John Moore, P.E.
Environmental Supervisor
Gallup Refinery

Western Refining Southwest, Inc.
A subsidiary of Marathon Petroleum Corporation

I-40 Exit 39
Jamestown, NM 87347

January 5, 2021

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

RE: Solid Waste Management Unit 1 Revised Investigation Report
Marathon Petroleum Company LP, Gallup Refinery
(dba Western Refining Southwest, Inc.)
EPA ID# NMD000333211

Dear Mr. Pierard:

Marathon Petroleum Company LP (dba Western Refining Southwest, Inc.) Gallup Refinery is submitting this Revised Investigation Report for the Solid Waste Management Unit (SWMU) 1. The Investigation Report has been enclosed for your review. If there are any questions, please call John Moore at (505) 879-7643.

Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or 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,
Marathon Petroleum Company LP, Gallup Refinery

Robert S. Hanks
Refinery General Manager

Enclosure

cc D. Cobrain, NMED HWB
M. Suzuki, NMED HWB
C. Chavez OCD
L. King, EPA Region 6
J. Moore, Marathon Gallup Refinery
G. McCarthy, Marathon Petroleum Company
H. Jones, Trihydro Corporation

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New Mexico Environment Department (NMED) Comments:

NMED Comment 1:

In the *Planned Sampling Activities* Section, page 8 of 14, the Permittee states, ”[a]nalysis of samples using field screening with a flame ionization detector (FID), and submission of laboratory samples for analysis of VOCs by Method 8260, SVOCs by Method 8270, metals by Method 6010, mercury by Method 7471, and TCLP analysis for lead, mercury, and benzene [were planned].” SWMU-1 Soil Sampling Investigation Work Plan (Work Plan), dated September 23, 2019, states that laboratory sampling analyses of the sediments consist of total petroleum hydrocarbons (TPH), diesel range organics (DRO), and gasoline range organics (GRO). Similarly, the Executive Summary, page 3 of 14, states that the samples were analyzed for TPH-GRO, DRO and ORO. TPH analysis is not included in the statement. Correct the statement for accuracy in the revised Report.

Marathon Petroleum Company (MPC) Response 1:

The sentence has been modified to read as follows in the revised report. “Analysis of samples using field screening with a flame ionization detector (FID), and submission of laboratory samples for analysis of VOCs by Method 8260, SVOCs by Method 8270, metals by Method 6010, mercury by Method 7471, TPH-GRO, TPH-DRO, TPH – motor oil range organics (ORO), and Toxicity Characteristics Leachate Procedure (TCLP) analysis for lead, mercury, and benzene were planned.”

NMED Comment 2:

In the *Planned Sampling Activities, Deviation from Approved Plan* Section, page 9 of 14, the Permittee states, “[d]espite dewatering with a vac truck throughout the week, [AP-1] and AP-2 pond surfaces remained too unstable to collect samples from some of the planned locations. One sample location from AP-1 and all three sample locations from AP-2 had to be moved closer to shore than previously planned. In addition, due to these safety concerns, the native clay liner samples were taken only to a depth of 6 to 12 inches into the native clay rather than "to the planned 8-foot depth.” According to Tables 2A, 2B, and 2C, the concentrations of organic contaminants exceeded the applicable screening levels at the bottom of all soil borings in the native clay intervals. Since the boring depths were compromised due to the safety concerns, vertical extent of contamination was not evaluated. Consequently, the extent of excavation necessary to remediate soil contamination is

not determined. Although the volume of excavation was estimated (e.g., AL-1 for 2,700 cubic yards), the estimation was not justified in the Report. In the revised Report, propose to resolve the safety concerns and recollect soil samples to delineate vertical extent of contamination or propose to excavate to a depth below the depressed water table for maximum soil removal.

MPC Response 2:

Tables 2A, 2B, and 2C show only exceedances, not every sample result. A better picture of the relatively abrupt decrease with depth of concentrations can be seen from Attachment B Tables 1A, 1B and 1C, where the TPH (GRO/DRO/ORO) results for the pond sediments show a relatively abrupt (several orders of magnitude) decrease in concentration with depth as the clay was encountered. For example, for the lowermost clay sample from all three AL-1 pond sample locations (SWMU 1-8 (5 - 5.5 ft), SWMU 1-9 (5.5 - 6 ft), and SWMU 1-10 (4.5 - 5 ft)) are below both the NMED Industrial Soil Screening Levels (ISSL) and Residential Soil Screening Levels (RSSL) for TPH (GRO/DRO/ORO).

To support MPC's assertion that the extent of contamination in the clay is limited, a new table (Table 8) has been added showing frequency of detection below standards for the underlying clay for AL-1, AL-2 and EP-1. Of the 21 TPH (GRO/DRO/ORO) analyses at the seven sample locations collected from the clay liner in AL-1, which includes the toe samples, 95 percent (%) are below the ISSL and 81 % are below both the ISSL and RSSL (Table 8). In other words, five of seven locations are below both the ISSL and RSSL in AL-1 for TPH (GRO/DRO/ORO) and six of the sample locations are below the ISSL for TPH (GRO/DRO/ORO).

Three sample locations out of the six locations collected from the clay liner in AL-2, are below both ISSL and RSSL for TPH (GRO/DRO/ORO). Another sample location is below the ISSL for TPH (GRO/DRO/ORO). Overall, of the 18 analyses from AL-2, 83 percent are below the ISSL and 72 percent are below both the ISSL and the RSSL for TPH (GRO/DRO/ORO).

Six of the nine sample locations from EP-1 were below both ISSL and RSSL for TPH (GRO/DRO/ORO). Only one location had TPH (GRO/DRO/ORO) analyses above both ISSL and RSSL. Of the 27 analyses for TPH (GRO/DRO/ORO) from samples collected from EP-1, 93 percent were below the ISSL and 85 percent were below both the ISSL and RSSL (Table 8). Overall

91 percent of the 66 TPH (GRO/DRO/ORO) analyses collected from all three ponds were below the ISSL.

These results correlate with the color change observed in the clay. Available FID field data also indicate a correlation with TPH-DRO/ORO analytical data (see MPC Response #7 below). Together, field observations (i.e. color of sediments/clay, consistency (obvious sludge), presence of hydrocarbon odor) and FID screening should provide a practical, working basis for full-scale excavation in the field. Excavation will be followed by laboratory confirmation sampling of excavation vertical and horizontal extent. Additional text will be added to accompany the new Table 8 to support this conclusion.

NMED Comment 3:

In the *Planned Sampling Activities, Deviation from Approved Plan* Section, page 9 of 14, the Permittee states, "[t]he sampling plan specified equipment blank collection at a frequency of 10% of samples collected. These samples were not collected. The hand auger was decontaminated prior to each sample depth by brushing off soil and by cleaning off any sludge until the surface of the hand auger was visibly clean. The hand-auger and spade were decontaminated using Simple Green™ between each sample location." Even if equipment was visibly clean, residual contaminants may have been present. Unless equipment blank is collected and tested, it is impossible to verify that the sampling equipment was clean, and the analytical results were not affected by cross-contamination. Demonstrate that the acquired data is defensible without equipment blank in the revised Report.

MPC Response 3:

While equipment blanks were not collected, MPC does not believe the integrity of the samples was compromised. Several factors were considered in making this determination.

In MPC Response Comment 2, it was shown that 91% of the bottom clay liner analyses from AL-1, AL-2, and EP-1 were below ISSLs for TPH (GRO/DRO/ORO). This indicates that the bottom clay samples were not significantly cross-contaminated by the sludge from the interval immediately above the bottom clay or from potential cross-contamination between sample locations. The remaining 9% of the bottom clay liner analyses were most likely impacted in-situ, not as a result of sampling.

In addition, within each borehole, after collection of the overlying sludge sample, the hand auger had to be pushed through the sloughing black sludge to the bottom clay liner to collect the sample, so that decontamination and the importance of an equipment blank was minimal due to the issue of having to sample the clay through the sludge. To eliminate as much cross-contamination as possible to the clay layer, the outer black sludge was removed from the clay sample, so only clay was placed in the sample jar. In addition, gloves were changed between sludge and clay sample collection. Finally, the augers were decontaminated between boreholes, including washing and rinsing to remove all visible traces of sludge.

This response will be added to the revised report to explain why the lack of equipment blanks does not affect the data quality and interpretation.

NMED Comment 4:

In the *Planned Sampling Activities, Deviation from Approved Plan* Section, page 9 of 14, the Permittee states, "[t]he laboratory had enough remaining sample left to analyze for total mercury, but it was completed outside the holding time of 28 days. Samples of mercury that were reported as not detected are considered unusable due to the length of time between sampling and analysis." The Laboratory Analytical Results, (QA/QC Samples Section[)], page 13 of 14, states that the laboratory determined that the precision, accuracy, validity, and usability of the data were not compromised; however, a justification for the usability of analytical data acquired outside the holding time is not discussed in the Report. Whether or not mercury is detected, all mercury concentrations analyzed outside the holding time are not usable for risk evaluation. In the revised Report, propose to recollect soil samples for mercury analysis or propose to excavate to a depth below the historic water table for maximum soil removal (e.g., more than ten feet bgs) to address potential risk associated with mercury.

MPC Response 4:

The TCLP mercury samples, which were proposed in the approved investigation work plan, were analyzed within the holding time. Although the mercury soil analyses exceeded the holding times for the EPA Method 7471, this analysis was not proposed in the approved investigation work plan and was requested later to provide additional information on mercury concentrations across the

ponds. TCLP mercury results for all samples (berm and pond) were several orders of magnitude below the Code of Federal Regulations (CFR) TCLP screening level of 0.2 milligram per liter (mg/L). The revised report will be modified to include text to support this conclusion.

NMED Comment 5:

In the *Field investigation Results* Section, page 10 of 14, the Permittee states, "[p]ond sample depths ranged from surface collection to 6.5 ft below ground surface (bgs)." According to Table 1, none of the pond soil samples were collected at a depth of 6.5 feet bgs. Correct the statement for accuracy in the revised Report.

MPC Response 5:

According to Table 1, sample location SWMU 1-19 (toe) (6-6.5 ft) was sampled to a depth of 6.5 feet below the pond surface. Though designated toe samples, toe samples are effectively pond samples because they exhibit the same silty, sandy surface layer underlain by three to five feet of sludge, which lies above the native clay liner. The report text will be revised to reflect that the toe sample lithology is similar to pond sample lithology.

NMED Comment 6:

In the *Field investigation Results, Summary of Field Sampling Activities* Section, page 10 of 14, the Permittee states, "[h]eadspace sampling of the samples was conducted using an FID. Only samples collected on Monday, January 13, 2020 were sampled with the FID, as the FID and its replacement would not operate properly; specifically, the flame would not stay lit." It is not clear why only flame ionization detector (FID) was used during the investigation. Photo ionization detector (PID) was also proposed in the Work Plan (page 9) and could have been used as well. Explain why a PID was not used during the investigation in the revised Report.

MPC Response 6:

The sludge in the aeration lagoons has been accumulating since the refinery was built. These sludges consist of heavily weathered hydrocarbon products. A PID is designed to detect light volatile organic compounds (VOC) such as benzene, toluene, ethylbenzene, and xylene compounds. Additionally, a PID does not work well with pond sediments due to the moisture content of the

sediments. An FID is designed to detect a broader range of compounds such as long-chained hydrocarbons, also known as SVOCs, in addition to the VOCs. Because both AL-1 and AL-2 are aeration lagoons, most of the lighter VOCs had volatilized or degraded during aeration leaving the heavier SVOCs in the sludge and hydrocarbon that infiltrated the underlying clay liner. Based on the above, an FID was selected for screening the soils and sludges as it would be able to detect the heavier hydrocarbons, as well as the lighter hydrocarbons.

NMED Comment 7:

In the *Laboratory Analytical Results*, *VOCs* Section, page 12 of 14, the Permittee states, "[e]xceedances were observed in DRO, GRO, and Oil Range Organics (ORO) across the pond and lagoons." The concentrations of organic contaminants exceeded the applicable screening levels in all berm samples. Soils outside of the berms are potentially contaminated due to the activities associated with SWMU 1. In the revised Report, propose to submit a work plan to advance soil borings outside the berms to investigate the lateral extent of potential soil contamination or commit to expanding the remedial excavation as necessary to remove all contaminated soils to meet risk-based cleanup levels. The investigation is necessary to determine lateral extent of excavation unless all affected soils are removed.

MPC Response 7:

Soils outside of the berms were not sampled, as this was not proposed as part of the approved work plan. Other, earlier, samples outside of the bermed areas were collected, as shown on Figure 2. These results showed that only one sample (SWMU 1-1 (2-4 ft), of the 17 soil borings advanced along the berm of all three ponds, exceeded ISSL and RSSL. This boring was located near the discharge lines coming from the new American Petroleum Institute separator (Western Refining 2013). All wastewater flow was discontinued by June 2013 when the flow was diverted to the new wastewater treatment plant (Western Refining 2013). Therefore, additional seepage into the berm would not be expected since mid-2013.

Based on the berm sampling results shown in Table 7, shallow berm soils can likely be segregated in the field during excavation and composite sampled to determine suitability as backfill. Deeper berm soils and soils outside of the berms can be assessed during excavation on the basis of physical

appearance, odor, and FID field screening, segregated if necessary, and sampled. A statement will be added to the final report.

NMED Comment 8:

In the *Laboratory Analytical Results, Metals* Section, page 12 of 14, the Permittee states, "[e]xceedances were observed for arsenic, antimony, and mercury compared to the USEPA RSSL and the NMED Residential SSL." Since the mercury analysis was conducted outside the holding time, the discussion regarding the detection of mercury must be qualified in the Report. Revise the Report accordingly.

MPC Response 8:

As in MPC Response 4 above, although the mercury analyses exceeded the holding times for the EPA Method 7471, this analysis was not included in the approved investigation work plan, thus not required. The TCLP mercury results, which were included in the approved investigation work plan, were analyzed within the holding time. TCLP mercury results for all samples (berm and pond) were several orders of magnitude below the CFR TCLP screening level of 0.2 mg/L. Therefore, additional sampling, other than confirmation samples collected after excavation, will not be necessary. The revised report will be modified to include text to support this conclusion.

NMED Comment 9:

In the *Laboratory Analytical Results, General Chemistry* Section, page 12 of 14, the Permittee states, "[f]ree liquids were analyzed and resulted in a positive or negative result [paint filter test). Of the 97 sample locations only six resulted in a positive paint filter test resulting in the sample having free liquid." All sampling locations were too shallow. Excavation will likely be necessary below the water table. If soils are excavated below the water table, the results of the paint filter test may be different. No response required.

MPC Response 9:

The standing water observed in AL-1 and AL-2 is likely perched within the pond clay liners and is not representative of the deeper water table. This standing water is likely from precipitation, with a possible contribution from shallow groundwater seepage (< 6 ft in depth). Test pits proposed for

areas adjacent to AL-1 and AL-2 will assist in determining the potential for significant seepage which could affect waste excavation. The deeper groundwater may be present at lower depths in EP-1. For example, the depth to water in local monitoring wells GWM-1 (northwest corner of EP-1) in 2016 (2016 Annual Report) was approximately 22 ft below grade, GWM-2 and GMW-3 were dry (total depths approximately 18 and 19 ft below grade, respectively).

NMED Comment 10:

In the *Laboratory Analytical Results, Correlation of Analytical Results with FlD Field Screening* Section, page 13 of 14, the Permittee states, "[t]he FlD will be used during excavation to confirm that hydrocarbon contaminated soil has been excavated from the lagoons and pond along with visual indicators and laboratory confirmation sampling." Since FID failed during this investigation, PID or other appropriate instrument must be proposed for future investigations in SWMU 1. Revise the Report accordingly.

MPC Response 10:

The piece of equipment delivered onsite failed but the information that the FID provided while operational showed a clear correlation between contamination and elevated FID readings. Higher DRO results generally corresponded with higher FID readings. The revised report will include language stating that in future investigations, an additional functional FID unit will be kept on-site.

NMED Comment 11:

In the *Conclusion* Section, page 13 of 14, the Permittee states, "[t]his investigation was conducted to characterize soils and sediments in EP-1, AL-1, and AL-2 for future excavation and closure of SWMU-1." The investigation failed to characterize lateral and vertical extent of contamination necessary for the planned excavation (see Comments 2 and 7). Clarify that the investigation did not achieve the intended purpose in the revised Report.

MPC Response 11:

As noted in MPC Responses to Comments 2 and 7, much of the vertical and horizontal delineation of contamination was achieved. Therefore, clarification that the investigation did not achieve the intended purpose is not necessary. Text will be added that the results to provide a firm basis for

proceeding with an excavation plan, which will include the field screening to aid in contamination delineation and laboratory confirmation sampling.

NMED Comment 12:

In the *Conclusion* Section, page 13 of 14, the Permittee states, “volumes for excavation and disposal [are estimated] for EP-1 (non-hazardous] 11,500 yd^3, AL-1 1,700 yds^3 (listed hazardous) and AL-2 3,800 yds^3 (listed hazardous).” According to the Executive Summary, page 4 of 14, the estimated volumes for excavation for EP-1, AL-1, and AL-2 are listed as 11,500, 2,700, and 4,500 cubic yards (yds^3), respectively. There is a discrepancy in the estimated volumes. Regardless, the estimated volume of excavation will increase once the extent of soil contamination is delineated appropriately. Revise the Report accordingly.

MPC Response 12:

The volume provided in the executive summary are correct. The report volumes will be changed.

NMED Comment 13:

In the *Conclusion* Section, page 13 of 14, the Permittee states, "[g]enerally, the oily sludge in the ponds had a specific gravity of 1.92, and a pH of 8.66. Of the 106 samples of sludge, only 6 had free liquids in the sample. This shows that the water accumulating in the ponds is like from outside SWMU 1 and not coming from groundwater.” Sludge is defined as a mixture of solids and liquids. All sludge samples should contain liquids. Provide a clarification in the revised Report. In addition, discuss the origin of the water accumulated in the ponds in the revised Report.

MPC Response 13:

The revised report will include the following text for clarification, “While it is true that all sludge samples have high moisture content, it does not necessarily mean that all sludge contains *free* liquids. Much of the liquid within the sludge may have been trapped within the sludge at the time of its deposition and is potentially emulsified with petroleum into a gel-like consistency based on field observations by the field geologist.”

Ponded water observed in AL-1 and AL-2 is likely perched water trapped by the clay layer which underlies the ponds and results from precipitation and possible shallow groundwater seepage from the east and south. Based on the shallow water table elevations NAPIS well and in the Seeps area to the south, it is seepage into the ponds may be occurring along the eastern and southern edge of AL-1 and AL-2.

NMED Comment 14:

In the *Conclusion* Section, page 14 of 14, the Permittee states, "[f]ollowing NMED's review of these results and approval of the characterization of SWMU 1, MPC plans to proceed with the remedy implementation for the excavation and closure of the SWMU." A separate work plan is required for future remedial excavation. NMED will establish a due date for the work plan upon approval of this Report. Revise the Report accordingly.

MPC Response 14:

MPC will revise the report to state that a separate work plan will be submitted for future remedial excavation of the SWMU.

Attachment A: Clean

MARATHON PETROLEUM CORPORATION

GALLUP REFINING DIVISION

REVISED SWMU 1 INVESTIGATION REPORT

MARCH 30, 2020

REVISED JANUARY 5, 2021

Page 14 of 1023

Approval to Proceed

I certify under penalty of law that this document and all attachments were prepared under my direction or 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.

Name: John Moore, P.E.

1-5-21
Date

Title: Environmental Superintendent

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Executive Summary

The Marathon Petroleum Company, Gallup Refining Division (MPC) is submitting this revised investigation report for sampling of soils and sediments at the former aeration lagoons (AL-1 and AL-2) and evaporation pond (EP-1), known collectively as Solid Waste Management Unit (SWMU) 1. The sampling was conducted for the purposes of soil and sediment volume determination and chemical characterization for future SWMU 1 excavation, disposal, and closure. The sampling took place the week of January 13, 2020 and was conducted in accordance with an approved work plan submitted to the New Mexico Environment Department (NMED) on September 23, 2019 (MPC 2019) and approved with modifications by NMED on October 30, 2019.

SWMU 1 was part of a former aggressive biological treatment unit where refinery wastewater flowed through the aeration lagoons in series and into the evaporation pond. Based on this usage and the concurrence of the NMED Hazardous Waste Bureau (NMED 2019), AL-1 and AL-2 sediments are classified as F-listed (F037/F038) hazardous waste, with EP-1 soils/sediment potentially classified as non-hazardous pending the results of this investigation.

Field work consisted of:

- Collection of samples at four location in EP-1 and at three locations in AL-1 and AL-2.
- Collection of samples on each of the four berms of the lagoons and the pond.
- Measuring soil/sediment thickness at all sampling locations.

The samples were collected using a hand auger and analyzed for pH, volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), metals, toxic characteristics leaching procedure (TCLP) (benzene, lead, and mercury), total petroleum hydrocarbons TPH for gasoline range organics (GRO), diesel range organics (DRO) and oil range organics (ORO). The results were compared with NMED Industrial Soil Screening Levels (ISSL) June 2019, TCLP Screening Levels (40 CFR 261.24) and United States Environmental Protection Agency (EPA) Regional Screening Levels (RSL) Industrial Soil Hazard Quotient 0.1. Analytes exceeding the NMED SSLs and/or the EPA RSLs were:

- TPH (GRO, DRO, and ORO).
- SVOCs (1-methylnaphthalene, 2-methylnapthalene, naphthalene, benzo(a)anthracene, and benzo(a)pyrene).
- metals (arsenic and mercury).

TCLP results for lead, mercury and benzene were below TCLP standards.

Based on field observations during sample collection, a material type and color change (black waste sludge to gray native clay) is associated with a decrease in contaminant concentrations, which should assist with determining the vertical extent of excavation. Field flame ionization detector (FID) sample headspace data are also positively correlated with laboratory analytical data. Volumes for excavation were calculated using the average depth of contamination and the pond areas, and then rounded to the nearest 100 yds^3, with resulting volumes as follows:

- AL-1: Average depth 5.2 ft, surface area 13,789 square feet (ft^2), volume 2,700 cubic yards (yds^3).
- AL-2: Average depth 5.3 ft, surface area 23,211 ft^2, volume 4,500 yds^3.
- EP-1: Average depth 5.3 ft, surface area 58,757 ft^2, volume 11,500 yds^3.

Received by OCD: 3/2/2021 2:18:14 PM

Table of Contents

Approval to Proceed 2
Executive Summary 3
List of Figures 6
List of Tables 6
List of Attachments 6
Introduction 7
Background 7
Historic Sampling and Results 7
Planned Sampling Activities 8
Deviations from Approved Plan 9
Field Investigation Results 10
Summary of Field Sampling Activities 10
Field Observations of Pond Conditions 11
Quality Assurance/Quality Control Samples 12
Laboratory Analytical Results 12
VOCs 12
SVOCs 12
Metals 13
General Chemistry 13
Pond Berm Analytic Results Summary 13
Pond Clay Liner Analytic Results Summary 14
QA/QC Samples 15
Correlation of Analytical Results with FID Field Screening 15
Conclusions 15
References 16
Figures 17
Tables 18
Attachments 19
Attachment A - Field Notes 20
Attachment B - Complete Analytical Tables 21
Attachment C - Laboratory Analytical Reports 22

Released to Imaging: 3/2/2021 2:22:29 PM

List of Figures

1. Refinery and SWMU 1 Location, Marathon Petroleum Company, Gallup Refining Division, Gallup, New Mexico
2. Sampling Locations, SWMU 1, Marathon Petroleum Company, Gallup Refining Division, Gallup, New Mexico
3. Sample Locations and Intervals with Free Liquids, Marathon Petroleum Company, Gallup Refining Division, Gallup, New Mexico

List of Tables

1. SWMU 1 Sampling Locations and Depths, Marathon Petroleum Company, Gallup, New Mexico
2A. SWMU 1 Sampling – Volatile Organic Compounds (AL-1), Marathon Petroleum Company, Gallup, New Mexico
2B. SWMU 1 Sampling – Volatile Organic Compounds (AL-2), Marathon Petroleum Company, Gallup, New Mexico
2C. SWMU 1 Sampling – Volatile Organic Compounds (EP-1), Marathon Petroleum Company, Gallup, New Mexico
3A. SWMU 1 Sampling – Semivolatile Organic Compounds (AL-1), Marathon Petroleum Company, Gallup, New Mexico
3B. SWMU 1 Sampling – Semivolatile Organic Compounds (AL-2), Marathon Petroleum Company, Gallup, New Mexico
3C. SWMU 1 Sampling – Semivolatile Organic Compounds (EP-1), Marathon Petroleum Company, Gallup, New Mexico
4A. SWMU 1 Sampling – Metals Compounds (AL-1), Marathon Petroleum Company, Gallup, New Mexico
4B. SWMU 1 Sampling – Metals Compounds (AL-2), Marathon Petroleum Company, Gallup, New Mexico
4C. SWMU 1 Sampling – Metals Compunds (EP-1), Marathon Petroleum Company, Gallup, New Mexico
5. SWMU 1 Sampling – General Chemistry, Marathon Petroleum Company, Gallup, New Mexico
6. FID Sampling Results, Marathon Petroleum Company, Gallup, New Mexico
7. SWMU-1 Berm Sample Results, Marathon Petroleum Company, Gallup, New Mexico
8. SWMU-1 Clay Sample Results, Marathon Petroleum Company, Gallup, New Mexico

List of Attachments

A. Sediment Sampling Forms
B. Analytical Results Tables
C. Lab Reports

Introduction

The Marathon Petroleum Company, Gallup Refining Division (MPC) is submitting this revised investigation report for sampling of soils and sediments at the former aeration lagoons (AL-1 and AL-2) and evaporation pond (EP-1), known collectively as Solid Waste Management Unit (SWMU) 1. The sampling was conducted for the purposes of soil and sediment volume determination and chemical characterization for future SWMU 1 excavation, disposal, and closure. The sampling took place the week of January 13, 2020 and was conducted in accordance with an approved work plan submitted to the New Mexico Environment Department (NMED) on September 23, 2019 (MPC 2019). The work plan was approved by NMED on October 30, 2019.

Prior sampling was conducted in 2008 (Trihydro 2008) when the ponds were flooded and a boat was required. The resulting sediment depths and waste volumes were affected by the presence of water. The current effort was conducted while the ponds were substantially dry, and includes specific chemical analyses, such as the Toxicity Characteristics Leaching Procedure (TCLP), not analyzed for in the prior SWMU 1 investigation.

Background

MPC, Gallup Refining Division (Refinery) is located approximately 17 miles east of Gallup, McKinley County, New Mexico along the north side of Interstate Highway I-40 (Figure 1). The physical address is I-40, Exit #39 Jamestown, New Mexico 87347. The Refinery property covers approximately 810 acres.

The Refinery is a crude oil refinery that processes crude oil transported by pipeline or tanker truck from the Four Corners region. Various process units operated at the Refinery include: crude distillation, reformer, fluidized catalytic cracker, alkylation, sulfur recovery, merox treater, and hydrotreater. Current and past operations have produced gasoline, diesel fuels, jet fuels, kerosene, propane, butane, and residual fuel.

SWMU 1 consists of the former aeration lagoons (AL-1 and AL-2) and the evaporation pond (EP-1) (Figure 1), which were constructed in 1987. Operation ceased in 2013. AL-1 and AL-2 are approximately 0.3 acres and 0.5 acres, respectively, and EP-1 is approximately 1.3 acres. The Refinery's process wastewater treatment train consisted of an American Petroleum Institute separator, benzene air strippers, and an aggressive biological treatment unit (ABTU) consisting of the two aeration lagoons in series, followed by evaporation in EP-1. AL-1, AL-2, and EP-1 are earthen surface impoundments with native clay functioning as a bottom liner (DiSorbo 2018).

Based on their usage as a component of an ABTU, AL-1 and AL-2 sediments have been classified as listed hazardous waste (F037/F038), whereas sediments in EP-1 by definition would not be classified as a listed hazardous waste, but may be hazardous depending on sampling and analysis results (NMED 2019).

Historic Sampling and Results

Prior sampling of the sediments and laboratory analysis were conducted in 2008 of AL-1, AL-2, and EP-1 (Trihydro 2008). Sampling was conducted using a boat because of the presence of water in the ponds. Laboratory sampling analyses of the sediments consisted of total petroleum hydrocarbons (TPH), diesel range organics (DRO), and gasoline range organics (GRO) by United States Environmental Protection Agency (USEPA) method 8015, semi-volatile organic

compounds (SVOCs) by USEPA method 8270, volatile organic compounds (VOCs) by USEPA Method 8260, Resource Conservation and Recovery Act (RCRA) metals by USEPA Method 6010C, and mercury by USEPA Method 7471.

In the 2008 report (Trihydro 2008), standards for comparison consisted of NMED Industrial Soil Screening Levels (ISSLs) and the USEPA Maximum Concentrations of Contaminants for the Toxicity Characteristic (CFR Title 40 Part 261). The Toxicity Characteristics Leaching Procedure (TCLP) analysis was not performed. In the absence of TCLP analyses, the sample concentrations were divided by 20 and compared to the TCLP standard as the maximum theoretical leachate concentration that could be observed from the sample. This was to evaluate the potential for soils from the sample to exceed the TCLP standard and was used as a screening tool.

Twenty-six samples, using the EPA-approved RCRA calculation for comparing total metals concentrations to the TCLP standard, from various sediment depths in the three areas exceeded the Toxicity Characteristic for mercury, and three samples from AL-1 exceeded the Toxicity Characteristic for lead. During this sampling, approximate sediment thickness and volumes were estimated as follows:

- AL-1: 3.5 feet (ft) to 6.0 ft, 1,700 cubic yards (yds^3).
- AL-2: 6.5 ft to 9.6 ft, 3,800 yds^3.
- EP-1: 1.2 ft to 5.1 ft, 3,200 yds^3.

Historical sample locations are shown on Figure 2.

Planned Sampling Activities

A Soil Sampling Investigation Work Plan (MPC 2019) was submitted and approved by the NMED in September 2019 (NMED 2019), and consisted of the following major elements:

- Samples collected using a hand-auger in locations predetermined by the RCRA Post-Closure Permit guidelines.
- Three sampling locations in each of the two aeration ponds and four sampling loctions in the evaporation pond to a depth of 8 ft or refusal.
- Pond berm sampling at locations along each of the pond berms (four berms/pond), starting at the top and then at an interval of 2.5 vertical ft and a depth of 1.5 ft in as near a horizontal direction as possible.
- Analysis of samples using field screening with a flame ionization detector (FID), and submission of laboratory samples for analysis of VOCs by Method 8260, SVOCs by Method 8270, metals by Method 6010, mercury by Method 7471, TPH-GRO, TPH-DRO, TPH - motor oil range (ORO), and TCLP analysis for lead, mercury, and benzene were planned. Free liquids, pH, and specific gravity were also analyzed by the laboratory.

- Duplicate samples for the purpose of quality assurance.
- Analytical results comparison against NMED ISSLs, TCLP and the NMED Residential Soil Screening Levels (RSSLs). The hazardous waste determination was completed using the TCLP standards compared against the benzene, mercury, and lead results.

Deviations from Approved Plan

Deviations from the sampling plan approved by NMED (NMED 2019) included the following:

1. Samples were to be collected at the surface and every 2.5 ft to a maximum depth of 8 ft; however, during the sampling it became apparent that immediately below the surface sediment was a homogeneous black sludge that varied in thickness above a visually distinct native clay liner. Attachment A provides the field notes from the sampling event. It was decided that only a surface, one sludge, and one native clay sample would be collected from each location in the basins.

2. Despite dewatering with a vac truck throughout the week, AL-1 and AL-2 pond surfaces remained too unstable to collect samples from some of the planned locations. One sample location from AL-1 and all three sample locations from AL-2 had to be moved closer to shore than previously planned. In addition, due to these safety concerns, the native clay liner samples were taken only to a depth of 6 to 12 inches into the native clay rather than to the planned 8-foot depth. Sample locations and depths are shown on Figure 2 and summarized in Table 1.

3. While equipment blanks were not collected, MPC does not believe the integrity of the samples was compromised. Several factors were considered in making this determination.

   In MPC Response Comment 2, it was shown that 91% of the bottom clay liner analyses from AL-1, AL-2, and EP-1 were below ISSLs for TPH (GRO/DRO/ORO). This indicates that the bottom clay samples were not significantly cross-contaminated by the sludge from the interval immediately above the bottom clay or from potential cross-contamination between sample locations. The remaining 9% of the bottom clay liner analyses were most likely impacted in-situ, not as a result of sampling.

   In addition, within each borehole, after collection of the overlying sludge sample, the hand auger had to be pushed through the sloughing black sludge to the bottom clay liner to collect the sample, so that decontamination and the importance of an equipment blank was minimal due to the issue with having to sampling the clay through the sludge. To eliminate as much cross-contamination as possible to the clay layer, the outer black sludge was removed from the clay sample, so only clay was placed in the sample jar. In addition, gloves were changed between sludge and clay sample collection. Finally, the augers were decontaminated between boreholes, including washing and rinsing to remove all visible traces of sludge.

4. The planned sampling activities included field screening with an FID. The FID received from the rental agency would not stay lit after the first day of use and a replacement was ordered. The replacement FID would not function. Due to repeated technical issues with the FIDs, only samples from the first day (approximately 20) were able to be screened in the field. While all field data were not screened, there was sufficient FID data to establish a positive correlation between the FID results and the laboratory VOC and SVOC data.

5. TCLP benzene analyses were performed on those samples where benzene soil concentrations exceeded 0.5 mg/kg, rather than all samples. This was a screen recommended by the laboratory Hall Environmental to optimize the number of benzene TCLP analyses.

6. The TCLP mercury samples, which were proposed in the approved investigation work plan, were analyzed within the holding time. Although the mercury soil analyses exceeded the holding times for the EPA Method 7471, this analysis was not proposed in the approved investigation work plan and was requested later to provide additional information on mercury concentrations across the ponds. TCLP mercury results for all samples (berm and pond) were several orders of magnitude below the Code of Federal Regulations (CFR) TCLP screening level of 0.2 milligrams per liter (mg/L).

7. A Tier I data validation was completed on all the samples. Tier II data validation will be completed on the confirmation results following excavation of SWMU 1. The Tier I validation reviewed potential problems with the data and did not identify possible biases or errors in the lab data. The data were considered accurate for the purposes of excavation delineation and waste disposal determination.

8. A comparison of the analytical results to Land Disposal Restrictions (LDRs) is not submitted in this report; but following selection of the waste treatment/disposal firms MPC will complete the LDR form and comparison.

Field Investigation Results

Trihydro conducted the sampling January 13-17, 2020. The samples were collected from 22 locations, including 10 pond sediment and 12 berm locations. Pond or toe sample depths ranged from surface collection to 6.5 ft below ground surface (bgs). Though designated toe samples, toe samples are effectively pond samples because they exhibit the same silty, sandy surface layer underlain by three to five feet of sludge, which lies above the native clay liner. Berm locations were taken from the inside of the pond to a vertical depth of 9 ft through the top of berm. The samples were generally collected in the locations presented in the Soil Sampling Investigation Work Plan (MPC 2019) but deviated slightly based on the conditions observed in the pond and lagoons during the sampling, as discussed above.

Summary of Field Sampling Activities

A total of 97 samples plus 10 duplicate samples and 5 trip blanks were collected from the three ponds. A summary of samples and locations are shown on Figure 2 and in Table 1.

Sampling began on the top and sidewall berms of the three ponds while AL-1 and AL-2 fluid was being removed with a vac truck. Several samples were identified as toe and berm samples. The toe samples were collected starting with sediment taken from the base of the berm, including any surface soil, another sample was taken of any sludge, and lastly a native clay sample was taken from below the sludge. Although these samples are classified as toe samples, they are, in fact, pond samples due to the presence of several feet of sludge. Surface samples on the pond and lagoons were taken with a spade and placed in a Ziplock bag. The hand auger was then advanced down through the sludge to the hard-packed native clay liner to determine the depth to the top of the native clay liner. The sludge sample was extracted from the hand auger as it came out of the hole and placed in a Ziplock bag. Dry decontamination of the auger by brushing and scraping was conducted between depths. Then the hand auger was used to obtain a sample of the native clay liner. Generally, penetration into the native clay was limited to approximately 1 foot because of difficulty turning

the auger in the native clay. The field geologist visually observed the samples and recorded the observations in the field notebook. The hand auger and spade were decontaminated using Simple Green™ between each sample location.

Headspace sampling of the samples was conducted using an FID. Only samples collected on Monday, January 13, 2020 were sampled with the FID, as the FID and its replacement would not operate properly; specifically, the flame would not stay lit. The piece of equipment delivered onsite failed but the information that the FID provided while operational showed a clear correlation between contamination and elevated FID readings. Higher DRO results generally corresponded with higher FID readings. In future investigations, an additional functional FID unit will be kept on-site.

The sludge in the aeration lagoons has been accumulating since the refinery was built. These sludges consist of heavily weathered hydrocarbon products. A PID is designed to detect light volatile organic compounds (VOC) such as benzene, toluene, ethylbenzene, and xylene compounds. Additionally, a PID does not work well with pond sediments due to the moisture content of the sediments. An FID is designed to detect a broader range of compounds such as long-chained hydrocarbons, also known as SVOCs, in addition to the VOCs. Because both AL-1 and AL-2 are aeration lagoons, most of the lighter VOCs had volatilized or degraded during aeration leaving the heavier SVOCs in the sludge and hydrocarbon that infiltrated the underlying clay liner. Based on the above, an FID was selected for screening the soils and sludges as it would be able to detect the heavier hydrocarbons, as well as the lighter hydrocarbons.

The samples were placed in laboratory provided sample containers, labeled, and placed in a cooler, iced, and delivered to Hall Environmental Laboratories for analysis for VOCs by USEPA Test Method 8260B; SVOCs by USEPA Test Method 8270C; TPH by USEPA Test Method 8015M; total metals by USEPA Test Methods 6010B and 7471; benzene TCLP by USEPA Test Method 8260B; mercury and lead TCLP by USEPA Test Methods 7470 and 1311/6010A, pH, specific gravity, and free liquids (paint filter).

Field Observations of Pond Conditions

EP-1

The toe of each EP-1 berm had 6 to 12 inches of surface sediment, underlain by up to 3 ft of black sludge overlying a native clay layer. The native clay layer in the toe samples showed little to no visual evidence of staining, and the transition in color and texture from black sludge to native unstained clay was obvious. Samples in EP-1 were taken in locations as indicated in the workplan. The samples taken within the pond had minimal surface sediment with 3 to 5 ft of sludge overlying the native clay layer. Surface water was observed on approximately a quarter of the pond area. Groundwater was not encountered during the sampling.

AL-1

AL-1 conditions required sample SWMU 1-8 to be collected closer to the shoreline than the work plan proposed due to safety concerns as shown on Figure 2. Samples were collected using a pallet as a sampling platform. Samples consisted of 3 to 6 inches of surface sediment underlain by 4 to 6 ft of sludge overlying a native clay layer. As with EP-1, the transition from black sludge to unstained native clay was obvious. The maximum sample depth was dictated by the native clay layer. Samples were generally taken up to 6 to 12 inches into the native clay layer, after which it was deemed unsafe to continue due to the unstable sampling platform. Surface water was observed on approximately a third of the pond area, prior to vac truck removal, which reduced the surface water coverage to approximately 25% of the area. Groundwater was not encountered during the sampling.

AL-2

Conditions in AL-2 were similar to AL-1, but with more saturated conditions. AL-2 conditions required all sampling to be collected closer to the shoreline than the workplan indicated due to safety concerns (Figure 2). Samples consisted of 0 to 6 inches of surface sediment underlain by 4 to 5.5 ft of sludge overlying a native clay layer. As in AL-1, the maximum sample depth was dictated by an unstained native clay layer, which was readily discernible . Samples were taken 6 to 12 inches into a native clay layer, after which it was deemed unsafe to continue. Surface water was observed on approximately a third of the pond area prior to vac truck removal, which reduced the surface water coverage to approximately 25% of the area. Groundwater was not encountered during the sampling.

Quality Assurance/Quality Control Samples

Quality assurance/quality control (QA/QC) samples were recorded on the field forms.

Laboratory Analytical Results

Analytical results for exceeded detections of the various parameters are presented in the following tables:

- Table 2 – VOCs
- Table 3 – SVOCs
- Table 4 – Metals

Results are organized in these tables by pond. Tables with all the sampling results compared to the soil standards are included in Attachment B. Analytical laboratory reports are included in Attachment C. The ranges of detected concentrations of analytes are summarized in the sections below. An interpretation of the results, including a comparison to the standards, is also presented below. The sample locations are shown on Figure 2 and summarized in Table 1.

VOCs

The detected exceedance sample results of VOCs are provided in Tables 2a through 2c. A complete summary of all sample results is included in Attachment B. Exceedances were observed in DRO, GRO, and Oil Range Organics (ORO) across the pond and lagoons. The NMED ISSL for DRO and ORO are both 3,000 milligrams per kilogram (mg/kg) and 500 mg/kg for GRO. The NMED RSSL for DRO and ORO are both 1,000 mg/kg and 100 mg/kg for GRO. The detections were generally higher in locations sampled closer to the surface, and as shown in Appendix B Tables 1A, 1B and 1C, the concentrations relatively abruptly (several orders of magnitude) decrease with depth as the clay is encountered.. No other VOC detections exceeded the standards.

Benzene samples with concentrations greater than 0.5 mg/kg were analyzed for TCLP benzene. Only 8 samples from AL-1 met this criterion. No detections of benzene exceeded the NMED SSL's of 87.24 mg/kg for an Industrial Worker. No detections of benzene TCLP exceeded the 40 CFR 261.24 TCLP Screening Level of 0.5 mg/kg.

SVOCs

The detected exceedance sample results of SVOCs are provided in Tables 3a through 3c. 1-methylnaphthalene, 2-methylnaphthalene, and naphthalene exceeded their respective NMED RSSLs and the USEPA RSL's, but these analytes

did not exceed the NMED ISSL. Benzo(a)anthracene and benzo(a)pyrene exceeded all three of the standards in one location, SWMU 1-9 in the surface sample. Benzo(a)pyrene exceeded the NMED RSSL and USEPA RSL for SWMU 1-9 at 4.5 ft. No other exceedances were observed.

Metals

The detected exceedance sample results of metals are provided in Tables 4a through 4c. Exceedances were observed for arsenic, antimony, and mercury compared to the USEPA RSL and the NMED RSSL. Arsenic did not exceed the NMED ISSL and a standard for mercury has not been established for NMED. Antimony exceeded the NMED RSSL in two locations, SWMU 1-20 (toe) (0.5 – 3 ft) and SWMU 1-11 (toe). Lead did not exceed any of the applicable screening levels. The TCLP results for mercury and lead did not exceed the screening levels from 40 CFR 261.24.

Although the mercury analyses exceeded the holding times for the EPA Method 7471, this analysis was not included in the approved investigation work plan, thus not required. The TCLP mercury results, which were included in the approved investigation work plan, were analyzed within the holding time. TCLP mercury results for all samples (berm and pond) were several orders of magnitude below the CFR TCLP screening level of 0.2 mg/L. Therefore, additional sampling, other than confirmation samples collected after excavation, will not be necessary.

General Chemistry

Sample results of general chemistry analyses, pH, free liquids, and specific gravity are provided in Table 5. The pH ranged from 3.48 in SWMU 1-19 (toe) to 9.13 in SWMU 1-22 ((toe) (3.5-4 ft)) with an average pH for all the samples of 7.52. Specific gravity ranged from 1.03 g/cm^3 in SWMU 1-12 (toe) to 2.21 g/cm^3 in SWMU 1-17 ((berm) (1.5 ft)). Free liquids were analyzed and resulted in a positive or negative result (paint filter test). Of the 97 sample locations only six resulted in a positive paint filter test resulting in the sample having free liquid. Those locations are: SWMU 1-10 (4-4.5 ft), SWMU 1-18 (toe), SWMU 1-18 (toe) (2.5 ft), SWMU 1-20 (toe) (0.5-3 ft), SWMU 1-8 (2.5 ft), and SWMU 1-9 (4.5 ft). A summary of the free liquid detected during sampling is shown on Figure 3.

The standing water observed in AL-1 and AL-2 is likely perched within the pond clay liners and is not representative of the deeper water table. This standing water is likely from precipitation, with a possible contribution from shallow groundwater seepage (< 6 ft in depth). Test pits proposed for areas adjacent to AL-1 and AL-2 will assist in determining the potential for significant seepage which could affect waste excavation. The deeper groundwater may be present at lower depths in EP-1. For example, the depth to water in local monitoring wells GWM-1 (northwest corner of EP-1) in 2016 (2016 Annual Report) was approximately 22 ft below grade, GWM-2 and GMW-3 were dry (total depths approximately 18 and 19 ft below grade, respectively).

Pond Berm Analytic Results Summary

Soils outside of the berms were not sampled, as this was not proposed as part of the approved work plan. Other, earlier, samples outside of the bermed areas were collected, as shown on Figure 2. These results showed that only one sample (SWMU 1-1 (2-4 ft), of the 17 soil borings advanced along the berm of all three ponds, exceeded ISSL and RSSL. This boring was located near the discharge lines coming from the new American Petroleum Institute separator (Western Refining 2013). All wastewater flow was discontinued by June 2013 when the flow was diverted to the new wastewater

treatment plant (Western Refining 2013). Therefore, additional seepage into the berm would not be expected since mid-2013.

Based on the berm sampling results shown in Table 7, shallow berm soils can likely be segregated in the field during excavation and composite sampled to determine suitability as backfill. Deeper berm soils and soils outside of the berms can be assessed during excavation on the basis of physical appearance, odor, and FID field screening, segregated if necessary, and sampled.

Pond Clay Liner Analytic Results Summary

A distinct clay liner was encountered in this investigation. This liner was evidenced by its material properties (hand-augering in clay) and unstained color. A better picture of the relatively abrupt decrease with depth of concentrations can be seen from Attachment B Tables 1A, 1B and 1C, where the TPH (GRO/DRO/ORO) results for the pond sediments show a relatively abrupt (several orders of magnitude) decrease in concentration with depth in a boring location as the clay was encountered. For example, in Attachment B Table 1A, the TPH (GRO/DRO/ORO) results for the lowermost clay sample from all three AL-1 pond sample locations (SWMU 1-8 (5 - 5.5 ft), SWMU 1-9 (5.5 - 6 ft), and SWMU 1-10 (4.5 – 5 ft)) are below both the NMED Industrial Soil Screening Levels (ISSL) and Residential Soil Screening Levels (RSSL) for TPH (GRO/DRO/ORO).

To support MPC's assertion that the extent of contamination in the clay is limited, Table 8 presents the frequency of detection above standards for the underlying clay for AL-1, AL-2 and EP-1. Tables 2A, 2B, and 2C show only exceedances, not every sample result.

Of the 21 TPH (GRO/DRO/ORO) analyses at the seven sample locations collected from the clay liner in AL-1, which includes the toe samples, 95 percent are below the ISSL and 81 percent are below both the ISSL and RSSL (Table 8). That is five of seven locations are below both the ISSL and RSSL in AL-1 for TPH (GRO/DRO/ORO). Six of the sample locations are below the ISSL for TPH (GRO/DRO/ORO).

Three sample locations out of the six locations collected from the clay liner in AL-2, are below both ISSL and RSSL for TPH (GRO/DRO/ORO). Another sample location is below the ISSL for TPH (GRO/DRO/ORO). Overall, of the 18 analyses from AL-2, 83 percent are below the ISSL and 72 percent are below both the ISSL and the RSSL for TPH (GRO/DRO/ORO).

Six of the nine sample locations from EP-1 were below both ISSL and RSSL for TPH (GRO/DRO/ORO). Only one location had TPH (GRO/DRO/ORO) analyses above both ISSL and RSSL. Of the 27 analyses for TPH (GRO/DRO/ORO) from samples collected from EP-1, 93 percent were below the ISSL and 85 percent were below both the ISSL and RSSL (Table 8). Overall 91 percent of the 66 TPH (GRO/DRO/ORO) analyses collected from all three ponds were below the ISSL.

These results correlate with the color change observed in the clay. Available FID field data also indicate a correlation with TPH-DRO/ORO analytical data (see below). Together, field observations and FID screening should provide a practical, working basis for full-scale excavation in the field. Excavation will be followed by laboratory confirmation sampling of excavation vertical and horizontal extent.

QA/QC Samples

Five methanol blank samples were provided by the laboratory as trip blanks. These samples were sent in the coolers by the laboratory and were not altered between sampling and analysis. Methylene chloride, 1-methylnaphthalene, 2-methylnaphthalene, 1,2,4-trimethylbenzene, 4-methyl-2-pentanone, and toluene were detected in the blank samples. Methylene chloride is a common laboratory contaminant and was detected in all of the laboratory blanks and several of the soil samples. None of the detected blank samples exceeded the standards.

Tier I data validation was performed on the data package provided by the laboratory. The Tier I data validation included a review of the completeness of the data packages, COC's, sample condition receipts, sample preservations, holding times, the case narrative, and the quality control summary. Several notations were provided in the quality control summary provided by the laboratory, but the laboratory determined that the precision, accuracy, validity, and usability of the data were not compromised, and that corrective actions were not necessary. Following a review of the Tier I data validation parameters, it was determined that the data set was generally complete.

Correlation of Analytical Results with FID Field Screening

FID results from the first day were compared to the TPH results from the samples they were analyzed from. The comparison is provided in Table 6. Results with high detections of DRO (greater than 200 mg/kg) had an FID reading greater than 1.5 ions per second. These results indicate a potential positive correlation between the analytical results and soil characteristics in the field. The FID will be used during excavation to confirm that hydrocarbon contaminated soil has been excavated from the lagoons and pond along with visual indicators and laboratory confirmation sampling.

Conclusions

This investigation was conducted to characterize soils and sediments in EP-1, AL-1, and AL-2 for future excavation and closure of SWMU-1. Much of the vertical and horizontal delineation of contamination was achieved. The results provide a firm basis for proceeding with an excavation plan, which will include the field and laboratory sampling procedures. Significant findings include:

- Confirmation that EP-1 soil/sediments are not RCRA hazardous based on the toxicity criteria.
- Estimated volumes for excavation and disposal for EP-1 (non-hazardous) 11,500 yd^3, AL-1 2,700 yds^3 (listed hazardous) and AL-2 4,500 yds^3 (listed hazardous).
- Characterization of the berm soil for potential re-use for excavation backfill.
- Pond sediment as consisting of a thick oily sludge, whose composition was confirmed by elevated TPH results.
- Generally, the oily sludge in the ponds had a specific gravity of 1.92, and a pH of 8.66. Of the 106 samples of sludge, only 6 had free liquids in the sample. This shows that the water accumulating in the ponds is likely from outside SWMU 1 and not coming from groundwater. While it is true that all sludge samples should contain liquids, it does not necessarily mean that all sludge contains *free* liquids. Much of the liquid within the sludge was trapped within the sludge at the time of its deposition and appears to be emulsified with petroleum into a gel-like consistency.

Ponded water observed in AL-1 and AL-2 is likely perched water trapped by the clay layer which underlies the ponds. Based on the shallow water table elevations in the Seeps area to the south, it is also possible that seepage into the ponds is occurring along the southern edge of AL-1 and AL-2.

- Based on the analytical data and field observations, the waste excavation of the ponds can be reliably guided by visual observation of the sludge/native clay liner interface, color change of the native clay to a natural grey color, and FID sampling. Confirmation sampling will be conducted following excavation completion including mercury analysis.

Following NMED's review of these results and approval of the characterization of SWMU 1, MPC plans to submit and investigation work plan that is required by NMED before the remedial excavation and closure of the SWMU is implemented. MPC plans to engage with a contractor for the excavation and disposal of the ponds. Once the contractor is identified and Waste Acceptance Criteria, including LDRs, are identified based on the contractor's proposed method of treatment and disposal, an excavation sampling plan will be submitted to the NMED for review and approval.

Closure sampling will be completed to confirm that the contaminated soil has been removed and submitted to NMED for review prior to backfill. Similar to this report, following the approval of the closure sampling MPC anticipates the submittal of a Class 3 RCRA permit modification for their Final RCRA Post-Closure Permit.

References

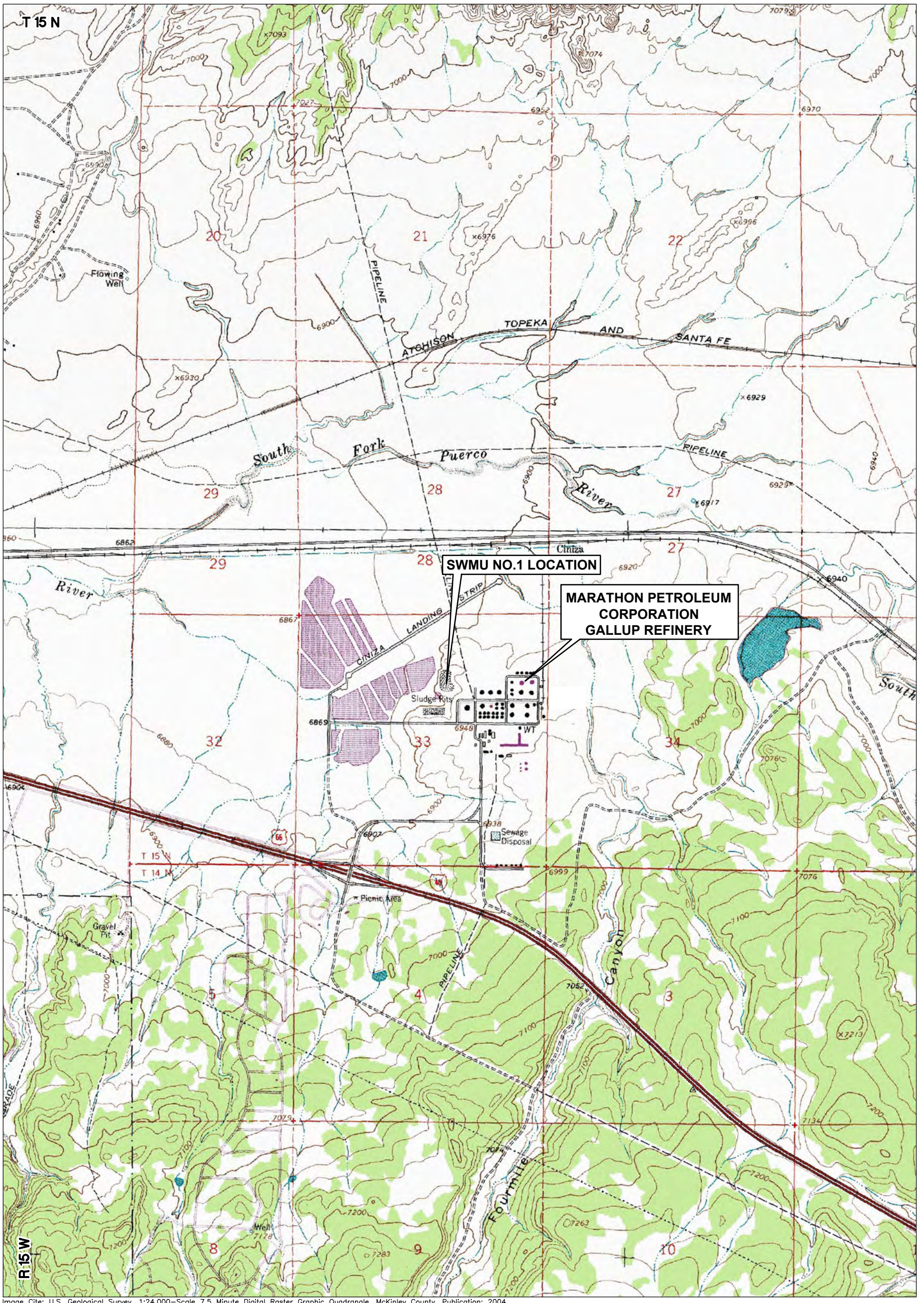
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Figures


T 15 N
T 14 N
R 15 W
SWMU NO.1 LOCATION
MARATHON PETROLEUM CORPORATION GALLUP REFINERY
PIPELINE
TOPEKA AND SANTA FE
ATCHISON
South Fork Puerco River
Cañon
Fourmile
Cañon
Cañon
Cañon

NOTES:

-POND AND TOE SAMPLES INCLUDED SURFACE SOIL, POND, AND CLAY SAMPLED SEPARATELY.
-TOE SAMPLE - SAMPLE COLLECTED AT THE BASE OF THE BERM.
-EP - EVAPORATION POND
-AL - AERATION LAGOON

SWMU 1-5
SB-0101
GWM-3
SWMU 1-6
SWMU 1-11 BERM
1.5'
2.5'
5'
7.5'
STP B-9
SWMU 1-11 (TOE)
SWMU 1-12 (TOE)
1.5'
5'
2.5'
7.5'
EP-1 S1
SB-0102
SWMU 1-12 BERM
SWMU 1-24
SWMU 1-1
EP-1 S2
SWMU 1-2
EP-1 S3
SWMU 1-7
SWMU 1-4
EP-1 S4
EP-1 S5
SWMU 1-13 (TOE)
9'
7.5'
1.5'
5'
2.5'
SWMU 1-13 BERM
EP-1 S6
SWMU 1-4
EP-1 S7
SWMU 1-3
EP-1
GWM-1
SB-0106
GWM-2
EP-1 S8
SWMU 1-14 BERM
SWMU 1-14 (TOE)
7.5'
SWMU 1-15 BERM
5'
2.5'
1.5'
2.5'
AL-2
AL-2 S1
SWMU 1-20 BERM
1.5'
2.5'
SB-0103
SWMU 1-16 BERM
1.5'
2.5'
SWMU 1-16 (TOE)
SWMU 1-15 (TOE)
SWMU 1-20 (TOE)
SWMU 1-7
AL-2 S2
AL-1 S2
SWMU 1-3
SWMU 1-19 BERM
1.5'
2.5'
AL-1 S1
SWMU 1-9
SWMU 1-8
NAPIS-3
SWMU 1-21 (TOE)
AL-2 S3
SWMU 1-19 (TOE)
SWMU 1-8
SWMU 1-21 BERM
1.5'
NAPIS-2
AL-2 S4
AL-1 S3
SWMU 1-17 BERM
SWMU 1-17 (TOE)
2.5'
1.5'
SB-1072-1
SB-0105
SWMU 1-5
SWMU 1-10
AL-1 S4
AL-1 S5
AL-2 S5
SWMU 1-18 (TOE)
SWMU 1-6
AL-1
5'
SWMU 1-22 (TOE)
SWMU 1-18 BERM
SWMU 1-2
2.5'
1.5'
1.5'
2.5'
SWMU 1-1
SWMU 1-22 BERM
SB-0104
SWMU 1-37

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

EXPLANATION

- TOE SAMPLING LOCATION
- BERM SAMPLING LOCATION
- POND SAMPLING LOCATION
- HISTORICAL SAMPLE LOCATION
- MONITORING WELL
- HISTORICAL BORING LOCATION
- BERM SAMPLING GROUP

N

0 40'

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

FIGURE 2

SAMPLING LOCATIONS
SWMU 1

MARATHON PETROLEUM COMPANY
GALLUP REFINING DIVISION
GALLUP, NEW MEXICO

Drawn By: KEJ	Checked By: PKH	Scale: 1 " = 40 '	Date: 3/25/20	File: 2_SampleLoc_Jan2020_Fig2.mxd

M:\TRIHYDRO\MARATHON\GIS\PROJECTS\GALLUP\REFINERY\SWMU1_EVAPPOND\OSHIGREINVESTIGATIONSREPORT\2_SAMPLELOC_JAN2020_FIG2.MXD

SWMU 1-11 BERM
1.5'
2.5'
5'
7.5'
SWMU 1-11 (TOE)
SWMU 1-12 (TOE)
1.5'
2.5'
5'
7.5'
SWMU 1-12 BERM
SWMU 1-1
SWMU 1-2
SWMU 1-13 (TOE)
5'
9'
7.5'
1.5'
2.5'
SWMU 1-13 BERM
SWMU 1-4
SWMU 1-3
EP-1
SWMU 1-14 BERM
SWMU 1-14 (TOE)
7.5'
SWMU 1-15 BERM
5'
2.5'
2.5'
1.5'
1.5'
AL-2
SWMU 1-20 BERM
1.5'
2.5'
SWMU 1-20 (TOE)
0.5 - 3.5 FEET
SWMU 1-16 BERM
1.5'
2.5'
SWMU 1-16 (TOE)
SWMU 1-15 (TOE)
SWMU 1-7
SWMU 1-19 BERM
1.5'
2.5'
SWMU 1-9
SWMU 1-19 (TOE)
SWMU 1-8
SWMU 1-21 (TOE)
SWMU 1-21 BERM
1.5'
SWMU 1-17 (TOE)
SWMU 1-17 BERM
2.5'
1.5'
SWMU 1-5
SWMU 1-10
SURFACE AND 2.5 FEET
SWMU 1-18 (TOE)
SWMU 1-6
AL-1
5'
SWMU 1-22 (TOE)
2.5'
1.5'
SWMU 1-18 BERM
2.5'
1.5'
SWMU 1-22 BERM

EXPLANATION

- SAMPLING LOCATION
- FREE LIQUID DETECTED AT LOCATION (INTERVAL NOTED)
- BERM SAMPLING GROUP

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

NOTES:

-TOE SAMPLES COMPOSITED IN THE FIELD
-TOE SAMPLE - SAMPLE COLLECTED AT THE BASE OF THE BERM. SAMPLE INCLUDED SURFACE SOIL, SLUDGE, AND CLAY IN THE COMPOSITE
-EP - EVAPORATION POND
-AL - AERATION LAGOON

N

0 40 '

Trihydro CORPORATION
1252 Commerce Drive
Laramie, WY 82070
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FIGURE 3

SAMPLE LOCATIONS AND INTERVALS WITH FREE LIQUIDS

**MARATHON PETROLEUM COMPANY
GALLUP REFINING DIVISION
GALLUP, NEW MEXICO**

Drawn By: KEJ	Checked By: PKH	Scale: 1 " = 40 '	Date: 3/20/20	File: 3_FreeWaterLoc_2020_Fig3.mxd

M:\TRIHYDRO\MARATHON\GISPROJECTS\GALLUP\REFINERY\SWMU1_EVAPPOND\OSRBRINVESTIGATION\SREPORT\3_FREEWATERLOC_2020_FIG3.MXD

Tables

TABLE 1. SWMU 1 SAMPLING LOCATIONS AND DEPTHS
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

EP-1 Pond Sampling

Location	Depth (ft)
SWMU 1-1	suface
	0.5-3
	5
SWMU 1-2	surface
	2-2.5
	3-3.5
SWMU 1-3	surface
	2.5
	3
SWMU 1-4	suface
	3
	3-3.5

AL-1 Pond Sampling

Location	Depth (ft)
SWMU 1-8	surface
	2.5
	5-5.5
SWMU 1-9	surface
	4.5
	5.5-6
SWMU 1-10	surface
	4-4.5
	4.5-5

AL-2 Pond Sampling

Location	Depth (ft)
SWMU 1-5	surface
	2.5-5
	5.5-6
SWMU 1-6	0-5.5
	5.5-6
SWMU 1-7	surface
	2.5
	4.5

EP-1 Berm Sampling

Location	Depth (ft)
SWMU 1-11	1.5
	2.5
	5
	7.5
toe	surface
	2.5
SWMU 1-12	1.5
	2.5
	5
	7.5
toe	surface
	2.5
	3
SWMU 1-13	1.5
	2.5
	5
	7.5
	9
toe	surface
	3
SWMU 1-14	1.5
	2.5
	5
	7
toe	surface
	2.5
	3

AL-1 Berm Sampling

Location	Depth (ft)
SWMU 1-19	1.5
	2.5
toe	surface
	0.5-6
	6-6.5
SWMU 1-20	1.5
	2.5
toe	surface
	1.5
	0.5-3
	5
SWMU 1-21	1.5
toe	surface
	2.5
	5
SWMU 1-22	1.5
	2.5
	5
toe	surface
	2.5
	3.5-4

AL-2 Berm Sampling

Location	Depth (ft)
SWMU 1-15	1.5
	2.5
toe	surface
	3
	4.0-5.0
SWMU 1-16	1.5
	2.5
toe	surface
	2.5
	4-4.5
SWMU 1-17	1.5
	2.5
toe	surface
	2.5
	4.5-5
SWMU 1-18	1.5
	2.5
toe	surface
	2.5
	5

See sampling logs for lithology

TABLE 2A. SWMU 1 SAMPLING - VOLATILE ORGANIC COMPOUND EXCEEDANCES (AL-1)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location	Date Sampled	Naphthalene (mg/kg)	TPH DRO (mg/kg)	TPH GRO (mg/kg)	TPH ORO (mg/kg)
SWMU 1-8	1/16/2020	NA	49000	NA	11000
SWMU 1-8 (2.5 ft)	1/16/2020	NA	7800	150	1100
SWMU 1-9	1/16/2020	NA	150000	370	51000
SWMU 1-9 (4.5 ft)	1/16/2020	NA	65000	240	8600
SWMU 1-10	1/16/2020	NA	110000	450	29000
SWMU 1-10 (4-4.5 ft)	1/16/2020	NA	33000	600	4800
SWMU 1-19 (berm) (2.5 ft)	1/13/2020	NA	6300	NA	3100
SWMU 1-19 (toe)	1/16/2020	NA	81000	NA	43000
SWMU 1-19 (toe) (0.5-6 ft)	1/16/2020	NA	22000	250	4500
SWMU 1-19 (toe) (6-6.5 ft)	1/16/2020	NA	2800	NA	NA
SWMU 1-19 (toe) Dup	1/16/2020	NA	73000	NA	38000
SWMU 1-20 (toe)	1/15/2020	NA	33000	NA	32000
SWMU 1-20 (toe) (0.5-3 ft)	1/15/2020	NA	17000	200	2900
SWMU 1-20 (toe) (5 ft)	1/15/2020	NA	6400	220	1500
SWMU 1-20 (toe) (5 ft) Dup	1/15/2020	NA	9300	180	2800
SWMU 1-22 (berm) (2.5 ft)	1/14/2020	NA	2100	NA	NA
SWMU 1-22 (berm) (5 ft)	1/14/2020	NA	140000	120	27000
SWMU 1-22 (toe)	1/16/2020	NA	89000	140	36000
SWMU 1-22 (toe) (2.5 ft)	1/16/2020	18	21000	410	4400
CFR TCLP		NA	NA	NA	NA
NMED Industrial SSL		241	3,000	500	3,000
NMED Residential RSL		49.7	1,000	100	1,000
USEPA RSL Industrial Soil HQ 0.1		17	NA	NA	NA

Notes:

NMED SSL's - New Mexico Environmental Department Industrial and Residential Soil Screening Levels, June 2019

TCLP SL - Toxicity Characteristic Levels from 40 CFR 261.24.

USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019

AL - Aeration Lagoon

ft - feet

mg/kg - milligrams per kilogram

NA - Not Applicable, samples did not exceed the standards

SWMU - Solid Waste Management Unit

Dup - Duplicate Sample

(toe) samples composited in the field

(berm) samples taken along the berm

Samples taken in Aeration Lagoon 1.

Samples without location depths were taken from the surface.

TABLE 2B. SWMU 1 SAMPLING - VOLATILE ORGANIC COMPOUND EXCEEDANCES (AL-2)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location	Date Sampled	TPH DRO (mg/kg)	TPH GRO (mg/kg)	TPH ORO (mg/kg)
SWMU 1-5	1/17/2020	130000	110	42000
SWMU 1-5 (2.5-5 ft)	1/17/2020	99000	NA	21000
SWMU 1-5 (5.5-6 ft)	1/17/2020	1200	NA	NA
SWMU 1-6 (0-5.5 ft)	1/17/2020	19000	NA	2500
SWMU 1-7	1/17/2020	61000	NA	29000
SWMU 1-7 (2.5 ft)	1/17/2020	66000	NA	13000
SWMU 1-7 (4-5 ft)	1/17/2020	3800	NA	1200
SWMU 1-7 Dup	1/17/2020	87000	NA	38000
SWMU 1-15 (berm) (2.5 ft)	1/13/2020	20000	NA	5500
SWMU 1-15 (toe)	1/16/2020	160000	NA	68000
SWMU 1-15 (toe) (3 ft)	1/16/2020	18000	NA	4700
SWMU 1-15 (toe) (4-5 ft)	1/16/2020	56000	NA	14000
SWMU 1-15 (toe) Dup	1/16/2020	170000	NA	67000
SWMU 1-16 (berm) (2.5 ft)	1/13/2020	32000	NA	8200
SWMU 1-16 (toe)	1/16/2020	130000	NA	72000
SWMU 1-16 (toe) (2.5 ft)	1/16/2020	69000	NA	14000
SWMU 1-16 (toe) (4-4.5 ft)	1/16/2020	16000	NA	5000
SWMU 1-16 (toe) Dup	1/16/2020	130000	NA	69000
SWMU 1-17 (toe)	1/16/2020	62000	NA	48000
SWMU 1-17 (toe) (2.5 ft)	1/16/2020	14000	NA	4200
SWMU 1-18 (toe)	1/16/2020	96000	NA	31000
SWMU 1-18 (toe) (2.5 ft)	1/16/2020	23000	NA	8300
CFR TCLP		NA	NA	NA
NMED Industrial SSL		3,000	500	3,000
NMED Residential RSL		1,000	100	1,000
USEPA RSL Industrial Soil HQ 0.1		NA	NA	NA

Notes:
NMED SSL's - New Mexico Environmental Department Industrial and Residential Soil Screening Levels, June 2019
TCLP SL - Toxicity Characteristic Levels from 40 CFR 261.24.
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
AL - Aeration Lagoon
ft - feet
mg/kg - milligrams per kilogram
NA - Not Applicable, samples did not exceed the standards
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field
(berm) samples taken along the berm
Samples taken in Aeration Lagoon 1.
Samples without location depths were taken from the surface.

TABLE 2C. SWMU 1 SAMPLING - VOLATILE ORGANIC COMPOUND EXCEEDANCES (EP-1)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location	Date Sampled	TPH DRO (mg/kg)	TPH ORO (mg/kg)
SWMU 1-1	1/15/2020	84000	29000
SWMU 1-1 (0.5-3 ft)	1/15/2020	47000	8700
SWMU 1-2	1/15/2020	150000	50000
SWMU 1-2 (2-2.5 ft)	1/15/2020	68000	9400
SWMU 1-2 (3-3.5 ft)	1/15/2020	1700	NA
SWMU 1-2 Dup	1/15/2020	130000	42000
SWMU 1-3 (0.5-3 ft)	1/14/2020	46000	7200
SWMU 1-3 (0-0.5 ft)	1/14/2020	29000	15000
SWMU 1-3 (3 ft)	1/14/2020	1700	NA
SWMU 1-4	1/14/2020	140000	34000
SWMU 1-4 (3 ft)	1/14/2020	42000	6400
SWMU 1-11 (berm) (7.5 ft)	1/13/2020	4900	3200
SWMU 1-11 (toe)	1/15/2020	92000	52000
SWMU 1-11 (toe) (2.5 ft)	1/15/2020	8100	3300
SWMU 1-12 (berm) (7.5 ft)	1/13/2020	7000	4600
SWMU 1-12 (toe)	1/15/2020	110000	51000
SWMU 1-13 (toe)	1/14/2020	37000	21000
SWMU 1-13 (toe) Dup	1/14/2020	26000	18000
SWMU 1-14 (berm) (7.5 ft)	1/14/2020	2800	1100
SWMU 1-14 (toe)	1/14/2020	89000	28000
SWMU 1-14 (toe) (2.5 ft)	1/14/2020	59000	12000
CFR TCLP		NA	NA
NMED Industrial SSL		3,000	3,000
NMED Residential RSL		1,000	1,000
USEPA RSL Industrial Soil HQ 0.1		NA	NA

Notes:
NMED SSL's - New Mexico Environmental Department Industrial and Residential Soil Screening Levels, June 2019
TCLP SL - Toxicity Characteristic Levels from 40 CFR 261.24.

USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
AL - Aeration Lagoon
ft - feet
mg/kg - milligrams per kilogram
NA - Not Applicable, samples did not exceed the standards
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field
(berm) samples taken along the berm
Samples taken in Aeration Lagoon 1.
Samples without location depths were taken from the surface.

TABLE 3A. SWMU 1 SAMPLING - SEMIVOLATILE ORGANIC COMPOUND EXCEEDANCES (AL-1)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location	Date Sampled	1-Methylnaphthalene (mg/kg)	2-Methylnaphthalene (mg/kg)	Benzo(a)anthracene (mg/kg)	Benzo(a)pyrene (mg/kg)	Naphthalene (mg/kg)
SWMU 1-8 (2.5 ft)	1/16/2020	83	NA	NA	NA	25
SWMU 1-9	1/16/2020	75	NA	48	25	13
SWMU 1-9 (4.5 ft)	1/16/2020	290	340	NA	10	72
SWMU 1-10	1/16/2020	210	NA	NA	NA	32
SWMU 1-10 (4-4.5 ft)	1/16/2020	270	360	NA	NA	77
SWMU 1-19 (toe) (0.5-6 ft)	1/16/2020	NA	NA	NA	NA	20
SWMU 1-20 (toe) (0.5-3 ft)	1/15/2020	NA	NA	NA	NA	28
SWMU 1-22 (toe) (2.5 ft)	1/16/2020	170	NA	NA	NA	46
CFR TCLP		NA	NA	NA	NA	NA
NMED Industrial SSL		813	3,368	32.3	23.58	241
NMED Residential RSL		172	232	1.53	1.12	49.7
USEPA RSL Industrial Soil HQ 0.1		73	300	21	2.1	17

Notes:
NMED SSL's - New Mexico Environmental Department Industrial and Residential Soil Screening Levels, June 2019
TCLP SL - Toxicity Characteristic Levels from 40 CFR 261.24.
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
AL - Aeration Lagoon
ft - feet
mg/kg - milligrams per kilogram
NA - Not Applicable, samples did not exceed the standards
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field
(berm) samples taken along the berm
Samples taken in Aeration Lagoon 1.
Samples without location depths were taken from the surface.

TABLE 3B. SWMU 1 SAMPLING - SEMIVOLATILE ORGANIC COMPOUND EXCEEDANCES (AL-2)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location	Date Sampled	1-Methylnaphthalene (mg/kg)	2-Methylnaphthalene (mg/kg)	Benzo(a)anthracene (mg/kg)	Benzo(a)pyrene (mg/kg)	Naphthalene (mg/kg)
SWMU 1-5	1/17/2020	87	NA	NA	NA	NA
SWMU 1-5 (2.5-5 ft)	1/17/2020	360	350	NA	8.5	41
SWMU 1-6 (0-5.5 ft)	1/17/2020	76	NA	NA	NA	NA
SWMU 1-7 (2.5 ft)	1/17/2020	180	NA	NA	11	38
SWMU 1-7 Dup	1/17/2020	NA	NA	24	NA	NA
SWMU 1-15 (toe) (4-5 ft)	1/16/2020	140	NA	NA	NA	27
SWMU 1-16 (toe) (2.5 ft)	1/16/2020	150	NA	NA	NA	21
SWMU 1-18 (toe) (2.5 ft)	1/16/2020	80	NA	NA	NA	NA
CFR TCLP		NA	NA	NA	NA	NA
NMED Industrial SSL		813	3,368	32.3	23.58	241
NMED Residential RSL		172	232	1.53	1.12	49.7
USEPA RSL Industrial Soil HQ 0.1		73	300	21	2.1	17

Notes:
NMED SSL's - New Mexico Environmental Department Industrial and Residential Soil Screening Levels, June 2019
TCLP SL - Toxicity Characteristic Levels from 40 CFR 261.24.
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
AL - Aeration Lagoon
ft - feet
mg/kg - milligrams per kilogram
NA - Not Applicable, samples did not exceed the standards
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field
(berm) samples taken along the berm
Samples taken in Aeration Lagoon 1.
Samples without location depths were taken from the surface.

TABLE 3C. SWMU 1 SAMPLING - SEMIVOLATILE ORGANIC COMPOUND EXCEEDANCES (EP-1)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location	Date Sampled	1-Methylnaphthalene (mg/kg)
SWMU 1-1 (0.5-3 ft)	1/15/2020	160
SWMU 1-2 (2-2.5 ft)	1/15/2020	150
SWMU 1-3 (0.5-3 ft)	1/14/2020	180
SWMU 1-4	1/14/2020	96
SWMU 1-4 (3 ft)	1/14/2020	180
SWMU 1-14 (toe) (2.5 ft)	1/14/2020	110
CFR TCLP		NA
NMED Industrial SSL		813
NMED Residential RSL		172
USEPA RSL Industrial Soil HQ 0.1		73

Notes:
NMED SSL's - New Mexico Environmental Department Industrial and Residential Soil Screening Levels, June 2019

TCLP SL - Toxicity Characteristic Levels from 40 CFR 261.24.

USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019

AL - Aeration Lagoon

ft - feet

mg/kg - milligrams per kilogram

NA - Not Applicable, samples did not exceed the standards

SWMU - Solid Waste Management Unit

Dup - Duplicate Sample

(toe) samples composited in the field

(berm) samples taken along the berm

Samples taken in Aeration Lagoon 1.

Samples without location depths were taken from the surface.

TABLE 4A. SWMU 1 SAMPLING - METALS COMPOUND EXCEEDANCES (AL-1)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location	Date Sampled	Antimony, Total (mg/kg)	Arsenic, Total (mg/kg)	Mercury, Total (mg/kg)
SWMU 1-8	1/16/2020	NA	7	4.3
SWMU 1-8 (2.5 ft)	1/16/2020	NA	7.8	5.1
SWMU 1-9	1/16/2020	NA	15	16
SWMU 1-9 (4.5 ft)	1/16/2020	NA	15	12
SWMU 1-9 (5.5-6 ft)	1/16/2020	NA	3.1	NA
SWMU 1-10	1/16/2020	NA	16	NA
SWMU 1-10 (4-4.5 ft)	1/16/2020	NA	26	NA
SWMU 1-19 (toe)	1/16/2020	NA	8.4	5
SWMU 1-19 (toe) (0.5-6 ft)	1/16/2020	NA	14	9.9
SWMU 1-19 (toe) Dup	1/16/2020	NA	9.9	5.8
SWMU 1-20 (toe)	1/15/2020	NA	6.2	5.1
SWMU 1-20 (toe) (0.5-3 ft)	1/15/2020	34	14	13
SWMU 1-22 (berm) (5 ft)	1/14/2020	NA	25	NA
SWMU 1-22 (toe)	1/16/2020	NA	3.5	6.8
SWMU 1-22 (toe) (2.5 ft)	1/16/2020	NA	22	7.5
CFR TCLP		NA	NA	NA
NMED Industrial SSL		519.1	35.88	NA
NMED Residential RSL		31.3	7.07	NA
USEPA RSL Industrial Soil HQ 0.1		47	3	4.6

Notes:
NMED SSL's - New Mexico Environmental Department Industrial and Residential Soil Screening Levels, June 2019
TCLP SL - Toxicity Characteristic Levels from 40 CFR 261.24.
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
AL - Aeration Lagoon
ft - feet
mg/kg - milligrams per kilogram
NA - Not Applicable, samples did not exceed the standards
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field
(berm) samples taken along the berm
Samples taken in Aeration Lagoon 1.
Samples without location depths were taken from the surface.

TABLE 4B. SWMU 1 SAMPLING - METALS COMPOUND EXCEEDANCES (AL-2)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location	Date Sampled	Arsenic, Total (mg/kg)	Mercury, Total (mg/kg)
SWMU 1-5	1/17/2020	5.3	7.7
SWMU 1-6 (0-5.5 ft)	1/17/2020	15	NA
SWMU 1-7 (2.5 ft)	1/17/2020	10	5.9
SWMU 1-15 (toe)	1/16/2020	9.5	NA
SWMU 1-15 (toe) (4-5 ft)	1/16/2020	11	6.6
SWMU 1-15 (toe) Dup	1/16/2020	5	NA
SWMU 1-16 (toe)	1/16/2020	8.1	5.2
SWMU 1-16 (toe) (2.5 ft)	1/16/2020	8.7	10
SWMU 1-16 (toe) Dup	1/16/2020	8.8	6.7
SWMU 1-17 (toe)	1/16/2020	6	6
SWMU 1-18 (toe) (2.5 ft)	1/16/2020	5	NA
CFR TCLP		NA	NA
NMED Industrial SSL		35.88	NA
NMED Residential RSL		7.07	NA
USEPA RSL Industrial Soil HQ 0.1		3	4.6

Notes:

NMED SSL's - New Mexico Environmental Department Industrial and Residential Soil Screening Levels, June 2019

TCLP SL - Toxicity Characteristic Levels from 40 CFR 261.24.

USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019

AL - Aeration Lagoon

ft - feet

mg/kg - milligrams per kilogram

NA - Not Applicable, samples did not exceed the standards

SWMU - Solid Waste Management Unit

Dup - Duplicate Sample

(toe) samples composited in the field

(berm) samples taken along the berm

Samples taken in Aeration Lagoon 1.

Samples without location depths were taken from the surface.

TABLE 4C. SWMU 1 SAMPLING - METALS COMPOUND EXCEEDANCES (EP-1)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location	Date Sampled	Antimony, Total (mg/kg)	Arsenic, Total (mg/kg)	Chromium, Total (mg/kg)	Mercury, Total (mg/kg)
SWMU 1-1	1/15/2020	NA	5.1	NA	5.6
SWMU 1-1 (0.5-3 ft)	1/15/2020	NA	7.6	NA	5.7
SWMU 1-2	1/15/2020	NA	6	NA	NA
SWMU 1-2 (2-2.5 ft)	1/15/2020	NA	11	NA	6.2
SWMU 1-2 Dup	1/15/2020	NA	8.5	NA	NA
SWMU 1-3 (0.5-3 ft)	1/14/2020	NA	5.3	NA	NA
SWMU 1-3 (0-0.5 ft)	1/14/2020	NA	5.6	NA	5.9
SWMU 1-4	1/14/2020	NA	8.1	NA	6.5
SWMU 1-4 (3 ft)	1/14/2020	NA	10	NA	NA
SWMU 1-11 (berm) (7.5 ft)	1/13/2020	NA	NA	100	NA
SWMU 1-11 (toe)	1/15/2020	62	30	NA	9.6
SWMU 1-12 (berm) (1.5 ft)	1/13/2020	NA	4.1	NA	NA
SWMU 1-12 (toe)	1/15/2020	NA	8	NA	8.7
SWMU 1-14 (toe)	1/14/2020	NA	4.1	NA	5.8
SWMU 1-14 (toe) (2.5 ft)	1/14/2020	NA	12	NA	NA
CFR TCLP		NA	NA	NA	NA
NMED Industrial SSL		519.1	35.88	504.6	NA
NMED Residential RSL		31.3	7.07	96.6	NA
USEPA RSL Industrial Soil HQ 0.1		47	3	NA	4.6

Notes:

NMED SSL's - New Mexico Environmental Department Industrial and Residential Soil Screening Levels, June 2019

TCLP SL - Toxicity Characteristic Levels from 40 CFR 261.24.

USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019

AL - Aeration Lagoon

ft - feet

mg/kg - milligrams per kilogram

NA - Not Applicable, samples did not exceed the standards

SWMU - Solid Waste Management Unit

Dup - Duplicate Sample

(toe) samples composited in the field

(berm) samples taken along the berm

Samples taken in Aeration Lagoon 1.

Samples without location depths were taken from the surface.

TABLE 5. SWMU 1 SAMPLING - GENERAL CHEMISTRY
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Liquids, Free (unitless)	pH (Std Units)	Specific Gravity (g/cc)
SWMU 1-1	01/15/20	Negative	6.45	1.21
SWMU 1-1 (0.5-3 ft)	01/15/20	Negative	7.62	1.12
SWMU 1-1 (5 ft)	01/15/20	Negative	8.83	2.04
SWMU 1-2 Dup	01/15/20	Negative	4.36	1.16
SWMU 1-2	01/15/20	Negative	4.43	1.12
SWMU 1-2 (2-2.5 ft)	01/15/20	Negative	7.71	1.2
SWMU 1-2 (3-3.5 ft)	01/15/20	Negative	8.77	1.9
SWMU 1-3 (0-0.5 ft)	01/14/20	Negative	6.61	1.36
SWMU 1-3 (0.5-3 ft)	01/14/20	Negative	7.91	1.27
SWMU 1-3 (3 ft)	01/14/20	Negative	6.61	1.85
SWMU 1-4	01/14/20	Negative	6.33	1.16
SWMU 1-4 (3 ft)	01/14/20	Negative	7.99	1.12
SWMU 1-4 (3-3.5 ft)	01/14/20	Negative	8.86	1.92
SWMU 1-5	01/17/20	Negative	5.42	1.28
SWMU 1-5 (2.5-5 ft)	01/17/20	Negative	7.45	1.2
SWMU 1-5 (5.5-6 ft)	01/17/20	Negative	8.83	1.78
SWMU 1-6 (0-5.5 ft)	01/17/20	Negative	7.66	1.25
SWMU 1-6 (5.5-6 ft)	01/17/20	Negative	8.92	1.95
SWMU 1-7 Dup	01/17/20	Negative	6.39	1.56
SWMU 1-7	01/17/20	Negative	6.23	1.58
SWMU 1-7 (2.5 ft)	01/17/20	Negative	7.47	1.15
SWMU 1-7 (4-5 ft)	01/17/20	Negative	8.55	1.97
SWMU 1-8	01/16/20	Negative	7.54	1.35
SWMU 1-8 (2.5 ft)	01/16/20	Positve	7.75	1.42
SWMU 1-8 (5-5.5 ft)	01/16/20	Negative	8.93	1.92
SWMU 1-9	01/16/20	Negative	5.9	1.51
SWMU 1-9 (4.5 ft)	01/16/20	Positve	7.47	1.24
SWMU 1-9 (5.5-6 ft)	01/16/20	Negative	8.91	1.92
SWMU 1-10	01/16/20	Negative	6.35	1.2
SWMU 1-10 (4-4.5 ft)	01/16/20	Positive	7.85	1.27
SWMU 1-10 (4.5-5 ft)	01/16/20	Negative	9.1	2.01
SWMU 1-11 (berm) (1.5 ft)	01/13/20	Negative	8.16	1.71
SWMU 1-11 (berm) (2.5 ft)	01/13/20	Negative	8.11	2.04
SWMU 1-11 (berm) (5 ft)	01/13/20	Negative	7.96	2.15
SWMU 1-11 (berm) (7.5 ft)	01/13/20	Negative	8.81	1.85
SWMU 1-11 (toe)	01/15/20	Negative	6.73	1.09
SWMU 1-11 (toe) (2.5 ft)	01/15/20	Negative	8.74	1.96
SWMU 1-12 (berm) (1.5 ft)	01/13/20	Negative	8.14	1.88
SWMU 1-12 (berm) (2.5 ft)	01/13/20	Negative	8.13	2.11
SWMU 1-12 (berm) (5 ft)	01/13/20	Negative	7.57	2.09
SWMU 1-12 (berm) (7.5 ft)	01/13/20	Negative	7.86	1.82
SWMU 1-12 (toe)	01/15/20	Negative	5.85	1.03
SWMU 1-12 (toe) (2.5 ft)	01/15/20	Negative	8.72	1.98
SWMU 1-12 (toe) (3 ft)	01/15/20	Negative	8.82	1.91

Notes:
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Samples without location depths were taken from the surface.
See sediment sampling logs for lithology of samples.

ProjectDirect: Analytical Table 5. General Chemistry PK:8111 RK:87733

TABLE 5. SWMU 1 SAMPLING - GENERAL CHEMISTRY
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Liquids, Free (unitless)	pH (Std Units)	Specific Gravity (g/cc)
SWMU 1-13 (berm) (5 ft) Dup	01/13/20	Negative	8.29	2.06
SWMU 1-13 (berm) (1.5 ft)	01/13/20	Negative	8.03	2.08
SWMU 1-13 (berm) (2.5 ft)	01/13/20	Negative	7.8	2.11
SWMU 1-13 (berm) (5 ft)	01/13/20	Negative	8.27	2.13
SWMU 1-13 (berm) (7.5 ft)	01/13/20	Negative	8.66	2.05
SWMU 1-13 (berm) (9 ft)	01/13/20	Negative	7.86	2.11
SWMU 1-13 (toe) Dup	01/14/20	Negative	6.82	1.77
SWMU 1-13 (toe) (3 ft)	01/14/20	Negative	8.87	1.97
SWMU 1-13 (toe)	01/14/20	Negative	6.81	1.77
SWMU 1-14 (berm) (5 ft) Dup	01/14/20	Negative	8.45	1.64
SWMU 1-14 (berm) (1.5 ft)	01/14/20	Negative	7.89	2.07
SWMU 1-14 (berm) (2.5 ft)	01/14/20	Negative	8.06	1.82
SWMU 1-14 (berm) (5 ft)	01/14/20	Negative	8.29	2.15
SWMU 1-14 (berm) (7.5 ft)	01/14/20	Negative	8.02	1.89
SWMU 1-14 (toe)	01/14/20	Negative	6.34	1.39
SWMU 1-14 (toe) (2.5 ft)	01/14/20	Negative	7.97	1.39
SWMU 1-14 (toe) (3 ft)	01/14/20	Negative	8.66	1.97
SWMU 1-15 (berm) (1.5 ft)	01/13/20	Negative	8.48	2.02
SWMU 1-15 (berm) (2.5 ft)	01/13/20	Negative	7.32	1.76
SWMU 1-15 (toe) Dup	01/16/20	Negative	4.74	1.25
SWMU 1-15 (toe)	01/16/20	Negative	4.62	1.29
SWMU 1-15 (toe) (3 ft)	01/16/20	Negative	8.66	1.92
SWMU 1-15 (toe) (4-5 ft)	01/16/20	Negative	7.33	1.2
SWMU 1-16 (berm) (1.5 ft) Dup	01/13/20	Negative	7.74	2.14
SWMU 1-16 (berm) (1.5 ft)	01/13/20	Negative	7.74	2.18
SWMU 1-16 (berm) (2.5 ft)	01/13/20	Negative	8.32	1.77
SWMU 1-16 (toe) Dup	01/16/20	Negative	4.56	1.1
SWMU 1-16 (toe)	01/16/20	Negative	4.4	1.13
SWMU 1-16 (toe) (2.5 ft)	01/16/20	Negative	6.98	1.19
SWMU 1-16 (toe) (4-4.5 ft)	01/16/20	Negative	8.81	1.88
SWMU 1-17 (berm) (1.5 ft)	01/13/20	Negative	7.88	2.21
SWMU 1-17 (berm) (2.5 ft)	01/13/20	Negative	8.73	2.01
SWMU 1-17 (toe)	01/16/20	Negative	5.36	1.29
SWMU 1-17 (toe) (2.5 ft)	01/16/20	Negative	7.66	1.64
SWMU 1-17 (toe) (4.5-5 ft)	01/16/20	Negative	8.5	1.92
SWMU 1-18 (berm) (1.5 ft)	01/13/20	Negative	7.87	2.11
SWMU 1-18 (berm) (2.5 ft)	01/13/20	Negative	7.88	1.7
SWMU 1-18 (toe)	01/16/20	Positve	7.8	1.34
SWMU 1-18 (toe) (2.5 ft)	01/16/20	Positive	7.1	1.26
SWMU 1-18 (toe) (5 ft)	01/16/20	Negative	8.39	1.94
SWMU 1-19 (berm) (1.5 ft)	01/13/20	Negative	8.45	2.04
SWMU 1-19 (berm) (2.5 ft)	01/13/20	Negative	7.46	1.86
SWMU 1-19 (toe) Dup	01/16/20	Negative	3.48	1.36
SWMU 1-19 (toe)	01/16/20	Negative	3.63	1.39

Notes:
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Samples without location depths were taken from the surface.
See sediment sampling logs for lithology of samples.

ProjectDirect: Analytical Table 5. General Chemistry PK:8111 RK:87733

TABLE 5. SWMU 1 SAMPLING - GENERAL CHEMISTRY
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Liquids, Free (unitless)	pH (Std Units)	Specific Gravity (g/cc)
SWMU 1-19 (toe) (0.5-6 ft)	01/16/20	Negative	7.52	1.37
SWMU 1-19 (toe) (6-6.5 ft)	01/16/20	Negative	8.03	1.9
SWMU 1-20 (berm) (2.5 ft)	01/14/20	Negative	7.6	1.93
SWMU 1-20 (toe) (1.5 ft)	01/14/20	Negative	8.19	2.1
SWMU 1-20 (toe) (5 ft) Dup	01/15/20	Negative	8.98	1.91
SWMU 1-20 (toe)	01/15/20	Negative	6.71	1.58
SWMU 1-20 (toe) (0.5-3 ft)	01/15/20	Positve	7.52	1.18
SWMU 1-20 (toe) (5 ft)	01/15/20	Negative	9.04	1.92
SWMU 1-21 (berm) (1.5 ft)	01/14/20	Negative	7.74	2.08
SWMU 1-21 (toe)	01/14/20	Negative	6.16	1.81
SWMU 1-21 (toe) (2.5 ft)	01/14/20	Negative	8.93	1.9
SWMU 1-21 (toe) (5 ft)	01/14/20	Negative	7.98	2.04
SWMU 1-22 (berm) (1.5 ft)	01/14/20	Negative	8	2.17
SWMU 1-22 (berm) (2.5 ft)	01/14/20	Negative	8.04	1.95
SWMU 1-22 (berm) (5 ft)	01/14/20	Negative	4.93	1.58
SWMU 1-22 (toe)	01/16/20	Negative	6.77	1.36
SWMU 1-22 (toe) (2.5 ft)	01/16/20	Negative	8.31	1.36
SWMU 1-22 (toe) (3.5-4 ft)	01/16/20	Negative	9.13	1.99

Notes:
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Samples without location depths were taken from the surface.
See sediment sampling logs for lithology of samples.

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TABLE 6. FID SAMPLING RESULTS
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location	Date	DRO	ORO	GRO	FID Result
SWMU 1-12 (berm) (1.5 ft)	1/13/2020	32	110	ND(3.1)	1.9
SWMU 1-12 (berm) (2.5 ft)	1/13/2020	4.2	ND(45)	ND(3.4)	0
SWMU 1-12 (berm) (5 ft)	1/13/2020	110	110	ND(3)	0.2
SWMU 1-12 (berm) (7.5 ft)	1/13/2020	**7,000**	**4,600**	6.3	4.9
SWMU 1-13 (berm) (1.5 ft)	1/13/2020	47	110	ND(3.8)	0
SWMU 1-13 (berm) (5 ft)	1/13/2020	6.3	ND(49)	ND(3.5)	0
SWMU 1-13 (berm) (2.5 ft)	1/13/2020	16	ND(49)	ND(4.3)	0
SWMU 1-13 (berm) (7.5 ft)	1/13/2020	25	ND(46)	ND(3.9)	0
SWMU 1-13 (berm) (9 ft)	1/13/2020	6.3	ND(48)	ND(3.9)	0.3
SWMU 1-15 (berm) (1.5 ft)	1/13/2020	4.7	ND(46)	ND(4.4)	1
SWMU 1-15 (berm) (2.5 ft)	1/13/2020	**20,000**	**5,500**	5.4	2.1
SWMU 1-16 (berm) (1.5 ft)	1/13/2020	230	140	ND(4.8)	2
SWMU 1-16 (berm) (2.5 ft)	1/13/2020	**32,000**	**8,200**	20	27.2
SWMU 1-17 (berm) (1.5 ft)	1/13/2020	290	230	ND(4.5)	1.5
SWMU 1-17 (berm) (2.5 ft)	1/13/2020	130	49	ND(2.7)	1.6
SWMU 1-18 (berm) (1.5 ft)	1/13/2020	35	ND(47)	ND(4.1)	0
SWMU 1-19 (berm) (1.5 ft)	1/13/2020	40	ND(44)	ND(3.9)	0
SWMU 1-19 (berm) (2.5 ft)	1/13/2020	**6,300**	**3,100**	5	2.9

Notes:

6300 Sample exceeds NMED ISSL and RSSL

NMED New Mexico Environmental Department

ISSL Industrial Soil Screening Level

RSSL Residential Soil Screening Level

TABLE 7. SWMU-1 BERM SAMPLE RESULTS
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Diesel Range Organics (mg/kg)	Gasoline Range Organics (mg/kg)	Oil Range Organics (mg/kg)	FID, ppm
SWMU 1 Evaporation Pond EP-1					
SWMU 1-11 (berm) (1.5 ft)	01/13/20	140	ND(3.5)	230	NM
SWMU 1-11 (berm) (2.5 ft)	01/13/20	520	ND(3.4)	650	NM
SWMU 1-11 (berm) (5 ft)	01/13/20	24	ND(3.5)	ND(50)	NM
SWMU 1-11 (berm) (7.5 ft)	01/13/20	4,900	9	3,200	NM
SWMU 1-12 (berm) (1.5 ft)	01/13/20	32	ND(3.1)	110	1.9
SWMU 1-12 (berm) (2.5 ft)	01/13/20	4	ND(3.4)	ND(45)	0.0
SWMU 1-12 (berm) (5 ft)	01/13/20	110	ND(3)	110	0.2
SWMU 1-12 (berm) (7.5 ft)	01/13/20	7,000	6	4,600	4.9
SWMU 1-13 (berm) (1.5 ft)	01/13/20	47	ND(3.8)	110	0.0
SWMU 1-13 (berm) (2.5 ft)	01/13/20	16	ND(4.3)	ND(49)	0.0
SWMU 1-13 (berm) (5 ft)	01/13/20	6	ND(3.5)	ND(49)	0.0
SWMU 1-13 (berm) (7.5 ft)	01/13/20	25	ND(3.9)	ND(46)	0.0
SWMU 1-13 (berm) (9 ft)	01/13/20	6	ND(3.9)	ND(48)	0.3
SWMU 1-14 (berm) (1.5 ft)	01/14/20	7	ND(4.1)	ND(50)	NM
SWMU 1-14 (berm) (2.5 ft)	01/14/20	12	ND(4)	ND(48)	NM
SWMU 1-14 (berm) (5 ft)	01/14/20	16	ND(3.9)	ND(48)	NM
SWMU 1-14 (berm) (7.5 ft)	01/14/20	2,800	ND(3)	1,100	NM
SWMU 1 Former Aeration Lagoon AL-1					
SWMU 1-19 (berm) (1.5 ft)	01/13/20	40	ND(3.9)	ND(44)	0.0
SWMU 1-19 (berm) (2.5 ft)	01/13/20	6,300	5	3,100	2.9
SWMU 1-20 (berm) (2.5 ft)	01/14/20	560	1	640	NM
SWMU 1-21 (berm) (1.5 ft)	01/14/20	340	1	600	NM
SWMU 1-22 (berm) (1.5 ft)	01/14/20	82	ND(4.1)	140	NM
SWMU 1-22 (berm) (2.5 ft)	01/14/20	2,100	12	710	NM
SWMU 1-22 (berm) (5 ft)	01/14/20	140,000	120	27,000	NM
SWMU 1 Former Aeration Lagoon AL-2					
SWMU 1-15 (berm) (1.5 ft)	01/13/20	5	ND(4.4)	ND(46)	1.0
SWMU 1-15 (berm) (2.5 ft)	01/13/20	20,000	5	5,500	2.1
SWMU 1-16 (berm) (1.5 ft)	01/13/20	230	ND(4.8)	140	2.0
SWMU 1-16 (berm) (2.5 ft)	01/13/20	32,000	20	8,200	27.2
SWMU 1-17 (berm) (1.5 ft)	01/13/20	290	ND(4.5)	230	1.5
SWMU 1-17 (berm) (2.5 ft)	01/13/20	130	ND(2.7)	49	1.6
SWMU 1-18 (berm) (1.5 ft)	01/13/20	35	ND(4.1)	ND(47)	0.0
SWMU 1-18 (berm) (2.5 ft)	01/13/20	280	ND(4.8)	200	0.0

NMED Industrial SSL		3,000	500	3,000
NMED Residential SSL		1,000	100	1,000

Summary Statistics

Location	Number of Analysis	Number of Analysis < ISSL	Number of Analysis < RSSL	Percentage < ISSL	Percentage < RSSL
EP-1	51	47	45	92%	88%
AL-1	21	17	14	81%	67%
AL-2	24	20	20	83%	83%
Total Location	96	84	79	88%	82%

Notes:
FID - Flame ionization detector
NMED - New Mexico Environment Department
ISSL - Industrial soil screening levels
RSSL - Residential soil screening levels

2,800	Analysis is <ISSL, but > RSSL
32,000	Analysis is >ISSL and RSSL
SWMU 1-13 (berm) (9 ft)	Sample was collected below historic high water line

ft - foot
mg/kg - milligrams per kiligram
NA - not analyzed
ND - non-detect
ppm - parts per million

TABLE 8. SWMU-1 CLAY SAMPLE RESULTS
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Diesel Range Organics (mg/kg)	Gasoline Range Organics (mg/kg)	Oil Range Organics (mg/kg)	Lithologic Description
SWMU 1 Evaporation Pond EP-1					
SWMU 1-1 (5 ft)	01/15/20	72	1	ND(47)	Clay, chocolate brn
SWMU 1-2 (3-3.5 ft)	01/15/20	1,700	ND(13)	280	Clay, pink-brn
SWMU 1-3 (3 ft)	01/14/20	1,700	23	370	Clay black-brn
SWMU 1-4 (3-3.5 ft)	01/14/20	810	13	160	Clay, black to brn
SWMU 1-11 (toe) (2.5 ft)	01/15/20	8,100	71	3,300	Silty sand
SWMU 1-12 (toe) (2.5 ft)	01/15/20	150	ND(2.5)	48	Clay brn-black
SWMU 1-12 (toe) (3 ft)	01/15/20	190	ND(2.4)	110	Clay, pink-red
SWMU 1-13 (toe) (3 ft)	01/14/20	24	ND(15)	ND(46)	Clay, pink
SWMU 1-14 (toe) (3 ft)	01/14/20	120	4	ND(44)	Clay, brn
SWMU 1 Former Aeration Lagoon AL-1					
SWMU 1-8 (5-5.5 ft)	01/16/20	56	10	ND(47)	Clay, gray reduced bands alternating with pink oxidized bands
SWMU 1-9 (5.5-6 ft)	01/16/20	110	12	ND(48)	Clay, gray with pink clay @ bottom
SWMU 1-10 (4.5-5 ft)	01/16/20	350	35	67	Clay, black to dk gray, irridescent shimmer on fracture surfaces
SWMU 1-19 (toe) (6-6.5 f	01/16/20	2,800	20	730	Clay, brn - black
SWMU 1-20 (toe) (5 ft)	01/15/20	6,400	220	1,500	Clay, black
SWMU 1-21 (toe) (5 ft)	01/14/20	950	3	620	Clay, tan-brn
SWMU 1-22 (toe) (3.5-4 f	01/16/20	530	ND(16)	110	Clay, lgt gray grading to pink-brn clay at bottom
SWMU 1 Former Aeration Lagoon AL-2					
SWMU 1-5 (5.5-6 ft)	01/17/20	1,200	12	310	Clay, black
SWMU 1-6 (5.5-6 ft)	01/17/20	25	8	ND(42)	Clay, black silty
SWMU 1-7 (4-5 ft)	01/17/20	3,800	17	1,200	Clay, black, soft
SWMU 1-16 (toe) (4-4.5 f	01/16/20	16,000	14	5,000	Clay, black-gray
SWMU 1-17 (toe) (4.5-5 f	01/16/20	590	1	240	Clay, chocolate brown
SWMU 1-18 (toe) (5 ft)	01/16/20	520	4	150	Clay, no description

NMED Industrial SSL		3,000	500	3,000
NMED Residential SSL		1,000	100	1,000

Summary Statistics

Location	Number of Analysis	Number of Analysis < ISSL	Number of Analysis < RSSL	Percentage < ISSL	Percentage < RSSL
EP-1	27	25	23	93%	85%
AL-1	21	20	17	95%	81%
AL-2	18	15	13	83%	72%
Total Location	66	60	53	91%	80%

Notes:
NMED - New Mexico Environment Department
ISSL - Industrial soil screening levels
RSSL - Residential soil screening levels
2,800 Analysis is <ISSL, but > RSSL
32,000 Analysis is >ISSL and RSSL
ft - foot
mg/kg - milligrams per kiligram
brn - brown
lgt - light

Attachments (on CD)

Attachment A - Field Notes

Attachment B - Complete Analytical Tables

Attachment C - Laboratory Analytical Reports

Attachment A - Field Notes

Sediment Sampling Field Form

Project Name:	Gallup Refinery SWMU 1 Pond Sampling	Sample Media:	Sediment
Sample ID:	SWMU 1-1	Sample Date:	1/16/2020
Location:	EP-1 North Berm	Sample Time Berm Surface:	845
Samplers:	PH/BM	Sample Time Berm 0.5' - 3.0':	849
Weather:	Sunny, cool	Sample Time Berm 5.0':	950

Sample Description

Sampling Equipment:	Auger, sediment sampler		
Sample Depth Surface:	0.0-0.5'	Sample Depth Top Clay:	2.5'
Sample Depth Top Sludge:	0.5-2.5'		

Sample Description:

Berm Sediment:

Top	0'	Black to black-brown clayey sandy silt, slight HC odor, dry, loose
Side	0.5' - 3.0'	Black sludge
Side	5.0'	chocolate brown plastic clay, dense, moist, HC staining and odor

Comments:

Sediment Sampling Field Form

Project Name:	Gallup Refinery SWMU 1 Pond Sampling	Sample Media:	Sediment
Sample ID:	SWMU 1-2	Sample Date:	1/14/2020
Location:	EP-1 North Berm	Sample Time Berm Surface:	825
Samplers:	PH/BM	Sample Time Berm 0.5' - 2.9':	829
Weather:	Sunny, cool	Sample Time Berm 3.0' - 3.5':	829

Sample Description

Sampling Equipment:	Auger, sediment sampler		
Sample Depth Surface:	0.0-0.5'	Sample Depth Top Clay:	3' - 3.5'
Sample Depth Top Sludge:	2.0-2.5'		

Sample Description:

Berm Sediment:

Top	0'	Black to black-brown clayey sandy silt, slight HC odor, dry, loose, DUP 9
Side	0.5' - 2.9'	sludge, very wet, plstic, soft, HC odor strong
Side	3.0' - 3.5'	Pink/brown clay, plastic, moist, dense, hard

Comments:

Sediment Sampling Field Form

Project Name:	Gallup Refinery SWMU 1 Pond Sampling	Sample Media:	Sediment
Sample ID:	SWMU 1-3	Sample Date:	1/14/2020
Location:	EP-1 North Berm	Sample Time Berm 0.0':	1650
Samplers:	PH/BM	Sample Time Berm 3.0':	1705
Weather:	Sunny, cool	Sample Time Toe 0.5' - 3.0':	1654

Sample Description

Sampling Equipment:	Auger, sediment sampler		
Sample Depth Surface:	0.0-0.5'	Sample Depth Top Clay:	2.5'
Sample Depth Top Sludge:	0.5-2.5'		

Sample Description:

Berm Sediment:

Top	0.0' - 0.5'	black moist plastic soft clay, wet, HC odor and staining
Side	3.0' - 3.5'	black and brown plastic clay with silt, HC staining and odor

Toe Sediment: 0.5' - 3.0' Black sludge

Comments:

Sediment Sampling Field Form

Project Name:	Gallup Refinery SWMU 1 Pond Sampling	Sample Media:	Sediment
Sample ID:	SWMU 1-4	Sample Date:	1/14/2020
Location:	EP-1 North Berm	Sample Time Berm Surface:	1513
Samplers:	PH/BM	Sample Time Berm 3.0':	1627
Weather:	Sunny, cool	Sample Time Berm 3.0' - 3.5':	1640

Sample Description

Sampling Equipment:	Auger, sediment sampler		
Sample Depth Surface:	0.0-0.5'	Sample Depth Top Clay:	2.5'
Sample Depth Top Sludge:	0.5-2.5'		

Sample Description:

Berm Sediment:

Top	0'	Black moist silty clay, plastic, HC odor and staining
Side	3.0'	black sludge
Side	3.0' - 3.5'	dark black to brown, dense hard plastic clay minor silt, heavy HC odor and staining

Comments:

Sediment Sampling Field Form

Project Name:	Gallup Refinery SWMU 1 Pond Sampling	Sample Media:	Sediment
Sample ID:	SWMU 1-5	Sample Date:	1/17/2020
Location:	EP-1 North Berm	Sample Time Berm Surface:	835
Samplers:	PH/BM	Sample Time Berm 0.5' - 5.0':	840
Weather:	Sunny, cool	Sample Time Berm 5.5' - 6.0':	845

Sample Description

Sampling Equipment:	Auger, sediment sampler		
Sample Depth Surface:	0.0-0.5'	Sample Depth Top Clay:	2.5'
Sample Depth Top Sludge:	2.5' - 5.0'		

Sample Description:

Berm Sediment:

Top	0'	Black clayey silt, slightly plastic, moist, HC odor and staining
Side	0.5' - 5.0'	Black sludge, very wet, strong HC odor
Side	5.5' - 6.0'	black moist clay with silt, HC odor and staining

Comments:

Sediment Sampling Field Form

Project Name:	Gallup Refinery SWMU 1 Pond Sampling	Sample Media:	Sediment
Sample ID:	SWMU 1-6	Sample Date:	1/17/2020
Location:	EP-1 North Berm	Sample Time Berm Surface:	-
Samplers:	PH/BM	Sample Time Berm 0.5' - 5.0':	900
Weather:	Sunny, cool	Sample Time Berm 5.5' - 6.0':	925

Sample Description

Sampling Equipment:	Auger, sediment sampler		
Sample Depth Surface:	0.0-0.5'	Sample Depth Top Clay:	2.5'
Sample Depth Top Sludge:	0.5-2.5'		

Sample Description:

Berm Sediment:

Top	0'	no surface sample
Side	0.5' - 5.0'	Sludge. Black, wet, strong HC odor clayey sludge
Side	5.5' - 6.0'	Black silty clay, plastic, moist, HC staining and odor

Comments:

Sediment Sampling Field Form

Project Name:	Gallup Refinery SWMU 1 Pond Sampling	Sample Media:	Sediment
Sample ID:	SWMU 1-7	Sample Date:	1/17/2020
Location:	EP-1 North Berm	Sample Time Berm Surface:	912
Samplers:	PH/BM	Sample Time Berm 2.5':	916
Weather:	Sunny, cool	Sample Time Berm 4.0':	926

Sample Description

Sampling Equipment:	Auger, sediment sampler		
Sample Depth Surface:	0.0-0.5'	Sample Depth Top Clay:	4' - 5'
Sample Depth Top Sludge:	0.5-4'		

Sample Description:

Berm Sediment:

Top	0'	dark brown to black sandy silt with clay, crumbly, HC odor and staining, DUP 7
Side	2.5'	Sludge black, very soft, wet, almost liquid
Side	4.0' - 5.0'	black soft plastic clay with silt, HC odor and staining

Comments:

Sediment Sampling Field Form

Project Name:	Gallup Refinery SWMU 1 Pond Sampling	Sample Media:	Sediment
Sample ID:	SWMU 1-8	Sample Date:	1/16/2020
Location:	EP-1 North Berm	Sample Time Berm Surface:	830
Samplers:	PH/BM	Sample Time Berm 0.5' - 5.0':	835
Weather:	Sunny, cool	Sample Time Berm 5.0' - 5.5':	848

Sample Description

Sampling Equipment:	Auger, sediment sampler		
Sample Depth Surface:	0.0-0.5'	Sample Depth Top Clay:	2.5'
Sample Depth Top Sludge:	0.5-2.5'		

Sample Description:

Berm Sediment:

Top	0'	Black wet sludge material, clay/silt, HC odor
Side	0.5' - 5.0'	sludge, black, wet, very soft, pudding consistency
Side	5.0' - 5.5'	dry, gray, reduced bands with pink oxidized bands

Comments:

Sediment Sampling Field Form

Project Name:	Gallup Refinery SWMU 1 Pond Sampling	Sample Media:	Sediment
Sample ID:	SWMU 1-9	Sample Date:	1/16/2020
Location:	EP-1 North Berm	Sample Time Berm Surface:	855
Samplers:	PH/BM	Sample Time Berm 4.5':	900
Weather:	Sunny, cool	Sample Time Berm 5.0':	905

Sample Description

Sampling Equipment:	Auger, sediment sampler		
Sample Depth Surface:	0.0-0.5'	Sample Depth Top Clay:	2.5'
Sample Depth Top Sludge:	0.5-2.5'		

Sample Description:

Berm Sediment:

Top	0'	Black silty sandy clay, heavy HC staining and odor
Side	4.5'	Black sludge
Side	5.5' - 6.0'	gray clay with pink unstained clay at bottom of auger

Comments:

Sediment Sampling Field Form

Project Name:	Gallup Refinery SWMU 1 Pond Sampling	Sample Media:	Sediment
Sample ID:	SWMU 1-10	Sample Date:	1/16/2020
Location:	EP-1 North Berm	Sample Time Berm Surface:	921
Samplers:	PH/BM	Sample Time Toe 0.5' - 4.5' :	926
Weather:	Sunny, cool	Sample Time Toe 4.5' - 5.0':	928

Sample Description

Sampling Equipment:	Auger, sediment sampler		
Sample Depth Surface:	0.0-0.5'	Sample Depth Top Clay:	2.5'
Sample Depth Top Sludge:	0.5-2.5'		

Sample Description:

Berm Sediment:

Top	0'	Black hard sandy silt, looks like ash, brown crust, dry, HC odor
Toe Sediment:	0.5' - 4.5'	sludge, black, very wet, amost fluid, HC odor
	4.5' - 5.0'	black to dark gray plastic clay with apparent irridescent blue shimmer in freshly broken surfaces, HC odor and staining throughout

Comments:

Sediment Sampling Field Form

Project Name:	Gallup Refinery SWMU 1 Pond Sampling	Sample Media:	Sediment
Sample ID:	SWMU 1-11	Sample Date:	1/13/2020
Location:	EP-1 North Berm	Sample Time Berm Surface:	1320
Samplers:	PH/BM	Sample Time Berm 2.5':	1330
Weather:	Sunny, cool	Sample Time Berm 5.0':	1335
		Sample Time Berm 7.5:	1340
		Sample Time Toe 0.0':	1000
		Sample Time Toe 2.5':	1010

Sample Description

Sampling Equipment:	Auger, sediment sampler		
Sample Depth Surface:	0.0-0.5'	Sample Depth Top Clay:	2.5'
Sample Depth Top Sludge:	0.5-2.5'		

Sample Description:

Berm Sediment:		
Top	1.5'	Brown to tan fill material; vf-f sand with silt and gravel (10%)
Side	2.5'	Brown silty vf-m sand with abundant gravel (35%)
Side	5.0'	Brown to tan vf-m sand with silt; trace gravel
Side	7.5'	Brown silty clay with gravel, black staining and HC odor
Toe Sediment:	0.0'	Dark brown silty clay/clayey silt; abundant leaves, twigs, and organics
	2.5 '	Tan - brown silty vf-f sand with trace clay, HC odor, sludge from 0.5' to 2.5'

Comments:

Sediment Sampling Field Form

Project Name:	Gallup Refinery SWMU 1 Pond Sampling	Sample Media:	Sediment
Sample ID:	SWMU 1-12	Sample Date:	1/13/2020 and 1/14/2020
Location:	EP-1 North Berm	Sample Time Berm Surface:	1403
Samplers:	PH/BM	Sample Time Berm 2.5':	1408
Weather:	Sunny, cool	Sample Time Berm 5.0':	1415
		Sample Time Berm 7.5:	1421
		Sample Time Toe 0.0':	1355
		Sample Time Toe 2.5':	1406
		Sample Time Toe 3.0':	1410

Sample Description

Sampling Equipment:	Auger, sediment sampler		
Sample Depth Surface:	0.0-0.5'	Sample Depth Top Clay:	2.5'
Sample Depth Top Sludge:	0.5-2.5'		

Sample Description:

Berm Sediment:		
Top	1.5'	Brown to tan silty sand; dry w/ gravel (40%)
Side	2.5'	vF-F silty sand w grave, dry browngravel (5-10%)
Side	5.0'	vF-m silty sand w/ 10% gravel, brown- tan
Side	7.5'	Black slightly silty clay, black staining, faint odor, moist, plastic
Toe Sediment:	0.0'	black to dark brown clayey silt vF-F sand, moist, crumbly texture
	2.5'	brown to black, hard, dense, plastic clay
	3.0'	pinkish red plastic dense, hard clay, minor silt, some HC staining and odor

Comments:

Sediment Sampling Field Form

Project Name:	Gallup Refinery SWMU 1 Pond Sampling	Sample Media:	Sediment
Sample ID:	SWMU 1-13	Sample Date:	1/13/2020
Location:	EP-1 North Berm	Sample Time Berm 1.5':	1444
Samplers:	PH/BM	Sample Time Berm 2.5':	1447
Weather:	Sunny, cool	Sample Time Berm 5.0':	1452
		Sample Time Berm 7.5:	1458
		Sample Time Berm 9':	1503
		Sample Time Toe 0.0':	1419
		Sample Time Toe 3.0':	1028

Sample Description

Sampling Equipment:	Auger, sediment sampler		
Sample Depth Surface:	0.0-0.5'	Sample Depth Top Clay:	2.5'
Sample Depth Top Sludge:	0.5-2.5'		

Sample Description:

Berm Sediment:		
Top	1.5'	Brown silty vF-m sand w/ 20% gravel, dry
Side	2.5'	dry brown clay with silty sand (uF-F), some gravel (3%)
Side	5.0'	drown dry silty uF-m sand with clay and gravel, DUP 2
Side	7.5'	Black slightly silty clay, black stain Slightly moist brown silty clay, slightly plastic, no color
Side	9.0'	brown uF-F sand with silt, trace clay (3%), dry, no odor
Toe Sediment:	0'	black to black-brown clayey sandy silt, dry, loose, slight HC odor, DUP 8
	3.0'	Pink clay with HC staining, not marked

Comments:

Sediment Sampling Field Form

Project Name:	Gallup Refinery SWMU 1 Pond Sampling	Sample Media:	Sediment
Sample ID:	SWMU 1-14	Sample Date:	1/14/2020
Location:	EP-1 North Berm	Sample Time Berm 1.5':	948
Samplers:	PH/BM	Sample Time Berm 2.5':	959
Weather:	Sunny, cool	Sample Time Berm 5.0':	1002
		Sample Time Berm 7.5:	1011
		Sample Time Toe 0.0':	1444
		Sample Time Toe 2.5':	1450
		Sample Time Toe 3.0':	1458

Sample Description

Sampling Equipment:	Auger, sediment sampler		
Sample Depth Surface:	0.0-0.5'	Sample Depth Top Clay:	2.5'
Sample Depth Top Sludge:	0.5-2.5'		

Sample Description:

Berm Sediment:		
Top	1.5'	medium to dark brown dry loose silty uF-F sand with trace clay, no odor
Side	2.5'	Dry brown loose silty vF-F sand with clay
Side	5.0'	Brown, loose sandy silt with clay, dry, roots, DUP 3
Side	7.5'	moist, plastic, reddish brown silty clay, no odor
Toe Sediment:	0.0'	Black to dark brown clayey silt, soft, plastic, HC stained
	2.5'	Black sludge
	3.0'	brown plastic clay with silt, hard, miost, some black staining and HC odor

Comments:

Sediment Sampling Field Form

Project Name:	Gallup Refinery SWMU 1 Pond Sampling	Sample Media:	Sediment
Sample ID:	SWMU 1-15	Sample Date:	1/13/2020
Location:	EP-1 North Berm	Sample Time Berm 1.5':	1515
Samplers:	PH/BM	Sample Time Berm 2.5':	1520
Weather:	Sunny, cool		
		Sample Time Toe 0.0':	1434
		Sample Time Toe 3.0':	1428
		Sample Time Toe 4.0' - 5.0':	1435
		Sample Time Toe 7.5':	

Sample Description

Sampling Equipment:	Auger, sediment sampler		
Sample Depth Surface:	0.0-0.5'	Sample Depth Top Clay:	2.5'
Sample Depth Top Sludge:	0.5-2.5'		

Sample Description:

Berm Sediment:		
Top	1.5'	dry brown silty vF-m sand with clay, no odor
Side	2.5'	moist dark brown-black silty clay, slight odor
Toe Sediment:	0.0'	Brown-Black clayey sandy silt, HC odor, moist, crumbly texture, DUP 10
	3.0'	Black plastic clay, HC staining, heavy HC odor
	4.0' - 5.0'	Black sludge

Comments:

Sediment Sampling Field Form

Project Name:	Gallup Refinery SWMU 1 Pond Sampling	Sample Media:	Sediment
Sample ID:	SWMU 1-16	Sample Date:	1/13/2020
Location:	EP-1 North Berm	Sample Time Berm 1.5':	1530
Samplers:	PH/BM	Sample Time Berm 2.5':	1535
Weather:	Sunny, cool		
		Sample Time Toe 0.0':	1405
		Sample Time Toe 2.5':	1408
		Sample Time Toe 4.0' - 4.5':	1416
		Sample Time Toe 5.0':	1455

Sample Description

Sampling Equipment:	Auger, sediment sampler		
Sample Depth Surface:	0.0-0.5'	Sample Depth Top Clay:	2.5'
Sample Depth Top Sludge:	0.5-2.5'		

Sample Description:

Berm Sediment:		
Top	1.5'	brown dry clayey sand with silt, uF-F, DUP 1
Side	2.5'	Black-brown clay with silt, some gravel, moist, HC odor
Toe Sediment:	0.0'	Black-brown clayey silt, HC odor, moist, crumbly with small plastic balls, DUP 6
	2.5'	Black runny sludge, Heavy odor
	4.0' - 4.5'	Black-gray clay plastic, medium soft
	5.0'	Black hard clay with silt, irridesence blue on surfaces, HC odor and staining, almost looks like ash

Comments:

Sediment Sampling Field Form

Project Name:	Gallup Refinery SWMU 1 Pond Sampling	Sample Media:	Sediment
Sample ID:	SWMU 1-17	Sample Date:	1/13/2020
Location:	EP-1 North Berm	Sample Time Berm Surface:	1555
Samplers:	PH/BM	Sample Time Berm 2.5':	1604
Weather:	Sunny, cool		
		Sample Time Toe 0.0':	1338
		Sample Time Toe 4.5' - 5.0':	1350

Sample Description

Sampling Equipment:	Auger, sediment sampler		
Sample Depth Surface:	0.0-0.5'	Sample Depth Top Clay:	2.5'
Sample Depth Top Sludge:	0.5-2.5'		

Sample Description:

Berm Sediment:		
Top	0'	dry dark brown silty sand with gravel, vF-m , no odor
Side	2.5'	moist plastic clay, red-brown with trace gravel, no odor
Toe Sediment:	0'	dark brown to black silty plastic clay, HC staining and odor
	2.5'	Sludge, very wet, soft, black, HC odor
	4.5' -5.0'	chocolate brown clay, moist, plastic, trace silt, some black HC staining mostly on outside of samples, some black staining at top of interval

Comments:

Sediment Sampling Field Form

Project Name:	Gallup Refinery SWMU 1 Pond Sampling	Sample Media:	Sediment
Sample ID:	SWMU 1-18	Sample Date:	1/13/2020
Location:	EP-1 North Berm	Sample Time Berm 1.5':	1612
Samplers:	PH/BM	Sample Time Berm 2.5':	1620
Weather:	Sunny, cool		
		Sample Time Toe 0.0':	1423
		Sample Time Toe 2.5':	1456

Sample Description

Sampling Equipment:	Auger, sediment sampler		
Sample Depth Surface:	0.0-0.5'	Sample Depth Top Clay:	2.5'
Sample Depth Top Sludge:	0.5-2.5'		

Sample Description:

Berm Sediment:		
Top	1.5'	dry brown silty, vF-m sand with clay and gravel, no odor
Side	2.5'	brown dry silty vF-F sand with clay, no odor
Toe Sediment:	0.0'	Black soft plastic clay, heavy HC odor
	2.5'	Black Sludge

Comments:

Sediment Sampling Field Form

Project Name:	Gallup Refinery SWMU 1 Pond Sampling	Sample Media:	Sediment
Sample ID:	SWMU 1-19	Sample Date:	1/13/2020
Location:	EP-1 North Berm	Sample Time Berm 1.5':	1633
Samplers:	PH/BM	Sample Time Berm 2.5':	1640
Weather:	Sunny, cool		
		Sample Time Toe 0.0':	1005
		Sample Time Toe 0.5' - 6.0':	1010
		Sample Time Toe 6.0' - 6.5":	1015

Sample Description

Sampling Equipment:	Auger, sediment sampler		
Sample Depth Surface:	0.0-0.5'	Sample Depth Top Clay:	2.5'
Sample Depth Top Sludge:	0.5-2.5'		

Sample Description:

Berm Sediment:		
Top	1.5'	dry brown silty clay w vF-m sand (30%), no odor
Side	2.5'	gray brown silty clay with trace sand, moist, no odor
Toe Sediment:	0.0'	dark brown-black crumbly silty uF-F sand with clay, dry, DUP 5
	0.5 - 6.0'	Black sludge, very wet, almost fluid
	6.0' - 6.5'	Brown to black plastic clay, massive texture, moist, HC odor

Comments:

Sediment Sampling Field Form

Project Name:	Gallup Refinery SWMU 1 Pond Sampling	Sample Media:	Sediment
Sample ID:	SWMU 1-20	Sample Date:	1/14/2020
Location:	EP-1 North Berm	Sample Time Berm 1.5':	935
Samplers:	PH/BM	Sample Time Berm 2.5':	940
Weather:	Sunny, cool		
		Sample Time Toe 0.0':	1450
		Sample Time Toe 0.5' - 3.0' :	1502
		Sample Time Toe 5.0':	1507

Sample Description

Sampling Equipment:	Auger, sediment sampler		
Sample Depth Surface:	0.0-0.5'	Sample Depth Top Clay:	2.5'
Sample Depth Top Sludge:	0.5-2.5'		

Sample Description:

Berm Sediment:		
Top	1.5'	brown plastic clay with silt, some minor HC staining and odor
Side	2.5'	black-gray clay with silt, plastic, moist
Toe Sediment:	0.0'	dark brown crumbly dry loose sandy silt with clay, none to slight odor
	0.5' - 3.0'	Black Sludge
	5.0'	Black moist clay, slightly plastic, HC odor, DUP 4

Comments:

Sediment Sampling Field Form

Project Name:	Gallup Refinery SWMU 1 Pond Sampling	Sample Media:	Sediment
Sample ID:	SWMU 1-21	Sample Date:	1/14/2020
Location:	EP-1 North Berm	Sample Time Berm 1.5':	1029
Samplers:	PH/BM		
Weather:	Sunny, cool		
		Sample Time Toe 0.0':	1035
		Sample Time Toe 2.5':	1043
		Sample Time Toe 5.0':	1100
		Sample Time Toe 7.5':	

Sample Description

Sampling Equipment:	Auger, sediment sampler		
Sample Depth Surface:	0.0-0.5'	Sample Depth Top Clay:	2.5'
Sample Depth Top Sludge:	0.5-2.5'		

Sample Description:

Berm Sediment:

Top	1.5'	sandy silt with clay, dry, brown, loose, no odor

Toe Sediment:	0.0'	Dark brown, crumbly, loose sandy silt with clay, HC odor and staining
	2.5'	brown silty clay, slightly plastic, slight HC odor
	5.0'	tannish brown plastic clay, soft, minor black HC staining and odor

Comments:

Sediment Sampling Field Form

Project Name:	Gallup Refinery SWMU 1 Pond Sampling	Sample Media:	Sediment
Sample ID:	SWMU 1-22	Sample Date:	1/14/2020
Location:	EP-1 North Berm	Sample Time Berm 1.5':	915
Samplers:	PH/BM	Sample Time Berm 2.5':	920
Weather:	Sunny, cool	Sample Time Berm 5.0':	953
		Sample Time Toe 0.0':	945
		Sample Time Toe 2.5':	950
		Sample Time Toe 3.5'- 4.0':	955

Sample Description

Sampling Equipment:	Auger, sediment sampler		
Sample Depth Surface:	0.0-0.5'	Sample Depth Top Clay:	2.5'
Sample Depth Top Sludge:	0.5-2.5'		

Sample Description:

Berm Sediment:		
Top	1.5'	brown, loose, dry, crumbly sandy silt with clay, no odor
Side	2.5'	grayish brown moist plastic clay, silty, hard HC odor
Side	5.0'	black/brown plastic clay with silt, HC odor
Toe Sediment:	0.0'	Black, moist, crumbly clayey sandy silt
	2.5'	Black sludge
	3.5'- 4.0'	light gray plastic clay, soft, moist, grading into pink/brown soft plastic clay

Comments:

Attachment B - Complete Analytical Tables

ATTACHMENT B - TABLE 1A. SWMU 1 SAMPLING - VOLATILE ORGANIC COMPOUNDS (AL-1)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	1,1,1,2-Tetrachloroethane (mg/kg)	1,1,1-Trichloroethane (mg/kg)	1,1,2,2-Tetrachloroethane (mg/kg)	1,1,2-Trichloroethane (mg/kg)	1,1-Dichloroethane (mg/kg)	1,1-Dichloroethene (mg/kg)	1,1-Dichloropropene (mg/kg)	1,2,3-Trichlorobenzene (mg/kg)
SWMU 1-8	01/16/20	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.18)	0.059	ND(0.18)	ND(0.37)	ND(0.37)
SWMU 1-8 (2.5 ft)	01/16/20	ND(0.34)	ND(0.34)	ND(0.34)	ND(0.34)	0.12	ND(0.34)	ND(0.69)	ND(0.69)
SWMU 1-8 (5-5.5 ft)	01/16/20	ND(0.052)	ND(0.052)	ND(0.052)	ND(0.052)	ND(0.052)	ND(0.052)	ND(0.1)	ND(0.1)
SWMU 1-9	01/16/20	ND(0.74)	ND(0.74)	ND(0.74)	ND(0.74)	ND(0.74)	ND(0.74)	ND(1.5)	ND(1.5)
SWMU 1-9 (4.5 ft)	01/16/20	ND(0.19)	ND(0.19)	ND(0.19)	ND(0.19)	0.07	ND(0.19)	ND(0.38)	ND(0.38)
SWMU 1-9 (5.5-6 ft)	01/16/20	ND(0.12)	ND(0.12)	ND(0.12)	ND(0.12)	ND(0.12)	ND(0.12)	ND(0.24)	ND(0.24)
SWMU 1-10	01/16/20	ND(0.24)	ND(0.24)	ND(0.97)	ND(0.24)	ND(0.24)	ND(0.24)	ND(0.49)	ND(1.9)
SWMU 1-10 (4-4.5 ft)	01/16/20	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.18)	0.055	ND(0.18)	ND(0.35)	ND(0.35)
SWMU 1-10 (4.5-5 ft)	01/16/20	ND(0.11)	ND(0.11)	ND(0.11)	ND(0.11)	ND(0.11)	ND(0.11)	ND(0.21)	ND(0.21)
SWMU 1-19 (berm) (1.5 ft)	01/13/20	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.079)	ND(0.079)
SWMU 1-19 (berm) (2.5 ft)	01/13/20	ND(0.038)	ND(0.038)	ND(0.19)	ND(0.038)	ND(0.038)	ND(0.038)	ND(0.077)	ND(0.38)
SWMU 1-19 (toe) Dup	01/16/20	ND(0.088)	ND(0.088)	ND(0.088)	ND(0.088)	ND(0.088)	ND(0.088)	ND(0.18)	ND(0.18)
SWMU 1-19 (toe)	01/16/20	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.077)	ND(0.077)
SWMU 1-19 (toe) (0.5-6 ft)	01/16/20	ND(0.75)	ND(0.75)	0.42	ND(0.75)	0.22	ND(0.75)	ND(1.5)	ND(1.5)
SWMU 1-19 (toe) (6-6.5 ft)	01/16/20	ND(0.048)	ND(0.048)	ND(0.048)	ND(0.048)	ND(0.048)	ND(0.048)	ND(0.097)	ND(0.097)
SWMU 1-20 (berm) (2.5 ft)	01/14/20	ND(0.036)	ND(0.036)	ND(0.036)	ND(0.036)	ND(0.036)	ND(0.036)	ND(0.072)	ND(0.072)
SWMU 1-20 (toe) (1.5 ft)	01/14/20	ND(0.16)	ND(0.16)	ND(0.16)	ND(0.16)	ND(0.16)	ND(0.16)	ND(0.32)	ND(0.32)
SWMU 1-20 (toe) (5 ft) Dup	01/15/20	ND(0.29)	ND(0.29)	ND(0.29)	ND(0.29)	ND(0.29)	ND(0.29)	ND(0.58)	ND(0.58)
SWMU 1-20 (toe)	01/15/20	ND(0.054)	ND(0.054)	ND(0.054)	ND(0.054)	ND(0.054)	ND(0.054)	ND(0.11)	ND(0.11)
SWMU 1-20 (toe) (0.5-3 ft)	01/15/20	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.18)	0.054	ND(0.18)	ND(0.35)	ND(0.35)
SWMU 1-20 (toe) (5 ft)	01/15/20	ND(0.26)	ND(0.26)	ND(0.26)	ND(0.26)	ND(0.26)	ND(0.26)	ND(0.53)	ND(0.53)
SWMU 1-21 (berm) (1.5 ft)	01/14/20	ND(0.038)	ND(0.038)	ND(0.038)	ND(0.038)	ND(0.038)	ND(0.038)	ND(0.076)	ND(0.076)
SWMU 1-21 (toe)	01/14/20	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.4)	ND(0.4)
SWMU 1-21 (toe) (2.5 ft)	01/14/20	ND(0.15)	ND(0.15)	ND(0.15)	ND(0.15)	ND(0.15)	ND(0.15)	ND(0.29)	ND(0.29)
SWMU 1-21 (toe) (5 ft)	01/14/20	ND(0.15)	ND(0.15)	ND(0.15)	ND(0.15)	ND(0.15)	ND(0.15)	ND(0.29)	ND(0.29)
SWMU 1-22 (berm) (1.5 ft)	01/14/20	ND(0.041)	ND(0.041)	ND(0.041)	ND(0.041)	ND(0.041)	ND(0.041)	ND(0.082)	ND(0.082)
SWMU 1-22 (berm) (2.5 ft)	01/14/20	ND(0.036)	ND(0.036)	ND(0.036)	ND(0.036)	ND(0.036)	ND(0.036)	ND(0.073)	ND(0.073)
SWMU 1-22 (berm) (5 ft)	01/14/20	ND(0.18)	ND(0.18)	ND(0.72)	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.36)	ND(1.4)
SWMU 1-22 (toe)	01/16/20	ND(0.41)	ND(0.41)	ND(0.41)	ND(0.41)	ND(0.41)	ND(0.41)	ND(0.83)	ND(0.83)
SWMU 1-22 (toe) (2.5 ft)	01/16/20	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.35)	ND(0.35)
SWMU 1-22 (toe) (3.5-4 ft)	01/16/20	ND(0.16)	ND(0.16)	ND(0.16)	ND(0.16)	ND(0.16)	ND(0.16)	ND(0.33)	ND(0.33)
[a] NMED Industrial SSL		137.2	72,530	39.4	12.39	383.3	2,255	NA	NA
[b] NMED Residential SSL		28.1	14,400	7.98	18.8	78.6	440	NA	NA
[c] CFR TCLP		NA	NA	NA	NA	NA	NA	NA	NA
[d] USEPA RSL Industrial Soil HQ 0.1		8.8	3,600	2.7	0.63	16	100	NA	93

Notes:
NMED SSL's - New Mexico Environmental Department Industrial and Residential Soil Screening Levels, June 2019
TCLP SL - Toxicity Characteristic Levels from 40 CFR 261.24.
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
AL - Aeration Lagoon
TCLP - toxicity characteristic leaching procedure
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Benzene was analyzed for TCLP if the initial sample was detected above 0.5 ug/kg.
Samples taken in Aeration Lagoon 1.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.

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ATTACHMENT B - TABLE 1A. SWMU 1 SAMPLING - VOLATILE ORGANIC COMPOUNDS (AL-1)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	1,2,3-Trichloropropane (mg/kg)	1,2,4-Trichlorobenzene (mg/kg)	1,2,4-Trimethylbenzene (mg/kg)	1,2-Dibromo 3-chloropropane (mg/kg)	1,2-Dibromoethane (mg/kg)	1,2-Dichlorobenzene (mg/kg)	1,2-Dichloroethane (mg/kg)	1,2-Dichloropropane (mg/kg)
SWMU 1-8	01/16/20	ND(0.37)	ND(0.18)	1.5	ND(0.37)	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.18)
SWMU 1-8 (2.5 ft)	01/16/20	ND(0.69)	ND(0.34)	4.3	ND(0.69)	ND(0.34)	ND(0.34)	ND(0.34)	ND(0.34)
SWMU 1-8 (5-5.5 ft)	01/16/20	ND(0.1)	ND(0.052)	0.24	ND(0.1)	ND(0.052)	ND(0.052)	0.026	ND(0.052)
SWMU 1-9	01/16/20	ND(1.5)	ND(0.74)	10	ND(1.5)	ND(0.74)	ND(0.74)	ND(0.74)	ND(0.74)
SWMU 1-9 (4.5 ft)	01/16/20	ND(0.38)	ND(0.19)	7.3	ND(0.38)	ND(0.19)	ND(0.19)	ND(0.19)	ND(0.19)
SWMU 1-9 (5.5-6 ft)	01/16/20	ND(0.24)	ND(0.12)	0.56	ND(0.24)	ND(0.12)	ND(0.12)	0.052	ND(0.12)
SWMU 1-10	01/16/20	ND(1.9)	ND(0.97)	13	ND(1.9)	ND(0.24)	ND(0.97)	ND(0.24)	ND(0.24)
SWMU 1-10 (4-4.5 ft)	01/16/20	ND(0.35)	ND(0.18)	15	ND(0.35)	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.18)
SWMU 1-10 (4.5-5 ft)	01/16/20	ND(0.21)	ND(0.11)	0.97	ND(0.21)	0.031	ND(0.11)	ND(0.11)	ND(0.11)
SWMU 1-19 (berm) (1.5 ft)	01/13/20	ND(0.079)	ND(0.039)	ND(0.039)	ND(0.079)	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.039)
SWMU 1-19 (berm) (2.5 ft)	01/13/20	ND(0.38)	ND(0.19)	0.38	ND(0.38)	0.023	ND(0.19)	ND(0.038)	ND(0.038)
SWMU 1-19 (toe) Dup	01/16/20	ND(0.18)	ND(0.088)	0.087	ND(0.18)	ND(0.088)	ND(0.088)	ND(0.088)	ND(0.088)
SWMU 1-19 (toe)	01/16/20	ND(0.077)	ND(0.039)	0.058	ND(0.077)	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.039)
SWMU 1-19 (toe) (0.5-6 ft)	01/16/20	ND(1.5)	ND(0.75)	6.3	ND(1.5)	ND(0.75)	ND(0.75)	ND(0.75)	ND(0.75)
SWMU 1-19 (toe) (6-6.5 ft)	01/16/20	ND(0.097)	ND(0.048)	0.31	ND(0.097)	ND(0.048)	ND(0.048)	ND(0.048)	ND(0.048)
SWMU 1-20 (berm) (2.5 ft)	01/14/20	ND(0.072)	ND(0.036)	0.0078	ND(0.072)	ND(0.036)	ND(0.036)	ND(0.036)	ND(0.036)
SWMU 1-20 (toe) (1.5 ft)	01/14/20	ND(0.32)	ND(0.16)	ND(0.16)	ND(0.32)	ND(0.16)	ND(0.16)	ND(0.16)	ND(0.16)
SWMU 1-20 (toe) (5 ft) Dup	01/15/20	ND(0.58)	ND(0.29)	3.7	ND(0.58)	ND(0.29)	ND(0.29)	ND(0.29)	ND(0.29)
SWMU 1-20 (toe)	01/15/20	ND(0.11)	ND(0.054)	0.042	ND(0.11)	0.018	ND(0.054)	ND(0.054)	ND(0.054)
SWMU 1-20 (toe) (0.5-3 ft)	01/15/20	ND(0.35)	ND(0.18)	4.2	ND(0.35)	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.18)
SWMU 1-20 (toe) (5 ft)	01/15/20	ND(0.53)	ND(0.26)	6.6	ND(0.53)	0.074	ND(0.26)	0.13	ND(0.26)
SWMU 1-21 (berm) (1.5 ft)	01/14/20	ND(0.076)	ND(0.038)	0.0084	ND(0.076)	ND(0.038)	ND(0.038)	ND(0.038)	ND(0.038)
SWMU 1-21 (toe)	01/14/20	ND(0.4)	ND(0.2)	1.2	ND(0.4)	0.066	ND(0.2)	0.09	ND(0.2)
SWMU 1-21 (toe) (2.5 ft)	01/14/20	ND(0.29)	ND(0.15)	1.2	ND(0.29)	0.035	ND(0.15)	ND(0.15)	ND(0.15)
SWMU 1-21 (toe) (5 ft)	01/14/20	ND(0.29)	ND(0.15)	0.097	ND(0.29)	ND(0.15)	ND(0.15)	ND(0.15)	ND(0.15)
SWMU 1-22 (berm) (1.5 ft)	01/14/20	ND(0.082)	ND(0.041)	ND(0.041)	ND(0.082)	ND(0.041)	ND(0.041)	ND(0.041)	ND(0.041)
SWMU 1-22 (berm) (2.5 ft)	01/14/20	ND(0.073)	ND(0.036)	0.037	ND(0.073)	0.012	ND(0.036)	ND(0.036)	ND(0.036)
SWMU 1-22 (berm) (5 ft)	01/14/20	ND(1.4)	ND(0.72)	4.6	ND(1.4)	0.071	ND(0.72)	ND(0.18)	ND(0.18)
SWMU 1-22 (toe)	01/16/20	ND(0.83)	ND(0.41)	4.5	ND(0.83)	ND(0.41)	ND(0.41)	ND(0.41)	ND(0.41)
SWMU 1-22 (toe) (2.5 ft)	01/16/20	ND(0.35)	ND(0.17)	14	ND(0.35)	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)
SWMU 1-22 (toe) (3.5-4 ft)	01/16/20	ND(0.33)	ND(0.16)	0.028	ND(0.33)	ND(0.16)	ND(0.16)	ND(0.16)	ND(0.16)
[a] NMED Industrial SSL		1.211	422.9	NA	1.179	3.309	12,970	40.67	86.82
[b] NMED Residential SSL		0.051	240	NA	0.0858	0.672	2,150	8.32	17.8
[c] CFR TCLP		NA	NA	NA	NA	NA	NA	NA	NA
[d] USEPA RSL Industrial Soil HQ 0.1		0.11	26	180	0.064	0.16	930	2	6.6

Notes:
NMED SSL's - New Mexico Environmental Department Industrial and Residential Soil Screening Levels, June 2019
TCLP SL - Toxicity Characteristic Levels from 40 CFR 261.24.
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
AL - Aeration Lagoon
TCLP - toxicity characteristic leaching procedure
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Benzene was analyzed for TCLP if the initial sample was detected above 0.5 ug/kg.
Samples taken in Aeration Lagoon 1.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.

ATTACHMENT B - TABLE 1A. SWMU 1 SAMPLING - VOLATILE ORGANIC COMPOUNDS (AL-1)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	1,3,5-Trimethylbenzene (mg/kg)	1,3-Dichlorobenzene (mg/kg)	1,3-Dichloropropane (mg/kg)	1,4-Dichlorobenzene (mg/kg)	1-Methylnaphthalene (mg/kg)	2,2-Dichloropropane (mg/kg)	2-Butanone (mg/kg)	2-Chlorotoluene (mg/kg)
SWMU 1-8	01/16/20	0.51	ND(0.18)	ND(0.18)	ND(0.18)	4.7	ND(0.37)	1.4	ND(0.18)
SWMU 1-8 (2.5 ft)	01/16/20	1.5	ND(0.34)	ND(0.34)	ND(0.34)	12	ND(0.69)	ND(3.4)	ND(0.34)
SWMU 1-8 (5-5.5 ft)	01/16/20	0.068	ND(0.052)	ND(0.052)	ND(0.052)	0.31	ND(0.1)	ND(0.52)	ND(0.052)
SWMU 1-9	01/16/20	3.7	ND(0.74)	ND(0.74)	ND(0.74)	32	ND(1.5)	ND(7.4)	ND(0.74)
SWMU 1-9 (4.5 ft)	01/16/20	2.3	ND(0.19)	ND(0.19)	ND(0.19)	19	ND(0.38)	ND(1.9)	ND(0.19)
SWMU 1-9 (5.5-6 ft)	01/16/20	0.17	ND(0.12)	ND(0.12)	ND(0.12)	0.6	ND(0.24)	0.27	ND(0.12)
SWMU 1-10	01/16/20	4.7	ND(0.97)	ND(0.24)	ND(0.97)	35	ND(0.49)	ND(2.4)	ND(0.97)
SWMU 1-10 (4-4.5 ft)	01/16/20	4.9	ND(0.18)	ND(0.18)	ND(0.18)	28	ND(0.35)	ND(1.8)	ND(0.18)
SWMU 1-10 (4.5-5 ft)	01/16/20	0.29	ND(0.11)	ND(0.11)	ND(0.11)	1	ND(0.21)	ND(1.1)	ND(0.11)
SWMU 1-19 (berm) (1.5 ft)	01/13/20	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.16)	ND(0.079)	ND(0.39)	ND(0.039)
SWMU 1-19 (berm) (2.5 ft)	01/13/20	0.16	ND(0.19)	ND(0.038)	ND(0.19)	0.63	ND(0.077)	0.15	ND(0.19)
SWMU 1-19 (toe) Dup	01/16/20	0.061	ND(0.088)	ND(0.088)	ND(0.088)	0.066	ND(0.18)	0.11	ND(0.088)
SWMU 1-19 (toe)	01/16/20	0.046	ND(0.039)	ND(0.039)	ND(0.039)	0.043	ND(0.077)	0.08	ND(0.039)
SWMU 1-19 (toe) (0.5-6 ft)	01/16/20	2	ND(0.75)	ND(0.75)	ND(0.75)	14	ND(1.5)	ND(7.5)	ND(0.75)
SWMU 1-19 (toe) (6-6.5 ft)	01/16/20	0.095	ND(0.048)	ND(0.048)	ND(0.048)	0.28	ND(0.097)	0.44	ND(0.048)
SWMU 1-20 (berm) (2.5 ft)	01/14/20	ND(0.036)	ND(0.036)	ND(0.036)	ND(0.036)	0.06	ND(0.072)	ND(0.36)	ND(0.036)
SWMU 1-20 (toe) (1.5 ft)	01/14/20	ND(0.16)	ND(0.16)	ND(0.16)	ND(0.16)	0.17	ND(0.32)	ND(1.6)	ND(0.16)
SWMU 1-20 (toe) (5 ft) Dup	01/15/20	1.3	ND(0.29)	ND(0.29)	ND(0.29)	5.2	ND(0.58)	ND(2.9)	ND(0.29)
SWMU 1-20 (toe)	01/15/20	0.015	ND(0.054)	ND(0.054)	ND(0.054)	0.16	ND(0.11)	0.51	ND(0.054)
SWMU 1-20 (toe) (0.5-3 ft)	01/15/20	1.4	ND(0.18)	ND(0.18)	ND(0.18)	8.5	ND(0.35)	ND(1.8)	ND(0.18)
SWMU 1-20 (toe) (5 ft)	01/15/20	2	ND(0.26)	ND(0.26)	ND(0.26)	7	ND(0.53)	ND(2.6)	ND(0.26)
SWMU 1-21 (berm) (1.5 ft)	01/14/20	ND(0.038)	ND(0.038)	ND(0.038)	ND(0.038)	0.043	ND(0.076)	ND(0.38)	ND(0.038)
SWMU 1-21 (toe)	01/14/20	0.58	ND(0.2)	ND(0.2)	ND(0.2)	10	ND(0.4)	ND(2)	ND(0.2)
SWMU 1-21 (toe) (2.5 ft)	01/14/20	0.32	ND(0.15)	ND(0.15)	ND(0.15)	3.3	ND(0.29)	ND(1.4)	ND(0.15)
SWMU 1-21 (toe) (5 ft)	01/14/20	0.027	ND(0.15)	ND(0.15)	ND(0.15)	0.33	ND(0.29)	ND(1.5)	ND(0.15)
SWMU 1-22 (berm) (1.5 ft)	01/14/20	ND(0.041)	ND(0.041)	ND(0.041)	ND(0.041)	ND(0.16)	ND(0.082)	ND(0.41)	ND(0.041)
SWMU 1-22 (berm) (2.5 ft)	01/14/20	0.043	ND(0.036)	ND(0.036)	ND(0.036)	0.37	ND(0.073)	0.17	ND(0.036)
SWMU 1-22 (berm) (5 ft)	01/14/20	2.7	ND(0.72)	ND(0.18)	ND(0.72)	15	ND(0.36)	0.8	ND(0.72)
SWMU 1-22 (toe)	01/16/20	1.9	ND(0.41)	ND(0.41)	ND(0.41)	12	ND(0.83)	2.5	ND(0.41)
SWMU 1-22 (toe) (2.5 ft)	01/16/20	4.3	ND(0.17)	ND(0.17)	ND(0.17)	24	ND(0.35)	ND(1.7)	ND(0.17)
SWMU 1-22 (toe) (3.5-4 ft)	01/16/20	ND(0.16)	ND(0.16)	ND(0.16)	ND(0.16)	0.35	ND(0.33)	ND(1.6)	ND(0.16)
[a] NMED Industrial SSL		NA	NA	NA	6,729	813	NA	411,000	25,960
[b] NMED Residential SSL		NA	NA	NA	1,290	172	NA	37,400	1,560
[c] CFR TCLP		NA	NA	NA	NA	NA	NA	NA	NA
[d] USEPA RSL Industrial Soil HQ 0.1		150	NA	2,300	11	73	NA	19,000	2,300

Notes:
NMED SSL's - New Mexico Environmental Department Industrial and Residential Soil Screening Levels, June 2019
TCLP SL - Toxicity Characteristic Levels from 40 CFR 261.24.
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
AL - Aeration Lagoon
TCLP - toxicity characteristic leaching procedure
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Benzene was analyzed for TCLP if the initial sample was detected above 0.5 ug/kg.
Samples taken in Aeration Lagoon 1.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.

ATTACHMENT B - TABLE 1A. SWMU 1 SAMPLING - VOLATILE ORGANIC COMPOUNDS (AL-1)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	2-Hexanone (mg/kg)	2-Methylnaphthalene (mg/kg)	4-Chlorotoluene (mg/kg)	4-Methyl-2-Pentanone (mg/kg)	Acetone (mg/kg)	Benzene (mg/kg)	Benzene, TCLP (mg/L)	Bromobenzene (mg/kg)
SWMU 1-8	01/16/20	ND(1.8)	7.2	ND(0.18)	ND(1.8)	ND(2.7)	0.18	--	ND(0.18)
SWMU 1-8 (2.5 ft)	01/16/20	1.1	19	ND(0.34)	ND(3.4)	ND(5.1)	0.65	0.06	ND(0.34)
SWMU 1-8 (5-5.5 ft)	01/16/20	0.041	0.46	ND(0.052)	0.094	0.32	0.056	--	ND(0.052)
SWMU 1-9	01/16/20	ND(7.4)	49	ND(0.74)	ND(7.4)	ND(11)	1.4	ND(0.5)	ND(0.74)
SWMU 1-9 (4.5 ft)	01/16/20	0.66	30	ND(0.19)	ND(1.9)	0.46	2.7	0.17	ND(0.19)
SWMU 1-9 (5.5-6 ft)	01/16/20	ND(1.2)	0.99	ND(0.12)	0.091	ND(1.8)	0.067	--	ND(0.12)
SWMU 1-10	01/16/20	ND(2.4)	42	ND(0.97)	ND(2.4)	0.39	0.94	0.018	ND(0.97)
SWMU 1-10 (4-4.5 ft)	01/16/20	ND(1.8)	43	ND(0.18)	ND(1.8)	0.7	4	0.27	ND(0.18)
SWMU 1-10 (4.5-5 ft)	01/16/20	0.099	1.3	ND(0.11)	0.25	0.3	0.18	--	ND(0.11)
SWMU 1-19 (berm) (1.5 ft)	01/13/20	ND(0.39)	ND(0.16)	ND(0.039)	0.025	ND(0.59)	ND(0.02)	--	ND(0.039)
SWMU 1-19 (berm) (2.5 ft)	01/13/20	0.068	0.9	ND(0.19)	0.042	ND(0.58)	ND(0.019)	--	ND(0.19)
SWMU 1-19 (toe) Dup	01/16/20	0.064	0.079	ND(0.088)	ND(0.88)	0.13	ND(0.044)	--	ND(0.088)
SWMU 1-19 (toe)	01/16/20	0.041	0.057	ND(0.039)	ND(0.39)	0.13	ND(0.019)	--	ND(0.039)
SWMU 1-19 (toe) (0.5-6 ft)	01/16/20	1	22	ND(0.75)	ND(7.5)	0.83	2.4	--	ND(0.75)
SWMU 1-19 (toe) (6-6.5 ft)	01/16/20	ND(0.48)	0.34	ND(0.048)	ND(0.48)	ND(0.72)	0.14	--	ND(0.048)
SWMU 1-20 (berm) (2.5 ft)	01/14/20	ND(0.36)	0.06	ND(0.036)	0.023	ND(0.54)	ND(0.018)	--	ND(0.036)
SWMU 1-20 (toe) (1.5 ft)	01/14/20	ND(1.6)	0.18	ND(0.16)	0.098	ND(2.4)	ND(0.08)	--	ND(0.16)
SWMU 1-20 (toe) (5 ft) Dup	01/15/20	ND(2.9)	8.3	ND(0.29)	ND(2.9)	ND(4.4)	0.22	--	ND(0.29)
SWMU 1-20 (toe)	01/15/20	0.066	0.16	ND(0.054)	0.038	0.18	ND(0.027)	--	ND(0.054)
SWMU 1-20 (toe) (0.5-3 ft)	01/15/20	0.83	13	ND(0.18)	ND(1.8)	0.51	2.3	0.15	ND(0.18)
SWMU 1-20 (toe) (5 ft)	01/15/20	0.38	12	ND(0.26)	2.3	1.6	0.58	ND(0.5)	ND(0.26)
SWMU 1-21 (berm) (1.5 ft)	01/14/20	ND(0.38)	0.045	ND(0.038)	0.023	ND(0.57)	ND(0.019)	--	ND(0.038)
SWMU 1-21 (toe)	01/14/20	ND(2)	13	ND(0.2)	0.14	0.22	ND(0.1)	--	ND(0.2)
SWMU 1-21 (toe) (2.5 ft)	01/14/20	0.18	3.5	ND(0.15)	0.48	ND(2.2)	0.023	--	ND(0.15)
SWMU 1-21 (toe) (5 ft)	01/14/20	ND(1.5)	0.34	ND(0.15)	0.11	ND(2.2)	ND(0.073)	--	ND(0.15)
SWMU 1-22 (berm) (1.5 ft)	01/14/20	ND(0.41)	ND(0.16)	ND(0.041)	ND(0.41)	ND(0.62)	ND(0.021)	--	ND(0.041)
SWMU 1-22 (berm) (2.5 ft)	01/14/20	0.043	0.33	ND(0.036)	0.036	0.11	ND(0.018)	--	ND(0.036)
SWMU 1-22 (berm) (5 ft)	01/14/20	ND(1.8)	18	ND(0.72)	0.2	0.72	ND(0.09)	--	ND(0.72)
SWMU 1-22 (toe)	01/16/20	ND(4.1)	15	ND(0.41)	ND(4.1)	0.44	0.4	--	ND(0.41)
SWMU 1-22 (toe) (2.5 ft)	01/16/20	1.4	41	ND(0.17)	ND(1.7)	0.5	2.4	0.15	ND(0.17)
SWMU 1-22 (toe) (3.5-4 ft)	01/16/20	ND(1.6)	0.31	ND(0.16)	0.11	ND(2.5)	ND(0.082)	--	ND(0.16)
[a] NMED Industrial SSL		NA	3,368	NA	81,650	960,100	87.24	NA	NA
[b] NMED Residential SSL		NA	232	NA	5,810	66,300	17.8	NA	NA
[c] CFR TCLP		NA	NA	NA	NA	NA	NA	0.5	NA
[d] USEPA RSL Industrial Soil HQ 0.1		130	300	2,300	14,000	67,000	5.1	NA	180

Notes:
NMED SSL's - New Mexico Environmental Department Industrial and Residential Soil Screening Levels, June 2019
TCLP SL - Toxicity Characteristic Levels from 40 CFR 261.24.
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
AL - Aeration Lagoon
TCLP - toxicity characteristic leaching procedure
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Benzene was analyzed for TCLP if the initial sample was detected above 0.5 ug/kg.
Samples taken in Aeration Lagoon 1.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.

ATTACHMENT B - TABLE 1A. SWMU 1 SAMPLING - VOLATILE ORGANIC COMPOUNDS (AL-1)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Bromodichloromethane (mg/kg)	Bromoform (mg/kg)	Bromomethane (mg/kg)	Carbon Disulfide (mg/kg)	Carbon tetrachloride (mg/kg)	Chlorobenzene (mg/kg)	Chloroethane (mg/kg)	Chloroform (mg/kg)
SWMU 1-8	01/16/20	ND(0.18)	ND(0.18)	ND(0.55)	0.54	ND(0.18)	ND(0.18)	ND(0.37)	ND(0.18)
SWMU 1-8 (2.5 ft)	01/16/20	ND(0.34)	ND(0.34)	ND(1)	2.4	ND(0.34)	ND(0.34)	ND(0.69)	0.058
SWMU 1-8 (5-5.5 ft)	01/16/20	ND(0.052)	ND(0.052)	ND(0.16)	0.25	ND(0.052)	ND(0.052)	ND(0.1)	ND(0.052)
SWMU 1-9	01/16/20	ND(0.74)	ND(0.74)	ND(2.2)	0.42	ND(0.74)	ND(0.74)	ND(1.5)	ND(0.74)
SWMU 1-9 (4.5 ft)	01/16/20	ND(0.19)	ND(0.19)	ND(0.57)	0.17	ND(0.19)	ND(0.19)	0.096	0.052
SWMU 1-9 (5.5-6 ft)	01/16/20	ND(0.12)	ND(0.12)	ND(0.36)	0.77	ND(0.12)	ND(0.12)	ND(0.24)	ND(0.12)
SWMU 1-10	01/16/20	0.12	ND(0.97)	0.12	0.26	ND(0.24)	ND(0.24)	ND(0.49)	0.19
SWMU 1-10 (4-4.5 ft)	01/16/20	ND(0.18)	ND(0.18)	ND(0.53)	0.34	ND(0.18)	ND(0.18)	ND(0.35)	ND(0.18)
SWMU 1-10 (4.5-5 ft)	01/16/20	ND(0.11)	ND(0.11)	ND(0.32)	0.43	ND(0.11)	ND(0.11)	ND(0.21)	ND(0.11)
SWMU 1-19 (berm) (1.5 ft)	01/13/20	ND(0.039)	ND(0.039)	ND(0.12)	ND(0.39)	ND(0.039)	ND(0.039)	ND(0.079)	ND(0.039)
SWMU 1-19 (berm) (2.5 ft)	01/13/20	ND(0.038)	ND(0.19)	ND(0.12)	ND(0.38)	ND(0.038)	ND(0.038)	ND(0.077)	ND(0.038)
SWMU 1-19 (toe) Dup	01/16/20	ND(0.088)	ND(0.088)	0.045	ND(0.88)	ND(0.088)	ND(0.088)	ND(0.18)	ND(0.088)
SWMU 1-19 (toe)	01/16/20	ND(0.039)	ND(0.039)	0.02	0.023	ND(0.039)	ND(0.039)	ND(0.077)	ND(0.039)
SWMU 1-19 (toe) (0.5-6 ft)	01/16/20	ND(0.75)	ND(0.75)	0.36	1.5	ND(0.75)	ND(0.75)	ND(1.5)	0.16
SWMU 1-19 (toe) (6-6.5 ft)	01/16/20	ND(0.048)	ND(0.048)	0.024	0.048	ND(0.048)	ND(0.048)	ND(0.097)	0.008
SWMU 1-20 (berm) (2.5 ft)	01/14/20	ND(0.036)	ND(0.036)	ND(0.11)	ND(0.36)	ND(0.036)	ND(0.036)	ND(0.072)	ND(0.036)
SWMU 1-20 (toe) (1.5 ft)	01/14/20	ND(0.16)	ND(0.16)	ND(0.48)	ND(1.6)	ND(0.16)	ND(0.16)	ND(0.32)	ND(0.16)
SWMU 1-20 (toe) (5 ft) Dup	01/15/20	ND(0.29)	ND(0.29)	ND(0.88)	0.13	ND(0.29)	ND(0.29)	ND(0.58)	ND(0.29)
SWMU 1-20 (toe)	01/15/20	ND(0.054)	ND(0.054)	ND(0.16)	ND(0.54)	ND(0.054)	ND(0.054)	ND(0.11)	ND(0.054)
SWMU 1-20 (toe) (0.5-3 ft)	01/15/20	ND(0.18)	ND(0.18)	ND(0.53)	0.28	ND(0.18)	ND(0.18)	0.075	0.091
SWMU 1-20 (toe) (5 ft)	01/15/20	ND(0.26)	ND(0.26)	ND(0.79)	ND(2.6)	ND(0.26)	ND(0.26)	ND(0.53)	ND(0.26)
SWMU 1-21 (berm) (1.5 ft)	01/14/20	ND(0.038)	ND(0.038)	ND(0.11)	ND(0.38)	ND(0.038)	ND(0.038)	ND(0.076)	ND(0.038)
SWMU 1-21 (toe)	01/14/20	0.12	ND(0.2)	ND(0.6)	ND(2)	ND(0.2)	ND(0.2)	ND(0.4)	ND(0.2)
SWMU 1-21 (toe) (2.5 ft)	01/14/20	ND(0.15)	ND(0.15)	ND(0.44)	ND(1.4)	ND(0.15)	ND(0.15)	ND(0.29)	ND(0.15)
SWMU 1-21 (toe) (5 ft)	01/14/20	ND(0.15)	ND(0.15)	ND(0.44)	0.064	ND(0.15)	ND(0.15)	ND(0.29)	ND(0.15)
SWMU 1-22 (berm) (1.5 ft)	01/14/20	ND(0.041)	ND(0.041)	ND(0.12)	ND(0.41)	ND(0.041)	ND(0.041)	ND(0.082)	ND(0.041)
SWMU 1-22 (berm) (2.5 ft)	01/14/20	ND(0.036)	ND(0.036)	ND(0.11)	ND(0.36)	ND(0.036)	ND(0.036)	ND(0.073)	ND(0.036)
SWMU 1-22 (berm) (5 ft)	01/14/20	ND(0.18)	ND(0.72)	ND(0.54)	ND(1.8)	ND(0.18)	ND(0.18)	ND(0.36)	ND(0.18)
SWMU 1-22 (toe)	01/16/20	ND(0.41)	ND(0.41)	0.2	0.14	ND(0.41)	ND(0.41)	ND(0.83)	0.048
SWMU 1-22 (toe) (2.5 ft)	01/16/20	0.033	ND(0.17)	ND(0.52)	0.11	ND(0.17)	ND(0.17)	ND(0.35)	0.1
SWMU 1-22 (toe) (3.5-4 ft)	01/16/20	ND(0.16)	ND(0.16)	ND(0.49)	ND(1.6)	ND(0.16)	ND(0.16)	ND(0.33)	ND(0.16)
[a] NMED Industrial SSL		30.18	1,760	94.52	8,541	52.5	2,157	89,540	28.66
[b] NMED Residential SSL		6.19	674	17.7	1,550	10.7	378	19,000	5.9
[c] CFR TCLP		NA	NA	NA	NA	NA	NA	NA	NA
[d] USEPA RSL Industrial Soil HQ 0.1		1.3	86	3	350	2.9	130	5,700	1.4

Notes:
NMED SSL's - New Mexico Environmental Department Industrial and Residential Soil Screening Levels, June 2019
TCLP SL - Toxicity Characteristic Levels from 40 CFR 261.24.
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
AL - Aeration Lagoon
TCLP - toxicity characteristic leaching procedure
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Benzene was analyzed for TCLP if the initial sample was detected above 0.5 ug/kg.
Samples taken in Aeration Lagoon 1.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.

ATTACHMENT B - TABLE 1A. SWMU 1 SAMPLING - VOLATILE ORGANIC COMPOUNDS (AL-1)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Chloromethane (mg/kg)	cis-1,2-Dichloroethene (mg/kg)	Cis-1,3-dichloropropene (mg/kg)	Dibromochloromethane (mg/kg)	Dibromomethane (mg/kg)	Dichlorodifluoromethane (mg/kg)	Ethylbenzene (mg/kg)	Hexachlorobutadiene (mg/kg)
SWMU 1-8	01/16/20	ND(0.55)	0.061	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.18)	0.49	ND(0.37)
SWMU 1-8 (2.5 ft)	01/16/20	ND(1)	0.061	ND(0.34)	ND(0.34)	ND(0.34)	ND(0.34)	1.4	ND(0.69)
SWMU 1-8 (5-5.5 ft)	01/16/20	ND(0.16)	ND(0.052)	ND(0.052)	ND(0.052)	ND(0.052)	ND(0.052)	0.095	ND(0.1)
SWMU 1-9	01/16/20	ND(2.2)	ND(0.74)	ND(0.74)	ND(0.74)	ND(0.74)	ND(0.74)	4	ND(1.5)
SWMU 1-9 (4.5 ft)	01/16/20	0.077	ND(0.19)	0.022	ND(0.19)	ND(0.19)	ND(0.19)	3.4	ND(0.38)
SWMU 1-9 (5.5-6 ft)	01/16/20	ND(0.36)	ND(0.12)	ND(0.12)	ND(0.12)	ND(0.12)	ND(0.12)	0.12	ND(0.24)
SWMU 1-10	01/16/20	ND(0.73)	0.12	ND(0.24)	ND(0.24)	ND(0.24)	ND(0.24)	4.1	ND(1.9)
SWMU 1-10 (4-4.5 ft)	01/16/20	0.09	0.14	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.18)	8.7	ND(0.35)
SWMU 1-10 (4.5-5 ft)	01/16/20	ND(0.32)	ND(0.11)	ND(0.11)	ND(0.11)	ND(0.11)	ND(0.11)	0.31	ND(0.21)
SWMU 1-19 (berm) (1.5 ft)	01/13/20	ND(0.12)	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.079)
SWMU 1-19 (berm) (2.5 ft)	01/13/20	ND(0.12)	ND(0.038)	ND(0.038)	ND(0.038)	ND(0.038)	ND(0.038)	ND(0.038)	ND(0.38)
SWMU 1-19 (toe) Dup	01/16/20	ND(0.26)	ND(0.088)	ND(0.088)	ND(0.088)	ND(0.088)	ND(0.088)	ND(0.088)	ND(0.18)
SWMU 1-19 (toe)	01/16/20	ND(0.12)	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.077)
SWMU 1-19 (toe) (0.5-6 ft)	01/16/20	ND(2.2)	0.3	ND(0.75)	ND(0.75)	ND(0.75)	ND(0.75)	2.9	ND(1.5)
SWMU 1-19 (toe) (6-6.5 ft)	01/16/20	ND(0.14)	0.012	ND(0.048)	ND(0.048)	ND(0.048)	ND(0.048)	0.28	ND(0.097)
SWMU 1-20 (berm) (2.5 ft)	01/14/20	ND(0.11)	ND(0.036)	ND(0.036)	ND(0.036)	ND(0.036)	ND(0.036)	ND(0.036)	ND(0.072)
SWMU 1-20 (toe) (1.5 ft)	01/14/20	ND(0.48)	ND(0.16)	ND(0.16)	ND(0.16)	ND(0.16)	ND(0.16)	ND(0.16)	ND(0.32)
SWMU 1-20 (toe) (5 ft) Dup	01/15/20	ND(0.88)	ND(0.29)	ND(0.29)	ND(0.29)	ND(0.29)	ND(0.29)	0.95	ND(0.58)
SWMU 1-20 (toe)	01/15/20	ND(0.16)	ND(0.054)	ND(0.054)	ND(0.054)	ND(0.054)	ND(0.054)	ND(0.054)	ND(0.11)
SWMU 1-20 (toe) (0.5-3 ft)	01/15/20	0.079	0.03	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.18)	2.1	ND(0.35)
SWMU 1-20 (toe) (5 ft)	01/15/20	ND(0.79)	ND(0.26)	ND(0.26)	ND(0.26)	ND(0.26)	ND(0.26)	2	ND(0.53)
SWMU 1-21 (berm) (1.5 ft)	01/14/20	ND(0.11)	ND(0.038)	ND(0.038)	ND(0.038)	ND(0.038)	ND(0.038)	ND(0.038)	ND(0.076)
SWMU 1-21 (toe)	01/14/20	ND(0.6)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	0.095	ND(0.4)
SWMU 1-21 (toe) (2.5 ft)	01/14/20	ND(0.44)	ND(0.15)	ND(0.15)	ND(0.15)	ND(0.15)	ND(0.15)	0.23	ND(0.29)
SWMU 1-21 (toe) (5 ft)	01/14/20	ND(0.44)	ND(0.15)	ND(0.15)	ND(0.15)	ND(0.15)	ND(0.15)	ND(0.15)	ND(0.29)
SWMU 1-22 (berm) (1.5 ft)	01/14/20	ND(0.12)	ND(0.041)	ND(0.041)	ND(0.041)	ND(0.041)	ND(0.041)	ND(0.041)	ND(0.082)
SWMU 1-22 (berm) (2.5 ft)	01/14/20	ND(0.11)	ND(0.036)	ND(0.036)	ND(0.036)	ND(0.036)	ND(0.036)	ND(0.036)	ND(0.073)
SWMU 1-22 (berm) (5 ft)	01/14/20	ND(0.54)	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.18)	0.3	ND(1.4)
SWMU 1-22 (toe)	01/16/20	ND(1.2)	ND(0.41)	ND(0.41)	ND(0.41)	ND(0.41)	ND(0.41)	1.3	ND(0.83)
SWMU 1-22 (toe) (2.5 ft)	01/16/20	0.07	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)	6.3	ND(0.35)
SWMU 1-22 (toe) (3.5-4 ft)	01/16/20	ND(0.49)	ND(0.16)	ND(0.16)	ND(0.16)	ND(0.16)	ND(0.16)	ND(0.16)	ND(0.33)
[a] NMED Industrial SSL		200.8	2,596	NA	67.37	288.2	864.8	367.6	52.08
[b] NMED Residential SSL		41.1	156	NA	13.9	57.9	182	75.1	68.3
[c] CFR TCLP		NA	NA	NA	NA	NA	NA	NA	NA
[d] USEPA RSL Industrial Soil HQ 0.1		46	230	NA	39	9.9	37	25	5.3

Notes:
NMED SSL's - New Mexico Environmental Department Industrial and Residential Soil Screening Levels, June 2019
TCLP SL - Toxicity Characteristic Levels from 40 CFR 261.24.
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
AL - Aeration Lagoon
TCLP - toxicity characteristic leaching procedure
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Benzene was analyzed for TCLP if the initial sample was detected above 0.5 ug/kg.
Samples taken in Aeration Lagoon 1.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.

ATTACHMENT B - TABLE 1A. SWMU 1 SAMPLING - VOLATILE ORGANIC COMPOUNDS (AL-1)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Isopropylbenzene (mg/kg)	Methylene Chloride (mg/kg)	MTBE (mg/kg)	Naphthalene (mg/kg)	n-Butylbenzene (mg/kg)	n-Propylbenzene (mg/kg)	p-Isopropyltoluene (mg/kg)	sec-Butylbenzene (mg/kg)
SWMU 1-8	01/16/20	0.099	0.048	ND(0.18)	1.9	0.18	0.26	0.081	0.11
SWMU 1-8 (2.5 ft)	01/16/20	0.29	ND(1)	ND(0.34)	5.5	0.5	0.77	0.22	0.28
SWMU 1-8 (5-5.5 ft)	01/16/20	0.02	0.025	0.065	0.17	0.029	0.035	0.012	0.034
SWMU 1-9	01/16/20	0.86	ND(2.2)	ND(0.74)	13	1.1	1.7	0.63	0.71
SWMU 1-9 (4.5 ft)	01/16/20	0.63	ND(0.57)	0.49	10	0.75	1.3	0.44	0.5
SWMU 1-9 (5.5-6 ft)	01/16/20	0.038	0.064	0.095	0.37	0.054	0.078	0.027	0.072
SWMU 1-10	01/16/20	1.4	ND(0.73)	0.063	8.9	1.9	2.3	1.2	1.4
SWMU 1-10 (4-4.5 ft)	01/16/20	1.8	ND(0.53)	0.54	14	1.5	3.2	0.88	1.1
SWMU 1-10 (4.5-5 ft)	01/16/20	0.064	ND(0.32)	0.092	0.5	0.12	0.15	0.031	0.088
SWMU 1-19 (berm) (1.5 ft)	01/13/20	ND(0.039)	0.054	ND(0.039)	ND(0.079)	ND(0.12)	ND(0.039)	ND(0.039)	ND(0.039)
SWMU 1-19 (berm) (2.5 ft)	01/13/20	ND(0.038)	0.029	ND(0.038)	0.18	ND(0.58)	ND(0.19)	0.046	ND(0.19)
SWMU 1-19 (toe) Dup	01/16/20	ND(0.088)	ND(0.26)	ND(0.088)	ND(0.18)	ND(0.26)	ND(0.088)	ND(0.088)	ND(0.088)
SWMU 1-19 (toe)	01/16/20	ND(0.039)	0.014	ND(0.039)	ND(0.077)	ND(0.12)	ND(0.039)	ND(0.039)	ND(0.039)
SWMU 1-19 (toe) (0.5-6 ft)	01/16/20	0.41	ND(2.2)	0.23	7.5	0.56	1.1	0.18	0.23
SWMU 1-19 (toe) (6-6.5 ft)	01/16/20	0.041	0.01	0.041	0.23	ND(0.14)	0.067	ND(0.048)	0.016
SWMU 1-20 (berm) (2.5 ft)	01/14/20	ND(0.036)	0.03	ND(0.036)	ND(0.072)	ND(0.11)	ND(0.036)	ND(0.036)	ND(0.036)
SWMU 1-20 (toe) (1.5 ft)	01/14/20	ND(0.16)	0.088	ND(0.16)	ND(0.32)	ND(0.48)	ND(0.16)	ND(0.16)	ND(0.16)
SWMU 1-20 (toe) (5 ft) Dup	01/15/20	0.24	ND(0.88)	ND(0.29)	2.3	0.53	0.66	0.21	0.23
SWMU 1-20 (toe)	01/15/20	ND(0.054)	0.062	ND(0.054)	0.037	0.015	ND(0.054)	0.011	0.028
SWMU 1-20 (toe) (0.5-3 ft)	01/15/20	0.38	ND(0.53)	0.14	5.4	0.46	0.87	0.23	0.29
SWMU 1-20 (toe) (5 ft)	01/15/20	0.52	ND(0.79)	ND(0.26)	4.7	0.73	1.1	0.36	0.5
SWMU 1-21 (berm) (1.5 ft)	01/14/20	ND(0.038)	0.051	ND(0.038)	ND(0.076)	ND(0.11)	ND(0.038)	ND(0.038)	ND(0.038)
SWMU 1-21 (toe)	01/14/20	0.054	ND(0.6)	ND(0.2)	1.7	0.054	0.074	0.1	0.17
SWMU 1-21 (toe) (2.5 ft)	01/14/20	0.093	0.061	ND(0.15)	0.53	0.21	0.18	0.1	0.17
SWMU 1-21 (toe) (5 ft)	01/14/20	ND(0.15)	0.08	ND(0.15)	0.069	ND(0.44)	ND(0.15)	ND(0.15)	ND(0.15)
SWMU 1-22 (berm) (1.5 ft)	01/14/20	ND(0.041)	0.027	ND(0.041)	ND(0.082)	ND(0.12)	ND(0.041)	ND(0.041)	ND(0.041)
SWMU 1-22 (berm) (2.5 ft)	01/14/20	ND(0.036)	0.023	ND(0.036)	0.042	0.0097	ND(0.036)	0.0053	0.02
SWMU 1-22 (berm) (5 ft)	01/14/20	0.19	0.086	ND(0.18)	2	0.3	0.24	0.55	0.6
SWMU 1-22 (toe)	01/16/20	0.26	ND(1.2)	ND(0.41)	3.5	ND(1.2)	0.67	0.36	0.32
SWMU 1-22 (toe) (2.5 ft)	01/16/20	0.89	ND(0.52)	0.52	**18** [d]	1.1	2.4	0.43	0.5
SWMU 1-22 (toe) (3.5-4 ft)	01/16/20	ND(0.16)	0.085	0.052	0.04	ND(0.49)	ND(0.16)	ND(0.16)	ND(0.16)
[a] NMED Industrial SSL		14,220	5,131	NA	241	NA	NA	NA	NA
[b] NMED Residential SSL		2,360	766	NA	49.7	NA	NA	NA	NA
[c] CFR TCLP		NA	NA	NA	NA	NA	NA	NA	NA
[d] USEPA RSL Industrial Soil HQ 0.1		990	320	210	17	5,800	2,400	NA	12,000

Notes:
NMED SSL's - New Mexico Environmental Department Industrial and Residential Soil Screening Levels, June 2019
TCLP SL - Toxicity Characteristic Levels from 40 CFR 261.24.
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
AL - Aeration Lagoon
TCLP - toxicity characteristic leaching procedure
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Benzene was analyzed for TCLP if the initial sample was detected above 0.5 ug/kg.
Samples taken in Aeration Lagoon 1.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.

ATTACHMENT B - TABLE 1A. SWMU 1 SAMPLING - VOLATILE ORGANIC COMPOUNDS (AL-1)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Styrene (mg/kg)	tert-Butylbenzene (mg/kg)	Tetrachloroethene (mg/kg)	Toluene (mg/kg)	trans-1,2-Dichloroethene (mg/kg)	trans-1,3-Dichloropropene (mg/kg)	Trichloroethene (mg/kg)	Trichlorofluoromethane (mg/kg)
SWMU 1-8	01/16/20	ND(0.18)	ND(0.18)	ND(0.18)	1.3	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.18)
SWMU 1-8 (2.5 ft)	01/16/20	ND(0.34)	ND(0.34)	ND(0.34)	3.8	ND(0.34)	ND(0.34)	ND(0.34)	ND(0.34)
SWMU 1-8 (5-5.5 ft)	01/16/20	ND(0.052)	ND(0.052)	ND(0.052)	0.23	ND(0.052)	ND(0.052)	ND(0.052)	ND(0.052)
SWMU 1-9	01/16/20	ND(0.74)	ND(0.74)	ND(0.74)	14	ND(0.74)	ND(0.74)	ND(0.74)	ND(0.74)
SWMU 1-9 (4.5 ft)	01/16/20	ND(0.19)	ND(0.19)	ND(0.19)	15	ND(0.19)	0.093	ND(0.19)	ND(0.19)
SWMU 1-9 (5.5-6 ft)	01/16/20	ND(0.12)	ND(0.12)	ND(0.12)	0.17	ND(0.12)	ND(0.12)	ND(0.12)	ND(0.12)
SWMU 1-10	01/16/20	ND(0.24)	ND(0.97)	ND(0.24)	9.3	ND(0.24)	ND(0.24)	ND(0.24)	ND(0.24)
SWMU 1-10 (4-4.5 ft)	01/16/20	ND(0.18)	ND(0.18)	ND(0.18)	25	0.069	ND(0.18)	ND(0.18)	ND(0.18)
SWMU 1-10 (4.5-5 ft)	01/16/20	ND(0.11)	ND(0.11)	ND(0.11)	0.65	ND(0.11)	ND(0.11)	ND(0.11)	ND(0.11)
SWMU 1-19 (berm) (1.5 ft)	01/13/20	ND(0.039)	ND(0.039)	ND(0.039)	0.0045	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.039)
SWMU 1-19 (berm) (2.5 ft)	01/13/20	ND(0.038)	ND(0.19)	ND(0.038)	0.0085	ND(0.038)	ND(0.038)	ND(0.038)	ND(0.038)
SWMU 1-19 (toe) Dup	01/16/20	ND(0.088)	ND(0.088)	ND(0.088)	0.011	ND(0.088)	ND(0.088)	ND(0.088)	ND(0.088)
SWMU 1-19 (toe)	01/16/20	ND(0.039)	ND(0.039)	ND(0.039)	0.014	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.039)
SWMU 1-19 (toe) (0.5-6 ft)	01/16/20	ND(0.75)	ND(0.75)	ND(0.75)	11	ND(0.75)	ND(0.75)	ND(0.75)	ND(0.75)
SWMU 1-19 (toe) (6-6.5 ft)	01/16/20	ND(0.048)	ND(0.048)	ND(0.048)	0.25	ND(0.048)	ND(0.048)	ND(0.048)	ND(0.048)
SWMU 1-20 (berm) (2.5 ft)	01/14/20	ND(0.036)	ND(0.036)	ND(0.036)	0.0064	ND(0.036)	ND(0.036)	ND(0.036)	ND(0.036)
SWMU 1-20 (toe) (1.5 ft)	01/14/20	ND(0.16)	ND(0.16)	ND(0.16)	0.024	ND(0.16)	ND(0.16)	ND(0.16)	ND(0.16)
SWMU 1-20 (toe) (5 ft) Dup	01/15/20	ND(0.29)	ND(0.29)	ND(0.29)	1.8	ND(0.29)	ND(0.29)	ND(0.29)	ND(0.29)
SWMU 1-20 (toe)	01/15/20	ND(0.054)	ND(0.054)	ND(0.054)	0.011	ND(0.054)	ND(0.054)	ND(0.054)	ND(0.054)
SWMU 1-20 (toe) (0.5-3 ft)	01/15/20	ND(0.18)	ND(0.18)	ND(0.18)	8	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.18)
SWMU 1-20 (toe) (5 ft)	01/15/20	ND(0.26)	ND(0.26)	ND(0.26)	4.5	ND(0.26)	ND(0.26)	ND(0.26)	ND(0.26)
SWMU 1-21 (berm) (1.5 ft)	01/14/20	ND(0.038)	ND(0.038)	ND(0.038)	0.007	ND(0.038)	ND(0.038)	ND(0.038)	ND(0.038)
SWMU 1-21 (toe)	01/14/20	ND(0.2)	ND(0.2)	ND(0.2)	0.038	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
SWMU 1-21 (toe) (2.5 ft)	01/14/20	ND(0.15)	ND(0.15)	ND(0.15)	0.13	ND(0.15)	ND(0.15)	ND(0.15)	ND(0.15)
SWMU 1-21 (toe) (5 ft)	01/14/20	ND(0.15)	ND(0.15)	ND(0.15)	0.029	ND(0.15)	ND(0.15)	ND(0.15)	ND(0.15)
SWMU 1-22 (berm) (1.5 ft)	01/14/20	ND(0.041)	ND(0.041)	ND(0.041)	ND(0.041)	ND(0.041)	ND(0.041)	ND(0.041)	ND(0.041)
SWMU 1-22 (berm) (2.5 ft)	01/14/20	ND(0.036)	ND(0.036)	ND(0.036)	0.0046	ND(0.036)	ND(0.036)	ND(0.036)	ND(0.036)
SWMU 1-22 (berm) (5 ft)	01/14/20	ND(0.18)	ND(0.72)	ND(0.18)	0.12	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.18)
SWMU 1-22 (toe)	01/16/20	ND(0.41)	ND(0.41)	ND(0.41)	3.4	ND(0.41)	ND(0.41)	ND(0.41)	ND(0.41)
SWMU 1-22 (toe) (2.5 ft)	01/16/20	ND(0.17)	ND(0.17)	ND(0.17)	17	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)
SWMU 1-22 (toe) (3.5-4 ft)	01/16/20	ND(0.16)	ND(0.16)	ND(0.16)	0.019	ND(0.16)	ND(0.16)	ND(0.16)	ND(0.16)
[a] NMED Industrial SSL		51,300	NA	628.8	61,340	1,610	NA	36.46	6,031
[b] NMED Residential SSL		7,260	NA	337	5,230	295	NA	15.5	1,230
[c] CFR TCLP		NA	NA	NA	NA	NA	NA	NA	NA
[d] USEPA RSL Industrial Soil HQ 0.1		3,500	12,000	39	4,700	2,300	NA	1.9	35,000

Notes:
NMED SSL's - New Mexico Environmental Department Industrial and Residential Soil Screening Levels, June 2019
TCLP SL - Toxicity Characteristic Levels from 40 CFR 261.24.
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
AL - Aeration Lagoon
TCLP - toxicity characteristic leaching procedure
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Benzene was analyzed for TCLP if the initial sample was detected above 0.5 ug/kg.
Samples taken in Aeration Lagoon 1.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.

ATTACHMENT B - TABLE 1A. SWMU 1 SAMPLING - VOLATILE ORGANIC COMPOUNDS (AL-1)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Vinyl Chloride (mg/kg)	Xylenes, Total (mg/kg)	Diesel Range Organics (mg/kg)	Gasoline Range Organics (mg/kg)	Oil Range Organics (mg/kg)
SWMU 1-8	01/16/20	ND(0.18)	3.1	**49000** a,b	52	**11000** a,b
SWMU 1-8 (2.5 ft)	01/16/20	ND(0.34)	8.6	**7800** a,b	**150** b	**1100** b
SWMU 1-8 (5-5.5 ft)	01/16/20	ND(0.052)	0.53	56	10	ND(47)
SWMU 1-9	01/16/20	ND(0.74)	26	**150000** a,b	**370** b	**51000** a,b
SWMU 1-9 (4.5 ft)	01/16/20	ND(0.19)	19	**65000** a,b	**240** b	**8600** a,b
SWMU 1-9 (5.5-6 ft)	01/16/20	ND(0.12)	0.65	110	12	ND(48)
SWMU 1-10	01/16/20	ND(0.24)	25	**110000** a,b	**450** b	**29000** a,b
SWMU 1-10 (4-4.5 ft)	01/16/20	ND(0.18)	44	**33000** a,b	**600** a,b	**4800** a,b
SWMU 1-10 (4.5-5 ft)	01/16/20	ND(0.11)	2	350	35	67
SWMU 1-19 (berm) (1.5 ft)	01/13/20	ND(0.039)	ND(0.079)	40	ND(3.9)	ND(44)
SWMU 1-19 (berm) (2.5 ft)	01/13/20	ND(0.038)	0.24	**6300** a,b	5	**3100** a,b
SWMU 1-19 (toe) Dup	01/16/20	ND(0.088)	0.024	**73000** a,b	4.7	**38000** a,b
SWMU 1-19 (toe)	01/16/20	ND(0.039)	0.039	**81000** a,b	3.4	**43000** a,b
SWMU 1-19 (toe) (0.5-6 ft)	01/16/20	ND(0.75)	19	**22000** a,b	**250** b	**4500** a,b
SWMU 1-19 (toe) (6-6.5 ft)	01/16/20	ND(0.048)	0.89	**2800** b	20	730
SWMU 1-20 (berm) (2.5 ft)	01/14/20	ND(0.036)	ND(0.072)	560	0.8	640
SWMU 1-20 (toe) (1.5 ft)	01/14/20	ND(0.16)	ND(0.32)	300	ND(16)	450
SWMU 1-20 (toe) (5 ft) Dup	01/15/20	ND(0.29)	6.1	**9300** a,b	**180** b	**2800** b
SWMU 1-20 (toe)	01/15/20	ND(0.054)	0.048	**33000** a,b	18	**32000** a,b
SWMU 1-20 (toe) (0.5-3 ft)	01/15/20	ND(0.18)	12	**17000** a,b	**200** b	**2900** b
SWMU 1-20 (toe) (5 ft)	01/15/20	ND(0.26)	13	**6400** a,b	**220** b	**1500** b
SWMU 1-21 (berm) (1.5 ft)	01/14/20	ND(0.038)	0.015	340	0.89	600
SWMU 1-21 (toe)	01/14/20	ND(0.2)	0.75	**48000** a,b	42	**18000** a,b
SWMU 1-21 (toe) (2.5 ft)	01/14/20	ND(0.15)	1.1	**2800** b	47	860
SWMU 1-21 (toe) (5 ft)	01/14/20	ND(0.15)	0.099	950	3.3	620
SWMU 1-22 (berm) (1.5 ft)	01/14/20	ND(0.041)	ND(0.082)	82	ND(4.1)	140
SWMU 1-22 (berm) (2.5 ft)	01/14/20	ND(0.036)	0.011	**2100** b	12	710
SWMU 1-22 (berm) (5 ft)	01/14/20	ND(0.18)	2.9	**140000** a,b	**120** b	**27000** a,b
SWMU 1-22 (toe)	01/16/20	ND(0.41)	8.3	**89000** a,b	**140** b	**36000** a,b
SWMU 1-22 (toe) (2.5 ft)	01/16/20	ND(0.17)	36	**21000** a,b	**410** b	**4400** a,b
SWMU 1-22 (toe) (3.5-4 ft)	01/16/20	ND(0.16)	0.049	530	ND(16)	110

[a]	NMED Industrial SSL	28.41	4,275	3,000	500	3,000
[b]	NMED Residential SSL	0.742	871	1,000	100	1,000
[c]	CFR TCLP	NA	NA	NA	NA	NA
[d]	USEPA RSL Industrial Soil HQ 0.1	1.7	250	NA	NA	NA

Notes:
NMED SSL's - New Mexico Environmental Department Industrial and Residential Soil Screening Levels, June 2019
TCLP SL - Toxicity Characteristic Levels from 40 CFR 261.24.
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
AL - Aeration Lagoon
TCLP - toxicity characteristic leaching procedure
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Benzene was analyzed for TCLP if the initial sample was detected above 0.5 ug/kg.
Samples taken in Aeration Lagoon 1.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.

ATTACHMENT B - TABLE 1B. SWMU 1 SAMPLING - VOLATILE ORGANIC COMPOUNDS (AL-2)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	1,1,1,2-Tetrachloroethane (mg/kg)	1,1,1-Trichloroethane (mg/kg)	1,1,2,2-Tetrachloroethane (mg/kg)	1,1,2-Trichloroethane (mg/kg)	1,1-Dichloroethane (mg/kg)	1,1-Dichloroethene (mg/kg)	1,1-Dichloropropene (mg/kg)	1,2,3-Trichlorobenzene (mg/kg)
SWMU 1-5	01/17/20	ND(0.91)	ND(0.91)	ND(0.91)	ND(0.91)	ND(0.91)	ND(0.91)	ND(1.8)	ND(1.8)
SWMU 1-5 (2.5-5 ft)	01/17/20	ND(0.19)	ND(0.19)	ND(0.19)	ND(0.19)	0.067	ND(0.19)	ND(0.39)	ND(0.39)
SWMU 1-5 (5.5-6 ft)	01/17/20	ND(0.14)	ND(0.14)	ND(0.14)	ND(0.14)	ND(0.14)	ND(0.14)	ND(0.28)	ND(0.28)
SWMU 1-6 (0-5.5 ft)	01/17/20	ND(0.16)	ND(0.16)	ND(0.16)	ND(0.16)	0.053	ND(0.16)	ND(0.33)	ND(0.33)
SWMU 1-6 (5.5-6 ft)	01/17/20	ND(0.029)	ND(0.029)	ND(0.029)	ND(0.029)	ND(0.029)	ND(0.029)	ND(0.058)	ND(0.058)
SWMU 1-7 Dup	01/17/20	ND(0.16)	ND(0.16)	ND(0.16)	ND(0.16)	0.047	ND(0.16)	ND(0.32)	ND(0.32)
SWMU 1-7	01/17/20	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)	0.049	ND(0.17)	ND(0.33)	ND(0.33)
SWMU 1-7 (2.5 ft)	01/17/20	ND(0.19)	ND(0.19)	ND(0.19)	ND(0.19)	0.07	ND(0.19)	ND(0.39)	ND(0.39)
SWMU 1-7 (4-5 ft)	01/17/20	ND(0.027)	ND(0.027)	ND(0.027)	ND(0.027)	0.0081	ND(0.027)	ND(0.054)	ND(0.054)
SWMU 1-15 (berm) (1.5 ft)	01/13/20	ND(0.044)	ND(0.044)	ND(0.044)	ND(0.044)	ND(0.044)	ND(0.044)	ND(0.087)	ND(0.087)
SWMU 1-15 (berm) (2.5 ft)	01/13/20	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.35)	ND(0.35)
SWMU 1-15 (toe) Dup	01/16/20	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.4)	ND(0.4)
SWMU 1-15 (toe)	01/16/20	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.39)	ND(0.39)
SWMU 1-15 (toe) (3 ft)	01/16/20	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.34)	ND(0.34)
SWMU 1-15 (toe) (4-5 ft)	01/16/20	ND(0.21)	ND(0.21)	ND(0.21)	ND(0.21)	0.066	ND(0.21)	ND(0.42)	ND(0.42)
SWMU 1-16 (berm) (1.5 ft) Dup	01/13/20	ND(0.047)	ND(0.047)	ND(0.047)	ND(0.047)	ND(0.047)	ND(0.047)	ND(0.093)	ND(0.093)
SWMU 1-16 (berm) (1.5 ft)	01/13/20	ND(0.048)	ND(0.048)	ND(0.048)	ND(0.048)	ND(0.048)	ND(0.048)	ND(0.095)	ND(0.095)
SWMU 1-16 (berm) (2.5 ft)	01/13/20	ND(0.14)	ND(0.14)	ND(0.14)	ND(0.14)	ND(0.14)	ND(0.14)	ND(0.28)	ND(0.28)
SWMU 1-16 (toe) Dup	01/16/20	ND(0.47)	ND(0.47)	ND(0.47)	ND(0.47)	ND(0.47)	ND(0.47)	ND(0.95)	ND(0.95)
SWMU 1-16 (toe)	01/16/20	ND(0.51)	ND(0.51)	0.43	ND(0.51)	ND(0.51)	ND(0.51)	ND(1)	ND(1)
SWMU 1-16 (toe) (2.5 ft)	01/16/20	ND(0.52)	ND(0.52)	ND(0.52)	ND(0.52)	ND(0.52)	ND(0.52)	ND(1)	ND(1)
SWMU 1-16 (toe) (4-4.5 ft)	01/16/20	ND(0.067)	ND(0.067)	ND(0.067)	ND(0.067)	ND(0.067)	ND(0.067)	ND(0.13)	ND(0.13)
SWMU 1-17 (berm) (1.5 ft)	01/13/20	ND(0.045)	ND(0.045)	ND(0.045)	ND(0.045)	ND(0.045)	ND(0.045)	ND(0.091)	ND(0.091)
SWMU 1-17 (berm) (2.5 ft)	01/13/20	ND(0.027)	ND(0.027)	ND(0.027)	ND(0.027)	ND(0.027)	ND(0.027)	ND(0.054)	ND(0.054)
SWMU 1-17 (toe)	01/16/20	ND(0.23)	ND(0.23)	ND(0.23)	ND(0.23)	ND(0.23)	ND(0.23)	ND(0.45)	ND(0.45)
SWMU 1-17 (toe) (2.5 ft)	01/16/20	ND(0.14)	ND(0.14)	ND(0.14)	ND(0.14)	ND(0.14)	ND(0.14)	ND(0.29)	ND(0.29)
SWMU 1-17 (toe) (4.5-5 ft)	01/16/20	ND(0.029)	ND(0.029)	ND(0.029)	ND(0.029)	ND(0.029)	ND(0.029)	ND(0.058)	ND(0.058)
SWMU 1-18 (berm) (1.5 ft)	01/13/20	ND(0.041)	ND(0.041)	ND(0.041)	ND(0.041)	ND(0.041)	ND(0.041)	ND(0.082)	ND(0.082)
SWMU 1-18 (berm) (2.5 ft)	01/13/20	ND(0.048)	ND(0.048)	ND(0.048)	ND(0.048)	ND(0.048)	ND(0.048)	ND(0.097)	ND(0.097)
SWMU 1-18 (toe)	01/16/20	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.35)	ND(0.35)
SWMU 1-18 (toe) (2.5 ft)	01/16/20	ND(0.21)	ND(0.21)	ND(0.21)	ND(0.21)	0.069	ND(0.21)	ND(0.42)	ND(0.42)
SWMU 1-18 (toe) (5 ft)	01/16/20	ND(0.026)	ND(0.026)	ND(0.026)	ND(0.026)	0.0077	ND(0.026)	ND(0.052)	ND(0.052)
[a] NMED Industrial SSL		137.2	72,530	39.4	12.39	383.3	2,255	NA	NA
[b] NMED Residential SSL		28.1	14,400	7.98	18.8	78.6	440	NA	NA
[c] USEPA RSL Industrial Soil HQ 0.1		8.8	3,600	2.7	0.63	16	100	NA	93

Notes:
NMED SSL's - New Mexico Environmental Department Industrial and Residential Soil Screening Levels, June 2019
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
AL - Aeration Lagoon
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Samples taken in Aeration Lagoon 2.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.
See sediment sampling logs for lithology of samples.

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ATTACHMENT B - TABLE 1B. SWMU 1 SAMPLING - VOLATILE ORGANIC COMPOUNDS (AL-2)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	1,2,3-Trichloropropane (mg/kg)	1,2,4-Trichlorobenzene (mg/kg)	1,2,4-Trimethylbenzene (mg/kg)	1,2-Dibromo 3-chloropropane (mg/kg)	1,2-Dibromoethane (mg/kg)	1,2-Dichlorobenzene (mg/kg)	1,2-Dichloroethane (mg/kg)	1,2-Dichloropropane (mg/kg)
SWMU 1-5	01/17/20	ND(1.8)	ND(0.91)	3.8	ND(1.8)	ND(0.91)	ND(0.91)	ND(0.91)	ND(0.91)
SWMU 1-5 (2.5-5 ft)	01/17/20	ND(0.39)	ND(0.19)	1.8	ND(0.39)	ND(0.19)	ND(0.19)	ND(0.19)	ND(0.19)
SWMU 1-5 (5.5-6 ft)	01/17/20	ND(0.28)	ND(0.14)	0.3	ND(0.28)	ND(0.14)	ND(0.14)	ND(0.14)	ND(0.14)
SWMU 1-6 (0-5.5 ft)	01/17/20	ND(0.33)	ND(0.16)	1.4	ND(0.33)	ND(0.16)	ND(0.16)	ND(0.16)	ND(0.16)
SWMU 1-6 (5.5-6 ft)	01/17/20	ND(0.058)	ND(0.029)	0.068	ND(0.058)	ND(0.029)	ND(0.029)	ND(0.029)	ND(0.029)
SWMU 1-7 Dup	01/17/20	ND(0.32)	ND(0.16)	0.75	ND(0.32)	ND(0.16)	ND(0.16)	ND(0.16)	ND(0.16)
SWMU 1-7	01/17/20	ND(0.33)	ND(0.17)	0.88	ND(0.33)	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)
SWMU 1-7 (2.5 ft)	01/17/20	ND(0.39)	ND(0.19)	2.6	ND(0.39)	ND(0.19)	ND(0.19)	0.05	ND(0.19)
SWMU 1-7 (4-5 ft)	01/17/20	ND(0.054)	ND(0.027)	0.28	ND(0.054)	ND(0.027)	ND(0.027)	ND(0.027)	ND(0.027)
SWMU 1-15 (berm) (1.5 ft)	01/13/20	ND(0.087)	ND(0.044)	ND(0.044)	ND(0.087)	ND(0.044)	ND(0.044)	ND(0.044)	ND(0.044)
SWMU 1-15 (berm) (2.5 ft)	01/13/20	ND(0.35)	ND(0.18)	0.56	ND(0.35)	0.048	ND(0.18)	ND(0.18)	ND(0.18)
SWMU 1-15 (toe) Dup	01/16/20	ND(0.4)	ND(0.2)	2.2	ND(0.4)	ND(0.2)	ND(0.2)	0.15	ND(0.2)
SWMU 1-15 (toe)	01/16/20	ND(0.39)	ND(0.2)	1.8	ND(0.39)	ND(0.2)	ND(0.2)	0.14	ND(0.2)
SWMU 1-15 (toe) (3 ft)	01/16/20	ND(0.34)	ND(0.17)	0.88	ND(0.34)	0.046	ND(0.17)	ND(0.17)	ND(0.17)
SWMU 1-15 (toe) (4-5 ft)	01/16/20	ND(0.42)	ND(0.21)	2.1	ND(0.42)	ND(0.21)	ND(0.21)	ND(0.21)	ND(0.21)
SWMU 1-16 (berm) (1.5 ft) Dup	01/13/20	ND(0.093)	ND(0.047)	ND(0.047)	ND(0.093)	ND(0.047)	ND(0.047)	ND(0.047)	ND(0.047)
SWMU 1-16 (berm) (1.5 ft)	01/13/20	ND(0.095)	ND(0.048)	ND(0.048)	ND(0.095)	ND(0.048)	ND(0.048)	ND(0.048)	ND(0.048)
SWMU 1-16 (berm) (2.5 ft)	01/13/20	ND(0.28)	ND(0.14)	1.6	ND(0.28)	0.046	ND(0.14)	0.12	ND(0.14)
SWMU 1-16 (toe) Dup	01/16/20	ND(0.95)	ND(0.47)	1.3	ND(0.95)	ND(0.47)	ND(0.47)	ND(0.47)	ND(0.47)
SWMU 1-16 (toe)	01/16/20	ND(1)	ND(0.51)	1.2	ND(1)	ND(0.51)	ND(0.51)	ND(0.51)	ND(0.51)
SWMU 1-16 (toe) (2.5 ft)	01/16/20	ND(1)	ND(0.52)	3.9	ND(1)	ND(0.52)	ND(0.52)	ND(0.52)	ND(0.52)
SWMU 1-16 (toe) (4-4.5 ft)	01/16/20	ND(0.13)	ND(0.067)	0.3	ND(0.13)	ND(0.067)	ND(0.067)	ND(0.067)	ND(0.067)
SWMU 1-17 (berm) (1.5 ft)	01/13/20	ND(0.091)	ND(0.045)	0.0083	ND(0.091)	ND(0.045)	ND(0.045)	ND(0.045)	ND(0.045)
SWMU 1-17 (berm) (2.5 ft)	01/13/20	ND(0.054)	ND(0.027)	0.0033	ND(0.054)	ND(0.027)	ND(0.027)	ND(0.027)	ND(0.027)
SWMU 1-17 (toe)	01/16/20	ND(0.45)	ND(0.23)	ND(0.23)	ND(0.45)	ND(0.23)	ND(0.23)	ND(0.23)	ND(0.23)
SWMU 1-17 (toe) (2.5 ft)	01/16/20	ND(0.29)	ND(0.14)	0.32	ND(0.29)	ND(0.14)	ND(0.14)	0.1	ND(0.14)
SWMU 1-17 (toe) (4.5-5 ft)	01/16/20	ND(0.058)	ND(0.029)	0.0059	ND(0.058)	ND(0.029)	ND(0.029)	0.013	ND(0.029)
SWMU 1-18 (berm) (1.5 ft)	01/13/20	ND(0.082)	ND(0.041)	0.0038	ND(0.082)	ND(0.041)	ND(0.041)	ND(0.041)	ND(0.041)
SWMU 1-18 (berm) (2.5 ft)	01/13/20	ND(0.097)	ND(0.048)	0.0058	ND(0.097)	ND(0.048)	ND(0.048)	ND(0.048)	ND(0.048)
SWMU 1-18 (toe)	01/16/20	ND(0.35)	ND(0.17)	0.059	ND(0.35)	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)
SWMU 1-18 (toe) (2.5 ft)	01/16/20	ND(0.42)	ND(0.21)	1.5	ND(0.42)	ND(0.21)	ND(0.21)	ND(0.21)	ND(0.21)
SWMU 1-18 (toe) (5 ft)	01/16/20	ND(0.052)	ND(0.026)	0.089	ND(0.052)	ND(0.026)	ND(0.026)	ND(0.026)	ND(0.026)
[a] NMED Industrial SSL		1.211	422.9	NA	1.179	3.309	12,970	40.67	86.82
[b] NMED Residential SSL		0.051	240	NA	0.0858	0.672	2,150	8.32	17.8
[c] USEPA RSL Industrial Soil HQ 0.1		0.11	26	180	0.064	0.16	930	2	6.6

Notes:
NMED SSL's - New Mexico Environmental Department Industrial and Residential Soil Screening Levels, June 2019
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
AL - Aeration Lagoon
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Samples taken in Aeration Lagoon 2.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.
See sediment sampling logs for lithology of samples.

ATTACHMENT B - TABLE 1B. SWMU 1 SAMPLING - VOLATILE ORGANIC COMPOUNDS (AL-2)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	1,3,5-Trimethylbenzene (mg/kg)	1,3-Dichlorobenzene (mg/kg)	1,3-Dichloropropane (mg/kg)	1,4-Dichlorobenzene (mg/kg)	1-Methylnaphthalene (mg/kg)	2,2-Dichloropropane (mg/kg)	2-Butanone (mg/kg)	2-Chlorotoluene (mg/kg)
SWMU 1-5	01/17/20	1.2	ND(0.91)	ND(0.91)	ND(0.91)	31	ND(1.8)	1.4	ND(0.91)
SWMU 1-5 (2.5-5 ft)	01/17/20	0.58	ND(0.19)	ND(0.19)	ND(0.19)	14	ND(0.39)	1.5	ND(0.19)
SWMU 1-5 (5.5-6 ft)	01/17/20	0.067	ND(0.14)	ND(0.14)	ND(0.14)	2	ND(0.28)	0.29	ND(0.14)
SWMU 1-6 (0-5.5 ft)	01/17/20	0.4	ND(0.16)	ND(0.16)	ND(0.16)	7	ND(0.33)	1.3	ND(0.16)
SWMU 1-6 (5.5-6 ft)	01/17/20	0.02	ND(0.029)	ND(0.029)	ND(0.029)	0.28	ND(0.058)	0.17	ND(0.029)
SWMU 1-7 Dup	01/17/20	0.35	ND(0.16)	ND(0.16)	ND(0.16)	3.4	ND(0.32)	0.44	ND(0.16)
SWMU 1-7	01/17/20	0.4	ND(0.17)	ND(0.17)	ND(0.17)	4.7	ND(0.33)	0.45	ND(0.17)
SWMU 1-7 (2.5 ft)	01/17/20	0.93	ND(0.19)	ND(0.19)	ND(0.19)	12	ND(0.39)	ND(1.9)	ND(0.19)
SWMU 1-7 (4-5 ft)	01/17/20	0.097	ND(0.027)	ND(0.027)	ND(0.027)	1.1	ND(0.054)	ND(0.27)	ND(0.027)
SWMU 1-15 (berm) (1.5 ft)	01/13/20	ND(0.044)	ND(0.044)	ND(0.044)	ND(0.044)	ND(0.17)	ND(0.087)	ND(0.44)	ND(0.044)
SWMU 1-15 (berm) (2.5 ft)	01/13/20	0.19	ND(0.18)	ND(0.18)	ND(0.18)	4.4	ND(0.35)	0.46	ND(0.18)
SWMU 1-15 (toe) Dup	01/16/20	0.77	ND(0.2)	ND(0.2)	ND(0.2)	12	ND(0.4)	1.2	ND(0.2)
SWMU 1-15 (toe)	01/16/20	0.63	ND(0.2)	ND(0.2)	ND(0.2)	10	ND(0.39)	1.3	ND(0.2)
SWMU 1-15 (toe) (3 ft)	01/16/20	0.24	ND(0.17)	ND(0.17)	ND(0.17)	3.8	ND(0.34)	ND(1.7)	ND(0.17)
SWMU 1-15 (toe) (4-5 ft)	01/16/20	0.68	ND(0.21)	ND(0.21)	ND(0.21)	13	ND(0.42)	2	ND(0.21)
SWMU 1-16 (berm) (1.5 ft) Dup	01/13/20	ND(0.047)	ND(0.047)	ND(0.047)	ND(0.047)	0.064	ND(0.093)	ND(0.47)	ND(0.047)
SWMU 1-16 (berm) (1.5 ft)	01/13/20	ND(0.048)	ND(0.048)	ND(0.048)	ND(0.048)	0.092	ND(0.095)	ND(0.48)	ND(0.048)
SWMU 1-16 (berm) (2.5 ft)	01/13/20	0.46	ND(0.14)	ND(0.14)	ND(0.14)	8.5	ND(0.28)	ND(1.4)	ND(0.14)
SWMU 1-16 (toe) Dup	01/16/20	0.37	ND(0.47)	ND(0.47)	ND(0.47)	18	ND(0.95)	ND(4.7)	ND(0.47)
SWMU 1-16 (toe)	01/16/20	0.36	ND(0.51)	ND(0.51)	ND(0.51)	18	ND(1)	ND(5.1)	ND(0.51)
SWMU 1-16 (toe) (2.5 ft)	01/16/20	1.2	ND(0.52)	ND(0.52)	ND(0.52)	22	ND(1)	ND(5.2)	ND(0.52)
SWMU 1-16 (toe) (4-4.5 ft)	01/16/20	0.085	ND(0.067)	ND(0.067)	ND(0.067)	1.5	ND(0.13)	ND(0.67)	ND(0.067)
SWMU 1-17 (berm) (1.5 ft)	01/13/20	ND(0.045)	ND(0.045)	ND(0.045)	ND(0.045)	0.076	ND(0.091)	ND(0.45)	ND(0.045)
SWMU 1-17 (berm) (2.5 ft)	01/13/20	ND(0.027)	ND(0.027)	ND(0.027)	ND(0.027)	0.051	ND(0.054)	ND(0.27)	ND(0.027)
SWMU 1-17 (toe)	01/16/20	ND(0.23)	ND(0.23)	ND(0.23)	ND(0.23)	0.27	ND(0.45)	ND(2.3)	ND(0.23)
SWMU 1-17 (toe) (2.5 ft)	01/16/20	0.14	ND(0.14)	ND(0.14)	ND(0.14)	2.4	ND(0.29)	ND(1.4)	ND(0.14)
SWMU 1-17 (toe) (4.5-5 ft)	01/16/20	ND(0.029)	ND(0.029)	ND(0.029)	ND(0.029)	0.059	ND(0.058)	ND(0.29)	ND(0.029)
SWMU 1-18 (berm) (1.5 ft)	01/13/20	ND(0.041)	ND(0.041)	ND(0.041)	ND(0.041)	0.041	ND(0.082)	ND(0.41)	ND(0.041)
SWMU 1-18 (berm) (2.5 ft)	01/13/20	ND(0.048)	ND(0.048)	ND(0.048)	ND(0.048)	ND(0.19)	ND(0.097)	ND(0.48)	ND(0.048)
SWMU 1-18 (toe)	01/16/20	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)	0.38	ND(0.35)	ND(1.7)	ND(0.17)
SWMU 1-18 (toe) (2.5 ft)	01/16/20	0.46	ND(0.21)	ND(0.21)	ND(0.21)	8.9	ND(0.42)	0.98	ND(0.21)
SWMU 1-18 (toe) (5 ft)	01/16/20	0.024	ND(0.026)	ND(0.026)	ND(0.026)	0.55	ND(0.052)	0.17	ND(0.026)
[a] NMED Industrial SSL		NA	NA	NA	6,729	813	NA	411,000	25,960
[b] NMED Residential SSL		NA	NA	NA	1,290	172	NA	37,400	1,560
[c] USEPA RSL Industrial Soil HQ 0.1		150	NA	2,300	11	73	NA	19,000	2,300

Notes:
NMED SSL's - New Mexico Environmental Department Industrial and Residential Soil Screening Levels, June 2019
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
AL - Aeration Lagoon
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Samples taken in Aeration Lagoon 2.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.
See sediment sampling logs for lithology of samples.

ATTACHMENT B - TABLE 1B. SWMU 1 SAMPLING - VOLATILE ORGANIC COMPOUNDS (AL-2)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	2-Hexanone (mg/kg)	2-Methylnaphthalene (mg/kg)	4-Chlorotoluene (mg/kg)	4-Methyl-2-Pentanone (mg/kg)	Acetone (mg/kg)	Benzene (mg/kg)	Bromobenzene (mg/kg)	Bromodichloromethane (mg/kg)
SWMU 1-5	01/17/20	ND(9.1)	44	ND(0.91)	ND(9.1)	0.89	ND(0.45)	ND(0.91)	ND(0.91)
SWMU 1-5 (2.5-5 ft)	01/17/20	0.33	19	ND(0.19)	ND(1.9)	0.97	0.13	ND(0.19)	ND(0.19)
SWMU 1-5 (5.5-6 ft)	01/17/20	ND(1.4)	2.8	ND(0.14)	ND(1.4)	0.31	ND(0.07)	ND(0.14)	ND(0.14)
SWMU 1-6 (0-5.5 ft)	01/17/20	0.26	9.4	ND(0.16)	ND(1.6)	0.33	0.18	ND(0.16)	ND(0.16)
SWMU 1-6 (5.5-6 ft)	01/17/20	0.17	0.39	ND(0.029)	ND(0.29)	0.065	ND(0.014)	ND(0.029)	ND(0.029)
SWMU 1-7 Dup	01/17/20	0.41	3.9	ND(0.16)	ND(1.6)	0.28	ND(0.081)	ND(0.16)	ND(0.16)
SWMU 1-7	01/17/20	0.44	5.7	ND(0.17)	ND(1.7)	0.28	ND(0.084)	ND(0.17)	ND(0.17)
SWMU 1-7 (2.5 ft)	01/17/20	0.54	19	ND(0.19)	ND(1.9)	1	0.23	ND(0.19)	ND(0.19)
SWMU 1-7 (4-5 ft)	01/17/20	ND(0.27)	1.6	ND(0.027)	ND(0.27)	0.27	0.036	ND(0.027)	ND(0.027)
SWMU 1-15 (berm) (1.5 ft)	01/13/20	ND(0.44)	ND(0.17)	ND(0.044)	0.028	ND(0.66)	ND(0.022)	ND(0.044)	ND(0.044)
SWMU 1-15 (berm) (2.5 ft)	01/13/20	0.14	6	ND(0.18)	0.14	ND(2.6)	ND(0.088)	ND(0.18)	ND(0.18)
SWMU 1-15 (toe) Dup	01/16/20	0.19	14	ND(0.2)	0.54	0.21	0.039	ND(0.2)	ND(0.2)
SWMU 1-15 (toe)	01/16/20	0.18	12	ND(0.2)	0.43	0.19	0.035	ND(0.2)	ND(0.2)
SWMU 1-15 (toe) (3 ft)	01/16/20	0.16	6	ND(0.17)	0.45	0.28	ND(0.084)	ND(0.17)	ND(0.17)
SWMU 1-15 (toe) (4-5 ft)	01/16/20	0.65	19	ND(0.21)	ND(2.1)	0.91	0.21	ND(0.21)	ND(0.21)
SWMU 1-16 (berm) (1.5 ft) Dup	01/13/20	ND(0.47)	0.076	ND(0.047)	0.029	ND(0.7)	ND(0.023)	ND(0.047)	ND(0.047)
SWMU 1-16 (berm) (1.5 ft)	01/13/20	ND(0.48)	0.1	ND(0.048)	0.031	0.045	ND(0.024)	ND(0.048)	ND(0.048)
SWMU 1-16 (berm) (2.5 ft)	01/13/20	0.15	12	ND(0.14)	0.29	ND(2.1)	ND(0.069)	ND(0.14)	ND(0.14)
SWMU 1-16 (toe) Dup	01/16/20	ND(4.7)	25	ND(0.47)	ND(4.7)	0.6	ND(0.24)	ND(0.47)	ND(0.47)
SWMU 1-16 (toe)	01/16/20	ND(5.1)	25	ND(0.51)	ND(5.1)	ND(7.7)	ND(0.26)	ND(0.51)	ND(0.51)
SWMU 1-16 (toe) (2.5 ft)	01/16/20	ND(5.2)	33	ND(0.52)	1.1	ND(7.9)	0.26	ND(0.52)	ND(0.52)
SWMU 1-16 (toe) (4-4.5 ft)	01/16/20	0.063	2.2	ND(0.067)	0.19	ND(1)	ND(0.033)	ND(0.067)	ND(0.067)
SWMU 1-17 (berm) (1.5 ft)	01/13/20	ND(0.45)	0.079	ND(0.045)	0.029	ND(0.68)	ND(0.023)	ND(0.045)	ND(0.045)
SWMU 1-17 (berm) (2.5 ft)	01/13/20	ND(0.27)	0.062	ND(0.027)	ND(0.27)	ND(0.41)	ND(0.014)	ND(0.027)	ND(0.027)
SWMU 1-17 (toe)	01/16/20	ND(2.3)	0.27	ND(0.23)	0.14	0.29	ND(0.11)	ND(0.23)	ND(0.23)
SWMU 1-17 (toe) (2.5 ft)	01/16/20	0.094	3	ND(0.14)	0.13	ND(2.2)	ND(0.072)	ND(0.14)	ND(0.14)
SWMU 1-17 (toe) (4.5-5 ft)	01/16/20	ND(0.29)	0.07	ND(0.029)	0.018	ND(0.44)	ND(0.015)	ND(0.029)	ND(0.029)
SWMU 1-18 (berm) (1.5 ft)	01/13/20	ND(0.41)	0.041	ND(0.041)	0.027	ND(0.62)	ND(0.021)	ND(0.041)	ND(0.041)
SWMU 1-18 (berm) (2.5 ft)	01/13/20	ND(0.48)	ND(0.19)	ND(0.048)	ND(0.48)	ND(0.73)	ND(0.024)	ND(0.048)	ND(0.048)
SWMU 1-18 (toe)	01/16/20	ND(1.7)	0.51	ND(0.17)	ND(1.7)	0.26	ND(0.086)	ND(0.17)	ND(0.17)
SWMU 1-18 (toe) (2.5 ft)	01/16/20	0.4	12	ND(0.21)	ND(2.1)	0.52	0.13	ND(0.21)	ND(0.21)
SWMU 1-18 (toe) (5 ft)	01/16/20	0.035	0.73	ND(0.026)	ND(0.26)	0.083	0.0022	ND(0.026)	ND(0.026)
[a] NMED Industrial SSL		NA	3,368	NA	81,650	960,100	87.24	NA	30.18
[b] NMED Residential SSL		NA	232	NA	5,810	66,300	17.8	NA	6.19
[c] USEPA RSL Industrial Soil HQ 0.1		130	300	2,300	14,000	67,000	5.1	180	1.3

Notes:
NMED SSL's - New Mexico Environmental Department Industrial and Residential Soil Screening Levels, June 2019
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
AL - Aeration Lagoon
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Samples taken in Aeration Lagoon 2.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.
See sediment sampling logs for lithology of samples.

ATTACHMENT B - TABLE 1B. SWMU 1 SAMPLING - VOLATILE ORGANIC COMPOUNDS (AL-2)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Bromoform (mg/kg)	Bromomethane (mg/kg)	Carbon Disulfide (mg/kg)	Carbon tetrachloride (mg/kg)	Chlorobenzene (mg/kg)	Chloroethane (mg/kg)	Chloroform (mg/kg)	Chloromethane (mg/kg)
SWMU 1-5	01/17/20	ND(0.91)	ND(2.7)	0.56	ND(0.91)	ND(0.91)	ND(1.8)	ND(0.91)	ND(2.7)
SWMU 1-5 (2.5-5 ft)	01/17/20	ND(0.19)	ND(0.58)	1.3	ND(0.19)	ND(0.19)	0.1	0.021	ND(0.58)
SWMU 1-5 (5.5-6 ft)	01/17/20	ND(0.14)	0.067	1	ND(0.14)	ND(0.14)	ND(0.28)	ND(0.14)	ND(0.42)
SWMU 1-6 (0-5.5 ft)	01/17/20	ND(0.16)	ND(0.49)	0.86	ND(0.16)	ND(0.16)	ND(0.33)	0.019	ND(0.49)
SWMU 1-6 (5.5-6 ft)	01/17/20	ND(0.029)	0.017	0.14	ND(0.029)	ND(0.029)	ND(0.058)	0.0071	ND(0.087)
SWMU 1-7 Dup	01/17/20	ND(0.16)	ND(0.49)	0.27	ND(0.16)	ND(0.16)	ND(0.32)	ND(0.16)	ND(0.49)
SWMU 1-7	01/17/20	ND(0.17)	ND(0.5)	0.29	ND(0.17)	ND(0.17)	ND(0.33)	ND(0.17)	ND(0.5)
SWMU 1-7 (2.5 ft)	01/17/20	ND(0.19)	ND(0.58)	2.6	ND(0.19)	ND(0.19)	0.081	0.044	ND(0.58)
SWMU 1-7 (4-5 ft)	01/17/20	ND(0.027)	0.016	1.2	ND(0.027)	ND(0.027)	ND(0.054)	0.0093	0.011
SWMU 1-15 (berm) (1.5 ft)	01/13/20	ND(0.044)	ND(0.13)	ND(0.44)	ND(0.044)	ND(0.044)	ND(0.087)	ND(0.044)	ND(0.13)
SWMU 1-15 (berm) (2.5 ft)	01/13/20	ND(0.18)	ND(0.53)	ND(1.8)	ND(0.18)	ND(0.18)	ND(0.35)	ND(0.18)	ND(0.53)
SWMU 1-15 (toe) Dup	01/16/20	ND(0.2)	ND(0.59)	0.11	ND(0.2)	ND(0.2)	ND(0.4)	ND(0.2)	ND(0.59)
SWMU 1-15 (toe)	01/16/20	ND(0.2)	ND(0.59)	0.1	ND(0.2)	ND(0.2)	ND(0.39)	ND(0.2)	ND(0.59)
SWMU 1-15 (toe) (3 ft)	01/16/20	ND(0.17)	ND(0.5)	0.53	ND(0.17)	ND(0.17)	ND(0.34)	ND(0.17)	ND(0.5)
SWMU 1-15 (toe) (4-5 ft)	01/16/20	ND(0.21)	ND(0.63)	1.5	ND(0.21)	ND(0.21)	ND(0.42)	0.033	ND(0.63)
SWMU 1-16 (berm) (1.5 ft) Dup	01/13/20	ND(0.047)	ND(0.14)	ND(0.47)	ND(0.047)	ND(0.047)	ND(0.093)	ND(0.047)	ND(0.14)
SWMU 1-16 (berm) (1.5 ft)	01/13/20	ND(0.048)	ND(0.14)	ND(0.48)	ND(0.048)	ND(0.048)	ND(0.095)	ND(0.048)	ND(0.14)
SWMU 1-16 (berm) (2.5 ft)	01/13/20	ND(0.14)	ND(0.42)	0.06	ND(0.14)	ND(0.14)	ND(0.28)	ND(0.14)	ND(0.42)
SWMU 1-16 (toe) Dup	01/16/20	ND(0.47)	0.23	ND(4.7)	ND(0.47)	ND(0.47)	ND(0.95)	ND(0.47)	ND(1.4)
SWMU 1-16 (toe)	01/16/20	ND(0.51)	ND(1.5)	ND(5.1)	ND(0.51)	ND(0.51)	ND(1)	ND(0.51)	ND(1.5)
SWMU 1-16 (toe) (2.5 ft)	01/16/20	ND(0.52)	ND(1.6)	1.8	ND(0.52)	ND(0.52)	ND(1)	ND(0.52)	ND(1.6)
SWMU 1-16 (toe) (4-4.5 ft)	01/16/20	ND(0.067)	ND(0.2)	1.7	ND(0.067)	ND(0.067)	ND(0.13)	ND(0.067)	ND(0.2)
SWMU 1-17 (berm) (1.5 ft)	01/13/20	ND(0.045)	ND(0.14)	ND(0.45)	ND(0.045)	ND(0.045)	ND(0.091)	ND(0.045)	ND(0.14)
SWMU 1-17 (berm) (2.5 ft)	01/13/20	ND(0.027)	ND(0.081)	ND(0.27)	ND(0.027)	ND(0.027)	ND(0.054)	ND(0.027)	ND(0.081)
SWMU 1-17 (toe)	01/16/20	ND(0.23)	ND(0.68)	ND(2.3)	ND(0.23)	ND(0.23)	ND(0.45)	ND(0.23)	ND(0.68)
SWMU 1-17 (toe) (2.5 ft)	01/16/20	ND(0.14)	ND(0.43)	ND(1.4)	ND(0.14)	ND(0.14)	ND(0.29)	ND(0.14)	ND(0.43)
SWMU 1-17 (toe) (4.5-5 ft)	01/16/20	ND(0.029)	ND(0.087)	ND(0.29)	ND(0.029)	ND(0.029)	ND(0.058)	ND(0.029)	ND(0.087)
SWMU 1-18 (berm) (1.5 ft)	01/13/20	ND(0.041)	ND(0.12)	ND(0.41)	ND(0.041)	ND(0.041)	ND(0.082)	ND(0.041)	ND(0.12)
SWMU 1-18 (berm) (2.5 ft)	01/13/20	ND(0.048)	ND(0.15)	ND(0.48)	ND(0.048)	ND(0.048)	ND(0.097)	ND(0.048)	ND(0.15)
SWMU 1-18 (toe)	01/16/20	ND(0.17)	ND(0.52)	0.17	ND(0.17)	ND(0.17)	ND(0.35)	ND(0.17)	ND(0.52)
SWMU 1-18 (toe) (2.5 ft)	01/16/20	ND(0.21)	0.1	1.4	ND(0.21)	ND(0.21)	ND(0.42)	0.017	ND(0.63)
SWMU 1-18 (toe) (5 ft)	01/16/20	ND(0.026)	0.013	0.55	ND(0.026)	ND(0.026)	ND(0.052)	0.0034	ND(0.078)
[a] NMED Industrial SSL		1,760	94.52	8,541	52.5	2,157	89,540	28.66	200.8
[b] NMED Residential SSL		674	17.7	1,550	10.7	378	19,000	5.9	41.1
[c] USEPA RSL Industrial Soil HQ 0.1		86	3	350	2.9	130	5,700	1.4	46

Notes:
NMED SSL's - New Mexico Environmental Department Industrial and Residential Soil Screening Levels, June 2019
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
AL - Aeration Lagoon
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Samples taken in Aeration Lagoon 2.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.
See sediment sampling logs for lithology of samples.

ATTACHMENT B - TABLE 1B. SWMU 1 SAMPLING - VOLATILE ORGANIC COMPOUNDS (AL-2)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	cis-1,2-Dichloroethene (mg/kg)	Cis-1,3-dichloropropene (mg/kg)	Dibromochloromethane (mg/kg)	Dibromomethane (mg/kg)	Dichlorodifluoromethane (mg/kg)	Ethylbenzene (mg/kg)	Hexachlorobutadiene (mg/kg)	Isopropylbenzene (mg/kg)
SWMU 1-5	01/17/20	ND(0.91)	ND(0.91)	ND(0.91)	ND(0.91)	ND(0.91)	0.33	ND(1.8)	0.067
SWMU 1-5 (2.5-5 ft)	01/17/20	0.03	ND(0.19)	ND(0.19)	ND(0.19)	ND(0.19)	0.37	ND(0.39)	0.076
SWMU 1-5 (5.5-6 ft)	01/17/20	ND(0.14)	ND(0.14)	ND(0.14)	ND(0.14)	ND(0.14)	0.014	ND(0.28)	ND(0.14)
SWMU 1-6 (0-5.5 ft)	01/17/20	ND(0.16)	ND(0.16)	ND(0.16)	ND(0.16)	ND(0.16)	0.4	ND(0.33)	0.075
SWMU 1-6 (5.5-6 ft)	01/17/20	0.0063	ND(0.029)	ND(0.029)	ND(0.029)	ND(0.029)	0.0066	ND(0.058)	ND(0.029)
SWMU 1-7 Dup	01/17/20	0.024	ND(0.16)	ND(0.16)	ND(0.16)	ND(0.16)	0.15	ND(0.32)	0.014
SWMU 1-7	01/17/20	0.035	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)	0.17	ND(0.33)	0.017
SWMU 1-7 (2.5 ft)	01/17/20	0.036	ND(0.19)	ND(0.19)	ND(0.19)	ND(0.19)	0.75	ND(0.39)	0.12
SWMU 1-7 (4-5 ft)	01/17/20	ND(0.027)	ND(0.027)	ND(0.027)	ND(0.027)	ND(0.027)	0.12	ND(0.054)	0.017
SWMU 1-15 (berm) (1.5 ft)	01/13/20	ND(0.044)	ND(0.044)	ND(0.044)	ND(0.044)	ND(0.044)	ND(0.044)	ND(0.087)	ND(0.044)
SWMU 1-15 (berm) (2.5 ft)	01/13/20	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.35)	0.024
SWMU 1-15 (toe) Dup	01/16/20	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	0.33	ND(0.4)	0.13
SWMU 1-15 (toe)	01/16/20	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	0.27	ND(0.39)	0.099
SWMU 1-15 (toe) (3 ft)	01/16/20	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)	0.085	ND(0.34)	0.042
SWMU 1-15 (toe) (4-5 ft)	01/16/20	0.072	ND(0.21)	ND(0.21)	ND(0.21)	ND(0.21)	0.6	ND(0.42)	0.11
SWMU 1-16 (berm) (1.5 ft) Dup	01/13/20	ND(0.047)	ND(0.047)	ND(0.047)	ND(0.047)	ND(0.047)	ND(0.047)	ND(0.093)	ND(0.047)
SWMU 1-16 (berm) (1.5 ft)	01/13/20	ND(0.048)	ND(0.048)	ND(0.048)	ND(0.048)	ND(0.048)	ND(0.048)	ND(0.095)	ND(0.048)
SWMU 1-16 (berm) (2.5 ft)	01/13/20	ND(0.14)	ND(0.14)	ND(0.14)	ND(0.14)	ND(0.14)	0.15	ND(0.28)	0.088
SWMU 1-16 (toe) Dup	01/16/20	ND(0.47)	ND(0.47)	ND(0.47)	ND(0.47)	ND(0.47)	0.067	ND(0.95)	ND(0.47)
SWMU 1-16 (toe)	01/16/20	ND(0.51)	ND(0.51)	ND(0.51)	ND(0.51)	ND(0.51)	0.054	ND(1)	ND(0.51)
SWMU 1-16 (toe) (2.5 ft)	01/16/20	ND(0.52)	ND(0.52)	ND(0.52)	ND(0.52)	ND(0.52)	0.74	ND(1)	0.24
SWMU 1-16 (toe) (4-4.5 ft)	01/16/20	ND(0.067)	ND(0.067)	ND(0.067)	ND(0.067)	ND(0.067)	0.033	ND(0.13)	0.016
SWMU 1-17 (berm) (1.5 ft)	01/13/20	ND(0.045)	ND(0.045)	ND(0.045)	ND(0.045)	ND(0.045)	ND(0.045)	ND(0.091)	ND(0.045)
SWMU 1-17 (berm) (2.5 ft)	01/13/20	ND(0.027)	ND(0.027)	ND(0.027)	ND(0.027)	ND(0.027)	ND(0.027)	ND(0.054)	ND(0.027)
SWMU 1-17 (toe)	01/16/20	ND(0.23)	ND(0.23)	ND(0.23)	ND(0.23)	ND(0.23)	ND(0.23)	ND(0.45)	ND(0.23)
SWMU 1-17 (toe) (2.5 ft)	01/16/20	ND(0.14)	ND(0.14)	ND(0.14)	ND(0.14)	ND(0.14)	ND(0.14)	ND(0.29)	0.012
SWMU 1-17 (toe) (4.5-5 ft)	01/16/20	ND(0.029)	ND(0.029)	ND(0.029)	ND(0.029)	ND(0.029)	ND(0.029)	ND(0.058)	ND(0.029)
SWMU 1-18 (berm) (1.5 ft)	01/13/20	ND(0.041)	ND(0.041)	ND(0.041)	ND(0.041)	ND(0.041)	ND(0.041)	ND(0.082)	ND(0.041)
SWMU 1-18 (berm) (2.5 ft)	01/13/20	ND(0.048)	ND(0.048)	ND(0.048)	ND(0.048)	ND(0.048)	ND(0.048)	ND(0.097)	ND(0.048)
SWMU 1-18 (toe)	01/16/20	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.35)	ND(0.17)
SWMU 1-18 (toe) (2.5 ft)	01/16/20	ND(0.21)	ND(0.21)	ND(0.21)	ND(0.21)	ND(0.21)	0.36	ND(0.42)	0.07
SWMU 1-18 (toe) (5 ft)	01/16/20	ND(0.026)	ND(0.026)	ND(0.026)	ND(0.026)	ND(0.026)	0.007	ND(0.052)	ND(0.026)
[a] NMED Industrial SSL		2,596	NA	67.37	288.2	864.8	367.6	52.08	14,220
[b] NMED Residential SSL		156	NA	13.9	57.9	182	75.1	68.3	2,360
[c] USEPA RSL Industrial Soil HQ 0.1		230	NA	39	9.9	37	25	5.3	990

Notes:
NMED SSL's - New Mexico Environmental Department Industrial and Residential Soil Screening Levels, June 2019
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
AL - Aeration Lagoon
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Samples taken in Aeration Lagoon 2.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.
See sediment sampling logs for lithology of samples.

ATTACHMENT B - TABLE 1B. SWMU 1 SAMPLING - VOLATILE ORGANIC COMPOUNDS (AL-2)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Methylene Chloride (mg/kg)	MTBE (mg/kg)	Naphthalene (mg/kg)	n-Butylbenzene (mg/kg)	n-Propylbenzene (mg/kg)	p-Isopropyltoluene (mg/kg)	sec-Butylbenzene (mg/kg)	Styrene (mg/kg)
SWMU 1-5	01/17/20	ND(2.7)	ND(0.91)	6.5	0.64	0.38	0.25	0.26	ND(0.91)
SWMU 1-5 (2.5-5 ft)	01/17/20	ND(0.58)	0.24	3.4	0.24	0.24	0.094	0.11	ND(0.19)
SWMU 1-5 (5.5-6 ft)	01/17/20	ND(0.42)	ND(0.14)	0.33	0.048	0.017	ND(0.14)	ND(0.14)	ND(0.14)
SWMU 1-6 (0-5.5 ft)	01/17/20	0.046	ND(0.16)	2.1	0.16	0.19	0.074	0.08	ND(0.16)
SWMU 1-6 (5.5-6 ft)	01/17/20	0.033	ND(0.029)	0.037	0.015	0.0061	0.0041	0.0046	ND(0.029)
SWMU 1-7 Dup	01/17/20	ND(0.49)	ND(0.16)	0.62	ND(0.49)	0.087	0.042	0.039	ND(0.16)
SWMU 1-7	01/17/20	0.033	ND(0.17)	0.99	0.11	0.096	0.048	0.046	ND(0.17)
SWMU 1-7 (2.5 ft)	01/17/20	ND(0.58)	ND(0.19)	4.9	0.29	0.41	0.086	0.11	ND(0.19)
SWMU 1-7 (4-5 ft)	01/17/20	0.026	ND(0.027)	0.32	0.029	0.038	0.012	0.012	ND(0.027)
SWMU 1-15 (berm) (1.5 ft)	01/13/20	0.036	ND(0.044)	ND(0.087)	ND(0.13)	ND(0.044)	ND(0.044)	ND(0.044)	ND(0.044)
SWMU 1-15 (berm) (2.5 ft)	01/13/20	0.097	ND(0.18)	0.77	0.12	0.05	0.076	0.12	ND(0.18)
SWMU 1-15 (toe) Dup	01/16/20	0.11	ND(0.2)	2.8	0.41	0.29	0.22	0.27	ND(0.2)
SWMU 1-15 (toe)	01/16/20	0.11	ND(0.2)	2.4	0.34	0.22	0.18	0.24	ND(0.2)
SWMU 1-15 (toe) (3 ft)	01/16/20	0.084	ND(0.17)	0.8	0.19	0.098	0.088	0.15	ND(0.17)
SWMU 1-15 (toe) (4-5 ft)	01/16/20	ND(0.63)	ND(0.21)	4.4	0.3	0.33	0.11	0.13	ND(0.21)
SWMU 1-16 (berm) (1.5 ft) Dup	01/13/20	0.032	ND(0.047)	ND(0.093)	ND(0.14)	ND(0.047)	ND(0.047)	ND(0.047)	ND(0.047)
SWMU 1-16 (berm) (1.5 ft)	01/13/20	0.064	ND(0.048)	ND(0.095)	ND(0.14)	ND(0.048)	ND(0.048)	ND(0.048)	ND(0.048)
SWMU 1-16 (berm) (2.5 ft)	01/13/20	0.072	ND(0.14)	2.2	0.27	0.2	0.13	0.19	ND(0.14)
SWMU 1-16 (toe) Dup	01/16/20	0.12	ND(0.47)	2.9	0.19	0.081	0.042	ND(0.47)	ND(0.47)
SWMU 1-16 (toe)	01/16/20	ND(1.5)	ND(0.51)	2.8	0.17	0.069	ND(0.51)	ND(0.51)	ND(0.51)
SWMU 1-16 (toe) (2.5 ft)	01/16/20	0.23	ND(0.52)	6.1	0.56	0.49	0.26	0.46	ND(0.52)
SWMU 1-16 (toe) (4-4.5 ft)	01/16/20	0.055	0.028	0.25	0.06	0.031	0.03	0.053	ND(0.067)
SWMU 1-17 (berm) (1.5 ft)	01/13/20	0.06	ND(0.045)	0.012	ND(0.14)	ND(0.045)	ND(0.045)	ND(0.045)	ND(0.045)
SWMU 1-17 (berm) (2.5 ft)	01/13/20	0.021	ND(0.027)	0.0056	ND(0.081)	ND(0.027)	ND(0.027)	ND(0.027)	ND(0.027)
SWMU 1-17 (toe)	01/16/20	ND(0.68)	ND(0.23)	ND(0.45)	ND(0.68)	ND(0.23)	ND(0.23)	ND(0.23)	ND(0.23)
SWMU 1-17 (toe) (2.5 ft)	01/16/20	0.063	ND(0.14)	0.36	0.054	ND(0.14)	0.038	0.076	ND(0.14)
SWMU 1-17 (toe) (4.5-5 ft)	01/16/20	0.016	ND(0.029)	0.01	ND(0.087)	ND(0.029)	ND(0.029)	ND(0.029)	ND(0.029)
SWMU 1-18 (berm) (1.5 ft)	01/13/20	0.058	ND(0.041)	ND(0.082)	ND(0.12)	ND(0.041)	ND(0.041)	ND(0.041)	ND(0.041)
SWMU 1-18 (berm) (2.5 ft)	01/13/20	0.042	ND(0.048)	ND(0.097)	ND(0.15)	ND(0.048)	ND(0.048)	ND(0.048)	ND(0.048)
SWMU 1-18 (toe)	01/16/20	0.05	ND(0.17)	ND(0.35)	ND(0.52)	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)
SWMU 1-18 (toe) (2.5 ft)	01/16/20	0.044	ND(0.21)	2.7	0.22	0.21	0.09	0.1	ND(0.21)
SWMU 1-18 (toe) (5 ft)	01/16/20	0.0099	ND(0.026)	0.12	0.018	0.0072	0.0057	0.0053	ND(0.026)
[a] NMED Industrial SSL		5,131	NA	241	NA	NA	NA	NA	51,300
[b] NMED Residential SSL		766	NA	49.7	NA	NA	NA	NA	7,260
[c] USEPA RSL Industrial Soil HQ 0.1		320	210	17	5,800	2,400	NA	12,000	3,500

Notes:
NMED SSL's - New Mexico Environmental Department Industrial and Residential Soil Screening Levels, June 2019
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
AL - Aeration Lagoon
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Samples taken in Aeration Lagoon 2.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.
See sediment sampling logs for lithology of samples.

ATTACHMENT B - TABLE 1B. SWMU 1 SAMPLING - VOLATILE ORGANIC COMPOUNDS (AL-2)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	tert-Butylbenzene (mg/kg)	Tetrachloroethene (mg/kg)	Toluene (mg/kg)	trans-1,2-Dichloroethene (mg/kg)	trans-1,3-Dichloropropene (mg/kg)	Trichloroethene (mg/kg)	Trichlorofluoromethane (mg/kg)	Vinyl Chloride (mg/kg)
SWMU 1-5	01/17/20	ND(0.91)	ND(0.91)	0.56	ND(0.91)	ND(0.91)	ND(0.91)	ND(0.91)	ND(0.91)
SWMU 1-5 (2.5-5 ft)	01/17/20	ND(0.19)	ND(0.19)	0.97	ND(0.19)	0.042	ND(0.19)	ND(0.19)	ND(0.19)
SWMU 1-5 (5.5-6 ft)	01/17/20	ND(0.14)	ND(0.14)	0.043	ND(0.14)	ND(0.14)	ND(0.14)	ND(0.14)	ND(0.14)
SWMU 1-6 (0-5.5 ft)	01/17/20	ND(0.16)	ND(0.16)	1.2	ND(0.16)	0.025	ND(0.16)	ND(0.16)	ND(0.16)
SWMU 1-6 (5.5-6 ft)	01/17/20	ND(0.029)	ND(0.029)	0.018	ND(0.029)	ND(0.029)	ND(0.029)	ND(0.029)	ND(0.029)
SWMU 1-7 Dup	01/17/20	ND(0.16)	ND(0.16)	0.25	ND(0.16)	ND(0.16)	ND(0.16)	ND(0.16)	ND(0.16)
SWMU 1-7	01/17/20	ND(0.17)	ND(0.17)	0.3	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)
SWMU 1-7 (2.5 ft)	01/17/20	ND(0.19)	ND(0.19)	1.9	ND(0.19)	0.12	ND(0.19)	ND(0.19)	ND(0.19)
SWMU 1-7 (4-5 ft)	01/17/20	ND(0.027)	ND(0.027)	0.27	ND(0.027)	ND(0.027)	ND(0.027)	ND(0.027)	ND(0.027)
SWMU 1-15 (berm) (1.5 ft)	01/13/20	ND(0.044)	ND(0.044)	ND(0.044)	ND(0.044)	ND(0.044)	ND(0.044)	ND(0.044)	ND(0.044)
SWMU 1-15 (berm) (2.5 ft)	01/13/20	ND(0.18)	ND(0.18)	0.02	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.18)
SWMU 1-15 (toe) Dup	01/16/20	ND(0.2)	ND(0.2)	0.48	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
SWMU 1-15 (toe)	01/16/20	ND(0.2)	ND(0.2)	0.43	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
SWMU 1-15 (toe) (3 ft)	01/16/20	ND(0.17)	ND(0.17)	0.1	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)
SWMU 1-15 (toe) (4-5 ft)	01/16/20	ND(0.21)	ND(0.21)	1.5	ND(0.21)	ND(0.21)	ND(0.21)	ND(0.21)	ND(0.21)
SWMU 1-16 (berm) (1.5 ft) Dup	01/13/20	ND(0.047)	ND(0.047)	ND(0.047)	ND(0.047)	ND(0.047)	ND(0.047)	ND(0.047)	ND(0.047)
SWMU 1-16 (berm) (1.5 ft)	01/13/20	ND(0.048)	ND(0.048)	0.0052	ND(0.048)	ND(0.048)	ND(0.048)	ND(0.048)	ND(0.048)
SWMU 1-16 (berm) (2.5 ft)	01/13/20	ND(0.14)	ND(0.14)	0.14	ND(0.14)	ND(0.14)	ND(0.14)	ND(0.14)	ND(0.14)
SWMU 1-16 (toe) Dup	01/16/20	ND(0.47)	ND(0.47)	0.2	ND(0.47)	ND(0.47)	ND(0.47)	ND(0.47)	ND(0.47)
SWMU 1-16 (toe)	01/16/20	ND(0.51)	ND(0.51)	0.21	ND(0.51)	ND(0.51)	ND(0.51)	ND(0.51)	ND(0.51)
SWMU 1-16 (toe) (2.5 ft)	01/16/20	ND(0.52)	ND(0.52)	2	ND(0.52)	ND(0.52)	ND(0.52)	ND(0.52)	ND(0.52)
SWMU 1-16 (toe) (4-4.5 ft)	01/16/20	ND(0.067)	ND(0.067)	0.055	ND(0.067)	ND(0.067)	ND(0.067)	ND(0.067)	ND(0.067)
SWMU 1-17 (berm) (1.5 ft)	01/13/20	ND(0.045)	ND(0.045)	0.0058	ND(0.045)	ND(0.045)	ND(0.045)	ND(0.045)	ND(0.045)
SWMU 1-17 (berm) (2.5 ft)	01/13/20	ND(0.027)	ND(0.027)	ND(0.027)	ND(0.027)	ND(0.027)	ND(0.027)	ND(0.027)	ND(0.027)
SWMU 1-17 (toe)	01/16/20	ND(0.23)	ND(0.23)	ND(0.23)	ND(0.23)	ND(0.23)	ND(0.23)	ND(0.23)	ND(0.23)
SWMU 1-17 (toe) (2.5 ft)	01/16/20	ND(0.14)	ND(0.14)	0.019	ND(0.14)	ND(0.14)	ND(0.14)	ND(0.14)	ND(0.14)
SWMU 1-17 (toe) (4.5-5 ft)	01/16/20	ND(0.029)	ND(0.029)	ND(0.029)	ND(0.029)	ND(0.029)	ND(0.029)	ND(0.029)	ND(0.029)
SWMU 1-18 (berm) (1.5 ft)	01/13/20	ND(0.041)	ND(0.041)	0.0046	ND(0.041)	ND(0.041)	ND(0.041)	ND(0.041)	ND(0.041)
SWMU 1-18 (berm) (2.5 ft)	01/13/20	ND(0.048)	ND(0.048)	0.0048	ND(0.048)	ND(0.048)	ND(0.048)	ND(0.048)	ND(0.048)
SWMU 1-18 (toe)	01/16/20	ND(0.17)	ND(0.17)	0.051	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)
SWMU 1-18 (toe) (2.5 ft)	01/16/20	ND(0.21)	ND(0.21)	1.1	ND(0.21)	0.036	ND(0.21)	ND(0.21)	ND(0.21)
SWMU 1-18 (toe) (5 ft)	01/16/20	ND(0.026)	ND(0.026)	0.023	ND(0.026)	ND(0.026)	ND(0.026)	ND(0.026)	ND(0.026)
[a] NMED Industrial SSL		NA	628.8	61,340	1,610	NA	36.46	6,031	28.41
[b] NMED Residential SSL		NA	337	5,230	295	NA	15.5	1,230	0.742
[c] USEPA RSL Industrial Soil HQ 0.1		12,000	39	4,700	2,300	NA	1.9	35,000	1.7

Notes:
NMED SSL's - New Mexico Environmental Department Industrial and Residential Soil Screening Levels, June 2019
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
AL - Aeration Lagoon
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Samples taken in Aeration Lagoon 2.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.
See sediment sampling logs for lithology of samples.

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ATTACHMENT B - TABLE 1B. SWMU 1 SAMPLING - VOLATILE ORGANIC COMPOUNDS (AL-2)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Xylenes, Total (mg/kg)	Diesel Range Organics (mg/kg)	Gasoline Range Organics (mg/kg)	Oil Range Organics (mg/kg)
SWMU 1-5	01/17/20	3.1	**130000** a,b	**110** b	**42000** a,b
SWMU 1-5 (2.5-5 ft)	01/17/20	2.6	**99000** a,b	48	**21000** a,b
SWMU 1-5 (5.5-6 ft)	01/17/20	0.15	**1200** b	12	310
SWMU 1-6 (0-5.5 ft)	01/17/20	2.6	**19000** a,b	55	**2500** b
SWMU 1-6 (5.5-6 ft)	01/17/20	0.067	25	7.7	ND(42)
SWMU 1-7 Dup	01/17/20	1.1	**87000** a,b	30	**38000** a,b
SWMU 1-7	01/17/20	1.3	**61000** a,b	32	**29000** a,b
SWMU 1-7 (2.5 ft)	01/17/20	5	**66000** a,b	74	**13000** a,b
SWMU 1-7 (4-5 ft)	01/17/20	0.8	**3800** a,b	17	**1200** b
SWMU 1-15 (berm) (1.5 ft)	01/13/20	ND(0.087)	4.7	ND(4.4)	ND(46)
SWMU 1-15 (berm) (2.5 ft)	01/13/20	0.31	**20000** a,b	5.4	**5500** a,b
SWMU 1-15 (toe) Dup	01/16/20	2.5	**170000** a,b	55	**67000** a,b
SWMU 1-15 (toe)	01/16/20	2	**160000** a,b	42	**68000** a,b
SWMU 1-15 (toe) (3 ft)	01/16/20	0.65	**18000** a,b	32	**4700** a,b
SWMU 1-15 (toe) (4-5 ft)	01/16/20	3.8	**56000** a,b	78	**14000** a,b
SWMU 1-16 (berm) (1.5 ft) Dup	01/13/20	ND(0.093)	310	ND(4.7)	160
SWMU 1-16 (berm) (1.5 ft)	01/13/20	ND(0.095)	230	ND(4.8)	140
SWMU 1-16 (berm) (2.5 ft)	01/13/20	1.3	**32000** a,b	20	**8200** a,b
SWMU 1-16 (toe) Dup	01/16/20	1	**130000** a,b	28	**69000** a,b
SWMU 1-16 (toe)	01/16/20	0.71	**130000** a,b	25	**72000** a,b
SWMU 1-16 (toe) (2.5 ft)	01/16/20	5.5	**69000** a,b	100	**14000** a,b
SWMU 1-16 (toe) (4-4.5 ft)	01/16/20	0.25	**16000** a,b	14	**5000** a,b
SWMU 1-17 (berm) (1.5 ft)	01/13/20	ND(0.091)	290	ND(4.5)	230
SWMU 1-17 (berm) (2.5 ft)	01/13/20	ND(0.054)	130	ND(2.7)	49
SWMU 1-17 (toe)	01/16/20	ND(0.45)	**62000** a,b	ND(23)	**48000** a,b
SWMU 1-17 (toe) (2.5 ft)	01/16/20	0.19	**14000** a,b	14	**4200** a,b
SWMU 1-17 (toe) (4.5-5 ft)	01/16/20	ND(0.058)	590	0.95	240
SWMU 1-18 (berm) (1.5 ft)	01/13/20	ND(0.082)	35	ND(4.1)	ND(47)
SWMU 1-18 (berm) (2.5 ft)	01/13/20	ND(0.097)	280	ND(4.8)	200
SWMU 1-18 (toe)	01/16/20	ND(0.35)	**96000** a,b	4.8	**31000** a,b
SWMU 1-18 (toe) (2.5 ft)	01/16/20	2.3	**23000** a,b	45	**8300** a,b
SWMU 1-18 (toe) (5 ft)	01/16/20	0.073	520	4.1	150

a	NMED Industrial SSL	4,275	3,000	500	3,000
b	NMED Residential SSL	871	1,000	100	1,000
c	USEPA RSL Industrial Soil HQ 0.1	250	NA	NA	NA

Notes:
NMED SSL's - New Mexico Environmental Department Industrial and Residential Soil Screening Levels, June 2019
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
AL - Aeration Lagoon
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Samples taken in Aeration Lagoon 2.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.
See sediment sampling logs for lithology of samples.

ATTACHMENT B - TABLE 1C. SWMU 1 SAMPLING - VOLATILE ORGANIC COMPOUNDS (EP-1)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	1,1,1,2-Tetrachloroethane (mg/kg)	1,1,1-Trichloroethane (mg/kg)	1,1,2,2-Tetrachloroethane (mg/kg)	1,1,2-Trichloroethane (mg/kg)	1,1-Dichloroethane (mg/kg)	1,1-Dichloroethene (mg/kg)	1,1-Dichloropropene (mg/kg)	1,2,3-Trichlorobenzene (mg/kg)
SWMU 1-1	01/15/20	ND(0.23)	ND(0.23)	ND(0.23)	ND(0.23)	ND(0.23)	ND(0.23)	ND(0.46)	ND(0.46)
SWMU 1-1 (0.5-3 ft)	01/15/20	ND(0.083)	ND(0.083)	ND(0.083)	ND(0.083)	0.029	ND(0.083)	ND(0.17)	ND(0.17)
SWMU 1-1 (5 ft)	01/15/20	ND(0.026)	ND(0.026)	ND(0.026)	ND(0.026)	ND(0.026)	ND(0.026)	ND(0.053)	ND(0.053)
SWMU 1-2 Dup	01/15/20	ND(0.27)	ND(0.27)	ND(0.27)	ND(0.27)	ND(0.27)	ND(0.27)	ND(0.55)	ND(0.55)
SWMU 1-2	01/15/20	ND(0.26)	ND(0.26)	ND(0.26)	ND(0.26)	ND(0.26)	ND(0.26)	ND(0.52)	ND(0.52)
SWMU 1-2 (2-2.5 ft)	01/15/20	ND(0.21)	ND(0.21)	ND(0.21)	ND(0.21)	ND(0.21)	ND(0.21)	ND(0.43)	ND(0.43)
SWMU 1-2 (3-3.5 ft)	01/15/20	ND(0.13)	ND(0.13)	ND(0.13)	ND(0.13)	ND(0.13)	ND(0.13)	ND(0.26)	ND(0.26)
SWMU 1-3 (0-0.5 ft)	01/14/20	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.35)	ND(0.35)
SWMU 1-3 (0.5-3 ft)	01/14/20	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)	0.077	ND(0.25)	ND(0.49)	ND(0.49)
SWMU 1-3 (3 ft)	01/14/20	ND(0.16)	ND(0.16)	ND(0.16)	ND(0.16)	ND(0.16)	ND(0.16)	ND(0.32)	ND(0.32)
SWMU 1-4	01/14/20	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.39)	ND(0.39)
SWMU 1-4 (3 ft)	01/14/20	ND(0.28)	ND(0.28)	ND(0.28)	ND(0.28)	0.088	ND(0.28)	ND(0.56)	ND(0.56)
SWMU 1-4 (3-3.5 ft)	01/14/20	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.05)	ND(0.05)
SWMU 1-11 (berm) (1.5 ft)	01/13/20	ND(0.035)	ND(0.035)	ND(0.035)	ND(0.035)	ND(0.035)	ND(0.035)	ND(0.069)	ND(0.069)
SWMU 1-11 (berm) (2.5 ft)	01/13/20	ND(0.034)	ND(0.034)	ND(0.034)	ND(0.034)	ND(0.034)	ND(0.034)	ND(0.069)	ND(0.069)
SWMU 1-11 (berm) (5 ft)	01/13/20	ND(0.035)	ND(0.035)	ND(0.035)	ND(0.035)	ND(0.035)	ND(0.035)	ND(0.071)	ND(0.071)
SWMU 1-11 (berm) (7.5 ft)	01/13/20	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.051)	ND(0.051)
SWMU 1-11 (toe)	01/15/20	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)	0.073	ND(0.25)	ND(0.5)	ND(0.5)
SWMU 1-11 (toe) (2.5 ft)	01/15/20	ND(0.15)	ND(0.15)	ND(0.15)	ND(0.15)	ND(0.15)	ND(0.15)	ND(0.3)	ND(0.3)
SWMU 1-12 (berm) (1.5 ft)	01/13/20	ND(0.031)	ND(0.031)	ND(0.031)	ND(0.031)	ND(0.031)	ND(0.031)	ND(0.063)	ND(0.063)
SWMU 1-12 (berm) (2.5 ft)	01/13/20	ND(0.034)	ND(0.034)	ND(0.034)	ND(0.034)	ND(0.034)	ND(0.034)	ND(0.067)	ND(0.067)
SWMU 1-12 (berm) (5 ft)	01/13/20	ND(0.03)	ND(0.03)	ND(0.03)	ND(0.03)	ND(0.03)	ND(0.03)	ND(0.059)	ND(0.059)
SWMU 1-12 (berm) (7.5 ft)	01/13/20	ND(0.034)	ND(0.034)	ND(0.034)	ND(0.034)	ND(0.034)	ND(0.034)	ND(0.067)	ND(0.067)
SWMU 1-12 (toe)	01/15/20	ND(0.22)	ND(0.22)	ND(0.22)	ND(0.22)	ND(0.22)	ND(0.22)	ND(0.44)	ND(0.44)
SWMU 1-12 (toe) (2.5 ft)	01/15/20	ND(0.025)	ND(0.025)	0.0081	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.05)	ND(0.05)
SWMU 1-12 (toe) (3 ft)	01/15/20	ND(0.024)	ND(0.024)	ND(0.024)	ND(0.024)	ND(0.024)	ND(0.024)	ND(0.048)	ND(0.048)
SWMU 1-13 (berm) (5 ft) Dup	01/13/20	ND(0.041)	ND(0.041)	ND(0.041)	ND(0.041)	ND(0.041)	ND(0.041)	ND(0.083)	ND(0.083)
SWMU 1-13 (berm) (1.5 ft)	01/13/20	ND(0.038)	ND(0.038)	ND(0.038)	ND(0.038)	ND(0.038)	ND(0.038)	ND(0.076)	ND(0.076)
SWMU 1-13 (berm) (2.5 ft)	01/13/20	ND(0.043)	ND(0.043)	ND(0.043)	ND(0.043)	ND(0.043)	ND(0.043)	ND(0.086)	ND(0.086)
SWMU 1-13 (berm) (5 ft)	01/13/20	ND(0.035)	ND(0.035)	ND(0.035)	ND(0.035)	ND(0.035)	ND(0.035)	ND(0.069)	ND(0.069)
SWMU 1-13 (berm) (7.5 ft)	01/13/20	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.078)	ND(0.078)
SWMU 1-13 (berm) (9 ft)	01/13/20	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.077)	ND(0.077)
SWMU 1-13 (toe) Dup	01/14/20	ND(0.038)	ND(0.038)	ND(0.038)	ND(0.038)	ND(0.038)	ND(0.038)	ND(0.076)	ND(0.076)
SWMU 1-13 (toe) (3 ft)	01/14/20	ND(0.15)	ND(0.15)	ND(0.15)	ND(0.15)	ND(0.15)	ND(0.15)	ND(0.31)	ND(0.31)
SWMU 1-13 (toe)	01/14/20	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.36)	ND(0.36)
SWMU 1-14 (berm) (5 ft) Dup	01/14/20	ND(0.034)	ND(0.034)	ND(0.034)	ND(0.034)	ND(0.034)	ND(0.034)	ND(0.068)	ND(0.068)
SWMU 1-14 (berm) (1.5 ft)	01/14/20	ND(0.041)	ND(0.041)	ND(0.041)	ND(0.041)	ND(0.041)	ND(0.041)	ND(0.082)	ND(0.082)
SWMU 1-14 (berm) (2.5 ft)	01/14/20	ND(0.04)	ND(0.04)	ND(0.04)	ND(0.04)	ND(0.04)	ND(0.04)	ND(0.08)	ND(0.08)
[a] NMED Industrial SSL		137.2	72,530	39.4	12.39	383.3	2,255	NA	NA
[b] NMED Residential SSL		28.1	14,400	7.98	18.8	78.6	440	NA	NA
[c] USEPA RSL Industrial Soil HQ 0.1		8.8	3,600	2.7	0.63	16	100	NA	93

Notes:
NMED SSL's - New Mexico Environmental Department Industrial and Residential Soil Screening Levels, June 2019.
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
EP - Evaporation Pond
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Samples taken in Evaporation Pond 1.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.
See sediment sampling logs for lithology of sample.

ATTACHMENT B - TABLE 1C. SWMU 1 SAMPLING - VOLATILE ORGANIC COMPOUNDS (EP-1)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	1,2,3-Trichloropropane (mg/kg)	1,2,4-Trichlorobenzene (mg/kg)	1,2,4-Trimethylbenzene (mg/kg)	1,2-Dibromo 3-chloropropane (mg/kg)	1,2-Dibromoethane (mg/kg)	1,2-Dichlorobenzene (mg/kg)	1,2-Dichloroethane (mg/kg)	1,2-Dichloropropane (mg/kg)
SWMU 1-1	01/15/20	ND(0.46)	ND(0.23)	0.14	ND(0.46)	ND(0.23)	ND(0.23)	ND(0.23)	ND(0.23)
SWMU 1-1 (0.5-3 ft)	01/15/20	ND(0.17)	ND(0.083)	0.89	ND(0.17)	ND(0.083)	ND(0.083)	ND(0.083)	ND(0.083)
SWMU 1-1 (5 ft)	01/15/20	ND(0.053)	ND(0.026)	0.007	ND(0.053)	ND(0.026)	ND(0.026)	ND(0.026)	ND(0.026)
SWMU 1-2 Dup	01/15/20	ND(0.55)	ND(0.27)	ND(0.27)	ND(0.55)	ND(0.27)	ND(0.27)	ND(0.27)	ND(0.27)
SWMU 1-2	01/15/20	ND(0.52)	ND(0.26)	0.034	ND(0.52)	ND(0.26)	ND(0.26)	ND(0.26)	ND(0.26)
SWMU 1-2 (2-2.5 ft)	01/15/20	ND(0.43)	ND(0.21)	0.63	ND(0.43)	0.06	ND(0.21)	ND(0.21)	ND(0.21)
SWMU 1-2 (3-3.5 ft)	01/15/20	ND(0.26)	ND(0.13)	0.015	ND(0.26)	ND(0.13)	ND(0.13)	ND(0.13)	ND(0.13)
SWMU 1-3 (0-0.5 ft)	01/14/20	ND(0.35)	ND(0.17)	ND(0.17)	ND(0.35)	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)
SWMU 1-3 (0.5-3 ft)	01/14/20	ND(0.49)	ND(0.25)	2	ND(0.49)	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)
SWMU 1-3 (3 ft)	01/14/20	ND(0.32)	ND(0.16)	0.43	ND(0.32)	ND(0.16)	ND(0.16)	ND(0.16)	ND(0.16)
SWMU 1-4	01/14/20	ND(0.39)	ND(0.2)	1.5	ND(0.39)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
SWMU 1-4 (3 ft)	01/14/20	ND(0.56)	ND(0.28)	1.8	ND(0.56)	ND(0.28)	ND(0.28)	ND(0.28)	ND(0.28)
SWMU 1-4 (3-3.5 ft)	01/14/20	ND(0.05)	ND(0.025)	0.069	ND(0.05)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)
SWMU 1-11 (berm) (1.5 ft)	01/13/20	ND(0.069)	ND(0.035)	0.0061	ND(0.069)	ND(0.035)	ND(0.035)	ND(0.035)	ND(0.035)
SWMU 1-11 (berm) (2.5 ft)	01/13/20	ND(0.069)	ND(0.034)	0.0049	ND(0.069)	ND(0.034)	ND(0.034)	ND(0.034)	ND(0.034)
SWMU 1-11 (berm) (5 ft)	01/13/20	ND(0.071)	ND(0.035)	ND(0.035)	ND(0.071)	ND(0.035)	ND(0.035)	ND(0.035)	ND(0.035)
SWMU 1-11 (berm) (7.5 ft)	01/13/20	ND(0.051)	ND(0.025)	0.17	ND(0.051)	0.01	ND(0.025)	0.086	ND(0.025)
SWMU 1-11 (toe)	01/15/20	ND(0.5)	ND(0.25)	2	ND(0.5)	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)
SWMU 1-11 (toe) (2.5 ft)	01/15/20	ND(0.3)	ND(0.15)	1	ND(0.3)	0.081	ND(0.15)	ND(0.15)	ND(0.15)
SWMU 1-12 (berm) (1.5 ft)	01/13/20	ND(0.063)	ND(0.031)	ND(0.031)	ND(0.063)	ND(0.031)	ND(0.031)	ND(0.031)	ND(0.031)
SWMU 1-12 (berm) (2.5 ft)	01/13/20	ND(0.067)	ND(0.034)	ND(0.034)	ND(0.067)	ND(0.034)	ND(0.034)	ND(0.034)	ND(0.034)
SWMU 1-12 (berm) (5 ft)	01/13/20	ND(0.059)	ND(0.03)	ND(0.03)	ND(0.059)	ND(0.03)	ND(0.03)	ND(0.03)	ND(0.03)
SWMU 1-12 (berm) (7.5 ft)	01/13/20	ND(0.067)	ND(0.034)	0.2	ND(0.067)	0.026	ND(0.034)	0.018	ND(0.034)
SWMU 1-12 (toe)	01/15/20	ND(0.44)	ND(0.22)	0.029	ND(0.44)	ND(0.22)	ND(0.22)	ND(0.22)	ND(0.22)
SWMU 1-12 (toe) (2.5 ft)	01/15/20	ND(0.05)	ND(0.025)	0.0062	ND(0.05)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)
SWMU 1-12 (toe) (3 ft)	01/15/20	ND(0.048)	ND(0.024)	0.0023	ND(0.048)	ND(0.024)	ND(0.024)	ND(0.024)	ND(0.024)
SWMU 1-13 (berm) (5 ft) Dup	01/13/20	ND(0.083)	ND(0.041)	ND(0.041)	ND(0.083)	ND(0.041)	ND(0.041)	ND(0.041)	ND(0.041)
SWMU 1-13 (berm) (1.5 ft)	01/13/20	ND(0.076)	ND(0.038)	ND(0.038)	ND(0.076)	ND(0.038)	ND(0.038)	ND(0.038)	ND(0.038)
SWMU 1-13 (berm) (2.5 ft)	01/13/20	ND(0.086)	ND(0.043)	ND(0.043)	ND(0.086)	ND(0.043)	ND(0.043)	ND(0.043)	ND(0.043)
SWMU 1-13 (berm) (5 ft)	01/13/20	ND(0.069)	ND(0.035)	ND(0.035)	ND(0.069)	ND(0.035)	ND(0.035)	ND(0.035)	ND(0.035)
SWMU 1-13 (berm) (7.5 ft)	01/13/20	ND(0.078)	ND(0.039)	ND(0.039)	ND(0.078)	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.039)
SWMU 1-13 (berm) (9 ft)	01/13/20	ND(0.077)	ND(0.039)	ND(0.039)	ND(0.077)	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.039)
SWMU 1-13 (toe) Dup	01/14/20	ND(0.076)	ND(0.038)	0.011	ND(0.076)	ND(0.038)	ND(0.038)	ND(0.038)	ND(0.038)
SWMU 1-13 (toe) (3 ft)	01/14/20	ND(0.31)	ND(0.15)	ND(0.15)	ND(0.31)	ND(0.15)	ND(0.15)	ND(0.15)	ND(0.15)
SWMU 1-13 (toe)	01/14/20	ND(0.36)	ND(0.18)	0.03	ND(0.36)	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.18)
SWMU 1-14 (berm) (5 ft) Dup	01/14/20	ND(0.068)	ND(0.034)	ND(0.034)	ND(0.068)	ND(0.034)	ND(0.034)	ND(0.034)	ND(0.034)
SWMU 1-14 (berm) (1.5 ft)	01/14/20	ND(0.082)	ND(0.041)	ND(0.041)	ND(0.082)	ND(0.041)	ND(0.041)	ND(0.041)	ND(0.041)
SWMU 1-14 (berm) (2.5 ft)	01/14/20	ND(0.08)	ND(0.04)	ND(0.04)	ND(0.08)	ND(0.04)	ND(0.04)	ND(0.04)	ND(0.04)
[a] NMED Industrial SSL		1.211	422.9	NA	1.179	3.309	12,970	40.67	86.82
[b] NMED Residential SSL		0.051	240	NA	0.0858	0.672	2,150	8.32	17.8
[c] USEPA RSL Industrial Soil HQ 0.1		0.11	26	180	0.064	0.16	930	2	6.6

Notes:
NMED SSL's - New Mexico Environmental Department Industrial and Residential Soil Screening Levels, June 2019.
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
EP - Evaporation Pond
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Samples taken in Evaporation Pond 1.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.
See sediment sampling logs for lithology of sample.

ATTACHMENT B - TABLE 1C. SWMU 1 SAMPLING - VOLATILE ORGANIC COMPOUNDS (EP-1)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	1,3,5-Trimethylbenzene (mg/kg)	1,3-Dichlorobenzene (mg/kg)	1,3-Dichloropropane (mg/kg)	1,4-Dichlorobenzene (mg/kg)	1-Methylnaphthalene (mg/kg)	2,2-Dichloropropane (mg/kg)	2-Butanone (mg/kg)	2-Chlorotoluene (mg/kg)
SWMU 1-1	01/15/20	0.028	ND(0.23)	ND(0.23)	ND(0.23)	0.4	ND(0.46)	ND(2.3)	ND(0.23)
SWMU 1-1 (0.5-3 ft)	01/15/20	0.28	ND(0.083)	ND(0.083)	ND(0.083)	5.5	ND(0.17)	0.69	ND(0.083)
SWMU 1-1 (5 ft)	01/15/20	ND(0.026)	ND(0.026)	ND(0.026)	ND(0.026)	0.053	ND(0.053)	0.042	ND(0.026)
SWMU 1-2 Dup	01/15/20	ND(0.27)	ND(0.27)	ND(0.27)	ND(0.27)	0.48	ND(0.55)	0.97	ND(0.27)
SWMU 1-2	01/15/20	ND(0.26)	ND(0.26)	ND(0.26)	ND(0.26)	0.53	ND(0.52)	0.64	ND(0.26)
SWMU 1-2 (2-2.5 ft)	01/15/20	0.16	ND(0.21)	ND(0.21)	ND(0.21)	3	ND(0.43)	1.9	ND(0.21)
SWMU 1-2 (3-3.5 ft)	01/15/20	ND(0.13)	ND(0.13)	ND(0.13)	ND(0.13)	ND(0.53)	ND(0.26)	ND(1.3)	ND(0.13)
SWMU 1-3 (0-0.5 ft)	01/14/20	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)	0.23	ND(0.35)	ND(1.7)	ND(0.17)
SWMU 1-3 (0.5-3 ft)	01/14/20	0.61	ND(0.25)	ND(0.25)	ND(0.25)	12	ND(0.49)	1	ND(0.25)
SWMU 1-3 (3 ft)	01/14/20	0.13	ND(0.16)	ND(0.16)	ND(0.16)	2.5	ND(0.32)	0.32	ND(0.16)
SWMU 1-4	01/14/20	0.49	ND(0.2)	ND(0.2)	ND(0.2)	7.9	ND(0.39)	ND(2)	ND(0.2)
SWMU 1-4 (3 ft)	01/14/20	0.52	ND(0.28)	ND(0.28)	ND(0.28)	14	ND(0.56)	1.2	ND(0.28)
SWMU 1-4 (3-3.5 ft)	01/14/20	0.017	ND(0.025)	ND(0.025)	ND(0.025)	0.4	ND(0.05)	0.16	ND(0.025)
SWMU 1-11 (berm) (1.5 ft)	01/13/20	ND(0.035)	ND(0.035)	ND(0.035)	ND(0.035)	ND(0.14)	ND(0.069)	ND(0.35)	ND(0.035)
SWMU 1-11 (berm) (2.5 ft)	01/13/20	ND(0.034)	ND(0.034)	ND(0.034)	ND(0.034)	ND(0.14)	ND(0.069)	ND(0.34)	ND(0.034)
SWMU 1-11 (berm) (5 ft)	01/13/20	ND(0.035)	ND(0.035)	ND(0.035)	ND(0.035)	ND(0.14)	ND(0.071)	ND(0.35)	ND(0.035)
SWMU 1-11 (berm) (7.5 ft)	01/13/20	0.11	ND(0.025)	ND(0.025)	ND(0.025)	0.49	ND(0.051)	ND(0.25)	ND(0.025)
SWMU 1-11 (toe)	01/15/20	0.59	ND(0.25)	ND(0.25)	ND(0.25)	21	ND(0.5)	1.1	ND(0.25)
SWMU 1-11 (toe) (2.5 ft)	01/15/20	0.3	ND(0.15)	ND(0.15)	ND(0.15)	5.9	ND(0.3)	ND(1.5)	ND(0.15)
SWMU 1-12 (berm) (1.5 ft)	01/13/20	ND(0.031)	ND(0.031)	ND(0.031)	ND(0.031)	ND(0.13)	ND(0.063)	ND(0.31)	ND(0.031)
SWMU 1-12 (berm) (2.5 ft)	01/13/20	ND(0.034)	ND(0.034)	ND(0.034)	ND(0.034)	ND(0.13)	ND(0.067)	ND(0.34)	ND(0.034)
SWMU 1-12 (berm) (5 ft)	01/13/20	ND(0.03)	ND(0.03)	ND(0.03)	ND(0.03)	ND(0.12)	ND(0.059)	ND(0.3)	ND(0.03)
SWMU 1-12 (berm) (7.5 ft)	01/13/20	0.062	ND(0.034)	ND(0.034)	ND(0.034)	1	ND(0.067)	ND(0.34)	ND(0.034)
SWMU 1-12 (toe)	01/15/20	ND(0.22)	ND(0.22)	ND(0.22)	ND(0.22)	0.65	ND(0.44)	ND(2.2)	ND(0.22)
SWMU 1-12 (toe) (2.5 ft)	01/15/20	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	0.015	ND(0.05)	ND(0.25)	ND(0.025)
SWMU 1-12 (toe) (3 ft)	01/15/20	ND(0.024)	ND(0.024)	ND(0.024)	ND(0.024)	0.027	ND(0.048)	ND(0.24)	ND(0.024)
SWMU 1-13 (berm) (5 ft) Dup	01/13/20	ND(0.041)	ND(0.041)	ND(0.041)	ND(0.041)	ND(0.17)	ND(0.083)	ND(0.41)	ND(0.041)
SWMU 1-13 (berm) (1.5 ft)	01/13/20	ND(0.038)	ND(0.038)	ND(0.038)	ND(0.038)	ND(0.15)	ND(0.076)	ND(0.38)	ND(0.038)
SWMU 1-13 (berm) (2.5 ft)	01/13/20	ND(0.043)	ND(0.043)	ND(0.043)	ND(0.043)	0.059	ND(0.086)	ND(0.43)	ND(0.043)
SWMU 1-13 (berm) (5 ft)	01/13/20	ND(0.035)	ND(0.035)	ND(0.035)	ND(0.035)	ND(0.14)	ND(0.069)	ND(0.35)	ND(0.035)
SWMU 1-13 (berm) (7.5 ft)	01/13/20	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.16)	ND(0.078)	ND(0.39)	ND(0.039)
SWMU 1-13 (berm) (9 ft)	01/13/20	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.15)	ND(0.077)	ND(0.39)	ND(0.039)
SWMU 1-13 (toe) Dup	01/14/20	ND(0.038)	ND(0.038)	ND(0.038)	ND(0.038)	ND(0.15)	ND(0.076)	0.047	ND(0.038)
SWMU 1-13 (toe) (3 ft)	01/14/20	ND(0.15)	ND(0.15)	ND(0.15)	ND(0.15)	ND(0.62)	ND(0.31)	ND(1.5)	ND(0.15)
SWMU 1-13 (toe)	01/14/20	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.72)	ND(0.36)	ND(1.8)	ND(0.18)
SWMU 1-14 (berm) (5 ft) Dup	01/14/20	ND(0.034)	ND(0.034)	ND(0.034)	ND(0.034)	ND(0.14)	ND(0.068)	ND(0.34)	ND(0.034)
SWMU 1-14 (berm) (1.5 ft)	01/14/20	ND(0.041)	ND(0.041)	ND(0.041)	ND(0.041)	ND(0.16)	ND(0.082)	ND(0.41)	ND(0.041)
SWMU 1-14 (berm) (2.5 ft)	01/14/20	ND(0.04)	ND(0.04)	ND(0.04)	ND(0.04)	ND(0.16)	ND(0.08)	ND(0.4)	ND(0.04)
[a] NMED Industrial SSL		NA	NA	NA	6,729	813	NA	411,000	25,960
[b] NMED Residential SSL		NA	NA	NA	1,290	172	NA	37,400	1,560
[c] USEPA RSL Industrial Soil HQ 0.1		150	NA	2,300	11	73	NA	19,000	2,300

Notes:
NMED SSL's - New Mexico Environmental Department Industrial and Residential Soil Screening Levels, June 2019.
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
EP - Evaporation Pond
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Samples taken in Evaporation Pond 1.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.
See sediment sampling logs for lithology of sample.

ATTACHMENT B - TABLE 1C. SWMU 1 SAMPLING - VOLATILE ORGANIC COMPOUNDS (EP-1)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	2-Hexanone (mg/kg)	2-Methylnaphthalene (mg/kg)	4-Chlorotoluene (mg/kg)	4-Methyl-2-Pentanone (mg/kg)	Acetone (mg/kg)	Benzene (mg/kg)	Bromobenzene (mg/kg)	Bromodichloromethane (mg/kg)
SWMU 1-1	01/15/20	ND(2.3)	0.47	ND(0.23)	ND(2.3)	0.78	ND(0.12)	ND(0.23)	ND(0.23)
SWMU 1-1 (0.5-3 ft)	01/15/20	0.11	8	ND(0.083)	ND(0.83)	0.55	0.073	ND(0.083)	ND(0.083)
SWMU 1-1 (5 ft)	01/15/20	ND(0.26)	0.044	ND(0.026)	0.02	0.077	ND(0.013)	ND(0.026)	ND(0.026)
SWMU 1-2 Dup	01/15/20	ND(2.7)	0.4	ND(0.27)	0.26	0.69	ND(0.14)	ND(0.27)	ND(0.27)
SWMU 1-2	01/15/20	ND(2.6)	0.49	ND(0.26)	0.21	0.76	ND(0.13)	ND(0.26)	ND(0.26)
SWMU 1-2 (2-2.5 ft)	01/15/20	ND(2.1)	4.3	ND(0.21)	0.24	0.4	0.088	ND(0.21)	ND(0.21)
SWMU 1-2 (3-3.5 ft)	01/15/20	0.077	ND(0.53)	ND(0.13)	ND(1.3)	0.13	ND(0.066)	ND(0.13)	ND(0.13)
SWMU 1-3 (0-0.5 ft)	01/14/20	ND(1.7)	0.24	ND(0.17)	0.13	ND(2.6)	ND(0.087)	ND(0.17)	ND(0.17)
SWMU 1-3 (0.5-3 ft)	01/14/20	0.23	17	ND(0.25)	ND(2.5)	0.28	0.12	ND(0.25)	ND(0.25)
SWMU 1-3 (3 ft)	01/14/20	0.28	3.6	ND(0.16)	ND(1.6)	ND(2.4)	ND(0.079)	ND(0.16)	ND(0.16)
SWMU 1-4	01/14/20	0.14	12	ND(0.2)	0.35	0.45	0.034	ND(0.2)	0.043
SWMU 1-4 (3 ft)	01/14/20	0.23	18	ND(0.28)	ND(2.8)	0.38	0.16	ND(0.28)	ND(0.28)
SWMU 1-4 (3-3.5 ft)	01/14/20	ND(0.25)	0.14	ND(0.025)	ND(0.25)	0.043	ND(0.012)	ND(0.025)	ND(0.025)
SWMU 1-11 (berm) (1.5 ft)	01/13/20	ND(0.35)	ND(0.14)	ND(0.035)	0.022	ND(0.52)	ND(0.017)	ND(0.035)	ND(0.035)
SWMU 1-11 (berm) (2.5 ft)	01/13/20	ND(0.34)	ND(0.14)	ND(0.034)	ND(0.34)	ND(0.51)	ND(0.017)	ND(0.034)	ND(0.034)
SWMU 1-11 (berm) (5 ft)	01/13/20	ND(0.35)	ND(0.14)	ND(0.035)	0.021	ND(0.53)	ND(0.018)	ND(0.035)	ND(0.035)
SWMU 1-11 (berm) (7.5 ft)	01/13/20	0.087	0.29	ND(0.025)	0.12	0.14	0.0083	ND(0.025)	ND(0.025)
SWMU 1-11 (toe)	01/15/20	0.51	31	ND(0.25)	ND(2.5)	0.79	0.029	ND(0.25)	ND(0.25)
SWMU 1-11 (toe) (2.5 ft)	01/15/20	0.17	9.2	ND(0.15)	0.38	0.91	0.041	ND(0.15)	ND(0.15)
SWMU 1-12 (berm) (1.5 ft)	01/13/20	ND(0.31)	ND(0.13)	ND(0.031)	0.019	ND(0.47)	ND(0.016)	ND(0.031)	ND(0.031)
SWMU 1-12 (berm) (2.5 ft)	01/13/20	ND(0.34)	ND(0.13)	ND(0.034)	0.021	ND(0.51)	ND(0.017)	ND(0.034)	ND(0.034)
SWMU 1-12 (berm) (5 ft)	01/13/20	ND(0.3)	ND(0.12)	ND(0.03)	0.019	ND(0.44)	ND(0.015)	ND(0.03)	ND(0.03)
SWMU 1-12 (berm) (7.5 ft)	01/13/20	0.091	1.5	ND(0.034)	0.15	0.15	ND(0.017)	ND(0.034)	ND(0.034)
SWMU 1-12 (toe)	01/15/20	ND(2.2)	0.64	ND(0.22)	0.15	ND(3.3)	ND(0.11)	ND(0.22)	ND(0.22)
SWMU 1-12 (toe) (2.5 ft)	01/15/20	ND(0.25)	0.026	ND(0.025)	ND(0.25)	0.075	ND(0.013)	ND(0.025)	ND(0.025)
SWMU 1-12 (toe) (3 ft)	01/15/20	ND(0.24)	0.026	ND(0.024)	ND(0.24)	0.045	ND(0.012)	ND(0.024)	ND(0.024)
SWMU 1-13 (berm) (5 ft) Dup	01/13/20	ND(0.41)	ND(0.17)	ND(0.041)	0.025	ND(0.62)	ND(0.021)	ND(0.041)	ND(0.041)
SWMU 1-13 (berm) (1.5 ft)	01/13/20	ND(0.38)	ND(0.15)	ND(0.038)	0.024	ND(0.57)	ND(0.019)	ND(0.038)	ND(0.038)
SWMU 1-13 (berm) (2.5 ft)	01/13/20	ND(0.43)	0.065	ND(0.043)	0.028	ND(0.65)	ND(0.022)	ND(0.043)	ND(0.043)
SWMU 1-13 (berm) (5 ft)	01/13/20	ND(0.35)	ND(0.14)	ND(0.035)	0.023	ND(0.52)	ND(0.017)	ND(0.035)	ND(0.035)
SWMU 1-13 (berm) (7.5 ft)	01/13/20	ND(0.39)	ND(0.16)	ND(0.039)	0.025	ND(0.58)	ND(0.019)	ND(0.039)	ND(0.039)
SWMU 1-13 (berm) (9 ft)	01/13/20	ND(0.39)	ND(0.15)	ND(0.039)	0.024	0.035	ND(0.019)	ND(0.039)	ND(0.039)
SWMU 1-13 (toe) Dup	01/14/20	ND(0.38)	0.027	ND(0.038)	ND(0.38)	0.064	ND(0.019)	ND(0.038)	ND(0.038)
SWMU 1-13 (toe) (3 ft)	01/14/20	ND(1.5)	ND(0.62)	ND(0.15)	ND(1.5)	ND(2.3)	ND(0.077)	ND(0.15)	ND(0.15)
SWMU 1-13 (toe)	01/14/20	ND(1.8)	ND(0.72)	ND(0.18)	ND(1.8)	ND(2.7)	ND(0.09)	ND(0.18)	ND(0.18)
SWMU 1-14 (berm) (5 ft) Dup	01/14/20	ND(0.34)	ND(0.14)	ND(0.034)	ND(0.34)	ND(0.51)	ND(0.017)	ND(0.034)	ND(0.034)
SWMU 1-14 (berm) (1.5 ft)	01/14/20	ND(0.41)	ND(0.16)	ND(0.041)	ND(0.41)	ND(0.61)	ND(0.02)	ND(0.041)	ND(0.041)
SWMU 1-14 (berm) (2.5 ft)	01/14/20	ND(0.4)	ND(0.16)	ND(0.04)	0.024	ND(0.6)	ND(0.02)	ND(0.04)	ND(0.04)
[a] NMED Industrial SSL		NA	3,368	NA	81,650	960,100	87.24	NA	30.18
[b] NMED Residential SSL		NA	232	NA	5,810	66,300	17.8	NA	6.19
[c] USEPA RSL Industrial Soil HQ 0.1		130	300	2,300	14,000	67,000	5.1	180	1.3

Notes:
NMED SSL's - New Mexico Environmental Department Industrial and Residential Soil Screening Levels, June 2019.
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
EP - Evaporation Pond
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Samples taken in Evaporation Pond 1.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.
See sediment sampling logs for lithology of sample.

ATTACHMENT B - TABLE 1C. SWMU 1 SAMPLING - VOLATILE ORGANIC COMPOUNDS (EP-1)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Bromoform (mg/kg)	Bromomethane (mg/kg)	Carbon Disulfide (mg/kg)	Carbon tetrachloride (mg/kg)	Chlorobenzene (mg/kg)	Chloroethane (mg/kg)	Chloroform (mg/kg)	Chloromethane (mg/kg)
SWMU 1-1	01/15/20	ND(0.23)	ND(0.69)	ND(2.3)	ND(0.23)	ND(0.23)	ND(0.46)	ND(0.23)	ND(0.69)
SWMU 1-1 (0.5-3 ft)	01/15/20	ND(0.083)	ND(0.25)	0.11	ND(0.083)	ND(0.083)	ND(0.17)	0.0095	0.033
SWMU 1-1 (5 ft)	01/15/20	ND(0.026)	ND(0.079)	ND(0.26)	ND(0.026)	ND(0.026)	ND(0.053)	ND(0.026)	ND(0.079)
SWMU 1-2 Dup	01/15/20	ND(0.27)	ND(0.82)	ND(2.7)	ND(0.27)	ND(0.27)	ND(0.55)	ND(0.27)	ND(0.82)
SWMU 1-2	01/15/20	ND(0.26)	ND(0.78)	ND(2.6)	ND(0.26)	ND(0.26)	ND(0.52)	ND(0.26)	ND(0.78)
SWMU 1-2 (2-2.5 ft)	01/15/20	ND(0.21)	ND(0.64)	ND(2.1)	ND(0.21)	ND(0.21)	ND(0.43)	ND(0.21)	ND(0.64)
SWMU 1-2 (3-3.5 ft)	01/15/20	ND(0.13)	ND(0.4)	ND(1.3)	ND(0.13)	ND(0.13)	ND(0.26)	ND(0.13)	ND(0.4)
SWMU 1-3 (0-0.5 ft)	01/14/20	ND(0.17)	ND(0.52)	ND(1.7)	ND(0.17)	ND(0.17)	ND(0.35)	ND(0.17)	ND(0.52)
SWMU 1-3 (0.5-3 ft)	01/14/20	ND(0.25)	ND(0.74)	ND(2.5)	ND(0.25)	ND(0.25)	ND(0.49)	ND(0.25)	0.097
SWMU 1-3 (3 ft)	01/14/20	ND(0.16)	ND(0.48)	ND(1.6)	ND(0.16)	ND(0.16)	ND(0.32)	ND(0.16)	ND(0.48)
SWMU 1-4	01/14/20	ND(0.2)	ND(0.59)	ND(2)	ND(0.2)	ND(0.2)	ND(0.39)	ND(0.2)	ND(0.59)
SWMU 1-4 (3 ft)	01/14/20	ND(0.28)	ND(0.84)	ND(2.8)	ND(0.28)	ND(0.28)	ND(0.56)	ND(0.28)	ND(0.84)
SWMU 1-4 (3-3.5 ft)	01/14/20	ND(0.025)	0.013	0.032	ND(0.025)	ND(0.025)	ND(0.05)	0.0069	ND(0.074)
SWMU 1-11 (berm) (1.5 ft)	01/13/20	ND(0.035)	ND(0.1)	ND(0.35)	ND(0.035)	ND(0.035)	ND(0.069)	ND(0.035)	ND(0.1)
SWMU 1-11 (berm) (2.5 ft)	01/13/20	ND(0.034)	ND(0.1)	ND(0.34)	ND(0.034)	ND(0.034)	ND(0.069)	ND(0.034)	ND(0.1)
SWMU 1-11 (berm) (5 ft)	01/13/20	ND(0.035)	ND(0.11)	ND(0.35)	ND(0.035)	ND(0.035)	ND(0.071)	ND(0.035)	ND(0.11)
SWMU 1-11 (berm) (7.5 ft)	01/13/20	ND(0.025)	ND(0.076)	ND(0.25)	ND(0.025)	ND(0.025)	ND(0.051)	ND(0.025)	ND(0.076)
SWMU 1-11 (toe)	01/15/20	ND(0.25)	0.12	ND(2.5)	ND(0.25)	ND(0.25)	ND(0.5)	ND(0.25)	ND(0.75)
SWMU 1-11 (toe) (2.5 ft)	01/15/20	ND(0.15)	ND(0.45)	ND(1.5)	ND(0.15)	ND(0.15)	ND(0.3)	ND(0.15)	ND(0.45)
SWMU 1-12 (berm) (1.5 ft)	01/13/20	ND(0.031)	ND(0.094)	ND(0.31)	ND(0.031)	ND(0.031)	ND(0.063)	ND(0.031)	ND(0.094)
SWMU 1-12 (berm) (2.5 ft)	01/13/20	ND(0.034)	ND(0.1)	ND(0.34)	ND(0.034)	ND(0.034)	ND(0.067)	ND(0.034)	ND(0.1)
SWMU 1-12 (berm) (5 ft)	01/13/20	ND(0.03)	ND(0.089)	ND(0.3)	ND(0.03)	ND(0.03)	ND(0.059)	ND(0.03)	ND(0.089)
SWMU 1-12 (berm) (7.5 ft)	01/13/20	ND(0.034)	ND(0.1)	ND(0.34)	ND(0.034)	ND(0.034)	ND(0.067)	ND(0.034)	ND(0.1)
SWMU 1-12 (toe)	01/15/20	ND(0.22)	ND(0.66)	ND(2.2)	ND(0.22)	ND(0.22)	ND(0.44)	ND(0.22)	ND(0.66)
SWMU 1-12 (toe) (2.5 ft)	01/15/20	ND(0.025)	0.013	ND(0.25)	ND(0.025)	ND(0.025)	ND(0.05)	ND(0.025)	ND(0.076)
SWMU 1-12 (toe) (3 ft)	01/15/20	ND(0.024)	ND(0.071)	ND(0.24)	ND(0.024)	ND(0.024)	ND(0.048)	ND(0.024)	ND(0.071)
SWMU 1-13 (berm) (5 ft) Dup	01/13/20	ND(0.041)	ND(0.12)	ND(0.41)	ND(0.041)	ND(0.041)	ND(0.083)	ND(0.041)	ND(0.12)
SWMU 1-13 (berm) (1.5 ft)	01/13/20	ND(0.038)	ND(0.11)	ND(0.38)	ND(0.038)	ND(0.038)	ND(0.076)	ND(0.038)	ND(0.11)
SWMU 1-13 (berm) (2.5 ft)	01/13/20	ND(0.043)	ND(0.13)	ND(0.43)	ND(0.043)	ND(0.043)	ND(0.086)	ND(0.043)	ND(0.13)
SWMU 1-13 (berm) (5 ft)	01/13/20	ND(0.035)	ND(0.1)	ND(0.35)	ND(0.035)	ND(0.035)	ND(0.069)	ND(0.035)	ND(0.1)
SWMU 1-13 (berm) (7.5 ft)	01/13/20	ND(0.039)	ND(0.12)	ND(0.39)	ND(0.039)	ND(0.039)	ND(0.078)	ND(0.039)	ND(0.12)
SWMU 1-13 (berm) (9 ft)	01/13/20	ND(0.039)	ND(0.12)	ND(0.39)	ND(0.039)	ND(0.039)	ND(0.077)	ND(0.039)	ND(0.12)
SWMU 1-13 (toe) Dup	01/14/20	ND(0.038)	0.021	ND(0.38)	ND(0.038)	ND(0.038)	ND(0.076)	ND(0.038)	ND(0.11)
SWMU 1-13 (toe) (3 ft)	01/14/20	ND(0.15)	ND(0.46)	ND(1.5)	ND(0.15)	ND(0.15)	ND(0.31)	ND(0.15)	ND(0.46)
SWMU 1-13 (toe)	01/14/20	ND(0.18)	0.087	ND(1.8)	ND(0.18)	ND(0.18)	ND(0.36)	ND(0.18)	ND(0.54)
SWMU 1-14 (berm) (5 ft) Dup	01/14/20	ND(0.034)	ND(0.1)	ND(0.34)	ND(0.034)	ND(0.034)	ND(0.068)	ND(0.034)	ND(0.1)
SWMU 1-14 (berm) (1.5 ft)	01/14/20	ND(0.041)	ND(0.12)	ND(0.41)	ND(0.041)	ND(0.041)	ND(0.082)	ND(0.041)	ND(0.12)
SWMU 1-14 (berm) (2.5 ft)	01/14/20	ND(0.04)	ND(0.12)	ND(0.4)	ND(0.04)	ND(0.04)	ND(0.08)	ND(0.04)	ND(0.12)
[a] NMED Industrial SSL		1,760	94.52	8,541	52.5	2,157	89,540	28.66	200.8
[b] NMED Residential SSL		674	17.7	1,550	10.7	378	19,000	5.9	41.1
[c] USEPA RSL Industrial Soil HQ 0.1		86	3	350	2.9	130	5,700	1.4	46

Notes:
NMED SSL's - New Mexico Environmental Department Industrial and Residential Soil Screening Levels, June 2019.
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
EP - Evaporation Pond
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Samples taken in Evaporation Pond 1.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.
See sediment sampling logs for lithology of sample.

ATTACHMENT B - TABLE 1C. SWMU 1 SAMPLING - VOLATILE ORGANIC COMPOUNDS (EP-1)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	cis-1,2-Dichloroethene (mg/kg)	Cis-1,3-dichloropropene (mg/kg)	Dibromochloromethane (mg/kg)	Dibromomethane (mg/kg)	Dichlorodifluoromethane (mg/kg)	Ethylbenzene (mg/kg)	Hexachlorobutadiene (mg/kg)	Isopropylbenzene (mg/kg)
SWMU 1-1	01/15/20	ND(0.23)	ND(0.23)	ND(0.23)	ND(0.23)	ND(0.23)	ND(0.23)	ND(0.46)	ND(0.23)
SWMU 1-1 (0.5-3 ft)	01/15/20	0.029	ND(0.083)	ND(0.083)	ND(0.083)	ND(0.083)	0.19	ND(0.17)	0.039
SWMU 1-1 (5 ft)	01/15/20	ND(0.026)	ND(0.026)	ND(0.026)	ND(0.026)	ND(0.026)	ND(0.026)	ND(0.053)	ND(0.026)
SWMU 1-2 Dup	01/15/20	ND(0.27)	ND(0.27)	ND(0.27)	ND(0.27)	ND(0.27)	ND(0.27)	ND(0.55)	ND(0.27)
SWMU 1-2	01/15/20	ND(0.26)	ND(0.26)	ND(0.26)	ND(0.26)	ND(0.26)	ND(0.26)	ND(0.52)	ND(0.26)
SWMU 1-2 (2-2.5 ft)	01/15/20	ND(0.21)	ND(0.21)	0.045	ND(0.21)	ND(0.21)	0.11	ND(0.43)	0.039
SWMU 1-2 (3-3.5 ft)	01/15/20	ND(0.13)	ND(0.13)	ND(0.13)	ND(0.13)	ND(0.13)	ND(0.13)	ND(0.26)	ND(0.13)
SWMU 1-3 (0-0.5 ft)	01/14/20	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.35)	ND(0.17)
SWMU 1-3 (0.5-3 ft)	01/14/20	0.052	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)	0.46	ND(0.49)	0.087
SWMU 1-3 (3 ft)	01/14/20	0.032	ND(0.16)	ND(0.16)	ND(0.16)	ND(0.16)	0.031	ND(0.32)	ND(0.16)
SWMU 1-4	01/14/20	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	0.19	ND(0.39)	0.073
SWMU 1-4 (3 ft)	01/14/20	ND(0.28)	ND(0.28)	ND(0.28)	ND(0.28)	ND(0.28)	0.39	ND(0.56)	0.061
SWMU 1-4 (3-3.5 ft)	01/14/20	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	0.0099	ND(0.05)	0.0019
SWMU 1-11 (berm) (1.5 ft)	01/13/20	ND(0.035)	ND(0.035)	ND(0.035)	ND(0.035)	ND(0.035)	ND(0.035)	ND(0.069)	ND(0.035)
SWMU 1-11 (berm) (2.5 ft)	01/13/20	ND(0.034)	ND(0.034)	ND(0.034)	ND(0.034)	ND(0.034)	ND(0.034)	ND(0.069)	ND(0.034)
SWMU 1-11 (berm) (5 ft)	01/13/20	ND(0.035)	ND(0.035)	ND(0.035)	ND(0.035)	ND(0.035)	ND(0.035)	ND(0.071)	ND(0.035)
SWMU 1-11 (berm) (7.5 ft)	01/13/20	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	0.089	ND(0.051)	0.016
SWMU 1-11 (toe)	01/15/20	0.055	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)	0.27	ND(0.5)	0.12
SWMU 1-11 (toe) (2.5 ft)	01/15/20	ND(0.15)	ND(0.15)	ND(0.15)	ND(0.15)	ND(0.15)	0.16	ND(0.3)	0.071
SWMU 1-12 (berm) (1.5 ft)	01/13/20	ND(0.031)	ND(0.031)	ND(0.031)	ND(0.031)	ND(0.031)	ND(0.031)	ND(0.063)	ND(0.031)
SWMU 1-12 (berm) (2.5 ft)	01/13/20	ND(0.034)	ND(0.034)	ND(0.034)	ND(0.034)	ND(0.034)	ND(0.034)	ND(0.067)	ND(0.034)
SWMU 1-12 (berm) (5 ft)	01/13/20	ND(0.03)	ND(0.03)	ND(0.03)	ND(0.03)	ND(0.03)	ND(0.03)	ND(0.059)	ND(0.03)
SWMU 1-12 (berm) (7.5 ft)	01/13/20	ND(0.034)	ND(0.034)	ND(0.034)	ND(0.034)	ND(0.034)	0.018	ND(0.067)	0.013
SWMU 1-12 (toe)	01/15/20	ND(0.22)	ND(0.22)	ND(0.22)	ND(0.22)	ND(0.22)	ND(0.22)	ND(0.44)	ND(0.22)
SWMU 1-12 (toe) (2.5 ft)	01/15/20	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.05)	ND(0.025)
SWMU 1-12 (toe) (3 ft)	01/15/20	ND(0.024)	ND(0.024)	ND(0.024)	ND(0.024)	ND(0.024)	ND(0.024)	ND(0.048)	ND(0.024)
SWMU 1-13 (berm) (5 ft) Dup	01/13/20	ND(0.041)	ND(0.041)	ND(0.041)	ND(0.041)	ND(0.041)	ND(0.041)	ND(0.083)	ND(0.041)
SWMU 1-13 (berm) (1.5 ft)	01/13/20	ND(0.038)	ND(0.038)	ND(0.038)	ND(0.038)	ND(0.038)	ND(0.038)	ND(0.076)	ND(0.038)
SWMU 1-13 (berm) (2.5 ft)	01/13/20	ND(0.043)	ND(0.043)	ND(0.043)	ND(0.043)	ND(0.043)	ND(0.043)	ND(0.086)	ND(0.043)
SWMU 1-13 (berm) (5 ft)	01/13/20	ND(0.035)	ND(0.035)	ND(0.035)	ND(0.035)	ND(0.035)	ND(0.035)	ND(0.069)	ND(0.035)
SWMU 1-13 (berm) (7.5 ft)	01/13/20	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.078)	ND(0.039)
SWMU 1-13 (berm) (9 ft)	01/13/20	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.077)	ND(0.039)
SWMU 1-13 (toe) Dup	01/14/20	ND(0.038)	ND(0.038)	ND(0.038)	ND(0.038)	ND(0.038)	ND(0.038)	ND(0.076)	ND(0.038)
SWMU 1-13 (toe) (3 ft)	01/14/20	ND(0.15)	ND(0.15)	ND(0.15)	ND(0.15)	ND(0.15)	ND(0.15)	ND(0.31)	ND(0.15)
SWMU 1-13 (toe)	01/14/20	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.36)	ND(0.18)
SWMU 1-14 (berm) (5 ft) Dup	01/14/20	ND(0.034)	ND(0.034)	ND(0.034)	ND(0.034)	ND(0.034)	ND(0.034)	ND(0.068)	ND(0.034)
SWMU 1-14 (berm) (1.5 ft)	01/14/20	ND(0.041)	ND(0.041)	ND(0.041)	ND(0.041)	ND(0.041)	ND(0.041)	ND(0.082)	ND(0.041)
SWMU 1-14 (berm) (2.5 ft)	01/14/20	ND(0.04)	ND(0.04)	ND(0.04)	ND(0.04)	ND(0.04)	ND(0.04)	ND(0.08)	ND(0.04)
[a] NMED Industrial SSL		2,596	NA	67.37	288.2	864.8	367.6	52.08	14,220
[b] NMED Residential SSL		156	NA	13.9	57.9	182	75.1	68.3	2,360
[c] USEPA RSL Industrial Soil HQ 0.1		230	NA	39	9.9	37	25	5.3	990

Notes:
NMED SSL's - New Mexico Environmental Department Industrial and Residential Soil Screening Levels, June 2019.
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
EP - Evaporation Pond
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Samples taken in Evaporation Pond 1.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.
See sediment sampling logs for lithology of sample.

ATTACHMENT B - TABLE 1C. SWMU 1 SAMPLING - VOLATILE ORGANIC COMPOUNDS (EP-1)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Methylene Chloride (mg/kg)	MTBE (mg/kg)	Naphthalene (mg/kg)	n-Butylbenzene (mg/kg)	n-Propylbenzene (mg/kg)	p-Isopropyltoluene (mg/kg)	sec-Butylbenzene (mg/kg)	Styrene (mg/kg)
SWMU 1-1	01/15/20	ND(0.69)	ND(0.23)	ND(0.46)	ND(0.69)	ND(0.23)	ND(0.23)	ND(0.23)	ND(0.23)
SWMU 1-1 (0.5-3 ft)	01/15/20	ND(0.25)	0.057	2	0.1	0.11	0.043	0.045	ND(0.083)
SWMU 1-1 (5 ft)	01/15/20	0.015	0.0094	0.0085	ND(0.079)	ND(0.026)	ND(0.026)	ND(0.026)	ND(0.026)
SWMU 1-2 Dup	01/15/20	0.13	ND(0.27)	0.15	ND(0.82)	ND(0.27)	ND(0.27)	ND(0.27)	ND(0.27)
SWMU 1-2	01/15/20	0.11	ND(0.26)	0.14	ND(0.78)	ND(0.26)	ND(0.26)	ND(0.26)	ND(0.26)
SWMU 1-2 (2-2.5 ft)	01/15/20	ND(0.64)	ND(0.21)	1	0.073	0.069	0.042	0.11	ND(0.21)
SWMU 1-2 (3-3.5 ft)	01/15/20	0.072	ND(0.13)	ND(0.26)	ND(0.4)	ND(0.13)	ND(0.13)	ND(0.13)	ND(0.13)
SWMU 1-3 (0-0.5 ft)	01/14/20	ND(0.52)	ND(0.17)	ND(0.35)	ND(0.52)	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)
SWMU 1-3 (0.5-3 ft)	01/14/20	ND(0.74)	ND(0.25)	3.9	0.23	0.26	0.1	0.11	ND(0.25)
SWMU 1-3 (3 ft)	01/14/20	ND(0.48)	ND(0.16)	0.51	0.07	0.033	0.018	ND(0.16)	ND(0.16)
SWMU 1-4	01/14/20	0.099	ND(0.2)	2.4	0.25	0.17	0.12	0.18	ND(0.2)
SWMU 1-4 (3 ft)	01/14/20	ND(0.84)	ND(0.28)	3.8	0.23	0.24	0.079	0.1	ND(0.28)
SWMU 1-4 (3-3.5 ft)	01/14/20	0.01	ND(0.025)	ND(0.05)	0.011	0.0097	0.0099	0.0096	ND(0.025)
SWMU 1-11 (berm) (1.5 ft)	01/13/20	0.021	ND(0.035)	ND(0.069)	ND(0.1)	ND(0.035)	ND(0.035)	ND(0.035)	ND(0.035)
SWMU 1-11 (berm) (2.5 ft)	01/13/20	0.02	ND(0.034)	ND(0.069)	ND(0.1)	ND(0.034)	ND(0.034)	ND(0.034)	ND(0.034)
SWMU 1-11 (berm) (5 ft)	01/13/20	0.021	ND(0.035)	ND(0.071)	ND(0.11)	ND(0.035)	ND(0.035)	ND(0.035)	ND(0.035)
SWMU 1-11 (berm) (7.5 ft)	01/13/20	0.029	ND(0.025)	0.078	0.024	0.025	0.025	0.02	ND(0.025)
SWMU 1-11 (toe)	01/15/20	0.053	ND(0.25)	3.4	0.36	0.27	0.2	0.21	ND(0.25)
SWMU 1-11 (toe) (2.5 ft)	01/15/20	0.081	ND(0.15)	1.4	0.17	0.14	0.091	0.16	ND(0.15)
SWMU 1-12 (berm) (1.5 ft)	01/13/20	0.018	ND(0.031)	ND(0.063)	ND(0.094)	ND(0.031)	ND(0.031)	ND(0.031)	ND(0.031)
SWMU 1-12 (berm) (2.5 ft)	01/13/20	0.021	ND(0.034)	ND(0.067)	ND(0.1)	ND(0.034)	ND(0.034)	ND(0.034)	ND(0.034)
SWMU 1-12 (berm) (5 ft)	01/13/20	0.018	ND(0.03)	ND(0.059)	ND(0.089)	ND(0.03)	ND(0.03)	ND(0.03)	ND(0.03)
SWMU 1-12 (berm) (7.5 ft)	01/13/20	0.039	ND(0.034)	0.18	0.041	0.023	0.02	0.032	ND(0.034)
SWMU 1-12 (toe)	01/15/20	ND(0.66)	ND(0.22)	0.17	ND(0.66)	ND(0.22)	ND(0.22)	ND(0.22)	ND(0.22)
SWMU 1-12 (toe) (2.5 ft)	01/15/20	0.0074	ND(0.025)	ND(0.05)	ND(0.076)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)
SWMU 1-12 (toe) (3 ft)	01/15/20	0.029	ND(0.024)	ND(0.048)	ND(0.071)	ND(0.024)	ND(0.024)	ND(0.024)	ND(0.024)
SWMU 1-13 (berm) (5 ft) Dup	01/13/20	0.027	ND(0.041)	ND(0.083)	ND(0.12)	ND(0.041)	ND(0.041)	ND(0.041)	ND(0.041)
SWMU 1-13 (berm) (1.5 ft)	01/13/20	0.032	ND(0.038)	ND(0.076)	ND(0.11)	ND(0.038)	ND(0.038)	ND(0.038)	ND(0.038)
SWMU 1-13 (berm) (2.5 ft)	01/13/20	0.036	ND(0.043)	ND(0.086)	ND(0.13)	ND(0.043)	ND(0.043)	ND(0.043)	ND(0.043)
SWMU 1-13 (berm) (5 ft)	01/13/20	0.023	ND(0.035)	ND(0.069)	ND(0.1)	ND(0.035)	ND(0.035)	ND(0.035)	ND(0.035)
SWMU 1-13 (berm) (7.5 ft)	01/13/20	0.033	ND(0.039)	ND(0.078)	ND(0.12)	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.039)
SWMU 1-13 (berm) (9 ft)	01/13/20	0.023	ND(0.039)	ND(0.077)	ND(0.12)	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.039)
SWMU 1-13 (toe) Dup	01/14/20	0.01	ND(0.038)	ND(0.076)	ND(0.11)	ND(0.038)	ND(0.038)	ND(0.038)	ND(0.038)
SWMU 1-13 (toe) (3 ft)	01/14/20	0.078	ND(0.15)	ND(0.31)	ND(0.46)	ND(0.15)	ND(0.15)	ND(0.15)	ND(0.15)
SWMU 1-13 (toe)	01/14/20	ND(0.54)	ND(0.18)	ND(0.36)	ND(0.54)	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.18)
SWMU 1-14 (berm) (5 ft) Dup	01/14/20	0.027	ND(0.034)	ND(0.068)	ND(0.1)	ND(0.034)	ND(0.034)	ND(0.034)	ND(0.034)
SWMU 1-14 (berm) (1.5 ft)	01/14/20	0.027	ND(0.041)	ND(0.082)	ND(0.12)	ND(0.041)	ND(0.041)	ND(0.041)	ND(0.041)
SWMU 1-14 (berm) (2.5 ft)	01/14/20	0.027	ND(0.04)	ND(0.08)	ND(0.12)	ND(0.04)	ND(0.04)	ND(0.04)	ND(0.04)
[a] NMED Industrial SSL		5,131	NA	241	NA	NA	NA	NA	51,300
[b] NMED Residential SSL		766	NA	49.7	NA	NA	NA	NA	7,260
[c] USEPA RSL Industrial Soil HQ 0.1		320	210	17	5,800	2,400	NA	12,000	3,500

Notes:
NMED SSL's - New Mexico Environmental Department Industrial and Residential Soil Screening Levels, June 2019.
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
EP - Evaporation Pond
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Samples taken in Evaporation Pond 1.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.
See sediment sampling logs for lithology of sample.

ATTACHMENT B - TABLE 1C. SWMU 1 SAMPLING - VOLATILE ORGANIC COMPOUNDS (EP-1)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	tert-Butylbenzene (mg/kg)	Tetrachloroethene (mg/kg)	Toluene (mg/kg)	trans-1,2-Dichloroethene (mg/kg)	trans-1,3-Dichloropropene (mg/kg)	Trichloroethene (mg/kg)	Trichlorofluoromethane (mg/kg)	Vinyl Chloride (mg/kg)
SWMU 1-1	01/15/20	ND(0.23)	ND(0.23)	0.028	ND(0.23)	ND(0.23)	ND(0.23)	ND(0.23)	ND(0.23)
SWMU 1-1 (0.5-3 ft)	01/15/20	ND(0.083)	ND(0.083)	0.51	ND(0.083)	0.024	ND(0.083)	ND(0.083)	ND(0.083)
SWMU 1-1 (5 ft)	01/15/20	ND(0.026)	ND(0.026)	0.0038	ND(0.026)	ND(0.026)	ND(0.026)	ND(0.026)	ND(0.026)
SWMU 1-2 Dup	01/15/20	ND(0.27)	ND(0.27)	0.045	ND(0.27)	ND(0.27)	ND(0.27)	ND(0.27)	ND(0.27)
SWMU 1-2	01/15/20	ND(0.26)	ND(0.26)	0.04	ND(0.26)	ND(0.26)	ND(0.26)	ND(0.26)	ND(0.26)
SWMU 1-2 (2-2.5 ft)	01/15/20	ND(0.21)	ND(0.21)	0.35	ND(0.21)	ND(0.21)	ND(0.21)	ND(0.21)	ND(0.21)
SWMU 1-2 (3-3.5 ft)	01/15/20	ND(0.13)	ND(0.13)	ND(0.13)	ND(0.13)	ND(0.13)	ND(0.13)	ND(0.13)	ND(0.13)
SWMU 1-3 (0-0.5 ft)	01/14/20	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)
SWMU 1-3 (0.5-3 ft)	01/14/20	ND(0.25)	ND(0.25)	1.3	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)
SWMU 1-3 (3 ft)	01/14/20	ND(0.16)	ND(0.16)	0.085	ND(0.16)	ND(0.16)	ND(0.16)	ND(0.16)	ND(0.16)
SWMU 1-4	01/14/20	ND(0.2)	ND(0.2)	0.3	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
SWMU 1-4 (3 ft)	01/14/20	ND(0.28)	ND(0.28)	1.1	ND(0.28)	ND(0.28)	ND(0.28)	ND(0.28)	ND(0.28)
SWMU 1-4 (3-3.5 ft)	01/14/20	ND(0.025)	ND(0.025)	0.02	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)
SWMU 1-11 (berm) (1.5 ft)	01/13/20	ND(0.035)	ND(0.035)	ND(0.035)	ND(0.035)	ND(0.035)	ND(0.035)	ND(0.035)	ND(0.035)
SWMU 1-11 (berm) (2.5 ft)	01/13/20	ND(0.034)	ND(0.034)	ND(0.034)	ND(0.034)	ND(0.034)	ND(0.034)	ND(0.034)	ND(0.034)
SWMU 1-11 (berm) (5 ft)	01/13/20	ND(0.035)	ND(0.035)	ND(0.035)	ND(0.035)	ND(0.035)	ND(0.035)	ND(0.035)	ND(0.035)
SWMU 1-11 (berm) (7.5 ft)	01/13/20	ND(0.025)	ND(0.025)	0.025	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)
SWMU 1-11 (toe)	01/15/20	ND(0.25)	ND(0.25)	0.46	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)
SWMU 1-11 (toe) (2.5 ft)	01/15/20	ND(0.15)	ND(0.15)	0.32	ND(0.15)	0.025	ND(0.15)	ND(0.15)	ND(0.15)
SWMU 1-12 (berm) (1.5 ft)	01/13/20	ND(0.031)	ND(0.031)	ND(0.031)	ND(0.031)	ND(0.031)	ND(0.031)	ND(0.031)	ND(0.031)
SWMU 1-12 (berm) (2.5 ft)	01/13/20	ND(0.034)	ND(0.034)	ND(0.034)	ND(0.034)	ND(0.034)	ND(0.034)	ND(0.034)	ND(0.034)
SWMU 1-12 (berm) (5 ft)	01/13/20	ND(0.03)	ND(0.03)	ND(0.03)	ND(0.03)	ND(0.03)	ND(0.03)	ND(0.03)	ND(0.03)
SWMU 1-12 (berm) (7.5 ft)	01/13/20	ND(0.034)	ND(0.034)	0.019	ND(0.034)	0.0056	ND(0.034)	ND(0.034)	ND(0.034)
SWMU 1-12 (toe)	01/15/20	ND(0.22)	ND(0.22)	0.026	ND(0.22)	ND(0.22)	ND(0.22)	ND(0.22)	ND(0.22)
SWMU 1-12 (toe) (2.5 ft)	01/15/20	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)
SWMU 1-12 (toe) (3 ft)	01/15/20	ND(0.024)	ND(0.024)	0.0042	ND(0.024)	ND(0.024)	ND(0.024)	ND(0.024)	ND(0.024)
SWMU 1-13 (berm) (5 ft) Dup	01/13/20	ND(0.041)	ND(0.041)	ND(0.041)	ND(0.041)	ND(0.041)	ND(0.041)	ND(0.041)	ND(0.041)
SWMU 1-13 (berm) (1.5 ft)	01/13/20	ND(0.038)	ND(0.038)	ND(0.038)	ND(0.038)	ND(0.038)	ND(0.038)	ND(0.038)	ND(0.038)
SWMU 1-13 (berm) (2.5 ft)	01/13/20	ND(0.043)	ND(0.043)	ND(0.043)	ND(0.043)	ND(0.043)	ND(0.043)	ND(0.043)	ND(0.043)
SWMU 1-13 (berm) (5 ft)	01/13/20	ND(0.035)	ND(0.035)	ND(0.035)	ND(0.035)	ND(0.035)	ND(0.035)	ND(0.035)	ND(0.035)
SWMU 1-13 (berm) (7.5 ft)	01/13/20	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.039)
SWMU 1-13 (berm) (9 ft)	01/13/20	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.039)
SWMU 1-13 (toe) Dup	01/14/20	ND(0.038)	ND(0.038)	0.0094	ND(0.038)	ND(0.038)	ND(0.038)	ND(0.038)	ND(0.038)
SWMU 1-13 (toe) (3 ft)	01/14/20	ND(0.15)	ND(0.15)	ND(0.15)	ND(0.15)	ND(0.15)	ND(0.15)	ND(0.15)	ND(0.15)
SWMU 1-13 (toe)	01/14/20	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.18)
SWMU 1-14 (berm) (5 ft) Dup	01/14/20	ND(0.034)	ND(0.034)	0.0041	ND(0.034)	ND(0.034)	ND(0.034)	ND(0.034)	ND(0.034)
SWMU 1-14 (berm) (1.5 ft)	01/14/20	ND(0.041)	ND(0.041)	ND(0.041)	ND(0.041)	ND(0.041)	ND(0.041)	ND(0.041)	ND(0.041)
SWMU 1-14 (berm) (2.5 ft)	01/14/20	ND(0.04)	ND(0.04)	ND(0.04)	ND(0.04)	ND(0.04)	ND(0.04)	ND(0.04)	ND(0.04)
[a] NMED Industrial SSL		NA	628.8	61,340	1,610	NA	36.46	6,031	28.41
[b] NMED Residential SSL		NA	337	5,230	295	NA	15.5	1,230	0.742
[c] USEPA RSL Industrial Soil HQ 0.1		12,000	39	4,700	2,300	NA	1.9	35,000	1.7

Notes:
NMED SSL's - New Mexico Environmental Department Industrial and Residential Soil Screening Levels, June 2019.
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
EP - Evaporation Pond
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Samples taken in Evaporation Pond 1.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.
See sediment sampling logs for lithology of sample.

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ATTACHMENT B - TABLE 1C. SWMU 1 SAMPLING - VOLATILE ORGANIC COMPOUNDS (EP-1)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Xylenes, Total (mg/kg)	Diesel Range Organics (mg/kg)	Gasoline Range Organics (mg/kg)	Oil Range Organics (mg/kg)
SWMU 1-1	01/15/20	ND(0.46)	**84000** a,b	6.9	**29000** a,b
SWMU 1-1 (0.5-3 ft)	01/15/20	1.4	**47000** a,b	39	**8700** a,b
SWMU 1-1 (5 ft)	01/15/20	ND(0.053)	72	0.81	ND(47)
SWMU 1-2 Dup	01/15/20	ND(0.55)	**130000** a,b	8.2	**42000** a,b
SWMU 1-2	01/15/20	ND(0.52)	**150000** a,b	7.7	**50000** a,b
SWMU 1-2 (2-2.5 ft)	01/15/20	0.89	**68000** a,b	44	**9400** a,b
SWMU 1-2 (3-3.5 ft)	01/15/20	ND(0.26)	**1700** b	ND(13)	280
SWMU 1-3 (0-0.5 ft)	01/14/20	ND(0.35)	**29000** a,b	ND(17)	**15000** a,b
SWMU 1-3 (0.5-3 ft)	01/14/20	3.2	**46000** a,b	78	**7200** a,b
SWMU 1-3 (3 ft)	01/14/20	0.37	**1700** b	23	370
SWMU 1-4	01/14/20	1.5	**140000** a,b	40	**34000** a,b
SWMU 1-4 (3 ft)	01/14/20	2.8	**42000** a,b	86	**6400** a,b
SWMU 1-4 (3-3.5 ft)	01/14/20	0.062	810	13	160
SWMU 1-11 (berm) (1.5 ft)	01/13/20	ND(0.069)	140	ND(3.5)	230
SWMU 1-11 (berm) (2.5 ft)	01/13/20	ND(0.069)	520	ND(3.4)	650
SWMU 1-11 (berm) (5 ft)	01/13/20	ND(0.071)	24	ND(3.5)	ND(50)
SWMU 1-11 (berm) (7.5 ft)	01/13/20	0.41	**4900** a,b	8.9	**3200** a,b
SWMU 1-11 (toe)	01/15/20	1.9	**92000** a,b	91	**52000** a,b
SWMU 1-11 (toe) (2.5 ft)	01/15/20	1.2	**8100** a,b	71	**3300** a,b
SWMU 1-12 (berm) (1.5 ft)	01/13/20	ND(0.063)	32	ND(3.1)	110
SWMU 1-12 (berm) (2.5 ft)	01/13/20	ND(0.067)	4.2	ND(3.4)	ND(45)
SWMU 1-12 (berm) (5 ft)	01/13/20	ND(0.059)	110	ND(3)	110
SWMU 1-12 (berm) (7.5 ft)	01/13/20	0.16	**7000** a,b	6.3	**4600** a,b
SWMU 1-12 (toe)	01/15/20	ND(0.44)	**110000** a,b	6.5	**51000** a,b
SWMU 1-12 (toe) (2.5 ft)	01/15/20	ND(0.05)	150	ND(2.5)	48
SWMU 1-12 (toe) (3 ft)	01/15/20	ND(0.048)	190	ND(2.4)	110
SWMU 1-13 (berm) (5 ft) Dup	01/13/20	ND(0.083)	5.9	ND(4.1)	ND(49)
SWMU 1-13 (berm) (1.5 ft)	01/13/20	ND(0.076)	47	ND(3.8)	110
SWMU 1-13 (berm) (2.5 ft)	01/13/20	ND(0.086)	16	ND(4.3)	ND(49)
SWMU 1-13 (berm) (5 ft)	01/13/20	ND(0.069)	6.3	ND(3.5)	ND(49)
SWMU 1-13 (berm) (7.5 ft)	01/13/20	ND(0.078)	25	ND(3.9)	ND(46)
SWMU 1-13 (berm) (9 ft)	01/13/20	ND(0.077)	6.3	ND(3.9)	ND(48)
SWMU 1-13 (toe) Dup	01/14/20	ND(0.076)	**26000** a,b	1.9	**18000** a,b
SWMU 1-13 (toe) (3 ft)	01/14/20	ND(0.31)	24	ND(15)	ND(46)
SWMU 1-13 (toe)	01/14/20	ND(0.36)	**37000** a,b	ND(18)	**21000** a,b
SWMU 1-14 (berm) (5 ft) Dup	01/14/20	ND(0.068)	18	ND(3.4)	ND(48)
SWMU 1-14 (berm) (1.5 ft)	01/14/20	ND(0.082)	7	ND(4.1)	ND(50)
SWMU 1-14 (berm) (2.5 ft)	01/14/20	ND(0.08)	12	ND(4)	ND(48)
[a] NMED Industrial SSL		4,275	3,000	500	3,000
[b] NMED Residential SSL		871	1,000	100	1,000
[c] USEPA RSL Industrial Soil HQ 0.1		250	NA	NA	NA

Notes:
NMED SSL's - New Mexico Environmental Department Industrial and Residential Soil Screening Levels, June 2019.
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
EP - Evaporation Pond
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Samples taken in Evaporation Pond 1.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.
See sediment sampling logs for lithology of sample.

ATTACHMENT B - TABLE 1C. SWMU 1 SAMPLING - VOLATILE ORGANIC COMPOUNDS (EP-1)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	1,1,1,2-Tetrachloroethane (mg/kg)	1,1,1-Trichloroethane (mg/kg)	1,1,2,2-Tetrachloroethane (mg/kg)	1,1,2-Trichloroethane (mg/kg)	1,1-Dichloroethane (mg/kg)	1,1-Dichloroethene (mg/kg)	1,1-Dichloropropene (mg/kg)	1,2,3-Trichlorobenzene (mg/kg)
SWMU 1-14 (berm) (5 ft)	01/14/20	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.077)	ND(0.077)
SWMU 1-14 (berm) (7.5 ft)	01/14/20	ND(0.03)	ND(0.03)	ND(0.03)	ND(0.03)	ND(0.03)	ND(0.03)	ND(0.059)	ND(0.059)
SWMU 1-14 (toe)	01/14/20	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.35)	ND(0.35)
SWMU 1-14 (toe) (2.5 ft)	01/14/20	ND(0.24)	ND(0.24)	ND(0.24)	ND(0.24)	0.07	ND(0.24)	ND(0.47)	ND(0.47)
SWMU 1-14 (toe) (3 ft)	01/14/20	ND(0.14)	ND(0.14)	ND(0.14)	ND(0.14)	ND(0.14)	ND(0.14)	ND(0.29)	ND(0.29)
[a] NMED Industrial SSL		137.2	72,530	39.4	12.39	383.3	2,255	NA	NA
[b] NMED Residential SSL		28.1	14,400	7.98	18.8	78.6	440	NA	NA
[c] USEPA RSL Industrial Soil HQ 0.1		8.8	3,600	2.7	0.63	16	100	NA	93

Notes:
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Samples taken in Evaporation Pond 1.
Samples without location depths were taken from the surface.
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ATTACHMENT B - TABLE 1C. SWMU 1 SAMPLING - VOLATILE ORGANIC COMPOUNDS (EP-1)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	1,2,3-Trichloropropane (mg/kg)	1,2,4-Trichlorobenzene (mg/kg)	1,2,4-Trimethylbenzene (mg/kg)	1,2-Dibromo 3-chloropropane (mg/kg)	1,2-Dibromoethane (mg/kg)	1,2-Dichlorobenzene (mg/kg)	1,2-Dichloroethane (mg/kg)	1,2-Dichloropropane (mg/kg)
SWMU 1-14 (berm) (5 ft)	01/14/20	ND(0.077)	ND(0.039)	ND(0.039)	ND(0.077)	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.039)
SWMU 1-14 (berm) (7.5 ft)	01/14/20	ND(0.059)	ND(0.03)	0.0037	ND(0.059)	ND(0.03)	ND(0.03)	ND(0.03)	ND(0.03)
SWMU 1-14 (toe)	01/14/20	ND(0.35)	ND(0.18)	0.052	ND(0.35)	ND(0.18)	ND(0.18)	0.08	ND(0.18)
SWMU 1-14 (toe) (2.5 ft)	01/14/20	ND(0.47)	ND(0.24)	1.2	ND(0.47)	ND(0.24)	ND(0.24)	ND(0.24)	ND(0.24)
SWMU 1-14 (toe) (3 ft)	01/14/20	ND(0.29)	ND(0.14)	0.015	ND(0.29)	ND(0.14)	ND(0.14)	ND(0.14)	ND(0.14)
[a] NMED Industrial SSL		1.211	422.9	NA	1.179	3.309	12,970	40.67	86.82
[b] NMED Residential SSL		0.051	240	NA	0.0858	0.672	2,150	8.32	17.8
[c] USEPA RSL Industrial Soil HQ 0.1		0.11	26	180	0.064	0.16	930	2	6.6

Notes:
NMED SSL's - New Mexico Environmental Department Industrial and Residential Soil Screening Levels, June 2019.
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
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SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Samples taken in Evaporation Pond 1.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.
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ATTACHMENT B - TABLE 1C. SWMU 1 SAMPLING - VOLATILE ORGANIC COMPOUNDS (EP-1)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	1,3,5-Trimethylbenzene (mg/kg)	1,3-Dichlorobenzene (mg/kg)	1,3-Dichloropropane (mg/kg)	1,4-Dichlorobenzene (mg/kg)	1-Methylnaphthalene (mg/kg)	2,2-Dichloropropane (mg/kg)	2-Butanone (mg/kg)	2-Chlorotoluene (mg/kg)
SWMU 1-14 (berm) (5 ft)	01/14/20	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.15)	ND(0.077)	ND(0.39)	ND(0.039)
SWMU 1-14 (berm) (7.5 ft)	01/14/20	ND(0.03)	ND(0.03)	ND(0.03)	ND(0.03)	0.054	ND(0.059)	ND(0.3)	ND(0.03)
SWMU 1-14 (toe)	01/14/20	0.023	ND(0.18)	ND(0.18)	ND(0.18)	0.48	ND(0.35)	ND(1.8)	ND(0.18)
SWMU 1-14 (toe) (2.5 ft)	01/14/20	0.34	ND(0.24)	ND(0.24)	ND(0.24)	11	ND(0.47)	1.1	ND(0.24)
SWMU 1-14 (toe) (3 ft)	01/14/20	ND(0.14)	ND(0.14)	ND(0.14)	ND(0.14)	0.33	ND(0.29)	ND(1.4)	ND(0.14)
[a] NMED Industrial SSL		NA	NA	NA	6,729	813	NA	411,000	25,960
[b] NMED Residential SSL		NA	NA	NA	1,290	172	NA	37,400	1,560
[c] USEPA RSL Industrial Soil HQ 0.1		150	NA	2,300	11	73	NA	19,000	2,300

Notes:
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EP - Evaporation Pond
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Samples taken in Evaporation Pond 1.
Samples without location depths were taken from the surface.
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ATTACHMENT B - TABLE 1C. SWMU 1 SAMPLING - VOLATILE ORGANIC COMPOUNDS (EP-1)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	2-Hexanone (mg/kg)	2-Methylnaphthalene (mg/kg)	4-Chlorotoluene (mg/kg)	4-Methyl-2-Pentanone (mg/kg)	Acetone (mg/kg)	Benzene (mg/kg)	Bromobenzene (mg/kg)	Bromodichloromethane (mg/kg)
SWMU 1-14 (berm) (5 ft)	01/14/20	ND(0.39)	ND(0.15)	ND(0.039)	0.024	ND(0.58)	ND(0.019)	ND(0.039)	ND(0.039)
SWMU 1-14 (berm) (7.5 ft)	01/14/20	ND(0.3)	0.06	ND(0.03)	ND(0.3)	ND(0.44)	ND(0.015)	ND(0.03)	ND(0.03)
SWMU 1-14 (toe)	01/14/20	ND(1.8)	0.54	ND(0.18)	ND(1.8)	0.22	ND(0.088)	ND(0.18)	ND(0.18)
SWMU 1-14 (toe) (2.5 ft)	01/14/20	0.31	16	ND(0.24)	ND(2.4)	0.32	0.079	ND(0.24)	ND(0.24)
SWMU 1-14 (toe) (3 ft)	01/14/20	ND(1.4)	0.45	ND(0.14)	ND(1.4)	ND(2.2)	ND(0.072)	ND(0.14)	ND(0.14)
[a] NMED Industrial SSL	NA	3,368	NA	81,650	960,100	87.24	NA	30.18	
[b] NMED Residential SSL	NA	232	NA	5,810	66,300	17.8	NA	6.19	
[c] USEPA RSL Industrial Soil HQ 0.1	130	300	2,300	14,000	67,000	5.1	180	1.3	

Notes:
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EP - Evaporation Pond
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Samples taken in Evaporation Pond 1.
Samples without location depths were taken from the surface.
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ATTACHMENT B - TABLE 1C. SWMU 1 SAMPLING - VOLATILE ORGANIC COMPOUNDS (EP-1)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Bromoform (mg/kg)	Bromomethane (mg/kg)	Carbon Disulfide (mg/kg)	Carbon tetrachloride (mg/kg)	Chlorobenzene (mg/kg)	Chloroethane (mg/kg)	Chloroform (mg/kg)	Chloromethane (mg/kg)
SWMU 1-14 (berm) (5 ft)	01/14/20	ND(0.039)	ND(0.12)	ND(0.39)	ND(0.039)	ND(0.039)	ND(0.077)	ND(0.039)	ND(0.12)
SWMU 1-14 (berm) (7.5 ft)	01/14/20	ND(0.03)	ND(0.088)	ND(0.3)	ND(0.03)	ND(0.03)	ND(0.059)	ND(0.03)	ND(0.088)
SWMU 1-14 (toe)	01/14/20	ND(0.18)	ND(0.53)	ND(1.8)	ND(0.18)	ND(0.18)	ND(0.35)	ND(0.18)	ND(0.53)
SWMU 1-14 (toe) (2.5 ft)	01/14/20	ND(0.24)	ND(0.71)	ND(2.4)	ND(0.24)	ND(0.24)	ND(0.47)	ND(0.24)	ND(0.71)
SWMU 1-14 (toe) (3 ft)	01/14/20	ND(0.14)	ND(0.43)	ND(1.4)	ND(0.14)	ND(0.14)	ND(0.29)	ND(0.14)	ND(0.43)
[a] NMED Industrial SSL		1,760	94.52	8,541	52.5	2,157	89,540	28.66	200.8
[b] NMED Residential SSL		674	17.7	1,550	10.7	378	19,000	5.9	41.1
[c] USEPA RSL Industrial Soil HQ 0.1		86	3	350	2.9	130	5,700	1.4	46

Notes:
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ATTACHMENT B - TABLE 1C. SWMU 1 SAMPLING - VOLATILE ORGANIC COMPOUNDS (EP-1)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	cis-1,2-Dichloroethene (mg/kg)	Cis-1,3-dichloropropene (mg/kg)	Dibromochloromethane (mg/kg)	Dibromomethane (mg/kg)	Dichlorodifluoromethane (mg/kg)	Ethylbenzene (mg/kg)	Hexachlorobutadiene (mg/kg)	Isopropylbenzene (mg/kg)
SWMU 1-14 (berm) (5 ft)	01/14/20	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.077)	ND(0.039)
SWMU 1-14 (berm) (7.5 ft)	01/14/20	ND(0.03)	ND(0.03)	ND(0.03)	ND(0.03)	ND(0.03)	ND(0.03)	ND(0.059)	ND(0.03)
SWMU 1-14 (toe)	01/14/20	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.35)	ND(0.18)
SWMU 1-14 (toe) (2.5 ft)	01/14/20	0.033	ND(0.24)	ND(0.24)	ND(0.24)	ND(0.24)	0.2	ND(0.47)	0.041
SWMU 1-14 (toe) (3 ft)	01/14/20	ND(0.14)	ND(0.14)	ND(0.14)	ND(0.14)	ND(0.14)	ND(0.14)	ND(0.29)	ND(0.14)
[a] NMED Industrial SSL		2,596	NA	67.37	288.2	864.8	367.6	52.08	14,220
[b] NMED Residential SSL		156	NA	13.9	57.9	182	75.1	68.3	2,360
[c] USEPA RSL Industrial Soil HQ 0.1		230	NA	39	9.9	37	25	5.3	990

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ATTACHMENT B - TABLE 1C. SWMU 1 SAMPLING - VOLATILE ORGANIC COMPOUNDS (EP-1)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Methylene Chloride (mg/kg)	MTBE (mg/kg)	Naphthalene (mg/kg)	n-Butylbenzene (mg/kg)	n-Propylbenzene (mg/kg)	p-Isopropyltoluene (mg/kg)	sec-Butylbenzene (mg/kg)	Styrene (mg/kg)
SWMU 1-14 (berm) (5 ft)	01/14/20	0.034	ND(0.039)	ND(0.077)	ND(0.12)	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.039)
SWMU 1-14 (berm) (7.5 ft)	01/14/20	0.037	ND(0.03)	ND(0.059)	ND(0.088)	ND(0.03)	ND(0.03)	ND(0.03)	ND(0.03)
SWMU 1-14 (toe)	01/14/20	0.086	ND(0.18)	0.065	ND(0.53)	ND(0.18)	0.018	ND(0.18)	ND(0.18)
SWMU 1-14 (toe) (2.5 ft)	01/14/20	0.064	ND(0.24)	2.4	0.17	0.15	0.084	0.084	ND(0.24)
SWMU 1-14 (toe) (3 ft)	01/14/20	0.08	ND(0.14)	0.034	ND(0.43)	ND(0.14)	ND(0.14)	ND(0.14)	ND(0.14)
[a] NMED Industrial SSL		5,131	NA	241	NA	NA	NA	NA	51,300
[b] NMED Residential SSL		766	NA	49.7	NA	NA	NA	NA	7,260
[c] USEPA RSL Industrial Soil HQ 0.1		320	210	17	5,800	2,400	NA	12,000	3,500

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ATTACHMENT B - TABLE 1C. SWMU 1 SAMPLING - VOLATILE ORGANIC COMPOUNDS (EP-1)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	tert-Butylbenzene (mg/kg)	Tetrachloroethene (mg/kg)	Toluene (mg/kg)	trans-1,2-Dichloroethene (mg/kg)	trans-1,3-Dichloropropene (mg/kg)	Trichloroethene (mg/kg)	Trichlorofluoromethane (mg/kg)	Vinyl Chloride (mg/kg)
SWMU 1-14 (berm) (5 ft)	01/14/20	ND(0.039)	ND(0.039)	0.0044	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.039)
SWMU 1-14 (berm) (7.5 ft)	01/14/20	ND(0.03)	ND(0.03)	0.0045	ND(0.03)	ND(0.03)	ND(0.03)	ND(0.03)	ND(0.03)
SWMU 1-14 (toe)	01/14/20	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.18)
SWMU 1-14 (toe) (2.5 ft)	01/14/20	ND(0.24)	ND(0.24)	0.61	ND(0.24)	ND(0.24)	ND(0.24)	ND(0.24)	ND(0.24)
SWMU 1-14 (toe) (3 ft)	01/14/20	ND(0.14)	ND(0.14)	ND(0.14)	ND(0.14)	ND(0.14)	ND(0.14)	ND(0.14)	ND(0.14)
[a] NMED Industrial SSL	NA	628.8	61,340	1,610	NA	36.46	6,031	28.41	
[b] NMED Residential SSL	NA	337	5,230	295	NA	15.5	1,230	0.742	
[c] USEPA RSL Industrial Soil HQ 0.1	12,000	39	4,700	2,300	NA	1.9	35,000	1.7	

Notes:
NMED SSL's - New Mexico Environmental Department Industrial and Residential Soil Screening Levels, June 2019.
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
EP - Evaporation Pond
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Samples taken in Evaporation Pond 1.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.
See sediment sampling logs for lithology of sample.

ATTACHMENT B - TABLE 1C. SWMU 1 SAMPLING - VOLATILE ORGANIC COMPOUNDS (EP-1)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Xylenes, Total (mg/kg)	Diesel Range Organics (mg/kg)		Gasoline Range Organics (mg/kg)	Oil Range Organics (mg/kg)	
SWMU 1-14 (berm) (5 ft)	01/14/20	ND(0.077)	16		ND(3.9)	ND(48)	
SWMU 1-14 (berm) (7.5 ft)	01/14/20	ND(0.059)	**2800**	b	ND(3)	**1100**	b
SWMU 1-14 (toe)	01/14/20	ND(0.35)	**89000**	a,b	17	**28000**	a,b
SWMU 1-14 (toe) (2.5 ft)	01/14/20	1.5	**59000**	a,b	82	**12000**	a,b
SWMU 1-14 (toe) (3 ft)	01/14/20	ND(0.29)	120		4.4	ND(44)	

[a]	NMED Industrial SSL	4,275	3,000	500	3,000
[b]	NMED Residential SSL	871	1,000	100	1,000
[c]	USEPA RSL Industrial Soil HQ 0.1	250	NA	NA	NA

Notes:
NMED SSL's - New Mexico Environmental Department Industrial and Residential Soil Screening Levels, June 2019.
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
EP - Evaporation Pond
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Samples taken in Evaporation Pond 1.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.
See sediment sampling logs for lithology of sample.

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ATTACHMENT B - TABLE 2A. SWMU 1 SAMPLING - SEMIVOLATILE ORGANIC COMPOUNDS (AL-1)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	1,2,4-Trichlorobenzene (mg/kg)	1,2-Dichlorobenzene (mg/kg)	1,3-Dichlorobenzene (mg/kg)	1,4-Dichlorobenzene (mg/kg)	1-Methylnaphthalene (mg/kg)	2,4,5-Trichlorophenol (mg/kg)	2,4,6-Trichlorophenol (mg/kg)	2,4-Dichlorophenol (mg/kg)
SWMU 1-8	01/16/20	ND(4.8)	ND(4.8)	ND(4.8)	ND(4.8)	52	ND(4.8)	ND(4.8)	ND(9.5)
SWMU 1-8 (2.5 ft)	01/16/20	ND(4.6)	ND(4.6)	ND(4.6)	ND(4.6)	**83** [c]	ND(4.6)	ND(4.6)	ND(9.3)
SWMU 1-8 (5-5.5 ft)	01/16/20	ND(0.36)	ND(0.36)	ND(0.36)	ND(0.36)	0.32	ND(0.36)	ND(0.36)	ND(0.72)
SWMU 1-9	01/16/20	ND(5.6)	ND(5.6)	ND(5.6)	ND(5.6)	**75** [c]	ND(5.6)	ND(5.6)	ND(11)
SWMU 1-9 (4.5 ft)	01/16/20	ND(4.5)	ND(4.5)	ND(4.5)	ND(4.5)	**290** [b,c]	ND(4.5)	ND(4.5)	ND(9.1)
SWMU 1-9 (5.5-6 ft)	01/16/20	ND(0.35)	ND(0.35)	ND(0.35)	ND(0.35)	0.21	ND(0.35)	ND(0.35)	ND(0.7)
SWMU 1-10	01/16/20	ND(37)	ND(37)	ND(37)	ND(37)	**210** [b,c]	ND(37)	ND(37)	ND(73)
SWMU 1-10 (4-4.5 ft)	01/16/20	ND(22)	ND(22)	ND(22)	ND(22)	**270** [b,c]	ND(22)	ND(22)	ND(43)
SWMU 1-10 (4.5-5 ft)	01/16/20	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.39)	0.86	ND(0.39)	ND(0.39)	ND(0.77)
SWMU 1-19 (berm) (1.5 ft)	01/13/20	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.39)
SWMU 1-19 (berm) (2.5 ft)	01/13/20	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(3.9)
SWMU 1-19 (toe) Dup	01/16/20	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(10)
SWMU 1-19 (toe)	01/16/20	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(10)
SWMU 1-19 (toe) (0.5-6 ft)	01/16/20	ND(4.9)	ND(4.9)	ND(4.9)	ND(4.9)	62	ND(4.9)	ND(4.9)	ND(9.7)
SWMU 1-19 (toe) (6-6.5 ft)	01/16/20	ND(0.89)	ND(0.89)	ND(0.89)	ND(0.89)	ND(0.89)	ND(0.89)	ND(0.89)	ND(1.8)
SWMU 1-20 (berm) (2.5 ft)	01/14/20	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(4)
SWMU 1-20 (toe) (1.5 ft)	01/14/20	ND(0.36)	ND(0.36)	ND(0.36)	ND(0.36)	ND(0.36)	ND(0.36)	ND(0.36)	ND(0.72)
SWMU 1-20 (toe) (5 ft) Dup	01/15/20	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	4.9	ND(1.7)	ND(1.7)	ND(3.4)
SWMU 1-20 (toe)	01/15/20	ND(4.9)	ND(4.9)	ND(4.9)	ND(4.9)	ND(4.9)	ND(4.9)	ND(4.9)	ND(9.8)
SWMU 1-20 (toe) (0.5-3 ft)	01/15/20	ND(4.9)	ND(4.9)	ND(4.9)	ND(4.9)	65	ND(4.9)	ND(4.9)	ND(9.8)
SWMU 1-20 (toe) (5 ft)	01/15/20	ND(2)	ND(2)	ND(2)	ND(2)	9.8	ND(2)	ND(2)	ND(3.9)
SWMU 1-21 (berm) (1.5 ft)	01/14/20	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)	ND(3.8)
SWMU 1-21 (toe)	01/14/20	ND(4.9)	ND(4.9)	ND(4.9)	ND(4.9)	27	ND(4.9)	ND(4.9)	ND(9.9)
SWMU 1-21 (toe) (2.5 ft)	01/14/20	ND(0.94)	ND(0.94)	ND(0.94)	ND(0.94)	8.8	ND(0.94)	ND(0.94)	ND(1.9)
SWMU 1-21 (toe) (5 ft)	01/14/20	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)	ND(3.8)
SWMU 1-22 (berm) (1.5 ft)	01/14/20	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)	ND(3.9)
SWMU 1-22 (berm) (2.5 ft)	01/14/20	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(3.9)
SWMU 1-22 (berm) (5 ft)	01/14/20	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(50)
SWMU 1-22 (toe)	01/16/20	ND(4.8)	ND(4.8)	ND(4.8)	ND(4.8)	26	ND(4.8)	ND(4.8)	ND(9.6)
SWMU 1-22 (toe) (2.5 ft)	01/16/20	ND(4.7)	ND(4.7)	ND(4.7)	ND(4.7)	**170** [c]	ND(4.7)	ND(4.7)	ND(9.5)
SWMU 1-22 (toe) (3.5-4 ft)	01/16/20	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.38)	0.82	ND(0.38)	ND(0.38)	ND(0.75)
[a] NMED Industrial SSL		422.9	12,970	NA	6,729	813	91,630	916.3	2,749
[b] NMED Residential SSL		240	2,150	NA	1,290	172	6,160	484	185
[c] USEPA RSL Industrial Soil HQ 0.1		26	930	NA	11	73	8,200	82	250

Notes:
NMED SSL's - New Mexico Environmental Department Industrial and Residential Soil Screening Levels, June 2019
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
AL - Aeration Lagoon
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Samples taken in Aeration Lagoon 1.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.
See sediment samplings logs for lithology of samples.

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ATTACHMENT B - TABLE 2A. SWMU 1 SAMPLING - SEMIVOLATILE ORGANIC COMPOUNDS (AL-1)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	2,4-Dimethylphenol (mg/kg)	2,4-Dinitrophenol (mg/kg)	2,4-Dinitro Toluene (mg/kg)	2,6-Dinitro Toluene (mg/kg)	2-Chloronaphthalene (mg/kg)	2-Chlorophenol (mg/kg)	2-Methylnaphthalene (mg/kg)	2-Methyl phenol (mg/kg)
SWMU 1-8	01/16/20	ND(7.2)	ND(12)	ND(12)	ND(12)	ND(6)	ND(4.8)	56	ND(9.5)
SWMU 1-8 (2.5 ft)	01/16/20	ND(7)	ND(12)	ND(12)	ND(12)	ND(5.8)	ND(4.6)	120	ND(9.3)
SWMU 1-8 (5-5.5 ft)	01/16/20	ND(0.54)	ND(0.9)	ND(0.9)	ND(0.9)	ND(0.45)	ND(0.36)	0.34	0.3
SWMU 1-9	01/16/20	ND(8.4)	ND(14)	ND(14)	ND(14)	ND(7)	ND(5.6)	77	ND(11)
SWMU 1-9 (4.5 ft)	01/16/20	ND(6.8)	ND(11)	ND(11)	ND(11)	ND(5.7)	ND(4.5)	**340** [b,c]	ND(9.1)
SWMU 1-9 (5.5-6 ft)	01/16/20	ND(0.53)	ND(0.88)	ND(0.88)	ND(0.88)	ND(0.44)	ND(0.35)	0.32	0.43
SWMU 1-10	01/16/20	ND(55)	ND(92)	ND(92)	ND(92)	ND(46)	ND(37)	190	ND(73)
SWMU 1-10 (4-4.5 ft)	01/16/20	ND(32)	ND(54)	ND(54)	ND(54)	ND(27)	ND(22)	**360** [b,c]	ND(43)
SWMU 1-10 (4.5-5 ft)	01/16/20	ND(0.58)	ND(0.96)	ND(0.96)	ND(0.96)	ND(0.48)	ND(0.39)	0.63	0.19
SWMU 1-19 (berm) (1.5 ft)	01/13/20	ND(0.29)	ND(0.49)	ND(0.49)	ND(0.49)	ND(0.25)	ND(0.2)	ND(0.2)	ND(0.39)
SWMU 1-19 (berm) (2.5 ft)	01/13/20	ND(2.9)	ND(4.9)	ND(4.9)	ND(4.9)	ND(2.4)	ND(2)	ND(2)	ND(3.9)
SWMU 1-19 (toe) Dup	01/16/20	ND(7.6)	ND(13)	ND(13)	ND(13)	ND(6.3)	ND(5)	ND(5)	ND(10)
SWMU 1-19 (toe)	01/16/20	ND(7.5)	ND(13)	ND(13)	ND(13)	ND(6.3)	ND(5)	ND(5)	ND(10)
SWMU 1-19 (toe) (0.5-6 ft)	01/16/20	ND(7.3)	ND(12)	ND(12)	ND(12)	ND(6.1)	ND(4.9)	89	ND(9.7)
SWMU 1-19 (toe) (6-6.5 ft)	01/16/20	ND(1.3)	ND(2.2)	ND(2.2)	ND(2.2)	ND(1.1)	ND(0.89)	ND(0.89)	ND(1.8)
SWMU 1-20 (berm) (2.5 ft)	01/14/20	ND(3)	ND(5)	ND(5)	ND(5)	ND(2.5)	ND(2)	ND(2)	ND(4)
SWMU 1-20 (toe) (1.5 ft)	01/14/20	ND(0.54)	ND(0.91)	ND(0.91)	ND(0.91)	ND(0.45)	ND(0.36)	ND(0.36)	ND(0.72)
SWMU 1-20 (toe) (5 ft) Dup	01/15/20	ND(2.5)	ND(4.2)	ND(4.2)	ND(4.2)	ND(2.1)	ND(1.7)	7.3	ND(3.4)
SWMU 1-20 (toe)	01/15/20	ND(7.4)	ND(12)	ND(12)	ND(12)	ND(6.1)	ND(4.9)	ND(4.9)	ND(9.8)
SWMU 1-20 (toe) (0.5-3 ft)	01/15/20	ND(7.4)	ND(12)	ND(12)	ND(12)	ND(6.1)	ND(4.9)	120	ND(9.8)
SWMU 1-20 (toe) (5 ft)	01/15/20	ND(2.9)	ND(4.9)	ND(4.9)	ND(4.9)	ND(2.4)	ND(2)	17	ND(3.9)
SWMU 1-21 (berm) (1.5 ft)	01/14/20	ND(2.8)	ND(4.7)	ND(4.7)	ND(4.7)	ND(2.4)	ND(1.9)	ND(1.9)	ND(3.8)
SWMU 1-21 (toe)	01/14/20	ND(7.4)	ND(12)	ND(12)	ND(12)	ND(6.2)	ND(4.9)	20	ND(9.9)
SWMU 1-21 (toe) (2.5 ft)	01/14/20	ND(1.4)	ND(2.3)	ND(2.3)	ND(2.3)	ND(1.2)	ND(0.94)	5.3	ND(1.9)
SWMU 1-21 (toe) (5 ft)	01/14/20	ND(2.8)	ND(4.7)	ND(4.7)	ND(4.7)	ND(2.4)	ND(1.9)	ND(1.9)	ND(3.8)
SWMU 1-22 (berm) (1.5 ft)	01/14/20	ND(2.9)	ND(4.8)	ND(4.8)	ND(4.8)	ND(2.4)	ND(1.9)	ND(1.9)	ND(3.9)
SWMU 1-22 (berm) (2.5 ft)	01/14/20	ND(2.9)	ND(4.9)	ND(4.9)	ND(4.9)	ND(2.5)	ND(2)	ND(2)	ND(3.9)
SWMU 1-22 (berm) (5 ft)	01/14/20	ND(37)	ND(62)	ND(62)	ND(62)	ND(31)	ND(25)	ND(25)	ND(50)
SWMU 1-22 (toe)	01/16/20	ND(7.2)	ND(12)	ND(12)	ND(12)	ND(6)	ND(4.8)	22	ND(9.6)
SWMU 1-22 (toe) (2.5 ft)	01/16/20	ND(7.1)	ND(12)	ND(12)	ND(12)	ND(5.9)	ND(4.7)	230	ND(9.5)
SWMU 1-22 (toe) (3.5-4 ft)	01/16/20	ND(0.56)	ND(0.94)	ND(0.94)	ND(0.94)	ND(0.47)	ND(0.38)	ND(0.38)	0.21

[a] NMED Industrial SSL	18,330	1,833	82.27	17.15	103,800	6,489	3,368	NA
[b] NMED Residential SSL	1,230	123	123	18.5	6,260	391	232	NA
[c] USEPA RSL Industrial Soil HQ 0.1	1,600	160	7.4	1.5	6,000	580	300	4,100

Notes:
NMED SSL's - New Mexico Environmental Department Industrial and Residential Soil Screening Levels, June 2019
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
AL - Aeration Lagoon
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Samples taken in Aeration Lagoon 1.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.
See sediment samplings logs for lithology of samples.

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ATTACHMENT B - TABLE 2A. SWMU 1 SAMPLING - SEMIVOLATILE ORGANIC COMPOUNDS (AL-1)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	2-Nitroaniline (mg/kg)	2-Nitrophenol (mg/kg)	3,3'-Dichlorobenzidine (mg/kg)	3,4- Methyl phenol (mg/kg)	3-Nitroaniline (mg/kg)	2-Methyl-4,6-dinitrophenol (mg/kg)	4-Bromophenylphenylether (mg/kg)	4-Chloro-3-Methylphenol (mg/kg)
SWMU 1-8	01/16/20	ND(4.8)	ND(4.8)	ND(6)	9.3	ND(4.8)	ND(9.5)	ND(4.8)	ND(12)
SWMU 1-8 (2.5 ft)	01/16/20	ND(4.6)	ND(4.6)	ND(5.8)	9.5	ND(4.6)	ND(9.3)	ND(4.6)	ND(12)
SWMU 1-8 (5-5.5 ft)	01/16/20	ND(0.36)	ND(0.36)	ND(0.45)	0.87	ND(0.36)	ND(0.72)	ND(0.36)	ND(0.9)
SWMU 1-9	01/16/20	ND(5.6)	ND(5.6)	ND(7)	ND(5.6)	ND(5.6)	ND(11)	ND(5.6)	ND(14)
SWMU 1-9 (4.5 ft)	01/16/20	ND(4.5)	ND(4.5)	ND(5.7)	17	ND(4.5)	ND(9.1)	ND(4.5)	ND(11)
SWMU 1-9 (5.5-6 ft)	01/16/20	ND(0.35)	ND(0.35)	ND(0.44)	0.36	ND(0.35)	ND(0.7)	ND(0.35)	ND(0.88)
SWMU 1-10	01/16/20	ND(37)	ND(37)	ND(46)	ND(37)	ND(37)	ND(73)	ND(37)	ND(92)
SWMU 1-10 (4-4.5 ft)	01/16/20	ND(22)	ND(22)	ND(27)	25	ND(22)	ND(43)	ND(22)	ND(54)
SWMU 1-10 (4.5-5 ft)	01/16/20	ND(0.39)	ND(0.39)	ND(0.48)	ND(0.39)	ND(0.39)	ND(0.77)	ND(0.39)	ND(0.96)
SWMU 1-19 (berm) (1.5 ft)	01/13/20	ND(0.2)	ND(0.2)	ND(0.25)	ND(0.2)	ND(0.2)	ND(0.39)	ND(0.2)	ND(0.49)
SWMU 1-19 (berm) (2.5 ft)	01/13/20	ND(2)	ND(2)	ND(2.4)	ND(2)	ND(2)	ND(3.9)	ND(2)	ND(4.9)
SWMU 1-19 (toe) Dup	01/16/20	ND(5)	ND(5)	ND(6.3)	ND(5)	ND(5)	ND(10)	ND(5)	ND(13)
SWMU 1-19 (toe)	01/16/20	ND(5)	ND(5)	ND(6.3)	ND(5)	ND(5)	ND(10)	ND(5)	ND(13)
SWMU 1-19 (toe) (0.5-6 ft)	01/16/20	ND(4.9)	ND(4.9)	ND(6.1)	9.9	ND(4.9)	ND(9.7)	ND(4.9)	ND(12)
SWMU 1-19 (toe) (6-6.5 ft)	01/16/20	ND(0.89)	ND(0.89)	ND(1.1)	ND(0.89)	ND(0.89)	ND(1.8)	ND(0.89)	ND(2.2)
SWMU 1-20 (berm) (2.5 ft)	01/14/20	ND(2)	ND(2)	ND(2.5)	ND(2)	ND(2)	ND(4)	ND(2)	ND(5)
SWMU 1-20 (toe) (1.5 ft)	01/14/20	ND(0.36)	ND(0.36)	ND(0.45)	ND(0.36)	ND(0.36)	ND(0.72)	ND(0.36)	ND(0.91)
SWMU 1-20 (toe) (5 ft) Dup	01/15/20	ND(1.7)	ND(1.7)	ND(2.1)	ND(1.7)	ND(1.7)	ND(3.4)	ND(1.7)	ND(4.2)
SWMU 1-20 (toe)	01/15/20	ND(4.9)	ND(4.9)	ND(6.1)	ND(4.9)	ND(4.9)	ND(9.8)	ND(4.9)	ND(12)
SWMU 1-20 (toe) (0.5-3 ft)	01/15/20	ND(4.9)	ND(4.9)	ND(6.1)	5.5	ND(4.9)	ND(9.8)	ND(4.9)	ND(12)
SWMU 1-20 (toe) (5 ft)	01/15/20	ND(2)	ND(2)	ND(2.4)	0.84	ND(2)	ND(3.9)	ND(2)	ND(4.9)
SWMU 1-21 (berm) (1.5 ft)	01/14/20	ND(1.9)	ND(1.9)	ND(2.4)	ND(1.9)	ND(1.9)	ND(3.8)	ND(1.9)	ND(4.7)
SWMU 1-21 (toe)	01/14/20	ND(4.9)	ND(4.9)	ND(6.2)	ND(4.9)	ND(4.9)	ND(9.9)	ND(4.9)	ND(12)
SWMU 1-21 (toe) (2.5 ft)	01/14/20	ND(0.94)	ND(0.94)	ND(1.2)	ND(0.94)	ND(0.94)	ND(1.9)	ND(0.94)	ND(2.3)
SWMU 1-21 (toe) (5 ft)	01/14/20	ND(1.9)	ND(1.9)	ND(2.4)	ND(1.9)	ND(1.9)	ND(3.8)	ND(1.9)	ND(4.7)
SWMU 1-22 (berm) (1.5 ft)	01/14/20	ND(1.9)	ND(1.9)	ND(2.4)	ND(1.9)	ND(1.9)	ND(3.9)	ND(1.9)	ND(4.8)
SWMU 1-22 (berm) (2.5 ft)	01/14/20	ND(2)	ND(2)	ND(2.5)	ND(2)	ND(2)	ND(3.9)	ND(2)	ND(4.9)
SWMU 1-22 (berm) (5 ft)	01/14/20	ND(25)	ND(25)	ND(31)	ND(25)	ND(25)	ND(50)	ND(25)	ND(62)
SWMU 1-22 (toe)	01/16/20	ND(4.8)	ND(4.8)	ND(6)	ND(4.8)	ND(4.8)	ND(9.6)	ND(4.8)	ND(12)
SWMU 1-22 (toe) (2.5 ft)	01/16/20	ND(4.7)	ND(4.7)	ND(5.9)	14	ND(4.7)	ND(9.5)	ND(4.7)	ND(12)
SWMU 1-22 (toe) (3.5-4 ft)	01/16/20	ND(0.38)	ND(0.38)	ND(0.47)	ND(0.38)	ND(0.38)	ND(0.75)	ND(0.38)	ND(0.94)
[a] NMED Industrial SSL		NA	NA	57.01	NA	NA	NA	NA	NA
[b] NMED Residential SSL		NA	NA	11.8	NA	NA	NA	NA	NA
[c] USEPA RSL Industrial Soil HQ 0.1		800	NA	5.1	NA	NA	6.6	NA	8,200

Notes:
NMED SSL's - New Mexico Environmental Department Industrial and Residential Soil Screening Levels, June 2019
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
AL - Aeration Lagoon
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Samples taken in Aeration Lagoon 1.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.
See sediment samplings logs for lithology of samples.

ATTACHMENT B - TABLE 2A. SWMU 1 SAMPLING - SEMIVOLATILE ORGANIC COMPOUNDS (AL-1)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	4-Chloroaniline (mg/kg)	4-Chlorophenylphenylether (mg/kg)	4-Nitroaniline (mg/kg)	4-Nitrophenol (mg/kg)	Acenaphthene (mg/kg)	Acenaphthylene (mg/kg)	Aniline (mg/kg)	Anthracene (mg/kg)
SWMU 1-8	01/16/20	ND(12)	ND(4.8)	ND(9.5)	ND(6)	ND(4.8)	ND(4.8)	ND(4.8)	ND(4.8)
SWMU 1-8 (2.5 ft)	01/16/20	ND(12)	ND(4.6)	ND(9.3)	ND(5.8)	ND(4.6)	ND(4.6)	ND(4.6)	ND(4.6)
SWMU 1-8 (5-5.5 ft)	01/16/20	ND(0.9)	ND(0.36)	ND(0.72)	ND(0.45)	ND(0.36)	ND(0.36)	ND(0.36)	ND(0.36)
SWMU 1-9	01/16/20	ND(14)	ND(5.6)	ND(11)	ND(7)	ND(5.6)	ND(5.6)	ND(5.6)	ND(5.6)
SWMU 1-9 (4.5 ft)	01/16/20	ND(11)	ND(4.5)	ND(9.1)	ND(5.7)	ND(4.5)	ND(4.5)	ND(4.5)	ND(4.5)
SWMU 1-9 (5.5-6 ft)	01/16/20	ND(0.88)	ND(0.35)	ND(0.7)	ND(0.44)	ND(0.35)	ND(0.35)	ND(0.35)	ND(0.35)
SWMU 1-10	01/16/20	ND(92)	ND(37)	ND(73)	ND(46)	ND(37)	ND(37)	ND(37)	ND(37)
SWMU 1-10 (4-4.5 ft)	01/16/20	ND(54)	ND(22)	ND(43)	ND(27)	ND(22)	ND(22)	ND(22)	ND(22)
SWMU 1-10 (4.5-5 ft)	01/16/20	ND(0.96)	ND(0.39)	ND(0.77)	ND(0.48)	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.39)
SWMU 1-19 (berm) (1.5 ft)	01/13/20	ND(0.49)	ND(0.2)	ND(0.39)	ND(0.25)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
SWMU 1-19 (berm) (2.5 ft)	01/13/20	ND(4.9)	ND(2)	ND(3.9)	ND(2.4)	ND(2)	ND(2)	ND(2)	ND(2)
SWMU 1-19 (toe) Dup	01/16/20	ND(13)	ND(5)	ND(10)	ND(6.3)	ND(5)	ND(5)	ND(5)	ND(5)
SWMU 1-19 (toe)	01/16/20	ND(13)	ND(5)	ND(10)	ND(6.3)	ND(5)	ND(5)	ND(5)	ND(5)
SWMU 1-19 (toe) (0.5-6 ft)	01/16/20	ND(12)	ND(4.9)	ND(9.7)	ND(6.1)	ND(4.9)	ND(4.9)	ND(4.9)	ND(4.9)
SWMU 1-19 (toe) (6-6.5 ft)	01/16/20	ND(2.2)	ND(0.89)	ND(1.8)	ND(1.1)	ND(0.89)	ND(0.89)	ND(0.89)	ND(0.89)
SWMU 1-20 (berm) (2.5 ft)	01/14/20	ND(5)	ND(2)	ND(4)	ND(2.5)	ND(2)	ND(2)	ND(2)	ND(2)
SWMU 1-20 (toe) (1.5 ft)	01/14/20	ND(0.91)	ND(0.36)	ND(0.72)	ND(0.45)	ND(0.36)	ND(0.36)	ND(0.36)	ND(0.36)
SWMU 1-20 (toe) (5 ft) Dup	01/15/20	ND(4.2)	ND(1.7)	ND(3.4)	ND(2.1)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
SWMU 1-20 (toe)	01/15/20	ND(12)	ND(4.9)	ND(9.8)	ND(6.1)	ND(4.9)	ND(4.9)	ND(4.9)	ND(4.9)
SWMU 1-20 (toe) (0.5-3 ft)	01/15/20	ND(12)	ND(4.9)	ND(9.8)	ND(6.1)	ND(4.9)	ND(4.9)	ND(4.9)	ND(4.9)
SWMU 1-20 (toe) (5 ft)	01/15/20	ND(4.9)	ND(2)	ND(3.9)	ND(2.4)	ND(2)	ND(2)	ND(2)	ND(2)
SWMU 1-21 (berm) (1.5 ft)	01/14/20	ND(4.7)	ND(1.9)	ND(3.8)	ND(2.4)	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)
SWMU 1-21 (toe)	01/14/20	ND(12)	ND(4.9)	ND(9.9)	ND(6.2)	ND(4.9)	ND(4.9)	ND(4.9)	ND(4.9)
SWMU 1-21 (toe) (2.5 ft)	01/14/20	ND(2.3)	ND(0.94)	ND(1.9)	ND(1.2)	ND(0.94)	ND(0.94)	ND(0.94)	ND(0.94)
SWMU 1-21 (toe) (5 ft)	01/14/20	ND(4.7)	ND(1.9)	ND(3.8)	ND(2.4)	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)
SWMU 1-22 (berm) (1.5 ft)	01/14/20	ND(4.8)	ND(1.9)	ND(3.9)	ND(2.4)	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)
SWMU 1-22 (berm) (2.5 ft)	01/14/20	ND(4.9)	ND(2)	ND(3.9)	ND(2.5)	ND(2)	ND(2)	ND(2)	ND(2)
SWMU 1-22 (berm) (5 ft)	01/14/20	ND(62)	ND(25)	ND(50)	ND(31)	ND(25)	ND(25)	ND(25)	ND(25)
SWMU 1-22 (toe)	01/16/20	ND(12)	ND(4.8)	ND(9.6)	ND(6)	ND(4.8)	ND(4.8)	ND(4.8)	ND(4.8)
SWMU 1-22 (toe) (2.5 ft)	01/16/20	ND(12)	ND(4.7)	ND(9.5)	ND(5.9)	ND(4.7)	ND(4.7)	ND(4.7)	ND(4.7)
SWMU 1-22 (toe) (3.5-4 ft)	01/16/20	ND(0.94)	ND(0.38)	ND(0.75)	ND(0.47)	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.38)
[a] NMED Industrial SSL		NA	NA	NA	NA	50,520	NA	NA	252,600
[b] NMED Residential SSL		NA	NA	NA	NA	3,480	NA	NA	17,400
[c] USEPA RSL Industrial Soil HQ 0.1		11	NA	110	NA	4,500	NA	400	23,000

Notes:
NMED SSL's - New Mexico Environmental Department Industrial and Residential Soil Screening Levels, June 2019
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
AL - Aeration Lagoon
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Samples taken in Aeration Lagoon 1.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.
See sediment samplings logs for lithology of samples.

ATTACHMENT B - TABLE 2A. SWMU 1 SAMPLING - SEMIVOLATILE ORGANIC COMPOUNDS (AL-1)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Azobenzene (mg/kg)	Benzo(a)anthracene (mg/kg)	Benzo(a)pyrene (mg/kg)	Benzo(b)fluoranthene (mg/kg)	Benzo(g,h,i)perylene (mg/kg)	Benzo(k)fluoranthene (mg/kg)	Benzoic Acid (mg/kg)	Benzyl Alcohol (mg/kg)
SWMU 1-8	01/16/20	ND(4.8)	ND(4.8)	ND(4.8)	ND(4.8)	ND(4.8)	ND(4.8)	ND(12)	ND(4.8)
SWMU 1-8 (2.5 ft)	01/16/20	ND(4.6)	ND(4.6)	ND(4.6)	ND(4.6)	ND(4.6)	ND(4.6)	ND(12)	ND(4.6)
SWMU 1-8 (5-5.5 ft)	01/16/20	ND(0.36)	ND(0.36)	ND(0.36)	ND(0.36)	ND(0.36)	ND(0.36)	ND(0.9)	ND(0.36)
SWMU 1-9	01/16/20	ND(5.6)	**48** a,b,c	**25** a,b,c	ND(5.6)	12	ND(5.6)	ND(14)	ND(5.6)
SWMU 1-9 (4.5 ft)	01/16/20	ND(4.5)	ND(4.5)	**10** b,c	ND(4.5)	ND(4.5)	ND(4.5)	ND(11)	ND(4.5)
SWMU 1-9 (5.5-6 ft)	01/16/20	ND(0.35)	ND(0.35)	ND(0.35)	ND(0.35)	ND(0.35)	ND(0.35)	ND(0.88)	ND(0.35)
SWMU 1-10	01/16/20	ND(37)	ND(37)	ND(37)	ND(37)	ND(37)	ND(37)	ND(92)	ND(37)
SWMU 1-10 (4-4.5 ft)	01/16/20	ND(22)	ND(22)	ND(22)	ND(22)	ND(22)	ND(22)	ND(54)	ND(22)
SWMU 1-10 (4.5-5 ft)	01/16/20	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.96)	ND(0.39)
SWMU 1-19 (berm) (1.5 ft)	01/13/20	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.49)	ND(0.2)
SWMU 1-19 (berm) (2.5 ft)	01/13/20	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(4.9)	ND(2)
SWMU 1-19 (toe) Dup	01/16/20	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(13)	ND(5)
SWMU 1-19 (toe)	01/16/20	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(13)	ND(5)
SWMU 1-19 (toe) (0.5-6 ft)	01/16/20	ND(4.9)	ND(4.9)	ND(4.9)	ND(4.9)	ND(4.9)	ND(4.9)	ND(12)	ND(4.9)
SWMU 1-19 (toe) (6-6.5 ft)	01/16/20	ND(0.89)	ND(0.89)	ND(0.89)	ND(0.89)	ND(0.89)	ND(0.89)	ND(2.2)	ND(0.89)
SWMU 1-20 (berm) (2.5 ft)	01/14/20	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(5)	ND(2)
SWMU 1-20 (toe) (1.5 ft)	01/14/20	ND(0.36)	ND(0.36)	ND(0.36)	ND(0.36)	ND(0.36)	ND(0.36)	ND(0.91)	ND(0.36)
SWMU 1-20 (toe) (5 ft) Dup	01/15/20	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(4.2)	ND(1.7)
SWMU 1-20 (toe)	01/15/20	ND(4.9)	ND(4.9)	ND(4.9)	ND(4.9)	ND(4.9)	ND(4.9)	ND(12)	ND(4.9)
SWMU 1-20 (toe) (0.5-3 ft)	01/15/20	ND(4.9)	ND(4.9)	ND(4.9)	ND(4.9)	ND(4.9)	ND(4.9)	ND(12)	ND(4.9)
SWMU 1-20 (toe) (5 ft)	01/15/20	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(4.9)	ND(2)
SWMU 1-21 (berm) (1.5 ft)	01/14/20	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)	ND(4.7)	ND(1.9)
SWMU 1-21 (toe)	01/14/20	ND(4.9)	ND(4.9)	ND(4.9)	ND(4.9)	ND(4.9)	ND(4.9)	ND(12)	ND(4.9)
SWMU 1-21 (toe) (2.5 ft)	01/14/20	ND(0.94)	ND(0.94)	ND(0.94)	ND(0.94)	ND(0.94)	ND(0.94)	ND(2.3)	ND(0.94)
SWMU 1-21 (toe) (5 ft)	01/14/20	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)	ND(4.7)	ND(1.9)
SWMU 1-22 (berm) (1.5 ft)	01/14/20	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)	ND(4.8)	ND(1.9)
SWMU 1-22 (berm) (2.5 ft)	01/14/20	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(4.9)	ND(2)
SWMU 1-22 (berm) (5 ft)	01/14/20	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(62)	ND(25)
SWMU 1-22 (toe)	01/16/20	ND(4.8)	ND(4.8)	ND(4.8)	ND(4.8)	ND(4.8)	ND(4.8)	ND(12)	ND(4.8)
SWMU 1-22 (toe) (2.5 ft)	01/16/20	ND(4.7)	ND(4.7)	ND(4.7)	ND(4.7)	ND(4.7)	ND(4.7)	ND(12)	ND(4.7)
SWMU 1-22 (toe) (3.5-4 ft)	01/16/20	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.94)	ND(0.38)
[a] NMED Industrial SSL		NA	32.3	23.58	32.3	NA	322.9	NA	NA
[b] NMED Residential SSL		NA	1.53	1.12	1.53	NA	15.3	NA	NA
[c] USEPA RSL Industrial Soil HQ 0.1		26	21	2.1	21	NA	210	330,000	8,200

Notes:
NMED SSL's - New Mexico Environmental Department Industrial and Residential Soil Screening Levels, June 2019
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
AL - Aeration Lagoon
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Samples taken in Aeration Lagoon 1.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.
See sediment samplings logs for lithology of samples.

ATTACHMENT B - TABLE 2A. SWMU 1 SAMPLING - SEMIVOLATILE ORGANIC COMPOUNDS (AL-1)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Bis(2chloroethoxy) methane (mg/kg)	Bis(2-chloroethyl)ether (mg/kg)	Bis(2chloroisopropyl)ether (mg/kg)	Bis(2-ethylhexyl)phthalate (mg/kg)	Benzyl Butyl Phthalate (mg/kg)	Carbazole (mg/kg)	Chrysene (mg/kg)	Dibenz(a,h)anthracene (mg/kg)
SWMU 1-8	01/16/20	ND(4.8)	ND(4.8)	ND(4.8)	ND(12)	ND(4.8)	ND(4.8)	24	ND(4.8)
SWMU 1-8 (2.5 ft)	01/16/20	ND(4.6)	ND(4.6)	ND(4.6)	ND(12)	ND(4.6)	ND(4.6)	ND(4.6)	ND(4.6)
SWMU 1-8 (5-5.5 ft)	01/16/20	ND(0.36)	ND(0.36)	ND(0.36)	ND(0.9)	ND(0.36)	ND(0.36)	ND(0.36)	ND(0.36)
SWMU 1-9	01/16/20	ND(5.6)	ND(5.6)	ND(5.6)	ND(14)	ND(5.6)	ND(5.6)	ND(5.6)	ND(5.6)
SWMU 1-9 (4.5 ft)	01/16/20	ND(4.5)	ND(4.5)	ND(4.5)	ND(11)	ND(4.5)	ND(4.5)	ND(4.5)	ND(4.5)
SWMU 1-9 (5.5-6 ft)	01/16/20	ND(0.35)	ND(0.35)	ND(0.35)	ND(0.88)	ND(0.35)	ND(0.35)	ND(0.35)	ND(0.35)
SWMU 1-10	01/16/20	ND(37)	ND(37)	ND(37)	ND(92)	ND(37)	ND(37)	ND(37)	ND(37)
SWMU 1-10 (4-4.5 ft)	01/16/20	ND(22)	ND(22)	ND(22)	ND(54)	ND(22)	ND(22)	ND(22)	ND(22)
SWMU 1-10 (4.5-5 ft)	01/16/20	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.96)	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.39)
SWMU 1-19 (berm) (1.5 ft)	01/13/20	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.49)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
SWMU 1-19 (berm) (2.5 ft)	01/13/20	ND(2)	ND(2)	ND(2)	ND(4.9)	ND(2)	ND(2)	ND(2)	ND(2)
SWMU 1-19 (toe) Dup	01/16/20	ND(5)	ND(5)	ND(5)	ND(13)	ND(5)	ND(5)	21	ND(5)
SWMU 1-19 (toe)	01/16/20	ND(5)	ND(5)	ND(5)	ND(13)	ND(5)	ND(5)	23	ND(5)
SWMU 1-19 (toe) (0.5-6 ft)	01/16/20	ND(4.9)	ND(4.9)	ND(4.9)	ND(12)	ND(4.9)	ND(4.9)	ND(4.9)	ND(4.9)
SWMU 1-19 (toe) (6-6.5 ft)	01/16/20	ND(0.89)	ND(0.89)	ND(0.89)	ND(2.2)	ND(0.89)	ND(0.89)	ND(0.89)	ND(0.89)
SWMU 1-20 (berm) (2.5 ft)	01/14/20	ND(2)	ND(2)	ND(2)	ND(5)	ND(2)	ND(2)	ND(2)	ND(2)
SWMU 1-20 (toe) (1.5 ft)	01/14/20	ND(0.36)	ND(0.36)	ND(0.36)	ND(0.91)	ND(0.36)	ND(0.36)	ND(0.36)	ND(0.36)
SWMU 1-20 (toe) (5 ft) Dup	01/15/20	ND(1.7)	ND(1.7)	ND(1.7)	ND(4.2)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
SWMU 1-20 (toe)	01/15/20	ND(4.9)	ND(4.9)	ND(4.9)	ND(12)	ND(4.9)	ND(4.9)	ND(4.9)	ND(4.9)
SWMU 1-20 (toe) (0.5-3 ft)	01/15/20	ND(4.9)	ND(4.9)	ND(4.9)	ND(12)	ND(4.9)	ND(4.9)	ND(4.9)	ND(4.9)
SWMU 1-20 (toe) (5 ft)	01/15/20	ND(2)	ND(2)	ND(2)	ND(4.9)	ND(2)	ND(2)	ND(2)	ND(2)
SWMU 1-21 (berm) (1.5 ft)	01/14/20	ND(1.9)	ND(1.9)	ND(1.9)	ND(4.7)	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)
SWMU 1-21 (toe)	01/14/20	ND(4.9)	ND(4.9)	ND(4.9)	ND(12)	ND(4.9)	ND(4.9)	22	ND(4.9)
SWMU 1-21 (toe) (2.5 ft)	01/14/20	ND(0.94)	ND(0.94)	ND(0.94)	ND(2.3)	ND(0.94)	ND(0.94)	2.1	ND(0.94)
SWMU 1-21 (toe) (5 ft)	01/14/20	ND(1.9)	ND(1.9)	ND(1.9)	ND(4.7)	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)
SWMU 1-22 (berm) (1.5 ft)	01/14/20	ND(1.9)	ND(1.9)	ND(1.9)	ND(4.8)	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)
SWMU 1-22 (berm) (2.5 ft)	01/14/20	ND(2)	ND(2)	ND(2)	ND(4.9)	ND(2)	ND(2)	ND(2)	ND(2)
SWMU 1-22 (berm) (5 ft)	01/14/20	ND(25)	ND(25)	ND(25)	ND(62)	ND(25)	ND(25)	52	ND(25)
SWMU 1-22 (toe)	01/16/20	ND(4.8)	ND(4.8)	ND(4.8)	ND(12)	ND(4.8)	ND(4.8)	ND(4.8)	ND(4.8)
SWMU 1-22 (toe) (2.5 ft)	01/16/20	ND(4.7)	ND(4.7)	ND(4.7)	ND(12)	ND(4.7)	ND(4.7)	ND(4.7)	ND(4.7)
SWMU 1-22 (toe) (3.5-4 ft)	01/16/20	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.94)	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.38)

[a]	NMED Industrial SSL	NA	15.67	NA	1,832	NA	NA	3,229	3.23
[b]	NMED Residential SSL	NA	3.11	NA	380	NA	NA	153	0.153
[c]	USEPA RSL Industrial Soil HQ 0.1	250	1	NA	160	1,200	NA	2,100	2.1

Notes:
NMED SSL's - New Mexico Environmental Department Industrial and Residential Soil Screening Levels, June 2019
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
AL - Aeration Lagoon
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Samples taken in Aeration Lagoon 1.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.
See sediment samplings logs for lithology of samples.

ATTACHMENT B - TABLE 2A. SWMU 1 SAMPLING - SEMIVOLATILE ORGANIC COMPOUNDS (AL-1)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Dibenzofuran (mg/kg)	Diethylphthalate (mg/kg)	Dimethyl Phthalate (mg/kg)	Di-n-butylphthalate (mg/kg)	Di-n-octylphthalate (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Hexachloro Benzene (mg/kg)
SWMU 1-8	01/16/20	ND(4.8)	ND(12)	ND(4.8)	ND(9.5)	ND(9.5)	ND(4.8)	15	ND(4.8)
SWMU 1-8 (2.5 ft)	01/16/20	ND(4.6)	ND(12)	ND(4.6)	ND(9.3)	ND(9.3)	ND(4.6)	21	ND(4.6)
SWMU 1-8 (5-5.5 ft)	01/16/20	ND(0.36)	ND(0.9)	ND(0.36)	ND(0.72)	ND(0.72)	ND(0.36)	ND(0.36)	ND(0.36)
SWMU 1-9	01/16/20	ND(5.6)	ND(14)	ND(5.6)	ND(11)	ND(11)	ND(5.6)	26	ND(5.6)
SWMU 1-9 (4.5 ft)	01/16/20	ND(4.5)	ND(11)	ND(4.5)	ND(9.1)	ND(9.1)	ND(4.5)	43	ND(4.5)
SWMU 1-9 (5.5-6 ft)	01/16/20	ND(0.35)	ND(0.88)	ND(0.35)	ND(0.7)	ND(0.7)	ND(0.35)	ND(0.35)	ND(0.35)
SWMU 1-10	01/16/20	ND(37)	ND(92)	ND(37)	ND(73)	ND(73)	ND(37)	47	ND(37)
SWMU 1-10 (4-4.5 ft)	01/16/20	ND(22)	ND(54)	ND(22)	ND(43)	ND(43)	ND(22)	40	ND(22)
SWMU 1-10 (4.5-5 ft)	01/16/20	ND(0.39)	ND(0.96)	ND(0.39)	ND(0.77)	ND(0.77)	ND(0.39)	0.34	ND(0.39)
SWMU 1-19 (berm) (1.5 ft)	01/13/20	ND(0.2)	ND(0.49)	ND(0.2)	ND(0.39)	ND(0.39)	ND(0.2)	ND(0.2)	ND(0.2)
SWMU 1-19 (berm) (2.5 ft)	01/13/20	ND(2)	ND(4.9)	ND(2)	ND(3.9)	ND(3.9)	ND(2)	ND(2)	ND(2)
SWMU 1-19 (toe) Dup	01/16/20	ND(5)	ND(13)	ND(5)	ND(10)	ND(10)	ND(5)	ND(5)	ND(5)
SWMU 1-19 (toe)	01/16/20	ND(5)	ND(13)	ND(5)	ND(10)	ND(10)	ND(5)	ND(5)	ND(5)
SWMU 1-19 (toe) (0.5-6 ft)	01/16/20	ND(4.9)	ND(12)	ND(4.9)	ND(9.7)	ND(9.7)	ND(4.9)	16	ND(4.9)
SWMU 1-19 (toe) (6-6.5 ft)	01/16/20	ND(0.89)	ND(2.2)	ND(0.89)	ND(1.8)	ND(1.8)	ND(0.89)	ND(0.89)	ND(0.89)
SWMU 1-20 (berm) (2.5 ft)	01/14/20	ND(2)	ND(5)	ND(2)	ND(4)	ND(4)	ND(2)	ND(2)	ND(2)
SWMU 1-20 (toe) (1.5 ft)	01/14/20	ND(0.36)	ND(0.91)	ND(0.36)	ND(0.72)	ND(0.72)	ND(0.36)	ND(0.36)	ND(0.36)
SWMU 1-20 (toe) (5 ft) Dup	01/15/20	ND(1.7)	ND(4.2)	ND(1.7)	ND(3.4)	ND(3.4)	ND(1.7)	1.5	ND(1.7)
SWMU 1-20 (toe)	01/15/20	ND(4.9)	ND(12)	ND(4.9)	ND(9.8)	ND(9.8)	ND(4.9)	ND(4.9)	ND(4.9)
SWMU 1-20 (toe) (0.5-3 ft)	01/15/20	ND(4.9)	ND(12)	ND(4.9)	ND(9.8)	ND(9.8)	ND(4.9)	15	ND(4.9)
SWMU 1-20 (toe) (5 ft)	01/15/20	ND(2)	ND(4.9)	ND(2)	ND(3.9)	ND(3.9)	ND(2)	2.6	ND(2)
SWMU 1-21 (berm) (1.5 ft)	01/14/20	ND(1.9)	ND(4.7)	ND(1.9)	ND(3.8)	ND(3.8)	ND(1.9)	ND(1.9)	ND(1.9)
SWMU 1-21 (toe)	01/14/20	ND(4.9)	ND(12)	ND(4.9)	ND(9.9)	ND(9.9)	ND(4.9)	ND(4.9)	ND(4.9)
SWMU 1-21 (toe) (2.5 ft)	01/14/20	ND(0.94)	ND(2.3)	ND(0.94)	ND(1.9)	ND(1.9)	ND(0.94)	2	ND(0.94)
SWMU 1-21 (toe) (5 ft)	01/14/20	ND(1.9)	ND(4.7)	ND(1.9)	ND(3.8)	ND(3.8)	ND(1.9)	ND(1.9)	ND(1.9)
SWMU 1-22 (berm) (1.5 ft)	01/14/20	ND(1.9)	ND(4.8)	ND(1.9)	ND(3.9)	ND(3.9)	ND(1.9)	ND(1.9)	ND(1.9)
SWMU 1-22 (berm) (2.5 ft)	01/14/20	ND(2)	ND(4.9)	ND(2)	ND(3.9)	ND(3.9)	ND(2)	ND(2)	ND(2)
SWMU 1-22 (berm) (5 ft)	01/14/20	ND(25)	ND(62)	ND(25)	ND(50)	ND(50)	ND(25)	ND(25)	ND(25)
SWMU 1-22 (toe)	01/16/20	ND(4.8)	ND(12)	ND(4.8)	ND(9.6)	ND(9.6)	ND(4.8)	ND(4.8)	ND(4.8)
SWMU 1-22 (toe) (2.5 ft)	01/16/20	ND(4.7)	ND(12)	ND(4.7)	ND(9.5)	ND(9.5)	ND(4.7)	27	ND(4.7)
SWMU 1-22 (toe) (3.5-4 ft)	01/16/20	ND(0.38)	ND(0.94)	ND(0.38)	ND(0.75)	ND(0.75)	ND(0.38)	ND(0.38)	ND(0.38)
[a] NMED Industrial SSL		NA	733,000	NA	91,630	NA	33,680	33,680	16.03
[b] NMED Residential SSL		NA	49,300	NA	6,160	NA	2,320	2,320	3.33
[c] USEPA RSL Industrial Soil HQ 0.1		100	66,000	NA	8,200	820	3,000	3,000	0.96

Notes:
NMED SSL's - New Mexico Environmental Department Industrial and Residential Soil Screening Levels, June 2019
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
AL - Aeration Lagoon
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Samples taken in Aeration Lagoon 1.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.
See sediment samplings logs for lithology of samples.

ATTACHMENT B - TABLE 2A. SWMU 1 SAMPLING - SEMIVOLATILE ORGANIC COMPOUNDS (AL-1)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Hexachloro- butadiene (mg/kg)	Hexachloro-cyclopenta-diene (mg/kg)	Hexachloroethane (mg/kg)	Indeno-(1,2,3-c,d)pyrene (mg/kg)	Isophorone (mg/kg)	Naphthalene (mg/kg)	Nitrobenzene (mg/kg)	N-Nitrosodi-n-propylamine (mg/kg)
SWMU 1-8	01/16/20	ND(4.8)	ND(4.8)	ND(4.8)	ND(4.8)	ND(9.5)	9.5	ND(9.5)	ND(4.8)
SWMU 1-8 (2.5 ft)	01/16/20	ND(4.6)	ND(4.6)	ND(4.6)	ND(4.6)	ND(9.3)	**25** [c]	ND(9.3)	ND(4.6)
SWMU 1-8 (5-5.5 ft)	01/16/20	ND(0.36)	ND(0.36)	ND(0.36)	ND(0.36)	ND(0.72)	ND(0.36)	ND(0.72)	ND(0.36)
SWMU 1-9	01/16/20	ND(5.6)	ND(5.6)	ND(5.6)	ND(5.6)	ND(11)	13	ND(11)	ND(5.6)
SWMU 1-9 (4.5 ft)	01/16/20	ND(4.5)	ND(4.5)	ND(4.5)	ND(4.5)	ND(9.1)	**72** [b,c]	ND(9.1)	ND(4.5)
SWMU 1-9 (5.5-6 ft)	01/16/20	ND(0.35)	ND(0.35)	ND(0.35)	ND(0.35)	ND(0.7)	ND(0.35)	ND(0.7)	ND(0.35)
SWMU 1-10	01/16/20	ND(37)	ND(37)	ND(37)	ND(37)	ND(73)	**32** [c]	ND(73)	ND(37)
SWMU 1-10 (4-4.5 ft)	01/16/20	ND(22)	ND(22)	ND(22)	ND(22)	ND(43)	**77** [b,c]	ND(43)	ND(22)
SWMU 1-10 (4.5-5 ft)	01/16/20	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.77)	0.38	ND(0.77)	ND(0.39)
SWMU 1-19 (berm) (1.5 ft)	01/13/20	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.39)	ND(0.2)	ND(0.39)	ND(0.2)
SWMU 1-19 (berm) (2.5 ft)	01/13/20	ND(2)	ND(2)	ND(2)	ND(2)	ND(3.9)	ND(2)	ND(3.9)	ND(2)
SWMU 1-19 (toe) Dup	01/16/20	ND(5)	ND(5)	ND(5)	ND(5)	ND(10)	ND(5)	ND(10)	ND(5)
SWMU 1-19 (toe)	01/16/20	ND(5)	ND(5)	ND(5)	ND(5)	ND(10)	ND(5)	ND(10)	ND(5)
SWMU 1-19 (toe) (0.5-6 ft)	01/16/20	ND(4.9)	ND(4.9)	ND(4.9)	ND(4.9)	ND(9.7)	**20** [c]	ND(9.7)	ND(4.9)
SWMU 1-19 (toe) (6-6.5 ft)	01/16/20	ND(0.89)	ND(0.89)	ND(0.89)	ND(0.89)	ND(1.8)	ND(0.89)	ND(1.8)	ND(0.89)
SWMU 1-20 (berm) (2.5 ft)	01/14/20	ND(2)	ND(2)	ND(2)	ND(2)	ND(4)	ND(2)	ND(4)	ND(2)
SWMU 1-20 (toe) (1.5 ft)	01/14/20	ND(0.36)	ND(0.36)	ND(0.36)	ND(0.36)	ND(0.72)	ND(0.36)	ND(0.72)	ND(0.36)
SWMU 1-20 (toe) (5 ft) Dup	01/15/20	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(3.4)	1.5	ND(3.4)	ND(1.7)
SWMU 1-20 (toe)	01/15/20	ND(4.9)	ND(4.9)	ND(4.9)	ND(4.9)	ND(9.8)	ND(4.9)	ND(9.8)	ND(4.9)
SWMU 1-20 (toe) (0.5-3 ft)	01/15/20	ND(4.9)	ND(4.9)	ND(4.9)	ND(4.9)	ND(9.8)	**28** [c]	ND(9.8)	ND(4.9)
SWMU 1-20 (toe) (5 ft)	01/15/20	ND(2)	ND(2)	ND(2)	ND(2)	ND(3.9)	3.7	ND(3.9)	ND(2)
SWMU 1-21 (berm) (1.5 ft)	01/14/20	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)	ND(3.8)	ND(1.9)	ND(3.8)	ND(1.9)
SWMU 1-21 (toe)	01/14/20	ND(4.9)	ND(4.9)	ND(4.9)	ND(4.9)	ND(9.9)	2.9	ND(9.9)	ND(4.9)
SWMU 1-21 (toe) (2.5 ft)	01/14/20	ND(0.94)	ND(0.94)	ND(0.94)	ND(0.94)	ND(1.9)	0.95	ND(1.9)	ND(0.94)
SWMU 1-21 (toe) (5 ft)	01/14/20	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)	ND(3.8)	ND(1.9)	ND(3.8)	ND(1.9)
SWMU 1-22 (berm) (1.5 ft)	01/14/20	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)	ND(3.9)	ND(1.9)	ND(3.9)	ND(1.9)
SWMU 1-22 (berm) (2.5 ft)	01/14/20	ND(2)	ND(2)	ND(2)	ND(2)	ND(3.9)	ND(2)	ND(3.9)	ND(2)
SWMU 1-22 (berm) (5 ft)	01/14/20	ND(25)	ND(25)	ND(25)	ND(25)	ND(50)	ND(25)	ND(50)	ND(25)
SWMU 1-22 (toe)	01/16/20	ND(4.8)	ND(4.8)	ND(4.8)	ND(4.8)	ND(9.6)	4.3	ND(9.6)	ND(4.8)
SWMU 1-22 (toe) (2.5 ft)	01/16/20	ND(4.7)	ND(4.7)	ND(4.7)	ND(4.7)	ND(9.5)	**46** [c]	ND(9.5)	ND(4.7)
SWMU 1-22 (toe) (3.5-4 ft)	01/16/20	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.75)	ND(0.38)	ND(0.75)	ND(0.38)
[a] NMED Industrial SSL		52.08	5,492	641.4	32.3	27,010	241	293.3	NA
[b] NMED Residential SSL		68.3	2.3	133	1.53	5,610	49.7	60.4	NA
[c] USEPA RSL Industrial Soil HQ 0.1		5.3	0.75	8	21	2,400	17	22	0.33

Notes:
NMED SSL's - New Mexico Environmental Department Industrial and Residential Soil Screening Levels, June 2019
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
AL - Aeration Lagoon
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Samples taken in Aeration Lagoon 1.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.
See sediment samplings logs for lithology of samples.

ATTACHMENT B - TABLE 2A. SWMU 1 SAMPLING - SEMIVOLATILE ORGANIC COMPOUNDS (AL-1)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	N-Nitroso-diphenylamine (mg/kg)	Pentachlorophenol (mg/kg)	Phenanthrene (mg/kg)	Phenol (mg/kg)	Pyrene (mg/kg)	Pyridine (mg/kg)
SWMU 1-8	01/16/20	ND(4.8)	ND(9.5)	85	ND(4.8)	ND(4.8)	ND(9.5)
SWMU 1-8 (2.5 ft)	01/16/20	ND(4.6)	ND(9.3)	64	2.1	17	ND(9.3)
SWMU 1-8 (5-5.5 ft)	01/16/20	ND(0.36)	ND(0.72)	ND(0.36)	0.51	ND(0.36)	ND(0.72)
SWMU 1-9	01/16/20	ND(5.6)	ND(11)	160	ND(5.6)	140	ND(11)
SWMU 1-9 (4.5 ft)	01/16/20	ND(4.5)	ND(9.1)	190	ND(4.5)	84	ND(9.1)
SWMU 1-9 (5.5-6 ft)	01/16/20	ND(0.35)	ND(0.7)	ND(0.35)	ND(0.35)	ND(0.35)	ND(0.7)
SWMU 1-10	01/16/20	ND(37)	ND(73)	130	ND(37)	30	ND(73)
SWMU 1-10 (4-4.5 ft)	01/16/20	ND(22)	ND(43)	140	ND(22)	25	ND(43)
SWMU 1-10 (4.5-5 ft)	01/16/20	ND(0.39)	ND(0.77)	0.38	ND(0.39)	ND(0.39)	ND(0.77)
SWMU 1-19 (berm) (1.5 ft)	01/13/20	ND(0.2)	ND(0.39)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.39)
SWMU 1-19 (berm) (2.5 ft)	01/13/20	ND(2)	ND(3.9)	ND(2)	ND(2)	ND(2)	ND(3.9)
SWMU 1-19 (toe) Dup	01/16/20	ND(5)	ND(10)	20	ND(5)	ND(5)	ND(10)
SWMU 1-19 (toe)	01/16/20	ND(5)	ND(10)	20	ND(5)	ND(5)	ND(10)
SWMU 1-19 (toe) (0.5-6 ft)	01/16/20	ND(4.9)	ND(9.7)	54	6	ND(4.9)	ND(9.7)
SWMU 1-19 (toe) (6-6.5 ft)	01/16/20	ND(0.89)	ND(1.8)	0.58	ND(0.89)	ND(0.89)	ND(1.8)
SWMU 1-20 (berm) (2.5 ft)	01/14/20	ND(2)	ND(4)	ND(2)	ND(2)	ND(2)	ND(4)
SWMU 1-20 (toe) (1.5 ft)	01/14/20	ND(0.36)	ND(0.72)	0.34	ND(0.36)	ND(0.36)	ND(0.72)
SWMU 1-20 (toe) (5 ft) Dup	01/15/20	ND(1.7)	ND(3.4)	3.2	ND(1.7)	ND(1.7)	ND(3.4)
SWMU 1-20 (toe)	01/15/20	ND(4.9)	ND(9.8)	ND(4.9)	ND(4.9)	ND(4.9)	ND(9.8)
SWMU 1-20 (toe) (0.5-3 ft)	01/15/20	ND(4.9)	ND(9.8)	38	ND(4.9)	ND(4.9)	ND(9.8)
SWMU 1-20 (toe) (5 ft)	01/15/20	ND(2)	ND(3.9)	5.4	ND(2)	ND(2)	ND(3.9)
SWMU 1-21 (berm) (1.5 ft)	01/14/20	ND(1.9)	ND(3.8)	ND(1.9)	ND(1.9)	ND(1.9)	ND(3.8)
SWMU 1-21 (toe)	01/14/20	ND(4.9)	ND(9.9)	40	ND(4.9)	39	ND(9.9)
SWMU 1-21 (toe) (2.5 ft)	01/14/20	ND(0.94)	ND(1.9)	5.7	ND(0.94)	ND(0.94)	ND(1.9)
SWMU 1-21 (toe) (5 ft)	01/14/20	ND(1.9)	ND(3.8)	ND(1.9)	ND(1.9)	ND(1.9)	ND(3.8)
SWMU 1-22 (berm) (1.5 ft)	01/14/20	ND(1.9)	ND(3.9)	ND(1.9)	ND(1.9)	ND(1.9)	ND(3.9)
SWMU 1-22 (berm) (2.5 ft)	01/14/20	ND(2)	ND(3.9)	ND(2)	ND(2)	ND(2)	ND(3.9)
SWMU 1-22 (berm) (5 ft)	01/14/20	ND(25)	ND(50)	160	ND(25)	75	ND(50)
SWMU 1-22 (toe)	01/16/20	ND(4.8)	ND(9.6)	15	ND(4.8)	ND(4.8)	ND(9.6)
SWMU 1-22 (toe) (2.5 ft)	01/16/20	ND(4.7)	ND(9.5)	100	4	24	ND(9.5)
SWMU 1-22 (toe) (3.5-4 ft)	01/16/20	ND(0.38)	ND(0.75)	0.29	ND(0.38)	ND(0.38)	ND(0.75)

[a]	NMED Industrial SSL	5,236	44.51	25,260	274,900	25,260	NA
[b]	NMED Residential SSL	1,090	9.85	1,740	18,500	1,740	NA
[c]	USEPA RSL Industrial Soil HQ 0.1	470	4	NA	25,000	2,300	120

Notes:
NMED SSL's - New Mexico Environmental Department Industrial and Residential Soil Screening Levels, June 2019
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
AL - Aeration Lagoon
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Samples taken in Aeration Lagoon 1.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.
See sediment samplings logs for lithology of samples.

ATTACHMENT B - TABLE 2B. SWMU 1 SAMPLING - SEMIVOLATILE ORGANIC COMPOUNDS (AL-2)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	1,2,4-Trichlorobenzene (mg/kg)	1,2-Dichlorobenzene (mg/kg)	1,3-Dichlorobenzene (mg/kg)	1,4-Dichlorobenzene (mg/kg)	1-Methylnaphthalene (mg/kg)		2,4,5-Trichlorophenol (mg/kg)	2,4,6-Trichlorophenol (mg/kg)	2,4-Dichlorophenol (mg/kg)
SWMU 1-5	01/17/20	ND(4.8)	ND(4.8)	ND(4.8)	ND(4.8)	**87**	c	ND(4.8)	ND(4.8)	ND(9.6)
SWMU 1-5 (2.5-5 ft)	01/17/20	ND(4.9)	ND(4.9)	ND(4.9)	ND(4.9)	**360**	b,c	ND(4.9)	ND(4.9)	ND(9.8)
SWMU 1-5 (5.5-6 ft)	01/17/20	ND(0.36)	ND(0.36)	ND(0.36)	ND(0.36)	1.6		ND(0.36)	ND(0.36)	ND(0.73)
SWMU 1-6 (0-5.5 ft)	01/17/20	ND(4.8)	ND(4.8)	ND(4.8)	ND(4.8)	**76**	c	ND(4.8)	ND(4.8)	ND(9.6)
SWMU 1-6 (5.5-6 ft)	01/17/20	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.38)		ND(0.38)	ND(0.38)	ND(0.77)
SWMU 1-7 Dup	01/17/20	ND(23)	ND(23)	ND(23)	ND(23)	ND(23)		ND(23)	ND(23)	ND(46)
SWMU 1-7	01/17/20	ND(4.5)	ND(4.5)	ND(4.5)	ND(4.5)	ND(4.5)		ND(4.5)	ND(4.5)	ND(9)
SWMU 1-7 (2.5 ft)	01/17/20	ND(5)	ND(5)	ND(5)	ND(5)	**180**	b,c	ND(5)	ND(5)	ND(10)
SWMU 1-7 (4-5 ft)	01/17/20	ND(0.41)	ND(0.41)	ND(0.41)	ND(0.41)	0.6		ND(0.41)	ND(0.41)	ND(0.81)
SWMU 1-15 (berm) (1.5 ft)	01/13/20	ND(0.19)	ND(0.19)	ND(0.19)	ND(0.19)	ND(0.19)		ND(0.19)	ND(0.19)	ND(0.38)
SWMU 1-15 (berm) (2.5 ft)	01/13/20	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)	12		ND(1.9)	ND(1.9)	ND(3.8)
SWMU 1-15 (toe) Dup	01/16/20	ND(26)	ND(26)	ND(26)	ND(26)	27		ND(26)	ND(26)	ND(52)
SWMU 1-15 (toe)	01/16/20	ND(23)	ND(23)	ND(23)	ND(23)	58		ND(23)	ND(23)	ND(45)
SWMU 1-15 (toe) (3 ft)	01/16/20	ND(4.6)	ND(4.6)	ND(4.6)	ND(4.6)	28		ND(4.6)	ND(4.6)	ND(9.1)
SWMU 1-15 (toe) (4-5 ft)	01/16/20	ND(4.5)	ND(4.5)	ND(4.5)	ND(4.5)	**140**	c	ND(4.5)	ND(4.5)	ND(9.1)
SWMU 1-16 (berm) (1.5 ft) Dup	01/13/20	ND(0.4)	ND(0.4)	ND(0.4)	ND(0.4)	ND(0.4)		ND(0.4)	ND(0.4)	ND(0.8)
SWMU 1-16 (berm) (1.5 ft)	01/13/20	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.39)		ND(0.39)	ND(0.39)	ND(0.77)
SWMU 1-16 (berm) (2.5 ft)	01/13/20	ND(3.9)	ND(3.9)	ND(3.9)	ND(3.9)	28		ND(3.9)	ND(3.9)	ND(7.7)
SWMU 1-16 (toe) Dup	01/16/20	ND(7.3)	ND(7.3)	ND(7.3)	ND(7.3)	71		ND(7.3)	ND(7.3)	ND(15)
SWMU 1-16 (toe)	01/16/20	ND(6.2)	ND(6.2)	ND(6.2)	ND(6.2)	56		ND(6.2)	ND(6.2)	ND(12)
SWMU 1-16 (toe) (2.5 ft)	01/16/20	ND(4.8)	ND(4.8)	ND(4.8)	ND(4.8)	**150**	c	ND(4.8)	ND(4.8)	ND(9.7)
SWMU 1-16 (toe) (4-4.5 ft)	01/16/20	ND(4.7)	ND(4.7)	ND(4.7)	ND(4.7)	23		ND(4.7)	ND(4.7)	ND(9.3)
SWMU 1-17 (berm) (1.5 ft)	01/13/20	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)		ND(2)	ND(2)	ND(4)
SWMU 1-17 (berm) (2.5 ft)	01/13/20	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.39)		ND(0.39)	ND(0.39)	ND(0.78)
SWMU 1-17 (toe)	01/16/20	ND(5.2)	ND(5.2)	ND(5.2)	ND(5.2)	ND(5.2)		ND(5.2)	ND(5.2)	ND(10)
SWMU 1-17 (toe) (2.5 ft)	01/16/20	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)	6.7		ND(1.9)	ND(1.9)	ND(3.8)
SWMU 1-17 (toe) (4.5-5 ft)	01/16/20	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)		ND(2)	ND(2)	ND(4)
SWMU 1-18 (berm) (1.5 ft)	01/13/20	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.39)		ND(0.39)	ND(0.39)	ND(0.78)
SWMU 1-18 (berm) (2.5 ft)	01/13/20	ND(0.37)	ND(0.37)	ND(0.37)	ND(0.37)	ND(0.37)		ND(0.37)	ND(0.37)	ND(0.74)
SWMU 1-18 (toe)	01/16/20	ND(9.2)	ND(9.2)	ND(9.2)	ND(9.2)	ND(9.2)		ND(9.2)	ND(9.2)	ND(18)
SWMU 1-18 (toe) (2.5 ft)	01/16/20	ND(23)	ND(23)	ND(23)	ND(23)	**80**	c	ND(23)	ND(23)	ND(45)
SWMU 1-18 (toe) (5 ft)	01/16/20	ND(0.99)	ND(0.99)	ND(0.99)	ND(0.99)	2.7		ND(0.99)	ND(0.99)	ND(2)
[a] NMED Industrial SSL		422.9	12,970	NA	6,729	813		91,630	916.3	2,749
[b] NMED Residential SSL		240	2,150	NA	1,290	172		6,160	484	185
[c] USEPA RSL Industrial Soil HQ 0.1		26	930	NA	11	73		8,200	82	250

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AL - Aeration Lagoon
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Samples taken in Aeration Lagoon 1.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.
See sediment samplings logs for lithology of samples.

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ATTACHMENT B - TABLE 2B. SWMU 1 SAMPLING - SEMIVOLATILE ORGANIC COMPOUNDS (AL-2)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	2,4-Dimethylphenol (mg/kg)	2,4-Dinitrophenol (mg/kg)	2,4-Dinitro Toluene (mg/kg)	2,6-Dinitro Toluene (mg/kg)	2-Chloronaphthalene (mg/kg)	2-Chlorophenol (mg/kg)	2-Methylnaphthalene (mg/kg)	2-Methyl phenol (mg/kg)
SWMU 1-5	01/17/20	ND(7.2)	ND(12)	ND(12)	ND(12)	ND(6)	ND(4.8)	81	ND(9.6)
SWMU 1-5 (2.5-5 ft)	01/17/20	ND(7.3)	ND(12)	ND(12)	ND(12)	ND(6.1)	ND(4.9)	**350** [b,c]	ND(9.8)
SWMU 1-5 (5.5-6 ft)	01/17/20	ND(0.55)	ND(0.91)	ND(0.91)	ND(0.91)	ND(0.45)	ND(0.36)	1.8	0.22
SWMU 1-6 (0-5.5 ft)	01/17/20	ND(7.2)	ND(12)	ND(12)	ND(12)	ND(6)	ND(4.8)	85	ND(9.6)
SWMU 1-6 (5.5-6 ft)	01/17/20	ND(0.58)	ND(0.96)	ND(0.96)	ND(0.96)	ND(0.48)	ND(0.38)	ND(0.38)	ND(0.77)
SWMU 1-7 Dup	01/17/20	ND(34)	ND(57)	ND(57)	ND(57)	ND(28)	ND(23)	ND(23)	ND(46)
SWMU 1-7	01/17/20	ND(6.7)	ND(11)	ND(11)	ND(11)	ND(5.6)	ND(4.5)	ND(4.5)	ND(9)
SWMU 1-7 (2.5 ft)	01/17/20	ND(7.5)	ND(12)	ND(12)	ND(12)	ND(6.2)	ND(5)	230	ND(10)
SWMU 1-7 (4-5 ft)	01/17/20	ND(0.61)	ND(1)	ND(1)	ND(1)	ND(0.51)	ND(0.41)	0.73	ND(0.81)
SWMU 1-15 (berm) (1.5 ft)	01/13/20	ND(0.29)	ND(0.48)	ND(0.48)	ND(0.48)	ND(0.24)	ND(0.19)	ND(0.19)	ND(0.38)
SWMU 1-15 (berm) (2.5 ft)	01/13/20	ND(2.8)	ND(4.7)	ND(4.7)	ND(4.7)	ND(2.3)	ND(1.9)	13	ND(3.8)
SWMU 1-15 (toe) Dup	01/16/20	ND(39)	ND(65)	ND(65)	ND(65)	ND(33)	ND(26)	17	ND(52)
SWMU 1-15 (toe)	01/16/20	ND(34)	ND(57)	ND(57)	ND(57)	ND(28)	ND(23)	31	ND(45)
SWMU 1-15 (toe) (3 ft)	01/16/20	ND(6.8)	ND(11)	ND(11)	ND(11)	ND(5.7)	ND(4.6)	32	ND(9.1)
SWMU 1-15 (toe) (4-5 ft)	01/16/20	ND(6.8)	ND(11)	ND(11)	ND(11)	ND(5.7)	ND(4.5)	170	14
SWMU 1-16 (berm) (1.5 ft) Dup	01/13/20	ND(0.6)	ND(1)	ND(1)	ND(1)	ND(0.5)	ND(0.4)	ND(0.4)	ND(0.8)
SWMU 1-16 (berm) (1.5 ft)	01/13/20	ND(0.58)	ND(0.97)	ND(0.97)	ND(0.97)	ND(0.48)	ND(0.39)	ND(0.39)	ND(0.77)
SWMU 1-16 (berm) (2.5 ft)	01/13/20	ND(5.8)	ND(9.7)	ND(9.7)	ND(9.7)	ND(4.8)	ND(3.9)	23	ND(7.7)
SWMU 1-16 (toe) Dup	01/16/20	ND(11)	ND(18)	ND(18)	ND(18)	ND(9.1)	ND(7.3)	64	ND(15)
SWMU 1-16 (toe)	01/16/20	ND(9.3)	ND(16)	ND(16)	ND(16)	ND(7.8)	ND(6.2)	54	ND(12)
SWMU 1-16 (toe) (2.5 ft)	01/16/20	ND(7.2)	ND(12)	ND(12)	ND(12)	ND(6)	ND(4.8)	160	ND(9.7)
SWMU 1-16 (toe) (4-4.5 ft)	01/16/20	ND(7)	ND(12)	ND(12)	ND(12)	ND(5.8)	ND(4.7)	26	ND(9.3)
SWMU 1-17 (berm) (1.5 ft)	01/13/20	ND(3)	ND(5)	ND(5)	ND(5)	ND(2.5)	ND(2)	ND(2)	ND(4)
SWMU 1-17 (berm) (2.5 ft)	01/13/20	ND(0.59)	ND(0.98)	ND(0.98)	ND(0.98)	ND(0.49)	ND(0.39)	ND(0.39)	ND(0.78)
SWMU 1-17 (toe)	01/16/20	ND(7.8)	ND(13)	ND(13)	ND(13)	ND(6.5)	ND(5.2)	ND(5.2)	ND(10)
SWMU 1-17 (toe) (2.5 ft)	01/16/20	ND(2.8)	ND(4.7)	ND(4.7)	ND(4.7)	ND(2.4)	ND(1.9)	3.9	ND(3.8)
SWMU 1-17 (toe) (4.5-5 ft)	01/16/20	ND(3)	ND(5)	ND(5)	ND(5)	ND(2.5)	ND(2)	ND(2)	ND(4)
SWMU 1-18 (berm) (1.5 ft)	01/13/20	ND(0.59)	ND(0.98)	ND(0.98)	ND(0.98)	ND(0.49)	ND(0.39)	ND(0.39)	ND(0.78)
SWMU 1-18 (berm) (2.5 ft)	01/13/20	ND(0.56)	ND(0.93)	ND(0.93)	ND(0.93)	ND(0.46)	ND(0.37)	ND(0.37)	ND(0.74)
SWMU 1-18 (toe)	01/16/20	ND(14)	ND(23)	ND(23)	ND(23)	ND(11)	ND(9.2)	ND(9.2)	ND(18)
SWMU 1-18 (toe) (2.5 ft)	01/16/20	ND(34)	ND(57)	ND(57)	ND(57)	ND(28)	ND(23)	81	ND(45)
SWMU 1-18 (toe) (5 ft)	01/16/20	ND(1.5)	ND(2.5)	ND(2.5)	ND(2.5)	ND(1.2)	ND(0.99)	2.3	ND(2)
[a] NMED Industrial SSL		18,330	1,833	82.27	17.15	103,800	6,489	3,368	NA
[b] NMED Residential SSL		1,230	123	123	18.5	6,260	391	232	NA
[c] USEPA RSL Industrial Soil HQ 0.1		1,600	160	7.4	1.5	6,000	580	300	4,100

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(toe) samples composited in the field (berm) samples taken along the berm
Samples taken in Aeration Lagoon 1.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.
See sediment samplings logs for lithology of samples.

ATTACHMENT B - TABLE 2B. SWMU 1 SAMPLING - SEMIVOLATILE ORGANIC COMPOUNDS (AL-2)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	2-Nitroaniline (mg/kg)	2-Nitrophenol (mg/kg)	3,3'-Dichlorobenzidine (mg/kg)	3,4- Methyl phenol (mg/kg)	3-Nitroaniline (mg/kg)	2-Methyl-4,6-dinitrophenol (mg/kg)	4-Bromophenylphenylether (mg/kg)	4-Chloro-3-Methylphenol (mg/kg)
SWMU 1-5	01/17/20	ND(4.8)	ND(4.8)	ND(6)	ND(4.8)	ND(4.8)	ND(9.6)	ND(4.8)	ND(12)
SWMU 1-5 (2.5-5 ft)	01/17/20	ND(4.9)	ND(4.9)	ND(6.1)	7.4	ND(4.9)	ND(9.8)	ND(4.9)	ND(12)
SWMU 1-5 (5.5-6 ft)	01/17/20	ND(0.36)	ND(0.36)	ND(0.45)	3.3	ND(0.36)	ND(0.73)	ND(0.36)	ND(0.91)
SWMU 1-6 (0-5.5 ft)	01/17/20	ND(4.8)	ND(4.8)	ND(6)	13	ND(4.8)	ND(9.6)	ND(4.8)	ND(12)
SWMU 1-6 (5.5-6 ft)	01/17/20	ND(0.38)	ND(0.38)	ND(0.48)	ND(0.38)	ND(0.38)	ND(0.77)	ND(0.38)	ND(0.96)
SWMU 1-7 Dup	01/17/20	ND(23)	ND(23)	ND(28)	ND(23)	ND(23)	ND(46)	ND(23)	ND(57)
SWMU 1-7	01/17/20	ND(4.5)	ND(4.5)	ND(5.6)	ND(4.5)	ND(4.5)	ND(9)	ND(4.5)	ND(11)
SWMU 1-7 (2.5 ft)	01/17/20	ND(5)	ND(5)	ND(6.2)	12	ND(5)	ND(10)	ND(5)	ND(12)
SWMU 1-7 (4-5 ft)	01/17/20	ND(0.41)	ND(0.41)	ND(0.51)	0.34	ND(0.41)	ND(0.81)	ND(0.41)	ND(1)
SWMU 1-15 (berm) (1.5 ft)	01/13/20	ND(0.19)	ND(0.19)	ND(0.24)	ND(0.19)	ND(0.19)	ND(0.38)	ND(0.19)	ND(0.48)
SWMU 1-15 (berm) (2.5 ft)	01/13/20	ND(1.9)	ND(1.9)	ND(2.3)	ND(1.9)	ND(1.9)	ND(3.8)	ND(1.9)	ND(4.7)
SWMU 1-15 (toe) Dup	01/16/20	ND(26)	ND(26)	ND(33)	ND(26)	ND(26)	ND(52)	ND(26)	ND(65)
SWMU 1-15 (toe)	01/16/20	ND(23)	ND(23)	ND(28)	ND(23)	ND(23)	ND(45)	ND(23)	ND(57)
SWMU 1-15 (toe) (3 ft)	01/16/20	ND(4.6)	ND(4.6)	ND(5.7)	1.7	ND(4.6)	ND(9.1)	ND(4.6)	ND(11)
SWMU 1-15 (toe) (4-5 ft)	01/16/20	ND(4.5)	ND(4.5)	ND(5.7)	22	ND(4.5)	ND(9.1)	ND(4.5)	ND(11)
SWMU 1-16 (berm) (1.5 ft) Dup	01/13/20	ND(0.4)	ND(0.4)	ND(0.5)	ND(0.4)	ND(0.4)	ND(0.8)	ND(0.4)	ND(1)
SWMU 1-16 (berm) (1.5 ft)	01/13/20	ND(0.39)	ND(0.39)	ND(0.48)	ND(0.39)	ND(0.39)	ND(0.77)	ND(0.39)	ND(0.97)
SWMU 1-16 (berm) (2.5 ft)	01/13/20	ND(3.9)	ND(3.9)	ND(4.8)	ND(3.9)	ND(3.9)	ND(7.7)	ND(3.9)	ND(9.7)
SWMU 1-16 (toe) Dup	01/16/20	ND(7.3)	ND(7.3)	ND(9.1)	ND(7.3)	ND(7.3)	ND(15)	ND(7.3)	ND(18)
SWMU 1-16 (toe)	01/16/20	ND(6.2)	ND(6.2)	ND(7.8)	ND(6.2)	ND(6.2)	ND(12)	ND(6.2)	ND(16)
SWMU 1-16 (toe) (2.5 ft)	01/16/20	ND(4.8)	ND(4.8)	ND(6)	9.3	ND(4.8)	ND(9.7)	ND(4.8)	ND(12)
SWMU 1-16 (toe) (4-4.5 ft)	01/16/20	ND(4.7)	ND(4.7)	ND(5.8)	2.9	ND(4.7)	ND(9.3)	ND(4.7)	ND(12)
SWMU 1-17 (berm) (1.5 ft)	01/13/20	ND(2)	ND(2)	ND(2.5)	ND(2)	ND(2)	ND(4)	ND(2)	ND(5)
SWMU 1-17 (berm) (2.5 ft)	01/13/20	ND(0.39)	ND(0.39)	ND(0.49)	ND(0.39)	ND(0.39)	ND(0.78)	ND(0.39)	ND(0.98)
SWMU 1-17 (toe)	01/16/20	ND(5.2)	ND(5.2)	ND(6.5)	ND(5.2)	ND(5.2)	ND(10)	ND(5.2)	ND(13)
SWMU 1-17 (toe) (2.5 ft)	01/16/20	ND(1.9)	ND(1.9)	ND(2.4)	ND(1.9)	ND(1.9)	ND(3.8)	ND(1.9)	ND(4.7)
SWMU 1-17 (toe) (4.5-5 ft)	01/16/20	ND(2)	ND(2)	ND(2.5)	ND(2)	ND(2)	ND(4)	ND(2)	ND(5)
SWMU 1-18 (berm) (1.5 ft)	01/13/20	ND(0.39)	ND(0.39)	ND(0.49)	ND(0.39)	ND(0.39)	ND(0.78)	ND(0.39)	ND(0.98)
SWMU 1-18 (berm) (2.5 ft)	01/13/20	ND(0.37)	ND(0.37)	ND(0.46)	ND(0.37)	ND(0.37)	ND(0.74)	ND(0.37)	ND(0.93)
SWMU 1-18 (toe)	01/16/20	ND(9.2)	ND(9.2)	ND(11)	ND(9.2)	ND(9.2)	ND(18)	ND(9.2)	ND(23)
SWMU 1-18 (toe) (2.5 ft)	01/16/20	ND(23)	ND(23)	ND(28)	ND(23)	ND(23)	ND(45)	ND(23)	ND(57)
SWMU 1-18 (toe) (5 ft)	01/16/20	ND(0.99)	ND(0.99)	ND(1.2)	ND(0.99)	ND(0.99)	ND(2)	ND(0.99)	ND(2.5)
[a] NMED Industrial SSL		NA	NA	57.01	NA	NA	NA	NA	NA
[b] NMED Residential SSL		NA	NA	11.8	NA	NA	NA	NA	NA
[c] USEPA RSL Industrial Soil HQ 0.1		800	NA	5.1	NA	NA	6.6	NA	8,200

Notes:
NMED SSL's - New Mexico Environmental Department Industrial and Residential Soil Screening Levels, June 2019
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
AL - Aeration Lagoon
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Samples taken in Aeration Lagoon 1.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.
See sediment samplings logs for lithology of samples.

ATTACHMENT B - TABLE 2B. SWMU 1 SAMPLING - SEMIVOLATILE ORGANIC COMPOUNDS (AL-2)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	4-Chloroaniline (mg/kg)	4-Chlorophenylphenylether (mg/kg)	4-Nitroaniline (mg/kg)	4-Nitrophenol (mg/kg)	Acenaphthene (mg/kg)	Acenaphthylene (mg/kg)	Aniline (mg/kg)	Anthracene (mg/kg)
SWMU 1-5	01/17/20	ND(12)	ND(4.8)	ND(9.6)	ND(6)	ND(4.8)	ND(4.8)	ND(4.8)	ND(4.8)
SWMU 1-5 (2.5-5 ft)	01/17/20	ND(12)	ND(4.9)	ND(9.8)	ND(6.1)	ND(4.9)	ND(4.9)	ND(4.9)	ND(4.9)
SWMU 1-5 (5.5-6 ft)	01/17/20	ND(0.91)	ND(0.36)	ND(0.73)	ND(0.45)	ND(0.36)	ND(0.36)	ND(0.36)	ND(0.36)
SWMU 1-6 (0-5.5 ft)	01/17/20	ND(12)	ND(4.8)	ND(9.6)	ND(6)	ND(4.8)	ND(4.8)	ND(4.8)	ND(4.8)
SWMU 1-6 (5.5-6 ft)	01/17/20	ND(0.96)	ND(0.38)	ND(0.77)	ND(0.48)	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.38)
SWMU 1-7 Dup	01/17/20	ND(57)	ND(23)	ND(46)	ND(28)	ND(23)	ND(23)	ND(23)	ND(23)
SWMU 1-7	01/17/20	ND(11)	ND(4.5)	ND(9)	ND(5.6)	ND(4.5)	ND(4.5)	ND(4.5)	ND(4.5)
SWMU 1-7 (2.5 ft)	01/17/20	ND(12)	ND(5)	ND(10)	ND(6.2)	ND(5)	ND(5)	ND(5)	ND(5)
SWMU 1-7 (4-5 ft)	01/17/20	ND(1)	ND(0.41)	ND(0.81)	ND(0.51)	ND(0.41)	ND(0.41)	ND(0.41)	ND(0.41)
SWMU 1-15 (berm) (1.5 ft)	01/13/20	ND(0.48)	ND(0.19)	ND(0.38)	ND(0.24)	ND(0.19)	ND(0.19)	ND(0.19)	ND(0.19)
SWMU 1-15 (berm) (2.5 ft)	01/13/20	ND(4.7)	ND(1.9)	ND(3.8)	ND(2.3)	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)
SWMU 1-15 (toe) Dup	01/16/20	ND(65)	ND(26)	ND(52)	ND(33)	ND(26)	ND(26)	ND(26)	ND(26)
SWMU 1-15 (toe)	01/16/20	ND(57)	ND(23)	ND(45)	ND(28)	ND(23)	ND(23)	ND(23)	ND(23)
SWMU 1-15 (toe) (3 ft)	01/16/20	ND(11)	ND(4.6)	ND(9.1)	ND(5.7)	ND(4.6)	ND(4.6)	ND(4.6)	ND(4.6)
SWMU 1-15 (toe) (4-5 ft)	01/16/20	ND(11)	ND(4.5)	ND(9.1)	ND(5.7)	ND(4.5)	ND(4.5)	ND(4.5)	ND(4.5)
SWMU 1-16 (berm) (1.5 ft) Dup	01/13/20	ND(1)	ND(0.4)	ND(0.8)	ND(0.5)	ND(0.4)	ND(0.4)	ND(0.4)	ND(0.4)
SWMU 1-16 (berm) (1.5 ft)	01/13/20	ND(0.97)	ND(0.39)	ND(0.77)	ND(0.48)	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.39)
SWMU 1-16 (berm) (2.5 ft)	01/13/20	ND(9.7)	ND(3.9)	ND(7.7)	ND(4.8)	ND(3.9)	ND(3.9)	ND(3.9)	ND(3.9)
SWMU 1-16 (toe) Dup	01/16/20	ND(18)	ND(7.3)	ND(15)	ND(9.1)	ND(7.3)	ND(7.3)	ND(7.3)	ND(7.3)
SWMU 1-16 (toe)	01/16/20	ND(16)	ND(6.2)	ND(12)	ND(7.8)	ND(6.2)	ND(6.2)	ND(6.2)	ND(6.2)
SWMU 1-16 (toe) (2.5 ft)	01/16/20	ND(12)	ND(4.8)	ND(9.7)	ND(6)	ND(4.8)	ND(4.8)	ND(4.8)	ND(4.8)
SWMU 1-16 (toe) (4-4.5 ft)	01/16/20	ND(12)	ND(4.7)	ND(9.3)	ND(5.8)	ND(4.7)	ND(4.7)	ND(4.7)	ND(4.7)
SWMU 1-17 (berm) (1.5 ft)	01/13/20	ND(5)	ND(2)	ND(4)	ND(2.5)	ND(2)	ND(2)	ND(2)	ND(2)
SWMU 1-17 (berm) (2.5 ft)	01/13/20	ND(0.98)	ND(0.39)	ND(0.78)	ND(0.49)	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.39)
SWMU 1-17 (toe)	01/16/20	ND(13)	ND(5.2)	ND(10)	ND(6.5)	ND(5.2)	ND(5.2)	ND(5.2)	ND(5.2)
SWMU 1-17 (toe) (2.5 ft)	01/16/20	ND(4.7)	ND(1.9)	ND(3.8)	ND(2.4)	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)
SWMU 1-17 (toe) (4.5-5 ft)	01/16/20	ND(5)	ND(2)	ND(4)	ND(2.5)	ND(2)	ND(2)	ND(2)	ND(2)
SWMU 1-18 (berm) (1.5 ft)	01/13/20	ND(0.98)	ND(0.39)	ND(0.78)	ND(0.49)	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.39)
SWMU 1-18 (berm) (2.5 ft)	01/13/20	ND(0.93)	ND(0.37)	ND(0.74)	ND(0.46)	ND(0.37)	ND(0.37)	ND(0.37)	ND(0.37)
SWMU 1-18 (toe)	01/16/20	ND(23)	ND(9.2)	ND(18)	ND(11)	ND(9.2)	ND(9.2)	ND(9.2)	ND(9.2)
SWMU 1-18 (toe) (2.5 ft)	01/16/20	ND(57)	ND(23)	ND(45)	ND(28)	ND(23)	ND(23)	ND(23)	ND(23)
SWMU 1-18 (toe) (5 ft)	01/16/20	ND(2.5)	ND(0.99)	ND(2)	ND(1.2)	ND(0.99)	ND(0.99)	ND(0.99)	ND(0.99)
[a] NMED Industrial SSL		NA	NA	NA	NA	50,520	NA	NA	252,600
[b] NMED Residential SSL		NA	NA	NA	NA	3,480	NA	NA	17,400
[c] USEPA RSL Industrial Soil HQ 0.1		11	NA	110	NA	4,500	NA	400	23,000

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AL - Aeration Lagoon
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Samples taken in Aeration Lagoon 1.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.
See sediment samplings logs for lithology of samples.

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ATTACHMENT B - TABLE 2B. SWMU 1 SAMPLING - SEMIVOLATILE ORGANIC COMPOUNDS (AL-2)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Azobenzene (mg/kg)	Benzo(a)anthracene (mg/kg)	Benzo(a)pyrene (mg/kg)	Benzo(b)fluoranthene (mg/kg)	Benzo(g,h,i)perylene (mg/kg)	Benzo(k)fluoranthene (mg/kg)	Benzoic Acid (mg/kg)	Benzyl Alcohol (mg/kg)
SWMU 1-5	01/17/20	ND(4.8)	ND(4.8)	ND(4.8)	ND(4.8)	ND(4.8)	ND(4.8)	ND(12)	ND(4.8)
SWMU 1-5 (2.5-5 ft)	01/17/20	ND(4.9)	ND(4.9)	**8.5** [b,c]	ND(4.9)	ND(4.9)	ND(4.9)	ND(12)	ND(4.9)
SWMU 1-5 (5.5-6 ft)	01/17/20	ND(0.36)	ND(0.36)	ND(0.36)	ND(0.36)	ND(0.36)	ND(0.36)	ND(0.91)	ND(0.36)
SWMU 1-6 (0-5.5 ft)	01/17/20	ND(4.8)	ND(4.8)	ND(4.8)	ND(4.8)	ND(4.8)	ND(4.8)	ND(12)	ND(4.8)
SWMU 1-6 (5.5-6 ft)	01/17/20	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.96)	ND(0.38)
SWMU 1-7 Dup	01/17/20	ND(23)	**24** [b,c]	ND(23)	ND(23)	ND(23)	ND(23)	ND(57)	ND(23)
SWMU 1-7	01/17/20	ND(4.5)	ND(4.5)	ND(4.5)	ND(4.5)	ND(4.5)	ND(4.5)	ND(11)	ND(4.5)
SWMU 1-7 (2.5 ft)	01/17/20	ND(5)	ND(5)	**11** [b,c]	ND(5)	ND(5)	ND(5)	ND(12)	ND(5)
SWMU 1-7 (4-5 ft)	01/17/20	ND(0.41)	ND(0.41)	ND(0.41)	ND(0.41)	ND(0.41)	ND(0.41)	ND(1)	ND(0.41)
SWMU 1-15 (berm) (1.5 ft)	01/13/20	ND(0.19)	ND(0.19)	ND(0.19)	ND(0.19)	ND(0.19)	ND(0.19)	ND(0.48)	ND(0.19)
SWMU 1-15 (berm) (2.5 ft)	01/13/20	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)	ND(4.7)	ND(1.9)
SWMU 1-15 (toe) Dup	01/16/20	ND(26)	ND(26)	ND(26)	ND(26)	ND(26)	ND(26)	ND(65)	ND(26)
SWMU 1-15 (toe)	01/16/20	ND(23)	ND(23)	ND(23)	ND(23)	ND(23)	ND(23)	ND(57)	ND(23)
SWMU 1-15 (toe) (3 ft)	01/16/20	ND(4.6)	ND(4.6)	ND(4.6)	ND(4.6)	ND(4.6)	ND(4.6)	ND(11)	ND(4.6)
SWMU 1-15 (toe) (4-5 ft)	01/16/20	ND(4.5)	ND(4.5)	ND(4.5)	ND(4.5)	ND(4.5)	ND(4.5)	ND(11)	ND(4.5)
SWMU 1-16 (berm) (1.5 ft) Dup	01/13/20	ND(0.4)	ND(0.4)	ND(0.4)	ND(0.4)	ND(0.4)	ND(0.4)	ND(1)	ND(0.4)
SWMU 1-16 (berm) (1.5 ft)	01/13/20	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.97)	ND(0.39)
SWMU 1-16 (berm) (2.5 ft)	01/13/20	ND(3.9)	ND(3.9)	ND(3.9)	ND(3.9)	ND(3.9)	ND(3.9)	ND(9.7)	ND(3.9)
SWMU 1-16 (toe) Dup	01/16/20	ND(7.3)	ND(7.3)	ND(7.3)	ND(7.3)	ND(7.3)	ND(7.3)	ND(18)	ND(7.3)
SWMU 1-16 (toe)	01/16/20	ND(6.2)	ND(6.2)	ND(6.2)	ND(6.2)	ND(6.2)	ND(6.2)	ND(16)	ND(6.2)
SWMU 1-16 (toe) (2.5 ft)	01/16/20	ND(4.8)	ND(4.8)	ND(4.8)	ND(4.8)	ND(4.8)	ND(4.8)	ND(12)	ND(4.8)
SWMU 1-16 (toe) (4-4.5 ft)	01/16/20	ND(4.7)	ND(4.7)	ND(4.7)	ND(4.7)	ND(4.7)	ND(4.7)	ND(12)	ND(4.7)
SWMU 1-17 (berm) (1.5 ft)	01/13/20	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(5)	ND(2)
SWMU 1-17 (berm) (2.5 ft)	01/13/20	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.98)	ND(0.39)
SWMU 1-17 (toe)	01/16/20	ND(5.2)	ND(5.2)	ND(5.2)	ND(5.2)	ND(5.2)	ND(5.2)	ND(13)	ND(5.2)
SWMU 1-17 (toe) (2.5 ft)	01/16/20	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)	ND(4.7)	ND(1.9)
SWMU 1-17 (toe) (4.5-5 ft)	01/16/20	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(5)	ND(2)
SWMU 1-18 (berm) (1.5 ft)	01/13/20	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.98)	ND(0.39)
SWMU 1-18 (berm) (2.5 ft)	01/13/20	ND(0.37)	ND(0.37)	ND(0.37)	ND(0.37)	ND(0.37)	ND(0.37)	ND(0.93)	ND(0.37)
SWMU 1-18 (toe)	01/16/20	ND(9.2)	ND(9.2)	ND(9.2)	ND(9.2)	ND(9.2)	ND(9.2)	ND(23)	ND(9.2)
SWMU 1-18 (toe) (2.5 ft)	01/16/20	ND(23)	ND(23)	ND(23)	ND(23)	ND(23)	ND(23)	ND(57)	ND(23)
SWMU 1-18 (toe) (5 ft)	01/16/20	ND(0.99)	ND(0.99)	ND(0.99)	ND(0.99)	ND(0.99)	ND(0.99)	ND(2.5)	ND(0.99)
[a] NMED Industrial SSL		NA	32.3	23.58	32.3	NA	322.9	NA	NA
[b] NMED Residential SSL		NA	1.53	1.12	1.53	NA	15.3	NA	NA
[c] USEPA RSL Industrial Soil HQ 0.1		26	21	2.1	21	NA	210	330,000	8,200

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ft - feet mg/kg - milligrams per kilogram
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Samples without location depths were taken from the surface.
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ATTACHMENT B - TABLE 2B. SWMU 1 SAMPLING - SEMIVOLATILE ORGANIC COMPOUNDS (AL-2)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Bis(2chloroethoxy) methane (mg/kg)	Bis(2-chloroethyl)ether (mg/kg)	Bis(2chloroisopropyl)ether (mg/kg)	Bis(2-ethylhexyl)phthalate (mg/kg)	Benzyl Butyl Phthalate (mg/kg)	Carbazole (mg/kg)	Chrysene (mg/kg)	Dibenz(a,h)anthracene (mg/kg)
SWMU 1-5	01/17/20	ND(4.8)	ND(4.8)	ND(4.8)	ND(12)	ND(4.8)	ND(4.8)	ND(4.8)	ND(4.8)
SWMU 1-5 (2.5-5 ft)	01/17/20	ND(4.9)	ND(4.9)	ND(4.9)	ND(12)	ND(4.9)	ND(4.9)	ND(4.9)	ND(4.9)
SWMU 1-5 (5.5-6 ft)	01/17/20	ND(0.36)	ND(0.36)	ND(0.36)	ND(0.91)	ND(0.36)	ND(0.36)	ND(0.36)	ND(0.36)
SWMU 1-6 (0-5.5 ft)	01/17/20	ND(4.8)	ND(4.8)	ND(4.8)	ND(12)	ND(4.8)	ND(4.8)	ND(4.8)	ND(4.8)
SWMU 1-6 (5.5-6 ft)	01/17/20	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.96)	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.38)
SWMU 1-7 Dup	01/17/20	ND(23)	ND(23)	ND(23)	ND(57)	ND(23)	ND(23)	18	ND(23)
SWMU 1-7	01/17/20	ND(4.5)	ND(4.5)	ND(4.5)	ND(11)	ND(4.5)	ND(4.5)	13	ND(4.5)
SWMU 1-7 (2.5 ft)	01/17/20	ND(5)	ND(5)	ND(5)	ND(12)	ND(5)	ND(5)	ND(5)	ND(5)
SWMU 1-7 (4-5 ft)	01/17/20	ND(0.41)	ND(0.41)	ND(0.41)	ND(1)	ND(0.41)	ND(0.41)	ND(0.41)	ND(0.41)
SWMU 1-15 (berm) (1.5 ft)	01/13/20	ND(0.19)	ND(0.19)	ND(0.19)	ND(0.48)	ND(0.19)	ND(0.19)	ND(0.19)	ND(0.19)
SWMU 1-15 (berm) (2.5 ft)	01/13/20	ND(1.9)	ND(1.9)	ND(1.9)	ND(4.7)	ND(1.9)	ND(1.9)	2.9	ND(1.9)
SWMU 1-15 (toe) Dup	01/16/20	ND(26)	ND(26)	ND(26)	ND(65)	ND(26)	ND(26)	22	ND(26)
SWMU 1-15 (toe)	01/16/20	ND(23)	ND(23)	ND(23)	ND(57)	ND(23)	ND(23)	ND(23)	ND(23)
SWMU 1-15 (toe) (3 ft)	01/16/20	ND(4.6)	ND(4.6)	ND(4.6)	ND(11)	ND(4.6)	ND(4.6)	ND(4.6)	ND(4.6)
SWMU 1-15 (toe) (4-5 ft)	01/16/20	ND(4.5)	ND(4.5)	ND(4.5)	ND(11)	ND(4.5)	ND(4.5)	ND(4.5)	ND(4.5)
SWMU 1-16 (berm) (1.5 ft) Dup	01/13/20	ND(0.4)	ND(0.4)	ND(0.4)	ND(1)	ND(0.4)	ND(0.4)	ND(0.4)	ND(0.4)
SWMU 1-16 (berm) (1.5 ft)	01/13/20	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.97)	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.39)
SWMU 1-16 (berm) (2.5 ft)	01/13/20	ND(3.9)	ND(3.9)	ND(3.9)	ND(9.7)	ND(3.9)	ND(3.9)	9.3	ND(3.9)
SWMU 1-16 (toe) Dup	01/16/20	ND(7.3)	ND(7.3)	ND(7.3)	ND(18)	ND(7.3)	ND(7.3)	ND(7.3)	ND(7.3)
SWMU 1-16 (toe)	01/16/20	ND(6.2)	ND(6.2)	ND(6.2)	ND(16)	ND(6.2)	ND(6.2)	50	ND(6.2)
SWMU 1-16 (toe) (2.5 ft)	01/16/20	ND(4.8)	ND(4.8)	ND(4.8)	ND(12)	ND(4.8)	ND(4.8)	ND(4.8)	ND(4.8)
SWMU 1-16 (toe) (4-4.5 ft)	01/16/20	ND(4.7)	ND(4.7)	ND(4.7)	ND(12)	ND(4.7)	ND(4.7)	ND(4.7)	ND(4.7)
SWMU 1-17 (berm) (1.5 ft)	01/13/20	ND(2)	ND(2)	ND(2)	ND(5)	ND(2)	ND(2)	ND(2)	ND(2)
SWMU 1-17 (berm) (2.5 ft)	01/13/20	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.98)	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.39)
SWMU 1-17 (toe)	01/16/20	ND(5.2)	ND(5.2)	ND(5.2)	ND(13)	ND(5.2)	ND(5.2)	42	ND(5.2)
SWMU 1-17 (toe) (2.5 ft)	01/16/20	ND(1.9)	ND(1.9)	ND(1.9)	ND(4.7)	ND(1.9)	ND(1.9)	5.6	ND(1.9)
SWMU 1-17 (toe) (4.5-5 ft)	01/16/20	ND(2)	ND(2)	ND(2)	ND(5)	ND(2)	ND(2)	ND(2)	ND(2)
SWMU 1-18 (berm) (1.5 ft)	01/13/20	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.98)	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.39)
SWMU 1-18 (berm) (2.5 ft)	01/13/20	ND(0.37)	ND(0.37)	ND(0.37)	ND(0.93)	ND(0.37)	ND(0.37)	ND(0.37)	ND(0.37)
SWMU 1-18 (toe)	01/16/20	ND(9.2)	ND(9.2)	ND(9.2)	ND(23)	ND(9.2)	ND(9.2)	28	ND(9.2)
SWMU 1-18 (toe) (2.5 ft)	01/16/20	ND(23)	ND(23)	ND(23)	ND(57)	ND(23)	ND(23)	24	ND(23)
SWMU 1-18 (toe) (5 ft)	01/16/20	ND(0.99)	ND(0.99)	ND(0.99)	ND(2.5)	ND(0.99)	ND(0.99)	ND(0.99)	ND(0.99)
[a] NMED Industrial SSL		NA	15.67	NA	1,832	NA	NA	3,229	3.23
[b] NMED Residential SSL		NA	3.11	NA	380	NA	NA	153	0.153
[c] USEPA RSL Industrial Soil HQ 0.1		250	1	NA	160	1,200	NA	2,100	2.1

Notes:
NMED SSL's - New Mexico Environmental Department Industrial and Residential Soil Screening Levels, June 2019
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
AL - Aeration Lagoon
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Samples taken in Aeration Lagoon 1.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.
See sediment samplings logs for lithology of samples.

ATTACHMENT B - TABLE 2B. SWMU 1 SAMPLING - SEMIVOLATILE ORGANIC COMPOUNDS (AL-2)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Dibenzofuran (mg/kg)	Diethylphthalate (mg/kg)	Dimethyl Phthalate (mg/kg)	Di-n-butylphthalate (mg/kg)	Di-n-octylphthalate (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Hexachloro Benzene (mg/kg)
SWMU 1-5	01/17/20	ND(4.8)	ND(12)	ND(4.8)	ND(9.6)	ND(9.6)	ND(4.8)	28	ND(4.8)
SWMU 1-5 (2.5-5 ft)	01/17/20	ND(4.9)	ND(12)	ND(4.9)	ND(9.8)	ND(9.8)	ND(4.9)	64	ND(4.9)
SWMU 1-5 (5.5-6 ft)	01/17/20	ND(0.36)	ND(0.91)	ND(0.36)	ND(0.73)	ND(0.73)	ND(0.36)	0.57	ND(0.36)
SWMU 1-6 (0-5.5 ft)	01/17/20	ND(4.8)	ND(12)	ND(4.8)	ND(9.6)	ND(9.6)	ND(4.8)	21	ND(4.8)
SWMU 1-6 (5.5-6 ft)	01/17/20	ND(0.38)	ND(0.96)	ND(0.38)	ND(0.77)	ND(0.77)	ND(0.38)	ND(0.38)	ND(0.38)
SWMU 1-7 Dup	01/17/20	ND(23)	ND(57)	ND(23)	ND(46)	ND(46)	ND(23)	ND(23)	ND(23)
SWMU 1-7	01/17/20	ND(4.5)	ND(11)	ND(4.5)	ND(9)	ND(9)	ND(4.5)	ND(4.5)	ND(4.5)
SWMU 1-7 (2.5 ft)	01/17/20	ND(5)	ND(12)	ND(5)	ND(10)	ND(10)	ND(5)	54	ND(5)
SWMU 1-7 (4-5 ft)	01/17/20	ND(0.41)	ND(1)	ND(0.41)	ND(0.81)	ND(0.81)	ND(0.41)	0.24	ND(0.41)
SWMU 1-15 (berm) (1.5 ft)	01/13/20	ND(0.19)	ND(0.48)	ND(0.19)	0.38	ND(0.38)	ND(0.19)	ND(0.19)	ND(0.19)
SWMU 1-15 (berm) (2.5 ft)	01/13/20	ND(1.9)	ND(4.7)	ND(1.9)	ND(3.8)	ND(3.8)	ND(1.9)	4	ND(1.9)
SWMU 1-15 (toe) Dup	01/16/20	ND(26)	ND(65)	ND(26)	ND(52)	ND(52)	ND(26)	11	ND(26)
SWMU 1-15 (toe)	01/16/20	ND(23)	ND(57)	ND(23)	ND(45)	ND(45)	ND(23)	20	ND(23)
SWMU 1-15 (toe) (3 ft)	01/16/20	ND(4.6)	ND(11)	ND(4.6)	ND(9.1)	ND(9.1)	ND(4.6)	10	ND(4.6)
SWMU 1-15 (toe) (4-5 ft)	01/16/20	ND(4.5)	ND(11)	ND(4.5)	ND(9.1)	ND(9.1)	ND(4.5)	38	ND(4.5)
SWMU 1-16 (berm) (1.5 ft) Dup	01/13/20	ND(0.4)	ND(1)	ND(0.4)	ND(0.8)	ND(0.8)	ND(0.4)	ND(0.4)	ND(0.4)
SWMU 1-16 (berm) (1.5 ft)	01/13/20	ND(0.39)	ND(0.97)	ND(0.39)	ND(0.77)	ND(0.77)	ND(0.39)	ND(0.39)	ND(0.39)
SWMU 1-16 (berm) (2.5 ft)	01/13/20	ND(3.9)	ND(9.7)	ND(3.9)	ND(7.7)	ND(7.7)	ND(3.9)	9.3	ND(3.9)
SWMU 1-16 (toe) Dup	01/16/20	ND(7.3)	ND(18)	ND(7.3)	ND(15)	ND(15)	ND(7.3)	32	ND(7.3)
SWMU 1-16 (toe)	01/16/20	ND(6.2)	ND(16)	ND(6.2)	ND(12)	ND(12)	ND(6.2)	28	ND(6.2)
SWMU 1-16 (toe) (2.5 ft)	01/16/20	ND(4.8)	ND(12)	ND(4.8)	ND(9.7)	ND(9.7)	ND(4.8)	44	ND(4.8)
SWMU 1-16 (toe) (4-4.5 ft)	01/16/20	ND(4.7)	ND(12)	ND(4.7)	ND(9.3)	ND(9.3)	ND(4.7)	9.5	ND(4.7)
SWMU 1-17 (berm) (1.5 ft)	01/13/20	ND(2)	ND(5)	ND(2)	ND(4)	ND(4)	ND(2)	ND(2)	ND(2)
SWMU 1-17 (berm) (2.5 ft)	01/13/20	ND(0.39)	ND(0.98)	ND(0.39)	ND(0.78)	ND(0.78)	ND(0.39)	ND(0.39)	ND(0.39)
SWMU 1-17 (toe)	01/16/20	ND(5.2)	ND(13)	ND(5.2)	ND(10)	ND(10)	ND(5.2)	ND(5.2)	ND(5.2)
SWMU 1-17 (toe) (2.5 ft)	01/16/20	ND(1.9)	ND(4.7)	ND(1.9)	ND(3.8)	ND(3.8)	ND(1.9)	2.9	ND(1.9)
SWMU 1-17 (toe) (4.5-5 ft)	01/16/20	ND(2)	ND(5)	ND(2)	ND(4)	ND(4)	ND(2)	ND(2)	ND(2)
SWMU 1-18 (berm) (1.5 ft)	01/13/20	ND(0.39)	ND(0.98)	ND(0.39)	ND(0.78)	ND(0.78)	ND(0.39)	ND(0.39)	ND(0.39)
SWMU 1-18 (berm) (2.5 ft)	01/13/20	ND(0.37)	ND(0.93)	ND(0.37)	ND(0.74)	ND(0.74)	ND(0.37)	ND(0.37)	ND(0.37)
SWMU 1-18 (toe)	01/16/20	ND(9.2)	ND(23)	ND(9.2)	ND(18)	ND(18)	ND(9.2)	ND(9.2)	ND(9.2)
SWMU 1-18 (toe) (2.5 ft)	01/16/20	ND(23)	ND(57)	ND(23)	ND(45)	ND(45)	ND(23)	25	ND(23)
SWMU 1-18 (toe) (5 ft)	01/16/20	ND(0.99)	ND(2.5)	ND(0.99)	ND(2)	ND(2)	ND(0.99)	0.57	ND(0.99)
[a] NMED Industrial SSL		NA	733,000	NA	91,630	NA	33,680	33,680	16.03
[b] NMED Residential SSL		NA	49,300	NA	6,160	NA	2,320	2,320	3.33
[c] USEPA RSL Industrial Soil HQ 0.1		100	66,000	NA	8,200	820	3,000	3,000	0.96

Notes:
NMED SSL's - New Mexico Environmental Department Industrial and Residential Soil Screening Levels, June 2019
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
AL - Aeration Lagoon
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Samples taken in Aeration Lagoon 1.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.
See sediment samplings logs for lithology of samples.

ATTACHMENT B - TABLE 2B. SWMU 1 SAMPLING - SEMIVOLATILE ORGANIC COMPOUNDS (AL-2)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Hexachloro- butadiene (mg/kg)	Hexachloro-cyclopenta-diene (mg/kg)	Hexachloroethane (mg/kg)	Indeno-(1,2,3-c,d)pyrene (mg/kg)	Isophorone (mg/kg)	Naphthalene (mg/kg)		Nitrobenzene (mg/kg)	N-Nitrosodi-n-propylamine (mg/kg)
SWMU 1-5	01/17/20	ND(4.8)	ND(4.8)	ND(4.8)	ND(4.8)	ND(9.6)	10		ND(9.6)	ND(4.8)
SWMU 1-5 (2.5-5 ft)	01/17/20	ND(4.9)	ND(4.9)	ND(4.9)	ND(4.9)	ND(9.8)	**41**	c	ND(9.8)	ND(4.9)
SWMU 1-5 (5.5-6 ft)	01/17/20	ND(0.36)	ND(0.36)	ND(0.36)	ND(0.36)	ND(0.73)	0.25		ND(0.73)	ND(0.36)
SWMU 1-6 (0-5.5 ft)	01/17/20	ND(4.8)	ND(4.8)	ND(4.8)	ND(4.8)	ND(9.6)	13		ND(9.6)	ND(4.8)
SWMU 1-6 (5.5-6 ft)	01/17/20	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.77)	ND(0.38)		ND(0.77)	ND(0.38)
SWMU 1-7 Dup	01/17/20	ND(23)	ND(23)	ND(23)	ND(23)	ND(46)	ND(23)		ND(46)	ND(23)
SWMU 1-7	01/17/20	ND(4.5)	ND(4.5)	ND(4.5)	ND(4.5)	ND(9)	ND(4.5)		ND(9)	ND(4.5)
SWMU 1-7 (2.5 ft)	01/17/20	ND(5)	ND(5)	ND(5)	ND(5)	ND(10)	**38**	c	ND(10)	ND(5)
SWMU 1-7 (4-5 ft)	01/17/20	ND(0.41)	ND(0.41)	ND(0.41)	ND(0.41)	ND(0.81)	ND(0.41)		ND(0.81)	ND(0.41)
SWMU 1-15 (berm) (1.5 ft)	01/13/20	ND(0.19)	ND(0.19)	ND(0.19)	ND(0.19)	ND(0.38)	ND(0.19)		ND(0.38)	ND(0.19)
SWMU 1-15 (berm) (2.5 ft)	01/13/20	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)	ND(3.8)	1.4		ND(3.8)	ND(1.9)
SWMU 1-15 (toe) Dup	01/16/20	ND(26)	ND(26)	ND(26)	ND(26)	ND(52)	ND(26)		ND(52)	ND(26)
SWMU 1-15 (toe)	01/16/20	ND(23)	ND(23)	ND(23)	ND(23)	ND(45)	ND(23)		ND(45)	ND(23)
SWMU 1-15 (toe) (3 ft)	01/16/20	ND(4.6)	ND(4.6)	ND(4.6)	ND(4.6)	ND(9.1)	3.3		ND(9.1)	ND(4.6)
SWMU 1-15 (toe) (4-5 ft)	01/16/20	ND(4.5)	ND(4.5)	ND(4.5)	ND(4.5)	ND(9.1)	**27**	c	ND(9.1)	ND(4.5)
SWMU 1-16 (berm) (1.5 ft) Dup	01/13/20	ND(0.4)	ND(0.4)	ND(0.4)	ND(0.4)	ND(0.8)	ND(0.4)		ND(0.8)	ND(0.4)
SWMU 1-16 (berm) (1.5 ft)	01/13/20	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.77)	ND(0.39)		ND(0.77)	ND(0.39)
SWMU 1-16 (berm) (2.5 ft)	01/13/20	ND(3.9)	ND(3.9)	ND(3.9)	ND(3.9)	ND(7.7)	2.4		ND(7.7)	ND(3.9)
SWMU 1-16 (toe) Dup	01/16/20	ND(7.3)	ND(7.3)	ND(7.3)	ND(7.3)	ND(15)	5.4		ND(15)	ND(7.3)
SWMU 1-16 (toe)	01/16/20	ND(6.2)	ND(6.2)	ND(6.2)	ND(6.2)	ND(12)	5.2		ND(12)	ND(6.2)
SWMU 1-16 (toe) (2.5 ft)	01/16/20	ND(4.8)	ND(4.8)	ND(4.8)	ND(4.8)	ND(9.7)	**21**	c	ND(9.7)	ND(4.8)
SWMU 1-16 (toe) (4-4.5 ft)	01/16/20	ND(4.7)	ND(4.7)	ND(4.7)	ND(4.7)	ND(9.3)	2.7		ND(9.3)	ND(4.7)
SWMU 1-17 (berm) (1.5 ft)	01/13/20	ND(2)	ND(2)	ND(2)	ND(2)	ND(4)	ND(2)		ND(4)	ND(2)
SWMU 1-17 (berm) (2.5 ft)	01/13/20	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.78)	ND(0.39)		ND(0.78)	ND(0.39)
SWMU 1-17 (toe)	01/16/20	ND(5.2)	ND(5.2)	ND(5.2)	ND(5.2)	ND(10)	ND(5.2)		ND(10)	ND(5.2)
SWMU 1-17 (toe) (2.5 ft)	01/16/20	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)	ND(3.8)	ND(1.9)		ND(3.8)	ND(1.9)
SWMU 1-17 (toe) (4.5-5 ft)	01/16/20	ND(2)	ND(2)	ND(2)	ND(2)	ND(4)	ND(2)		ND(4)	ND(2)
SWMU 1-18 (berm) (1.5 ft)	01/13/20	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.78)	ND(0.39)		ND(0.78)	ND(0.39)
SWMU 1-18 (berm) (2.5 ft)	01/13/20	ND(0.37)	ND(0.37)	ND(0.37)	ND(0.37)	ND(0.74)	ND(0.37)		ND(0.74)	ND(0.37)
SWMU 1-18 (toe)	01/16/20	ND(9.2)	ND(9.2)	ND(9.2)	ND(9.2)	ND(18)	ND(9.2)		ND(18)	ND(9.2)
SWMU 1-18 (toe) (2.5 ft)	01/16/20	ND(23)	ND(23)	ND(23)	ND(23)	ND(45)	11		ND(45)	ND(23)
SWMU 1-18 (toe) (5 ft)	01/16/20	ND(0.99)	ND(0.99)	ND(0.99)	ND(0.99)	ND(2)	ND(0.99)		ND(2)	ND(0.99)
[a] NMED Industrial SSL		52.08	5,492	641.4	32.3	27,010	241		293.3	NA
[b] NMED Residential SSL		68.3	2.3	133	1.53	5,610	49.7		60.4	NA
[c] USEPA RSL Industrial Soil HQ 0.1		5.3	0.75	8	21	2,400	17		22	0.33

Notes:
NMED SSL's - New Mexico Environmental Department Industrial and Residential Soil Screening Levels, June 2019
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
AL - Aeration Lagoon
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Samples taken in Aeration Lagoon 1.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.
See sediment samplings logs for lithology of samples.

ATTACHMENT B - TABLE 2B. SWMU 1 SAMPLING - SEMIVOLATILE ORGANIC COMPOUNDS (AL-2)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	N-Nitroso-diphenylamine (mg/kg)	Pentachlorophenol (mg/kg)	Phenanthrene (mg/kg)	Phenol (mg/kg)	Pyrene (mg/kg)	Pyridine (mg/kg)
SWMU 1-5	01/17/20	ND(4.8)	ND(9.6)	120	ND(4.8)	ND(4.8)	ND(9.6)
SWMU 1-5 (2.5-5 ft)	01/17/20	ND(4.9)	ND(9.8)	220	4.4	80	ND(9.8)
SWMU 1-5 (5.5-6 ft)	01/17/20	ND(0.36)	ND(0.73)	1.4	0.48	ND(0.36)	ND(0.73)
SWMU 1-6 (0-5.5 ft)	01/17/20	ND(4.8)	ND(9.6)	62	ND(4.8)	ND(4.8)	ND(9.6)
SWMU 1-6 (5.5-6 ft)	01/17/20	ND(0.38)	ND(0.77)	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.77)
SWMU 1-7 Dup	01/17/20	ND(23)	ND(46)	ND(23)	ND(23)	18	ND(46)
SWMU 1-7	01/17/20	ND(4.5)	ND(9)	12	ND(4.5)	ND(4.5)	ND(9)
SWMU 1-7 (2.5 ft)	01/17/20	ND(5)	ND(10)	210	5.5	82	ND(10)
SWMU 1-7 (4-5 ft)	01/17/20	ND(0.41)	ND(0.81)	0.79	ND(0.41)	0.28	ND(0.81)
SWMU 1-15 (berm) (1.5 ft)	01/13/20	ND(0.19)	ND(0.38)	ND(0.19)	ND(0.19)	ND(0.19)	ND(0.38)
SWMU 1-15 (berm) (2.5 ft)	01/13/20	ND(1.9)	ND(3.8)	12	ND(1.9)	ND(1.9)	ND(3.8)
SWMU 1-15 (toe) Dup	01/16/20	ND(26)	ND(52)	40	ND(26)	20	ND(52)
SWMU 1-15 (toe)	01/16/20	ND(23)	ND(45)	65	ND(23)	37	ND(45)
SWMU 1-15 (toe) (3 ft)	01/16/20	ND(4.6)	ND(9.1)	32	ND(4.6)	7.2	ND(9.1)
SWMU 1-15 (toe) (4-5 ft)	01/16/20	ND(4.5)	ND(9.1)	150	17	45	ND(9.1)
SWMU 1-16 (berm) (1.5 ft) Dup	01/13/20	ND(0.4)	ND(0.8)	0.33	ND(0.4)	ND(0.4)	ND(0.8)
SWMU 1-16 (berm) (1.5 ft)	01/13/20	ND(0.39)	ND(0.77)	0.33	ND(0.39)	ND(0.39)	ND(0.77)
SWMU 1-16 (berm) (2.5 ft)	01/13/20	ND(3.9)	ND(7.7)	35	ND(3.9)	16	ND(7.7)
SWMU 1-16 (toe) Dup	01/16/20	ND(7.3)	ND(15)	200	ND(7.3)	74	ND(15)
SWMU 1-16 (toe)	01/16/20	ND(6.2)	ND(12)	210	ND(6.2)	72	ND(12)
SWMU 1-16 (toe) (2.5 ft)	01/16/20	ND(4.8)	ND(9.7)	160	2.9	56	ND(9.7)
SWMU 1-16 (toe) (4-4.5 ft)	01/16/20	ND(4.7)	ND(9.3)	29	ND(4.7)	13	ND(9.3)
SWMU 1-17 (berm) (1.5 ft)	01/13/20	ND(2)	ND(4)	ND(2)	ND(2)	ND(2)	ND(4)
SWMU 1-17 (berm) (2.5 ft)	01/13/20	ND(0.39)	ND(0.78)	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.78)
SWMU 1-17 (toe)	01/16/20	ND(5.2)	ND(10)	10	ND(5.2)	47	ND(10)
SWMU 1-17 (toe) (2.5 ft)	01/16/20	ND(1.9)	ND(3.8)	11	ND(1.9)	7.8	ND(3.8)
SWMU 1-17 (toe) (4.5-5 ft)	01/16/20	ND(2)	ND(4)	ND(2)	ND(2)	ND(2)	ND(4)
SWMU 1-18 (berm) (1.5 ft)	01/13/20	ND(0.39)	ND(0.78)	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.78)
SWMU 1-18 (berm) (2.5 ft)	01/13/20	ND(0.37)	ND(0.74)	ND(0.37)	ND(0.37)	ND(0.37)	ND(0.74)
SWMU 1-18 (toe)	01/16/20	ND(9.2)	ND(18)	36	ND(9.2)	ND(9.2)	ND(18)
SWMU 1-18 (toe) (2.5 ft)	01/16/20	ND(23)	ND(45)	66	ND(23)	21	ND(45)
SWMU 1-18 (toe) (5 ft)	01/16/20	ND(0.99)	ND(2)	1.2	ND(0.99)	ND(0.99)	ND(2)
[a] NMED Industrial SSL		5,236	44.51	25,260	274,900	25,260	NA
[b] NMED Residential SSL		1,090	9.85	1,740	18,500	1,740	NA
[c] USEPA RSL Industrial Soil HQ 0.1		470	4	NA	25,000	2,300	120

Notes:
NMED SSL's - New Mexico Environmental Department Industrial and Residential Soil Screening Levels, June 2019
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
AL - Aeration Lagoon
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Samples taken in Aeration Lagoon 1.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.
See sediment samplings logs for lithology of samples.

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ATTACHMENT B - TABLE 2C. SWMU 1 SAMPLING - SEMIVOLATILE ORGANIC COMPOUNDS (EP-1)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	1,2,4-Trichlorobenzene (mg/kg)	1,2-Dichlorobenzene (mg/kg)	1,3-Dichlorobenzene (mg/kg)	1,4-Dichlorobenzene (mg/kg)	1-Methylnaphthalene (mg/kg)	2,4,5-Trichlorophenol (mg/kg)	2,4,6-Trichlorophenol (mg/kg)	2,4-Dichlorophenol (mg/kg)
SWMU 1-1	01/15/20	ND(24)	ND(24)	ND(24)	ND(24)	ND(24)	ND(24)	ND(24)	ND(49)
SWMU 1-1 (0.5-3 ft)	01/15/20	ND(4.9)	ND(4.9)	ND(4.9)	ND(4.9)	**160** [c]	ND(4.9)	ND(4.9)	ND(9.7)
SWMU 1-1 (5 ft)	01/15/20	ND(0.41)	ND(0.41)	ND(0.41)	ND(0.41)	ND(0.41)	ND(0.41)	ND(0.41)	ND(0.83)
SWMU 1-2 Dup	01/15/20	ND(24)	ND(24)	ND(24)	ND(24)	ND(24)	ND(24)	ND(24)	ND(47)
SWMU 1-2	01/15/20	ND(33)	ND(33)	ND(33)	ND(33)	ND(33)	ND(33)	ND(33)	ND(66)
SWMU 1-2 (2-2.5 ft)	01/15/20	ND(5.1)	ND(5.1)	ND(5.1)	ND(5.1)	**150** [c]	ND(5.1)	ND(5.1)	ND(10)
SWMU 1-2 (3-3.5 ft)	01/15/20	ND(0.4)	ND(0.4)	ND(0.4)	ND(0.4)	ND(0.4)	ND(0.4)	ND(0.4)	ND(0.8)
SWMU 1-3 (0-0.5 ft)	01/14/20	ND(4.9)	ND(4.9)	ND(4.9)	ND(4.9)	ND(4.9)	ND(4.9)	ND(4.9)	ND(9.9)
SWMU 1-3 (0.5-3 ft)	01/14/20	ND(24)	ND(24)	ND(24)	ND(24)	**180** [b,c]	ND(24)	ND(24)	ND(48)
SWMU 1-3 (3 ft)	01/14/20	ND(0.4)	ND(0.4)	ND(0.4)	ND(0.4)	1	ND(0.4)	ND(0.4)	ND(0.8)
SWMU 1-4	01/14/20	ND(5.5)	ND(5.5)	ND(5.5)	ND(5.5)	**96** [c]	ND(5.5)	ND(5.5)	ND(11)
SWMU 1-4 (3 ft)	01/14/20	ND(4.7)	ND(4.7)	ND(4.7)	ND(4.7)	**180** [b,c]	ND(4.7)	ND(4.7)	ND(9.5)
SWMU 1-4 (3-3.5 ft)	01/14/20	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.38)	0.45	ND(0.38)	ND(0.38)	ND(0.77)
SWMU 1-11 (berm) (1.5 ft)	01/13/20	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(4)
SWMU 1-11 (berm) (2.5 ft)	01/13/20	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)	ND(3.9)
SWMU 1-11 (berm) (5 ft)	01/13/20	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.78)
SWMU 1-11 (berm) (7.5 ft)	01/13/20	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(3.9)
SWMU 1-11 (toe)	01/15/20	ND(6.1)	ND(6.1)	ND(6.1)	ND(6.1)	38	ND(6.1)	ND(6.1)	ND(12)
SWMU 1-11 (toe) (2.5 ft)	01/15/20	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.39)	0.35	ND(0.39)	ND(0.39)	ND(0.78)
SWMU 1-12 (berm) (1.5 ft)	01/13/20	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(3.9)
SWMU 1-12 (berm) (2.5 ft)	01/13/20	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.39)
SWMU 1-12 (berm) (5 ft)	01/13/20	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)	ND(3.9)
SWMU 1-12 (berm) (7.5 ft)	01/13/20	ND(2)	ND(2)	ND(2)	ND(2)	2.4	ND(2)	ND(2)	ND(4)
SWMU 1-12 (toe)	01/15/20	ND(4.9)	ND(4.9)	ND(4.9)	ND(4.9)	ND(4.9)	ND(4.9)	ND(4.9)	ND(9.8)
SWMU 1-12 (toe) (2.5 ft)	01/15/20	ND(0.36)	ND(0.36)	ND(0.36)	ND(0.36)	ND(0.36)	ND(0.36)	ND(0.36)	ND(0.72)
SWMU 1-12 (toe) (3 ft)	01/15/20	ND(0.37)	ND(0.37)	ND(0.37)	ND(0.37)	ND(0.37)	ND(0.37)	ND(0.37)	ND(0.74)
SWMU 1-13 (berm) (5 ft) Dup	01/13/20	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.4)
SWMU 1-13 (berm) (1.5 ft)	01/13/20	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.77)
SWMU 1-13 (berm) (2.5 ft)	01/13/20	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.36)
SWMU 1-13 (berm) (5 ft)	01/13/20	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.39)
SWMU 1-13 (berm) (7.5 ft)	01/13/20	ND(0.37)	ND(0.37)	ND(0.37)	ND(0.37)	ND(0.37)	ND(0.37)	ND(0.37)	ND(0.75)
SWMU 1-13 (berm) (9 ft)	01/13/20	ND(0.19)	ND(0.19)	ND(0.19)	ND(0.19)	ND(0.19)	ND(0.19)	ND(0.19)	ND(0.39)
SWMU 1-13 (toe) Dup	01/14/20	ND(23)	ND(23)	ND(23)	ND(23)	ND(23)	ND(23)	ND(23)	ND(47)
SWMU 1-13 (toe) (3 ft)	01/14/20	ND(0.22)	ND(0.22)	ND(0.22)	ND(0.22)	ND(0.22)	ND(0.22)	ND(0.22)	ND(0.44)
SWMU 1-13 (toe)	01/14/20	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(49)
SWMU 1-14 (berm) (5 ft) Dup	01/14/20	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.76)
SWMU 1-14 (berm) (1.5 ft)	01/14/20	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.4)
SWMU 1-14 (berm) (2.5 ft)	01/14/20	ND(0.34)	ND(0.34)	ND(0.34)	ND(0.34)	ND(0.34)	ND(0.34)	ND(0.34)	ND(0.68)
[a] NMED Industrial SSL		422.9	12,970	NA	6,729	813	91,630	916.3	2,749
[b] NMED Residential SSL		240	2,150	NA	1,290	172	6,160	484	185
[c] USEPA RSL Industrial Soil HQ 0.1		26	930	NA	11	73	8,200	82	250

Notes:
NMED SSL's - New Mexico Environmental Department Industrial Soil Screening Levels, June 2019
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
EP - Evaporation Pond
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Samples taken in Evaporation Pond 1.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.
See sediment samplings logs for lithology of samples.

ATTACHMENT B - TABLE 2C. SWMU 1 SAMPLING - SEMIVOLATILE ORGANIC COMPOUNDS (EP-1)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	2,4-Dimethylphenol (mg/kg)	2,4-Dinitrophenol (mg/kg)	2,4-Dinitro Toluene (mg/kg)	2,6-Dinitro Toluene (mg/kg)	2-Chloronaphthalene (mg/kg)	2-Chlorophenol (mg/kg)	2-Methylnaphthalene (mg/kg)	2-Methyl phenol (mg/kg)
SWMU 1-1	01/15/20	ND(37)	ND(61)	ND(61)	ND(61)	ND(31)	ND(24)	ND(24)	ND(49)
SWMU 1-1 (0.5-3 ft)	01/15/20	ND(7.3)	ND(12)	ND(12)	ND(12)	ND(6.1)	ND(4.9)	200	ND(9.7)
SWMU 1-1 (5 ft)	01/15/20	ND(0.62)	ND(1)	ND(1)	ND(1)	ND(0.52)	ND(0.41)	ND(0.41)	ND(0.83)
SWMU 1-2 Dup	01/15/20	ND(36)	ND(59)	ND(59)	ND(59)	ND(30)	ND(24)	ND(24)	ND(47)
SWMU 1-2	01/15/20	ND(50)	ND(83)	ND(83)	ND(83)	ND(41)	ND(33)	ND(33)	ND(66)
SWMU 1-2 (2-2.5 ft)	01/15/20	ND(7.6)	ND(13)	ND(13)	ND(13)	ND(6.3)	ND(5.1)	130	ND(10)
SWMU 1-2 (3-3.5 ft)	01/15/20	ND(0.6)	ND(1)	ND(1)	ND(1)	ND(0.5)	ND(0.4)	ND(0.4)	ND(0.8)
SWMU 1-3 (0-0.5 ft)	01/14/20	ND(7.4)	ND(12)	ND(12)	ND(12)	ND(6.2)	ND(4.9)	6.3	ND(9.9)
SWMU 1-3 (0.5-3 ft)	01/14/20	ND(36)	ND(60)	ND(60)	ND(60)	ND(30)	ND(24)	160	ND(48)
SWMU 1-3 (3 ft)	01/14/20	ND(0.6)	ND(1)	ND(1)	ND(1)	ND(0.5)	ND(0.4)	1	ND(0.8)
SWMU 1-4	01/14/20	ND(8.2)	ND(14)	ND(14)	ND(14)	ND(6.8)	ND(5.5)	86	ND(11)
SWMU 1-4 (3 ft)	01/14/20	ND(7.1)	ND(12)	ND(12)	ND(12)	ND(5.9)	ND(4.7)	150	ND(9.5)
SWMU 1-4 (3-3.5 ft)	01/14/20	ND(0.58)	ND(0.96)	ND(0.96)	ND(0.96)	ND(0.48)	ND(0.38)	0.27	ND(0.77)
SWMU 1-11 (berm) (1.5 ft)	01/13/20	ND(3)	ND(5)	ND(5)	ND(5)	ND(2.5)	ND(2)	ND(2)	ND(4)
SWMU 1-11 (berm) (2.5 ft)	01/13/20	ND(2.9)	ND(4.8)	ND(4.8)	ND(4.8)	ND(2.4)	ND(1.9)	ND(1.9)	ND(3.9)
SWMU 1-11 (berm) (5 ft)	01/13/20	ND(0.59)	ND(0.98)	ND(0.98)	ND(0.98)	ND(0.49)	ND(0.39)	ND(0.39)	ND(0.78)
SWMU 1-11 (berm) (7.5 ft)	01/13/20	ND(2.9)	ND(4.9)	ND(4.9)	ND(4.9)	ND(2.5)	ND(2)	ND(2)	ND(3.9)
SWMU 1-11 (toe)	01/15/20	ND(9.2)	ND(15)	ND(15)	ND(15)	ND(7.7)	ND(6.1)	39	ND(12)
SWMU 1-11 (toe) (2.5 ft)	01/15/20	ND(0.58)	ND(0.97)	ND(0.97)	ND(0.97)	ND(0.48)	ND(0.39)	0.53	0.48
SWMU 1-12 (berm) (1.5 ft)	01/13/20	ND(2.9)	ND(4.9)	ND(4.9)	ND(4.9)	ND(2.5)	ND(2)	ND(2)	ND(3.9)
SWMU 1-12 (berm) (2.5 ft)	01/13/20	ND(0.29)	ND(0.49)	ND(0.49)	ND(0.49)	ND(0.25)	ND(0.2)	ND(0.2)	ND(0.39)
SWMU 1-12 (berm) (5 ft)	01/13/20	ND(2.9)	ND(4.8)	ND(4.8)	ND(4.8)	ND(2.4)	ND(1.9)	ND(1.9)	ND(3.9)
SWMU 1-12 (berm) (7.5 ft)	01/13/20	ND(3)	ND(4.9)	ND(4.9)	ND(4.9)	ND(2.5)	ND(2)	2.6	ND(4)
SWMU 1-12 (toe)	01/15/20	ND(7.4)	ND(12)	ND(12)	ND(12)	ND(6.1)	ND(4.9)	ND(4.9)	ND(9.8)
SWMU 1-12 (toe) (2.5 ft)	01/15/20	ND(0.54)	ND(0.9)	ND(0.9)	ND(0.9)	ND(0.45)	ND(0.36)	ND(0.36)	ND(0.72)
SWMU 1-12 (toe) (3 ft)	01/15/20	ND(0.56)	ND(0.93)	ND(0.93)	ND(0.93)	ND(0.46)	ND(0.37)	ND(0.37)	ND(0.74)
SWMU 1-13 (berm) (5 ft) Dup	01/13/20	ND(0.3)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.25)	ND(0.2)	ND(0.2)	ND(0.4)
SWMU 1-13 (berm) (1.5 ft)	01/13/20	ND(0.58)	ND(0.96)	ND(0.96)	ND(0.96)	ND(0.48)	ND(0.38)	ND(0.38)	ND(0.77)
SWMU 1-13 (berm) (2.5 ft)	01/13/20	ND(0.27)	ND(0.46)	ND(0.46)	ND(0.46)	ND(0.23)	ND(0.18)	ND(0.18)	ND(0.36)
SWMU 1-13 (berm) (5 ft)	01/13/20	ND(0.3)	ND(0.49)	ND(0.49)	ND(0.49)	ND(0.25)	ND(0.2)	ND(0.2)	ND(0.39)
SWMU 1-13 (berm) (7.5 ft)	01/13/20	ND(0.56)	ND(0.93)	ND(0.93)	ND(0.93)	ND(0.47)	ND(0.37)	ND(0.37)	ND(0.75)
SWMU 1-13 (berm) (9 ft)	01/13/20	ND(0.29)	ND(0.48)	ND(0.48)	ND(0.48)	ND(0.24)	ND(0.19)	ND(0.19)	ND(0.39)
SWMU 1-13 (toe) Dup	01/14/20	ND(35)	ND(59)	ND(59)	ND(59)	ND(29)	ND(23)	ND(23)	ND(47)
SWMU 1-13 (toe) (3 ft)	01/14/20	ND(0.33)	ND(0.55)	ND(0.55)	ND(0.55)	ND(0.28)	ND(0.22)	ND(0.22)	ND(0.44)
SWMU 1-13 (toe)	01/14/20	ND(37)	ND(62)	ND(62)	ND(62)	ND(31)	ND(25)	ND(25)	ND(49)
SWMU 1-14 (berm) (5 ft) Dup	01/14/20	ND(0.57)	ND(0.94)	ND(0.94)	ND(0.94)	ND(0.47)	ND(0.38)	ND(0.38)	ND(0.76)
SWMU 1-14 (berm) (1.5 ft)	01/14/20	ND(0.3)	ND(0.49)	ND(0.49)	ND(0.49)	ND(0.25)	ND(0.2)	ND(0.2)	ND(0.4)
SWMU 1-14 (berm) (2.5 ft)	01/14/20	ND(0.51)	ND(0.85)	ND(0.85)	ND(0.85)	ND(0.43)	ND(0.34)	ND(0.34)	ND(0.68)
[a] NMED Industrial SSL		18,330	1,833	82.27	17.15	103,800	6,489	3,368	NA
[b] NMED Residential SSL		1,230	123	123	18.5	6,260	391	232	NA
[c] USEPA RSL Industrial Soil HQ 0.1		1,600	160	7.4	1.5	6,000	580	300	4,100

Notes:
NMED SSL's - New Mexico Environmental Department Industrial Soil Screening Levels, June 2019
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
EP - Evaporation Pond
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Samples taken in Evaporation Pond 1.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.
See sediment samplings logs for lithology of samples.

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ATTACHMENT B - TABLE 2C. SWMU 1 SAMPLING - SEMIVOLATILE ORGANIC COMPOUNDS (EP-1)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	2-Nitroaniline (mg/kg)	2-Nitrophenol (mg/kg)	3,3'-Dichlorobenzidine (mg/kg)	3,4- Methyl phenol (mg/kg)	3-Nitroaniline (mg/kg)	2-Methyl-4,6-dinitrophenol (mg/kg)	4-Bromophenylphenylether (mg/kg)	4-Chloro-3-Methylphenol (mg/kg)
SWMU 1-1	01/15/20	ND(24)	ND(24)	ND(31)	ND(24)	ND(24)	ND(49)	ND(24)	ND(61)
SWMU 1-1 (0.5-3 ft)	01/15/20	ND(4.9)	ND(4.9)	ND(6.1)	99	ND(4.9)	ND(9.7)	ND(4.9)	ND(12)
SWMU 1-1 (5 ft)	01/15/20	ND(0.41)	ND(0.41)	ND(0.52)	ND(0.41)	ND(0.41)	ND(0.83)	ND(0.41)	ND(1)
SWMU 1-2 Dup	01/15/20	ND(24)	ND(24)	ND(30)	ND(24)	ND(24)	ND(47)	ND(24)	ND(59)
SWMU 1-2	01/15/20	ND(33)	ND(33)	ND(41)	ND(33)	ND(33)	ND(66)	ND(33)	ND(83)
SWMU 1-2 (2-2.5 ft)	01/15/20	ND(5.1)	ND(5.1)	ND(6.3)	37	ND(5.1)	ND(10)	ND(5.1)	ND(13)
SWMU 1-2 (3-3.5 ft)	01/15/20	ND(0.4)	ND(0.4)	ND(0.5)	ND(0.4)	ND(0.4)	ND(0.8)	ND(0.4)	ND(1)
SWMU 1-3 (0-0.5 ft)	01/14/20	ND(4.9)	ND(4.9)	ND(6.2)	ND(4.9)	ND(4.9)	ND(9.9)	ND(4.9)	ND(12)
SWMU 1-3 (0.5-3 ft)	01/14/20	ND(24)	ND(24)	ND(30)	22	ND(24)	ND(48)	ND(24)	ND(60)
SWMU 1-3 (3 ft)	01/14/20	ND(0.4)	ND(0.4)	ND(0.5)	ND(0.4)	ND(0.4)	ND(0.8)	ND(0.4)	ND(1)
SWMU 1-4	01/14/20	ND(5.5)	ND(5.5)	ND(6.8)	ND(5.5)	ND(5.5)	ND(11)	ND(5.5)	ND(14)
SWMU 1-4 (3 ft)	01/14/20	ND(4.7)	ND(4.7)	ND(5.9)	56	ND(4.7)	ND(9.5)	ND(4.7)	ND(12)
SWMU 1-4 (3-3.5 ft)	01/14/20	ND(0.38)	ND(0.38)	ND(0.48)	ND(0.38)	ND(0.38)	ND(0.77)	ND(0.38)	ND(0.96)
SWMU 1-11 (berm) (1.5 ft)	01/13/20	ND(2)	ND(2)	ND(2.5)	ND(2)	ND(2)	ND(4)	ND(2)	ND(5)
SWMU 1-11 (berm) (2.5 ft)	01/13/20	ND(1.9)	ND(1.9)	ND(2.4)	ND(1.9)	ND(1.9)	ND(3.9)	ND(1.9)	ND(4.8)
SWMU 1-11 (berm) (5 ft)	01/13/20	ND(0.39)	ND(0.39)	ND(0.49)	ND(0.39)	ND(0.39)	ND(0.78)	ND(0.39)	ND(0.98)
SWMU 1-11 (berm) (7.5 ft)	01/13/20	ND(2)	ND(2)	ND(2.5)	ND(2)	ND(2)	ND(3.9)	ND(2)	ND(4.9)
SWMU 1-11 (toe)	01/15/20	ND(6.1)	ND(6.1)	ND(7.7)	3.6	ND(6.1)	ND(12)	ND(6.1)	ND(15)
SWMU 1-11 (toe) (2.5 ft)	01/15/20	ND(0.39)	ND(0.39)	ND(0.48)	0.58	ND(0.39)	ND(0.78)	ND(0.39)	ND(0.97)
SWMU 1-12 (berm) (1.5 ft)	01/13/20	ND(2)	ND(2)	ND(2.5)	ND(2)	ND(2)	ND(3.9)	ND(2)	ND(4.9)
SWMU 1-12 (berm) (2.5 ft)	01/13/20	ND(0.2)	ND(0.2)	ND(0.25)	ND(0.2)	ND(0.2)	ND(0.39)	ND(0.2)	ND(0.49)
SWMU 1-12 (berm) (5 ft)	01/13/20	ND(1.9)	ND(1.9)	ND(2.4)	ND(1.9)	ND(1.9)	ND(3.9)	ND(1.9)	ND(4.8)
SWMU 1-12 (berm) (7.5 ft)	01/13/20	ND(2)	ND(2)	ND(2.5)	ND(2)	ND(2)	ND(4)	ND(2)	ND(4.9)
SWMU 1-12 (toe)	01/15/20	ND(4.9)	ND(4.9)	ND(6.1)	ND(4.9)	ND(4.9)	ND(9.8)	ND(4.9)	ND(12)
SWMU 1-12 (toe) (2.5 ft)	01/15/20	ND(0.36)	ND(0.36)	ND(0.45)	ND(0.36)	ND(0.36)	ND(0.72)	ND(0.36)	ND(0.9)
SWMU 1-12 (toe) (3 ft)	01/15/20	ND(0.37)	ND(0.37)	ND(0.46)	ND(0.37)	ND(0.37)	ND(0.74)	ND(0.37)	ND(0.93)
SWMU 1-13 (berm) (5 ft) Dup	01/13/20	ND(0.2)	ND(0.2)	ND(0.25)	ND(0.2)	ND(0.2)	ND(0.4)	ND(0.2)	ND(0.5)
SWMU 1-13 (berm) (1.5 ft)	01/13/20	ND(0.38)	ND(0.38)	ND(0.48)	ND(0.38)	ND(0.38)	ND(0.77)	ND(0.38)	ND(0.96)
SWMU 1-13 (berm) (2.5 ft)	01/13/20	ND(0.18)	ND(0.18)	ND(0.23)	ND(0.18)	ND(0.18)	ND(0.36)	ND(0.18)	ND(0.46)
SWMU 1-13 (berm) (5 ft)	01/13/20	ND(0.2)	ND(0.2)	ND(0.25)	ND(0.2)	ND(0.2)	ND(0.39)	ND(0.2)	ND(0.49)
SWMU 1-13 (berm) (7.5 ft)	01/13/20	ND(0.37)	ND(0.37)	ND(0.47)	ND(0.37)	ND(0.37)	ND(0.75)	ND(0.37)	ND(0.93)
SWMU 1-13 (berm) (9 ft)	01/13/20	ND(0.19)	ND(0.19)	ND(0.24)	ND(0.19)	ND(0.19)	ND(0.39)	ND(0.19)	ND(0.48)
SWMU 1-13 (toe) Dup	01/14/20	ND(23)	ND(23)	ND(29)	ND(23)	ND(23)	ND(47)	ND(23)	ND(59)
SWMU 1-13 (toe) (3 ft)	01/14/20	ND(0.22)	ND(0.22)	ND(0.28)	ND(0.22)	ND(0.22)	ND(0.44)	ND(0.22)	ND(0.55)
SWMU 1-13 (toe)	01/14/20	ND(25)	ND(25)	ND(31)	ND(25)	ND(25)	ND(49)	ND(25)	ND(62)
SWMU 1-14 (berm) (5 ft) Dup	01/14/20	ND(0.38)	ND(0.38)	ND(0.47)	ND(0.38)	ND(0.38)	ND(0.76)	ND(0.38)	ND(0.94)
SWMU 1-14 (berm) (1.5 ft)	01/14/20	ND(0.2)	ND(0.2)	ND(0.25)	ND(0.2)	ND(0.2)	ND(0.4)	ND(0.2)	ND(0.49)
SWMU 1-14 (berm) (2.5 ft)	01/14/20	ND(0.34)	ND(0.34)	ND(0.43)	ND(0.34)	ND(0.34)	ND(0.68)	ND(0.34)	ND(0.85)
[a] NMED Industrial SSL		NA	NA	57.01	NA	NA	NA	NA	NA
[b] NMED Residential SSL		NA	NA	11.8	NA	NA	NA	NA	NA
[c] USEPA RSL Industrial Soil HQ 0.1		800	NA	5.1	NA	NA	6.6	NA	8,200

Notes:
NMED SSL's - New Mexico Environmental Department Industrial Soil Screening Levels, June 2019
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
EP - Evaporation Pond
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Samples taken in Evaporation Pond 1.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.
See sediment samplings logs for lithology of samples.

ATTACHMENT B - TABLE 2C. SWMU 1 SAMPLING - SEMIVOLATILE ORGANIC COMPOUNDS (EP-1)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	4-Chloroaniline (mg/kg)	4-Chlorophenylphenylether (mg/kg)	4-Nitroaniline (mg/kg)	4-Nitrophenol (mg/kg)	Acenaphthene (mg/kg)	Acenaphthylene (mg/kg)	Aniline (mg/kg)	Anthracene (mg/kg)
SWMU 1-1	01/15/20	ND(61)	ND(24)	ND(49)	ND(31)	ND(24)	ND(24)	ND(24)	ND(24)
SWMU 1-1 (0.5-3 ft)	01/15/20	ND(12)	ND(4.9)	ND(9.7)	ND(6.1)	ND(4.9)	ND(4.9)	ND(4.9)	ND(4.9)
SWMU 1-1 (5 ft)	01/15/20	ND(1)	ND(0.41)	ND(0.83)	ND(0.52)	ND(0.41)	ND(0.41)	ND(0.41)	ND(0.41)
SWMU 1-2 Dup	01/15/20	ND(59)	ND(24)	ND(47)	ND(30)	ND(24)	ND(24)	ND(24)	ND(24)
SWMU 1-2	01/15/20	ND(83)	ND(33)	ND(66)	ND(41)	ND(33)	ND(33)	ND(33)	ND(33)
SWMU 1-2 (2-2.5 ft)	01/15/20	ND(13)	ND(5.1)	ND(10)	ND(6.3)	ND(5.1)	ND(5.1)	ND(5.1)	ND(5.1)
SWMU 1-2 (3-3.5 ft)	01/15/20	ND(1)	ND(0.4)	ND(0.8)	ND(0.5)	ND(0.4)	ND(0.4)	ND(0.4)	ND(0.4)
SWMU 1-3 (0-0.5 ft)	01/14/20	ND(12)	ND(4.9)	ND(9.9)	ND(6.2)	ND(4.9)	ND(4.9)	ND(4.9)	ND(4.9)
SWMU 1-3 (0.5-3 ft)	01/14/20	ND(60)	ND(24)	ND(48)	ND(30)	ND(24)	ND(24)	ND(24)	ND(24)
SWMU 1-3 (3 ft)	01/14/20	ND(1)	ND(0.4)	ND(0.8)	ND(0.5)	ND(0.4)	ND(0.4)	ND(0.4)	ND(0.4)
SWMU 1-4	01/14/20	ND(14)	ND(5.5)	ND(11)	ND(6.8)	ND(5.5)	ND(5.5)	ND(5.5)	ND(5.5)
SWMU 1-4 (3 ft)	01/14/20	ND(12)	ND(4.7)	ND(9.5)	ND(5.9)	ND(4.7)	ND(4.7)	ND(4.7)	ND(4.7)
SWMU 1-4 (3-3.5 ft)	01/14/20	ND(0.96)	ND(0.38)	ND(0.77)	ND(0.48)	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.38)
SWMU 1-11 (berm) (1.5 ft)	01/13/20	ND(5)	ND(2)	ND(4)	ND(2.5)	ND(2)	ND(2)	ND(2)	ND(2)
SWMU 1-11 (berm) (2.5 ft)	01/13/20	ND(4.8)	ND(1.9)	ND(3.9)	ND(2.4)	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)
SWMU 1-11 (berm) (5 ft)	01/13/20	ND(0.98)	ND(0.39)	ND(0.78)	ND(0.49)	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.39)
SWMU 1-11 (berm) (7.5 ft)	01/13/20	ND(4.9)	ND(2)	ND(3.9)	ND(2.5)	ND(2)	ND(2)	ND(2)	ND(2)
SWMU 1-11 (toe)	01/15/20	ND(15)	ND(6.1)	ND(12)	ND(7.7)	ND(6.1)	ND(6.1)	ND(6.1)	ND(6.1)
SWMU 1-11 (toe) (2.5 ft)	01/15/20	ND(0.97)	ND(0.39)	ND(0.78)	ND(0.48)	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.39)
SWMU 1-12 (berm) (1.5 ft)	01/13/20	ND(4.9)	ND(2)	ND(3.9)	ND(2.5)	ND(2)	ND(2)	ND(2)	ND(2)
SWMU 1-12 (berm) (2.5 ft)	01/13/20	ND(0.49)	ND(0.2)	ND(0.39)	ND(0.25)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
SWMU 1-12 (berm) (5 ft)	01/13/20	ND(4.8)	ND(1.9)	ND(3.9)	ND(2.4)	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)
SWMU 1-12 (berm) (7.5 ft)	01/13/20	ND(4.9)	ND(2)	ND(4)	ND(2.5)	ND(2)	ND(2)	ND(2)	ND(2)
SWMU 1-12 (toe)	01/15/20	ND(12)	ND(4.9)	ND(9.8)	ND(6.1)	ND(4.9)	ND(4.9)	ND(4.9)	ND(4.9)
SWMU 1-12 (toe) (2.5 ft)	01/15/20	ND(0.9)	ND(0.36)	ND(0.72)	ND(0.45)	ND(0.36)	ND(0.36)	ND(0.36)	ND(0.36)
SWMU 1-12 (toe) (3 ft)	01/15/20	ND(0.93)	ND(0.37)	ND(0.74)	ND(0.46)	ND(0.37)	ND(0.37)	ND(0.37)	ND(0.37)
SWMU 1-13 (berm) (5 ft) Dup	01/13/20	ND(0.5)	ND(0.2)	ND(0.4)	ND(0.25)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
SWMU 1-13 (berm) (1.5 ft)	01/13/20	ND(0.96)	ND(0.38)	ND(0.77)	ND(0.48)	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.38)
SWMU 1-13 (berm) (2.5 ft)	01/13/20	ND(0.46)	ND(0.18)	ND(0.36)	ND(0.23)	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.18)
SWMU 1-13 (berm) (5 ft)	01/13/20	ND(0.49)	ND(0.2)	ND(0.39)	ND(0.25)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
SWMU 1-13 (berm) (7.5 ft)	01/13/20	ND(0.93)	ND(0.37)	ND(0.75)	ND(0.47)	ND(0.37)	ND(0.37)	ND(0.37)	ND(0.37)
SWMU 1-13 (berm) (9 ft)	01/13/20	ND(0.48)	ND(0.19)	ND(0.39)	ND(0.24)	ND(0.19)	ND(0.19)	ND(0.19)	ND(0.19)
SWMU 1-13 (toe) Dup	01/14/20	ND(59)	ND(23)	ND(47)	ND(29)	ND(23)	ND(23)	ND(23)	ND(23)
SWMU 1-13 (toe) (3 ft)	01/14/20	ND(0.55)	ND(0.22)	ND(0.44)	ND(0.28)	ND(0.22)	ND(0.22)	ND(0.22)	ND(0.22)
SWMU 1-13 (toe)	01/14/20	ND(62)	ND(25)	ND(49)	ND(31)	ND(25)	ND(25)	ND(25)	ND(25)
SWMU 1-14 (berm) (5 ft) Dup	01/14/20	ND(0.94)	ND(0.38)	ND(0.76)	ND(0.47)	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.38)
SWMU 1-14 (berm) (1.5 ft)	01/14/20	ND(0.49)	ND(0.2)	ND(0.4)	ND(0.25)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
SWMU 1-14 (berm) (2.5 ft)	01/14/20	ND(0.85)	ND(0.34)	ND(0.68)	ND(0.43)	ND(0.34)	ND(0.34)	ND(0.34)	ND(0.34)
[a] NMED Industrial SSL		NA	NA	NA	NA	50,520	NA	NA	252,600
[b] NMED Residential SSL		NA	NA	NA	NA	3,480	NA	NA	17,400
[c] USEPA RSL Industrial Soil HQ 0.1		11	NA	110	NA	4,500	NA	400	23,000

Notes:
NMED SSL's - New Mexico Environmental Department Industrial Soil Screening Levels, June 2019
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
EP - Evaporation Pond
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Samples taken in Evaporation Pond 1.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.
See sediment samplings logs for lithology of samples.

ATTACHMENT B - TABLE 2C. SWMU 1 SAMPLING - SEMIVOLATILE ORGANIC COMPOUNDS (EP-1)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Azobenzene (mg/kg)	Benzo(a)anthracene (mg/kg)	Benzo(a)pyrene (mg/kg)	Benzo(b)fluoranthene (mg/kg)	Benzo(g,h,i)perylene (mg/kg)	Benzo(k)fluoranthene (mg/kg)	Benzoic Acid (mg/kg)	Benzyl Alcohol (mg/kg)
SWMU 1-1	01/15/20	ND(24)	ND(24)	ND(24)	ND(24)	ND(24)	ND(24)	ND(61)	ND(24)
SWMU 1-1 (0.5-3 ft)	01/15/20	ND(4.9)	ND(4.9)	ND(4.9)	ND(4.9)	ND(4.9)	ND(4.9)	ND(12)	ND(4.9)
SWMU 1-1 (5 ft)	01/15/20	ND(0.41)	ND(0.41)	ND(0.41)	ND(0.41)	ND(0.41)	ND(0.41)	ND(1)	ND(0.41)
SWMU 1-2 Dup	01/15/20	ND(24)	ND(24)	ND(24)	ND(24)	ND(24)	ND(24)	ND(59)	ND(24)
SWMU 1-2	01/15/20	ND(33)	ND(33)	ND(33)	ND(33)	ND(33)	ND(33)	ND(83)	ND(33)
SWMU 1-2 (2-2.5 ft)	01/15/20	ND(5.1)	ND(5.1)	ND(5.1)	ND(5.1)	ND(5.1)	ND(5.1)	ND(13)	ND(5.1)
SWMU 1-2 (3-3.5 ft)	01/15/20	ND(0.4)	ND(0.4)	ND(0.4)	ND(0.4)	ND(0.4)	ND(0.4)	ND(1)	ND(0.4)
SWMU 1-3 (0-0.5 ft)	01/14/20	ND(4.9)	ND(4.9)	ND(4.9)	ND(4.9)	ND(4.9)	ND(4.9)	ND(12)	ND(4.9)
SWMU 1-3 (0.5-3 ft)	01/14/20	ND(24)	ND(24)	ND(24)	ND(24)	ND(24)	ND(24)	ND(60)	ND(24)
SWMU 1-3 (3 ft)	01/14/20	ND(0.4)	ND(0.4)	ND(0.4)	ND(0.4)	ND(0.4)	ND(0.4)	ND(1)	ND(0.4)
SWMU 1-4	01/14/20	ND(5.5)	ND(5.5)	ND(5.5)	ND(5.5)	ND(5.5)	ND(5.5)	ND(14)	ND(5.5)
SWMU 1-4 (3 ft)	01/14/20	ND(4.7)	ND(4.7)	ND(4.7)	ND(4.7)	ND(4.7)	ND(4.7)	ND(12)	ND(4.7)
SWMU 1-4 (3-3.5 ft)	01/14/20	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.96)	ND(0.38)
SWMU 1-11 (berm) (1.5 ft)	01/13/20	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(5)	ND(2)
SWMU 1-11 (berm) (2.5 ft)	01/13/20	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)	ND(4.8)	ND(1.9)
SWMU 1-11 (berm) (5 ft)	01/13/20	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.98)	ND(0.39)
SWMU 1-11 (berm) (7.5 ft)	01/13/20	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(4.9)	ND(2)
SWMU 1-11 (toe)	01/15/20	ND(6.1)	ND(6.1)	ND(6.1)	ND(6.1)	ND(6.1)	ND(6.1)	ND(15)	ND(6.1)
SWMU 1-11 (toe) (2.5 ft)	01/15/20	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.97)	ND(0.39)
SWMU 1-12 (berm) (1.5 ft)	01/13/20	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(4.9)	ND(2)
SWMU 1-12 (berm) (2.5 ft)	01/13/20	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.49)	ND(0.2)
SWMU 1-12 (berm) (5 ft)	01/13/20	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)	ND(4.8)	ND(1.9)
SWMU 1-12 (berm) (7.5 ft)	01/13/20	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(4.9)	ND(2)
SWMU 1-12 (toe)	01/15/20	ND(4.9)	ND(4.9)	ND(4.9)	ND(4.9)	ND(4.9)	ND(4.9)	ND(12)	ND(4.9)
SWMU 1-12 (toe) (2.5 ft)	01/15/20	ND(0.36)	ND(0.36)	ND(0.36)	ND(0.36)	ND(0.36)	ND(0.36)	ND(0.9)	ND(0.36)
SWMU 1-12 (toe) (3 ft)	01/15/20	ND(0.37)	ND(0.37)	ND(0.37)	ND(0.37)	ND(0.37)	ND(0.37)	ND(0.93)	ND(0.37)
SWMU 1-13 (berm) (5 ft) Dup	01/13/20	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.5)	ND(0.2)
SWMU 1-13 (berm) (1.5 ft)	01/13/20	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.96)	ND(0.38)
SWMU 1-13 (berm) (2.5 ft)	01/13/20	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.46)	ND(0.18)
SWMU 1-13 (berm) (5 ft)	01/13/20	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.49)	ND(0.2)
SWMU 1-13 (berm) (7.5 ft)	01/13/20	ND(0.37)	ND(0.37)	ND(0.37)	ND(0.37)	ND(0.37)	ND(0.37)	ND(0.93)	ND(0.37)
SWMU 1-13 (berm) (9 ft)	01/13/20	ND(0.19)	ND(0.19)	ND(0.19)	ND(0.19)	ND(0.19)	ND(0.19)	ND(0.48)	ND(0.19)
SWMU 1-13 (toe) Dup	01/14/20	ND(23)	ND(23)	ND(23)	ND(23)	ND(23)	ND(23)	ND(59)	ND(23)
SWMU 1-13 (toe) (3 ft)	01/14/20	ND(0.22)	ND(0.22)	ND(0.22)	ND(0.22)	ND(0.22)	ND(0.22)	ND(0.55)	ND(0.22)
SWMU 1-13 (toe)	01/14/20	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(62)	ND(25)
SWMU 1-14 (berm) (5 ft) Dup	01/14/20	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.94)	ND(0.38)
SWMU 1-14 (berm) (1.5 ft)	01/14/20	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.49)	ND(0.2)
SWMU 1-14 (berm) (2.5 ft)	01/14/20	ND(0.34)	ND(0.34)	ND(0.34)	ND(0.34)	ND(0.34)	ND(0.34)	ND(0.85)	ND(0.34)
[a] NMED Industrial SSL		NA	32.3	23.58	32.3	NA	322.9	NA	NA
[b] NMED Residential SSL		NA	1.53	1.12	1.53	NA	15.3	NA	NA
[c] USEPA RSL Industrial Soil HQ 0.1		26	21	2.1	21	NA	210	330,000	8,200

Notes:
NMED SSL's - New Mexico Environmental Department Industrial Soil Screening Levels, June 2019
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
EP - Evaporation Pond
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Samples taken in Evaporation Pond 1.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.
See sediment samplings logs for lithology of samples.

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ATTACHMENT B - TABLE 2C. SWMU 1 SAMPLING - SEMIVOLATILE ORGANIC COMPOUNDS (EP-1)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Bis(2chloroethoxy) methane (mg/kg)	Bis(2-chloroethyl)ether (mg/kg)	Bis(2chloroisopropyl)ether (mg/kg)	Bis(2-ethylhexyl)phthalate (mg/kg)	Benzyl Butyl Phthalate (mg/kg)	Carbazole (mg/kg)	Chrysene (mg/kg)	Dibenz(a,h)anthracene (mg/kg)
SWMU 1-1	01/15/20	ND(24)	ND(24)	ND(24)	ND(61)	ND(24)	ND(24)	ND(24)	ND(24)
SWMU 1-1 (0.5-3 ft)	01/15/20	ND(4.9)	ND(4.9)	ND(4.9)	ND(12)	ND(4.9)	ND(4.9)	ND(4.9)	ND(4.9)
SWMU 1-1 (5 ft)	01/15/20	ND(0.41)	ND(0.41)	ND(0.41)	ND(1)	ND(0.41)	ND(0.41)	ND(0.41)	ND(0.41)
SWMU 1-2 Dup	01/15/20	ND(24)	ND(24)	ND(24)	ND(59)	ND(24)	ND(24)	ND(24)	ND(24)
SWMU 1-2	01/15/20	ND(33)	ND(33)	ND(33)	ND(83)	ND(33)	ND(33)	83	ND(33)
SWMU 1-2 (2-2.5 ft)	01/15/20	ND(5.1)	ND(5.1)	ND(5.1)	ND(13)	ND(5.1)	ND(5.1)	ND(5.1)	ND(5.1)
SWMU 1-2 (3-3.5 ft)	01/15/20	ND(0.4)	ND(0.4)	ND(0.4)	ND(1)	ND(0.4)	ND(0.4)	ND(0.4)	ND(0.4)
SWMU 1-3 (0-0.5 ft)	01/14/20	ND(4.9)	ND(4.9)	ND(4.9)	ND(12)	ND(4.9)	ND(4.9)	21	ND(4.9)
SWMU 1-3 (0.5-3 ft)	01/14/20	ND(24)	ND(24)	ND(24)	ND(60)	ND(24)	ND(24)	ND(24)	ND(24)
SWMU 1-3 (3 ft)	01/14/20	ND(0.4)	ND(0.4)	ND(0.4)	ND(1)	ND(0.4)	ND(0.4)	0.25	ND(0.4)
SWMU 1-4	01/14/20	ND(5.5)	ND(5.5)	ND(5.5)	ND(14)	ND(5.5)	ND(5.5)	ND(5.5)	ND(5.5)
SWMU 1-4 (3 ft)	01/14/20	ND(4.7)	ND(4.7)	ND(4.7)	ND(12)	ND(4.7)	ND(4.7)	ND(4.7)	ND(4.7)
SWMU 1-4 (3-3.5 ft)	01/14/20	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.96)	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.38)
SWMU 1-11 (berm) (1.5 ft)	01/13/20	ND(2)	ND(2)	ND(2)	ND(5)	ND(2)	ND(2)	ND(2)	ND(2)
SWMU 1-11 (berm) (2.5 ft)	01/13/20	ND(1.9)	ND(1.9)	ND(1.9)	ND(4.8)	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)
SWMU 1-11 (berm) (5 ft)	01/13/20	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.98)	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.39)
SWMU 1-11 (berm) (7.5 ft)	01/13/20	ND(2)	ND(2)	ND(2)	ND(4.9)	ND(2)	ND(2)	2.7	ND(2)
SWMU 1-11 (toe)	01/15/20	ND(6.1)	ND(6.1)	ND(6.1)	ND(15)	ND(6.1)	ND(6.1)	27	ND(6.1)
SWMU 1-11 (toe) (2.5 ft)	01/15/20	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.97)	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.39)
SWMU 1-12 (berm) (1.5 ft)	01/13/20	ND(2)	ND(2)	ND(2)	ND(4.9)	ND(2)	ND(2)	ND(2)	ND(2)
SWMU 1-12 (berm) (2.5 ft)	01/13/20	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.49)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
SWMU 1-12 (berm) (5 ft)	01/13/20	ND(1.9)	ND(1.9)	ND(1.9)	ND(4.8)	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)
SWMU 1-12 (berm) (7.5 ft)	01/13/20	ND(2)	ND(2)	ND(2)	ND(4.9)	ND(2)	ND(2)	1.2	ND(2)
SWMU 1-12 (toe)	01/15/20	ND(4.9)	ND(4.9)	ND(4.9)	ND(12)	ND(4.9)	ND(4.9)	ND(4.9)	ND(4.9)
SWMU 1-12 (toe) (2.5 ft)	01/15/20	ND(0.36)	ND(0.36)	ND(0.36)	ND(0.9)	ND(0.36)	ND(0.36)	ND(0.36)	ND(0.36)
SWMU 1-12 (toe) (3 ft)	01/15/20	ND(0.37)	ND(0.37)	ND(0.37)	ND(0.93)	ND(0.37)	ND(0.37)	ND(0.37)	ND(0.37)
SWMU 1-13 (berm) (5 ft) Dup	01/13/20	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.5)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
SWMU 1-13 (berm) (1.5 ft)	01/13/20	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.96)	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.38)
SWMU 1-13 (berm) (2.5 ft)	01/13/20	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.46)	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.18)
SWMU 1-13 (berm) (5 ft)	01/13/20	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.49)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
SWMU 1-13 (berm) (7.5 ft)	01/13/20	ND(0.37)	ND(0.37)	ND(0.37)	ND(0.93)	ND(0.37)	ND(0.37)	ND(0.37)	ND(0.37)
SWMU 1-13 (berm) (9 ft)	01/13/20	ND(0.19)	ND(0.19)	ND(0.19)	ND(0.48)	ND(0.19)	ND(0.19)	ND(0.19)	ND(0.19)
SWMU 1-13 (toe) Dup	01/14/20	ND(23)	ND(23)	ND(23)	ND(59)	ND(23)	ND(23)	19	ND(23)
SWMU 1-13 (toe) (3 ft)	01/14/20	ND(0.22)	ND(0.22)	ND(0.22)	ND(0.55)	ND(0.22)	ND(0.22)	ND(0.22)	ND(0.22)
SWMU 1-13 (toe)	01/14/20	ND(25)	ND(25)	ND(25)	ND(62)	ND(25)	ND(25)	ND(25)	ND(25)
SWMU 1-14 (berm) (5 ft) Dup	01/14/20	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.94)	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.38)
SWMU 1-14 (berm) (1.5 ft)	01/14/20	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.49)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
SWMU 1-14 (berm) (2.5 ft)	01/14/20	ND(0.34)	ND(0.34)	ND(0.34)	ND(0.85)	ND(0.34)	ND(0.34)	ND(0.34)	ND(0.34)
[a] NMED Industrial SSL		NA	15.67	NA	1,832	NA	NA	3,229	3.23
[b] NMED Residential SSL		NA	3.11	NA	380	NA	NA	153	0.153
[c] USEPA RSL Industrial Soil HQ 0.1		250	1	NA	160	1,200	NA	2,100	2.1

Notes:
NMED SSL's - New Mexico Environmental Department Industrial Soil Screening Levels, June 2019
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
EP - Evaporation Pond
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Samples taken in Evaporation Pond 1.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.
See sediment samplings logs for lithology of samples.

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ATTACHMENT B - TABLE 2C. SWMU 1 SAMPLING - SEMIVOLATILE ORGANIC COMPOUNDS (EP-1)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Dibenzofuran (mg/kg)	Diethylphthalate (mg/kg)	Dimethyl Phthalate (mg/kg)	Di-n-butylphthalate (mg/kg)	Di-n-octylphthalate (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Hexachloro Benzene (mg/kg)
SWMU 1-1	01/15/20	ND(24)	ND(61)	ND(24)	ND(49)	ND(49)	ND(24)	ND(24)	ND(24)
SWMU 1-1 (0.5-3 ft)	01/15/20	ND(4.9)	ND(12)	ND(4.9)	ND(9.7)	ND(9.7)	ND(4.9)	47	ND(4.9)
SWMU 1-1 (5 ft)	01/15/20	ND(0.41)	ND(1)	ND(0.41)	ND(0.83)	ND(0.83)	ND(0.41)	ND(0.41)	ND(0.41)
SWMU 1-2 Dup	01/15/20	ND(24)	ND(59)	ND(24)	ND(47)	ND(47)	ND(24)	ND(24)	ND(24)
SWMU 1-2	01/15/20	ND(33)	ND(83)	ND(33)	ND(66)	ND(66)	ND(33)	ND(33)	ND(33)
SWMU 1-2 (2-2.5 ft)	01/15/20	ND(5.1)	ND(13)	ND(5.1)	ND(10)	ND(10)	ND(5.1)	39	ND(5.1)
SWMU 1-2 (3-3.5 ft)	01/15/20	ND(0.4)	ND(1)	ND(0.4)	ND(0.8)	ND(0.8)	ND(0.4)	ND(0.4)	ND(0.4)
SWMU 1-3 (0-0.5 ft)	01/14/20	ND(4.9)	ND(12)	ND(4.9)	ND(9.9)	ND(9.9)	ND(4.9)	ND(4.9)	ND(4.9)
SWMU 1-3 (0.5-3 ft)	01/14/20	ND(24)	ND(60)	ND(24)	ND(48)	ND(48)	ND(24)	33	ND(24)
SWMU 1-3 (3 ft)	01/14/20	ND(0.4)	ND(1)	ND(0.4)	ND(0.8)	ND(0.8)	ND(0.4)	0.3	ND(0.4)
SWMU 1-4	01/14/20	ND(5.5)	ND(14)	ND(5.5)	ND(11)	ND(11)	ND(5.5)	ND(5.5)	ND(5.5)
SWMU 1-4 (3 ft)	01/14/20	ND(4.7)	ND(12)	ND(4.7)	ND(9.5)	ND(9.5)	ND(4.7)	40	ND(4.7)
SWMU 1-4 (3-3.5 ft)	01/14/20	ND(0.38)	ND(0.96)	ND(0.38)	ND(0.77)	ND(0.77)	ND(0.38)	0.17	ND(0.38)
SWMU 1-11 (berm) (1.5 ft)	01/13/20	ND(2)	ND(5)	ND(2)	ND(4)	ND(4)	ND(2)	ND(2)	ND(2)
SWMU 1-11 (berm) (2.5 ft)	01/13/20	ND(1.9)	ND(4.8)	ND(1.9)	ND(3.9)	ND(3.9)	ND(1.9)	ND(1.9)	ND(1.9)
SWMU 1-11 (berm) (5 ft)	01/13/20	ND(0.39)	ND(0.98)	ND(0.39)	ND(0.78)	ND(0.78)	ND(0.39)	ND(0.39)	ND(0.39)
SWMU 1-11 (berm) (7.5 ft)	01/13/20	ND(2)	ND(4.9)	ND(2)	ND(3.9)	ND(3.9)	ND(2)	ND(2)	ND(2)
SWMU 1-11 (toe)	01/15/20	ND(6.1)	ND(15)	ND(6.1)	ND(12)	ND(12)	ND(6.1)	16	ND(6.1)
SWMU 1-11 (toe) (2.5 ft)	01/15/20	ND(0.39)	ND(0.97)	ND(0.39)	ND(0.78)	ND(0.78)	ND(0.39)	ND(0.39)	ND(0.39)
SWMU 1-12 (berm) (1.5 ft)	01/13/20	ND(2)	ND(4.9)	ND(2)	ND(3.9)	ND(3.9)	ND(2)	ND(2)	ND(2)
SWMU 1-12 (berm) (2.5 ft)	01/13/20	ND(0.2)	ND(0.49)	ND(0.2)	ND(0.39)	ND(0.39)	ND(0.2)	ND(0.2)	ND(0.2)
SWMU 1-12 (berm) (5 ft)	01/13/20	ND(1.9)	ND(4.8)	ND(1.9)	ND(3.9)	ND(3.9)	ND(1.9)	ND(1.9)	ND(1.9)
SWMU 1-12 (berm) (7.5 ft)	01/13/20	ND(2)	ND(4.9)	ND(2)	ND(4)	ND(4)	ND(2)	1	ND(2)
SWMU 1-12 (toe)	01/15/20	ND(4.9)	ND(12)	ND(4.9)	ND(9.8)	ND(9.8)	ND(4.9)	ND(4.9)	ND(4.9)
SWMU 1-12 (toe) (2.5 ft)	01/15/20	ND(0.36)	ND(0.9)	ND(0.36)	ND(0.72)	ND(0.72)	ND(0.36)	ND(0.36)	ND(0.36)
SWMU 1-12 (toe) (3 ft)	01/15/20	ND(0.37)	ND(0.93)	ND(0.37)	ND(0.74)	ND(0.74)	ND(0.37)	ND(0.37)	ND(0.37)
SWMU 1-13 (berm) (5 ft) Dup	01/13/20	ND(0.2)	ND(0.5)	ND(0.2)	0.3	ND(0.4)	ND(0.2)	ND(0.2)	ND(0.2)
SWMU 1-13 (berm) (1.5 ft)	01/13/20	ND(0.38)	ND(0.96)	ND(0.38)	ND(0.77)	ND(0.77)	ND(0.38)	ND(0.38)	ND(0.38)
SWMU 1-13 (berm) (2.5 ft)	01/13/20	ND(0.18)	ND(0.46)	ND(0.18)	ND(0.36)	ND(0.36)	ND(0.18)	ND(0.18)	ND(0.18)
SWMU 1-13 (berm) (5 ft)	01/13/20	ND(0.2)	ND(0.49)	ND(0.2)	0.34	ND(0.39)	ND(0.2)	ND(0.2)	ND(0.2)
SWMU 1-13 (berm) (7.5 ft)	01/13/20	ND(0.37)	ND(0.93)	ND(0.37)	ND(0.75)	ND(0.75)	ND(0.37)	ND(0.37)	ND(0.37)
SWMU 1-13 (berm) (9 ft)	01/13/20	ND(0.19)	0.35	ND(0.19)	0.32	ND(0.39)	ND(0.19)	ND(0.19)	ND(0.19)
SWMU 1-13 (toe) Dup	01/14/20	ND(23)	ND(59)	ND(23)	ND(47)	ND(47)	ND(23)	ND(23)	ND(23)
SWMU 1-13 (toe) (3 ft)	01/14/20	ND(0.22)	ND(0.55)	ND(0.22)	ND(0.44)	ND(0.44)	ND(0.22)	ND(0.22)	ND(0.22)
SWMU 1-13 (toe)	01/14/20	ND(25)	ND(62)	ND(25)	ND(49)	ND(49)	ND(25)	ND(25)	ND(25)
SWMU 1-14 (berm) (5 ft) Dup	01/14/20	ND(0.38)	ND(0.94)	ND(0.38)	ND(0.76)	ND(0.76)	ND(0.38)	ND(0.38)	ND(0.38)
SWMU 1-14 (berm) (1.5 ft)	01/14/20	ND(0.2)	ND(0.49)	ND(0.2)	ND(0.4)	ND(0.4)	ND(0.2)	ND(0.2)	ND(0.2)
SWMU 1-14 (berm) (2.5 ft)	01/14/20	ND(0.34)	ND(0.85)	ND(0.34)	ND(0.68)	ND(0.68)	ND(0.34)	ND(0.34)	ND(0.34)
[a] NMED Industrial SSL		NA	733,000	NA	91,630	NA	33,680	33,680	16.03
[b] NMED Residential SSL		NA	49,300	NA	6,160	NA	2,320	2,320	3.33
[c] USEPA RSL Industrial Soil HQ 0.1		100	66,000	NA	8,200	820	3,000	3,000	0.96

Notes:
NMED SSL's - New Mexico Environmental Department Industrial Soil Screening Levels, June 2019
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
EP - Evaporation Pond
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Samples taken in Evaporation Pond 1.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.
See sediment samplings logs for lithology of samples.

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ATTACHMENT B - TABLE 2C. SWMU 1 SAMPLING - SEMIVOLATILE ORGANIC COMPOUNDS (EP-1)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Hexachloro- butadiene (mg/kg)	Hexachloro-cyclopenta-diene (mg/kg)	Hexachloroethane (mg/kg)	Indeno-(1,2,3-c,d)pyrene (mg/kg)	Isophorone (mg/kg)	Naphthalene (mg/kg)	Nitrobenzene (mg/kg)	N-Nitrosodi-n-propylamine (mg/kg)
SWMU 1-1	01/15/20	ND(24)	ND(24)	ND(24)	ND(24)	ND(49)	ND(24)	ND(49)	ND(24)
SWMU 1-1 (0.5-3 ft)	01/15/20	ND(4.9)	ND(4.9)	ND(4.9)	ND(4.9)	ND(9.7)	**23** [c]	ND(9.7)	ND(4.9)
SWMU 1-1 (5 ft)	01/15/20	ND(0.41)	ND(0.41)	ND(0.41)	ND(0.41)	ND(0.83)	ND(0.41)	ND(0.83)	ND(0.41)
SWMU 1-2 Dup	01/15/20	ND(24)	ND(24)	ND(24)	ND(24)	ND(47)	ND(24)	ND(47)	ND(24)
SWMU 1-2	01/15/20	ND(33)	ND(33)	ND(33)	ND(33)	ND(66)	ND(33)	ND(66)	ND(33)
SWMU 1-2 (2-2.5 ft)	01/15/20	ND(5.1)	ND(5.1)	ND(5.1)	ND(5.1)	ND(10)	17	ND(10)	ND(5.1)
SWMU 1-2 (3-3.5 ft)	01/15/20	ND(0.4)	ND(0.4)	ND(0.4)	ND(0.4)	ND(0.8)	ND(0.4)	ND(0.8)	ND(0.4)
SWMU 1-3 (0-0.5 ft)	01/14/20	ND(4.9)	ND(4.9)	ND(4.9)	ND(4.9)	ND(9.9)	ND(4.9)	ND(9.9)	ND(4.9)
SWMU 1-3 (0.5-3 ft)	01/14/20	ND(24)	ND(24)	ND(24)	ND(24)	ND(48)	**21** [c]	ND(48)	ND(24)
SWMU 1-3 (3 ft)	01/14/20	ND(0.4)	ND(0.4)	ND(0.4)	ND(0.4)	ND(0.8)	ND(0.4)	ND(0.8)	ND(0.4)
SWMU 1-4	01/14/20	ND(5.5)	ND(5.5)	ND(5.5)	ND(5.5)	ND(11)	14	ND(11)	ND(5.5)
SWMU 1-4 (3 ft)	01/14/20	ND(4.7)	ND(4.7)	ND(4.7)	ND(4.7)	ND(9.5)	**20** [c]	ND(9.5)	ND(4.7)
SWMU 1-4 (3-3.5 ft)	01/14/20	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.77)	ND(0.38)	ND(0.77)	ND(0.38)
SWMU 1-11 (berm) (1.5 ft)	01/13/20	ND(2)	ND(2)	ND(2)	ND(2)	ND(4)	ND(2)	ND(4)	ND(2)
SWMU 1-11 (berm) (2.5 ft)	01/13/20	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)	ND(3.9)	ND(1.9)	ND(3.9)	ND(1.9)
SWMU 1-11 (berm) (5 ft)	01/13/20	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.78)	ND(0.39)	ND(0.78)	ND(0.39)
SWMU 1-11 (berm) (7.5 ft)	01/13/20	ND(2)	ND(2)	ND(2)	ND(2)	ND(3.9)	ND(2)	ND(3.9)	ND(2)
SWMU 1-11 (toe)	01/15/20	ND(6.1)	ND(6.1)	ND(6.1)	ND(6.1)	ND(12)	3.8	ND(12)	ND(6.1)
SWMU 1-11 (toe) (2.5 ft)	01/15/20	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.78)	0.2	ND(0.78)	ND(0.39)
SWMU 1-12 (berm) (1.5 ft)	01/13/20	ND(2)	ND(2)	ND(2)	ND(2)	ND(3.9)	ND(2)	ND(3.9)	ND(2)
SWMU 1-12 (berm) (2.5 ft)	01/13/20	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.39)	ND(0.2)	ND(0.39)	ND(0.2)
SWMU 1-12 (berm) (5 ft)	01/13/20	ND(1.9)	ND(1.9)	ND(1.9)	ND(1.9)	ND(3.9)	ND(1.9)	ND(3.9)	ND(1.9)
SWMU 1-12 (berm) (7.5 ft)	01/13/20	ND(2)	ND(2)	ND(2)	ND(2)	ND(4)	ND(2)	ND(4)	ND(2)
SWMU 1-12 (toe)	01/15/20	ND(4.9)	ND(4.9)	ND(4.9)	ND(4.9)	ND(9.8)	ND(4.9)	ND(9.8)	ND(4.9)
SWMU 1-12 (toe) (2.5 ft)	01/15/20	ND(0.36)	ND(0.36)	ND(0.36)	ND(0.36)	ND(0.72)	ND(0.36)	ND(0.72)	ND(0.36)
SWMU 1-12 (toe) (3 ft)	01/15/20	ND(0.37)	ND(0.37)	ND(0.37)	ND(0.37)	ND(0.74)	ND(0.37)	ND(0.74)	ND(0.37)
SWMU 1-13 (berm) (5 ft) Dup	01/13/20	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.4)	ND(0.2)	ND(0.4)	ND(0.2)
SWMU 1-13 (berm) (1.5 ft)	01/13/20	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.77)	ND(0.38)	ND(0.77)	ND(0.38)
SWMU 1-13 (berm) (2.5 ft)	01/13/20	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.36)	ND(0.18)	ND(0.36)	ND(0.18)
SWMU 1-13 (berm) (5 ft)	01/13/20	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.39)	ND(0.2)	ND(0.39)	ND(0.2)
SWMU 1-13 (berm) (7.5 ft)	01/13/20	ND(0.37)	ND(0.37)	ND(0.37)	ND(0.37)	ND(0.75)	ND(0.37)	ND(0.75)	ND(0.37)
SWMU 1-13 (berm) (9 ft)	01/13/20	ND(0.19)	ND(0.19)	ND(0.19)	ND(0.19)	ND(0.39)	ND(0.19)	ND(0.39)	ND(0.19)
SWMU 1-13 (toe) Dup	01/14/20	ND(23)	ND(23)	ND(23)	ND(23)	ND(47)	ND(23)	ND(47)	ND(23)
SWMU 1-13 (toe) (3 ft)	01/14/20	ND(0.22)	ND(0.22)	ND(0.22)	ND(0.22)	ND(0.44)	ND(0.22)	ND(0.44)	ND(0.22)
SWMU 1-13 (toe)	01/14/20	ND(25)	ND(25)	ND(25)	ND(25)	ND(49)	ND(25)	ND(49)	ND(25)
SWMU 1-14 (berm) (5 ft) Dup	01/14/20	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.76)	ND(0.38)	ND(0.76)	ND(0.38)
SWMU 1-14 (berm) (1.5 ft)	01/14/20	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.4)	ND(0.2)	ND(0.4)	ND(0.2)
SWMU 1-14 (berm) (2.5 ft)	01/14/20	ND(0.34)	ND(0.34)	ND(0.34)	ND(0.34)	ND(0.68)	ND(0.34)	ND(0.68)	ND(0.34)
[a] NMED Industrial SSL		52.08	5,492	641.4	32.3	27,010	241	293.3	NA
[b] NMED Residential SSL		68.3	2.3	133	1.53	5,610	49.7	60.4	NA
[c] USEPA RSL Industrial Soil HQ 0.1		5.3	0.75	8	21	2,400	17	22	0.33

Notes:
NMED SSL's - New Mexico Environmental Department Industrial Soil Screening Levels, June 2019
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
EP - Evaporation Pond
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Samples taken in Evaporation Pond 1.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.
See sediment samplings logs for lithology of samples.

ATTACHMENT B - TABLE 2C. SWMU 1 SAMPLING - SEMIVOLATILE ORGANIC COMPOUNDS (EP-1)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	N-Nitroso-diphenylamine (mg/kg)	Pentachlorophenol (mg/kg)	Phenanthrene (mg/kg)	Phenol (mg/kg)	Pyrene (mg/kg)	Pyridine (mg/kg)
SWMU 1-1	01/15/20	ND(24)	ND(49)	34	ND(24)	95	ND(49)
SWMU 1-1 (0.5-3 ft)	01/15/20	ND(4.9)	ND(9.7)	160	6.9	47	ND(9.7)
SWMU 1-1 (5 ft)	01/15/20	ND(0.41)	ND(0.83)	ND(0.41)	ND(0.41)	ND(0.41)	ND(0.83)
SWMU 1-2 Dup	01/15/20	ND(24)	ND(47)	32	ND(24)	69	ND(47)
SWMU 1-2	01/15/20	ND(33)	ND(66)	ND(33)	ND(33)	81	ND(66)
SWMU 1-2 (2-2.5 ft)	01/15/20	ND(5.1)	ND(10)	130	ND(5.1)	53	ND(10)
SWMU 1-2 (3-3.5 ft)	01/15/20	ND(0.4)	ND(0.8)	0.39	ND(0.4)	ND(0.4)	ND(0.8)
SWMU 1-3 (0-0.5 ft)	01/14/20	ND(4.9)	ND(9.9)	ND(4.9)	ND(4.9)	ND(4.9)	ND(9.9)
SWMU 1-3 (0.5-3 ft)	01/14/20	ND(24)	ND(48)	140	ND(24)	31	ND(48)
SWMU 1-3 (3 ft)	01/14/20	ND(0.4)	ND(0.8)	1	ND(0.4)	0.33	ND(0.8)
SWMU 1-4	01/14/20	ND(5.5)	ND(11)	85	ND(5.5)	99	ND(11)
SWMU 1-4 (3 ft)	01/14/20	ND(4.7)	ND(9.5)	130	3.5	44	ND(9.5)
SWMU 1-4 (3-3.5 ft)	01/14/20	ND(0.38)	ND(0.77)	0.44	ND(0.38)	ND(0.38)	ND(0.77)
SWMU 1-11 (berm) (1.5 ft)	01/13/20	ND(2)	ND(4)	ND(2)	ND(2)	ND(2)	ND(4)
SWMU 1-11 (berm) (2.5 ft)	01/13/20	ND(1.9)	ND(3.9)	ND(1.9)	ND(1.9)	ND(1.9)	ND(3.9)
SWMU 1-11 (berm) (5 ft)	01/13/20	ND(0.39)	ND(0.78)	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.78)
SWMU 1-11 (berm) (7.5 ft)	01/13/20	ND(2)	ND(3.9)	2.2	ND(2)	1.7	ND(3.9)
SWMU 1-11 (toe)	01/15/20	ND(6.1)	ND(12)	62	ND(6.1)	ND(6.1)	ND(12)
SWMU 1-11 (toe) (2.5 ft)	01/15/20	ND(0.39)	ND(0.78)	ND(0.39)	ND(0.39)	ND(0.39)	ND(0.78)
SWMU 1-12 (berm) (1.5 ft)	01/13/20	ND(2)	ND(3.9)	ND(2)	ND(2)	ND(2)	ND(3.9)
SWMU 1-12 (berm) (2.5 ft)	01/13/20	ND(0.2)	ND(0.39)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.39)
SWMU 1-12 (berm) (5 ft)	01/13/20	ND(1.9)	ND(3.9)	ND(1.9)	ND(1.9)	ND(1.9)	ND(3.9)
SWMU 1-12 (berm) (7.5 ft)	01/13/20	ND(2)	ND(4)	2.8	ND(2)	ND(2)	ND(4)
SWMU 1-12 (toe)	01/15/20	ND(4.9)	ND(9.8)	ND(4.9)	ND(4.9)	77	ND(9.8)
SWMU 1-12 (toe) (2.5 ft)	01/15/20	ND(0.36)	ND(0.72)	ND(0.36)	ND(0.36)	ND(0.36)	ND(0.72)
SWMU 1-12 (toe) (3 ft)	01/15/20	ND(0.37)	ND(0.74)	ND(0.37)	ND(0.37)	0.16	ND(0.74)
SWMU 1-13 (berm) (5 ft) Dup	01/13/20	ND(0.2)	ND(0.4)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.4)
SWMU 1-13 (berm) (1.5 ft)	01/13/20	ND(0.38)	ND(0.77)	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.77)
SWMU 1-13 (berm) (2.5 ft)	01/13/20	ND(0.18)	ND(0.36)	ND(0.18)	ND(0.18)	ND(0.18)	ND(0.36)
SWMU 1-13 (berm) (5 ft)	01/13/20	ND(0.2)	ND(0.39)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.39)
SWMU 1-13 (berm) (7.5 ft)	01/13/20	ND(0.37)	ND(0.75)	ND(0.37)	ND(0.37)	ND(0.37)	ND(0.75)
SWMU 1-13 (berm) (9 ft)	01/13/20	ND(0.19)	ND(0.39)	ND(0.19)	ND(0.19)	ND(0.19)	ND(0.39)
SWMU 1-13 (toe) Dup	01/14/20	ND(23)	ND(47)	ND(23)	ND(23)	9.2	ND(47)
SWMU 1-13 (toe) (3 ft)	01/14/20	ND(0.22)	ND(0.44)	ND(0.22)	ND(0.22)	ND(0.22)	ND(0.44)
SWMU 1-13 (toe)	01/14/20	ND(25)	ND(49)	ND(25)	ND(25)	ND(25)	ND(49)
SWMU 1-14 (berm) (5 ft) Dup	01/14/20	ND(0.38)	ND(0.76)	ND(0.38)	ND(0.38)	ND(0.38)	ND(0.76)
SWMU 1-14 (berm) (1.5 ft)	01/14/20	ND(0.2)	ND(0.4)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.4)
SWMU 1-14 (berm) (2.5 ft)	01/14/20	ND(0.34)	ND(0.68)	ND(0.34)	ND(0.34)	ND(0.34)	ND(0.68)
[a] NMED Industrial SSL		5,236	44.51	25,260	274,900	25,260	NA
[b] NMED Residential SSL		1,090	9.85	1,740	18,500	1,740	NA
[c] USEPA RSL Industrial Soil HQ 0.1		470	4	NA	25,000	2,300	120

Notes:
NMED SSL's - New Mexico Environmental Department Industrial Soil Screening Levels, June 2019
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
EP - Evaporation Pond
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Samples taken in Evaporation Pond 1.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.
See sediment samplings logs for lithology of samples.

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ATTACHMENT B - TABLE 2C. SWMU 1 SAMPLING - SEMIVOLATILE ORGANIC COMPOUNDS (EP-1)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	1,2,4-Trichlorobenzene (mg/kg)	1,2-Dichlorobenzene (mg/kg)	1,3-Dichlorobenzene (mg/kg)	1,4-Dichlorobenzene (mg/kg)	1-Methylnaphthalene (mg/kg)	2,4,5-Trichlorophenol (mg/kg)	2,4,6-Trichlorophenol (mg/kg)	2,4-Dichlorophenol (mg/kg)
SWMU 1-14 (berm) (5 ft)	01/14/20	ND(0.34)	ND(0.34)	ND(0.34)	ND(0.34)	ND(0.34)	ND(0.34)	ND(0.34)	ND(0.67)
SWMU 1-14 (berm) (7.5 ft)	01/14/20	ND(1.8)	ND(1.8)	ND(1.8)	ND(1.8)	ND(1.8)	ND(1.8)	ND(1.8)	ND(3.6)
SWMU 1-14 (toe)	01/14/20	ND(4.7)	ND(4.7)	ND(4.7)	ND(4.7)	ND(4.7)	ND(4.7)	ND(4.7)	ND(9.4)
SWMU 1-14 (toe) (2.5 ft)	01/14/20	ND(4.6)	ND(4.6)	ND(4.6)	ND(4.6)	**110** [c]	ND(4.6)	ND(4.6)	ND(9.3)
SWMU 1-14 (toe) (3 ft)	01/14/20	ND(4.6)	ND(4.6)	ND(4.6)	ND(4.6)	6.5	ND(4.6)	ND(4.6)	ND(9.2)
[a] NMED Industrial SSL		422.9	12,970	NA	6,729	813	91,630	916.3	2,749
[b] NMED Residential SSL		240	2,150	NA	1,290	172	6,160	484	185
[c] USEPA RSL Industrial Soil HQ 0.1		26	930	NA	11	73	8,200	82	250

Notes:
NMED SSL's - New Mexico Environmental Department Industrial Soil Screening Levels, June 2019
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
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ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Samples taken in Evaporation Pond 1.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.
See sediment samplings logs for lithology of samples.

ATTACHMENT B - TABLE 2C. SWMU 1 SAMPLING - SEMIVOLATILE ORGANIC COMPOUNDS (EP-1)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	2,4-Dimethylphenol (mg/kg)	2,4-Dinitrophenol (mg/kg)	2,4-Dinitro Toluene (mg/kg)	2,6-Dinitro Toluene (mg/kg)	2-Chloronaphthalene (mg/kg)	2-Chlorophenol (mg/kg)	2-Methylnaphthalene (mg/kg)	2-Methyl phenol (mg/kg)
SWMU 1-14 (berm) (5 ft)	01/14/20	ND(0.51)	ND(0.84)	ND(0.84)	ND(0.84)	ND(0.42)	ND(0.34)	ND(0.34)	ND(0.67)
SWMU 1-14 (berm) (7.5 ft)	01/14/20	ND(2.7)	ND(4.6)	ND(4.6)	ND(4.6)	ND(2.3)	ND(1.8)	ND(1.8)	ND(3.6)
SWMU 1-14 (toe)	01/14/20	ND(7.1)	ND(12)	ND(12)	ND(12)	ND(5.9)	ND(4.7)	ND(4.7)	ND(9.4)
SWMU 1-14 (toe) (2.5 ft)	01/14/20	ND(6.9)	ND(12)	ND(12)	ND(12)	ND(5.8)	ND(4.6)	120	ND(9.3)
SWMU 1-14 (toe) (3 ft)	01/14/20	ND(6.9)	ND(12)	ND(12)	ND(12)	ND(5.8)	ND(4.6)	7.8	ND(9.2)
[a] NMED Industrial SSL		18,330	1,833	82.27	17.15	103,800	6,489	3,368	NA
[b] NMED Residential SSL		1,230	123	123	18.5	6,260	391	232	NA
[c] USEPA RSL Industrial Soil HQ 0.1		1,600	160	7.4	1.5	6,000	580	300	4,100

Notes:
NMED SSL's - New Mexico Environmental Department Industrial Soil Screening Levels, June 2019
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ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Samples taken in Evaporation Pond 1.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.
See sediment samplings logs for lithology of samples.

ATTACHMENT B - TABLE 2C. SWMU 1 SAMPLING - SEMIVOLATILE ORGANIC COMPOUNDS (EP-1)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	2-Nitroaniline (mg/kg)	2-Nitrophenol (mg/kg)	3,3'-Dichlorobenzidine (mg/kg)	3,4- Methyl phenol (mg/kg)	3-Nitroaniline (mg/kg)	2-Methyl-4,6-dinitrophenol (mg/kg)	4-Bromophenylphenylether (mg/kg)	4-Chloro-3-Methylphenol (mg/kg)
SWMU 1-14 (berm) (5 ft)	01/14/20	ND(0.34)	ND(0.34)	ND(0.42)	ND(0.34)	ND(0.34)	ND(0.67)	ND(0.34)	ND(0.84)
SWMU 1-14 (berm) (7.5 ft)	01/14/20	ND(1.8)	ND(1.8)	ND(2.3)	ND(1.8)	ND(1.8)	ND(3.6)	ND(1.8)	ND(4.6)
SWMU 1-14 (toe)	01/14/20	ND(4.7)	ND(4.7)	ND(5.9)	ND(4.7)	ND(4.7)	ND(9.4)	ND(4.7)	ND(12)
SWMU 1-14 (toe) (2.5 ft)	01/14/20	ND(4.6)	ND(4.6)	ND(5.8)	11	ND(4.6)	ND(9.3)	ND(4.6)	ND(12)
SWMU 1-14 (toe) (3 ft)	01/14/20	ND(4.6)	ND(4.6)	ND(5.8)	1.9	ND(4.6)	ND(9.2)	ND(4.6)	ND(12)
[a] NMED Industrial SSL		NA	NA	57.01	NA	NA	NA	NA	NA
[b] NMED Residential SSL		NA	NA	11.8	NA	NA	NA	NA	NA
[c] USEPA RSL Industrial Soil HQ 0.1		800	NA	5.1	NA	NA	6.6	NA	8,200

Notes:
NMED SSL's - New Mexico Environmental Department Industrial Soil Screening Levels, June 2019
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
EP - Evaporation Pond
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Samples taken in Evaporation Pond 1.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.
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ATTACHMENT B - TABLE 2C. SWMU 1 SAMPLING - SEMIVOLATILE ORGANIC COMPOUNDS (EP-1)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	4-Chloroaniline (mg/kg)	4-Chlorophenylphenylether (mg/kg)	4-Nitroaniline (mg/kg)	4-Nitrophenol (mg/kg)	Acenaphthene (mg/kg)	Acenaphthylene (mg/kg)	Aniline (mg/kg)	Anthracene (mg/kg)
SWMU 1-14 (berm) (5 ft)	01/14/20	ND(0.84)	ND(0.34)	ND(0.67)	ND(0.42)	ND(0.34)	ND(0.34)	ND(0.34)	ND(0.34)
SWMU 1-14 (berm) (7.5 ft)	01/14/20	ND(4.6)	ND(1.8)	ND(3.6)	ND(2.3)	ND(1.8)	ND(1.8)	ND(1.8)	ND(1.8)
SWMU 1-14 (toe)	01/14/20	ND(12)	ND(4.7)	ND(9.4)	ND(5.9)	ND(4.7)	ND(4.7)	ND(4.7)	ND(4.7)
SWMU 1-14 (toe) (2.5 ft)	01/14/20	ND(12)	ND(4.6)	ND(9.3)	ND(5.8)	ND(4.6)	ND(4.6)	ND(4.6)	ND(4.6)
SWMU 1-14 (toe) (3 ft)	01/14/20	ND(12)	ND(4.6)	ND(9.2)	ND(5.8)	ND(4.6)	ND(4.6)	ND(4.6)	ND(4.6)
[a] NMED Industrial SSL		NA	NA	NA	NA	50,520	NA	NA	252,600
[b] NMED Residential SSL		NA	NA	NA	NA	3,480	NA	NA	17,400
[c] USEPA RSL Industrial Soil HQ 0.1		11	NA	110	NA	4,500	NA	400	23,000

Notes:
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ft - feet mg/kg - milligrams per kilogram
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SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Samples taken in Evaporation Pond 1.
Samples without location depths were taken from the surface.
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ATTACHMENT B - TABLE 2C. SWMU 1 SAMPLING - SEMIVOLATILE ORGANIC COMPOUNDS (EP-1)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Azobenzene (mg/kg)	Benzo(a)anthracene (mg/kg)	Benzo(a)pyrene (mg/kg)	Benzo(b)fluoranthene (mg/kg)	Benzo(g,h,i)perylene (mg/kg)	Benzo(k)fluoranthene (mg/kg)	Benzoic Acid (mg/kg)	Benzyl Alcohol (mg/kg)
SWMU 1-14 (berm) (5 ft)	01/14/20	ND(0.34)	ND(0.34)	ND(0.34)	ND(0.34)	ND(0.34)	ND(0.34)	ND(0.84)	ND(0.34)
SWMU 1-14 (berm) (7.5 ft)	01/14/20	ND(1.8)	ND(1.8)	ND(1.8)	ND(1.8)	ND(1.8)	ND(1.8)	ND(4.6)	ND(1.8)
SWMU 1-14 (toe)	01/14/20	ND(4.7)	ND(4.7)	ND(4.7)	ND(4.7)	ND(4.7)	ND(4.7)	ND(12)	ND(4.7)
SWMU 1-14 (toe) (2.5 ft)	01/14/20	ND(4.6)	ND(4.6)	ND(4.6)	ND(4.6)	ND(4.6)	ND(4.6)	ND(12)	ND(4.6)
SWMU 1-14 (toe) (3 ft)	01/14/20	ND(4.6)	ND(4.6)	ND(4.6)	ND(4.6)	ND(4.6)	ND(4.6)	ND(12)	ND(4.6)
[a] NMED Industrial SSL		NA	32.3	23.58	32.3	NA	322.9	NA	NA
[b] NMED Residential SSL		NA	1.53	1.12	1.53	NA	15.3	NA	NA
[c] USEPA RSL Industrial Soil HQ 0.1		26	21	2.1	21	NA	210	330,000	8,200

Notes:
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(toe) samples composited in the field (berm) samples taken along the berm
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ATTACHMENT B - TABLE 2C. SWMU 1 SAMPLING - SEMIVOLATILE ORGANIC COMPOUNDS (EP-1)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Bis(2chloroethoxy) methane (mg/kg)	Bis(2-chloroethyl)ether (mg/kg)	Bis(2chloroisopropyl)ether (mg/kg)	Bis(2-ethylhexyl)phthalate (mg/kg)	Benzyl Butyl Phthalate (mg/kg)	Carbazole (mg/kg)	Chrysene (mg/kg)	Dibenz(a,h)anthracene (mg/kg)
SWMU 1-14 (berm) (5 ft)	01/14/20	ND(0.34)	ND(0.34)	ND(0.34)	ND(0.84)	ND(0.34)	ND(0.34)	ND(0.34)	ND(0.34)
SWMU 1-14 (berm) (7.5 ft)	01/14/20	ND(1.8)	ND(1.8)	ND(1.8)	ND(4.6)	ND(1.8)	ND(1.8)	ND(1.8)	ND(1.8)
SWMU 1-14 (toe)	01/14/20	ND(4.7)	ND(4.7)	ND(4.7)	ND(12)	ND(4.7)	ND(4.7)	ND(4.7)	ND(4.7)
SWMU 1-14 (toe) (2.5 ft)	01/14/20	ND(4.6)	ND(4.6)	ND(4.6)	ND(12)	ND(4.6)	ND(4.6)	ND(4.6)	ND(4.6)
SWMU 1-14 (toe) (3 ft)	01/14/20	ND(4.6)	ND(4.6)	ND(4.6)	ND(12)	ND(4.6)	ND(4.6)	ND(4.6)	ND(4.6)
[a] NMED Industrial SSL	NA	15.67	NA	1,832	NA	NA	3,229	3.23	
[b] NMED Residential SSL	NA	3.11	NA	380	NA	NA	153	0.153	
[c] USEPA RSL Industrial Soil HQ 0.1	250	1	NA	160	1,200	NA	2,100	2.1	

Notes:
NMED SSL's - New Mexico Environmental Department Industrial Soil Screening Levels, June 2019
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
EP - Evaporation Pond
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Samples taken in Evaporation Pond 1.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.
See sediment samplings logs for lithology of samples.

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ATTACHMENT B - TABLE 2C. SWMU 1 SAMPLING - SEMIVOLATILE ORGANIC COMPOUNDS (EP-1)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Dibenzofuran (mg/kg)	Diethylphthalate (mg/kg)	Dimethyl Phthalate (mg/kg)	Di-n-butylphthalate (mg/kg)	Di-n-octylphthalate (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Hexachloro Benzene (mg/kg)
SWMU 1-14 (berm) (5 ft)	01/14/20	ND(0.34)	ND(0.84)	ND(0.34)	ND(0.67)	ND(0.67)	ND(0.34)	ND(0.34)	ND(0.34)
SWMU 1-14 (berm) (7.5 ft)	01/14/20	ND(1.8)	ND(4.6)	ND(1.8)	ND(3.6)	ND(3.6)	ND(1.8)	ND(1.8)	ND(1.8)
SWMU 1-14 (toe)	01/14/20	ND(4.7)	ND(12)	ND(4.7)	ND(9.4)	ND(9.4)	ND(4.7)	ND(4.7)	ND(4.7)
SWMU 1-14 (toe) (2.5 ft)	01/14/20	ND(4.6)	ND(12)	ND(4.6)	ND(9.3)	ND(9.3)	ND(4.6)	26	ND(4.6)
SWMU 1-14 (toe) (3 ft)	01/14/20	ND(4.6)	ND(12)	ND(4.6)	ND(9.2)	ND(9.2)	ND(4.6)	2.2	ND(4.6)
[a] NMED Industrial SSL	NA	733,000	NA	91,630	NA	33,680	33,680	16.03	
[b] NMED Residential SSL	NA	49,300	NA	6,160	NA	2,320	2,320	3.33	
[c] USEPA RSL Industrial Soil HQ 0.1	100	66,000	NA	8,200	820	3,000	3,000	0.96	

Notes:
NMED SSL's - New Mexico Environmental Department Industrial Soil Screening Levels, June 2019
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
EP - Evaporation Pond
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Samples taken in Evaporation Pond 1.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.
See sediment samplings logs for lithology of samples.

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ATTACHMENT B - TABLE 2C. SWMU 1 SAMPLING - SEMIVOLATILE ORGANIC COMPOUNDS (EP-1)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Hexachloro- butadiene (mg/kg)	Hexachloro-cyclopenta-diene (mg/kg)	Hexachloroethane (mg/kg)	Indeno-(1,2,3-c,d)pyrene (mg/kg)	Isophorone (mg/kg)	Naphthalene (mg/kg)	Nitrobenzene (mg/kg)	N-Nitrosodi-n-propylamine (mg/kg)
SWMU 1-14 (berm) (5 ft)	01/14/20	ND(0.34)	ND(0.34)	ND(0.34)	ND(0.34)	ND(0.67)	ND(0.34)	ND(0.67)	ND(0.34)
SWMU 1-14 (berm) (7.5 ft)	01/14/20	ND(1.8)	ND(1.8)	ND(1.8)	ND(1.8)	ND(3.6)	ND(1.8)	ND(3.6)	ND(1.8)
SWMU 1-14 (toe)	01/14/20	ND(4.7)	ND(4.7)	ND(4.7)	ND(4.7)	ND(9.4)	ND(4.7)	ND(9.4)	ND(4.7)
SWMU 1-14 (toe) (2.5 ft)	01/14/20	ND(4.6)	ND(4.6)	ND(4.6)	ND(4.6)	ND(9.3)	11	ND(9.3)	ND(4.6)
SWMU 1-14 (toe) (3 ft)	01/14/20	ND(4.6)	ND(4.6)	ND(4.6)	ND(4.6)	ND(9.2)	ND(4.6)	ND(9.2)	ND(4.6)
[a] NMED Industrial SSL		52.08	5,492	641.4	32.3	27,010	241	293.3	NA
[b] NMED Residential SSL		68.3	2.3	133	1.53	5,610	49.7	60.4	NA
[c] USEPA RSL Industrial Soil HQ 0.1		5.3	0.75	8	21	2,400	17	22	0.33

Notes:
NMED SSL's - New Mexico Environmental Department Industrial Soil Screening Levels, June 2019
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
EP - Evaporation Pond
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Samples taken in Evaporation Pond 1.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.
See sediment samplings logs for lithology of samples.

ATTACHMENT B - TABLE 2C. SWMU 1 SAMPLING - SEMIVOLATILE ORGANIC COMPOUNDS (EP-1)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	N-Nitroso-diphenylamine (mg/kg)	Pentachlorophenol (mg/kg)	Phenanthrene (mg/kg)	Phenol (mg/kg)	Pyrene (mg/kg)	Pyridine (mg/kg)
SWMU 1-14 (berm) (5 ft)	01/14/20	ND(0.34)	ND(0.67)	ND(0.34)	ND(0.34)	ND(0.34)	ND(0.67)
SWMU 1-14 (berm) (7.5 ft)	01/14/20	ND(1.8)	ND(3.6)	1.1	ND(1.8)	1.1	ND(3.6)
SWMU 1-14 (toe)	01/14/20	ND(4.7)	ND(9.4)	ND(4.7)	ND(4.7)	60	ND(9.4)
SWMU 1-14 (toe) (2.5 ft)	01/14/20	ND(4.6)	ND(9.3)	98	ND(4.6)	ND(4.6)	ND(9.3)
SWMU 1-14 (toe) (3 ft)	01/14/20	ND(4.6)	ND(9.2)	7.8	ND(4.6)	1.9	ND(9.2)
[a] NMED Industrial SSL		5,236	44.51	25,260	274,900	25,260	NA
[b] NMED Residential SSL		1,090	9.85	1,740	18,500	1,740	NA
[c] USEPA RSL Industrial Soil HQ 0.1		470	4	NA	25,000	2,300	120

Notes:
NMED SSL's - New Mexico Environmental Department Industrial Soil Screening Levels, June 2019
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
EP - Evaporation Pond
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Samples taken in Evaporation Pond 1.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.
See sediment samplings logs for lithology of samples.

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ATTACHMENT B - 3A. SWMU 1 SAMPLING - METALS COMPOUNDS (AL-1)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Antimony, Total (mg/kg)	Arsenic, Total (mg/kg)	Barium, Total (mg/kg)	Beryllium, Total (mg/kg)	Cadmium, Total (mg/kg)	Chromium, Total (mg/kg)	Cobalt, Total (mg/kg)	Lead, Total (mg/kg)
SWMU 1-8	01/16/20	ND(4.8)	**7** [d]	760	0.32	ND(0.19)	23	3.8	24
SWMU 1-8 (2.5 ft)	01/16/20	ND(5.1)	**7.8** [b,d]	610	0.24	ND(0.2)	22	3.5	22
SWMU 1-8 (5-5.5 ft)	01/16/20	ND(5)	ND(5)	270	0.86	ND(0.2)	17	4.5	3
SWMU 1-9	01/16/20	ND(4.9)	**15** [b,d]	290	0.3	ND(0.2)	28	4.1	40
SWMU 1-9 (4.5 ft)	01/16/20	ND(5.1)	**15** [b,d]	470	0.25	ND(0.2)	32	5.3	61
SWMU 1-9 (5.5-6 ft)	01/16/20	ND(4.9)	**3.1** [d]	230	0.82	ND(0.2)	27	5	2.4
SWMU 1-10	01/16/20	ND(5.2)	**16** [b,d]	170	0.33	ND(0.21)	51	8.2	100
SWMU 1-10 (4-4.5 ft)	01/16/20	16	**26** [b,d]	550	0.25	ND(0.21)	38	6.3	130
SWMU 1-10 (4.5-5 ft)	01/16/20	ND(5)	ND(5)	340	0.84	ND(0.2)	40	4.9	3.5
SWMU 1-19 (berm) (1.5 ft)	01/13/20	ND(5)	ND(5)	620	0.88	ND(0.2)	8.2	4.2	3.8
SWMU 1-19 (berm) (2.5 ft)	01/13/20	ND(12)	ND(12)	210	1.3	ND(0.49)	14	5.5	2.1
SWMU 1-19 (toe) Dup	01/16/20	ND(5)	**9.9** [b,d]	500	0.38	ND(0.2)	62	3	32
SWMU 1-19 (toe)	01/16/20	ND(4.9)	**8.4** [b,d]	340	0.34	ND(0.2)	65	2.8	35
SWMU 1-19 (toe) (0.5-6 ft)	01/16/20	ND(4.9)	**14** [b,d]	270	0.36	0.37	42	5.7	62
SWMU 1-19 (toe) (6-6.5 ft)	01/16/20	ND(4.9)	ND(4.9)	350	1.1	ND(0.19)	24	5.2	8.9
SWMU 1-20 (berm) (1.5 ft)	01/14/20	--	--	--	--	--	--	--	--
SWMU 1-20 (berm) (2.5 ft)	01/14/20	ND(5.1)	ND(5.1)	180	0.87	ND(0.2)	9.6	4.2	2
SWMU 1-20 (toe) (1.5 ft)	01/14/20	ND(5.1)	ND(13)	410	0.87	ND(0.21)	19	4.4	4.8
SWMU 1-20 (toe) (5 ft) Dup	01/15/20	ND(12)	ND(12)	230	1.1	ND(0.49)	13	4.5	5.7
SWMU 1-20 (toe)	01/15/20	ND(4.8)	**6.2** [d]	770	0.43	ND(0.19)	38	3.3	15
SWMU 1-20 (toe) (0.5-3 ft)	01/15/20	**34** [b]	**14** [b,d]	350	0.19	ND(0.2)	32	4.2	47
SWMU 1-20 (toe) (5 ft)	01/15/20	ND(4.8)	ND(4.8)	190	1	ND(0.19)	11	4.3	1.8
SWMU 1-21 (berm) (1.5 ft)	01/14/20	ND(4.9)	ND(4.9)	530	0.74	ND(0.19)	44	5.2	33
SWMU 1-21 (toe)	01/14/20	ND(5.1)	**4** [d]	180	0.51	ND(0.2)	24	4	19
SWMU 1-21 (toe) (2.5 ft)	01/14/20	ND(5.1)	ND(5.1)	300	0.97	ND(0.2)	9.5	4	2.3
SWMU 1-21 (toe) (5 ft)	01/14/20	ND(5.1)	ND(5.1)	290	1.1	ND(0.2)	13	4.5	1.9
SWMU 1-22 (berm) (1.5 ft)	01/14/20	ND(5)	ND(5)	600	0.85	ND(0.2)	17	4.6	3.7
SWMU 1-22 (berm) (2.5 ft)	01/14/20	ND(4.9)	ND(4.9)	570	0.95	ND(0.2)	50	5	15
SWMU 1-22 (berm) (5 ft)	01/14/20	ND(5)	**25** [b,d]	73	0.35	ND(0.2)	88	10	200
SWMU 1-22 (toe)	01/16/20	ND(5.1)	**3.5** [d]	570	0.49	ND(0.2)	16	3.3	12
SWMU 1-22 (toe) (2.5 ft)	01/16/20	ND(5.1)	**22** [b,d]	550	0.31	ND(0.2)	35	4.6	130
SWMU 1-22 (toe) (3.5-4 ft)	01/16/20	ND(4.9)	ND(4.9)	250	0.88	ND(0.2)	27	4.6	3.9
[a] NMED Industrial SSL		519.1	35.88	254,700	2,583	1,108	504.6	388.4	800
[b] NMED Residential SSL		31.3	7.07	15,600	64,400	85,900	96.6	17,200	400
[c] CFR TCLP		NA	NA	NA	NA	NA	NA	NA	NA
[d] USEPA RSL Industrial Soil HQ 0.1		47	3	22,000	230	98	NA	35	800

Notes:
NMED SSL's - New Mexico Environmental Department Industrial Soil Screening Levels, June 2019
TCLP SL - Toxicity Characteristic Levels from 40 CFR 261.24.
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
AL - Aeration Lagoon
TCLP - toxicity characteristic leaching procedure
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Samples taken in Aeration Lagoon 1.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.
See sediment sampling logs for lithology of samples.

ATTACHMENT B - 3A. SWMU 1 SAMPLING - METALS COMPOUNDS (AL-1)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Lead, TCLP (mg/L)	Mercury, Total (mg/kg)		Mercury, TCLP (mg/L)	Nickel, Total (mg/kg)	Selenium, Total (mg/kg)	Silver, Total (mg/kg)	Vanadium, Total (mg/kg)	Zinc, Total (mg/kg)
SWMU 1-8	01/16/20	ND(5)	4.3		ND(0.02)	32	ND(4.8)	ND(0.48)	16	1200
SWMU 1-8 (2.5 ft)	01/16/20	ND(5)	**5.1**	d	ND(0.02)	25	4	ND(0.51)	13	1200
SWMU 1-8 (5-5.5 ft)	01/16/20	ND(5)	0.016		ND(0.02)	8.9	ND(5)	ND(0.5)	35	20
SWMU 1-9	01/16/20	ND(5)	**16**	d	ND(0.02)	49	ND(4.9)	ND(0.49)	30	1700
SWMU 1-9 (4.5 ft)	01/16/20	ND(5)	**12**	d	ND(0.02)	62	ND(5.1)	ND(0.51)	27	3100
SWMU 1-9 (5.5-6 ft)	01/16/20	ND(5)	0.072		ND(0.02)	8.6	ND(4.9)	ND(0.49)	23	30
SWMU 1-10	01/16/20	ND(5)	ND(0.034)		ND(0.02)	93	ND(5.2)	ND(0.52)	26	5200
SWMU 1-10 (4-4.5 ft)	01/16/20	ND(5)	ND(0.032)		ND(0.02)	72	ND(5.2)	ND(0.52)	21	5500
SWMU 1-10 (4.5-5 ft)	01/16/20	ND(5)	0.42		ND(0.02)	9.7	ND(5)	ND(0.5)	26	70
SWMU 1-19 (berm) (1.5 ft)	01/13/20	ND(5)	0.0088		ND(0.02)	7.5	ND(5)	ND(0.5)	20	13
SWMU 1-19 (berm) (2.5 ft)	01/13/20	ND(5)	0.16		ND(0.02)	12	ND(12)	ND(1.2)	23	27
SWMU 1-19 (toe) Dup	01/16/20	0.011	**5.8**	d	ND(0.02)	17	3.9	ND(0.5)	25	190
SWMU 1-19 (toe)	01/16/20	0.0095	**5**	d	ND(0.02)	16	5.3	ND(0.49)	25	230
SWMU 1-19 (toe) (0.5-6 ft)	01/16/20	ND(5)	**9.9**	d	ND(0.02)	48	2.5	ND(0.49)	19	2100
SWMU 1-19 (toe) (6-6.5 ft)	01/16/20	ND(5)	0.29		ND(0.02)	12	ND(4.9)	ND(0.49)	28	76
SWMU 1-20 (berm) (1.5 ft)	01/14/20	--	0.24		--	--	--	--	--	--
SWMU 1-20 (berm) (2.5 ft)	01/14/20	ND(5)	0.46		0.0014	8.3	ND(5.1)	ND(0.51)	17	51
SWMU 1-20 (toe) (1.5 ft)	01/14/20	ND(5)	--		ND(0.02)	8.5	ND(5.1)	ND(0.51)	20	76
SWMU 1-20 (toe) (5 ft) Dup	01/15/20	ND(5)	0.23		ND(0.02)	11	ND(12)	ND(1.2)	58	28
SWMU 1-20 (toe)	01/15/20	ND(5)	**5.1**	d	ND(0.02)	22	5.3	0.28	16	950
SWMU 1-20 (toe) (0.5-3 ft)	01/15/20	ND(5)	**13**	d	ND(0.02)	57	ND(5)	ND(0.5)	6.7	1300
SWMU 1-20 (toe) (5 ft)	01/15/20	ND(5)	0.59		ND(0.02)	9.2	ND(4.8)	ND(0.48)	15	17
SWMU 1-21 (berm) (1.5 ft)	01/14/20	ND(5)	0.33		ND(0.02)	12	ND(4.9)	ND(0.49)	25	97
SWMU 1-21 (toe)	01/14/20	ND(5)	3.5		0.0014	20	3.7	ND(0.51)	20	600
SWMU 1-21 (toe) (2.5 ft)	01/14/20	ND(5)	0.0069		ND(0.02)	8.7	ND(5.1)	ND(0.51)	19	15
SWMU 1-21 (toe) (5 ft)	01/14/20	ND(5)	0.22		ND(0.02)	10	ND(5.1)	ND(0.51)	26	54
SWMU 1-22 (berm) (1.5 ft)	01/14/20	ND(5)	0.55		0.0014	9.2	ND(5)	ND(0.5)	22	28
SWMU 1-22 (berm) (2.5 ft)	01/14/20	ND(5)	0.25		0.0015	10	ND(4.9)	ND(0.49)	27	60
SWMU 1-22 (berm) (5 ft)	01/14/20	ND(5)	ND(0.032)		ND(0.02)	170	2.9	ND(0.5)	42	6500
SWMU 1-22 (toe)	01/16/20	ND(5)	**6.8**	d	ND(0.02)	21	ND(5.1)	ND(0.51)	17	680
SWMU 1-22 (toe) (2.5 ft)	01/16/20	ND(5)	**7.5**	d	ND(0.02)	61	ND(5.1)	ND(0.51)	18	2800
SWMU 1-22 (toe) (3.5-4 ft)	01/16/20	ND(5)	0.096		ND(0.02)	9.3	ND(4.9)	ND(0.49)	24	78

[a]	NMED Industrial SSL	NA	NA	NA	25,680	6,489	6,489	6,525	389,300
[b]	NMED Residential SSL	NA	NA	NA	595,000	391	391	394	23,500
[c]	CFR TCLP	5	NA	0.2	NA	NA	NA	NA	NA
[d]	USEPA RSL Industrial Soil HQ 0.1	NA	4.6	NA	2,200	580	580	580	35,000

Notes:
NMED SSL's - New Mexico Environmental Department Industrial Soil Screening Levels, June 2019
TCLP SL - Toxicity Characteristic Levels from 40 CFR 261.24.
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
AL - Aeration Lagoon
TCLP - toxicity characteristic leaching procedure
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Samples taken in Aeration Lagoon 1.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.
See sediment sampling logs for lithology of samples.

ProjectDirect: Analytical B - 3a. SWMU 1 Metals - AL-1 PK:8111 RK:87561

ATTACHMENT B - 3B. SWMU 1 SAMPLING - METALS COMPOUNDS (AL-2)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Antimony, Total (mg/kg)	Arsenic, Total (mg/kg)		Barium, Total (mg/kg)	Beryllium, Total (mg/kg)	Cadmium, Total (mg/kg)	Chromium, Total (mg/kg)	Cobalt, Total (mg/kg)	Lead, Total (mg/kg)
SWMU 1-5	01/17/20	ND(5.1)	**5.3**	d	300	0.28	ND(0.21)	17	3.4	2.4
SWMU 1-5 (2.5-5 ft)	01/17/20	ND(5.1)	ND(5.1)		450	0.59	ND(0.21)	15	3.8	9.7
SWMU 1-5 (5.5-6 ft)	01/17/20	ND(5.1)	ND(5.1)		230	0.77	ND(0.2)	21	5.3	5.9
SWMU 1-6 (0-5.5 ft)	01/17/20	ND(5.1)	**15**	b,d	500	0.3	2.4	39	3.2	44
SWMU 1-6 (5.5-6 ft)	01/17/20	ND(5.1)	ND(5.1)		230	0.82	ND(0.2)	11	5.7	0.9
SWMU 1-7 Dup	01/17/20	ND(5.1)	ND(5.1)		410	0.43	ND(0.2)	13	3.1	5.4
SWMU 1-7	01/17/20	ND(5.1)	ND(5.1)		360	0.43	ND(0.21)	11	3	4.1
SWMU 1-7 (2.5 ft)	01/17/20	ND(5.2)	**10**	b,d	300	0.21	ND(0.21)	35	4.1	28
SWMU 1-7 (4-5 ft)	01/17/20	ND(5)	ND(5)		200	0.94	ND(0.2)	12	4.4	1
SWMU 1-15 (berm) (1.5 ft)	01/13/20	ND(4.9)	ND(4.9)		200	1	ND(0.2)	11	5	2.7
SWMU 1-15 (berm) (2.5 ft)	01/13/20	ND(5.1)	ND(5.1)		190	0.97	ND(0.2)	9.9	4.5	2.3
SWMU 1-15 (toe) Dup	01/16/20	ND(4.9)	**5**	d	380	0.24	ND(0.19)	15	2.4	3.5
SWMU 1-15 (toe)	01/16/20	ND(5)	**9.5**	b,d	310	0.19	ND(0.2)	19	2.7	3.4
SWMU 1-15 (toe) (3 ft)	01/16/20	ND(4.9)	ND(4.9)		160	0.58	ND(0.2)	10	3.4	4.4
SWMU 1-15 (toe) (4-5 ft)	01/16/20	1.4	**11**	b,d	380	0.19	ND(0.2)	29	3.7	30
SWMU 1-16 (berm) (1.5 ft) Dup	01/13/20	ND(4.9)	ND(4.9)		330	0.84	ND(0.19)	8.3	3.8	2.2
SWMU 1-16 (berm) (1.5 ft)	01/13/20	ND(5)	ND(5)		400	0.79	ND(0.2)	11	3.9	1.5
SWMU 1-16 (berm) (2.5 ft)	01/13/20	ND(4.9)	ND(4.9)		530	0.87	ND(0.2)	20	4.8	13
SWMU 1-16 (toe) Dup	01/16/20	ND(5.1)	**8.8**	b,d	500	0.22	ND(0.2)	30	3	6.9
SWMU 1-16 (toe)	01/16/20	ND(5.1)	**8.1**	b,d	450	0.26	ND(0.2)	29	3.2	6.2
SWMU 1-16 (toe) (2.5 ft)	01/16/20	ND(4.8)	**8.7**	b,d	180	0.21	ND(0.19)	25	4.2	25
SWMU 1-16 (toe) (4-4.5 ft)	01/16/20	ND(5)	ND(5)		300	1.2	ND(0.2)	20	6	0.68
SWMU 1-17 (berm) (1.5 ft)	01/13/20	ND(5)	ND(5)		190	1.3	ND(0.2)	9.1	4.7	ND(0.5)
SWMU 1-17 (berm) (2.5 ft)	01/13/20	ND(5)	ND(5)		180	1.1	ND(0.2)	9.9	4.1	2.2
SWMU 1-17 (toe)	01/16/20	ND(4.9)	**6**	d	300	0.37	ND(0.2)	24	3.4	27
SWMU 1-17 (toe) (2.5 ft)	01/16/20	ND(5)	ND(5)		570	0.81	ND(0.2)	18	4.7	12
SWMU 1-17 (toe) (4.5-5 ft)	01/16/20	ND(5)	ND(5)		230	1.1	ND(0.2)	14	5.4	1.9
SWMU 1-18 (berm) (1.5 ft)	01/13/20	ND(13)	ND(13)		490	0.96	ND(0.52)	11	4.8	3.1
SWMU 1-18 (berm) (2.5 ft)	01/13/20	ND(5)	ND(5)		210	0.94	ND(0.2)	12	4.8	0.82
SWMU 1-18 (toe)	01/16/20	ND(5.1)	ND(5.1)		310	0.6	ND(0.2)	16	3.3	2.4
SWMU 1-18 (toe) (2.5 ft)	01/16/20	ND(4.9)	**5**	d	370	0.31	ND(0.2)	19	2.7	9.5
SWMU 1-18 (toe) (5 ft)	01/16/20	ND(5)	ND(5)		400	0.79	ND(0.2)	11	4.1	1.3

[a] NMED Industrial SSL	519.1	35.88	254,700	2,583	1,108	504.6	388.4	800
[b] NMED Residential SSL	31.3	7.07	15,600	64,400	85,900	96.6	17,200	400
[c] CFR TCLP	NA	NA	NA	NA	NA	NA	NA	NA
[d] USEPA RSL Industrial Soil HQ 0.1	47	3	22,000	230	98	NA	35	800

Notes:
NMED SSL's - New Mexico Environmental Department Industrial Soil Screening Levels, June 2019
TCLP SL - Toxicity Characteristic Levels from 40 CFR 261.24.
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
AL - Aeration Lagoon
TCLP - toxicity characteristic leaching procedure
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Samples taken in Aeration Lagoon 2.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.

ATTACHMENT B - 3B. SWMU 1 SAMPLING - METALS COMPOUNDS (AL-2)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Lead, TCLP (mg/L)	Mercury, Total (mg/kg)		Mercury, TCLP (mg/L)	Nickel, Total (mg/kg)	Selenium, Total (mg/kg)	Silver, Total (mg/kg)	Vanadium, Total (mg/kg)	Zinc, Total (mg/kg)
SWMU 1-5	01/17/20	ND(5)	**7.7**	d	ND(0.02)	19	4.7	0.63	9.1	510
SWMU 1-5 (2.5-5 ft)	01/17/20	ND(5)	2.9		ND(0.02)	14	ND(5.1)	ND(0.51)	18	840
SWMU 1-5 (5.5-6 ft)	01/17/20	ND(5)	0.15		ND(0.02)	14	ND(5.1)	ND(0.51)	21	170
SWMU 1-6 (0-5.5 ft)	01/17/20	ND(5)	2.3		ND(0.02)	25	ND(5.1)	ND(0.51)	19	1400
SWMU 1-6 (5.5-6 ft)	01/17/20	ND(5)	0.018		ND(0.02)	8.8	ND(5.1)	ND(0.51)	21	19
SWMU 1-7 Dup	01/17/20	ND(5)	0.59		ND(0.02)	7.6	ND(5.1)	ND(0.51)	24	160
SWMU 1-7	01/17/20	ND(5)	1.1		ND(0.02)	7.3	ND(5.1)	ND(0.51)	16	150
SWMU 1-7 (2.5 ft)	01/17/20	ND(5)	**5.9**	d	ND(0.02)	32	ND(5.2)	ND(0.52)	11	2000
SWMU 1-7 (4-5 ft)	01/17/20	ND(5)	0.033		ND(0.02)	9.3	ND(5)	ND(0.5)	23	29
SWMU 1-15 (berm) (1.5 ft)	01/13/20	ND(5)	0.0065		ND(0.02)	9.5	ND(4.9)	ND(0.49)	19	16
SWMU 1-15 (berm) (2.5 ft)	01/13/20	ND(5)	0.028		0.0014	11	ND(5.1)	ND(0.51)	16	25
SWMU 1-15 (toe) Dup	01/16/20	ND(5)	0.0026		ND(0.02)	5.7	7.9	0.47	9.2	240
SWMU 1-15 (toe)	01/16/20	ND(5)	ND(0.033)		ND(0.02)	6.7	6	0.62	9.8	280
SWMU 1-15 (toe) (3 ft)	01/16/20	ND(5)	0.079		ND(0.02)	7.2	ND(4.9)	ND(0.49)	11	23
SWMU 1-15 (toe) (4-5 ft)	01/16/20	ND(5)	**6.6**	d	ND(0.02)	26	ND(5.1)	ND(0.51)	9.3	2200
SWMU 1-16 (berm) (1.5 ft) Dup	01/13/20	ND(5)	0.012		ND(0.02)	7.6	ND(4.9)	ND(0.49)	17	15
SWMU 1-16 (berm) (1.5 ft)	01/13/20	ND(5)	0.026		0.0015	7.8	ND(5)	ND(0.5)	19	30
SWMU 1-16 (berm) (2.5 ft)	01/13/20	ND(5)	2.2		ND(0.02)	15	ND(4.9)	ND(0.49)	22	690
SWMU 1-16 (toe) Dup	01/16/20	ND(5)	**6.7**	d	ND(0.02)	6.8	12	ND(0.51)	10	220
SWMU 1-16 (toe)	01/16/20	ND(5)	**5.2**	d	ND(0.02)	9	9.2	0.16	13	250
SWMU 1-16 (toe) (2.5 ft)	01/16/20	ND(5)	**10**	d	ND(0.02)	25	7.1	ND(0.48)	10	1800
SWMU 1-16 (toe) (4-4.5 ft)	01/16/20	ND(5)	0.026		ND(0.02)	14	ND(5)	ND(0.5)	30	100
SWMU 1-17 (berm) (1.5 ft)	01/13/20	ND(5)	0.15		ND(0.02)	8.8	ND(5)	ND(0.5)	16	39
SWMU 1-17 (berm) (2.5 ft)	01/13/20	ND(5)	0.0074		ND(0.02)	9.1	ND(5)	ND(0.5)	18	16
SWMU 1-17 (toe)	01/16/20	ND(5)	**6**	d	ND(0.02)	14	ND(4.9)	ND(0.49)	18	420
SWMU 1-17 (toe) (2.5 ft)	01/16/20	ND(5)	2.3		ND(0.02)	16	3.1	ND(0.5)	23	680
SWMU 1-17 (toe) (4.5-5 ft)	01/16/20	ND(5)	0.08		ND(0.02)	11	ND(5)	ND(0.5)	24	49
SWMU 1-18 (berm) (1.5 ft)	01/13/20	ND(5)	0.0064		ND(0.02)	8.7	ND(13)	ND(1.3)	19	16
SWMU 1-18 (berm) (2.5 ft)	01/13/20	ND(5)	0.0069		ND(0.02)	9.7	ND(5)	ND(0.5)	27	24
SWMU 1-18 (toe)	01/16/20	ND(5)	0.79		ND(0.02)	8.6	ND(5.1)	ND(0.51)	17	130
SWMU 1-18 (toe) (2.5 ft)	01/16/20	ND(5)	ND(0.035)		ND(0.02)	13	2.6	ND(0.49)	11	700
SWMU 1-18 (toe) (5 ft)	01/16/20	ND(5)	0.012		ND(0.02)	7.5	ND(5)	ND(0.5)	21	26
[a] NMED Industrial SSL		NA	NA		NA	25,680	6,489	6,489	6,525	389,300
[b] NMED Residential SSL		NA	NA		NA	595,000	391	391	394	23,500
[c] CFR TCLP		5	NA		0.2	NA	NA	NA	NA	NA
[d] USEPA RSL Industrial Soil HQ 0.1		NA	4.6		NA	2,200	580	580	580	35,000

Notes:
NMED SSL's - New Mexico Environmental Department Industrial Soil Screening Levels, June 2019
TCLP SL - Toxicity Characteristic Levels from 40 CFR 261.24.
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
AL - Aeration Lagoon
TCLP - toxicity characteristic leaching procedure
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Samples taken in Aeration Lagoon 2.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.

ATTACHMENT B - TABLE 3C. SWMU 1 SAMPLING - METALS COMPOUNDS (EP-1)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Antimony, Total (mg/kg)	Arsenic, Total (mg/kg)	Barium, Total (mg/kg)	Beryllium, Total (mg/kg)	Cadmium, Total (mg/kg)	Chromium, Total (mg/kg)	Cobalt, Total (mg/kg)	Lead, Total (mg/kg)
SWMU 1-1	01/15/20	ND(4.8)	**5.1** d	270	0.25	ND(0.19)	19	3.2	3.8
SWMU 1-1 (0.5-3 ft)	01/15/20	4.8	**7.6** b,d	520	0.18	ND(0.2)	15	3.3	19
SWMU 1-1 (5 ft)	01/15/20	ND(4.9)	ND(4.9)	390	0.9	ND(0.19)	11	4.4	2
SWMU 1-2 Dup	01/15/20	ND(5)	**8.5** b,d	520	0.34	ND(0.2)	52	3.9	10
SWMU 1-2	01/15/20	ND(5)	**6** d	450	0.31	ND(0.2)	46	3.4	8.8
SWMU 1-2 (2-2.5 ft)	01/15/20	0.95	**11** b,d	510	0.18	ND(0.2)	16	3.1	19
SWMU 1-2 (3-3.5 ft)	01/15/20	ND(4.9)	ND(4.9)	480	0.96	ND(0.2)	14	4.8	1.6
SWMU 1-3 (0-0.5 ft)	01/14/20	ND(5)	**5.6** d	410	0.45	ND(0.2)	35	4.6	3.8
SWMU 1-3 (0.5-3 ft)	01/14/20	ND(4.8)	**5.3** d	420	0.25	ND(0.19)	10	2.7	11
SWMU 1-3 (3 ft)	01/14/20	ND(5)	ND(5)	160	1.4	ND(0.2)	19	7.6	ND(0.5)
SWMU 1-4	01/14/20	ND(5)	**8.1** b,d	500	0.3	ND(0.2)	60	3.4	9.2
SWMU 1-4 (3 ft)	01/14/20	11	**10** b,d	490	0.15	ND(0.2)	14	2.8	23
SWMU 1-4 (3-3.5 ft)	01/14/20	ND(13)	ND(13)	770	1.1	ND(0.51)	15	4.9	ND(1.3)
SWMU 1-11 (berm) (1.5 ft)	01/13/20	ND(13)	ND(13)	460	0.66	ND(0.51)	32	3.6	2.7
SWMU 1-11 (berm) (2.5 ft)	01/13/20	ND(13)	ND(13)	700	0.71	ND(0.51)	64	4.5	5.5
SWMU 1-11 (berm) (5 ft)	01/13/20	ND(13)	ND(13)	690	0.59	ND(0.51)	5.8	2.8	4.2
SWMU 1-11 (berm) (7.5 ft)	01/13/20	ND(5)	ND(5)	550	0.87	ND(0.2)	**100** b	5.5	3.1
SWMU 1-11 (toe)	01/15/20	**62** b,d	**30** b,d	590	0.47	ND(0.2)	37	6.3	94
SWMU 1-11 (toe) (2.5 ft)	01/15/20	ND(5)	ND(5)	220	0.98	ND(0.2)	14	5	2.6
SWMU 1-12 (berm) (1.5 ft)	01/13/20	ND(5)	**4.1** d	520	0.6	ND(0.2)	2.1	3	0.66
SWMU 1-12 (berm) (2.5 ft)	01/13/20	ND(5)	ND(5)	360	1	ND(0.2)	9.5	4.3	3.5
SWMU 1-12 (berm) (5 ft)	01/13/20	ND(5)	ND(5)	210	0.74	ND(0.2)	8.2	3.9	1.2
SWMU 1-12 (berm) (7.5 ft)	01/13/20	ND(5)	ND(5)	160	1.3	ND(0.2)	16	5.8	1.4
SWMU 1-12 (toe)	01/15/20	ND(5.2)	**8** b,d	810	0.53	ND(0.21)	25	4.2	20
SWMU 1-12 (toe) (2.5 ft)	01/15/20	ND(5)	3	140	1.2	ND(0.2)	12	5.5	0.64
SWMU 1-12 (toe) (3 ft)	01/15/20	ND(4.9)	ND(4.9)	250	1.4	ND(0.19)	15	5.8	2.1
SWMU 1-13 (berm) (5 ft) Dup	01/13/20	ND(5.1)	ND(5.1)	610	0.78	ND(0.21)	7.4	3.8	3.6
SWMU 1-13 (berm) (1.5 ft)	01/13/20	ND(4.9)	ND(4.9)	480	0.82	ND(0.2)	15	3.9	2.6
SWMU 1-13 (berm) (2.5 ft)	01/13/20	ND(13)	ND(13)	450	0.95	ND(0.51)	18	3.6	3.7
SWMU 1-13 (berm) (5 ft)	01/13/20	ND(13)	ND(13)	540	0.87	ND(0.51)	7.9	4.7	3.4
SWMU 1-13 (berm) (7.5 ft)	01/13/20	ND(5)	ND(5)	720	0.89	ND(0.2)	22	5.5	1.7
SWMU 1-13 (berm) (9 ft)	01/13/20	ND(5)	ND(5)	320	0.6	ND(0.2)	6.2	3.2	2.7
SWMU 1-13 (toe) Dup	01/14/20	ND(5)	ND(5)	360	0.65	ND(0.2)	13	3.8	0.74
SWMU 1-13 (toe) (3 ft)	01/14/20	ND(5.1)	ND(5.1)	310	1.3	ND(0.2)	12	5.2	2.4
SWMU 1-13 (toe)	01/14/20	ND(4.9)	ND(4.9)	300	0.69	ND(0.2)	15	4.2	ND(0.49)
[a] NMED Industrial SSL		519.1	35.88	254,700	2,583	1,108	504.6	388.4	800
[b] NMED Residential SSL		31.3	7.07	15,600	64,400	85,900	96.6	17,200	400
[c] CFR TCLP		NA	NA	NA	NA	NA	NA	NA	NA
[d] USEPA RSL Industrial Soil HQ 0.1		47	3	22,000	230	98	NA	35	800

Notes:
NMED SSL's - New Mexico Environmental Department Industrial Soil Screening Levels, June 2019
TCLP SL - Toxicity Characteristic Levels from 40 CFR 261.24.
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
EP - Evaporation Pond
TCLP - toxicity characteristic leaching procedure
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Benzene was analyzed for TCLP if the initial sample was detected above 0.5 ug/kg.
Samples taken in Evaporation Pond 1.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.

ATTACHMENT B - TABLE 3C. SWMU 1 SAMPLING - METALS COMPOUNDS (EP-1)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Lead, TCLP (mg/L)	Mercury, Total (mg/kg)	Mercury, TCLP (mg/L)	Nickel, Total (mg/kg)	Selenium, Total (mg/kg)	Silver, Total (mg/kg)	Vanadium, Total (mg/kg)	Zinc, Total (mg/kg)
SWMU 1-1	01/15/20	ND(5)	**5.6** [d]	ND(0.02)	15	ND(4.8)	ND(0.48)	10	680
SWMU 1-1 (0.5-3 ft)	01/15/20	ND(5)	**5.7** [d]	ND(0.02)	20	ND(5.1)	ND(0.51)	8.9	1800
SWMU 1-1 (5 ft)	01/15/20	ND(5)	0.011	ND(0.02)	7.8	ND(4.9)	ND(0.49)	18	15
SWMU 1-2 Dup	01/15/20	ND(5)	ND(0.035)	ND(0.02)	15	ND(5)	ND(0.5)	13	840
SWMU 1-2	01/15/20	ND(5)	ND(0.036)	ND(0.02)	11	ND(5)	ND(0.5)	12	340
SWMU 1-2 (2-2.5 ft)	01/15/20	ND(5)	**6.2** [d]	ND(0.02)	21	ND(5)	ND(0.5)	7.7	1600
SWMU 1-2 (3-3.5 ft)	01/15/20	ND(5)	0.037	ND(0.02)	11	ND(4.9)	ND(0.49)	21	46
SWMU 1-3 (0-0.5 ft)	01/14/20	ND(5)	**5.9** [d]	ND(0.02)	14	3.3	ND(0.5)	15	560
SWMU 1-3 (0.5-3 ft)	01/14/20	ND(5)	ND(0.034)	ND(0.02)	14	ND(4.8)	ND(0.48)	9.3	1600
SWMU 1-3 (3 ft)	01/14/20	ND(5)	0.54	ND(0.02)	18	ND(5)	ND(0.5)	33	140
SWMU 1-4	01/14/20	ND(5)	**6.5** [d]	ND(0.02)	12	7.6	ND(0.5)	11	480
SWMU 1-4 (3 ft)	01/14/20	ND(5)	ND(0.034)	ND(0.02)	19	ND(4.9)	ND(0.49)	7.1	1600
SWMU 1-4 (3-3.5 ft)	01/14/20	ND(5)	0.028	ND(0.02)	11	ND(13)	ND(1.3)	27	30
SWMU 1-11 (berm) (1.5 ft)	01/13/20	ND(5)	0.12	ND(0.02)	7.4	ND(13)	0.88	19	37
SWMU 1-11 (berm) (2.5 ft)	01/13/20	ND(5)	0.21	ND(0.02)	6.7	ND(13)	0.24	34	68
SWMU 1-11 (berm) (5 ft)	01/13/20	ND(5)	0.014	ND(0.02)	5.4	ND(13)	ND(1.3)	16	15
SWMU 1-11 (berm) (7.5 ft)	01/13/20	ND(5)	0.54	ND(0.02)	11	ND(5)	ND(0.5)	26	83
SWMU 1-11 (toe)	01/15/20	0.01	**9.6** [d]	ND(0.02)	68	7.3	ND(0.51)	27	7600
SWMU 1-11 (toe) (2.5 ft)	01/15/20	ND(5)	0.19	ND(0.02)	11	ND(5)	ND(0.5)	22	210
SWMU 1-12 (berm) (1.5 ft)	01/13/20	ND(5)	0.022	ND(0.02)	6.6	3.2	0.78	17	20
SWMU 1-12 (berm) (2.5 ft)	01/13/20	ND(5)	0.0063	ND(0.02)	9	ND(5)	ND(0.5)	18	16
SWMU 1-12 (berm) (5 ft)	01/13/20	ND(5)	0.031	ND(0.02)	6.5	ND(5)	ND(0.5)	17	18
SWMU 1-12 (berm) (7.5 ft)	01/13/20	ND(5)	0.26	ND(0.02)	13	ND(5)	ND(0.5)	25	76
SWMU 1-12 (toe)	01/15/20	ND(5)	**8.7** [d]	ND(0.02)	18	9	ND(0.52)	16	1100
SWMU 1-12 (toe) (2.5 ft)	01/15/20	ND(5)	0.031	ND(0.02)	11	ND(5)	ND(0.5)	22	19
SWMU 1-12 (toe) (3 ft)	01/15/20	ND(5)	0.013	ND(0.02)	12	ND(4.9)	ND(0.49)	28	22
SWMU 1-13 (berm) (5 ft) Dup	01/13/20	ND(5)	0.0046	ND(0.02)	6.7	ND(5.1)	ND(0.51)	20	11
SWMU 1-13 (berm) (1.5 ft)	01/13/20	ND(5)	0.031	ND(0.02)	7.5	ND(4.9)	ND(0.49)	20	15
SWMU 1-13 (berm) (2.5 ft)	01/13/20	ND(5)	0.012	0.0015	7.5	ND(13)	ND(1.3)	17	15
SWMU 1-13 (berm) (5 ft)	01/13/20	ND(5)	0.0044	ND(0.02)	8.8	ND(13)	ND(1.3)	23	14
SWMU 1-13 (berm) (7.5 ft)	01/13/20	ND(5)	0.043	0.0013	8.7	ND(5)	ND(0.5)	23	20
SWMU 1-13 (berm) (9 ft)	01/13/20	ND(5)	ND(0.033)	0.0014	5.7	ND(5)	ND(0.5)	17	11
SWMU 1-13 (toe) Dup	01/14/20	ND(5)	0.081	ND(0.02)	7.6	ND(5)	ND(0.5)	18	130
SWMU 1-13 (toe) (3 ft)	01/14/20	ND(5)	0.0043	ND(0.02)	11	ND(5.1)	ND(0.51)	18	22
SWMU 1-13 (toe)	01/14/20	ND(5)	0.74	ND(0.02)	11	ND(4.9)	ND(0.49)	17	350
[a] NMED Industrial SSL		NA	NA	NA	25,680	6,489	6,489	6,525	389,300
[b] NMED Residential SSL		NA	NA	NA	595,000	391	391	394	23,500
[c] CFR TCLP		5	NA	0.2	NA	NA	NA	NA	NA
[d] USEPA RSL Industrial Soil HQ 0.1		NA	4.6	NA	2,200	580	580	580	35,000

Notes:
NMED SSL's - New Mexico Environmental Department Industrial Soil Screening Levels, June 2019
TCLP SL - Toxicity Characteristic Levels from 40 CFR 261.24.
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
EP - Evaporation Pond
TCLP - toxicity characteristic leaching procedure
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Benzene was analyzed for TCLP if the initial sample was detected above 0.5 ug/kg.
Samples taken in Evaporation Pond 1.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.

ATTACHMENT B - TABLE 3C. SWMU 1 SAMPLING - METALS COMPOUNDS (EP-1)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Antimony, Total (mg/kg)	Arsenic, Total (mg/kg)	Barium, Total (mg/kg)	Beryllium, Total (mg/kg)	Cadmium, Total (mg/kg)	Chromium, Total (mg/kg)	Cobalt, Total (mg/kg)	Lead, Total (mg/kg)
SWMU 1-14 (berm) (5 ft) Dup	01/14/20	ND(5.1)	ND(5.1)	280	1.2	ND(0.2)	13	6	3.3
SWMU 1-14 (berm) (1.5 ft)	01/14/20	ND(5.1)	ND(5.1)	200	0.95	ND(0.2)	8.9	4.5	3.4
SWMU 1-14 (berm) (2.5 ft)	01/14/20	ND(5)	ND(5)	210	1.2	ND(0.2)	10	5.1	3.7
SWMU 1-14 (berm) (5 ft)	01/14/20	ND(5)	ND(5)	200	1.3	ND(0.2)	12	6.4	3.3
SWMU 1-14 (berm) (7.5 ft)	01/14/20	ND(5)	ND(5)	340	1.1	ND(0.2)	11	4.7	1.6
SWMU 1-14 (toe)	01/14/20	ND(5.1)	**4.1** [d]	490	0.64	ND(0.2)	19	4.1	5
SWMU 1-14 (toe) (2.5 ft)	01/14/20	5.1	**12** [b,d]	470	0.47	ND(0.2)	22	4.4	19
SWMU 1-14 (toe) (3 ft)	01/14/20	ND(5)	ND(12)	200	0.93	ND(0.2)	8.8	4.8	2
[a] NMED Industrial SSL		519.1	35.88	254,700	2,583	1,108	504.6	388.4	800
[b] NMED Residential SSL		31.3	7.07	15,600	64,400	85,900	96.6	17,200	400
[c] CFR TCLP		NA	NA	NA	NA	NA	NA	NA	NA
[d] USEPA RSL Industrial Soil HQ 0.1		47	3	22,000	230	98	NA	35	800

Notes:
NMED SSL's - New Mexico Environmental Department Industrial Soil Screening Levels, June 2019
TCLP SL - Toxicity Characteristic Levels from 40 CFR 261.24.
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
EP - Evaporation Pond
TCLP - toxicity characteristic leaching procedure
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Benzene was analyzed for TCLP if the initial sample was detected above 0.5 ug/kg.
Samples taken in Evaporation Pond 1.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.

ATTACHMENT B - TABLE 3C. SWMU 1 SAMPLING - METALS COMPOUNDS (EP-1)
MARATHON PETROLEUM COMPANY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Lead, TCLP (mg/L)	Mercury, Total (mg/kg)	Mercury, TCLP (mg/L)	Nickel, Total (mg/kg)	Selenium, Total (mg/kg)	Silver, Total (mg/kg)	Vanadium, Total (mg/kg)	Zinc, Total (mg/kg)
SWMU 1-14 (berm) (5 ft) Dup	01/14/20	ND(5)	ND(0.16)	0.0014	11	ND(5.1)	ND(0.51)	20	18
SWMU 1-14 (berm) (1.5 ft)	01/14/20	ND(5)	0.0029	0.0015	8.5	ND(5.1)	ND(0.51)	16	13
SWMU 1-14 (berm) (2.5 ft)	01/14/20	ND(5)	0.0081	ND(0.02)	9.9	ND(5)	ND(0.5)	17	16
SWMU 1-14 (berm) (5 ft)	01/14/20	ND(5)	0.011	0.0015	12	ND(5)	ND(0.5)	21	18
SWMU 1-14 (berm) (7.5 ft)	01/14/20	ND(5)	0.031	ND(0.02)	9.9	ND(5)	ND(0.5)	21	24
SWMU 1-14 (toe)	01/14/20	ND(5)	**5.8** [d]	ND(0.02)	11	4.9	ND(0.51)	19	680
SWMU 1-14 (toe) (2.5 ft)	01/14/20	ND(5)	0.088	ND(0.02)	20	ND(4.9)	ND(0.49)	14	1400
SWMU 1-14 (toe) (3 ft)	01/14/20	ND(5)	0.037	ND(0.02)	8.3	ND(5)	ND(0.5)	16	18
[a] NMED Industrial SSL		NA	NA	NA	25,680	6,489	6,489	6,525	389,300
[b] NMED Residential SSL		NA	NA	NA	595,000	391	391	394	23,500
[c] CFR TCLP		5	NA	0.2	NA	NA	NA	NA	NA
[d] USEPA RSL Industrial Soil HQ 0.1		NA	4.6	NA	2,200	580	580	580	35,000

Notes:
NMED SSL's - New Mexico Environmental Department Industrial Soil Screening Levels, June 2019
TCLP SL - Toxicity Characteristic Levels from 40 CFR 261.24.
USEPA RSL Industrial Soil HQ 0.1 - United States Environmental Protection Agency, Regional Screening Levels, Hazard Quotient 0.1, November 2019
EP - Evaporation Pond
TCLP - toxicity characteristic leaching procedure
ft - feet mg/kg - milligrams per kilogram
NA - Not Applicable ND - Not Detected (Reporting Limit)
SWMU - Solid Waste Management Unit
Dup - Duplicate Sample
(toe) samples composited in the field (berm) samples taken along the berm
Benzene was analyzed for TCLP if the initial sample was detected above 0.5 ug/kg.
Samples taken in Evaporation Pond 1.
Samples without location depths were taken from the surface.
Bolded values exceed the standard.

Attachment C - Laboratory Analytical Reports

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

February 25, 2020

Paul Hildebrandt

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

RE: Gallup SWMUI Sampling Event OrderNo.: 2001623

Dear Paul Hildebrandt:

Hall Environmental Analysis Laboratory received 24 sample(s) on 1/16/2020 for the analyses presented in the following report.

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

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

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

Sincerely,



Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1 1-11 1.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 1:20:00 PM
Lab ID: 2001623-001 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **CLP**	
Diesel Range Organics (DRO)	140	4.4	18		mg/Kg	2	1/21/2020 4:30:05 PM	49861
Motor Oil Range Organics (MRO)	230	92	92		mg/Kg	2	1/21/2020 4:30:05 PM	49861
Surr: DNOP	98.0	0	55.1-146		%Rec	2	1/21/2020 4:30:05 PM	49861
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	1.1	3.5		mg/Kg	1	1/18/2020 4:46:53 AM	49874
Surr: BFB	72.0	0	66.6-105		%Rec	1	1/18/2020 4:46:53 AM	49874
EPA METHOD 7471: MERCURY							Analyst: **rde**	
Mercury	0.12	0.0019	0.035	H	mg/Kg	1	2/24/2020 3:55:34 PM	50503
MERCURY, TCLP							Analyst: **pmf**	
Mercury	ND	0.00075	0.020		mg/L	1	1/20/2020 7:21:14 PM	49923
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.9	13		mg/Kg	5	1/25/2020 11:44:16 AM	50038
Arsenic	ND	7.2	13		mg/Kg	5	1/25/2020 11:44:16 AM	50038
Barium	460	0.12	0.51		mg/Kg	5	1/25/2020 11:44:16 AM	50038
Beryllium	0.66	0.047	0.76	J	mg/Kg	5	1/25/2020 11:44:16 AM	50038
Cadmium	ND	0.12	0.51		mg/Kg	5	1/25/2020 11:44:16 AM	50038
Chromium	32	0.40	1.5		mg/Kg	5	1/25/2020 11:44:16 AM	50038
Cobalt	3.6	0.54	1.5		mg/Kg	5	1/25/2020 11:44:16 AM	50038
Lead	2.7	1.2	1.3		mg/Kg	5	1/25/2020 11:44:16 AM	50038
Nickel	7.4	0.76	2.5		mg/Kg	5	1/25/2020 11:44:16 AM	50038
Selenium	ND	6.4	13		mg/Kg	5	1/25/2020 11:44:16 AM	50038
Silver	0.88	0.16	1.3	J	mg/Kg	5	1/25/2020 11:44:16 AM	50038
Vanadium	19	0.34	13		mg/Kg	5	1/25/2020 11:44:16 AM	50038
Zinc	37	2.0	13		mg/Kg	5	1/25/2020 11:44:16 AM	50038
EPA METHOD 6010B: TCLP METALS							Analyst: **rde**	
Lead	ND	0.0085	5.0		mg/L	1	1/20/2020 12:11:58 PM	49897
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.75	2.0	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
Acenaphthylene	ND	0.88	2.0	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
Aniline	ND	0.68	2.0	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
Anthracene	ND	0.77	2.0	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
Azobenzene	ND	1.0	2.0	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
Benz(a)anthracene	ND	0.68	2.0	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
Benzo(a)pyrene	ND	1.1	2.0	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
Benzo(b)fluoranthene	ND	1.1	2.0	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
Benzo(g,h,i)perylene	ND	1.0	2.0	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868

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

Qualifiers:

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

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1 1-11 1.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 1:20:00 PM
Lab ID: 2001623-001 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Benzo(k)fluoranthene	ND	0.59	2.0	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
Benzoic acid	ND	1.4	5.0	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
Benzyl alcohol	ND	0.82	2.0	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
Bis(2-chloroethoxy)methane	ND	0.82	2.0	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
Bis(2-chloroethyl)ether	ND	1.2	2.0	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
Bis(2-chloroisopropyl)ether	ND	0.85	2.0	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
Bis(2-ethylhexyl)phthalate	ND	2.2	5.0	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
4-Bromophenyl phenyl ether	ND	1.2	2.0	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
Butyl benzyl phthalate	ND	0.67	2.0	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
Carbazole	ND	0.79	2.0	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
4-Chloro-3-methylphenol	ND	0.78	5.0	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
4-Chloroaniline	ND	0.76	5.0	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
2-Chloronaphthalene	ND	0.83	2.5	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
2-Chlorophenol	ND	1.1	2.0	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
4-Chlorophenyl phenyl ether	ND	0.83	2.0	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
Chrysene	ND	0.78	2.0	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
Di-n-butyl phthalate	ND	3.0	4.0	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
Di-n-octyl phthalate	ND	0.66	4.0	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
Dibenz(a,h)anthracene	ND	1.1	2.0	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
Dibenzofuran	ND	0.99	2.0	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
1,2-Dichlorobenzene	ND	0.78	2.0	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
1,3-Dichlorobenzene	ND	0.66	2.0	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
1,4-Dichlorobenzene	ND	0.82	2.0	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
3,3´-Dichlorobenzidine	ND	0.85	2.5	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
Diethyl phthalate	ND	3.0	5.0	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
Dimethyl phthalate	ND	0.81	2.0	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
2,4-Dichlorophenol	ND	0.84	4.0	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
2,4-Dimethylphenol	ND	0.82	3.0	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
4,6-Dinitro-2-methylphenol	ND	0.73	4.0	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
2,4-Dinitrophenol	ND	0.58	5.0	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
2,4-Dinitrotoluene	ND	1.0	5.0	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
2,6-Dinitrotoluene	ND	1.2	5.0	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
Fluoranthene	ND	0.76	2.0	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
Fluorene	ND	0.78	2.0	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
Hexachlorobenzene	ND	0.78	2.0	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
Hexachlorobutadiene	ND	0.87	2.0	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
Hexachlorocyclopentadiene	ND	0.95	2.0	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
Hexachloroethane	ND	0.81	2.0	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
Indeno(1,2,3-cd)pyrene	ND	1.2	2.0	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868

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

Qualifiers:

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

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** SWMU1 1-11 1.5'
Project: Gallup SWMUI Sampling Event **Collection Date:** 1/13/2020 1:20:00 PM
Lab ID: 2001623-001 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Isophorone	ND	0.86	4.0	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
1-Methylnaphthalene	ND	0.92	2.0	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
2-Methylnaphthalene	ND	0.81	2.0	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
2-Methylphenol	ND	0.84	4.0	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
3+4-Methylphenol	ND	0.72	2.0	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
N-Nitrosodi-n-propylamine	ND	1.0	2.0	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
N-Nitrosodiphenylamine	ND	1.0	2.0	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
Naphthalene	ND	0.81	2.0	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
2-Nitroaniline	ND	1.1	2.0	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
3-Nitroaniline	ND	0.97	2.0	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
4-Nitroaniline	ND	1.3	4.0	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
Nitrobenzene	ND	0.85	4.0	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
2-Nitrophenol	ND	0.82	2.0	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
4-Nitrophenol	ND	0.58	2.5	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
Pentachlorophenol	ND	0.89	4.0	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
Phenanthrene	ND	1.0	2.0	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
Phenol	ND	0.84	2.0	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
Pyrene	ND	0.66	2.0	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
Pyridine	ND	1.8	4.0	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
1,2,4-Trichlorobenzene	ND	0.85	2.0	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
2,4,5-Trichlorophenol	ND	0.64	2.0	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
2,4,6-Trichlorophenol	ND	1.0	2.0	D	mg/Kg	1	1/22/2020 8:31:51 PM	49868
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	1	1/22/2020 8:31:51 PM	49868
Surr: Phenol-d5	0		18.5-101	SD	%Rec	1	1/22/2020 8:31:51 PM	49868
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	1	1/22/2020 8:31:51 PM	49868
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	1	1/22/2020 8:31:51 PM	49868
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	1	1/22/2020 8:31:51 PM	49868
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	1	1/22/2020 8:31:51 PM	49868
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.0028	0.017		mg/Kg	1	1/18/2020 12:39:54 AM	49833
Toluene	ND	0.0033	0.035		mg/Kg	1	1/18/2020 12:39:54 AM	49833
Ethylbenzene	ND	0.0020	0.035		mg/Kg	1	1/18/2020 12:39:54 AM	49833
Methyl tert-butyl ether (MTBE)	ND	0.0082	0.035		mg/Kg	1	1/18/2020 12:39:54 AM	49833
1,2,4-Trimethylbenzene	0.0061	0.0032	0.035	J	mg/Kg	1	1/18/2020 12:39:54 AM	49833
1,3,5-Trimethylbenzene	ND	0.0034	0.035		mg/Kg	1	1/18/2020 12:39:54 AM	49833
1,2-Dichloroethane (EDC)	ND	0.0035	0.035		mg/Kg	1	1/18/2020 12:39:54 AM	49833
1,2-Dibromoethane (EDB)	ND	0.0032	0.035		mg/Kg	1	1/18/2020 12:39:54 AM	49833
Naphthalene	ND	0.0070	0.069		mg/Kg	1	1/18/2020 12:39:54 AM	49833
1-Methylnaphthalene	ND	0.020	0.14		mg/Kg	1	1/18/2020 12:39:54 AM	49833

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

Qualifiers:

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

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1 1-11 1.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 1:20:00 PM
Lab ID: 2001623-001 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
2-Methylnaphthalene	ND	0.015	0.14		mg/Kg	1	1/18/2020 12:39:54 AM	49833
Acetone	ND	0.029	0.52		mg/Kg	1	1/18/2020 12:39:54 AM	49833
Bromobenzene	ND	0.0033	0.035		mg/Kg	1	1/18/2020 12:39:54 AM	49833
Bromodichloromethane	ND	0.0032	0.035		mg/Kg	1	1/18/2020 12:39:54 AM	49833
Bromoform	ND	0.0031	0.035		mg/Kg	1	1/18/2020 12:39:54 AM	49833
Bromomethane	ND	0.0084	0.10		mg/Kg	1	1/18/2020 12:39:54 AM	49833
2-Butanone	ND	0.040	0.35		mg/Kg	1	1/18/2020 12:39:54 AM	49833
Carbon disulfide	ND	0.011	0.35		mg/Kg	1	1/18/2020 12:39:54 AM	49833
Carbon tetrachloride	ND	0.0033	0.035		mg/Kg	1	1/18/2020 12:39:54 AM	49833
Chlorobenzene	ND	0.0045	0.035		mg/Kg	1	1/18/2020 12:39:54 AM	49833
Chloroethane	ND	0.0051	0.069		mg/Kg	1	1/18/2020 12:39:54 AM	49833
Chloroform	ND	0.0028	0.035		mg/Kg	1	1/18/2020 12:39:54 AM	49833
Chloromethane	ND	0.0033	0.10		mg/Kg	1	1/18/2020 12:39:54 AM	49833
2-Chlorotoluene	ND	0.0030	0.035		mg/Kg	1	1/18/2020 12:39:54 AM	49833
4-Chlorotoluene	ND	0.0028	0.035		mg/Kg	1	1/18/2020 12:39:54 AM	49833
cis-1,2-DCE	ND	0.0048	0.035		mg/Kg	1	1/18/2020 12:39:54 AM	49833
cis-1,3-Dichloropropene	ND	0.0029	0.035		mg/Kg	1	1/18/2020 12:39:54 AM	49833
1,2-Dibromo-3-chloropropane	ND	0.0036	0.069		mg/Kg	1	1/18/2020 12:39:54 AM	49833
Dibromochloromethane	ND	0.0025	0.035		mg/Kg	1	1/18/2020 12:39:54 AM	49833
Dibromomethane	ND	0.0037	0.035		mg/Kg	1	1/18/2020 12:39:54 AM	49833
1,2-Dichlorobenzene	ND	0.0028	0.035		mg/Kg	1	1/18/2020 12:39:54 AM	49833
1,3-Dichlorobenzene	ND	0.0030	0.035		mg/Kg	1	1/18/2020 12:39:54 AM	49833
1,4-Dichlorobenzene	ND	0.0029	0.035		mg/Kg	1	1/18/2020 12:39:54 AM	49833
Dichlorodifluoromethane	ND	0.0081	0.035		mg/Kg	1	1/18/2020 12:39:54 AM	49833
1,1-Dichloroethane	ND	0.0022	0.035		mg/Kg	1	1/18/2020 12:39:54 AM	49833
1,1-Dichloroethene	ND	0.014	0.035		mg/Kg	1	1/18/2020 12:39:54 AM	49833
1,2-Dichloropropane	ND	0.0025	0.035		mg/Kg	1	1/18/2020 12:39:54 AM	49833
1,3-Dichloropropane	ND	0.0038	0.035		mg/Kg	1	1/18/2020 12:39:54 AM	49833
2,2-Dichloropropane	ND	0.011	0.069		mg/Kg	1	1/18/2020 12:39:54 AM	49833
1,1-Dichloropropene	ND	0.0032	0.069		mg/Kg	1	1/18/2020 12:39:54 AM	49833
Hexachlorobutadiene	ND	0.0035	0.069		mg/Kg	1	1/18/2020 12:39:54 AM	49833
2-Hexanone	ND	0.0058	0.35		mg/Kg	1	1/18/2020 12:39:54 AM	49833
Isopropylbenzene	ND	0.0025	0.035		mg/Kg	1	1/18/2020 12:39:54 AM	49833
4-Isopropyltoluene	ND	0.0029	0.035		mg/Kg	1	1/18/2020 12:39:54 AM	49833
4-Methyl-2-pentanone	0.022	0.0066	0.35	J	mg/Kg	1	1/18/2020 12:39:54 AM	49833
Methylene chloride	0.021	0.0061	0.10	J	mg/Kg	1	1/18/2020 12:39:54 AM	49833
n-Butylbenzene	ND	0.0032	0.10		mg/Kg	1	1/18/2020 12:39:54 AM	49833
n-Propylbenzene	ND	0.0028	0.035		mg/Kg	1	1/18/2020 12:39:54 AM	49833
sec-Butylbenzene	ND	0.0039	0.035		mg/Kg	1	1/18/2020 12:39:54 AM	49833

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Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1 1-11 1.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 1:20:00 PM
Lab ID: 2001623-001 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Styrene	ND	0.0027	0.035		mg/Kg	1	1/18/2020 12:39:54 AM	49833
tert-Butylbenzene	ND	0.0033	0.035		mg/Kg	1	1/18/2020 12:39:54 AM	49833
1,1,1,2-Tetrachloroethane	ND	0.0023	0.035		mg/Kg	1	1/18/2020 12:39:54 AM	49833
1,1,2,2-Tetrachloroethane	ND	0.0035	0.035		mg/Kg	1	1/18/2020 12:39:54 AM	49833
Tetrachloroethene (PCE)	ND	0.0028	0.035		mg/Kg	1	1/18/2020 12:39:54 AM	49833
trans-1,2-DCE	ND	0.0032	0.035		mg/Kg	1	1/18/2020 12:39:54 AM	49833
trans-1,3-Dichloropropene	ND	0.0037	0.035		mg/Kg	1	1/18/2020 12:39:54 AM	49833
1,2,3-Trichlorobenzene	ND	0.0031	0.069		mg/Kg	1	1/18/2020 12:39:54 AM	49833
1,2,4-Trichlorobenzene	ND	0.0035	0.035		mg/Kg	1	1/18/2020 12:39:54 AM	49833
1,1,1-Trichloroethane	ND	0.0031	0.035		mg/Kg	1	1/18/2020 12:39:54 AM	49833
1,1,2-Trichloroethane	ND	0.0025	0.035		mg/Kg	1	1/18/2020 12:39:54 AM	49833
Trichloroethene (TCE)	ND	0.0040	0.035		mg/Kg	1	1/18/2020 12:39:54 AM	49833
Trichlorofluoromethane	ND	0.012	0.035		mg/Kg	1	1/18/2020 12:39:54 AM	49833
1,2,3-Trichloropropane	ND	0.0056	0.069		mg/Kg	1	1/18/2020 12:39:54 AM	49833
Vinyl chloride	ND	0.0023	0.035		mg/Kg	1	1/18/2020 12:39:54 AM	49833
Xylenes, Total	ND	0.0088	0.069		mg/Kg	1	1/18/2020 12:39:54 AM	49833
Surr: Dibromofluoromethane	105		70-130		%Rec	1	1/18/2020 12:39:54 AM	49833
Surr: 1,2-Dichloroethane-d4	91.3		70-130		%Rec	1	1/18/2020 12:39:54 AM	49833
Surr: Toluene-d8	102		70-130		%Rec	1	1/18/2020 12:39:54 AM	49833
Surr: 4-Bromofluorobenzene	102		70-130		%Rec	1	1/18/2020 12:39:54 AM	49833
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/20/2020 1:09:00 PM	R65914
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	8.16				pH Units	1	1/21/2020 10:28:00 AM	R65942

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J	Analyte detected below quantitation limits
P	Sample pH Not In Range
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Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** SWMU1- 1-11 5'
Project: Gallup SWMUI Sampling Event **Collection Date:** 1/13/2020 1:35:00 PM
Lab ID: 2001623-002 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	24	2.4	9.9		mg/Kg	1	1/21/2020 11:19:27 PM	49861
Motor Oil Range Organics (MRO)	ND	50	50		mg/Kg	1	1/21/2020 11:19:27 PM	49861
Surr: DNOP	98.9	0	55.1-146		%Rec	1	1/21/2020 11:19:27 PM	49861
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	1.1	3.5		mg/Kg	1	1/18/2020 5:09:49 AM	49874
Surr: BFB	76.6	0	66.6-105		%Rec	1	1/18/2020 5:09:49 AM	49874
EPA METHOD 7471: MERCURY							Analyst: **rde**	
Mercury	0.014	0.0018	0.032	JH	mg/Kg	1	2/24/2020 4:01:34 PM	50503
MERCURY, TCLP							Analyst: **pmf**	
Mercury	ND	0.00075	0.020		mg/L	1	1/20/2020 7:29:45 PM	49923
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.9	13		mg/Kg	5	1/25/2020 11:49:58 AM	50038
Arsenic	ND	7.3	13		mg/Kg	5	1/25/2020 11:49:58 AM	50038
Barium	690	0.12	0.51		mg/Kg	5	1/25/2020 11:49:58 AM	50038
Beryllium	0.59	0.047	0.77	J	mg/Kg	5	1/25/2020 11:49:58 AM	50038
Cadmium	ND	0.12	0.51		mg/Kg	5	1/25/2020 11:49:58 AM	50038
Chromium	5.8	0.41	1.5		mg/Kg	5	1/25/2020 11:49:58 AM	50038
Cobalt	2.8	0.54	1.5		mg/Kg	5	1/25/2020 11:49:58 AM	50038
Lead	4.2	1.2	1.3		mg/Kg	5	1/25/2020 11:49:58 AM	50038
Nickel	5.4	0.77	2.6		mg/Kg	5	1/25/2020 11:49:58 AM	50038
Selenium	ND	6.4	13		mg/Kg	5	1/25/2020 11:49:58 AM	50038
Silver	ND	0.16	1.3		mg/Kg	5	1/25/2020 11:49:58 AM	50038
Vanadium	16	0.34	13		mg/Kg	5	1/25/2020 11:49:58 AM	50038
Zinc	15	2.0	13		mg/Kg	5	1/25/2020 11:49:58 AM	50038
EPA METHOD 6010B: TCLP METALS							Analyst: **rde**	
Lead	ND	0.0085	5.0		mg/L	1	1/20/2020 12:13:31 PM	49897
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.15	0.39	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
Acenaphthylene	ND	0.17	0.39	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
Aniline	ND	0.13	0.39	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
Anthracene	ND	0.15	0.39	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
Azobenzene	ND	0.20	0.39	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
Benz(a)anthracene	ND	0.13	0.39	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
Benzo(a)pyrene	ND	0.21	0.39	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
Benzo(b)fluoranthene	ND	0.22	0.39	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
Benzo(g,h,i)perylene	ND	0.20	0.39	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868

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Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1- 1-11 5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 1:35:00 PM
Lab ID: 2001623-002 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Benzo(k)fluoranthene	ND	0.12	0.39	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
Benzoic acid	ND	0.27	0.98	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
Benzyl alcohol	ND	0.16	0.39	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
Bis(2-chloroethoxy)methane	ND	0.16	0.39	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
Bis(2-chloroethyl)ether	ND	0.23	0.39	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
Bis(2-chloroisopropyl)ether	ND	0.17	0.39	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
Bis(2-ethylhexyl)phthalate	ND	0.44	0.98	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
4-Bromophenyl phenyl ether	ND	0.23	0.39	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
Butyl benzyl phthalate	ND	0.13	0.39	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
Carbazole	ND	0.16	0.39	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
4-Chloro-3-methylphenol	ND	0.15	0.98	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
4-Chloroaniline	ND	0.15	0.98	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
2-Chloronaphthalene	ND	0.16	0.49	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
2-Chlorophenol	ND	0.22	0.39	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
4-Chlorophenyl phenyl ether	ND	0.16	0.39	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
Chrysene	ND	0.15	0.39	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
Di-n-butyl phthalate	ND	0.58	0.78	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
Di-n-octyl phthalate	ND	0.13	0.78	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
Dibenz(a,h)anthracene	ND	0.22	0.39	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
Dibenzofuran	ND	0.20	0.39	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
1,2-Dichlorobenzene	ND	0.15	0.39	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
1,3-Dichlorobenzene	ND	0.13	0.39	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
1,4-Dichlorobenzene	ND	0.16	0.39	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
3,3´-Dichlorobenzidine	ND	0.17	0.49	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
Diethyl phthalate	ND	0.60	0.98	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
Dimethyl phthalate	ND	0.16	0.39	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
2,4-Dichlorophenol	ND	0.16	0.78	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
2,4-Dimethylphenol	ND	0.16	0.59	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
4,6-Dinitro-2-methylphenol	ND	0.14	0.78	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
2,4-Dinitrophenol	ND	0.11	0.98	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
2,4-Dinitrotoluene	ND	0.20	0.98	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
2,6-Dinitrotoluene	ND	0.23	0.98	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
Fluoranthene	ND	0.15	0.39	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
Fluorene	ND	0.15	0.39	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
Hexachlorobenzene	ND	0.15	0.39	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
Hexachlorobutadiene	ND	0.17	0.39	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
Hexachlorocyclopentadiene	ND	0.19	0.39	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
Hexachloroethane	ND	0.16	0.39	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
Indeno(1,2,3-cd)pyrene	ND	0.24	0.39	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868

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Qualifiers:

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D	Sample Diluted Due to Matrix
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ND	Not Detected at the Reporting Limit
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S	% Recovery outside of range due to dilution or matrix
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Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** SWMU1- 1-11 5'
Project: Gallup SWMUI Sampling Event **Collection Date:** 1/13/2020 1:35:00 PM
Lab ID: 2001623-002 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Isophorone	ND	0.17	0.78	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
1-Methylnaphthalene	ND	0.18	0.39	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
2-Methylnaphthalene	ND	0.16	0.39	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
2-Methylphenol	ND	0.16	0.78	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
3+4-Methylphenol	ND	0.14	0.39	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
N-Nitrosodi-n-propylamine	ND	0.20	0.39	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
N-Nitrosodiphenylamine	ND	0.20	0.39	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
Naphthalene	ND	0.16	0.39	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
2-Nitroaniline	ND	0.22	0.39	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
3-Nitroaniline	ND	0.19	0.39	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
4-Nitroaniline	ND	0.26	0.78	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
Nitrobenzene	ND	0.17	0.78	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
2-Nitrophenol	ND	0.16	0.39	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
4-Nitrophenol	ND	0.11	0.49	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
Pentachlorophenol	ND	0.17	0.78	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
Phenanthrene	ND	0.20	0.39	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
Phenol	ND	0.17	0.39	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
Pyrene	ND	0.13	0.39	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
Pyridine	ND	0.36	0.78	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
1,2,4-Trichlorobenzene	ND	0.17	0.39	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
2,4,5-Trichlorophenol	ND	0.13	0.39	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
2,4,6-Trichlorophenol	ND	0.20	0.39	D	mg/Kg	1	1/22/2020 9:00:24 PM	49868
Surr: 2-Fluorophenol	52.1		26.7-85.9	D	%Rec	1	1/22/2020 9:00:24 PM	49868
Surr: Phenol-d5	69.2		18.5-101	D	%Rec	1	1/22/2020 9:00:24 PM	49868
Surr: 2,4,6-Tribromophenol	68.1		35.8-85.6	D	%Rec	1	1/22/2020 9:00:24 PM	49868
Surr: Nitrobenzene-d5	72.4		40.8-95.2	D	%Rec	1	1/22/2020 9:00:24 PM	49868
Surr: 2-Fluorobiphenyl	69.7		34.7-85.2	D	%Rec	1	1/22/2020 9:00:24 PM	49868
Surr: 4-Terphenyl-d14	80.1		37.4-91.3	D	%Rec	1	1/22/2020 9:00:24 PM	49868
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.0029	0.018		mg/Kg	1	1/18/2020 1:08:42 AM	49833
Toluene	ND	0.0034	0.035		mg/Kg	1	1/18/2020 1:08:42 AM	49833
Ethylbenzene	ND	0.0021	0.035		mg/Kg	1	1/18/2020 1:08:42 AM	49833
Methyl tert-butyl ether (MTBE)	ND	0.0084	0.035		mg/Kg	1	1/18/2020 1:08:42 AM	49833
1,2,4-Trimethylbenzene	ND	0.0032	0.035		mg/Kg	1	1/18/2020 1:08:42 AM	49833
1,3,5-Trimethylbenzene	ND	0.0034	0.035		mg/Kg	1	1/18/2020 1:08:42 AM	49833
1,2-Dichloroethane (EDC)	ND	0.0036	0.035		mg/Kg	1	1/18/2020 1:08:42 AM	49833
1,2-Dibromoethane (EDB)	ND	0.0032	0.035		mg/Kg	1	1/18/2020 1:08:42 AM	49833
Naphthalene	ND	0.0071	0.071		mg/Kg	1	1/18/2020 1:08:42 AM	49833
1-Methylnaphthalene	ND	0.020	0.14		mg/Kg	1	1/18/2020 1:08:42 AM	49833

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

Qualifiers:

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

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1- 1-11 5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 1:35:00 PM
Lab ID: 2001623-002 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
2-Methylnaphthalene	ND	0.015	0.14		mg/Kg	1	1/18/2020 1:08:42 AM	49833
Acetone	ND	0.029	0.53		mg/Kg	1	1/18/2020 1:08:42 AM	49833
Bromobenzene	ND	0.0034	0.035		mg/Kg	1	1/18/2020 1:08:42 AM	49833
Bromodichloromethane	ND	0.0032	0.035		mg/Kg	1	1/18/2020 1:08:42 AM	49833
Bromoform	ND	0.0032	0.035		mg/Kg	1	1/18/2020 1:08:42 AM	49833
Bromomethane	ND	0.0085	0.11		mg/Kg	1	1/18/2020 1:08:42 AM	49833
2-Butanone	ND	0.041	0.35		mg/Kg	1	1/18/2020 1:08:42 AM	49833
Carbon disulfide	ND	0.012	0.35		mg/Kg	1	1/18/2020 1:08:42 AM	49833
Carbon tetrachloride	ND	0.0034	0.035		mg/Kg	1	1/18/2020 1:08:42 AM	49833
Chlorobenzene	ND	0.0045	0.035		mg/Kg	1	1/18/2020 1:08:42 AM	49833
Chloroethane	ND	0.0052	0.071		mg/Kg	1	1/18/2020 1:08:42 AM	49833
Chloroform	ND	0.0028	0.035		mg/Kg	1	1/18/2020 1:08:42 AM	49833
Chloromethane	ND	0.0034	0.11		mg/Kg	1	1/18/2020 1:08:42 AM	49833
2-Chlorotoluene	ND	0.0031	0.035		mg/Kg	1	1/18/2020 1:08:42 AM	49833
4-Chlorotoluene	ND	0.0029	0.035		mg/Kg	1	1/18/2020 1:08:42 AM	49833
cis-1,2-DCE	ND	0.0048	0.035		mg/Kg	1	1/18/2020 1:08:42 AM	49833
cis-1,3-Dichloropropene	ND	0.0030	0.035		mg/Kg	1	1/18/2020 1:08:42 AM	49833
1,2-Dibromo-3-chloropropane	ND	0.0036	0.071		mg/Kg	1	1/18/2020 1:08:42 AM	49833
Dibromochloromethane	ND	0.0025	0.035		mg/Kg	1	1/18/2020 1:08:42 AM	49833
Dibromomethane	ND	0.0038	0.035		mg/Kg	1	1/18/2020 1:08:42 AM	49833
1,2-Dichlorobenzene	ND	0.0029	0.035		mg/Kg	1	1/18/2020 1:08:42 AM	49833
1,3-Dichlorobenzene	ND	0.0031	0.035		mg/Kg	1	1/18/2020 1:08:42 AM	49833
1,4-Dichlorobenzene	ND	0.0030	0.035		mg/Kg	1	1/18/2020 1:08:42 AM	49833
Dichlorodifluoromethane	ND	0.0082	0.035		mg/Kg	1	1/18/2020 1:08:42 AM	49833
1,1-Dichloroethane	ND	0.0023	0.035		mg/Kg	1	1/18/2020 1:08:42 AM	49833
1,1-Dichloroethene	ND	0.014	0.035		mg/Kg	1	1/18/2020 1:08:42 AM	49833
1,2-Dichloropropane	ND	0.0026	0.035		mg/Kg	1	1/18/2020 1:08:42 AM	49833
1,3-Dichloropropane	ND	0.0038	0.035		mg/Kg	1	1/18/2020 1:08:42 AM	49833
2,2-Dichloropropane	ND	0.012	0.071		mg/Kg	1	1/18/2020 1:08:42 AM	49833
1,1-Dichloropropene	ND	0.0032	0.071		mg/Kg	1	1/18/2020 1:08:42 AM	49833
Hexachlorobutadiene	ND	0.0036	0.071		mg/Kg	1	1/18/2020 1:08:42 AM	49833
2-Hexanone	ND	0.0059	0.35		mg/Kg	1	1/18/2020 1:08:42 AM	49833
Isopropylbenzene	ND	0.0026	0.035		mg/Kg	1	1/18/2020 1:08:42 AM	49833
4-Isopropyltoluene	ND	0.0029	0.035		mg/Kg	1	1/18/2020 1:08:42 AM	49833
4-Methyl-2-pentanone	0.021	0.0067	0.35	J	mg/Kg	1	1/18/2020 1:08:42 AM	49833
Methylene chloride	0.021	0.0063	0.11	J	mg/Kg	1	1/18/2020 1:08:42 AM	49833
n-Butylbenzene	ND	0.0033	0.11		mg/Kg	1	1/18/2020 1:08:42 AM	49833
n-Propylbenzene	ND	0.0028	0.035		mg/Kg	1	1/18/2020 1:08:42 AM	49833
sec-Butylbenzene	ND	0.0040	0.035		mg/Kg	1	1/18/2020 1:08:42 AM	49833

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

Qualifiers:

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

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1- 1-11 5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 1:35:00 PM
Lab ID: 2001623-002 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Styrene	ND	0.0028	0.035		mg/Kg	1	1/18/2020 1:08:42 AM	49833
tert-Butylbenzene	ND	0.0033	0.035		mg/Kg	1	1/18/2020 1:08:42 AM	49833
1,1,1,2-Tetrachloroethane	ND	0.0024	0.035		mg/Kg	1	1/18/2020 1:08:42 AM	49833
1,1,2,2-Tetrachloroethane	ND	0.0036	0.035		mg/Kg	1	1/18/2020 1:08:42 AM	49833
Tetrachloroethene (PCE)	ND	0.0028	0.035		mg/Kg	1	1/18/2020 1:08:42 AM	49833
trans-1,2-DCE	ND	0.0032	0.035		mg/Kg	1	1/18/2020 1:08:42 AM	49833
trans-1,3-Dichloropropene	ND	0.0037	0.035		mg/Kg	1	1/18/2020 1:08:42 AM	49833
1,2,3-Trichlorobenzene	ND	0.0031	0.071		mg/Kg	1	1/18/2020 1:08:42 AM	49833
1,2,4-Trichlorobenzene	ND	0.0036	0.035		mg/Kg	1	1/18/2020 1:08:42 AM	49833
1,1,1-Trichloroethane	ND	0.0032	0.035		mg/Kg	1	1/18/2020 1:08:42 AM	49833
1,1,2-Trichloroethane	ND	0.0025	0.035		mg/Kg	1	1/18/2020 1:08:42 AM	49833
Trichloroethene (TCE)	ND	0.0041	0.035		mg/Kg	1	1/18/2020 1:08:42 AM	49833
Trichlorofluoromethane	ND	0.012	0.035		mg/Kg	1	1/18/2020 1:08:42 AM	49833
1,2,3-Trichloropropane	ND	0.0057	0.071		mg/Kg	1	1/18/2020 1:08:42 AM	49833
Vinyl chloride	ND	0.0023	0.035		mg/Kg	1	1/18/2020 1:08:42 AM	49833
Xylenes, Total	ND	0.0089	0.071		mg/Kg	1	1/18/2020 1:08:42 AM	49833
Surr: Dibromofluoromethane	99.0		70-130		%Rec	1	1/18/2020 1:08:42 AM	49833
Surr: 1,2-Dichloroethane-d4	86.5		70-130		%Rec	1	1/18/2020 1:08:42 AM	49833
Surr: Toluene-d8	107		70-130		%Rec	1	1/18/2020 1:08:42 AM	49833
Surr: 4-Bromofluorobenzene	97.4		70-130		%Rec	1	1/18/2020 1:08:42 AM	49833
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/20/2020 1:09:00 PM	R65914
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	7.96				pH Units	1	1/21/2020 10:28:00 AM	R65942

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Qualifiers:

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ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** SWMU1-11 2.5'
Project: Gallup SWMUI Sampling Event **Collection Date:** 1/13/2020 1:30:00 PM
Lab ID: 2001623-003 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	520	21	89		mg/Kg	10	1/21/2020 11:28:22 PM	49861
Motor Oil Range Organics (MRO)	650	440	440		mg/Kg	10	1/21/2020 11:28:22 PM	49861
Surr: DNOP	0	0	55.1-146	S	%Rec	10	1/21/2020 11:28:22 PM	49861
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	1.0	3.4		mg/Kg	1	1/18/2020 5:32:46 AM	49874
Surr: BFB	71.6	0	66.6-105		%Rec	1	1/18/2020 5:32:46 AM	49874
EPA METHOD 7471: MERCURY							Analyst: **rde**	
Mercury	0.21	0.0017	0.032	H	mg/Kg	1	2/24/2020 4:03:34 PM	50503
MERCURY, TCLP							Analyst: **pmf**	
Mercury	ND	0.00075	0.020		mg/L	1	1/20/2020 7:32:36 PM	49923
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.9	13		mg/Kg	5	1/25/2020 11:51:19 AM	50038
Arsenic	ND	7.3	13		mg/Kg	5	1/25/2020 11:51:19 AM	50038
Barium	700	0.12	0.51		mg/Kg	5	1/25/2020 11:51:19 AM	50038
Beryllium	0.71	0.047	0.77	J	mg/Kg	5	1/25/2020 11:51:19 AM	50038
Cadmium	ND	0.12	0.51		mg/Kg	5	1/25/2020 11:51:19 AM	50038
Chromium	64	0.41	1.5		mg/Kg	5	1/25/2020 11:51:19 AM	50038
Cobalt	4.5	0.54	1.5		mg/Kg	5	1/25/2020 11:51:19 AM	50038
Lead	5.5	1.2	1.3		mg/Kg	5	1/25/2020 11:51:19 AM	50038
Nickel	6.7	0.77	2.6		mg/Kg	5	1/25/2020 11:51:19 AM	50038
Selenium	ND	6.5	13		mg/Kg	5	1/25/2020 11:51:19 AM	50038
Silver	0.24	0.16	1.3	J	mg/Kg	5	1/25/2020 11:51:19 AM	50038
Vanadium	34	0.34	13		mg/Kg	5	1/25/2020 11:51:19 AM	50038
Zinc	68	2.0	13		mg/Kg	5	1/25/2020 11:51:19 AM	50038
EPA METHOD 6010B: TCLP METALS							Analyst: **rde**	
Lead	ND	0.0085	5.0		mg/L	1	1/20/2020 12:15:03 PM	49897
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.73	1.9	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
Acenaphthylene	ND	0.86	1.9	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
Aniline	ND	0.66	1.9	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
Anthracene	ND	0.75	1.9	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
Azobenzene	ND	0.98	1.9	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
Benz(a)anthracene	ND	0.67	1.9	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
Benzo(a)pyrene	ND	1.0	1.9	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
Benzo(b)fluoranthene	ND	1.1	1.9	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
Benzo(g,h,i)perylene	ND	1.0	1.9	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868

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ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
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P	Sample pH Not In Range
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Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** SWMU1-11 2.5'
Project: Gallup SWMUI Sampling Event **Collection Date:** 1/13/2020 1:30:00 PM
Lab ID: 2001623-003 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Benzo(k)fluoranthene	ND	0.58	1.9	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
Benzoic acid	ND	1.3	4.8	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
Benzyl alcohol	ND	0.80	1.9	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
Bis(2-chloroethoxy)methane	ND	0.80	1.9	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
Bis(2-chloroethyl)ether	ND	1.1	1.9	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
Bis(2-chloroisopropyl)ether	ND	0.83	1.9	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
Bis(2-ethylhexyl)phthalate	ND	2.2	4.8	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
4-Bromophenyl phenyl ether	ND	1.1	1.9	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
Butyl benzyl phthalate	ND	0.65	1.9	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
Carbazole	ND	0.77	1.9	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
4-Chloro-3-methylphenol	ND	0.76	4.8	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
4-Chloroaniline	ND	0.74	4.8	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
2-Chloronaphthalene	ND	0.81	2.4	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
2-Chlorophenol	ND	1.1	1.9	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
4-Chlorophenyl phenyl ether	ND	0.81	1.9	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
Chrysene	ND	0.76	1.9	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
Di-n-butyl phthalate	ND	2.9	3.9	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
Di-n-octyl phthalate	ND	0.65	3.9	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
Dibenz(a,h)anthracene	ND	1.1	1.9	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
Dibenzofuran	ND	0.97	1.9	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
1,2-Dichlorobenzene	ND	0.76	1.9	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
1,3-Dichlorobenzene	ND	0.65	1.9	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
1,4-Dichlorobenzene	ND	0.80	1.9	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
3,3´-Dichlorobenzidine	ND	0.83	2.4	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
Diethyl phthalate	ND	3.0	4.8	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
Dimethyl phthalate	ND	0.79	1.9	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
2,4-Dichlorophenol	ND	0.82	3.9	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
2,4-Dimethylphenol	ND	0.80	2.9	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
4,6-Dinitro-2-methylphenol	ND	0.71	3.9	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
2,4-Dinitrophenol	ND	0.56	4.8	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
2,4-Dinitrotoluene	ND	0.99	4.8	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
2,6-Dinitrotoluene	ND	1.2	4.8	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
Fluoranthene	ND	0.74	1.9	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
Fluorene	ND	0.76	1.9	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
Hexachlorobenzene	ND	0.76	1.9	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
Hexachlorobutadiene	ND	0.85	1.9	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
Hexachlorocyclopentadiene	ND	0.93	1.9	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
Hexachloroethane	ND	0.79	1.9	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
Indeno(1,2,3-cd)pyrene	ND	1.2	1.9	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868

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

Qualifiers:

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

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** SWMU1-11 2.5'
Project: Gallup SWMUI Sampling Event **Collection Date:** 1/13/2020 1:30:00 PM
Lab ID: 2001623-003 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Isophorone	ND	0.84	3.9	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
1-Methylnaphthalene	ND	0.90	1.9	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
2-Methylnaphthalene	ND	0.79	1.9	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
2-Methylphenol	ND	0.82	3.9	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
3+4-Methylphenol	ND	0.70	1.9	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
N-Nitrosodi-n-propylamine	ND	0.97	1.9	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
N-Nitrosodiphenylamine	ND	1.0	1.9	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
Naphthalene	ND	0.79	1.9	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
2-Nitroaniline	ND	1.1	1.9	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
3-Nitroaniline	ND	0.95	1.9	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
4-Nitroaniline	ND	1.3	3.9	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
Nitrobenzene	ND	0.83	3.9	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
2-Nitrophenol	ND	0.80	1.9	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
4-Nitrophenol	ND	0.57	2.4	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
Pentachlorophenol	ND	0.87	3.9	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
Phenanthrene	ND	0.99	1.9	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
Phenol	ND	0.82	1.9	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
Pyrene	ND	0.64	1.9	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
Pyridine	ND	1.8	3.9	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
1,2,4-Trichlorobenzene	ND	0.83	1.9	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
2,4,5-Trichlorophenol	ND	0.62	1.9	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
2,4,6-Trichlorophenol	ND	0.97	1.9	D	mg/Kg	1	1/22/2020 9:29:04 PM	49868
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	1	1/22/2020 9:29:04 PM	49868
Surr: Phenol-d5	0		18.5-101	SD	%Rec	1	1/22/2020 9:29:04 PM	49868
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	1	1/22/2020 9:29:04 PM	49868
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	1	1/22/2020 9:29:04 PM	49868
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	1	1/22/2020 9:29:04 PM	49868
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	1	1/22/2020 9:29:04 PM	49868
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.0028	0.017		mg/Kg	1	1/18/2020 1:37:27 AM	49833
Toluene	ND	0.0033	0.034		mg/Kg	1	1/18/2020 1:37:27 AM	49833
Ethylbenzene	ND	0.0020	0.034		mg/Kg	1	1/18/2020 1:37:27 AM	49833
Methyl tert-butyl ether (MTBE)	ND	0.0081	0.034		mg/Kg	1	1/18/2020 1:37:27 AM	49833
1,2,4-Trimethylbenzene	0.0049	0.0031	0.034	J	mg/Kg	1	1/18/2020 1:37:27 AM	49833
1,3,5-Trimethylbenzene	ND	0.0033	0.034		mg/Kg	1	1/18/2020 1:37:27 AM	49833
1,2-Dichloroethane (EDC)	ND	0.0035	0.034		mg/Kg	1	1/18/2020 1:37:27 AM	49833
1,2-Dibromoethane (EDB)	ND	0.0031	0.034		mg/Kg	1	1/18/2020 1:37:27 AM	49833
Naphthalene	ND	0.0069	0.069		mg/Kg	1	1/18/2020 1:37:27 AM	49833
1-Methylnaphthalene	ND	0.020	0.14		mg/Kg	1	1/18/2020 1:37:27 AM	49833

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Qualifiers:

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B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Value above quantitation range
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ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1-11 2.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 1:30:00 PM
Lab ID: 2001623-003 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
2-Methylnaphthalene	ND	0.015	0.14		mg/Kg	1	1/18/2020 1:37:27 AM	49833
Acetone	ND	0.028	0.51		mg/Kg	1	1/18/2020 1:37:27 AM	49833
Bromobenzene	ND	0.0033	0.034		mg/Kg	1	1/18/2020 1:37:27 AM	49833
Bromodichloromethane	ND	0.0031	0.034		mg/Kg	1	1/18/2020 1:37:27 AM	49833
Bromoform	ND	0.0031	0.034		mg/Kg	1	1/18/2020 1:37:27 AM	49833
Bromomethane	ND	0.0083	0.10		mg/Kg	1	1/18/2020 1:37:27 AM	49833
2-Butanone	ND	0.040	0.34		mg/Kg	1	1/18/2020 1:37:27 AM	49833
Carbon disulfide	ND	0.011	0.34		mg/Kg	1	1/18/2020 1:37:27 AM	49833
Carbon tetrachloride	ND	0.0033	0.034		mg/Kg	1	1/18/2020 1:37:27 AM	49833
Chlorobenzene	ND	0.0044	0.034		mg/Kg	1	1/18/2020 1:37:27 AM	49833
Chloroethane	ND	0.0051	0.069		mg/Kg	1	1/18/2020 1:37:27 AM	49833
Chloroform	ND	0.0028	0.034		mg/Kg	1	1/18/2020 1:37:27 AM	49833
Chloromethane	ND	0.0033	0.10		mg/Kg	1	1/18/2020 1:37:27 AM	49833
2-Chlorotoluene	ND	0.0030	0.034		mg/Kg	1	1/18/2020 1:37:27 AM	49833
4-Chlorotoluene	ND	0.0028	0.034		mg/Kg	1	1/18/2020 1:37:27 AM	49833
cis-1,2-DCE	ND	0.0047	0.034		mg/Kg	1	1/18/2020 1:37:27 AM	49833
cis-1,3-Dichloropropene	ND	0.0029	0.034		mg/Kg	1	1/18/2020 1:37:27 AM	49833
1,2-Dibromo-3-chloropropane	ND	0.0035	0.069		mg/Kg	1	1/18/2020 1:37:27 AM	49833
Dibromochloromethane	ND	0.0024	0.034		mg/Kg	1	1/18/2020 1:37:27 AM	49833
Dibromomethane	ND	0.0037	0.034		mg/Kg	1	1/18/2020 1:37:27 AM	49833
1,2-Dichlorobenzene	ND	0.0028	0.034		mg/Kg	1	1/18/2020 1:37:27 AM	49833
1,3-Dichlorobenzene	ND	0.0030	0.034		mg/Kg	1	1/18/2020 1:37:27 AM	49833
1,4-Dichlorobenzene	ND	0.0029	0.034		mg/Kg	1	1/18/2020 1:37:27 AM	49833
Dichlorodifluoromethane	ND	0.0080	0.034		mg/Kg	1	1/18/2020 1:37:27 AM	49833
1,1-Dichloroethane	ND	0.0022	0.034		mg/Kg	1	1/18/2020 1:37:27 AM	49833
1,1-Dichloroethene	ND	0.014	0.034		mg/Kg	1	1/18/2020 1:37:27 AM	49833
1,2-Dichloropropane	ND	0.0025	0.034		mg/Kg	1	1/18/2020 1:37:27 AM	49833
1,3-Dichloropropane	ND	0.0037	0.034		mg/Kg	1	1/18/2020 1:37:27 AM	49833
2,2-Dichloropropane	ND	0.011	0.069		mg/Kg	1	1/18/2020 1:37:27 AM	49833
1,1-Dichloropropene	ND	0.0031	0.069		mg/Kg	1	1/18/2020 1:37:27 AM	49833
Hexachlorobutadiene	ND	0.0035	0.069		mg/Kg	1	1/18/2020 1:37:27 AM	49833
2-Hexanone	ND	0.0057	0.34		mg/Kg	1	1/18/2020 1:37:27 AM	49833
Isopropylbenzene	ND	0.0025	0.034		mg/Kg	1	1/18/2020 1:37:27 AM	49833
4-Isopropyltoluene	ND	0.0028	0.034		mg/Kg	1	1/18/2020 1:37:27 AM	49833
4-Methyl-2-pentanone	ND	0.0065	0.34		mg/Kg	1	1/18/2020 1:37:27 AM	49833
Methylene chloride	0.020	0.0061	0.10	J	mg/Kg	1	1/18/2020 1:37:27 AM	49833
n-Butylbenzene	ND	0.0032	0.10		mg/Kg	1	1/18/2020 1:37:27 AM	49833
n-Propylbenzene	ND	0.0027	0.034		mg/Kg	1	1/18/2020 1:37:27 AM	49833
sec-Butylbenzene	ND	0.0039	0.034		mg/Kg	1	1/18/2020 1:37:27 AM	49833

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E	Value above quantitation range
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ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
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Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1-11 2.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 1:30:00 PM
Lab ID: 2001623-003 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Styrene	ND	0.0027	0.034		mg/Kg	1	1/18/2020 1:37:27 AM	49833
tert-Butylbenzene	ND	0.0032	0.034		mg/Kg	1	1/18/2020 1:37:27 AM	49833
1,1,1,2-Tetrachloroethane	ND	0.0023	0.034		mg/Kg	1	1/18/2020 1:37:27 AM	49833
1,1,2,2-Tetrachloroethane	ND	0.0035	0.034		mg/Kg	1	1/18/2020 1:37:27 AM	49833
Tetrachloroethene (PCE)	ND	0.0027	0.034		mg/Kg	1	1/18/2020 1:37:27 AM	49833
trans-1,2-DCE	ND	0.0031	0.034		mg/Kg	1	1/18/2020 1:37:27 AM	49833
trans-1,3-Dichloropropene	ND	0.0036	0.034		mg/Kg	1	1/18/2020 1:37:27 AM	49833
1,2,3-Trichlorobenzene	ND	0.0030	0.069		mg/Kg	1	1/18/2020 1:37:27 AM	49833
1,2,4-Trichlorobenzene	ND	0.0035	0.034		mg/Kg	1	1/18/2020 1:37:27 AM	49833
1,1,1-Trichloroethane	ND	0.0031	0.034		mg/Kg	1	1/18/2020 1:37:27 AM	49833
1,1,2-Trichloroethane	ND	0.0024	0.034		mg/Kg	1	1/18/2020 1:37:27 AM	49833
Trichloroethene (TCE)	ND	0.0040	0.034		mg/Kg	1	1/18/2020 1:37:27 AM	49833
Trichlorofluoromethane	ND	0.012	0.034		mg/Kg	1	1/18/2020 1:37:27 AM	49833
1,2,3-Trichloropropane	ND	0.0056	0.069		mg/Kg	1	1/18/2020 1:37:27 AM	49833
Vinyl chloride	ND	0.0022	0.034		mg/Kg	1	1/18/2020 1:37:27 AM	49833
Xylenes, Total	ND	0.0086	0.069		mg/Kg	1	1/18/2020 1:37:27 AM	49833
Surr: Dibromofluoromethane	106		70-130		%Rec	1	1/18/2020 1:37:27 AM	49833
Surr: 1,2-Dichloroethane-d4	87.5		70-130		%Rec	1	1/18/2020 1:37:27 AM	49833
Surr: Toluene-d8	107		70-130		%Rec	1	1/18/2020 1:37:27 AM	49833
Surr: 4-Bromofluorobenzene	97.2		70-130		%Rec	1	1/18/2020 1:37:27 AM	49833
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/20/2020 1:09:00 PM	R65914
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	8.11				pH Units	1	1/21/2020 10:28:00 AM	R65942

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Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1-12 2.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 2:03:00 PM
Lab ID: 2001623-004 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **CLP**	
Diesel Range Organics (DRO)	32	4.3	18		mg/Kg	2	1/21/2020 5:41:12 PM	49861
Motor Oil Range Organics (MRO)	110	89	89		mg/Kg	2	1/21/2020 5:41:12 PM	49861
Surr: DNOP	102	0	55.1-146		%Rec	2	1/21/2020 5:41:12 PM	49861
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.95	3.1		mg/Kg	1	1/18/2020 5:55:45 AM	49874
Surr: BFB	73.1	0	66.6-105		%Rec	1	1/18/2020 5:55:45 AM	49874
EPA METHOD 7471: MERCURY							Analyst: **rde**	
Mercury	0.022	0.0018	0.033	JH	mg/Kg	1	2/24/2020 4:05:36 PM	50503
MERCURY, TCLP							Analyst: **pmf**	
Mercury	ND	0.00075	0.020		mg/L	1	1/20/2020 7:35:20 PM	49923
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.74	5.0		mg/Kg	2	1/25/2020 11:09:02 AM	50038
Arsenic	4.1	2.9	5.0	J	mg/Kg	2	1/25/2020 11:09:02 AM	50038
Barium	520	0.12	0.50		mg/Kg	5	1/25/2020 11:52:41 AM	50038
Beryllium	0.60	0.019	0.30		mg/Kg	2	1/25/2020 11:09:02 AM	50038
Cadmium	ND	0.049	0.20		mg/Kg	2	1/25/2020 11:09:02 AM	50038
Chromium	2.1	0.16	0.60		mg/Kg	2	1/25/2020 11:09:02 AM	50038
Cobalt	3.0	0.21	0.60		mg/Kg	2	1/25/2020 11:09:02 AM	50038
Lead	0.66	0.49	0.50		mg/Kg	2	1/25/2020 11:09:02 AM	50038
Nickel	6.6	0.30	1.0		mg/Kg	2	1/25/2020 11:09:02 AM	50038
Selenium	3.2	2.5	5.0	J	mg/Kg	2	1/25/2020 11:09:02 AM	50038
Silver	0.78	0.065	0.50		mg/Kg	2	1/25/2020 11:09:02 AM	50038
Vanadium	17	0.13	5.0		mg/Kg	2	1/25/2020 11:09:02 AM	50038
Zinc	20	0.80	5.0		mg/Kg	2	1/25/2020 11:09:02 AM	50038
EPA METHOD 6010B: TCLP METALS							Analyst: **rde**	
Lead	ND	0.0085	5.0		mg/L	1	1/20/2020 12:16:36 PM	49897
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.74	2.0	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
Acenaphthylene	ND	0.87	2.0	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
Aniline	ND	0.67	2.0	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
Anthracene	ND	0.76	2.0	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
Azobenzene	ND	1.0	2.0	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
Benz(a)anthracene	ND	0.67	2.0	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
Benzo(a)pyrene	ND	1.1	2.0	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
Benzo(b)fluoranthene	ND	1.1	2.0	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
Benzo(g,h,i)perylene	ND	1.0	2.0	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868

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Qualifiers:

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Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** SWMU1-12 2.5'
Project: Gallup SWMUI Sampling Event **Collection Date:** 1/13/2020 2:03:00 PM
Lab ID: 2001623-004 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Benzo(k)fluoranthene	ND	0.59	2.0	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
Benzoic acid	ND	1.4	4.9	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
Benzyl alcohol	ND	0.81	2.0	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
Bis(2-chloroethoxy)methane	ND	0.81	2.0	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
Bis(2-chloroethyl)ether	ND	1.1	2.0	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
Bis(2-chloroisopropyl)ether	ND	0.84	2.0	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
Bis(2-ethylhexyl)phthalate	ND	2.2	4.9	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
4-Bromophenyl phenyl ether	ND	1.1	2.0	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
Butyl benzyl phthalate	ND	0.66	2.0	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
Carbazole	ND	0.78	2.0	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
4-Chloro-3-methylphenol	ND	0.77	4.9	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
4-Chloroaniline	ND	0.75	4.9	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
2-Chloronaphthalene	ND	0.82	2.5	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
2-Chlorophenol	ND	1.1	2.0	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
4-Chlorophenyl phenyl ether	ND	0.82	2.0	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
Chrysene	ND	0.77	2.0	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
Di-n-butyl phthalate	ND	2.9	3.9	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
Di-n-octyl phthalate	ND	0.66	3.9	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
Dibenz(a,h)anthracene	ND	1.1	2.0	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
Dibenzofuran	ND	0.98	2.0	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
1,2-Dichlorobenzene	ND	0.77	2.0	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
1,3-Dichlorobenzene	ND	0.66	2.0	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
1,4-Dichlorobenzene	ND	0.81	2.0	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
3,3´-Dichlorobenzidine	ND	0.84	2.5	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
Diethyl phthalate	ND	3.0	4.9	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
Dimethyl phthalate	ND	0.80	2.0	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
2,4-Dichlorophenol	ND	0.83	3.9	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
2,4-Dimethylphenol	ND	0.81	2.9	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
4,6-Dinitro-2-methylphenol	ND	0.72	3.9	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
2,4-Dinitrophenol	ND	0.57	4.9	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
2,4-Dinitrotoluene	ND	1.0	4.9	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
2,6-Dinitrotoluene	ND	1.2	4.9	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
Fluoranthene	ND	0.75	2.0	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
Fluorene	ND	0.77	2.0	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
Hexachlorobenzene	ND	0.77	2.0	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
Hexachlorobutadiene	ND	0.86	2.0	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
Hexachlorocyclopentadiene	ND	0.94	2.0	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
Hexachloroethane	ND	0.80	2.0	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
Indeno(1,2,3-cd)pyrene	ND	1.2	2.0	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868

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

Qualifiers:

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

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** SWMU1-12 2.5'
Project: Gallup SWMUI Sampling Event **Collection Date:** 1/13/2020 2:03:00 PM
Lab ID: 2001623-004 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Isophorone	ND	0.85	3.9	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
1-Methylnaphthalene	ND	0.91	2.0	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
2-Methylnaphthalene	ND	0.80	2.0	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
2-Methylphenol	ND	0.83	3.9	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
3+4-Methylphenol	ND	0.71	2.0	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
N-Nitrosodi-n-propylamine	ND	0.99	2.0	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
N-Nitrosodiphenylamine	ND	1.0	2.0	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
Naphthalene	ND	0.80	2.0	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
2-Nitroaniline	ND	1.1	2.0	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
3-Nitroaniline	ND	0.96	2.0	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
4-Nitroaniline	ND	1.3	3.9	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
Nitrobenzene	ND	0.84	3.9	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
2-Nitrophenol	ND	0.81	2.0	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
4-Nitrophenol	ND	0.58	2.5	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
Pentachlorophenol	ND	0.88	3.9	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
Phenanthrene	ND	1.0	2.0	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
Phenol	ND	0.83	2.0	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
Pyrene	ND	0.65	2.0	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
Pyridine	ND	1.8	3.9	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
1,2,4-Trichlorobenzene	ND	0.84	2.0	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
2,4,5-Trichlorophenol	ND	0.63	2.0	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
2,4,6-Trichlorophenol	ND	0.98	2.0	D	mg/Kg	1	1/22/2020 9:58:00 PM	49868
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	1	1/22/2020 9:58:00 PM	49868
Surr: Phenol-d5	0		18.5-101	SD	%Rec	1	1/22/2020 9:58:00 PM	49868
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	1	1/22/2020 9:58:00 PM	49868
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	1	1/22/2020 9:58:00 PM	49868
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	1	1/22/2020 9:58:00 PM	49868
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	1	1/22/2020 9:58:00 PM	49868
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.0026	0.016		mg/Kg	1	1/18/2020 2:06:13 AM	49833
Toluene	ND	0.0030	0.031		mg/Kg	1	1/18/2020 2:06:13 AM	49833
Ethylbenzene	ND	0.0018	0.031		mg/Kg	1	1/18/2020 2:06:13 AM	49833
Methyl tert-butyl ether (MTBE)	ND	0.0074	0.031		mg/Kg	1	1/18/2020 2:06:13 AM	49833
1,2,4-Trimethylbenzene	ND	0.0029	0.031		mg/Kg	1	1/18/2020 2:06:13 AM	49833
1,3,5-Trimethylbenzene	ND	0.0030	0.031		mg/Kg	1	1/18/2020 2:06:13 AM	49833
1,2-Dichloroethane (EDC)	ND	0.0032	0.031		mg/Kg	1	1/18/2020 2:06:13 AM	49833
1,2-Dibromoethane (EDB)	ND	0.0029	0.031		mg/Kg	1	1/18/2020 2:06:13 AM	49833
Naphthalene	ND	0.0063	0.063		mg/Kg	1	1/18/2020 2:06:13 AM	49833
1-Methylnaphthalene	ND	0.018	0.13		mg/Kg	1	1/18/2020 2:06:13 AM	49833

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Qualifiers:

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

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1-12 2.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 2:03:00 PM
Lab ID: 2001623-004 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
2-Methylnaphthalene	ND	0.014	0.13		mg/Kg	1	1/18/2020 2:06:13 AM	49833
Acetone	ND	0.026	0.47		mg/Kg	1	1/18/2020 2:06:13 AM	49833
Bromobenzene	ND	0.0030	0.031		mg/Kg	1	1/18/2020 2:06:13 AM	49833
Bromodichloromethane	ND	0.0029	0.031		mg/Kg	1	1/18/2020 2:06:13 AM	49833
Bromoform	ND	0.0028	0.031		mg/Kg	1	1/18/2020 2:06:13 AM	49833
Bromomethane	ND	0.0076	0.094		mg/Kg	1	1/18/2020 2:06:13 AM	49833
2-Butanone	ND	0.036	0.31		mg/Kg	1	1/18/2020 2:06:13 AM	49833
Carbon disulfide	ND	0.010	0.31		mg/Kg	1	1/18/2020 2:06:13 AM	49833
Carbon tetrachloride	ND	0.0030	0.031		mg/Kg	1	1/18/2020 2:06:13 AM	49833
Chlorobenzene	ND	0.0040	0.031		mg/Kg	1	1/18/2020 2:06:13 AM	49833
Chloroethane	ND	0.0046	0.063		mg/Kg	1	1/18/2020 2:06:13 AM	49833
Chloroform	ND	0.0025	0.031		mg/Kg	1	1/18/2020 2:06:13 AM	49833
Chloromethane	ND	0.0030	0.094		mg/Kg	1	1/18/2020 2:06:13 AM	49833
2-Chlorotoluene	ND	0.0027	0.031		mg/Kg	1	1/18/2020 2:06:13 AM	49833
4-Chlorotoluene	ND	0.0026	0.031		mg/Kg	1	1/18/2020 2:06:13 AM	49833
cis-1,2-DCE	ND	0.0043	0.031		mg/Kg	1	1/18/2020 2:06:13 AM	49833
cis-1,3-Dichloropropene	ND	0.0026	0.031		mg/Kg	1	1/18/2020 2:06:13 AM	49833
1,2-Dibromo-3-chloropropane	ND	0.0032	0.063		mg/Kg	1	1/18/2020 2:06:13 AM	49833
Dibromochloromethane	ND	0.0022	0.031		mg/Kg	1	1/18/2020 2:06:13 AM	49833
Dibromomethane	ND	0.0034	0.031		mg/Kg	1	1/18/2020 2:06:13 AM	49833
1,2-Dichlorobenzene	ND	0.0026	0.031		mg/Kg	1	1/18/2020 2:06:13 AM	49833
1,3-Dichlorobenzene	ND	0.0027	0.031		mg/Kg	1	1/18/2020 2:06:13 AM	49833
1,4-Dichlorobenzene	ND	0.0026	0.031		mg/Kg	1	1/18/2020 2:06:13 AM	49833
Dichlorodifluoromethane	ND	0.0073	0.031		mg/Kg	1	1/18/2020 2:06:13 AM	49833
1,1-Dichloroethane	ND	0.0020	0.031		mg/Kg	1	1/18/2020 2:06:13 AM	49833
1,1-Dichloroethene	ND	0.013	0.031		mg/Kg	1	1/18/2020 2:06:13 AM	49833
1,2-Dichloropropane	ND	0.0023	0.031		mg/Kg	1	1/18/2020 2:06:13 AM	49833
1,3-Dichloropropane	ND	0.0034	0.031		mg/Kg	1	1/18/2020 2:06:13 AM	49833
2,2-Dichloropropane	ND	0.010	0.063		mg/Kg	1	1/18/2020 2:06:13 AM	49833
1,1-Dichloropropene	ND	0.0029	0.063		mg/Kg	1	1/18/2020 2:06:13 AM	49833
Hexachlorobutadiene	ND	0.0032	0.063		mg/Kg	1	1/18/2020 2:06:13 AM	49833
2-Hexanone	ND	0.0052	0.31		mg/Kg	1	1/18/2020 2:06:13 AM	49833
Isopropylbenzene	ND	0.0023	0.031		mg/Kg	1	1/18/2020 2:06:13 AM	49833
4-Isopropyltoluene	ND	0.0026	0.031		mg/Kg	1	1/18/2020 2:06:13 AM	49833
4-Methyl-2-pentanone	0.019	0.0059	0.31	J	mg/Kg	1	1/18/2020 2:06:13 AM	49833
Methylene chloride	0.018	0.0055	0.094	J	mg/Kg	1	1/18/2020 2:06:13 AM	49833
n-Butylbenzene	ND	0.0029	0.094		mg/Kg	1	1/18/2020 2:06:13 AM	49833
n-Propylbenzene	ND	0.0025	0.031		mg/Kg	1	1/18/2020 2:06:13 AM	49833
sec-Butylbenzene	ND	0.0035	0.031		mg/Kg	1	1/18/2020 2:06:13 AM	49833

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Qualifiers:

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

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1-12 2.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 2:03:00 PM
Lab ID: 2001623-004 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Styrene	ND	0.0025	0.031		mg/Kg	1	1/18/2020 2:06:13 AM	49833
tert-Butylbenzene	ND	0.0030	0.031		mg/Kg	1	1/18/2020 2:06:13 AM	49833
1,1,1,2-Tetrachloroethane	ND	0.0021	0.031		mg/Kg	1	1/18/2020 2:06:13 AM	49833
1,1,2,2-Tetrachloroethane	ND	0.0032	0.031		mg/Kg	1	1/18/2020 2:06:13 AM	49833
Tetrachloroethene (PCE)	ND	0.0025	0.031		mg/Kg	1	1/18/2020 2:06:13 AM	49833
trans-1,2-DCE	ND	0.0029	0.031		mg/Kg	1	1/18/2020 2:06:13 AM	49833
trans-1,3-Dichloropropene	ND	0.0033	0.031		mg/Kg	1	1/18/2020 2:06:13 AM	49833
1,2,3-Trichlorobenzene	ND	0.0028	0.063		mg/Kg	1	1/18/2020 2:06:13 AM	49833
1,2,4-Trichlorobenzene	ND	0.0032	0.031		mg/Kg	1	1/18/2020 2:06:13 AM	49833
1,1,1-Trichloroethane	ND	0.0028	0.031		mg/Kg	1	1/18/2020 2:06:13 AM	49833
1,1,2-Trichloroethane	ND	0.0022	0.031		mg/Kg	1	1/18/2020 2:06:13 AM	49833
Trichloroethene (TCE)	ND	0.0036	0.031		mg/Kg	1	1/18/2020 2:06:13 AM	49833
Trichlorofluoromethane	ND	0.011	0.031		mg/Kg	1	1/18/2020 2:06:13 AM	49833
1,2,3-Trichloropropane	ND	0.0051	0.063		mg/Kg	1	1/18/2020 2:06:13 AM	49833
Vinyl chloride	ND	0.0020	0.031		mg/Kg	1	1/18/2020 2:06:13 AM	49833
Xylenes, Total	ND	0.0079	0.063		mg/Kg	1	1/18/2020 2:06:13 AM	49833
Surr: Dibromofluoromethane	99.3		70-130		%Rec	1	1/18/2020 2:06:13 AM	49833
Surr: 1,2-Dichloroethane-d4	82.0		70-130		%Rec	1	1/18/2020 2:06:13 AM	49833
Surr: Toluene-d8	107		70-130		%Rec	1	1/18/2020 2:06:13 AM	49833
Surr: 4-Bromofluorobenzene	99.3		70-130		%Rec	1	1/18/2020 2:06:13 AM	49833
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/20/2020 1:09:00 PM	R65914
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	8.14				pH Units	1	1/21/2020 10:28:00 AM	R65942

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

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PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
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E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** SWMU1-11 7.5'
Project: Gallup SWMUI Sampling Event **Collection Date:** 1/13/2020 1:40:00 PM
Lab ID: 2001623-005 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **CLP**	
Diesel Range Organics (DRO)	4900	120	500		mg/Kg	50	1/21/2020 6:04:45 PM	49861
Motor Oil Range Organics (MRO)	3200	2500	2500		mg/Kg	50	1/21/2020 6:04:45 PM	49861
Surr: DNOP	0	0	55.1-146	S	%Rec	50	1/21/2020 6:04:45 PM	49861
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	8.9	0.77	2.5		mg/Kg	1	1/20/2020 3:10:24 PM	G65910
Surr: BFB	421	0	66.6-105	S	%Rec	1	1/20/2020 3:10:24 PM	G65910
EPA METHOD 7471: MERCURY							Analyst: **rde**	
Mercury	0.54	0.0087	0.16	H	mg/Kg	5	2/24/2020 4:24:17 PM	50503
MERCURY, TCLP							Analyst: **pmf**	
Mercury	ND	0.00075	0.020		mg/L	1	1/20/2020 7:38:04 PM	49923
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.74	5.0		mg/Kg	2	1/25/2020 11:10:27 AM	50038
Arsenic	ND	2.9	5.0		mg/Kg	2	1/25/2020 11:10:27 AM	50038
Barium	550	0.12	0.50		mg/Kg	5	1/25/2020 11:54:05 AM	50038
Beryllium	0.87	0.019	0.30		mg/Kg	2	1/25/2020 11:10:27 AM	50038
Cadmium	ND	0.049	0.20		mg/Kg	2	1/25/2020 11:10:27 AM	50038
Chromium	100	0.16	0.60		mg/Kg	2	1/25/2020 11:10:27 AM	50038
Cobalt	5.5	0.21	0.60		mg/Kg	2	1/25/2020 11:10:27 AM	50038
Lead	3.1	0.49	0.50		mg/Kg	2	1/25/2020 11:10:27 AM	50038
Nickel	11	0.30	1.0		mg/Kg	2	1/25/2020 11:10:27 AM	50038
Selenium	ND	2.5	5.0		mg/Kg	2	1/25/2020 11:10:27 AM	50038
Silver	ND	0.065	0.50		mg/Kg	2	1/25/2020 11:10:27 AM	50038
Vanadium	26	0.13	5.0		mg/Kg	2	1/25/2020 11:10:27 AM	50038
Zinc	83	0.80	5.0		mg/Kg	2	1/25/2020 11:10:27 AM	50038
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/22/2020 9:27:09 AM	49897
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.74	2.0	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868
Acenaphthylene	ND	0.87	2.0	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868
Aniline	ND	0.67	2.0	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868
Anthracene	ND	0.76	2.0	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868
Azobenzene	ND	1.0	2.0	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868
Benz(a)anthracene	ND	0.68	2.0	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868
Benzo(a)pyrene	ND	1.1	2.0	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868
Benzo(b)fluoranthene	ND	1.1	2.0	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868
Benzo(g,h,i)perylene	ND	1.0	2.0	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868

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

Qualifiers:

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

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** SWMU1-11 7.5'
Project: Gallup SWMUI Sampling Event **Collection Date:** 1/13/2020 1:40:00 PM
Lab ID: 2001623-005 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Benzo(k)fluoranthene	ND	0.59	2.0	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868
Benzoic acid	ND	1.4	4.9	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868
Benzyl alcohol	ND	0.82	2.0	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868
Bis(2-chloroethoxy)methane	ND	0.81	2.0	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868
Bis(2-chloroethyl)ether	ND	1.1	2.0	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868
Bis(2-chloroisopropyl)ether	ND	0.84	2.0	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868
Bis(2-ethylhexyl)phthalate	ND	2.2	4.9	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868
4-Bromophenyl phenyl ether	ND	1.1	2.0	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868
Butyl benzyl phthalate	ND	0.66	2.0	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868
Carbazole	ND	0.78	2.0	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868
4-Chloro-3-methylphenol	ND	0.77	4.9	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868
4-Chloroaniline	ND	0.75	4.9	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868
2-Chloronaphthalene	ND	0.82	2.5	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868
2-Chlorophenol	ND	1.1	2.0	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868
4-Chlorophenyl phenyl ether	ND	0.83	2.0	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868
Chrysene	2.7	0.77	2.0	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868
Di-n-butyl phthalate	ND	2.9	3.9	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868
Di-n-octyl phthalate	ND	0.66	3.9	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868
Dibenz(a,h)anthracene	ND	1.1	2.0	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868
Dibenzofuran	ND	0.98	2.0	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868
1,2-Dichlorobenzene	ND	0.77	2.0	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868
1,3-Dichlorobenzene	ND	0.66	2.0	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868
1,4-Dichlorobenzene	ND	0.81	2.0	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868
3,3´-Dichlorobenzidine	ND	0.84	2.5	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868
Diethyl phthalate	ND	3.0	4.9	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868
Dimethyl phthalate	ND	0.80	2.0	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868
2,4-Dichlorophenol	ND	0.83	3.9	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868
2,4-Dimethylphenol	ND	0.82	2.9	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868
4,6-Dinitro-2-methylphenol	ND	0.72	3.9	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868
2,4-Dinitrophenol	ND	0.57	4.9	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868
2,4-Dinitrotoluene	ND	1.0	4.9	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868
2,6-Dinitrotoluene	ND	1.2	4.9	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868
Fluoranthene	ND	0.75	2.0	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868
Fluorene	ND	0.77	2.0	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868
Hexachlorobenzene	ND	0.77	2.0	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868
Hexachlorobutadiene	ND	0.86	2.0	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868
Hexachlorocyclopentadiene	ND	0.94	2.0	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868
Hexachloroethane	ND	0.80	2.0	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868
Indeno(1,2,3-cd)pyrene	ND	1.2	2.0	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868

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Qualifiers:

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D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
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Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1-11 7.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 1:40:00 PM
Lab ID: 2001623-005 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Isophorone	ND	0.85	3.9	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868
1-Methylnaphthalene	ND	0.91	2.0	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868
2-Methylnaphthalene	ND	0.80	2.0	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868
2-Methylphenol	ND	0.83	3.9	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868
3+4-Methylphenol	ND	0.71	2.0	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868
N-Nitrosodi-n-propylamine	ND	0.99	2.0	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868
N-Nitrosodiphenylamine	ND	1.0	2.0	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868
Naphthalene	ND	0.80	2.0	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868
2-Nitroaniline	ND	1.1	2.0	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868
3-Nitroaniline	ND	0.96	2.0	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868
4-Nitroaniline	ND	1.3	3.9	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868
Nitrobenzene	ND	0.84	3.9	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868
2-Nitrophenol	ND	0.81	2.0	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868
4-Nitrophenol	ND	0.58	2.5	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868
Pentachlorophenol	ND	0.88	3.9	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868
Phenanthrene	2.2	1.0	2.0	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868
Phenol	ND	0.83	2.0	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868
Pyrene	1.7	0.65	2.0	JD	mg/Kg	1	1/22/2020 10:26:33 PM	49868
Pyridine	ND	1.8	3.9	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868
1,2,4-Trichlorobenzene	ND	0.84	2.0	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868
2,4,5-Trichlorophenol	ND	0.63	2.0	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868
2,4,6-Trichlorophenol	ND	0.99	2.0	D	mg/Kg	1	1/22/2020 10:26:33 PM	49868
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	1	1/22/2020 10:26:33 PM	49868
Surr: Phenol-d5	0		18.5-101	SD	%Rec	1	1/22/2020 10:26:33 PM	49868
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	1	1/22/2020 10:26:33 PM	49868
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	1	1/22/2020 10:26:33 PM	49868
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	1	1/22/2020 10:26:33 PM	49868
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	1	1/22/2020 10:26:33 PM	49868
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	0.0083	0.0021	0.013	J	mg/Kg	1	1/18/2020 5:55:45 PM	49833
Toluene	0.025	0.0024	0.025	J	mg/Kg	1	1/18/2020 5:55:45 PM	49833
Ethylbenzene	0.089	0.0015	0.025		mg/Kg	1	1/18/2020 5:55:45 PM	49833
Methyl tert-butyl ether (MTBE)	ND	0.0060	0.025		mg/Kg	1	1/18/2020 5:55:45 PM	49833
1,2,4-Trimethylbenzene	0.17	0.0023	0.025		mg/Kg	1	1/18/2020 5:55:45 PM	49833
1,3,5-Trimethylbenzene	0.11	0.0025	0.025		mg/Kg	1	1/18/2020 5:55:45 PM	49833
1,2-Dichloroethane (EDC)	0.086	0.0026	0.025		mg/Kg	1	1/18/2020 5:55:45 PM	49833
1,2-Dibromoethane (EDB)	0.010	0.0023	0.025	J	mg/Kg	1	1/18/2020 5:55:45 PM	49833
Naphthalene	0.078	0.0051	0.051		mg/Kg	1	1/18/2020 5:55:45 PM	49833
1-Methylnaphthalene	0.49	0.015	0.10		mg/Kg	1	1/18/2020 5:55:45 PM	49833

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P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1-11 7.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 1:40:00 PM
Lab ID: 2001623-005 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
2-Methylnaphthalene	0.29	0.011	0.10		mg/Kg	1	1/18/2020 5:55:45 PM	49833
Acetone	0.14	0.021	0.38	J	mg/Kg	1	1/18/2020 5:55:45 PM	49833
Bromobenzene	ND	0.0024	0.025		mg/Kg	1	1/18/2020 5:55:45 PM	49833
Bromodichloromethane	ND	0.0023	0.025		mg/Kg	1	1/18/2020 5:55:45 PM	49833
Bromoform	ND	0.0023	0.025		mg/Kg	1	1/18/2020 5:55:45 PM	49833
Bromomethane	ND	0.0061	0.076		mg/Kg	1	1/18/2020 5:55:45 PM	49833
2-Butanone	ND	0.029	0.25		mg/Kg	1	1/18/2020 5:55:45 PM	49833
Carbon disulfide	ND	0.0084	0.25		mg/Kg	1	1/18/2020 5:55:45 PM	49833
Carbon tetrachloride	ND	0.0024	0.025		mg/Kg	1	1/18/2020 5:55:45 PM	49833
Chlorobenzene	ND	0.0033	0.025		mg/Kg	1	1/18/2020 5:55:45 PM	49833
Chloroethane	ND	0.0037	0.051		mg/Kg	1	1/18/2020 5:55:45 PM	49833
Chloroform	ND	0.0020	0.025		mg/Kg	1	1/18/2020 5:55:45 PM	49833
Chloromethane	ND	0.0024	0.076		mg/Kg	1	1/18/2020 5:55:45 PM	49833
2-Chlorotoluene	ND	0.0022	0.025		mg/Kg	1	1/18/2020 5:55:45 PM	49833
4-Chlorotoluene	ND	0.0021	0.025		mg/Kg	1	1/18/2020 5:55:45 PM	49833
cis-1,2-DCE	ND	0.0035	0.025		mg/Kg	1	1/18/2020 5:55:45 PM	49833
cis-1,3-Dichloropropene	ND	0.0021	0.025		mg/Kg	1	1/18/2020 5:55:45 PM	49833
1,2-Dibromo-3-chloropropane	ND	0.0026	0.051		mg/Kg	1	1/18/2020 5:55:45 PM	49833
Dibromochloromethane	ND	0.0018	0.025		mg/Kg	1	1/18/2020 5:55:45 PM	49833
Dibromomethane	ND	0.0027	0.025		mg/Kg	1	1/18/2020 5:55:45 PM	49833
1,2-Dichlorobenzene	ND	0.0021	0.025		mg/Kg	1	1/18/2020 5:55:45 PM	49833
1,3-Dichlorobenzene	ND	0.0022	0.025		mg/Kg	1	1/18/2020 5:55:45 PM	49833
1,4-Dichlorobenzene	ND	0.0021	0.025		mg/Kg	1	1/18/2020 5:55:45 PM	49833
Dichlorodifluoromethane	ND	0.0059	0.025		mg/Kg	1	1/18/2020 5:55:45 PM	49833
1,1-Dichloroethane	ND	0.0016	0.025		mg/Kg	1	1/18/2020 5:55:45 PM	49833
1,1-Dichloroethene	ND	0.010	0.025		mg/Kg	1	1/18/2020 5:55:45 PM	49833
1,2-Dichloropropane	ND	0.0019	0.025		mg/Kg	1	1/18/2020 5:55:45 PM	49833
1,3-Dichloropropane	ND	0.0027	0.025		mg/Kg	1	1/18/2020 5:55:45 PM	49833
2,2-Dichloropropane	ND	0.0083	0.051		mg/Kg	1	1/18/2020 5:55:45 PM	49833
1,1-Dichloropropene	ND	0.0023	0.051		mg/Kg	1	1/18/2020 5:55:45 PM	49833
Hexachlorobutadiene	ND	0.0026	0.051		mg/Kg	1	1/18/2020 5:55:45 PM	49833
2-Hexanone	0.087	0.0042	0.25	J	mg/Kg	1	1/18/2020 5:55:45 PM	49833
Isopropylbenzene	0.016	0.0018	0.025	J	mg/Kg	1	1/18/2020 5:55:45 PM	49833
4-Isopropyltoluene	0.025	0.0021	0.025	J	mg/Kg	1	1/18/2020 5:55:45 PM	49833
4-Methyl-2-pentanone	0.12	0.0048	0.25	J	mg/Kg	1	1/18/2020 5:55:45 PM	49833
Methylene chloride	0.029	0.0045	0.076	J	mg/Kg	1	1/18/2020 5:55:45 PM	49833
n-Butylbenzene	0.024	0.0024	0.076	J	mg/Kg	1	1/18/2020 5:55:45 PM	49833
n-Propylbenzene	0.025	0.0020	0.025	J	mg/Kg	1	1/18/2020 5:55:45 PM	49833
sec-Butylbenzene	0.020	0.0029	0.025	J	mg/Kg	1	1/18/2020 5:55:45 PM	49833

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RL	Reporting Limit

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1-11 7.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 1:40:00 PM
Lab ID: 2001623-005 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Styrene	ND	0.0020	0.025		mg/Kg	1	1/18/2020 5:55:45 PM	49833
tert-Butylbenzene	ND	0.0024	0.025		mg/Kg	1	1/18/2020 5:55:45 PM	49833
1,1,1,2-Tetrachloroethane	ND	0.0017	0.025		mg/Kg	1	1/18/2020 5:55:45 PM	49833
1,1,2,2-Tetrachloroethane	ND	0.0026	0.025		mg/Kg	1	1/18/2020 5:55:45 PM	49833
Tetrachloroethene (PCE)	ND	0.0020	0.025		mg/Kg	1	1/18/2020 5:55:45 PM	49833
trans-1,2-DCE	ND	0.0023	0.025		mg/Kg	1	1/18/2020 5:55:45 PM	49833
trans-1,3-Dichloropropene	ND	0.0027	0.025		mg/Kg	1	1/18/2020 5:55:45 PM	49833
1,2,3-Trichlorobenzene	ND	0.0022	0.051		mg/Kg	1	1/18/2020 5:55:45 PM	49833
1,2,4-Trichlorobenzene	ND	0.0026	0.025		mg/Kg	1	1/18/2020 5:55:45 PM	49833
1,1,1-Trichloroethane	ND	0.0023	0.025		mg/Kg	1	1/18/2020 5:55:45 PM	49833
1,1,2-Trichloroethane	ND	0.0018	0.025		mg/Kg	1	1/18/2020 5:55:45 PM	49833
Trichloroethene (TCE)	ND	0.0029	0.025		mg/Kg	1	1/18/2020 5:55:45 PM	49833
Trichlorofluoromethane	ND	0.0086	0.025		mg/Kg	1	1/18/2020 5:55:45 PM	49833
1,2,3-Trichloropropane	ND	0.0041	0.051		mg/Kg	1	1/18/2020 5:55:45 PM	49833
Vinyl chloride	ND	0.0017	0.025		mg/Kg	1	1/18/2020 5:55:45 PM	49833
Xylenes, Total	0.41	0.0064	0.051		mg/Kg	1	1/18/2020 5:55:45 PM	49833
Surr: Dibromofluoromethane	98.9		70-130		%Rec	1	1/18/2020 5:55:45 PM	49833
Surr: 1,2-Dichloroethane-d4	88.6		70-130		%Rec	1	1/18/2020 5:55:45 PM	49833
Surr: Toluene-d8	106		70-130		%Rec	1	1/18/2020 5:55:45 PM	49833
Surr: 4-Bromofluorobenzene	72.6		70-130		%Rec	1	1/18/2020 5:55:45 PM	49833
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/20/2020 1:09:00 PM	R65914
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	8.81				pH Units	1	1/21/2020 10:28:00 AM	R65942

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

Qualifiers:

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J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1-12 2.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 2:05:00 PM
Lab ID: 2001623-006 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	4.2	2.2	9.1	J	mg/Kg	1	1/21/2020 1:57:30 AM	49861
Motor Oil Range Organics (MRO)	ND	45	45		mg/Kg	1	1/21/2020 1:57:30 AM	49861
Surr: DNOP	98.6	0	55.1-146		%Rec	1	1/21/2020 1:57:30 AM	49861
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	1.0	3.4		mg/Kg	1	1/18/2020 6:41:35 AM	49874
Surr: BFB	72.0	0	66.6-105		%Rec	1	1/18/2020 6:41:35 AM	49874
EPA METHOD 7471: MERCURY							Analyst: **rde**	
Mercury	0.0063	0.0017	0.032	JH	mg/Kg	1	2/24/2020 4:13:57 PM	50503
MERCURY, TCLP							Analyst: **pmf**	
Mercury	ND	0.00075	0.020		mg/L	1	1/20/2020 7:40:49 PM	49923
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.74	5.0		mg/Kg	2	1/25/2020 11:11:52 AM	50038
Arsenic	ND	2.9	5.0		mg/Kg	2	1/25/2020 11:11:52 AM	50038
Barium	360	0.046	0.20		mg/Kg	2	1/25/2020 11:11:52 AM	50038
Beryllium	1.0	0.018	0.30		mg/Kg	2	1/25/2020 11:11:52 AM	50038
Cadmium	ND	0.049	0.20		mg/Kg	2	1/25/2020 11:11:52 AM	50038
Chromium	9.5	0.16	0.60		mg/Kg	2	1/25/2020 11:11:52 AM	50038
Cobalt	4.3	0.21	0.60		mg/Kg	2	1/25/2020 11:11:52 AM	50038
Lead	3.5	0.49	0.50		mg/Kg	2	1/25/2020 11:11:52 AM	50038
Nickel	9.0	0.30	1.0		mg/Kg	2	1/25/2020 11:11:52 AM	50038
Selenium	ND	2.5	5.0		mg/Kg	2	1/25/2020 11:11:52 AM	50038
Silver	ND	0.064	0.50		mg/Kg	2	1/25/2020 11:11:52 AM	50038
Vanadium	18	0.13	5.0		mg/Kg	2	1/25/2020 11:11:52 AM	50038
Zinc	16	0.79	5.0		mg/Kg	2	1/25/2020 11:11:52 AM	50038
EPA METHOD 6010B: TCLP METALS							Analyst: **rde**	
Lead	ND	0.0085	5.0		mg/L	1	1/20/2020 4:23:03 PM	49897
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.074	0.20		mg/Kg	1	1/22/2020 10:55:34 PM	49868
Acenaphthylene	ND	0.087	0.20		mg/Kg	1	1/22/2020 10:55:34 PM	49868
Aniline	ND	0.067	0.20		mg/Kg	1	1/22/2020 10:55:34 PM	49868
Anthracene	ND	0.076	0.20		mg/Kg	1	1/22/2020 10:55:34 PM	49868
Azobenzene	ND	0.10	0.20		mg/Kg	1	1/22/2020 10:55:34 PM	49868
Benz(a)anthracene	ND	0.067	0.20		mg/Kg	1	1/22/2020 10:55:34 PM	49868
Benzo(a)pyrene	ND	0.11	0.20		mg/Kg	1	1/22/2020 10:55:34 PM	49868
Benzo(b)fluoranthene	ND	0.11	0.20		mg/Kg	1	1/22/2020 10:55:34 PM	49868
Benzo(g,h,i)perylene	ND	0.10	0.20		mg/Kg	1	1/22/2020 10:55:34 PM	49868

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Qualifiers:

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

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1-12 2.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 2:05:00 PM
Lab ID: 2001623-006 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Benzo(k)fluoranthene	ND	0.059	0.20		mg/Kg	1	1/22/2020 10:55:34 PM	49868
Benzoic acid	ND	0.14	0.49		mg/Kg	1	1/22/2020 10:55:34 PM	49868
Benzyl alcohol	ND	0.081	0.20		mg/Kg	1	1/22/2020 10:55:34 PM	49868
Bis(2-chloroethoxy)methane	ND	0.081	0.20		mg/Kg	1	1/22/2020 10:55:34 PM	49868
Bis(2-chloroethyl)ether	ND	0.11	0.20		mg/Kg	1	1/22/2020 10:55:34 PM	49868
Bis(2-chloroisopropyl)ether	ND	0.084	0.20		mg/Kg	1	1/22/2020 10:55:34 PM	49868
Bis(2-ethylhexyl)phthalate	ND	0.22	0.49		mg/Kg	1	1/22/2020 10:55:34 PM	49868
4-Bromophenyl phenyl ether	ND	0.11	0.20		mg/Kg	1	1/22/2020 10:55:34 PM	49868
Butyl benzyl phthalate	ND	0.066	0.20		mg/Kg	1	1/22/2020 10:55:34 PM	49868
Carbazole	ND	0.078	0.20		mg/Kg	1	1/22/2020 10:55:34 PM	49868
4-Chloro-3-methylphenol	ND	0.077	0.49		mg/Kg	1	1/22/2020 10:55:34 PM	49868
4-Chloroaniline	ND	0.075	0.49		mg/Kg	1	1/22/2020 10:55:34 PM	49868
2-Chloronaphthalene	ND	0.082	0.25		mg/Kg	1	1/22/2020 10:55:34 PM	49868
2-Chlorophenol	ND	0.11	0.20		mg/Kg	1	1/22/2020 10:55:34 PM	49868
4-Chlorophenyl phenyl ether	ND	0.082	0.20		mg/Kg	1	1/22/2020 10:55:34 PM	49868
Chrysene	ND	0.077	0.20		mg/Kg	1	1/22/2020 10:55:34 PM	49868
Di-n-butyl phthalate	ND	0.29	0.39		mg/Kg	1	1/22/2020 10:55:34 PM	49868
Di-n-octyl phthalate	ND	0.066	0.39		mg/Kg	1	1/22/2020 10:55:34 PM	49868
Dibenz(a,h)anthracene	ND	0.11	0.20		mg/Kg	1	1/22/2020 10:55:34 PM	49868
Dibenzofuran	ND	0.098	0.20		mg/Kg	1	1/22/2020 10:55:34 PM	49868
1,2-Dichlorobenzene	ND	0.077	0.20		mg/Kg	1	1/22/2020 10:55:34 PM	49868
1,3-Dichlorobenzene	ND	0.066	0.20		mg/Kg	1	1/22/2020 10:55:34 PM	49868
1,4-Dichlorobenzene	ND	0.081	0.20		mg/Kg	1	1/22/2020 10:55:34 PM	49868
3,3´-Dichlorobenzidine	ND	0.084	0.25		mg/Kg	1	1/22/2020 10:55:34 PM	49868
Diethyl phthalate	ND	0.30	0.49		mg/Kg	1	1/22/2020 10:55:34 PM	49868
Dimethyl phthalate	ND	0.080	0.20		mg/Kg	1	1/22/2020 10:55:34 PM	49868
2,4-Dichlorophenol	ND	0.083	0.39		mg/Kg	1	1/22/2020 10:55:34 PM	49868
2,4-Dimethylphenol	ND	0.081	0.29		mg/Kg	1	1/22/2020 10:55:34 PM	49868
4,6-Dinitro-2-methylphenol	ND	0.072	0.39		mg/Kg	1	1/22/2020 10:55:34 PM	49868
2,4-Dinitrophenol	ND	0.057	0.49		mg/Kg	1	1/22/2020 10:55:34 PM	49868
2,4-Dinitrotoluene	ND	0.10	0.49		mg/Kg	1	1/22/2020 10:55:34 PM	49868
2,6-Dinitrotoluene	ND	0.12	0.49		mg/Kg	1	1/22/2020 10:55:34 PM	49868
Fluoranthene	ND	0.075	0.20		mg/Kg	1	1/22/2020 10:55:34 PM	49868
Fluorene	ND	0.077	0.20		mg/Kg	1	1/22/2020 10:55:34 PM	49868
Hexachlorobenzene	ND	0.077	0.20		mg/Kg	1	1/22/2020 10:55:34 PM	49868
Hexachlorobutadiene	ND	0.086	0.20		mg/Kg	1	1/22/2020 10:55:34 PM	49868
Hexachlorocyclopentadiene	ND	0.094	0.20		mg/Kg	1	1/22/2020 10:55:34 PM	49868
Hexachloroethane	ND	0.080	0.20		mg/Kg	1	1/22/2020 10:55:34 PM	49868
Indeno(1,2,3-cd)pyrene	ND	0.12	0.20		mg/Kg	1	1/22/2020 10:55:34 PM	49868

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Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1-12 2.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 2:05:00 PM
Lab ID: 2001623-006 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Isophorone	ND	0.085	0.39		mg/Kg	1	1/22/2020 10:55:34 PM	49868
1-Methylnaphthalene	ND	0.091	0.20		mg/Kg	1	1/22/2020 10:55:34 PM	49868
2-Methylnaphthalene	ND	0.080	0.20		mg/Kg	1	1/22/2020 10:55:34 PM	49868
2-Methylphenol	ND	0.083	0.39		mg/Kg	1	1/22/2020 10:55:34 PM	49868
3+4-Methylphenol	ND	0.071	0.20		mg/Kg	1	1/22/2020 10:55:34 PM	49868
N-Nitrosodi-n-propylamine	ND	0.099	0.20		mg/Kg	1	1/22/2020 10:55:34 PM	49868
N-Nitrosodiphenylamine	ND	0.10	0.20		mg/Kg	1	1/22/2020 10:55:34 PM	49868
Naphthalene	ND	0.080	0.20		mg/Kg	1	1/22/2020 10:55:34 PM	49868
2-Nitroaniline	ND	0.11	0.20		mg/Kg	1	1/22/2020 10:55:34 PM	49868
3-Nitroaniline	ND	0.096	0.20		mg/Kg	1	1/22/2020 10:55:34 PM	49868
4-Nitroaniline	ND	0.13	0.39		mg/Kg	1	1/22/2020 10:55:34 PM	49868
Nitrobenzene	ND	0.084	0.39		mg/Kg	1	1/22/2020 10:55:34 PM	49868
2-Nitrophenol	ND	0.081	0.20		mg/Kg	1	1/22/2020 10:55:34 PM	49868
4-Nitrophenol	ND	0.058	0.25		mg/Kg	1	1/22/2020 10:55:34 PM	49868
Pentachlorophenol	ND	0.088	0.39		mg/Kg	1	1/22/2020 10:55:34 PM	49868
Phenanthrene	ND	0.10	0.20		mg/Kg	1	1/22/2020 10:55:34 PM	49868
Phenol	ND	0.083	0.20		mg/Kg	1	1/22/2020 10:55:34 PM	49868
Pyrene	ND	0.065	0.20		mg/Kg	1	1/22/2020 10:55:34 PM	49868
Pyridine	ND	0.18	0.39		mg/Kg	1	1/22/2020 10:55:34 PM	49868
1,2,4-Trichlorobenzene	ND	0.084	0.20		mg/Kg	1	1/22/2020 10:55:34 PM	49868
2,4,5-Trichlorophenol	ND	0.063	0.20		mg/Kg	1	1/22/2020 10:55:34 PM	49868
2,4,6-Trichlorophenol	ND	0.098	0.20		mg/Kg	1	1/22/2020 10:55:34 PM	49868
Surr: 2-Fluorophenol	42.7		26.7-85.9		%Rec	1	1/22/2020 10:55:34 PM	49868
Surr: Phenol-d5	52.8		18.5-101		%Rec	1	1/22/2020 10:55:34 PM	49868
Surr: 2,4,6-Tribromophenol	55.3		35.8-85.6		%Rec	1	1/22/2020 10:55:34 PM	49868
Surr: Nitrobenzene-d5	54.3		40.8-95.2		%Rec	1	1/22/2020 10:55:34 PM	49868
Surr: 2-Fluorobiphenyl	50.7		34.7-85.2		%Rec	1	1/22/2020 10:55:34 PM	49868
Surr: 4-Terphenyl-d14	65.2		37.4-91.3		%Rec	1	1/22/2020 10:55:34 PM	49868
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.0028	0.017		mg/Kg	1	1/18/2020 3:03:39 AM	49833
Toluene	ND	0.0032	0.034		mg/Kg	1	1/18/2020 3:03:39 AM	49833
Ethylbenzene	ND	0.0020	0.034		mg/Kg	1	1/18/2020 3:03:39 AM	49833
Methyl tert-butyl ether (MTBE)	ND	0.0080	0.034		mg/Kg	1	1/18/2020 3:03:39 AM	49833
1,2,4-Trimethylbenzene	ND	0.0031	0.034		mg/Kg	1	1/18/2020 3:03:39 AM	49833
1,3,5-Trimethylbenzene	ND	0.0033	0.034		mg/Kg	1	1/18/2020 3:03:39 AM	49833
1,2-Dichloroethane (EDC)	ND	0.0034	0.034		mg/Kg	1	1/18/2020 3:03:39 AM	49833
1,2-Dibromoethane (EDB)	ND	0.0031	0.034		mg/Kg	1	1/18/2020 3:03:39 AM	49833
Naphthalene	ND	0.0068	0.067		mg/Kg	1	1/18/2020 3:03:39 AM	49833
1-Methylnaphthalene	ND	0.019	0.13		mg/Kg	1	1/18/2020 3:03:39 AM	49833

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Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1-12 2.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 2:05:00 PM
Lab ID: 2001623-006 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
2-Methylnaphthalene	ND	0.015	0.13		mg/Kg	1	1/18/2020 3:03:39 AM	49833
Acetone	ND	0.028	0.51		mg/Kg	1	1/18/2020 3:03:39 AM	49833
Bromobenzene	ND	0.0032	0.034		mg/Kg	1	1/18/2020 3:03:39 AM	49833
Bromodichloromethane	ND	0.0031	0.034		mg/Kg	1	1/18/2020 3:03:39 AM	49833
Bromoform	ND	0.0030	0.034		mg/Kg	1	1/18/2020 3:03:39 AM	49833
Bromomethane	ND	0.0081	0.10		mg/Kg	1	1/18/2020 3:03:39 AM	49833
2-Butanone	ND	0.039	0.34		mg/Kg	1	1/18/2020 3:03:39 AM	49833
Carbon disulfide	ND	0.011	0.34		mg/Kg	1	1/18/2020 3:03:39 AM	49833
Carbon tetrachloride	ND	0.0032	0.034		mg/Kg	1	1/18/2020 3:03:39 AM	49833
Chlorobenzene	ND	0.0043	0.034		mg/Kg	1	1/18/2020 3:03:39 AM	49833
Chloroethane	ND	0.0050	0.067		mg/Kg	1	1/18/2020 3:03:39 AM	49833
Chloroform	ND	0.0027	0.034		mg/Kg	1	1/18/2020 3:03:39 AM	49833
Chloromethane	ND	0.0032	0.10		mg/Kg	1	1/18/2020 3:03:39 AM	49833
2-Chlorotoluene	ND	0.0029	0.034		mg/Kg	1	1/18/2020 3:03:39 AM	49833
4-Chlorotoluene	ND	0.0028	0.034		mg/Kg	1	1/18/2020 3:03:39 AM	49833
cis-1,2-DCE	ND	0.0046	0.034		mg/Kg	1	1/18/2020 3:03:39 AM	49833
cis-1,3-Dichloropropene	ND	0.0028	0.034		mg/Kg	1	1/18/2020 3:03:39 AM	49833
1,2-Dibromo-3-chloropropane	ND	0.0035	0.067		mg/Kg	1	1/18/2020 3:03:39 AM	49833
Dibromochloromethane	ND	0.0024	0.034		mg/Kg	1	1/18/2020 3:03:39 AM	49833
Dibromomethane	ND	0.0036	0.034		mg/Kg	1	1/18/2020 3:03:39 AM	49833
1,2-Dichlorobenzene	ND	0.0028	0.034		mg/Kg	1	1/18/2020 3:03:39 AM	49833
1,3-Dichlorobenzene	ND	0.0029	0.034		mg/Kg	1	1/18/2020 3:03:39 AM	49833
1,4-Dichlorobenzene	ND	0.0028	0.034		mg/Kg	1	1/18/2020 3:03:39 AM	49833
Dichlorodifluoromethane	ND	0.0078	0.034		mg/Kg	1	1/18/2020 3:03:39 AM	49833
1,1-Dichloroethane	ND	0.0022	0.034		mg/Kg	1	1/18/2020 3:03:39 AM	49833
1,1-Dichloroethene	ND	0.013	0.034		mg/Kg	1	1/18/2020 3:03:39 AM	49833
1,2-Dichloropropane	ND	0.0025	0.034		mg/Kg	1	1/18/2020 3:03:39 AM	49833
1,3-Dichloropropane	ND	0.0036	0.034		mg/Kg	1	1/18/2020 3:03:39 AM	49833
2,2-Dichloropropane	ND	0.011	0.067		mg/Kg	1	1/18/2020 3:03:39 AM	49833
1,1-Dichloropropene	ND	0.0031	0.067		mg/Kg	1	1/18/2020 3:03:39 AM	49833
Hexachlorobutadiene	ND	0.0034	0.067		mg/Kg	1	1/18/2020 3:03:39 AM	49833
2-Hexanone	ND	0.0056	0.34		mg/Kg	1	1/18/2020 3:03:39 AM	49833
Isopropylbenzene	ND	0.0024	0.034		mg/Kg	1	1/18/2020 3:03:39 AM	49833
4-Isopropyltoluene	ND	0.0028	0.034		mg/Kg	1	1/18/2020 3:03:39 AM	49833
4-Methyl-2-pentanone	0.021	0.0064	0.34	J	mg/Kg	1	1/18/2020 3:03:39 AM	49833
Methylene chloride	0.021	0.0060	0.10	J	mg/Kg	1	1/18/2020 3:03:39 AM	49833
n-Butylbenzene	ND	0.0031	0.10		mg/Kg	1	1/18/2020 3:03:39 AM	49833
n-Propylbenzene	ND	0.0027	0.034		mg/Kg	1	1/18/2020 3:03:39 AM	49833
sec-Butylbenzene	ND	0.0038	0.034		mg/Kg	1	1/18/2020 3:03:39 AM	49833

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Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1-12 2.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 2:05:00 PM
Lab ID: 2001623-006 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Styrene	ND	0.0026	0.034		mg/Kg	1	1/18/2020 3:03:39 AM	49833
tert-Butylbenzene	ND	0.0032	0.034		mg/Kg	1	1/18/2020 3:03:39 AM	49833
1,1,1,2-Tetrachloroethane	ND	0.0023	0.034		mg/Kg	1	1/18/2020 3:03:39 AM	49833
1,1,2,2-Tetrachloroethane	ND	0.0034	0.034		mg/Kg	1	1/18/2020 3:03:39 AM	49833
Tetrachloroethene (PCE)	ND	0.0027	0.034		mg/Kg	1	1/18/2020 3:03:39 AM	49833
trans-1,2-DCE	ND	0.0031	0.034		mg/Kg	1	1/18/2020 3:03:39 AM	49833
trans-1,3-Dichloropropene	ND	0.0036	0.034		mg/Kg	1	1/18/2020 3:03:39 AM	49833
1,2,3-Trichlorobenzene	ND	0.0030	0.067		mg/Kg	1	1/18/2020 3:03:39 AM	49833
1,2,4-Trichlorobenzene	ND	0.0034	0.034		mg/Kg	1	1/18/2020 3:03:39 AM	49833
1,1,1-Trichloroethane	ND	0.0030	0.034		mg/Kg	1	1/18/2020 3:03:39 AM	49833
1,1,2-Trichloroethane	ND	0.0024	0.034		mg/Kg	1	1/18/2020 3:03:39 AM	49833
Trichloroethene (TCE)	ND	0.0039	0.034		mg/Kg	1	1/18/2020 3:03:39 AM	49833
Trichlorofluoromethane	ND	0.011	0.034		mg/Kg	1	1/18/2020 3:03:39 AM	49833
1,2,3-Trichloropropane	ND	0.0055	0.067		mg/Kg	1	1/18/2020 3:03:39 AM	49833
Vinyl chloride	ND	0.0022	0.034		mg/Kg	1	1/18/2020 3:03:39 AM	49833
Xylenes, Total	ND	0.0085	0.067		mg/Kg	1	1/18/2020 3:03:39 AM	49833
Surr: Dibromofluoromethane	103		70-130		%Rec	1	1/18/2020 3:03:39 AM	49833
Surr: 1,2-Dichloroethane-d4	85.7		70-130		%Rec	1	1/18/2020 3:03:39 AM	49833
Surr: Toluene-d8	105		70-130		%Rec	1	1/18/2020 3:03:39 AM	49833
Surr: 4-Bromofluorobenzene	104		70-130		%Rec	1	1/18/2020 3:03:39 AM	49833
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/20/2020 1:09:00 PM	R65914
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	8.13				pH Units	1	1/21/2020 10:28:00 AM	R65942

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P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** SWMU1-12 5'
Project: Gallup SWMUI Sampling Event **Collection Date:** 1/13/2020 2:15:00 PM
Lab ID: 2001623-007 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	110	2.2	9.2		mg/Kg	1	1/21/2020 11:37:18 PM	49861
Motor Oil Range Organics (MRO)	110	46	46		mg/Kg	1	1/21/2020 11:37:18 PM	49861
Surr: DNOP	106	0	55.1-146		%Rec	1	1/21/2020 11:37:18 PM	49861
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.90	3.0		mg/Kg	1	1/18/2020 7:04:31 AM	49874
Surr: BFB	73.9	0	66.6-105		%Rec	1	1/18/2020 7:04:31 AM	49874
EPA METHOD 7471: MERCURY							Analyst: **rde**	
Mercury	0.031	0.0019	0.034	JH	mg/Kg	1	2/24/2020 4:16:00 PM	50503
MERCURY, TCLP							Analyst: **pmf**	
Mercury	ND	0.00075	0.020		mg/L	1	1/20/2020 7:50:50 PM	49923
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.73	5.0		mg/Kg	2	1/25/2020 11:13:17 AM	50038
Arsenic	ND	2.8	5.0		mg/Kg	2	1/25/2020 11:13:17 AM	50038
Barium	210	0.046	0.20		mg/Kg	2	1/25/2020 11:13:17 AM	50038
Beryllium	0.74	0.018	0.30		mg/Kg	2	1/25/2020 11:13:17 AM	50038
Cadmium	ND	0.048	0.20		mg/Kg	2	1/25/2020 11:13:17 AM	50038
Chromium	8.2	0.16	0.60		mg/Kg	2	1/25/2020 11:13:17 AM	50038
Cobalt	3.9	0.21	0.60		mg/Kg	2	1/25/2020 11:13:17 AM	50038
Lead	1.2	0.48	0.50		mg/Kg	2	1/25/2020 11:13:17 AM	50038
Nickel	6.5	0.30	1.0		mg/Kg	2	1/25/2020 11:13:17 AM	50038
Selenium	ND	2.5	5.0		mg/Kg	2	1/25/2020 11:13:17 AM	50038
Silver	ND	0.064	0.50		mg/Kg	2	1/25/2020 11:13:17 AM	50038
Vanadium	17	0.13	5.0		mg/Kg	2	1/25/2020 11:13:17 AM	50038
Zinc	18	0.79	5.0		mg/Kg	2	1/25/2020 11:13:17 AM	50038
EPA METHOD 6010B: TCLP METALS							Analyst: **rde**	
Lead	ND	0.0085	5.0		mg/L	1	1/20/2020 4:24:36 PM	49897
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.72	1.9	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
Acenaphthylene	ND	0.86	1.9	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
Aniline	ND	0.66	1.9	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
Anthracene	ND	0.74	1.9	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
Azobenzene	ND	0.98	1.9	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
Benz(a)anthracene	ND	0.66	1.9	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
Benzo(a)pyrene	ND	1.0	1.9	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
Benzo(b)fluoranthene	ND	1.1	1.9	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
Benzo(g,h,i)perylene	ND	0.99	1.9	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868

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Qualifiers:

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B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
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P	Sample pH Not In Range
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Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1-12 5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 2:15:00 PM
Lab ID: 2001623-007 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Benzo(k)fluoranthene	ND	0.58	1.9	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
Benzoic acid	ND	1.3	4.8	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
Benzyl alcohol	ND	0.80	1.9	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
Bis(2-chloroethoxy)methane	ND	0.80	1.9	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
Bis(2-chloroethyl)ether	ND	1.1	1.9	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
Bis(2-chloroisopropyl)ether	ND	0.83	1.9	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
Bis(2-ethylhexyl)phthalate	ND	2.2	4.8	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
4-Bromophenyl phenyl ether	ND	1.1	1.9	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
Butyl benzyl phthalate	ND	0.65	1.9	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
Carbazole	ND	0.77	1.9	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
4-Chloro-3-methylphenol	ND	0.76	4.8	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
4-Chloroaniline	ND	0.74	4.8	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
2-Chloronaphthalene	ND	0.81	2.4	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
2-Chlorophenol	ND	1.1	1.9	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
4-Chlorophenyl phenyl ether	ND	0.81	1.9	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
Chrysene	ND	0.75	1.9	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
Di-n-butyl phthalate	ND	2.9	3.9	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
Di-n-octyl phthalate	ND	0.64	3.9	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
Dibenz(a,h)anthracene	ND	1.1	1.9	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
Dibenzofuran	ND	0.96	1.9	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
1,2-Dichlorobenzene	ND	0.76	1.9	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
1,3-Dichlorobenzene	ND	0.64	1.9	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
1,4-Dichlorobenzene	ND	0.80	1.9	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
3,3´-Dichlorobenzidine	ND	0.82	2.4	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
Diethyl phthalate	ND	2.9	4.8	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
Dimethyl phthalate	ND	0.78	1.9	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
2,4-Dichlorophenol	ND	0.81	3.9	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
2,4-Dimethylphenol	ND	0.80	2.9	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
4,6-Dinitro-2-methylphenol	ND	0.71	3.9	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
2,4-Dinitrophenol	ND	0.56	4.8	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
2,4-Dinitrotoluene	ND	0.99	4.8	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
2,6-Dinitrotoluene	ND	1.1	4.8	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
Fluoranthene	ND	0.74	1.9	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
Fluorene	ND	0.76	1.9	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
Hexachlorobenzene	ND	0.75	1.9	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
Hexachlorobutadiene	ND	0.84	1.9	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
Hexachlorocyclopentadiene	ND	0.92	1.9	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
Hexachloroethane	ND	0.79	1.9	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
Indeno(1,2,3-cd)pyrene	ND	1.2	1.9	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868

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Qualifiers:

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D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
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Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1-12 5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 2:15:00 PM
Lab ID: 2001623-007 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Isophorone	ND	0.84	3.9	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
1-Methylnaphthalene	ND	0.90	1.9	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
2-Methylnaphthalene	ND	0.78	1.9	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
2-Methylphenol	ND	0.81	3.9	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
3+4-Methylphenol	ND	0.70	1.9	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
N-Nitrosodi-n-propylamine	ND	0.97	1.9	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
N-Nitrosodiphenylamine	ND	0.99	1.9	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
Naphthalene	ND	0.79	1.9	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
2-Nitroaniline	ND	1.1	1.9	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
3-Nitroaniline	ND	0.95	1.9	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
4-Nitroaniline	ND	1.3	3.9	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
Nitrobenzene	ND	0.82	3.9	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
2-Nitrophenol	ND	0.80	1.9	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
4-Nitrophenol	ND	0.57	2.4	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
Pentachlorophenol	ND	0.86	3.9	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
Phenanthrene	ND	0.98	1.9	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
Phenol	ND	0.82	1.9	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
Pyrene	ND	0.64	1.9	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
Pyridine	ND	1.8	3.9	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
1,2,4-Trichlorobenzene	ND	0.82	1.9	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
2,4,5-Trichlorophenol	ND	0.62	1.9	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
2,4,6-Trichlorophenol	ND	0.97	1.9	D	mg/Kg	1	1/22/2020 11:24:13 PM	49868
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	1	1/22/2020 11:24:13 PM	49868
Surr: Phenol-d5	0		18.5-101	SD	%Rec	1	1/22/2020 11:24:13 PM	49868
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	1	1/22/2020 11:24:13 PM	49868
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	1	1/22/2020 11:24:13 PM	49868
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	1	1/22/2020 11:24:13 PM	49868
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	1	1/22/2020 11:24:13 PM	49868
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.0024	0.015		mg/Kg	1	1/18/2020 3:32:19 AM	49833
Toluene	ND	0.0028	0.030		mg/Kg	1	1/18/2020 3:32:19 AM	49833
Ethylbenzene	ND	0.0017	0.030		mg/Kg	1	1/18/2020 3:32:19 AM	49833
Methyl tert-butyl ether (MTBE)	ND	0.0070	0.030		mg/Kg	1	1/18/2020 3:32:19 AM	49833
1,2,4-Trimethylbenzene	ND	0.0027	0.030		mg/Kg	1	1/18/2020 3:32:19 AM	49833
1,3,5-Trimethylbenzene	ND	0.0029	0.030		mg/Kg	1	1/18/2020 3:32:19 AM	49833
1,2-Dichloroethane (EDC)	ND	0.0030	0.030		mg/Kg	1	1/18/2020 3:32:19 AM	49833
1,2-Dibromoethane (EDB)	ND	0.0027	0.030		mg/Kg	1	1/18/2020 3:32:19 AM	49833
Naphthalene	ND	0.0059	0.059		mg/Kg	1	1/18/2020 3:32:19 AM	49833
1-Methylnaphthalene	ND	0.017	0.12		mg/Kg	1	1/18/2020 3:32:19 AM	49833

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Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1-12 5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 2:15:00 PM
Lab ID: 2001623-007 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
2-Methylnaphthalene	ND	0.013	0.12		mg/Kg	1	1/18/2020 3:32:19 AM	49833
Acetone	ND	0.025	0.44		mg/Kg	1	1/18/2020 3:32:19 AM	49833
Bromobenzene	ND	0.0028	0.030		mg/Kg	1	1/18/2020 3:32:19 AM	49833
Bromodichloromethane	ND	0.0027	0.030		mg/Kg	1	1/18/2020 3:32:19 AM	49833
Bromoform	ND	0.0027	0.030		mg/Kg	1	1/18/2020 3:32:19 AM	49833
Bromomethane	ND	0.0072	0.089		mg/Kg	1	1/18/2020 3:32:19 AM	49833
2-Butanone	ND	0.034	0.30		mg/Kg	1	1/18/2020 3:32:19 AM	49833
Carbon disulfide	ND	0.0098	0.30		mg/Kg	1	1/18/2020 3:32:19 AM	49833
Carbon tetrachloride	ND	0.0028	0.030		mg/Kg	1	1/18/2020 3:32:19 AM	49833
Chlorobenzene	ND	0.0038	0.030		mg/Kg	1	1/18/2020 3:32:19 AM	49833
Chloroethane	ND	0.0044	0.059		mg/Kg	1	1/18/2020 3:32:19 AM	49833
Chloroform	ND	0.0024	0.030		mg/Kg	1	1/18/2020 3:32:19 AM	49833
Chloromethane	ND	0.0028	0.089		mg/Kg	1	1/18/2020 3:32:19 AM	49833
2-Chlorotoluene	ND	0.0026	0.030		mg/Kg	1	1/18/2020 3:32:19 AM	49833
4-Chlorotoluene	ND	0.0024	0.030		mg/Kg	1	1/18/2020 3:32:19 AM	49833
cis-1,2-DCE	ND	0.0041	0.030		mg/Kg	1	1/18/2020 3:32:19 AM	49833
cis-1,3-Dichloropropene	ND	0.0025	0.030		mg/Kg	1	1/18/2020 3:32:19 AM	49833
1,2-Dibromo-3-chloropropane	ND	0.0030	0.059		mg/Kg	1	1/18/2020 3:32:19 AM	49833
Dibromochloromethane	ND	0.0021	0.030		mg/Kg	1	1/18/2020 3:32:19 AM	49833
Dibromomethane	ND	0.0032	0.030		mg/Kg	1	1/18/2020 3:32:19 AM	49833
1,2-Dichlorobenzene	ND	0.0024	0.030		mg/Kg	1	1/18/2020 3:32:19 AM	49833
1,3-Dichlorobenzene	ND	0.0026	0.030		mg/Kg	1	1/18/2020 3:32:19 AM	49833
1,4-Dichlorobenzene	ND	0.0025	0.030		mg/Kg	1	1/18/2020 3:32:19 AM	49833
Dichlorodifluoromethane	ND	0.0069	0.030		mg/Kg	1	1/18/2020 3:32:19 AM	49833
1,1-Dichloroethane	ND	0.0019	0.030		mg/Kg	1	1/18/2020 3:32:19 AM	49833
1,1-Dichloroethene	ND	0.012	0.030		mg/Kg	1	1/18/2020 3:32:19 AM	49833
1,2-Dichloropropane	ND	0.0022	0.030		mg/Kg	1	1/18/2020 3:32:19 AM	49833
1,3-Dichloropropane	ND	0.0032	0.030		mg/Kg	1	1/18/2020 3:32:19 AM	49833
2,2-Dichloropropane	ND	0.0096	0.059		mg/Kg	1	1/18/2020 3:32:19 AM	49833
1,1-Dichloropropene	ND	0.0027	0.059		mg/Kg	1	1/18/2020 3:32:19 AM	49833
Hexachlorobutadiene	ND	0.0030	0.059		mg/Kg	1	1/18/2020 3:32:19 AM	49833
2-Hexanone	ND	0.0049	0.30		mg/Kg	1	1/18/2020 3:32:19 AM	49833
Isopropylbenzene	ND	0.0021	0.030		mg/Kg	1	1/18/2020 3:32:19 AM	49833
4-Isopropyltoluene	ND	0.0025	0.030		mg/Kg	1	1/18/2020 3:32:19 AM	49833
4-Methyl-2-pentanone	0.019	0.0056	0.30	J	mg/Kg	1	1/18/2020 3:32:19 AM	49833
Methylene chloride	0.018	0.0052	0.089	J	mg/Kg	1	1/18/2020 3:32:19 AM	49833
n-Butylbenzene	ND	0.0028	0.089		mg/Kg	1	1/18/2020 3:32:19 AM	49833
n-Propylbenzene	ND	0.0024	0.030		mg/Kg	1	1/18/2020 3:32:19 AM	49833
sec-Butylbenzene	ND	0.0033	0.030		mg/Kg	1	1/18/2020 3:32:19 AM	49833

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Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1-12 5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 2:15:00 PM
Lab ID: 2001623-007 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Styrene	ND	0.0023	0.030		mg/Kg	1	1/18/2020 3:32:19 AM	49833
tert-Butylbenzene	ND	0.0028	0.030		mg/Kg	1	1/18/2020 3:32:19 AM	49833
1,1,1,2-Tetrachloroethane	ND	0.0020	0.030		mg/Kg	1	1/18/2020 3:32:19 AM	49833
1,1,2,2-Tetrachloroethane	ND	0.0030	0.030		mg/Kg	1	1/18/2020 3:32:19 AM	49833
Tetrachloroethene (PCE)	ND	0.0024	0.030		mg/Kg	1	1/18/2020 3:32:19 AM	49833
trans-1,2-DCE	ND	0.0027	0.030		mg/Kg	1	1/18/2020 3:32:19 AM	49833
trans-1,3-Dichloropropene	ND	0.0031	0.030		mg/Kg	1	1/18/2020 3:32:19 AM	49833
1,2,3-Trichlorobenzene	ND	0.0026	0.059		mg/Kg	1	1/18/2020 3:32:19 AM	49833
1,2,4-Trichlorobenzene	ND	0.0030	0.030		mg/Kg	1	1/18/2020 3:32:19 AM	49833
1,1,1-Trichloroethane	ND	0.0027	0.030		mg/Kg	1	1/18/2020 3:32:19 AM	49833
1,1,2-Trichloroethane	ND	0.0021	0.030		mg/Kg	1	1/18/2020 3:32:19 AM	49833
Trichloroethene (TCE)	ND	0.0034	0.030		mg/Kg	1	1/18/2020 3:32:19 AM	49833
Trichlorofluoromethane	ND	0.010	0.030		mg/Kg	1	1/18/2020 3:32:19 AM	49833
1,2,3-Trichloropropane	ND	0.0048	0.059		mg/Kg	1	1/18/2020 3:32:19 AM	49833
Vinyl chloride	ND	0.0019	0.030		mg/Kg	1	1/18/2020 3:32:19 AM	49833
Xylenes, Total	ND	0.0075	0.059		mg/Kg	1	1/18/2020 3:32:19 AM	49833
Surr: Dibromofluoromethane	104		70-130		%Rec	1	1/18/2020 3:32:19 AM	49833
Surr: 1,2-Dichloroethane-d4	83.3		70-130		%Rec	1	1/18/2020 3:32:19 AM	49833
Surr: Toluene-d8	105		70-130		%Rec	1	1/18/2020 3:32:19 AM	49833
Surr: 4-Bromofluorobenzene	99.3		70-130		%Rec	1	1/18/2020 3:32:19 AM	49833
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/20/2020 1:09:00 PM	R65914
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	7.57				pH Units	1	1/21/2020 10:28:00 AM	R65942

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E	Value above quantitation range
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P	Sample pH Not In Range
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Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** SWMU1-19 2.5'
Project: Gallup SWMUI Sampling Event **Collection Date:** 1/13/2020 4:40:00 PM
Lab ID: 2001623-008 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	6300	120	500		mg/Kg	50	1/21/2020 2:15:18 AM	49861
Motor Oil Range Organics (MRO)	3100	2500	2500		mg/Kg	50	1/21/2020 2:15:18 AM	49861
Surr: DNOP	0	0	55.1-146	S	%Rec	50	1/21/2020 2:15:18 AM	49861
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	5.0	1.2	3.8		mg/Kg	1	1/18/2020 7:27:27 AM	49874
Surr: BFB	115	0	66.6-105	S	%Rec	1	1/18/2020 7:27:27 AM	49874
EPA METHOD 7471: MERCURY							Analyst: **rde**	
Mercury	0.16	0.0017	0.031	H	mg/Kg	1	2/24/2020 4:18:04 PM	50503
MERCURY, TCLP							Analyst: **pmf**	
Mercury	ND	0.00075	0.020		mg/L	1	1/20/2020 7:53:35 PM	49923
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.8	12		mg/Kg	5	1/25/2020 11:55:30 AM	50038
Arsenic	ND	7.0	12		mg/Kg	5	1/25/2020 11:55:30 AM	50038
Barium	210	0.11	0.49		mg/Kg	5	1/25/2020 11:55:30 AM	50038
Beryllium	1.3	0.045	0.73		mg/Kg	5	1/25/2020 11:55:30 AM	50038
Cadmium	ND	0.12	0.49		mg/Kg	5	1/25/2020 11:55:30 AM	50038
Chromium	14	0.39	1.5		mg/Kg	5	1/25/2020 11:55:30 AM	50038
Cobalt	5.5	0.52	1.5		mg/Kg	5	1/25/2020 11:55:30 AM	50038
Lead	2.1	1.2	1.2		mg/Kg	5	1/25/2020 11:55:30 AM	50038
Nickel	12	0.73	2.4		mg/Kg	5	1/25/2020 11:55:30 AM	50038
Selenium	ND	6.1	12		mg/Kg	5	1/25/2020 11:55:30 AM	50038
Silver	ND	0.16	1.2		mg/Kg	5	1/25/2020 11:55:30 AM	50038
Vanadium	23	0.33	12		mg/Kg	5	1/25/2020 11:55:30 AM	50038
Zinc	27	1.9	12		mg/Kg	5	1/25/2020 11:55:30 AM	50038
EPA METHOD 6010B: TCLP METALS							Analyst: **rde**	
Lead	ND	0.0085	5.0		mg/L	1	1/20/2020 4:26:08 PM	49897
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.74	2.0	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
Acenaphthylene	ND	0.87	2.0	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
Aniline	ND	0.67	2.0	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
Anthracene	ND	0.75	2.0	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
Azobenzene	ND	0.99	2.0	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
Benz(a)anthracene	ND	0.67	2.0	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
Benzo(a)pyrene	ND	1.1	2.0	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
Benzo(b)fluoranthene	ND	1.1	2.0	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
Benzo(g,h,i)perylene	ND	1.0	2.0	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868

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Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** SWMU1-19 2.5'
Project: Gallup SWMUI Sampling Event **Collection Date:** 1/13/2020 4:40:00 PM
Lab ID: 2001623-008 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Benzo(k)fluoranthene	ND	0.58	2.0	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
Benzoic acid	ND	1.4	4.9	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
Benzyl alcohol	ND	0.81	2.0	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
Bis(2-chloroethoxy)methane	ND	0.81	2.0	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
Bis(2-chloroethyl)ether	ND	1.1	2.0	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
Bis(2-chloroisopropyl)ether	ND	0.84	2.0	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
Bis(2-ethylhexyl)phthalate	ND	2.2	4.9	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
4-Bromophenyl phenyl ether	ND	1.1	2.0	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
Butyl benzyl phthalate	ND	0.66	2.0	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
Carbazole	ND	0.78	2.0	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
4-Chloro-3-methylphenol	ND	0.77	4.9	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
4-Chloroaniline	ND	0.75	4.9	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
2-Chloronaphthalene	ND	0.82	2.4	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
2-Chlorophenol	ND	1.1	2.0	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
4-Chlorophenyl phenyl ether	ND	0.82	2.0	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
Chrysene	ND	0.77	2.0	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
Di-n-butyl phthalate	ND	2.9	3.9	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
Di-n-octyl phthalate	ND	0.65	3.9	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
Dibenz(a,h)anthracene	ND	1.1	2.0	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
Dibenzofuran	ND	0.98	2.0	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
1,2-Dichlorobenzene	ND	0.77	2.0	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
1,3-Dichlorobenzene	ND	0.65	2.0	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
1,4-Dichlorobenzene	ND	0.81	2.0	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
3,3´-Dichlorobenzidine	ND	0.84	2.4	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
Diethyl phthalate	ND	3.0	4.9	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
Dimethyl phthalate	ND	0.79	2.0	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
2,4-Dichlorophenol	ND	0.83	3.9	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
2,4-Dimethylphenol	ND	0.81	2.9	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
4,6-Dinitro-2-methylphenol	ND	0.72	3.9	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
2,4-Dinitrophenol	ND	0.57	4.9	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
2,4-Dinitrotoluene	ND	1.0	4.9	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
2,6-Dinitrotoluene	ND	1.2	4.9	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
Fluoranthene	ND	0.75	2.0	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
Fluorene	ND	0.77	2.0	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
Hexachlorobenzene	ND	0.76	2.0	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
Hexachlorobutadiene	ND	0.86	2.0	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
Hexachlorocyclopentadiene	ND	0.94	2.0	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
Hexachloroethane	ND	0.80	2.0	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
Indeno(1,2,3-cd)pyrene	ND	1.2	2.0	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868

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Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1-19 2.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 4:40:00 PM
Lab ID: 2001623-008 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Isophorone	ND	0.85	3.9	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
1-Methylnaphthalene	ND	0.91	2.0	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
2-Methylnaphthalene	ND	0.79	2.0	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
2-Methylphenol	ND	0.82	3.9	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
3+4-Methylphenol	ND	0.71	2.0	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
N-Nitrosodi-n-propylamine	ND	0.99	2.0	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
N-Nitrosodiphenylamine	ND	1.0	2.0	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
Naphthalene	ND	0.80	2.0	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
2-Nitroaniline	ND	1.1	2.0	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
3-Nitroaniline	ND	0.96	2.0	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
4-Nitroaniline	ND	1.3	3.9	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
Nitrobenzene	ND	0.83	3.9	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
2-Nitrophenol	ND	0.81	2.0	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
4-Nitrophenol	ND	0.57	2.4	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
Pentachlorophenol	ND	0.88	3.9	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
Phenanthrene	ND	1.0	2.0	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
Phenol	ND	0.83	2.0	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
Pyrene	ND	0.65	2.0	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
Pyridine	ND	1.8	3.9	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
1,2,4-Trichlorobenzene	ND	0.84	2.0	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
2,4,5-Trichlorophenol	ND	0.63	2.0	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
2,4,6-Trichlorophenol	ND	0.98	2.0	D	mg/Kg	1	1/22/2020 11:53:08 PM	49868
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	1	1/22/2020 11:53:08 PM	49868
Surr: Phenol-d5	0		18.5-101	SD	%Rec	1	1/22/2020 11:53:08 PM	49868
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	1	1/22/2020 11:53:08 PM	49868
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	1	1/22/2020 11:53:08 PM	49868
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	1	1/22/2020 11:53:08 PM	49868
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	1	1/22/2020 11:53:08 PM	49868
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.0031	0.019		mg/Kg	1	1/18/2020 4:00:55 AM	49833
Toluene	0.0085	0.0037	0.038	J	mg/Kg	1	1/18/2020 4:00:55 AM	49833
Ethylbenzene	ND	0.0022	0.038		mg/Kg	1	1/18/2020 4:00:55 AM	49833
Methyl tert-butyl ether (MTBE)	ND	0.0091	0.038		mg/Kg	1	1/18/2020 4:00:55 AM	49833
1,2,4-Trimethylbenzene	0.38	0.018	0.19	D	mg/Kg	5	1/18/2020 6:25:02 PM	49833
1,3,5-Trimethylbenzene	0.16	0.019	0.19	JD	mg/Kg	5	1/18/2020 6:25:02 PM	49833
1,2-Dichloroethane (EDC)	ND	0.0039	0.038		mg/Kg	1	1/18/2020 4:00:55 AM	49833
1,2-Dibromoethane (EDB)	0.023	0.0035	0.038	J	mg/Kg	1	1/18/2020 4:00:55 AM	49833
Naphthalene	0.18	0.038	0.38	JD	mg/Kg	5	1/18/2020 6:25:02 PM	49833
1-Methylnaphthalene	0.63	0.11	0.77	JD	mg/Kg	5	1/18/2020 6:25:02 PM	49833

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Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1-19 2.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 4:40:00 PM
Lab ID: 2001623-008 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
2-Methylnaphthalene	0.90	0.084	0.77	D	mg/Kg	5	1/18/2020 6:25:02 PM	49833
Acetone	ND	0.032	0.58		mg/Kg	1	1/18/2020 4:00:55 AM	49833
Bromobenzene	ND	0.018	0.19	D	mg/Kg	5	1/18/2020 6:25:02 PM	49833
Bromodichloromethane	ND	0.0035	0.038		mg/Kg	1	1/18/2020 4:00:55 AM	49833
Bromoform	ND	0.017	0.19	D	mg/Kg	5	1/18/2020 6:25:02 PM	49833
Bromomethane	ND	0.0093	0.12		mg/Kg	1	1/18/2020 4:00:55 AM	49833
2-Butanone	0.15	0.044	0.38	J	mg/Kg	1	1/18/2020 4:00:55 AM	49833
Carbon disulfide	ND	0.013	0.38		mg/Kg	1	1/18/2020 4:00:55 AM	49833
Carbon tetrachloride	ND	0.0036	0.038		mg/Kg	1	1/18/2020 4:00:55 AM	49833
Chlorobenzene	ND	0.0049	0.038		mg/Kg	1	1/18/2020 4:00:55 AM	49833
Chloroethane	ND	0.0057	0.077		mg/Kg	1	1/18/2020 4:00:55 AM	49833
Chloroform	ND	0.0031	0.038		mg/Kg	1	1/18/2020 4:00:55 AM	49833
Chloromethane	ND	0.0037	0.12		mg/Kg	1	1/18/2020 4:00:55 AM	49833
2-Chlorotoluene	ND	0.017	0.19	D	mg/Kg	5	1/18/2020 6:25:02 PM	49833
4-Chlorotoluene	ND	0.016	0.19	D	mg/Kg	5	1/18/2020 6:25:02 PM	49833
cis-1,2-DCE	ND	0.0052	0.038		mg/Kg	1	1/18/2020 4:00:55 AM	49833
cis-1,3-Dichloropropene	ND	0.0032	0.038		mg/Kg	1	1/18/2020 4:00:55 AM	49833
1,2-Dibromo-3-chloropropane	ND	0.020	0.38	D	mg/Kg	5	1/18/2020 6:25:02 PM	49833
Dibromochloromethane	ND	0.0027	0.038		mg/Kg	1	1/18/2020 4:00:55 AM	49833
Dibromomethane	ND	0.0041	0.038		mg/Kg	1	1/18/2020 4:00:55 AM	49833
1,2-Dichlorobenzene	ND	0.016	0.19	D	mg/Kg	5	1/18/2020 6:25:02 PM	49833
1,3-Dichlorobenzene	ND	0.017	0.19	D	mg/Kg	5	1/18/2020 6:25:02 PM	49833
1,4-Dichlorobenzene	ND	0.016	0.19	D	mg/Kg	5	1/18/2020 6:25:02 PM	49833
Dichlorodifluoromethane	ND	0.0089	0.038		mg/Kg	1	1/18/2020 4:00:55 AM	49833
1,1-Dichloroethane	ND	0.0025	0.038		mg/Kg	1	1/18/2020 4:00:55 AM	49833
1,1-Dichloroethene	ND	0.015	0.038		mg/Kg	1	1/18/2020 4:00:55 AM	49833
1,2-Dichloropropane	ND	0.0028	0.038		mg/Kg	1	1/18/2020 4:00:55 AM	49833
1,3-Dichloropropane	ND	0.0042	0.038		mg/Kg	1	1/18/2020 4:00:55 AM	49833
2,2-Dichloropropane	ND	0.012	0.077		mg/Kg	1	1/18/2020 4:00:55 AM	49833
1,1-Dichloropropene	ND	0.0035	0.077		mg/Kg	1	1/18/2020 4:00:55 AM	49833
Hexachlorobutadiene	ND	0.020	0.38	D	mg/Kg	5	1/18/2020 6:25:02 PM	49833
2-Hexanone	0.068	0.0064	0.38	J	mg/Kg	1	1/18/2020 4:00:55 AM	49833
Isopropylbenzene	ND	0.0028	0.038		mg/Kg	1	1/18/2020 4:00:55 AM	49833
4-Isopropyltoluene	0.046	0.016	0.19	JD	mg/Kg	5	1/18/2020 6:25:02 PM	49833
4-Methyl-2-pentanone	0.042	0.0072	0.38	J	mg/Kg	1	1/18/2020 4:00:55 AM	49833
Methylene chloride	0.029	0.0068	0.12	J	mg/Kg	1	1/18/2020 4:00:55 AM	49833
n-Butylbenzene	ND	0.018	0.58	D	mg/Kg	5	1/18/2020 6:25:02 PM	49833
n-Propylbenzene	ND	0.015	0.19	D	mg/Kg	5	1/18/2020 6:25:02 PM	49833
sec-Butylbenzene	ND	0.022	0.19	D	mg/Kg	5	1/18/2020 6:25:02 PM	49833

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

Qualifiers:

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

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1-19 2.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 4:40:00 PM
Lab ID: 2001623-008 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Styrene	ND	0.0030	0.038		mg/Kg	1	1/18/2020 4:00:55 AM	49833
tert-Butylbenzene	ND	0.018	0.19	D	mg/Kg	5	1/18/2020 6:25:02 PM	49833
1,1,1,2-Tetrachloroethane	ND	0.0026	0.038		mg/Kg	1	1/18/2020 4:00:55 AM	49833
1,1,2,2-Tetrachloroethane	ND	0.019	0.19	D	mg/Kg	5	1/18/2020 6:25:02 PM	49833
Tetrachloroethene (PCE)	ND	0.0031	0.038		mg/Kg	1	1/18/2020 4:00:55 AM	49833
trans-1,2-DCE	ND	0.0035	0.038		mg/Kg	1	1/18/2020 4:00:55 AM	49833
trans-1,3-Dichloropropene	ND	0.0041	0.038		mg/Kg	1	1/18/2020 4:00:55 AM	49833
1,2,3-Trichlorobenzene	ND	0.017	0.38	D	mg/Kg	5	1/18/2020 6:25:02 PM	49833
1,2,4-Trichlorobenzene	ND	0.019	0.19	D	mg/Kg	5	1/18/2020 6:25:02 PM	49833
1,1,1-Trichloroethane	ND	0.0035	0.038		mg/Kg	1	1/18/2020 4:00:55 AM	49833
1,1,2-Trichloroethane	ND	0.0027	0.038		mg/Kg	1	1/18/2020 4:00:55 AM	49833
Trichloroethene (TCE)	ND	0.0044	0.038		mg/Kg	1	1/18/2020 4:00:55 AM	49833
Trichlorofluoromethane	ND	0.013	0.038		mg/Kg	1	1/18/2020 4:00:55 AM	49833
1,2,3-Trichloropropane	ND	0.031	0.38	D	mg/Kg	5	1/18/2020 6:25:02 PM	49833
Vinyl chloride	ND	0.0025	0.038		mg/Kg	1	1/18/2020 4:00:55 AM	49833
Xylenes, Total	0.24	0.0097	0.077		mg/Kg	1	1/18/2020 4:00:55 AM	49833
Surr: Dibromofluoromethane	103		70-130		%Rec	1	1/18/2020 4:00:55 AM	49833
Surr: 1,2-Dichloroethane-d4	86.8		70-130		%Rec	1	1/18/2020 4:00:55 AM	49833
Surr: Toluene-d8	109		70-130		%Rec	1	1/18/2020 4:00:55 AM	49833
Surr: 4-Bromofluorobenzene	80.7		70-130	D	%Rec	5	1/18/2020 6:25:02 PM	49833
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/20/2020 1:09:00 PM	R65914
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	7.46				pH Units	1	1/21/2020 10:28:00 AM	R65942

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

Qualifiers:

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

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1-18 1.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 4:12:00 PM
Lab ID: 2001623-009 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	35	2.3	9.4		mg/Kg	1	1/21/2020 11:46:13 PM	49861
Motor Oil Range Organics (MRO)	ND	47	47		mg/Kg	1	1/21/2020 11:46:13 PM	49861
Surr: DNOP	112	0	55.1-146		%Rec	1	1/21/2020 11:46:13 PM	49861
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	1.2	4.1		mg/Kg	1	1/18/2020 8:13:17 AM	49874
Surr: BFB	73.6	0	66.6-105		%Rec	1	1/18/2020 8:13:17 AM	49874
EPA METHOD 7471: MERCURY							Analyst: **rde**	
Mercury	0.0064	0.0018	0.034	JH	mg/Kg	1	2/24/2020 4:20:08 PM	50503
MERCURY, TCLP							Analyst: **pmf**	
Mercury	ND	0.00075	0.020		mg/L	1	1/20/2020 7:56:22 PM	49923
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.9	13		mg/Kg	5	1/25/2020 12:01:10 PM	50038
Arsenic	ND	7.4	13		mg/Kg	5	1/25/2020 12:01:10 PM	50038
Barium	490	0.12	0.52		mg/Kg	5	1/25/2020 12:01:10 PM	50038
Beryllium	0.96	0.047	0.77		mg/Kg	5	1/25/2020 12:01:10 PM	50038
Cadmium	ND	0.13	0.52		mg/Kg	5	1/25/2020 12:01:10 PM	50038
Chromium	11	0.41	1.5		mg/Kg	5	1/25/2020 12:01:10 PM	50038
Cobalt	4.8	0.55	1.5		mg/Kg	5	1/25/2020 12:01:10 PM	50038
Lead	3.1	1.3	1.3		mg/Kg	5	1/25/2020 12:01:10 PM	50038
Nickel	8.7	0.77	2.6		mg/Kg	5	1/25/2020 12:01:10 PM	50038
Selenium	ND	6.5	13		mg/Kg	5	1/25/2020 12:01:10 PM	50038
Silver	ND	0.17	1.3		mg/Kg	5	1/25/2020 12:01:10 PM	50038
Vanadium	19	0.34	13		mg/Kg	5	1/25/2020 12:01:10 PM	50038
Zinc	16	2.0	13		mg/Kg	5	1/25/2020 12:01:10 PM	50038
EPA METHOD 6010B: TCLP METALS							Analyst: **rde**	
Lead	ND	0.0085	5.0		mg/L	1	1/20/2020 4:27:40 PM	49897
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.15	0.39	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
Acenaphthylene	ND	0.17	0.39	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
Aniline	ND	0.13	0.39	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
Anthracene	ND	0.15	0.39	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
Azobenzene	ND	0.20	0.39	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
Benz(a)anthracene	ND	0.13	0.39	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
Benzo(a)pyrene	ND	0.21	0.39	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
Benzo(b)fluoranthene	ND	0.22	0.39	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
Benzo(g,h,i)perylene	ND	0.20	0.39	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868

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

Qualifiers:

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J	Analyte detected below quantitation limits
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Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1-18 1.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 4:12:00 PM
Lab ID: 2001623-009 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Benzo(k)fluoranthene	ND	0.12	0.39	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
Benzoic acid	ND	0.27	0.98	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
Benzyl alcohol	ND	0.16	0.39	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
Bis(2-chloroethoxy)methane	ND	0.16	0.39	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
Bis(2-chloroethyl)ether	ND	0.23	0.39	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
Bis(2-chloroisopropyl)ether	ND	0.17	0.39	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
Bis(2-ethylhexyl)phthalate	ND	0.44	0.98	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
4-Bromophenyl phenyl ether	ND	0.23	0.39	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
Butyl benzyl phthalate	ND	0.13	0.39	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
Carbazole	ND	0.16	0.39	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
4-Chloro-3-methylphenol	ND	0.15	0.98	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
4-Chloroaniline	ND	0.15	0.98	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
2-Chloronaphthalene	ND	0.16	0.49	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
2-Chlorophenol	ND	0.22	0.39	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
4-Chlorophenyl phenyl ether	ND	0.16	0.39	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
Chrysene	ND	0.15	0.39	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
Di-n-butyl phthalate	ND	0.59	0.78	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
Di-n-octyl phthalate	ND	0.13	0.78	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
Dibenz(a,h)anthracene	ND	0.22	0.39	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
Dibenzofuran	ND	0.20	0.39	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
1,2-Dichlorobenzene	ND	0.15	0.39	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
1,3-Dichlorobenzene	ND	0.13	0.39	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
1,4-Dichlorobenzene	ND	0.16	0.39	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
3,3´-Dichlorobenzidine	ND	0.17	0.49	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
Diethyl phthalate	ND	0.60	0.98	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
Dimethyl phthalate	ND	0.16	0.39	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
2,4-Dichlorophenol	ND	0.17	0.78	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
2,4-Dimethylphenol	ND	0.16	0.59	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
4,6-Dinitro-2-methylphenol	ND	0.14	0.78	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
2,4-Dinitrophenol	ND	0.11	0.98	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
2,4-Dinitrotoluene	ND	0.20	0.98	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
2,6-Dinitrotoluene	ND	0.23	0.98	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
Fluoranthene	ND	0.15	0.39	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
Fluorene	ND	0.15	0.39	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
Hexachlorobenzene	ND	0.15	0.39	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
Hexachlorobutadiene	ND	0.17	0.39	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
Hexachlorocyclopentadiene	ND	0.19	0.39	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
Hexachloroethane	ND	0.16	0.39	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
Indeno(1,2,3-cd)pyrene	ND	0.24	0.39	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868

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

Qualifiers:

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

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** SWMU1-18 1.5'
Project: Gallup SWMUI Sampling Event **Collection Date:** 1/13/2020 4:12:00 PM
Lab ID: 2001623-009 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Isophorone	ND	0.17	0.78	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
1-Methylnaphthalene	ND	0.18	0.39	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
2-Methylnaphthalene	ND	0.16	0.39	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
2-Methylphenol	ND	0.17	0.78	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
3+4-Methylphenol	ND	0.14	0.39	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
N-Nitrosodi-n-propylamine	ND	0.20	0.39	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
N-Nitrosodiphenylamine	ND	0.20	0.39	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
Naphthalene	ND	0.16	0.39	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
2-Nitroaniline	ND	0.22	0.39	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
3-Nitroaniline	ND	0.19	0.39	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
4-Nitroaniline	ND	0.26	0.78	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
Nitrobenzene	ND	0.17	0.78	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
2-Nitrophenol	ND	0.16	0.39	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
4-Nitrophenol	ND	0.12	0.49	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
Pentachlorophenol	ND	0.18	0.78	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
Phenanthrene	ND	0.20	0.39	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
Phenol	ND	0.17	0.39	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
Pyrene	ND	0.13	0.39	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
Pyridine	ND	0.36	0.78	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
1,2,4-Trichlorobenzene	ND	0.17	0.39	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
2,4,5-Trichlorophenol	ND	0.13	0.39	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
2,4,6-Trichlorophenol	ND	0.20	0.39	D	mg/Kg	1	1/23/2020 12:21:53 AM	49868
Surr: 2-Fluorophenol	48.0		26.7-85.9	D	%Rec	1	1/23/2020 12:21:53 AM	49868
Surr: Phenol-d5	63.9		18.5-101	D	%Rec	1	1/23/2020 12:21:53 AM	49868
Surr: 2,4,6-Tribromophenol	63.1		35.8-85.6	D	%Rec	1	1/23/2020 12:21:53 AM	49868
Surr: Nitrobenzene-d5	62.5		40.8-95.2	D	%Rec	1	1/23/2020 12:21:53 AM	49868
Surr: 2-Fluorobiphenyl	71.0		34.7-85.2	D	%Rec	1	1/23/2020 12:21:53 AM	49868
Surr: 4-Terphenyl-d14	113		37.4-91.3	SD	%Rec	1	1/23/2020 12:21:53 AM	49868
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.0034	0.021		mg/Kg	1	1/18/2020 4:29:33 AM	49833
Toluene	0.0046	0.0039	0.041	J	mg/Kg	1	1/18/2020 4:29:33 AM	49833
Ethylbenzene	ND	0.0024	0.041		mg/Kg	1	1/18/2020 4:29:33 AM	49833
Methyl tert-butyl ether (MTBE)	ND	0.0097	0.041		mg/Kg	1	1/18/2020 4:29:33 AM	49833
1,2,4-Trimethylbenzene	0.0038	0.0038	0.041	J	mg/Kg	1	1/18/2020 4:29:33 AM	49833
1,3,5-Trimethylbenzene	ND	0.0040	0.041		mg/Kg	1	1/18/2020 4:29:33 AM	49833
1,2-Dichloroethane (EDC)	ND	0.0042	0.041		mg/Kg	1	1/18/2020 4:29:33 AM	49833
1,2-Dibromoethane (EDB)	ND	0.0037	0.041		mg/Kg	1	1/18/2020 4:29:33 AM	49833
Naphthalene	ND	0.0082	0.082		mg/Kg	1	1/18/2020 4:29:33 AM	49833
1-Methylnaphthalene	0.041	0.024	0.16	J	mg/Kg	1	1/18/2020 4:29:33 AM	49833

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

Qualifiers:

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

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1-18 1.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 4:12:00 PM
Lab ID: 2001623-009 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
2-Methylnaphthalene	0.041	0.018	0.16	J	mg/Kg	1	1/18/2020 4:29:33 AM	49833
Acetone	ND	0.034	0.62		mg/Kg	1	1/18/2020 4:29:33 AM	49833
Bromobenzene	ND	0.0039	0.041		mg/Kg	1	1/18/2020 4:29:33 AM	49833
Bromodichloromethane	ND	0.0037	0.041		mg/Kg	1	1/18/2020 4:29:33 AM	49833
Bromoform	ND	0.0037	0.041		mg/Kg	1	1/18/2020 4:29:33 AM	49833
Bromomethane	ND	0.0099	0.12		mg/Kg	1	1/18/2020 4:29:33 AM	49833
2-Butanone	ND	0.048	0.41		mg/Kg	1	1/18/2020 4:29:33 AM	49833
Carbon disulfide	ND	0.014	0.41		mg/Kg	1	1/18/2020 4:29:33 AM	49833
Carbon tetrachloride	ND	0.0039	0.041		mg/Kg	1	1/18/2020 4:29:33 AM	49833
Chlorobenzene	ND	0.0053	0.041		mg/Kg	1	1/18/2020 4:29:33 AM	49833
Chloroethane	ND	0.0061	0.082		mg/Kg	1	1/18/2020 4:29:33 AM	49833
Chloroform	ND	0.0033	0.041		mg/Kg	1	1/18/2020 4:29:33 AM	49833
Chloromethane	ND	0.0039	0.12		mg/Kg	1	1/18/2020 4:29:33 AM	49833
2-Chlorotoluene	ND	0.0036	0.041		mg/Kg	1	1/18/2020 4:29:33 AM	49833
4-Chlorotoluene	ND	0.0034	0.041		mg/Kg	1	1/18/2020 4:29:33 AM	49833
cis-1,2-DCE	ND	0.0056	0.041		mg/Kg	1	1/18/2020 4:29:33 AM	49833
cis-1,3-Dichloropropene	ND	0.0035	0.041		mg/Kg	1	1/18/2020 4:29:33 AM	49833
1,2-Dibromo-3-chloropropane	ND	0.0042	0.082		mg/Kg	1	1/18/2020 4:29:33 AM	49833
Dibromochloromethane	ND	0.0029	0.041		mg/Kg	1	1/18/2020 4:29:33 AM	49833
Dibromomethane	ND	0.0044	0.041		mg/Kg	1	1/18/2020 4:29:33 AM	49833
1,2-Dichlorobenzene	ND	0.0034	0.041		mg/Kg	1	1/18/2020 4:29:33 AM	49833
1,3-Dichlorobenzene	ND	0.0036	0.041		mg/Kg	1	1/18/2020 4:29:33 AM	49833
1,4-Dichlorobenzene	ND	0.0034	0.041		mg/Kg	1	1/18/2020 4:29:33 AM	49833
Dichlorodifluoromethane	ND	0.0095	0.041		mg/Kg	1	1/18/2020 4:29:33 AM	49833
1,1-Dichloroethane	ND	0.0026	0.041		mg/Kg	1	1/18/2020 4:29:33 AM	49833
1,1-Dichloroethene	ND	0.016	0.041		mg/Kg	1	1/18/2020 4:29:33 AM	49833
1,2-Dichloropropane	ND	0.0030	0.041		mg/Kg	1	1/18/2020 4:29:33 AM	49833
1,3-Dichloropropane	ND	0.0044	0.041		mg/Kg	1	1/18/2020 4:29:33 AM	49833
2,2-Dichloropropane	ND	0.013	0.082		mg/Kg	1	1/18/2020 4:29:33 AM	49833
1,1-Dichloropropene	ND	0.0037	0.082		mg/Kg	1	1/18/2020 4:29:33 AM	49833
Hexachlorobutadiene	ND	0.0042	0.082		mg/Kg	1	1/18/2020 4:29:33 AM	49833
2-Hexanone	ND	0.0068	0.41		mg/Kg	1	1/18/2020 4:29:33 AM	49833
Isopropylbenzene	ND	0.0030	0.041		mg/Kg	1	1/18/2020 4:29:33 AM	49833
4-Isopropyltoluene	ND	0.0034	0.041		mg/Kg	1	1/18/2020 4:29:33 AM	49833
4-Methyl-2-pentanone	0.027	0.0078	0.41	J	mg/Kg	1	1/18/2020 4:29:33 AM	49833
Methylene chloride	0.058	0.0073	0.12	J	mg/Kg	1	1/18/2020 4:29:33 AM	49833
n-Butylbenzene	ND	0.0038	0.12		mg/Kg	1	1/18/2020 4:29:33 AM	49833
n-Propylbenzene	ND	0.0033	0.041		mg/Kg	1	1/18/2020 4:29:33 AM	49833
sec-Butylbenzene	ND	0.0046	0.041		mg/Kg	1	1/18/2020 4:29:33 AM	49833

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

Qualifiers:

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

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1-18 1.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 4:12:00 PM
Lab ID: 2001623-009 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Styrene	ND	0.0032	0.041		mg/Kg	1	1/18/2020 4:29:33 AM	49833
tert-Butylbenzene	ND	0.0039	0.041		mg/Kg	1	1/18/2020 4:29:33 AM	49833
1,1,1,2-Tetrachloroethane	ND	0.0028	0.041		mg/Kg	1	1/18/2020 4:29:33 AM	49833
1,1,2,2-Tetrachloroethane	ND	0.0042	0.041		mg/Kg	1	1/18/2020 4:29:33 AM	49833
Tetrachloroethene (PCE)	ND	0.0033	0.041		mg/Kg	1	1/18/2020 4:29:33 AM	49833
trans-1,2-DCE	ND	0.0038	0.041		mg/Kg	1	1/18/2020 4:29:33 AM	49833
trans-1,3-Dichloropropene	ND	0.0043	0.041		mg/Kg	1	1/18/2020 4:29:33 AM	49833
1,2,3-Trichlorobenzene	ND	0.0036	0.082		mg/Kg	1	1/18/2020 4:29:33 AM	49833
1,2,4-Trichlorobenzene	ND	0.0042	0.041		mg/Kg	1	1/18/2020 4:29:33 AM	49833
1,1,1-Trichloroethane	ND	0.0037	0.041		mg/Kg	1	1/18/2020 4:29:33 AM	49833
1,1,2-Trichloroethane	ND	0.0029	0.041		mg/Kg	1	1/18/2020 4:29:33 AM	49833
Trichloroethene (TCE)	ND	0.0048	0.041		mg/Kg	1	1/18/2020 4:29:33 AM	49833
Trichlorofluoromethane	ND	0.014	0.041		mg/Kg	1	1/18/2020 4:29:33 AM	49833
1,2,3-Trichloropropane	ND	0.0066	0.082		mg/Kg	1	1/18/2020 4:29:33 AM	49833
Vinyl chloride	ND	0.0027	0.041		mg/Kg	1	1/18/2020 4:29:33 AM	49833
Xylenes, Total	ND	0.010	0.082		mg/Kg	1	1/18/2020 4:29:33 AM	49833
Surr: Dibromofluoromethane	107		70-130		%Rec	1	1/18/2020 4:29:33 AM	49833
Surr: 1,2-Dichloroethane-d4	91.7		70-130		%Rec	1	1/18/2020 4:29:33 AM	49833
Surr: Toluene-d8	107		70-130		%Rec	1	1/18/2020 4:29:33 AM	49833
Surr: 4-Bromofluorobenzene	95.8		70-130		%Rec	1	1/18/2020 4:29:33 AM	49833
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/20/2020 1:09:00 PM	R65914
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	7.87				pH Units	1	1/21/2020 10:28:00 AM	R65942

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PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** SWMU1-12 7.5'
Project: Gallup SWMUI Sampling Event **Collection Date:** 1/13/2020 2:21:00 PM
Lab ID: 2001623-010 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	7000	210	890		mg/Kg	100	1/21/2020 2:33:09 AM	49861
Motor Oil Range Organics (MRO)	4600	4500	4500		mg/Kg	100	1/21/2020 2:33:09 AM	49861
Surr: DNOP	0	0	55.1-146	S	%Rec	100	1/21/2020 2:33:09 AM	49861
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	6.3	1.0	3.4		mg/Kg	1	1/20/2020 3:56:58 PM	G65910
Surr: BFB	464	0	66.6-105	S	%Rec	1	1/20/2020 3:56:58 PM	G65910
EPA METHOD 7471: MERCURY							Analyst: **rde**	
Mercury	0.26	0.0018	0.032	H	mg/Kg	1	2/24/2020 4:22:12 PM	50503
MERCURY, TCLP							Analyst: **pmf**	
Mercury	ND	0.00075	0.020		mg/L	1	1/20/2020 7:59:08 PM	49923
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.74	5.0		mg/Kg	2	1/25/2020 11:17:31 AM	50038
Arsenic	ND	2.9	5.0		mg/Kg	2	1/25/2020 11:17:31 AM	50038
Barium	160	0.046	0.20		mg/Kg	2	1/25/2020 11:17:31 AM	50038
Beryllium	1.3	0.018	0.30		mg/Kg	2	1/25/2020 11:17:31 AM	50038
Cadmium	ND	0.048	0.20		mg/Kg	2	1/25/2020 11:17:31 AM	50038
Chromium	16	0.16	0.60		mg/Kg	2	1/25/2020 11:17:31 AM	50038
Cobalt	5.8	0.21	0.60		mg/Kg	2	1/25/2020 11:17:31 AM	50038
Lead	1.4	0.49	0.50		mg/Kg	2	1/25/2020 11:17:31 AM	50038
Nickel	13	0.30	1.0		mg/Kg	2	1/25/2020 11:17:31 AM	50038
Selenium	ND	2.5	5.0		mg/Kg	2	1/25/2020 11:17:31 AM	50038
Silver	ND	0.064	0.50		mg/Kg	2	1/25/2020 11:17:31 AM	50038
Vanadium	25	0.13	5.0		mg/Kg	2	1/25/2020 11:17:31 AM	50038
Zinc	76	0.79	5.0		mg/Kg	2	1/25/2020 11:17:31 AM	50038
EPA METHOD 6010B: TCLP METALS							Analyst: **rde**	
Lead	ND	0.0085	5.0		mg/L	1	1/20/2020 4:29:12 PM	49897
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.74	2.0	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868
Acenaphthylene	ND	0.88	2.0	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868
Aniline	ND	0.67	2.0	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868
Anthracene	ND	0.76	2.0	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868
Azobenzene	ND	1.0	2.0	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868
Benz(a)anthracene	ND	0.68	2.0	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868
Benzo(a)pyrene	ND	1.1	2.0	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868
Benzo(b)fluoranthene	ND	1.1	2.0	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868
Benzo(g,h,i)perylene	ND	1.0	2.0	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868

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

Qualifiers:

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H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
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P	Sample pH Not In Range
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Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1-12 7.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 2:21:00 PM
Lab ID: 2001623-010 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Benzo(k)fluoranthene	ND	0.59	2.0	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868
Benzoic acid	ND	1.4	4.9	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868
Benzyl alcohol	ND	0.82	2.0	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868
Bis(2-chloroethoxy)methane	ND	0.82	2.0	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868
Bis(2-chloroethyl)ether	ND	1.2	2.0	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868
Bis(2-chloroisopropyl)ether	ND	0.85	2.0	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868
Bis(2-ethylhexyl)phthalate	ND	2.2	4.9	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868
4-Bromophenyl phenyl ether	ND	1.2	2.0	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868
Butyl benzyl phthalate	ND	0.66	2.0	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868
Carbazole	ND	0.78	2.0	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868
4-Chloro-3-methylphenol	ND	0.78	4.9	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868
4-Chloroaniline	ND	0.76	4.9	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868
2-Chloronaphthalene	ND	0.83	2.5	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868
2-Chlorophenol	ND	1.1	2.0	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868
4-Chlorophenyl phenyl ether	ND	0.83	2.0	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868
Chrysene	1.2	0.77	2.0	JD	mg/Kg	1	1/23/2020 12:50:35 AM	49868
Di-n-butyl phthalate	ND	2.9	4.0	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868
Di-n-octyl phthalate	ND	0.66	4.0	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868
Dibenz(a,h)anthracene	ND	1.1	2.0	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868
Dibenzofuran	ND	0.99	2.0	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868
1,2-Dichlorobenzene	ND	0.78	2.0	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868
1,3-Dichlorobenzene	ND	0.66	2.0	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868
1,4-Dichlorobenzene	ND	0.82	2.0	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868
3,3´-Dichlorobenzidine	ND	0.84	2.5	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868
Diethyl phthalate	ND	3.0	4.9	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868
Dimethyl phthalate	ND	0.80	2.0	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868
2,4-Dichlorophenol	ND	0.83	4.0	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868
2,4-Dimethylphenol	ND	0.82	3.0	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868
4,6-Dinitro-2-methylphenol	ND	0.73	4.0	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868
2,4-Dinitrophenol	ND	0.57	4.9	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868
2,4-Dinitrotoluene	ND	1.0	4.9	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868
2,6-Dinitrotoluene	ND	1.2	4.9	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868
Fluoranthene	ND	0.75	2.0	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868
Fluorene	1.0	0.78	2.0	JD	mg/Kg	1	1/23/2020 12:50:35 AM	49868
Hexachlorobenzene	ND	0.77	2.0	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868
Hexachlorobutadiene	ND	0.87	2.0	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868
Hexachlorocyclopentadiene	ND	0.95	2.0	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868
Hexachloroethane	ND	0.81	2.0	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868
Indeno(1,2,3-cd)pyrene	ND	1.2	2.0	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868

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Qualifiers:

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

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** SWMU1-12 7.5'
Project: Gallup SWMUI Sampling Event **Collection Date:** 1/13/2020 2:21:00 PM
Lab ID: 2001623-010 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Isophorone	ND	0.86	4.0	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868
1-Methylnaphthalene	2.4	0.92	2.0	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868
2-Methylnaphthalene	2.6	0.80	2.0	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868
2-Methylphenol	ND	0.83	4.0	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868
3+4-Methylphenol	ND	0.71	2.0	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868
N-Nitrosodi-n-propylamine	ND	0.99	2.0	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868
N-Nitrosodiphenylamine	ND	1.0	2.0	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868
Naphthalene	ND	0.81	2.0	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868
2-Nitroaniline	ND	1.1	2.0	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868
3-Nitroaniline	ND	0.97	2.0	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868
4-Nitroaniline	ND	1.3	4.0	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868
Nitrobenzene	ND	0.84	4.0	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868
2-Nitrophenol	ND	0.82	2.0	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868
4-Nitrophenol	ND	0.58	2.5	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868
Pentachlorophenol	ND	0.88	4.0	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868
Phenanthrene	2.8	1.0	2.0	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868
Phenol	ND	0.84	2.0	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868
Pyrene	ND	0.65	2.0	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868
Pyridine	ND	1.8	4.0	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868
1,2,4-Trichlorobenzene	ND	0.84	2.0	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868
2,4,5-Trichlorophenol	ND	0.64	2.0	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868
2,4,6-Trichlorophenol	ND	0.99	2.0	D	mg/Kg	1	1/23/2020 12:50:35 AM	49868
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	1	1/23/2020 12:50:35 AM	49868
Surr: Phenol-d5	0		18.5-101	SD	%Rec	1	1/23/2020 12:50:35 AM	49868
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	1	1/23/2020 12:50:35 AM	49868
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	1	1/23/2020 12:50:35 AM	49868
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	1	1/23/2020 12:50:35 AM	49868
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	1	1/23/2020 12:50:35 AM	49868
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.0027	0.017		mg/Kg	1	1/18/2020 6:54:10 PM	49833
Toluene	0.019	0.0032	0.034	J	mg/Kg	1	1/18/2020 6:54:10 PM	49833
Ethylbenzene	0.018	0.0020	0.034	J	mg/Kg	1	1/18/2020 6:54:10 PM	49833
Methyl tert-butyl ether (MTBE)	ND	0.0080	0.034		mg/Kg	1	1/18/2020 6:54:10 PM	49833
1,2,4-Trimethylbenzene	0.20	0.0031	0.034		mg/Kg	1	1/18/2020 6:54:10 PM	49833
1,3,5-Trimethylbenzene	0.062	0.0033	0.034		mg/Kg	1	1/18/2020 6:54:10 PM	49833
1,2-Dichloroethane (EDC)	0.018	0.0034	0.034	J	mg/Kg	1	1/18/2020 6:54:10 PM	49833
1,2-Dibromoethane (EDB)	0.026	0.0031	0.034	J	mg/Kg	1	1/18/2020 6:54:10 PM	49833
Naphthalene	0.18	0.0067	0.067		mg/Kg	1	1/18/2020 6:54:10 PM	49833
1-Methylnaphthalene	1.0	0.019	0.13		mg/Kg	1	1/18/2020 6:54:10 PM	49833

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Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1-12 7.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 2:21:00 PM
Lab ID: 2001623-010 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
2-Methylnaphthalene	1.5	0.015	0.13		mg/Kg	1	1/18/2020 6:54:10 PM	49833
Acetone	0.15	0.028	0.50	J	mg/Kg	1	1/18/2020 6:54:10 PM	49833
Bromobenzene	ND	0.0032	0.034		mg/Kg	1	1/18/2020 6:54:10 PM	49833
Bromodichloromethane	ND	0.0031	0.034		mg/Kg	1	1/18/2020 6:54:10 PM	49833
Bromoform	ND	0.0030	0.034		mg/Kg	1	1/18/2020 6:54:10 PM	49833
Bromomethane	ND	0.0081	0.10		mg/Kg	1	1/18/2020 6:54:10 PM	49833
2-Butanone	ND	0.039	0.34		mg/Kg	1	1/18/2020 6:54:10 PM	49833
Carbon disulfide	ND	0.011	0.34		mg/Kg	1	1/18/2020 6:54:10 PM	49833
Carbon tetrachloride	ND	0.0032	0.034		mg/Kg	1	1/18/2020 6:54:10 PM	49833
Chlorobenzene	ND	0.0043	0.034		mg/Kg	1	1/18/2020 6:54:10 PM	49833
Chloroethane	ND	0.0049	0.067		mg/Kg	1	1/18/2020 6:54:10 PM	49833
Chloroform	ND	0.0027	0.034		mg/Kg	1	1/18/2020 6:54:10 PM	49833
Chloromethane	ND	0.0032	0.10		mg/Kg	1	1/18/2020 6:54:10 PM	49833
2-Chlorotoluene	ND	0.0029	0.034		mg/Kg	1	1/18/2020 6:54:10 PM	49833
4-Chlorotoluene	ND	0.0028	0.034		mg/Kg	1	1/18/2020 6:54:10 PM	49833
cis-1,2-DCE	ND	0.0046	0.034		mg/Kg	1	1/18/2020 6:54:10 PM	49833
cis-1,3-Dichloropropene	ND	0.0028	0.034		mg/Kg	1	1/18/2020 6:54:10 PM	49833
1,2-Dibromo-3-chloropropane	ND	0.0034	0.067		mg/Kg	1	1/18/2020 6:54:10 PM	49833
Dibromochloromethane	ND	0.0024	0.034		mg/Kg	1	1/18/2020 6:54:10 PM	49833
Dibromomethane	ND	0.0036	0.034		mg/Kg	1	1/18/2020 6:54:10 PM	49833
1,2-Dichlorobenzene	ND	0.0028	0.034		mg/Kg	1	1/18/2020 6:54:10 PM	49833
1,3-Dichlorobenzene	ND	0.0029	0.034		mg/Kg	1	1/18/2020 6:54:10 PM	49833
1,4-Dichlorobenzene	ND	0.0028	0.034		mg/Kg	1	1/18/2020 6:54:10 PM	49833
Dichlorodifluoromethane	ND	0.0078	0.034		mg/Kg	1	1/18/2020 6:54:10 PM	49833
1,1-Dichloroethane	ND	0.0021	0.034		mg/Kg	1	1/18/2020 6:54:10 PM	49833
1,1-Dichloroethene	ND	0.013	0.034		mg/Kg	1	1/18/2020 6:54:10 PM	49833
1,2-Dichloropropane	ND	0.0024	0.034		mg/Kg	1	1/18/2020 6:54:10 PM	49833
1,3-Dichloropropane	ND	0.0036	0.034		mg/Kg	1	1/18/2020 6:54:10 PM	49833
2,2-Dichloropropane	ND	0.011	0.067		mg/Kg	1	1/18/2020 6:54:10 PM	49833
1,1-Dichloropropene	ND	0.0031	0.067		mg/Kg	1	1/18/2020 6:54:10 PM	49833
Hexachlorobutadiene	ND	0.0034	0.067		mg/Kg	1	1/18/2020 6:54:10 PM	49833
2-Hexanone	0.091	0.0056	0.34	J	mg/Kg	1	1/18/2020 6:54:10 PM	49833
Isopropylbenzene	0.013	0.0024	0.034	J	mg/Kg	1	1/18/2020 6:54:10 PM	49833
4-Isopropyltoluene	0.020	0.0028	0.034	J	mg/Kg	1	1/18/2020 6:54:10 PM	49833
4-Methyl-2-pentanone	0.15	0.0063	0.34	J	mg/Kg	1	1/18/2020 6:54:10 PM	49833
Methylene chloride	0.039	0.0059	0.10	J	mg/Kg	1	1/18/2020 6:54:10 PM	49833
n-Butylbenzene	0.041	0.0031	0.10	J	mg/Kg	1	1/18/2020 6:54:10 PM	49833
n-Propylbenzene	0.023	0.0027	0.034	J	mg/Kg	1	1/18/2020 6:54:10 PM	49833
sec-Butylbenzene	0.032	0.0038	0.034	J	mg/Kg	1	1/18/2020 6:54:10 PM	49833

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

Qualifiers:

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

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1-12 7.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 2:21:00 PM
Lab ID: 2001623-010 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Styrene	ND	0.0026	0.034		mg/Kg	1	1/18/2020 6:54:10 PM	49833
tert-Butylbenzene	ND	0.0032	0.034		mg/Kg	1	1/18/2020 6:54:10 PM	49833
1,1,1,2-Tetrachloroethane	ND	0.0023	0.034		mg/Kg	1	1/18/2020 6:54:10 PM	49833
1,1,2,2-Tetrachloroethane	ND	0.0034	0.034		mg/Kg	1	1/18/2020 6:54:10 PM	49833
Tetrachloroethene (PCE)	ND	0.0027	0.034		mg/Kg	1	1/18/2020 6:54:10 PM	49833
trans-1,2-DCE	ND	0.0031	0.034		mg/Kg	1	1/18/2020 6:54:10 PM	49833
trans-1,3-Dichloropropene	0.0056	0.0036	0.034	J	mg/Kg	1	1/18/2020 6:54:10 PM	49833
1,2,3-Trichlorobenzene	ND	0.0030	0.067		mg/Kg	1	1/18/2020 6:54:10 PM	49833
1,2,4-Trichlorobenzene	ND	0.0034	0.034		mg/Kg	1	1/18/2020 6:54:10 PM	49833
1,1,1-Trichloroethane	ND	0.0030	0.034		mg/Kg	1	1/18/2020 6:54:10 PM	49833
1,1,2-Trichloroethane	ND	0.0024	0.034		mg/Kg	1	1/18/2020 6:54:10 PM	49833
Trichloroethene (TCE)	ND	0.0039	0.034		mg/Kg	1	1/18/2020 6:54:10 PM	49833
Trichlorofluoromethane	ND	0.011	0.034		mg/Kg	1	1/18/2020 6:54:10 PM	49833
1,2,3-Trichloropropane	ND	0.0054	0.067		mg/Kg	1	1/18/2020 6:54:10 PM	49833
Vinyl chloride	ND	0.0022	0.034		mg/Kg	1	1/18/2020 6:54:10 PM	49833
Xylenes, Total	0.16	0.0085	0.067		mg/Kg	1	1/18/2020 6:54:10 PM	49833
Surr: Dibromofluoromethane	95.4		70-130		%Rec	1	1/18/2020 6:54:10 PM	49833
Surr: 1,2-Dichloroethane-d4	86.2		70-130		%Rec	1	1/18/2020 6:54:10 PM	49833
Surr: Toluene-d8	104		70-130		%Rec	1	1/18/2020 6:54:10 PM	49833
Surr: 4-Bromofluorobenzene	84.4		70-130		%Rec	1	1/18/2020 6:54:10 PM	49833
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/20/2020 1:09:00 PM	R65914
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	7.86				pH Units	1	1/21/2020 10:28:00 AM	R65942

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Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** DUP 1
Project: Gallup SWMUI Sampling Event **Collection Date:** 1/13/2020
Lab ID: 2001623-011 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **CLP**	
Diesel Range Organics (DRO)	310	4.3	18		mg/Kg	2	1/21/2020 6:28:16 PM	49861
Motor Oil Range Organics (MRO)	160	90	90		mg/Kg	2	1/21/2020 6:28:16 PM	49861
Surr: DNOP	101	0	55.1-146		%Rec	2	1/21/2020 6:28:16 PM	49861
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	1.4	4.7		mg/Kg	1	1/18/2020 8:59:11 AM	49874
Surr: BFB	72.8	0	66.6-105		%Rec	1	1/18/2020 8:59:11 AM	49874
EPA METHOD 7471: MERCURY							Analyst: **rde**	
Mercury	0.012	0.0019	0.035	JH	mg/Kg	1	2/24/2020 4:26:19 PM	50503
MERCURY, TCLP							Analyst: **pmf**	
Mercury	ND	0.00075	0.020		mg/L	1	1/20/2020 8:01:55 PM	49923
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.72	4.9		mg/Kg	2	1/28/2020 9:17:21 AM	50072
Arsenic	ND	2.8	4.9		mg/Kg	2	1/28/2020 9:17:21 AM	50072
Barium	330	0.045	0.19		mg/Kg	2	1/28/2020 9:17:21 AM	50072
Beryllium	0.84	0.018	0.29		mg/Kg	2	1/28/2020 9:17:21 AM	50072
Cadmium	ND	0.047	0.19		mg/Kg	2	1/28/2020 9:17:21 AM	50072
Chromium	8.3	0.16	0.58		mg/Kg	2	1/28/2020 9:17:21 AM	50072
Cobalt	3.8	0.21	0.58		mg/Kg	2	1/28/2020 9:17:21 AM	50072
Lead	2.2	0.47	0.49		mg/Kg	2	1/28/2020 10:40:36 AM	50072
Nickel	7.6	0.29	0.97		mg/Kg	2	1/28/2020 9:17:21 AM	50072
Selenium	ND	2.4	4.9		mg/Kg	2	1/28/2020 9:17:21 AM	50072
Silver	ND	0.062	0.49		mg/Kg	2	1/28/2020 9:17:21 AM	50072
Vanadium	17	0.13	4.9		mg/Kg	2	1/28/2020 9:17:21 AM	50072
Zinc	15	0.77	4.9		mg/Kg	2	1/28/2020 9:17:21 AM	50072
EPA METHOD 6010B: TCLP METALS							Analyst: **rde**	
Lead	ND	0.0085	5.0		mg/L	1	1/20/2020 4:30:44 PM	49897
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.15	0.40	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868
Acenaphthylene	ND	0.18	0.40	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868
Aniline	ND	0.14	0.40	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868
Anthracene	ND	0.15	0.40	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868
Azobenzene	ND	0.20	0.40	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868
Benz(a)anthracene	ND	0.14	0.40	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868
Benzo(a)pyrene	ND	0.22	0.40	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868
Benzo(b)fluoranthene	ND	0.23	0.40	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868
Benzo(g,h,i)perylene	ND	0.20	0.40	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868

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S	% Recovery outside of range due to dilution or matrix

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** DUP 1
Project: Gallup SWMUI Sampling Event **Collection Date:** 1/13/2020
Lab ID: 2001623-011 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Benzo(k)fluoranthene	ND	0.12	0.40	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868
Benzoic acid	ND	0.28	1.0	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868
Benzyl alcohol	ND	0.17	0.40	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868
Bis(2-chloroethoxy)methane	ND	0.16	0.40	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868
Bis(2-chloroethyl)ether	ND	0.23	0.40	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868
Bis(2-chloroisopropyl)ether	ND	0.17	0.40	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868
Bis(2-ethylhexyl)phthalate	ND	0.45	1.0	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868
4-Bromophenyl phenyl ether	ND	0.23	0.40	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868
Butyl benzyl phthalate	ND	0.13	0.40	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868
Carbazole	ND	0.16	0.40	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868
4-Chloro-3-methylphenol	ND	0.16	1.0	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868
4-Chloroaniline	ND	0.15	1.0	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868
2-Chloronaphthalene	ND	0.17	0.50	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868
2-Chlorophenol	ND	0.23	0.40	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868
4-Chlorophenyl phenyl ether	ND	0.17	0.40	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868
Chrysene	ND	0.16	0.40	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868
Di-n-butyl phthalate	ND	0.59	0.80	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868
Di-n-octyl phthalate	ND	0.13	0.80	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868
Dibenz(a,h)anthracene	ND	0.22	0.40	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868
Dibenzofuran	ND	0.20	0.40	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868
1,2-Dichlorobenzene	ND	0.16	0.40	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868
1,3-Dichlorobenzene	ND	0.13	0.40	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868
1,4-Dichlorobenzene	ND	0.17	0.40	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868
3,3´-Dichlorobenzidine	ND	0.17	0.50	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868
Diethyl phthalate	ND	0.61	1.0	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868
Dimethyl phthalate	ND	0.16	0.40	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868
2,4-Dichlorophenol	ND	0.17	0.80	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868
2,4-Dimethylphenol	ND	0.17	0.60	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868
4,6-Dinitro-2-methylphenol	ND	0.15	0.80	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868
2,4-Dinitrophenol	ND	0.12	1.0	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868
2,4-Dinitrotoluene	ND	0.20	1.0	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868
2,6-Dinitrotoluene	ND	0.24	1.0	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868
Fluoranthene	ND	0.15	0.40	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868
Fluorene	ND	0.16	0.40	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868
Hexachlorobenzene	ND	0.16	0.40	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868
Hexachlorobutadiene	ND	0.17	0.40	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868
Hexachlorocyclopentadiene	ND	0.19	0.40	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868
Hexachloroethane	ND	0.16	0.40	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868
Indeno(1,2,3-cd)pyrene	ND	0.25	0.40	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868

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

Qualifiers:

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

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** DUP 1
Project: Gallup SWMUI Sampling Event **Collection Date:** 1/13/2020
Lab ID: 2001623-011 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Isophorone	ND	0.17	0.80	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868
1-Methylnaphthalene	ND	0.19	0.40	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868
2-Methylnaphthalene	ND	0.16	0.40	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868
2-Methylphenol	ND	0.17	0.80	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868
3+4-Methylphenol	ND	0.14	0.40	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868
N-Nitrosodi-n-propylamine	ND	0.20	0.40	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868
N-Nitrosodiphenylamine	ND	0.21	0.40	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868
Naphthalene	ND	0.16	0.40	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868
2-Nitroaniline	ND	0.22	0.40	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868
3-Nitroaniline	ND	0.20	0.40	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868
4-Nitroaniline	ND	0.27	0.80	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868
Nitrobenzene	ND	0.17	0.80	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868
2-Nitrophenol	ND	0.16	0.40	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868
4-Nitrophenol	ND	0.12	0.50	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868
Pentachlorophenol	ND	0.18	0.80	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868
Phenanthrene	0.33	0.20	0.40	JD	mg/Kg	1	1/23/2020 10:42:33 AM	49868
Phenol	ND	0.17	0.40	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868
Pyrene	ND	0.13	0.40	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868
Pyridine	ND	0.37	0.80	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868
1,2,4-Trichlorobenzene	ND	0.17	0.40	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868
2,4,5-Trichlorophenol	ND	0.13	0.40	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868
2,4,6-Trichlorophenol	ND	0.20	0.40	D	mg/Kg	1	1/23/2020 10:42:33 AM	49868
Surr: 2-Fluorophenol	66.8		26.7-85.9	D	%Rec	1	1/23/2020 10:42:33 AM	49868
Surr: Phenol-d5	73.6		18.5-101	D	%Rec	1	1/23/2020 10:42:33 AM	49868
Surr: 2,4,6-Tribromophenol	66.6		35.8-85.6	D	%Rec	1	1/23/2020 10:42:33 AM	49868
Surr: Nitrobenzene-d5	86.3		40.8-95.2	D	%Rec	1	1/23/2020 10:42:33 AM	49868
Surr: 2-Fluorobiphenyl	70.1		34.7-85.2	D	%Rec	1	1/23/2020 10:42:33 AM	49868
Surr: 4-Terphenyl-d14	69.0		37.4-91.3	D	%Rec	1	1/23/2020 10:42:33 AM	49868
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.0038	0.023		mg/Kg	1	1/18/2020 5:26:51 AM	49833
Toluene	ND	0.0045	0.047		mg/Kg	1	1/18/2020 5:26:51 AM	49833
Ethylbenzene	ND	0.0027	0.047		mg/Kg	1	1/18/2020 5:26:51 AM	49833
Methyl tert-butyl ether (MTBE)	ND	0.011	0.047		mg/Kg	1	1/18/2020 5:26:51 AM	49833
1,2,4-Trimethylbenzene	ND	0.0043	0.047		mg/Kg	1	1/18/2020 5:26:51 AM	49833
1,3,5-Trimethylbenzene	ND	0.0045	0.047		mg/Kg	1	1/18/2020 5:26:51 AM	49833
1,2-Dichloroethane (EDC)	ND	0.0048	0.047		mg/Kg	1	1/18/2020 5:26:51 AM	49833
1,2-Dibromoethane (EDB)	ND	0.0043	0.047		mg/Kg	1	1/18/2020 5:26:51 AM	49833
Naphthalene	ND	0.0093	0.093		mg/Kg	1	1/18/2020 5:26:51 AM	49833
1-Methylnaphthalene	0.064	0.027	0.19	J	mg/Kg	1	1/18/2020 5:26:51 AM	49833

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

Qualifiers:

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

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 1
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020
Lab ID: 2001623-011
Matrix: SOIL
Received Date: 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
2-Methylnaphthalene	0.076	0.020	0.19	J	mg/Kg	1	1/18/2020 5:26:51 AM	49833
Acetone	ND	0.039	0.70		mg/Kg	1	1/18/2020 5:26:51 AM	49833
Bromobenzene	ND	0.0045	0.047		mg/Kg	1	1/18/2020 5:26:51 AM	49833
Bromodichloromethane	ND	0.0043	0.047		mg/Kg	1	1/18/2020 5:26:51 AM	49833
Bromoform	ND	0.0042	0.047		mg/Kg	1	1/18/2020 5:26:51 AM	49833
Bromomethane	ND	0.011	0.14		mg/Kg	1	1/18/2020 5:26:51 AM	49833
2-Butanone	ND	0.054	0.47		mg/Kg	1	1/18/2020 5:26:51 AM	49833
Carbon disulfide	ND	0.015	0.47		mg/Kg	1	1/18/2020 5:26:51 AM	49833
Carbon tetrachloride	ND	0.0044	0.047		mg/Kg	1	1/18/2020 5:26:51 AM	49833
Chlorobenzene	ND	0.0060	0.047		mg/Kg	1	1/18/2020 5:26:51 AM	49833
Chloroethane	ND	0.0069	0.093		mg/Kg	1	1/18/2020 5:26:51 AM	49833
Chloroform	ND	0.0038	0.047		mg/Kg	1	1/18/2020 5:26:51 AM	49833
Chloromethane	ND	0.0045	0.14		mg/Kg	1	1/18/2020 5:26:51 AM	49833
2-Chlorotoluene	ND	0.0041	0.047		mg/Kg	1	1/18/2020 5:26:51 AM	49833
4-Chlorotoluene	ND	0.0038	0.047		mg/Kg	1	1/18/2020 5:26:51 AM	49833
cis-1,2-DCE	ND	0.0064	0.047		mg/Kg	1	1/18/2020 5:26:51 AM	49833
cis-1,3-Dichloropropene	ND	0.0039	0.047		mg/Kg	1	1/18/2020 5:26:51 AM	49833
1,2-Dibromo-3-chloropropane	ND	0.0048	0.093		mg/Kg	1	1/18/2020 5:26:51 AM	49833
Dibromochloromethane	ND	0.0033	0.047		mg/Kg	1	1/18/2020 5:26:51 AM	49833
Dibromomethane	ND	0.0050	0.047		mg/Kg	1	1/18/2020 5:26:51 AM	49833
1,2-Dichlorobenzene	ND	0.0038	0.047		mg/Kg	1	1/18/2020 5:26:51 AM	49833
1,3-Dichlorobenzene	ND	0.0041	0.047		mg/Kg	1	1/18/2020 5:26:51 AM	49833
1,4-Dichlorobenzene	ND	0.0039	0.047		mg/Kg	1	1/18/2020 5:26:51 AM	49833
Dichlorodifluoromethane	ND	0.011	0.047		mg/Kg	1	1/18/2020 5:26:51 AM	49833
1,1-Dichloroethane	ND	0.0030	0.047		mg/Kg	1	1/18/2020 5:26:51 AM	49833
1,1-Dichloroethene	ND	0.019	0.047		mg/Kg	1	1/18/2020 5:26:51 AM	49833
1,2-Dichloropropane	ND	0.0034	0.047		mg/Kg	1	1/18/2020 5:26:51 AM	49833
1,3-Dichloropropane	ND	0.0051	0.047		mg/Kg	1	1/18/2020 5:26:51 AM	49833
2,2-Dichloropropane	ND	0.015	0.093		mg/Kg	1	1/18/2020 5:26:51 AM	49833
1,1-Dichloropropene	ND	0.0043	0.093		mg/Kg	1	1/18/2020 5:26:51 AM	49833
Hexachlorobutadiene	ND	0.0047	0.093		mg/Kg	1	1/18/2020 5:26:51 AM	49833
2-Hexanone	ND	0.0078	0.47		mg/Kg	1	1/18/2020 5:26:51 AM	49833
Isopropylbenzene	ND	0.0034	0.047		mg/Kg	1	1/18/2020 5:26:51 AM	49833
4-Isopropyltoluene	ND	0.0039	0.047		mg/Kg	1	1/18/2020 5:26:51 AM	49833
4-Methyl-2-pentanone	0.029	0.0088	0.47	J	mg/Kg	1	1/18/2020 5:26:51 AM	49833
Methylene chloride	0.032	0.0082	0.14	J	mg/Kg	1	1/18/2020 5:26:51 AM	49833
n-Butylbenzene	ND	0.0044	0.14		mg/Kg	1	1/18/2020 5:26:51 AM	49833
n-Propylbenzene	ND	0.0037	0.047		mg/Kg	1	1/18/2020 5:26:51 AM	49833
sec-Butylbenzene	ND	0.0053	0.047		mg/Kg	1	1/18/2020 5:26:51 AM	49833

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Qualifiers:

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D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
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Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 1
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020
Lab ID: 2001623-011
Matrix: SOIL
Received Date: 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Styrene	ND	0.0037	0.047		mg/Kg	1	1/18/2020 5:26:51 AM	49833
tert-Butylbenzene	ND	0.0044	0.047		mg/Kg	1	1/18/2020 5:26:51 AM	49833
1,1,1,2-Tetrachloroethane	ND	0.0032	0.047		mg/Kg	1	1/18/2020 5:26:51 AM	49833
1,1,2,2-Tetrachloroethane	ND	0.0047	0.047		mg/Kg	1	1/18/2020 5:26:51 AM	49833
Tetrachloroethene (PCE)	ND	0.0037	0.047		mg/Kg	1	1/18/2020 5:26:51 AM	49833
trans-1,2-DCE	ND	0.0043	0.047		mg/Kg	1	1/18/2020 5:26:51 AM	49833
trans-1,3-Dichloropropene	ND	0.0049	0.047		mg/Kg	1	1/18/2020 5:26:51 AM	49833
1,2,3-Trichlorobenzene	ND	0.0041	0.093		mg/Kg	1	1/18/2020 5:26:51 AM	49833
1,2,4-Trichlorobenzene	ND	0.0047	0.047		mg/Kg	1	1/18/2020 5:26:51 AM	49833
1,1,1-Trichloroethane	ND	0.0042	0.047		mg/Kg	1	1/18/2020 5:26:51 AM	49833
1,1,2-Trichloroethane	ND	0.0033	0.047		mg/Kg	1	1/18/2020 5:26:51 AM	49833
Trichloroethene (TCE)	ND	0.0054	0.047		mg/Kg	1	1/18/2020 5:26:51 AM	49833
Trichlorofluoromethane	ND	0.016	0.047		mg/Kg	1	1/18/2020 5:26:51 AM	49833
1,2,3-Trichloropropane	ND	0.0076	0.093		mg/Kg	1	1/18/2020 5:26:51 AM	49833
Vinyl chloride	ND	0.0030	0.047		mg/Kg	1	1/18/2020 5:26:51 AM	49833
Xylenes, Total	ND	0.012	0.093		mg/Kg	1	1/18/2020 5:26:51 AM	49833
Surr: Dibromofluoromethane	108		70-130		%Rec	1	1/18/2020 5:26:51 AM	49833
Surr: 1,2-Dichloroethane-d4	88.6		70-130		%Rec	1	1/18/2020 5:26:51 AM	49833
Surr: Toluene-d8	102		70-130		%Rec	1	1/18/2020 5:26:51 AM	49833
Surr: 4-Bromofluorobenzene	92.2		70-130		%Rec	1	1/18/2020 5:26:51 AM	49833
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/20/2020 1:09:00 PM	R65914
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	7.74				pH Units	1	1/21/2020 10:28:00 AM	R65942

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S	% Recovery outside of range due to dilution or matrix
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E	Value above quantitation range
J	Analyte detected below quantitation limits
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Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** DUP 2
Project: Gallup SWMUI Sampling Event **Collection Date:** 1/13/2020
Lab ID: 2001623-012 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	5.9	2.4	9.9	J	mg/Kg	1	1/21/2020 2:50:58 AM	49861
Motor Oil Range Organics (MRO)	ND	49	49		mg/Kg	1	1/21/2020 2:50:58 AM	49861
Surr: DNOP	92.1	0	55.1-146		%Rec	1	1/21/2020 2:50:58 AM	49861
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	1.3	4.1		mg/Kg	1	1/18/2020 9:22:10 AM	49874
Surr: BFB	71.7	0	66.6-105		%Rec	1	1/18/2020 9:22:10 AM	49874
EPA METHOD 7471: MERCURY							Analyst: **rde**	
Mercury	0.0046	0.0019	0.035	JH	mg/Kg	1	2/24/2020 4:28:16 PM	50503
MERCURY, TCLP							Analyst: **pmf**	
Mercury	ND	0.00075	0.020		mg/L	1	1/20/2020 8:04:42 PM	49923
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.76	5.1		mg/Kg	2	1/28/2020 9:27:14 AM	50072
Arsenic	ND	2.9	5.1		mg/Kg	2	1/28/2020 9:27:14 AM	50072
Barium	610	0.12	0.51		mg/Kg	5	1/28/2020 9:49:50 AM	50072
Beryllium	0.78	0.019	0.31		mg/Kg	2	1/28/2020 9:27:14 AM	50072
Cadmium	ND	0.050	0.21		mg/Kg	2	1/28/2020 9:27:14 AM	50072
Chromium	7.4	0.16	0.62		mg/Kg	2	1/28/2020 9:27:14 AM	50072
Cobalt	3.8	0.22	0.62		mg/Kg	2	1/28/2020 9:27:14 AM	50072
Lead	3.6	1.2	1.3		mg/Kg	5	1/28/2020 11:53:45 AM	50072
Nickel	6.7	0.31	1.0		mg/Kg	2	1/28/2020 9:27:14 AM	50072
Selenium	ND	2.6	5.1		mg/Kg	2	1/28/2020 9:27:14 AM	50072
Silver	ND	0.066	0.51		mg/Kg	2	1/28/2020 9:27:14 AM	50072
Vanadium	20	0.14	5.1		mg/Kg	2	1/28/2020 9:27:14 AM	50072
Zinc	11	0.81	5.1		mg/Kg	2	1/28/2020 9:27:14 AM	50072
EPA METHOD 6010B: TCLP METALS							Analyst: **rde**	
Lead	ND	0.0085	5.0		mg/L	1	1/20/2020 4:32:16 PM	49897
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.075	0.20		mg/Kg	1	1/23/2020 11:11:22 AM	49868
Acenaphthylene	ND	0.088	0.20		mg/Kg	1	1/23/2020 11:11:22 AM	49868
Aniline	ND	0.068	0.20		mg/Kg	1	1/23/2020 11:11:22 AM	49868
Anthracene	ND	0.077	0.20		mg/Kg	1	1/23/2020 11:11:22 AM	49868
Azobenzene	ND	0.10	0.20		mg/Kg	1	1/23/2020 11:11:22 AM	49868
Benz(a)anthracene	ND	0.068	0.20		mg/Kg	1	1/23/2020 11:11:22 AM	49868
Benzo(a)pyrene	ND	0.11	0.20		mg/Kg	1	1/23/2020 11:11:22 AM	49868
Benzo(b)fluoranthene	ND	0.11	0.20		mg/Kg	1	1/23/2020 11:11:22 AM	49868
Benzo(g,h,i)perylene	ND	0.10	0.20		mg/Kg	1	1/23/2020 11:11:22 AM	49868

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Qualifiers:

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

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** DUP 2
Project: Gallup SWMUI Sampling Event **Collection Date:** 1/13/2020
Lab ID: 2001623-012 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Benzo(k)fluoranthene	ND	0.060	0.20		mg/Kg	1	1/23/2020 11:11:22 AM	49868
Benzoic acid	ND	0.14	0.50		mg/Kg	1	1/23/2020 11:11:22 AM	49868
Benzyl alcohol	ND	0.083	0.20		mg/Kg	1	1/23/2020 11:11:22 AM	49868
Bis(2-chloroethoxy)methane	ND	0.082	0.20		mg/Kg	1	1/23/2020 11:11:22 AM	49868
Bis(2-chloroethyl)ether	ND	0.12	0.20		mg/Kg	1	1/23/2020 11:11:22 AM	49868
Bis(2-chloroisopropyl)ether	ND	0.086	0.20		mg/Kg	1	1/23/2020 11:11:22 AM	49868
Bis(2-ethylhexyl)phthalate	ND	0.22	0.50		mg/Kg	1	1/23/2020 11:11:22 AM	49868
4-Bromophenyl phenyl ether	ND	0.12	0.20		mg/Kg	1	1/23/2020 11:11:22 AM	49868
Butyl benzyl phthalate	ND	0.067	0.20		mg/Kg	1	1/23/2020 11:11:22 AM	49868
Carbazole	ND	0.079	0.20		mg/Kg	1	1/23/2020 11:11:22 AM	49868
4-Chloro-3-methylphenol	ND	0.078	0.50		mg/Kg	1	1/23/2020 11:11:22 AM	49868
4-Chloroaniline	ND	0.076	0.50		mg/Kg	1	1/23/2020 11:11:22 AM	49868
2-Chloronaphthalene	ND	0.084	0.25		mg/Kg	1	1/23/2020 11:11:22 AM	49868
2-Chlorophenol	ND	0.11	0.20		mg/Kg	1	1/23/2020 11:11:22 AM	49868
4-Chlorophenyl phenyl ether	ND	0.084	0.20		mg/Kg	1	1/23/2020 11:11:22 AM	49868
Chrysene	ND	0.078	0.20		mg/Kg	1	1/23/2020 11:11:22 AM	49868
Di-n-butyl phthalate	0.30	0.30	0.40	J	mg/Kg	1	1/23/2020 11:11:22 AM	49868
Di-n-octyl phthalate	ND	0.067	0.40		mg/Kg	1	1/23/2020 11:11:22 AM	49868
Dibenz(a,h)anthracene	ND	0.11	0.20		mg/Kg	1	1/23/2020 11:11:22 AM	49868
Dibenzofuran	ND	0.10	0.20		mg/Kg	1	1/23/2020 11:11:22 AM	49868
1,2-Dichlorobenzene	ND	0.078	0.20		mg/Kg	1	1/23/2020 11:11:22 AM	49868
1,3-Dichlorobenzene	ND	0.067	0.20		mg/Kg	1	1/23/2020 11:11:22 AM	49868
1,4-Dichlorobenzene	ND	0.083	0.20		mg/Kg	1	1/23/2020 11:11:22 AM	49868
3,3´-Dichlorobenzidine	ND	0.085	0.25		mg/Kg	1	1/23/2020 11:11:22 AM	49868
Diethyl phthalate	ND	0.30	0.50		mg/Kg	1	1/23/2020 11:11:22 AM	49868
Dimethyl phthalate	ND	0.081	0.20		mg/Kg	1	1/23/2020 11:11:22 AM	49868
2,4-Dichlorophenol	ND	0.084	0.40		mg/Kg	1	1/23/2020 11:11:22 AM	49868
2,4-Dimethylphenol	ND	0.083	0.30		mg/Kg	1	1/23/2020 11:11:22 AM	49868
4,6-Dinitro-2-methylphenol	ND	0.073	0.40		mg/Kg	1	1/23/2020 11:11:22 AM	49868
2,4-Dinitrophenol	ND	0.058	0.50		mg/Kg	1	1/23/2020 11:11:22 AM	49868
2,4-Dinitrotoluene	ND	0.10	0.50		mg/Kg	1	1/23/2020 11:11:22 AM	49868
2,6-Dinitrotoluene	ND	0.12	0.50		mg/Kg	1	1/23/2020 11:11:22 AM	49868
Fluoranthene	ND	0.076	0.20		mg/Kg	1	1/23/2020 11:11:22 AM	49868
Fluorene	ND	0.078	0.20		mg/Kg	1	1/23/2020 11:11:22 AM	49868
Hexachlorobenzene	ND	0.078	0.20		mg/Kg	1	1/23/2020 11:11:22 AM	49868
Hexachlorobutadiene	ND	0.087	0.20		mg/Kg	1	1/23/2020 11:11:22 AM	49868
Hexachlorocyclopentadiene	ND	0.096	0.20		mg/Kg	1	1/23/2020 11:11:22 AM	49868
Hexachloroethane	ND	0.082	0.20		mg/Kg	1	1/23/2020 11:11:22 AM	49868
Indeno(1,2,3-cd)pyrene	ND	0.12	0.20		mg/Kg	1	1/23/2020 11:11:22 AM	49868

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Qualifiers:

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

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** DUP 2
Project: Gallup SWMUI Sampling Event **Collection Date:** 1/13/2020
Lab ID: 2001623-012 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Isophorone	ND	0.087	0.40		mg/Kg	1	1/23/2020 11:11:22 AM	49868
1-Methylnaphthalene	ND	0.093	0.20		mg/Kg	1	1/23/2020 11:11:22 AM	49868
2-Methylnaphthalene	ND	0.081	0.20		mg/Kg	1	1/23/2020 11:11:22 AM	49868
2-Methylphenol	ND	0.084	0.40		mg/Kg	1	1/23/2020 11:11:22 AM	49868
3+4-Methylphenol	ND	0.072	0.20		mg/Kg	1	1/23/2020 11:11:22 AM	49868
N-Nitrosodi-n-propylamine	ND	0.10	0.20		mg/Kg	1	1/23/2020 11:11:22 AM	49868
N-Nitrosodiphenylamine	ND	0.10	0.20		mg/Kg	1	1/23/2020 11:11:22 AM	49868
Naphthalene	ND	0.082	0.20		mg/Kg	1	1/23/2020 11:11:22 AM	49868
2-Nitroaniline	ND	0.11	0.20		mg/Kg	1	1/23/2020 11:11:22 AM	49868
3-Nitroaniline	ND	0.098	0.20		mg/Kg	1	1/23/2020 11:11:22 AM	49868
4-Nitroaniline	ND	0.13	0.40		mg/Kg	1	1/23/2020 11:11:22 AM	49868
Nitrobenzene	ND	0.085	0.40		mg/Kg	1	1/23/2020 11:11:22 AM	49868
2-Nitrophenol	ND	0.082	0.20		mg/Kg	1	1/23/2020 11:11:22 AM	49868
4-Nitrophenol	ND	0.059	0.25		mg/Kg	1	1/23/2020 11:11:22 AM	49868
Pentachlorophenol	ND	0.089	0.40		mg/Kg	1	1/23/2020 11:11:22 AM	49868
Phenanthrene	ND	0.10	0.20		mg/Kg	1	1/23/2020 11:11:22 AM	49868
Phenol	ND	0.085	0.20		mg/Kg	1	1/23/2020 11:11:22 AM	49868
Pyrene	ND	0.066	0.20		mg/Kg	1	1/23/2020 11:11:22 AM	49868
Pyridine	ND	0.19	0.40		mg/Kg	1	1/23/2020 11:11:22 AM	49868
1,2,4-Trichlorobenzene	ND	0.085	0.20		mg/Kg	1	1/23/2020 11:11:22 AM	49868
2,4,5-Trichlorophenol	ND	0.064	0.20		mg/Kg	1	1/23/2020 11:11:22 AM	49868
2,4,6-Trichlorophenol	ND	0.10	0.20		mg/Kg	1	1/23/2020 11:11:22 AM	49868
Surr: 2-Fluorophenol	46.7		26.7-85.9		%Rec	1	1/23/2020 11:11:22 AM	49868
Surr: Phenol-d5	54.4		18.5-101		%Rec	1	1/23/2020 11:11:22 AM	49868
Surr: 2,4,6-Tribromophenol	61.0		35.8-85.6		%Rec	1	1/23/2020 11:11:22 AM	49868
Surr: Nitrobenzene-d5	60.1		40.8-95.2		%Rec	1	1/23/2020 11:11:22 AM	49868
Surr: 2-Fluorobiphenyl	54.9		34.7-85.2		%Rec	1	1/23/2020 11:11:22 AM	49868
Surr: 4-Terphenyl-d14	84.1		37.4-91.3		%Rec	1	1/23/2020 11:11:22 AM	49868
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.0034	0.021		mg/Kg	1	1/18/2020 5:55:29 AM	49833
Toluene	ND	0.0040	0.041		mg/Kg	1	1/18/2020 5:55:29 AM	49833
Ethylbenzene	ND	0.0024	0.041		mg/Kg	1	1/18/2020 5:55:29 AM	49833
Methyl tert-butyl ether (MTBE)	ND	0.0098	0.041		mg/Kg	1	1/18/2020 5:55:29 AM	49833
1,2,4-Trimethylbenzene	ND	0.0038	0.041		mg/Kg	1	1/18/2020 5:55:29 AM	49833
1,3,5-Trimethylbenzene	ND	0.0040	0.041		mg/Kg	1	1/18/2020 5:55:29 AM	49833
1,2-Dichloroethane (EDC)	ND	0.0042	0.041		mg/Kg	1	1/18/2020 5:55:29 AM	49833
1,2-Dibromoethane (EDB)	ND	0.0038	0.041		mg/Kg	1	1/18/2020 5:55:29 AM	49833
Naphthalene	ND	0.0083	0.083		mg/Kg	1	1/18/2020 5:55:29 AM	49833
1-Methylnaphthalene	ND	0.024	0.17		mg/Kg	1	1/18/2020 5:55:29 AM	49833

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

Qualifiers:

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

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 2
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020
Lab ID: 2001623-012
Matrix: SOIL
Received Date: 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
2-Methylnaphthalene	ND	0.018	0.17		mg/Kg	1	1/18/2020 5:55:29 AM	49833
Acetone	ND	0.034	0.62		mg/Kg	1	1/18/2020 5:55:29 AM	49833
Bromobenzene	ND	0.0040	0.041		mg/Kg	1	1/18/2020 5:55:29 AM	49833
Bromodichloromethane	ND	0.0038	0.041		mg/Kg	1	1/18/2020 5:55:29 AM	49833
Bromoform	ND	0.0037	0.041		mg/Kg	1	1/18/2020 5:55:29 AM	49833
Bromomethane	ND	0.010	0.12		mg/Kg	1	1/18/2020 5:55:29 AM	49833
2-Butanone	ND	0.048	0.41		mg/Kg	1	1/18/2020 5:55:29 AM	49833
Carbon disulfide	ND	0.014	0.41		mg/Kg	1	1/18/2020 5:55:29 AM	49833
Carbon tetrachloride	ND	0.0039	0.041		mg/Kg	1	1/18/2020 5:55:29 AM	49833
Chlorobenzene	ND	0.0053	0.041		mg/Kg	1	1/18/2020 5:55:29 AM	49833
Chloroethane	ND	0.0061	0.083		mg/Kg	1	1/18/2020 5:55:29 AM	49833
Chloroform	ND	0.0033	0.041		mg/Kg	1	1/18/2020 5:55:29 AM	49833
Chloromethane	ND	0.0040	0.12		mg/Kg	1	1/18/2020 5:55:29 AM	49833
2-Chlorotoluene	ND	0.0036	0.041		mg/Kg	1	1/18/2020 5:55:29 AM	49833
4-Chlorotoluene	ND	0.0034	0.041		mg/Kg	1	1/18/2020 5:55:29 AM	49833
cis-1,2-DCE	ND	0.0057	0.041		mg/Kg	1	1/18/2020 5:55:29 AM	49833
cis-1,3-Dichloropropene	ND	0.0035	0.041		mg/Kg	1	1/18/2020 5:55:29 AM	49833
1,2-Dibromo-3-chloropropane	ND	0.0042	0.083		mg/Kg	1	1/18/2020 5:55:29 AM	49833
Dibromochloromethane	ND	0.0029	0.041		mg/Kg	1	1/18/2020 5:55:29 AM	49833
Dibromomethane	ND	0.0045	0.041		mg/Kg	1	1/18/2020 5:55:29 AM	49833
1,2-Dichlorobenzene	ND	0.0034	0.041		mg/Kg	1	1/18/2020 5:55:29 AM	49833
1,3-Dichlorobenzene	ND	0.0036	0.041		mg/Kg	1	1/18/2020 5:55:29 AM	49833
1,4-Dichlorobenzene	ND	0.0035	0.041		mg/Kg	1	1/18/2020 5:55:29 AM	49833
Dichlorodifluoromethane	ND	0.0096	0.041		mg/Kg	1	1/18/2020 5:55:29 AM	49833
1,1-Dichloroethane	ND	0.0026	0.041		mg/Kg	1	1/18/2020 5:55:29 AM	49833
1,1-Dichloroethene	ND	0.017	0.041		mg/Kg	1	1/18/2020 5:55:29 AM	49833
1,2-Dichloropropane	ND	0.0030	0.041		mg/Kg	1	1/18/2020 5:55:29 AM	49833
1,3-Dichloropropane	ND	0.0045	0.041		mg/Kg	1	1/18/2020 5:55:29 AM	49833
2,2-Dichloropropane	ND	0.013	0.083		mg/Kg	1	1/18/2020 5:55:29 AM	49833
1,1-Dichloropropene	ND	0.0038	0.083		mg/Kg	1	1/18/2020 5:55:29 AM	49833
Hexachlorobutadiene	ND	0.0042	0.083		mg/Kg	1	1/18/2020 5:55:29 AM	49833
2-Hexanone	ND	0.0069	0.41		mg/Kg	1	1/18/2020 5:55:29 AM	49833
Isopropylbenzene	ND	0.0030	0.041		mg/Kg	1	1/18/2020 5:55:29 AM	49833
4-Isopropyltoluene	ND	0.0034	0.041		mg/Kg	1	1/18/2020 5:55:29 AM	49833
4-Methyl-2-pentanone	0.025	0.0078	0.41	J	mg/Kg	1	1/18/2020 5:55:29 AM	49833
Methylene chloride	0.027	0.0073	0.12	J	mg/Kg	1	1/18/2020 5:55:29 AM	49833
n-Butylbenzene	ND	0.0039	0.12		mg/Kg	1	1/18/2020 5:55:29 AM	49833
n-Propylbenzene	ND	0.0033	0.041		mg/Kg	1	1/18/2020 5:55:29 AM	49833
sec-Butylbenzene	ND	0.0047	0.041		mg/Kg	1	1/18/2020 5:55:29 AM	49833

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ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
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E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
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Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: DUP 2
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020
Lab ID: 2001623-012
Matrix: SOIL
Received Date: 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Styrene	ND	0.0032	0.041		mg/Kg	1	1/18/2020 5:55:29 AM	49833
tert-Butylbenzene	ND	0.0039	0.041		mg/Kg	1	1/18/2020 5:55:29 AM	49833
1,1,1,2-Tetrachloroethane	ND	0.0028	0.041		mg/Kg	1	1/18/2020 5:55:29 AM	49833
1,1,2,2-Tetrachloroethane	ND	0.0042	0.041		mg/Kg	1	1/18/2020 5:55:29 AM	49833
Tetrachloroethene (PCE)	ND	0.0033	0.041		mg/Kg	1	1/18/2020 5:55:29 AM	49833
trans-1,2-DCE	ND	0.0038	0.041		mg/Kg	1	1/18/2020 5:55:29 AM	49833
trans-1,3-Dichloropropene	ND	0.0044	0.041		mg/Kg	1	1/18/2020 5:55:29 AM	49833
1,2,3-Trichlorobenzene	ND	0.0036	0.083		mg/Kg	1	1/18/2020 5:55:29 AM	49833
1,2,4-Trichlorobenzene	ND	0.0042	0.041		mg/Kg	1	1/18/2020 5:55:29 AM	49833
1,1,1-Trichloroethane	ND	0.0037	0.041		mg/Kg	1	1/18/2020 5:55:29 AM	49833
1,1,2-Trichloroethane	ND	0.0029	0.041		mg/Kg	1	1/18/2020 5:55:29 AM	49833
Trichloroethene (TCE)	ND	0.0048	0.041		mg/Kg	1	1/18/2020 5:55:29 AM	49833
Trichlorofluoromethane	ND	0.014	0.041		mg/Kg	1	1/18/2020 5:55:29 AM	49833
1,2,3-Trichloropropane	ND	0.0067	0.083		mg/Kg	1	1/18/2020 5:55:29 AM	49833
Vinyl chloride	ND	0.0027	0.041		mg/Kg	1	1/18/2020 5:55:29 AM	49833
Xylenes, Total	ND	0.010	0.083		mg/Kg	1	1/18/2020 5:55:29 AM	49833
Surr: Dibromofluoromethane	104		70-130		%Rec	1	1/18/2020 5:55:29 AM	49833
Surr: 1,2-Dichloroethane-d4	88.5		70-130		%Rec	1	1/18/2020 5:55:29 AM	49833
Surr: Toluene-d8	104		70-130		%Rec	1	1/18/2020 5:55:29 AM	49833
Surr: 4-Bromofluorobenzene	104		70-130		%Rec	1	1/18/2020 5:55:29 AM	49833
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/20/2020 1:09:00 PM	R65914
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	8.29				pH Units	1	1/21/2020 10:28:00 AM	R65942

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E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
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Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** SWMU1-13 5'
Project: Gallup SWMUI Sampling Event **Collection Date:** 1/13/2020 2:52:00 PM
Lab ID: 2001623-013 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	6.3	2.3	9.7	J	mg/Kg	1	1/21/2020 2:59:52 AM	49861
Motor Oil Range Organics (MRO)	ND	49	49		mg/Kg	1	1/21/2020 2:59:52 AM	49861
Surr: DNOP	113	0	55.1-146		%Rec	1	1/21/2020 2:59:52 AM	49861
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	1.1	3.5		mg/Kg	1	1/18/2020 9:45:08 AM	49874
Surr: BFB	73.9	0	66.6-105		%Rec	1	1/18/2020 9:45:08 AM	49874
EPA METHOD 7471: MERCURY							Analyst: **rde**	
Mercury	0.0044	0.0017	0.031	JH	mg/Kg	1	2/24/2020 4:30:14 PM	50503
MERCURY, TCLP							Analyst: **pmf**	
Mercury	ND	0.00075	0.020		mg/L	1	1/20/2020 8:07:30 PM	49923
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.9	13		mg/Kg	5	1/28/2020 9:51:14 AM	50072
Arsenic	ND	7.2	13		mg/Kg	5	1/28/2020 9:51:14 AM	50072
Barium	540	0.12	0.51		mg/Kg	5	1/28/2020 9:51:14 AM	50072
Beryllium	0.87	0.047	0.76		mg/Kg	5	1/28/2020 9:51:14 AM	50072
Cadmium	ND	0.12	0.51		mg/Kg	5	1/28/2020 9:51:14 AM	50072
Chromium	7.9	0.40	1.5		mg/Kg	5	1/28/2020 9:51:14 AM	50072
Cobalt	4.7	0.53	1.5		mg/Kg	5	1/28/2020 9:51:14 AM	50072
Lead	3.4	1.2	1.3		mg/Kg	5	1/28/2020 10:52:00 AM	50072
Nickel	8.8	0.76	2.5		mg/Kg	5	1/28/2020 9:51:14 AM	50072
Selenium	ND	6.4	13		mg/Kg	5	1/28/2020 9:51:14 AM	50072
Silver	ND	0.16	1.3		mg/Kg	5	1/28/2020 9:51:14 AM	50072
Vanadium	23	0.34	13		mg/Kg	5	1/28/2020 9:51:14 AM	50072
Zinc	14	2.0	13		mg/Kg	5	1/28/2020 9:51:14 AM	50072
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/21/2020 11:47:18 AM	49932
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.074	0.20		mg/Kg	1	1/23/2020 11:40:01 AM	49868
Acenaphthylene	ND	0.087	0.20		mg/Kg	1	1/23/2020 11:40:01 AM	49868
Aniline	ND	0.067	0.20		mg/Kg	1	1/23/2020 11:40:01 AM	49868
Anthracene	ND	0.076	0.20		mg/Kg	1	1/23/2020 11:40:01 AM	49868
Azobenzene	ND	0.10	0.20		mg/Kg	1	1/23/2020 11:40:01 AM	49868
Benz(a)anthracene	ND	0.068	0.20		mg/Kg	1	1/23/2020 11:40:01 AM	49868
Benzo(a)pyrene	ND	0.11	0.20		mg/Kg	1	1/23/2020 11:40:01 AM	49868
Benzo(b)fluoranthene	ND	0.11	0.20		mg/Kg	1	1/23/2020 11:40:01 AM	49868
Benzo(g,h,i)perylene	ND	0.10	0.20		mg/Kg	1	1/23/2020 11:40:01 AM	49868

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

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1-13 5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 2:52:00 PM
Lab ID: 2001623-013 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Benzo(k)fluoranthene	ND	0.059	0.20		mg/Kg	1	1/23/2020 11:40:01 AM	49868
Benzoic acid	ND	0.14	0.49		mg/Kg	1	1/23/2020 11:40:01 AM	49868
Benzyl alcohol	ND	0.082	0.20		mg/Kg	1	1/23/2020 11:40:01 AM	49868
Bis(2-chloroethoxy)methane	ND	0.081	0.20		mg/Kg	1	1/23/2020 11:40:01 AM	49868
Bis(2-chloroethyl)ether	ND	0.11	0.20		mg/Kg	1	1/23/2020 11:40:01 AM	49868
Bis(2-chloroisopropyl)ether	ND	0.085	0.20		mg/Kg	1	1/23/2020 11:40:01 AM	49868
Bis(2-ethylhexyl)phthalate	ND	0.22	0.49		mg/Kg	1	1/23/2020 11:40:01 AM	49868
4-Bromophenyl phenyl ether	ND	0.11	0.20		mg/Kg	1	1/23/2020 11:40:01 AM	49868
Butyl benzyl phthalate	ND	0.066	0.20		mg/Kg	1	1/23/2020 11:40:01 AM	49868
Carbazole	ND	0.078	0.20		mg/Kg	1	1/23/2020 11:40:01 AM	49868
4-Chloro-3-methylphenol	ND	0.078	0.49		mg/Kg	1	1/23/2020 11:40:01 AM	49868
4-Chloroaniline	ND	0.075	0.49		mg/Kg	1	1/23/2020 11:40:01 AM	49868
2-Chloronaphthalene	ND	0.083	0.25		mg/Kg	1	1/23/2020 11:40:01 AM	49868
2-Chlorophenol	ND	0.11	0.20		mg/Kg	1	1/23/2020 11:40:01 AM	49868
4-Chlorophenyl phenyl ether	ND	0.083	0.20		mg/Kg	1	1/23/2020 11:40:01 AM	49868
Chrysene	ND	0.077	0.20		mg/Kg	1	1/23/2020 11:40:01 AM	49868
Di-n-butyl phthalate	0.34	0.29	0.39	J	mg/Kg	1	1/23/2020 11:40:01 AM	49868
Di-n-octyl phthalate	ND	0.066	0.39		mg/Kg	1	1/23/2020 11:40:01 AM	49868
Dibenz(a,h)anthracene	ND	0.11	0.20		mg/Kg	1	1/23/2020 11:40:01 AM	49868
Dibenzofuran	ND	0.098	0.20		mg/Kg	1	1/23/2020 11:40:01 AM	49868
1,2-Dichlorobenzene	ND	0.078	0.20		mg/Kg	1	1/23/2020 11:40:01 AM	49868
1,3-Dichlorobenzene	ND	0.066	0.20		mg/Kg	1	1/23/2020 11:40:01 AM	49868
1,4-Dichlorobenzene	ND	0.082	0.20		mg/Kg	1	1/23/2020 11:40:01 AM	49868
3,3´-Dichlorobenzidine	ND	0.084	0.25		mg/Kg	1	1/23/2020 11:40:01 AM	49868
Diethyl phthalate	ND	0.30	0.49		mg/Kg	1	1/23/2020 11:40:01 AM	49868
Dimethyl phthalate	ND	0.080	0.20		mg/Kg	1	1/23/2020 11:40:01 AM	49868
2,4-Dichlorophenol	ND	0.083	0.39		mg/Kg	1	1/23/2020 11:40:01 AM	49868
2,4-Dimethylphenol	ND	0.082	0.30		mg/Kg	1	1/23/2020 11:40:01 AM	49868
4,6-Dinitro-2-methylphenol	ND	0.072	0.39		mg/Kg	1	1/23/2020 11:40:01 AM	49868
2,4-Dinitrophenol	ND	0.057	0.49		mg/Kg	1	1/23/2020 11:40:01 AM	49868
2,4-Dinitrotoluene	ND	0.10	0.49		mg/Kg	1	1/23/2020 11:40:01 AM	49868
2,6-Dinitrotoluene	ND	0.12	0.49		mg/Kg	1	1/23/2020 11:40:01 AM	49868
Fluoranthene	ND	0.075	0.20		mg/Kg	1	1/23/2020 11:40:01 AM	49868
Fluorene	ND	0.078	0.20		mg/Kg	1	1/23/2020 11:40:01 AM	49868
Hexachlorobenzene	ND	0.077	0.20		mg/Kg	1	1/23/2020 11:40:01 AM	49868
Hexachlorobutadiene	ND	0.086	0.20		mg/Kg	1	1/23/2020 11:40:01 AM	49868
Hexachlorocyclopentadiene	ND	0.094	0.20		mg/Kg	1	1/23/2020 11:40:01 AM	49868
Hexachloroethane	ND	0.081	0.20		mg/Kg	1	1/23/2020 11:40:01 AM	49868
Indeno(1,2,3-cd)pyrene	ND	0.12	0.20		mg/Kg	1	1/23/2020 11:40:01 AM	49868

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RL	Reporting Limit

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1-13 5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 2:52:00 PM
Lab ID: 2001623-013 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Isophorone	ND	0.086	0.39		mg/Kg	1	1/23/2020 11:40:01 AM	49868
1-Methylnaphthalene	ND	0.092	0.20		mg/Kg	1	1/23/2020 11:40:01 AM	49868
2-Methylnaphthalene	ND	0.080	0.20		mg/Kg	1	1/23/2020 11:40:01 AM	49868
2-Methylphenol	ND	0.083	0.39		mg/Kg	1	1/23/2020 11:40:01 AM	49868
3+4-Methylphenol	ND	0.071	0.20		mg/Kg	1	1/23/2020 11:40:01 AM	49868
N-Nitrosodi-n-propylamine	ND	0.099	0.20		mg/Kg	1	1/23/2020 11:40:01 AM	49868
N-Nitrosodiphenylamine	ND	0.10	0.20		mg/Kg	1	1/23/2020 11:40:01 AM	49868
Naphthalene	ND	0.081	0.20		mg/Kg	1	1/23/2020 11:40:01 AM	49868
2-Nitroaniline	ND	0.11	0.20		mg/Kg	1	1/23/2020 11:40:01 AM	49868
3-Nitroaniline	ND	0.097	0.20		mg/Kg	1	1/23/2020 11:40:01 AM	49868
4-Nitroaniline	ND	0.13	0.39		mg/Kg	1	1/23/2020 11:40:01 AM	49868
Nitrobenzene	ND	0.084	0.39		mg/Kg	1	1/23/2020 11:40:01 AM	49868
2-Nitrophenol	ND	0.081	0.20		mg/Kg	1	1/23/2020 11:40:01 AM	49868
4-Nitrophenol	ND	0.058	0.25		mg/Kg	1	1/23/2020 11:40:01 AM	49868
Pentachlorophenol	ND	0.088	0.39		mg/Kg	1	1/23/2020 11:40:01 AM	49868
Phenanthrene	ND	0.10	0.20		mg/Kg	1	1/23/2020 11:40:01 AM	49868
Phenol	ND	0.084	0.20		mg/Kg	1	1/23/2020 11:40:01 AM	49868
Pyrene	ND	0.065	0.20		mg/Kg	1	1/23/2020 11:40:01 AM	49868
Pyridine	ND	0.18	0.39		mg/Kg	1	1/23/2020 11:40:01 AM	49868
1,2,4-Trichlorobenzene	ND	0.084	0.20		mg/Kg	1	1/23/2020 11:40:01 AM	49868
2,4,5-Trichlorophenol	ND	0.064	0.20		mg/Kg	1	1/23/2020 11:40:01 AM	49868
2,4,6-Trichlorophenol	ND	0.099	0.20		mg/Kg	1	1/23/2020 11:40:01 AM	49868
Surr: 2-Fluorophenol	49.2		26.7-85.9		%Rec	1	1/23/2020 11:40:01 AM	49868
Surr: Phenol-d5	55.5		18.5-101		%Rec	1	1/23/2020 11:40:01 AM	49868
Surr: 2,4,6-Tribromophenol	53.7		35.8-85.6		%Rec	1	1/23/2020 11:40:01 AM	49868
Surr: Nitrobenzene-d5	63.9		40.8-95.2		%Rec	1	1/23/2020 11:40:01 AM	49868
Surr: 2-Fluorobiphenyl	53.5		34.7-85.2		%Rec	1	1/23/2020 11:40:01 AM	49868
Surr: 4-Terphenyl-d14	86.5		37.4-91.3		%Rec	1	1/23/2020 11:40:01 AM	49868
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.0028	0.017		mg/Kg	1	1/18/2020 6:24:05 AM	49833
Toluene	ND	0.0033	0.035		mg/Kg	1	1/18/2020 6:24:05 AM	49833
Ethylbenzene	ND	0.0020	0.035		mg/Kg	1	1/18/2020 6:24:05 AM	49833
Methyl tert-butyl ether (MTBE)	ND	0.0082	0.035		mg/Kg	1	1/18/2020 6:24:05 AM	49833
1,2,4-Trimethylbenzene	ND	0.0032	0.035		mg/Kg	1	1/18/2020 6:24:05 AM	49833
1,3,5-Trimethylbenzene	ND	0.0034	0.035		mg/Kg	1	1/18/2020 6:24:05 AM	49833
1,2-Dichloroethane (EDC)	ND	0.0035	0.035		mg/Kg	1	1/18/2020 6:24:05 AM	49833
1,2-Dibromoethane (EDB)	ND	0.0032	0.035		mg/Kg	1	1/18/2020 6:24:05 AM	49833
Naphthalene	ND	0.0070	0.069		mg/Kg	1	1/18/2020 6:24:05 AM	49833
1-Methylnaphthalene	ND	0.020	0.14		mg/Kg	1	1/18/2020 6:24:05 AM	49833

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

Qualifiers:

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

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1-13 5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 2:52:00 PM
Lab ID: 2001623-013 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
2-Methylnaphthalene	ND	0.015	0.14		mg/Kg	1	1/18/2020 6:24:05 AM	49833
Acetone	ND	0.029	0.52		mg/Kg	1	1/18/2020 6:24:05 AM	49833
Bromobenzene	ND	0.0033	0.035		mg/Kg	1	1/18/2020 6:24:05 AM	49833
Bromodichloromethane	ND	0.0032	0.035		mg/Kg	1	1/18/2020 6:24:05 AM	49833
Bromoform	ND	0.0031	0.035		mg/Kg	1	1/18/2020 6:24:05 AM	49833
Bromomethane	ND	0.0084	0.10		mg/Kg	1	1/18/2020 6:24:05 AM	49833
2-Butanone	ND	0.040	0.35		mg/Kg	1	1/18/2020 6:24:05 AM	49833
Carbon disulfide	ND	0.011	0.35		mg/Kg	1	1/18/2020 6:24:05 AM	49833
Carbon tetrachloride	ND	0.0033	0.035		mg/Kg	1	1/18/2020 6:24:05 AM	49833
Chlorobenzene	ND	0.0044	0.035		mg/Kg	1	1/18/2020 6:24:05 AM	49833
Chloroethane	ND	0.0051	0.069		mg/Kg	1	1/18/2020 6:24:05 AM	49833
Chloroform	ND	0.0028	0.035		mg/Kg	1	1/18/2020 6:24:05 AM	49833
Chloromethane	ND	0.0033	0.10		mg/Kg	1	1/18/2020 6:24:05 AM	49833
2-Chlorotoluene	ND	0.0030	0.035		mg/Kg	1	1/18/2020 6:24:05 AM	49833
4-Chlorotoluene	ND	0.0028	0.035		mg/Kg	1	1/18/2020 6:24:05 AM	49833
cis-1,2-DCE	ND	0.0048	0.035		mg/Kg	1	1/18/2020 6:24:05 AM	49833
cis-1,3-Dichloropropene	ND	0.0029	0.035		mg/Kg	1	1/18/2020 6:24:05 AM	49833
1,2-Dibromo-3-chloropropane	ND	0.0036	0.069		mg/Kg	1	1/18/2020 6:24:05 AM	49833
Dibromochloromethane	ND	0.0025	0.035		mg/Kg	1	1/18/2020 6:24:05 AM	49833
Dibromomethane	ND	0.0037	0.035		mg/Kg	1	1/18/2020 6:24:05 AM	49833
1,2-Dichlorobenzene	ND	0.0028	0.035		mg/Kg	1	1/18/2020 6:24:05 AM	49833
1,3-Dichlorobenzene	ND	0.0030	0.035		mg/Kg	1	1/18/2020 6:24:05 AM	49833
1,4-Dichlorobenzene	ND	0.0029	0.035		mg/Kg	1	1/18/2020 6:24:05 AM	49833
Dichlorodifluoromethane	ND	0.0081	0.035		mg/Kg	1	1/18/2020 6:24:05 AM	49833
1,1-Dichloroethane	ND	0.0022	0.035		mg/Kg	1	1/18/2020 6:24:05 AM	49833
1,1-Dichloroethene	ND	0.014	0.035		mg/Kg	1	1/18/2020 6:24:05 AM	49833
1,2-Dichloropropane	ND	0.0025	0.035		mg/Kg	1	1/18/2020 6:24:05 AM	49833
1,3-Dichloropropane	ND	0.0038	0.035		mg/Kg	1	1/18/2020 6:24:05 AM	49833
2,2-Dichloropropane	ND	0.011	0.069		mg/Kg	1	1/18/2020 6:24:05 AM	49833
1,1-Dichloropropene	ND	0.0032	0.069		mg/Kg	1	1/18/2020 6:24:05 AM	49833
Hexachlorobutadiene	ND	0.0035	0.069		mg/Kg	1	1/18/2020 6:24:05 AM	49833
2-Hexanone	ND	0.0058	0.35		mg/Kg	1	1/18/2020 6:24:05 AM	49833
Isopropylbenzene	ND	0.0025	0.035		mg/Kg	1	1/18/2020 6:24:05 AM	49833
4-Isopropyltoluene	ND	0.0029	0.035		mg/Kg	1	1/18/2020 6:24:05 AM	49833
4-Methyl-2-pentanone	0.023	0.0066	0.35	J	mg/Kg	1	1/18/2020 6:24:05 AM	49833
Methylene chloride	0.023	0.0061	0.10	J	mg/Kg	1	1/18/2020 6:24:05 AM	49833
n-Butylbenzene	ND	0.0032	0.10		mg/Kg	1	1/18/2020 6:24:05 AM	49833
n-Propylbenzene	ND	0.0028	0.035		mg/Kg	1	1/18/2020 6:24:05 AM	49833
sec-Butylbenzene	ND	0.0039	0.035		mg/Kg	1	1/18/2020 6:24:05 AM	49833

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

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PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
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E	Value above quantitation range
J	Analyte detected below quantitation limits
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RL	Reporting Limit

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1-13 5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 2:52:00 PM
Lab ID: 2001623-013 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Styrene	ND	0.0027	0.035		mg/Kg	1	1/18/2020 6:24:05 AM	49833
tert-Butylbenzene	ND	0.0033	0.035		mg/Kg	1	1/18/2020 6:24:05 AM	49833
1,1,1,2-Tetrachloroethane	ND	0.0023	0.035		mg/Kg	1	1/18/2020 6:24:05 AM	49833
1,1,2,2-Tetrachloroethane	ND	0.0035	0.035		mg/Kg	1	1/18/2020 6:24:05 AM	49833
Tetrachloroethene (PCE)	ND	0.0028	0.035		mg/Kg	1	1/18/2020 6:24:05 AM	49833
trans-1,2-DCE	ND	0.0032	0.035		mg/Kg	1	1/18/2020 6:24:05 AM	49833
trans-1,3-Dichloropropene	ND	0.0037	0.035		mg/Kg	1	1/18/2020 6:24:05 AM	49833
1,2,3-Trichlorobenzene	ND	0.0030	0.069		mg/Kg	1	1/18/2020 6:24:05 AM	49833
1,2,4-Trichlorobenzene	ND	0.0035	0.035		mg/Kg	1	1/18/2020 6:24:05 AM	49833
1,1,1-Trichloroethane	ND	0.0031	0.035		mg/Kg	1	1/18/2020 6:24:05 AM	49833
1,1,2-Trichloroethane	ND	0.0024	0.035		mg/Kg	1	1/18/2020 6:24:05 AM	49833
Trichloroethene (TCE)	ND	0.0040	0.035		mg/Kg	1	1/18/2020 6:24:05 AM	49833
Trichlorofluoromethane	ND	0.012	0.035		mg/Kg	1	1/18/2020 6:24:05 AM	49833
1,2,3-Trichloropropane	ND	0.0056	0.069		mg/Kg	1	1/18/2020 6:24:05 AM	49833
Vinyl chloride	ND	0.0023	0.035		mg/Kg	1	1/18/2020 6:24:05 AM	49833
Xylenes, Total	ND	0.0088	0.069		mg/Kg	1	1/18/2020 6:24:05 AM	49833
Surr: Dibromofluoromethane	106		70-130		%Rec	1	1/18/2020 6:24:05 AM	49833
Surr: 1,2-Dichloroethane-d4	89.6		70-130		%Rec	1	1/18/2020 6:24:05 AM	49833
Surr: Toluene-d8	105		70-130		%Rec	1	1/18/2020 6:24:05 AM	49833
Surr: 4-Bromofluorobenzene	99.8		70-130		%Rec	1	1/18/2020 6:24:05 AM	49833
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/20/2020 1:09:00 PM	R65914
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	8.27				pH Units	1	1/21/2020 10:28:00 AM	R65942

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B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** SWMU1-15 1.5'
Project: Gallup SWMUI Sampling Event **Collection Date:** 1/13/2020 3:15:00 PM
Lab ID: 2001623-014 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	4.7	2.2	9.2	J	mg/Kg	1	1/21/2020 3:08:46 AM	49861
Motor Oil Range Organics (MRO)	ND	46	46		mg/Kg	1	1/21/2020 3:08:46 AM	49861
Surr: DNOP	94.9	0	55.1-146		%Rec	1	1/21/2020 3:08:46 AM	49861
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	1.3	4.4		mg/Kg	1	1/18/2020 10:08:09 AM	49874
Surr: BFB	73.4	0	66.6-105		%Rec	1	1/18/2020 10:08:09 AM	49874
EPA METHOD 7471: MERCURY							Analyst: **rde**	
Mercury	0.0065	0.0017	0.032	JH	mg/Kg	1	2/24/2020 4:32:12 PM	50503
MERCURY, TCLP							Analyst: **pmf**	
Mercury	ND	0.00075	0.020		mg/L	1	1/20/2020 8:10:18 PM	49923
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.73	4.9		mg/Kg	2	1/28/2020 9:30:05 AM	50072
Arsenic	ND	2.8	4.9		mg/Kg	2	1/28/2020 9:30:05 AM	50072
Barium	200	0.046	0.20		mg/Kg	2	1/28/2020 9:30:05 AM	50072
Beryllium	1.0	0.018	0.30		mg/Kg	2	1/28/2020 9:30:05 AM	50072
Cadmium	ND	0.048	0.20		mg/Kg	2	1/28/2020 9:30:05 AM	50072
Chromium	11	0.16	0.59		mg/Kg	2	1/28/2020 9:30:05 AM	50072
Cobalt	5.0	0.21	0.59		mg/Kg	2	1/28/2020 9:30:05 AM	50072
Lead	2.7	0.48	0.49		mg/Kg	2	1/28/2020 10:53:23 AM	50072
Nickel	9.5	0.29	0.99		mg/Kg	2	1/28/2020 9:30:05 AM	50072
Selenium	ND	2.5	4.9		mg/Kg	2	1/28/2020 9:30:05 AM	50072
Silver	ND	0.063	0.49		mg/Kg	2	1/28/2020 9:30:05 AM	50072
Vanadium	19	0.13	4.9		mg/Kg	2	1/28/2020 9:30:05 AM	50072
Zinc	16	0.78	4.9		mg/Kg	2	1/28/2020 9:30:05 AM	50072
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/21/2020 11:51:34 AM	49932
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.072	0.19		mg/Kg	1	1/23/2020 12:08:46 PM	49868
Acenaphthylene	ND	0.085	0.19		mg/Kg	1	1/23/2020 12:08:46 PM	49868
Aniline	ND	0.066	0.19		mg/Kg	1	1/23/2020 12:08:46 PM	49868
Anthracene	ND	0.074	0.19		mg/Kg	1	1/23/2020 12:08:46 PM	49868
Azobenzene	ND	0.098	0.19		mg/Kg	1	1/23/2020 12:08:46 PM	49868
Benz(a)anthracene	ND	0.066	0.19		mg/Kg	1	1/23/2020 12:08:46 PM	49868
Benzo(a)pyrene	ND	0.10	0.19		mg/Kg	1	1/23/2020 12:08:46 PM	49868
Benzo(b)fluoranthene	ND	0.11	0.19		mg/Kg	1	1/23/2020 12:08:46 PM	49868
Benzo(g,h,i)perylene	ND	0.099	0.19		mg/Kg	1	1/23/2020 12:08:46 PM	49868

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Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1-15 1.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 3:15:00 PM
Lab ID: 2001623-014 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Benzo(k)fluoranthene	ND	0.057	0.19		mg/Kg	1	1/23/2020 12:08:46 PM	49868
Benzoic acid	ND	0.13	0.48		mg/Kg	1	1/23/2020 12:08:46 PM	49868
Benzyl alcohol	ND	0.080	0.19		mg/Kg	1	1/23/2020 12:08:46 PM	49868
Bis(2-chloroethoxy)methane	ND	0.079	0.19		mg/Kg	1	1/23/2020 12:08:46 PM	49868
Bis(2-chloroethyl)ether	ND	0.11	0.19		mg/Kg	1	1/23/2020 12:08:46 PM	49868
Bis(2-chloroisopropyl)ether	ND	0.083	0.19		mg/Kg	1	1/23/2020 12:08:46 PM	49868
Bis(2-ethylhexyl)phthalate	ND	0.22	0.48		mg/Kg	1	1/23/2020 12:08:46 PM	49868
4-Bromophenyl phenyl ether	ND	0.11	0.19		mg/Kg	1	1/23/2020 12:08:46 PM	49868
Butyl benzyl phthalate	ND	0.065	0.19		mg/Kg	1	1/23/2020 12:08:46 PM	49868
Carbazole	ND	0.076	0.19		mg/Kg	1	1/23/2020 12:08:46 PM	49868
4-Chloro-3-methylphenol	ND	0.076	0.48		mg/Kg	1	1/23/2020 12:08:46 PM	49868
4-Chloroaniline	ND	0.074	0.48		mg/Kg	1	1/23/2020 12:08:46 PM	49868
2-Chloronaphthalene	ND	0.081	0.24		mg/Kg	1	1/23/2020 12:08:46 PM	49868
2-Chlorophenol	ND	0.11	0.19		mg/Kg	1	1/23/2020 12:08:46 PM	49868
4-Chlorophenyl phenyl ether	ND	0.081	0.19		mg/Kg	1	1/23/2020 12:08:46 PM	49868
Chrysene	ND	0.075	0.19		mg/Kg	1	1/23/2020 12:08:46 PM	49868
Di-n-butyl phthalate	0.38	0.29	0.38	J	mg/Kg	1	1/23/2020 12:08:46 PM	49868
Di-n-octyl phthalate	ND	0.064	0.38		mg/Kg	1	1/23/2020 12:08:46 PM	49868
Dibenz(a,h)anthracene	ND	0.11	0.19		mg/Kg	1	1/23/2020 12:08:46 PM	49868
Dibenzofuran	ND	0.096	0.19		mg/Kg	1	1/23/2020 12:08:46 PM	49868
1,2-Dichlorobenzene	ND	0.076	0.19		mg/Kg	1	1/23/2020 12:08:46 PM	49868
1,3-Dichlorobenzene	ND	0.064	0.19		mg/Kg	1	1/23/2020 12:08:46 PM	49868
1,4-Dichlorobenzene	ND	0.080	0.19		mg/Kg	1	1/23/2020 12:08:46 PM	49868
3,3´-Dichlorobenzidine	ND	0.082	0.24		mg/Kg	1	1/23/2020 12:08:46 PM	49868
Diethyl phthalate	ND	0.29	0.48		mg/Kg	1	1/23/2020 12:08:46 PM	49868
Dimethyl phthalate	ND	0.078	0.19		mg/Kg	1	1/23/2020 12:08:46 PM	49868
2,4-Dichlorophenol	ND	0.081	0.38		mg/Kg	1	1/23/2020 12:08:46 PM	49868
2,4-Dimethylphenol	ND	0.080	0.29		mg/Kg	1	1/23/2020 12:08:46 PM	49868
4,6-Dinitro-2-methylphenol	ND	0.071	0.38		mg/Kg	1	1/23/2020 12:08:46 PM	49868
2,4-Dinitrophenol	ND	0.056	0.48		mg/Kg	1	1/23/2020 12:08:46 PM	49868
2,4-Dinitrotoluene	ND	0.099	0.48		mg/Kg	1	1/23/2020 12:08:46 PM	49868
2,6-Dinitrotoluene	ND	0.11	0.48		mg/Kg	1	1/23/2020 12:08:46 PM	49868
Fluoranthene	ND	0.073	0.19		mg/Kg	1	1/23/2020 12:08:46 PM	49868
Fluorene	ND	0.076	0.19		mg/Kg	1	1/23/2020 12:08:46 PM	49868
Hexachlorobenzene	ND	0.075	0.19		mg/Kg	1	1/23/2020 12:08:46 PM	49868
Hexachlorobutadiene	ND	0.084	0.19		mg/Kg	1	1/23/2020 12:08:46 PM	49868
Hexachlorocyclopentadiene	ND	0.092	0.19		mg/Kg	1	1/23/2020 12:08:46 PM	49868
Hexachloroethane	ND	0.079	0.19		mg/Kg	1	1/23/2020 12:08:46 PM	49868
Indeno(1,2,3-cd)pyrene	ND	0.12	0.19		mg/Kg	1	1/23/2020 12:08:46 PM	49868

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

Qualifiers:

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

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** SWMU1-15 1.5'
Project: Gallup SWMUI Sampling Event **Collection Date:** 1/13/2020 3:15:00 PM
Lab ID: 2001623-014 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Isophorone	ND	0.084	0.38		mg/Kg	1	1/23/2020 12:08:46 PM	49868
1-Methylnaphthalene	ND	0.089	0.19		mg/Kg	1	1/23/2020 12:08:46 PM	49868
2-Methylnaphthalene	ND	0.078	0.19		mg/Kg	1	1/23/2020 12:08:46 PM	49868
2-Methylphenol	ND	0.081	0.38		mg/Kg	1	1/23/2020 12:08:46 PM	49868
3+4-Methylphenol	ND	0.070	0.19		mg/Kg	1	1/23/2020 12:08:46 PM	49868
N-Nitrosodi-n-propylamine	ND	0.097	0.19		mg/Kg	1	1/23/2020 12:08:46 PM	49868
N-Nitrosodiphenylamine	ND	0.099	0.19		mg/Kg	1	1/23/2020 12:08:46 PM	49868
Naphthalene	ND	0.079	0.19		mg/Kg	1	1/23/2020 12:08:46 PM	49868
2-Nitroaniline	ND	0.11	0.19		mg/Kg	1	1/23/2020 12:08:46 PM	49868
3-Nitroaniline	ND	0.094	0.19		mg/Kg	1	1/23/2020 12:08:46 PM	49868
4-Nitroaniline	ND	0.13	0.38		mg/Kg	1	1/23/2020 12:08:46 PM	49868
Nitrobenzene	ND	0.082	0.38		mg/Kg	1	1/23/2020 12:08:46 PM	49868
2-Nitrophenol	ND	0.079	0.19		mg/Kg	1	1/23/2020 12:08:46 PM	49868
4-Nitrophenol	ND	0.056	0.24		mg/Kg	1	1/23/2020 12:08:46 PM	49868
Pentachlorophenol	ND	0.086	0.38		mg/Kg	1	1/23/2020 12:08:46 PM	49868
Phenanthrene	ND	0.098	0.19		mg/Kg	1	1/23/2020 12:08:46 PM	49868
Phenol	ND	0.082	0.19		mg/Kg	1	1/23/2020 12:08:46 PM	49868
Pyrene	ND	0.064	0.19		mg/Kg	1	1/23/2020 12:08:46 PM	49868
Pyridine	ND	0.18	0.38		mg/Kg	1	1/23/2020 12:08:46 PM	49868
1,2,4-Trichlorobenzene	ND	0.082	0.19		mg/Kg	1	1/23/2020 12:08:46 PM	49868
2,4,5-Trichlorophenol	ND	0.062	0.19		mg/Kg	1	1/23/2020 12:08:46 PM	49868
2,4,6-Trichlorophenol	ND	0.096	0.19		mg/Kg	1	1/23/2020 12:08:46 PM	49868
Surr: 2-Fluorophenol	74.3		26.7-85.9		%Rec	1	1/23/2020 12:08:46 PM	49868
Surr: Phenol-d5	84.9		18.5-101		%Rec	1	1/23/2020 12:08:46 PM	49868
Surr: 2,4,6-Tribromophenol	87.8		35.8-85.6	S	%Rec	1	1/23/2020 12:08:46 PM	49868
Surr: Nitrobenzene-d5	103		40.8-95.2	S	%Rec	1	1/23/2020 12:08:46 PM	49868
Surr: 2-Fluorobiphenyl	94.3		34.7-85.2	S	%Rec	1	1/23/2020 12:08:46 PM	49868
Surr: 4-Terphenyl-d14	141		37.4-91.3	S	%Rec	1	1/23/2020 12:08:46 PM	49868
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.0036	0.022		mg/Kg	1	1/18/2020 6:52:42 AM	49833
Toluene	ND	0.0042	0.044		mg/Kg	1	1/18/2020 6:52:42 AM	49833
Ethylbenzene	ND	0.0025	0.044		mg/Kg	1	1/18/2020 6:52:42 AM	49833
Methyl tert-butyl ether (MTBE)	ND	0.010	0.044		mg/Kg	1	1/18/2020 6:52:42 AM	49833
1,2,4-Trimethylbenzene	ND	0.0040	0.044		mg/Kg	1	1/18/2020 6:52:42 AM	49833
1,3,5-Trimethylbenzene	ND	0.0042	0.044		mg/Kg	1	1/18/2020 6:52:42 AM	49833
1,2-Dichloroethane (EDC)	ND	0.0045	0.044		mg/Kg	1	1/18/2020 6:52:42 AM	49833
1,2-Dibromoethane (EDB)	ND	0.0040	0.044		mg/Kg	1	1/18/2020 6:52:42 AM	49833
Naphthalene	ND	0.0088	0.087		mg/Kg	1	1/18/2020 6:52:42 AM	49833
1-Methylnaphthalene	ND	0.025	0.17		mg/Kg	1	1/18/2020 6:52:42 AM	49833

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Qualifiers:

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D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
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Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1-15 1.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 3:15:00 PM
Lab ID: 2001623-014 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
2-Methylnaphthalene	ND	0.019	0.17		mg/Kg	1	1/18/2020 6:52:42 AM	49833
Acetone	ND	0.036	0.66		mg/Kg	1	1/18/2020 6:52:42 AM	49833
Bromobenzene	ND	0.0042	0.044		mg/Kg	1	1/18/2020 6:52:42 AM	49833
Bromodichloromethane	ND	0.0040	0.044		mg/Kg	1	1/18/2020 6:52:42 AM	49833
Bromoform	ND	0.0039	0.044		mg/Kg	1	1/18/2020 6:52:42 AM	49833
Bromomethane	ND	0.011	0.13		mg/Kg	1	1/18/2020 6:52:42 AM	49833
2-Butanone	ND	0.051	0.44		mg/Kg	1	1/18/2020 6:52:42 AM	49833
Carbon disulfide	ND	0.014	0.44		mg/Kg	1	1/18/2020 6:52:42 AM	49833
Carbon tetrachloride	ND	0.0041	0.044		mg/Kg	1	1/18/2020 6:52:42 AM	49833
Chlorobenzene	ND	0.0056	0.044		mg/Kg	1	1/18/2020 6:52:42 AM	49833
Chloroethane	ND	0.0064	0.087		mg/Kg	1	1/18/2020 6:52:42 AM	49833
Chloroform	ND	0.0035	0.044		mg/Kg	1	1/18/2020 6:52:42 AM	49833
Chloromethane	ND	0.0042	0.13		mg/Kg	1	1/18/2020 6:52:42 AM	49833
2-Chlorotoluene	ND	0.0038	0.044		mg/Kg	1	1/18/2020 6:52:42 AM	49833
4-Chlorotoluene	ND	0.0036	0.044		mg/Kg	1	1/18/2020 6:52:42 AM	49833
cis-1,2-DCE	ND	0.0060	0.044		mg/Kg	1	1/18/2020 6:52:42 AM	49833
cis-1,3-Dichloropropene	ND	0.0037	0.044		mg/Kg	1	1/18/2020 6:52:42 AM	49833
1,2-Dibromo-3-chloropropane	ND	0.0045	0.087		mg/Kg	1	1/18/2020 6:52:42 AM	49833
Dibromochloromethane	ND	0.0031	0.044		mg/Kg	1	1/18/2020 6:52:42 AM	49833
Dibromomethane	ND	0.0047	0.044		mg/Kg	1	1/18/2020 6:52:42 AM	49833
1,2-Dichlorobenzene	ND	0.0036	0.044		mg/Kg	1	1/18/2020 6:52:42 AM	49833
1,3-Dichlorobenzene	ND	0.0038	0.044		mg/Kg	1	1/18/2020 6:52:42 AM	49833
1,4-Dichlorobenzene	ND	0.0037	0.044		mg/Kg	1	1/18/2020 6:52:42 AM	49833
Dichlorodifluoromethane	ND	0.010	0.044		mg/Kg	1	1/18/2020 6:52:42 AM	49833
1,1-Dichloroethane	ND	0.0028	0.044		mg/Kg	1	1/18/2020 6:52:42 AM	49833
1,1-Dichloroethene	ND	0.017	0.044		mg/Kg	1	1/18/2020 6:52:42 AM	49833
1,2-Dichloropropane	ND	0.0032	0.044		mg/Kg	1	1/18/2020 6:52:42 AM	49833
1,3-Dichloropropane	ND	0.0047	0.044		mg/Kg	1	1/18/2020 6:52:42 AM	49833
2,2-Dichloropropane	ND	0.014	0.087		mg/Kg	1	1/18/2020 6:52:42 AM	49833
1,1-Dichloropropene	ND	0.0040	0.087		mg/Kg	1	1/18/2020 6:52:42 AM	49833
Hexachlorobutadiene	ND	0.0044	0.087		mg/Kg	1	1/18/2020 6:52:42 AM	49833
2-Hexanone	ND	0.0073	0.44		mg/Kg	1	1/18/2020 6:52:42 AM	49833
Isopropylbenzene	ND	0.0031	0.044		mg/Kg	1	1/18/2020 6:52:42 AM	49833
4-Isopropyltoluene	ND	0.0036	0.044		mg/Kg	1	1/18/2020 6:52:42 AM	49833
4-Methyl-2-pentanone	0.028	0.0083	0.44	J	mg/Kg	1	1/18/2020 6:52:42 AM	49833
Methylene chloride	0.036	0.0077	0.13	J	mg/Kg	1	1/18/2020 6:52:42 AM	49833
n-Butylbenzene	ND	0.0041	0.13		mg/Kg	1	1/18/2020 6:52:42 AM	49833
n-Propylbenzene	ND	0.0035	0.044		mg/Kg	1	1/18/2020 6:52:42 AM	49833
sec-Butylbenzene	ND	0.0049	0.044		mg/Kg	1	1/18/2020 6:52:42 AM	49833

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Qualifiers:

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D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
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J	Analyte detected below quantitation limits
P	Sample pH Not In Range
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Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1-15 1.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 3:15:00 PM
Lab ID: 2001623-014 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Styrene	ND	0.0034	0.044		mg/Kg	1	1/18/2020 6:52:42 AM	49833
tert-Butylbenzene	ND	0.0041	0.044		mg/Kg	1	1/18/2020 6:52:42 AM	49833
1,1,1,2-Tetrachloroethane	ND	0.0030	0.044		mg/Kg	1	1/18/2020 6:52:42 AM	49833
1,1,2,2-Tetrachloroethane	ND	0.0044	0.044		mg/Kg	1	1/18/2020 6:52:42 AM	49833
Tetrachloroethene (PCE)	ND	0.0035	0.044		mg/Kg	1	1/18/2020 6:52:42 AM	49833
trans-1,2-DCE	ND	0.0040	0.044		mg/Kg	1	1/18/2020 6:52:42 AM	49833
trans-1,3-Dichloropropene	ND	0.0046	0.044		mg/Kg	1	1/18/2020 6:52:42 AM	49833
1,2,3-Trichlorobenzene	ND	0.0038	0.087		mg/Kg	1	1/18/2020 6:52:42 AM	49833
1,2,4-Trichlorobenzene	ND	0.0044	0.044		mg/Kg	1	1/18/2020 6:52:42 AM	49833
1,1,1-Trichloroethane	ND	0.0039	0.044		mg/Kg	1	1/18/2020 6:52:42 AM	49833
1,1,2-Trichloroethane	ND	0.0031	0.044		mg/Kg	1	1/18/2020 6:52:42 AM	49833
Trichloroethene (TCE)	ND	0.0051	0.044		mg/Kg	1	1/18/2020 6:52:42 AM	49833
Trichlorofluoromethane	ND	0.015	0.044		mg/Kg	1	1/18/2020 6:52:42 AM	49833
1,2,3-Trichloropropane	ND	0.0071	0.087		mg/Kg	1	1/18/2020 6:52:42 AM	49833
Vinyl chloride	ND	0.0029	0.044		mg/Kg	1	1/18/2020 6:52:42 AM	49833
Xylenes, Total	ND	0.011	0.087		mg/Kg	1	1/18/2020 6:52:42 AM	49833
Surr: Dibromofluoromethane	107		70-130		%Rec	1	1/18/2020 6:52:42 AM	49833
Surr: 1,2-Dichloroethane-d4	90.6		70-130		%Rec	1	1/18/2020 6:52:42 AM	49833
Surr: Toluene-d8	108		70-130		%Rec	1	1/18/2020 6:52:42 AM	49833
Surr: 4-Bromofluorobenzene	102		70-130		%Rec	1	1/18/2020 6:52:42 AM	49833
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/20/2020 1:09:00 PM	R65914
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	8.48				pH Units	1	1/21/2020 10:28:00 AM	R65942

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J	Analyte detected below quantitation limits
P	Sample pH Not In Range
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Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** SWMU1-13 1.5'
Project: Gallup SWMUI Sampling Event **Collection Date:** 1/13/2020 2:44:00 PM
Lab ID: 2001623-015 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **CLP**	
Diesel Range Organics (DRO)	47	4.5	19		mg/Kg	2	1/21/2020 6:51:44 PM	49861
Motor Oil Range Organics (MRO)	110	94	94		mg/Kg	2	1/21/2020 6:51:44 PM	49861
Surr: DNOP	103	0	55.1-146		%Rec	2	1/21/2020 6:51:44 PM	49861
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	1.1	3.8		mg/Kg	1	1/20/2020 4:20:30 PM	G65910
Surr: BFB	81.0	0	66.6-105		%Rec	1	1/20/2020 4:20:30 PM	G65910
EPA METHOD 7471: MERCURY							Analyst: **rde**	
Mercury	0.031	0.0017	0.032	JH	mg/Kg	1	2/24/2020 4:38:21 PM	50503
MERCURY, TCLP							Analyst: **pmf**	
Mercury	ND	0.00075	0.020		mg/L	1	1/20/2020 8:13:08 PM	49923
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.73	4.9		mg/Kg	2	1/28/2020 9:31:29 AM	50072
Arsenic	ND	2.8	4.9		mg/Kg	2	1/28/2020 9:31:29 AM	50072
Barium	480	0.046	0.20		mg/Kg	2	1/28/2020 9:31:29 AM	50072
Beryllium	0.82	0.018	0.30		mg/Kg	2	1/28/2020 9:31:29 AM	50072
Cadmium	ND	0.048	0.20		mg/Kg	2	1/28/2020 9:31:29 AM	50072
Chromium	15	0.16	0.59		mg/Kg	2	1/28/2020 9:31:29 AM	50072
Cobalt	3.9	0.21	0.59		mg/Kg	2	1/28/2020 9:31:29 AM	50072
Lead	2.6	0.48	0.49		mg/Kg	2	1/28/2020 10:54:47 AM	50072
Nickel	7.5	0.30	0.99		mg/Kg	2	1/28/2020 9:31:29 AM	50072
Selenium	ND	2.5	4.9		mg/Kg	2	1/28/2020 9:31:29 AM	50072
Silver	ND	0.063	0.49		mg/Kg	2	1/28/2020 9:31:29 AM	50072
Vanadium	20	0.13	4.9		mg/Kg	2	1/28/2020 9:31:29 AM	50072
Zinc	15	0.78	4.9		mg/Kg	2	1/28/2020 9:31:29 AM	50072
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/21/2020 11:52:59 AM	49932
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.14	0.38	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
Acenaphthylene	ND	0.17	0.38	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
Aniline	ND	0.13	0.38	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
Anthracene	ND	0.15	0.38	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
Azobenzene	ND	0.20	0.38	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
Benz(a)anthracene	ND	0.13	0.38	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
Benzo(a)pyrene	ND	0.21	0.38	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
Benzo(b)fluoranthene	ND	0.22	0.38	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
Benzo(g,h,i)perylene	ND	0.20	0.38	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868

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Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1-13 1.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 2:44:00 PM
Lab ID: 2001623-015 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Benzo(k)fluoranthene	ND	0.11	0.38	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
Benzoic acid	ND	0.27	0.96	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
Benzyl alcohol	ND	0.16	0.38	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
Bis(2-chloroethoxy)methane	ND	0.16	0.38	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
Bis(2-chloroethyl)ether	ND	0.22	0.38	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
Bis(2-chloroisopropyl)ether	ND	0.16	0.38	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
Bis(2-ethylhexyl)phthalate	ND	0.43	0.96	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
4-Bromophenyl phenyl ether	ND	0.22	0.38	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
Butyl benzyl phthalate	ND	0.13	0.38	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
Carbazole	ND	0.15	0.38	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
4-Chloro-3-methylphenol	ND	0.15	0.96	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
4-Chloroaniline	ND	0.15	0.96	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
2-Chloronaphthalene	ND	0.16	0.48	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
2-Chlorophenol	ND	0.22	0.38	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
4-Chlorophenyl phenyl ether	ND	0.16	0.38	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
Chrysene	ND	0.15	0.38	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
Di-n-butyl phthalate	ND	0.57	0.77	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
Di-n-octyl phthalate	ND	0.13	0.77	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
Dibenz(a,h)anthracene	ND	0.21	0.38	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
Dibenzofuran	ND	0.19	0.38	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
1,2-Dichlorobenzene	ND	0.15	0.38	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
1,3-Dichlorobenzene	ND	0.13	0.38	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
1,4-Dichlorobenzene	ND	0.16	0.38	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
3,3´-Dichlorobenzidine	ND	0.16	0.48	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
Diethyl phthalate	ND	0.59	0.96	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
Dimethyl phthalate	ND	0.16	0.38	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
2,4-Dichlorophenol	ND	0.16	0.77	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
2,4-Dimethylphenol	ND	0.16	0.58	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
4,6-Dinitro-2-methylphenol	ND	0.14	0.77	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
2,4-Dinitrophenol	ND	0.11	0.96	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
2,4-Dinitrotoluene	ND	0.20	0.96	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
2,6-Dinitrotoluene	ND	0.23	0.96	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
Fluoranthene	ND	0.15	0.38	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
Fluorene	ND	0.15	0.38	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
Hexachlorobenzene	ND	0.15	0.38	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
Hexachlorobutadiene	ND	0.17	0.38	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
Hexachlorocyclopentadiene	ND	0.18	0.38	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
Hexachloroethane	ND	0.16	0.38	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
Indeno(1,2,3-cd)pyrene	ND	0.24	0.38	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868

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

Qualifiers:

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

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1-13 1.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 2:44:00 PM
Lab ID: 2001623-015 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Isophorone	ND	0.17	0.77	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
1-Methylnaphthalene	ND	0.18	0.38	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
2-Methylnaphthalene	ND	0.16	0.38	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
2-Methylphenol	ND	0.16	0.77	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
3+4-Methylphenol	ND	0.14	0.38	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
N-Nitrosodi-n-propylamine	ND	0.19	0.38	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
N-Nitrosodiphenylamine	ND	0.20	0.38	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
Naphthalene	ND	0.16	0.38	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
2-Nitroaniline	ND	0.21	0.38	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
3-Nitroaniline	ND	0.19	0.38	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
4-Nitroaniline	ND	0.26	0.77	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
Nitrobenzene	ND	0.16	0.77	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
2-Nitrophenol	ND	0.16	0.38	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
4-Nitrophenol	ND	0.11	0.48	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
Pentachlorophenol	ND	0.17	0.77	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
Phenanthrene	ND	0.20	0.38	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
Phenol	ND	0.16	0.38	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
Pyrene	ND	0.13	0.38	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
Pyridine	ND	0.36	0.77	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
1,2,4-Trichlorobenzene	ND	0.16	0.38	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
2,4,5-Trichlorophenol	ND	0.12	0.38	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
2,4,6-Trichlorophenol	ND	0.19	0.38	D	mg/Kg	1	1/23/2020 12:37:34 PM	49868
Surr: 2-Fluorophenol	71.9		26.7-85.9	D	%Rec	1	1/23/2020 12:37:34 PM	49868
Surr: Phenol-d5	82.4		18.5-101	D	%Rec	1	1/23/2020 12:37:34 PM	49868
Surr: 2,4,6-Tribromophenol	83.7		35.8-85.6	D	%Rec	1	1/23/2020 12:37:34 PM	49868
Surr: Nitrobenzene-d5	93.0		40.8-95.2	D	%Rec	1	1/23/2020 12:37:34 PM	49868
Surr: 2-Fluorobiphenyl	82.8		34.7-85.2	D	%Rec	1	1/23/2020 12:37:34 PM	49868
Surr: 4-Terphenyl-d14	152		37.4-91.3	SD	%Rec	1	1/23/2020 12:37:34 PM	49868
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.0031	0.019		mg/Kg	1	1/18/2020 7:21:17 AM	49833
Toluene	ND	0.0036	0.038		mg/Kg	1	1/18/2020 7:21:17 AM	49833
Ethylbenzene	ND	0.0022	0.038		mg/Kg	1	1/18/2020 7:21:17 AM	49833
Methyl tert-butyl ether (MTBE)	ND	0.0090	0.038		mg/Kg	1	1/18/2020 7:21:17 AM	49833
1,2,4-Trimethylbenzene	ND	0.0035	0.038		mg/Kg	1	1/18/2020 7:21:17 AM	49833
1,3,5-Trimethylbenzene	ND	0.0037	0.038		mg/Kg	1	1/18/2020 7:21:17 AM	49833
1,2-Dichloroethane (EDC)	ND	0.0039	0.038		mg/Kg	1	1/18/2020 7:21:17 AM	49833
1,2-Dibromoethane (EDB)	ND	0.0035	0.038		mg/Kg	1	1/18/2020 7:21:17 AM	49833
Naphthalene	ND	0.0076	0.076		mg/Kg	1	1/18/2020 7:21:17 AM	49833
1-Methylnaphthalene	ND	0.022	0.15		mg/Kg	1	1/18/2020 7:21:17 AM	49833

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Qualifiers:

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

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1-13 1.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 2:44:00 PM
Lab ID: 2001623-015 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
2-Methylnaphthalene	ND	0.017	0.15		mg/Kg	1	1/18/2020 7:21:17 AM	49833
Acetone	ND	0.031	0.57		mg/Kg	1	1/18/2020 7:21:17 AM	49833
Bromobenzene	ND	0.0036	0.038		mg/Kg	1	1/18/2020 7:21:17 AM	49833
Bromodichloromethane	ND	0.0035	0.038		mg/Kg	1	1/18/2020 7:21:17 AM	49833
Bromoform	ND	0.0034	0.038		mg/Kg	1	1/18/2020 7:21:17 AM	49833
Bromomethane	ND	0.0091	0.11		mg/Kg	1	1/18/2020 7:21:17 AM	49833
2-Butanone	ND	0.044	0.38		mg/Kg	1	1/18/2020 7:21:17 AM	49833
Carbon disulfide	ND	0.012	0.38		mg/Kg	1	1/18/2020 7:21:17 AM	49833
Carbon tetrachloride	ND	0.0036	0.038		mg/Kg	1	1/18/2020 7:21:17 AM	49833
Chlorobenzene	ND	0.0048	0.038		mg/Kg	1	1/18/2020 7:21:17 AM	49833
Chloroethane	ND	0.0056	0.076		mg/Kg	1	1/18/2020 7:21:17 AM	49833
Chloroform	ND	0.0030	0.038		mg/Kg	1	1/18/2020 7:21:17 AM	49833
Chloromethane	ND	0.0036	0.11		mg/Kg	1	1/18/2020 7:21:17 AM	49833
2-Chlorotoluene	ND	0.0033	0.038		mg/Kg	1	1/18/2020 7:21:17 AM	49833
4-Chlorotoluene	ND	0.0031	0.038		mg/Kg	1	1/18/2020 7:21:17 AM	49833
cis-1,2-DCE	ND	0.0052	0.038		mg/Kg	1	1/18/2020 7:21:17 AM	49833
cis-1,3-Dichloropropene	ND	0.0032	0.038		mg/Kg	1	1/18/2020 7:21:17 AM	49833
1,2-Dibromo-3-chloropropane	ND	0.0039	0.076		mg/Kg	1	1/18/2020 7:21:17 AM	49833
Dibromochloromethane	ND	0.0027	0.038		mg/Kg	1	1/18/2020 7:21:17 AM	49833
Dibromomethane	ND	0.0041	0.038		mg/Kg	1	1/18/2020 7:21:17 AM	49833
1,2-Dichlorobenzene	ND	0.0031	0.038		mg/Kg	1	1/18/2020 7:21:17 AM	49833
1,3-Dichlorobenzene	ND	0.0033	0.038		mg/Kg	1	1/18/2020 7:21:17 AM	49833
1,4-Dichlorobenzene	ND	0.0032	0.038		mg/Kg	1	1/18/2020 7:21:17 AM	49833
Dichlorodifluoromethane	ND	0.0088	0.038		mg/Kg	1	1/18/2020 7:21:17 AM	49833
1,1-Dichloroethane	ND	0.0024	0.038		mg/Kg	1	1/18/2020 7:21:17 AM	49833
1,1-Dichloroethene	ND	0.015	0.038		mg/Kg	1	1/18/2020 7:21:17 AM	49833
1,2-Dichloropropane	ND	0.0028	0.038		mg/Kg	1	1/18/2020 7:21:17 AM	49833
1,3-Dichloropropane	ND	0.0041	0.038		mg/Kg	1	1/18/2020 7:21:17 AM	49833
2,2-Dichloropropane	ND	0.012	0.076		mg/Kg	1	1/18/2020 7:21:17 AM	49833
1,1-Dichloropropene	ND	0.0034	0.076		mg/Kg	1	1/18/2020 7:21:17 AM	49833
Hexachlorobutadiene	ND	0.0039	0.076		mg/Kg	1	1/18/2020 7:21:17 AM	49833
2-Hexanone	ND	0.0063	0.38		mg/Kg	1	1/18/2020 7:21:17 AM	49833
Isopropylbenzene	ND	0.0027	0.038		mg/Kg	1	1/18/2020 7:21:17 AM	49833
4-Isopropyltoluene	ND	0.0031	0.038		mg/Kg	1	1/18/2020 7:21:17 AM	49833
4-Methyl-2-pentanone	0.024	0.0071	0.38	J	mg/Kg	1	1/18/2020 7:21:17 AM	49833
Methylene chloride	0.032	0.0067	0.11	J	mg/Kg	1	1/18/2020 7:21:17 AM	49833
n-Butylbenzene	ND	0.0035	0.11		mg/Kg	1	1/18/2020 7:21:17 AM	49833
n-Propylbenzene	ND	0.0030	0.038		mg/Kg	1	1/18/2020 7:21:17 AM	49833
sec-Butylbenzene	ND	0.0043	0.038		mg/Kg	1	1/18/2020 7:21:17 AM	49833

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Qualifiers:

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

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1-13 1.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 2:44:00 PM
Lab ID: 2001623-015 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Styrene	ND	0.0030	0.038		mg/Kg	1	1/18/2020 7:21:17 AM	49833
tert-Butylbenzene	ND	0.0036	0.038		mg/Kg	1	1/18/2020 7:21:17 AM	49833
1,1,1,2-Tetrachloroethane	ND	0.0026	0.038		mg/Kg	1	1/18/2020 7:21:17 AM	49833
1,1,2,2-Tetrachloroethane	ND	0.0038	0.038		mg/Kg	1	1/18/2020 7:21:17 AM	49833
Tetrachloroethene (PCE)	ND	0.0030	0.038		mg/Kg	1	1/18/2020 7:21:17 AM	49833
trans-1,2-DCE	ND	0.0035	0.038		mg/Kg	1	1/18/2020 7:21:17 AM	49833
trans-1,3-Dichloropropene	ND	0.0040	0.038		mg/Kg	1	1/18/2020 7:21:17 AM	49833
1,2,3-Trichlorobenzene	ND	0.0033	0.076		mg/Kg	1	1/18/2020 7:21:17 AM	49833
1,2,4-Trichlorobenzene	ND	0.0038	0.038		mg/Kg	1	1/18/2020 7:21:17 AM	49833
1,1,1-Trichloroethane	ND	0.0034	0.038		mg/Kg	1	1/18/2020 7:21:17 AM	49833
1,1,2-Trichloroethane	ND	0.0027	0.038		mg/Kg	1	1/18/2020 7:21:17 AM	49833
Trichloroethene (TCE)	ND	0.0044	0.038		mg/Kg	1	1/18/2020 7:21:17 AM	49833
Trichlorofluoromethane	ND	0.013	0.038		mg/Kg	1	1/18/2020 7:21:17 AM	49833
1,2,3-Trichloropropane	ND	0.0061	0.076		mg/Kg	1	1/18/2020 7:21:17 AM	49833
Vinyl chloride	ND	0.0025	0.038		mg/Kg	1	1/18/2020 7:21:17 AM	49833
Xylenes, Total	ND	0.0095	0.076		mg/Kg	1	1/18/2020 7:21:17 AM	49833
Surr: Dibromofluoromethane	106		70-130		%Rec	1	1/18/2020 7:21:17 AM	49833
Surr: 1,2-Dichloroethane-d4	88.2		70-130		%Rec	1	1/18/2020 7:21:17 AM	49833
Surr: Toluene-d8	107		70-130		%Rec	1	1/18/2020 7:21:17 AM	49833
Surr: 4-Bromofluorobenzene	101		70-130		%Rec	1	1/18/2020 7:21:17 AM	49833
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/20/2020 1:09:00 PM	R65914
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	8.03				pH Units	1	1/21/2020 10:28:00 AM	R65942

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

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PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** SWMU1-17 2.5'
Project: Gallup SWMUI Sampling Event **Collection Date:** 1/13/2020 4:04:00 PM
Lab ID: 2001623-016 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	130	2.2	9.0		mg/Kg	1	1/21/2020 11:55:08 PM	49861
Motor Oil Range Organics (MRO)	49	45	45		mg/Kg	1	1/21/2020 11:55:08 PM	49861
Surr: DNOP	96.1	0	55.1-146		%Rec	1	1/21/2020 11:55:08 PM	49861
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.82	2.7		mg/Kg	1	1/20/2020 4:44:04 PM	G65910
Surr: BFB	80.7	0	66.6-105		%Rec	1	1/20/2020 4:44:04 PM	G65910
EPA METHOD 7471: MERCURY							Analyst: **rde**	
Mercury	0.0074	0.0019	0.034	JH	mg/Kg	1	2/24/2020 4:40:20 PM	50503
MERCURY, TCLP							Analyst: **pmf**	
Mercury	ND	0.00075	0.020		mg/L	1	1/20/2020 8:15:57 PM	49923
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.73	5.0		mg/Kg	2	1/28/2020 9:32:54 AM	50072
Arsenic	ND	2.8	5.0		mg/Kg	2	1/28/2020 9:32:54 AM	50072
Barium	180	0.046	0.20		mg/Kg	2	1/28/2020 9:32:54 AM	50072
Beryllium	1.1	0.018	0.30		mg/Kg	2	1/28/2020 9:32:54 AM	50072
Cadmium	ND	0.048	0.20		mg/Kg	2	1/28/2020 9:32:54 AM	50072
Chromium	9.9	0.16	0.60		mg/Kg	2	1/28/2020 9:32:54 AM	50072
Cobalt	4.1	0.21	0.60		mg/Kg	2	1/28/2020 9:32:54 AM	50072
Lead	2.2	0.48	0.50		mg/Kg	2	1/28/2020 10:56:11 AM	50072
Nickel	9.1	0.30	0.99		mg/Kg	2	1/28/2020 9:32:54 AM	50072
Selenium	ND	2.5	5.0		mg/Kg	2	1/28/2020 9:32:54 AM	50072
Silver	ND	0.064	0.50		mg/Kg	2	1/28/2020 9:32:54 AM	50072
Vanadium	18	0.13	5.0		mg/Kg	2	1/28/2020 9:32:54 AM	50072
Zinc	16	0.79	5.0		mg/Kg	2	1/28/2020 9:32:54 AM	50072
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/21/2020 11:54:24 AM	49932
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.15	0.39	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
Acenaphthylene	ND	0.17	0.39	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
Aniline	ND	0.13	0.39	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
Anthracene	ND	0.15	0.39	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
Azobenzene	ND	0.20	0.39	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
Benz(a)anthracene	ND	0.13	0.39	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
Benzo(a)pyrene	ND	0.21	0.39	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
Benzo(b)fluoranthene	ND	0.22	0.39	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
Benzo(g,h,i)perylene	ND	0.20	0.39	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
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P	Sample pH Not In Range
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Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1-17 2.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 4:04:00 PM
Lab ID: 2001623-016 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Benzo(k)fluoranthene	ND	0.12	0.39	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
Benzoic acid	ND	0.27	0.98	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
Benzyl alcohol	ND	0.16	0.39	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
Bis(2-chloroethoxy)methane	ND	0.16	0.39	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
Bis(2-chloroethyl)ether	ND	0.23	0.39	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
Bis(2-chloroisopropyl)ether	ND	0.17	0.39	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
Bis(2-ethylhexyl)phthalate	ND	0.44	0.98	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
4-Bromophenyl phenyl ether	ND	0.23	0.39	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
Butyl benzyl phthalate	ND	0.13	0.39	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
Carbazole	ND	0.16	0.39	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
4-Chloro-3-methylphenol	ND	0.15	0.98	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
4-Chloroaniline	ND	0.15	0.98	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
2-Chloronaphthalene	ND	0.16	0.49	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
2-Chlorophenol	ND	0.22	0.39	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
4-Chlorophenyl phenyl ether	ND	0.16	0.39	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
Chrysene	ND	0.15	0.39	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
Di-n-butyl phthalate	ND	0.58	0.78	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
Di-n-octyl phthalate	ND	0.13	0.78	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
Dibenz(a,h)anthracene	ND	0.22	0.39	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
Dibenzofuran	ND	0.20	0.39	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
1,2-Dichlorobenzene	ND	0.15	0.39	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
1,3-Dichlorobenzene	ND	0.13	0.39	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
1,4-Dichlorobenzene	ND	0.16	0.39	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
3,3´-Dichlorobenzidine	ND	0.17	0.49	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
Diethyl phthalate	ND	0.60	0.98	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
Dimethyl phthalate	ND	0.16	0.39	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
2,4-Dichlorophenol	ND	0.17	0.78	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
2,4-Dimethylphenol	ND	0.16	0.59	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
4,6-Dinitro-2-methylphenol	ND	0.14	0.78	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
2,4-Dinitrophenol	ND	0.11	0.98	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
2,4-Dinitrotoluene	ND	0.20	0.98	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
2,6-Dinitrotoluene	ND	0.23	0.98	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
Fluoranthene	ND	0.15	0.39	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
Fluorene	ND	0.15	0.39	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
Hexachlorobenzene	ND	0.15	0.39	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
Hexachlorobutadiene	ND	0.17	0.39	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
Hexachlorocyclopentadiene	ND	0.19	0.39	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
Hexachloroethane	ND	0.16	0.39	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
Indeno(1,2,3-cd)pyrene	ND	0.24	0.39	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868

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Qualifiers:

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ND	Not Detected at the Reporting Limit
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S	% Recovery outside of range due to dilution or matrix
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Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** SWMU1-17 2.5'
Project: Gallup SWMUI Sampling Event **Collection Date:** 1/13/2020 4:04:00 PM
Lab ID: 2001623-016 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Isophorone	ND	0.17	0.78	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
1-Methylnaphthalene	ND	0.18	0.39	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
2-Methylnaphthalene	ND	0.16	0.39	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
2-Methylphenol	ND	0.16	0.78	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
3+4-Methylphenol	ND	0.14	0.39	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
N-Nitrosodi-n-propylamine	ND	0.20	0.39	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
N-Nitrosodiphenylamine	ND	0.20	0.39	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
Naphthalene	ND	0.16	0.39	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
2-Nitroaniline	ND	0.22	0.39	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
3-Nitroaniline	ND	0.19	0.39	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
4-Nitroaniline	ND	0.26	0.78	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
Nitrobenzene	ND	0.17	0.78	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
2-Nitrophenol	ND	0.16	0.39	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
4-Nitrophenol	ND	0.11	0.49	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
Pentachlorophenol	ND	0.18	0.78	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
Phenanthrene	ND	0.20	0.39	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
Phenol	ND	0.17	0.39	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
Pyrene	ND	0.13	0.39	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
Pyridine	ND	0.36	0.78	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
1,2,4-Trichlorobenzene	ND	0.17	0.39	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
2,4,5-Trichlorophenol	ND	0.13	0.39	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
2,4,6-Trichlorophenol	ND	0.20	0.39	D	mg/Kg	1	1/23/2020 1:06:23 PM	49868
Surr: 2-Fluorophenol	60.1		26.7-85.9	D	%Rec	1	1/23/2020 1:06:23 PM	49868
Surr: Phenol-d5	67.1		18.5-101	D	%Rec	1	1/23/2020 1:06:23 PM	49868
Surr: 2,4,6-Tribromophenol	66.5		35.8-85.6	D	%Rec	1	1/23/2020 1:06:23 PM	49868
Surr: Nitrobenzene-d5	74.6		40.8-95.2	D	%Rec	1	1/23/2020 1:06:23 PM	49868
Surr: 2-Fluorobiphenyl	67.1		34.7-85.2	D	%Rec	1	1/23/2020 1:06:23 PM	49868
Surr: 4-Terphenyl-d14	169		37.4-91.3	SD	%Rec	1	1/23/2020 1:06:23 PM	49868
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.0022	0.014		mg/Kg	1	1/18/2020 7:49:52 AM	49833
Toluene	ND	0.0026	0.027		mg/Kg	1	1/18/2020 7:49:52 AM	49833
Ethylbenzene	ND	0.0016	0.027		mg/Kg	1	1/18/2020 7:49:52 AM	49833
Methyl tert-butyl ether (MTBE)	ND	0.0064	0.027		mg/Kg	1	1/18/2020 7:49:52 AM	49833
1,2,4-Trimethylbenzene	0.0033	0.0025	0.027	J	mg/Kg	1	1/18/2020 7:49:52 AM	49833
1,3,5-Trimethylbenzene	ND	0.0026	0.027		mg/Kg	1	1/18/2020 7:49:52 AM	49833
1,2-Dichloroethane (EDC)	ND	0.0028	0.027		mg/Kg	1	1/18/2020 7:49:52 AM	49833
1,2-Dibromoethane (EDB)	ND	0.0025	0.027		mg/Kg	1	1/18/2020 7:49:52 AM	49833
Naphthalene	0.0056	0.0054	0.054	J	mg/Kg	1	1/18/2020 7:49:52 AM	49833
1-Methylnaphthalene	0.051	0.016	0.11	J	mg/Kg	1	1/18/2020 7:49:52 AM	49833

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Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1-17 2.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 4:04:00 PM
Lab ID: 2001623-016 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
2-Methylnaphthalene	0.062	0.012	0.11	J	mg/Kg	1	1/18/2020 7:49:52 AM	49833
Acetone	ND	0.022	0.41		mg/Kg	1	1/18/2020 7:49:52 AM	49833
Bromobenzene	ND	0.0026	0.027		mg/Kg	1	1/18/2020 7:49:52 AM	49833
Bromodichloromethane	ND	0.0025	0.027		mg/Kg	1	1/18/2020 7:49:52 AM	49833
Bromoform	ND	0.0024	0.027		mg/Kg	1	1/18/2020 7:49:52 AM	49833
Bromomethane	ND	0.0065	0.081		mg/Kg	1	1/18/2020 7:49:52 AM	49833
2-Butanone	ND	0.031	0.27		mg/Kg	1	1/18/2020 7:49:52 AM	49833
Carbon disulfide	ND	0.0090	0.27		mg/Kg	1	1/18/2020 7:49:52 AM	49833
Carbon tetrachloride	ND	0.0026	0.027		mg/Kg	1	1/18/2020 7:49:52 AM	49833
Chlorobenzene	ND	0.0035	0.027		mg/Kg	1	1/18/2020 7:49:52 AM	49833
Chloroethane	ND	0.0040	0.054		mg/Kg	1	1/18/2020 7:49:52 AM	49833
Chloroform	ND	0.0022	0.027		mg/Kg	1	1/18/2020 7:49:52 AM	49833
Chloromethane	ND	0.0026	0.081		mg/Kg	1	1/18/2020 7:49:52 AM	49833
2-Chlorotoluene	ND	0.0024	0.027		mg/Kg	1	1/18/2020 7:49:52 AM	49833
4-Chlorotoluene	ND	0.0022	0.027		mg/Kg	1	1/18/2020 7:49:52 AM	49833
cis-1,2-DCE	ND	0.0037	0.027		mg/Kg	1	1/18/2020 7:49:52 AM	49833
cis-1,3-Dichloropropene	ND	0.0023	0.027		mg/Kg	1	1/18/2020 7:49:52 AM	49833
1,2-Dibromo-3-chloropropane	ND	0.0028	0.054		mg/Kg	1	1/18/2020 7:49:52 AM	49833
Dibromochloromethane	ND	0.0019	0.027		mg/Kg	1	1/18/2020 7:49:52 AM	49833
Dibromomethane	ND	0.0029	0.027		mg/Kg	1	1/18/2020 7:49:52 AM	49833
1,2-Dichlorobenzene	ND	0.0022	0.027		mg/Kg	1	1/18/2020 7:49:52 AM	49833
1,3-Dichlorobenzene	ND	0.0024	0.027		mg/Kg	1	1/18/2020 7:49:52 AM	49833
1,4-Dichlorobenzene	ND	0.0023	0.027		mg/Kg	1	1/18/2020 7:49:52 AM	49833
Dichlorodifluoromethane	ND	0.0063	0.027		mg/Kg	1	1/18/2020 7:49:52 AM	49833
1,1-Dichloroethane	ND	0.0017	0.027		mg/Kg	1	1/18/2020 7:49:52 AM	49833
1,1-Dichloroethene	ND	0.011	0.027		mg/Kg	1	1/18/2020 7:49:52 AM	49833
1,2-Dichloropropane	ND	0.0020	0.027		mg/Kg	1	1/18/2020 7:49:52 AM	49833
1,3-Dichloropropane	ND	0.0029	0.027		mg/Kg	1	1/18/2020 7:49:52 AM	49833
2,2-Dichloropropane	ND	0.0088	0.054		mg/Kg	1	1/18/2020 7:49:52 AM	49833
1,1-Dichloropropene	ND	0.0025	0.054		mg/Kg	1	1/18/2020 7:49:52 AM	49833
Hexachlorobutadiene	ND	0.0028	0.054		mg/Kg	1	1/18/2020 7:49:52 AM	49833
2-Hexanone	ND	0.0045	0.27		mg/Kg	1	1/18/2020 7:49:52 AM	49833
Isopropylbenzene	ND	0.0020	0.027		mg/Kg	1	1/18/2020 7:49:52 AM	49833
4-Isopropyltoluene	ND	0.0022	0.027		mg/Kg	1	1/18/2020 7:49:52 AM	49833
4-Methyl-2-pentanone	ND	0.0051	0.27		mg/Kg	1	1/18/2020 7:49:52 AM	49833
Methylene chloride	0.021	0.0048	0.081	J	mg/Kg	1	1/18/2020 7:49:52 AM	49833
n-Butylbenzene	ND	0.0025	0.081		mg/Kg	1	1/18/2020 7:49:52 AM	49833
n-Propylbenzene	ND	0.0022	0.027		mg/Kg	1	1/18/2020 7:49:52 AM	49833
sec-Butylbenzene	ND	0.0031	0.027		mg/Kg	1	1/18/2020 7:49:52 AM	49833

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Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1-17 2.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 4:04:00 PM
Lab ID: 2001623-016 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Styrene	ND	0.0021	0.027		mg/Kg	1	1/18/2020 7:49:52 AM	49833
tert-Butylbenzene	ND	0.0026	0.027		mg/Kg	1	1/18/2020 7:49:52 AM	49833
1,1,1,2-Tetrachloroethane	ND	0.0018	0.027		mg/Kg	1	1/18/2020 7:49:52 AM	49833
1,1,2,2-Tetrachloroethane	ND	0.0028	0.027		mg/Kg	1	1/18/2020 7:49:52 AM	49833
Tetrachloroethene (PCE)	ND	0.0022	0.027		mg/Kg	1	1/18/2020 7:49:52 AM	49833
trans-1,2-DCE	ND	0.0025	0.027		mg/Kg	1	1/18/2020 7:49:52 AM	49833
trans-1,3-Dichloropropene	ND	0.0029	0.027		mg/Kg	1	1/18/2020 7:49:52 AM	49833
1,2,3-Trichlorobenzene	ND	0.0024	0.054		mg/Kg	1	1/18/2020 7:49:52 AM	49833
1,2,4-Trichlorobenzene	ND	0.0027	0.027		mg/Kg	1	1/18/2020 7:49:52 AM	49833
1,1,1-Trichloroethane	ND	0.0025	0.027		mg/Kg	1	1/18/2020 7:49:52 AM	49833
1,1,2-Trichloroethane	ND	0.0019	0.027		mg/Kg	1	1/18/2020 7:49:52 AM	49833
Trichloroethene (TCE)	ND	0.0031	0.027		mg/Kg	1	1/18/2020 7:49:52 AM	49833
Trichlorofluoromethane	ND	0.0092	0.027		mg/Kg	1	1/18/2020 7:49:52 AM	49833
1,2,3-Trichloropropane	ND	0.0044	0.054		mg/Kg	1	1/18/2020 7:49:52 AM	49833
Vinyl chloride	ND	0.0018	0.027		mg/Kg	1	1/18/2020 7:49:52 AM	49833
Xylenes, Total	ND	0.0068	0.054		mg/Kg	1	1/18/2020 7:49:52 AM	49833
Surr: Dibromofluoromethane	103		70-130		%Rec	1	1/18/2020 7:49:52 AM	49833
Surr: 1,2-Dichloroethane-d4	87.0		70-130		%Rec	1	1/18/2020 7:49:52 AM	49833
Surr: Toluene-d8	106		70-130		%Rec	1	1/18/2020 7:49:52 AM	49833
Surr: 4-Bromofluorobenzene	98.7		70-130		%Rec	1	1/18/2020 7:49:52 AM	49833
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/20/2020 1:09:00 PM	R65914
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	8.73				pH Units	1	1/21/2020 10:28:00 AM	R65942

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Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** SWMU1-17 1.5'
Project: Gallup SWMUI Sampling Event **Collection Date:** 1/13/2020 3:55:00 PM
Lab ID: 2001623-017 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **CLP**	
Diesel Range Organics (DRO)	290	4.8	20		mg/Kg	2	1/21/2020 7:15:13 PM	49861
Motor Oil Range Organics (MRO)	230	100	100		mg/Kg	2	1/21/2020 7:15:13 PM	49861
Surr: DNOP	98.1	0	55.1-146		%Rec	2	1/21/2020 7:15:13 PM	49861
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	1.4	4.5		mg/Kg	1	1/20/2020 8:15:12 PM	G65910
Surr: BFB	79.4	0	66.6-105		%Rec	1	1/20/2020 8:15:12 PM	G65910
EPA METHOD 7471: MERCURY							Analyst: **rde**	
Mercury	0.15	0.0018	0.033	H	mg/Kg	1	2/24/2020 4:42:19 PM	50503
MERCURY, TCLP							Analyst: **pmf**	
Mercury	ND	0.00075	0.020		mg/L	1	1/20/2020 8:24:49 PM	49923
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.74	5.0		mg/Kg	2	1/28/2020 9:34:18 AM	50072
Arsenic	ND	2.9	5.0		mg/Kg	2	1/28/2020 9:34:18 AM	50072
Barium	190	0.046	0.20		mg/Kg	2	1/28/2020 9:34:18 AM	50072
Beryllium	1.3	0.018	0.30		mg/Kg	2	1/28/2020 9:34:18 AM	50072
Cadmium	ND	0.049	0.20		mg/Kg	2	1/28/2020 9:34:18 AM	50072
Chromium	9.1	0.16	0.60		mg/Kg	2	1/28/2020 9:34:18 AM	50072
Cobalt	4.7	0.21	0.60		mg/Kg	2	1/28/2020 9:34:18 AM	50072
Lead	ND	0.49	0.50		mg/Kg	2	1/28/2020 10:57:38 AM	50072
Nickel	8.8	0.30	1.0		mg/Kg	2	1/28/2020 9:34:18 AM	50072
Selenium	ND	2.5	5.0		mg/Kg	2	1/28/2020 9:34:18 AM	50072
Silver	ND	0.064	0.50		mg/Kg	2	1/28/2020 9:34:18 AM	50072
Vanadium	16	0.13	5.0		mg/Kg	2	1/28/2020 9:34:18 AM	50072
Zinc	39	0.79	5.0		mg/Kg	2	1/28/2020 9:34:18 AM	50072
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/21/2020 11:55:48 AM	49932
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.75	2.0	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
Acenaphthylene	ND	0.88	2.0	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
Aniline	ND	0.68	2.0	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
Anthracene	ND	0.77	2.0	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
Azobenzene	ND	1.0	2.0	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
Benz(a)anthracene	ND	0.69	2.0	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
Benzo(a)pyrene	ND	1.1	2.0	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
Benzo(b)fluoranthene	ND	1.1	2.0	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
Benzo(g,h,i)perylene	ND	1.0	2.0	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868

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Qualifiers:

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

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1-17 1.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 3:55:00 PM
Lab ID: 2001623-017 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Benzo(k)fluoranthene	ND	0.60	2.0	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
Benzoic acid	ND	1.4	5.0	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
Benzyl alcohol	ND	0.83	2.0	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
Bis(2-chloroethoxy)methane	ND	0.82	2.0	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
Bis(2-chloroethyl)ether	ND	1.2	2.0	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
Bis(2-chloroisopropyl)ether	ND	0.86	2.0	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
Bis(2-ethylhexyl)phthalate	ND	2.2	5.0	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
4-Bromophenyl phenyl ether	ND	1.2	2.0	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
Butyl benzyl phthalate	ND	0.67	2.0	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
Carbazole	ND	0.79	2.0	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
4-Chloro-3-methylphenol	ND	0.79	5.0	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
4-Chloroaniline	ND	0.76	5.0	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
2-Chloronaphthalene	ND	0.84	2.5	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
2-Chlorophenol	ND	1.1	2.0	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
4-Chlorophenyl phenyl ether	ND	0.84	2.0	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
Chrysene	ND	0.78	2.0	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
Di-n-butyl phthalate	ND	3.0	4.0	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
Di-n-octyl phthalate	ND	0.67	4.0	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
Dibenz(a,h)anthracene	ND	1.1	2.0	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
Dibenzofuran	ND	1.0	2.0	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
1,2-Dichlorobenzene	ND	0.78	2.0	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
1,3-Dichlorobenzene	ND	0.67	2.0	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
1,4-Dichlorobenzene	ND	0.83	2.0	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
3,3´-Dichlorobenzidine	ND	0.85	2.5	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
Diethyl phthalate	ND	3.0	5.0	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
Dimethyl phthalate	ND	0.81	2.0	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
2,4-Dichlorophenol	ND	0.84	4.0	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
2,4-Dimethylphenol	ND	0.83	3.0	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
4,6-Dinitro-2-methylphenol	ND	0.73	4.0	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
2,4-Dinitrophenol	ND	0.58	5.0	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
2,4-Dinitrotoluene	ND	1.0	5.0	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
2,6-Dinitrotoluene	ND	1.2	5.0	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
Fluoranthene	ND	0.76	2.0	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
Fluorene	ND	0.78	2.0	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
Hexachlorobenzene	ND	0.78	2.0	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
Hexachlorobutadiene	ND	0.87	2.0	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
Hexachlorocyclopentadiene	ND	0.96	2.0	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
Hexachloroethane	ND	0.82	2.0	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
Indeno(1,2,3-cd)pyrene	ND	1.2	2.0	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868

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Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** SWMU1-17 1.5'
Project: Gallup SWMUI Sampling Event **Collection Date:** 1/13/2020 3:55:00 PM
Lab ID: 2001623-017 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Isophorone	ND	0.87	4.0	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
1-Methylnaphthalene	ND	0.93	2.0	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
2-Methylnaphthalene	ND	0.81	2.0	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
2-Methylphenol	ND	0.84	4.0	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
3+4-Methylphenol	ND	0.72	2.0	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
N-Nitrosodi-n-propylamine	ND	1.0	2.0	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
N-Nitrosodiphenylamine	ND	1.0	2.0	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
Naphthalene	ND	0.82	2.0	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
2-Nitroaniline	ND	1.1	2.0	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
3-Nitroaniline	ND	0.98	2.0	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
4-Nitroaniline	ND	1.3	4.0	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
Nitrobenzene	ND	0.85	4.0	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
2-Nitrophenol	ND	0.82	2.0	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
4-Nitrophenol	ND	0.59	2.5	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
Pentachlorophenol	ND	0.89	4.0	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
Phenanthrene	ND	1.0	2.0	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
Phenol	ND	0.85	2.0	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
Pyrene	ND	0.66	2.0	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
Pyridine	ND	1.9	4.0	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
1,2,4-Trichlorobenzene	ND	0.85	2.0	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
2,4,5-Trichlorophenol	ND	0.64	2.0	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
2,4,6-Trichlorophenol	ND	1.0	2.0	D	mg/Kg	1	1/23/2020 1:35:16 PM	49868
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	1	1/23/2020 1:35:16 PM	49868
Surr: Phenol-d5	0		18.5-101	SD	%Rec	1	1/23/2020 1:35:16 PM	49868
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	1	1/23/2020 1:35:16 PM	49868
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	1	1/23/2020 1:35:16 PM	49868
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	1	1/23/2020 1:35:16 PM	49868
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	1	1/23/2020 1:35:16 PM	49868
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.0037	0.023		mg/Kg	1	1/18/2020 8:18:30 AM	49833
Toluene	0.0058	0.0043	0.045	J	mg/Kg	1	1/18/2020 8:18:30 AM	49833
Ethylbenzene	ND	0.0026	0.045		mg/Kg	1	1/18/2020 8:18:30 AM	49833
Methyl tert-butyl ether (MTBE)	ND	0.011	0.045		mg/Kg	1	1/18/2020 8:18:30 AM	49833
1,2,4-Trimethylbenzene	0.0083	0.0042	0.045	J	mg/Kg	1	1/18/2020 8:18:30 AM	49833
1,3,5-Trimethylbenzene	ND	0.0044	0.045		mg/Kg	1	1/18/2020 8:18:30 AM	49833
1,2-Dichloroethane (EDC)	ND	0.0046	0.045		mg/Kg	1	1/18/2020 8:18:30 AM	49833
1,2-Dibromoethane (EDB)	ND	0.0041	0.045		mg/Kg	1	1/18/2020 8:18:30 AM	49833
Naphthalene	0.012	0.0091	0.091	J	mg/Kg	1	1/18/2020 8:18:30 AM	49833
1-Methylnaphthalene	0.076	0.026	0.18	J	mg/Kg	1	1/18/2020 8:18:30 AM	49833

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Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1-17 1.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 3:55:00 PM
Lab ID: 2001623-017 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
2-Methylnaphthalene	0.079	0.020	0.18	J	mg/Kg	1	1/18/2020 8:18:30 AM	49833
Acetone	ND	0.038	0.68		mg/Kg	1	1/18/2020 8:18:30 AM	49833
Bromobenzene	ND	0.0044	0.045		mg/Kg	1	1/18/2020 8:18:30 AM	49833
Bromodichloromethane	ND	0.0041	0.045		mg/Kg	1	1/18/2020 8:18:30 AM	49833
Bromoform	ND	0.0041	0.045		mg/Kg	1	1/18/2020 8:18:30 AM	49833
Bromomethane	ND	0.011	0.14		mg/Kg	1	1/18/2020 8:18:30 AM	49833
2-Butanone	ND	0.053	0.45		mg/Kg	1	1/18/2020 8:18:30 AM	49833
Carbon disulfide	ND	0.015	0.45		mg/Kg	1	1/18/2020 8:18:30 AM	49833
Carbon tetrachloride	ND	0.0043	0.045		mg/Kg	1	1/18/2020 8:18:30 AM	49833
Chlorobenzene	ND	0.0058	0.045		mg/Kg	1	1/18/2020 8:18:30 AM	49833
Chloroethane	ND	0.0067	0.091		mg/Kg	1	1/18/2020 8:18:30 AM	49833
Chloroform	ND	0.0037	0.045		mg/Kg	1	1/18/2020 8:18:30 AM	49833
Chloromethane	ND	0.0044	0.14		mg/Kg	1	1/18/2020 8:18:30 AM	49833
2-Chlorotoluene	ND	0.0040	0.045		mg/Kg	1	1/18/2020 8:18:30 AM	49833
4-Chlorotoluene	ND	0.0037	0.045		mg/Kg	1	1/18/2020 8:18:30 AM	49833
cis-1,2-DCE	ND	0.0062	0.045		mg/Kg	1	1/18/2020 8:18:30 AM	49833
cis-1,3-Dichloropropene	ND	0.0038	0.045		mg/Kg	1	1/18/2020 8:18:30 AM	49833
1,2-Dibromo-3-chloropropane	ND	0.0047	0.091		mg/Kg	1	1/18/2020 8:18:30 AM	49833
Dibromochloromethane	ND	0.0032	0.045		mg/Kg	1	1/18/2020 8:18:30 AM	49833
Dibromomethane	ND	0.0049	0.045		mg/Kg	1	1/18/2020 8:18:30 AM	49833
1,2-Dichlorobenzene	ND	0.0037	0.045		mg/Kg	1	1/18/2020 8:18:30 AM	49833
1,3-Dichlorobenzene	ND	0.0040	0.045		mg/Kg	1	1/18/2020 8:18:30 AM	49833
1,4-Dichlorobenzene	ND	0.0038	0.045		mg/Kg	1	1/18/2020 8:18:30 AM	49833
Dichlorodifluoromethane	ND	0.011	0.045		mg/Kg	1	1/18/2020 8:18:30 AM	49833
1,1-Dichloroethane	ND	0.0029	0.045		mg/Kg	1	1/18/2020 8:18:30 AM	49833
1,1-Dichloroethene	ND	0.018	0.045		mg/Kg	1	1/18/2020 8:18:30 AM	49833
1,2-Dichloropropane	ND	0.0033	0.045		mg/Kg	1	1/18/2020 8:18:30 AM	49833
1,3-Dichloropropane	ND	0.0049	0.045		mg/Kg	1	1/18/2020 8:18:30 AM	49833
2,2-Dichloropropane	ND	0.015	0.091		mg/Kg	1	1/18/2020 8:18:30 AM	49833
1,1-Dichloropropene	ND	0.0041	0.091		mg/Kg	1	1/18/2020 8:18:30 AM	49833
Hexachlorobutadiene	ND	0.0046	0.091		mg/Kg	1	1/18/2020 8:18:30 AM	49833
2-Hexanone	ND	0.0076	0.45		mg/Kg	1	1/18/2020 8:18:30 AM	49833
Isopropylbenzene	ND	0.0033	0.045		mg/Kg	1	1/18/2020 8:18:30 AM	49833
4-Isopropyltoluene	ND	0.0038	0.045		mg/Kg	1	1/18/2020 8:18:30 AM	49833
4-Methyl-2-pentanone	0.029	0.0086	0.45	J	mg/Kg	1	1/18/2020 8:18:30 AM	49833
Methylene chloride	0.060	0.0080	0.14	J	mg/Kg	1	1/18/2020 8:18:30 AM	49833
n-Butylbenzene	ND	0.0042	0.14		mg/Kg	1	1/18/2020 8:18:30 AM	49833
n-Propylbenzene	ND	0.0036	0.045		mg/Kg	1	1/18/2020 8:18:30 AM	49833
sec-Butylbenzene	ND	0.0051	0.045		mg/Kg	1	1/18/2020 8:18:30 AM	49833

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Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1-17 1.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 3:55:00 PM
Lab ID: 2001623-017 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Styrene	ND	0.0036	0.045		mg/Kg	1	1/18/2020 8:18:30 AM	49833
tert-Butylbenzene	ND	0.0043	0.045		mg/Kg	1	1/18/2020 8:18:30 AM	49833
1,1,1,2-Tetrachloroethane	ND	0.0031	0.045		mg/Kg	1	1/18/2020 8:18:30 AM	49833
1,1,2,2-Tetrachloroethane	ND	0.0046	0.045		mg/Kg	1	1/18/2020 8:18:30 AM	49833
Tetrachloroethene (PCE)	ND	0.0036	0.045		mg/Kg	1	1/18/2020 8:18:30 AM	49833
trans-1,2-DCE	ND	0.0042	0.045		mg/Kg	1	1/18/2020 8:18:30 AM	49833
trans-1,3-Dichloropropene	ND	0.0048	0.045		mg/Kg	1	1/18/2020 8:18:30 AM	49833
1,2,3-Trichlorobenzene	ND	0.0040	0.091		mg/Kg	1	1/18/2020 8:18:30 AM	49833
1,2,4-Trichlorobenzene	ND	0.0046	0.045		mg/Kg	1	1/18/2020 8:18:30 AM	49833
1,1,1-Trichloroethane	ND	0.0041	0.045		mg/Kg	1	1/18/2020 8:18:30 AM	49833
1,1,2-Trichloroethane	ND	0.0032	0.045		mg/Kg	1	1/18/2020 8:18:30 AM	49833
Trichloroethene (TCE)	ND	0.0053	0.045		mg/Kg	1	1/18/2020 8:18:30 AM	49833
Trichlorofluoromethane	ND	0.015	0.045		mg/Kg	1	1/18/2020 8:18:30 AM	49833
1,2,3-Trichloropropane	ND	0.0074	0.091		mg/Kg	1	1/18/2020 8:18:30 AM	49833
Vinyl chloride	ND	0.0030	0.045		mg/Kg	1	1/18/2020 8:18:30 AM	49833
Xylenes, Total	ND	0.011	0.091		mg/Kg	1	1/18/2020 8:18:30 AM	49833
Surr: Dibromofluoromethane	101		70-130		%Rec	1	1/18/2020 8:18:30 AM	49833
Surr: 1,2-Dichloroethane-d4	85.1		70-130		%Rec	1	1/18/2020 8:18:30 AM	49833
Surr: Toluene-d8	108		70-130		%Rec	1	1/18/2020 8:18:30 AM	49833
Surr: 4-Bromofluorobenzene	95.2		70-130		%Rec	1	1/18/2020 8:18:30 AM	49833
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/21/2020 2:26:00 PM	R65979
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	7.88				pH Units	1	1/21/2020 10:28:00 AM	R65942

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Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** SWMU1-19 1.5'
Project: Gallup SWMUI Sampling Event **Collection Date:** 1/13/2020 4:33:00 PM
Lab ID: 2001623-018 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	40	2.1	8.8		mg/Kg	1	1/22/2020 12:04:03 AM	49861
Motor Oil Range Organics (MRO)	ND	44	44		mg/Kg	1	1/22/2020 12:04:03 AM	49861
Surr: DNOP	96.8	0	55.1-146		%Rec	1	1/22/2020 12:04:03 AM	49861
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	1.2	3.9		mg/Kg	1	1/20/2020 8:38:34 PM	G65910
Surr: BFB	80.1	0	66.6-105		%Rec	1	1/20/2020 8:38:34 PM	G65910
EPA METHOD 7471: MERCURY							Analyst: **rde**	
Mercury	0.0088	0.0017	0.031	JH	mg/Kg	1	2/24/2020 4:44:20 PM	50503
MERCURY, TCLP							Analyst: **pmf**	
Mercury	ND	0.00075	0.020		mg/L	1	1/20/2020 8:27:41 PM	49923
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.74	5.0		mg/Kg	2	1/28/2020 9:35:43 AM	50072
Arsenic	ND	2.9	5.0		mg/Kg	2	1/28/2020 9:35:43 AM	50072
Barium	620	0.12	0.50		mg/Kg	5	1/28/2020 9:52:39 AM	50072
Beryllium	0.88	0.018	0.30		mg/Kg	2	1/28/2020 9:35:43 AM	50072
Cadmium	ND	0.049	0.20		mg/Kg	2	1/28/2020 9:35:43 AM	50072
Chromium	8.2	0.16	0.60		mg/Kg	2	1/28/2020 9:35:43 AM	50072
Cobalt	4.2	0.21	0.60		mg/Kg	2	1/28/2020 9:35:43 AM	50072
Lead	3.8	0.49	0.50		mg/Kg	2	1/28/2020 10:59:05 AM	50072
Nickel	7.5	0.30	1.0		mg/Kg	2	1/28/2020 9:35:43 AM	50072
Selenium	ND	2.5	5.0		mg/Kg	2	1/28/2020 9:35:43 AM	50072
Silver	ND	0.064	0.50		mg/Kg	2	1/28/2020 9:35:43 AM	50072
Vanadium	20	0.13	5.0		mg/Kg	2	1/28/2020 9:35:43 AM	50072
Zinc	13	0.80	5.0		mg/Kg	2	1/28/2020 9:35:43 AM	50072
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/21/2020 11:57:12 AM	49932
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.074	0.20		mg/Kg	1	1/23/2020 2:04:14 PM	49868
Acenaphthylene	ND	0.087	0.20		mg/Kg	1	1/23/2020 2:04:14 PM	49868
Aniline	ND	0.067	0.20		mg/Kg	1	1/23/2020 2:04:14 PM	49868
Anthracene	ND	0.076	0.20		mg/Kg	1	1/23/2020 2:04:14 PM	49868
Azobenzene	ND	0.10	0.20		mg/Kg	1	1/23/2020 2:04:14 PM	49868
Benz(a)anthracene	ND	0.068	0.20		mg/Kg	1	1/23/2020 2:04:14 PM	49868
Benzo(a)pyrene	ND	0.11	0.20		mg/Kg	1	1/23/2020 2:04:14 PM	49868
Benzo(b)fluoranthene	ND	0.11	0.20		mg/Kg	1	1/23/2020 2:04:14 PM	49868
Benzo(g,h,i)perylene	ND	0.10	0.20		mg/Kg	1	1/23/2020 2:04:14 PM	49868

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Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1-19 1.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 4:33:00 PM
Lab ID: 2001623-018 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Benzo(k)fluoranthene	ND	0.059	0.20		mg/Kg	1	1/23/2020 2:04:14 PM	49868
Benzoic acid	ND	0.14	0.49		mg/Kg	1	1/23/2020 2:04:14 PM	49868
Benzyl alcohol	ND	0.082	0.20		mg/Kg	1	1/23/2020 2:04:14 PM	49868
Bis(2-chloroethoxy)methane	ND	0.081	0.20		mg/Kg	1	1/23/2020 2:04:14 PM	49868
Bis(2-chloroethyl)ether	ND	0.11	0.20		mg/Kg	1	1/23/2020 2:04:14 PM	49868
Bis(2-chloroisopropyl)ether	ND	0.084	0.20		mg/Kg	1	1/23/2020 2:04:14 PM	49868
Bis(2-ethylhexyl)phthalate	ND	0.22	0.49		mg/Kg	1	1/23/2020 2:04:14 PM	49868
4-Bromophenyl phenyl ether	ND	0.11	0.20		mg/Kg	1	1/23/2020 2:04:14 PM	49868
Butyl benzyl phthalate	ND	0.066	0.20		mg/Kg	1	1/23/2020 2:04:14 PM	49868
Carbazole	ND	0.078	0.20		mg/Kg	1	1/23/2020 2:04:14 PM	49868
4-Chloro-3-methylphenol	ND	0.077	0.49		mg/Kg	1	1/23/2020 2:04:14 PM	49868
4-Chloroaniline	ND	0.075	0.49		mg/Kg	1	1/23/2020 2:04:14 PM	49868
2-Chloronaphthalene	ND	0.082	0.25		mg/Kg	1	1/23/2020 2:04:14 PM	49868
2-Chlorophenol	ND	0.11	0.20		mg/Kg	1	1/23/2020 2:04:14 PM	49868
4-Chlorophenyl phenyl ether	ND	0.083	0.20		mg/Kg	1	1/23/2020 2:04:14 PM	49868
Chrysene	ND	0.077	0.20		mg/Kg	1	1/23/2020 2:04:14 PM	49868
Di-n-butyl phthalate	ND	0.29	0.39		mg/Kg	1	1/23/2020 2:04:14 PM	49868
Di-n-octyl phthalate	ND	0.066	0.39		mg/Kg	1	1/23/2020 2:04:14 PM	49868
Dibenz(a,h)anthracene	ND	0.11	0.20		mg/Kg	1	1/23/2020 2:04:14 PM	49868
Dibenzofuran	ND	0.098	0.20		mg/Kg	1	1/23/2020 2:04:14 PM	49868
1,2-Dichlorobenzene	ND	0.077	0.20		mg/Kg	1	1/23/2020 2:04:14 PM	49868
1,3-Dichlorobenzene	ND	0.066	0.20		mg/Kg	1	1/23/2020 2:04:14 PM	49868
1,4-Dichlorobenzene	ND	0.081	0.20		mg/Kg	1	1/23/2020 2:04:14 PM	49868
3,3´-Dichlorobenzidine	ND	0.084	0.25		mg/Kg	1	1/23/2020 2:04:14 PM	49868
Diethyl phthalate	ND	0.30	0.49		mg/Kg	1	1/23/2020 2:04:14 PM	49868
Dimethyl phthalate	ND	0.080	0.20		mg/Kg	1	1/23/2020 2:04:14 PM	49868
2,4-Dichlorophenol	ND	0.083	0.39		mg/Kg	1	1/23/2020 2:04:14 PM	49868
2,4-Dimethylphenol	ND	0.082	0.29		mg/Kg	1	1/23/2020 2:04:14 PM	49868
4,6-Dinitro-2-methylphenol	ND	0.072	0.39		mg/Kg	1	1/23/2020 2:04:14 PM	49868
2,4-Dinitrophenol	ND	0.057	0.49		mg/Kg	1	1/23/2020 2:04:14 PM	49868
2,4-Dinitrotoluene	ND	0.10	0.49		mg/Kg	1	1/23/2020 2:04:14 PM	49868
2,6-Dinitrotoluene	ND	0.12	0.49		mg/Kg	1	1/23/2020 2:04:14 PM	49868
Fluoranthene	ND	0.075	0.20		mg/Kg	1	1/23/2020 2:04:14 PM	49868
Fluorene	ND	0.077	0.20		mg/Kg	1	1/23/2020 2:04:14 PM	49868
Hexachlorobenzene	ND	0.077	0.20		mg/Kg	1	1/23/2020 2:04:14 PM	49868
Hexachlorobutadiene	ND	0.086	0.20		mg/Kg	1	1/23/2020 2:04:14 PM	49868
Hexachlorocyclopentadiene	ND	0.094	0.20		mg/Kg	1	1/23/2020 2:04:14 PM	49868
Hexachloroethane	ND	0.080	0.20		mg/Kg	1	1/23/2020 2:04:14 PM	49868
Indeno(1,2,3-cd)pyrene	ND	0.12	0.20		mg/Kg	1	1/23/2020 2:04:14 PM	49868

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Lab Order **2001623**
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** SWMU1-19 1.5'
Project: Gallup SWMUI Sampling Event **Collection Date:** 1/13/2020 4:33:00 PM
Lab ID: 2001623-018 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Isophorone	ND	0.085	0.39		mg/Kg	1	1/23/2020 2:04:14 PM	49868
1-Methylnaphthalene	ND	0.091	0.20		mg/Kg	1	1/23/2020 2:04:14 PM	49868
2-Methylnaphthalene	ND	0.080	0.20		mg/Kg	1	1/23/2020 2:04:14 PM	49868
2-Methylphenol	ND	0.083	0.39		mg/Kg	1	1/23/2020 2:04:14 PM	49868
3+4-Methylphenol	ND	0.071	0.20		mg/Kg	1	1/23/2020 2:04:14 PM	49868
N-Nitrosodi-n-propylamine	ND	0.099	0.20		mg/Kg	1	1/23/2020 2:04:14 PM	49868
N-Nitrosodiphenylamine	ND	0.10	0.20		mg/Kg	1	1/23/2020 2:04:14 PM	49868
Naphthalene	ND	0.080	0.20		mg/Kg	1	1/23/2020 2:04:14 PM	49868
2-Nitroaniline	ND	0.11	0.20		mg/Kg	1	1/23/2020 2:04:14 PM	49868
3-Nitroaniline	ND	0.096	0.20		mg/Kg	1	1/23/2020 2:04:14 PM	49868
4-Nitroaniline	ND	0.13	0.39		mg/Kg	1	1/23/2020 2:04:14 PM	49868
Nitrobenzene	ND	0.084	0.39		mg/Kg	1	1/23/2020 2:04:14 PM	49868
2-Nitrophenol	ND	0.081	0.20		mg/Kg	1	1/23/2020 2:04:14 PM	49868
4-Nitrophenol	ND	0.058	0.25		mg/Kg	1	1/23/2020 2:04:14 PM	49868
Pentachlorophenol	ND	0.088	0.39		mg/Kg	1	1/23/2020 2:04:14 PM	49868
Phenanthrene	ND	0.10	0.20		mg/Kg	1	1/23/2020 2:04:14 PM	49868
Phenol	ND	0.083	0.20		mg/Kg	1	1/23/2020 2:04:14 PM	49868
Pyrene	ND	0.065	0.20		mg/Kg	1	1/23/2020 2:04:14 PM	49868
Pyridine	ND	0.18	0.39		mg/Kg	1	1/23/2020 2:04:14 PM	49868
1,2,4-Trichlorobenzene	ND	0.084	0.20		mg/Kg	1	1/23/2020 2:04:14 PM	49868
2,4,5-Trichlorophenol	ND	0.063	0.20		mg/Kg	1	1/23/2020 2:04:14 PM	49868
2,4,6-Trichlorophenol	ND	0.099	0.20		mg/Kg	1	1/23/2020 2:04:14 PM	49868
Surr: 2-Fluorophenol	42.9		26.7-85.9		%Rec	1	1/23/2020 2:04:14 PM	49868
Surr: Phenol-d5	53.8		18.5-101		%Rec	1	1/23/2020 2:04:14 PM	49868
Surr: 2,4,6-Tribromophenol	55.3		35.8-85.6		%Rec	1	1/23/2020 2:04:14 PM	49868
Surr: Nitrobenzene-d5	58.1		40.8-95.2		%Rec	1	1/23/2020 2:04:14 PM	49868
Surr: 2-Fluorobiphenyl	57.0		34.7-85.2		%Rec	1	1/23/2020 2:04:14 PM	49868
Surr: 4-Terphenyl-d14	94.4		37.4-91.3	S	%Rec	1	1/23/2020 2:04:14 PM	49868
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.0032	0.020		mg/Kg	1	1/18/2020 8:47:10 AM	49833
Toluene	0.0045	0.0038	0.039	J	mg/Kg	1	1/18/2020 8:47:10 AM	49833
Ethylbenzene	ND	0.0023	0.039		mg/Kg	1	1/18/2020 8:47:10 AM	49833
Methyl tert-butyl ether (MTBE)	ND	0.0094	0.039		mg/Kg	1	1/18/2020 8:47:10 AM	49833
1,2,4-Trimethylbenzene	ND	0.0036	0.039		mg/Kg	1	1/18/2020 8:47:10 AM	49833
1,3,5-Trimethylbenzene	ND	0.0038	0.039		mg/Kg	1	1/18/2020 8:47:10 AM	49833
1,2-Dichloroethane (EDC)	ND	0.0040	0.039		mg/Kg	1	1/18/2020 8:47:10 AM	49833
1,2-Dibromoethane (EDB)	ND	0.0036	0.039		mg/Kg	1	1/18/2020 8:47:10 AM	49833
Naphthalene	ND	0.0079	0.079		mg/Kg	1	1/18/2020 8:47:10 AM	49833
1-Methylnaphthalene	ND	0.023	0.16		mg/Kg	1	1/18/2020 8:47:10 AM	49833

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Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1-19 1.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 4:33:00 PM
Lab ID: 2001623-018 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
2-Methylnaphthalene	ND	0.017	0.16		mg/Kg	1	1/18/2020 8:47:10 AM	49833
Acetone	ND	0.033	0.59		mg/Kg	1	1/18/2020 8:47:10 AM	49833
Bromobenzene	ND	0.0038	0.039		mg/Kg	1	1/18/2020 8:47:10 AM	49833
Bromodichloromethane	ND	0.0036	0.039		mg/Kg	1	1/18/2020 8:47:10 AM	49833
Bromoform	ND	0.0036	0.039		mg/Kg	1	1/18/2020 8:47:10 AM	49833
Bromomethane	ND	0.0095	0.12		mg/Kg	1	1/18/2020 8:47:10 AM	49833
2-Butanone	ND	0.046	0.39		mg/Kg	1	1/18/2020 8:47:10 AM	49833
Carbon disulfide	ND	0.013	0.39		mg/Kg	1	1/18/2020 8:47:10 AM	49833
Carbon tetrachloride	ND	0.0037	0.039		mg/Kg	1	1/18/2020 8:47:10 AM	49833
Chlorobenzene	ND	0.0051	0.039		mg/Kg	1	1/18/2020 8:47:10 AM	49833
Chloroethane	ND	0.0058	0.079		mg/Kg	1	1/18/2020 8:47:10 AM	49833
Chloroform	ND	0.0032	0.039		mg/Kg	1	1/18/2020 8:47:10 AM	49833
Chloromethane	ND	0.0038	0.12		mg/Kg	1	1/18/2020 8:47:10 AM	49833
2-Chlorotoluene	ND	0.0034	0.039		mg/Kg	1	1/18/2020 8:47:10 AM	49833
4-Chlorotoluene	ND	0.0032	0.039		mg/Kg	1	1/18/2020 8:47:10 AM	49833
cis-1,2-DCE	ND	0.0054	0.039		mg/Kg	1	1/18/2020 8:47:10 AM	49833
cis-1,3-Dichloropropene	ND	0.0033	0.039		mg/Kg	1	1/18/2020 8:47:10 AM	49833
1,2-Dibromo-3-chloropropane	ND	0.0040	0.079		mg/Kg	1	1/18/2020 8:47:10 AM	49833
Dibromochloromethane	ND	0.0028	0.039		mg/Kg	1	1/18/2020 8:47:10 AM	49833
Dibromomethane	ND	0.0042	0.039		mg/Kg	1	1/18/2020 8:47:10 AM	49833
1,2-Dichlorobenzene	ND	0.0032	0.039		mg/Kg	1	1/18/2020 8:47:10 AM	49833
1,3-Dichlorobenzene	ND	0.0034	0.039		mg/Kg	1	1/18/2020 8:47:10 AM	49833
1,4-Dichlorobenzene	ND	0.0033	0.039		mg/Kg	1	1/18/2020 8:47:10 AM	49833
Dichlorodifluoromethane	ND	0.0092	0.039		mg/Kg	1	1/18/2020 8:47:10 AM	49833
1,1-Dichloroethane	ND	0.0025	0.039		mg/Kg	1	1/18/2020 8:47:10 AM	49833
1,1-Dichloroethene	ND	0.016	0.039		mg/Kg	1	1/18/2020 8:47:10 AM	49833
1,2-Dichloropropane	ND	0.0029	0.039		mg/Kg	1	1/18/2020 8:47:10 AM	49833
1,3-Dichloropropane	ND	0.0043	0.039		mg/Kg	1	1/18/2020 8:47:10 AM	49833
2,2-Dichloropropane	ND	0.013	0.079		mg/Kg	1	1/18/2020 8:47:10 AM	49833
1,1-Dichloropropene	ND	0.0036	0.079		mg/Kg	1	1/18/2020 8:47:10 AM	49833
Hexachlorobutadiene	ND	0.0040	0.079		mg/Kg	1	1/18/2020 8:47:10 AM	49833
2-Hexanone	ND	0.0066	0.39		mg/Kg	1	1/18/2020 8:47:10 AM	49833
Isopropylbenzene	ND	0.0028	0.039		mg/Kg	1	1/18/2020 8:47:10 AM	49833
4-Isopropyltoluene	ND	0.0033	0.039		mg/Kg	1	1/18/2020 8:47:10 AM	49833
4-Methyl-2-pentanone	0.025	0.0075	0.39	J	mg/Kg	1	1/18/2020 8:47:10 AM	49833
Methylene chloride	0.054	0.0070	0.12	J	mg/Kg	1	1/18/2020 8:47:10 AM	49833
n-Butylbenzene	ND	0.0037	0.12		mg/Kg	1	1/18/2020 8:47:10 AM	49833
n-Propylbenzene	ND	0.0031	0.039		mg/Kg	1	1/18/2020 8:47:10 AM	49833
sec-Butylbenzene	ND	0.0044	0.039		mg/Kg	1	1/18/2020 8:47:10 AM	49833

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Lab ID: 2001623-018 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Styrene	ND	0.0031	0.039		mg/Kg	1	1/18/2020 8:47:10 AM	49833
tert-Butylbenzene	ND	0.0037	0.039		mg/Kg	1	1/18/2020 8:47:10 AM	49833
1,1,1,2-Tetrachloroethane	ND	0.0027	0.039		mg/Kg	1	1/18/2020 8:47:10 AM	49833
1,1,2,2-Tetrachloroethane	ND	0.0040	0.039		mg/Kg	1	1/18/2020 8:47:10 AM	49833
Tetrachloroethene (PCE)	ND	0.0032	0.039		mg/Kg	1	1/18/2020 8:47:10 AM	49833
trans-1,2-DCE	ND	0.0036	0.039		mg/Kg	1	1/18/2020 8:47:10 AM	49833
trans-1,3-Dichloropropene	ND	0.0042	0.039		mg/Kg	1	1/18/2020 8:47:10 AM	49833
1,2,3-Trichlorobenzene	ND	0.0035	0.079		mg/Kg	1	1/18/2020 8:47:10 AM	49833
1,2,4-Trichlorobenzene	ND	0.0040	0.039		mg/Kg	1	1/18/2020 8:47:10 AM	49833
1,1,1-Trichloroethane	ND	0.0036	0.039		mg/Kg	1	1/18/2020 8:47:10 AM	49833
1,1,2-Trichloroethane	ND	0.0028	0.039		mg/Kg	1	1/18/2020 8:47:10 AM	49833
Trichloroethene (TCE)	ND	0.0046	0.039		mg/Kg	1	1/18/2020 8:47:10 AM	49833
Trichlorofluoromethane	ND	0.013	0.039		mg/Kg	1	1/18/2020 8:47:10 AM	49833
1,2,3-Trichloropropane	ND	0.0064	0.079		mg/Kg	1	1/18/2020 8:47:10 AM	49833
Vinyl chloride	ND	0.0026	0.039		mg/Kg	1	1/18/2020 8:47:10 AM	49833
Xylenes, Total	ND	0.010	0.079		mg/Kg	1	1/18/2020 8:47:10 AM	49833
Surr: Dibromofluoromethane	104		70-130		%Rec	1	1/18/2020 8:47:10 AM	49833
Surr: 1,2-Dichloroethane-d4	85.4		70-130		%Rec	1	1/18/2020 8:47:10 AM	49833
Surr: Toluene-d8	107		70-130		%Rec	1	1/18/2020 8:47:10 AM	49833
Surr: 4-Bromofluorobenzene	99.3		70-130		%Rec	1	1/18/2020 8:47:10 AM	49833
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/21/2020 2:26:00 PM	R65979
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	8.45				pH Units	1	1/21/2020 10:28:00 AM	R65942

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ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** SWMU1-16 2.5'
Project: Gallup SWMUI Sampling Event **Collection Date:** 1/13/2020 3:35:00 PM
Lab ID: 2001623-019 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	32000	220	930		mg/Kg	100	1/21/2020 3:53:50 AM	49861
Motor Oil Range Organics (MRO)	8200	4700	4700		mg/Kg	100	1/21/2020 3:53:50 AM	49861
Surr: DNOP	0	0	55.1-146	S	%Rec	100	1/21/2020 3:53:50 AM	49861
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	20	4.2	14		mg/Kg	5	1/20/2020 9:02:02 PM	G65910
Surr: BFB	185	0	66.6-105	S	%Rec	5	1/20/2020 9:02:02 PM	G65910
EPA METHOD 7471: MERCURY							Analyst: **rde**	
Mercury	2.2	0.019	0.34	H	mg/Kg	10	2/24/2020 4:50:33 PM	50503
MERCURY, TCLP							Analyst: **pmf**	
Mercury	ND	0.00075	0.020		mg/L	1	1/20/2020 8:33:07 PM	49924
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.73	4.9		mg/Kg	2	1/28/2020 9:37:07 AM	50072
Arsenic	ND	2.8	4.9		mg/Kg	2	1/28/2020 9:37:07 AM	50072
Barium	530	0.11	0.49		mg/Kg	5	1/28/2020 9:54:02 AM	50072
Beryllium	0.87	0.018	0.30		mg/Kg	2	1/28/2020 9:37:07 AM	50072
Cadmium	ND	0.048	0.20		mg/Kg	2	1/28/2020 9:37:07 AM	50072
Chromium	20	0.16	0.59		mg/Kg	2	1/28/2020 9:37:07 AM	50072
Cobalt	4.8	0.21	0.59		mg/Kg	2	1/28/2020 9:37:07 AM	50072
Lead	13	0.48	0.49		mg/Kg	2	1/28/2020 11:00:28 AM	50072
Nickel	15	0.29	0.98		mg/Kg	2	1/28/2020 9:37:07 AM	50072
Selenium	ND	2.5	4.9		mg/Kg	2	1/28/2020 9:37:07 AM	50072
Silver	ND	0.063	0.49		mg/Kg	2	1/28/2020 9:37:07 AM	50072
Vanadium	22	0.13	4.9		mg/Kg	2	1/28/2020 9:37:07 AM	50072
Zinc	690	1.9	12		mg/Kg	5	1/28/2020 9:54:02 AM	50072
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/21/2020 11:58:37 AM	49932
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	1.5	3.9	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868
Acenaphthylene	ND	1.7	3.9	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868
Aniline	ND	1.3	3.9	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868
Anthracene	ND	1.5	3.9	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868
Azobenzene	ND	2.0	3.9	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868
Benz(a)anthracene	ND	1.3	3.9	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868
Benzo(a)pyrene	ND	2.1	3.9	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868
Benzo(b)fluoranthene	ND	2.2	3.9	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868
Benzo(g,h,i)perylene	ND	2.0	3.9	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868

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Qualifiers:

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PQL	Practical Quanitative Limit
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P	Sample pH Not In Range
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Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1-16 2.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 3:35:00 PM
Lab ID: 2001623-019 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Benzo(k)fluoranthene	ND	1.2	3.9	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868
Benzoic acid	ND	2.7	9.7	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868
Benzyl alcohol	ND	1.6	3.9	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868
Bis(2-chloroethoxy)methane	ND	1.6	3.9	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868
Bis(2-chloroethyl)ether	ND	2.3	3.9	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868
Bis(2-chloroisopropyl)ether	ND	1.7	3.9	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868
Bis(2-ethylhexyl)phthalate	ND	4.3	9.7	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868
4-Bromophenyl phenyl ether	ND	2.3	3.9	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868
Butyl benzyl phthalate	ND	1.3	3.9	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868
Carbazole	ND	1.5	3.9	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868
4-Chloro-3-methylphenol	ND	1.5	9.7	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868
4-Chloroaniline	ND	1.5	9.7	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868
2-Chloronaphthalene	ND	1.6	4.8	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868
2-Chlorophenol	ND	2.2	3.9	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868
4-Chlorophenyl phenyl ether	ND	1.6	3.9	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868
Chrysene	9.3	1.5	3.9	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868
Di-n-butyl phthalate	ND	5.8	7.7	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868
Di-n-octyl phthalate	ND	1.3	7.7	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868
Dibenz(a,h)anthracene	ND	2.2	3.9	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868
Dibenzofuran	ND	1.9	3.9	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868
1,2-Dichlorobenzene	ND	1.5	3.9	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868
1,3-Dichlorobenzene	ND	1.3	3.9	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868
1,4-Dichlorobenzene	ND	1.6	3.9	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868
3,3´-Dichlorobenzidine	ND	1.7	4.8	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868
Diethyl phthalate	ND	5.9	9.7	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868
Dimethyl phthalate	ND	1.6	3.9	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868
2,4-Dichlorophenol	ND	1.6	7.7	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868
2,4-Dimethylphenol	ND	1.6	5.8	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868
4,6-Dinitro-2-methylphenol	ND	1.4	7.7	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868
2,4-Dinitrophenol	ND	1.1	9.7	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868
2,4-Dinitrotoluene	ND	2.0	9.7	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868
2,6-Dinitrotoluene	ND	2.3	9.7	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868
Fluoranthene	ND	1.5	3.9	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868
Fluorene	9.3	1.5	3.9	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868
Hexachlorobenzene	ND	1.5	3.9	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868
Hexachlorobutadiene	ND	1.7	3.9	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868
Hexachlorocyclopentadiene	ND	1.9	3.9	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868
Hexachloroethane	ND	1.6	3.9	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868
Indeno(1,2,3-cd)pyrene	ND	2.4	3.9	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868

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Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** SWMU1-16 2.5'
Project: Gallup SWMUI Sampling Event **Collection Date:** 1/13/2020 3:35:00 PM
Lab ID: 2001623-019 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Isophorone	ND	1.7	7.7	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868
1-Methylnaphthalene	28	1.8	3.9	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868
2-Methylnaphthalene	23	1.6	3.9	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868
2-Methylphenol	ND	1.6	7.7	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868
3+4-Methylphenol	ND	1.4	3.9	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868
N-Nitrosodi-n-propylamine	ND	1.9	3.9	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868
N-Nitrosodiphenylamine	ND	2.0	3.9	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868
Naphthalene	2.4	1.6	3.9	JD	mg/Kg	1	1/23/2020 2:33:09 PM	49868
2-Nitroaniline	ND	2.1	3.9	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868
3-Nitroaniline	ND	1.9	3.9	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868
4-Nitroaniline	ND	2.6	7.7	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868
Nitrobenzene	ND	1.7	7.7	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868
2-Nitrophenol	ND	1.6	3.9	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868
4-Nitrophenol	ND	1.1	4.8	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868
Pentachlorophenol	ND	1.7	7.7	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868
Phenanthrene	35	2.0	3.9	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868
Phenol	ND	1.6	3.9	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868
Pyrene	16	1.3	3.9	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868
Pyridine	ND	3.6	7.7	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868
1,2,4-Trichlorobenzene	ND	1.7	3.9	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868
2,4,5-Trichlorophenol	ND	1.2	3.9	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868
2,4,6-Trichlorophenol	ND	1.9	3.9	D	mg/Kg	1	1/23/2020 2:33:09 PM	49868
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	1	1/23/2020 2:33:09 PM	49868
Surr: Phenol-d5	0		18.5-101	SD	%Rec	1	1/23/2020 2:33:09 PM	49868
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	1	1/23/2020 2:33:09 PM	49868
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	1	1/23/2020 2:33:09 PM	49868
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	1	1/23/2020 2:33:09 PM	49868
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	1	1/23/2020 2:33:09 PM	49868
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.011	0.069	D	mg/Kg	5	1/18/2020 7:23:16 PM	49833
Toluene	0.14	0.013	0.14	D	mg/Kg	5	1/18/2020 7:23:16 PM	49833
Ethylbenzene	0.15	0.0081	0.14	D	mg/Kg	5	1/18/2020 7:23:16 PM	49833
Methyl tert-butyl ether (MTBE)	ND	0.033	0.14	D	mg/Kg	5	1/18/2020 7:23:16 PM	49833
1,2,4-Trimethylbenzene	1.6	0.013	0.14	D	mg/Kg	5	1/18/2020 7:23:16 PM	49833
1,3,5-Trimethylbenzene	0.46	0.013	0.14	D	mg/Kg	5	1/18/2020 7:23:16 PM	49833
1,2-Dichloroethane (EDC)	0.12	0.014	0.14	JD	mg/Kg	5	1/18/2020 7:23:16 PM	49833
1,2-Dibromoethane (EDB)	0.046	0.013	0.14	JD	mg/Kg	5	1/18/2020 7:23:16 PM	49833
Naphthalene	2.2	0.028	0.28	D	mg/Kg	5	1/18/2020 7:23:16 PM	49833
1-Methylnaphthalene	8.5	0.080	0.55	D	mg/Kg	5	1/18/2020 7:23:16 PM	49833

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Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1-16 2.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 3:35:00 PM
Lab ID: 2001623-019 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
2-Methylnaphthalene	12	0.061	0.55	D	mg/Kg	5	1/18/2020 7:23:16 PM	49833
Acetone	ND	0.11	2.1	D	mg/Kg	5	1/18/2020 7:23:16 PM	49833
Bromobenzene	ND	0.013	0.14	D	mg/Kg	5	1/18/2020 7:23:16 PM	49833
Bromodichloromethane	ND	0.013	0.14	D	mg/Kg	5	1/18/2020 7:23:16 PM	49833
Bromoform	ND	0.013	0.14	D	mg/Kg	5	1/18/2020 7:23:16 PM	49833
Bromomethane	ND	0.033	0.42	D	mg/Kg	5	1/18/2020 7:23:16 PM	49833
2-Butanone	ND	0.16	1.4	D	mg/Kg	5	1/18/2020 7:23:16 PM	49833
Carbon disulfide	0.060	0.046	1.4	JD	mg/Kg	5	1/18/2020 7:23:16 PM	49833
Carbon tetrachloride	ND	0.013	0.14	D	mg/Kg	5	1/18/2020 7:23:16 PM	49833
Chlorobenzene	ND	0.018	0.14	D	mg/Kg	5	1/18/2020 7:23:16 PM	49833
Chloroethane	ND	0.020	0.28	D	mg/Kg	5	1/18/2020 7:23:16 PM	49833
Chloroform	ND	0.011	0.14	D	mg/Kg	5	1/18/2020 7:23:16 PM	49833
Chloromethane	ND	0.013	0.42	D	mg/Kg	5	1/18/2020 7:23:16 PM	49833
2-Chlorotoluene	ND	0.012	0.14	D	mg/Kg	5	1/18/2020 7:23:16 PM	49833
4-Chlorotoluene	ND	0.011	0.14	D	mg/Kg	5	1/18/2020 7:23:16 PM	49833
cis-1,2-DCE	ND	0.019	0.14	D	mg/Kg	5	1/18/2020 7:23:16 PM	49833
cis-1,3-Dichloropropene	ND	0.012	0.14	D	mg/Kg	5	1/18/2020 7:23:16 PM	49833
1,2-Dibromo-3-chloropropane	ND	0.014	0.28	D	mg/Kg	5	1/18/2020 7:23:16 PM	49833
Dibromochloromethane	ND	0.0098	0.14	D	mg/Kg	5	1/18/2020 7:23:16 PM	49833
Dibromomethane	ND	0.015	0.14	D	mg/Kg	5	1/18/2020 7:23:16 PM	49833
1,2-Dichlorobenzene	ND	0.011	0.14	D	mg/Kg	5	1/18/2020 7:23:16 PM	49833
1,3-Dichlorobenzene	ND	0.012	0.14	D	mg/Kg	5	1/18/2020 7:23:16 PM	49833
1,4-Dichlorobenzene	ND	0.012	0.14	D	mg/Kg	5	1/18/2020 7:23:16 PM	49833
Dichlorodifluoromethane	ND	0.032	0.14	D	mg/Kg	5	1/18/2020 7:23:16 PM	49833
1,1-Dichloroethane	ND	0.0089	0.14	D	mg/Kg	5	1/18/2020 7:23:16 PM	49833
1,1-Dichloroethene	ND	0.055	0.14	D	mg/Kg	5	1/18/2020 7:23:16 PM	49833
1,2-Dichloropropane	ND	0.010	0.14	D	mg/Kg	5	1/18/2020 7:23:16 PM	49833
1,3-Dichloropropane	ND	0.015	0.14	D	mg/Kg	5	1/18/2020 7:23:16 PM	49833
2,2-Dichloropropane	ND	0.045	0.28	D	mg/Kg	5	1/18/2020 7:23:16 PM	49833
1,1-Dichloropropene	ND	0.013	0.28	D	mg/Kg	5	1/18/2020 7:23:16 PM	49833
Hexachlorobutadiene	ND	0.014	0.28	D	mg/Kg	5	1/18/2020 7:23:16 PM	49833
2-Hexanone	0.15	0.023	1.4	JD	mg/Kg	5	1/18/2020 7:23:16 PM	49833
Isopropylbenzene	0.088	0.010	0.14	JD	mg/Kg	5	1/18/2020 7:23:16 PM	49833
4-Isopropyltoluene	0.13	0.011	0.14	JD	mg/Kg	5	1/18/2020 7:23:16 PM	49833
4-Methyl-2-pentanone	0.29	0.026	1.4	JD	mg/Kg	5	1/18/2020 7:23:16 PM	49833
Methylene chloride	0.072	0.025	0.42	JD	mg/Kg	5	1/18/2020 7:23:16 PM	49833
n-Butylbenzene	0.27	0.013	0.42	JD	mg/Kg	5	1/18/2020 7:23:16 PM	49833
n-Propylbenzene	0.20	0.011	0.14	D	mg/Kg	5	1/18/2020 7:23:16 PM	49833
sec-Butylbenzene	0.19	0.016	0.14	D	mg/Kg	5	1/18/2020 7:23:16 PM	49833

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

Qualifiers:

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

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1-16 2.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 3:35:00 PM
Lab ID: 2001623-019 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Styrene	ND	0.011	0.14	D	mg/Kg	5	1/18/2020 7:23:16 PM	49833
tert-Butylbenzene	ND	0.013	0.14	D	mg/Kg	5	1/18/2020 7:23:16 PM	49833
1,1,1,2-Tetrachloroethane	ND	0.0094	0.14	D	mg/Kg	5	1/18/2020 7:23:16 PM	49833
1,1,2,2-Tetrachloroethane	ND	0.014	0.14	D	mg/Kg	5	1/18/2020 7:23:16 PM	49833
Tetrachloroethene (PCE)	ND	0.011	0.14	D	mg/Kg	5	1/18/2020 7:23:16 PM	49833
trans-1,2-DCE	ND	0.013	0.14	D	mg/Kg	5	1/18/2020 7:23:16 PM	49833
trans-1,3-Dichloropropene	ND	0.015	0.14	D	mg/Kg	5	1/18/2020 7:23:16 PM	49833
1,2,3-Trichlorobenzene	ND	0.012	0.28	D	mg/Kg	5	1/18/2020 7:23:16 PM	49833
1,2,4-Trichlorobenzene	ND	0.014	0.14	D	mg/Kg	5	1/18/2020 7:23:16 PM	49833
1,1,1-Trichloroethane	ND	0.013	0.14	D	mg/Kg	5	1/18/2020 7:23:16 PM	49833
1,1,2-Trichloroethane	ND	0.0098	0.14	D	mg/Kg	5	1/18/2020 7:23:16 PM	49833
Trichloroethene (TCE)	ND	0.016	0.14	D	mg/Kg	5	1/18/2020 7:23:16 PM	49833
Trichlorofluoromethane	ND	0.047	0.14	D	mg/Kg	5	1/18/2020 7:23:16 PM	49833
1,2,3-Trichloropropane	ND	0.022	0.28	D	mg/Kg	5	1/18/2020 7:23:16 PM	49833
Vinyl chloride	ND	0.0091	0.14	D	mg/Kg	5	1/18/2020 7:23:16 PM	49833
Xylenes, Total	1.3	0.035	0.28	D	mg/Kg	5	1/18/2020 7:23:16 PM	49833
Surr: Dibromofluoromethane	99.4		70-130	D	%Rec	5	1/18/2020 7:23:16 PM	49833
Surr: 1,2-Dichloroethane-d4	89.3		70-130	D	%Rec	5	1/18/2020 7:23:16 PM	49833
Surr: Toluene-d8	99.5		70-130	D	%Rec	5	1/18/2020 7:23:16 PM	49833
Surr: 4-Bromofluorobenzene	90.2		70-130	D	%Rec	5	1/18/2020 7:23:16 PM	49833
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/21/2020 2:26:00 PM	R65979
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	8.32				pH Units	1	1/21/2020 10:28:00 AM	R65942

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Qualifiers:

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

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** SWMU1-13 9'
Project: Gallup SWMUI Sampling Event **Collection Date:** 1/13/2020 3:03:00 PM
Lab ID: 2001623-020 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	6.3	2.3	9.5	J	mg/Kg	1	1/21/2020 4:02:44 AM	49861
Motor Oil Range Organics (MRO)	ND	48	48		mg/Kg	1	1/21/2020 4:02:44 AM	49861
Surr: DNOP	91.3	0	55.1-146		%Rec	1	1/21/2020 4:02:44 AM	49861
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	1.2	3.9		mg/Kg	1	1/20/2020 9:25:32 PM	G65910
Surr: BFB	80.3	0	66.6-105		%Rec	1	1/20/2020 9:25:32 PM	G65910
EPA METHOD 7471: MERCURY							Analyst: **rde**	
Mercury	ND	0.0018	0.033	H	mg/Kg	1	2/24/2020 4:48:30 PM	50503
MERCURY, TCLP							Analyst: **pmf**	
Mercury	0.0014	0.00075	0.020	J	mg/L	1	1/20/2020 8:41:22 PM	49924
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.73	5.0		mg/Kg	2	1/28/2020 9:38:32 AM	50072
Arsenic	ND	2.8	5.0		mg/Kg	2	1/28/2020 9:38:32 AM	50072
Barium	320	0.046	0.20		mg/Kg	2	1/28/2020 9:38:32 AM	50072
Beryllium	0.60	0.018	0.30		mg/Kg	2	1/28/2020 9:38:32 AM	50072
Cadmium	ND	0.048	0.20		mg/Kg	2	1/28/2020 9:38:32 AM	50072
Chromium	6.2	0.16	0.60		mg/Kg	2	1/28/2020 9:38:32 AM	50072
Cobalt	3.2	0.21	0.60		mg/Kg	2	1/28/2020 9:38:32 AM	50072
Lead	2.7	0.48	0.50		mg/Kg	2	1/28/2020 11:01:55 AM	50072
Nickel	5.7	0.30	1.0		mg/Kg	2	1/28/2020 9:38:32 AM	50072
Selenium	ND	2.5	5.0		mg/Kg	2	1/28/2020 9:38:32 AM	50072
Silver	ND	0.064	0.50		mg/Kg	2	1/28/2020 9:38:32 AM	50072
Vanadium	17	0.13	5.0		mg/Kg	2	1/28/2020 9:38:32 AM	50072
Zinc	11	0.79	5.0		mg/Kg	2	1/28/2020 9:38:32 AM	50072
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/21/2020 12:04:37 PM	49932
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.073	0.19		mg/Kg	1	1/23/2020 3:02:07 PM	49868
Acenaphthylene	ND	0.086	0.19		mg/Kg	1	1/23/2020 3:02:07 PM	49868
Aniline	ND	0.066	0.19		mg/Kg	1	1/23/2020 3:02:07 PM	49868
Anthracene	ND	0.074	0.19		mg/Kg	1	1/23/2020 3:02:07 PM	49868
Azobenzene	ND	0.098	0.19		mg/Kg	1	1/23/2020 3:02:07 PM	49868
Benz(a)anthracene	ND	0.066	0.19		mg/Kg	1	1/23/2020 3:02:07 PM	49868
Benzo(a)pyrene	ND	0.10	0.19		mg/Kg	1	1/23/2020 3:02:07 PM	49868
Benzo(b)fluoranthene	ND	0.11	0.19		mg/Kg	1	1/23/2020 3:02:07 PM	49868
Benzo(g,h,i)perylene	ND	0.099	0.19		mg/Kg	1	1/23/2020 3:02:07 PM	49868

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RL	Reporting Limit

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1-13 9'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 3:03:00 PM
Lab ID: 2001623-020 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Benzo(k)fluoranthene	ND	0.058	0.19		mg/Kg	1	1/23/2020 3:02:07 PM	49868
Benzoic acid	ND	0.13	0.48		mg/Kg	1	1/23/2020 3:02:07 PM	49868
Benzyl alcohol	ND	0.080	0.19		mg/Kg	1	1/23/2020 3:02:07 PM	49868
Bis(2-chloroethoxy)methane	ND	0.080	0.19		mg/Kg	1	1/23/2020 3:02:07 PM	49868
Bis(2-chloroethyl)ether	ND	0.11	0.19		mg/Kg	1	1/23/2020 3:02:07 PM	49868
Bis(2-chloroisopropyl)ether	ND	0.083	0.19		mg/Kg	1	1/23/2020 3:02:07 PM	49868
Bis(2-ethylhexyl)phthalate	ND	0.22	0.48		mg/Kg	1	1/23/2020 3:02:07 PM	49868
4-Bromophenyl phenyl ether	ND	0.11	0.19		mg/Kg	1	1/23/2020 3:02:07 PM	49868
Butyl benzyl phthalate	ND	0.065	0.19		mg/Kg	1	1/23/2020 3:02:07 PM	49868
Carbazole	ND	0.077	0.19		mg/Kg	1	1/23/2020 3:02:07 PM	49868
4-Chloro-3-methylphenol	ND	0.076	0.48		mg/Kg	1	1/23/2020 3:02:07 PM	49868
4-Chloroaniline	ND	0.074	0.48		mg/Kg	1	1/23/2020 3:02:07 PM	49868
2-Chloronaphthalene	ND	0.081	0.24		mg/Kg	1	1/23/2020 3:02:07 PM	49868
2-Chlorophenol	ND	0.11	0.19		mg/Kg	1	1/23/2020 3:02:07 PM	49868
4-Chlorophenyl phenyl ether	ND	0.081	0.19		mg/Kg	1	1/23/2020 3:02:07 PM	49868
Chrysene	ND	0.076	0.19		mg/Kg	1	1/23/2020 3:02:07 PM	49868
Di-n-butyl phthalate	0.32	0.29	0.39	J	mg/Kg	1	1/23/2020 3:02:07 PM	49868
Di-n-octyl phthalate	ND	0.064	0.39		mg/Kg	1	1/23/2020 3:02:07 PM	49868
Dibenz(a,h)anthracene	ND	0.11	0.19		mg/Kg	1	1/23/2020 3:02:07 PM	49868
Dibenzofuran	ND	0.097	0.19		mg/Kg	1	1/23/2020 3:02:07 PM	49868
1,2-Dichlorobenzene	ND	0.076	0.19		mg/Kg	1	1/23/2020 3:02:07 PM	49868
1,3-Dichlorobenzene	ND	0.065	0.19		mg/Kg	1	1/23/2020 3:02:07 PM	49868
1,4-Dichlorobenzene	ND	0.080	0.19		mg/Kg	1	1/23/2020 3:02:07 PM	49868
3,3´-Dichlorobenzidine	ND	0.082	0.24		mg/Kg	1	1/23/2020 3:02:07 PM	49868
Diethyl phthalate	0.35	0.29	0.48	J	mg/Kg	1	1/23/2020 3:02:07 PM	49868
Dimethyl phthalate	ND	0.078	0.19		mg/Kg	1	1/23/2020 3:02:07 PM	49868
2,4-Dichlorophenol	ND	0.082	0.39		mg/Kg	1	1/23/2020 3:02:07 PM	49868
2,4-Dimethylphenol	ND	0.080	0.29		mg/Kg	1	1/23/2020 3:02:07 PM	49868
4,6-Dinitro-2-methylphenol	ND	0.071	0.39		mg/Kg	1	1/23/2020 3:02:07 PM	49868
2,4-Dinitrophenol	ND	0.056	0.48		mg/Kg	1	1/23/2020 3:02:07 PM	49868
2,4-Dinitrotoluene	ND	0.099	0.48		mg/Kg	1	1/23/2020 3:02:07 PM	49868
2,6-Dinitrotoluene	ND	0.11	0.48		mg/Kg	1	1/23/2020 3:02:07 PM	49868
Fluoranthene	ND	0.074	0.19		mg/Kg	1	1/23/2020 3:02:07 PM	49868
Fluorene	ND	0.076	0.19		mg/Kg	1	1/23/2020 3:02:07 PM	49868
Hexachlorobenzene	ND	0.075	0.19		mg/Kg	1	1/23/2020 3:02:07 PM	49868
Hexachlorobutadiene	ND	0.085	0.19		mg/Kg	1	1/23/2020 3:02:07 PM	49868
Hexachlorocyclopentadiene	ND	0.093	0.19		mg/Kg	1	1/23/2020 3:02:07 PM	49868
Hexachloroethane	ND	0.079	0.19		mg/Kg	1	1/23/2020 3:02:07 PM	49868
Indeno(1,2,3-cd)pyrene	ND	0.12	0.19		mg/Kg	1	1/23/2020 3:02:07 PM	49868

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Qualifiers:

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

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1-13 9'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 3:03:00 PM
Lab ID: 2001623-020 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Isophorone	ND	0.084	0.39		mg/Kg	1	1/23/2020 3:02:07 PM	49868
1-Methylnaphthalene	ND	0.090	0.19		mg/Kg	1	1/23/2020 3:02:07 PM	49868
2-Methylnaphthalene	ND	0.078	0.19		mg/Kg	1	1/23/2020 3:02:07 PM	49868
2-Methylphenol	ND	0.081	0.39		mg/Kg	1	1/23/2020 3:02:07 PM	49868
3+4-Methylphenol	ND	0.070	0.19		mg/Kg	1	1/23/2020 3:02:07 PM	49868
N-Nitrosodi-n-propylamine	ND	0.097	0.19		mg/Kg	1	1/23/2020 3:02:07 PM	49868
N-Nitrosodiphenylamine	ND	0.10	0.19		mg/Kg	1	1/23/2020 3:02:07 PM	49868
Naphthalene	ND	0.079	0.19		mg/Kg	1	1/23/2020 3:02:07 PM	49868
2-Nitroaniline	ND	0.11	0.19		mg/Kg	1	1/23/2020 3:02:07 PM	49868
3-Nitroaniline	ND	0.095	0.19		mg/Kg	1	1/23/2020 3:02:07 PM	49868
4-Nitroaniline	ND	0.13	0.39		mg/Kg	1	1/23/2020 3:02:07 PM	49868
Nitrobenzene	ND	0.082	0.39		mg/Kg	1	1/23/2020 3:02:07 PM	49868
2-Nitrophenol	ND	0.080	0.19		mg/Kg	1	1/23/2020 3:02:07 PM	49868
4-Nitrophenol	ND	0.057	0.24		mg/Kg	1	1/23/2020 3:02:07 PM	49868
Pentachlorophenol	ND	0.086	0.39		mg/Kg	1	1/23/2020 3:02:07 PM	49868
Phenanthrene	ND	0.098	0.19		mg/Kg	1	1/23/2020 3:02:07 PM	49868
Phenol	ND	0.082	0.19		mg/Kg	1	1/23/2020 3:02:07 PM	49868
Pyrene	ND	0.064	0.19		mg/Kg	1	1/23/2020 3:02:07 PM	49868
Pyridine	ND	0.18	0.39		mg/Kg	1	1/23/2020 3:02:07 PM	49868
1,2,4-Trichlorobenzene	ND	0.082	0.19		mg/Kg	1	1/23/2020 3:02:07 PM	49868
2,4,5-Trichlorophenol	ND	0.062	0.19		mg/Kg	1	1/23/2020 3:02:07 PM	49868
2,4,6-Trichlorophenol	ND	0.097	0.19		mg/Kg	1	1/23/2020 3:02:07 PM	49868
Surr: 2-Fluorophenol	67.7		26.7-85.9		%Rec	1	1/23/2020 3:02:07 PM	49868
Surr: Phenol-d5	75.7		18.5-101		%Rec	1	1/23/2020 3:02:07 PM	49868
Surr: 2,4,6-Tribromophenol	72.1		35.8-85.6		%Rec	1	1/23/2020 3:02:07 PM	49868
Surr: Nitrobenzene-d5	88.0		40.8-95.2		%Rec	1	1/23/2020 3:02:07 PM	49868
Surr: 2-Fluorobiphenyl	71.7		34.7-85.2		%Rec	1	1/23/2020 3:02:07 PM	49868
Surr: 4-Terphenyl-d14	88.7		37.4-91.3		%Rec	1	1/23/2020 3:02:07 PM	49868
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.0032	0.019		mg/Kg	1	1/18/2020 11:11:03 AM	49874
Toluene	ND	0.0037	0.039		mg/Kg	1	1/18/2020 11:11:03 AM	49874
Ethylbenzene	ND	0.0022	0.039		mg/Kg	1	1/18/2020 11:11:03 AM	49874
Methyl tert-butyl ether (MTBE)	ND	0.0091	0.039		mg/Kg	1	1/18/2020 11:11:03 AM	49874
1,2,4-Trimethylbenzene	ND	0.0035	0.039		mg/Kg	1	1/18/2020 11:11:03 AM	49874
1,3,5-Trimethylbenzene	ND	0.0037	0.039		mg/Kg	1	1/18/2020 11:11:03 AM	49874
1,2-Dichloroethane (EDC)	ND	0.0039	0.039		mg/Kg	1	1/18/2020 11:11:03 AM	49874
1,2-Dibromoethane (EDB)	ND	0.0035	0.039		mg/Kg	1	1/18/2020 11:11:03 AM	49874
Naphthalene	ND	0.0077	0.077		mg/Kg	1	1/18/2020 11:11:03 AM	49874
1-Methylnaphthalene	ND	0.022	0.15		mg/Kg	1	1/18/2020 11:11:03 AM	49874

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

Qualifiers:

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

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1-13 9'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 3:03:00 PM
Lab ID: 2001623-020 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
2-Methylnaphthalene	ND	0.017	0.15		mg/Kg	1	1/18/2020 11:11:03 AM	49874
Acetone	0.035	0.032	0.58	J	mg/Kg	1	1/18/2020 11:11:03 AM	49874
Bromobenzene	ND	0.0037	0.039		mg/Kg	1	1/18/2020 11:11:03 AM	49874
Bromodichloromethane	ND	0.0035	0.039		mg/Kg	1	1/18/2020 11:11:03 AM	49874
Bromoform	ND	0.0035	0.039		mg/Kg	1	1/18/2020 11:11:03 AM	49874
Bromomethane	ND	0.0093	0.12		mg/Kg	1	1/18/2020 11:11:03 AM	49874
2-Butanone	ND	0.045	0.39		mg/Kg	1	1/18/2020 11:11:03 AM	49874
Carbon disulfide	ND	0.013	0.39		mg/Kg	1	1/18/2020 11:11:03 AM	49874
Carbon tetrachloride	ND	0.0037	0.039		mg/Kg	1	1/18/2020 11:11:03 AM	49874
Chlorobenzene	ND	0.0049	0.039		mg/Kg	1	1/18/2020 11:11:03 AM	49874
Chloroethane	ND	0.0057	0.077		mg/Kg	1	1/18/2020 11:11:03 AM	49874
Chloroform	ND	0.0031	0.039		mg/Kg	1	1/18/2020 11:11:03 AM	49874
Chloromethane	ND	0.0037	0.12		mg/Kg	1	1/18/2020 11:11:03 AM	49874
2-Chlorotoluene	ND	0.0034	0.039		mg/Kg	1	1/18/2020 11:11:03 AM	49874
4-Chlorotoluene	ND	0.0032	0.039		mg/Kg	1	1/18/2020 11:11:03 AM	49874
cis-1,2-DCE	ND	0.0053	0.039		mg/Kg	1	1/18/2020 11:11:03 AM	49874
cis-1,3-Dichloropropene	ND	0.0032	0.039		mg/Kg	1	1/18/2020 11:11:03 AM	49874
1,2-Dibromo-3-chloropropane	ND	0.0040	0.077		mg/Kg	1	1/18/2020 11:11:03 AM	49874
Dibromochloromethane	ND	0.0027	0.039		mg/Kg	1	1/18/2020 11:11:03 AM	49874
Dibromomethane	ND	0.0041	0.039		mg/Kg	1	1/18/2020 11:11:03 AM	49874
1,2-Dichlorobenzene	ND	0.0032	0.039		mg/Kg	1	1/18/2020 11:11:03 AM	49874
1,3-Dichlorobenzene	ND	0.0033	0.039		mg/Kg	1	1/18/2020 11:11:03 AM	49874
1,4-Dichlorobenzene	ND	0.0032	0.039		mg/Kg	1	1/18/2020 11:11:03 AM	49874
Dichlorodifluoromethane	ND	0.0089	0.039		mg/Kg	1	1/18/2020 11:11:03 AM	49874
1,1-Dichloroethane	ND	0.0025	0.039		mg/Kg	1	1/18/2020 11:11:03 AM	49874
1,1-Dichloroethene	ND	0.015	0.039		mg/Kg	1	1/18/2020 11:11:03 AM	49874
1,2-Dichloropropane	ND	0.0028	0.039		mg/Kg	1	1/18/2020 11:11:03 AM	49874
1,3-Dichloropropane	ND	0.0042	0.039		mg/Kg	1	1/18/2020 11:11:03 AM	49874
2,2-Dichloropropane	ND	0.013	0.077		mg/Kg	1	1/18/2020 11:11:03 AM	49874
1,1-Dichloropropene	ND	0.0035	0.077		mg/Kg	1	1/18/2020 11:11:03 AM	49874
Hexachlorobutadiene	ND	0.0039	0.077		mg/Kg	1	1/18/2020 11:11:03 AM	49874
2-Hexanone	ND	0.0064	0.39		mg/Kg	1	1/18/2020 11:11:03 AM	49874
Isopropylbenzene	ND	0.0028	0.039		mg/Kg	1	1/18/2020 11:11:03 AM	49874
4-Isopropyltoluene	ND	0.0032	0.039		mg/Kg	1	1/18/2020 11:11:03 AM	49874
4-Methyl-2-pentanone	0.024	0.0073	0.39	J	mg/Kg	1	1/18/2020 11:11:03 AM	49874
Methylene chloride	0.023	0.0068	0.12	J	mg/Kg	1	1/18/2020 11:11:03 AM	49874
n-Butylbenzene	ND	0.0036	0.12		mg/Kg	1	1/18/2020 11:11:03 AM	49874
n-Propylbenzene	ND	0.0031	0.039		mg/Kg	1	1/18/2020 11:11:03 AM	49874
sec-Butylbenzene	ND	0.0043	0.039		mg/Kg	1	1/18/2020 11:11:03 AM	49874

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

Qualifiers:

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

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1-13 9'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 3:03:00 PM
Lab ID: 2001623-020 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Styrene	ND	0.0030	0.039		mg/Kg	1	1/18/2020 11:11:03 AM	49874
tert-Butylbenzene	ND	0.0036	0.039		mg/Kg	1	1/18/2020 11:11:03 AM	49874
1,1,1,2-Tetrachloroethane	ND	0.0026	0.039		mg/Kg	1	1/18/2020 11:11:03 AM	49874
1,1,2,2-Tetrachloroethane	ND	0.0039	0.039		mg/Kg	1	1/18/2020 11:11:03 AM	49874
Tetrachloroethene (PCE)	ND	0.0031	0.039		mg/Kg	1	1/18/2020 11:11:03 AM	49874
trans-1,2-DCE	ND	0.0035	0.039		mg/Kg	1	1/18/2020 11:11:03 AM	49874
trans-1,3-Dichloropropene	ND	0.0041	0.039		mg/Kg	1	1/18/2020 11:11:03 AM	49874
1,2,3-Trichlorobenzene	ND	0.0034	0.077		mg/Kg	1	1/18/2020 11:11:03 AM	49874
1,2,4-Trichlorobenzene	ND	0.0039	0.039		mg/Kg	1	1/18/2020 11:11:03 AM	49874
1,1,1-Trichloroethane	ND	0.0035	0.039		mg/Kg	1	1/18/2020 11:11:03 AM	49874
1,1,2-Trichloroethane	ND	0.0027	0.039		mg/Kg	1	1/18/2020 11:11:03 AM	49874
Trichloroethene (TCE)	ND	0.0045	0.039		mg/Kg	1	1/18/2020 11:11:03 AM	49874
Trichlorofluoromethane	ND	0.013	0.039		mg/Kg	1	1/18/2020 11:11:03 AM	49874
1,2,3-Trichloropropane	ND	0.0062	0.077		mg/Kg	1	1/18/2020 11:11:03 AM	49874
Vinyl chloride	ND	0.0025	0.039		mg/Kg	1	1/18/2020 11:11:03 AM	49874
Xylenes, Total	ND	0.0097	0.077		mg/Kg	1	1/18/2020 11:11:03 AM	49874
Surr: Dibromofluoromethane	105		70-130		%Rec	1	1/18/2020 11:11:03 AM	49874
Surr: 1,2-Dichloroethane-d4	91.5		70-130		%Rec	1	1/18/2020 11:11:03 AM	49874
Surr: Toluene-d8	105		70-130		%Rec	1	1/18/2020 11:11:03 AM	49874
Surr: 4-Bromofluorobenzene	107		70-130		%Rec	1	1/18/2020 11:11:03 AM	49874
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/21/2020 2:26:00 PM	R6597
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	7.86				pH Units	1	1/22/2020 11:38:00 AM	R6598

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ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** SWMU1-13 7.5'
Project: Gallup SWMUI Sampling Event **Collection Date:** 1/13/2020 2:58:00 PM
Lab ID: 2001623-021 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	25	2.2	9.3		mg/Kg	1	1/21/2020 11:10:31 PM	49891
Motor Oil Range Organics (MRO)	ND	46	46		mg/Kg	1	1/21/2020 11:10:31 PM	49891
Surr: DNOP	102	0	55.1-146		%Rec	1	1/21/2020 11:10:31 PM	49891
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	1.2	3.9		mg/Kg	1	1/20/2020 9:48:53 PM	G65910
Surr: BFB	80.4	0	66.6-105		%Rec	1	1/20/2020 9:48:53 PM	G65910
EPA METHOD 7471: MERCURY							Analyst: **rde**	
Mercury	0.043	0.0019	0.034	H	mg/Kg	1	2/24/2020 5:02:51 PM	50504
MERCURY, TCLP							Analyst: **pmf**	
Mercury	0.0013	0.00075	0.020	J	mg/L	1	1/20/2020 8:44:07 PM	49924
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.73	5.0		mg/Kg	2	1/28/2020 9:39:56 AM	50072
Arsenic	ND	2.9	5.0		mg/Kg	2	1/28/2020 9:39:56 AM	50072
Barium	720	0.12	0.50		mg/Kg	5	1/28/2020 9:55:27 AM	50072
Beryllium	0.89	0.018	0.30		mg/Kg	2	1/28/2020 9:39:56 AM	50072
Cadmium	ND	0.048	0.20		mg/Kg	2	1/28/2020 9:39:56 AM	50072
Chromium	22	0.16	0.60		mg/Kg	2	1/28/2020 9:39:56 AM	50072
Cobalt	5.5	0.21	0.60		mg/Kg	2	1/28/2020 9:39:56 AM	50072
Lead	1.7	0.49	0.50		mg/Kg	2	1/28/2020 11:03:19 AM	50072
Nickel	8.7	0.30	1.0		mg/Kg	2	1/28/2020 9:39:56 AM	50072
Selenium	ND	2.5	5.0		mg/Kg	2	1/28/2020 9:39:56 AM	50072
Silver	ND	0.064	0.50		mg/Kg	2	1/28/2020 9:39:56 AM	50072
Vanadium	23	0.13	5.0		mg/Kg	2	1/28/2020 9:39:56 AM	50072
Zinc	20	0.79	5.0		mg/Kg	2	1/28/2020 9:39:56 AM	50072
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/21/2020 12:06:04 PM	49932
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.14	0.37	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
Acenaphthylene	ND	0.17	0.37	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
Aniline	ND	0.13	0.37	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
Anthracene	ND	0.14	0.37	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
Azobenzene	ND	0.19	0.37	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
Benz(a)anthracene	ND	0.13	0.37	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
Benzo(a)pyrene	ND	0.20	0.37	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
Benzo(b)fluoranthene	ND	0.21	0.37	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
Benzo(g,h,i)perylene	ND	0.19	0.37	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889

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Qualifiers:

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

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1-13 7.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 2:58:00 PM
Lab ID: 2001623-021 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Benzo(k)fluoranthene	ND	0.11	0.37	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
Benzoic acid	ND	0.26	0.93	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
Benzyl alcohol	ND	0.16	0.37	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
Bis(2-chloroethoxy)methane	ND	0.15	0.37	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
Bis(2-chloroethyl)ether	ND	0.22	0.37	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
Bis(2-chloroisopropyl)ether	ND	0.16	0.37	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
Bis(2-ethylhexyl)phthalate	ND	0.42	0.93	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
4-Bromophenyl phenyl ether	ND	0.22	0.37	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
Butyl benzyl phthalate	ND	0.13	0.37	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
Carbazole	ND	0.15	0.37	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
4-Chloro-3-methylphenol	ND	0.15	0.93	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
4-Chloroaniline	ND	0.14	0.93	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
2-Chloronaphthalene	ND	0.16	0.47	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
2-Chlorophenol	ND	0.21	0.37	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
4-Chlorophenyl phenyl ether	ND	0.16	0.37	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
Chrysene	ND	0.15	0.37	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
Di-n-butyl phthalate	ND	0.56	0.75	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
Di-n-octyl phthalate	ND	0.12	0.75	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
Dibenz(a,h)anthracene	ND	0.21	0.37	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
Dibenzofuran	ND	0.19	0.37	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
1,2-Dichlorobenzene	ND	0.15	0.37	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
1,3-Dichlorobenzene	ND	0.12	0.37	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
1,4-Dichlorobenzene	ND	0.15	0.37	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
3,3´-Dichlorobenzidine	ND	0.16	0.47	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
Diethyl phthalate	ND	0.57	0.93	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
Dimethyl phthalate	ND	0.15	0.37	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
2,4-Dichlorophenol	ND	0.16	0.75	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
2,4-Dimethylphenol	ND	0.16	0.56	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
4,6-Dinitro-2-methylphenol	ND	0.14	0.75	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
2,4-Dinitrophenol	ND	0.11	0.93	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
2,4-Dinitrotoluene	ND	0.19	0.93	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
2,6-Dinitrotoluene	ND	0.22	0.93	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
Fluoranthene	ND	0.14	0.37	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
Fluorene	ND	0.15	0.37	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
Hexachlorobenzene	ND	0.15	0.37	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
Hexachlorobutadiene	ND	0.16	0.37	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
Hexachlorocyclopentadiene	ND	0.18	0.37	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
Hexachloroethane	ND	0.15	0.37	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
Indeno(1,2,3-cd)pyrene	ND	0.23	0.37	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889

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

Qualifiers:

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

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** SWMU1-13 7.5'
Project: Gallup SWMUI Sampling Event **Collection Date:** 1/13/2020 2:58:00 PM
Lab ID: 2001623-021 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Isophorone	ND	0.16	0.75	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
1-Methylnaphthalene	ND	0.17	0.37	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
2-Methylnaphthalene	ND	0.15	0.37	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
2-Methylphenol	ND	0.16	0.75	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
3+4-Methylphenol	ND	0.14	0.37	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
N-Nitrosodi-n-propylamine	ND	0.19	0.37	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
N-Nitrosodiphenylamine	ND	0.19	0.37	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
Naphthalene	ND	0.15	0.37	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
2-Nitroaniline	ND	0.21	0.37	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
3-Nitroaniline	ND	0.18	0.37	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
4-Nitroaniline	ND	0.25	0.75	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
Nitrobenzene	ND	0.16	0.75	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
2-Nitrophenol	ND	0.15	0.37	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
4-Nitrophenol	ND	0.11	0.47	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
Pentachlorophenol	ND	0.17	0.75	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
Phenanthrene	ND	0.19	0.37	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
Phenol	ND	0.16	0.37	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
Pyrene	ND	0.12	0.37	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
Pyridine	ND	0.35	0.75	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
1,2,4-Trichlorobenzene	ND	0.16	0.37	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
2,4,5-Trichlorophenol	ND	0.12	0.37	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
2,4,6-Trichlorophenol	ND	0.19	0.37	D	mg/Kg	1	1/23/2020 3:31:02 PM	49889
Surr: 2-Fluorophenol	58.8		26.7-85.9	D	%Rec	1	1/23/2020 3:31:02 PM	49889
Surr: Phenol-d5	70.8		18.5-101	D	%Rec	1	1/23/2020 3:31:02 PM	49889
Surr: 2,4,6-Tribromophenol	69.3		35.8-85.6	D	%Rec	1	1/23/2020 3:31:02 PM	49889
Surr: Nitrobenzene-d5	83.4		40.8-95.2	D	%Rec	1	1/23/2020 3:31:02 PM	49889
Surr: 2-Fluorobiphenyl	70.3		34.7-85.2	D	%Rec	1	1/23/2020 3:31:02 PM	49889
Surr: 4-Terphenyl-d14	71.7		37.4-91.3	D	%Rec	1	1/23/2020 3:31:02 PM	49889
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.0032	0.019		mg/Kg	1	1/18/2020 11:40:00 AM	49874
Toluene	ND	0.0037	0.039		mg/Kg	1	1/18/2020 11:40:00 AM	49874
Ethylbenzene	ND	0.0023	0.039		mg/Kg	1	1/18/2020 11:40:00 AM	49874
Methyl tert-butyl ether (MTBE)	ND	0.0092	0.039		mg/Kg	1	1/18/2020 11:40:00 AM	49874
1,2,4-Trimethylbenzene	ND	0.0035	0.039		mg/Kg	1	1/18/2020 11:40:00 AM	49874
1,3,5-Trimethylbenzene	ND	0.0038	0.039		mg/Kg	1	1/18/2020 11:40:00 AM	49874
1,2-Dichloroethane (EDC)	ND	0.0040	0.039		mg/Kg	1	1/18/2020 11:40:00 AM	49874
1,2-Dibromoethane (EDB)	ND	0.0035	0.039		mg/Kg	1	1/18/2020 11:40:00 AM	49874
Naphthalene	ND	0.0078	0.078		mg/Kg	1	1/18/2020 11:40:00 AM	49874
1-Methylnaphthalene	ND	0.022	0.16		mg/Kg	1	1/18/2020 11:40:00 AM	49874

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

Qualifiers:

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H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
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J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1-13 7.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 2:58:00 PM
Lab ID: 2001623-021 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
2-Methylnaphthalene	ND	0.017	0.16		mg/Kg	1	1/18/2020 11:40:00 AM	49874
Acetone	ND	0.032	0.58		mg/Kg	1	1/18/2020 11:40:00 AM	49874
Bromobenzene	ND	0.0037	0.039		mg/Kg	1	1/18/2020 11:40:00 AM	49874
Bromodichloromethane	ND	0.0035	0.039		mg/Kg	1	1/18/2020 11:40:00 AM	49874
Bromoform	ND	0.0035	0.039		mg/Kg	1	1/18/2020 11:40:00 AM	49874
Bromomethane	ND	0.0094	0.12		mg/Kg	1	1/18/2020 11:40:00 AM	49874
2-Butanone	ND	0.045	0.39		mg/Kg	1	1/18/2020 11:40:00 AM	49874
Carbon disulfide	ND	0.013	0.39		mg/Kg	1	1/18/2020 11:40:00 AM	49874
Carbon tetrachloride	ND	0.0037	0.039		mg/Kg	1	1/18/2020 11:40:00 AM	49874
Chlorobenzene	ND	0.0050	0.039		mg/Kg	1	1/18/2020 11:40:00 AM	49874
Chloroethane	ND	0.0057	0.078		mg/Kg	1	1/18/2020 11:40:00 AM	49874
Chloroform	ND	0.0031	0.039		mg/Kg	1	1/18/2020 11:40:00 AM	49874
Chloromethane	ND	0.0037	0.12		mg/Kg	1	1/18/2020 11:40:00 AM	49874
2-Chlorotoluene	ND	0.0034	0.039		mg/Kg	1	1/18/2020 11:40:00 AM	49874
4-Chlorotoluene	ND	0.0032	0.039		mg/Kg	1	1/18/2020 11:40:00 AM	49874
cis-1,2-DCE	ND	0.0053	0.039		mg/Kg	1	1/18/2020 11:40:00 AM	49874
cis-1,3-Dichloropropene	ND	0.0033	0.039		mg/Kg	1	1/18/2020 11:40:00 AM	49874
1,2-Dibromo-3-chloropropane	ND	0.0040	0.078		mg/Kg	1	1/18/2020 11:40:00 AM	49874
Dibromochloromethane	ND	0.0028	0.039		mg/Kg	1	1/18/2020 11:40:00 AM	49874
Dibromomethane	ND	0.0042	0.039		mg/Kg	1	1/18/2020 11:40:00 AM	49874
1,2-Dichlorobenzene	ND	0.0032	0.039		mg/Kg	1	1/18/2020 11:40:00 AM	49874
1,3-Dichlorobenzene	ND	0.0034	0.039		mg/Kg	1	1/18/2020 11:40:00 AM	49874
1,4-Dichlorobenzene	ND	0.0032	0.039		mg/Kg	1	1/18/2020 11:40:00 AM	49874
Dichlorodifluoromethane	ND	0.0090	0.039		mg/Kg	1	1/18/2020 11:40:00 AM	49874
1,1-Dichloroethane	ND	0.0025	0.039		mg/Kg	1	1/18/2020 11:40:00 AM	49874
1,1-Dichloroethene	ND	0.016	0.039		mg/Kg	1	1/18/2020 11:40:00 AM	49874
1,2-Dichloropropane	ND	0.0028	0.039		mg/Kg	1	1/18/2020 11:40:00 AM	49874
1,3-Dichloropropane	ND	0.0042	0.039		mg/Kg	1	1/18/2020 11:40:00 AM	49874
2,2-Dichloropropane	ND	0.013	0.078		mg/Kg	1	1/18/2020 11:40:00 AM	49874
1,1-Dichloropropene	ND	0.0035	0.078		mg/Kg	1	1/18/2020 11:40:00 AM	49874
Hexachlorobutadiene	ND	0.0039	0.078		mg/Kg	1	1/18/2020 11:40:00 AM	49874
2-Hexanone	ND	0.0064	0.39		mg/Kg	1	1/18/2020 11:40:00 AM	49874
Isopropylbenzene	ND	0.0028	0.039		mg/Kg	1	1/18/2020 11:40:00 AM	49874
4-Isopropyltoluene	ND	0.0032	0.039		mg/Kg	1	1/18/2020 11:40:00 AM	49874
4-Methyl-2-pentanone	0.025	0.0073	0.39	J	mg/Kg	1	1/18/2020 11:40:00 AM	49874
Methylene chloride	0.033	0.0069	0.12	J	mg/Kg	1	1/18/2020 11:40:00 AM	49874
n-Butylbenzene	ND	0.0036	0.12		mg/Kg	1	1/18/2020 11:40:00 AM	49874
n-Propylbenzene	ND	0.0031	0.039		mg/Kg	1	1/18/2020 11:40:00 AM	49874
sec-Butylbenzene	ND	0.0044	0.039		mg/Kg	1	1/18/2020 11:40:00 AM	49874

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

Qualifiers:

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

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1-13 7.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 2:58:00 PM
Lab ID: 2001623-021 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Styrene	ND	0.0030	0.039		mg/Kg	1	1/18/2020 11:40:00 AM	49874
tert-Butylbenzene	ND	0.0037	0.039		mg/Kg	1	1/18/2020 11:40:00 AM	49874
1,1,1,2-Tetrachloroethane	ND	0.0026	0.039		mg/Kg	1	1/18/2020 11:40:00 AM	49874
1,1,2,2-Tetrachloroethane	ND	0.0039	0.039		mg/Kg	1	1/18/2020 11:40:00 AM	49874
Tetrachloroethene (PCE)	ND	0.0031	0.039		mg/Kg	1	1/18/2020 11:40:00 AM	49874
trans-1,2-DCE	ND	0.0035	0.039		mg/Kg	1	1/18/2020 11:40:00 AM	49874
trans-1,3-Dichloropropene	ND	0.0041	0.039		mg/Kg	1	1/18/2020 11:40:00 AM	49874
1,2,3-Trichlorobenzene	ND	0.0034	0.078		mg/Kg	1	1/18/2020 11:40:00 AM	49874
1,2,4-Trichlorobenzene	ND	0.0039	0.039		mg/Kg	1	1/18/2020 11:40:00 AM	49874
1,1,1-Trichloroethane	ND	0.0035	0.039		mg/Kg	1	1/18/2020 11:40:00 AM	49874
1,1,2-Trichloroethane	ND	0.0027	0.039		mg/Kg	1	1/18/2020 11:40:00 AM	49874
Trichloroethene (TCE)	ND	0.0045	0.039		mg/Kg	1	1/18/2020 11:40:00 AM	49874
Trichlorofluoromethane	ND	0.013	0.039		mg/Kg	1	1/18/2020 11:40:00 AM	49874
1,2,3-Trichloropropane	ND	0.0063	0.078		mg/Kg	1	1/18/2020 11:40:00 AM	49874
Vinyl chloride	ND	0.0025	0.039		mg/Kg	1	1/18/2020 11:40:00 AM	49874
Xylenes, Total	ND	0.0098	0.078		mg/Kg	1	1/18/2020 11:40:00 AM	49874
Surr: Dibromofluoromethane	104		70-130		%Rec	1	1/18/2020 11:40:00 AM	49874
Surr: 1,2-Dichloroethane-d4	92.3		70-130		%Rec	1	1/18/2020 11:40:00 AM	49874
Surr: Toluene-d8	100		70-130		%Rec	1	1/18/2020 11:40:00 AM	49874
Surr: 4-Bromofluorobenzene	105		70-130		%Rec	1	1/18/2020 11:40:00 AM	49874
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/21/2020 2:26:00 PM	R6597
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	8.66				pH Units	1	1/22/2020 11:38:00 AM	R6598

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

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PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1-15 2.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 3:20:00 PM
Lab ID: 2001623-022 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	20000	120	500		mg/Kg	50	1/20/2020 7:59:02 PM	49891
Motor Oil Range Organics (MRO)	5500	2500	2500		mg/Kg	50	1/20/2020 7:59:02 PM	49891
Surr: DNOP	0	0	55.1-146	S	%Rec	50	1/20/2020 7:59:02 PM	49891
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	5.4	5.3	18	JD	mg/Kg	5	1/20/2020 10:12:16 PM	G65910
Surr: BFB	123	0	66.6-105	SD	%Rec	5	1/20/2020 10:12:16 PM	G65910
EPA METHOD 7471: MERCURY							Analyst: **rde**	
Mercury	0.028	0.0018	0.034	JH	mg/Kg	1	2/24/2020 5:09:04 PM	50504
MERCURY, TCLP							Analyst: **pmf**	
Mercury	0.0014	0.00075	0.020	J	mg/L	1	1/20/2020 8:46:52 PM	49924
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.75	5.1		mg/Kg	2	1/28/2020 9:45:35 AM	50072
Arsenic	ND	2.9	5.1		mg/Kg	2	1/28/2020 9:45:35 AM	50072
Barium	190	0.047	0.20		mg/Kg	2	1/28/2020 9:45:35 AM	50072
Beryllium	0.97	0.019	0.30		mg/Kg	2	1/28/2020 9:45:35 AM	50072
Cadmium	ND	0.049	0.20		mg/Kg	2	1/28/2020 9:45:35 AM	50072
Chromium	9.9	0.16	0.61		mg/Kg	2	1/28/2020 9:45:35 AM	50072
Cobalt	4.5	0.21	0.61		mg/Kg	2	1/28/2020 9:45:35 AM	50072
Lead	2.3	0.49	0.51		mg/Kg	2	1/28/2020 11:09:00 AM	50072
Nickel	11	0.30	1.0		mg/Kg	2	1/28/2020 9:45:35 AM	50072
Selenium	ND	2.5	5.1		mg/Kg	2	1/28/2020 9:45:35 AM	50072
Silver	ND	0.065	0.51		mg/Kg	2	1/28/2020 9:45:35 AM	50072
Vanadium	16	0.13	5.1		mg/Kg	2	1/28/2020 9:45:35 AM	50072
Zinc	25	0.80	5.1		mg/Kg	2	1/28/2020 9:45:35 AM	50072
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/21/2020 12:07:28 PM	49932
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.70	1.9	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889
Acenaphthylene	ND	0.83	1.9	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889
Aniline	ND	0.64	1.9	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889
Anthracene	ND	0.72	1.9	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889
Azobenzene	ND	0.95	1.9	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889
Benz(a)anthracene	ND	0.64	1.9	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889
Benzo(a)pyrene	ND	1.0	1.9	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889
Benzo(b)fluoranthene	ND	1.1	1.9	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889
Benzo(g,h,i)perylene	ND	0.96	1.9	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889

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Qualifiers:

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

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** SWMU1-15 2.5'
Project: Gallup SWMUI Sampling Event **Collection Date:** 1/13/2020 3:20:00 PM
Lab ID: 2001623-022 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Benzo(k)fluoranthene	ND	0.56	1.9	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889
Benzoic acid	ND	1.3	4.7	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889
Benzyl alcohol	ND	0.78	1.9	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889
Bis(2-chloroethoxy)methane	ND	0.77	1.9	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889
Bis(2-chloroethyl)ether	ND	1.1	1.9	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889
Bis(2-chloroisopropyl)ether	ND	0.81	1.9	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889
Bis(2-ethylhexyl)phthalate	ND	2.1	4.7	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889
4-Bromophenyl phenyl ether	ND	1.1	1.9	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889
Butyl benzyl phthalate	ND	0.63	1.9	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889
Carbazole	ND	0.74	1.9	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889
4-Chloro-3-methylphenol	ND	0.74	4.7	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889
4-Chloroaniline	ND	0.72	4.7	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889
2-Chloronaphthalene	ND	0.79	2.3	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889
2-Chlorophenol	ND	1.1	1.9	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889
4-Chlorophenyl phenyl ether	ND	0.79	1.9	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889
Chrysene	2.9	0.73	1.9	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889
Di-n-butyl phthalate	ND	2.8	3.8	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889
Di-n-octyl phthalate	ND	0.63	3.8	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889
Dibenz(a,h)anthracene	ND	1.0	1.9	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889
Dibenzofuran	ND	0.94	1.9	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889
1,2-Dichlorobenzene	ND	0.74	1.9	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889
1,3-Dichlorobenzene	ND	0.63	1.9	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889
1,4-Dichlorobenzene	ND	0.78	1.9	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889
3,3´-Dichlorobenzidine	ND	0.80	2.3	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889
Diethyl phthalate	ND	2.9	4.7	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889
Dimethyl phthalate	ND	0.76	1.9	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889
2,4-Dichlorophenol	ND	0.79	3.8	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889
2,4-Dimethylphenol	ND	0.78	2.8	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889
4,6-Dinitro-2-methylphenol	ND	0.69	3.8	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889
2,4-Dinitrophenol	ND	0.54	4.7	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889
2,4-Dinitrotoluene	ND	0.96	4.7	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889
2,6-Dinitrotoluene	ND	1.1	4.7	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889
Fluoranthene	ND	0.72	1.9	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889
Fluorene	4.0	0.74	1.9	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889
Hexachlorobenzene	ND	0.73	1.9	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889
Hexachlorobutadiene	ND	0.82	1.9	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889
Hexachlorocyclopentadiene	ND	0.90	1.9	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889
Hexachloroethane	ND	0.77	1.9	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889
Indeno(1,2,3-cd)pyrene	ND	1.2	1.9	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889

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Qualifiers:

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D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
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P	Sample pH Not In Range
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Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** SWMU1-15 2.5'
Project: Gallup SWMUI Sampling Event **Collection Date:** 1/13/2020 3:20:00 PM
Lab ID: 2001623-022 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Isophorone	ND	0.82	3.8	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889
1-Methylnaphthalene	12	0.87	1.9	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889
2-Methylnaphthalene	13	0.76	1.9	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889
2-Methylphenol	ND	0.79	3.8	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889
3+4-Methylphenol	ND	0.68	1.9	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889
N-Nitrosodi-n-propylamine	ND	0.94	1.9	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889
N-Nitrosodiphenylamine	ND	0.97	1.9	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889
Naphthalene	1.4	0.77	1.9	JD	mg/Kg	1	1/23/2020 3:59:58 PM	49889
2-Nitroaniline	ND	1.0	1.9	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889
3-Nitroaniline	ND	0.92	1.9	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889
4-Nitroaniline	ND	1.3	3.8	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889
Nitrobenzene	ND	0.80	3.8	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889
2-Nitrophenol	ND	0.77	1.9	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889
4-Nitrophenol	ND	0.55	2.3	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889
Pentachlorophenol	ND	0.84	3.8	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889
Phenanthrene	12	0.96	1.9	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889
Phenol	ND	0.80	1.9	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889
Pyrene	ND	0.62	1.9	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889
Pyridine	ND	1.7	3.8	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889
1,2,4-Trichlorobenzene	ND	0.80	1.9	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889
2,4,5-Trichlorophenol	ND	0.61	1.9	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889
2,4,6-Trichlorophenol	ND	0.94	1.9	D	mg/Kg	1	1/23/2020 3:59:58 PM	49889
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	1	1/23/2020 3:59:58 PM	49889
Surr: Phenol-d5	0		18.5-101	SD	%Rec	1	1/23/2020 3:59:58 PM	49889
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	1	1/23/2020 3:59:58 PM	49889
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	1	1/23/2020 3:59:58 PM	49889
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	1	1/23/2020 3:59:58 PM	49889
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	1	1/23/2020 3:59:58 PM	49889
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.014	0.088		mg/Kg	5	1/18/2020 12:09:05 PM	49874
Toluene	0.020	0.017	0.18	J	mg/Kg	5	1/18/2020 12:09:05 PM	49874
Ethylbenzene	ND	0.010	0.18		mg/Kg	5	1/18/2020 12:09:05 PM	49874
Methyl tert-butyl ether (MTBE)	ND	0.042	0.18		mg/Kg	5	1/18/2020 12:09:05 PM	49874
1,2,4-Trimethylbenzene	0.56	0.016	0.18		mg/Kg	5	1/18/2020 12:09:05 PM	49874
1,3,5-Trimethylbenzene	0.19	0.017	0.18		mg/Kg	5	1/18/2020 12:09:05 PM	49874
1,2-Dichloroethane (EDC)	ND	0.018	0.18		mg/Kg	5	1/18/2020 12:09:05 PM	49874
1,2-Dibromoethane (EDB)	0.048	0.016	0.18	J	mg/Kg	5	1/18/2020 12:09:05 PM	49874
Naphthalene	0.77	0.035	0.35		mg/Kg	5	1/18/2020 12:09:05 PM	49874
1-Methylnaphthalene	4.4	0.10	0.70		mg/Kg	5	1/18/2020 12:09:05 PM	49874

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Qualifiers:

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

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1-15 2.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 3:20:00 PM
Lab ID: 2001623-022 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
2-Methylnaphthalene	6.0	0.077	0.70		mg/Kg	5	1/18/2020 12:09:05 PM	49874
Acetone	ND	0.15	2.6		mg/Kg	5	1/18/2020 12:09:05 PM	49874
Bromobenzene	ND	0.017	0.18		mg/Kg	5	1/18/2020 12:09:05 PM	49874
Bromodichloromethane	ND	0.016	0.18		mg/Kg	5	1/18/2020 12:09:05 PM	49874
Bromoform	ND	0.016	0.18		mg/Kg	5	1/18/2020 12:09:05 PM	49874
Bromomethane	ND	0.042	0.53		mg/Kg	5	1/18/2020 12:09:05 PM	49874
2-Butanone	0.46	0.20	1.8	J	mg/Kg	5	1/18/2020 12:09:05 PM	49874
Carbon disulfide	ND	0.058	1.8		mg/Kg	5	1/18/2020 12:09:05 PM	49874
Carbon tetrachloride	ND	0.017	0.18		mg/Kg	5	1/18/2020 12:09:05 PM	49874
Chlorobenzene	ND	0.022	0.18		mg/Kg	5	1/18/2020 12:09:05 PM	49874
Chloroethane	ND	0.026	0.35		mg/Kg	5	1/18/2020 12:09:05 PM	49874
Chloroform	ND	0.014	0.18		mg/Kg	5	1/18/2020 12:09:05 PM	49874
Chloromethane	ND	0.017	0.53		mg/Kg	5	1/18/2020 12:09:05 PM	49874
2-Chlorotoluene	ND	0.015	0.18		mg/Kg	5	1/18/2020 12:09:05 PM	49874
4-Chlorotoluene	ND	0.014	0.18		mg/Kg	5	1/18/2020 12:09:05 PM	49874
cis-1,2-DCE	ND	0.024	0.18		mg/Kg	5	1/18/2020 12:09:05 PM	49874
cis-1,3-Dichloropropene	ND	0.015	0.18		mg/Kg	5	1/18/2020 12:09:05 PM	49874
1,2-Dibromo-3-chloropropane	ND	0.018	0.35		mg/Kg	5	1/18/2020 12:09:05 PM	49874
Dibromochloromethane	ND	0.012	0.18		mg/Kg	5	1/18/2020 12:09:05 PM	49874
Dibromomethane	ND	0.019	0.18		mg/Kg	5	1/18/2020 12:09:05 PM	49874
1,2-Dichlorobenzene	ND	0.014	0.18		mg/Kg	5	1/18/2020 12:09:05 PM	49874
1,3-Dichlorobenzene	ND	0.015	0.18		mg/Kg	5	1/18/2020 12:09:05 PM	49874
1,4-Dichlorobenzene	ND	0.015	0.18		mg/Kg	5	1/18/2020 12:09:05 PM	49874
Dichlorodifluoromethane	ND	0.041	0.18		mg/Kg	5	1/18/2020 12:09:05 PM	49874
1,1-Dichloroethane	ND	0.011	0.18		mg/Kg	5	1/18/2020 12:09:05 PM	49874
1,1-Dichloroethene	ND	0.070	0.18		mg/Kg	5	1/18/2020 12:09:05 PM	49874
1,2-Dichloropropane	ND	0.013	0.18		mg/Kg	5	1/18/2020 12:09:05 PM	49874
1,3-Dichloropropane	ND	0.019	0.18		mg/Kg	5	1/18/2020 12:09:05 PM	49874
2,2-Dichloropropane	ND	0.057	0.35		mg/Kg	5	1/18/2020 12:09:05 PM	49874
1,1-Dichloropropene	ND	0.016	0.35		mg/Kg	5	1/18/2020 12:09:05 PM	49874
Hexachlorobutadiene	ND	0.018	0.35		mg/Kg	5	1/18/2020 12:09:05 PM	49874
2-Hexanone	0.14	0.029	1.8	J	mg/Kg	5	1/18/2020 12:09:05 PM	49874
Isopropylbenzene	0.024	0.013	0.18	J	mg/Kg	5	1/18/2020 12:09:05 PM	49874
4-Isopropyltoluene	0.076	0.014	0.18	J	mg/Kg	5	1/18/2020 12:09:05 PM	49874
4-Methyl-2-pentanone	0.14	0.033	1.8	J	mg/Kg	5	1/18/2020 12:09:05 PM	49874
Methylene chloride	0.097	0.031	0.53	J	mg/Kg	5	1/18/2020 12:09:05 PM	49874
n-Butylbenzene	0.12	0.016	0.53	J	mg/Kg	5	1/18/2020 12:09:05 PM	49874
n-Propylbenzene	0.050	0.014	0.18	J	mg/Kg	5	1/18/2020 12:09:05 PM	49874
sec-Butylbenzene	0.12	0.020	0.18	J	mg/Kg	5	1/18/2020 12:09:05 PM	49874

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Qualifiers:

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

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** SWMU1-15 2.5'
Project: Gallup SWMUI Sampling Event **Collection Date:** 1/13/2020 3:20:00 PM
Lab ID: 2001623-022 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Styrene	ND	0.014	0.18		mg/Kg	5	1/18/2020 12:09:05 PM	49874
tert-Butylbenzene	ND	0.017	0.18		mg/Kg	5	1/18/2020 12:09:05 PM	49874
1,1,1,2-Tetrachloroethane	ND	0.012	0.18		mg/Kg	5	1/18/2020 12:09:05 PM	49874
1,1,2,2-Tetrachloroethane	ND	0.018	0.18		mg/Kg	5	1/18/2020 12:09:05 PM	49874
Tetrachloroethene (PCE)	ND	0.014	0.18		mg/Kg	5	1/18/2020 12:09:05 PM	49874
trans-1,2-DCE	ND	0.016	0.18		mg/Kg	5	1/18/2020 12:09:05 PM	49874
trans-1,3-Dichloropropene	ND	0.019	0.18		mg/Kg	5	1/18/2020 12:09:05 PM	49874
1,2,3-Trichlorobenzene	ND	0.015	0.35		mg/Kg	5	1/18/2020 12:09:05 PM	49874
1,2,4-Trichlorobenzene	ND	0.018	0.18		mg/Kg	5	1/18/2020 12:09:05 PM	49874
1,1,1-Trichloroethane	ND	0.016	0.18		mg/Kg	5	1/18/2020 12:09:05 PM	49874
1,1,2-Trichloroethane	ND	0.012	0.18		mg/Kg	5	1/18/2020 12:09:05 PM	49874
Trichloroethene (TCE)	ND	0.020	0.18		mg/Kg	5	1/18/2020 12:09:05 PM	49874
Trichlorofluoromethane	ND	0.059	0.18		mg/Kg	5	1/18/2020 12:09:05 PM	49874
1,2,3-Trichloropropane	ND	0.028	0.35		mg/Kg	5	1/18/2020 12:09:05 PM	49874
Vinyl chloride	ND	0.011	0.18		mg/Kg	5	1/18/2020 12:09:05 PM	49874
Xylenes, Total	0.31	0.044	0.35	J	mg/Kg	5	1/18/2020 12:09:05 PM	49874
Surr: Dibromofluoromethane	109		70-130		%Rec	5	1/18/2020 12:09:05 PM	49874
Surr: 1,2-Dichloroethane-d4	93.0		70-130		%Rec	5	1/18/2020 12:09:05 PM	49874
Surr: Toluene-d8	103		70-130		%Rec	5	1/18/2020 12:09:05 PM	49874
Surr: 4-Bromofluorobenzene	90.9		70-130		%Rec	5	1/18/2020 12:09:05 PM	49874
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/21/2020 2:26:00 PM	R6597
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	7.32				pH Units	1	1/22/2020 11:38:00 AM	R6598

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Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** SWMU1-13 2.5'
Project: Gallup SWMUI Sampling Event **Collection Date:** 1/13/2020 2:47:00 PM
Lab ID: 2001623-023 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	16	2.4	9.9		mg/Kg	1	1/20/2020 8:07:58 PM	49891
Motor Oil Range Organics (MRO)	ND	49	49		mg/Kg	1	1/20/2020 8:07:58 PM	49891
Surr: DNOP	93.4	0	55.1-146		%Rec	1	1/20/2020 8:07:58 PM	49891
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	1.3	4.3		mg/Kg	1	1/20/2020 10:35:39 PM	G65910
Surr: BFB	80.2	0	66.6-105		%Rec	1	1/20/2020 10:35:39 PM	G65910
EPA METHOD 7471: MERCURY							Analyst: **rde**	
Mercury	0.012	0.0017	0.031	JH	mg/Kg	1	2/24/2020 5:11:02 PM	50504
MERCURY, TCLP							Analyst: **pmf**	
Mercury	0.0015	0.00075	0.020	J	mg/L	1	1/20/2020 8:49:39 PM	49924
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.9	13		mg/Kg	5	1/28/2020 9:56:53 AM	50072
Arsenic	ND	7.2	13		mg/Kg	5	1/28/2020 9:56:53 AM	50072
Barium	450	0.12	0.51		mg/Kg	5	1/28/2020 9:56:53 AM	50072
Beryllium	0.95	0.047	0.76		mg/Kg	5	1/28/2020 9:56:53 AM	50072
Cadmium	ND	0.12	0.51		mg/Kg	5	1/28/2020 9:56:53 AM	50072
Chromium	18	0.40	1.5		mg/Kg	5	1/28/2020 9:56:53 AM	50072
Cobalt	3.6	0.53	1.5		mg/Kg	5	1/28/2020 9:56:53 AM	50072
Lead	3.7	1.2	1.3		mg/Kg	5	1/28/2020 11:10:27 AM	50072
Nickel	7.5	0.75	2.5		mg/Kg	5	1/28/2020 9:56:53 AM	50072
Selenium	ND	6.4	13		mg/Kg	5	1/28/2020 9:56:53 AM	50072
Silver	ND	0.16	1.3		mg/Kg	5	1/28/2020 9:56:53 AM	50072
Vanadium	17	0.34	13		mg/Kg	5	1/28/2020 9:56:53 AM	50072
Zinc	15	2.0	13		mg/Kg	5	1/28/2020 9:56:53 AM	50072
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/21/2020 12:08:53 PM	49932
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.069	0.18		mg/Kg	1	1/23/2020 4:28:51 PM	49889
Acenaphthylene	ND	0.081	0.18		mg/Kg	1	1/23/2020 4:28:51 PM	49889
Aniline	ND	0.062	0.18		mg/Kg	1	1/23/2020 4:28:51 PM	49889
Anthracene	ND	0.070	0.18		mg/Kg	1	1/23/2020 4:28:51 PM	49889
Azobenzene	ND	0.093	0.18		mg/Kg	1	1/23/2020 4:28:51 PM	49889
Benz(a)anthracene	ND	0.063	0.18		mg/Kg	1	1/23/2020 4:28:51 PM	49889
Benzo(a)pyrene	ND	0.099	0.18		mg/Kg	1	1/23/2020 4:28:51 PM	49889
Benzo(b)fluoranthene	ND	0.10	0.18		mg/Kg	1	1/23/2020 4:28:51 PM	49889
Benzo(g,h,i)perylene	ND	0.094	0.18		mg/Kg	1	1/23/2020 4:28:51 PM	49889

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Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1-13 2.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 2:47:00 PM
Lab ID: 2001623-023 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Benzo(k)fluoranthene	ND	0.055	0.18		mg/Kg	1	1/23/2020 4:28:51 PM	49889
Benzoic acid	ND	0.13	0.46		mg/Kg	1	1/23/2020 4:28:51 PM	49889
Benzyl alcohol	ND	0.076	0.18		mg/Kg	1	1/23/2020 4:28:51 PM	49889
Bis(2-chloroethoxy)methane	ND	0.075	0.18		mg/Kg	1	1/23/2020 4:28:51 PM	49889
Bis(2-chloroethyl)ether	ND	0.11	0.18		mg/Kg	1	1/23/2020 4:28:51 PM	49889
Bis(2-chloroisopropyl)ether	ND	0.078	0.18		mg/Kg	1	1/23/2020 4:28:51 PM	49889
Bis(2-ethylhexyl)phthalate	ND	0.20	0.46		mg/Kg	1	1/23/2020 4:28:51 PM	49889
4-Bromophenyl phenyl ether	ND	0.11	0.18		mg/Kg	1	1/23/2020 4:28:51 PM	49889
Butyl benzyl phthalate	ND	0.061	0.18		mg/Kg	1	1/23/2020 4:28:51 PM	49889
Carbazole	ND	0.072	0.18		mg/Kg	1	1/23/2020 4:28:51 PM	49889
4-Chloro-3-methylphenol	ND	0.072	0.46		mg/Kg	1	1/23/2020 4:28:51 PM	49889
4-Chloroaniline	ND	0.070	0.46		mg/Kg	1	1/23/2020 4:28:51 PM	49889
2-Chloronaphthalene	ND	0.077	0.23		mg/Kg	1	1/23/2020 4:28:51 PM	49889
2-Chlorophenol	ND	0.10	0.18		mg/Kg	1	1/23/2020 4:28:51 PM	49889
4-Chlorophenyl phenyl ether	ND	0.077	0.18		mg/Kg	1	1/23/2020 4:28:51 PM	49889
Chrysene	ND	0.071	0.18		mg/Kg	1	1/23/2020 4:28:51 PM	49889
Di-n-butyl phthalate	ND	0.27	0.36		mg/Kg	1	1/23/2020 4:28:51 PM	49889
Di-n-octyl phthalate	ND	0.061	0.36		mg/Kg	1	1/23/2020 4:28:51 PM	49889
Dibenz(a,h)anthracene	ND	0.10	0.18		mg/Kg	1	1/23/2020 4:28:51 PM	49889
Dibenzofuran	ND	0.091	0.18		mg/Kg	1	1/23/2020 4:28:51 PM	49889
1,2-Dichlorobenzene	ND	0.072	0.18		mg/Kg	1	1/23/2020 4:28:51 PM	49889
1,3-Dichlorobenzene	ND	0.061	0.18		mg/Kg	1	1/23/2020 4:28:51 PM	49889
1,4-Dichlorobenzene	ND	0.076	0.18		mg/Kg	1	1/23/2020 4:28:51 PM	49889
3,3´-Dichlorobenzidine	ND	0.078	0.23		mg/Kg	1	1/23/2020 4:28:51 PM	49889
Diethyl phthalate	ND	0.28	0.46		mg/Kg	1	1/23/2020 4:28:51 PM	49889
Dimethyl phthalate	ND	0.074	0.18		mg/Kg	1	1/23/2020 4:28:51 PM	49889
2,4-Dichlorophenol	ND	0.077	0.36		mg/Kg	1	1/23/2020 4:28:51 PM	49889
2,4-Dimethylphenol	ND	0.076	0.27		mg/Kg	1	1/23/2020 4:28:51 PM	49889
4,6-Dinitro-2-methylphenol	ND	0.067	0.36		mg/Kg	1	1/23/2020 4:28:51 PM	49889
2,4-Dinitrophenol	ND	0.053	0.46		mg/Kg	1	1/23/2020 4:28:51 PM	49889
2,4-Dinitrotoluene	ND	0.094	0.46		mg/Kg	1	1/23/2020 4:28:51 PM	49889
2,6-Dinitrotoluene	ND	0.11	0.46		mg/Kg	1	1/23/2020 4:28:51 PM	49889
Fluoranthene	ND	0.070	0.18		mg/Kg	1	1/23/2020 4:28:51 PM	49889
Fluorene	ND	0.072	0.18		mg/Kg	1	1/23/2020 4:28:51 PM	49889
Hexachlorobenzene	ND	0.071	0.18		mg/Kg	1	1/23/2020 4:28:51 PM	49889
Hexachlorobutadiene	ND	0.080	0.18		mg/Kg	1	1/23/2020 4:28:51 PM	49889
Hexachlorocyclopentadiene	ND	0.087	0.18		mg/Kg	1	1/23/2020 4:28:51 PM	49889
Hexachloroethane	ND	0.075	0.18		mg/Kg	1	1/23/2020 4:28:51 PM	49889
Indeno(1,2,3-cd)pyrene	ND	0.11	0.18		mg/Kg	1	1/23/2020 4:28:51 PM	49889

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Qualifiers:

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

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** SWMU1-13 2.5'
Project: Gallup SWMUI Sampling Event **Collection Date:** 1/13/2020 2:47:00 PM
Lab ID: 2001623-023 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Isophorone	ND	0.079	0.36		mg/Kg	1	1/23/2020 4:28:51 PM	49889
1-Methylnaphthalene	ND	0.085	0.18		mg/Kg	1	1/23/2020 4:28:51 PM	49889
2-Methylnaphthalene	ND	0.074	0.18		mg/Kg	1	1/23/2020 4:28:51 PM	49889
2-Methylphenol	ND	0.077	0.36		mg/Kg	1	1/23/2020 4:28:51 PM	49889
3+4-Methylphenol	ND	0.066	0.18		mg/Kg	1	1/23/2020 4:28:51 PM	49889
N-Nitrosodi-n-propylamine	ND	0.092	0.18		mg/Kg	1	1/23/2020 4:28:51 PM	49889
N-Nitrosodiphenylamine	ND	0.094	0.18		mg/Kg	1	1/23/2020 4:28:51 PM	49889
Naphthalene	ND	0.075	0.18		mg/Kg	1	1/23/2020 4:28:51 PM	49889
2-Nitroaniline	ND	0.10	0.18		mg/Kg	1	1/23/2020 4:28:51 PM	49889
3-Nitroaniline	ND	0.089	0.18		mg/Kg	1	1/23/2020 4:28:51 PM	49889
4-Nitroaniline	ND	0.12	0.36		mg/Kg	1	1/23/2020 4:28:51 PM	49889
Nitrobenzene	ND	0.078	0.36		mg/Kg	1	1/23/2020 4:28:51 PM	49889
2-Nitrophenol	ND	0.075	0.18		mg/Kg	1	1/23/2020 4:28:51 PM	49889
4-Nitrophenol	ND	0.054	0.23		mg/Kg	1	1/23/2020 4:28:51 PM	49889
Pentachlorophenol	ND	0.082	0.36		mg/Kg	1	1/23/2020 4:28:51 PM	49889
Phenanthrene	ND	0.093	0.18		mg/Kg	1	1/23/2020 4:28:51 PM	49889
Phenol	ND	0.077	0.18		mg/Kg	1	1/23/2020 4:28:51 PM	49889
Pyrene	ND	0.060	0.18		mg/Kg	1	1/23/2020 4:28:51 PM	49889
Pyridine	ND	0.17	0.36		mg/Kg	1	1/23/2020 4:28:51 PM	49889
1,2,4-Trichlorobenzene	ND	0.078	0.18		mg/Kg	1	1/23/2020 4:28:51 PM	49889
2,4,5-Trichlorophenol	ND	0.059	0.18		mg/Kg	1	1/23/2020 4:28:51 PM	49889
2,4,6-Trichlorophenol	ND	0.091	0.18		mg/Kg	1	1/23/2020 4:28:51 PM	49889
Surr: 2-Fluorophenol	43.1		26.7-85.9		%Rec	1	1/23/2020 4:28:51 PM	49889
Surr: Phenol-d5	52.2		18.5-101		%Rec	1	1/23/2020 4:28:51 PM	49889
Surr: 2,4,6-Tribromophenol	54.4		35.8-85.6		%Rec	1	1/23/2020 4:28:51 PM	49889
Surr: Nitrobenzene-d5	57.0		40.8-95.2		%Rec	1	1/23/2020 4:28:51 PM	49889
Surr: 2-Fluorobiphenyl	51.9		34.7-85.2		%Rec	1	1/23/2020 4:28:51 PM	49889
Surr: 4-Terphenyl-d14	57.7		37.4-91.3		%Rec	1	1/23/2020 4:28:51 PM	49889
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.0035	0.022		mg/Kg	1	1/18/2020 12:38:12 PM	49874
Toluene	ND	0.0041	0.043		mg/Kg	1	1/18/2020 12:38:12 PM	49874
Ethylbenzene	ND	0.0025	0.043		mg/Kg	1	1/18/2020 12:38:12 PM	49874
Methyl tert-butyl ether (MTBE)	ND	0.010	0.043		mg/Kg	1	1/18/2020 12:38:12 PM	49874
1,2,4-Trimethylbenzene	ND	0.0040	0.043		mg/Kg	1	1/18/2020 12:38:12 PM	49874
1,3,5-Trimethylbenzene	ND	0.0042	0.043		mg/Kg	1	1/18/2020 12:38:12 PM	49874
1,2-Dichloroethane (EDC)	ND	0.0044	0.043		mg/Kg	1	1/18/2020 12:38:12 PM	49874
1,2-Dibromoethane (EDB)	ND	0.0039	0.043		mg/Kg	1	1/18/2020 12:38:12 PM	49874
Naphthalene	ND	0.0087	0.086		mg/Kg	1	1/18/2020 12:38:12 PM	49874
1-Methylnaphthalene	0.059	0.025	0.17	J	mg/Kg	1	1/18/2020 12:38:12 PM	49874

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

Qualifiers:

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

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1-13 2.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 2:47:00 PM
Lab ID: 2001623-023 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
2-Methylnaphthalene	0.065	0.019	0.17	J	mg/Kg	1	1/18/2020 12:38:12 PM	49874
Acetone	ND	0.036	0.65		mg/Kg	1	1/18/2020 12:38:12 PM	49874
Bromobenzene	ND	0.0041	0.043		mg/Kg	1	1/18/2020 12:38:12 PM	49874
Bromodichloromethane	ND	0.0039	0.043		mg/Kg	1	1/18/2020 12:38:12 PM	49874
Bromoform	ND	0.0039	0.043		mg/Kg	1	1/18/2020 12:38:12 PM	49874
Bromomethane	ND	0.010	0.13		mg/Kg	1	1/18/2020 12:38:12 PM	49874
2-Butanone	ND	0.050	0.43		mg/Kg	1	1/18/2020 12:38:12 PM	49874
Carbon disulfide	ND	0.014	0.43		mg/Kg	1	1/18/2020 12:38:12 PM	49874
Carbon tetrachloride	ND	0.0041	0.043		mg/Kg	1	1/18/2020 12:38:12 PM	49874
Chlorobenzene	ND	0.0055	0.043		mg/Kg	1	1/18/2020 12:38:12 PM	49874
Chloroethane	ND	0.0064	0.086		mg/Kg	1	1/18/2020 12:38:12 PM	49874
Chloroform	ND	0.0035	0.043		mg/Kg	1	1/18/2020 12:38:12 PM	49874
Chloromethane	ND	0.0041	0.13		mg/Kg	1	1/18/2020 12:38:12 PM	49874
2-Chlorotoluene	ND	0.0038	0.043		mg/Kg	1	1/18/2020 12:38:12 PM	49874
4-Chlorotoluene	ND	0.0035	0.043		mg/Kg	1	1/18/2020 12:38:12 PM	49874
cis-1,2-DCE	ND	0.0059	0.043		mg/Kg	1	1/18/2020 12:38:12 PM	49874
cis-1,3-Dichloropropene	ND	0.0036	0.043		mg/Kg	1	1/18/2020 12:38:12 PM	49874
1,2-Dibromo-3-chloropropane	ND	0.0044	0.086		mg/Kg	1	1/18/2020 12:38:12 PM	49874
Dibromochloromethane	ND	0.0031	0.043		mg/Kg	1	1/18/2020 12:38:12 PM	49874
Dibromomethane	ND	0.0047	0.043		mg/Kg	1	1/18/2020 12:38:12 PM	49874
1,2-Dichlorobenzene	ND	0.0035	0.043		mg/Kg	1	1/18/2020 12:38:12 PM	49874
1,3-Dichlorobenzene	ND	0.0038	0.043		mg/Kg	1	1/18/2020 12:38:12 PM	49874
1,4-Dichlorobenzene	ND	0.0036	0.043		mg/Kg	1	1/18/2020 12:38:12 PM	49874
Dichlorodifluoromethane	ND	0.010	0.043		mg/Kg	1	1/18/2020 12:38:12 PM	49874
1,1-Dichloroethane	ND	0.0028	0.043		mg/Kg	1	1/18/2020 12:38:12 PM	49874
1,1-Dichloroethene	ND	0.017	0.043		mg/Kg	1	1/18/2020 12:38:12 PM	49874
1,2-Dichloropropane	ND	0.0031	0.043		mg/Kg	1	1/18/2020 12:38:12 PM	49874
1,3-Dichloropropane	ND	0.0047	0.043		mg/Kg	1	1/18/2020 12:38:12 PM	49874
2,2-Dichloropropane	ND	0.014	0.086		mg/Kg	1	1/18/2020 12:38:12 PM	49874
1,1-Dichloropropene	ND	0.0039	0.086		mg/Kg	1	1/18/2020 12:38:12 PM	49874
Hexachlorobutadiene	ND	0.0044	0.086		mg/Kg	1	1/18/2020 12:38:12 PM	49874
2-Hexanone	ND	0.0072	0.43		mg/Kg	1	1/18/2020 12:38:12 PM	49874
Isopropylbenzene	ND	0.0031	0.043		mg/Kg	1	1/18/2020 12:38:12 PM	49874
4-Isopropyltoluene	ND	0.0036	0.043		mg/Kg	1	1/18/2020 12:38:12 PM	49874
4-Methyl-2-pentanone	0.028	0.0082	0.43	J	mg/Kg	1	1/18/2020 12:38:12 PM	49874
Methylene chloride	0.036	0.0076	0.13	J	mg/Kg	1	1/18/2020 12:38:12 PM	49874
n-Butylbenzene	ND	0.0040	0.13		mg/Kg	1	1/18/2020 12:38:12 PM	49874
n-Propylbenzene	ND	0.0034	0.043		mg/Kg	1	1/18/2020 12:38:12 PM	49874
sec-Butylbenzene	ND	0.0049	0.043		mg/Kg	1	1/18/2020 12:38:12 PM	49874

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Qualifiers:

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

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1-13 2.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 2:47:00 PM
Lab ID: 2001623-023 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Styrene	ND	0.0034	0.043		mg/Kg	1	1/18/2020 12:38:12 PM	49874
tert-Butylbenzene	ND	0.0041	0.043		mg/Kg	1	1/18/2020 12:38:12 PM	49874
1,1,1,2-Tetrachloroethane	ND	0.0029	0.043		mg/Kg	1	1/18/2020 12:38:12 PM	49874
1,1,2,2-Tetrachloroethane	ND	0.0044	0.043		mg/Kg	1	1/18/2020 12:38:12 PM	49874
Tetrachloroethene (PCE)	ND	0.0035	0.043		mg/Kg	1	1/18/2020 12:38:12 PM	49874
trans-1,2-DCE	ND	0.0040	0.043		mg/Kg	1	1/18/2020 12:38:12 PM	49874
trans-1,3-Dichloropropene	ND	0.0046	0.043		mg/Kg	1	1/18/2020 12:38:12 PM	49874
1,2,3-Trichlorobenzene	ND	0.0038	0.086		mg/Kg	1	1/18/2020 12:38:12 PM	49874
1,2,4-Trichlorobenzene	ND	0.0044	0.043		mg/Kg	1	1/18/2020 12:38:12 PM	49874
1,1,1-Trichloroethane	ND	0.0039	0.043		mg/Kg	1	1/18/2020 12:38:12 PM	49874
1,1,2-Trichloroethane	ND	0.0030	0.043		mg/Kg	1	1/18/2020 12:38:12 PM	49874
Trichloroethene (TCE)	ND	0.0050	0.043		mg/Kg	1	1/18/2020 12:38:12 PM	49874
Trichlorofluoromethane	ND	0.015	0.043		mg/Kg	1	1/18/2020 12:38:12 PM	49874
1,2,3-Trichloropropane	ND	0.0070	0.086		mg/Kg	1	1/18/2020 12:38:12 PM	49874
Vinyl chloride	ND	0.0028	0.043		mg/Kg	1	1/18/2020 12:38:12 PM	49874
Xylenes, Total	ND	0.011	0.086		mg/Kg	1	1/18/2020 12:38:12 PM	49874
Surr: Dibromofluoromethane	103		70-130		%Rec	1	1/18/2020 12:38:12 PM	49874
Surr: 1,2-Dichloroethane-d4	85.4		70-130		%Rec	1	1/18/2020 12:38:12 PM	49874
Surr: Toluene-d8	105		70-130		%Rec	1	1/18/2020 12:38:12 PM	49874
Surr: 4-Bromofluorobenzene	104		70-130		%Rec	1	1/18/2020 12:38:12 PM	49874
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/21/2020 2:26:00 PM	R6597
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	7.80				pH Units	1	1/22/2020 11:38:00 AM	R6598

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

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** SWMU1-16 1.5'
Project: Gallup SWMUI Sampling Event **Collection Date:** 1/13/2020 3:30:00 PM
Lab ID: 2001623-024 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **CLP**	
Diesel Range Organics (DRO)	230	4.4	19		mg/Kg	2	1/21/2020 7:38:40 PM	49891
Motor Oil Range Organics (MRO)	140	93	93		mg/Kg	2	1/21/2020 7:38:40 PM	49891
Surr: DNOP	98.9	0	55.1-146		%Rec	2	1/21/2020 7:38:40 PM	49891
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	1.4	4.8		mg/Kg	1	1/20/2020 10:59:03 PM	G65910
Surr: BFB	76.7	0	66.6-105		%Rec	1	1/20/2020 10:59:03 PM	G65910
EPA METHOD 7471: MERCURY							Analyst: **rde**	
Mercury	0.026	0.0019	0.034	JH	mg/Kg	1	2/24/2020 5:12:58 PM	50504
MERCURY, TCLP							Analyst: **pmf**	
Mercury	0.0015	0.00075	0.020	J	mg/L	1	1/20/2020 8:58:08 PM	49924
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.74	5.0		mg/Kg	2	1/28/2020 9:48:26 AM	50072
Arsenic	ND	2.9	5.0		mg/Kg	2	1/28/2020 9:48:26 AM	50072
Barium	400	0.046	0.20		mg/Kg	2	1/28/2020 9:48:26 AM	50072
Beryllium	0.79	0.018	0.30		mg/Kg	2	1/28/2020 9:48:26 AM	50072
Cadmium	ND	0.049	0.20		mg/Kg	2	1/28/2020 9:48:26 AM	50072
Chromium	11	0.16	0.60		mg/Kg	2	1/28/2020 9:48:26 AM	50072
Cobalt	3.9	0.21	0.60		mg/Kg	2	1/28/2020 9:48:26 AM	50072
Lead	1.5	0.49	0.50		mg/Kg	2	1/28/2020 11:11:50 AM	50072
Nickel	7.8	0.30	1.0		mg/Kg	2	1/28/2020 9:48:26 AM	50072
Selenium	ND	2.5	5.0		mg/Kg	2	1/28/2020 9:48:26 AM	50072
Silver	ND	0.064	0.50		mg/Kg	2	1/28/2020 9:48:26 AM	50072
Vanadium	19	0.13	5.0		mg/Kg	2	1/28/2020 9:48:26 AM	50072
Zinc	30	0.79	5.0		mg/Kg	2	1/28/2020 9:48:26 AM	50072
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/21/2020 12:10:17 PM	49932
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.15	0.39	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889
Acenaphthylene	ND	0.17	0.39	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889
Aniline	ND	0.13	0.39	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889
Anthracene	ND	0.15	0.39	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889
Azobenzene	ND	0.20	0.39	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889
Benz(a)anthracene	ND	0.13	0.39	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889
Benzo(a)pyrene	ND	0.21	0.39	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889
Benzo(b)fluoranthene	ND	0.22	0.39	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889
Benzo(g,h,i)perylene	ND	0.20	0.39	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889

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ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** SWMU1-16 1.5'
Project: Gallup SWMUI Sampling Event **Collection Date:** 1/13/2020 3:30:00 PM
Lab ID: 2001623-024 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Benzo(k)fluoranthene	ND	0.12	0.39	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889
Benzoic acid	ND	0.27	0.97	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889
Benzyl alcohol	ND	0.16	0.39	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889
Bis(2-chloroethoxy)methane	ND	0.16	0.39	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889
Bis(2-chloroethyl)ether	ND	0.23	0.39	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889
Bis(2-chloroisopropyl)ether	ND	0.17	0.39	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889
Bis(2-ethylhexyl)phthalate	ND	0.43	0.97	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889
4-Bromophenyl phenyl ether	ND	0.23	0.39	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889
Butyl benzyl phthalate	ND	0.13	0.39	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889
Carbazole	ND	0.15	0.39	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889
4-Chloro-3-methylphenol	ND	0.15	0.97	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889
4-Chloroaniline	ND	0.15	0.97	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889
2-Chloronaphthalene	ND	0.16	0.48	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889
2-Chlorophenol	ND	0.22	0.39	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889
4-Chlorophenyl phenyl ether	ND	0.16	0.39	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889
Chrysene	ND	0.15	0.39	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889
Di-n-butyl phthalate	ND	0.58	0.77	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889
Di-n-octyl phthalate	ND	0.13	0.77	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889
Dibenz(a,h)anthracene	ND	0.22	0.39	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889
Dibenzofuran	ND	0.19	0.39	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889
1,2-Dichlorobenzene	ND	0.15	0.39	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889
1,3-Dichlorobenzene	ND	0.13	0.39	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889
1,4-Dichlorobenzene	ND	0.16	0.39	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889
3,3´-Dichlorobenzidine	ND	0.17	0.48	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889
Diethyl phthalate	ND	0.59	0.97	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889
Dimethyl phthalate	ND	0.16	0.39	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889
2,4-Dichlorophenol	ND	0.16	0.77	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889
2,4-Dimethylphenol	ND	0.16	0.58	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889
4,6-Dinitro-2-methylphenol	ND	0.14	0.77	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889
2,4-Dinitrophenol	ND	0.11	0.97	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889
2,4-Dinitrotoluene	ND	0.20	0.97	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889
2,6-Dinitrotoluene	ND	0.23	0.97	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889
Fluoranthene	ND	0.15	0.39	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889
Fluorene	ND	0.15	0.39	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889
Hexachlorobenzene	ND	0.15	0.39	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889
Hexachlorobutadiene	ND	0.17	0.39	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889
Hexachlorocyclopentadiene	ND	0.19	0.39	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889
Hexachloroethane	ND	0.16	0.39	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889
Indeno(1,2,3-cd)pyrene	ND	0.24	0.39	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889

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Qualifiers:

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

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** SWMU1-16 1.5'
Project: Gallup SWMUI Sampling Event **Collection Date:** 1/13/2020 3:30:00 PM
Lab ID: 2001623-024 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Isophorone	ND	0.17	0.77	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889
1-Methylnaphthalene	ND	0.18	0.39	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889
2-Methylnaphthalene	ND	0.16	0.39	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889
2-Methylphenol	ND	0.16	0.77	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889
3+4-Methylphenol	ND	0.14	0.39	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889
N-Nitrosodi-n-propylamine	ND	0.19	0.39	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889
N-Nitrosodiphenylamine	ND	0.20	0.39	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889
Naphthalene	ND	0.16	0.39	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889
2-Nitroaniline	ND	0.21	0.39	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889
3-Nitroaniline	ND	0.19	0.39	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889
4-Nitroaniline	ND	0.26	0.77	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889
Nitrobenzene	ND	0.17	0.77	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889
2-Nitrophenol	ND	0.16	0.39	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889
4-Nitrophenol	ND	0.11	0.48	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889
Pentachlorophenol	ND	0.17	0.77	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889
Phenanthrene	0.33	0.20	0.39	JD	mg/Kg	1	1/23/2020 4:57:41 PM	49889
Phenol	ND	0.16	0.39	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889
Pyrene	ND	0.13	0.39	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889
Pyridine	ND	0.36	0.77	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889
1,2,4-Trichlorobenzene	ND	0.17	0.39	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889
2,4,5-Trichlorophenol	ND	0.12	0.39	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889
2,4,6-Trichlorophenol	ND	0.19	0.39	D	mg/Kg	1	1/23/2020 4:57:41 PM	49889
Surr: 2-Fluorophenol	50.9		26.7-85.9	D	%Rec	1	1/23/2020 4:57:41 PM	49889
Surr: Phenol-d5	59.8		18.5-101	D	%Rec	1	1/23/2020 4:57:41 PM	49889
Surr: 2,4,6-Tribromophenol	51.7		35.8-85.6	D	%Rec	1	1/23/2020 4:57:41 PM	49889
Surr: Nitrobenzene-d5	67.4		40.8-95.2	D	%Rec	1	1/23/2020 4:57:41 PM	49889
Surr: 2-Fluorobiphenyl	54.0		34.7-85.2	D	%Rec	1	1/23/2020 4:57:41 PM	49889
Surr: 4-Terphenyl-d14	51.5		37.4-91.3	D	%Rec	1	1/23/2020 4:57:41 PM	49889
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.0039	0.024		mg/Kg	1	1/18/2020 1:07:25 PM	49874
Toluene	0.0052	0.0046	0.048	J	mg/Kg	1	1/18/2020 1:07:25 PM	49874
Ethylbenzene	ND	0.0028	0.048		mg/Kg	1	1/18/2020 1:07:25 PM	49874
Methyl tert-butyl ether (MTBE)	ND	0.011	0.048		mg/Kg	1	1/18/2020 1:07:25 PM	49874
1,2,4-Trimethylbenzene	ND	0.0044	0.048		mg/Kg	1	1/18/2020 1:07:25 PM	49874
1,3,5-Trimethylbenzene	ND	0.0046	0.048		mg/Kg	1	1/18/2020 1:07:25 PM	49874
1,2-Dichloroethane (EDC)	ND	0.0049	0.048		mg/Kg	1	1/18/2020 1:07:25 PM	49874
1,2-Dibromoethane (EDB)	ND	0.0044	0.048		mg/Kg	1	1/18/2020 1:07:25 PM	49874
Naphthalene	ND	0.0096	0.095		mg/Kg	1	1/18/2020 1:07:25 PM	49874
1-Methylnaphthalene	0.092	0.027	0.19	J	mg/Kg	1	1/18/2020 1:07:25 PM	49874

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

Qualifiers:

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

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1-16 1.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 3:30:00 PM
Lab ID: 2001623-024 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
2-Methylnaphthalene	0.10	0.021	0.19	J	mg/Kg	1	1/18/2020 1:07:25 PM	49874
Acetone	0.045	0.040	0.72	J	mg/Kg	1	1/18/2020 1:07:25 PM	49874
Bromobenzene	ND	0.0046	0.048		mg/Kg	1	1/18/2020 1:07:25 PM	49874
Bromodichloromethane	ND	0.0044	0.048		mg/Kg	1	1/18/2020 1:07:25 PM	49874
Bromoform	ND	0.0043	0.048		mg/Kg	1	1/18/2020 1:07:25 PM	49874
Bromomethane	ND	0.012	0.14		mg/Kg	1	1/18/2020 1:07:25 PM	49874
2-Butanone	ND	0.055	0.48		mg/Kg	1	1/18/2020 1:07:25 PM	49874
Carbon disulfide	ND	0.016	0.48		mg/Kg	1	1/18/2020 1:07:25 PM	49874
Carbon tetrachloride	ND	0.0045	0.048		mg/Kg	1	1/18/2020 1:07:25 PM	49874
Chlorobenzene	ND	0.0061	0.048		mg/Kg	1	1/18/2020 1:07:25 PM	49874
Chloroethane	ND	0.0070	0.095		mg/Kg	1	1/18/2020 1:07:25 PM	49874
Chloroform	ND	0.0038	0.048		mg/Kg	1	1/18/2020 1:07:25 PM	49874
Chloromethane	ND	0.0046	0.14		mg/Kg	1	1/18/2020 1:07:25 PM	49874
2-Chlorotoluene	ND	0.0042	0.048		mg/Kg	1	1/18/2020 1:07:25 PM	49874
4-Chlorotoluene	ND	0.0039	0.048		mg/Kg	1	1/18/2020 1:07:25 PM	49874
cis-1,2-DCE	ND	0.0065	0.048		mg/Kg	1	1/18/2020 1:07:25 PM	49874
cis-1,3-Dichloropropene	ND	0.0040	0.048		mg/Kg	1	1/18/2020 1:07:25 PM	49874
1,2-Dibromo-3-chloropropane	ND	0.0049	0.095		mg/Kg	1	1/18/2020 1:07:25 PM	49874
Dibromochloromethane	ND	0.0034	0.048		mg/Kg	1	1/18/2020 1:07:25 PM	49874
Dibromomethane	ND	0.0051	0.048		mg/Kg	1	1/18/2020 1:07:25 PM	49874
1,2-Dichlorobenzene	ND	0.0039	0.048		mg/Kg	1	1/18/2020 1:07:25 PM	49874
1,3-Dichlorobenzene	ND	0.0041	0.048		mg/Kg	1	1/18/2020 1:07:25 PM	49874
1,4-Dichlorobenzene	ND	0.0040	0.048		mg/Kg	1	1/18/2020 1:07:25 PM	49874
Dichlorodifluoromethane	ND	0.011	0.048		mg/Kg	1	1/18/2020 1:07:25 PM	49874
1,1-Dichloroethane	ND	0.0031	0.048		mg/Kg	1	1/18/2020 1:07:25 PM	49874
1,1-Dichloroethene	ND	0.019	0.048		mg/Kg	1	1/18/2020 1:07:25 PM	49874
1,2-Dichloropropane	ND	0.0035	0.048		mg/Kg	1	1/18/2020 1:07:25 PM	49874
1,3-Dichloropropane	ND	0.0052	0.048		mg/Kg	1	1/18/2020 1:07:25 PM	49874
2,2-Dichloropropane	ND	0.016	0.095		mg/Kg	1	1/18/2020 1:07:25 PM	49874
1,1-Dichloropropene	ND	0.0043	0.095		mg/Kg	1	1/18/2020 1:07:25 PM	49874
Hexachlorobutadiene	ND	0.0049	0.095		mg/Kg	1	1/18/2020 1:07:25 PM	49874
2-Hexanone	ND	0.0079	0.48		mg/Kg	1	1/18/2020 1:07:25 PM	49874
Isopropylbenzene	ND	0.0034	0.048		mg/Kg	1	1/18/2020 1:07:25 PM	49874
4-Isopropyltoluene	ND	0.0039	0.048		mg/Kg	1	1/18/2020 1:07:25 PM	49874
4-Methyl-2-pentanone	0.031	0.0090	0.48	J	mg/Kg	1	1/18/2020 1:07:25 PM	49874
Methylene chloride	0.064	0.0084	0.14	J	mg/Kg	1	1/18/2020 1:07:25 PM	49874
n-Butylbenzene	ND	0.0044	0.14		mg/Kg	1	1/18/2020 1:07:25 PM	49874
n-Propylbenzene	ND	0.0038	0.048		mg/Kg	1	1/18/2020 1:07:25 PM	49874
sec-Butylbenzene	ND	0.0054	0.048		mg/Kg	1	1/18/2020 1:07:25 PM	49874

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

Analytical Report
Lab Order **2001623**
Date Reported: **2/25/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: SWMU1-16 1.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 3:30:00 PM
Lab ID: 2001623-024 **Matrix:** SOIL **Received Date:** 1/16/2020 10:05:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Styrene	ND	0.0037	0.048		mg/Kg	1	1/18/2020 1:07:25 PM	49874
tert-Butylbenzene	ND	0.0045	0.048		mg/Kg	1	1/18/2020 1:07:25 PM	49874
1,1,1,2-Tetrachloroethane	ND	0.0032	0.048		mg/Kg	1	1/18/2020 1:07:25 PM	49874
1,1,2,2-Tetrachloroethane	ND	0.0048	0.048		mg/Kg	1	1/18/2020 1:07:25 PM	49874
Tetrachloroethene (PCE)	ND	0.0038	0.048		mg/Kg	1	1/18/2020 1:07:25 PM	49874
trans-1,2-DCE	ND	0.0044	0.048		mg/Kg	1	1/18/2020 1:07:25 PM	49874
trans-1,3-Dichloropropene	ND	0.0050	0.048		mg/Kg	1	1/18/2020 1:07:25 PM	49874
1,2,3-Trichlorobenzene	ND	0.0042	0.095		mg/Kg	1	1/18/2020 1:07:25 PM	49874
1,2,4-Trichlorobenzene	ND	0.0048	0.048		mg/Kg	1	1/18/2020 1:07:25 PM	49874
1,1,1-Trichloroethane	ND	0.0043	0.048		mg/Kg	1	1/18/2020 1:07:25 PM	49874
1,1,2-Trichloroethane	ND	0.0034	0.048		mg/Kg	1	1/18/2020 1:07:25 PM	49874
Trichloroethene (TCE)	ND	0.0055	0.048		mg/Kg	1	1/18/2020 1:07:25 PM	49874
Trichlorofluoromethane	ND	0.016	0.048		mg/Kg	1	1/18/2020 1:07:25 PM	49874
1,2,3-Trichloropropane	ND	0.0077	0.095		mg/Kg	1	1/18/2020 1:07:25 PM	49874
Vinyl chloride	ND	0.0031	0.048		mg/Kg	1	1/18/2020 1:07:25 PM	49874
Xylenes, Total	ND	0.012	0.095		mg/Kg	1	1/18/2020 1:07:25 PM	49874
Surr: Dibromofluoromethane	102		70-130		%Rec	1	1/18/2020 1:07:25 PM	49874
Surr: 1,2-Dichloroethane-d4	88.8		70-130		%Rec	1	1/18/2020 1:07:25 PM	49874
Surr: Toluene-d8	99.4		70-130		%Rec	1	1/18/2020 1:07:25 PM	49874
Surr: 4-Bromofluorobenzene	93.4		70-130		%Rec	1	1/18/2020 1:07:25 PM	49874
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/21/2020 2:26:00 PM	R6597
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	7.74				pH Units	1	1/22/2020 11:38:00 AM	R6598

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

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J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

January 27, 2020

Hall Environmental Analysis Laboratory

Sample Delivery Group: L1180718

Samples Received: 01/17/2020

Project Number:

Description:

Report To:

4901 Hawkins NE

Albuquerque, NM 87109

Entire Report Reviewed By: Daphne R Richards

Daphne Richards
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



TABLE OF CONTENTS

Cp: Cover Page 1

Tc: Table of Contents 2

Ss: Sample Summary 3

Cn: Case Narrative 6

Sr: Sample Results 7

2001623-001C SWMU1-1-11 1.5 L1180718-01 7

2001623-002C SWMU1-11 5' L1180718-02 8

2001623-003C SWMU1-11 2.5' L1180718-03 9

2001623-004C SWMU1-12 2.5' L1180718-04 10

2001623-005C SWMU1-11 7.5' L1180718-05 11

2001623-006C SWMU1-12 2.5' L1180718-06 12

2001623-007C SWMU1-12 5' L1180718-07 13

2001623-008C SWMU1-19 2.5' L1180718-08 14

2001623-009C SWMU1-18 1.5' L1180718-09 15

2001623-010C SWMU1-12 7.5' L1180718-10 16

2001623-011C DUP 1 L1180718-11 17

2001623-012C DUP 2 L1180718-12 18

2001623-013C SWMU1-13 5' L1180718-13 19

2001623-014C SWMU1-15 1.5' L1180718-14 20

2001623-015C SWMU1-13 1.5' L1180718-15 21

2001623-016C SWMU1-17 2.5' L1180718-16 22

2001623-017C SWMU1-17 1.5' L1180718-17 23

2001623-018C SWMU1-19 1.5' L1180718-18 24

2001623-019C SWMU1-16 2.5' L1180718-19 25

2001623-020C SWMU1-13 9' L1180718-20 26

2001623-021C SWMU1-13 7.5' L1180718-21 27

2001623-022C SWMU1-15 2.5' L1180718-22 28

2001623-023C SWMU1-13 2.5' L1180718-23 29

2001623-024C SWMU1-16 1.5' L1180718-24 30

Qc: Quality Control Summary 31

Wet Chemistry by Method 2710 F-2011 31

Gl: Glossary of Terms 32

Al: Accreditations & Locations 33

Sc: Sample Chain of Custody 34

2001623-001C SWMU1-1-11 1.5 L1180718-01 Solid

Collected by | Collected date/time 01/13/20 13:20 | Received date/time 01/17/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1415608	1	01/22/20 20:26	01/23/20 22:44	MJA	Mt. Juliet, TN

2001623-002C SWMU1-11 5' L1180718-02 Solid

Collected by | Collected date/time 01/13/20 13:35 | Received date/time 01/17/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1415608	1	01/22/20 20:26	01/23/20 22:44	MJA	Mt. Juliet, TN

2001623-003C SWMU1-11 2.5' L1180718-03 Solid

Collected by | Collected date/time 01/13/20 13:30 | Received date/time 01/17/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1415608	1	01/22/20 20:26	01/23/20 22:44	MJA	Mt. Juliet, TN

2001623-004C SWMU1-12 2.5' L1180718-04 Solid

Collected by | Collected date/time 01/13/20 14:03 | Received date/time 01/17/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1415608	1	01/22/20 20:26	01/23/20 22:44	MJA	Mt. Juliet, TN

2001623-005C SWMU1-11 7.5' L1180718-05 Solid

Collected by | Collected date/time 01/13/20 13:40 | Received date/time 01/17/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1415608	1	01/22/20 20:26	01/23/20 22:44	MJA	Mt. Juliet, TN

2001623-006C SWMU1-12 2.5' L1180718-06 Solid

Collected by | Collected date/time 01/13/20 14:05 | Received date/time 01/17/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1415608	1	01/22/20 20:26	01/23/20 22:44	MJA	Mt. Juliet, TN

2001623-007C SWMU1-12 5' L1180718-07 Solid

Collected by | Collected date/time 01/13/20 14:15 | Received date/time 01/17/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1415608	1	01/22/20 20:26	01/23/20 22:44	MJA	Mt. Juliet, TN

2001623-008C SWMU1-19 2.5' L1180718-08 Solid

Collected by | Collected date/time 01/13/20 16:40 | Received date/time 01/17/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1415608	1	01/22/20 20:26	01/23/20 22:44	MJA	Mt. Juliet, TN

2001623-009C SWMU1-18 1.5' L1180718-09 Solid

Collected by | Collected date/time 01/13/20 16:12 | Received date/time 01/17/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1415608	1	01/22/20 20:26	01/23/20 22:44	MJA	Mt. Juliet, TN

2001623-010C SWMU1-12 7.5' L1180718-10 Solid

Collected by | Collected date/time 01/13/20 14:21 | Received date/time 01/17/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1415608	1	01/22/20 20:26	01/23/20 22:44	MJA	Mt. Juliet, TN

2001623-011C DUP 1 L1180718-11 Solid

Collected by | Collected date/time 01/13/20 00:00 | Received date/time 01/17/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1415608	1	01/22/20 20:26	01/23/20 22:44	MJA	Mt. Juliet, TN

2001623-012C DUP 2 L1180718-12 Solid

Collected by | Collected date/time 01/13/20 00:00 | Received date/time 01/17/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1415608	1	01/22/20 20:26	01/23/20 22:44	MJA	Mt. Juliet, TN

2001623-013C SWMU1-13 5' L1180718-13 Solid

Collected by | Collected date/time 01/13/20 14:52 | Received date/time 01/17/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1415608	1	01/22/20 20:26	01/23/20 22:44	MJA	Mt. Juliet, TN

2001623-014C SWMU1-15 1.5' L1180718-14 Solid

Collected by | Collected date/time 01/13/20 15:15 | Received date/time 01/17/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1415608	1	01/22/20 20:26	01/23/20 22:44	MJA	Mt. Juliet, TN

2001623-015C SWMU1-13 1.5' L1180718-15 Solid

Collected by | Collected date/time 01/13/20 14:44 | Received date/time 01/17/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1415608	1	01/22/20 20:26	01/23/20 22:44	MJA	Mt. Juliet, TN

2001623-016C SWMU1-17 2.5' L1180718-16 Solid

Collected by | Collected date/time 01/13/20 16:04 | Received date/time 01/17/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1415608	1	01/22/20 20:26	01/23/20 22:44	MJA	Mt. Juliet, TN

2001623-017C SWMU1-17 1.5' L1180718-17 Solid

Collected by | Collected date/time 01/13/20 15:55 | Received date/time 01/17/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1415608	1	01/22/20 20:26	01/23/20 22:44	MJA	Mt. Juliet, TN

2001623-018C SWMU1-19 1.5' L1180718-18 Solid

Collected by | Collected date/time 01/13/20 16:33 | Received date/time 01/17/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1415608	1	01/22/20 20:26	01/23/20 22:44	MJA	Mt. Juliet, TN

2001623-019C SWMU1-16 2.5' L1180718-19 Solid

Collected by | Collected date/time 01/13/20 15:35 | Received date/time 01/17/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1415608	1	01/22/20 20:26	01/23/20 22:44	MJA	Mt. Juliet, TN

2001623-020C SWMU1-13 9' L1180718-20 Solid

Collected by | Collected date/time 01/13/20 15:03 | Received date/time 01/17/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1415608	1	01/22/20 20:26	01/23/20 22:44	MJA	Mt. Juliet, TN

2001623-021C SWMU1-13 7.5' L1180718-21 Solid

Collected by | Collected date/time 01/13/20 14:58 | Received date/time 01/17/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1416834	1	01/24/20 19:49	01/25/20 23:55	MJA	Mt. Juliet, TN

2001623-022C SWMU1-15 2.5' L1180718-22 Solid

Collected by | Collected date/time 01/13/20 15:20 | Received date/time 01/17/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1416834	1	01/24/20 19:49	01/25/20 23:55	MJA	Mt. Juliet, TN

2001623-023C SWMU1-13 2.5' L1180718-23 Solid

Collected by | Collected date/time 01/13/20 14:47 | Received date/time 01/17/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1416834	1	01/24/20 19:49	01/25/20 23:55	MJA	Mt. Juliet, TN

2001623-024C SWMU1-16 1.5' L1180718-24 Solid

Collected by | Collected date/time 01/13/20 15:30 | Received date/time 01/17/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1416834	1	01/24/20 19:49	01/25/20 23:55	MJA	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Daphne R Richards

Daphne Richards
Project Manager

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.71		1	01/23/2020 22:44	WG1415608

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	2.15		1	01/23/2020 22:44	WG1415608

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	2.04		1	01/23/2020 22:44	WG1415608

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.88		1	01/23/2020 22:44	WG1415608

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.85		1	01/23/2020 22:44	WG1415608

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	2.11		1	01/23/2020 22:44	WG1415608

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	2.09		1	01/23/2020 22:44	WG1415608

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.86		1	01/23/2020 22:44	WG1415608

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	2.11		1	01/23/2020 22:44	WG1415608

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.82		1	01/23/2020 22:44	WG1415608

Received by OCD: 3/2/2021 2:18:14 PM

2001023-01C DUP 1
Collected date/time: 01/13/20 00:00

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	2.14		1	01/23/2020 22:44	WG1415608

Released to Imaging: 3/2/2021 2:22:29 PM

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	2.06		1	01/23/2020 22:44	WG1415608

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	2.13		1	01/23/2020 22:44	WG1415608

Received by OCD: 3/2/2021 2:18:14 PM

Collected date/time: 01/13/20 15:15

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	2.02		1	01/23/2020 22:44	WG1415608

Released to Imaging: 3/2/2021 2:22:29 PM

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	2.08		1	01/23/2020 22:44	WG1415608

Collected date/time: 01/13/20 16:04

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	2.01		1	01/23/2020 22:44	WG1415608

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	2.21		1	01/23/2020 22:44	WG1415608

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	2.04		1	01/23/2020 22:44	WG1415608

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.77		1	01/23/2020 22:44	WG1415608

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	2.11		1	01/23/2020 22:44	WG1415608

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	2.05		1	01/25/2020 23:55	WG1416834

Collected date/time: 01/13/20 15:20

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.76		1	01/25/2020 23:55	WG1416834

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	2.11		1	01/25/2020 23:55	WG1416834

Collected date/time: 01/13/20 15:30

L1180718

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	2.18		1	01/25/2020 23:55	WG1416834

L1180718-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1180718-08 01/23/20 22:44 • (DUP) R3493861-1 01/23/20 22:44

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	g/cm3	g/cm3		%		%
Density	1.86	1.87	1	0.134		20

L1180718-16 Original Sample (OS) • Duplicate (DUP)

(OS) L1180718-16 01/23/20 22:44 • (DUP) R3493861-2 01/23/20 22:44

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	g/cm3	g/cm3		%		%
Density	2.01	1.93	1	3.72		20

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
	The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

ACCREDITATIONS & LOCATIONS

ONE LAB. NATIONWIDE.

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

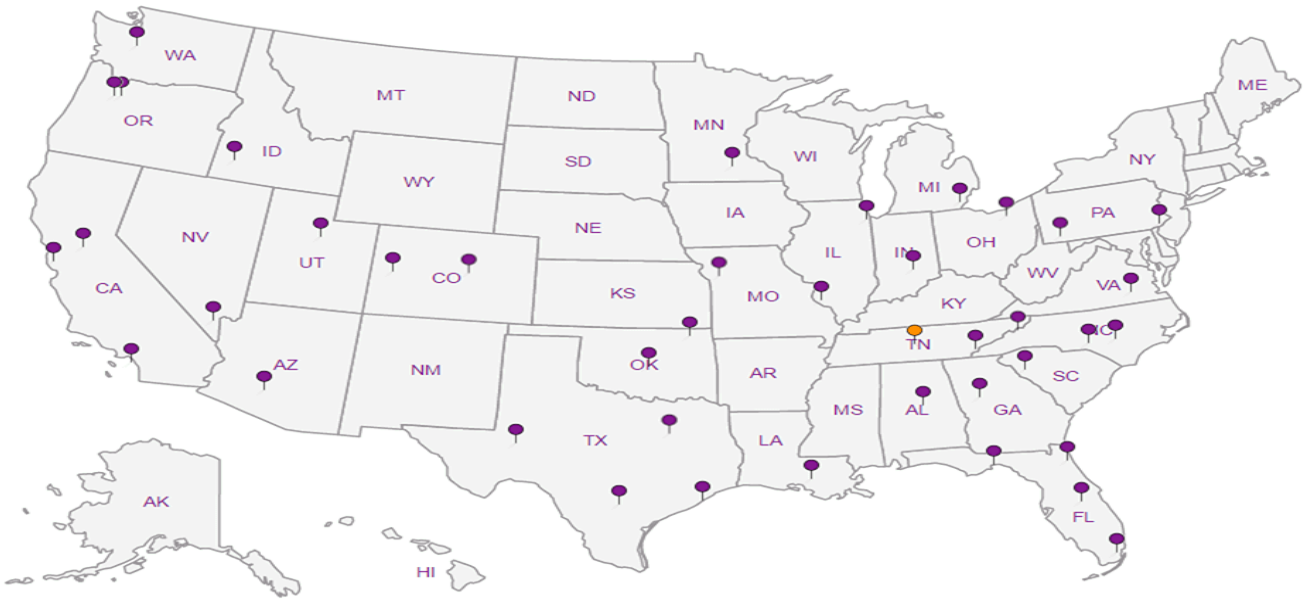
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 2

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

SUB CONTRATOR: ESC PACE	COMPANY: ESC PACE	PHONE: (800) 767-5859	FAX: (615) 758-5859
ADDRESS: 12065 Lebanon Rd		ACCOUNT #:	EMAIL:
CITY, STATE, ZIP: Mt. Juliet, TN 37122			

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS
1	2001623-001C	SWMU1 1-11 1.5'	4OZGU	Soil	1/13/2020 1:20:00 PM	1	Specific Gravity L1180718-01
2	2001623-002C	SWMU1-11 5'	4OZGU	Soil	1/13/2020 1:35:00 PM	1	Specific Gravity 02
3	2001623-003C	SWMU1-11 2.5'	4OZGU	Soil	1/13/2020 1:30:00 PM	1	Specific Gravity 03
4	2001623-004C	SWMU1-12 2.5'	4OZGU	Soil	1/13/2020 2:03:00 PM	1	Specific Gravity 04
5	2001623-005C	SWMU1-11 7.5'	4OZGU	Soil	1/13/2020 1:40:00 PM	1	Specific Gravity 05
6	2001623-006C	SWMU1-12 2.5'	4OZGU	Soil	1/13/2020 2:05:00 PM	1	Specific Gravity 06
7	2001623-007C	SWMU1-12 5'	4OZGU	Soil	1/13/2020 2:15:00 PM	1	Specific Gravity 07
8	2001623-008C	SWMU1-19 2.5'	4OZGU	Soil	1/13/2020 4:40:00 PM	1	Specific Gravity 08
9	2001623-009C	SWMU1-18 1.5'	4OZGU	Soil	1/13/2020 4:12:00 PM	1	Specific Gravity 09
10	2001623-010C	SWMU1-12 7.5'	4OZGU	Soil	1/13/2020 2:21:00 PM	1	Specific Gravity 10
11	2001623-011C	DUP 1	4OZGU	Soil	1/13/2020	1	Specific Gravity 11
12	2001623-012C	DUP 2	4OZGU	Soil	1/13/2020	1	Specific Gravity 12
13	2001623-013C	SWMU1-13 5'	4OZGU	Soil	1/13/2020 2:52:00 PM	1	Specific Gravity 13

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you

C225

4510 1669 2502 NOTB 24 total

Relinquished By: [signature]	Date: 1/16/2020	Time: 12:58 PM	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By: [signature] 1-17-20	Date:	Time: 0845

TAT: Standard [X] RUSH Next BD [ ] 2nd BD [ ] 3rd BD [ ]

REPORT TRANSMITTAL DESIRED:

[ ] HARDCOPY (extra cost) [ ] FAX [ ] EMAIL [ ] ONLINE

FOR LAB USE ONLY

Temp of samples 1.4+.4=1.8c AM A3 Attempt to Cool ?

RAD SCREEN: <0.5 mR/hr

Comments:

ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 2 OF: 2

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

SUB CONTRATOR: ESC PACE	COMPANY: ESC PACE	PHONE: (800) 767-5859	FAX: (615) 758-5859
ADDRESS: 12065 Lebanon Rd		ACCOUNT #:	EMAIL:
CITY, STATE, ZIP: Mt. Juliet, TN 37122			

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS	
14	2001623-014C	SWMU1-15 1.5'	4OZGU	Soil	1/13/2020 3:15:00 PM	1	Specific Gravity	L1180718-14
15	2001623-015C	SWMU1-13 1.5'	4OZGU	Soil	1/13/2020 2:44:00 PM	1	Specific Gravity	15
16	2001623-016C	SWMU1-17 2.5'	4OZGU	Soil	1/13/2020 4:04:00 PM	1	Specific Gravity	16
17	2001623-017C	SWMU1-17 1.5'	4OZGU	Soil	1/13/2020 3:55:00 PM	1	Specific Gravity	17
18	2001623-018C	SWMU1-19 1.5'	4OZGU	Soil	1/13/2020 4:33:00 PM	1	Specific Gravity	18
19	2001623-019C	SWMU1-16 2.5'	4OZGU	Soil	1/13/2020 3:35:00 PM	1	Specific Gravity	19
20	2001623-020C	SWMU1-13 9'	4OZGU	Soil	1/13/2020 3:03:00 PM	1	Specific Gravity	20
21	2001623-021C	SWMU1-13 7.5'	4OZGU	Soil	1/13/2020 2:58:00 PM	1	Specific Gravity	21
22	2001623-022C	SWMU1-15 2.5'	4OZGU	Soil	1/13/2020 3:20:00 PM	1	Specific Gravity	22
23	2001623-023C	SWMU1-13 2.5'	4OZGU	Soil	1/13/2020 2:47:00 PM	1	Specific Gravity	23
24	2001623-024C	SWMU1-16 1.5'	4OZGU	Soil	1/13/2020 3:30:00 PM	1	Specific Gravity	24

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

4510 1669 2502 No TB 24 Total

Relinquished By:	Date: 1/16/2020	Time: 12:58 PM	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date: 1-17-20	Time: 0845

TAT: Standard [X] RUSH Next BD [ ] 2nd BD [ ] 3rd BD [ ]

REPORT TRANSMITTAL DESIRED:

[ ] HARDCOPY (extra cost) [ ] FAX [ ] EMAIL [ ] ONLINE

FOR LAB USE ONLY

Temp of samples _____ °C Attempt to Cool ? _____

Comments: _____

Pace Analytical National Center for Testing & Innovation
Cooler Receipt Form

Client: HALLENVANM	L1180718	
Cooler Received/Opened On: 1/17/20 Temperature:	1.8	
Received By: Michael Pappas		
Signature:		

Receipt Check List	NP	Yes	No
COC Seal Present / Intact?	✓		
COC Signed / Accurate?		✓	
Bottles arrive intact?		✓	
Correct bottles used?		✓	
Sufficient volume sent?		✓	
If Applicable			
VOA Zero headspace?			
Preservation Correct / Checked?			

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001623**
25-Feb-20

Client: Marathon
Project: Gallup SWMUI Sampling Event

Sample ID: **LCS-49861** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **49861** RunNo: **65901**
Prep Date: **1/16/2020** Analysis Date: **1/21/2020** SeqNo: **2263856** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	56	10	50.00	0	112	63.9	124			
Surr: DNOP	5.3		5.000		107	55.1	146			

Sample ID: **LCS-49891** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **49891** RunNo: **65901**
Prep Date: **1/17/2020** Analysis Date: **1/20/2020** SeqNo: **2263857** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	50	10	50.00	0	101	63.9	124			
Surr: DNOP	4.0		5.000		79.2	55.1	146			

Sample ID: **MB-49861** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **49861** RunNo: **65901**
Prep Date: **1/16/2020** Analysis Date: **1/21/2020** SeqNo: **2263860** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	2.7	10								J
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	11		10.00		108	55.1	146			

Sample ID: **MB-49891** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **49891** RunNo: **65901**
Prep Date: **1/17/2020** Analysis Date: **1/20/2020** SeqNo: **2263861** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.9		10.00		89.4	55.1	146			

Sample ID: **2001623-001AMS** SampType: **MS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **SWMU1 1-11 1.5'** Batch ID: **49861** RunNo: **65937**
Prep Date: **1/16/2020** Analysis Date: **1/21/2020** SeqNo: **2266188** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	150	20	49.46	140.5	13.4	47.4	136			S
Surr: DNOP	5.2		4.946		104	55.1	146			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001623**
25-Feb-20

Client: Marathon
Project: Gallup SWMUI Sampling Event

Sample ID: **2001623-001AMSD** SampType: **MSD** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **SWMU1 1-11 1.5'** Batch ID: **49861** RunNo: **65937**
Prep Date: **1/16/2020** Analysis Date: **1/21/2020** SeqNo: **2266189** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	160	19	47.08	140.5	38.6	47.4	136	7.55	43.4	S
Surr: DNOP	5.2		4.708		110	55.1	146	0	0	

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001623**
25-Feb-20

Client: Marathon
Project: Gallup SWMUI Sampling Event

Sample ID: **mb-49833**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **PBS**	Batch ID: **49833**	RunNo: **65850**							
Prep Date: **1/15/2020**	Analysis Date: **1/16/2020**	SeqNo: **2261657**	Units: **%Rec**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	870		1000		86.5	66.6	105			

Sample ID: **lcs-49833**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **LCSS**	Batch ID: **49833**	RunNo: **65850**							
Prep Date: **1/15/2020**	Analysis Date: **1/16/2020**	SeqNo: **2261658**	Units: **%Rec**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	940		1000		93.7	66.6	105			

Sample ID: **mb-49874**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **PBS**	Batch ID: **49874**	RunNo: **65896**							
Prep Date: **1/16/2020**	Analysis Date: **1/17/2020**	SeqNo: **2262883**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	830		1000		83.1	66.6	105			

Sample ID: **lcs-49874**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **LCSS**	Batch ID: **49874**	RunNo: **65896**							
Prep Date: **1/16/2020**	Analysis Date: **1/17/2020**	SeqNo: **2262884**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	93.9	80	120			
Surr: BFB	870		1000		87.0	66.6	105			

Sample ID: **rb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **PBS**	Batch ID: **G65910**	RunNo: **65910**							
Prep Date:	Analysis Date: **1/20/2020**	SeqNo: **2263618**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	770		1000		77.4	66.6	105			

Sample ID: **2.5ug gro lcsb**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **LCSS**	Batch ID: **G65910**	RunNo: **65910**							
Prep Date:	Analysis Date: **1/20/2020**	SeqNo: **2263619**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	98.0	80	120			
Surr: BFB	890		1000		88.5	66.6	105			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001623**
25-Feb-20

Client: Marathon
Project: Gallup SWMUI Sampling Event

Sample ID: **mb-49833**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **49833**	RunNo: **65893**
Prep Date: **1/15/2020**	Analysis Date: **1/17/2020**	SeqNo: **2262786** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	ND	0.050								
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	ND	0.75								
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	ND	0.15								
2-Butanone	ND	0.50								
Carbon disulfide	ND	0.50								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	ND	0.050								
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.050								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.050								
1,1-Dichloroethene	ND	0.050								
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.10								

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001623**
25-Feb-20

Client: Marathon
Project: Gallup SWMUI Sampling Event

Sample ID: **mb-49833** SampType: **MBLK** TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS** Batch ID: **49833** RunNo: **65893**
Prep Date: **1/15/2020** Analysis Date: **1/17/2020** SeqNo: **2262786** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
4-Methyl-2-pentanone	ND	0.50								
Methylene chloride	ND	0.15								
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
1,2,3-Trichlorobenzene	ND	0.10								
1,2,4-Trichlorobenzene	ND	0.050								
1,1,1-Trichloroethane	ND	0.050								
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	ND	0.050								
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: Dibromofluoromethane	0.47		0.5000		94.1	70	130			
Surr: 1,2-Dichloroethane-d4	0.44		0.5000		87.2	70	130			
Surr: Toluene-d8	0.51		0.5000		102	70	130			
Surr: 4-Bromofluorobenzene	0.47		0.5000		93.3	70	130			

Sample ID: **lcs-49833** SampType: **LCS** TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS** Batch ID: **49833** RunNo: **65893**
Prep Date: **1/15/2020** Analysis Date: **1/17/2020** SeqNo: **2262787** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.85	0.025	1.000	0	84.6	70	130			
Toluene	0.94	0.050	1.000	0	94.1	70	130			
Chlorobenzene	0.89	0.050	1.000	0	88.9	70	130			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001623**
25-Feb-20

Client: Marathon
Project: Gallup SWMUI Sampling Event

Sample ID: **lcs-49833** SampType: **LCS** TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS** Batch ID: **49833** RunNo: **65893**
Prep Date: **1/15/2020** Analysis Date: **1/17/2020** SeqNo: **2262787** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	0.78	0.050	1.000	0	77.8	70	130			
Trichloroethene (TCE)	0.75	0.050	1.000	0	75.1	70	130			
Surr: Dibromofluoromethane	0.42		0.5000		84.7	70	130			
Surr: 1,2-Dichloroethane-d4	0.42		0.5000		83.1	70	130			
Surr: Toluene-d8	0.50		0.5000		99.4	70	130			
Surr: 4-Bromofluorobenzene	0.49		0.5000		98.5	70	130			

Sample ID: **mb-49874** SampType: **MBLK** TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS** Batch ID: **49874** RunNo: **65893**
Prep Date: **1/16/2020** Analysis Date: **1/17/2020** SeqNo: **2262807** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	ND	0.050								
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	ND	0.75								
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	ND	0.15								
2-Butanone	ND	0.50								
Carbon disulfide	ND	0.50								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	ND	0.050								
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001623**
25-Feb-20

Client: Marathon
Project: Gallup SWMUI Sampling Event

Sample ID: **mb-49874**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **49874**	RunNo: **65893**
Prep Date: **1/16/2020**	Analysis Date: **1/17/2020**	SeqNo: **2262807** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.050								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.050								
1,1-Dichloroethene	ND	0.050								
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.10								
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
4-Methyl-2-pentanone	ND	0.50								
Methylene chloride	ND	0.15								
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
1,2,3-Trichlorobenzene	ND	0.10								
1,2,4-Trichlorobenzene	ND	0.050								
1,1,1-Trichloroethane	ND	0.050								
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	ND	0.050								
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: Dibromofluoromethane	0.51		0.5000		102	70	130			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001623**
25-Feb-20

Client: Marathon
Project: Gallup SWMUI Sampling Event

Sample ID: **mb-49874**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**							
Client ID: **PBS**	Batch ID: **49874**	RunNo: **65893**							
Prep Date: **1/16/2020**	Analysis Date: **1/17/2020**	SeqNo: **2262807**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	0.44		0.5000		88.1	70	130			
Surr: Toluene-d8	0.51		0.5000		103	70	130			
Surr: 4-Bromofluorobenzene	0.52		0.5000		104	70	130			

Sample ID: **lcs-49874**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles**							
Client ID: **LCSS**	Batch ID: **49874**	RunNo: **65893**							
Prep Date: **1/16/2020**	Analysis Date: **1/17/2020**	SeqNo: **2262808**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.85	0.025	1.000	0	84.6	70	130			
Toluene	0.92	0.050	1.000	0	92.3	70	130			
Chlorobenzene	0.89	0.050	1.000	0	89.4	70	130			
1,1-Dichloroethene	0.80	0.050	1.000	0	80.5	70	130			
Trichloroethene (TCE)	0.78	0.050	1.000	0	77.7	70	130			
Surr: Dibromofluoromethane	0.41		0.5000		81.8	70	130			
Surr: 1,2-Dichloroethane-d4	0.42		0.5000		83.8	70	130			
Surr: Toluene-d8	0.51		0.5000		102	70	130			
Surr: 4-Bromofluorobenzene	0.50		0.5000		99.5	70	130			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001623**
25-Feb-20

Client: Marathon
Project: Gallup SWMUI Sampling Event

Sample ID: **mb-49868**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS**	Batch ID: **49868**	RunNo: **65991**
Prep Date: **1/16/2020**	Analysis Date: **1/22/2020**	SeqNo: **2266575** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	0.20								
Acenaphthylene	ND	0.20								
Aniline	ND	0.20								
Anthracene	ND	0.20								
Azobenzene	ND	0.20								
Benz(a)anthracene	ND	0.20								
Benzo(a)pyrene	ND	0.20								
Benzo(b)fluoranthene	ND	0.20								
Benzo(g,h,i)perylene	ND	0.20								
Benzo(k)fluoranthene	ND	0.20								
Benzoic acid	ND	0.50								
Benzyl alcohol	ND	0.20								
Bis(2-chloroethoxy)methane	ND	0.20								
Bis(2-chloroethyl)ether	ND	0.20								
Bis(2-chloroisopropyl)ether	ND	0.20								
Bis(2-ethylhexyl)phthalate	ND	0.50								
4-Bromophenyl phenyl ether	ND	0.20								
Butyl benzyl phthalate	ND	0.20								
Carbazole	ND	0.20								
4-Chloro-3-methylphenol	ND	0.50								
4-Chloroaniline	ND	0.50								
2-Chloronaphthalene	ND	0.25								
2-Chlorophenol	ND	0.20								
4-Chlorophenyl phenyl ether	ND	0.20								
Chrysene	ND	0.20								
Di-n-butyl phthalate	0.35	0.40								J
Di-n-octyl phthalate	ND	0.40								
Dibenz(a,h)anthracene	ND	0.20								
Dibenzofuran	ND	0.20								
1,2-Dichlorobenzene	ND	0.20								
1,3-Dichlorobenzene	ND	0.20								
1,4-Dichlorobenzene	ND	0.20								
3,3´-Dichlorobenzidine	ND	0.25								
Diethyl phthalate	ND	0.50								
Dimethyl phthalate	ND	0.20								
2,4-Dichlorophenol	ND	0.40								
2,4-Dimethylphenol	ND	0.30								
4,6-Dinitro-2-methylphenol	ND	0.40								
2,4-Dinitrophenol	ND	0.50								

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001623**
25-Feb-20

Client: Marathon
Project: Gallup SWMUI Sampling Event

Sample ID: **mb-49868**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS**	Batch ID: **49868**	RunNo: **65991**
Prep Date: **1/16/2020**	Analysis Date: **1/22/2020**	SeqNo: **2266575** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	0.50								
2,6-Dinitrotoluene	ND	0.50								
Fluoranthene	ND	0.20								
Fluorene	ND	0.20								
Hexachlorobenzene	ND	0.20								
Hexachlorobutadiene	ND	0.20								
Hexachlorocyclopentadiene	ND	0.20								
Hexachloroethane	ND	0.20								
Indeno(1,2,3-cd)pyrene	ND	0.20								
Isophorone	ND	0.40								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
2-Methylphenol	ND	0.40								
3+4-Methylphenol	ND	0.20								
N-Nitrosodi-n-propylamine	ND	0.20								
N-Nitrosodiphenylamine	ND	0.20								
Naphthalene	ND	0.20								
2-Nitroaniline	ND	0.20								
3-Nitroaniline	ND	0.20								
4-Nitroaniline	ND	0.40								
Nitrobenzene	ND	0.40								
2-Nitrophenol	ND	0.20								
4-Nitrophenol	ND	0.25								
Pentachlorophenol	ND	0.40								
Phenanthrene	ND	0.20								
Phenol	ND	0.20								
Pyrene	ND	0.20								
Pyridine	ND	0.40								
1,2,4-Trichlorobenzene	ND	0.20								
2,4,5-Trichlorophenol	ND	0.20								
2,4,6-Trichlorophenol	ND	0.20								
Surr: 2-Fluorophenol	2.5		3.330		75.1	26.7	85.9			
Surr: Phenol-d5	2.7		3.330		81.6	18.5	101			
Surr: 2,4,6-Tribromophenol	2.7		3.330		81.9	35.8	85.6			
Surr: Nitrobenzene-d5	1.5		1.670		92.4	40.8	95.2			
Surr: 2-Fluorobiphenyl	1.4		1.670		83.2	34.7	85.2			
Surr: 4-Terphenyl-d14	1.3		1.670		79.6	37.4	91.3			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001623**
25-Feb-20

Client: Marathon
Project: Gallup SWMUI Sampling Event

Sample ID: **lcs-49868** SampType: **LCS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS** Batch ID: **49868** RunNo: **65991**
Prep Date: **1/16/2020** Analysis Date: **1/22/2020** SeqNo: **2266576** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.2	0.20	1.670	0	70.4	46	89.5			
4-Chloro-3-methylphenol	2.5	0.50	3.330	0	74.9	44.1	101			
2-Chlorophenol	2.4	0.20	3.330	0	71.3	47	91			
1,4-Dichlorobenzene	1.1	0.20	1.670	0	65.6	41.4	85.8			
2,4-Dinitrotoluene	1.1	0.50	1.670	0	67.7	37.4	82			
N-Nitrosodi-n-propylamine	1.3	0.20	1.670	0	75.0	47.8	92.9			
4-Nitrophenol	2.3	0.25	3.330	0	70.3	45	94.3			
Pentachlorophenol	2.1	0.40	3.330	0	62.6	31.7	76.9			
Phenol	2.4	0.20	3.330	0	71.3	49.4	92.5			
Pyrene	1.2	0.20	1.670	0	71.3	52.9	82.7			
1,2,4-Trichlorobenzene	1.3	0.20	1.670	0	76.5	43.6	98.1			
Surr: 2-Fluorophenol	2.1		3.330		63.8	26.7	85.9			
Surr: Phenol-d5	2.5		3.330		74.3	18.5	101			
Surr: 2,4,6-Tribromophenol	2.3		3.330		70.1	35.8	85.6			
Surr: Nitrobenzene-d5	1.5		1.670		87.0	40.8	95.2			
Surr: 2-Fluorobiphenyl	1.3		1.670		78.7	34.7	85.2			
Surr: 4-Terphenyl-d14	1.3		1.670		76.0	37.4	91.3			

Sample ID: **mb-49889** SampType: **MBLK** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS** Batch ID: **49889** RunNo: **66033**
Prep Date: **1/17/2020** Analysis Date: **1/23/2020** SeqNo: **2267621** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	0.20								
Acenaphthylene	ND	0.20								
Aniline	ND	0.20								
Anthracene	ND	0.20								
Azobenzene	ND	0.20								
Benz(a)anthracene	ND	0.20								
Benzo(a)pyrene	ND	0.20								
Benzo(b)fluoranthene	ND	0.20								
Benzo(g,h,i)perylene	ND	0.20								
Benzo(k)fluoranthene	ND	0.20								
Benzoic acid	ND	0.50								
Benzyl alcohol	ND	0.20								
Bis(2-chloroethoxy)methane	ND	0.20								
Bis(2-chloroethyl)ether	ND	0.20								
Bis(2-chloroisopropyl)ether	ND	0.20								
Bis(2-ethylhexyl)phthalate	ND	0.50								

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001623**
25-Feb-20

Client: Marathon
Project: Gallup SWMUI Sampling Event

Sample ID: **mb-49889**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS**	Batch ID: **49889**	RunNo: **66033**
Prep Date: **1/17/2020**	Analysis Date: **1/23/2020**	SeqNo: **2267621** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Bromophenyl phenyl ether	ND	0.20								
Butyl benzyl phthalate	ND	0.20								
Carbazole	ND	0.20								
4-Chloro-3-methylphenol	ND	0.50								
4-Chloroaniline	ND	0.50								
2-Chloronaphthalene	ND	0.25								
2-Chlorophenol	ND	0.20								
4-Chlorophenyl phenyl ether	ND	0.20								
Chrysene	ND	0.20								
Di-n-butyl phthalate	ND	0.40								
Di-n-octyl phthalate	ND	0.40								
Dibenz(a,h)anthracene	ND	0.20								
Dibenzofuran	ND	0.20								
1,2-Dichlorobenzene	ND	0.20								
1,3-Dichlorobenzene	ND	0.20								
1,4-Dichlorobenzene	ND	0.20								
3,3´-Dichlorobenzidine	ND	0.25								
Diethyl phthalate	ND	0.50								
Dimethyl phthalate	ND	0.20								
2,4-Dichlorophenol	ND	0.40								
2,4-Dimethylphenol	ND	0.30								
4,6-Dinitro-2-methylphenol	ND	0.40								
2,4-Dinitrophenol	ND	0.50								
2,4-Dinitrotoluene	ND	0.50								
2,6-Dinitrotoluene	ND	0.50								
Fluoranthene	ND	0.20								
Fluorene	ND	0.20								
Hexachlorobenzene	ND	0.20								
Hexachlorobutadiene	ND	0.20								
Hexachlorocyclopentadiene	ND	0.20								
Hexachloroethane	ND	0.20								
Indeno(1,2,3-cd)pyrene	ND	0.20								
Isophorone	ND	0.40								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
2-Methylphenol	ND	0.40								
3+4-Methylphenol	ND	0.20								
N-Nitrosodi-n-propylamine	ND	0.20								
N-Nitrosodiphenylamine	ND	0.20								

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001623**
25-Feb-20

Client: Marathon
Project: Gallup SWMUI Sampling Event

Sample ID: **mb-49889** SampType: **MBLK** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS** Batch ID: **49889** RunNo: **66033**
Prep Date: **1/17/2020** Analysis Date: **1/23/2020** SeqNo: **2267621** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	0.20								
2-Nitroaniline	ND	0.20								
3-Nitroaniline	ND	0.20								
4-Nitroaniline	ND	0.40								
Nitrobenzene	ND	0.40								
2-Nitrophenol	ND	0.20								
4-Nitrophenol	ND	0.25								
Pentachlorophenol	ND	0.40								
Phenanthrene	ND	0.20								
Phenol	ND	0.20								
Pyrene	ND	0.20								
Pyridine	ND	0.40								
1,2,4-Trichlorobenzene	ND	0.20								
2,4,5-Trichlorophenol	ND	0.20								
2,4,6-Trichlorophenol	ND	0.20								
Surr: 2-Fluorophenol	1.2		3.330		37.0	26.7	85.9			
Surr: Phenol-d5	1.4		3.330		42.9	18.5	101			
Surr: 2,4,6-Tribromophenol	1.7		3.330		51.6	35.8	85.6			
Surr: Nitrobenzene-d5	0.82		1.670		49.2	40.8	95.2			
Surr: 2-Fluorobiphenyl	0.79		1.670		47.4	34.7	85.2			
Surr: 4-Terphenyl-d14	0.90		1.670		54.2	37.4	91.3			

Sample ID: **lcs-49889** SampType: **LCS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS** Batch ID: **49889** RunNo: **66033**
Prep Date: **1/17/2020** Analysis Date: **1/23/2020** SeqNo: **2267622** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.1	0.20	1.670	0	64.3	46	89.5			
4-Chloro-3-methylphenol	2.3	0.50	3.330	0	69.7	44.1	101			
2-Chlorophenol	2.0	0.20	3.330	0	59.5	47	91			
1,4-Dichlorobenzene	0.84	0.20	1.670	0	50.3	41.4	85.8			
2,4-Dinitrotoluene	1.0	0.50	1.670	0	60.3	37.4	82			
N-Nitrosodi-n-propylamine	1.1	0.20	1.670	0	64.6	47.8	92.9			
4-Nitrophenol	2.2	0.25	3.330	0	65.8	45	94.3			
Pentachlorophenol	2.0	0.40	3.330	0	60.8	31.7	76.9			
Phenol	2.0	0.20	3.330	0	58.8	49.4	92.5			
Pyrene	1.1	0.20	1.670	0	64.1	52.9	82.7			
1,2,4-Trichlorobenzene	1.0	0.20	1.670	0	60.3	43.6	98.1			
Surr: 2-Fluorophenol	1.7		3.330		52.0	26.7	85.9			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001623**
25-Feb-20

Client: Marathon
Project: Gallup SWMUI Sampling Event

Sample ID: **lcs-49889** SampType: **LCS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS** Batch ID: **49889** RunNo: **66033**
Prep Date: **1/17/2020** Analysis Date: **1/23/2020** SeqNo: **2267622** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Phenol-d5	2.1		3.330		61.8	18.5	101			
Surr: 2,4,6-Tribromophenol	2.3		3.330		68.8	35.8	85.6			
Surr: Nitrobenzene-d5	1.1		1.670		66.5	40.8	95.2			
Surr: 2-Fluorobiphenyl	1.0		1.670		61.3	34.7	85.2			
Surr: 4-Terphenyl-d14	1.1		1.670		65.0	37.4	91.3			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001623**
25-Feb-20

Client: Marathon
Project: Gallup SWMUI Sampling Event

Sample ID: **MB-50503**	SampType: **MBLK**	TestCode: **EPA Method 7471: Mercury**							
Client ID: **PBS**	Batch ID: **50503**	RunNo: **66761**							
Prep Date: **2/18/2020**	Analysis Date: **2/24/2020**	SeqNo: **2294680**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.033								

Sample ID: **LCS-50503**	SampType: **LCS**	TestCode: **EPA Method 7471: Mercury**							
Client ID: **LCSS**	Batch ID: **50503**	RunNo: **66761**							
Prep Date: **2/18/2020**	Analysis Date: **2/24/2020**	SeqNo: **2294681**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.17	0.033	0.1667	0	99.6	80	120			

Sample ID: **LLLCS-50503**	SampType: **LCSLL**	TestCode: **EPA Method 7471: Mercury**							
Client ID: **BatchQC**	Batch ID: **50503**	RunNo: **66761**							
Prep Date: **2/18/2020**	Analysis Date: **2/24/2020**	SeqNo: **2294682**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0074	0.033	0.006660	0	111	70	130			J

Sample ID: **2001623-001BMS**	SampType: **MS**	TestCode: **EPA Method 7471: Mercury**							
Client ID: **SWMU1 1-11 1.5'**	Batch ID: **50503**	RunNo: **66761**							
Prep Date: **2/18/2020**	Analysis Date: **2/24/2020**	SeqNo: **2294684**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.29	0.032	0.1633	0.1178	105	80	120			H

Sample ID: **2001623-001BMSD**	SampType: **MSD**	TestCode: **EPA Method 7471: Mercury**							
Client ID: **SWMU1 1-11 1.5'**	Batch ID: **50503**	RunNo: **66761**							
Prep Date: **2/18/2020**	Analysis Date: **2/24/2020**	SeqNo: **2294685**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.30	0.035	0.1769	0.1178	106	80	120	5.31	20	H

Sample ID: **MB-50504**	SampType: **MBLK**	TestCode: **EPA Method 7471: Mercury**							
Client ID: **PBS**	Batch ID: **50504**	RunNo: **66761**							
Prep Date: **2/18/2020**	Analysis Date: **2/24/2020**	SeqNo: **2294711**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.033								

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001623**
25-Feb-20

Client: Marathon
Project: Gallup SWMUI Sampling Event

Sample ID: **LCS-50504** SampType: **LCS** TestCode: **EPA Method 7471: Mercury**
Client ID: **LCSS** Batch ID: **50504** RunNo: **66761**
Prep Date: **2/18/2020** Analysis Date: **2/24/2020** SeqNo: **2294712** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.16	0.033	0.1667	0	96.2	80	120			

Sample ID: **LLLCS-50504** SampType: **LCSLL** TestCode: **EPA Method 7471: Mercury**
Client ID: **BatchQC** Batch ID: **50504** RunNo: **66761**
Prep Date: **2/18/2020** Analysis Date: **2/24/2020** SeqNo: **2294713** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0055	0.033	0.006660	0	82.3	70	130			J

Sample ID: **2001623-021BMS** SampType: **MS** TestCode: **EPA Method 7471: Mercury**
Client ID: **SWMU1-13 7.5'** Batch ID: **50504** RunNo: **66761**
Prep Date: **2/18/2020** Analysis Date: **2/24/2020** SeqNo: **2294717** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.17	0.031	0.1584	0.04284	81.3	80	120			H

Sample ID: **2001623-021BMSD** SampType: **MSD** TestCode: **EPA Method 7471: Mercury**
Client ID: **SWMU1-13 7.5'** Batch ID: **50504** RunNo: **66761**
Prep Date: **2/18/2020** Analysis Date: **2/24/2020** SeqNo: **2294718** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.20	0.031	0.1586	0.04284	98.7	80	120	15.0	20	H

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001623**
25-Feb-20

Client: Marathon
Project: Gallup SWMUI Sampling Event

Sample ID: **MB-49923**	SampType: **MBLK**	TestCode: **MERCURY, TCLP**							
Client ID: **PBW**	Batch ID: **49923**	RunNo: **65928**							
Prep Date: **1/20/2020**	Analysis Date: **1/20/2020**	SeqNo: **2264214**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.020								

Sample ID: **LLLCS-49923**	SampType: **LCSLL**	TestCode: **MERCURY, TCLP**							
Client ID: **BatchQC**	Batch ID: **49923**	RunNo: **65928**							
Prep Date:	Analysis Date: **1/20/2020**	SeqNo: **2264215**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00015	0.020	0.0001500	0	99.1	50	150			J

Sample ID: **LCS-49923**	SampType: **LCS**	TestCode: **MERCURY, TCLP**							
Client ID: **LCSW**	Batch ID: **49923**	RunNo: **65928**							
Prep Date: **1/20/2020**	Analysis Date: **1/20/2020**	SeqNo: **2264216**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0045	0.020	0.005000	0	90.7	80	120			J

Sample ID: **MB-49924**	SampType: **MBLK**	TestCode: **MERCURY, TCLP**							
Client ID: **PBW**	Batch ID: **49924**	RunNo: **65928**							
Prep Date: **1/20/2020**	Analysis Date: **1/20/2020**	SeqNo: **2264217**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.020								

Sample ID: **LCS-49924**	SampType: **LCS**	TestCode: **MERCURY, TCLP**							
Client ID: **LCSW**	Batch ID: **49924**	RunNo: **65928**							
Prep Date: **1/20/2020**	Analysis Date: **1/20/2020**	SeqNo: **2264219**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0044	0.020	0.005000	0	87.5	80	120			J

Sample ID: **LLLCS-49924**	SampType: **LCSLL**	TestCode: **MERCURY, TCLP**							
Client ID: **BatchQC**	Batch ID: **49924**	RunNo: **65928**							
Prep Date:	Analysis Date: **1/20/2020**	SeqNo: **2264220**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.000065	0.020	0.0001500	0	43.4	50	150			JS

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001623**
25-Feb-20

Client: Marathon
Project: Gallup SWMUI Sampling Event

Sample ID: **2001623-001BMS** SampType: **MS** TestCode: **MERCURY, TCLP**
Client ID: **SWMU1 1-11 1.5'** Batch ID: **49923** RunNo: **65928**
Prep Date: **1/20/2020** Analysis Date: **1/20/2020** SeqNo: **2264229** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0042	0.020	0.005000	0	84.0	75	125			J

Sample ID: **2001623-001BMSD** SampType: **MSD** TestCode: **MERCURY, TCLP**
Client ID: **SWMU1 1-11 1.5'** Batch ID: **49923** RunNo: **65928**
Prep Date: **1/20/2020** Analysis Date: **1/20/2020** SeqNo: **2264230** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0043	0.020	0.005000	0	86.3	75	125	2.71	20	J

Sample ID: **2001623-019BMS** SampType: **MS** TestCode: **MERCURY, TCLP**
Client ID: **SWMU1-16 2.5'** Batch ID: **49924** RunNo: **65928**
Prep Date: **1/20/2020** Analysis Date: **1/20/2020** SeqNo: **2264254** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0050	0.020	0.005000	0	99.2	75	125			J

Sample ID: **2001623-019BMSD** SampType: **MSD** TestCode: **MERCURY, TCLP**
Client ID: **SWMU1-16 2.5'** Batch ID: **49924** RunNo: **65928**
Prep Date: **1/20/2020** Analysis Date: **1/20/2020** SeqNo: **2264255** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0049	0.020	0.005000	0	99.0	75	125	0.203	20	J

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001623**
25-Feb-20

Client: Marathon
Project: Gallup SWMUI Sampling Event

Sample ID: **MB-50038** SampType: **MBLK** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **PBS** Batch ID: **50038** RunNo: **66075**
Prep Date: **1/24/2020** Analysis Date: **1/25/2020** SeqNo: **2269315** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	2.5								
Arsenic	ND	2.5								
Barium	ND	0.10								
Beryllium	ND	0.15								
Cadmium	ND	0.10								
Chromium	ND	0.30								
Cobalt	ND	0.30								
Lead	ND	0.25								
Nickel	ND	0.50								
Selenium	1.5	2.5								J
Silver	ND	0.25								
Vanadium	ND	2.5								
Zinc	0.52	2.5								J

Sample ID: **LCS-50038** SampType: **LCS** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **LCSS** Batch ID: **50038** RunNo: **66075**
Prep Date: **1/24/2020** Analysis Date: **1/25/2020** SeqNo: **2269316** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	24	2.5	25.00	0	96.5	80	120			
Arsenic	24	2.5	25.00	0	97.9	80	120			
Barium	25	0.10	25.00	0	101	80	120			
Beryllium	25	0.15	25.00	0	101	80	120			
Cadmium	25	0.10	25.00	0	100	80	120			
Chromium	25	0.30	25.00	0	101	80	120			
Cobalt	25	0.30	25.00	0	98.1	80	120			
Lead	25	0.25	25.00	0	99.8	80	120			
Nickel	25	0.50	25.00	0	98.7	80	120			
Selenium	25	2.5	25.00	0	98.9	80	120			
Silver	5.1	0.25	5.000	0	101	80	120			
Vanadium	26	2.5	25.00	0	104	80	120			
Zinc	24	2.5	25.00	0	97.1	80	120			

Sample ID: **2001623-001BMS** SampType: **MS** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **SWMU1 1-11 1.5'** Batch ID: **50038** RunNo: **66075**
Prep Date: **1/24/2020** Analysis Date: **1/25/2020** SeqNo: **2269384** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	3.3	13	25.69	0	13.0	75	125			JS
Arsenic	26	13	25.69	0	102	75	125			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001623**
25-Feb-20

Client: Marathon
Project: Gallup SWMUI Sampling Event

Sample ID: **2001623-001BMS** SampType: **MS** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **SWMU1 1-11 1.5'** Batch ID: **50038** RunNo: **66075**
Prep Date: **1/24/2020** Analysis Date: **1/25/2020** SeqNo: **2269384** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	640	0.51	25.69	461.8	680	75	125			S
Beryllium	27	0.77	25.69	0.6551	101	75	125			
Cadmium	25	0.51	25.69	0	96.7	75	125			
Chromium	70	1.5	25.69	32.14	147	75	125			S
Cobalt	30	1.5	25.69	3.613	103	75	125			
Lead	30	1.3	25.69	2.716	105	75	125			
Nickel	37	2.6	25.69	7.369	114	75	125			
Selenium	22	13	25.69	0	87.0	75	125			
Silver	4.4	1.3	5.138	0.8794	68.8	75	125			S
Vanadium	54	13	25.69	19.30	134	75	125			S
Zinc	71	13	25.69	36.84	135	75	125			S

Sample ID: **2001623-001BMSD** SampType: **MSD** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **SWMU1 1-11 1.5'** Batch ID: **50038** RunNo: **66075**
Prep Date: **1/24/2020** Analysis Date: **1/25/2020** SeqNo: **2269385** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	3.3	12	24.55	0	13.3	75	125	1.66	20	JS
Arsenic	23	12	24.55	0	94.8	75	125	11.5	20	
Barium	640	0.49	24.55	461.8	716	75	125	0.151	20	S
Beryllium	25	0.74	24.55	0.6551	101	75	125	4.17	20	
Cadmium	23	0.49	24.55	0	95.6	75	125	5.66	20	
Chromium	70	1.5	24.55	32.14	153	75	125	0.520	20	S
Cobalt	29	1.5	24.55	3.613	102	75	125	4.96	20	
Lead	28	1.2	24.55	2.716	103	75	125	5.61	20	
Nickel	34	2.5	24.55	7.369	107	75	125	8.83	20	
Selenium	26	12	24.55	0	104	75	125	13.5	20	
Silver	4.4	1.2	4.910	0.8794	70.7	75	125	1.35	20	S
Vanadium	50	12	24.55	19.30	124	75	125	7.57	20	
Zinc	70	12	24.55	36.84	135	75	125	2.09	20	S

Sample ID: **MB-50072** SampType: **MBLK** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **PBS** Batch ID: **50072** RunNo: **66115**
Prep Date: **1/27/2020** Analysis Date: **1/28/2020** SeqNo: **2270803** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.38	2.5								J
Arsenic	ND	2.5								
Barium	ND	0.10								
Beryllium	ND	0.15								

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001623**
25-Feb-20

Client: Marathon
Project: Gallup SWMUI Sampling Event

Sample ID: **MB-50072** SampType: **MBLK** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **PBS** Batch ID: **50072** RunNo: **66115**
Prep Date: **1/27/2020** Analysis Date: **1/28/2020** SeqNo: **2270803** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	ND	0.10								
Chromium	ND	0.30								
Cobalt	ND	0.30								
Nickel	0.19	0.50								J
Selenium	ND	2.5								
Silver	ND	0.25								
Vanadium	ND	2.5								
Zinc	ND	2.5								

Sample ID: **LCS-50072** SampType: **LCS** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **LCSS** Batch ID: **50072** RunNo: **66115**
Prep Date: **1/27/2020** Analysis Date: **1/28/2020** SeqNo: **2270804** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	25	2.5	25.00	0	100	80	120			
Arsenic	25	2.5	25.00	0	102	80	120			
Barium	25	0.10	25.00	0	102	80	120			
Beryllium	26	0.15	25.00	0	103	80	120			
Cadmium	25	0.10	25.00	0	101	80	120			
Chromium	26	0.30	25.00	0	102	80	120			
Cobalt	25	0.30	25.00	0	102	80	120			
Nickel	26	0.50	25.00	0	102	80	120			
Selenium	24	2.5	25.00	0	97.2	80	120			
Silver	5.0	0.25	5.000	0	101	80	120			
Vanadium	26	2.5	25.00	0	103	80	120			
Zinc	25	2.5	25.00	0	100	80	120			

Sample ID: **2001623-011BMS** SampType: **MS** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **DUP 1** Batch ID: **50072** RunNo: **66115**
Prep Date: **1/27/2020** Analysis Date: **1/28/2020** SeqNo: **2270807** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	6.2	4.9	24.51	0	25.5	75	125			S
Arsenic	22	4.9	24.51	0	89.5	75	125			
Barium	470	0.20	24.51	333.7	550	75	125			S
Beryllium	21	0.29	24.51	0.8433	83.2	75	125			
Cadmium	20	0.20	24.51	0	81.1	75	125			
Chromium	29	0.59	24.51	8.327	84.7	75	125			
Cobalt	23	0.59	24.51	3.795	77.4	75	125			
Nickel	26	0.98	24.51	7.638	76.6	75	125			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001623**
25-Feb-20

Client: Marathon
Project: Gallup SWMUI Sampling Event

Sample ID: **2001623-011BMS** SampType: **MS** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **DUP 1** Batch ID: **50072** RunNo: **66115**
Prep Date: **1/27/2020** Analysis Date: **1/28/2020** SeqNo: **2270807** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	17	4.9	24.51	0	71.0	75	125			S
Silver	3.8	0.49	4.902	0	76.6	75	125			
Vanadium	40	4.9	24.51	17.31	92.2	75	125			
Zinc	34	4.9	24.51	14.90	79.0	75	125			

Sample ID: **2001623-011BMSD** SampType: **MSD** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **DUP 1** Batch ID: **50072** RunNo: **66115**
Prep Date: **1/27/2020** Analysis Date: **1/28/2020** SeqNo: **2270808** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	6.3	4.9	24.39	0	26.0	75	125	1.54	20	S
Arsenic	21	4.9	24.39	0	85.8	75	125	4.73	20	
Barium	480	0.20	24.39	333.7	598	75	125	2.36	20	S
Beryllium	23	0.29	24.39	0.8433	89.6	75	125	6.62	20	
Cadmium	21	0.20	24.39	0	86.9	75	125	6.30	20	
Chromium	33	0.59	24.39	8.327	102	75	125	13.1	20	
Cobalt	25	0.59	24.39	3.795	87.5	75	125	9.87	20	
Nickel	29	0.98	24.39	7.638	87.3	75	125	9.10	20	
Selenium	22	4.9	24.39	0	89.4	75	125	22.4	20	R
Silver	3.7	0.49	4.877	0	75.0	75	125	2.59	20	
Vanadium	43	4.9	24.39	17.31	106	75	125	8.08	20	
Zinc	42	4.9	24.39	14.90	110	75	125	19.8	20	

Sample ID: **MB-50072** SampType: **MBLK** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **PBS** Batch ID: **50072** RunNo: **66115**
Prep Date: **1/27/2020** Analysis Date: **1/28/2020** SeqNo: **2270849** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	ND	0.25								

Sample ID: **LCS-50072** SampType: **LCS** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **LCSS** Batch ID: **50072** RunNo: **66115**
Prep Date: **1/27/2020** Analysis Date: **1/28/2020** SeqNo: **2270850** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	25	0.25	25.00	0	101	80	120			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001623**
25-Feb-20

Client: Marathon
Project: Gallup SWMUI Sampling Event

Sample ID: **2001623-011BMS**	SampType: **MS**	TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **DUP 1**	Batch ID: **50072**	RunNo: **66115**
Prep Date: **1/27/2020**	Analysis Date: **1/28/2020**	SeqNo: **2270853** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	22	0.49	24.51	2.220	79.9	75	125			

Sample ID: **2001623-011BMSD**	SampType: **MSD**	TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **DUP 1**	Batch ID: **50072**	RunNo: **66115**
Prep Date: **1/27/2020**	Analysis Date: **1/28/2020**	SeqNo: **2270854** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	23	0.49	24.39	2.220	83.5	75	125	3.55	20	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2001623**

25-Feb-20

Client: Marathon

Project: Gallup SWMUI Sampling Event

Sample ID: **MB-49897**	SampType: **MBLK**	TestCode: **EPA Method 6010B: TCLP Metals**							
Client ID: **PBW**	Batch ID: **49897**	RunNo: **65916**							
Prep Date: **1/17/2020**	Analysis Date: **1/20/2020**	SeqNo: **2263497**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	ND	5.0								

Sample ID: **LCS-49897**	SampType: **LCS**	TestCode: **EPA Method 6010B: TCLP Metals**							
Client ID: **LCSW**	Batch ID: **49897**	RunNo: **65916**							
Prep Date: **1/17/2020**	Analysis Date: **1/20/2020**	SeqNo: **2263499**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.49	5.0	0.5000	0	98.3	80	120			J

Sample ID: **MB-49932**	SampType: **MBLK**	TestCode: **EPA Method 6010B: TCLP Metals**							
Client ID: **PBW**	Batch ID: **49932**	RunNo: **65936**							
Prep Date: **1/20/2020**	Analysis Date: **1/21/2020**	SeqNo: **2264468**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	ND	5.0								

Sample ID: **LCS-49932**	SampType: **LCS**	TestCode: **EPA Method 6010B: TCLP Metals**							
Client ID: **LCSW**	Batch ID: **49932**	RunNo: **65936**							
Prep Date: **1/20/2020**	Analysis Date: **1/21/2020**	SeqNo: **2264469**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.49	5.0	0.5000	0	98.8	80	120			J

Sample ID: **2001623-013BMS**	SampType: **MS**	TestCode: **EPA Method 6010B: TCLP Metals**							
Client ID: **SWMU1-13 5'**	Batch ID: **49932**	RunNo: **65936**							
Prep Date: **1/20/2020**	Analysis Date: **1/21/2020**	SeqNo: **2264584**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.47	5.0	0.5000	0	93.5	75	125			J

Sample ID: **2001623-013BMSD**	SampType: **MSD**	TestCode: **EPA Method 6010B: TCLP Metals**							
Client ID: **SWMU1-13 5'**	Batch ID: **49932**	RunNo: **65936**							
Prep Date: **1/20/2020**	Analysis Date: **1/21/2020**	SeqNo: **2264585**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.48	5.0	0.5000	0	95.4	75	125	2.01	20	J

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001623**
25-Feb-20

Client: Marathon
Project: Gallup SWMUI Sampling Event

Sample ID: **2001623-018BDUP** SampType: **DUP** TestCode: **FREE LIQUID/PAINT FILTER**
Client ID: **SWMU1-19 1.5'** Batch ID: **R65979** RunNo: **65979**
Prep Date: Analysis Date: **1/21/2020** SeqNo: **2266201** Units: **Pos/Neg**

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

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001623**
25-Feb-20

Client: Marathon
Project: Gallup SWMUI Sampling Event

Sample ID: **2001623-002BDUP**	SampType: **DUP**	TestCode: **SM4500H+B/EPA 9040C**							
Client ID: **SWMU1- 1-11 5'**	Batch ID: **R65942**	RunNo: **65942**							
Prep Date:	Analysis Date: **1/21/2020**	SeqNo: **2264655**	Units: **pH Units**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
pH	7.91									

Sample ID: **2001623-020BDUP**	SampType: **DUP**	TestCode: **SM4500H+B/EPA 9040C**							
Client ID: **SWMU1-13 9'**	Batch ID: **R65980**	RunNo: **65980**							
Prep Date:	Analysis Date: **1/22/2020**	SeqNo: **2266222**	Units: **pH Units**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
pH	7.95									

Qualifiers:

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: MARATHON GALLUP Work Order Number: 2001623 RcptNo: 1

Received By: **Daniel Marquez** 1/16/2020 10:05:00 AM

Completed By: **Anne Thorne** 1/16/2020 11:57:47 AM

Reviewed By: DAD 1/16/20

Chain of Custody

1. Is Chain of Custody sufficiently 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: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: ENM 1/16/20

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: 1/3 of all provided 40z jars cut into 40z jar for specific gravity analysis. -ENM 1/16/20

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	4.6	Good	Not Present			
2	2.0	Good	Not Present			
3	4.7	Good	Not Present			

Released to Imaging: 3/2/2021 2:22:29 PM
Received by OCD: 3/2/2021 2:16:14 PM

Chain-of-Custody Record

Client: Marathon Petroleum Company

Mailing Address: 92 Giant Crossing Rd
Gallup, NM 87347

Phone #: 505-726-9745

email or Fax#:

QA/QC Package:
~~Standard~~ ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other

~~EDD~~ (Type)

Turn-Around Time:
~~Standard~~ ☐ Rush

Project Name: Gallup SWMU1 - Sampling Event

Project #: 697-070-001

Project Manager: Paul Hildebrandt

Sampler:

On Ice: ~~Yes~~ ☐ No

Sample Temperature: 4.6 - 0.1 = 4.6°C

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 2001623	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO3,NO2,PO4,SO4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	TCLP Lead, Mercury	pH Paint Filter	Specific Gravity	Sb,As,Ba,Be,Cd,Cr,Co,Pb	~~Anions (Cl,NO3-N,SO4)~~ Ni,Se,Ag,V,Zn
1/13/20	13:20	~~Sediment~~	SWMU1 1-11 15Ft	Glass 4	—	-001			X							X	X	X	X	X	X	
1/13/20	13:35	~~Sediment~~	SWMU1-11 5Ft	bottle 4	—	002			X							X	X	X	X	X	X	
1/13/20	13:30	Sediment	SWMU1-11 2.5Ft	bottle 4	—	003			X							X	X	X	X	X	X	
1/13/20	14:03	"	SWMU1-12 2.5Ft	"	—	004			X							X	X	X	X	X	X	
1/13/20	13:40	"	SWMU1-11 7.5Ft	"	—	005			X							X	X	X	X	X	X	
1/13/20	14:05	"	SWMU1-12 2.5Ft	"	—	006			X							X	X	X	X	X	X	
1/13/20	14:15	"	SWMU1-12 5Ft	"	—	007			X							X	X	X	X	X	X	
1/13/20	16:40	"	SWMU 1-13 2.5Ft	"	—	008			X							X	X	X	X	X	X	
1/13/20	16:12	"	SWMU 1-18 2.5Ft	"	—	009			X							X	X	X	X	X	X	
1/13/20	14:21	"	SWMU 1-12 2.5Ft	"		010			X							X	X	X	X	X	X	

Date:	Time:	Relinquished by:	Received by:	Date	Time
1/10/20	1525		CDO	1/14/20	1005
Date:	Time:	Relinquished by:	Received by:	Date	Time
1/16	1005				

Remarks: PLZ hold soil for possible TCLP benzene, if detected

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Released to Imaging: 3/2/2021 2:22:29 PM
Received by OCD: 3/2/2021 2:18:50 PM

Chain-of-Custody Record

D

Client: Marathon Petroleum Company

Mailing Address: 92 Giant Crossing Rd
Gallup NM 87347

Phone #: 505 726 9745

email or Fax#:

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other

☒ EDD (Type)

Turn-Around Time:
☐ Standard ☐ Rush

Project Name: Gallup SWMU1 Sampling Event

Project #: 697-070-001

Project Manager: Paul Hildebrandt

Sampler:
On Ice: ☑ Yes ☐ No

Sample Temperature: 2.1-0.1=2.0°

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 Request ID	Container Type and #	Preservative Type	HEAL No. 2001623	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO3,NO2,PO4,SO4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	TCLP Lead, Mercury	Paint Filter	Specific Gravity	SL, 4 Ba, Be, Cd, Cr, Co, Pb, Ni,	Air Bubbles (Y or N)
1/13/20	—	Sed	DUP1	Glass 4	—	001			X							X	X	X	X	X	X	
1/13/20	—	Sed	DUP2	11		002			X							X	X	X	X	X	X	
1/13/20	1452	Sed	SWMU1-13 5Ft	11		003			X							X	X	X	X	X	X	
1/13/20	1515	Sed	SWMU1-15 1.5Ft	11		004			X							X	X	X	X	X	X	
1/13/20	1444	Sed	SWMU1-13 1.5Ft	11		005			X							X	X	X	X	X	X	

Date	Time	Relinquished by:	Received by:	Date	Time
1/15/20	1925		COC	1/16/20	1005
1/16/20	1005				

Remarks: PLZ hold soil for possible TCLP benzene

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Released to Imaging: 3/2/2021 2:22:29 PM
Received by OCD: 3/2/2021 2:18:14 PM

Chain-of-Custody Record

Client: Marathon Petroleum Company

Mailing Address: 92 Giant Crossing Rd
Gallup NM 87347

Phone #: 505 726 9745

email or Fax#:

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☒ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: Gallup SWMU1 - Sampling Event

Project #: 697-070-001

Project Manager: Paul Hildebrandt

Sampler:

On Ice: ☑ Yes ☐ No

Sample Temperature: 4.8-0.1=4.7°C

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Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 2001623	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	TCLP Lead, Mercury	Paint Filter	Specific Gravity	Sb, As, Ba, Be, Cd, Cr, Co, Pb	Air Bubbles (Y or N) Ni, Se, Ag
1/13/20	1604	Sediment	SWMU1-17 2.5ft	bottles 4	—	016			X							X	X	X	X	X	X	
1/13/20	1555	Sediment	SWMU1-17 1.5ft	bottles 4	—	017			X							X	X	X	X	X	X	
1/13/20	1633	Sediment	SWMU1-19 1.5ft	bottles 4		018			X							X	X	X	X	X	X	
1/13/20	1535	"	SWMU1-16 2.5ft	"		019			X							X	X	X	X	X	X	
1/13/20	1503	"	SWMU1-13 9ft	"		020			X							X	X	X	X	X	X	
1/13/20	14:38	"	SWMU1-13 7.5ft	"		021			X							X	X	X	X	X	X	
1/13/20	15:20	"	SWMU1-15 2.5ft	"		022			X							X	X	X	X	X	X	
1/13/20	14:47	"	SWMU1-13 2.5ft	"		023			X							X	X	X	X	X	X	
1/13/20	15:30	"	SWMU1-16 1.5ft	"		024			X							X	X	X	X	X	X	

Date	Time	Relinquished by	Received by	Date	Time
1/15/20	1925		CDO	1/16/20	1005
1/16/20	1005				

Remarks: P/Z hold some soil for possible TCLP benzene if detected

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

February 28, 2020

Paul Hildebrandt

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

RE: Gallup SWMUI Sampling Event OrderNo.: 2001723

Dear Paul Hildebrandt:

Hall Environmental Analysis Laboratory received 28 sample(s) on 1/17/2020 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued January 31, 2020.

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. 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. All samples are reported as received unless otherwise indicated.

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

Sincerely,



Andy Freeman

Laboratory Manager

4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: Dup 3
Project: Gallup SWMUI Sampling Event
Collection Date:
Lab ID: 2001723-001 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	18	2.3	9.6		mg/Kg	1	1/21/2020 7:35:53 PM	49914
Motor Oil Range Organics (MRO)	ND	48	48		mg/Kg	1	1/21/2020 7:35:53 PM	49914
Surr: DNOP	111	0	55.1-146		%Rec	1	1/21/2020 7:35:53 PM	49914
EPA METHOD 7471: MERCURY							Analyst: **rde**	
Mercury	ND	0.0089	0.16		mg/Kg	5	2/25/2020 3:13:35 PM	50632
MERCURY, TCLP							Analyst: **pmf**	
Mercury	0.0014	0.00075	0.020	J	mg/L	1	1/20/2020 9:00:56 PM	49924
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.75	5.1		mg/Kg	2	1/21/2020 9:07:31 AM	49919
Arsenic	ND	2.9	5.1		mg/Kg	2	1/21/2020 9:07:31 AM	49919
Barium	280	0.047	0.20		mg/Kg	2	1/21/2020 9:07:31 AM	49919
Beryllium	1.2	0.019	0.30		mg/Kg	2	1/21/2020 9:07:31 AM	49919
Cadmium	ND	0.049	0.20		mg/Kg	2	1/21/2020 9:07:31 AM	49919
Chromium	13	0.16	0.61		mg/Kg	2	1/21/2020 9:07:31 AM	49919
Cobalt	6.0	0.21	0.61		mg/Kg	2	1/21/2020 9:07:31 AM	49919
Lead	3.3	0.49	0.51		mg/Kg	2	1/21/2020 9:07:31 AM	49919
Nickel	11	0.30	1.0		mg/Kg	2	1/21/2020 9:07:31 AM	49919
Selenium	ND	2.6	5.1		mg/Kg	2	1/21/2020 9:07:31 AM	49919
Silver	ND	0.065	0.51		mg/Kg	2	1/21/2020 9:07:31 AM	49919
Vanadium	20	0.14	5.1		mg/Kg	2	1/21/2020 9:07:31 AM	49919
Zinc	18	0.80	5.1		mg/Kg	2	1/21/2020 9:07:31 AM	49919
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/21/2020 11:08:32 AM	49933
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.14	0.38	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
Acenaphthylene	ND	0.17	0.38	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
Aniline	ND	0.13	0.38	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
Anthracene	ND	0.15	0.38	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
Azobenzene	ND	0.19	0.38	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
Benz(a)anthracene	ND	0.13	0.38	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
Benzo(a)pyrene	ND	0.20	0.38	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
Benzo(b)fluoranthene	ND	0.22	0.38	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
Benzo(g,h,i)perylene	ND	0.19	0.38	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
Benzo(k)fluoranthene	ND	0.11	0.38	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
Benzoic acid	ND	0.26	0.94	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
Benzyl alcohol	ND	0.16	0.38	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
Bis(2-chloroethoxy)methane	ND	0.16	0.38	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908

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

Qualifiers:

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

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: Dup 3
Project: Gallup SWMUI Sampling Event
Collection Date:
Lab ID: 2001723-001 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.22	0.38	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
Bis(2-chloroisopropyl)ether	ND	0.16	0.38	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
Bis(2-ethylhexyl)phthalate	ND	0.42	0.94	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
4-Bromophenyl phenyl ether	ND	0.22	0.38	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
Butyl benzyl phthalate	ND	0.13	0.38	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
Carbazole	ND	0.15	0.38	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
4-Chloro-3-methylphenol	ND	0.15	0.94	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
4-Chloroaniline	ND	0.14	0.94	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
2-Chloronaphthalene	ND	0.16	0.47	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
2-Chlorophenol	ND	0.21	0.38	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
4-Chlorophenyl phenyl ether	ND	0.16	0.38	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
Chrysene	ND	0.15	0.38	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
Di-n-butyl phthalate	ND	0.56	0.76	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
Di-n-octyl phthalate	ND	0.13	0.76	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
Dibenz(a,h)anthracene	ND	0.21	0.38	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
Dibenzofuran	ND	0.19	0.38	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
1,2-Dichlorobenzene	ND	0.15	0.38	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
1,3-Dichlorobenzene	ND	0.13	0.38	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
1,4-Dichlorobenzene	ND	0.16	0.38	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
3,3´-Dichlorobenzidine	ND	0.16	0.47	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
Diethyl phthalate	ND	0.58	0.94	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
Dimethyl phthalate	ND	0.15	0.38	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
2,4-Dichlorophenol	ND	0.16	0.76	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
2,4-Dimethylphenol	ND	0.16	0.57	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
4,6-Dinitro-2-methylphenol	ND	0.14	0.76	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
2,4-Dinitrophenol	ND	0.11	0.94	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
2,4-Dinitrotoluene	ND	0.19	0.94	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
2,6-Dinitrotoluene	ND	0.22	0.94	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
Fluoranthene	ND	0.14	0.38	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
Fluorene	ND	0.15	0.38	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
Hexachlorobenzene	ND	0.15	0.38	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
Hexachlorobutadiene	ND	0.17	0.38	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
Hexachlorocyclopentadiene	ND	0.18	0.38	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
Hexachloroethane	ND	0.15	0.38	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
Indeno(1,2,3-cd)pyrene	ND	0.23	0.38	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
Isophorone	ND	0.16	0.76	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
1-Methylnaphthalene	ND	0.18	0.38	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
2-Methylnaphthalene	ND	0.15	0.38	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
2-Methylphenol	ND	0.16	0.76	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908

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

Qualifiers:

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

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: Dup 3
Project: Gallup SWMUI Sampling Event
Collection Date:
Lab ID: 2001723-001 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.14	0.38	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
N-Nitrosodi-n-propylamine	ND	0.19	0.38	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
N-Nitrosodiphenylamine	ND	0.19	0.38	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
Naphthalene	ND	0.15	0.38	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
2-Nitroaniline	ND	0.21	0.38	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
3-Nitroaniline	ND	0.19	0.38	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
4-Nitroaniline	ND	0.25	0.76	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
Nitrobenzene	ND	0.16	0.76	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
2-Nitrophenol	ND	0.16	0.38	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
4-Nitrophenol	ND	0.11	0.47	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
Pentachlorophenol	ND	0.17	0.76	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
Phenanthrene	ND	0.19	0.38	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
Phenol	ND	0.16	0.38	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
Pyrene	ND	0.12	0.38	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
Pyridine	ND	0.35	0.76	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
1,2,4-Trichlorobenzene	ND	0.16	0.38	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
2,4,5-Trichlorophenol	ND	0.12	0.38	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
2,4,6-Trichlorophenol	ND	0.19	0.38	D	mg/Kg	1	1/24/2020 11:06:31 AM	49908
Surr: 2-Fluorophenol	49.4		26.7-85.9	D	%Rec	1	1/24/2020 11:06:31 AM	49908
Surr: Phenol-d5	56.6		18.5-101	D	%Rec	1	1/24/2020 11:06:31 AM	49908
Surr: 2,4,6-Tribromophenol	56.1		35.8-85.6	D	%Rec	1	1/24/2020 11:06:31 AM	49908
Surr: Nitrobenzene-d5	69.9		40.8-95.2	D	%Rec	1	1/24/2020 11:06:31 AM	49908
Surr: 2-Fluorobiphenyl	64.8		34.7-85.2	D	%Rec	1	1/24/2020 11:06:31 AM	49908
Surr: 4-Terphenyl-d14	60.7		37.4-91.3	D	%Rec	1	1/24/2020 11:06:31 AM	49908
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.0028	0.017		mg/Kg	1	1/21/2020 2:56:54 PM	A65958
Toluene	0.0041	0.0032	0.034	J	mg/Kg	1	1/21/2020 2:56:54 PM	A65958
Ethylbenzene	ND	0.0020	0.034		mg/Kg	1	1/21/2020 2:56:54 PM	A65958
Methyl tert-butyl ether (MTBE)	ND	0.0080	0.034		mg/Kg	1	1/21/2020 2:56:54 PM	A65958
1,2,4-Trimethylbenzene	ND	0.0031	0.034		mg/Kg	1	1/21/2020 2:56:54 PM	A65958
1,3,5-Trimethylbenzene	ND	0.0033	0.034		mg/Kg	1	1/21/2020 2:56:54 PM	A65958
1,2-Dichloroethane (EDC)	ND	0.0034	0.034		mg/Kg	1	1/21/2020 2:56:54 PM	A65958
1,2-Dibromoethane (EDB)	ND	0.0031	0.034		mg/Kg	1	1/21/2020 2:56:54 PM	A65958
Naphthalene	ND	0.0068	0.068		mg/Kg	1	1/21/2020 2:56:54 PM	A65958
1-Methylnaphthalene	ND	0.019	0.14		mg/Kg	1	1/21/2020 2:56:54 PM	A65958
2-Methylnaphthalene	ND	0.015	0.14		mg/Kg	1	1/21/2020 2:56:54 PM	A65958
Acetone	ND	0.028	0.51		mg/Kg	1	1/21/2020 2:56:54 PM	A65958
Bromobenzene	ND	0.0032	0.034		mg/Kg	1	1/21/2020 2:56:54 PM	A65958
Bromodichloromethane	ND	0.0031	0.034		mg/Kg	1	1/21/2020 2:56:54 PM	A65958

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Qualifiers:

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

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: Dup 3
Project: Gallup SWMUI Sampling Event
Collection Date:
Lab ID: 2001723-001 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Bromoform	ND	0.0030	0.034		mg/Kg	1	1/21/2020 2:56:54 PM	A65958
Bromomethane	ND	0.0081	0.10		mg/Kg	1	1/21/2020 2:56:54 PM	A65958
2-Butanone	ND	0.039	0.34		mg/Kg	1	1/21/2020 2:56:54 PM	A65958
Carbon disulfide	ND	0.011	0.34		mg/Kg	1	1/21/2020 2:56:54 PM	A65958
Carbon tetrachloride	ND	0.0032	0.034		mg/Kg	1	1/21/2020 2:56:54 PM	A65958
Chlorobenzene	ND	0.0043	0.034		mg/Kg	1	1/21/2020 2:56:54 PM	A65958
Chloroethane	ND	0.0050	0.068		mg/Kg	1	1/21/2020 2:56:54 PM	A65958
Chloroform	ND	0.0027	0.034		mg/Kg	1	1/21/2020 2:56:54 PM	A65958
Chloromethane	ND	0.0032	0.10		mg/Kg	1	1/21/2020 2:56:54 PM	A65958
2-Chlorotoluene	ND	0.0029	0.034		mg/Kg	1	1/21/2020 2:56:54 PM	A65958
4-Chlorotoluene	ND	0.0028	0.034		mg/Kg	1	1/21/2020 2:56:54 PM	A65958
cis-1,2-DCE	ND	0.0046	0.034		mg/Kg	1	1/21/2020 2:56:54 PM	A65958
cis-1,3-Dichloropropene	ND	0.0028	0.034		mg/Kg	1	1/21/2020 2:56:54 PM	A65958
1,2-Dibromo-3-chloropropane	ND	0.0035	0.068		mg/Kg	1	1/21/2020 2:56:54 PM	A65958
Dibromochloromethane	ND	0.0024	0.034		mg/Kg	1	1/21/2020 2:56:54 PM	A65958
Dibromomethane	ND	0.0036	0.034		mg/Kg	1	1/21/2020 2:56:54 PM	A65958
1,2-Dichlorobenzene	ND	0.0028	0.034		mg/Kg	1	1/21/2020 2:56:54 PM	A65958
1,3-Dichlorobenzene	ND	0.0029	0.034		mg/Kg	1	1/21/2020 2:56:54 PM	A65958
1,4-Dichlorobenzene	ND	0.0028	0.034		mg/Kg	1	1/21/2020 2:56:54 PM	A65958
Dichlorodifluoromethane	ND	0.0078	0.034		mg/Kg	1	1/21/2020 2:56:54 PM	A65958
1,1-Dichloroethane	ND	0.0022	0.034		mg/Kg	1	1/21/2020 2:56:54 PM	A65958
1,1-Dichloroethene	ND	0.014	0.034		mg/Kg	1	1/21/2020 2:56:54 PM	A65958
1,2-Dichloropropane	ND	0.0025	0.034		mg/Kg	1	1/21/2020 2:56:54 PM	A65958
1,3-Dichloropropane	ND	0.0037	0.034		mg/Kg	1	1/21/2020 2:56:54 PM	A65958
2,2-Dichloropropane	ND	0.011	0.068		mg/Kg	1	1/21/2020 2:56:54 PM	A65958
1,1-Dichloropropene	ND	0.0031	0.068		mg/Kg	1	1/21/2020 2:56:54 PM	A65958
Hexachlorobutadiene	ND	0.0034	0.068		mg/Kg	1	1/21/2020 2:56:54 PM	A65958
2-Hexanone	ND	0.0056	0.34		mg/Kg	1	1/21/2020 2:56:54 PM	A65958
Isopropylbenzene	ND	0.0024	0.034		mg/Kg	1	1/21/2020 2:56:54 PM	A65958
4-Isopropyltoluene	ND	0.0028	0.034		mg/Kg	1	1/21/2020 2:56:54 PM	A65958
4-Methyl-2-pentanone	ND	0.0064	0.34		mg/Kg	1	1/21/2020 2:56:54 PM	A65958
Methylene chloride	0.027	0.0060	0.10	J	mg/Kg	1	1/21/2020 2:56:54 PM	A65958
n-Butylbenzene	ND	0.0032	0.10		mg/Kg	1	1/21/2020 2:56:54 PM	A65958
n-Propylbenzene	ND	0.0027	0.034		mg/Kg	1	1/21/2020 2:56:54 PM	A65958
sec-Butylbenzene	ND	0.0038	0.034		mg/Kg	1	1/21/2020 2:56:54 PM	A65958
Styrene	ND	0.0027	0.034		mg/Kg	1	1/21/2020 2:56:54 PM	A65958
tert-Butylbenzene	ND	0.0032	0.034		mg/Kg	1	1/21/2020 2:56:54 PM	A65958
1,1,1,2-Tetrachloroethane	ND	0.0023	0.034		mg/Kg	1	1/21/2020 2:56:54 PM	A65958
1,1,2,2-Tetrachloroethane	ND	0.0034	0.034		mg/Kg	1	1/21/2020 2:56:54 PM	A65958

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

Qualifiers:

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

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: Dup 3
Project: Gallup SWMUI Sampling Event
Collection Date:
Lab ID: 2001723-001 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Tetrachloroethene (PCE)	ND	0.0027	0.034		mg/Kg	1	1/21/2020 2:56:54 PM	A65958
trans-1,2-DCE	ND	0.0031	0.034		mg/Kg	1	1/21/2020 2:56:54 PM	A65958
trans-1,3-Dichloropropene	ND	0.0036	0.034		mg/Kg	1	1/21/2020 2:56:54 PM	A65958
1,2,3-Trichlorobenzene	ND	0.0030	0.068		mg/Kg	1	1/21/2020 2:56:54 PM	A65958
1,2,4-Trichlorobenzene	ND	0.0034	0.034		mg/Kg	1	1/21/2020 2:56:54 PM	A65958
1,1,1-Trichloroethane	ND	0.0031	0.034		mg/Kg	1	1/21/2020 2:56:54 PM	A65958
1,1,2-Trichloroethane	ND	0.0024	0.034		mg/Kg	1	1/21/2020 2:56:54 PM	A65958
Trichloroethene (TCE)	ND	0.0039	0.034		mg/Kg	1	1/21/2020 2:56:54 PM	A65958
Trichlorofluoromethane	ND	0.011	0.034		mg/Kg	1	1/21/2020 2:56:54 PM	A65958
1,2,3-Trichloropropane	ND	0.0055	0.068		mg/Kg	1	1/21/2020 2:56:54 PM	A65958
Vinyl chloride	ND	0.0022	0.034		mg/Kg	1	1/21/2020 2:56:54 PM	A65958
Xylenes, Total	ND	0.0085	0.068		mg/Kg	1	1/21/2020 2:56:54 PM	A65958
Surr: Dibromofluoromethane	106		70-130		%Rec	1	1/21/2020 2:56:54 PM	A65958
Surr: 1,2-Dichloroethane-d4	88.0		70-130		%Rec	1	1/21/2020 2:56:54 PM	A65958
Surr: Toluene-d8	96.6		70-130		%Rec	1	1/21/2020 2:56:54 PM	A65958
Surr: 4-Bromofluorobenzene	96.5		70-130		%Rec	1	1/21/2020 2:56:54 PM	A65958
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	ND	0.72	3.4		mg/Kg	1	1/21/2020 2:56:54 PM	AG659
Surr: BFB	92.6	0	70-130		%Rec	1	1/21/2020 2:56:54 PM	AG659
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/21/2020 2:26:00 PM	R6597
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	8.45				pH Units	1	1/22/2020 11:38:00 AM	R6598
SPECIFIC GRAVITY							Analyst: **PAC**	
Specific Gravity	1.640				g/cm3	1	1/25/2020	R66241

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Qualifiers:

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

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-21 Toe Surface
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 10:35:00 AM
Lab ID: 2001723-002 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **CLP**	
Diesel Range Organics (DRO)	48000	230	970		mg/Kg	100	1/22/2020 10:03:33 AM	49914
Motor Oil Range Organics (MRO)	18000	4800	4800		mg/Kg	100	1/22/2020 10:03:33 AM	49914
Surr: DNOP	0	0	55.1-146	S	%Rec	100	1/22/2020 10:03:33 AM	49914
EPA METHOD 7471: MERCURY							Analyst: **rde**	
Mercury	3.5	0.19	3.5	H	mg/Kg	100	2/25/2020 3:27:55 PM	50632
MERCURY, TCLP							Analyst: **pmf**	
Mercury	0.0014	0.00075	0.020	J	mg/L	1	1/20/2020 9:03:45 PM	49924
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.74	5.1		mg/Kg	2	1/21/2020 9:18:47 AM	49919
Arsenic	4.0	2.9	5.1	J	mg/Kg	2	1/21/2020 9:18:47 AM	49919
Barium	180	0.047	0.20		mg/Kg	2	1/21/2020 9:18:47 AM	49919
Beryllium	0.51	0.019	0.30		mg/Kg	2	1/21/2020 9:18:47 AM	49919
Cadmium	ND	0.049	0.20		mg/Kg	2	1/21/2020 9:18:47 AM	49919
Chromium	24	0.16	0.61		mg/Kg	2	1/21/2020 9:18:47 AM	49919
Cobalt	4.0	0.21	0.61		mg/Kg	2	1/21/2020 9:18:47 AM	49919
Lead	19	0.49	0.51		mg/Kg	2	1/21/2020 9:18:47 AM	49919
Nickel	20	0.30	1.0		mg/Kg	2	1/21/2020 9:18:47 AM	49919
Selenium	3.7	2.5	5.1	J	mg/Kg	2	1/21/2020 9:18:47 AM	49919
Silver	ND	0.065	0.51		mg/Kg	2	1/21/2020 9:18:47 AM	49919
Vanadium	20	0.13	5.1		mg/Kg	2	1/21/2020 9:18:47 AM	49919
Zinc	600	2.0	13		mg/Kg	5	1/21/2020 10:16:29 AM	49919
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/21/2020 11:12:48 AM	49933
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	1.9	4.9	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908
Acenaphthylene	ND	2.2	4.9	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908
Aniline	ND	1.7	4.9	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908
Anthracene	ND	1.9	4.9	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908
Azobenzene	ND	2.5	4.9	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908
Benz(a)anthracene	ND	1.7	4.9	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908
Benzo(a)pyrene	ND	2.7	4.9	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908
Benzo(b)fluoranthene	ND	2.8	4.9	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908
Benzo(g,h,i)perylene	ND	2.5	4.9	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908
Benzo(k)fluoranthene	ND	1.5	4.9	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908
Benzoic acid	ND	3.4	12	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908
Benzyl alcohol	ND	2.1	4.9	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908
Bis(2-chloroethoxy)methane	ND	2.0	4.9	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908

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ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
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Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-21 Toe Surface
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 10:35:00 AM
Lab ID: 2001723-002 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	2.9	4.9	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908
Bis(2-chloroisopropyl)ether	ND	2.1	4.9	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908
Bis(2-ethylhexyl)phthalate	ND	5.5	12	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908
4-Bromophenyl phenyl ether	ND	2.9	4.9	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908
Butyl benzyl phthalate	ND	1.7	4.9	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908
Carbazole	ND	2.0	4.9	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908
4-Chloro-3-methylphenol	ND	1.9	12	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908
4-Chloroaniline	ND	1.9	12	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908
2-Chloronaphthalene	ND	2.1	6.2	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908
2-Chlorophenol	ND	2.8	4.9	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908
4-Chlorophenyl phenyl ether	ND	2.1	4.9	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908
Chrysene	22	1.9	4.9	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908
Di-n-butyl phthalate	ND	7.4	9.9	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908
Di-n-octyl phthalate	ND	1.7	9.9	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908
Dibenz(a,h)anthracene	ND	2.8	4.9	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908
Dibenzofuran	ND	2.5	4.9	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908
1,2-Dichlorobenzene	ND	1.9	4.9	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908
1,3-Dichlorobenzene	ND	1.7	4.9	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908
1,4-Dichlorobenzene	ND	2.0	4.9	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908
3,3´-Dichlorobenzidine	ND	2.1	6.2	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908
Diethyl phthalate	ND	7.5	12	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908
Dimethyl phthalate	ND	2.0	4.9	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908
2,4-Dichlorophenol	ND	2.1	9.9	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908
2,4-Dimethylphenol	ND	2.1	7.4	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908
4,6-Dinitro-2-methylphenol	ND	1.8	9.9	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908
2,4-Dinitrophenol	ND	1.4	12	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908
2,4-Dinitrotoluene	ND	2.5	12	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908
2,6-Dinitrotoluene	ND	2.9	12	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908
Fluoranthene	ND	1.9	4.9	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908
Fluorene	ND	1.9	4.9	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908
Hexachlorobenzene	ND	1.9	4.9	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908
Hexachlorobutadiene	ND	2.2	4.9	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908
Hexachlorocyclopentadiene	ND	2.4	4.9	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908
Hexachloroethane	ND	2.0	4.9	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908
Indeno(1,2,3-cd)pyrene	ND	3.1	4.9	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908
Isophorone	ND	2.2	9.9	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908
1-Methylnaphthalene	27	2.3	4.9	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908
2-Methylnaphthalene	20	2.0	4.9	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908
2-Methylphenol	ND	2.1	9.9	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908

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

Qualifiers:

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

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-21 Toe Surface
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 10:35:00 AM
Lab ID: 2001723-002 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	1.8	4.9	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908
N-Nitrosodi-n-propylamine	ND	2.5	4.9	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908
N-Nitrosodiphenylamine	ND	2.5	4.9	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908
Naphthalene	2.9	2.0	4.9	JD	mg/Kg	1	1/24/2020 12:34:18 PM	49908
2-Nitroaniline	ND	2.7	4.9	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908
3-Nitroaniline	ND	2.4	4.9	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908
4-Nitroaniline	ND	3.3	9.9	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908
Nitrobenzene	ND	2.1	9.9	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908
2-Nitrophenol	ND	2.0	4.9	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908
4-Nitrophenol	ND	1.5	6.2	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908
Pentachlorophenol	ND	2.2	9.9	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908
Phenanthrene	40	2.5	4.9	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908
Phenol	ND	2.1	4.9	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908
Pyrene	39	1.6	4.9	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908
Pyridine	ND	4.6	9.9	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908
1,2,4-Trichlorobenzene	ND	2.1	4.9	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908
2,4,5-Trichlorophenol	ND	1.6	4.9	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908
2,4,6-Trichlorophenol	ND	2.5	4.9	D	mg/Kg	1	1/24/2020 12:34:18 PM	49908
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	1	1/24/2020 12:34:18 PM	49908
Surr: Phenol-d5	0		18.5-101	SD	%Rec	1	1/24/2020 12:34:18 PM	49908
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	1	1/24/2020 12:34:18 PM	49908
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	1	1/24/2020 12:34:18 PM	49908
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	1	1/24/2020 12:34:18 PM	49908
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	1	1/24/2020 12:34:18 PM	49908
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.016	0.10		mg/Kg	5	1/21/2020 4:24:47 PM	A65958
Toluene	0.038	0.019	0.20	J	mg/Kg	5	1/21/2020 4:24:47 PM	A65958
Ethylbenzene	0.095	0.012	0.20	J	mg/Kg	5	1/21/2020 4:24:47 PM	A65958
Methyl tert-butyl ether (MTBE)	ND	0.048	0.20		mg/Kg	5	1/21/2020 4:24:47 PM	A65958
1,2,4-Trimethylbenzene	1.2	0.018	0.20		mg/Kg	5	1/21/2020 4:24:47 PM	A65958
1,3,5-Trimethylbenzene	0.58	0.019	0.20		mg/Kg	5	1/21/2020 4:24:47 PM	A65958
1,2-Dichloroethane (EDC)	0.090	0.021	0.20	J	mg/Kg	5	1/21/2020 4:24:47 PM	A65958
1,2-Dibromoethane (EDB)	0.066	0.018	0.20	J	mg/Kg	5	1/21/2020 4:24:47 PM	A65958
Naphthalene	1.7	0.040	0.40		mg/Kg	5	1/21/2020 4:24:47 PM	A65958
1-Methylnaphthalene	10	0.12	0.80		mg/Kg	5	1/21/2020 4:24:47 PM	A65958
2-Methylnaphthalene	13	0.088	0.80		mg/Kg	5	1/21/2020 4:24:47 PM	A65958
Acetone	0.22	0.17	3.0	J	mg/Kg	5	1/21/2020 4:24:47 PM	A65958
Bromobenzene	ND	0.019	0.20		mg/Kg	5	1/21/2020 4:24:47 PM	A65958
Bromodichloromethane	0.12	0.018	0.20	J	mg/Kg	5	1/21/2020 4:24:47 PM	A65958

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Qualifiers:

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H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
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Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-21 Toe Surface
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 10:35:00 AM
Lab ID: 2001723-002 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Bromoform	ND	0.018	0.20		mg/Kg	5	1/21/2020 4:24:47 PM	A65958
Bromomethane	ND	0.048	0.60		mg/Kg	5	1/21/2020 4:24:47 PM	A65958
2-Butanone	ND	0.23	2.0		mg/Kg	5	1/21/2020 4:24:47 PM	A65958
Carbon disulfide	ND	0.066	2.0		mg/Kg	5	1/21/2020 4:24:47 PM	A65958
Carbon tetrachloride	ND	0.019	0.20		mg/Kg	5	1/21/2020 4:24:47 PM	A65958
Chlorobenzene	ND	0.026	0.20		mg/Kg	5	1/21/2020 4:24:47 PM	A65958
Chloroethane	ND	0.030	0.40		mg/Kg	5	1/21/2020 4:24:47 PM	A65958
Chloroform	ND	0.016	0.20		mg/Kg	5	1/21/2020 4:24:47 PM	A65958
Chloromethane	ND	0.019	0.60		mg/Kg	5	1/21/2020 4:24:47 PM	A65958
2-Chlorotoluene	ND	0.017	0.20		mg/Kg	5	1/21/2020 4:24:47 PM	A65958
4-Chlorotoluene	ND	0.016	0.20		mg/Kg	5	1/21/2020 4:24:47 PM	A65958
cis-1,2-DCE	ND	0.027	0.20		mg/Kg	5	1/21/2020 4:24:47 PM	A65958
cis-1,3-Dichloropropene	ND	0.017	0.20		mg/Kg	5	1/21/2020 4:24:47 PM	A65958
1,2-Dibromo-3-chloropropane	ND	0.021	0.40		mg/Kg	5	1/21/2020 4:24:47 PM	A65958
Dibromochloromethane	ND	0.014	0.20		mg/Kg	5	1/21/2020 4:24:47 PM	A65958
Dibromomethane	ND	0.022	0.20		mg/Kg	5	1/21/2020 4:24:47 PM	A65958
1,2-Dichlorobenzene	ND	0.016	0.20		mg/Kg	5	1/21/2020 4:24:47 PM	A65958
1,3-Dichlorobenzene	ND	0.017	0.20		mg/Kg	5	1/21/2020 4:24:47 PM	A65958
1,4-Dichlorobenzene	ND	0.017	0.20		mg/Kg	5	1/21/2020 4:24:47 PM	A65958
Dichlorodifluoromethane	ND	0.047	0.20		mg/Kg	5	1/21/2020 4:24:47 PM	A65958
1,1-Dichloroethane	ND	0.013	0.20		mg/Kg	5	1/21/2020 4:24:47 PM	A65958
1,1-Dichloroethene	ND	0.080	0.20		mg/Kg	5	1/21/2020 4:24:47 PM	A65958
1,2-Dichloropropane	ND	0.015	0.20		mg/Kg	5	1/21/2020 4:24:47 PM	A65958
1,3-Dichloropropane	ND	0.022	0.20		mg/Kg	5	1/21/2020 4:24:47 PM	A65958
2,2-Dichloropropane	ND	0.065	0.40		mg/Kg	5	1/21/2020 4:24:47 PM	A65958
1,1-Dichloropropene	ND	0.018	0.40		mg/Kg	5	1/21/2020 4:24:47 PM	A65958
Hexachlorobutadiene	ND	0.020	0.40		mg/Kg	5	1/21/2020 4:24:47 PM	A65958
2-Hexanone	ND	0.033	2.0		mg/Kg	5	1/21/2020 4:24:47 PM	A65958
Isopropylbenzene	0.054	0.014	0.20	J	mg/Kg	5	1/21/2020 4:24:47 PM	A65958
4-Isopropyltoluene	0.10	0.017	0.20	J	mg/Kg	5	1/21/2020 4:24:47 PM	A65958
4-Methyl-2-pentanone	0.14	0.038	2.0	J	mg/Kg	5	1/21/2020 4:24:47 PM	A65958
Methylene chloride	ND	0.035	0.60		mg/Kg	5	1/21/2020 4:24:47 PM	A65958
n-Butylbenzene	0.054	0.019	0.60	J	mg/Kg	5	1/21/2020 4:24:47 PM	A65958
n-Propylbenzene	0.074	0.016	0.20	J	mg/Kg	5	1/21/2020 4:24:47 PM	A65958
sec-Butylbenzene	0.17	0.023	0.20	J	mg/Kg	5	1/21/2020 4:24:47 PM	A65958
Styrene	ND	0.016	0.20		mg/Kg	5	1/21/2020 4:24:47 PM	A65958
tert-Butylbenzene	ND	0.019	0.20		mg/Kg	5	1/21/2020 4:24:47 PM	A65958
1,1,1,2-Tetrachloroethane	ND	0.014	0.20		mg/Kg	5	1/21/2020 4:24:47 PM	A65958
1,1,2,2-Tetrachloroethane	ND	0.020	0.20		mg/Kg	5	1/21/2020 4:24:47 PM	A65958

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Qualifiers:

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H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
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Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-21 Toe Surface
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 10:35:00 AM
Lab ID: 2001723-002 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Tetrachloroethene (PCE)	ND	0.016	0.20		mg/Kg	5	1/21/2020 4:24:47 PM	A65958
trans-1,2-DCE	ND	0.018	0.20		mg/Kg	5	1/21/2020 4:24:47 PM	A65958
trans-1,3-Dichloropropene	ND	0.021	0.20		mg/Kg	5	1/21/2020 4:24:47 PM	A65958
1,2,3-Trichlorobenzene	ND	0.018	0.40		mg/Kg	5	1/21/2020 4:24:47 PM	A65958
1,2,4-Trichlorobenzene	ND	0.020	0.20		mg/Kg	5	1/21/2020 4:24:47 PM	A65958
1,1,1-Trichloroethane	ND	0.018	0.20		mg/Kg	5	1/21/2020 4:24:47 PM	A65958
1,1,2-Trichloroethane	ND	0.014	0.20		mg/Kg	5	1/21/2020 4:24:47 PM	A65958
Trichloroethene (TCE)	ND	0.023	0.20		mg/Kg	5	1/21/2020 4:24:47 PM	A65958
Trichlorofluoromethane	ND	0.068	0.20		mg/Kg	5	1/21/2020 4:24:47 PM	A65958
1,2,3-Trichloropropane	ND	0.033	0.40		mg/Kg	5	1/21/2020 4:24:47 PM	A65958
Vinyl chloride	ND	0.013	0.20		mg/Kg	5	1/21/2020 4:24:47 PM	A65958
Xylenes, Total	0.75	0.051	0.40		mg/Kg	5	1/21/2020 4:24:47 PM	A65958
Surr: Dibromofluoromethane	114		70-130		%Rec	5	1/21/2020 4:24:47 PM	A65958
Surr: 1,2-Dichloroethane-d4	99.8		70-130		%Rec	5	1/21/2020 4:24:47 PM	A65958
Surr: Toluene-d8	99.8		70-130		%Rec	5	1/21/2020 4:24:47 PM	A65958
Surr: 4-Bromofluorobenzene	81.4		70-130		%Rec	5	1/21/2020 4:24:47 PM	A65958
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	42	4.3	20		mg/Kg	5	1/21/2020 4:24:47 PM	AG659
Surr: BFB	98.6	0	70-130		%Rec	5	1/21/2020 4:24:47 PM	AG659
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/21/2020 2:26:00 PM	R6597
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	6.16				pH Units	1	1/22/2020 11:38:00 AM	R6598
SPECIFIC GRAVITY							Analyst: **PAC**	
Specific Gravity	1.810				g/cm3	1	1/25/2020	R66241

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S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
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Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-22 2.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 9:20:00 AM
Lab ID: 2001723-003 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **CLP**	
Diesel Range Organics (DRO)	2100	22	92		mg/Kg	10	1/22/2020 10:51:53 AM	49914
Motor Oil Range Organics (MRO)	710	460	460		mg/Kg	10	1/22/2020 10:51:53 AM	49914
Surr: DNOP	0	0	55.1-146	S	%Rec	10	1/22/2020 10:51:53 AM	49914
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	0.25	0.0017	0.031	H	mg/Kg	1	2/26/2020 1:59:52 PM	50632
MERCURY, TCLP							Analyst: **pmf**	
Mercury	0.0015	0.00075	0.020	J	mg/L	1	1/20/2020 9:06:33 PM	49924
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.72	4.9		mg/Kg	2	1/21/2020 9:20:12 AM	49919
Arsenic	ND	2.8	4.9		mg/Kg	2	1/21/2020 9:20:12 AM	49919
Barium	570	0.11	0.49		mg/Kg	5	1/21/2020 10:17:51 AM	49919
Beryllium	0.95	0.018	0.29		mg/Kg	2	1/21/2020 9:20:12 AM	49919
Cadmium	ND	0.048	0.20		mg/Kg	2	1/21/2020 9:20:12 AM	49919
Chromium	50	0.16	0.59		mg/Kg	2	1/21/2020 9:20:12 AM	49919
Cobalt	5.0	0.21	0.59		mg/Kg	2	1/21/2020 9:20:12 AM	49919
Lead	15	0.48	0.49		mg/Kg	2	1/21/2020 9:20:12 AM	49919
Nickel	10	0.29	0.98		mg/Kg	2	1/21/2020 9:20:12 AM	49919
Selenium	ND	2.5	4.9		mg/Kg	2	1/21/2020 9:20:12 AM	49919
Silver	ND	0.063	0.49		mg/Kg	2	1/21/2020 9:20:12 AM	49919
Vanadium	27	0.13	4.9		mg/Kg	2	1/21/2020 9:20:12 AM	49919
Zinc	60	0.78	4.9		mg/Kg	2	1/21/2020 9:20:12 AM	49919
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/21/2020 11:14:12 AM	49933
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.74	2.0	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
Acenaphthylene	ND	0.87	2.0	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
Aniline	ND	0.67	2.0	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
Anthracene	ND	0.76	2.0	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
Azobenzene	ND	1.0	2.0	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
Benz(a)anthracene	ND	0.68	2.0	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
Benzo(a)pyrene	ND	1.1	2.0	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
Benzo(b)fluoranthene	ND	1.1	2.0	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
Benzo(g,h,i)perylene	ND	1.0	2.0	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
Benzo(k)fluoranthene	ND	0.59	2.0	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
Benzoic acid	ND	1.4	4.9	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
Benzyl alcohol	ND	0.82	2.0	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
Bis(2-chloroethoxy)methane	ND	0.81	2.0	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908

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P	Sample pH Not In Range
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Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-22 2.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 9:20:00 AM
Lab ID: 2001723-003 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	1.1	2.0	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
Bis(2-chloroisopropyl)ether	ND	0.84	2.0	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
Bis(2-ethylhexyl)phthalate	ND	2.2	4.9	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
4-Bromophenyl phenyl ether	ND	1.1	2.0	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
Butyl benzyl phthalate	ND	0.66	2.0	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
Carbazole	ND	0.78	2.0	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
4-Chloro-3-methylphenol	ND	0.77	4.9	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
4-Chloroaniline	ND	0.75	4.9	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
2-Chloronaphthalene	ND	0.82	2.5	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
2-Chlorophenol	ND	1.1	2.0	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
4-Chlorophenyl phenyl ether	ND	0.83	2.0	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
Chrysene	ND	0.77	2.0	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
Di-n-butyl phthalate	ND	2.9	3.9	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
Di-n-octyl phthalate	ND	0.66	3.9	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
Dibenz(a,h)anthracene	ND	1.1	2.0	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
Dibenzofuran	ND	0.98	2.0	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
1,2-Dichlorobenzene	ND	0.77	2.0	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
1,3-Dichlorobenzene	ND	0.66	2.0	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
1,4-Dichlorobenzene	ND	0.81	2.0	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
3,3´-Dichlorobenzidine	ND	0.84	2.5	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
Diethyl phthalate	ND	3.0	4.9	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
Dimethyl phthalate	ND	0.80	2.0	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
2,4-Dichlorophenol	ND	0.83	3.9	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
2,4-Dimethylphenol	ND	0.82	2.9	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
4,6-Dinitro-2-methylphenol	ND	0.72	3.9	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
2,4-Dinitrophenol	ND	0.57	4.9	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
2,4-Dinitrotoluene	ND	1.0	4.9	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
2,6-Dinitrotoluene	ND	1.2	4.9	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
Fluoranthene	ND	0.75	2.0	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
Fluorene	ND	0.77	2.0	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
Hexachlorobenzene	ND	0.77	2.0	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
Hexachlorobutadiene	ND	0.86	2.0	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
Hexachlorocyclopentadiene	ND	0.94	2.0	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
Hexachloroethane	ND	0.80	2.0	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
Indeno(1,2,3-cd)pyrene	ND	1.2	2.0	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
Isophorone	ND	0.85	3.9	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
1-Methylnaphthalene	ND	0.91	2.0	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
2-Methylnaphthalene	ND	0.80	2.0	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
2-Methylphenol	ND	0.83	3.9	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908

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

Qualifiers:

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

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-22 2.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 9:20:00 AM
Lab ID: 2001723-003 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.71	2.0	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
N-Nitrosodi-n-propylamine	ND	0.99	2.0	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
N-Nitrosodiphenylamine	ND	1.0	2.0	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
Naphthalene	ND	0.80	2.0	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
2-Nitroaniline	ND	1.1	2.0	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
3-Nitroaniline	ND	0.96	2.0	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
4-Nitroaniline	ND	1.3	3.9	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
Nitrobenzene	ND	0.84	3.9	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
2-Nitrophenol	ND	0.81	2.0	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
4-Nitrophenol	ND	0.58	2.5	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
Pentachlorophenol	ND	0.88	3.9	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
Phenanthrene	ND	1.0	2.0	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
Phenol	ND	0.83	2.0	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
Pyrene	ND	0.65	2.0	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
Pyridine	ND	1.8	3.9	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
1,2,4-Trichlorobenzene	ND	0.84	2.0	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
2,4,5-Trichlorophenol	ND	0.63	2.0	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
2,4,6-Trichlorophenol	ND	0.99	2.0	D	mg/Kg	1	1/24/2020 1:03:58 PM	49908
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	1	1/24/2020 1:03:58 PM	49908
Surr: Phenol-d5	0		18.5-101	SD	%Rec	1	1/24/2020 1:03:58 PM	49908
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	1	1/24/2020 1:03:58 PM	49908
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	1	1/24/2020 1:03:58 PM	49908
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	1	1/24/2020 1:03:58 PM	49908
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	1	1/24/2020 1:03:58 PM	49908
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.0030	0.018		mg/Kg	1	1/21/2020 5:52:37 PM	A65958
Toluene	0.0046	0.0035	0.036	J	mg/Kg	1	1/21/2020 5:52:37 PM	A65958
Ethylbenzene	ND	0.0021	0.036		mg/Kg	1	1/21/2020 5:52:37 PM	A65958
Methyl tert-butyl ether (MTBE)	ND	0.0086	0.036		mg/Kg	1	1/21/2020 5:52:37 PM	A65958
1,2,4-Trimethylbenzene	0.037	0.0033	0.036		mg/Kg	1	1/21/2020 5:52:37 PM	A65958
1,3,5-Trimethylbenzene	0.043	0.0035	0.036		mg/Kg	1	1/21/2020 5:52:37 PM	A65958
1,2-Dichloroethane (EDC)	ND	0.0037	0.036		mg/Kg	1	1/21/2020 5:52:37 PM	A65958
1,2-Dibromoethane (EDB)	0.012	0.0033	0.036	J	mg/Kg	1	1/21/2020 5:52:37 PM	A65958
Naphthalene	0.042	0.0073	0.073	J	mg/Kg	1	1/21/2020 5:52:37 PM	A65958
1-Methylnaphthalene	0.37	0.021	0.15		mg/Kg	1	1/21/2020 5:52:37 PM	A65958
2-Methylnaphthalene	0.33	0.016	0.15		mg/Kg	1	1/21/2020 5:52:37 PM	A65958
Acetone	0.11	0.030	0.55	J	mg/Kg	1	1/21/2020 5:52:37 PM	A65958
Bromobenzene	ND	0.0035	0.036		mg/Kg	1	1/21/2020 5:52:37 PM	A65958
Bromodichloromethane	ND	0.0033	0.036		mg/Kg	1	1/21/2020 5:52:37 PM	A65958

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Qualifiers:

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

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-22 2.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 9:20:00 AM
Lab ID: 2001723-003 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Bromoform	ND	0.0033	0.036		mg/Kg	1	1/21/2020 5:52:37 PM	A65958
Bromomethane	ND	0.0088	0.11		mg/Kg	1	1/21/2020 5:52:37 PM	A65958
2-Butanone	0.17	0.042	0.36	J	mg/Kg	1	1/21/2020 5:52:37 PM	A65958
Carbon disulfide	ND	0.012	0.36		mg/Kg	1	1/21/2020 5:52:37 PM	A65958
Carbon tetrachloride	ND	0.0035	0.036		mg/Kg	1	1/21/2020 5:52:37 PM	A65958
Chlorobenzene	ND	0.0047	0.036		mg/Kg	1	1/21/2020 5:52:37 PM	A65958
Chloroethane	ND	0.0054	0.073		mg/Kg	1	1/21/2020 5:52:37 PM	A65958
Chloroform	ND	0.0029	0.036		mg/Kg	1	1/21/2020 5:52:37 PM	A65958
Chloromethane	ND	0.0035	0.11		mg/Kg	1	1/21/2020 5:52:37 PM	A65958
2-Chlorotoluene	ND	0.0032	0.036		mg/Kg	1	1/21/2020 5:52:37 PM	A65958
4-Chlorotoluene	ND	0.0030	0.036		mg/Kg	1	1/21/2020 5:52:37 PM	A65958
cis-1,2-DCE	ND	0.0050	0.036		mg/Kg	1	1/21/2020 5:52:37 PM	A65958
cis-1,3-Dichloropropene	ND	0.0031	0.036		mg/Kg	1	1/21/2020 5:52:37 PM	A65958
1,2-Dibromo-3-chloropropane	ND	0.0037	0.073		mg/Kg	1	1/21/2020 5:52:37 PM	A65958
Dibromochloromethane	ND	0.0026	0.036		mg/Kg	1	1/21/2020 5:52:37 PM	A65958
Dibromomethane	ND	0.0039	0.036		mg/Kg	1	1/21/2020 5:52:37 PM	A65958
1,2-Dichlorobenzene	ND	0.0030	0.036		mg/Kg	1	1/21/2020 5:52:37 PM	A65958
1,3-Dichlorobenzene	ND	0.0032	0.036		mg/Kg	1	1/21/2020 5:52:37 PM	A65958
1,4-Dichlorobenzene	ND	0.0030	0.036		mg/Kg	1	1/21/2020 5:52:37 PM	A65958
Dichlorodifluoromethane	ND	0.0085	0.036		mg/Kg	1	1/21/2020 5:52:37 PM	A65958
1,1-Dichloroethane	ND	0.0023	0.036		mg/Kg	1	1/21/2020 5:52:37 PM	A65958
1,1-Dichloroethene	ND	0.015	0.036		mg/Kg	1	1/21/2020 5:52:37 PM	A65958
1,2-Dichloropropane	ND	0.0027	0.036		mg/Kg	1	1/21/2020 5:52:37 PM	A65958
1,3-Dichloropropane	ND	0.0039	0.036		mg/Kg	1	1/21/2020 5:52:37 PM	A65958
2,2-Dichloropropane	ND	0.012	0.073		mg/Kg	1	1/21/2020 5:52:37 PM	A65958
1,1-Dichloropropene	ND	0.0033	0.073		mg/Kg	1	1/21/2020 5:52:37 PM	A65958
Hexachlorobutadiene	ND	0.0037	0.073		mg/Kg	1	1/21/2020 5:52:37 PM	A65958
2-Hexanone	0.043	0.0061	0.36	J	mg/Kg	1	1/21/2020 5:52:37 PM	A65958
Isopropylbenzene	ND	0.0026	0.036		mg/Kg	1	1/21/2020 5:52:37 PM	A65958
4-Isopropyltoluene	0.0053	0.0030	0.036	J	mg/Kg	1	1/21/2020 5:52:37 PM	A65958
4-Methyl-2-pentanone	0.036	0.0069	0.36	J	mg/Kg	1	1/21/2020 5:52:37 PM	A65958
Methylene chloride	0.023	0.0064	0.11	J	mg/Kg	1	1/21/2020 5:52:37 PM	A65958
n-Butylbenzene	0.0097	0.0034	0.11	J	mg/Kg	1	1/21/2020 5:52:37 PM	A65958
n-Propylbenzene	ND	0.0029	0.036		mg/Kg	1	1/21/2020 5:52:37 PM	A65958
sec-Butylbenzene	0.020	0.0041	0.036	J	mg/Kg	1	1/21/2020 5:52:37 PM	A65958
Styrene	ND	0.0029	0.036		mg/Kg	1	1/21/2020 5:52:37 PM	A65958
tert-Butylbenzene	ND	0.0034	0.036		mg/Kg	1	1/21/2020 5:52:37 PM	A65958
1,1,1,2-Tetrachloroethane	ND	0.0025	0.036		mg/Kg	1	1/21/2020 5:52:37 PM	A65958
1,1,2,2-Tetrachloroethane	ND	0.0037	0.036		mg/Kg	1	1/21/2020 5:52:37 PM	A65958

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Qualifiers:

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

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-22 2.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 9:20:00 AM
Lab ID: 2001723-003 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Tetrachloroethene (PCE)	ND	0.0029	0.036		mg/Kg	1	1/21/2020 5:52:37 PM	A65958
trans-1,2-DCE	ND	0.0033	0.036		mg/Kg	1	1/21/2020 5:52:37 PM	A65958
trans-1,3-Dichloropropene	ND	0.0039	0.036		mg/Kg	1	1/21/2020 5:52:37 PM	A65958
1,2,3-Trichlorobenzene	ND	0.0032	0.073		mg/Kg	1	1/21/2020 5:52:37 PM	A65958
1,2,4-Trichlorobenzene	ND	0.0037	0.036		mg/Kg	1	1/21/2020 5:52:37 PM	A65958
1,1,1-Trichloroethane	ND	0.0033	0.036		mg/Kg	1	1/21/2020 5:52:37 PM	A65958
1,1,2-Trichloroethane	ND	0.0026	0.036		mg/Kg	1	1/21/2020 5:52:37 PM	A65958
Trichloroethene (TCE)	ND	0.0042	0.036		mg/Kg	1	1/21/2020 5:52:37 PM	A65958
Trichlorofluoromethane	ND	0.012	0.036		mg/Kg	1	1/21/2020 5:52:37 PM	A65958
1,2,3-Trichloropropane	ND	0.0059	0.073		mg/Kg	1	1/21/2020 5:52:37 PM	A65958
Vinyl chloride	ND	0.0024	0.036		mg/Kg	1	1/21/2020 5:52:37 PM	A65958
Xylenes, Total	0.011	0.0092	0.073	J	mg/Kg	1	1/21/2020 5:52:37 PM	A65958
Surr: Dibromofluoromethane	104		70-130		%Rec	1	1/21/2020 5:52:37 PM	A65958
Surr: 1,2-Dichloroethane-d4	89.5		70-130		%Rec	1	1/21/2020 5:52:37 PM	A65958
Surr: Toluene-d8	98.8		70-130		%Rec	1	1/21/2020 5:52:37 PM	A65958
Surr: 4-Bromofluorobenzene	83.8		70-130		%Rec	1	1/21/2020 5:52:37 PM	A65958
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	12	0.77	3.6		mg/Kg	1	1/21/2020 5:52:37 PM	AG659
Surr: BFB	82.7	0	70-130		%Rec	1	1/21/2020 5:52:37 PM	AG659
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/21/2020 2:26:00 PM	R6597
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	8.04				pH Units	1	1/22/2020 11:38:00 AM	R6598
SPECIFIC GRAVITY							Analyst: **PAC**	
Specific Gravity	1.950				g/cm3	1	1/25/2020	R66241

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

Qualifiers:

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ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-20 2.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 9:40:00 AM
Lab ID: 2001723-004 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **JME**	
Diesel Range Organics (DRO)	560	20	85		mg/Kg	10	1/22/2020 10:06:39 AM	49914
Motor Oil Range Organics (MRO)	640	420	420		mg/Kg	10	1/22/2020 10:06:39 AM	49914
Surr: DNOP	0	0	55.1-146	S	%Rec	10	1/22/2020 10:06:39 AM	49914
EPA METHOD 7471: MERCURY							Analyst: **rde**	
Mercury	0.46	0.0094	0.17	H	mg/Kg	5	2/25/2020 4:01:38 PM	50632
MERCURY, TCLP							Analyst: **pmf**	
Mercury	0.0014	0.00075	0.020	J	mg/L	1	1/20/2020 9:09:22 PM	49924
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.74	5.1		mg/Kg	2	1/21/2020 9:21:37 AM	49919
Arsenic	ND	2.9	5.1		mg/Kg	2	1/21/2020 9:21:37 AM	49919
Barium	180	0.047	0.20		mg/Kg	2	1/21/2020 9:21:37 AM	49919
Beryllium	0.87	0.019	0.30		mg/Kg	2	1/21/2020 9:21:37 AM	49919
Cadmium	ND	0.049	0.20		mg/Kg	2	1/21/2020 9:21:37 AM	49919
Chromium	9.6	0.16	0.61		mg/Kg	2	1/21/2020 9:21:37 AM	49919
Cobalt	4.2	0.21	0.61		mg/Kg	2	1/21/2020 9:21:37 AM	49919
Lead	2.0	0.49	0.51		mg/Kg	2	1/21/2020 9:21:37 AM	49919
Nickel	8.3	0.30	1.0		mg/Kg	2	1/21/2020 9:21:37 AM	49919
Selenium	ND	2.5	5.1		mg/Kg	2	1/21/2020 9:21:37 AM	49919
Silver	ND	0.065	0.51		mg/Kg	2	1/21/2020 9:21:37 AM	49919
Vanadium	17	0.13	5.1		mg/Kg	2	1/21/2020 9:21:37 AM	49919
Zinc	51	0.80	5.1		mg/Kg	2	1/21/2020 9:21:37 AM	49919
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/21/2020 11:15:37 AM	49933
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.75	2.0	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
Acenaphthylene	ND	0.89	2.0	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
Aniline	ND	0.68	2.0	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
Anthracene	ND	0.77	2.0	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
Azobenzene	ND	1.0	2.0	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
Benz(a)anthracene	ND	0.69	2.0	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
Benzo(a)pyrene	ND	1.1	2.0	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
Benzo(b)fluoranthene	ND	1.1	2.0	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
Benzo(g,h,i)perylene	ND	1.0	2.0	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
Benzo(k)fluoranthene	ND	0.60	2.0	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
Benzoic acid	ND	1.4	5.0	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
Benzyl alcohol	ND	0.83	2.0	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
Bis(2-chloroethoxy)methane	ND	0.83	2.0	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
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Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-20 2.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 9:40:00 AM
Lab ID: 2001723-004 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	1.2	2.0	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
Bis(2-chloroisopropyl)ether	ND	0.86	2.0	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
Bis(2-ethylhexyl)phthalate	ND	2.2	5.0	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
4-Bromophenyl phenyl ether	ND	1.2	2.0	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
Butyl benzyl phthalate	ND	0.67	2.0	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
Carbazole	ND	0.80	2.0	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
4-Chloro-3-methylphenol	ND	0.79	5.0	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
4-Chloroaniline	ND	0.77	5.0	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
2-Chloronaphthalene	ND	0.84	2.5	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
2-Chlorophenol	ND	1.1	2.0	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
4-Chlorophenyl phenyl ether	ND	0.84	2.0	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
Chrysene	ND	0.78	2.0	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
Di-n-butyl phthalate	ND	3.0	4.0	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
Di-n-octyl phthalate	ND	0.67	4.0	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
Dibenz(a,h)anthracene	ND	1.1	2.0	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
Dibenzofuran	ND	1.0	2.0	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
1,2-Dichlorobenzene	ND	0.79	2.0	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
1,3-Dichlorobenzene	ND	0.67	2.0	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
1,4-Dichlorobenzene	ND	0.83	2.0	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
3,3´-Dichlorobenzidine	ND	0.86	2.5	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
Diethyl phthalate	ND	3.1	5.0	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
Dimethyl phthalate	ND	0.81	2.0	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
2,4-Dichlorophenol	ND	0.85	4.0	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
2,4-Dimethylphenol	ND	0.83	3.0	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
4,6-Dinitro-2-methylphenol	ND	0.74	4.0	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
2,4-Dinitrophenol	ND	0.58	5.0	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
2,4-Dinitrotoluene	ND	1.0	5.0	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
2,6-Dinitrotoluene	ND	1.2	5.0	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
Fluoranthene	ND	0.77	2.0	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
Fluorene	ND	0.79	2.0	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
Hexachlorobenzene	ND	0.78	2.0	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
Hexachlorobutadiene	ND	0.88	2.0	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
Hexachlorocyclopentadiene	ND	0.96	2.0	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
Hexachloroethane	ND	0.82	2.0	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
Indeno(1,2,3-cd)pyrene	ND	1.2	2.0	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
Isophorone	ND	0.87	4.0	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
1-Methylnaphthalene	ND	0.93	2.0	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
2-Methylnaphthalene	ND	0.81	2.0	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
2-Methylphenol	ND	0.84	4.0	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908

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

Qualifiers:

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

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-20 2.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 9:40:00 AM
Lab ID: 2001723-004 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.72	2.0	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
N-Nitrosodi-n-propylamine	ND	1.0	2.0	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
N-Nitrosodiphenylamine	ND	1.0	2.0	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
Naphthalene	ND	0.82	2.0	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
2-Nitroaniline	ND	1.1	2.0	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
3-Nitroaniline	ND	0.98	2.0	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
4-Nitroaniline	ND	1.3	4.0	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
Nitrobenzene	ND	0.85	4.0	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
2-Nitrophenol	ND	0.83	2.0	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
4-Nitrophenol	ND	0.59	2.5	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
Pentachlorophenol	ND	0.90	4.0	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
Phenanthrene	ND	1.0	2.0	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
Phenol	ND	0.85	2.0	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
Pyrene	ND	0.66	2.0	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
Pyridine	ND	1.9	4.0	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
1,2,4-Trichlorobenzene	ND	0.86	2.0	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
2,4,5-Trichlorophenol	ND	0.65	2.0	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
2,4,6-Trichlorophenol	ND	1.0	2.0	D	mg/Kg	1	1/24/2020 1:33:21 PM	49908
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	1	1/24/2020 1:33:21 PM	49908
Surr: Phenol-d5	0		18.5-101	SD	%Rec	1	1/24/2020 1:33:21 PM	49908
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	1	1/24/2020 1:33:21 PM	49908
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	1	1/24/2020 1:33:21 PM	49908
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	1	1/24/2020 1:33:21 PM	49908
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	1	1/24/2020 1:33:21 PM	49908
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.0029	0.018		mg/Kg	1	1/21/2020 6:21:58 PM	A65958
Toluene	0.0064	0.0034	0.036	J	mg/Kg	1	1/21/2020 6:21:58 PM	A65958
Ethylbenzene	ND	0.0021	0.036		mg/Kg	1	1/21/2020 6:21:58 PM	A65958
Methyl tert-butyl ether (MTBE)	ND	0.0085	0.036		mg/Kg	1	1/21/2020 6:21:58 PM	A65958
1,2,4-Trimethylbenzene	0.0078	0.0033	0.036	J	mg/Kg	1	1/21/2020 6:21:58 PM	A65958
1,3,5-Trimethylbenzene	ND	0.0035	0.036		mg/Kg	1	1/21/2020 6:21:58 PM	A65958
1,2-Dichloroethane (EDC)	ND	0.0037	0.036		mg/Kg	1	1/21/2020 6:21:58 PM	A65958
1,2-Dibromoethane (EDB)	ND	0.0033	0.036		mg/Kg	1	1/21/2020 6:21:58 PM	A65958
Naphthalene	ND	0.0072	0.072		mg/Kg	1	1/21/2020 6:21:58 PM	A65958
1-Methylnaphthalene	0.060	0.021	0.14	J	mg/Kg	1	1/21/2020 6:21:58 PM	A65958
2-Methylnaphthalene	0.060	0.016	0.14	J	mg/Kg	1	1/21/2020 6:21:58 PM	A65958
Acetone	ND	0.030	0.54		mg/Kg	1	1/21/2020 6:21:58 PM	A65958
Bromobenzene	ND	0.0035	0.036		mg/Kg	1	1/21/2020 6:21:58 PM	A65958
Bromodichloromethane	ND	0.0033	0.036		mg/Kg	1	1/21/2020 6:21:58 PM	A65958

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PQL	Practical Quanitative Limit
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E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
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Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-20 2.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 9:40:00 AM
Lab ID: 2001723-004 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Bromoform	ND	0.0033	0.036		mg/Kg	1	1/21/2020 6:21:58 PM	A65958
Bromomethane	ND	0.0087	0.11		mg/Kg	1	1/21/2020 6:21:58 PM	A65958
2-Butanone	ND	0.042	0.36		mg/Kg	1	1/21/2020 6:21:58 PM	A65958
Carbon disulfide	ND	0.012	0.36		mg/Kg	1	1/21/2020 6:21:58 PM	A65958
Carbon tetrachloride	ND	0.0034	0.036		mg/Kg	1	1/21/2020 6:21:58 PM	A65958
Chlorobenzene	ND	0.0046	0.036		mg/Kg	1	1/21/2020 6:21:58 PM	A65958
Chloroethane	ND	0.0053	0.072		mg/Kg	1	1/21/2020 6:21:58 PM	A65958
Chloroform	ND	0.0029	0.036		mg/Kg	1	1/21/2020 6:21:58 PM	A65958
Chloromethane	ND	0.0034	0.11		mg/Kg	1	1/21/2020 6:21:58 PM	A65958
2-Chlorotoluene	ND	0.0031	0.036		mg/Kg	1	1/21/2020 6:21:58 PM	A65958
4-Chlorotoluene	ND	0.0030	0.036		mg/Kg	1	1/21/2020 6:21:58 PM	A65958
cis-1,2-DCE	ND	0.0049	0.036		mg/Kg	1	1/21/2020 6:21:58 PM	A65958
cis-1,3-Dichloropropene	ND	0.0030	0.036		mg/Kg	1	1/21/2020 6:21:58 PM	A65958
1,2-Dibromo-3-chloropropane	ND	0.0037	0.072		mg/Kg	1	1/21/2020 6:21:58 PM	A65958
Dibromochloromethane	ND	0.0026	0.036		mg/Kg	1	1/21/2020 6:21:58 PM	A65958
Dibromomethane	ND	0.0039	0.036		mg/Kg	1	1/21/2020 6:21:58 PM	A65958
1,2-Dichlorobenzene	ND	0.0030	0.036		mg/Kg	1	1/21/2020 6:21:58 PM	A65958
1,3-Dichlorobenzene	ND	0.0031	0.036		mg/Kg	1	1/21/2020 6:21:58 PM	A65958
1,4-Dichlorobenzene	ND	0.0030	0.036		mg/Kg	1	1/21/2020 6:21:58 PM	A65958
Dichlorodifluoromethane	ND	0.0084	0.036		mg/Kg	1	1/21/2020 6:21:58 PM	A65958
1,1-Dichloroethane	ND	0.0023	0.036		mg/Kg	1	1/21/2020 6:21:58 PM	A65958
1,1-Dichloroethene	ND	0.014	0.036		mg/Kg	1	1/21/2020 6:21:58 PM	A65958
1,2-Dichloropropane	ND	0.0026	0.036		mg/Kg	1	1/21/2020 6:21:58 PM	A65958
1,3-Dichloropropane	ND	0.0039	0.036		mg/Kg	1	1/21/2020 6:21:58 PM	A65958
2,2-Dichloropropane	ND	0.012	0.072		mg/Kg	1	1/21/2020 6:21:58 PM	A65958
1,1-Dichloropropene	ND	0.0033	0.072		mg/Kg	1	1/21/2020 6:21:58 PM	A65958
Hexachlorobutadiene	ND	0.0037	0.072		mg/Kg	1	1/21/2020 6:21:58 PM	A65958
2-Hexanone	ND	0.0060	0.36		mg/Kg	1	1/21/2020 6:21:58 PM	A65958
Isopropylbenzene	ND	0.0026	0.036		mg/Kg	1	1/21/2020 6:21:58 PM	A65958
4-Isopropyltoluene	ND	0.0030	0.036		mg/Kg	1	1/21/2020 6:21:58 PM	A65958
4-Methyl-2-pentanone	0.023	0.0068	0.36	J	mg/Kg	1	1/21/2020 6:21:58 PM	A65958
Methylene chloride	0.030	0.0064	0.11	J	mg/Kg	1	1/21/2020 6:21:58 PM	A65958
n-Butylbenzene	ND	0.0034	0.11		mg/Kg	1	1/21/2020 6:21:58 PM	A65958
n-Propylbenzene	ND	0.0029	0.036		mg/Kg	1	1/21/2020 6:21:58 PM	A65958
sec-Butylbenzene	ND	0.0041	0.036		mg/Kg	1	1/21/2020 6:21:58 PM	A65958
Styrene	ND	0.0028	0.036		mg/Kg	1	1/21/2020 6:21:58 PM	A65958
tert-Butylbenzene	ND	0.0034	0.036		mg/Kg	1	1/21/2020 6:21:58 PM	A65958
1,1,1,2-Tetrachloroethane	ND	0.0024	0.036		mg/Kg	1	1/21/2020 6:21:58 PM	A65958
1,1,2,2-Tetrachloroethane	ND	0.0037	0.036		mg/Kg	1	1/21/2020 6:21:58 PM	A65958

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
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PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
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P	Sample pH Not In Range
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Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-20 2.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 9:40:00 AM
Lab ID: 2001723-004 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Tetrachloroethene (PCE)	ND	0.0029	0.036		mg/Kg	1	1/21/2020 6:21:58 PM	A65958
trans-1,2-DCE	ND	0.0033	0.036		mg/Kg	1	1/21/2020 6:21:58 PM	A65958
trans-1,3-Dichloropropene	ND	0.0038	0.036		mg/Kg	1	1/21/2020 6:21:58 PM	A65958
1,2,3-Trichlorobenzene	ND	0.0032	0.072		mg/Kg	1	1/21/2020 6:21:58 PM	A65958
1,2,4-Trichlorobenzene	ND	0.0036	0.036		mg/Kg	1	1/21/2020 6:21:58 PM	A65958
1,1,1-Trichloroethane	ND	0.0033	0.036		mg/Kg	1	1/21/2020 6:21:58 PM	A65958
1,1,2-Trichloroethane	ND	0.0025	0.036		mg/Kg	1	1/21/2020 6:21:58 PM	A65958
Trichloroethene (TCE)	ND	0.0042	0.036		mg/Kg	1	1/21/2020 6:21:58 PM	A65958
Trichlorofluoromethane	ND	0.012	0.036		mg/Kg	1	1/21/2020 6:21:58 PM	A65958
1,2,3-Trichloropropane	ND	0.0058	0.072		mg/Kg	1	1/21/2020 6:21:58 PM	A65958
Vinyl chloride	ND	0.0024	0.036		mg/Kg	1	1/21/2020 6:21:58 PM	A65958
Xylenes, Total	ND	0.0091	0.072		mg/Kg	1	1/21/2020 6:21:58 PM	A65958
Surr: Dibromofluoromethane	103		70-130		%Rec	1	1/21/2020 6:21:58 PM	A65958
Surr: 1,2-Dichloroethane-d4	90.3		70-130		%Rec	1	1/21/2020 6:21:58 PM	A65958
Surr: Toluene-d8	99.8		70-130		%Rec	1	1/21/2020 6:21:58 PM	A65958
Surr: 4-Bromofluorobenzene	86.7		70-130		%Rec	1	1/21/2020 6:21:58 PM	A65958
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	0.80	0.77	3.6	J	mg/Kg	1	1/21/2020 6:21:58 PM	AG659
Surr: BFB	93.5	0	70-130		%Rec	1	1/21/2020 6:21:58 PM	AG659
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/21/2020 2:26:00 PM	R6597
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	7.60				pH Units	1	1/22/2020 11:38:00 AM	R6598
SPECIFIC GRAVITY							Analyst: **PAC**	
Specific Gravity	1.930				g/cm3	1	1/25/2020	R66241

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

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PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-14 1.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 9:48:00 AM
Lab ID: 2001723-005 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	7.0	2.4	10	J	mg/Kg	1	1/21/2020 8:11:46 PM	49914
Motor Oil Range Organics (MRO)	ND	50	50		mg/Kg	1	1/21/2020 8:11:46 PM	49914
Surr: DNOP	134	0	55.1-146		%Rec	1	1/21/2020 8:11:46 PM	49914
EPA METHOD 7471: MERCURY							Analyst: **rde**	
Mercury	0.0029	0.0018	0.033	JH	mg/Kg	1	2/25/2020 3:32:06 PM	50632
MERCURY, TCLP							Analyst: **pmf**	
Mercury	0.0015	0.00075	0.020	J	mg/L	1	1/20/2020 9:12:12 PM	49924
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.75	5.1		mg/Kg	2	1/21/2020 9:23:00 AM	49919
Arsenic	ND	2.9	5.1		mg/Kg	2	1/21/2020 9:23:00 AM	49919
Barium	200	0.047	0.20		mg/Kg	2	1/21/2020 9:23:00 AM	49919
Beryllium	0.95	0.019	0.31		mg/Kg	2	1/21/2020 9:23:00 AM	49919
Cadmium	ND	0.050	0.20		mg/Kg	2	1/21/2020 9:23:00 AM	49919
Chromium	8.9	0.16	0.61		mg/Kg	2	1/21/2020 9:23:00 AM	49919
Cobalt	4.5	0.22	0.61		mg/Kg	2	1/21/2020 9:23:00 AM	49919
Lead	3.4	0.50	0.51		mg/Kg	2	1/21/2020 9:23:00 AM	49919
Nickel	8.5	0.31	1.0		mg/Kg	2	1/21/2020 9:23:00 AM	49919
Selenium	ND	2.6	5.1		mg/Kg	2	1/21/2020 9:23:00 AM	49919
Silver	ND	0.066	0.51		mg/Kg	2	1/21/2020 9:23:00 AM	49919
Vanadium	16	0.14	5.1		mg/Kg	2	1/21/2020 9:23:00 AM	49919
Zinc	13	0.81	5.1		mg/Kg	2	1/21/2020 9:23:00 AM	49919
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/21/2020 11:17:02 AM	49933
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.074	0.20		mg/Kg	1	1/24/2020 2:02:44 PM	49908
Acenaphthylene	ND	0.088	0.20		mg/Kg	1	1/24/2020 2:02:44 PM	49908
Aniline	ND	0.068	0.20		mg/Kg	1	1/24/2020 2:02:44 PM	49908
Anthracene	ND	0.076	0.20		mg/Kg	1	1/24/2020 2:02:44 PM	49908
Azobenzene	ND	0.10	0.20		mg/Kg	1	1/24/2020 2:02:44 PM	49908
Benz(a)anthracene	ND	0.068	0.20		mg/Kg	1	1/24/2020 2:02:44 PM	49908
Benzo(a)pyrene	ND	0.11	0.20		mg/Kg	1	1/24/2020 2:02:44 PM	49908
Benzo(b)fluoranthene	ND	0.11	0.20		mg/Kg	1	1/24/2020 2:02:44 PM	49908
Benzo(g,h,i)perylene	ND	0.10	0.20		mg/Kg	1	1/24/2020 2:02:44 PM	49908
Benzo(k)fluoranthene	ND	0.059	0.20		mg/Kg	1	1/24/2020 2:02:44 PM	49908
Benzoic acid	ND	0.14	0.49		mg/Kg	1	1/24/2020 2:02:44 PM	49908
Benzyl alcohol	ND	0.082	0.20		mg/Kg	1	1/24/2020 2:02:44 PM	49908
Bis(2-chloroethoxy)methane	ND	0.082	0.20		mg/Kg	1	1/24/2020 2:02:44 PM	49908

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Qualifiers:

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D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
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Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-14 1.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 9:48:00 AM
Lab ID: 2001723-005 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.12	0.20		mg/Kg	1	1/24/2020 2:02:44 PM	49908
Bis(2-chloroisopropyl)ether	ND	0.085	0.20		mg/Kg	1	1/24/2020 2:02:44 PM	49908
Bis(2-ethylhexyl)phthalate	ND	0.22	0.49		mg/Kg	1	1/24/2020 2:02:44 PM	49908
4-Bromophenyl phenyl ether	ND	0.12	0.20		mg/Kg	1	1/24/2020 2:02:44 PM	49908
Butyl benzyl phthalate	ND	0.066	0.20		mg/Kg	1	1/24/2020 2:02:44 PM	49908
Carbazole	ND	0.079	0.20		mg/Kg	1	1/24/2020 2:02:44 PM	49908
4-Chloro-3-methylphenol	ND	0.078	0.49		mg/Kg	1	1/24/2020 2:02:44 PM	49908
4-Chloroaniline	ND	0.076	0.49		mg/Kg	1	1/24/2020 2:02:44 PM	49908
2-Chloronaphthalene	ND	0.083	0.25		mg/Kg	1	1/24/2020 2:02:44 PM	49908
2-Chlorophenol	ND	0.11	0.20		mg/Kg	1	1/24/2020 2:02:44 PM	49908
4-Chlorophenyl phenyl ether	ND	0.083	0.20		mg/Kg	1	1/24/2020 2:02:44 PM	49908
Chrysene	ND	0.077	0.20		mg/Kg	1	1/24/2020 2:02:44 PM	49908
Di-n-butyl phthalate	ND	0.30	0.40		mg/Kg	1	1/24/2020 2:02:44 PM	49908
Di-n-octyl phthalate	ND	0.066	0.40		mg/Kg	1	1/24/2020 2:02:44 PM	49908
Dibenz(a,h)anthracene	ND	0.11	0.20		mg/Kg	1	1/24/2020 2:02:44 PM	49908
Dibenzofuran	ND	0.099	0.20		mg/Kg	1	1/24/2020 2:02:44 PM	49908
1,2-Dichlorobenzene	ND	0.078	0.20		mg/Kg	1	1/24/2020 2:02:44 PM	49908
1,3-Dichlorobenzene	ND	0.066	0.20		mg/Kg	1	1/24/2020 2:02:44 PM	49908
1,4-Dichlorobenzene	ND	0.082	0.20		mg/Kg	1	1/24/2020 2:02:44 PM	49908
3,3´-Dichlorobenzidine	ND	0.084	0.25		mg/Kg	1	1/24/2020 2:02:44 PM	49908
Diethyl phthalate	ND	0.30	0.49		mg/Kg	1	1/24/2020 2:02:44 PM	49908
Dimethyl phthalate	ND	0.080	0.20		mg/Kg	1	1/24/2020 2:02:44 PM	49908
2,4-Dichlorophenol	ND	0.084	0.40		mg/Kg	1	1/24/2020 2:02:44 PM	49908
2,4-Dimethylphenol	ND	0.082	0.30		mg/Kg	1	1/24/2020 2:02:44 PM	49908
4,6-Dinitro-2-methylphenol	ND	0.073	0.40		mg/Kg	1	1/24/2020 2:02:44 PM	49908
2,4-Dinitrophenol	ND	0.057	0.49		mg/Kg	1	1/24/2020 2:02:44 PM	49908
2,4-Dinitrotoluene	ND	0.10	0.49		mg/Kg	1	1/24/2020 2:02:44 PM	49908
2,6-Dinitrotoluene	ND	0.12	0.49		mg/Kg	1	1/24/2020 2:02:44 PM	49908
Fluoranthene	ND	0.075	0.20		mg/Kg	1	1/24/2020 2:02:44 PM	49908
Fluorene	ND	0.078	0.20		mg/Kg	1	1/24/2020 2:02:44 PM	49908
Hexachlorobenzene	ND	0.077	0.20		mg/Kg	1	1/24/2020 2:02:44 PM	49908
Hexachlorobutadiene	ND	0.087	0.20		mg/Kg	1	1/24/2020 2:02:44 PM	49908
Hexachlorocyclopentadiene	ND	0.095	0.20		mg/Kg	1	1/24/2020 2:02:44 PM	49908
Hexachloroethane	ND	0.081	0.20		mg/Kg	1	1/24/2020 2:02:44 PM	49908
Indeno(1,2,3-cd)pyrene	ND	0.12	0.20		mg/Kg	1	1/24/2020 2:02:44 PM	49908
Isophorone	ND	0.086	0.40		mg/Kg	1	1/24/2020 2:02:44 PM	49908
1-Methylnaphthalene	ND	0.092	0.20		mg/Kg	1	1/24/2020 2:02:44 PM	49908
2-Methylnaphthalene	ND	0.080	0.20		mg/Kg	1	1/24/2020 2:02:44 PM	49908
2-Methylphenol	ND	0.083	0.40		mg/Kg	1	1/24/2020 2:02:44 PM	49908

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Qualifiers:

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H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
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B	Analyte detected in the associated Method Blank
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Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-14 1.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 9:48:00 AM
Lab ID: 2001723-005 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.071	0.20		mg/Kg	1	1/24/2020 2:02:44 PM	49908
N-Nitrosodi-n-propylamine	ND	0.10	0.20		mg/Kg	1	1/24/2020 2:02:44 PM	49908
N-Nitrosodiphenylamine	ND	0.10	0.20		mg/Kg	1	1/24/2020 2:02:44 PM	49908
Naphthalene	ND	0.081	0.20		mg/Kg	1	1/24/2020 2:02:44 PM	49908
2-Nitroaniline	ND	0.11	0.20		mg/Kg	1	1/24/2020 2:02:44 PM	49908
3-Nitroaniline	ND	0.097	0.20		mg/Kg	1	1/24/2020 2:02:44 PM	49908
4-Nitroaniline	ND	0.13	0.40		mg/Kg	1	1/24/2020 2:02:44 PM	49908
Nitrobenzene	ND	0.084	0.40		mg/Kg	1	1/24/2020 2:02:44 PM	49908
2-Nitrophenol	ND	0.082	0.20		mg/Kg	1	1/24/2020 2:02:44 PM	49908
4-Nitrophenol	ND	0.058	0.25		mg/Kg	1	1/24/2020 2:02:44 PM	49908
Pentachlorophenol	ND	0.089	0.40		mg/Kg	1	1/24/2020 2:02:44 PM	49908
Phenanthrene	ND	0.10	0.20		mg/Kg	1	1/24/2020 2:02:44 PM	49908
Phenol	ND	0.084	0.20		mg/Kg	1	1/24/2020 2:02:44 PM	49908
Pyrene	ND	0.065	0.20		mg/Kg	1	1/24/2020 2:02:44 PM	49908
Pyridine	ND	0.18	0.40		mg/Kg	1	1/24/2020 2:02:44 PM	49908
1,2,4-Trichlorobenzene	ND	0.084	0.20		mg/Kg	1	1/24/2020 2:02:44 PM	49908
2,4,5-Trichlorophenol	ND	0.064	0.20		mg/Kg	1	1/24/2020 2:02:44 PM	49908
2,4,6-Trichlorophenol	ND	0.099	0.20		mg/Kg	1	1/24/2020 2:02:44 PM	49908
Surr: 2-Fluorophenol	50.3		26.7-85.9		%Rec	1	1/24/2020 2:02:44 PM	49908
Surr: Phenol-d5	58.1		18.5-101		%Rec	1	1/24/2020 2:02:44 PM	49908
Surr: 2,4,6-Tribromophenol	60.2		35.8-85.6		%Rec	1	1/24/2020 2:02:44 PM	49908
Surr: Nitrobenzene-d5	63.6		40.8-95.2		%Rec	1	1/24/2020 2:02:44 PM	49908
Surr: 2-Fluorobiphenyl	66.5		34.7-85.2		%Rec	1	1/24/2020 2:02:44 PM	49908
Surr: 4-Terphenyl-d14	61.0		37.4-91.3		%Rec	1	1/24/2020 2:02:44 PM	49908
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.0033	0.020		mg/Kg	1	1/21/2020 6:51:14 PM	A65958
Toluene	ND	0.0039	0.041		mg/Kg	1	1/21/2020 6:51:14 PM	A65958
Ethylbenzene	ND	0.0024	0.041		mg/Kg	1	1/21/2020 6:51:14 PM	A65958
Methyl tert-butyl ether (MTBE)	ND	0.0097	0.041		mg/Kg	1	1/21/2020 6:51:14 PM	A65958
1,2,4-Trimethylbenzene	ND	0.0037	0.041		mg/Kg	1	1/21/2020 6:51:14 PM	A65958
1,3,5-Trimethylbenzene	ND	0.0040	0.041		mg/Kg	1	1/21/2020 6:51:14 PM	A65958
1,2-Dichloroethane (EDC)	ND	0.0042	0.041		mg/Kg	1	1/21/2020 6:51:14 PM	A65958
1,2-Dibromoethane (EDB)	ND	0.0037	0.041		mg/Kg	1	1/21/2020 6:51:14 PM	A65958
Naphthalene	ND	0.0082	0.082		mg/Kg	1	1/21/2020 6:51:14 PM	A65958
1-Methylnaphthalene	ND	0.023	0.16		mg/Kg	1	1/21/2020 6:51:14 PM	A65958
2-Methylnaphthalene	ND	0.018	0.16		mg/Kg	1	1/21/2020 6:51:14 PM	A65958
Acetone	ND	0.034	0.61		mg/Kg	1	1/21/2020 6:51:14 PM	A65958
Bromobenzene	ND	0.0039	0.041		mg/Kg	1	1/21/2020 6:51:14 PM	A65958
Bromodichloromethane	ND	0.0037	0.041		mg/Kg	1	1/21/2020 6:51:14 PM	A65958

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Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-14 1.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 9:48:00 AM
Lab ID: 2001723-005 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Bromoform	ND	0.0037	0.041		mg/Kg	1	1/21/2020 6:51:14 PM	A65958
Bromomethane	ND	0.0098	0.12		mg/Kg	1	1/21/2020 6:51:14 PM	A65958
2-Butanone	ND	0.047	0.41		mg/Kg	1	1/21/2020 6:51:14 PM	A65958
Carbon disulfide	ND	0.013	0.41		mg/Kg	1	1/21/2020 6:51:14 PM	A65958
Carbon tetrachloride	ND	0.0039	0.041		mg/Kg	1	1/21/2020 6:51:14 PM	A65958
Chlorobenzene	ND	0.0052	0.041		mg/Kg	1	1/21/2020 6:51:14 PM	A65958
Chloroethane	ND	0.0060	0.082		mg/Kg	1	1/21/2020 6:51:14 PM	A65958
Chloroform	ND	0.0033	0.041		mg/Kg	1	1/21/2020 6:51:14 PM	A65958
Chloromethane	ND	0.0039	0.12		mg/Kg	1	1/21/2020 6:51:14 PM	A65958
2-Chlorotoluene	ND	0.0036	0.041		mg/Kg	1	1/21/2020 6:51:14 PM	A65958
4-Chlorotoluene	ND	0.0033	0.041		mg/Kg	1	1/21/2020 6:51:14 PM	A65958
cis-1,2-DCE	ND	0.0056	0.041		mg/Kg	1	1/21/2020 6:51:14 PM	A65958
cis-1,3-Dichloropropene	ND	0.0034	0.041		mg/Kg	1	1/21/2020 6:51:14 PM	A65958
1,2-Dibromo-3-chloropropane	ND	0.0042	0.082		mg/Kg	1	1/21/2020 6:51:14 PM	A65958
Dibromochloromethane	ND	0.0029	0.041		mg/Kg	1	1/21/2020 6:51:14 PM	A65958
Dibromomethane	ND	0.0044	0.041		mg/Kg	1	1/21/2020 6:51:14 PM	A65958
1,2-Dichlorobenzene	ND	0.0033	0.041		mg/Kg	1	1/21/2020 6:51:14 PM	A65958
1,3-Dichlorobenzene	ND	0.0035	0.041		mg/Kg	1	1/21/2020 6:51:14 PM	A65958
1,4-Dichlorobenzene	ND	0.0034	0.041		mg/Kg	1	1/21/2020 6:51:14 PM	A65958
Dichlorodifluoromethane	ND	0.0095	0.041		mg/Kg	1	1/21/2020 6:51:14 PM	A65958
1,1-Dichloroethane	ND	0.0026	0.041		mg/Kg	1	1/21/2020 6:51:14 PM	A65958
1,1-Dichloroethene	ND	0.016	0.041		mg/Kg	1	1/21/2020 6:51:14 PM	A65958
1,2-Dichloropropane	ND	0.0030	0.041		mg/Kg	1	1/21/2020 6:51:14 PM	A65958
1,3-Dichloropropane	ND	0.0044	0.041		mg/Kg	1	1/21/2020 6:51:14 PM	A65958
2,2-Dichloropropane	ND	0.013	0.082		mg/Kg	1	1/21/2020 6:51:14 PM	A65958
1,1-Dichloropropene	ND	0.0037	0.082		mg/Kg	1	1/21/2020 6:51:14 PM	A65958
Hexachlorobutadiene	ND	0.0042	0.082		mg/Kg	1	1/21/2020 6:51:14 PM	A65958
2-Hexanone	ND	0.0068	0.41		mg/Kg	1	1/21/2020 6:51:14 PM	A65958
Isopropylbenzene	ND	0.0029	0.041		mg/Kg	1	1/21/2020 6:51:14 PM	A65958
4-Isopropyltoluene	ND	0.0034	0.041		mg/Kg	1	1/21/2020 6:51:14 PM	A65958
4-Methyl-2-pentanone	ND	0.0077	0.41		mg/Kg	1	1/21/2020 6:51:14 PM	A65958
Methylene chloride	0.027	0.0072	0.12	J	mg/Kg	1	1/21/2020 6:51:14 PM	A65958
n-Butylbenzene	ND	0.0038	0.12		mg/Kg	1	1/21/2020 6:51:14 PM	A65958
n-Propylbenzene	ND	0.0033	0.041		mg/Kg	1	1/21/2020 6:51:14 PM	A65958
sec-Butylbenzene	ND	0.0046	0.041		mg/Kg	1	1/21/2020 6:51:14 PM	A65958
Styrene	ND	0.0032	0.041		mg/Kg	1	1/21/2020 6:51:14 PM	A65958
tert-Butylbenzene	ND	0.0039	0.041		mg/Kg	1	1/21/2020 6:51:14 PM	A65958
1,1,1,2-Tetrachloroethane	ND	0.0028	0.041		mg/Kg	1	1/21/2020 6:51:14 PM	A65958
1,1,2,2-Tetrachloroethane	ND	0.0041	0.041		mg/Kg	1	1/21/2020 6:51:14 PM	A65958

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Qualifiers:

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B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-14 1.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 9:48:00 AM
Lab ID: 2001723-005 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Tetrachloroethene (PCE)	ND	0.0033	0.041		mg/Kg	1	1/21/2020 6:51:14 PM	A65958
trans-1,2-DCE	ND	0.0037	0.041		mg/Kg	1	1/21/2020 6:51:14 PM	A65958
trans-1,3-Dichloropropene	ND	0.0043	0.041		mg/Kg	1	1/21/2020 6:51:14 PM	A65958
1,2,3-Trichlorobenzene	ND	0.0036	0.082		mg/Kg	1	1/21/2020 6:51:14 PM	A65958
1,2,4-Trichlorobenzene	ND	0.0041	0.041		mg/Kg	1	1/21/2020 6:51:14 PM	A65958
1,1,1-Trichloroethane	ND	0.0037	0.041		mg/Kg	1	1/21/2020 6:51:14 PM	A65958
1,1,2-Trichloroethane	ND	0.0029	0.041		mg/Kg	1	1/21/2020 6:51:14 PM	A65958
Trichloroethene (TCE)	ND	0.0047	0.041		mg/Kg	1	1/21/2020 6:51:14 PM	A65958
Trichlorofluoromethane	ND	0.014	0.041		mg/Kg	1	1/21/2020 6:51:14 PM	A65958
1,2,3-Trichloropropane	ND	0.0066	0.082		mg/Kg	1	1/21/2020 6:51:14 PM	A65958
Vinyl chloride	ND	0.0027	0.041		mg/Kg	1	1/21/2020 6:51:14 PM	A65958
Xylenes, Total	ND	0.010	0.082		mg/Kg	1	1/21/2020 6:51:14 PM	A65958
Surr: Dibromofluoromethane	108		70-130		%Rec	1	1/21/2020 6:51:14 PM	A65958
Surr: 1,2-Dichloroethane-d4	91.3		70-130		%Rec	1	1/21/2020 6:51:14 PM	A65958
Surr: Toluene-d8	101		70-130		%Rec	1	1/21/2020 6:51:14 PM	A65958
Surr: 4-Bromofluorobenzene	95.6		70-130		%Rec	1	1/21/2020 6:51:14 PM	A65958
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	ND	0.87	4.1		mg/Kg	1	1/21/2020 6:51:14 PM	AG659
Surr: BFB	97.4	0	70-130		%Rec	1	1/21/2020 6:51:14 PM	AG659
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/21/2020 2:26:00 PM	R6597
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	7.89				pH Units	1	1/22/2020 11:38:00 AM	R6598
SPECIFIC GRAVITY							Analyst: **PAC**	
Specific Gravity	2.070				g/cm3	1	1/25/2020	R66241

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P	Sample pH Not In Range
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Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-22 1.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 9:15:00 AM
Lab ID: 2001723-006 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **CLP**	
Diesel Range Organics (DRO)	82	2.4	10		mg/Kg	1	1/23/2020 10:33:55 AM	49914
Motor Oil Range Organics (MRO)	140	50	50		mg/Kg	1	1/23/2020 10:33:55 AM	49914
Surr: DNOP	117	0	55.1-146		%Rec	1	1/23/2020 10:33:55 AM	49914
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	0.55	0.0084	0.15	H	mg/Kg	5	2/26/2020 2:01:55 PM	50632
MERCURY, TCLP							Analyst: **pmf**	
Mercury	0.0014	0.00075	0.020	J	mg/L	1	1/20/2020 9:15:02 PM	49924
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.74	5.0		mg/Kg	2	1/21/2020 9:24:25 AM	49919
Arsenic	ND	2.9	5.0		mg/Kg	2	1/21/2020 9:24:25 AM	49919
Barium	600	0.12	0.50		mg/Kg	5	1/21/2020 10:19:13 AM	49919
Beryllium	0.85	0.019	0.30		mg/Kg	2	1/21/2020 9:24:25 AM	49919
Cadmium	ND	0.049	0.20		mg/Kg	2	1/21/2020 9:24:25 AM	49919
Chromium	17	0.16	0.61		mg/Kg	2	1/21/2020 9:24:25 AM	49919
Cobalt	4.6	0.21	0.61		mg/Kg	2	1/21/2020 9:24:25 AM	49919
Lead	3.7	0.49	0.50		mg/Kg	2	1/21/2020 9:24:25 AM	49919
Nickel	9.2	0.30	1.0		mg/Kg	2	1/21/2020 9:24:25 AM	49919
Selenium	ND	2.5	5.0		mg/Kg	2	1/21/2020 9:24:25 AM	49919
Silver	ND	0.065	0.50		mg/Kg	2	1/21/2020 9:24:25 AM	49919
Vanadium	22	0.13	5.0		mg/Kg	2	1/21/2020 9:24:25 AM	49919
Zinc	28	0.80	5.0		mg/Kg	2	1/21/2020 9:24:25 AM	49919
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/21/2020 11:18:25 AM	49933
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.73	1.9	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
Acenaphthylene	ND	0.86	1.9	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
Aniline	ND	0.66	1.9	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
Anthracene	ND	0.74	1.9	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
Azobenzene	ND	0.98	1.9	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
Benz(a)anthracene	ND	0.66	1.9	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
Benzo(a)pyrene	ND	1.0	1.9	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
Benzo(b)fluoranthene	ND	1.1	1.9	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
Benzo(g,h,i)perylene	ND	0.99	1.9	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
Benzo(k)fluoranthene	ND	0.58	1.9	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
Benzoic acid	ND	1.3	4.8	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
Benzyl alcohol	ND	0.80	1.9	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
Bis(2-chloroethoxy)methane	ND	0.80	1.9	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908

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Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-22 1.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 9:15:00 AM
Lab ID: 2001723-006 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	1.1	1.9	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
Bis(2-chloroisopropyl)ether	ND	0.83	1.9	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
Bis(2-ethylhexyl)phthalate	ND	2.2	4.8	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
4-Bromophenyl phenyl ether	ND	1.1	1.9	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
Butyl benzyl phthalate	ND	0.65	1.9	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
Carbazole	ND	0.77	1.9	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
4-Chloro-3-methylphenol	ND	0.76	4.8	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
4-Chloroaniline	ND	0.74	4.8	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
2-Chloronaphthalene	ND	0.81	2.4	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
2-Chlorophenol	ND	1.1	1.9	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
4-Chlorophenyl phenyl ether	ND	0.81	1.9	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
Chrysene	ND	0.76	1.9	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
Di-n-butyl phthalate	ND	2.9	3.9	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
Di-n-octyl phthalate	ND	0.64	3.9	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
Dibenz(a,h)anthracene	ND	1.1	1.9	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
Dibenzofuran	ND	0.97	1.9	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
1,2-Dichlorobenzene	ND	0.76	1.9	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
1,3-Dichlorobenzene	ND	0.65	1.9	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
1,4-Dichlorobenzene	ND	0.80	1.9	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
3,3´-Dichlorobenzidine	ND	0.82	2.4	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
Diethyl phthalate	ND	2.9	4.8	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
Dimethyl phthalate	ND	0.78	1.9	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
2,4-Dichlorophenol	ND	0.82	3.9	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
2,4-Dimethylphenol	ND	0.80	2.9	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
4,6-Dinitro-2-methylphenol	ND	0.71	3.9	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
2,4-Dinitrophenol	ND	0.56	4.8	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
2,4-Dinitrotoluene	ND	0.99	4.8	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
2,6-Dinitrotoluene	ND	1.1	4.8	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
Fluoranthene	ND	0.74	1.9	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
Fluorene	ND	0.76	1.9	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
Hexachlorobenzene	ND	0.75	1.9	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
Hexachlorobutadiene	ND	0.85	1.9	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
Hexachlorocyclopentadiene	ND	0.93	1.9	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
Hexachloroethane	ND	0.79	1.9	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
Indeno(1,2,3-cd)pyrene	ND	1.2	1.9	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
Isophorone	ND	0.84	3.9	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
1-Methylnaphthalene	ND	0.90	1.9	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
2-Methylnaphthalene	ND	0.78	1.9	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
2-Methylphenol	ND	0.81	3.9	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908

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Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-22 1.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 9:15:00 AM
Lab ID: 2001723-006 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.70	1.9	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
N-Nitrosodi-n-propylamine	ND	0.97	1.9	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
N-Nitrosodiphenylamine	ND	1.0	1.9	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
Naphthalene	ND	0.79	1.9	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
2-Nitroaniline	ND	1.1	1.9	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
3-Nitroaniline	ND	0.95	1.9	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
4-Nitroaniline	ND	1.3	3.9	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
Nitrobenzene	ND	0.82	3.9	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
2-Nitrophenol	ND	0.80	1.9	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
4-Nitrophenol	ND	0.57	2.4	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
Pentachlorophenol	ND	0.86	3.9	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
Phenanthrene	ND	0.98	1.9	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
Phenol	ND	0.82	1.9	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
Pyrene	ND	0.64	1.9	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
Pyridine	ND	1.8	3.9	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
1,2,4-Trichlorobenzene	ND	0.82	1.9	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
2,4,5-Trichlorophenol	ND	0.62	1.9	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
2,4,6-Trichlorophenol	ND	0.97	1.9	D	mg/Kg	1	1/24/2020 2:32:07 PM	49908
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	1	1/24/2020 2:32:07 PM	49908
Surr: Phenol-d5	0		18.5-101	SD	%Rec	1	1/24/2020 2:32:07 PM	49908
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	1	1/24/2020 2:32:07 PM	49908
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	1	1/24/2020 2:32:07 PM	49908
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	1	1/24/2020 2:32:07 PM	49908
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	1	1/24/2020 2:32:07 PM	49908
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.0034	0.021		mg/Kg	1	1/21/2020 7:20:31 PM	A65958
Toluene	ND	0.0039	0.041		mg/Kg	1	1/21/2020 7:20:31 PM	A65958
Ethylbenzene	ND	0.0024	0.041		mg/Kg	1	1/21/2020 7:20:31 PM	A65958
Methyl tert-butyl ether (MTBE)	ND	0.0098	0.041		mg/Kg	1	1/21/2020 7:20:31 PM	A65958
1,2,4-Trimethylbenzene	ND	0.0038	0.041		mg/Kg	1	1/21/2020 7:20:31 PM	A65958
1,3,5-Trimethylbenzene	ND	0.0040	0.041		mg/Kg	1	1/21/2020 7:20:31 PM	A65958
1,2-Dichloroethane (EDC)	ND	0.0042	0.041		mg/Kg	1	1/21/2020 7:20:31 PM	A65958
1,2-Dibromoethane (EDB)	ND	0.0038	0.041		mg/Kg	1	1/21/2020 7:20:31 PM	A65958
Naphthalene	ND	0.0082	0.082		mg/Kg	1	1/21/2020 7:20:31 PM	A65958
1-Methylnaphthalene	ND	0.024	0.16		mg/Kg	1	1/21/2020 7:20:31 PM	A65958
2-Methylnaphthalene	ND	0.018	0.16		mg/Kg	1	1/21/2020 7:20:31 PM	A65958
Acetone	ND	0.034	0.62		mg/Kg	1	1/21/2020 7:20:31 PM	A65958
Bromobenzene	ND	0.0039	0.041		mg/Kg	1	1/21/2020 7:20:31 PM	A65958
Bromodichloromethane	ND	0.0038	0.041		mg/Kg	1	1/21/2020 7:20:31 PM	A65958

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Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
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Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 9:15:00 AM
Lab ID: 2001723-006 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Bromoform	ND	0.0037	0.041		mg/Kg	1	1/21/2020 7:20:31 PM	A65958
Bromomethane	ND	0.0099	0.12		mg/Kg	1	1/21/2020 7:20:31 PM	A65958
2-Butanone	ND	0.048	0.41		mg/Kg	1	1/21/2020 7:20:31 PM	A65958
Carbon disulfide	ND	0.014	0.41		mg/Kg	1	1/21/2020 7:20:31 PM	A65958
Carbon tetrachloride	ND	0.0039	0.041		mg/Kg	1	1/21/2020 7:20:31 PM	A65958
Chlorobenzene	ND	0.0053	0.041		mg/Kg	1	1/21/2020 7:20:31 PM	A65958
Chloroethane	ND	0.0061	0.082		mg/Kg	1	1/21/2020 7:20:31 PM	A65958
Chloroform	ND	0.0033	0.041		mg/Kg	1	1/21/2020 7:20:31 PM	A65958
Chloromethane	ND	0.0039	0.12		mg/Kg	1	1/21/2020 7:20:31 PM	A65958
2-Chlorotoluene	ND	0.0036	0.041		mg/Kg	1	1/21/2020 7:20:31 PM	A65958
4-Chlorotoluene	ND	0.0034	0.041		mg/Kg	1	1/21/2020 7:20:31 PM	A65958
cis-1,2-DCE	ND	0.0056	0.041		mg/Kg	1	1/21/2020 7:20:31 PM	A65958
cis-1,3-Dichloropropene	ND	0.0035	0.041		mg/Kg	1	1/21/2020 7:20:31 PM	A65958
1,2-Dibromo-3-chloropropane	ND	0.0042	0.082		mg/Kg	1	1/21/2020 7:20:31 PM	A65958
Dibromochloromethane	ND	0.0029	0.041		mg/Kg	1	1/21/2020 7:20:31 PM	A65958
Dibromomethane	ND	0.0044	0.041		mg/Kg	1	1/21/2020 7:20:31 PM	A65958
1,2-Dichlorobenzene	ND	0.0034	0.041		mg/Kg	1	1/21/2020 7:20:31 PM	A65958
1,3-Dichlorobenzene	ND	0.0036	0.041		mg/Kg	1	1/21/2020 7:20:31 PM	A65958
1,4-Dichlorobenzene	ND	0.0034	0.041		mg/Kg	1	1/21/2020 7:20:31 PM	A65958
Dichlorodifluoromethane	ND	0.0096	0.041		mg/Kg	1	1/21/2020 7:20:31 PM	A65958
1,1-Dichloroethane	ND	0.0026	0.041		mg/Kg	1	1/21/2020 7:20:31 PM	A65958
1,1-Dichloroethene	ND	0.016	0.041		mg/Kg	1	1/21/2020 7:20:31 PM	A65958
1,2-Dichloropropane	ND	0.0030	0.041		mg/Kg	1	1/21/2020 7:20:31 PM	A65958
1,3-Dichloropropane	ND	0.0045	0.041		mg/Kg	1	1/21/2020 7:20:31 PM	A65958
2,2-Dichloropropane	ND	0.013	0.082		mg/Kg	1	1/21/2020 7:20:31 PM	A65958
1,1-Dichloropropene	ND	0.0037	0.082		mg/Kg	1	1/21/2020 7:20:31 PM	A65958
Hexachlorobutadiene	ND	0.0042	0.082		mg/Kg	1	1/21/2020 7:20:31 PM	A65958
2-Hexanone	ND	0.0068	0.41		mg/Kg	1	1/21/2020 7:20:31 PM	A65958
Isopropylbenzene	ND	0.0030	0.041		mg/Kg	1	1/21/2020 7:20:31 PM	A65958
4-Isopropyltoluene	ND	0.0034	0.041		mg/Kg	1	1/21/2020 7:20:31 PM	A65958
4-Methyl-2-pentanone	ND	0.0078	0.41		mg/Kg	1	1/21/2020 7:20:31 PM	A65958
Methylene chloride	0.027	0.0073	0.12	J	mg/Kg	1	1/21/2020 7:20:31 PM	A65958
n-Butylbenzene	ND	0.0038	0.12		mg/Kg	1	1/21/2020 7:20:31 PM	A65958
n-Propylbenzene	ND	0.0033	0.041		mg/Kg	1	1/21/2020 7:20:31 PM	A65958
sec-Butylbenzene	ND	0.0046	0.041		mg/Kg	1	1/21/2020 7:20:31 PM	A65958
Styrene	ND	0.0032	0.041		mg/Kg	1	1/21/2020 7:20:31 PM	A65958
tert-Butylbenzene	ND	0.0039	0.041		mg/Kg	1	1/21/2020 7:20:31 PM	A65958
1,1,1,2-Tetrachloroethane	ND	0.0028	0.041		mg/Kg	1	1/21/2020 7:20:31 PM	A65958
1,1,2,2-Tetrachloroethane	ND	0.0042	0.041		mg/Kg	1	1/21/2020 7:20:31 PM	A65958

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PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-22 1.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 9:15:00 AM
Lab ID: 2001723-006 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Tetrachloroethene (PCE)	ND	0.0033	0.041		mg/Kg	1	1/21/2020 7:20:31 PM	A65958
trans-1,2-DCE	ND	0.0038	0.041		mg/Kg	1	1/21/2020 7:20:31 PM	A65958
trans-1,3-Dichloropropene	ND	0.0044	0.041		mg/Kg	1	1/21/2020 7:20:31 PM	A65958
1,2,3-Trichlorobenzene	ND	0.0036	0.082		mg/Kg	1	1/21/2020 7:20:31 PM	A65958
1,2,4-Trichlorobenzene	ND	0.0042	0.041		mg/Kg	1	1/21/2020 7:20:31 PM	A65958
1,1,1-Trichloroethane	ND	0.0037	0.041		mg/Kg	1	1/21/2020 7:20:31 PM	A65958
1,1,2-Trichloroethane	ND	0.0029	0.041		mg/Kg	1	1/21/2020 7:20:31 PM	A65958
Trichloroethene (TCE)	ND	0.0048	0.041		mg/Kg	1	1/21/2020 7:20:31 PM	A65958
Trichlorofluoromethane	ND	0.014	0.041		mg/Kg	1	1/21/2020 7:20:31 PM	A65958
1,2,3-Trichloropropane	ND	0.0067	0.082		mg/Kg	1	1/21/2020 7:20:31 PM	A65958
Vinyl chloride	ND	0.0027	0.041		mg/Kg	1	1/21/2020 7:20:31 PM	A65958
Xylenes, Total	ND	0.010	0.082		mg/Kg	1	1/21/2020 7:20:31 PM	A65958
Surr: Dibromofluoromethane	99.3		70-130		%Rec	1	1/21/2020 7:20:31 PM	A65958
Surr: 1,2-Dichloroethane-d4	82.9		70-130		%Rec	1	1/21/2020 7:20:31 PM	A65958
Surr: Toluene-d8	95.3		70-130		%Rec	1	1/21/2020 7:20:31 PM	A65958
Surr: 4-Bromofluorobenzene	92.1		70-130		%Rec	1	1/21/2020 7:20:31 PM	A65958
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	ND	0.87	4.1		mg/Kg	1	1/21/2020 7:20:31 PM	AG659
Surr: BFB	88.2	0	70-130		%Rec	1	1/21/2020 7:20:31 PM	AG659
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/21/2020 2:26:00 PM	R6597
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	8.00				pH Units	1	1/22/2020 11:38:00 AM	R6598
SPECIFIC GRAVITY							Analyst: **PAC**	
Specific Gravity	2.170				g/cm3	1	1/25/2020	R66241

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

Qualifiers:

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

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-14 5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 10:02:00 AM
Lab ID: 2001723-007 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	16	2.3	9.5		mg/Kg	1	1/21/2020 8:29:41 PM	49914
Motor Oil Range Organics (MRO)	ND	48	48		mg/Kg	1	1/21/2020 8:29:41 PM	49914
Surr: DNOP	115	0	55.1-146		%Rec	1	1/21/2020 8:29:41 PM	49914
EPA METHOD 7471: MERCURY							Analyst: **rde**	
Mercury	0.011	0.0018	0.033	JH	mg/Kg	1	2/25/2020 3:36:18 PM	50632
MERCURY, TCLP							Analyst: **pmf**	
Mercury	0.0015	0.00075	0.020	J	mg/L	1	1/20/2020 9:17:45 PM	49924
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.74	5.0		mg/Kg	2	1/21/2020 9:25:50 AM	49919
Arsenic	ND	2.9	5.0		mg/Kg	2	1/21/2020 9:25:50 AM	49919
Barium	200	0.046	0.20		mg/Kg	2	1/21/2020 9:25:50 AM	49919
Beryllium	1.3	0.018	0.30		mg/Kg	2	1/21/2020 9:25:50 AM	49919
Cadmium	ND	0.049	0.20		mg/Kg	2	1/21/2020 9:25:50 AM	49919
Chromium	12	0.16	0.60		mg/Kg	2	1/21/2020 9:25:50 AM	49919
Cobalt	6.4	0.21	0.60		mg/Kg	2	1/21/2020 9:25:50 AM	49919
Lead	3.3	0.49	0.50		mg/Kg	2	1/21/2020 9:25:50 AM	49919
Nickel	12	0.30	1.0		mg/Kg	2	1/21/2020 9:25:50 AM	49919
Selenium	ND	2.5	5.0		mg/Kg	2	1/21/2020 9:25:50 AM	49919
Silver	ND	0.064	0.50		mg/Kg	2	1/21/2020 9:25:50 AM	49919
Vanadium	21	0.13	5.0		mg/Kg	2	1/21/2020 9:25:50 AM	49919
Zinc	18	0.79	5.0		mg/Kg	2	1/21/2020 9:25:50 AM	49919
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/21/2020 11:19:50 AM	49933
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.13	0.34	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
Acenaphthylene	ND	0.15	0.34	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
Aniline	ND	0.12	0.34	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
Anthracene	ND	0.13	0.34	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
Azobenzene	ND	0.17	0.34	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
Benz(a)anthracene	ND	0.12	0.34	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
Benzo(a)pyrene	ND	0.18	0.34	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
Benzo(b)fluoranthene	ND	0.19	0.34	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
Benzo(g,h,i)perylene	ND	0.17	0.34	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
Benzo(k)fluoranthene	ND	0.10	0.34	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
Benzoic acid	ND	0.23	0.84	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
Benzyl alcohol	ND	0.14	0.34	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
Bis(2-chloroethoxy)methane	ND	0.14	0.34	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908

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Qualifiers:

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

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-14 5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 10:02:00 AM
Lab ID: 2001723-007 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.20	0.34	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
Bis(2-chloroisopropyl)ether	ND	0.14	0.34	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
Bis(2-ethylhexyl)phthalate	ND	0.38	0.84	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
4-Bromophenyl phenyl ether	ND	0.20	0.34	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
Butyl benzyl phthalate	ND	0.11	0.34	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
Carbazole	ND	0.13	0.34	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
4-Chloro-3-methylphenol	ND	0.13	0.84	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
4-Chloroaniline	ND	0.13	0.84	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
2-Chloronaphthalene	ND	0.14	0.42	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
2-Chlorophenol	ND	0.19	0.34	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
4-Chlorophenyl phenyl ether	ND	0.14	0.34	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
Chrysene	ND	0.13	0.34	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
Di-n-butyl phthalate	ND	0.50	0.67	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
Di-n-octyl phthalate	ND	0.11	0.67	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
Dibenz(a,h)anthracene	ND	0.19	0.34	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
Dibenzofuran	ND	0.17	0.34	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
1,2-Dichlorobenzene	ND	0.13	0.34	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
1,3-Dichlorobenzene	ND	0.11	0.34	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
1,4-Dichlorobenzene	ND	0.14	0.34	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
3,3´-Dichlorobenzidine	ND	0.14	0.42	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
Diethyl phthalate	ND	0.51	0.84	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
Dimethyl phthalate	ND	0.14	0.34	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
2,4-Dichlorophenol	ND	0.14	0.67	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
2,4-Dimethylphenol	ND	0.14	0.51	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
4,6-Dinitro-2-methylphenol	ND	0.12	0.67	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
2,4-Dinitrophenol	ND	0.098	0.84	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
2,4-Dinitrotoluene	ND	0.17	0.84	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
2,6-Dinitrotoluene	ND	0.20	0.84	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
Fluoranthene	ND	0.13	0.34	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
Fluorene	ND	0.13	0.34	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
Hexachlorobenzene	ND	0.13	0.34	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
Hexachlorobutadiene	ND	0.15	0.34	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
Hexachlorocyclopentadiene	ND	0.16	0.34	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
Hexachloroethane	ND	0.14	0.34	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
Indeno(1,2,3-cd)pyrene	ND	0.21	0.34	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
Isophorone	ND	0.15	0.67	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
1-Methylnaphthalene	ND	0.16	0.34	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
2-Methylnaphthalene	ND	0.14	0.34	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
2-Methylphenol	ND	0.14	0.67	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
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Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-14 5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 10:02:00 AM
Lab ID: 2001723-007 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.12	0.34	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
N-Nitrosodi-n-propylamine	ND	0.17	0.34	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
N-Nitrosodiphenylamine	ND	0.17	0.34	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
Naphthalene	ND	0.14	0.34	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
2-Nitroaniline	ND	0.19	0.34	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
3-Nitroaniline	ND	0.17	0.34	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
4-Nitroaniline	ND	0.23	0.67	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
Nitrobenzene	ND	0.14	0.67	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
2-Nitrophenol	ND	0.14	0.34	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
4-Nitrophenol	ND	0.099	0.42	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
Pentachlorophenol	ND	0.15	0.67	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
Phenanthrene	ND	0.17	0.34	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
Phenol	ND	0.14	0.34	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
Pyrene	ND	0.11	0.34	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
Pyridine	ND	0.31	0.67	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
1,2,4-Trichlorobenzene	ND	0.14	0.34	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
2,4,5-Trichlorophenol	ND	0.11	0.34	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
2,4,6-Trichlorophenol	ND	0.17	0.34	D	mg/Kg	1	1/24/2020 3:01:32 PM	49908
Surr: 2-Fluorophenol	56.7		26.7-85.9	D	%Rec	1	1/24/2020 3:01:32 PM	49908
Surr: Phenol-d5	69.4		18.5-101	D	%Rec	1	1/24/2020 3:01:32 PM	49908
Surr: 2,4,6-Tribromophenol	78.1		35.8-85.6	D	%Rec	1	1/24/2020 3:01:32 PM	49908
Surr: Nitrobenzene-d5	78.4		40.8-95.2	D	%Rec	1	1/24/2020 3:01:32 PM	49908
Surr: 2-Fluorobiphenyl	77.3		34.7-85.2	D	%Rec	1	1/24/2020 3:01:32 PM	49908
Surr: 4-Terphenyl-d14	76.1		37.4-91.3	D	%Rec	1	1/24/2020 3:01:32 PM	49908
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.0032	0.019		mg/Kg	1	1/21/2020 7:49:46 PM	A65958
Toluene	0.0044	0.0037	0.039	J	mg/Kg	1	1/21/2020 7:49:46 PM	A65958
Ethylbenzene	ND	0.0023	0.039		mg/Kg	1	1/21/2020 7:49:46 PM	A65958
Methyl tert-butyl ether (MTBE)	ND	0.0092	0.039		mg/Kg	1	1/21/2020 7:49:46 PM	A65958
1,2,4-Trimethylbenzene	ND	0.0035	0.039		mg/Kg	1	1/21/2020 7:49:46 PM	A65958
1,3,5-Trimethylbenzene	ND	0.0037	0.039		mg/Kg	1	1/21/2020 7:49:46 PM	A65958
1,2-Dichloroethane (EDC)	ND	0.0040	0.039		mg/Kg	1	1/21/2020 7:49:46 PM	A65958
1,2-Dibromoethane (EDB)	ND	0.0035	0.039		mg/Kg	1	1/21/2020 7:49:46 PM	A65958
Naphthalene	ND	0.0078	0.077		mg/Kg	1	1/21/2020 7:49:46 PM	A65958
1-Methylnaphthalene	ND	0.022	0.15		mg/Kg	1	1/21/2020 7:49:46 PM	A65958
2-Methylnaphthalene	ND	0.017	0.15		mg/Kg	1	1/21/2020 7:49:46 PM	A65958
Acetone	ND	0.032	0.58		mg/Kg	1	1/21/2020 7:49:46 PM	A65958
Bromobenzene	ND	0.0037	0.039		mg/Kg	1	1/21/2020 7:49:46 PM	A65958
Bromodichloromethane	ND	0.0035	0.039		mg/Kg	1	1/21/2020 7:49:46 PM	A65958

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Qualifiers:

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

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-14 5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 10:02:00 AM
Lab ID: 2001723-007 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Bromoform	ND	0.0035	0.039		mg/Kg	1	1/21/2020 7:49:46 PM	A65958
Bromomethane	ND	0.0093	0.12		mg/Kg	1	1/21/2020 7:49:46 PM	A65958
2-Butanone	ND	0.045	0.39		mg/Kg	1	1/21/2020 7:49:46 PM	A65958
Carbon disulfide	ND	0.013	0.39		mg/Kg	1	1/21/2020 7:49:46 PM	A65958
Carbon tetrachloride	ND	0.0037	0.039		mg/Kg	1	1/21/2020 7:49:46 PM	A65958
Chlorobenzene	ND	0.0050	0.039		mg/Kg	1	1/21/2020 7:49:46 PM	A65958
Chloroethane	ND	0.0057	0.077		mg/Kg	1	1/21/2020 7:49:46 PM	A65958
Chloroform	ND	0.0031	0.039		mg/Kg	1	1/21/2020 7:49:46 PM	A65958
Chloromethane	ND	0.0037	0.12		mg/Kg	1	1/21/2020 7:49:46 PM	A65958
2-Chlorotoluene	ND	0.0034	0.039		mg/Kg	1	1/21/2020 7:49:46 PM	A65958
4-Chlorotoluene	ND	0.0032	0.039		mg/Kg	1	1/21/2020 7:49:46 PM	A65958
cis-1,2-DCE	ND	0.0053	0.039		mg/Kg	1	1/21/2020 7:49:46 PM	A65958
cis-1,3-Dichloropropene	ND	0.0033	0.039		mg/Kg	1	1/21/2020 7:49:46 PM	A65958
1,2-Dibromo-3-chloropropane	ND	0.0040	0.077		mg/Kg	1	1/21/2020 7:49:46 PM	A65958
Dibromochloromethane	ND	0.0027	0.039		mg/Kg	1	1/21/2020 7:49:46 PM	A65958
Dibromomethane	ND	0.0042	0.039		mg/Kg	1	1/21/2020 7:49:46 PM	A65958
1,2-Dichlorobenzene	ND	0.0032	0.039		mg/Kg	1	1/21/2020 7:49:46 PM	A65958
1,3-Dichlorobenzene	ND	0.0034	0.039		mg/Kg	1	1/21/2020 7:49:46 PM	A65958
1,4-Dichlorobenzene	ND	0.0032	0.039		mg/Kg	1	1/21/2020 7:49:46 PM	A65958
Dichlorodifluoromethane	ND	0.0090	0.039		mg/Kg	1	1/21/2020 7:49:46 PM	A65958
1,1-Dichloroethane	ND	0.0025	0.039		mg/Kg	1	1/21/2020 7:49:46 PM	A65958
1,1-Dichloroethene	ND	0.015	0.039		mg/Kg	1	1/21/2020 7:49:46 PM	A65958
1,2-Dichloropropane	ND	0.0028	0.039		mg/Kg	1	1/21/2020 7:49:46 PM	A65958
1,3-Dichloropropane	ND	0.0042	0.039		mg/Kg	1	1/21/2020 7:49:46 PM	A65958
2,2-Dichloropropane	ND	0.013	0.077		mg/Kg	1	1/21/2020 7:49:46 PM	A65958
1,1-Dichloropropene	ND	0.0035	0.077		mg/Kg	1	1/21/2020 7:49:46 PM	A65958
Hexachlorobutadiene	ND	0.0039	0.077		mg/Kg	1	1/21/2020 7:49:46 PM	A65958
2-Hexanone	ND	0.0064	0.39		mg/Kg	1	1/21/2020 7:49:46 PM	A65958
Isopropylbenzene	ND	0.0028	0.039		mg/Kg	1	1/21/2020 7:49:46 PM	A65958
4-Isopropyltoluene	ND	0.0032	0.039		mg/Kg	1	1/21/2020 7:49:46 PM	A65958
4-Methyl-2-pentanone	0.024	0.0073	0.39	J	mg/Kg	1	1/21/2020 7:49:46 PM	A65958
Methylene chloride	0.034	0.0068	0.12	J	mg/Kg	1	1/21/2020 7:49:46 PM	A65958
n-Butylbenzene	ND	0.0036	0.12		mg/Kg	1	1/21/2020 7:49:46 PM	A65958
n-Propylbenzene	ND	0.0031	0.039		mg/Kg	1	1/21/2020 7:49:46 PM	A65958
sec-Butylbenzene	ND	0.0044	0.039		mg/Kg	1	1/21/2020 7:49:46 PM	A65958
Styrene	ND	0.0030	0.039		mg/Kg	1	1/21/2020 7:49:46 PM	A65958
tert-Butylbenzene	ND	0.0037	0.039		mg/Kg	1	1/21/2020 7:49:46 PM	A65958
1,1,1,2-Tetrachloroethane	ND	0.0026	0.039		mg/Kg	1	1/21/2020 7:49:46 PM	A65958
1,1,2,2-Tetrachloroethane	ND	0.0039	0.039		mg/Kg	1	1/21/2020 7:49:46 PM	A65958

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

Qualifiers:

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

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-14 5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 10:02:00 AM
Lab ID: 2001723-007 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Tetrachloroethene (PCE)	ND	0.0031	0.039		mg/Kg	1	1/21/2020 7:49:46 PM	A65958
trans-1,2-DCE	ND	0.0035	0.039		mg/Kg	1	1/21/2020 7:49:46 PM	A65958
trans-1,3-Dichloropropene	ND	0.0041	0.039		mg/Kg	1	1/21/2020 7:49:46 PM	A65958
1,2,3-Trichlorobenzene	ND	0.0034	0.077		mg/Kg	1	1/21/2020 7:49:46 PM	A65958
1,2,4-Trichlorobenzene	ND	0.0039	0.039		mg/Kg	1	1/21/2020 7:49:46 PM	A65958
1,1,1-Trichloroethane	ND	0.0035	0.039		mg/Kg	1	1/21/2020 7:49:46 PM	A65958
1,1,2-Trichloroethane	ND	0.0027	0.039		mg/Kg	1	1/21/2020 7:49:46 PM	A65958
Trichloroethene (TCE)	ND	0.0045	0.039		mg/Kg	1	1/21/2020 7:49:46 PM	A65958
Trichlorofluoromethane	ND	0.013	0.039		mg/Kg	1	1/21/2020 7:49:46 PM	A65958
1,2,3-Trichloropropane	ND	0.0063	0.077		mg/Kg	1	1/21/2020 7:49:46 PM	A65958
Vinyl chloride	ND	0.0025	0.039		mg/Kg	1	1/21/2020 7:49:46 PM	A65958
Xylenes, Total	ND	0.0098	0.077		mg/Kg	1	1/21/2020 7:49:46 PM	A65958
Surr: Dibromofluoromethane	105		70-130		%Rec	1	1/21/2020 7:49:46 PM	A65958
Surr: 1,2-Dichloroethane-d4	87.6		70-130		%Rec	1	1/21/2020 7:49:46 PM	A65958
Surr: Toluene-d8	102		70-130		%Rec	1	1/21/2020 7:49:46 PM	A65958
Surr: 4-Bromofluorobenzene	93.9		70-130		%Rec	1	1/21/2020 7:49:46 PM	A65958
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	ND	0.82	3.9		mg/Kg	1	1/21/2020 7:49:46 PM	AG659
Surr: BFB	98.4	0	70-130		%Rec	1	1/21/2020 7:49:46 PM	AG659
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/21/2020 2:26:00 PM	R6597
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	8.29				pH Units	1	1/22/2020 11:38:00 AM	R6598
SPECIFIC GRAVITY							Analyst: **PAC**	
Specific Gravity	2.150				g/cm3	1	1/25/2020	R66241

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

Qualifiers:

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

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-21 Toe 2.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 10:43:00 AM
Lab ID: 2001723-008 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **JME**	
Diesel Range Organics (DRO)	2800	22	91		mg/Kg	10	1/22/2020 10:53:52 AM	49914
Motor Oil Range Organics (MRO)	860	460	460		mg/Kg	10	1/22/2020 10:53:52 AM	49914
Surr: DNOP	0	0	55.1-146	S	%Rec	10	1/22/2020 10:53:52 AM	49914
EPA METHOD 7471: MERCURY							Analyst: **rde**	
Mercury	0.0069	0.0018	0.033	JH	mg/Kg	1	2/25/2020 3:38:21 PM	50632
MERCURY, TCLP							Analyst: **pmf**	
Mercury	ND	0.00075	0.020		mg/L	1	1/20/2020 9:20:28 PM	49924
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.75	5.1		mg/Kg	2	1/21/2020 9:27:15 AM	49919
Arsenic	ND	2.9	5.1		mg/Kg	2	1/21/2020 9:27:15 AM	49919
Barium	300	0.047	0.20		mg/Kg	2	1/21/2020 9:27:15 AM	49919
Beryllium	0.97	0.019	0.30		mg/Kg	2	1/21/2020 9:27:15 AM	49919
Cadmium	ND	0.049	0.20		mg/Kg	2	1/21/2020 9:27:15 AM	49919
Chromium	9.5	0.16	0.61		mg/Kg	2	1/21/2020 9:27:15 AM	49919
Cobalt	4.0	0.21	0.61		mg/Kg	2	1/21/2020 9:27:15 AM	49919
Lead	2.3	0.49	0.51		mg/Kg	2	1/21/2020 9:27:15 AM	49919
Nickel	8.7	0.30	1.0		mg/Kg	2	1/21/2020 9:27:15 AM	49919
Selenium	ND	2.5	5.1		mg/Kg	2	1/21/2020 9:27:15 AM	49919
Silver	ND	0.065	0.51		mg/Kg	2	1/21/2020 9:27:15 AM	49919
Vanadium	19	0.14	5.1		mg/Kg	2	1/21/2020 9:27:15 AM	49919
Zinc	15	0.80	5.1		mg/Kg	2	1/21/2020 9:27:15 AM	49919
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/21/2020 11:21:15 AM	49933
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.35	0.94	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
Acenaphthylene	ND	0.42	0.94	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
Aniline	ND	0.32	0.94	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
Anthracene	ND	0.36	0.94	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
Azobenzene	ND	0.48	0.94	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
Benz(a)anthracene	ND	0.32	0.94	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
Benzo(a)pyrene	ND	0.51	0.94	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
Benzo(b)fluoranthene	ND	0.53	0.94	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
Benzo(g,h,i)perylene	ND	0.48	0.94	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
Benzo(k)fluoranthene	ND	0.28	0.94	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
Benzoic acid	ND	0.65	2.3	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
Benzyl alcohol	ND	0.39	0.94	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
Bis(2-chloroethoxy)methane	ND	0.39	0.94	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908

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

Qualifiers:

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

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-21 Toe 2.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 10:43:00 AM
Lab ID: 2001723-008 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.55	0.94	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
Bis(2-chloroisopropyl)ether	ND	0.40	0.94	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
Bis(2-ethylhexyl)phthalate	ND	1.0	2.3	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
4-Bromophenyl phenyl ether	ND	0.55	0.94	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
Butyl benzyl phthalate	ND	0.31	0.94	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
Carbazole	ND	0.37	0.94	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
4-Chloro-3-methylphenol	ND	0.37	2.3	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
4-Chloroaniline	ND	0.36	2.3	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
2-Chloronaphthalene	ND	0.39	1.2	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
2-Chlorophenol	ND	0.53	0.94	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
4-Chlorophenyl phenyl ether	ND	0.39	0.94	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
Chrysene	2.1	0.37	0.94	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
Di-n-butyl phthalate	ND	1.4	1.9	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
Di-n-octyl phthalate	ND	0.31	1.9	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
Dibenz(a,h)anthracene	ND	0.52	0.94	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
Dibenzofuran	ND	0.47	0.94	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
1,2-Dichlorobenzene	ND	0.37	0.94	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
1,3-Dichlorobenzene	ND	0.31	0.94	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
1,4-Dichlorobenzene	ND	0.39	0.94	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
3,3´-Dichlorobenzidine	ND	0.40	1.2	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
Diethyl phthalate	ND	1.4	2.3	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
Dimethyl phthalate	ND	0.38	0.94	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
2,4-Dichlorophenol	ND	0.40	1.9	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
2,4-Dimethylphenol	ND	0.39	1.4	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
4,6-Dinitro-2-methylphenol	ND	0.34	1.9	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
2,4-Dinitrophenol	ND	0.27	2.3	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
2,4-Dinitrotoluene	ND	0.48	2.3	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
2,6-Dinitrotoluene	ND	0.56	2.3	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
Fluoranthene	ND	0.36	0.94	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
Fluorene	2.0	0.37	0.94	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
Hexachlorobenzene	ND	0.37	0.94	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
Hexachlorobutadiene	ND	0.41	0.94	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
Hexachlorocyclopentadiene	ND	0.45	0.94	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
Hexachloroethane	ND	0.38	0.94	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
Indeno(1,2,3-cd)pyrene	ND	0.58	0.94	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
Isophorone	ND	0.41	1.9	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
1-Methylnaphthalene	8.8	0.44	0.94	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
2-Methylnaphthalene	5.3	0.38	0.94	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
2-Methylphenol	ND	0.39	1.9	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908

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

Qualifiers:

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

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-21 Toe 2.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 10:43:00 AM
Lab ID: 2001723-008 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.34	0.94	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
N-Nitrosodi-n-propylamine	ND	0.47	0.94	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
N-Nitrosodiphenylamine	ND	0.48	0.94	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
Naphthalene	0.95	0.38	0.94	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
2-Nitroaniline	ND	0.52	0.94	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
3-Nitroaniline	ND	0.46	0.94	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
4-Nitroaniline	ND	0.63	1.9	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
Nitrobenzene	ND	0.40	1.9	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
2-Nitrophenol	ND	0.39	0.94	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
4-Nitrophenol	ND	0.28	1.2	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
Pentachlorophenol	ND	0.42	1.9	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
Phenanthrene	5.7	0.48	0.94	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
Phenol	ND	0.40	0.94	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
Pyrene	ND	0.31	0.94	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
Pyridine	ND	0.87	1.9	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
1,2,4-Trichlorobenzene	ND	0.40	0.94	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
2,4,5-Trichlorophenol	ND	0.30	0.94	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
2,4,6-Trichlorophenol	ND	0.47	0.94	D	mg/Kg	1	1/24/2020 3:31:00 PM	49908
Surr: 2-Fluorophenol	67.1		26.7-85.9	D	%Rec	1	1/24/2020 3:31:00 PM	49908
Surr: Phenol-d5	77.1		18.5-101	D	%Rec	1	1/24/2020 3:31:00 PM	49908
Surr: 2,4,6-Tribromophenol	71.8		35.8-85.6	D	%Rec	1	1/24/2020 3:31:00 PM	49908
Surr: Nitrobenzene-d5	149		40.8-95.2	SD	%Rec	1	1/24/2020 3:31:00 PM	49908
Surr: 2-Fluorobiphenyl	93.8		34.7-85.2	SD	%Rec	1	1/24/2020 3:31:00 PM	49908
Surr: 4-Terphenyl-d14	74.6		37.4-91.3	D	%Rec	1	1/24/2020 3:31:00 PM	49908
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	0.023	0.012	0.072	J	mg/Kg	5	1/21/2020 8:19:01 PM	A65958
Toluene	0.13	0.014	0.15	J	mg/Kg	5	1/21/2020 8:19:01 PM	A65958
Ethylbenzene	0.23	0.0084	0.15		mg/Kg	5	1/21/2020 8:19:01 PM	A65958
Methyl tert-butyl ether (MTBE)	ND	0.034	0.15		mg/Kg	5	1/21/2020 8:19:01 PM	A65958
1,2,4-Trimethylbenzene	1.2	0.013	0.15		mg/Kg	5	1/21/2020 8:19:01 PM	A65958
1,3,5-Trimethylbenzene	0.32	0.014	0.15		mg/Kg	5	1/21/2020 8:19:01 PM	A65958
1,2-Dichloroethane (EDC)	ND	0.015	0.15		mg/Kg	5	1/21/2020 8:19:01 PM	A65958
1,2-Dibromoethane (EDB)	0.035	0.013	0.15	J	mg/Kg	5	1/21/2020 8:19:01 PM	A65958
Naphthalene	0.53	0.029	0.29		mg/Kg	5	1/21/2020 8:19:01 PM	A65958
1-Methylnaphthalene	3.3	0.083	0.58		mg/Kg	5	1/21/2020 8:19:01 PM	A65958
2-Methylnaphthalene	3.5	0.063	0.58		mg/Kg	5	1/21/2020 8:19:01 PM	A65958
Acetone	ND	0.12	2.2		mg/Kg	5	1/21/2020 8:19:01 PM	A65958
Bromobenzene	ND	0.014	0.15		mg/Kg	5	1/21/2020 8:19:01 PM	A65958
Bromodichloromethane	ND	0.013	0.15		mg/Kg	5	1/21/2020 8:19:01 PM	A65958

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

Qualifiers:

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

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-21 Toe 2.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 10:43:00 AM
Lab ID: 2001723-008 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Bromoform	ND	0.013	0.15		mg/Kg	5	1/21/2020 8:19:01 PM	A65958
Bromomethane	ND	0.035	0.44		mg/Kg	5	1/21/2020 8:19:01 PM	A65958
2-Butanone	ND	0.17	1.4		mg/Kg	5	1/21/2020 8:19:01 PM	A65958
Carbon disulfide	ND	0.048	1.4		mg/Kg	5	1/21/2020 8:19:01 PM	A65958
Carbon tetrachloride	ND	0.014	0.15		mg/Kg	5	1/21/2020 8:19:01 PM	A65958
Chlorobenzene	ND	0.019	0.15		mg/Kg	5	1/21/2020 8:19:01 PM	A65958
Chloroethane	ND	0.021	0.29		mg/Kg	5	1/21/2020 8:19:01 PM	A65958
Chloroform	ND	0.012	0.15		mg/Kg	5	1/21/2020 8:19:01 PM	A65958
Chloromethane	ND	0.014	0.44		mg/Kg	5	1/21/2020 8:19:01 PM	A65958
2-Chlorotoluene	ND	0.013	0.15		mg/Kg	5	1/21/2020 8:19:01 PM	A65958
4-Chlorotoluene	ND	0.012	0.15		mg/Kg	5	1/21/2020 8:19:01 PM	A65958
cis-1,2-DCE	ND	0.020	0.15		mg/Kg	5	1/21/2020 8:19:01 PM	A65958
cis-1,3-Dichloropropene	ND	0.012	0.15		mg/Kg	5	1/21/2020 8:19:01 PM	A65958
1,2-Dibromo-3-chloropropane	ND	0.015	0.29		mg/Kg	5	1/21/2020 8:19:01 PM	A65958
Dibromochloromethane	ND	0.010	0.15		mg/Kg	5	1/21/2020 8:19:01 PM	A65958
Dibromomethane	ND	0.016	0.15		mg/Kg	5	1/21/2020 8:19:01 PM	A65958
1,2-Dichlorobenzene	ND	0.012	0.15		mg/Kg	5	1/21/2020 8:19:01 PM	A65958
1,3-Dichlorobenzene	ND	0.013	0.15		mg/Kg	5	1/21/2020 8:19:01 PM	A65958
1,4-Dichlorobenzene	ND	0.012	0.15		mg/Kg	5	1/21/2020 8:19:01 PM	A65958
Dichlorodifluoromethane	ND	0.034	0.15		mg/Kg	5	1/21/2020 8:19:01 PM	A65958
1,1-Dichloroethane	ND	0.0093	0.15		mg/Kg	5	1/21/2020 8:19:01 PM	A65958
1,1-Dichloroethene	ND	0.058	0.15		mg/Kg	5	1/21/2020 8:19:01 PM	A65958
1,2-Dichloropropane	ND	0.011	0.15		mg/Kg	5	1/21/2020 8:19:01 PM	A65958
1,3-Dichloropropane	ND	0.016	0.15		mg/Kg	5	1/21/2020 8:19:01 PM	A65958
2,2-Dichloropropane	ND	0.047	0.29		mg/Kg	5	1/21/2020 8:19:01 PM	A65958
1,1-Dichloropropene	ND	0.013	0.29		mg/Kg	5	1/21/2020 8:19:01 PM	A65958
Hexachlorobutadiene	ND	0.015	0.29		mg/Kg	5	1/21/2020 8:19:01 PM	A65958
2-Hexanone	0.18	0.024	1.4	J	mg/Kg	5	1/21/2020 8:19:01 PM	A65958
Isopropylbenzene	0.093	0.010	0.15	J	mg/Kg	5	1/21/2020 8:19:01 PM	A65958
4-Isopropyltoluene	0.10	0.012	0.15	J	mg/Kg	5	1/21/2020 8:19:01 PM	A65958
4-Methyl-2-pentanone	0.48	0.027	1.4	J	mg/Kg	5	1/21/2020 8:19:01 PM	A65958
Methylene chloride	0.061	0.026	0.44	J	mg/Kg	5	1/21/2020 8:19:01 PM	A65958
n-Butylbenzene	0.21	0.014	0.44	J	mg/Kg	5	1/21/2020 8:19:01 PM	A65958
n-Propylbenzene	0.18	0.012	0.15		mg/Kg	5	1/21/2020 8:19:01 PM	A65958
sec-Butylbenzene	0.17	0.016	0.15		mg/Kg	5	1/21/2020 8:19:01 PM	A65958
Styrene	ND	0.011	0.15		mg/Kg	5	1/21/2020 8:19:01 PM	A65958
tert-Butylbenzene	ND	0.014	0.15		mg/Kg	5	1/21/2020 8:19:01 PM	A65958
1,1,1,2-Tetrachloroethane	ND	0.0098	0.15		mg/Kg	5	1/21/2020 8:19:01 PM	A65958
1,1,2,2-Tetrachloroethane	ND	0.015	0.15		mg/Kg	5	1/21/2020 8:19:01 PM	A65958

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

Qualifiers:

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

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-21 Toe 2.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 10:43:00 AM
Lab ID: 2001723-008 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Tetrachloroethene (PCE)	ND	0.012	0.15		mg/Kg	5	1/21/2020 8:19:01 PM	A65958
trans-1,2-DCE	ND	0.013	0.15		mg/Kg	5	1/21/2020 8:19:01 PM	A65958
trans-1,3-Dichloropropene	ND	0.015	0.15		mg/Kg	5	1/21/2020 8:19:01 PM	A65958
1,2,3-Trichlorobenzene	ND	0.013	0.29		mg/Kg	5	1/21/2020 8:19:01 PM	A65958
1,2,4-Trichlorobenzene	ND	0.015	0.15		mg/Kg	5	1/21/2020 8:19:01 PM	A65958
1,1,1-Trichloroethane	ND	0.013	0.15		mg/Kg	5	1/21/2020 8:19:01 PM	A65958
1,1,2-Trichloroethane	ND	0.010	0.15		mg/Kg	5	1/21/2020 8:19:01 PM	A65958
Trichloroethene (TCE)	ND	0.017	0.15		mg/Kg	5	1/21/2020 8:19:01 PM	A65958
Trichlorofluoromethane	ND	0.049	0.15		mg/Kg	5	1/21/2020 8:19:01 PM	A65958
1,2,3-Trichloropropane	ND	0.023	0.29		mg/Kg	5	1/21/2020 8:19:01 PM	A65958
Vinyl chloride	ND	0.0095	0.15		mg/Kg	5	1/21/2020 8:19:01 PM	A65958
Xylenes, Total	1.1	0.037	0.29		mg/Kg	5	1/21/2020 8:19:01 PM	A65958
Surr: Dibromofluoromethane	106		70-130		%Rec	5	1/21/2020 8:19:01 PM	A65958
Surr: 1,2-Dichloroethane-d4	94.1		70-130		%Rec	5	1/21/2020 8:19:01 PM	A65958
Surr: Toluene-d8	98.2		70-130		%Rec	5	1/21/2020 8:19:01 PM	A65958
Surr: 4-Bromofluorobenzene	78.8		70-130		%Rec	5	1/21/2020 8:19:01 PM	A65958
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	47	3.1	15		mg/Kg	5	1/21/2020 8:19:01 PM	AG659
Surr: BFB	96.0	0	70-130		%Rec	5	1/21/2020 8:19:01 PM	AG659
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/21/2020 2:26:00 PM	R6597
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	8.93				pH Units	1	1/22/2020 11:38:00 AM	R6598
SPECIFIC GRAVITY							Analyst: **PAC**	
Specific Gravity	1.900				g/cm3	1	1/25/2020	R66241

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

Qualifiers:

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

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-3 0-0.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 4:50:00 PM
Lab ID: 2001723-009 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **CLP**	
Diesel Range Organics (DRO)	29000	220	920		mg/Kg	100	1/22/2020 2:51:01 PM	49914
Motor Oil Range Organics (MRO)	15000	4600	4600		mg/Kg	100	1/22/2020 2:51:01 PM	49914
Surr: DNOP	0	0	55.1-146	S	%Rec	100	1/22/2020 2:51:01 PM	49914
EPA METHOD 7471: MERCURY							Analyst: **rde**	
Mercury	5.9	0.17	3.1	H	mg/Kg	100	2/25/2020 3:55:36 PM	50632
MERCURY, TCLP							Analyst: **pmf**	
Mercury	ND	0.00075	0.020		mg/L	1	1/20/2020 9:23:11 PM	49924
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.74	5.0		mg/Kg	2	1/21/2020 9:28:40 AM	49919
Arsenic	5.6	2.9	5.0		mg/Kg	2	1/21/2020 9:28:40 AM	49919
Barium	410	0.047	0.20		mg/Kg	2	1/21/2020 9:28:40 AM	49919
Beryllium	0.45	0.019	0.30		mg/Kg	2	1/21/2020 9:28:40 AM	49919
Cadmium	ND	0.049	0.20		mg/Kg	2	1/21/2020 9:28:40 AM	49919
Chromium	35	0.16	0.60		mg/Kg	2	1/21/2020 9:28:40 AM	49919
Cobalt	4.6	0.21	0.60		mg/Kg	2	1/21/2020 9:28:40 AM	49919
Lead	3.8	0.49	0.50		mg/Kg	2	1/21/2020 9:28:40 AM	49919
Nickel	14	0.30	1.0		mg/Kg	2	1/21/2020 9:28:40 AM	49919
Selenium	3.3	2.5	5.0	J	mg/Kg	2	1/21/2020 9:28:40 AM	49919
Silver	ND	0.065	0.50		mg/Kg	2	1/21/2020 9:28:40 AM	49919
Vanadium	15	0.13	5.0		mg/Kg	2	1/21/2020 9:28:40 AM	49919
Zinc	560	2.0	13		mg/Kg	5	1/21/2020 10:20:34 AM	49919
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/21/2020 11:27:11 AM	49933
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	1.9	4.9	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
Acenaphthylene	ND	2.2	4.9	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
Aniline	ND	1.7	4.9	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
Anthracene	ND	1.9	4.9	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
Azobenzene	ND	2.5	4.9	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
Benz(a)anthracene	ND	1.7	4.9	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
Benzo(a)pyrene	ND	2.7	4.9	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
Benzo(b)fluoranthene	ND	2.8	4.9	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
Benzo(g,h,i)perylene	ND	2.5	4.9	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
Benzo(k)fluoranthene	ND	1.5	4.9	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
Benzoic acid	ND	3.4	12	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
Benzyl alcohol	ND	2.1	4.9	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
Bis(2-chloroethoxy)methane	ND	2.0	4.9	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908

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Qualifiers:

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

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-3 0-0.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 4:50:00 PM
Lab ID: 2001723-009 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	2.9	4.9	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
Bis(2-chloroisopropyl)ether	ND	2.1	4.9	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
Bis(2-ethylhexyl)phthalate	ND	5.5	12	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
4-Bromophenyl phenyl ether	ND	2.9	4.9	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
Butyl benzyl phthalate	ND	1.7	4.9	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
Carbazole	ND	2.0	4.9	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
4-Chloro-3-methylphenol	ND	1.9	12	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
4-Chloroaniline	ND	1.9	12	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
2-Chloronaphthalene	ND	2.1	6.2	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
2-Chlorophenol	ND	2.8	4.9	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
4-Chlorophenyl phenyl ether	ND	2.1	4.9	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
Chrysene	21	1.9	4.9	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
Di-n-butyl phthalate	ND	7.4	9.9	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
Di-n-octyl phthalate	ND	1.7	9.9	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
Dibenz(a,h)anthracene	ND	2.8	4.9	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
Dibenzofuran	ND	2.5	4.9	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
1,2-Dichlorobenzene	ND	1.9	4.9	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
1,3-Dichlorobenzene	ND	1.7	4.9	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
1,4-Dichlorobenzene	ND	2.0	4.9	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
3,3´-Dichlorobenzidine	ND	2.1	6.2	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
Diethyl phthalate	ND	7.5	12	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
Dimethyl phthalate	ND	2.0	4.9	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
2,4-Dichlorophenol	ND	2.1	9.9	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
2,4-Dimethylphenol	ND	2.1	7.4	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
4,6-Dinitro-2-methylphenol	ND	1.8	9.9	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
2,4-Dinitrophenol	ND	1.4	12	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
2,4-Dinitrotoluene	ND	2.5	12	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
2,6-Dinitrotoluene	ND	2.9	12	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
Fluoranthene	ND	1.9	4.9	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
Fluorene	ND	1.9	4.9	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
Hexachlorobenzene	ND	1.9	4.9	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
Hexachlorobutadiene	ND	2.2	4.9	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
Hexachlorocyclopentadiene	ND	2.4	4.9	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
Hexachloroethane	ND	2.0	4.9	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
Indeno(1,2,3-cd)pyrene	ND	3.1	4.9	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
Isophorone	ND	2.2	9.9	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
1-Methylnaphthalene	ND	2.3	4.9	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
2-Methylnaphthalene	6.3	2.0	4.9	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
2-Methylphenol	ND	2.1	9.9	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908

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

Qualifiers:

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

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-3 0-0.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 4:50:00 PM
Lab ID: 2001723-009 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	1.8	4.9	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
N-Nitrosodi-n-propylamine	ND	2.5	4.9	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
N-Nitrosodiphenylamine	ND	2.5	4.9	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
Naphthalene	ND	2.0	4.9	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
2-Nitroaniline	ND	2.7	4.9	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
3-Nitroaniline	ND	2.4	4.9	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
4-Nitroaniline	ND	3.3	9.9	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
Nitrobenzene	ND	2.1	9.9	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
2-Nitrophenol	ND	2.0	4.9	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
4-Nitrophenol	ND	1.5	6.2	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
Pentachlorophenol	ND	2.2	9.9	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
Phenanthrene	ND	2.5	4.9	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
Phenol	ND	2.1	4.9	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
Pyrene	ND	1.6	4.9	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
Pyridine	ND	4.6	9.9	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
1,2,4-Trichlorobenzene	ND	2.1	4.9	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
2,4,5-Trichlorophenol	ND	1.6	4.9	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
2,4,6-Trichlorophenol	ND	2.5	4.9	D	mg/Kg	1	1/24/2020 4:00:10 PM	49908
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	1	1/24/2020 4:00:10 PM	49908
Surr: Phenol-d5	0		18.5-101	SD	%Rec	1	1/24/2020 4:00:10 PM	49908
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	1	1/24/2020 4:00:10 PM	49908
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	1	1/24/2020 4:00:10 PM	49908
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	1	1/24/2020 4:00:10 PM	49908
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	1	1/24/2020 4:00:10 PM	49908
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.014	0.087		mg/Kg	5	1/21/2020 8:48:15 PM	A65958
Toluene	ND	0.017	0.17		mg/Kg	5	1/21/2020 8:48:15 PM	A65958
Ethylbenzene	ND	0.010	0.17		mg/Kg	5	1/21/2020 8:48:15 PM	A65958
Methyl tert-butyl ether (MTBE)	ND	0.041	0.17		mg/Kg	5	1/21/2020 8:48:15 PM	A65958
1,2,4-Trimethylbenzene	ND	0.016	0.17		mg/Kg	5	1/21/2020 8:48:15 PM	A65958
1,3,5-Trimethylbenzene	ND	0.017	0.17		mg/Kg	5	1/21/2020 8:48:15 PM	A65958
1,2-Dichloroethane (EDC)	ND	0.018	0.17		mg/Kg	5	1/21/2020 8:48:15 PM	A65958
1,2-Dibromoethane (EDB)	ND	0.016	0.17		mg/Kg	5	1/21/2020 8:48:15 PM	A65958
Naphthalene	ND	0.035	0.35		mg/Kg	5	1/21/2020 8:48:15 PM	A65958
1-Methylnaphthalene	0.23	0.10	0.69	J	mg/Kg	5	1/21/2020 8:48:15 PM	A65958
2-Methylnaphthalene	0.24	0.076	0.69	J	mg/Kg	5	1/21/2020 8:48:15 PM	A65958
Acetone	ND	0.14	2.6		mg/Kg	5	1/21/2020 8:48:15 PM	A65958
Bromobenzene	ND	0.017	0.17		mg/Kg	5	1/21/2020 8:48:15 PM	A65958
Bromodichloromethane	ND	0.016	0.17		mg/Kg	5	1/21/2020 8:48:15 PM	A65958

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

Qualifiers:

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

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-3 0-0.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 4:50:00 PM
Lab ID: 2001723-009 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Bromoform	ND	0.016	0.17		mg/Kg	5	1/21/2020 8:48:15 PM	A65958
Bromomethane	ND	0.042	0.52		mg/Kg	5	1/21/2020 8:48:15 PM	A65958
2-Butanone	ND	0.20	1.7		mg/Kg	5	1/21/2020 8:48:15 PM	A65958
Carbon disulfide	ND	0.057	1.7		mg/Kg	5	1/21/2020 8:48:15 PM	A65958
Carbon tetrachloride	ND	0.016	0.17		mg/Kg	5	1/21/2020 8:48:15 PM	A65958
Chlorobenzene	ND	0.022	0.17		mg/Kg	5	1/21/2020 8:48:15 PM	A65958
Chloroethane	ND	0.026	0.35		mg/Kg	5	1/21/2020 8:48:15 PM	A65958
Chloroform	ND	0.014	0.17		mg/Kg	5	1/21/2020 8:48:15 PM	A65958
Chloromethane	ND	0.017	0.52		mg/Kg	5	1/21/2020 8:48:15 PM	A65958
2-Chlorotoluene	ND	0.015	0.17		mg/Kg	5	1/21/2020 8:48:15 PM	A65958
4-Chlorotoluene	ND	0.014	0.17		mg/Kg	5	1/21/2020 8:48:15 PM	A65958
cis-1,2-DCE	ND	0.024	0.17		mg/Kg	5	1/21/2020 8:48:15 PM	A65958
cis-1,3-Dichloropropene	ND	0.015	0.17		mg/Kg	5	1/21/2020 8:48:15 PM	A65958
1,2-Dibromo-3-chloropropane	ND	0.018	0.35		mg/Kg	5	1/21/2020 8:48:15 PM	A65958
Dibromochloromethane	ND	0.012	0.17		mg/Kg	5	1/21/2020 8:48:15 PM	A65958
Dibromomethane	ND	0.019	0.17		mg/Kg	5	1/21/2020 8:48:15 PM	A65958
1,2-Dichlorobenzene	ND	0.014	0.17		mg/Kg	5	1/21/2020 8:48:15 PM	A65958
1,3-Dichlorobenzene	ND	0.015	0.17		mg/Kg	5	1/21/2020 8:48:15 PM	A65958
1,4-Dichlorobenzene	ND	0.015	0.17		mg/Kg	5	1/21/2020 8:48:15 PM	A65958
Dichlorodifluoromethane	ND	0.040	0.17		mg/Kg	5	1/21/2020 8:48:15 PM	A65958
1,1-Dichloroethane	ND	0.011	0.17		mg/Kg	5	1/21/2020 8:48:15 PM	A65958
1,1-Dichloroethene	ND	0.069	0.17		mg/Kg	5	1/21/2020 8:48:15 PM	A65958
1,2-Dichloropropane	ND	0.013	0.17		mg/Kg	5	1/21/2020 8:48:15 PM	A65958
1,3-Dichloropropane	ND	0.019	0.17		mg/Kg	5	1/21/2020 8:48:15 PM	A65958
2,2-Dichloropropane	ND	0.056	0.35		mg/Kg	5	1/21/2020 8:48:15 PM	A65958
1,1-Dichloropropene	ND	0.016	0.35		mg/Kg	5	1/21/2020 8:48:15 PM	A65958
Hexachlorobutadiene	ND	0.018	0.35		mg/Kg	5	1/21/2020 8:48:15 PM	A65958
2-Hexanone	ND	0.029	1.7		mg/Kg	5	1/21/2020 8:48:15 PM	A65958
Isopropylbenzene	ND	0.013	0.17		mg/Kg	5	1/21/2020 8:48:15 PM	A65958
4-Isopropyltoluene	ND	0.014	0.17		mg/Kg	5	1/21/2020 8:48:15 PM	A65958
4-Methyl-2-pentanone	0.13	0.033	1.7	J	mg/Kg	5	1/21/2020 8:48:15 PM	A65958
Methylene chloride	ND	0.031	0.52		mg/Kg	5	1/21/2020 8:48:15 PM	A65958
n-Butylbenzene	ND	0.016	0.52		mg/Kg	5	1/21/2020 8:48:15 PM	A65958
n-Propylbenzene	ND	0.014	0.17		mg/Kg	5	1/21/2020 8:48:15 PM	A65958
sec-Butylbenzene	ND	0.020	0.17		mg/Kg	5	1/21/2020 8:48:15 PM	A65958
Styrene	ND	0.014	0.17		mg/Kg	5	1/21/2020 8:48:15 PM	A65958
tert-Butylbenzene	ND	0.016	0.17		mg/Kg	5	1/21/2020 8:48:15 PM	A65958
1,1,1,2-Tetrachloroethane	ND	0.012	0.17		mg/Kg	5	1/21/2020 8:48:15 PM	A65958
1,1,2,2-Tetrachloroethane	ND	0.018	0.17		mg/Kg	5	1/21/2020 8:48:15 PM	A65958

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Qualifiers:

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H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
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P	Sample pH Not In Range
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Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-3 0-0.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 4:50:00 PM
Lab ID: 2001723-009 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Tetrachloroethene (PCE)	ND	0.014	0.17		mg/Kg	5	1/21/2020 8:48:15 PM	A65958
trans-1,2-DCE	ND	0.016	0.17		mg/Kg	5	1/21/2020 8:48:15 PM	A65958
trans-1,3-Dichloropropene	ND	0.018	0.17		mg/Kg	5	1/21/2020 8:48:15 PM	A65958
1,2,3-Trichlorobenzene	ND	0.015	0.35		mg/Kg	5	1/21/2020 8:48:15 PM	A65958
1,2,4-Trichlorobenzene	ND	0.018	0.17		mg/Kg	5	1/21/2020 8:48:15 PM	A65958
1,1,1-Trichloroethane	ND	0.016	0.17		mg/Kg	5	1/21/2020 8:48:15 PM	A65958
1,1,2-Trichloroethane	ND	0.012	0.17		mg/Kg	5	1/21/2020 8:48:15 PM	A65958
Trichloroethene (TCE)	ND	0.020	0.17		mg/Kg	5	1/21/2020 8:48:15 PM	A65958
Trichlorofluoromethane	ND	0.059	0.17		mg/Kg	5	1/21/2020 8:48:15 PM	A65958
1,2,3-Trichloropropane	ND	0.028	0.35		mg/Kg	5	1/21/2020 8:48:15 PM	A65958
Vinyl chloride	ND	0.011	0.17		mg/Kg	5	1/21/2020 8:48:15 PM	A65958
Xylenes, Total	ND	0.044	0.35		mg/Kg	5	1/21/2020 8:48:15 PM	A65958
Surr: Dibromofluoromethane	104		70-130		%Rec	5	1/21/2020 8:48:15 PM	A65958
Surr: 1,2-Dichloroethane-d4	86.1		70-130		%Rec	5	1/21/2020 8:48:15 PM	A65958
Surr: Toluene-d8	97.1		70-130		%Rec	5	1/21/2020 8:48:15 PM	A65958
Surr: 4-Bromofluorobenzene	87.1		70-130		%Rec	5	1/21/2020 8:48:15 PM	A65958
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	ND	3.7	17		mg/Kg	5	1/21/2020 8:48:15 PM	AG659
Surr: BFB	91.7	0	70-130		%Rec	5	1/21/2020 8:48:15 PM	AG659
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/21/2020 2:26:00 PM	R6597
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	6.61				pH Units	1	1/22/2020 11:38:00 AM	R6598
SPECIFIC GRAVITY							Analyst: **PAC**	
Specific Gravity	1.360				g/cm3	1	1/25/2020	R66241

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Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-4 Surf
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 3:13:00 PM
Lab ID: 2001723-010 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **CLP**	
Diesel Range Organics (DRO)	140000	470	2000		mg/Kg	200	1/23/2020 11:39:57 AM	49914
Motor Oil Range Organics (MRO)	34000	9900	9900		mg/Kg	200	1/23/2020 11:39:57 AM	49914
Surr: DNOP	0	0	55.1-146	S	%Rec	200	1/23/2020 11:39:57 AM	49914
EPA METHOD 7471: MERCURY							Analyst: **rde**	
Mercury	6.5	0.18	3.2	H	mg/Kg	100	2/25/2020 3:59:37 PM	50632
MERCURY, TCLP							Analyst: **pmf**	
Mercury	ND	0.00075	0.020		mg/L	1	1/20/2020 9:31:37 PM	49924
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.73	5.0		mg/Kg	2	1/21/2020 9:30:05 AM	49919
Arsenic	8.1	2.8	5.0		mg/Kg	2	1/21/2020 9:30:05 AM	49919
Barium	500	0.12	0.50		mg/Kg	5	1/21/2020 10:21:56 AM	49919
Beryllium	0.30	0.018	0.30		mg/Kg	2	1/21/2020 9:30:05 AM	49919
Cadmium	ND	0.048	0.20		mg/Kg	2	1/21/2020 9:30:05 AM	49919
Chromium	60	0.16	0.60		mg/Kg	2	1/21/2020 9:30:05 AM	49919
Cobalt	3.4	0.21	0.60		mg/Kg	2	1/21/2020 9:30:05 AM	49919
Lead	9.2	0.48	0.50		mg/Kg	2	1/21/2020 9:30:05 AM	49919
Nickel	12	0.30	1.0		mg/Kg	2	1/21/2020 9:30:05 AM	49919
Selenium	7.6	2.5	5.0		mg/Kg	2	1/21/2020 9:30:05 AM	49919
Silver	ND	0.064	0.50		mg/Kg	2	1/21/2020 9:30:05 AM	49919
Vanadium	11	0.13	5.0		mg/Kg	2	1/21/2020 9:30:05 AM	49919
Zinc	480	0.79	5.0		mg/Kg	2	1/21/2020 9:30:05 AM	49919
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/21/2020 11:28:37 AM	49933
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	2.1	5.5	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
Acenaphthylene	ND	2.4	5.5	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
Aniline	ND	1.9	5.5	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
Anthracene	ND	2.1	5.5	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
Azobenzene	ND	2.8	5.5	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
Benz(a)anthracene	ND	1.9	5.5	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
Benzo(a)pyrene	ND	3.0	5.5	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
Benzo(b)fluoranthene	ND	3.1	5.5	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
Benzo(g,h,i)perylene	ND	2.8	5.5	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
Benzo(k)fluoranthene	ND	1.6	5.5	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
Benzoic acid	ND	3.8	14	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
Benzyl alcohol	ND	2.3	5.5	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
Bis(2-chloroethoxy)methane	ND	2.3	5.5	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908

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Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-4 Surf
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 3:13:00 PM
Lab ID: 2001723-010 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	3.2	5.5	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
Bis(2-chloroisopropyl)ether	ND	2.3	5.5	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
Bis(2-ethylhexyl)phthalate	ND	6.1	14	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
4-Bromophenyl phenyl ether	ND	3.2	5.5	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
Butyl benzyl phthalate	ND	1.8	5.5	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
Carbazole	ND	2.2	5.5	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
4-Chloro-3-methylphenol	ND	2.2	14	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
4-Chloroaniline	ND	2.1	14	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
2-Chloronaphthalene	ND	2.3	6.8	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
2-Chlorophenol	ND	3.1	5.5	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
4-Chlorophenyl phenyl ether	ND	2.3	5.5	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
Chrysene	ND	2.1	5.5	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
Di-n-butyl phthalate	ND	8.2	11	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
Di-n-octyl phthalate	ND	1.8	11	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
Dibenz(a,h)anthracene	ND	3.0	5.5	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
Dibenzofuran	ND	2.7	5.5	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
1,2-Dichlorobenzene	ND	2.1	5.5	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
1,3-Dichlorobenzene	ND	1.8	5.5	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
1,4-Dichlorobenzene	ND	2.3	5.5	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
3,3´-Dichlorobenzidine	ND	2.3	6.8	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
Diethyl phthalate	ND	8.3	14	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
Dimethyl phthalate	ND	2.2	5.5	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
2,4-Dichlorophenol	ND	2.3	11	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
2,4-Dimethylphenol	ND	2.3	8.2	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
4,6-Dinitro-2-methylphenol	ND	2.0	11	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
2,4-Dinitrophenol	ND	1.6	14	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
2,4-Dinitrotoluene	ND	2.8	14	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
2,6-Dinitrotoluene	ND	3.2	14	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
Fluoranthene	ND	2.1	5.5	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
Fluorene	ND	2.1	5.5	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
Hexachlorobenzene	ND	2.1	5.5	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
Hexachlorobutadiene	ND	2.4	5.5	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
Hexachlorocyclopentadiene	ND	2.6	5.5	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
Hexachloroethane	ND	2.2	5.5	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
Indeno(1,2,3-cd)pyrene	ND	3.4	5.5	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
Isophorone	ND	2.4	11	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
1-Methylnaphthalene	96	2.5	5.5	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
2-Methylnaphthalene	86	2.2	5.5	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
2-Methylphenol	ND	2.3	11	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908

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Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-4 Surf
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 3:13:00 PM
Lab ID: 2001723-010 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	2.0	5.5	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
N-Nitrosodi-n-propylamine	ND	2.8	5.5	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
N-Nitrosodiphenylamine	ND	2.8	5.5	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
Naphthalene	14	2.2	5.5	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
2-Nitroaniline	ND	3.0	5.5	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
3-Nitroaniline	ND	2.7	5.5	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
4-Nitroaniline	ND	3.7	11	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
Nitrobenzene	ND	2.3	11	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
2-Nitrophenol	ND	2.3	5.5	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
4-Nitrophenol	ND	1.6	6.8	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
Pentachlorophenol	ND	2.4	11	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
Phenanthrene	85	2.8	5.5	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
Phenol	ND	2.3	5.5	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
Pyrene	99	1.8	5.5	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
Pyridine	ND	5.1	11	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
1,2,4-Trichlorobenzene	ND	2.3	5.5	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
2,4,5-Trichlorophenol	ND	1.8	5.5	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
2,4,6-Trichlorophenol	ND	2.7	5.5	D	mg/Kg	1	1/24/2020 4:29:27 PM	49908
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	1	1/24/2020 4:29:27 PM	49908
Surr: Phenol-d5	0		18.5-101	SD	%Rec	1	1/24/2020 4:29:27 PM	49908
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	1	1/24/2020 4:29:27 PM	49908
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	1	1/24/2020 4:29:27 PM	49908
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	1	1/24/2020 4:29:27 PM	49908
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	1	1/24/2020 4:29:27 PM	49908
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	0.034	0.016	0.098	J	mg/Kg	5	1/22/2020 12:12:37 AM	A65958
Toluene	0.30	0.019	0.20		mg/Kg	5	1/22/2020 12:12:37 AM	A65958
Ethylbenzene	0.19	0.011	0.20	J	mg/Kg	5	1/22/2020 12:12:37 AM	A65958
Methyl tert-butyl ether (MTBE)	ND	0.047	0.20		mg/Kg	5	1/22/2020 12:12:37 AM	A65958
1,2,4-Trimethylbenzene	1.5	0.018	0.20		mg/Kg	5	1/22/2020 12:12:37 AM	A65958
1,3,5-Trimethylbenzene	0.49	0.019	0.20		mg/Kg	5	1/22/2020 12:12:37 AM	A65958
1,2-Dichloroethane (EDC)	ND	0.020	0.20		mg/Kg	5	1/22/2020 12:12:37 AM	A65958
1,2-Dibromoethane (EDB)	ND	0.018	0.20		mg/Kg	5	1/22/2020 12:12:37 AM	A65958
Naphthalene	2.4	0.039	0.39		mg/Kg	5	1/22/2020 12:12:37 AM	A65958
1-Methylnaphthalene	7.9	0.11	0.78		mg/Kg	5	1/22/2020 12:12:37 AM	A65958
2-Methylnaphthalene	12	0.086	0.78		mg/Kg	5	1/22/2020 12:12:37 AM	A65958
Acetone	0.45	0.16	2.9	J	mg/Kg	5	1/22/2020 12:12:37 AM	A65958
Bromobenzene	ND	0.019	0.20		mg/Kg	5	1/22/2020 12:12:37 AM	A65958
Bromodichloromethane	0.043	0.018	0.20	J	mg/Kg	5	1/22/2020 12:12:37 AM	A65958

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Qualifiers:

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

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-4 Surf
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 3:13:00 PM
Lab ID: 2001723-010 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Bromoform	ND	0.018	0.20		mg/Kg	5	1/22/2020 12:12:37 AM	A65958
Bromomethane	ND	0.047	0.59		mg/Kg	5	1/22/2020 12:12:37 AM	A65958
2-Butanone	ND	0.23	2.0		mg/Kg	5	1/22/2020 12:12:37 AM	A65958
Carbon disulfide	ND	0.065	2.0		mg/Kg	5	1/22/2020 12:12:37 AM	A65958
Carbon tetrachloride	ND	0.019	0.20		mg/Kg	5	1/22/2020 12:12:37 AM	A65958
Chlorobenzene	ND	0.025	0.20		mg/Kg	5	1/22/2020 12:12:37 AM	A65958
Chloroethane	ND	0.029	0.39		mg/Kg	5	1/22/2020 12:12:37 AM	A65958
Chloroform	ND	0.016	0.20		mg/Kg	5	1/22/2020 12:12:37 AM	A65958
Chloromethane	ND	0.019	0.59		mg/Kg	5	1/22/2020 12:12:37 AM	A65958
2-Chlorotoluene	ND	0.017	0.20		mg/Kg	5	1/22/2020 12:12:37 AM	A65958
4-Chlorotoluene	ND	0.016	0.20		mg/Kg	5	1/22/2020 12:12:37 AM	A65958
cis-1,2-DCE	ND	0.027	0.20		mg/Kg	5	1/22/2020 12:12:37 AM	A65958
cis-1,3-Dichloropropene	ND	0.017	0.20		mg/Kg	5	1/22/2020 12:12:37 AM	A65958
1,2-Dibromo-3-chloropropane	ND	0.020	0.39		mg/Kg	5	1/22/2020 12:12:37 AM	A65958
Dibromochloromethane	ND	0.014	0.20		mg/Kg	5	1/22/2020 12:12:37 AM	A65958
Dibromomethane	ND	0.021	0.20		mg/Kg	5	1/22/2020 12:12:37 AM	A65958
1,2-Dichlorobenzene	ND	0.016	0.20		mg/Kg	5	1/22/2020 12:12:37 AM	A65958
1,3-Dichlorobenzene	ND	0.017	0.20		mg/Kg	5	1/22/2020 12:12:37 AM	A65958
1,4-Dichlorobenzene	ND	0.016	0.20		mg/Kg	5	1/22/2020 12:12:37 AM	A65958
Dichlorodifluoromethane	ND	0.046	0.20		mg/Kg	5	1/22/2020 12:12:37 AM	A65958
1,1-Dichloroethane	ND	0.013	0.20		mg/Kg	5	1/22/2020 12:12:37 AM	A65958
1,1-Dichloroethene	ND	0.078	0.20		mg/Kg	5	1/22/2020 12:12:37 AM	A65958
1,2-Dichloropropane	ND	0.014	0.20		mg/Kg	5	1/22/2020 12:12:37 AM	A65958
1,3-Dichloropropane	ND	0.021	0.20		mg/Kg	5	1/22/2020 12:12:37 AM	A65958
2,2-Dichloropropane	ND	0.064	0.39		mg/Kg	5	1/22/2020 12:12:37 AM	A65958
1,1-Dichloropropene	ND	0.018	0.39		mg/Kg	5	1/22/2020 12:12:37 AM	A65958
Hexachlorobutadiene	ND	0.020	0.39		mg/Kg	5	1/22/2020 12:12:37 AM	A65958
2-Hexanone	0.14	0.033	2.0	J	mg/Kg	5	1/22/2020 12:12:37 AM	A65958
Isopropylbenzene	0.073	0.014	0.20	J	mg/Kg	5	1/22/2020 12:12:37 AM	A65958
4-Isopropyltoluene	0.12	0.016	0.20	J	mg/Kg	5	1/22/2020 12:12:37 AM	A65958
4-Methyl-2-pentanone	0.35	0.037	2.0	J	mg/Kg	5	1/22/2020 12:12:37 AM	A65958
Methylene chloride	0.099	0.035	0.59	J	mg/Kg	5	1/22/2020 12:12:37 AM	A65958
n-Butylbenzene	0.25	0.018	0.59	J	mg/Kg	5	1/22/2020 12:12:37 AM	A65958
n-Propylbenzene	0.17	0.016	0.20	J	mg/Kg	5	1/22/2020 12:12:37 AM	A65958
sec-Butylbenzene	0.18	0.022	0.20	J	mg/Kg	5	1/22/2020 12:12:37 AM	A65958
Styrene	ND	0.015	0.20		mg/Kg	5	1/22/2020 12:12:37 AM	A65958
tert-Butylbenzene	ND	0.018	0.20		mg/Kg	5	1/22/2020 12:12:37 AM	A65958
1,1,1,2-Tetrachloroethane	ND	0.013	0.20		mg/Kg	5	1/22/2020 12:12:37 AM	A65958
1,1,2,2-Tetrachloroethane	ND	0.020	0.20		mg/Kg	5	1/22/2020 12:12:37 AM	A65958

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Qualifiers:

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H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
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B	Analyte detected in the associated Method Blank
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Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-4 Surf
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 3:13:00 PM
Lab ID: 2001723-010 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Tetrachloroethene (PCE)	ND	0.016	0.20		mg/Kg	5	1/22/2020 12:12:37 AM	A65958
trans-1,2-DCE	ND	0.018	0.20		mg/Kg	5	1/22/2020 12:12:37 AM	A65958
trans-1,3-Dichloropropene	ND	0.021	0.20		mg/Kg	5	1/22/2020 12:12:37 AM	A65958
1,2,3-Trichlorobenzene	ND	0.017	0.39		mg/Kg	5	1/22/2020 12:12:37 AM	A65958
1,2,4-Trichlorobenzene	ND	0.020	0.20		mg/Kg	5	1/22/2020 12:12:37 AM	A65958
1,1,1-Trichloroethane	ND	0.018	0.20		mg/Kg	5	1/22/2020 12:12:37 AM	A65958
1,1,2-Trichloroethane	ND	0.014	0.20		mg/Kg	5	1/22/2020 12:12:37 AM	A65958
Trichloroethene (TCE)	ND	0.023	0.20		mg/Kg	5	1/22/2020 12:12:37 AM	A65958
Trichlorofluoromethane	ND	0.067	0.20		mg/Kg	5	1/22/2020 12:12:37 AM	A65958
1,2,3-Trichloropropane	ND	0.032	0.39		mg/Kg	5	1/22/2020 12:12:37 AM	A65958
Vinyl chloride	ND	0.013	0.20		mg/Kg	5	1/22/2020 12:12:37 AM	A65958
Xylenes, Total	1.5	0.049	0.39		mg/Kg	5	1/22/2020 12:12:37 AM	A65958
Surr: Dibromofluoromethane	112		70-130		%Rec	5	1/22/2020 12:12:37 AM	A65958
Surr: 1,2-Dichloroethane-d4	94.8		70-130		%Rec	5	1/22/2020 12:12:37 AM	A65958
Surr: Toluene-d8	98.5		70-130		%Rec	5	1/22/2020 12:12:37 AM	A65958
Surr: 4-Bromofluorobenzene	88.6		70-130		%Rec	5	1/22/2020 12:12:37 AM	A65958
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	40	4.2	20		mg/Kg	5	1/22/2020 12:12:37 AM	AG659
Surr: BFB	95.1	0	70-130		%Rec	5	1/22/2020 12:12:37 AM	AG659
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/21/2020 2:26:00 PM	R6597
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	6.33				pH Units	1	1/22/2020 11:38:00 AM	R6598
SPECIFIC GRAVITY							Analyst: **PAC**	
Specific Gravity	1.160				g/cm3	1	1/25/2020	R66241

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E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
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Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-1 Toe Surf
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 2:50:00 PM
Lab ID: 2001723-011 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **CLP**	
Diesel Range Organics (DRO)	33000	120	490		mg/Kg	50	1/23/2020 12:30:55 PM	49914
Motor Oil Range Organics (MRO)	32000	2500	2500		mg/Kg	50	1/23/2020 12:30:55 PM	49914
Surr: DNOP	0	0	55.1-146	S	%Rec	50	1/23/2020 12:30:55 PM	49914
EPA METHOD 7471: MERCURY							Analyst: **rde**	
Mercury	5.1	0.20	3.5	H	mg/Kg	100	2/25/2020 3:57:38 PM	50632
MERCURY, TCLP							Analyst: **pmf**	
Mercury	ND	0.00075	0.020		mg/L	1	1/20/2020 9:34:21 PM	49924
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.71	4.8		mg/Kg	2	1/21/2020 9:36:04 AM	49919
Arsenic	6.2	2.7	4.8		mg/Kg	2	1/21/2020 9:36:04 AM	49919
Barium	770	0.11	0.48		mg/Kg	5	1/21/2020 10:23:18 AM	49919
Beryllium	0.43	0.018	0.29		mg/Kg	2	1/21/2020 9:36:04 AM	49919
Cadmium	ND	0.047	0.19		mg/Kg	2	1/21/2020 9:36:04 AM	49919
Chromium	38	0.15	0.58		mg/Kg	2	1/21/2020 9:36:04 AM	49919
Cobalt	3.3	0.20	0.58		mg/Kg	2	1/21/2020 9:36:04 AM	49919
Lead	15	0.47	0.48		mg/Kg	2	1/21/2020 9:36:04 AM	49919
Nickel	22	0.29	0.96		mg/Kg	2	1/21/2020 9:36:04 AM	49919
Selenium	5.3	2.4	4.8		mg/Kg	2	1/21/2020 9:36:04 AM	49919
Silver	0.28	0.062	0.48	J	mg/Kg	2	1/21/2020 9:36:04 AM	49919
Vanadium	16	0.13	4.8		mg/Kg	2	1/21/2020 9:36:04 AM	49919
Zinc	950	1.9	12		mg/Kg	5	1/21/2020 10:23:18 AM	49919
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/21/2020 11:30:02 AM	49933
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	1.8	4.9	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
Acenaphthylene	ND	2.2	4.9	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
Aniline	ND	1.7	4.9	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
Anthracene	ND	1.9	4.9	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
Azobenzene	ND	2.5	4.9	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
Benz(a)anthracene	ND	1.7	4.9	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
Benzo(a)pyrene	ND	2.7	4.9	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
Benzo(b)fluoranthene	ND	2.8	4.9	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
Benzo(g,h,i)perylene	ND	2.5	4.9	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
Benzo(k)fluoranthene	ND	1.5	4.9	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
Benzoic acid	ND	3.4	12	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
Benzyl alcohol	ND	2.0	4.9	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
Bis(2-chloroethoxy)methane	ND	2.0	4.9	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908

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B	Analyte detected in the associated Method Blank
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Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-1 Toe Surf
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 2:50:00 PM
Lab ID: 2001723-011 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	2.9	4.9	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
Bis(2-chloroisopropyl)ether	ND	2.1	4.9	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
Bis(2-ethylhexyl)phthalate	ND	5.5	12	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
4-Bromophenyl phenyl ether	ND	2.9	4.9	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
Butyl benzyl phthalate	ND	1.6	4.9	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
Carbazole	ND	1.9	4.9	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
4-Chloro-3-methylphenol	ND	1.9	12	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
4-Chloroaniline	ND	1.9	12	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
2-Chloronaphthalene	ND	2.1	6.1	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
2-Chlorophenol	ND	2.8	4.9	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
4-Chlorophenyl phenyl ether	ND	2.1	4.9	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
Chrysene	ND	1.9	4.9	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
Di-n-butyl phthalate	ND	7.3	9.8	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
Di-n-octyl phthalate	ND	1.6	9.8	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
Dibenz(a,h)anthracene	ND	2.7	4.9	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
Dibenzofuran	ND	2.5	4.9	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
1,2-Dichlorobenzene	ND	1.9	4.9	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
1,3-Dichlorobenzene	ND	1.6	4.9	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
1,4-Dichlorobenzene	ND	2.0	4.9	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
3,3´-Dichlorobenzidine	ND	2.1	6.1	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
Diethyl phthalate	ND	7.5	12	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
Dimethyl phthalate	ND	2.0	4.9	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
2,4-Dichlorophenol	ND	2.1	9.8	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
2,4-Dimethylphenol	ND	2.0	7.4	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
4,6-Dinitro-2-methylphenol	ND	1.8	9.8	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
2,4-Dinitrophenol	ND	1.4	12	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
2,4-Dinitrotoluene	ND	2.5	12	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
2,6-Dinitrotoluene	ND	2.9	12	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
Fluoranthene	ND	1.9	4.9	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
Fluorene	ND	1.9	4.9	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
Hexachlorobenzene	ND	1.9	4.9	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
Hexachlorobutadiene	ND	2.2	4.9	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
Hexachlorocyclopentadiene	ND	2.4	4.9	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
Hexachloroethane	ND	2.0	4.9	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
Indeno(1,2,3-cd)pyrene	ND	3.0	4.9	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
Isophorone	ND	2.1	9.8	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
1-Methylnaphthalene	ND	2.3	4.9	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
2-Methylnaphthalene	ND	2.0	4.9	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
2-Methylphenol	ND	2.1	9.8	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908

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

Qualifiers:

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

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-1 Toe Surf
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 2:50:00 PM
Lab ID: 2001723-011 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	1.8	4.9	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
N-Nitrosodi-n-propylamine	ND	2.5	4.9	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
N-Nitrosodiphenylamine	ND	2.5	4.9	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
Naphthalene	ND	2.0	4.9	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
2-Nitroaniline	ND	2.7	4.9	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
3-Nitroaniline	ND	2.4	4.9	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
4-Nitroaniline	ND	3.3	9.8	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
Nitrobenzene	ND	2.1	9.8	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
2-Nitrophenol	ND	2.0	4.9	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
4-Nitrophenol	ND	1.4	6.1	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
Pentachlorophenol	ND	2.2	9.8	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
Phenanthrene	ND	2.5	4.9	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
Phenol	ND	2.1	4.9	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
Pyrene	ND	1.6	4.9	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
Pyridine	ND	4.6	9.8	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
1,2,4-Trichlorobenzene	ND	2.1	4.9	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
2,4,5-Trichlorophenol	ND	1.6	4.9	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
2,4,6-Trichlorophenol	ND	2.5	4.9	D	mg/Kg	1	1/24/2020 4:58:20 PM	49908
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	1	1/24/2020 4:58:20 PM	49908
Surr: Phenol-d5	0		18.5-101	SD	%Rec	1	1/24/2020 4:58:20 PM	49908
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	1	1/24/2020 4:58:20 PM	49908
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	1	1/24/2020 4:58:20 PM	49908
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	1	1/24/2020 4:58:20 PM	49908
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	1	1/24/2020 4:58:20 PM	49908
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.0044	0.027		mg/Kg	1	1/22/2020 12:41:41 AM	A65958
Toluene	0.011	0.0051	0.054	J	mg/Kg	1	1/22/2020 12:41:41 AM	A65958
Ethylbenzene	ND	0.0031	0.054		mg/Kg	1	1/22/2020 12:41:41 AM	A65958
Methyl tert-butyl ether (MTBE)	ND	0.013	0.054		mg/Kg	1	1/22/2020 12:41:41 AM	A65958
1,2,4-Trimethylbenzene	0.042	0.0049	0.054	J	mg/Kg	1	1/22/2020 12:41:41 AM	A65958
1,3,5-Trimethylbenzene	0.015	0.0052	0.054	J	mg/Kg	1	1/22/2020 12:41:41 AM	A65958
1,2-Dichloroethane (EDC)	ND	0.0055	0.054		mg/Kg	1	1/22/2020 12:41:41 AM	A65958
1,2-Dibromoethane (EDB)	0.018	0.0049	0.054	J	mg/Kg	1	1/22/2020 12:41:41 AM	A65958
Naphthalene	0.037	0.011	0.11	J	mg/Kg	1	1/22/2020 12:41:41 AM	A65958
1-Methylnaphthalene	0.16	0.031	0.22	J	mg/Kg	1	1/22/2020 12:41:41 AM	A65958
2-Methylnaphthalene	0.16	0.023	0.22	J	mg/Kg	1	1/22/2020 12:41:41 AM	A65958
Acetone	0.18	0.045	0.81	J	mg/Kg	1	1/22/2020 12:41:41 AM	A65958
Bromobenzene	ND	0.0052	0.054		mg/Kg	1	1/22/2020 12:41:41 AM	A65958
Bromodichloromethane	ND	0.0049	0.054		mg/Kg	1	1/22/2020 12:41:41 AM	A65958

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Qualifiers:

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

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-1 Toe Surf
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 2:50:00 PM
Lab ID: 2001723-011 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Bromoform	ND	0.0049	0.054		mg/Kg	1	1/22/2020 12:41:41 AM	A65958
Bromomethane	ND	0.013	0.16		mg/Kg	1	1/22/2020 12:41:41 AM	A65958
2-Butanone	0.51	0.062	0.54	J	mg/Kg	1	1/22/2020 12:41:41 AM	A65958
Carbon disulfide	ND	0.018	0.54		mg/Kg	1	1/22/2020 12:41:41 AM	A65958
Carbon tetrachloride	ND	0.0051	0.054		mg/Kg	1	1/22/2020 12:41:41 AM	A65958
Chlorobenzene	ND	0.0069	0.054		mg/Kg	1	1/22/2020 12:41:41 AM	A65958
Chloroethane	ND	0.0079	0.11		mg/Kg	1	1/22/2020 12:41:41 AM	A65958
Chloroform	ND	0.0043	0.054		mg/Kg	1	1/22/2020 12:41:41 AM	A65958
Chloromethane	ND	0.0051	0.16		mg/Kg	1	1/22/2020 12:41:41 AM	A65958
2-Chlorotoluene	ND	0.0047	0.054		mg/Kg	1	1/22/2020 12:41:41 AM	A65958
4-Chlorotoluene	ND	0.0044	0.054		mg/Kg	1	1/22/2020 12:41:41 AM	A65958
cis-1,2-DCE	ND	0.0074	0.054		mg/Kg	1	1/22/2020 12:41:41 AM	A65958
cis-1,3-Dichloropropene	ND	0.0045	0.054		mg/Kg	1	1/22/2020 12:41:41 AM	A65958
1,2-Dibromo-3-chloropropane	ND	0.0055	0.11		mg/Kg	1	1/22/2020 12:41:41 AM	A65958
Dibromochloromethane	ND	0.0038	0.054		mg/Kg	1	1/22/2020 12:41:41 AM	A65958
Dibromomethane	ND	0.0058	0.054		mg/Kg	1	1/22/2020 12:41:41 AM	A65958
1,2-Dichlorobenzene	ND	0.0044	0.054		mg/Kg	1	1/22/2020 12:41:41 AM	A65958
1,3-Dichlorobenzene	ND	0.0047	0.054		mg/Kg	1	1/22/2020 12:41:41 AM	A65958
1,4-Dichlorobenzene	ND	0.0045	0.054		mg/Kg	1	1/22/2020 12:41:41 AM	A65958
Dichlorodifluoromethane	ND	0.012	0.054		mg/Kg	1	1/22/2020 12:41:41 AM	A65958
1,1-Dichloroethane	ND	0.0034	0.054		mg/Kg	1	1/22/2020 12:41:41 AM	A65958
1,1-Dichloroethene	ND	0.022	0.054		mg/Kg	1	1/22/2020 12:41:41 AM	A65958
1,2-Dichloropropane	ND	0.0039	0.054		mg/Kg	1	1/22/2020 12:41:41 AM	A65958
1,3-Dichloropropane	ND	0.0058	0.054		mg/Kg	1	1/22/2020 12:41:41 AM	A65958
2,2-Dichloropropane	ND	0.017	0.11		mg/Kg	1	1/22/2020 12:41:41 AM	A65958
1,1-Dichloropropene	ND	0.0049	0.11		mg/Kg	1	1/22/2020 12:41:41 AM	A65958
Hexachlorobutadiene	ND	0.0055	0.11		mg/Kg	1	1/22/2020 12:41:41 AM	A65958
2-Hexanone	0.066	0.0089	0.54	J	mg/Kg	1	1/22/2020 12:41:41 AM	A65958
Isopropylbenzene	ND	0.0039	0.054		mg/Kg	1	1/22/2020 12:41:41 AM	A65958
4-Isopropyltoluene	0.011	0.0045	0.054	J	mg/Kg	1	1/22/2020 12:41:41 AM	A65958
4-Methyl-2-pentanone	0.038	0.010	0.54	J	mg/Kg	1	1/22/2020 12:41:41 AM	A65958
Methylene chloride	0.062	0.0095	0.16	J	mg/Kg	1	1/22/2020 12:41:41 AM	A65958
n-Butylbenzene	0.015	0.0050	0.16	J	mg/Kg	1	1/22/2020 12:41:41 AM	A65958
n-Propylbenzene	ND	0.0043	0.054		mg/Kg	1	1/22/2020 12:41:41 AM	A65958
sec-Butylbenzene	0.028	0.0061	0.054	J	mg/Kg	1	1/22/2020 12:41:41 AM	A65958
Styrene	ND	0.0042	0.054		mg/Kg	1	1/22/2020 12:41:41 AM	A65958
tert-Butylbenzene	ND	0.0051	0.054		mg/Kg	1	1/22/2020 12:41:41 AM	A65958
1,1,1,2-Tetrachloroethane	ND	0.0036	0.054		mg/Kg	1	1/22/2020 12:41:41 AM	A65958
1,1,2,2-Tetrachloroethane	ND	0.0055	0.054		mg/Kg	1	1/22/2020 12:41:41 AM	A65958

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Qualifiers:

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

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-1 Toe Surf
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 2:50:00 PM
Lab ID: 2001723-011 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Tetrachloroethene (PCE)	ND	0.0043	0.054		mg/Kg	1	1/22/2020 12:41:41 AM	A65958
trans-1,2-DCE	ND	0.0049	0.054		mg/Kg	1	1/22/2020 12:41:41 AM	A65958
trans-1,3-Dichloropropene	ND	0.0057	0.054		mg/Kg	1	1/22/2020 12:41:41 AM	A65958
1,2,3-Trichlorobenzene	ND	0.0047	0.11		mg/Kg	1	1/22/2020 12:41:41 AM	A65958
1,2,4-Trichlorobenzene	ND	0.0054	0.054		mg/Kg	1	1/22/2020 12:41:41 AM	A65958
1,1,1-Trichloroethane	ND	0.0049	0.054		mg/Kg	1	1/22/2020 12:41:41 AM	A65958
1,1,2-Trichloroethane	ND	0.0038	0.054		mg/Kg	1	1/22/2020 12:41:41 AM	A65958
Trichloroethene (TCE)	ND	0.0062	0.054		mg/Kg	1	1/22/2020 12:41:41 AM	A65958
Trichlorofluoromethane	ND	0.018	0.054		mg/Kg	1	1/22/2020 12:41:41 AM	A65958
1,2,3-Trichloropropane	ND	0.0087	0.11		mg/Kg	1	1/22/2020 12:41:41 AM	A65958
Vinyl chloride	ND	0.0035	0.054		mg/Kg	1	1/22/2020 12:41:41 AM	A65958
Xylenes, Total	0.048	0.014	0.11	J	mg/Kg	1	1/22/2020 12:41:41 AM	A65958
Surr: Dibromofluoromethane	98.7		70-130		%Rec	1	1/22/2020 12:41:41 AM	A65958
Surr: 1,2-Dichloroethane-d4	81.2		70-130		%Rec	1	1/22/2020 12:41:41 AM	A65958
Surr: Toluene-d8	98.4		70-130		%Rec	1	1/22/2020 12:41:41 AM	A65958
Surr: 4-Bromofluorobenzene	86.9		70-130		%Rec	1	1/22/2020 12:41:41 AM	A65958
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	18	1.1	5.4		mg/Kg	1	1/22/2020 12:41:41 AM	AG659
Surr: BFB	84.3	0	70-130		%Rec	1	1/22/2020 12:41:41 AM	AG659
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/21/2020 2:26:00 PM	R6597
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	6.71				pH Units	1	1/22/2020 11:38:00 AM	R6598
SPECIFIC GRAVITY							Analyst: **PAC**	
Specific Gravity	1.580				g/cm3	1	1/25/2020	R66241

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Qualifiers:

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PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
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J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-21 1.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 10:29:00 AM
Lab ID: 2001723-012 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **CLP**	
Diesel Range Organics (DRO)	340	22	91		mg/Kg	10	1/23/2020 1:37:03 PM	49914
Motor Oil Range Organics (MRO)	600	460	460		mg/Kg	10	1/23/2020 1:37:03 PM	49914
Surr: DNOP	0	0	55.1-146	S	%Rec	10	1/23/2020 1:37:03 PM	49914
EPA METHOD 7471: MERCURY							Analyst: **rde**	
Mercury	0.33	0.0018	0.032	H	mg/Kg	1	2/25/2020 3:49:29 PM	50632
MERCURY, TCLP							Analyst: **pmf**	
Mercury	ND	0.00075	0.020		mg/L	1	1/20/2020 9:37:06 PM	49924
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.72	4.9		mg/Kg	2	1/21/2020 9:37:30 AM	49919
Arsenic	ND	2.8	4.9		mg/Kg	2	1/21/2020 9:37:30 AM	49919
Barium	530	0.11	0.49		mg/Kg	5	1/21/2020 10:24:41 AM	49919
Beryllium	0.74	0.018	0.29		mg/Kg	2	1/21/2020 9:37:30 AM	49919
Cadmium	ND	0.047	0.19		mg/Kg	2	1/21/2020 9:37:30 AM	49919
Chromium	44	0.15	0.58		mg/Kg	2	1/21/2020 9:37:30 AM	49919
Cobalt	5.2	0.21	0.58		mg/Kg	2	1/21/2020 9:37:30 AM	49919
Lead	33	0.47	0.49		mg/Kg	2	1/21/2020 9:37:30 AM	49919
Nickel	12	0.29	0.97		mg/Kg	2	1/21/2020 9:37:30 AM	49919
Selenium	ND	2.4	4.9		mg/Kg	2	1/21/2020 9:37:30 AM	49919
Silver	ND	0.062	0.49		mg/Kg	2	1/21/2020 9:37:30 AM	49919
Vanadium	25	0.13	4.9		mg/Kg	2	1/21/2020 9:37:30 AM	49919
Zinc	97	0.77	4.9		mg/Kg	2	1/21/2020 9:37:30 AM	49919
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/21/2020 11:31:27 AM	49933
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.71	1.9	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
Acenaphthylene	ND	0.84	1.9	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
Aniline	ND	0.65	1.9	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
Anthracene	ND	0.73	1.9	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
Azobenzene	ND	0.96	1.9	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
Benz(a)anthracene	ND	0.65	1.9	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
Benzo(a)pyrene	ND	1.0	1.9	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
Benzo(b)fluoranthene	ND	1.1	1.9	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
Benzo(g,h,i)perylene	ND	0.97	1.9	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
Benzo(k)fluoranthene	ND	0.57	1.9	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
Benzoic acid	ND	1.3	4.7	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
Benzyl alcohol	ND	0.79	1.9	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
Bis(2-chloroethoxy)methane	ND	0.78	1.9	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908

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Qualifiers:

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ND	Not Detected at the Reporting Limit
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P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-21 1.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 10:29:00 AM
Lab ID: 2001723-012 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	1.1	1.9	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
Bis(2-chloroisopropyl)ether	ND	0.81	1.9	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
Bis(2-ethylhexyl)phthalate	ND	2.1	4.7	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
4-Bromophenyl phenyl ether	ND	1.1	1.9	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
Butyl benzyl phthalate	ND	0.64	1.9	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
Carbazole	ND	0.75	1.9	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
4-Chloro-3-methylphenol	ND	0.75	4.7	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
4-Chloroaniline	ND	0.72	4.7	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
2-Chloronaphthalene	ND	0.79	2.4	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
2-Chlorophenol	ND	1.1	1.9	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
4-Chlorophenyl phenyl ether	ND	0.79	1.9	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
Chrysene	ND	0.74	1.9	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
Di-n-butyl phthalate	ND	2.8	3.8	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
Di-n-octyl phthalate	ND	0.63	3.8	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
Dibenz(a,h)anthracene	ND	1.1	1.9	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
Dibenzofuran	ND	0.95	1.9	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
1,2-Dichlorobenzene	ND	0.74	1.9	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
1,3-Dichlorobenzene	ND	0.63	1.9	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
1,4-Dichlorobenzene	ND	0.78	1.9	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
3,3´-Dichlorobenzidine	ND	0.81	2.4	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
Diethyl phthalate	ND	2.9	4.7	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
Dimethyl phthalate	ND	0.77	1.9	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
2,4-Dichlorophenol	ND	0.80	3.8	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
2,4-Dimethylphenol	ND	0.79	2.8	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
4,6-Dinitro-2-methylphenol	ND	0.69	3.8	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
2,4-Dinitrophenol	ND	0.55	4.7	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
2,4-Dinitrotoluene	ND	0.97	4.7	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
2,6-Dinitrotoluene	ND	1.1	4.7	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
Fluoranthene	ND	0.72	1.9	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
Fluorene	ND	0.74	1.9	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
Hexachlorobenzene	ND	0.74	1.9	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
Hexachlorobutadiene	ND	0.83	1.9	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
Hexachlorocyclopentadiene	ND	0.91	1.9	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
Hexachloroethane	ND	0.77	1.9	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
Indeno(1,2,3-cd)pyrene	ND	1.2	1.9	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
Isophorone	ND	0.82	3.8	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
1-Methylnaphthalene	ND	0.88	1.9	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
2-Methylnaphthalene	ND	0.77	1.9	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
2-Methylphenol	ND	0.80	3.8	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908

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

Qualifiers:

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

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-21 1.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 10:29:00 AM
Lab ID: 2001723-012 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.68	1.9	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
N-Nitrosodi-n-propylamine	ND	0.95	1.9	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
N-Nitrosodiphenylamine	ND	0.98	1.9	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
Naphthalene	ND	0.77	1.9	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
2-Nitroaniline	ND	1.0	1.9	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
3-Nitroaniline	ND	0.93	1.9	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
4-Nitroaniline	ND	1.3	3.8	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
Nitrobenzene	ND	0.81	3.8	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
2-Nitrophenol	ND	0.78	1.9	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
4-Nitrophenol	ND	0.56	2.4	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
Pentachlorophenol	ND	0.85	3.8	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
Phenanthrene	ND	0.96	1.9	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
Phenol	ND	0.80	1.9	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
Pyrene	ND	0.63	1.9	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
Pyridine	ND	1.8	3.8	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
1,2,4-Trichlorobenzene	ND	0.81	1.9	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
2,4,5-Trichlorophenol	ND	0.61	1.9	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
2,4,6-Trichlorophenol	ND	0.95	1.9	D	mg/Kg	1	1/24/2020 5:27:16 PM	49908
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	1	1/24/2020 5:27:16 PM	49908
Surr: Phenol-d5	0		18.5-101	SD	%Rec	1	1/24/2020 5:27:16 PM	49908
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	1	1/24/2020 5:27:16 PM	49908
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	1	1/24/2020 5:27:16 PM	49908
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	1	1/24/2020 5:27:16 PM	49908
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	1	1/24/2020 5:27:16 PM	49908
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.0031	0.019		mg/Kg	1	1/22/2020 1:10:48 AM	A65958
Toluene	0.0070	0.0036	0.038	J	mg/Kg	1	1/22/2020 1:10:48 AM	A65958
Ethylbenzene	ND	0.0022	0.038		mg/Kg	1	1/22/2020 1:10:48 AM	A65958
Methyl tert-butyl ether (MTBE)	ND	0.0090	0.038		mg/Kg	1	1/22/2020 1:10:48 AM	A65958
1,2,4-Trimethylbenzene	0.0084	0.0035	0.038	J	mg/Kg	1	1/22/2020 1:10:48 AM	A65958
1,3,5-Trimethylbenzene	ND	0.0037	0.038		mg/Kg	1	1/22/2020 1:10:48 AM	A65958
1,2-Dichloroethane (EDC)	ND	0.0039	0.038		mg/Kg	1	1/22/2020 1:10:48 AM	A65958
1,2-Dibromoethane (EDB)	ND	0.0035	0.038		mg/Kg	1	1/22/2020 1:10:48 AM	A65958
Naphthalene	ND	0.0076	0.076		mg/Kg	1	1/22/2020 1:10:48 AM	A65958
1-Methylnaphthalene	0.043	0.022	0.15	J	mg/Kg	1	1/22/2020 1:10:48 AM	A65958
2-Methylnaphthalene	0.045	0.017	0.15	J	mg/Kg	1	1/22/2020 1:10:48 AM	A65958
Acetone	ND	0.031	0.57		mg/Kg	1	1/22/2020 1:10:48 AM	A65958
Bromobenzene	ND	0.0036	0.038		mg/Kg	1	1/22/2020 1:10:48 AM	A65958
Bromodichloromethane	ND	0.0035	0.038		mg/Kg	1	1/22/2020 1:10:48 AM	A65958

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Qualifiers:

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

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-21 1.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 10:29:00 AM
Lab ID: 2001723-012 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Bromoform	ND	0.0034	0.038		mg/Kg	1	1/22/2020 1:10:48 AM	A65958
Bromomethane	ND	0.0092	0.11		mg/Kg	1	1/22/2020 1:10:48 AM	A65958
2-Butanone	ND	0.044	0.38		mg/Kg	1	1/22/2020 1:10:48 AM	A65958
Carbon disulfide	ND	0.013	0.38		mg/Kg	1	1/22/2020 1:10:48 AM	A65958
Carbon tetrachloride	ND	0.0036	0.038		mg/Kg	1	1/22/2020 1:10:48 AM	A65958
Chlorobenzene	ND	0.0049	0.038		mg/Kg	1	1/22/2020 1:10:48 AM	A65958
Chloroethane	ND	0.0056	0.076		mg/Kg	1	1/22/2020 1:10:48 AM	A65958
Chloroform	ND	0.0031	0.038		mg/Kg	1	1/22/2020 1:10:48 AM	A65958
Chloromethane	ND	0.0036	0.11		mg/Kg	1	1/22/2020 1:10:48 AM	A65958
2-Chlorotoluene	ND	0.0033	0.038		mg/Kg	1	1/22/2020 1:10:48 AM	A65958
4-Chlorotoluene	ND	0.0031	0.038		mg/Kg	1	1/22/2020 1:10:48 AM	A65958
cis-1,2-DCE	ND	0.0052	0.038		mg/Kg	1	1/22/2020 1:10:48 AM	A65958
cis-1,3-Dichloropropene	ND	0.0032	0.038		mg/Kg	1	1/22/2020 1:10:48 AM	A65958
1,2-Dibromo-3-chloropropane	ND	0.0039	0.076		mg/Kg	1	1/22/2020 1:10:48 AM	A65958
Dibromochloromethane	ND	0.0027	0.038		mg/Kg	1	1/22/2020 1:10:48 AM	A65958
Dibromomethane	ND	0.0041	0.038		mg/Kg	1	1/22/2020 1:10:48 AM	A65958
1,2-Dichlorobenzene	ND	0.0031	0.038		mg/Kg	1	1/22/2020 1:10:48 AM	A65958
1,3-Dichlorobenzene	ND	0.0033	0.038		mg/Kg	1	1/22/2020 1:10:48 AM	A65958
1,4-Dichlorobenzene	ND	0.0032	0.038		mg/Kg	1	1/22/2020 1:10:48 AM	A65958
Dichlorodifluoromethane	ND	0.0088	0.038		mg/Kg	1	1/22/2020 1:10:48 AM	A65958
1,1-Dichloroethane	ND	0.0024	0.038		mg/Kg	1	1/22/2020 1:10:48 AM	A65958
1,1-Dichloroethene	ND	0.015	0.038		mg/Kg	1	1/22/2020 1:10:48 AM	A65958
1,2-Dichloropropane	ND	0.0028	0.038		mg/Kg	1	1/22/2020 1:10:48 AM	A65958
1,3-Dichloropropane	ND	0.0041	0.038		mg/Kg	1	1/22/2020 1:10:48 AM	A65958
2,2-Dichloropropane	ND	0.012	0.076		mg/Kg	1	1/22/2020 1:10:48 AM	A65958
1,1-Dichloropropene	ND	0.0035	0.076		mg/Kg	1	1/22/2020 1:10:48 AM	A65958
Hexachlorobutadiene	ND	0.0039	0.076		mg/Kg	1	1/22/2020 1:10:48 AM	A65958
2-Hexanone	ND	0.0063	0.38		mg/Kg	1	1/22/2020 1:10:48 AM	A65958
Isopropylbenzene	ND	0.0027	0.038		mg/Kg	1	1/22/2020 1:10:48 AM	A65958
4-Isopropyltoluene	ND	0.0031	0.038		mg/Kg	1	1/22/2020 1:10:48 AM	A65958
4-Methyl-2-pentanone	0.023	0.0072	0.38	J	mg/Kg	1	1/22/2020 1:10:48 AM	A65958
Methylene chloride	0.051	0.0067	0.11	J	mg/Kg	1	1/22/2020 1:10:48 AM	A65958
n-Butylbenzene	ND	0.0035	0.11		mg/Kg	1	1/22/2020 1:10:48 AM	A65958
n-Propylbenzene	ND	0.0030	0.038		mg/Kg	1	1/22/2020 1:10:48 AM	A65958
sec-Butylbenzene	ND	0.0043	0.038		mg/Kg	1	1/22/2020 1:10:48 AM	A65958
Styrene	ND	0.0030	0.038		mg/Kg	1	1/22/2020 1:10:48 AM	A65958
tert-Butylbenzene	ND	0.0036	0.038		mg/Kg	1	1/22/2020 1:10:48 AM	A65958
1,1,1,2-Tetrachloroethane	ND	0.0026	0.038		mg/Kg	1	1/22/2020 1:10:48 AM	A65958
1,1,2,2-Tetrachloroethane	ND	0.0039	0.038		mg/Kg	1	1/22/2020 1:10:48 AM	A65958

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

Qualifiers:

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

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-21 1.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 10:29:00 AM
Lab ID: 2001723-012 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Tetrachloroethene (PCE)	ND	0.0030	0.038		mg/Kg	1	1/22/2020 1:10:48 AM	A65958
trans-1,2-DCE	ND	0.0035	0.038		mg/Kg	1	1/22/2020 1:10:48 AM	A65958
trans-1,3-Dichloropropene	ND	0.0040	0.038		mg/Kg	1	1/22/2020 1:10:48 AM	A65958
1,2,3-Trichlorobenzene	ND	0.0033	0.076		mg/Kg	1	1/22/2020 1:10:48 AM	A65958
1,2,4-Trichlorobenzene	ND	0.0038	0.038		mg/Kg	1	1/22/2020 1:10:48 AM	A65958
1,1,1-Trichloroethane	ND	0.0034	0.038		mg/Kg	1	1/22/2020 1:10:48 AM	A65958
1,1,2-Trichloroethane	ND	0.0027	0.038		mg/Kg	1	1/22/2020 1:10:48 AM	A65958
Trichloroethene (TCE)	ND	0.0044	0.038		mg/Kg	1	1/22/2020 1:10:48 AM	A65958
Trichlorofluoromethane	ND	0.013	0.038		mg/Kg	1	1/22/2020 1:10:48 AM	A65958
1,2,3-Trichloropropane	ND	0.0061	0.076		mg/Kg	1	1/22/2020 1:10:48 AM	A65958
Vinyl chloride	ND	0.0025	0.038		mg/Kg	1	1/22/2020 1:10:48 AM	A65958
Xylenes, Total	0.015	0.0096	0.076	J	mg/Kg	1	1/22/2020 1:10:48 AM	A65958
Surr: Dibromofluoromethane	106		70-130		%Rec	1	1/22/2020 1:10:48 AM	A65958
Surr: 1,2-Dichloroethane-d4	88.4		70-130		%Rec	1	1/22/2020 1:10:48 AM	A65958
Surr: Toluene-d8	97.7		70-130		%Rec	1	1/22/2020 1:10:48 AM	A65958
Surr: 4-Bromofluorobenzene	87.4		70-130		%Rec	1	1/22/2020 1:10:48 AM	A65958
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	0.89	0.81	3.8	J	mg/Kg	1	1/22/2020 1:10:48 AM	AG659
Surr: BFB	91.1	0	70-130		%Rec	1	1/22/2020 1:10:48 AM	AG659
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/23/2020 3:07:00 PM	R66022
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	7.74				pH Units	1	1/22/2020 11:38:00 AM	R65980
SPECIFIC GRAVITY							Analyst: **PAC**	
Specific Gravity	2.080				g/cm3	1	1/25/2020	R66241

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

Qualifiers:

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

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-16 Toe 4-4.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 2:16:00 PM
Lab ID: 2001723-013 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **CLP**	
Diesel Range Organics (DRO)	16000	110	450		mg/Kg	50	1/22/2020 1:17:47 PM	49914
Motor Oil Range Organics (MRO)	5000	2300	2300		mg/Kg	50	1/22/2020 1:17:47 PM	49914
Surr: DNOP	0	0	55.1-146	S	%Rec	50	1/22/2020 1:17:47 PM	49914
EPA METHOD 7471: MERCURY							Analyst: **rde**	
Mercury	0.026	0.0018	0.032	JH	mg/Kg	1	2/25/2020 4:03:39 PM	50632
MERCURY, TCLP							Analyst: **pmf**	
Mercury	ND	0.00075	0.020		mg/L	1	1/20/2020 9:39:52 PM	49924
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.74	5.0		mg/Kg	2	1/21/2020 9:38:55 AM	49919
Arsenic	ND	2.9	5.0		mg/Kg	2	1/21/2020 9:38:55 AM	49919
Barium	300	0.046	0.20		mg/Kg	2	1/21/2020 9:38:55 AM	49919
Beryllium	1.2	0.018	0.30		mg/Kg	2	1/21/2020 9:38:55 AM	49919
Cadmium	ND	0.049	0.20		mg/Kg	2	1/21/2020 9:38:55 AM	49919
Chromium	20	0.16	0.60		mg/Kg	2	1/21/2020 9:38:55 AM	49919
Cobalt	6.0	0.21	0.60		mg/Kg	2	1/21/2020 9:38:55 AM	49919
Lead	0.68	0.49	0.50		mg/Kg	2	1/21/2020 9:38:55 AM	49919
Nickel	14	0.30	1.0		mg/Kg	2	1/21/2020 9:38:55 AM	49919
Selenium	ND	2.5	5.0		mg/Kg	2	1/21/2020 9:38:55 AM	49919
Silver	ND	0.064	0.50		mg/Kg	2	1/21/2020 9:38:55 AM	49919
Vanadium	30	0.13	5.0		mg/Kg	2	1/21/2020 9:38:55 AM	49919
Zinc	100	0.79	5.0		mg/Kg	2	1/21/2020 9:38:55 AM	49919
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/21/2020 11:32:53 AM	49933
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	1.8	4.7	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908
Acenaphthylene	ND	2.1	4.7	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908
Aniline	ND	1.6	4.7	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908
Anthracene	ND	1.8	4.7	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908
Azobenzene	ND	2.4	4.7	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908
Benz(a)anthracene	ND	1.6	4.7	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908
Benzo(a)pyrene	ND	2.5	4.7	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908
Benzo(b)fluoranthene	ND	2.7	4.7	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908
Benzo(g,h,i)perylene	ND	2.4	4.7	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908
Benzo(k)fluoranthene	ND	1.4	4.7	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908
Benzoic acid	ND	3.2	12	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908
Benzyl alcohol	ND	1.9	4.7	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908
Bis(2-chloroethoxy)methane	ND	1.9	4.7	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908

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Qualifiers:

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

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-16 Toe 4-4.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 2:16:00 PM
Lab ID: 2001723-013 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	2.7	4.7	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908
Bis(2-chloroisopropyl)ether	ND	2.0	4.7	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908
Bis(2-ethylhexyl)phthalate	ND	5.2	12	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908
4-Bromophenyl phenyl ether	ND	2.7	4.7	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908
Butyl benzyl phthalate	ND	1.6	4.7	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908
Carbazole	ND	1.9	4.7	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908
4-Chloro-3-methylphenol	ND	1.8	12	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908
4-Chloroaniline	ND	1.8	12	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908
2-Chloronaphthalene	ND	2.0	5.8	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908
2-Chlorophenol	ND	2.6	4.7	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908
4-Chlorophenyl phenyl ether	ND	2.0	4.7	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908
Chrysene	ND	1.8	4.7	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908
Di-n-butyl phthalate	ND	7.0	9.3	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908
Di-n-octyl phthalate	ND	1.6	9.3	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908
Dibenz(a,h)anthracene	ND	2.6	4.7	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908
Dibenzofuran	ND	2.3	4.7	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908
1,2-Dichlorobenzene	ND	1.8	4.7	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908
1,3-Dichlorobenzene	ND	1.6	4.7	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908
1,4-Dichlorobenzene	ND	1.9	4.7	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908
3,3´-Dichlorobenzidine	ND	2.0	5.8	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908
Diethyl phthalate	ND	7.1	12	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908
Dimethyl phthalate	ND	1.9	4.7	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908
2,4-Dichlorophenol	ND	2.0	9.3	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908
2,4-Dimethylphenol	ND	1.9	7.0	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908
4,6-Dinitro-2-methylphenol	ND	1.7	9.3	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908
2,4-Dinitrophenol	ND	1.4	12	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908
2,4-Dinitrotoluene	ND	2.4	12	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908
2,6-Dinitrotoluene	ND	2.8	12	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908
Fluoranthene	ND	1.8	4.7	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908
Fluorene	9.5	1.8	4.7	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908
Hexachlorobenzene	ND	1.8	4.7	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908
Hexachlorobutadiene	ND	2.0	4.7	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908
Hexachlorocyclopentadiene	ND	2.2	4.7	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908
Hexachloroethane	ND	1.9	4.7	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908
Indeno(1,2,3-cd)pyrene	ND	2.9	4.7	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908
Isophorone	ND	2.0	9.3	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908
1-Methylnaphthalene	23	2.2	4.7	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908
2-Methylnaphthalene	26	1.9	4.7	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908
2-Methylphenol	ND	2.0	9.3	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908

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Qualifiers:

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

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-16 Toe 4-4.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 2:16:00 PM
Lab ID: 2001723-013 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	2.9	1.7	4.7	JD	mg/Kg	1	1/24/2020 5:56:09 PM	49908
N-Nitrosodi-n-propylamine	ND	2.4	4.7	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908
N-Nitrosodiphenylamine	ND	2.4	4.7	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908
Naphthalene	2.7	1.9	4.7	JD	mg/Kg	1	1/24/2020 5:56:09 PM	49908
2-Nitroaniline	ND	2.6	4.7	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908
3-Nitroaniline	ND	2.3	4.7	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908
4-Nitroaniline	ND	3.1	9.3	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908
Nitrobenzene	ND	2.0	9.3	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908
2-Nitrophenol	ND	1.9	4.7	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908
4-Nitrophenol	ND	1.4	5.8	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908
Pentachlorophenol	ND	2.1	9.3	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908
Phenanthrene	29	2.4	4.7	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908
Phenol	ND	2.0	4.7	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908
Pyrene	13	1.5	4.7	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908
Pyridine	ND	4.3	9.3	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908
1,2,4-Trichlorobenzene	ND	2.0	4.7	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908
2,4,5-Trichlorophenol	ND	1.5	4.7	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908
2,4,6-Trichlorophenol	ND	2.3	4.7	D	mg/Kg	1	1/24/2020 5:56:09 PM	49908
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	1	1/24/2020 5:56:09 PM	49908
Surr: Phenol-d5	0		18.5-101	SD	%Rec	1	1/24/2020 5:56:09 PM	49908
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	1	1/24/2020 5:56:09 PM	49908
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	1	1/24/2020 5:56:09 PM	49908
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	1	1/24/2020 5:56:09 PM	49908
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	1	1/24/2020 5:56:09 PM	49908
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.0055	0.033		mg/Kg	2	1/22/2020 1:39:53 AM	A65958
Toluene	0.055	0.0064	0.067	J	mg/Kg	2	1/22/2020 1:39:53 AM	A65958
Ethylbenzene	0.033	0.0039	0.067	J	mg/Kg	2	1/22/2020 1:39:53 AM	A65958
Methyl tert-butyl ether (MTBE)	0.028	0.016	0.067	J	mg/Kg	2	1/22/2020 1:39:53 AM	A65958
1,2,4-Trimethylbenzene	0.30	0.0061	0.067		mg/Kg	2	1/22/2020 1:39:53 AM	A65958
1,3,5-Trimethylbenzene	0.085	0.0065	0.067		mg/Kg	2	1/22/2020 1:39:53 AM	A65958
1,2-Dichloroethane (EDC)	ND	0.0068	0.067		mg/Kg	2	1/22/2020 1:39:53 AM	A65958
1,2-Dibromoethane (EDB)	ND	0.0061	0.067		mg/Kg	2	1/22/2020 1:39:53 AM	A65958
Naphthalene	0.25	0.013	0.13		mg/Kg	2	1/22/2020 1:39:53 AM	A65958
1-Methylnaphthalene	1.5	0.038	0.27		mg/Kg	2	1/22/2020 1:39:53 AM	A65958
2-Methylnaphthalene	2.2	0.029	0.27		mg/Kg	2	1/22/2020 1:39:53 AM	A65958
Acetone	ND	0.055	1.0		mg/Kg	2	1/22/2020 1:39:53 AM	A65958
Bromobenzene	ND	0.0064	0.067		mg/Kg	2	1/22/2020 1:39:53 AM	A65958
Bromodichloromethane	ND	0.0061	0.067		mg/Kg	2	1/22/2020 1:39:53 AM	A65958

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PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
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E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
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Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-16 Toe 4-4.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 2:16:00 PM
Lab ID: 2001723-013 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Bromoform	ND	0.0060	0.067		mg/Kg	2	1/22/2020 1:39:53 AM	A65958
Bromomethane	ND	0.016	0.20		mg/Kg	2	1/22/2020 1:39:53 AM	A65958
2-Butanone	ND	0.077	0.67		mg/Kg	2	1/22/2020 1:39:53 AM	A65958
Carbon disulfide	1.7	0.022	0.67		mg/Kg	2	1/22/2020 1:39:53 AM	A65958
Carbon tetrachloride	ND	0.0063	0.067		mg/Kg	2	1/22/2020 1:39:53 AM	A65958
Chlorobenzene	ND	0.0086	0.067		mg/Kg	2	1/22/2020 1:39:53 AM	A65958
Chloroethane	ND	0.0098	0.13		mg/Kg	2	1/22/2020 1:39:53 AM	A65958
Chloroform	ND	0.0054	0.067		mg/Kg	2	1/22/2020 1:39:53 AM	A65958
Chloromethane	ND	0.0064	0.20		mg/Kg	2	1/22/2020 1:39:53 AM	A65958
2-Chlorotoluene	ND	0.0058	0.067		mg/Kg	2	1/22/2020 1:39:53 AM	A65958
4-Chlorotoluene	ND	0.0055	0.067		mg/Kg	2	1/22/2020 1:39:53 AM	A65958
cis-1,2-DCE	ND	0.0091	0.067		mg/Kg	2	1/22/2020 1:39:53 AM	A65958
cis-1,3-Dichloropropene	ND	0.0056	0.067		mg/Kg	2	1/22/2020 1:39:53 AM	A65958
1,2-Dibromo-3-chloropropane	ND	0.0068	0.13		mg/Kg	2	1/22/2020 1:39:53 AM	A65958
Dibromochloromethane	ND	0.0047	0.067		mg/Kg	2	1/22/2020 1:39:53 AM	A65958
Dibromomethane	ND	0.0072	0.067		mg/Kg	2	1/22/2020 1:39:53 AM	A65958
1,2-Dichlorobenzene	ND	0.0055	0.067		mg/Kg	2	1/22/2020 1:39:53 AM	A65958
1,3-Dichlorobenzene	ND	0.0058	0.067		mg/Kg	2	1/22/2020 1:39:53 AM	A65958
1,4-Dichlorobenzene	ND	0.0056	0.067		mg/Kg	2	1/22/2020 1:39:53 AM	A65958
Dichlorodifluoromethane	ND	0.015	0.067		mg/Kg	2	1/22/2020 1:39:53 AM	A65958
1,1-Dichloroethane	ND	0.0043	0.067		mg/Kg	2	1/22/2020 1:39:53 AM	A65958
1,1-Dichloroethene	ND	0.027	0.067		mg/Kg	2	1/22/2020 1:39:53 AM	A65958
1,2-Dichloropropane	ND	0.0049	0.067		mg/Kg	2	1/22/2020 1:39:53 AM	A65958
1,3-Dichloropropane	ND	0.0072	0.067		mg/Kg	2	1/22/2020 1:39:53 AM	A65958
2,2-Dichloropropane	ND	0.022	0.13		mg/Kg	2	1/22/2020 1:39:53 AM	A65958
1,1-Dichloropropene	ND	0.0061	0.13		mg/Kg	2	1/22/2020 1:39:53 AM	A65958
Hexachlorobutadiene	ND	0.0068	0.13		mg/Kg	2	1/22/2020 1:39:53 AM	A65958
2-Hexanone	0.063	0.011	0.67	J	mg/Kg	2	1/22/2020 1:39:53 AM	A65958
Isopropylbenzene	0.016	0.0048	0.067	J	mg/Kg	2	1/22/2020 1:39:53 AM	A65958
4-Isopropyltoluene	0.030	0.0055	0.067	J	mg/Kg	2	1/22/2020 1:39:53 AM	A65958
4-Methyl-2-pentanone	0.19	0.013	0.67	J	mg/Kg	2	1/22/2020 1:39:53 AM	A65958
Methylene chloride	0.055	0.012	0.20	J	mg/Kg	2	1/22/2020 1:39:53 AM	A65958
n-Butylbenzene	0.060	0.0062	0.20	J	mg/Kg	2	1/22/2020 1:39:53 AM	A65958
n-Propylbenzene	0.031	0.0053	0.067	J	mg/Kg	2	1/22/2020 1:39:53 AM	A65958
sec-Butylbenzene	0.053	0.0075	0.067	J	mg/Kg	2	1/22/2020 1:39:53 AM	A65958
Styrene	ND	0.0052	0.067		mg/Kg	2	1/22/2020 1:39:53 AM	A65958
tert-Butylbenzene	ND	0.0063	0.067		mg/Kg	2	1/22/2020 1:39:53 AM	A65958
1,1,1,2-Tetrachloroethane	ND	0.0045	0.067		mg/Kg	2	1/22/2020 1:39:53 AM	A65958
1,1,2,2-Tetrachloroethane	ND	0.0068	0.067		mg/Kg	2	1/22/2020 1:39:53 AM	A65958

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ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
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Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-16 Toe 4-4.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 2:16:00 PM
Lab ID: 2001723-013 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Tetrachloroethene (PCE)	ND	0.0053	0.067		mg/Kg	2	1/22/2020 1:39:53 AM	A65958
trans-1,2-DCE	ND	0.0061	0.067		mg/Kg	2	1/22/2020 1:39:53 AM	A65958
trans-1,3-Dichloropropene	ND	0.0071	0.067		mg/Kg	2	1/22/2020 1:39:53 AM	A65958
1,2,3-Trichlorobenzene	ND	0.0059	0.13		mg/Kg	2	1/22/2020 1:39:53 AM	A65958
1,2,4-Trichlorobenzene	ND	0.0067	0.067		mg/Kg	2	1/22/2020 1:39:53 AM	A65958
1,1,1-Trichloroethane	ND	0.0060	0.067		mg/Kg	2	1/22/2020 1:39:53 AM	A65958
1,1,2-Trichloroethane	ND	0.0047	0.067		mg/Kg	2	1/22/2020 1:39:53 AM	A65958
Trichloroethene (TCE)	ND	0.0077	0.067		mg/Kg	2	1/22/2020 1:39:53 AM	A65958
Trichlorofluoromethane	ND	0.023	0.067		mg/Kg	2	1/22/2020 1:39:53 AM	A65958
1,2,3-Trichloropropane	ND	0.011	0.13		mg/Kg	2	1/22/2020 1:39:53 AM	A65958
Vinyl chloride	ND	0.0044	0.067		mg/Kg	2	1/22/2020 1:39:53 AM	A65958
Xylenes, Total	0.25	0.017	0.13		mg/Kg	2	1/22/2020 1:39:53 AM	A65958
Surr: Dibromofluoromethane	107		70-130		%Rec	2	1/22/2020 1:39:53 AM	A65958
Surr: 1,2-Dichloroethane-d4	88.5		70-130		%Rec	2	1/22/2020 1:39:53 AM	A65958
Surr: Toluene-d8	101		70-130		%Rec	2	1/22/2020 1:39:53 AM	A65958
Surr: 4-Bromofluorobenzene	86.9		70-130		%Rec	2	1/22/2020 1:39:53 AM	A65958
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	14	1.4	6.7		mg/Kg	2	1/22/2020 1:39:53 AM	AG659
Surr: BFB	98.4	0	70-130		%Rec	2	1/22/2020 1:39:53 AM	AG659
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/23/2020 3:07:00 PM	R66022
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	8.81				pH Units	1	1/22/2020 11:38:00 AM	R65980
SPECIFIC GRAVITY							Analyst: **PAC**	
Specific Gravity	1.880				g/cm3	1	1/25/2020	R66241

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Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-14 7.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 10:11:00 AM
Lab ID: 2001723-014 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **CLP**	
Diesel Range Organics (DRO)	2800	24	100		mg/Kg	10	1/22/2020 1:42:10 PM	49914
Motor Oil Range Organics (MRO)	1100	500	500		mg/Kg	10	1/22/2020 1:42:10 PM	49914
Surr: DNOP	0	0	55.1-146	S	%Rec	10	1/22/2020 1:42:10 PM	49914
EPA METHOD 7471: MERCURY							Analyst: **rde**	
Mercury	0.031	0.0019	0.034	JH	mg/Kg	1	2/25/2020 4:05:37 PM	50632
MERCURY, TCLP							Analyst: **pmf**	
Mercury	ND	0.00075	0.020		mg/L	1	1/20/2020 9:42:37 PM	49924
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.74	5.0		mg/Kg	2	1/21/2020 9:40:19 AM	49919
Arsenic	ND	2.9	5.0		mg/Kg	2	1/21/2020 9:40:19 AM	49919
Barium	340	0.046	0.20		mg/Kg	2	1/21/2020 9:40:19 AM	49919
Beryllium	1.1	0.018	0.30		mg/Kg	2	1/21/2020 9:40:19 AM	49919
Cadmium	ND	0.049	0.20		mg/Kg	2	1/21/2020 9:40:19 AM	49919
Chromium	11	0.16	0.60		mg/Kg	2	1/21/2020 9:40:19 AM	49919
Cobalt	4.7	0.21	0.60		mg/Kg	2	1/21/2020 9:40:19 AM	49919
Lead	1.6	0.49	0.50		mg/Kg	2	1/21/2020 9:40:19 AM	49919
Nickel	9.9	0.30	1.0		mg/Kg	2	1/21/2020 9:40:19 AM	49919
Selenium	ND	2.5	5.0		mg/Kg	2	1/21/2020 9:40:19 AM	49919
Silver	ND	0.064	0.50		mg/Kg	2	1/21/2020 9:40:19 AM	49919
Vanadium	21	0.13	5.0		mg/Kg	2	1/21/2020 9:40:19 AM	49919
Zinc	24	0.79	5.0		mg/Kg	2	1/21/2020 9:40:19 AM	49919
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/21/2020 11:34:18 AM	49933
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.68	1.8	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908
Acenaphthylene	ND	0.81	1.8	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908
Aniline	ND	0.62	1.8	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908
Anthracene	ND	0.70	1.8	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908
Azobenzene	ND	0.92	1.8	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908
Benz(a)anthracene	ND	0.63	1.8	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908
Benzo(a)pyrene	ND	0.98	1.8	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908
Benzo(b)fluoranthene	ND	1.0	1.8	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908
Benzo(g,h,i)perylene	ND	0.94	1.8	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908
Benzo(k)fluoranthene	ND	0.54	1.8	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908
Benzoic acid	ND	1.3	4.6	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908
Benzyl alcohol	ND	0.76	1.8	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908
Bis(2-chloroethoxy)methane	ND	0.75	1.8	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908

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Qualifiers:

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Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-14 7.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 10:11:00 AM
Lab ID: 2001723-014 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	1.1	1.8	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908
Bis(2-chloroisopropyl)ether	ND	0.78	1.8	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908
Bis(2-ethylhexyl)phthalate	ND	2.0	4.6	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908
4-Bromophenyl phenyl ether	ND	1.1	1.8	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908
Butyl benzyl phthalate	ND	0.61	1.8	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908
Carbazole	ND	0.72	1.8	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908
4-Chloro-3-methylphenol	ND	0.72	4.6	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908
4-Chloroaniline	ND	0.70	4.6	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908
2-Chloronaphthalene	ND	0.76	2.3	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908
2-Chlorophenol	ND	1.0	1.8	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908
4-Chlorophenyl phenyl ether	ND	0.76	1.8	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908
Chrysene	ND	0.71	1.8	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908
Di-n-butyl phthalate	ND	2.7	3.6	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908
Di-n-octyl phthalate	ND	0.61	3.6	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908
Dibenz(a,h)anthracene	ND	1.0	1.8	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908
Dibenzofuran	ND	0.91	1.8	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908
1,2-Dichlorobenzene	ND	0.72	1.8	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908
1,3-Dichlorobenzene	ND	0.61	1.8	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908
1,4-Dichlorobenzene	ND	0.75	1.8	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908
3,3´-Dichlorobenzidine	ND	0.78	2.3	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908
Diethyl phthalate	ND	2.8	4.6	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908
Dimethyl phthalate	ND	0.74	1.8	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908
2,4-Dichlorophenol	ND	0.77	3.6	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908
2,4-Dimethylphenol	ND	0.76	2.7	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908
4,6-Dinitro-2-methylphenol	ND	0.67	3.6	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908
2,4-Dinitrophenol	ND	0.53	4.6	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908
2,4-Dinitrotoluene	ND	0.93	4.6	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908
2,6-Dinitrotoluene	ND	1.1	4.6	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908
Fluoranthene	ND	0.69	1.8	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908
Fluorene	ND	0.72	1.8	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908
Hexachlorobenzene	ND	0.71	1.8	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908
Hexachlorobutadiene	ND	0.80	1.8	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908
Hexachlorocyclopentadiene	ND	0.87	1.8	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908
Hexachloroethane	ND	0.74	1.8	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908
Indeno(1,2,3-cd)pyrene	ND	1.1	1.8	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908
Isophorone	ND	0.79	3.6	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908
1-Methylnaphthalene	ND	0.85	1.8	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908
2-Methylnaphthalene	ND	0.74	1.8	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908
2-Methylphenol	ND	0.77	3.6	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908

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Qualifiers:

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Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-14 7.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 10:11:00 AM
Lab ID: 2001723-014 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.66	1.8	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908
N-Nitrosodi-n-propylamine	ND	0.92	1.8	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908
N-Nitrosodiphenylamine	ND	0.94	1.8	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908
Naphthalene	ND	0.74	1.8	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908
2-Nitroaniline	ND	1.0	1.8	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908
3-Nitroaniline	ND	0.89	1.8	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908
4-Nitroaniline	ND	1.2	3.6	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908
Nitrobenzene	ND	0.78	3.6	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908
2-Nitrophenol	ND	0.75	1.8	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908
4-Nitrophenol	ND	0.53	2.3	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908
Pentachlorophenol	ND	0.81	3.6	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908
Phenanthrene	1.1	0.93	1.8	JD	mg/Kg	1	1/24/2020 6:24:58 PM	49908
Phenol	ND	0.77	1.8	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908
Pyrene	1.1	0.60	1.8	JD	mg/Kg	1	1/24/2020 6:24:58 PM	49908
Pyridine	ND	1.7	3.6	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908
1,2,4-Trichlorobenzene	ND	0.78	1.8	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908
2,4,5-Trichlorophenol	ND	0.59	1.8	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908
2,4,6-Trichlorophenol	ND	0.91	1.8	D	mg/Kg	1	1/24/2020 6:24:58 PM	49908
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	1	1/24/2020 6:24:58 PM	49908
Surr: Phenol-d5	0		18.5-101	SD	%Rec	1	1/24/2020 6:24:58 PM	49908
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	1	1/24/2020 6:24:58 PM	49908
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	1	1/24/2020 6:24:58 PM	49908
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	1	1/24/2020 6:24:58 PM	49908
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	1	1/24/2020 6:24:58 PM	49908
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.0024	0.015		mg/Kg	1	1/22/2020 2:08:59 AM	A65958
Toluene	0.0045	0.0028	0.030	J	mg/Kg	1	1/22/2020 2:08:59 AM	A65958
Ethylbenzene	ND	0.0017	0.030		mg/Kg	1	1/22/2020 2:08:59 AM	A65958
Methyl tert-butyl ether (MTBE)	ND	0.0070	0.030		mg/Kg	1	1/22/2020 2:08:59 AM	A65958
1,2,4-Trimethylbenzene	0.0037	0.0027	0.030	J	mg/Kg	1	1/22/2020 2:08:59 AM	A65958
1,3,5-Trimethylbenzene	ND	0.0029	0.030		mg/Kg	1	1/22/2020 2:08:59 AM	A65958
1,2-Dichloroethane (EDC)	ND	0.0030	0.030		mg/Kg	1	1/22/2020 2:08:59 AM	A65958
1,2-Dibromoethane (EDB)	ND	0.0027	0.030		mg/Kg	1	1/22/2020 2:08:59 AM	A65958
Naphthalene	ND	0.0059	0.059		mg/Kg	1	1/22/2020 2:08:59 AM	A65958
1-Methylnaphthalene	0.054	0.017	0.12	J	mg/Kg	1	1/22/2020 2:08:59 AM	A65958
2-Methylnaphthalene	0.060	0.013	0.12	J	mg/Kg	1	1/22/2020 2:08:59 AM	A65958
Acetone	ND	0.024	0.44		mg/Kg	1	1/22/2020 2:08:59 AM	A65958
Bromobenzene	ND	0.0028	0.030		mg/Kg	1	1/22/2020 2:08:59 AM	A65958
Bromodichloromethane	ND	0.0027	0.030		mg/Kg	1	1/22/2020 2:08:59 AM	A65958

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Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-14 7.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 10:11:00 AM
Lab ID: 2001723-014 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Bromoform	ND	0.0027	0.030		mg/Kg	1	1/22/2020 2:08:59 AM	A65958
Bromomethane	ND	0.0071	0.088		mg/Kg	1	1/22/2020 2:08:59 AM	A65958
2-Butanone	ND	0.034	0.30		mg/Kg	1	1/22/2020 2:08:59 AM	A65958
Carbon disulfide	ND	0.0097	0.30		mg/Kg	1	1/22/2020 2:08:59 AM	A65958
Carbon tetrachloride	ND	0.0028	0.030		mg/Kg	1	1/22/2020 2:08:59 AM	A65958
Chlorobenzene	ND	0.0038	0.030		mg/Kg	1	1/22/2020 2:08:59 AM	A65958
Chloroethane	ND	0.0043	0.059		mg/Kg	1	1/22/2020 2:08:59 AM	A65958
Chloroform	ND	0.0024	0.030		mg/Kg	1	1/22/2020 2:08:59 AM	A65958
Chloromethane	ND	0.0028	0.088		mg/Kg	1	1/22/2020 2:08:59 AM	A65958
2-Chlorotoluene	ND	0.0026	0.030		mg/Kg	1	1/22/2020 2:08:59 AM	A65958
4-Chlorotoluene	ND	0.0024	0.030		mg/Kg	1	1/22/2020 2:08:59 AM	A65958
cis-1,2-DCE	ND	0.0040	0.030		mg/Kg	1	1/22/2020 2:08:59 AM	A65958
cis-1,3-Dichloropropene	ND	0.0025	0.030		mg/Kg	1	1/22/2020 2:08:59 AM	A65958
1,2-Dibromo-3-chloropropane	ND	0.0030	0.059		mg/Kg	1	1/22/2020 2:08:59 AM	A65958
Dibromochloromethane	ND	0.0021	0.030		mg/Kg	1	1/22/2020 2:08:59 AM	A65958
Dibromomethane	ND	0.0032	0.030		mg/Kg	1	1/22/2020 2:08:59 AM	A65958
1,2-Dichlorobenzene	ND	0.0024	0.030		mg/Kg	1	1/22/2020 2:08:59 AM	A65958
1,3-Dichlorobenzene	ND	0.0026	0.030		mg/Kg	1	1/22/2020 2:08:59 AM	A65958
1,4-Dichlorobenzene	ND	0.0025	0.030		mg/Kg	1	1/22/2020 2:08:59 AM	A65958
Dichlorodifluoromethane	ND	0.0068	0.030		mg/Kg	1	1/22/2020 2:08:59 AM	A65958
1,1-Dichloroethane	ND	0.0019	0.030		mg/Kg	1	1/22/2020 2:08:59 AM	A65958
1,1-Dichloroethene	ND	0.012	0.030		mg/Kg	1	1/22/2020 2:08:59 AM	A65958
1,2-Dichloropropane	ND	0.0021	0.030		mg/Kg	1	1/22/2020 2:08:59 AM	A65958
1,3-Dichloropropane	ND	0.0032	0.030		mg/Kg	1	1/22/2020 2:08:59 AM	A65958
2,2-Dichloropropane	ND	0.0096	0.059		mg/Kg	1	1/22/2020 2:08:59 AM	A65958
1,1-Dichloropropene	ND	0.0027	0.059		mg/Kg	1	1/22/2020 2:08:59 AM	A65958
Hexachlorobutadiene	ND	0.0030	0.059		mg/Kg	1	1/22/2020 2:08:59 AM	A65958
2-Hexanone	ND	0.0049	0.30		mg/Kg	1	1/22/2020 2:08:59 AM	A65958
Isopropylbenzene	ND	0.0021	0.030		mg/Kg	1	1/22/2020 2:08:59 AM	A65958
4-Isopropyltoluene	ND	0.0024	0.030		mg/Kg	1	1/22/2020 2:08:59 AM	A65958
4-Methyl-2-pentanone	ND	0.0056	0.30		mg/Kg	1	1/22/2020 2:08:59 AM	A65958
Methylene chloride	0.037	0.0052	0.088	J	mg/Kg	1	1/22/2020 2:08:59 AM	A65958
n-Butylbenzene	ND	0.0028	0.088		mg/Kg	1	1/22/2020 2:08:59 AM	A65958
n-Propylbenzene	ND	0.0024	0.030		mg/Kg	1	1/22/2020 2:08:59 AM	A65958
sec-Butylbenzene	ND	0.0033	0.030		mg/Kg	1	1/22/2020 2:08:59 AM	A65958
Styrene	ND	0.0023	0.030		mg/Kg	1	1/22/2020 2:08:59 AM	A65958
tert-Butylbenzene	ND	0.0028	0.030		mg/Kg	1	1/22/2020 2:08:59 AM	A65958
1,1,1,2-Tetrachloroethane	ND	0.0020	0.030		mg/Kg	1	1/22/2020 2:08:59 AM	A65958
1,1,2,2-Tetrachloroethane	ND	0.0030	0.030		mg/Kg	1	1/22/2020 2:08:59 AM	A65958

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Qualifiers:

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Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-14 7.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 10:11:00 AM
Lab ID: 2001723-014 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Tetrachloroethene (PCE)	ND	0.0024	0.030		mg/Kg	1	1/22/2020 2:08:59 AM	A65958
trans-1,2-DCE	ND	0.0027	0.030		mg/Kg	1	1/22/2020 2:08:59 AM	A65958
trans-1,3-Dichloropropene	ND	0.0031	0.030		mg/Kg	1	1/22/2020 2:08:59 AM	A65958
1,2,3-Trichlorobenzene	ND	0.0026	0.059		mg/Kg	1	1/22/2020 2:08:59 AM	A65958
1,2,4-Trichlorobenzene	ND	0.0030	0.030		mg/Kg	1	1/22/2020 2:08:59 AM	A65958
1,1,1-Trichloroethane	ND	0.0027	0.030		mg/Kg	1	1/22/2020 2:08:59 AM	A65958
1,1,2-Trichloroethane	ND	0.0021	0.030		mg/Kg	1	1/22/2020 2:08:59 AM	A65958
Trichloroethene (TCE)	ND	0.0034	0.030		mg/Kg	1	1/22/2020 2:08:59 AM	A65958
Trichlorofluoromethane	ND	0.010	0.030		mg/Kg	1	1/22/2020 2:08:59 AM	A65958
1,2,3-Trichloropropane	ND	0.0048	0.059		mg/Kg	1	1/22/2020 2:08:59 AM	A65958
Vinyl chloride	ND	0.0019	0.030		mg/Kg	1	1/22/2020 2:08:59 AM	A65958
Xylenes, Total	ND	0.0074	0.059		mg/Kg	1	1/22/2020 2:08:59 AM	A65958
Surr: Dibromofluoromethane	107		70-130		%Rec	1	1/22/2020 2:08:59 AM	A65958
Surr: 1,2-Dichloroethane-d4	90.7		70-130		%Rec	1	1/22/2020 2:08:59 AM	A65958
Surr: Toluene-d8	102		70-130		%Rec	1	1/22/2020 2:08:59 AM	A65958
Surr: 4-Bromofluorobenzene	92.6		70-130		%Rec	1	1/22/2020 2:08:59 AM	A65958
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	ND	0.63	3.0		mg/Kg	1	1/22/2020 2:08:59 AM	AG659
Surr: BFB	93.9	0	70-130		%Rec	1	1/22/2020 2:08:59 AM	AG659
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/23/2020 3:07:00 PM	R66022
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	8.02				pH Units	1	1/22/2020 11:38:00 AM	R65980
SPECIFIC GRAVITY							Analyst: **PAC**	
Specific Gravity	1.890				g/cm3	1	1/25/2020	R66241

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Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-14 Toe Surf
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 2:44:00 PM
Lab ID: 2001723-015 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **JME**	
Diesel Range Organics (DRO)	89000	1000	4200		mg/Kg	500	1/22/2020 11:17:42 AM	49914
Motor Oil Range Organics (MRO)	28000	21000	21000		mg/Kg	500	1/22/2020 11:17:42 AM	49914
Surr: DNOP	0	0	55.1-146	S	%Rec	500	1/22/2020 11:17:42 AM	49914
EPA METHOD 7471: MERCURY							Analyst: **rde**	
Mercury	5.8	0.19	3.4	H	mg/Kg	100	2/25/2020 4:24:12 PM	50632
MERCURY, TCLP							Analyst: **pmf**	
Mercury	ND	0.00075	0.020		mg/L	1	1/20/2020 9:48:10 PM	49926
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.75	5.1		mg/Kg	2	1/21/2020 9:41:44 AM	49919
Arsenic	4.1	2.9	5.1	J	mg/Kg	2	1/21/2020 9:41:44 AM	49919
Barium	490	0.047	0.20		mg/Kg	2	1/21/2020 9:41:44 AM	49919
Beryllium	0.64	0.019	0.30		mg/Kg	2	1/21/2020 9:41:44 AM	49919
Cadmium	ND	0.049	0.20		mg/Kg	2	1/21/2020 9:41:44 AM	49919
Chromium	19	0.16	0.61		mg/Kg	2	1/21/2020 9:41:44 AM	49919
Cobalt	4.1	0.21	0.61		mg/Kg	2	1/21/2020 9:41:44 AM	49919
Lead	5.0	0.49	0.51		mg/Kg	2	1/21/2020 9:41:44 AM	49919
Nickel	11	0.30	1.0		mg/Kg	2	1/21/2020 9:41:44 AM	49919
Selenium	4.9	2.6	5.1	J	mg/Kg	2	1/21/2020 9:41:44 AM	49919
Silver	ND	0.065	0.51		mg/Kg	2	1/21/2020 9:41:44 AM	49919
Vanadium	19	0.14	5.1		mg/Kg	2	1/21/2020 9:41:44 AM	49919
Zinc	680	2.0	13		mg/Kg	5	1/21/2020 10:26:05 AM	49919
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/21/2020 11:35:42 AM	49933
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	1.8	4.7	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
Acenaphthylene	ND	2.1	4.7	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
Aniline	ND	1.6	4.7	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
Anthracene	ND	1.8	4.7	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
Azobenzene	ND	2.4	4.7	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
Benz(a)anthracene	ND	1.6	4.7	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
Benzo(a)pyrene	ND	2.6	4.7	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
Benzo(b)fluoranthene	ND	2.7	4.7	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
Benzo(g,h,i)perylene	ND	2.4	4.7	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
Benzo(k)fluoranthene	ND	1.4	4.7	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
Benzoic acid	ND	3.3	12	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
Benzyl alcohol	ND	2.0	4.7	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
Bis(2-chloroethoxy)methane	ND	1.9	4.7	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908

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Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-14 Toe Surf
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 2:44:00 PM
Lab ID: 2001723-015 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	2.7	4.7	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
Bis(2-chloroisopropyl)ether	ND	2.0	4.7	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
Bis(2-ethylhexyl)phthalate	ND	5.3	12	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
4-Bromophenyl phenyl ether	ND	2.7	4.7	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
Butyl benzyl phthalate	ND	1.6	4.7	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
Carbazole	ND	1.9	4.7	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
4-Chloro-3-methylphenol	ND	1.9	12	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
4-Chloroaniline	ND	1.8	12	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
2-Chloronaphthalene	ND	2.0	5.9	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
2-Chlorophenol	ND	2.7	4.7	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
4-Chlorophenyl phenyl ether	ND	2.0	4.7	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
Chrysene	ND	1.8	4.7	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
Di-n-butyl phthalate	ND	7.0	9.4	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
Di-n-octyl phthalate	ND	1.6	9.4	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
Dibenz(a,h)anthracene	ND	2.6	4.7	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
Dibenzofuran	ND	2.4	4.7	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
1,2-Dichlorobenzene	ND	1.9	4.7	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
1,3-Dichlorobenzene	ND	1.6	4.7	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
1,4-Dichlorobenzene	ND	2.0	4.7	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
3,3´-Dichlorobenzidine	ND	2.0	5.9	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
Diethyl phthalate	ND	7.2	12	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
Dimethyl phthalate	ND	1.9	4.7	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
2,4-Dichlorophenol	ND	2.0	9.4	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
2,4-Dimethylphenol	ND	2.0	7.1	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
4,6-Dinitro-2-methylphenol	ND	1.7	9.4	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
2,4-Dinitrophenol	ND	1.4	12	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
2,4-Dinitrotoluene	ND	2.4	12	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
2,6-Dinitrotoluene	ND	2.8	12	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
Fluoranthene	ND	1.8	4.7	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
Fluorene	ND	1.9	4.7	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
Hexachlorobenzene	ND	1.8	4.7	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
Hexachlorobutadiene	ND	2.1	4.7	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
Hexachlorocyclopentadiene	ND	2.3	4.7	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
Hexachloroethane	ND	1.9	4.7	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
Indeno(1,2,3-cd)pyrene	ND	2.9	4.7	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
Isophorone	ND	2.1	9.4	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
1-Methylnaphthalene	ND	2.2	4.7	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
2-Methylnaphthalene	ND	1.9	4.7	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
2-Methylphenol	ND	2.0	9.4	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908

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Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-14 Toe Surf
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 2:44:00 PM
Lab ID: 2001723-015 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	1.7	4.7	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
N-Nitrosodi-n-propylamine	ND	2.4	4.7	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
N-Nitrosodiphenylamine	ND	2.4	4.7	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
Naphthalene	ND	1.9	4.7	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
2-Nitroaniline	ND	2.6	4.7	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
3-Nitroaniline	ND	2.3	4.7	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
4-Nitroaniline	ND	3.2	9.4	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
Nitrobenzene	ND	2.0	9.4	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
2-Nitrophenol	ND	1.9	4.7	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
4-Nitrophenol	ND	1.4	5.9	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
Pentachlorophenol	ND	2.1	9.4	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
Phenanthrene	ND	2.4	4.7	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
Phenol	ND	2.0	4.7	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
Pyrene	60	1.6	4.7	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
Pyridine	ND	4.4	9.4	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
1,2,4-Trichlorobenzene	ND	2.0	4.7	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
2,4,5-Trichlorophenol	ND	1.5	4.7	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
2,4,6-Trichlorophenol	ND	2.4	4.7	D	mg/Kg	1	1/24/2020 6:53:37 PM	49908
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	1	1/24/2020 6:53:37 PM	49908
Surr: Phenol-d5	0		18.5-101	SD	%Rec	1	1/24/2020 6:53:37 PM	49908
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	1	1/24/2020 6:53:37 PM	49908
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	1	1/24/2020 6:53:37 PM	49908
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	1	1/24/2020 6:53:37 PM	49908
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	1	1/24/2020 6:53:37 PM	49908
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.014	0.088		mg/Kg	5	1/22/2020 2:38:02 AM	A65958
Toluene	ND	0.017	0.18		mg/Kg	5	1/22/2020 2:38:02 AM	A65958
Ethylbenzene	ND	0.010	0.18		mg/Kg	5	1/22/2020 2:38:02 AM	A65958
Methyl tert-butyl ether (MTBE)	ND	0.042	0.18		mg/Kg	5	1/22/2020 2:38:02 AM	A65958
1,2,4-Trimethylbenzene	0.052	0.016	0.18	J	mg/Kg	5	1/22/2020 2:38:02 AM	A65958
1,3,5-Trimethylbenzene	0.023	0.017	0.18	J	mg/Kg	5	1/22/2020 2:38:02 AM	A65958
1,2-Dichloroethane (EDC)	0.080	0.018	0.18	J	mg/Kg	5	1/22/2020 2:38:02 AM	A65958
1,2-Dibromoethane (EDB)	ND	0.016	0.18		mg/Kg	5	1/22/2020 2:38:02 AM	A65958
Naphthalene	0.065	0.035	0.35	J	mg/Kg	5	1/22/2020 2:38:02 AM	A65958
1-Methylnaphthalene	0.48	0.10	0.70	J	mg/Kg	5	1/22/2020 2:38:02 AM	A65958
2-Methylnaphthalene	0.54	0.077	0.70	J	mg/Kg	5	1/22/2020 2:38:02 AM	A65958
Acetone	0.22	0.15	2.6	J	mg/Kg	5	1/22/2020 2:38:02 AM	A65958
Bromobenzene	ND	0.017	0.18		mg/Kg	5	1/22/2020 2:38:02 AM	A65958
Bromodichloromethane	ND	0.016	0.18		mg/Kg	5	1/22/2020 2:38:02 AM	A65958

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Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-14 Toe Surf
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 2:44:00 PM
Lab ID: 2001723-015 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Bromoform	ND	0.016	0.18		mg/Kg	5	1/22/2020 2:38:02 AM	A65958
Bromomethane	ND	0.042	0.53		mg/Kg	5	1/22/2020 2:38:02 AM	A65958
2-Butanone	ND	0.20	1.8		mg/Kg	5	1/22/2020 2:38:02 AM	A65958
Carbon disulfide	ND	0.058	1.8		mg/Kg	5	1/22/2020 2:38:02 AM	A65958
Carbon tetrachloride	ND	0.017	0.18		mg/Kg	5	1/22/2020 2:38:02 AM	A65958
Chlorobenzene	ND	0.023	0.18		mg/Kg	5	1/22/2020 2:38:02 AM	A65958
Chloroethane	ND	0.026	0.35		mg/Kg	5	1/22/2020 2:38:02 AM	A65958
Chloroform	ND	0.014	0.18		mg/Kg	5	1/22/2020 2:38:02 AM	A65958
Chloromethane	ND	0.017	0.53		mg/Kg	5	1/22/2020 2:38:02 AM	A65958
2-Chlorotoluene	ND	0.015	0.18		mg/Kg	5	1/22/2020 2:38:02 AM	A65958
4-Chlorotoluene	ND	0.014	0.18		mg/Kg	5	1/22/2020 2:38:02 AM	A65958
cis-1,2-DCE	ND	0.024	0.18		mg/Kg	5	1/22/2020 2:38:02 AM	A65958
cis-1,3-Dichloropropene	ND	0.015	0.18		mg/Kg	5	1/22/2020 2:38:02 AM	A65958
1,2-Dibromo-3-chloropropane	ND	0.018	0.35		mg/Kg	5	1/22/2020 2:38:02 AM	A65958
Dibromochloromethane	ND	0.012	0.18		mg/Kg	5	1/22/2020 2:38:02 AM	A65958
Dibromomethane	ND	0.019	0.18		mg/Kg	5	1/22/2020 2:38:02 AM	A65958
1,2-Dichlorobenzene	ND	0.014	0.18		mg/Kg	5	1/22/2020 2:38:02 AM	A65958
1,3-Dichlorobenzene	ND	0.015	0.18		mg/Kg	5	1/22/2020 2:38:02 AM	A65958
1,4-Dichlorobenzene	ND	0.015	0.18		mg/Kg	5	1/22/2020 2:38:02 AM	A65958
Dichlorodifluoromethane	ND	0.041	0.18		mg/Kg	5	1/22/2020 2:38:02 AM	A65958
1,1-Dichloroethane	ND	0.011	0.18		mg/Kg	5	1/22/2020 2:38:02 AM	A65958
1,1-Dichloroethene	ND	0.070	0.18		mg/Kg	5	1/22/2020 2:38:02 AM	A65958
1,2-Dichloropropane	ND	0.013	0.18		mg/Kg	5	1/22/2020 2:38:02 AM	A65958
1,3-Dichloropropane	ND	0.019	0.18		mg/Kg	5	1/22/2020 2:38:02 AM	A65958
2,2-Dichloropropane	ND	0.057	0.35		mg/Kg	5	1/22/2020 2:38:02 AM	A65958
1,1-Dichloropropene	ND	0.016	0.35		mg/Kg	5	1/22/2020 2:38:02 AM	A65958
Hexachlorobutadiene	ND	0.018	0.35		mg/Kg	5	1/22/2020 2:38:02 AM	A65958
2-Hexanone	ND	0.029	1.8		mg/Kg	5	1/22/2020 2:38:02 AM	A65958
Isopropylbenzene	ND	0.013	0.18		mg/Kg	5	1/22/2020 2:38:02 AM	A65958
4-Isopropyltoluene	0.018	0.015	0.18	J	mg/Kg	5	1/22/2020 2:38:02 AM	A65958
4-Methyl-2-pentanone	ND	0.033	1.8		mg/Kg	5	1/22/2020 2:38:02 AM	A65958
Methylene chloride	0.086	0.031	0.53	J	mg/Kg	5	1/22/2020 2:38:02 AM	A65958
n-Butylbenzene	ND	0.016	0.53		mg/Kg	5	1/22/2020 2:38:02 AM	A65958
n-Propylbenzene	ND	0.014	0.18		mg/Kg	5	1/22/2020 2:38:02 AM	A65958
sec-Butylbenzene	ND	0.020	0.18		mg/Kg	5	1/22/2020 2:38:02 AM	A65958
Styrene	ND	0.014	0.18		mg/Kg	5	1/22/2020 2:38:02 AM	A65958
tert-Butylbenzene	ND	0.017	0.18		mg/Kg	5	1/22/2020 2:38:02 AM	A65958
1,1,1,2-Tetrachloroethane	ND	0.012	0.18		mg/Kg	5	1/22/2020 2:38:02 AM	A65958
1,1,2,2-Tetrachloroethane	ND	0.018	0.18		mg/Kg	5	1/22/2020 2:38:02 AM	A65958

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PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-14 Toe Surf
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 2:44:00 PM
Lab ID: 2001723-015 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Tetrachloroethene (PCE)	ND	0.014	0.18		mg/Kg	5	1/22/2020 2:38:02 AM	A65958
trans-1,2-DCE	ND	0.016	0.18		mg/Kg	5	1/22/2020 2:38:02 AM	A65958
trans-1,3-Dichloropropene	ND	0.019	0.18		mg/Kg	5	1/22/2020 2:38:02 AM	A65958
1,2,3-Trichlorobenzene	ND	0.015	0.35		mg/Kg	5	1/22/2020 2:38:02 AM	A65958
1,2,4-Trichlorobenzene	ND	0.018	0.18		mg/Kg	5	1/22/2020 2:38:02 AM	A65958
1,1,1-Trichloroethane	ND	0.016	0.18		mg/Kg	5	1/22/2020 2:38:02 AM	A65958
1,1,2-Trichloroethane	ND	0.012	0.18		mg/Kg	5	1/22/2020 2:38:02 AM	A65958
Trichloroethene (TCE)	ND	0.020	0.18		mg/Kg	5	1/22/2020 2:38:02 AM	A65958
Trichlorofluoromethane	ND	0.060	0.18		mg/Kg	5	1/22/2020 2:38:02 AM	A65958
1,2,3-Trichloropropane	ND	0.028	0.35		mg/Kg	5	1/22/2020 2:38:02 AM	A65958
Vinyl chloride	ND	0.012	0.18		mg/Kg	5	1/22/2020 2:38:02 AM	A65958
Xylenes, Total	ND	0.044	0.35		mg/Kg	5	1/22/2020 2:38:02 AM	A65958
Surr: Dibromofluoromethane	106		70-130		%Rec	5	1/22/2020 2:38:02 AM	A65958
Surr: 1,2-Dichloroethane-d4	90.0		70-130		%Rec	5	1/22/2020 2:38:02 AM	A65958
Surr: Toluene-d8	101		70-130		%Rec	5	1/22/2020 2:38:02 AM	A65958
Surr: 4-Bromofluorobenzene	87.5		70-130		%Rec	5	1/22/2020 2:38:02 AM	A65958
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	17	3.7	18	J	mg/Kg	5	1/22/2020 2:38:02 AM	AG659
Surr: BFB	97.9	0	70-130		%Rec	5	1/22/2020 2:38:02 AM	AG659
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/23/2020 3:07:00 PM	R66022
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	6.34				pH Units	1	1/22/2020 11:38:00 AM	R65980
SPECIFIC GRAVITY							Analyst: **PAC**	
Specific Gravity	1.390				g/cm3	1	1/25/2020	R66241

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

Qualifiers:

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

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-17 Toe Surface
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 1:30:00 PM
Lab ID: 2001723-016 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **JME**	
Diesel Range Organics (DRO)	62000	1200	5000		mg/Kg	500	1/22/2020 11:41:28 AM	49914
Motor Oil Range Organics (MRO)	48000	25000	25000		mg/Kg	500	1/22/2020 11:41:28 AM	49914
Surr: DNOP	0	0	55.1-146	S	%Rec	500	1/22/2020 11:41:28 AM	49914
EPA METHOD 7471: MERCURY							Analyst: **rde**	
Mercury	6.0	0.19	3.4	H	mg/Kg	100	2/25/2020 5:02:51 PM	50632
MERCURY, TCLP							Analyst: **pmf**	
Mercury	ND	0.00075	0.020		mg/L	1	1/20/2020 9:56:35 PM	49926
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.73	4.9		mg/Kg	2	1/21/2020 9:43:09 AM	49919
Arsenic	6.0	2.8	4.9		mg/Kg	2	1/21/2020 9:43:09 AM	49919
Barium	300	0.046	0.20		mg/Kg	2	1/21/2020 9:43:09 AM	49919
Beryllium	0.37	0.018	0.30		mg/Kg	2	1/21/2020 9:43:09 AM	49919
Cadmium	ND	0.048	0.20		mg/Kg	2	1/21/2020 9:43:09 AM	49919
Chromium	24	0.16	0.59		mg/Kg	2	1/21/2020 9:43:09 AM	49919
Cobalt	3.4	0.21	0.59		mg/Kg	2	1/21/2020 9:43:09 AM	49919
Lead	27	0.48	0.49		mg/Kg	2	1/21/2020 9:43:09 AM	49919
Nickel	14	0.30	0.99		mg/Kg	2	1/21/2020 9:43:09 AM	49919
Selenium	ND	2.5	4.9		mg/Kg	2	1/21/2020 9:43:09 AM	49919
Silver	ND	0.063	0.49		mg/Kg	2	1/21/2020 9:43:09 AM	49919
Vanadium	18	0.13	4.9		mg/Kg	2	1/21/2020 9:43:09 AM	49919
Zinc	420	0.78	4.9		mg/Kg	2	1/21/2020 9:43:09 AM	49919
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/21/2020 11:37:06 AM	49933
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	2.0	5.2	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
Acenaphthylene	ND	2.3	5.2	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
Aniline	ND	1.8	5.2	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
Anthracene	ND	2.0	5.2	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
Azobenzene	ND	2.6	5.2	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
Benz(a)anthracene	ND	1.8	5.2	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
Benzo(a)pyrene	ND	2.8	5.2	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
Benzo(b)fluoranthene	ND	3.0	5.2	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
Benzo(g,h,i)perylene	ND	2.7	5.2	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
Benzo(k)fluoranthene	ND	1.6	5.2	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
Benzoic acid	ND	3.6	13	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
Benzyl alcohol	ND	2.2	5.2	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
Bis(2-chloroethoxy)methane	ND	2.1	5.2	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908

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Qualifiers:

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

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-17 Toe Surface
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 1:30:00 PM
Lab ID: 2001723-016 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	3.0	5.2	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
Bis(2-chloroisopropyl)ether	ND	2.2	5.2	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
Bis(2-ethylhexyl)phthalate	ND	5.8	13	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
4-Bromophenyl phenyl ether	ND	3.0	5.2	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
Butyl benzyl phthalate	ND	1.7	5.2	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
Carbazole	ND	2.1	5.2	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
4-Chloro-3-methylphenol	ND	2.0	13	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
4-Chloroaniline	ND	2.0	13	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
2-Chloronaphthalene	ND	2.2	6.5	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
2-Chlorophenol	ND	2.9	5.2	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
4-Chlorophenyl phenyl ether	ND	2.2	5.2	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
Chrysene	42	2.0	5.2	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
Di-n-butyl phthalate	ND	7.8	10	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
Di-n-octyl phthalate	ND	1.7	10	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
Dibenz(a,h)anthracene	ND	2.9	5.2	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
Dibenzofuran	ND	2.6	5.2	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
1,2-Dichlorobenzene	ND	2.0	5.2	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
1,3-Dichlorobenzene	ND	1.7	5.2	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
1,4-Dichlorobenzene	ND	2.2	5.2	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
3,3´-Dichlorobenzidine	ND	2.2	6.5	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
Diethyl phthalate	ND	7.9	13	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
Dimethyl phthalate	ND	2.1	5.2	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
2,4-Dichlorophenol	ND	2.2	10	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
2,4-Dimethylphenol	ND	2.2	7.8	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
4,6-Dinitro-2-methylphenol	ND	1.9	10	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
2,4-Dinitrophenol	ND	1.5	13	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
2,4-Dinitrotoluene	ND	2.7	13	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
2,6-Dinitrotoluene	ND	3.1	13	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
Fluoranthene	ND	2.0	5.2	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
Fluorene	ND	2.0	5.2	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
Hexachlorobenzene	ND	2.0	5.2	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
Hexachlorobutadiene	ND	2.3	5.2	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
Hexachlorocyclopentadiene	ND	2.5	5.2	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
Hexachloroethane	ND	2.1	5.2	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
Indeno(1,2,3-cd)pyrene	ND	3.2	5.2	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
Isophorone	ND	2.3	10	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
1-Methylnaphthalene	ND	2.4	5.2	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
2-Methylnaphthalene	ND	2.1	5.2	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
2-Methylphenol	ND	2.2	10	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908

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Qualifiers:

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D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
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Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-17 Toe Surface
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 1:30:00 PM
Lab ID: 2001723-016 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	1.9	5.2	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
N-Nitrosodi-n-propylamine	ND	2.6	5.2	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
N-Nitrosodiphenylamine	ND	2.7	5.2	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
Naphthalene	ND	2.1	5.2	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
2-Nitroaniline	ND	2.9	5.2	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
3-Nitroaniline	ND	2.5	5.2	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
4-Nitroaniline	ND	3.5	10	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
Nitrobenzene	ND	2.2	10	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
2-Nitrophenol	ND	2.1	5.2	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
4-Nitrophenol	ND	1.5	6.5	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
Pentachlorophenol	ND	2.3	10	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
Phenanthrene	10	2.6	5.2	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
Phenol	ND	2.2	5.2	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
Pyrene	47	1.7	5.2	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
Pyridine	ND	4.8	10	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
1,2,4-Trichlorobenzene	ND	2.2	5.2	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
2,4,5-Trichlorophenol	ND	1.7	5.2	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
2,4,6-Trichlorophenol	ND	2.6	5.2	D	mg/Kg	1	1/24/2020 7:22:15 PM	49908
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	1	1/24/2020 7:22:15 PM	49908
Surr: Phenol-d5	0		18.5-101	SD	%Rec	1	1/24/2020 7:22:15 PM	49908
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	1	1/24/2020 7:22:15 PM	49908
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	1	1/24/2020 7:22:15 PM	49908
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	1	1/24/2020 7:22:15 PM	49908
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	1	1/24/2020 7:22:15 PM	49908
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.019	0.11		mg/Kg	5	1/22/2020 3:07:05 AM	A65958
Toluene	ND	0.022	0.23		mg/Kg	5	1/22/2020 3:07:05 AM	A65958
Ethylbenzene	ND	0.013	0.23		mg/Kg	5	1/22/2020 3:07:05 AM	A65958
Methyl tert-butyl ether (MTBE)	ND	0.054	0.23		mg/Kg	5	1/22/2020 3:07:05 AM	A65958
1,2,4-Trimethylbenzene	ND	0.021	0.23		mg/Kg	5	1/22/2020 3:07:05 AM	A65958
1,3,5-Trimethylbenzene	ND	0.022	0.23		mg/Kg	5	1/22/2020 3:07:05 AM	A65958
1,2-Dichloroethane (EDC)	ND	0.023	0.23		mg/Kg	5	1/22/2020 3:07:05 AM	A65958
1,2-Dibromoethane (EDB)	ND	0.021	0.23		mg/Kg	5	1/22/2020 3:07:05 AM	A65958
Naphthalene	ND	0.046	0.45		mg/Kg	5	1/22/2020 3:07:05 AM	A65958
1-Methylnaphthalene	0.27	0.13	0.91	J	mg/Kg	5	1/22/2020 3:07:05 AM	A65958
2-Methylnaphthalene	0.27	0.099	0.91	J	mg/Kg	5	1/22/2020 3:07:05 AM	A65958
Acetone	0.29	0.19	3.4	J	mg/Kg	5	1/22/2020 3:07:05 AM	A65958
Bromobenzene	ND	0.022	0.23		mg/Kg	5	1/22/2020 3:07:05 AM	A65958
Bromodichloromethane	ND	0.021	0.23		mg/Kg	5	1/22/2020 3:07:05 AM	A65958

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

Qualifiers:

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

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-17 Toe Surface
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 1:30:00 PM
Lab ID: 2001723-016 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Bromoform	ND	0.021	0.23		mg/Kg	5	1/22/2020 3:07:05 AM	A65958
Bromomethane	ND	0.055	0.68		mg/Kg	5	1/22/2020 3:07:05 AM	A65958
2-Butanone	ND	0.26	2.3		mg/Kg	5	1/22/2020 3:07:05 AM	A65958
Carbon disulfide	ND	0.075	2.3		mg/Kg	5	1/22/2020 3:07:05 AM	A65958
Carbon tetrachloride	ND	0.022	0.23		mg/Kg	5	1/22/2020 3:07:05 AM	A65958
Chlorobenzene	ND	0.029	0.23		mg/Kg	5	1/22/2020 3:07:05 AM	A65958
Chloroethane	ND	0.033	0.45		mg/Kg	5	1/22/2020 3:07:05 AM	A65958
Chloroform	ND	0.018	0.23		mg/Kg	5	1/22/2020 3:07:05 AM	A65958
Chloromethane	ND	0.022	0.68		mg/Kg	5	1/22/2020 3:07:05 AM	A65958
2-Chlorotoluene	ND	0.020	0.23		mg/Kg	5	1/22/2020 3:07:05 AM	A65958
4-Chlorotoluene	ND	0.019	0.23		mg/Kg	5	1/22/2020 3:07:05 AM	A65958
cis-1,2-DCE	ND	0.031	0.23		mg/Kg	5	1/22/2020 3:07:05 AM	A65958
cis-1,3-Dichloropropene	ND	0.019	0.23		mg/Kg	5	1/22/2020 3:07:05 AM	A65958
1,2-Dibromo-3-chloropropane	ND	0.023	0.45		mg/Kg	5	1/22/2020 3:07:05 AM	A65958
Dibromochloromethane	ND	0.016	0.23		mg/Kg	5	1/22/2020 3:07:05 AM	A65958
Dibromomethane	ND	0.024	0.23		mg/Kg	5	1/22/2020 3:07:05 AM	A65958
1,2-Dichlorobenzene	ND	0.019	0.23		mg/Kg	5	1/22/2020 3:07:05 AM	A65958
1,3-Dichlorobenzene	ND	0.020	0.23		mg/Kg	5	1/22/2020 3:07:05 AM	A65958
1,4-Dichlorobenzene	ND	0.019	0.23		mg/Kg	5	1/22/2020 3:07:05 AM	A65958
Dichlorodifluoromethane	ND	0.053	0.23		mg/Kg	5	1/22/2020 3:07:05 AM	A65958
1,1-Dichloroethane	ND	0.015	0.23		mg/Kg	5	1/22/2020 3:07:05 AM	A65958
1,1-Dichloroethene	ND	0.091	0.23		mg/Kg	5	1/22/2020 3:07:05 AM	A65958
1,2-Dichloropropane	ND	0.017	0.23		mg/Kg	5	1/22/2020 3:07:05 AM	A65958
1,3-Dichloropropane	ND	0.025	0.23		mg/Kg	5	1/22/2020 3:07:05 AM	A65958
2,2-Dichloropropane	ND	0.074	0.45		mg/Kg	5	1/22/2020 3:07:05 AM	A65958
1,1-Dichloropropene	ND	0.021	0.45		mg/Kg	5	1/22/2020 3:07:05 AM	A65958
Hexachlorobutadiene	ND	0.023	0.45		mg/Kg	5	1/22/2020 3:07:05 AM	A65958
2-Hexanone	ND	0.038	2.3		mg/Kg	5	1/22/2020 3:07:05 AM	A65958
Isopropylbenzene	ND	0.016	0.23		mg/Kg	5	1/22/2020 3:07:05 AM	A65958
4-Isopropyltoluene	ND	0.019	0.23		mg/Kg	5	1/22/2020 3:07:05 AM	A65958
4-Methyl-2-pentanone	0.14	0.043	2.3	J	mg/Kg	5	1/22/2020 3:07:05 AM	A65958
Methylene chloride	ND	0.040	0.68		mg/Kg	5	1/22/2020 3:07:05 AM	A65958
n-Butylbenzene	ND	0.021	0.68		mg/Kg	5	1/22/2020 3:07:05 AM	A65958
n-Propylbenzene	ND	0.018	0.23		mg/Kg	5	1/22/2020 3:07:05 AM	A65958
sec-Butylbenzene	ND	0.026	0.23		mg/Kg	5	1/22/2020 3:07:05 AM	A65958
Styrene	ND	0.018	0.23		mg/Kg	5	1/22/2020 3:07:05 AM	A65958
tert-Butylbenzene	ND	0.021	0.23		mg/Kg	5	1/22/2020 3:07:05 AM	A65958
1,1,1,2-Tetrachloroethane	ND	0.015	0.23		mg/Kg	5	1/22/2020 3:07:05 AM	A65958
1,1,2,2-Tetrachloroethane	ND	0.023	0.23		mg/Kg	5	1/22/2020 3:07:05 AM	A65958

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

Qualifiers:

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

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-17 Toe Surface
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 1:30:00 PM
Lab ID: 2001723-016 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Tetrachloroethene (PCE)	ND	0.018	0.23		mg/Kg	5	1/22/2020 3:07:05 AM	A65958
trans-1,2-DCE	ND	0.021	0.23		mg/Kg	5	1/22/2020 3:07:05 AM	A65958
trans-1,3-Dichloropropene	ND	0.024	0.23		mg/Kg	5	1/22/2020 3:07:05 AM	A65958
1,2,3-Trichlorobenzene	ND	0.020	0.45		mg/Kg	5	1/22/2020 3:07:05 AM	A65958
1,2,4-Trichlorobenzene	ND	0.023	0.23		mg/Kg	5	1/22/2020 3:07:05 AM	A65958
1,1,1-Trichloroethane	ND	0.021	0.23		mg/Kg	5	1/22/2020 3:07:05 AM	A65958
1,1,2-Trichloroethane	ND	0.016	0.23		mg/Kg	5	1/22/2020 3:07:05 AM	A65958
Trichloroethene (TCE)	ND	0.026	0.23		mg/Kg	5	1/22/2020 3:07:05 AM	A65958
Trichlorofluoromethane	ND	0.077	0.23		mg/Kg	5	1/22/2020 3:07:05 AM	A65958
1,2,3-Trichloropropane	ND	0.037	0.45		mg/Kg	5	1/22/2020 3:07:05 AM	A65958
Vinyl chloride	ND	0.015	0.23		mg/Kg	5	1/22/2020 3:07:05 AM	A65958
Xylenes, Total	ND	0.057	0.45		mg/Kg	5	1/22/2020 3:07:05 AM	A65958
Surr: Dibromofluoromethane	109		70-130		%Rec	5	1/22/2020 3:07:05 AM	A65958
Surr: 1,2-Dichloroethane-d4	92.0		70-130		%Rec	5	1/22/2020 3:07:05 AM	A65958
Surr: Toluene-d8	103		70-130		%Rec	5	1/22/2020 3:07:05 AM	A65958
Surr: 4-Bromofluorobenzene	93.6		70-130		%Rec	5	1/22/2020 3:07:05 AM	A65958
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	ND	4.8	23		mg/Kg	5	1/22/2020 3:07:05 AM	AG659
Surr: BFB	97.0	0	70-130		%Rec	5	1/22/2020 3:07:05 AM	AG659
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/23/2020 3:07:00 PM	R66022
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	5.36				pH Units	1	1/24/2020 9:47:00 AM	R66051
SPECIFIC GRAVITY							Analyst: **PAC**	
Specific Gravity	1.290				g/cm3	1	1/25/2020	R66241

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Qualifiers:

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PQL	Practical Quanitative Limit
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E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-14 2.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 9:54:00 AM
Lab ID: 2001723-017 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	12	2.3	9.6		mg/Kg	1	1/21/2020 9:59:06 PM	49914
Motor Oil Range Organics (MRO)	ND	48	48		mg/Kg	1	1/21/2020 9:59:06 PM	49914
Surr: DNOP	107	0	55.1-146		%Rec	1	1/21/2020 9:59:06 PM	49914
EPA METHOD 7471: MERCURY							Analyst: **rde**	
Mercury	0.0081	0.0018	0.033	JH	mg/Kg	1	2/25/2020 4:11:51 PM	50632
MERCURY, TCLP							Analyst: **pmf**	
Mercury	ND	0.00075	0.020		mg/L	1	1/20/2020 10:05:06 PM	49926
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.73	5.0		mg/Kg	2	1/21/2020 9:44:32 AM	49919
Arsenic	ND	2.8	5.0		mg/Kg	2	1/21/2020 9:44:32 AM	49919
Barium	210	0.046	0.20		mg/Kg	2	1/21/2020 9:44:32 AM	49919
Beryllium	1.2	0.018	0.30		mg/Kg	2	1/21/2020 9:44:32 AM	49919
Cadmium	ND	0.048	0.20		mg/Kg	2	1/21/2020 9:44:32 AM	49919
Chromium	10	0.16	0.60		mg/Kg	2	1/21/2020 9:44:32 AM	49919
Cobalt	5.1	0.21	0.60		mg/Kg	2	1/21/2020 9:44:32 AM	49919
Lead	3.7	0.48	0.50		mg/Kg	2	1/21/2020 9:44:32 AM	49919
Nickel	9.9	0.30	1.0		mg/Kg	2	1/21/2020 9:44:32 AM	49919
Selenium	ND	2.5	5.0		mg/Kg	2	1/21/2020 9:44:32 AM	49919
Silver	ND	0.064	0.50		mg/Kg	2	1/21/2020 9:44:32 AM	49919
Vanadium	17	0.13	5.0		mg/Kg	2	1/21/2020 9:44:32 AM	49919
Zinc	16	0.79	5.0		mg/Kg	2	1/21/2020 9:44:32 AM	49919
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/21/2020 11:38:31 AM	49933
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.13	0.34	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
Acenaphthylene	ND	0.15	0.34	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
Aniline	ND	0.12	0.34	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
Anthracene	ND	0.13	0.34	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
Azobenzene	ND	0.17	0.34	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
Benz(a)anthracene	ND	0.12	0.34	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
Benzo(a)pyrene	ND	0.18	0.34	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
Benzo(b)fluoranthene	ND	0.19	0.34	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
Benzo(g,h,i)perylene	ND	0.18	0.34	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
Benzo(k)fluoranthene	ND	0.10	0.34	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
Benzoic acid	ND	0.24	0.85	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
Benzyl alcohol	ND	0.14	0.34	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
Bis(2-chloroethoxy)methane	ND	0.14	0.34	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908

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Qualifiers:

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

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-14 2.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 9:54:00 AM
Lab ID: 2001723-017 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.20	0.34	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
Bis(2-chloroisopropyl)ether	ND	0.15	0.34	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
Bis(2-ethylhexyl)phthalate	ND	0.38	0.85	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
4-Bromophenyl phenyl ether	ND	0.20	0.34	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
Butyl benzyl phthalate	ND	0.11	0.34	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
Carbazole	ND	0.14	0.34	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
4-Chloro-3-methylphenol	ND	0.13	0.85	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
4-Chloroaniline	ND	0.13	0.85	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
2-Chloronaphthalene	ND	0.14	0.43	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
2-Chlorophenol	ND	0.19	0.34	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
4-Chlorophenyl phenyl ether	ND	0.14	0.34	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
Chrysene	ND	0.13	0.34	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
Di-n-butyl phthalate	ND	0.51	0.68	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
Di-n-octyl phthalate	ND	0.11	0.68	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
Dibenz(a,h)anthracene	ND	0.19	0.34	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
Dibenzofuran	ND	0.17	0.34	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
1,2-Dichlorobenzene	ND	0.13	0.34	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
1,3-Dichlorobenzene	ND	0.11	0.34	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
1,4-Dichlorobenzene	ND	0.14	0.34	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
3,3´-Dichlorobenzidine	ND	0.15	0.43	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
Diethyl phthalate	ND	0.52	0.85	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
Dimethyl phthalate	ND	0.14	0.34	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
2,4-Dichlorophenol	ND	0.14	0.68	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
2,4-Dimethylphenol	ND	0.14	0.51	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
4,6-Dinitro-2-methylphenol	ND	0.12	0.68	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
2,4-Dinitrophenol	ND	0.099	0.85	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
2,4-Dinitrotoluene	ND	0.17	0.85	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
2,6-Dinitrotoluene	ND	0.20	0.85	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
Fluoranthene	ND	0.13	0.34	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
Fluorene	ND	0.13	0.34	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
Hexachlorobenzene	ND	0.13	0.34	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
Hexachlorobutadiene	ND	0.15	0.34	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
Hexachlorocyclopentadiene	ND	0.16	0.34	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
Hexachloroethane	ND	0.14	0.34	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
Indeno(1,2,3-cd)pyrene	ND	0.21	0.34	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
Isophorone	ND	0.15	0.68	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
1-Methylnaphthalene	ND	0.16	0.34	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
2-Methylnaphthalene	ND	0.14	0.34	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
2-Methylphenol	ND	0.14	0.68	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908

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Qualifiers:

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D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
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Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-14 2.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 9:54:00 AM
Lab ID: 2001723-017 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.12	0.34	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
N-Nitrosodi-n-propylamine	ND	0.17	0.34	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
N-Nitrosodiphenylamine	ND	0.18	0.34	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
Naphthalene	ND	0.14	0.34	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
2-Nitroaniline	ND	0.19	0.34	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
3-Nitroaniline	ND	0.17	0.34	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
4-Nitroaniline	ND	0.23	0.68	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
Nitrobenzene	ND	0.15	0.68	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
2-Nitrophenol	ND	0.14	0.34	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
4-Nitrophenol	ND	0.10	0.43	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
Pentachlorophenol	ND	0.15	0.68	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
Phenanthrene	ND	0.17	0.34	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
Phenol	ND	0.14	0.34	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
Pyrene	ND	0.11	0.34	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
Pyridine	ND	0.32	0.68	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
1,2,4-Trichlorobenzene	ND	0.15	0.34	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
2,4,5-Trichlorophenol	ND	0.11	0.34	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
2,4,6-Trichlorophenol	ND	0.17	0.34	D	mg/Kg	1	1/24/2020 7:50:55 PM	49908
Surr: 2-Fluorophenol	52.1		26.7-85.9	D	%Rec	1	1/24/2020 7:50:55 PM	49908
Surr: Phenol-d5	61.7		18.5-101	D	%Rec	1	1/24/2020 7:50:55 PM	49908
Surr: 2,4,6-Tribromophenol	71.7		35.8-85.6	D	%Rec	1	1/24/2020 7:50:55 PM	49908
Surr: Nitrobenzene-d5	58.4		40.8-95.2	D	%Rec	1	1/24/2020 7:50:55 PM	49908
Surr: 2-Fluorobiphenyl	76.6		34.7-85.2	D	%Rec	1	1/24/2020 7:50:55 PM	49908
Surr: 4-Terphenyl-d14	65.1		37.4-91.3	D	%Rec	1	1/24/2020 7:50:55 PM	49908
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.0033	0.020		mg/Kg	1	1/22/2020 3:36:09 AM	A65958
Toluene	ND	0.0038	0.040		mg/Kg	1	1/22/2020 3:36:09 AM	A65958
Ethylbenzene	ND	0.0023	0.040		mg/Kg	1	1/22/2020 3:36:09 AM	A65958
Methyl tert-butyl ether (MTBE)	ND	0.0095	0.040		mg/Kg	1	1/22/2020 3:36:09 AM	A65958
1,2,4-Trimethylbenzene	ND	0.0037	0.040		mg/Kg	1	1/22/2020 3:36:09 AM	A65958
1,3,5-Trimethylbenzene	ND	0.0039	0.040		mg/Kg	1	1/22/2020 3:36:09 AM	A65958
1,2-Dichloroethane (EDC)	ND	0.0041	0.040		mg/Kg	1	1/22/2020 3:36:09 AM	A65958
1,2-Dibromoethane (EDB)	ND	0.0037	0.040		mg/Kg	1	1/22/2020 3:36:09 AM	A65958
Naphthalene	ND	0.0080	0.080		mg/Kg	1	1/22/2020 3:36:09 AM	A65958
1-Methylnaphthalene	ND	0.023	0.16		mg/Kg	1	1/22/2020 3:36:09 AM	A65958
2-Methylnaphthalene	ND	0.017	0.16		mg/Kg	1	1/22/2020 3:36:09 AM	A65958
Acetone	ND	0.033	0.60		mg/Kg	1	1/22/2020 3:36:09 AM	A65958
Bromobenzene	ND	0.0038	0.040		mg/Kg	1	1/22/2020 3:36:09 AM	A65958
Bromodichloromethane	ND	0.0037	0.040		mg/Kg	1	1/22/2020 3:36:09 AM	A65958

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

Qualifiers:

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E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-14 2.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 9:54:00 AM
Lab ID: 2001723-017 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Bromoform	ND	0.0036	0.040		mg/Kg	1	1/22/2020 3:36:09 AM	A65958
Bromomethane	ND	0.0097	0.12		mg/Kg	1	1/22/2020 3:36:09 AM	A65958
2-Butanone	ND	0.046	0.40		mg/Kg	1	1/22/2020 3:36:09 AM	A65958
Carbon disulfide	ND	0.013	0.40		mg/Kg	1	1/22/2020 3:36:09 AM	A65958
Carbon tetrachloride	ND	0.0038	0.040		mg/Kg	1	1/22/2020 3:36:09 AM	A65958
Chlorobenzene	ND	0.0051	0.040		mg/Kg	1	1/22/2020 3:36:09 AM	A65958
Chloroethane	ND	0.0059	0.080		mg/Kg	1	1/22/2020 3:36:09 AM	A65958
Chloroform	ND	0.0032	0.040		mg/Kg	1	1/22/2020 3:36:09 AM	A65958
Chloromethane	ND	0.0038	0.12		mg/Kg	1	1/22/2020 3:36:09 AM	A65958
2-Chlorotoluene	ND	0.0035	0.040		mg/Kg	1	1/22/2020 3:36:09 AM	A65958
4-Chlorotoluene	ND	0.0033	0.040		mg/Kg	1	1/22/2020 3:36:09 AM	A65958
cis-1,2-DCE	ND	0.0055	0.040		mg/Kg	1	1/22/2020 3:36:09 AM	A65958
cis-1,3-Dichloropropene	ND	0.0034	0.040		mg/Kg	1	1/22/2020 3:36:09 AM	A65958
1,2-Dibromo-3-chloropropane	ND	0.0041	0.080		mg/Kg	1	1/22/2020 3:36:09 AM	A65958
Dibromochloromethane	ND	0.0028	0.040		mg/Kg	1	1/22/2020 3:36:09 AM	A65958
Dibromomethane	ND	0.0043	0.040		mg/Kg	1	1/22/2020 3:36:09 AM	A65958
1,2-Dichlorobenzene	ND	0.0033	0.040		mg/Kg	1	1/22/2020 3:36:09 AM	A65958
1,3-Dichlorobenzene	ND	0.0035	0.040		mg/Kg	1	1/22/2020 3:36:09 AM	A65958
1,4-Dichlorobenzene	ND	0.0033	0.040		mg/Kg	1	1/22/2020 3:36:09 AM	A65958
Dichlorodifluoromethane	ND	0.0093	0.040		mg/Kg	1	1/22/2020 3:36:09 AM	A65958
1,1-Dichloroethane	ND	0.0026	0.040		mg/Kg	1	1/22/2020 3:36:09 AM	A65958
1,1-Dichloroethene	ND	0.016	0.040		mg/Kg	1	1/22/2020 3:36:09 AM	A65958
1,2-Dichloropropane	ND	0.0029	0.040		mg/Kg	1	1/22/2020 3:36:09 AM	A65958
1,3-Dichloropropane	ND	0.0043	0.040		mg/Kg	1	1/22/2020 3:36:09 AM	A65958
2,2-Dichloropropane	ND	0.013	0.080		mg/Kg	1	1/22/2020 3:36:09 AM	A65958
1,1-Dichloropropene	ND	0.0036	0.080		mg/Kg	1	1/22/2020 3:36:09 AM	A65958
Hexachlorobutadiene	ND	0.0041	0.080		mg/Kg	1	1/22/2020 3:36:09 AM	A65958
2-Hexanone	ND	0.0066	0.40		mg/Kg	1	1/22/2020 3:36:09 AM	A65958
Isopropylbenzene	ND	0.0029	0.040		mg/Kg	1	1/22/2020 3:36:09 AM	A65958
4-Isopropyltoluene	ND	0.0033	0.040		mg/Kg	1	1/22/2020 3:36:09 AM	A65958
4-Methyl-2-pentanone	0.024	0.0076	0.40	J	mg/Kg	1	1/22/2020 3:36:09 AM	A65958
Methylene chloride	0.027	0.0071	0.12	J	mg/Kg	1	1/22/2020 3:36:09 AM	A65958
n-Butylbenzene	ND	0.0037	0.12		mg/Kg	1	1/22/2020 3:36:09 AM	A65958
n-Propylbenzene	ND	0.0032	0.040		mg/Kg	1	1/22/2020 3:36:09 AM	A65958
sec-Butylbenzene	ND	0.0045	0.040		mg/Kg	1	1/22/2020 3:36:09 AM	A65958
Styrene	ND	0.0031	0.040		mg/Kg	1	1/22/2020 3:36:09 AM	A65958
tert-Butylbenzene	ND	0.0038	0.040		mg/Kg	1	1/22/2020 3:36:09 AM	A65958
1,1,1,2-Tetrachloroethane	ND	0.0027	0.040		mg/Kg	1	1/22/2020 3:36:09 AM	A65958
1,1,2,2-Tetrachloroethane	ND	0.0041	0.040		mg/Kg	1	1/22/2020 3:36:09 AM	A65958

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

Qualifiers:

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

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-14 2.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 9:54:00 AM
Lab ID: 2001723-017 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Tetrachloroethene (PCE)	ND	0.0032	0.040		mg/Kg	1	1/22/2020 3:36:09 AM	A65958
trans-1,2-DCE	ND	0.0037	0.040		mg/Kg	1	1/22/2020 3:36:09 AM	A65958
trans-1,3-Dichloropropene	ND	0.0042	0.040		mg/Kg	1	1/22/2020 3:36:09 AM	A65958
1,2,3-Trichlorobenzene	ND	0.0035	0.080		mg/Kg	1	1/22/2020 3:36:09 AM	A65958
1,2,4-Trichlorobenzene	ND	0.0040	0.040		mg/Kg	1	1/22/2020 3:36:09 AM	A65958
1,1,1-Trichloroethane	ND	0.0036	0.040		mg/Kg	1	1/22/2020 3:36:09 AM	A65958
1,1,2-Trichloroethane	ND	0.0028	0.040		mg/Kg	1	1/22/2020 3:36:09 AM	A65958
Trichloroethene (TCE)	ND	0.0046	0.040		mg/Kg	1	1/22/2020 3:36:09 AM	A65958
Trichlorofluoromethane	ND	0.014	0.040		mg/Kg	1	1/22/2020 3:36:09 AM	A65958
1,2,3-Trichloropropane	ND	0.0065	0.080		mg/Kg	1	1/22/2020 3:36:09 AM	A65958
Vinyl chloride	ND	0.0026	0.040		mg/Kg	1	1/22/2020 3:36:09 AM	A65958
Xylenes, Total	ND	0.010	0.080		mg/Kg	1	1/22/2020 3:36:09 AM	A65958
Surr: Dibromofluoromethane	101		70-130		%Rec	1	1/22/2020 3:36:09 AM	A65958
Surr: 1,2-Dichloroethane-d4	83.4		70-130		%Rec	1	1/22/2020 3:36:09 AM	A65958
Surr: Toluene-d8	103		70-130		%Rec	1	1/22/2020 3:36:09 AM	A65958
Surr: 4-Bromofluorobenzene	98.3		70-130		%Rec	1	1/22/2020 3:36:09 AM	A65958
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	ND	0.85	4.0		mg/Kg	1	1/22/2020 3:36:09 AM	AG659
Surr: BFB	96.4	0	70-130		%Rec	1	1/22/2020 3:36:09 AM	AG659
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/23/2020 3:07:00 PM	R66022
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	8.06				pH Units	1	1/24/2020 9:47:00 AM	R66051
SPECIFIC GRAVITY							Analyst: **PAC**	
Specific Gravity	1.820				g/cm3	1	1/27/2020	R66241

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Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-18 2.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 4:20:00 PM
Lab ID: 2001723-018 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **JME**	
Diesel Range Organics (DRO)	280	2.4	10		mg/Kg	1	1/22/2020 12:05:16 PM	49914
Motor Oil Range Organics (MRO)	200	50	50		mg/Kg	1	1/22/2020 12:05:16 PM	49914
Surr: DNOP	97.5	0	55.1-146		%Rec	1	1/22/2020 12:05:16 PM	49914
EPA METHOD 7471: MERCURY							Analyst: **rde**	
Mercury	0.0069	0.0019	0.035	JH	mg/Kg	1	2/25/2020 4:13:52 PM	50632
MERCURY, TCLP							Analyst: **pmf**	
Mercury	ND	0.00075	0.020		mg/L	1	1/20/2020 10:07:56 PM	49926
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.74	5.0		mg/Kg	2	1/21/2020 9:45:54 AM	49919
Arsenic	ND	2.9	5.0		mg/Kg	2	1/21/2020 9:45:54 AM	49919
Barium	210	0.047	0.20		mg/Kg	2	1/21/2020 9:45:54 AM	49919
Beryllium	0.94	0.019	0.30		mg/Kg	2	1/21/2020 9:45:54 AM	49919
Cadmium	ND	0.049	0.20		mg/Kg	2	1/21/2020 9:45:54 AM	49919
Chromium	12	0.16	0.60		mg/Kg	2	1/21/2020 9:45:54 AM	49919
Cobalt	4.8	0.21	0.60		mg/Kg	2	1/21/2020 9:45:54 AM	49919
Lead	0.82	0.49	0.50		mg/Kg	2	1/21/2020 9:45:54 AM	49919
Nickel	9.7	0.30	1.0		mg/Kg	2	1/21/2020 9:45:54 AM	49919
Selenium	ND	2.5	5.0		mg/Kg	2	1/21/2020 9:45:54 AM	49919
Silver	ND	0.065	0.50		mg/Kg	2	1/21/2020 9:45:54 AM	49919
Vanadium	27	0.13	5.0		mg/Kg	2	1/21/2020 9:45:54 AM	49919
Zinc	24	0.80	5.0		mg/Kg	2	1/21/2020 9:45:54 AM	49919
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/21/2020 11:39:56 AM	49933
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.14	0.37	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
Acenaphthylene	ND	0.16	0.37	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
Aniline	ND	0.13	0.37	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
Anthracene	ND	0.14	0.37	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
Azobenzene	ND	0.19	0.37	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
Benz(a)anthracene	ND	0.13	0.37	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
Benzo(a)pyrene	ND	0.20	0.37	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
Benzo(b)fluoranthene	ND	0.21	0.37	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
Benzo(g,h,i)perylene	ND	0.19	0.37	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
Benzo(k)fluoranthene	ND	0.11	0.37	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
Benzoic acid	ND	0.26	0.93	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
Benzyl alcohol	ND	0.15	0.37	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
Bis(2-chloroethoxy)methane	ND	0.15	0.37	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908

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J	Analyte detected below quantitation limits
P	Sample pH Not In Range
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Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-18 2.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 4:20:00 PM
Lab ID: 2001723-018 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.22	0.37	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
Bis(2-chloroisopropyl)ether	ND	0.16	0.37	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
Bis(2-ethylhexyl)phthalate	ND	0.42	0.93	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
4-Bromophenyl phenyl ether	ND	0.22	0.37	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
Butyl benzyl phthalate	ND	0.12	0.37	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
Carbazole	ND	0.15	0.37	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
4-Chloro-3-methylphenol	ND	0.15	0.93	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
4-Chloroaniline	ND	0.14	0.93	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
2-Chloronaphthalene	ND	0.16	0.46	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
2-Chlorophenol	ND	0.21	0.37	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
4-Chlorophenyl phenyl ether	ND	0.16	0.37	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
Chrysene	ND	0.15	0.37	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
Di-n-butyl phthalate	ND	0.55	0.74	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
Di-n-octyl phthalate	ND	0.12	0.74	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
Dibenz(a,h)anthracene	ND	0.21	0.37	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
Dibenzofuran	ND	0.19	0.37	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
1,2-Dichlorobenzene	ND	0.15	0.37	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
1,3-Dichlorobenzene	ND	0.12	0.37	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
1,4-Dichlorobenzene	ND	0.15	0.37	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
3,3´-Dichlorobenzidine	ND	0.16	0.46	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
Diethyl phthalate	ND	0.57	0.93	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
Dimethyl phthalate	ND	0.15	0.37	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
2,4-Dichlorophenol	ND	0.16	0.74	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
2,4-Dimethylphenol	ND	0.15	0.56	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
4,6-Dinitro-2-methylphenol	ND	0.14	0.74	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
2,4-Dinitrophenol	ND	0.11	0.93	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
2,4-Dinitrotoluene	ND	0.19	0.93	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
2,6-Dinitrotoluene	ND	0.22	0.93	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
Fluoranthene	ND	0.14	0.37	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
Fluorene	ND	0.15	0.37	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
Hexachlorobenzene	ND	0.15	0.37	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
Hexachlorobutadiene	ND	0.16	0.37	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
Hexachlorocyclopentadiene	ND	0.18	0.37	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
Hexachloroethane	ND	0.15	0.37	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
Indeno(1,2,3-cd)pyrene	ND	0.23	0.37	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
Isophorone	ND	0.16	0.74	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
1-Methylnaphthalene	ND	0.17	0.37	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
2-Methylnaphthalene	ND	0.15	0.37	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
2-Methylphenol	ND	0.16	0.74	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908

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D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
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Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-18 2.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 4:20:00 PM
Lab ID: 2001723-018 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.13	0.37	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
N-Nitrosodi-n-propylamine	ND	0.19	0.37	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
N-Nitrosodiphenylamine	ND	0.19	0.37	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
Naphthalene	ND	0.15	0.37	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
2-Nitroaniline	ND	0.21	0.37	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
3-Nitroaniline	ND	0.18	0.37	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
4-Nitroaniline	ND	0.25	0.74	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
Nitrobenzene	ND	0.16	0.74	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
2-Nitrophenol	ND	0.15	0.37	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
4-Nitrophenol	ND	0.11	0.46	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
Pentachlorophenol	ND	0.17	0.74	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
Phenanthrene	ND	0.19	0.37	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
Phenol	ND	0.16	0.37	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
Pyrene	ND	0.12	0.37	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
Pyridine	ND	0.35	0.74	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
1,2,4-Trichlorobenzene	ND	0.16	0.37	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
2,4,5-Trichlorophenol	ND	0.12	0.37	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
2,4,6-Trichlorophenol	ND	0.19	0.37	D	mg/Kg	1	1/27/2020 11:29:46 AM	49908
Surr: 2-Fluorophenol	48.7		26.7-85.9	D	%Rec	1	1/27/2020 11:29:46 AM	49908
Surr: Phenol-d5	54.3		18.5-101	D	%Rec	1	1/27/2020 11:29:46 AM	49908
Surr: 2,4,6-Tribromophenol	69.4		35.8-85.6	D	%Rec	1	1/27/2020 11:29:46 AM	49908
Surr: Nitrobenzene-d5	63.2		40.8-95.2	D	%Rec	1	1/27/2020 11:29:46 AM	49908
Surr: 2-Fluorobiphenyl	65.6		34.7-85.2	D	%Rec	1	1/27/2020 11:29:46 AM	49908
Surr: 4-Terphenyl-d14	65.1		37.4-91.3	D	%Rec	1	1/27/2020 11:29:46 AM	49908
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.0040	0.024		mg/Kg	1	1/22/2020 4:05:08 AM	A65958
Toluene	0.0048	0.0046	0.048	J	mg/Kg	1	1/22/2020 4:05:08 AM	A65958
Ethylbenzene	ND	0.0028	0.048		mg/Kg	1	1/22/2020 4:05:08 AM	A65958
Methyl tert-butyl ether (MTBE)	ND	0.011	0.048		mg/Kg	1	1/22/2020 4:05:08 AM	A65958
1,2,4-Trimethylbenzene	0.0058	0.0044	0.048	J	mg/Kg	1	1/22/2020 4:05:08 AM	A65958
1,3,5-Trimethylbenzene	ND	0.0047	0.048		mg/Kg	1	1/22/2020 4:05:08 AM	A65958
1,2-Dichloroethane (EDC)	ND	0.0049	0.048		mg/Kg	1	1/22/2020 4:05:08 AM	A65958
1,2-Dibromoethane (EDB)	ND	0.0044	0.048		mg/Kg	1	1/22/2020 4:05:08 AM	A65958
Naphthalene	ND	0.0097	0.097		mg/Kg	1	1/22/2020 4:05:08 AM	A65958
1-Methylnaphthalene	ND	0.028	0.19		mg/Kg	1	1/22/2020 4:05:08 AM	A65958
2-Methylnaphthalene	ND	0.021	0.19		mg/Kg	1	1/22/2020 4:05:08 AM	A65958
Acetone	ND	0.040	0.73		mg/Kg	1	1/22/2020 4:05:08 AM	A65958
Bromobenzene	ND	0.0046	0.048		mg/Kg	1	1/22/2020 4:05:08 AM	A65958
Bromodichloromethane	ND	0.0044	0.048		mg/Kg	1	1/22/2020 4:05:08 AM	A65958

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

Qualifiers:

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

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-18 2.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 4:20:00 PM
Lab ID: 2001723-018 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Bromoform	ND	0.0044	0.048		mg/Kg	1	1/22/2020 4:05:08 AM	A65958
Bromomethane	ND	0.012	0.15		mg/Kg	1	1/22/2020 4:05:08 AM	A65958
2-Butanone	ND	0.056	0.48		mg/Kg	1	1/22/2020 4:05:08 AM	A65958
Carbon disulfide	ND	0.016	0.48		mg/Kg	1	1/22/2020 4:05:08 AM	A65958
Carbon tetrachloride	ND	0.0046	0.048		mg/Kg	1	1/22/2020 4:05:08 AM	A65958
Chlorobenzene	ND	0.0062	0.048		mg/Kg	1	1/22/2020 4:05:08 AM	A65958
Chloroethane	ND	0.0071	0.097		mg/Kg	1	1/22/2020 4:05:08 AM	A65958
Chloroform	ND	0.0039	0.048		mg/Kg	1	1/22/2020 4:05:08 AM	A65958
Chloromethane	ND	0.0046	0.15		mg/Kg	1	1/22/2020 4:05:08 AM	A65958
2-Chlorotoluene	ND	0.0042	0.048		mg/Kg	1	1/22/2020 4:05:08 AM	A65958
4-Chlorotoluene	ND	0.0040	0.048		mg/Kg	1	1/22/2020 4:05:08 AM	A65958
cis-1,2-DCE	ND	0.0066	0.048		mg/Kg	1	1/22/2020 4:05:08 AM	A65958
cis-1,3-Dichloropropene	ND	0.0041	0.048		mg/Kg	1	1/22/2020 4:05:08 AM	A65958
1,2-Dibromo-3-chloropropane	ND	0.0050	0.097		mg/Kg	1	1/22/2020 4:05:08 AM	A65958
Dibromochloromethane	ND	0.0034	0.048		mg/Kg	1	1/22/2020 4:05:08 AM	A65958
Dibromomethane	ND	0.0052	0.048		mg/Kg	1	1/22/2020 4:05:08 AM	A65958
1,2-Dichlorobenzene	ND	0.0040	0.048		mg/Kg	1	1/22/2020 4:05:08 AM	A65958
1,3-Dichlorobenzene	ND	0.0042	0.048		mg/Kg	1	1/22/2020 4:05:08 AM	A65958
1,4-Dichlorobenzene	ND	0.0041	0.048		mg/Kg	1	1/22/2020 4:05:08 AM	A65958
Dichlorodifluoromethane	ND	0.011	0.048		mg/Kg	1	1/22/2020 4:05:08 AM	A65958
1,1-Dichloroethane	ND	0.0031	0.048		mg/Kg	1	1/22/2020 4:05:08 AM	A65958
1,1-Dichloroethene	ND	0.019	0.048		mg/Kg	1	1/22/2020 4:05:08 AM	A65958
1,2-Dichloropropane	ND	0.0035	0.048		mg/Kg	1	1/22/2020 4:05:08 AM	A65958
1,3-Dichloropropane	ND	0.0052	0.048		mg/Kg	1	1/22/2020 4:05:08 AM	A65958
2,2-Dichloropropane	ND	0.016	0.097		mg/Kg	1	1/22/2020 4:05:08 AM	A65958
1,1-Dichloropropene	ND	0.0044	0.097		mg/Kg	1	1/22/2020 4:05:08 AM	A65958
Hexachlorobutadiene	ND	0.0049	0.097		mg/Kg	1	1/22/2020 4:05:08 AM	A65958
2-Hexanone	ND	0.0080	0.48		mg/Kg	1	1/22/2020 4:05:08 AM	A65958
Isopropylbenzene	ND	0.0035	0.048		mg/Kg	1	1/22/2020 4:05:08 AM	A65958
4-Isopropyltoluene	ND	0.0040	0.048		mg/Kg	1	1/22/2020 4:05:08 AM	A65958
4-Methyl-2-pentanone	ND	0.0091	0.48		mg/Kg	1	1/22/2020 4:05:08 AM	A65958
Methylene chloride	0.042	0.0086	0.15	J	mg/Kg	1	1/22/2020 4:05:08 AM	A65958
n-Butylbenzene	ND	0.0045	0.15		mg/Kg	1	1/22/2020 4:05:08 AM	A65958
n-Propylbenzene	ND	0.0039	0.048		mg/Kg	1	1/22/2020 4:05:08 AM	A65958
sec-Butylbenzene	ND	0.0055	0.048		mg/Kg	1	1/22/2020 4:05:08 AM	A65958
Styrene	ND	0.0038	0.048		mg/Kg	1	1/22/2020 4:05:08 AM	A65958
tert-Butylbenzene	ND	0.0046	0.048		mg/Kg	1	1/22/2020 4:05:08 AM	A65958
1,1,1,2-Tetrachloroethane	ND	0.0033	0.048		mg/Kg	1	1/22/2020 4:05:08 AM	A65958
1,1,2,2-Tetrachloroethane	ND	0.0049	0.048		mg/Kg	1	1/22/2020 4:05:08 AM	A65958

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Qualifiers:

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ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
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P	Sample pH Not In Range
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Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-18 2.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/13/2020 4:20:00 PM
Lab ID: 2001723-018 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Tetrachloroethene (PCE)	ND	0.0039	0.048		mg/Kg	1	1/22/2020 4:05:08 AM	A65958
trans-1,2-DCE	ND	0.0044	0.048		mg/Kg	1	1/22/2020 4:05:08 AM	A65958
trans-1,3-Dichloropropene	ND	0.0051	0.048		mg/Kg	1	1/22/2020 4:05:08 AM	A65958
1,2,3-Trichlorobenzene	ND	0.0043	0.097		mg/Kg	1	1/22/2020 4:05:08 AM	A65958
1,2,4-Trichlorobenzene	ND	0.0049	0.048		mg/Kg	1	1/22/2020 4:05:08 AM	A65958
1,1,1-Trichloroethane	ND	0.0044	0.048		mg/Kg	1	1/22/2020 4:05:08 AM	A65958
1,1,2-Trichloroethane	ND	0.0034	0.048		mg/Kg	1	1/22/2020 4:05:08 AM	A65958
Trichloroethene (TCE)	ND	0.0056	0.048		mg/Kg	1	1/22/2020 4:05:08 AM	A65958
Trichlorofluoromethane	ND	0.016	0.048		mg/Kg	1	1/22/2020 4:05:08 AM	A65958
1,2,3-Trichloropropane	ND	0.0078	0.097		mg/Kg	1	1/22/2020 4:05:08 AM	A65958
Vinyl chloride	ND	0.0032	0.048		mg/Kg	1	1/22/2020 4:05:08 AM	A65958
Xylenes, Total	ND	0.012	0.097		mg/Kg	1	1/22/2020 4:05:08 AM	A65958
Surr: Dibromofluoromethane	103		70-130		%Rec	1	1/22/2020 4:05:08 AM	A65958
Surr: 1,2-Dichloroethane-d4	86.1		70-130		%Rec	1	1/22/2020 4:05:08 AM	A65958
Surr: Toluene-d8	100		70-130		%Rec	1	1/22/2020 4:05:08 AM	A65958
Surr: 4-Bromofluorobenzene	95.3		70-130		%Rec	1	1/22/2020 4:05:08 AM	A65958
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	ND	1.0	4.8		mg/Kg	1	1/22/2020 4:05:08 AM	AG659
Surr: BFB	92.7	0	70-130		%Rec	1	1/22/2020 4:05:08 AM	AG659
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/23/2020 3:07:00 PM	R66022
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	7.88				pH Units	1	1/24/2020 9:47:00 AM	R66051
SPECIFIC GRAVITY							Analyst: **PAC**	
Specific Gravity	1.700				g/cm3	1	1/27/2020	R66241

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Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-12 Toe 3'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 2:10:00 PM
Lab ID: 2001723-019 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **JME**	
Diesel Range Organics (DRO)	190	2.3	9.7		mg/Kg	1	1/22/2020 12:29:03 PM	49914
Motor Oil Range Organics (MRO)	110	48	48		mg/Kg	1	1/22/2020 12:29:03 PM	49914
Surr: DNOP	96.4	0	55.1-146		%Rec	1	1/22/2020 12:29:03 PM	49914
EPA METHOD 7471: MERCURY							Analyst: **rde**	
Mercury	0.013	0.0017	0.031	JH	mg/Kg	1	2/25/2020 4:20:02 PM	50632
MERCURY, TCLP							Analyst: **pmf**	
Mercury	ND	0.00075	0.020		mg/L	1	1/20/2020 10:10:45 PM	49926
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.72	4.9		mg/Kg	2	1/21/2020 9:47:17 AM	49919
Arsenic	ND	2.8	4.9		mg/Kg	2	1/21/2020 9:47:17 AM	49919
Barium	250	0.045	0.19		mg/Kg	2	1/21/2020 9:47:17 AM	49919
Beryllium	1.4	0.018	0.29		mg/Kg	2	1/21/2020 9:47:17 AM	49919
Cadmium	ND	0.047	0.19		mg/Kg	2	1/21/2020 9:47:17 AM	49919
Chromium	15	0.15	0.58		mg/Kg	2	1/21/2020 9:47:17 AM	49919
Cobalt	5.8	0.21	0.58		mg/Kg	2	1/21/2020 9:47:17 AM	49919
Lead	2.1	0.47	0.49		mg/Kg	2	1/21/2020 9:47:17 AM	49919
Nickel	12	0.29	0.97		mg/Kg	2	1/21/2020 9:47:17 AM	49919
Selenium	ND	2.4	4.9		mg/Kg	2	1/21/2020 9:47:17 AM	49919
Silver	ND	0.062	0.49		mg/Kg	2	1/21/2020 9:47:17 AM	49919
Vanadium	28	0.13	4.9		mg/Kg	2	1/21/2020 9:47:17 AM	49919
Zinc	22	0.77	4.9		mg/Kg	2	1/21/2020 9:47:17 AM	49919
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/21/2020 11:45:52 AM	49933
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.14	0.37	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908
Acenaphthylene	ND	0.16	0.37	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908
Aniline	ND	0.13	0.37	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908
Anthracene	ND	0.14	0.37	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908
Azobenzene	ND	0.19	0.37	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908
Benz(a)anthracene	ND	0.13	0.37	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908
Benzo(a)pyrene	ND	0.20	0.37	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908
Benzo(b)fluoranthene	ND	0.21	0.37	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908
Benzo(g,h,i)perylene	ND	0.19	0.37	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908
Benzo(k)fluoranthene	ND	0.11	0.37	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908
Benzoic acid	ND	0.26	0.93	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908
Benzyl alcohol	ND	0.15	0.37	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908
Bis(2-chloroethoxy)methane	ND	0.15	0.37	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908

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P	Sample pH Not In Range
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Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-12 Toe 3'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 2:10:00 PM
Lab ID: 2001723-019 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.22	0.37	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908
Bis(2-chloroisopropyl)ether	ND	0.16	0.37	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908
Bis(2-ethylhexyl)phthalate	ND	0.42	0.93	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908
4-Bromophenyl phenyl ether	ND	0.22	0.37	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908
Butyl benzyl phthalate	ND	0.12	0.37	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908
Carbazole	ND	0.15	0.37	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908
4-Chloro-3-methylphenol	ND	0.15	0.93	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908
4-Chloroaniline	ND	0.14	0.93	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908
2-Chloronaphthalene	ND	0.16	0.46	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908
2-Chlorophenol	ND	0.21	0.37	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908
4-Chlorophenyl phenyl ether	ND	0.16	0.37	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908
Chrysene	ND	0.15	0.37	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908
Di-n-butyl phthalate	ND	0.55	0.74	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908
Di-n-octyl phthalate	ND	0.12	0.74	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908
Dibenz(a,h)anthracene	ND	0.21	0.37	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908
Dibenzofuran	ND	0.19	0.37	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908
1,2-Dichlorobenzene	ND	0.15	0.37	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908
1,3-Dichlorobenzene	ND	0.12	0.37	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908
1,4-Dichlorobenzene	ND	0.15	0.37	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908
3,3´-Dichlorobenzidine	ND	0.16	0.46	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908
Diethyl phthalate	ND	0.57	0.93	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908
Dimethyl phthalate	ND	0.15	0.37	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908
2,4-Dichlorophenol	ND	0.16	0.74	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908
2,4-Dimethylphenol	ND	0.15	0.56	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908
4,6-Dinitro-2-methylphenol	ND	0.14	0.74	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908
2,4-Dinitrophenol	ND	0.11	0.93	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908
2,4-Dinitrotoluene	ND	0.19	0.93	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908
2,6-Dinitrotoluene	ND	0.22	0.93	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908
Fluoranthene	ND	0.14	0.37	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908
Fluorene	ND	0.15	0.37	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908
Hexachlorobenzene	ND	0.15	0.37	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908
Hexachlorobutadiene	ND	0.16	0.37	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908
Hexachlorocyclopentadiene	ND	0.18	0.37	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908
Hexachloroethane	ND	0.15	0.37	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908
Indeno(1,2,3-cd)pyrene	ND	0.23	0.37	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908
Isophorone	ND	0.16	0.74	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908
1-Methylnaphthalene	ND	0.17	0.37	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908
2-Methylnaphthalene	ND	0.15	0.37	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908
2-Methylphenol	ND	0.16	0.74	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908

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Qualifiers:

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D	Sample Diluted Due to Matrix
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Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-12 Toe 3'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 2:10:00 PM
Lab ID: 2001723-019 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.13	0.37	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908
N-Nitrosodi-n-propylamine	ND	0.19	0.37	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908
N-Nitrosodiphenylamine	ND	0.19	0.37	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908
Naphthalene	ND	0.15	0.37	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908
2-Nitroaniline	ND	0.21	0.37	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908
3-Nitroaniline	ND	0.18	0.37	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908
4-Nitroaniline	ND	0.25	0.74	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908
Nitrobenzene	ND	0.16	0.74	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908
2-Nitrophenol	ND	0.15	0.37	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908
4-Nitrophenol	ND	0.11	0.46	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908
Pentachlorophenol	ND	0.17	0.74	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908
Phenanthrene	ND	0.19	0.37	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908
Phenol	ND	0.16	0.37	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908
Pyrene	0.16	0.12	0.37	JD	mg/Kg	1	1/27/2020 11:58:32 AM	49908
Pyridine	ND	0.35	0.74	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908
1,2,4-Trichlorobenzene	ND	0.16	0.37	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908
2,4,5-Trichlorophenol	ND	0.12	0.37	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908
2,4,6-Trichlorophenol	ND	0.19	0.37	D	mg/Kg	1	1/27/2020 11:58:32 AM	49908
Surr: 2-Fluorophenol	58.6		26.7-85.9	D	%Rec	1	1/27/2020 11:58:32 AM	49908
Surr: Phenol-d5	64.0		18.5-101	D	%Rec	1	1/27/2020 11:58:32 AM	49908
Surr: 2,4,6-Tribromophenol	71.1		35.8-85.6	D	%Rec	1	1/27/2020 11:58:32 AM	49908
Surr: Nitrobenzene-d5	72.4		40.8-95.2	D	%Rec	1	1/27/2020 11:58:32 AM	49908
Surr: 2-Fluorobiphenyl	71.3		34.7-85.2	D	%Rec	1	1/27/2020 11:58:32 AM	49908
Surr: 4-Terphenyl-d14	66.9		37.4-91.3	D	%Rec	1	1/27/2020 11:58:32 AM	49908
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.0019	0.012		mg/Kg	1	1/22/2020 4:34:10 AM	A65958
Toluene	0.0042	0.0023	0.024	J	mg/Kg	1	1/22/2020 4:34:10 AM	A65958
Ethylbenzene	ND	0.0014	0.024		mg/Kg	1	1/22/2020 4:34:10 AM	A65958
Methyl tert-butyl ether (MTBE)	ND	0.0056	0.024		mg/Kg	1	1/22/2020 4:34:10 AM	A65958
1,2,4-Trimethylbenzene	0.0023	0.0022	0.024	J	mg/Kg	1	1/22/2020 4:34:10 AM	A65958
1,3,5-Trimethylbenzene	ND	0.0023	0.024		mg/Kg	1	1/22/2020 4:34:10 AM	A65958
1,2-Dichloroethane (EDC)	ND	0.0024	0.024		mg/Kg	1	1/22/2020 4:34:10 AM	A65958
1,2-Dibromoethane (EDB)	ND	0.0022	0.024		mg/Kg	1	1/22/2020 4:34:10 AM	A65958
Naphthalene	ND	0.0048	0.048		mg/Kg	1	1/22/2020 4:34:10 AM	A65958
1-Methylnaphthalene	0.027	0.014	0.095	J	mg/Kg	1	1/22/2020 4:34:10 AM	A65958
2-Methylnaphthalene	0.026	0.010	0.095	J	mg/Kg	1	1/22/2020 4:34:10 AM	A65958
Acetone	0.045	0.020	0.36	J	mg/Kg	1	1/22/2020 4:34:10 AM	A65958
Bromobenzene	ND	0.0023	0.024		mg/Kg	1	1/22/2020 4:34:10 AM	A65958
Bromodichloromethane	ND	0.0022	0.024		mg/Kg	1	1/22/2020 4:34:10 AM	A65958

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

Qualifiers:

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

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-12 Toe 3'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 2:10:00 PM
Lab ID: 2001723-019 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Bromoform	ND	0.0021	0.024		mg/Kg	1	1/22/2020 4:34:10 AM	A65958
Bromomethane	ND	0.0057	0.071		mg/Kg	1	1/22/2020 4:34:10 AM	A65958
2-Butanone	ND	0.027	0.24		mg/Kg	1	1/22/2020 4:34:10 AM	A65958
Carbon disulfide	ND	0.0078	0.24		mg/Kg	1	1/22/2020 4:34:10 AM	A65958
Carbon tetrachloride	ND	0.0023	0.024		mg/Kg	1	1/22/2020 4:34:10 AM	A65958
Chlorobenzene	ND	0.0030	0.024		mg/Kg	1	1/22/2020 4:34:10 AM	A65958
Chloroethane	ND	0.0035	0.048		mg/Kg	1	1/22/2020 4:34:10 AM	A65958
Chloroform	ND	0.0019	0.024		mg/Kg	1	1/22/2020 4:34:10 AM	A65958
Chloromethane	ND	0.0023	0.071		mg/Kg	1	1/22/2020 4:34:10 AM	A65958
2-Chlorotoluene	ND	0.0021	0.024		mg/Kg	1	1/22/2020 4:34:10 AM	A65958
4-Chlorotoluene	ND	0.0019	0.024		mg/Kg	1	1/22/2020 4:34:10 AM	A65958
cis-1,2-DCE	ND	0.0032	0.024		mg/Kg	1	1/22/2020 4:34:10 AM	A65958
cis-1,3-Dichloropropene	ND	0.0020	0.024		mg/Kg	1	1/22/2020 4:34:10 AM	A65958
1,2-Dibromo-3-chloropropane	ND	0.0024	0.048		mg/Kg	1	1/22/2020 4:34:10 AM	A65958
Dibromochloromethane	ND	0.0017	0.024		mg/Kg	1	1/22/2020 4:34:10 AM	A65958
Dibromomethane	ND	0.0026	0.024		mg/Kg	1	1/22/2020 4:34:10 AM	A65958
1,2-Dichlorobenzene	ND	0.0019	0.024		mg/Kg	1	1/22/2020 4:34:10 AM	A65958
1,3-Dichlorobenzene	ND	0.0021	0.024		mg/Kg	1	1/22/2020 4:34:10 AM	A65958
1,4-Dichlorobenzene	ND	0.0020	0.024		mg/Kg	1	1/22/2020 4:34:10 AM	A65958
Dichlorodifluoromethane	ND	0.0055	0.024		mg/Kg	1	1/22/2020 4:34:10 AM	A65958
1,1-Dichloroethane	ND	0.0015	0.024		mg/Kg	1	1/22/2020 4:34:10 AM	A65958
1,1-Dichloroethene	ND	0.0095	0.024		mg/Kg	1	1/22/2020 4:34:10 AM	A65958
1,2-Dichloropropane	ND	0.0017	0.024		mg/Kg	1	1/22/2020 4:34:10 AM	A65958
1,3-Dichloropropane	ND	0.0026	0.024		mg/Kg	1	1/22/2020 4:34:10 AM	A65958
2,2-Dichloropropane	ND	0.0077	0.048		mg/Kg	1	1/22/2020 4:34:10 AM	A65958
1,1-Dichloropropene	ND	0.0022	0.048		mg/Kg	1	1/22/2020 4:34:10 AM	A65958
Hexachlorobutadiene	ND	0.0024	0.048		mg/Kg	1	1/22/2020 4:34:10 AM	A65958
2-Hexanone	ND	0.0039	0.24		mg/Kg	1	1/22/2020 4:34:10 AM	A65958
Isopropylbenzene	ND	0.0017	0.024		mg/Kg	1	1/22/2020 4:34:10 AM	A65958
4-Isopropyltoluene	ND	0.0020	0.024		mg/Kg	1	1/22/2020 4:34:10 AM	A65958
4-Methyl-2-pentanone	ND	0.0045	0.24		mg/Kg	1	1/22/2020 4:34:10 AM	A65958
Methylene chloride	0.029	0.0042	0.071	J	mg/Kg	1	1/22/2020 4:34:10 AM	A65958
n-Butylbenzene	ND	0.0022	0.071		mg/Kg	1	1/22/2020 4:34:10 AM	A65958
n-Propylbenzene	ND	0.0019	0.024		mg/Kg	1	1/22/2020 4:34:10 AM	A65958
sec-Butylbenzene	ND	0.0027	0.024		mg/Kg	1	1/22/2020 4:34:10 AM	A65958
Styrene	ND	0.0019	0.024		mg/Kg	1	1/22/2020 4:34:10 AM	A65958
tert-Butylbenzene	ND	0.0022	0.024		mg/Kg	1	1/22/2020 4:34:10 AM	A65958
1,1,1,2-Tetrachloroethane	ND	0.0016	0.024		mg/Kg	1	1/22/2020 4:34:10 AM	A65958
1,1,2,2-Tetrachloroethane	ND	0.0024	0.024		mg/Kg	1	1/22/2020 4:34:10 AM	A65958

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Qualifiers:

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

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-12 Toe 3'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 2:10:00 PM
Lab ID: 2001723-019 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Tetrachloroethene (PCE)	ND	0.0019	0.024		mg/Kg	1	1/22/2020 4:34:10 AM	A65958
trans-1,2-DCE	ND	0.0022	0.024		mg/Kg	1	1/22/2020 4:34:10 AM	A65958
trans-1,3-Dichloropropene	ND	0.0025	0.024		mg/Kg	1	1/22/2020 4:34:10 AM	A65958
1,2,3-Trichlorobenzene	ND	0.0021	0.048		mg/Kg	1	1/22/2020 4:34:10 AM	A65958
1,2,4-Trichlorobenzene	ND	0.0024	0.024		mg/Kg	1	1/22/2020 4:34:10 AM	A65958
1,1,1-Trichloroethane	ND	0.0021	0.024		mg/Kg	1	1/22/2020 4:34:10 AM	A65958
1,1,2-Trichloroethane	ND	0.0017	0.024		mg/Kg	1	1/22/2020 4:34:10 AM	A65958
Trichloroethene (TCE)	ND	0.0028	0.024		mg/Kg	1	1/22/2020 4:34:10 AM	A65958
Trichlorofluoromethane	ND	0.0081	0.024		mg/Kg	1	1/22/2020 4:34:10 AM	A65958
1,2,3-Trichloropropane	ND	0.0038	0.048		mg/Kg	1	1/22/2020 4:34:10 AM	A65958
Vinyl chloride	ND	0.0016	0.024		mg/Kg	1	1/22/2020 4:34:10 AM	A65958
Xylenes, Total	ND	0.0060	0.048		mg/Kg	1	1/22/2020 4:34:10 AM	A65958
Surr: Dibromofluoromethane	105		70-130		%Rec	1	1/22/2020 4:34:10 AM	A65958
Surr: 1,2-Dichloroethane-d4	91.3		70-130		%Rec	1	1/22/2020 4:34:10 AM	A65958
Surr: Toluene-d8	102		70-130		%Rec	1	1/22/2020 4:34:10 AM	A65958
Surr: 4-Bromofluorobenzene	94.9		70-130		%Rec	1	1/22/2020 4:34:10 AM	A65958
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	ND	0.50	2.4		mg/Kg	1	1/22/2020 4:34:10 AM	AG659
Surr: BFB	95.0	0	70-130		%Rec	1	1/22/2020 4:34:10 AM	AG659
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/23/2020 3:07:00 PM	R66022
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	8.82				pH Units	1	1/24/2020 9:47:00 AM	R66051
SPECIFIC GRAVITY							Analyst: **PAC**	
Specific Gravity	1.910				g/cm3	1	1/27/2020	R66241

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PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-17 Toe 2.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 1:41:00 PM
Lab ID: 2001723-020 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **JME**	
Diesel Range Organics (DRO)	14000	120	490		mg/Kg	50	1/22/2020 12:52:53 PM	49914
Motor Oil Range Organics (MRO)	4200	2500	2500		mg/Kg	50	1/22/2020 12:52:53 PM	49914
Surr: DNOP	0	0	55.1-146	S	%Rec	50	1/22/2020 12:52:53 PM	49914
EPA METHOD 7471: MERCURY							Analyst: **rde**	
Mercury	2.3	0.088	1.6	H	mg/Kg	50	2/25/2020 5:04:50 PM	50632
MERCURY, TCLP							Analyst: **pmf**	
Mercury	ND	0.00075	0.020		mg/L	1	1/20/2020 10:13:28 PM	49926
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.73	5.0		mg/Kg	2	1/21/2020 9:48:38 AM	49919
Arsenic	ND	2.8	5.0		mg/Kg	2	1/21/2020 9:48:38 AM	49919
Barium	570	0.12	0.50		mg/Kg	5	1/21/2020 10:32:55 AM	49919
Beryllium	0.81	0.018	0.30		mg/Kg	2	1/21/2020 9:48:38 AM	49919
Cadmium	ND	0.048	0.20		mg/Kg	2	1/21/2020 9:48:38 AM	49919
Chromium	18	0.16	0.60		mg/Kg	2	1/21/2020 9:48:38 AM	49919
Cobalt	4.7	0.21	0.60		mg/Kg	2	1/21/2020 9:48:38 AM	49919
Lead	12	0.48	0.50		mg/Kg	2	1/21/2020 9:48:38 AM	49919
Nickel	16	0.30	0.99		mg/Kg	2	1/21/2020 9:48:38 AM	49919
Selenium	3.1	2.5	5.0	J	mg/Kg	2	1/21/2020 9:48:38 AM	49919
Silver	ND	0.064	0.50		mg/Kg	2	1/21/2020 9:48:38 AM	49919
Vanadium	23	0.13	5.0		mg/Kg	2	1/21/2020 9:48:38 AM	49919
Zinc	680	2.0	12		mg/Kg	5	1/21/2020 10:32:55 AM	49919
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/23/2020 10:14:29 AM	49985
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.71	1.9	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
Acenaphthylene	ND	0.84	1.9	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
Aniline	ND	0.65	1.9	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
Anthracene	ND	0.73	1.9	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
Azobenzene	ND	0.96	1.9	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
Benz(a)anthracene	ND	0.65	1.9	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
Benzo(a)pyrene	ND	1.0	1.9	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
Benzo(b)fluoranthene	ND	1.1	1.9	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
Benzo(g,h,i)perylene	ND	0.97	1.9	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
Benzo(k)fluoranthene	ND	0.57	1.9	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
Benzoic acid	ND	1.3	4.7	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
Benzyl alcohol	ND	0.79	1.9	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
Bis(2-chloroethoxy)methane	ND	0.78	1.9	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908

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ND	Not Detected at the Reporting Limit
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B	Analyte detected in the associated Method Blank
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J	Analyte detected below quantitation limits
P	Sample pH Not In Range
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Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-17 Toe 2.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 1:41:00 PM
Lab ID: 2001723-020 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	1.1	1.9	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
Bis(2-chloroisopropyl)ether	ND	0.81	1.9	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
Bis(2-ethylhexyl)phthalate	ND	2.1	4.7	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
4-Bromophenyl phenyl ether	ND	1.1	1.9	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
Butyl benzyl phthalate	ND	0.63	1.9	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
Carbazole	ND	0.75	1.9	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
4-Chloro-3-methylphenol	ND	0.75	4.7	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
4-Chloroaniline	ND	0.72	4.7	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
2-Chloronaphthalene	ND	0.79	2.4	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
2-Chlorophenol	ND	1.1	1.9	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
4-Chlorophenyl phenyl ether	ND	0.79	1.9	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
Chrysene	5.6	0.74	1.9	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
Di-n-butyl phthalate	ND	2.8	3.8	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
Di-n-octyl phthalate	ND	0.63	3.8	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
Dibenz(a,h)anthracene	ND	1.1	1.9	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
Dibenzofuran	ND	0.95	1.9	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
1,2-Dichlorobenzene	ND	0.74	1.9	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
1,3-Dichlorobenzene	ND	0.63	1.9	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
1,4-Dichlorobenzene	ND	0.78	1.9	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
3,3´-Dichlorobenzidine	ND	0.81	2.4	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
Diethyl phthalate	ND	2.9	4.7	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
Dimethyl phthalate	ND	0.77	1.9	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
2,4-Dichlorophenol	ND	0.80	3.8	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
2,4-Dimethylphenol	ND	0.79	2.8	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
4,6-Dinitro-2-methylphenol	ND	0.69	3.8	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
2,4-Dinitrophenol	ND	0.55	4.7	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
2,4-Dinitrotoluene	ND	0.97	4.7	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
2,6-Dinitrotoluene	ND	1.1	4.7	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
Fluoranthene	ND	0.72	1.9	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
Fluorene	2.9	0.74	1.9	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
Hexachlorobenzene	ND	0.74	1.9	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
Hexachlorobutadiene	ND	0.83	1.9	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
Hexachlorocyclopentadiene	ND	0.91	1.9	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
Hexachloroethane	ND	0.77	1.9	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
Indeno(1,2,3-cd)pyrene	ND	1.2	1.9	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
Isophorone	ND	0.82	3.8	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
1-Methylnaphthalene	6.7	0.88	1.9	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
2-Methylnaphthalene	3.9	0.77	1.9	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
2-Methylphenol	ND	0.80	3.8	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908

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Qualifiers:

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

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-17 Toe 2.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 1:41:00 PM
Lab ID: 2001723-020 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.68	1.9	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
N-Nitrosodi-n-propylamine	ND	0.95	1.9	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
N-Nitrosodiphenylamine	ND	0.98	1.9	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
Naphthalene	ND	0.77	1.9	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
2-Nitroaniline	ND	1.0	1.9	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
3-Nitroaniline	ND	0.93	1.9	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
4-Nitroaniline	ND	1.3	3.8	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
Nitrobenzene	ND	0.81	3.8	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
2-Nitrophenol	ND	0.78	1.9	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
4-Nitrophenol	ND	0.56	2.4	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
Pentachlorophenol	ND	0.85	3.8	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
Phenanthrene	11	0.96	1.9	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
Phenol	ND	0.80	1.9	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
Pyrene	7.8	0.63	1.9	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
Pyridine	ND	1.8	3.8	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
1,2,4-Trichlorobenzene	ND	0.81	1.9	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
2,4,5-Trichlorophenol	ND	0.61	1.9	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
2,4,6-Trichlorophenol	ND	0.95	1.9	D	mg/Kg	1	1/27/2020 12:27:21 PM	49908
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	1	1/27/2020 12:27:21 PM	49908
Surr: Phenol-d5	0		18.5-101	SD	%Rec	1	1/27/2020 12:27:21 PM	49908
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	1	1/27/2020 12:27:21 PM	49908
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	1	1/27/2020 12:27:21 PM	49908
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	1	1/27/2020 12:27:21 PM	49908
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	1	1/27/2020 12:27:21 PM	49908
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.012	0.072		mg/Kg	5	1/22/2020 5:03:15 AM	A65958
Toluene	0.019	0.014	0.14	J	mg/Kg	5	1/22/2020 5:03:15 AM	A65958
Ethylbenzene	ND	0.0084	0.14		mg/Kg	5	1/22/2020 5:03:15 AM	A65958
Methyl tert-butyl ether (MTBE)	ND	0.034	0.14		mg/Kg	5	1/22/2020 5:03:15 AM	A65958
1,2,4-Trimethylbenzene	0.32	0.013	0.14		mg/Kg	5	1/22/2020 5:03:15 AM	A65958
1,3,5-Trimethylbenzene	0.14	0.014	0.14	J	mg/Kg	5	1/22/2020 5:03:15 AM	A65958
1,2-Dichloroethane (EDC)	0.10	0.015	0.14	J	mg/Kg	5	1/22/2020 5:03:15 AM	A65958
1,2-Dibromoethane (EDB)	ND	0.013	0.14		mg/Kg	5	1/22/2020 5:03:15 AM	A65958
Naphthalene	0.36	0.029	0.29		mg/Kg	5	1/22/2020 5:03:15 AM	A65958
1-Methylnaphthalene	2.4	0.083	0.58		mg/Kg	5	1/22/2020 5:03:15 AM	A65958
2-Methylnaphthalene	3.0	0.063	0.58		mg/Kg	5	1/22/2020 5:03:15 AM	A65958
Acetone	ND	0.12	2.2		mg/Kg	5	1/22/2020 5:03:15 AM	A65958
Bromobenzene	ND	0.014	0.14		mg/Kg	5	1/22/2020 5:03:15 AM	A65958
Bromodichloromethane	ND	0.013	0.14		mg/Kg	5	1/22/2020 5:03:15 AM	A65958

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Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-17 Toe 2.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 1:41:00 PM
Lab ID: 2001723-020 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Bromoform	ND	0.013	0.14		mg/Kg	5	1/22/2020 5:03:15 AM	A65958
Bromomethane	ND	0.035	0.43		mg/Kg	5	1/22/2020 5:03:15 AM	A65958
2-Butanone	ND	0.17	1.4		mg/Kg	5	1/22/2020 5:03:15 AM	A65958
Carbon disulfide	ND	0.048	1.4		mg/Kg	5	1/22/2020 5:03:15 AM	A65958
Carbon tetrachloride	ND	0.014	0.14		mg/Kg	5	1/22/2020 5:03:15 AM	A65958
Chlorobenzene	ND	0.018	0.14		mg/Kg	5	1/22/2020 5:03:15 AM	A65958
Chloroethane	ND	0.021	0.29		mg/Kg	5	1/22/2020 5:03:15 AM	A65958
Chloroform	ND	0.012	0.14		mg/Kg	5	1/22/2020 5:03:15 AM	A65958
Chloromethane	ND	0.014	0.43		mg/Kg	5	1/22/2020 5:03:15 AM	A65958
2-Chlorotoluene	ND	0.013	0.14		mg/Kg	5	1/22/2020 5:03:15 AM	A65958
4-Chlorotoluene	ND	0.012	0.14		mg/Kg	5	1/22/2020 5:03:15 AM	A65958
cis-1,2-DCE	ND	0.020	0.14		mg/Kg	5	1/22/2020 5:03:15 AM	A65958
cis-1,3-Dichloropropene	ND	0.012	0.14		mg/Kg	5	1/22/2020 5:03:15 AM	A65958
1,2-Dibromo-3-chloropropane	ND	0.015	0.29		mg/Kg	5	1/22/2020 5:03:15 AM	A65958
Dibromochloromethane	ND	0.010	0.14		mg/Kg	5	1/22/2020 5:03:15 AM	A65958
Dibromomethane	ND	0.016	0.14		mg/Kg	5	1/22/2020 5:03:15 AM	A65958
1,2-Dichlorobenzene	ND	0.012	0.14		mg/Kg	5	1/22/2020 5:03:15 AM	A65958
1,3-Dichlorobenzene	ND	0.013	0.14		mg/Kg	5	1/22/2020 5:03:15 AM	A65958
1,4-Dichlorobenzene	ND	0.012	0.14		mg/Kg	5	1/22/2020 5:03:15 AM	A65958
Dichlorodifluoromethane	ND	0.034	0.14		mg/Kg	5	1/22/2020 5:03:15 AM	A65958
1,1-Dichloroethane	ND	0.0092	0.14		mg/Kg	5	1/22/2020 5:03:15 AM	A65958
1,1-Dichloroethene	ND	0.058	0.14		mg/Kg	5	1/22/2020 5:03:15 AM	A65958
1,2-Dichloropropane	ND	0.011	0.14		mg/Kg	5	1/22/2020 5:03:15 AM	A65958
1,3-Dichloropropane	ND	0.016	0.14		mg/Kg	5	1/22/2020 5:03:15 AM	A65958
2,2-Dichloropropane	ND	0.047	0.29		mg/Kg	5	1/22/2020 5:03:15 AM	A65958
1,1-Dichloropropene	ND	0.013	0.29		mg/Kg	5	1/22/2020 5:03:15 AM	A65958
Hexachlorobutadiene	ND	0.015	0.29		mg/Kg	5	1/22/2020 5:03:15 AM	A65958
2-Hexanone	0.094	0.024	1.4	J	mg/Kg	5	1/22/2020 5:03:15 AM	A65958
Isopropylbenzene	0.012	0.010	0.14	J	mg/Kg	5	1/22/2020 5:03:15 AM	A65958
4-Isopropyltoluene	0.038	0.012	0.14	J	mg/Kg	5	1/22/2020 5:03:15 AM	A65958
4-Methyl-2-pentanone	0.13	0.027	1.4	J	mg/Kg	5	1/22/2020 5:03:15 AM	A65958
Methylene chloride	0.063	0.025	0.43	J	mg/Kg	5	1/22/2020 5:03:15 AM	A65958
n-Butylbenzene	0.054	0.013	0.43	J	mg/Kg	5	1/22/2020 5:03:15 AM	A65958
n-Propylbenzene	ND	0.012	0.14		mg/Kg	5	1/22/2020 5:03:15 AM	A65958
sec-Butylbenzene	0.076	0.016	0.14	J	mg/Kg	5	1/22/2020 5:03:15 AM	A65958
Styrene	ND	0.011	0.14		mg/Kg	5	1/22/2020 5:03:15 AM	A65958
tert-Butylbenzene	ND	0.014	0.14		mg/Kg	5	1/22/2020 5:03:15 AM	A65958
1,1,1,2-Tetrachloroethane	ND	0.0097	0.14		mg/Kg	5	1/22/2020 5:03:15 AM	A65958
1,1,2,2-Tetrachloroethane	ND	0.015	0.14		mg/Kg	5	1/22/2020 5:03:15 AM	A65958

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PQL	Practical Quanitative Limit
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Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-17 Toe 2.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 1:41:00 PM
Lab ID: 2001723-020 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Tetrachloroethene (PCE)	ND	0.012	0.14		mg/Kg	5	1/22/2020 5:03:15 AM	A65958
trans-1,2-DCE	ND	0.013	0.14		mg/Kg	5	1/22/2020 5:03:15 AM	A65958
trans-1,3-Dichloropropene	ND	0.015	0.14		mg/Kg	5	1/22/2020 5:03:15 AM	A65958
1,2,3-Trichlorobenzene	ND	0.013	0.29		mg/Kg	5	1/22/2020 5:03:15 AM	A65958
1,2,4-Trichlorobenzene	ND	0.015	0.14		mg/Kg	5	1/22/2020 5:03:15 AM	A65958
1,1,1-Trichloroethane	ND	0.013	0.14		mg/Kg	5	1/22/2020 5:03:15 AM	A65958
1,1,2-Trichloroethane	ND	0.010	0.14		mg/Kg	5	1/22/2020 5:03:15 AM	A65958
Trichloroethene (TCE)	ND	0.017	0.14		mg/Kg	5	1/22/2020 5:03:15 AM	A65958
Trichlorofluoromethane	ND	0.049	0.14		mg/Kg	5	1/22/2020 5:03:15 AM	A65958
1,2,3-Trichloropropane	ND	0.023	0.29		mg/Kg	5	1/22/2020 5:03:15 AM	A65958
Vinyl chloride	ND	0.0094	0.14		mg/Kg	5	1/22/2020 5:03:15 AM	A65958
Xylenes, Total	0.19	0.036	0.29	J	mg/Kg	5	1/22/2020 5:03:15 AM	A65958
Surr: Dibromofluoromethane	111		70-130		%Rec	5	1/22/2020 5:03:15 AM	A65958
Surr: 1,2-Dichloroethane-d4	89.2		70-130		%Rec	5	1/22/2020 5:03:15 AM	A65958
Surr: Toluene-d8	102		70-130		%Rec	5	1/22/2020 5:03:15 AM	A65958
Surr: 4-Bromofluorobenzene	91.0		70-130		%Rec	5	1/22/2020 5:03:15 AM	A65958
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	14	3.1	14	J	mg/Kg	5	1/22/2020 5:03:15 AM	AG659
Surr: BFB	102	0	70-130		%Rec	5	1/22/2020 5:03:15 AM	AG659
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/23/2020 3:07:00 PM	R66022
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	7.66				pH Units	1	1/24/2020 9:47:00 AM	R66051
SPECIFIC GRAVITY							Analyst: **PAC**	
Specific Gravity	1.640				g/cm3	1	1/27/2020	R66241

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Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-17 Toe 4.5-5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 1:50:00 PM
Lab ID: 2001723-021 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **CLP**	
Diesel Range Organics (DRO)	590	11	46		mg/Kg	5	1/22/2020 5:15:21 PM	49915
Motor Oil Range Organics (MRO)	240	230	230		mg/Kg	5	1/22/2020 5:15:21 PM	49915
Surr: DNOP	84.5	0	55.1-146		%Rec	5	1/22/2020 5:15:21 PM	49915
EPA METHOD 7471: MERCURY							Analyst: **rde**	
Mercury	0.080	0.0019	0.035	H	mg/Kg	1	2/25/2020 4:37:09 PM	50634
MERCURY, TCLP							Analyst: **pmf**	
Mercury	ND	0.00075	0.020		mg/L	1	1/20/2020 10:16:11 PM	49926
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.73	5.0		mg/Kg	2	1/21/2020 9:55:19 AM	49920
Arsenic	ND	2.8	5.0		mg/Kg	2	1/21/2020 9:55:19 AM	49920
Barium	230	0.046	0.20		mg/Kg	2	1/21/2020 9:55:19 AM	49920
Beryllium	1.1	0.018	0.30		mg/Kg	2	1/21/2020 9:55:19 AM	49920
Cadmium	ND	0.048	0.20		mg/Kg	2	1/21/2020 9:55:19 AM	49920
Chromium	14	0.16	0.60		mg/Kg	2	1/21/2020 9:55:19 AM	49920
Cobalt	5.4	0.21	0.60		mg/Kg	2	1/21/2020 9:55:19 AM	49920
Lead	1.9	0.48	0.50		mg/Kg	2	1/21/2020 9:55:19 AM	49920
Nickel	11	0.30	0.99		mg/Kg	2	1/21/2020 9:55:19 AM	49920
Selenium	ND	2.5	5.0		mg/Kg	2	1/21/2020 9:55:19 AM	49920
Silver	ND	0.064	0.50		mg/Kg	2	1/21/2020 9:55:19 AM	49920
Vanadium	24	0.13	5.0		mg/Kg	2	1/21/2020 9:55:19 AM	49920
Zinc	49	0.79	5.0		mg/Kg	2	1/21/2020 9:55:19 AM	49920
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/23/2020 10:18:43 AM	49985
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.75	2.0	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
Acenaphthylene	ND	0.89	2.0	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
Aniline	ND	0.68	2.0	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
Anthracene	ND	0.77	2.0	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
Azobenzene	ND	1.0	2.0	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
Benz(a)anthracene	ND	0.69	2.0	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
Benzo(a)pyrene	ND	1.1	2.0	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
Benzo(b)fluoranthene	ND	1.1	2.0	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
Benzo(g,h,i)perylene	ND	1.0	2.0	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
Benzo(k)fluoranthene	ND	0.60	2.0	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
Benzoic acid	ND	1.4	5.0	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
Benzyl alcohol	ND	0.83	2.0	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
Bis(2-chloroethoxy)methane	ND	0.83	2.0	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952

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Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-17 Toe 4.5-5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 1:50:00 PM
Lab ID: 2001723-021 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	1.2	2.0	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
Bis(2-chloroisopropyl)ether	ND	0.86	2.0	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
Bis(2-ethylhexyl)phthalate	ND	2.2	5.0	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
4-Bromophenyl phenyl ether	ND	1.2	2.0	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
Butyl benzyl phthalate	ND	0.67	2.0	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
Carbazole	ND	0.79	2.0	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
4-Chloro-3-methylphenol	ND	0.79	5.0	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
4-Chloroaniline	ND	0.77	5.0	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
2-Chloronaphthalene	ND	0.84	2.5	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
2-Chlorophenol	ND	1.1	2.0	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
4-Chlorophenyl phenyl ether	ND	0.84	2.0	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
Chrysene	ND	0.78	2.0	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
Di-n-butyl phthalate	ND	3.0	4.0	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
Di-n-octyl phthalate	ND	0.67	4.0	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
Dibenz(a,h)anthracene	ND	1.1	2.0	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
Dibenzofuran	ND	1.0	2.0	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
1,2-Dichlorobenzene	ND	0.79	2.0	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
1,3-Dichlorobenzene	ND	0.67	2.0	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
1,4-Dichlorobenzene	ND	0.83	2.0	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
3,3´-Dichlorobenzidine	ND	0.85	2.5	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
Diethyl phthalate	ND	3.0	5.0	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
Dimethyl phthalate	ND	0.81	2.0	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
2,4-Dichlorophenol	ND	0.84	4.0	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
2,4-Dimethylphenol	ND	0.83	3.0	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
4,6-Dinitro-2-methylphenol	ND	0.73	4.0	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
2,4-Dinitrophenol	ND	0.58	5.0	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
2,4-Dinitrotoluene	ND	1.0	5.0	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
2,6-Dinitrotoluene	ND	1.2	5.0	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
Fluoranthene	ND	0.76	2.0	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
Fluorene	ND	0.79	2.0	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
Hexachlorobenzene	ND	0.78	2.0	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
Hexachlorobutadiene	ND	0.88	2.0	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
Hexachlorocyclopentadiene	ND	0.96	2.0	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
Hexachloroethane	ND	0.82	2.0	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
Indeno(1,2,3-cd)pyrene	ND	1.2	2.0	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
Isophorone	ND	0.87	4.0	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
1-Methylnaphthalene	ND	0.93	2.0	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
2-Methylnaphthalene	ND	0.81	2.0	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
2-Methylphenol	ND	0.84	4.0	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952

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

Qualifiers:

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

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-17 Toe 4.5-5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 1:50:00 PM
Lab ID: 2001723-021 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.72	2.0	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
N-Nitrosodi-n-propylamine	ND	1.0	2.0	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
N-Nitrosodiphenylamine	ND	1.0	2.0	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
Naphthalene	ND	0.82	2.0	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
2-Nitroaniline	ND	1.1	2.0	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
3-Nitroaniline	ND	0.98	2.0	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
4-Nitroaniline	ND	1.3	4.0	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
Nitrobenzene	ND	0.85	4.0	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
2-Nitrophenol	ND	0.82	2.0	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
4-Nitrophenol	ND	0.59	2.5	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
Pentachlorophenol	ND	0.89	4.0	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
Phenanthrene	ND	1.0	2.0	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
Phenol	ND	0.85	2.0	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
Pyrene	ND	0.66	2.0	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
Pyridine	ND	1.9	4.0	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
1,2,4-Trichlorobenzene	ND	0.85	2.0	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
2,4,5-Trichlorophenol	ND	0.64	2.0	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
2,4,6-Trichlorophenol	ND	1.0	2.0	D	mg/Kg	1	1/27/2020 12:55:59 PM	49952
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	1	1/27/2020 12:55:59 PM	49952
Surr: Phenol-d5	0		18.5-101	SD	%Rec	1	1/27/2020 12:55:59 PM	49952
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	1	1/27/2020 12:55:59 PM	49952
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	1	1/27/2020 12:55:59 PM	49952
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	1	1/27/2020 12:55:59 PM	49952
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	1	1/27/2020 12:55:59 PM	49952
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.0024	0.015		mg/Kg	1	1/22/2020 5:32:23 AM	B65958
Toluene	ND	0.0028	0.029		mg/Kg	1	1/22/2020 5:32:23 AM	B65958
Ethylbenzene	ND	0.0017	0.029		mg/Kg	1	1/22/2020 5:32:23 AM	B65958
Methyl tert-butyl ether (MTBE)	ND	0.0069	0.029		mg/Kg	1	1/22/2020 5:32:23 AM	B65958
1,2,4-Trimethylbenzene	0.0059	0.0027	0.029	J	mg/Kg	1	1/22/2020 5:32:23 AM	B65958
1,3,5-Trimethylbenzene	ND	0.0028	0.029		mg/Kg	1	1/22/2020 5:32:23 AM	B65958
1,2-Dichloroethane (EDC)	0.013	0.0030	0.029	J	mg/Kg	1	1/22/2020 5:32:23 AM	B65958
1,2-Dibromoethane (EDB)	ND	0.0026	0.029		mg/Kg	1	1/22/2020 5:32:23 AM	B65958
Naphthalene	0.010	0.0058	0.058	J	mg/Kg	1	1/22/2020 5:32:23 AM	B65958
1-Methylnaphthalene	0.059	0.017	0.12	J	mg/Kg	1	1/22/2020 5:32:23 AM	B65958
2-Methylnaphthalene	0.070	0.013	0.12	J	mg/Kg	1	1/22/2020 5:32:23 AM	B65958
Acetone	ND	0.024	0.44		mg/Kg	1	1/22/2020 5:32:23 AM	B65958
Bromobenzene	ND	0.0028	0.029		mg/Kg	1	1/22/2020 5:32:23 AM	B65958
Bromodichloromethane	ND	0.0026	0.029		mg/Kg	1	1/22/2020 5:32:23 AM	B65958

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

Qualifiers:

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

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-17 Toe 4.5-5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 1:50:00 PM
Lab ID: 2001723-021 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Bromoform	ND	0.0026	0.029		mg/Kg	1	1/22/2020 5:32:23 AM	B65958
Bromomethane	ND	0.0070	0.087		mg/Kg	1	1/22/2020 5:32:23 AM	B65958
2-Butanone	ND	0.034	0.29		mg/Kg	1	1/22/2020 5:32:23 AM	B65958
Carbon disulfide	ND	0.0096	0.29		mg/Kg	1	1/22/2020 5:32:23 AM	B65958
Carbon tetrachloride	ND	0.0028	0.029		mg/Kg	1	1/22/2020 5:32:23 AM	B65958
Chlorobenzene	ND	0.0037	0.029		mg/Kg	1	1/22/2020 5:32:23 AM	B65958
Chloroethane	ND	0.0043	0.058		mg/Kg	1	1/22/2020 5:32:23 AM	B65958
Chloroform	ND	0.0023	0.029		mg/Kg	1	1/22/2020 5:32:23 AM	B65958
Chloromethane	ND	0.0028	0.087		mg/Kg	1	1/22/2020 5:32:23 AM	B65958
2-Chlorotoluene	ND	0.0025	0.029		mg/Kg	1	1/22/2020 5:32:23 AM	B65958
4-Chlorotoluene	ND	0.0024	0.029		mg/Kg	1	1/22/2020 5:32:23 AM	B65958
cis-1,2-DCE	ND	0.0040	0.029		mg/Kg	1	1/22/2020 5:32:23 AM	B65958
cis-1,3-Dichloropropene	ND	0.0024	0.029		mg/Kg	1	1/22/2020 5:32:23 AM	B65958
1,2-Dibromo-3-chloropropane	ND	0.0030	0.058		mg/Kg	1	1/22/2020 5:32:23 AM	B65958
Dibromochloromethane	ND	0.0021	0.029		mg/Kg	1	1/22/2020 5:32:23 AM	B65958
Dibromomethane	ND	0.0031	0.029		mg/Kg	1	1/22/2020 5:32:23 AM	B65958
1,2-Dichlorobenzene	ND	0.0024	0.029		mg/Kg	1	1/22/2020 5:32:23 AM	B65958
1,3-Dichlorobenzene	ND	0.0025	0.029		mg/Kg	1	1/22/2020 5:32:23 AM	B65958
1,4-Dichlorobenzene	ND	0.0024	0.029		mg/Kg	1	1/22/2020 5:32:23 AM	B65958
Dichlorodifluoromethane	ND	0.0067	0.029		mg/Kg	1	1/22/2020 5:32:23 AM	B65958
1,1-Dichloroethane	ND	0.0019	0.029		mg/Kg	1	1/22/2020 5:32:23 AM	B65958
1,1-Dichloroethene	ND	0.012	0.029		mg/Kg	1	1/22/2020 5:32:23 AM	B65958
1,2-Dichloropropane	ND	0.0021	0.029		mg/Kg	1	1/22/2020 5:32:23 AM	B65958
1,3-Dichloropropane	ND	0.0031	0.029		mg/Kg	1	1/22/2020 5:32:23 AM	B65958
2,2-Dichloropropane	ND	0.0094	0.058		mg/Kg	1	1/22/2020 5:32:23 AM	B65958
1,1-Dichloropropene	ND	0.0026	0.058		mg/Kg	1	1/22/2020 5:32:23 AM	B65958
Hexachlorobutadiene	ND	0.0030	0.058		mg/Kg	1	1/22/2020 5:32:23 AM	B65958
2-Hexanone	ND	0.0048	0.29		mg/Kg	1	1/22/2020 5:32:23 AM	B65958
Isopropylbenzene	ND	0.0021	0.029		mg/Kg	1	1/22/2020 5:32:23 AM	B65958
4-Isopropyltoluene	ND	0.0024	0.029		mg/Kg	1	1/22/2020 5:32:23 AM	B65958
4-Methyl-2-pentanone	0.018	0.0055	0.29	J	mg/Kg	1	1/22/2020 5:32:23 AM	B65958
Methylene chloride	0.016	0.0051	0.087	J	mg/Kg	1	1/22/2020 5:32:23 AM	B65958
n-Butylbenzene	ND	0.0027	0.087		mg/Kg	1	1/22/2020 5:32:23 AM	B65958
n-Propylbenzene	ND	0.0023	0.029		mg/Kg	1	1/22/2020 5:32:23 AM	B65958
sec-Butylbenzene	ND	0.0033	0.029		mg/Kg	1	1/22/2020 5:32:23 AM	B65958
Styrene	ND	0.0023	0.029		mg/Kg	1	1/22/2020 5:32:23 AM	B65958
tert-Butylbenzene	ND	0.0027	0.029		mg/Kg	1	1/22/2020 5:32:23 AM	B65958
1,1,1,2-Tetrachloroethane	ND	0.0020	0.029		mg/Kg	1	1/22/2020 5:32:23 AM	B65958
1,1,2,2-Tetrachloroethane	ND	0.0029	0.029		mg/Kg	1	1/22/2020 5:32:23 AM	B65958

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

Qualifiers:

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

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-17 Toe 4.5-5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 1:50:00 PM
Lab ID: 2001723-021 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Tetrachloroethene (PCE)	ND	0.0023	0.029		mg/Kg	1	1/22/2020 5:32:23 AM	B65958
trans-1,2-DCE	ND	0.0027	0.029		mg/Kg	1	1/22/2020 5:32:23 AM	B65958
trans-1,3-Dichloropropene	ND	0.0031	0.029		mg/Kg	1	1/22/2020 5:32:23 AM	B65958
1,2,3-Trichlorobenzene	ND	0.0025	0.058		mg/Kg	1	1/22/2020 5:32:23 AM	B65958
1,2,4-Trichlorobenzene	ND	0.0029	0.029		mg/Kg	1	1/22/2020 5:32:23 AM	B65958
1,1,1-Trichloroethane	ND	0.0026	0.029		mg/Kg	1	1/22/2020 5:32:23 AM	B65958
1,1,2-Trichloroethane	ND	0.0020	0.029		mg/Kg	1	1/22/2020 5:32:23 AM	B65958
Trichloroethene (TCE)	ND	0.0034	0.029		mg/Kg	1	1/22/2020 5:32:23 AM	B65958
Trichlorofluoromethane	ND	0.0098	0.029		mg/Kg	1	1/22/2020 5:32:23 AM	B65958
1,2,3-Trichloropropane	ND	0.0047	0.058		mg/Kg	1	1/22/2020 5:32:23 AM	B65958
Vinyl chloride	ND	0.0019	0.029		mg/Kg	1	1/22/2020 5:32:23 AM	B65958
Xylenes, Total	ND	0.0073	0.058		mg/Kg	1	1/22/2020 5:32:23 AM	B65958
Surr: Dibromofluoromethane	101		70-130		%Rec	1	1/22/2020 5:32:23 AM	B65958
Surr: 1,2-Dichloroethane-d4	82.8		70-130		%Rec	1	1/22/2020 5:32:23 AM	B65958
Surr: Toluene-d8	101		70-130		%Rec	1	1/22/2020 5:32:23 AM	B65958
Surr: 4-Bromofluorobenzene	94.0		70-130		%Rec	1	1/22/2020 5:32:23 AM	B65958
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	0.95	0.62	2.9	J	mg/Kg	1	1/22/2020 5:32:23 AM	BG659
Surr: BFB	97.5	0	70-130		%Rec	1	1/22/2020 5:32:23 AM	BG659
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/23/2020 3:07:00 PM	R66022
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	8.50				pH Units	1	1/24/2020 9:47:00 AM	R66051
SPECIFIC GRAVITY							Analyst: **PAC**	
Specific Gravity	1.920				g/cm3	1	1/27/2020	R66241

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

Qualifiers:

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ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-20 Toe 5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 3:07:00 PM
Lab ID: 2001723-022 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	6400	43	180		mg/Kg	20	1/24/2020 8:20:10 AM	49945
Motor Oil Range Organics (MRO)	1500	890	890		mg/Kg	20	1/24/2020 8:20:10 AM	49945
Surr: DNOP	0	0	55.1-146	S	%Rec	20	1/24/2020 8:20:10 AM	49945
EPA METHOD 7471: MERCURY							Analyst: **rde**	
Mercury	0.59	0.094	1.7	JH	mg/Kg	50	2/25/2020 5:06:51 PM	50634
MERCURY, TCLP							Analyst: **pmf**	
Mercury	ND	0.00075	0.020		mg/L	1	1/20/2020 10:18:55 PM	49926
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.71	4.8		mg/Kg	2	1/21/2020 9:56:44 AM	49920
Arsenic	ND	2.8	4.8		mg/Kg	2	1/21/2020 9:56:44 AM	49920
Barium	190	0.045	0.19		mg/Kg	2	1/21/2020 9:56:44 AM	49920
Beryllium	1.0	0.018	0.29		mg/Kg	2	1/21/2020 9:56:44 AM	49920
Cadmium	ND	0.047	0.19		mg/Kg	2	1/21/2020 9:56:44 AM	49920
Chromium	11	0.15	0.58		mg/Kg	2	1/21/2020 9:56:44 AM	49920
Cobalt	4.3	0.20	0.58		mg/Kg	2	1/21/2020 9:56:44 AM	49920
Lead	1.8	0.47	0.48		mg/Kg	2	1/21/2020 9:56:44 AM	49920
Nickel	9.2	0.29	0.96		mg/Kg	2	1/21/2020 9:56:44 AM	49920
Selenium	ND	2.4	4.8		mg/Kg	2	1/21/2020 9:56:44 AM	49920
Silver	ND	0.062	0.48		mg/Kg	2	1/21/2020 9:56:44 AM	49920
Vanadium	15	0.13	4.8		mg/Kg	2	1/21/2020 9:56:44 AM	49920
Zinc	17	0.76	4.8		mg/Kg	2	1/21/2020 9:56:44 AM	49920
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/23/2020 10:20:08 AM	49985
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.74	2.0	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952
Acenaphthylene	ND	0.87	2.0	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952
Aniline	ND	0.67	2.0	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952
Anthracene	ND	0.75	2.0	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952
Azobenzene	ND	0.99	2.0	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952
Benz(a)anthracene	ND	0.67	2.0	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952
Benzo(a)pyrene	ND	1.1	2.0	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952
Benzo(b)fluoranthene	ND	1.1	2.0	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952
Benzo(g,h,i)perylene	ND	1.0	2.0	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952
Benzo(k)fluoranthene	ND	0.58	2.0	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952
Benzoic acid	ND	1.4	4.9	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952
Benzyl alcohol	ND	0.81	2.0	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952
Bis(2-chloroethoxy)methane	ND	0.81	2.0	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952

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Qualifiers:

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PQL	Practical Quanitative Limit
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E	Value above quantitation range
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P	Sample pH Not In Range
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Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-20 Toe 5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 3:07:00 PM
Lab ID: 2001723-022 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	1.1	2.0	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952
Bis(2-chloroisopropyl)ether	ND	0.84	2.0	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952
Bis(2-ethylhexyl)phthalate	ND	2.2	4.9	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952
4-Bromophenyl phenyl ether	ND	1.1	2.0	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952
Butyl benzyl phthalate	ND	0.66	2.0	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952
Carbazole	ND	0.78	2.0	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952
4-Chloro-3-methylphenol	ND	0.77	4.9	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952
4-Chloroaniline	ND	0.75	4.9	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952
2-Chloronaphthalene	ND	0.82	2.4	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952
2-Chlorophenol	ND	1.1	2.0	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952
4-Chlorophenyl phenyl ether	ND	0.82	2.0	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952
Chrysene	ND	0.77	2.0	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952
Di-n-butyl phthalate	ND	2.9	3.9	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952
Di-n-octyl phthalate	ND	0.65	3.9	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952
Dibenz(a,h)anthracene	ND	1.1	2.0	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952
Dibenzofuran	ND	0.98	2.0	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952
1,2-Dichlorobenzene	ND	0.77	2.0	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952
1,3-Dichlorobenzene	ND	0.65	2.0	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952
1,4-Dichlorobenzene	ND	0.81	2.0	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952
3,3´-Dichlorobenzidine	ND	0.84	2.4	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952
Diethyl phthalate	ND	3.0	4.9	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952
Dimethyl phthalate	ND	0.79	2.0	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952
2,4-Dichlorophenol	ND	0.83	3.9	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952
2,4-Dimethylphenol	ND	0.81	2.9	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952
4,6-Dinitro-2-methylphenol	ND	0.72	3.9	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952
2,4-Dinitrophenol	ND	0.57	4.9	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952
2,4-Dinitrotoluene	ND	1.0	4.9	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952
2,6-Dinitrotoluene	ND	1.2	4.9	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952
Fluoranthene	ND	0.75	2.0	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952
Fluorene	2.6	0.77	2.0	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952
Hexachlorobenzene	ND	0.76	2.0	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952
Hexachlorobutadiene	ND	0.86	2.0	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952
Hexachlorocyclopentadiene	ND	0.94	2.0	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952
Hexachloroethane	ND	0.80	2.0	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952
Indeno(1,2,3-cd)pyrene	ND	1.2	2.0	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952
Isophorone	ND	0.85	3.9	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952
1-Methylnaphthalene	9.8	0.91	2.0	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952
2-Methylnaphthalene	17	0.79	2.0	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952
2-Methylphenol	ND	0.82	3.9	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952

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Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-20 Toe 5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 3:07:00 PM
Lab ID: 2001723-022 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	0.84	0.71	2.0	JD	mg/Kg	1	1/27/2020 1:24:22 PM	49952
N-Nitrosodi-n-propylamine	ND	0.99	2.0	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952
N-Nitrosodiphenylamine	ND	1.0	2.0	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952
Naphthalene	3.7	0.80	2.0	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952
2-Nitroaniline	ND	1.1	2.0	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952
3-Nitroaniline	ND	0.96	2.0	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952
4-Nitroaniline	ND	1.3	3.9	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952
Nitrobenzene	ND	0.83	3.9	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952
2-Nitrophenol	ND	0.81	2.0	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952
4-Nitrophenol	ND	0.57	2.4	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952
Pentachlorophenol	ND	0.88	3.9	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952
Phenanthrene	5.4	1.0	2.0	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952
Phenol	ND	0.83	2.0	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952
Pyrene	ND	0.65	2.0	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952
Pyridine	ND	1.8	3.9	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952
1,2,4-Trichlorobenzene	ND	0.84	2.0	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952
2,4,5-Trichlorophenol	ND	0.63	2.0	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952
2,4,6-Trichlorophenol	ND	0.98	2.0	D	mg/Kg	1	1/27/2020 1:24:22 PM	49952
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	1	1/27/2020 1:24:22 PM	49952
Surr: Phenol-d5	0		18.5-101	SD	%Rec	1	1/27/2020 1:24:22 PM	49952
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	1	1/27/2020 1:24:22 PM	49952
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	1	1/27/2020 1:24:22 PM	49952
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	1	1/27/2020 1:24:22 PM	49952
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	1	1/27/2020 1:24:22 PM	49952
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	0.58	0.022	0.13		mg/Kg	10	1/22/2020 7:01:14 AM	B65958
Toluene	4.5	0.025	0.26		mg/Kg	10	1/22/2020 7:01:14 AM	B65958
Ethylbenzene	2.0	0.015	0.26		mg/Kg	10	1/22/2020 7:01:14 AM	B65958
Methyl tert-butyl ether (MTBE)	ND	0.062	0.26		mg/Kg	10	1/22/2020 7:01:14 AM	B65958
1,2,4-Trimethylbenzene	6.6	0.024	0.26		mg/Kg	10	1/22/2020 7:01:14 AM	B65958
1,3,5-Trimethylbenzene	2.0	0.025	0.26		mg/Kg	10	1/22/2020 7:01:14 AM	B65958
1,2-Dichloroethane (EDC)	0.13	0.027	0.26	J	mg/Kg	10	1/22/2020 7:01:14 AM	B65958
1,2-Dibromoethane (EDB)	0.074	0.024	0.26	J	mg/Kg	10	1/22/2020 7:01:14 AM	B65958
Naphthalene	4.7	0.053	0.53		mg/Kg	10	1/22/2020 7:01:14 AM	B65958
1-Methylnaphthalene	7.0	0.15	1.1		mg/Kg	10	1/22/2020 7:01:14 AM	B65958
2-Methylnaphthalene	12	0.11	1.1		mg/Kg	10	1/22/2020 7:01:14 AM	B65958
Acetone	1.6	0.22	3.9	J	mg/Kg	10	1/22/2020 7:01:14 AM	B65958
Bromobenzene	ND	0.025	0.26		mg/Kg	10	1/22/2020 7:01:14 AM	B65958
Bromodichloromethane	ND	0.024	0.26		mg/Kg	10	1/22/2020 7:01:14 AM	B65958

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Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-20 Toe 5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 3:07:00 PM
Lab ID: 2001723-022 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Bromoform	ND	0.024	0.26		mg/Kg	10	1/22/2020 7:01:14 AM	B65958
Bromomethane	ND	0.063	0.79		mg/Kg	10	1/22/2020 7:01:14 AM	B65958
2-Butanone	ND	0.30	2.6		mg/Kg	10	1/22/2020 7:01:14 AM	B65958
Carbon disulfide	ND	0.087	2.6		mg/Kg	10	1/22/2020 7:01:14 AM	B65958
Carbon tetrachloride	ND	0.025	0.26		mg/Kg	10	1/22/2020 7:01:14 AM	B65958
Chlorobenzene	ND	0.034	0.26		mg/Kg	10	1/22/2020 7:01:14 AM	B65958
Chloroethane	ND	0.039	0.53		mg/Kg	10	1/22/2020 7:01:14 AM	B65958
Chloroform	ND	0.021	0.26		mg/Kg	10	1/22/2020 7:01:14 AM	B65958
Chloromethane	ND	0.025	0.79		mg/Kg	10	1/22/2020 7:01:14 AM	B65958
2-Chlorotoluene	ND	0.023	0.26		mg/Kg	10	1/22/2020 7:01:14 AM	B65958
4-Chlorotoluene	ND	0.022	0.26		mg/Kg	10	1/22/2020 7:01:14 AM	B65958
cis-1,2-DCE	ND	0.036	0.26		mg/Kg	10	1/22/2020 7:01:14 AM	B65958
cis-1,3-Dichloropropene	ND	0.022	0.26		mg/Kg	10	1/22/2020 7:01:14 AM	B65958
1,2-Dibromo-3-chloropropane	ND	0.027	0.53		mg/Kg	10	1/22/2020 7:01:14 AM	B65958
Dibromochloromethane	ND	0.019	0.26		mg/Kg	10	1/22/2020 7:01:14 AM	B65958
Dibromomethane	ND	0.028	0.26		mg/Kg	10	1/22/2020 7:01:14 AM	B65958
1,2-Dichlorobenzene	ND	0.022	0.26		mg/Kg	10	1/22/2020 7:01:14 AM	B65958
1,3-Dichlorobenzene	ND	0.023	0.26		mg/Kg	10	1/22/2020 7:01:14 AM	B65958
1,4-Dichlorobenzene	ND	0.022	0.26		mg/Kg	10	1/22/2020 7:01:14 AM	B65958
Dichlorodifluoromethane	ND	0.061	0.26		mg/Kg	10	1/22/2020 7:01:14 AM	B65958
1,1-Dichloroethane	ND	0.017	0.26		mg/Kg	10	1/22/2020 7:01:14 AM	B65958
1,1-Dichloroethene	ND	0.11	0.26		mg/Kg	10	1/22/2020 7:01:14 AM	B65958
1,2-Dichloropropane	ND	0.019	0.26		mg/Kg	10	1/22/2020 7:01:14 AM	B65958
1,3-Dichloropropane	ND	0.028	0.26		mg/Kg	10	1/22/2020 7:01:14 AM	B65958
2,2-Dichloropropane	ND	0.086	0.53		mg/Kg	10	1/22/2020 7:01:14 AM	B65958
1,1-Dichloropropene	ND	0.024	0.53		mg/Kg	10	1/22/2020 7:01:14 AM	B65958
Hexachlorobutadiene	ND	0.027	0.53		mg/Kg	10	1/22/2020 7:01:14 AM	B65958
2-Hexanone	0.38	0.044	2.6	J	mg/Kg	10	1/22/2020 7:01:14 AM	B65958
Isopropylbenzene	0.52	0.019	0.26		mg/Kg	10	1/22/2020 7:01:14 AM	B65958
4-Isopropyltoluene	0.36	0.022	0.26		mg/Kg	10	1/22/2020 7:01:14 AM	B65958
4-Methyl-2-pentanone	2.3	0.050	2.6	J	mg/Kg	10	1/22/2020 7:01:14 AM	B65958
Methylene chloride	ND	0.046	0.79		mg/Kg	10	1/22/2020 7:01:14 AM	B65958
n-Butylbenzene	0.73	0.025	0.79	J	mg/Kg	10	1/22/2020 7:01:14 AM	B65958
n-Propylbenzene	1.1	0.021	0.26		mg/Kg	10	1/22/2020 7:01:14 AM	B65958
sec-Butylbenzene	0.50	0.030	0.26		mg/Kg	10	1/22/2020 7:01:14 AM	B65958
Styrene	ND	0.021	0.26		mg/Kg	10	1/22/2020 7:01:14 AM	B65958
tert-Butylbenzene	ND	0.025	0.26		mg/Kg	10	1/22/2020 7:01:14 AM	B65958
1,1,1,2-Tetrachloroethane	ND	0.018	0.26		mg/Kg	10	1/22/2020 7:01:14 AM	B65958
1,1,2,2-Tetrachloroethane	ND	0.027	0.26		mg/Kg	10	1/22/2020 7:01:14 AM	B65958

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Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-20 Toe 5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 3:07:00 PM
Lab ID: 2001723-022 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Tetrachloroethene (PCE)	ND	0.021	0.26		mg/Kg	10	1/22/2020 7:01:14 AM	B65958
trans-1,2-DCE	ND	0.024	0.26		mg/Kg	10	1/22/2020 7:01:14 AM	B65958
trans-1,3-Dichloropropene	ND	0.028	0.26		mg/Kg	10	1/22/2020 7:01:14 AM	B65958
1,2,3-Trichlorobenzene	ND	0.023	0.53		mg/Kg	10	1/22/2020 7:01:14 AM	B65958
1,2,4-Trichlorobenzene	ND	0.027	0.26		mg/Kg	10	1/22/2020 7:01:14 AM	B65958
1,1,1-Trichloroethane	ND	0.024	0.26		mg/Kg	10	1/22/2020 7:01:14 AM	B65958
1,1,2-Trichloroethane	ND	0.019	0.26		mg/Kg	10	1/22/2020 7:01:14 AM	B65958
Trichloroethene (TCE)	ND	0.030	0.26		mg/Kg	10	1/22/2020 7:01:14 AM	B65958
Trichlorofluoromethane	ND	0.089	0.26		mg/Kg	10	1/22/2020 7:01:14 AM	B65958
1,2,3-Trichloropropane	ND	0.043	0.53		mg/Kg	10	1/22/2020 7:01:14 AM	B65958
Vinyl chloride	ND	0.017	0.26		mg/Kg	10	1/22/2020 7:01:14 AM	B65958
Xylenes, Total	13	0.066	0.53		mg/Kg	10	1/22/2020 7:01:14 AM	B65958
Surr: Dibromofluoromethane	97.2		70-130		%Rec	10	1/22/2020 7:01:14 AM	B65958
Surr: 1,2-Dichloroethane-d4	87.2		70-130		%Rec	10	1/22/2020 7:01:14 AM	B65958
Surr: Toluene-d8	105		70-130		%Rec	10	1/22/2020 7:01:14 AM	B65958
Surr: 4-Bromofluorobenzene	86.3		70-130		%Rec	10	1/22/2020 7:01:14 AM	B65958
VOLATILES BY 8260B/1311							Analyst: **RAA**	
Benzene	ND	0.10	0.50		mg/L	1	1/26/2020 1:52:00 PM	49987
Surr: 1,2-Dichloroethane-d4	106	0	70-130		%Rec	1	1/26/2020 1:52:00 PM	49987
Surr: Dibromofluoromethane	101	0	70-130		%Rec	1	1/26/2020 1:52:00 PM	49987
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	220	5.6	26		mg/Kg	10	1/22/2020 7:01:14 AM	BG659
Surr: BFB	99.2	0	70-130		%Rec	10	1/22/2020 7:01:14 AM	BG659
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/23/2020 3:07:00 PM	R66022
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	9.04				pH Units	1	1/24/2020 9:47:00 AM	R66051
SPECIFIC GRAVITY							Analyst: **PAC**	
Specific Gravity	1.920				g/cm3	1	1/27/2020	R66241

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Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1- 5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 9:50:00 AM
Lab ID: 2001723-023 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	72	2.2	9.4		mg/Kg	1	1/22/2020 2:07:03 PM	49945
Motor Oil Range Organics (MRO)	ND	47	47		mg/Kg	1	1/22/2020 2:07:03 PM	49945
Surr: DNOP	92.5	0	55.1-146		%Rec	1	1/22/2020 2:07:03 PM	49945
EPA METHOD 7471: MERCURY							Analyst: **rde**	
Mercury	0.011	0.0018	0.032	JH	mg/Kg	1	2/25/2020 4:49:37 PM	50634
MERCURY, TCLP							Analyst: **pmf**	
Mercury	ND	0.00075	0.020		mg/L	1	1/20/2020 10:21:38 PM	49926
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.72	4.9		mg/Kg	2	1/21/2020 9:58:08 AM	49920
Arsenic	ND	2.8	4.9		mg/Kg	2	1/21/2020 9:58:08 AM	49920
Barium	390	0.045	0.19		mg/Kg	2	1/21/2020 9:58:08 AM	49920
Beryllium	0.90	0.018	0.29		mg/Kg	2	1/21/2020 9:58:08 AM	49920
Cadmium	ND	0.047	0.19		mg/Kg	2	1/21/2020 9:58:08 AM	49920
Chromium	11	0.16	0.58		mg/Kg	2	1/21/2020 9:58:08 AM	49920
Cobalt	4.4	0.21	0.58		mg/Kg	2	1/21/2020 9:58:08 AM	49920
Lead	2.0	0.47	0.49		mg/Kg	2	1/21/2020 9:58:08 AM	49920
Nickel	7.8	0.29	0.97		mg/Kg	2	1/21/2020 9:58:08 AM	49920
Selenium	ND	2.4	4.9		mg/Kg	2	1/21/2020 9:58:08 AM	49920
Silver	ND	0.063	0.49		mg/Kg	2	1/21/2020 9:58:08 AM	49920
Vanadium	18	0.13	4.9		mg/Kg	2	1/21/2020 9:58:08 AM	49920
Zinc	15	0.77	4.9		mg/Kg	2	1/21/2020 9:58:08 AM	49920
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/23/2020 10:24:52 AM	49985
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.16	0.41	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
Acenaphthylene	ND	0.18	0.41	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
Aniline	ND	0.14	0.41	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
Anthracene	ND	0.16	0.41	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
Azobenzene	ND	0.21	0.41	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
Benz(a)anthracene	ND	0.14	0.41	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
Benzo(a)pyrene	ND	0.22	0.41	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
Benzo(b)fluoranthene	ND	0.24	0.41	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
Benzo(g,h,i)perylene	ND	0.21	0.41	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
Benzo(k)fluoranthene	ND	0.12	0.41	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
Benzoic acid	ND	0.29	1.0	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
Benzyl alcohol	ND	0.17	0.41	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
Bis(2-chloroethoxy)methane	ND	0.17	0.41	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952

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Qualifiers:

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ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
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E	Value above quantitation range
J	Analyte detected below quantitation limits
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Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1- 5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 9:50:00 AM
Lab ID: 2001723-023 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.24	0.41	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
Bis(2-chloroisopropyl)ether	ND	0.18	0.41	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
Bis(2-ethylhexyl)phthalate	ND	0.46	1.0	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
4-Bromophenyl phenyl ether	ND	0.24	0.41	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
Butyl benzyl phthalate	ND	0.14	0.41	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
Carbazole	ND	0.16	0.41	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
4-Chloro-3-methylphenol	ND	0.16	1.0	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
4-Chloroaniline	ND	0.16	1.0	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
2-Chloronaphthalene	ND	0.17	0.52	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
2-Chlorophenol	ND	0.23	0.41	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
4-Chlorophenyl phenyl ether	ND	0.17	0.41	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
Chrysene	ND	0.16	0.41	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
Di-n-butyl phthalate	ND	0.62	0.83	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
Di-n-octyl phthalate	ND	0.14	0.83	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
Dibenz(a,h)anthracene	ND	0.23	0.41	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
Dibenzofuran	ND	0.21	0.41	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
1,2-Dichlorobenzene	ND	0.16	0.41	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
1,3-Dichlorobenzene	ND	0.14	0.41	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
1,4-Dichlorobenzene	ND	0.17	0.41	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
3,3´-Dichlorobenzidine	ND	0.18	0.52	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
Diethyl phthalate	ND	0.63	1.0	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
Dimethyl phthalate	ND	0.17	0.41	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
2,4-Dichlorophenol	ND	0.17	0.83	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
2,4-Dimethylphenol	ND	0.17	0.62	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
4,6-Dinitro-2-methylphenol	ND	0.15	0.83	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
2,4-Dinitrophenol	ND	0.12	1.0	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
2,4-Dinitrotoluene	ND	0.21	1.0	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
2,6-Dinitrotoluene	ND	0.25	1.0	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
Fluoranthene	ND	0.16	0.41	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
Fluorene	ND	0.16	0.41	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
Hexachlorobenzene	ND	0.16	0.41	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
Hexachlorobutadiene	ND	0.18	0.41	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
Hexachlorocyclopentadiene	ND	0.20	0.41	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
Hexachloroethane	ND	0.17	0.41	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
Indeno(1,2,3-cd)pyrene	ND	0.25	0.41	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
Isophorone	ND	0.18	0.83	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
1-Methylnaphthalene	ND	0.19	0.41	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
2-Methylnaphthalene	ND	0.17	0.41	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
2-Methylphenol	ND	0.17	0.83	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952

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Qualifiers:

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Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1- 5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 9:50:00 AM
Lab ID: 2001723-023 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.15	0.41	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
N-Nitrosodi-n-propylamine	ND	0.21	0.41	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
N-Nitrosodiphenylamine	ND	0.21	0.41	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
Naphthalene	ND	0.17	0.41	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
2-Nitroaniline	ND	0.23	0.41	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
3-Nitroaniline	ND	0.20	0.41	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
4-Nitroaniline	ND	0.28	0.83	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
Nitrobenzene	ND	0.18	0.83	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
2-Nitrophenol	ND	0.17	0.41	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
4-Nitrophenol	ND	0.12	0.52	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
Pentachlorophenol	ND	0.18	0.83	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
Phenanthrene	ND	0.21	0.41	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
Phenol	ND	0.18	0.41	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
Pyrene	ND	0.14	0.41	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
Pyridine	ND	0.38	0.83	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
1,2,4-Trichlorobenzene	ND	0.18	0.41	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
2,4,5-Trichlorophenol	ND	0.13	0.41	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
2,4,6-Trichlorophenol	ND	0.21	0.41	D	mg/Kg	1	1/27/2020 1:52:36 PM	49952
Surr: 2-Fluorophenol	65.3		26.7-85.9	D	%Rec	1	1/27/2020 1:52:36 PM	49952
Surr: Phenol-d5	72.2		18.5-101	D	%Rec	1	1/27/2020 1:52:36 PM	49952
Surr: 2,4,6-Tribromophenol	81.5		35.8-85.6	D	%Rec	1	1/27/2020 1:52:36 PM	49952
Surr: Nitrobenzene-d5	72.9		40.8-95.2	D	%Rec	1	1/27/2020 1:52:36 PM	49952
Surr: 2-Fluorobiphenyl	78.7		34.7-85.2	D	%Rec	1	1/27/2020 1:52:36 PM	49952
Surr: 4-Terphenyl-d14	75.6		37.4-91.3	D	%Rec	1	1/27/2020 1:52:36 PM	49952
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.0022	0.013		mg/Kg	1	1/22/2020 12:22:48 PM	A65992
Toluene	0.0038	0.0025	0.026	J	mg/Kg	1	1/22/2020 12:22:48 PM	A65992
Ethylbenzene	ND	0.0015	0.026		mg/Kg	1	1/22/2020 12:22:48 PM	A65992
Methyl tert-butyl ether (MTBE)	0.0094	0.0062	0.026	J	mg/Kg	1	1/22/2020 12:22:48 PM	A65992
1,2,4-Trimethylbenzene	0.0070	0.0024	0.026	J	mg/Kg	1	1/22/2020 12:22:48 PM	A65992
1,3,5-Trimethylbenzene	ND	0.0025	0.026		mg/Kg	1	1/22/2020 12:22:48 PM	A65992
1,2-Dichloroethane (EDC)	ND	0.0027	0.026		mg/Kg	1	1/22/2020 12:22:48 PM	A65992
1,2-Dibromoethane (EDB)	ND	0.0024	0.026		mg/Kg	1	1/22/2020 12:22:48 PM	A65992
Naphthalene	0.0085	0.0053	0.053	J	mg/Kg	1	1/22/2020 12:22:48 PM	A65992
1-Methylnaphthalene	0.053	0.015	0.11	J	mg/Kg	1	1/22/2020 12:22:48 PM	A65992
2-Methylnaphthalene	0.044	0.011	0.11	J	mg/Kg	1	1/22/2020 12:22:48 PM	A65992
Acetone	0.077	0.022	0.39	J	mg/Kg	1	1/22/2020 12:22:48 PM	A65992
Bromobenzene	ND	0.0025	0.026		mg/Kg	1	1/22/2020 12:22:48 PM	A65992
Bromodichloromethane	ND	0.0024	0.026		mg/Kg	1	1/22/2020 12:22:48 PM	A65992

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PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
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Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1- 5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 9:50:00 AM
Lab ID: 2001723-023 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Bromoform	ND	0.0024	0.026		mg/Kg	1	1/22/2020 12:22:48 PM	A65992
Bromomethane	ND	0.0063	0.079		mg/Kg	1	1/22/2020 12:22:48 PM	A65992
2-Butanone	0.042	0.030	0.26	J	mg/Kg	1	1/22/2020 12:22:48 PM	A65992
Carbon disulfide	ND	0.0087	0.26		mg/Kg	1	1/22/2020 12:22:48 PM	A65992
Carbon tetrachloride	ND	0.0025	0.026		mg/Kg	1	1/22/2020 12:22:48 PM	A65992
Chlorobenzene	ND	0.0034	0.026		mg/Kg	1	1/22/2020 12:22:48 PM	A65992
Chloroethane	ND	0.0039	0.053		mg/Kg	1	1/22/2020 12:22:48 PM	A65992
Chloroform	ND	0.0021	0.026		mg/Kg	1	1/22/2020 12:22:48 PM	A65992
Chloromethane	ND	0.0025	0.079		mg/Kg	1	1/22/2020 12:22:48 PM	A65992
2-Chlorotoluene	ND	0.0023	0.026		mg/Kg	1	1/22/2020 12:22:48 PM	A65992
4-Chlorotoluene	ND	0.0022	0.026		mg/Kg	1	1/22/2020 12:22:48 PM	A65992
cis-1,2-DCE	ND	0.0036	0.026		mg/Kg	1	1/22/2020 12:22:48 PM	A65992
cis-1,3-Dichloropropene	ND	0.0022	0.026		mg/Kg	1	1/22/2020 12:22:48 PM	A65992
1,2-Dibromo-3-chloropropane	ND	0.0027	0.053		mg/Kg	1	1/22/2020 12:22:48 PM	A65992
Dibromochloromethane	ND	0.0019	0.026		mg/Kg	1	1/22/2020 12:22:48 PM	A65992
Dibromomethane	ND	0.0028	0.026		mg/Kg	1	1/22/2020 12:22:48 PM	A65992
1,2-Dichlorobenzene	ND	0.0022	0.026		mg/Kg	1	1/22/2020 12:22:48 PM	A65992
1,3-Dichlorobenzene	ND	0.0023	0.026		mg/Kg	1	1/22/2020 12:22:48 PM	A65992
1,4-Dichlorobenzene	ND	0.0022	0.026		mg/Kg	1	1/22/2020 12:22:48 PM	A65992
Dichlorodifluoromethane	ND	0.0061	0.026		mg/Kg	1	1/22/2020 12:22:48 PM	A65992
1,1-Dichloroethane	ND	0.0017	0.026		mg/Kg	1	1/22/2020 12:22:48 PM	A65992
1,1-Dichloroethene	ND	0.011	0.026		mg/Kg	1	1/22/2020 12:22:48 PM	A65992
1,2-Dichloropropane	ND	0.0019	0.026		mg/Kg	1	1/22/2020 12:22:48 PM	A65992
1,3-Dichloropropane	ND	0.0028	0.026		mg/Kg	1	1/22/2020 12:22:48 PM	A65992
2,2-Dichloropropane	ND	0.0086	0.053		mg/Kg	1	1/22/2020 12:22:48 PM	A65992
1,1-Dichloropropene	ND	0.0024	0.053		mg/Kg	1	1/22/2020 12:22:48 PM	A65992
Hexachlorobutadiene	ND	0.0027	0.053		mg/Kg	1	1/22/2020 12:22:48 PM	A65992
2-Hexanone	ND	0.0044	0.26		mg/Kg	1	1/22/2020 12:22:48 PM	A65992
Isopropylbenzene	ND	0.0019	0.026		mg/Kg	1	1/22/2020 12:22:48 PM	A65992
4-Isopropyltoluene	ND	0.0022	0.026		mg/Kg	1	1/22/2020 12:22:48 PM	A65992
4-Methyl-2-pentanone	0.020	0.0050	0.26	J	mg/Kg	1	1/22/2020 12:22:48 PM	A65992
Methylene chloride	0.015	0.0046	0.079	J	mg/Kg	1	1/22/2020 12:22:48 PM	A65992
n-Butylbenzene	ND	0.0025	0.079		mg/Kg	1	1/22/2020 12:22:48 PM	A65992
n-Propylbenzene	ND	0.0021	0.026		mg/Kg	1	1/22/2020 12:22:48 PM	A65992
sec-Butylbenzene	ND	0.0030	0.026		mg/Kg	1	1/22/2020 12:22:48 PM	A65992
Styrene	ND	0.0021	0.026		mg/Kg	1	1/22/2020 12:22:48 PM	A65992
tert-Butylbenzene	ND	0.0025	0.026		mg/Kg	1	1/22/2020 12:22:48 PM	A65992
1,1,1,2-Tetrachloroethane	ND	0.0018	0.026		mg/Kg	1	1/22/2020 12:22:48 PM	A65992
1,1,2,2-Tetrachloroethane	ND	0.0027	0.026		mg/Kg	1	1/22/2020 12:22:48 PM	A65992

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PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
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Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1- 5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 9:50:00 AM
Lab ID: 2001723-023 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Tetrachloroethene (PCE)	ND	0.0021	0.026		mg/Kg	1	1/22/2020 12:22:48 PM	A65992
trans-1,2-DCE	ND	0.0024	0.026		mg/Kg	1	1/22/2020 12:22:48 PM	A65992
trans-1,3-Dichloropropene	ND	0.0028	0.026		mg/Kg	1	1/22/2020 12:22:48 PM	A65992
1,2,3-Trichlorobenzene	ND	0.0023	0.053		mg/Kg	1	1/22/2020 12:22:48 PM	A65992
1,2,4-Trichlorobenzene	ND	0.0027	0.026		mg/Kg	1	1/22/2020 12:22:48 PM	A65992
1,1,1-Trichloroethane	ND	0.0024	0.026		mg/Kg	1	1/22/2020 12:22:48 PM	A65992
1,1,2-Trichloroethane	ND	0.0019	0.026		mg/Kg	1	1/22/2020 12:22:48 PM	A65992
Trichloroethene (TCE)	ND	0.0030	0.026		mg/Kg	1	1/22/2020 12:22:48 PM	A65992
Trichlorofluoromethane	ND	0.0089	0.026		mg/Kg	1	1/22/2020 12:22:48 PM	A65992
1,2,3-Trichloropropane	ND	0.0043	0.053		mg/Kg	1	1/22/2020 12:22:48 PM	A65992
Vinyl chloride	ND	0.0017	0.026		mg/Kg	1	1/22/2020 12:22:48 PM	A65992
Xylenes, Total	ND	0.0066	0.053		mg/Kg	1	1/22/2020 12:22:48 PM	A65992
Surr: Dibromofluoromethane	106		70-130		%Rec	1	1/22/2020 12:22:48 PM	A65992
Surr: 1,2-Dichloroethane-d4	88.1		70-130		%Rec	1	1/22/2020 12:22:48 PM	A65992
Surr: Toluene-d8	102		70-130		%Rec	1	1/22/2020 12:22:48 PM	A65992
Surr: 4-Bromofluorobenzene	95.7		70-130		%Rec	1	1/22/2020 12:22:48 PM	A65992
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	0.81	0.56	2.6	J	mg/Kg	1	1/22/2020 12:22:48 PM	AG659
Surr: BFB	98.9	0	70-130		%Rec	1	1/22/2020 12:22:48 PM	AG659
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/23/2020 3:07:00 PM	R66022
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	8.83				pH Units	1	1/24/2020 9:47:00 AM	R66051
SPECIFIC GRAVITY							Analyst: **PAC**	
Specific Gravity	2.040				g/cm3	1	1/27/2020	R66241

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Qualifiers:

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

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-10 Clay 4.5-5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 9:28:00 AM
Lab ID: 2001723-024 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	350	2.2	9.1		mg/Kg	1	1/24/2020 8:29:20 AM	49945
Motor Oil Range Organics (MRO)	67	46	46		mg/Kg	1	1/24/2020 8:29:20 AM	49945
Surr: DNOP	90.6	0	55.1-146		%Rec	1	1/24/2020 8:29:20 AM	49945
EPA METHOD 7471: MERCURY							Analyst: **rde**	
Mercury	0.42	0.018	0.33	H	mg/Kg	10	2/25/2020 5:08:51 PM	50634
MERCURY, TCLP							Analyst: **pmf**	
Mercury	ND	0.00075	0.020		mg/L	1	1/20/2020 10:24:23 PM	49926
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.74	5.0		mg/Kg	2	1/21/2020 9:59:31 AM	49920
Arsenic	ND	2.9	5.0		mg/Kg	2	1/21/2020 9:59:31 AM	49920
Barium	340	0.047	0.20		mg/Kg	2	1/21/2020 9:59:31 AM	49920
Beryllium	0.84	0.018	0.30		mg/Kg	2	1/21/2020 9:59:31 AM	49920
Cadmium	ND	0.049	0.20		mg/Kg	2	1/21/2020 9:59:31 AM	49920
Chromium	40	0.16	0.60		mg/Kg	2	1/21/2020 9:59:31 AM	49920
Cobalt	4.9	0.21	0.60		mg/Kg	2	1/21/2020 9:59:31 AM	49920
Lead	3.5	0.49	0.50		mg/Kg	2	1/21/2020 9:59:31 AM	49920
Nickel	9.7	0.30	1.0		mg/Kg	2	1/21/2020 9:59:31 AM	49920
Selenium	ND	2.5	5.0		mg/Kg	2	1/21/2020 9:59:31 AM	49920
Silver	ND	0.064	0.50		mg/Kg	2	1/21/2020 9:59:31 AM	49920
Vanadium	26	0.13	5.0		mg/Kg	2	1/21/2020 9:59:31 AM	49920
Zinc	70	0.80	5.0		mg/Kg	2	1/21/2020 9:59:31 AM	49920
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/23/2020 10:26:12 AM	49985
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.14	0.39	D	mg/Kg	1	1/27/2020 2:21:20 PM	49952
Acenaphthylene	ND	0.17	0.39	D	mg/Kg	1	1/27/2020 2:21:20 PM	49952
Aniline	ND	0.13	0.39	D	mg/Kg	1	1/27/2020 2:21:20 PM	49952
Anthracene	ND	0.15	0.39	D	mg/Kg	1	1/27/2020 2:21:20 PM	49952
Azobenzene	ND	0.20	0.39	D	mg/Kg	1	1/27/2020 2:21:20 PM	49952
Benz(a)anthracene	ND	0.13	0.39	D	mg/Kg	1	1/27/2020 2:21:20 PM	49952
Benzo(a)pyrene	ND	0.21	0.39	D	mg/Kg	1	1/27/2020 2:21:20 PM	49952
Benzo(b)fluoranthene	ND	0.22	0.39	D	mg/Kg	1	1/27/2020 2:21:20 PM	49952
Benzo(g,h,i)perylene	ND	0.20	0.39	D	mg/Kg	1	1/27/2020 2:21:20 PM	49952
Benzo(k)fluoranthene	ND	0.12	0.39	D	mg/Kg	1	1/27/2020 2:21:20 PM	49952
Benzoic acid	ND	0.27	0.96	D	mg/Kg	1	1/27/2020 2:21:20 PM	49952
Benzyl alcohol	ND	0.16	0.39	D	mg/Kg	1	1/27/2020 2:21:20 PM	49952
Bis(2-chloroethoxy)methane	ND	0.16	0.39	D	mg/Kg	1	1/27/2020 2:21:20 PM	49952

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Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-10 Clay 4.5-5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 9:28:00 AM
Lab ID: 2001723-024 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.22	0.39	D	mg/Kg	1	1/27/2020 2:21:20 PM	49952
Bis(2-chloroisopropyl)ether	ND	0.17	0.39	D	mg/Kg	1	1/27/2020 2:21:20 PM	49952
Bis(2-ethylhexyl)phthalate	ND	0.43	0.96	D	mg/Kg	1	1/27/2020 2:21:20 PM	49952
4-Bromophenyl phenyl ether	ND	0.22	0.39	D	mg/Kg	1	1/27/2020 2:21:20 PM	49952
Butyl benzyl phthalate	ND	0.13	0.39	D	mg/Kg	1	1/27/2020 2:21:20 PM	49952
Carbazole	ND	0.15	0.39	D	mg/Kg	1	1/27/2020 2:21:20 PM	49952
4-Chloro-3-methylphenol	ND	0.15	0.96	D	mg/Kg	1	1/27/2020 2:21:20 PM	49952
4-Chloroaniline	ND	0.15	0.96	D	mg/Kg	1	1/27/2020 2:21:20 PM	49952
2-Chloronaphthalene	ND	0.16	0.48	D	mg/Kg	1	1/27/2020 2:21:20 PM	49952
2-Chlorophenol	ND	0.22	0.39	D	mg/Kg	1	1/27/2020 2:21:20 PM	49952
4-Chlorophenyl phenyl ether	ND	0.16	0.39	D	mg/Kg	1	1/27/2020 2:21:20 PM	49952
Chrysene	ND	0.15	0.39	D	mg/Kg	1	1/27/2020 2:21:20 PM	49952
Di-n-butyl phthalate	ND	0.57	0.77	D	mg/Kg	1	1/27/2020 2:21:20 PM	49952
Di-n-octyl phthalate	ND	0.13	0.77	D	mg/Kg	1	1/27/2020 2:21:20 PM	49952
Dibenz(a,h)anthracene	ND	0.21	0.39	D	mg/Kg	1	1/27/2020 2:21:20 PM	49952
Dibenzofuran	ND	0.19	0.39	D	mg/Kg	1	1/27/2020 2:21:20 PM	49952
1,2-Dichlorobenzene	ND	0.15	0.39	D	mg/Kg	1	1/27/2020 2:21:20 PM	49952
1,3-Dichlorobenzene	ND	0.13	0.39	D	mg/Kg	1	1/27/2020 2:21:20 PM	49952
1,4-Dichlorobenzene	ND	0.16	0.39	D	mg/Kg	1	1/27/2020 2:21:20 PM	49952
3,3´-Dichlorobenzidine	ND	0.16	0.48	D	mg/Kg	1	1/27/2020 2:21:20 PM	49952
Diethyl phthalate	ND	0.59	0.96	D	mg/Kg	1	1/27/2020 2:21:20 PM	49952
Dimethyl phthalate	ND	0.16	0.39	D	mg/Kg	1	1/27/2020 2:21:20 PM	49952
2,4-Dichlorophenol	ND	0.16	0.77	D	mg/Kg	1	1/27/2020 2:21:20 PM	49952
2,4-Dimethylphenol	ND	0.16	0.58	D	mg/Kg	1	1/27/2020 2:21:20 PM	49952
4,6-Dinitro-2-methylphenol	ND	0.14	0.77	D	mg/Kg	1	1/27/2020 2:21:20 PM	49952
2,4-Dinitrophenol	ND	0.11	0.96	D	mg/Kg	1	1/27/2020 2:21:20 PM	49952
2,4-Dinitrotoluene	ND	0.20	0.96	D	mg/Kg	1	1/27/2020 2:21:20 PM	49952
2,6-Dinitrotoluene	ND	0.23	0.96	D	mg/Kg	1	1/27/2020 2:21:20 PM	49952
Fluoranthene	ND	0.15	0.39	D	mg/Kg	1	1/27/2020 2:21:20 PM	49952
Fluorene	0.34	0.15	0.39	JD	mg/Kg	1	1/27/2020 2:21:20 PM	49952
Hexachlorobenzene	ND	0.15	0.39	D	mg/Kg	1	1/27/2020 2:21:20 PM	49952
Hexachlorobutadiene	ND	0.17	0.39	D	mg/Kg	1	1/27/2020 2:21:20 PM	49952
Hexachlorocyclopentadiene	ND	0.18	0.39	D	mg/Kg	1	1/27/2020 2:21:20 PM	49952
Hexachloroethane	ND	0.16	0.39	D	mg/Kg	1	1/27/2020 2:21:20 PM	49952
Indeno(1,2,3-cd)pyrene	ND	0.24	0.39	D	mg/Kg	1	1/27/2020 2:21:20 PM	49952
Isophorone	ND	0.17	0.77	D	mg/Kg	1	1/27/2020 2:21:20 PM	49952
1-Methylnaphthalene	0.86	0.18	0.39	D	mg/Kg	1	1/27/2020 2:21:20 PM	49952
2-Methylnaphthalene	0.63	0.16	0.39	D	mg/Kg	1	1/27/2020 2:21:20 PM	49952
2-Methylphenol	0.19	0.16	0.77	JD	mg/Kg	1	1/27/2020 2:21:20 PM	49952

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Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-10 Clay 4.5-5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 9:28:00 AM
Lab ID: 2001723-024 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.14	0.39	D	mg/Kg	1	1/27/2020 2:21:20 PM	49952
N-Nitrosodi-n-propylamine	ND	0.19	0.39	D	mg/Kg	1	1/27/2020 2:21:20 PM	49952
N-Nitrosodiphenylamine	ND	0.20	0.39	D	mg/Kg	1	1/27/2020 2:21:20 PM	49952
Naphthalene	0.38	0.16	0.39	JD	mg/Kg	1	1/27/2020 2:21:20 PM	49952
2-Nitroaniline	ND	0.21	0.39	D	mg/Kg	1	1/27/2020 2:21:20 PM	49952
3-Nitroaniline	ND	0.19	0.39	D	mg/Kg	1	1/27/2020 2:21:20 PM	49952
4-Nitroaniline	ND	0.26	0.77	D	mg/Kg	1	1/27/2020 2:21:20 PM	49952
Nitrobenzene	ND	0.16	0.77	D	mg/Kg	1	1/27/2020 2:21:20 PM	49952
2-Nitrophenol	ND	0.16	0.39	D	mg/Kg	1	1/27/2020 2:21:20 PM	49952
4-Nitrophenol	ND	0.11	0.48	D	mg/Kg	1	1/27/2020 2:21:20 PM	49952
Pentachlorophenol	ND	0.17	0.77	D	mg/Kg	1	1/27/2020 2:21:20 PM	49952
Phenanthrene	0.38	0.20	0.39	JD	mg/Kg	1	1/27/2020 2:21:20 PM	49952
Phenol	ND	0.16	0.39	D	mg/Kg	1	1/27/2020 2:21:20 PM	49952
Pyrene	ND	0.13	0.39	D	mg/Kg	1	1/27/2020 2:21:20 PM	49952
Pyridine	ND	0.36	0.77	D	mg/Kg	1	1/27/2020 2:21:20 PM	49952
1,2,4-Trichlorobenzene	ND	0.16	0.39	D	mg/Kg	1	1/27/2020 2:21:20 PM	49952
2,4,5-Trichlorophenol	ND	0.12	0.39	D	mg/Kg	1	1/27/2020 2:21:20 PM	49952
2,4,6-Trichlorophenol	ND	0.19	0.39	D	mg/Kg	1	1/27/2020 2:21:20 PM	49952
Surr: 2-Fluorophenol	65.8		26.7-85.9	D	%Rec	1	1/27/2020 2:21:20 PM	49952
Surr: Phenol-d5	76.7		18.5-101	D	%Rec	1	1/27/2020 2:21:20 PM	49952
Surr: 2,4,6-Tribromophenol	81.8		35.8-85.6	D	%Rec	1	1/27/2020 2:21:20 PM	49952
Surr: Nitrobenzene-d5	84.5		40.8-95.2	D	%Rec	1	1/27/2020 2:21:20 PM	49952
Surr: 2-Fluorobiphenyl	82.3		34.7-85.2	D	%Rec	1	1/27/2020 2:21:20 PM	49952
Surr: 4-Terphenyl-d14	66.8		37.4-91.3	D	%Rec	1	1/27/2020 2:21:20 PM	49952
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	0.18	0.0088	0.054		mg/Kg	5	1/22/2020 1:51:12 PM	A65992
Toluene	0.65	0.010	0.11		mg/Kg	5	1/22/2020 1:51:12 PM	A65992
Ethylbenzene	0.31	0.0062	0.11		mg/Kg	5	1/22/2020 1:51:12 PM	A65992
Methyl tert-butyl ether (MTBE)	0.092	0.025	0.11	J	mg/Kg	5	1/22/2020 1:51:12 PM	A65992
1,2,4-Trimethylbenzene	0.97	0.0098	0.11		mg/Kg	5	1/22/2020 1:51:12 PM	A65992
1,3,5-Trimethylbenzene	0.29	0.010	0.11		mg/Kg	5	1/22/2020 1:51:12 PM	A65992
1,2-Dichloroethane (EDC)	ND	0.011	0.11		mg/Kg	5	1/22/2020 1:51:12 PM	A65992
1,2-Dibromoethane (EDB)	0.031	0.0098	0.11	J	mg/Kg	5	1/22/2020 1:51:12 PM	A65992
Naphthalene	0.50	0.022	0.21		mg/Kg	5	1/22/2020 1:51:12 PM	A65992
1-Methylnaphthalene	1.0	0.062	0.43		mg/Kg	5	1/22/2020 1:51:12 PM	A65992
2-Methylnaphthalene	1.3	0.047	0.43		mg/Kg	5	1/22/2020 1:51:12 PM	A65992
Acetone	0.30	0.089	1.6	J	mg/Kg	5	1/22/2020 1:51:12 PM	A65992
Bromobenzene	ND	0.010	0.11		mg/Kg	5	1/22/2020 1:51:12 PM	A65992
Bromodichloromethane	ND	0.0098	0.11		mg/Kg	5	1/22/2020 1:51:12 PM	A65992

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Lab Order **2001723**
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-10 Clay 4.5-5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 9:28:00 AM
Lab ID: 2001723-024 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Bromoform	ND	0.0097	0.11		mg/Kg	5	1/22/2020 1:51:12 PM	A65992
Bromomethane	ND	0.026	0.32		mg/Kg	5	1/22/2020 1:51:12 PM	A65992
2-Butanone	ND	0.12	1.1		mg/Kg	5	1/22/2020 1:51:12 PM	A65992
Carbon disulfide	0.43	0.035	1.1	J	mg/Kg	5	1/22/2020 1:51:12 PM	A65992
Carbon tetrachloride	ND	0.010	0.11		mg/Kg	5	1/22/2020 1:51:12 PM	A65992
Chlorobenzene	ND	0.014	0.11		mg/Kg	5	1/22/2020 1:51:12 PM	A65992
Chloroethane	ND	0.016	0.21		mg/Kg	5	1/22/2020 1:51:12 PM	A65992
Chloroform	ND	0.0086	0.11		mg/Kg	5	1/22/2020 1:51:12 PM	A65992
Chloromethane	ND	0.010	0.32		mg/Kg	5	1/22/2020 1:51:12 PM	A65992
2-Chlorotoluene	ND	0.0094	0.11		mg/Kg	5	1/22/2020 1:51:12 PM	A65992
4-Chlorotoluene	ND	0.0088	0.11		mg/Kg	5	1/22/2020 1:51:12 PM	A65992
cis-1,2-DCE	ND	0.015	0.11		mg/Kg	5	1/22/2020 1:51:12 PM	A65992
cis-1,3-Dichloropropene	ND	0.0091	0.11		mg/Kg	5	1/22/2020 1:51:12 PM	A65992
1,2-Dibromo-3-chloropropane	ND	0.011	0.21		mg/Kg	5	1/22/2020 1:51:12 PM	A65992
Dibromochloromethane	ND	0.0076	0.11		mg/Kg	5	1/22/2020 1:51:12 PM	A65992
Dibromomethane	ND	0.012	0.11		mg/Kg	5	1/22/2020 1:51:12 PM	A65992
1,2-Dichlorobenzene	ND	0.0088	0.11		mg/Kg	5	1/22/2020 1:51:12 PM	A65992
1,3-Dichlorobenzene	ND	0.0093	0.11		mg/Kg	5	1/22/2020 1:51:12 PM	A65992
1,4-Dichlorobenzene	ND	0.0090	0.11		mg/Kg	5	1/22/2020 1:51:12 PM	A65992
Dichlorodifluoromethane	ND	0.025	0.11		mg/Kg	5	1/22/2020 1:51:12 PM	A65992
1,1-Dichloroethane	ND	0.0069	0.11		mg/Kg	5	1/22/2020 1:51:12 PM	A65992
1,1-Dichloroethene	ND	0.043	0.11		mg/Kg	5	1/22/2020 1:51:12 PM	A65992
1,2-Dichloropropane	ND	0.0078	0.11		mg/Kg	5	1/22/2020 1:51:12 PM	A65992
1,3-Dichloropropane	ND	0.012	0.11		mg/Kg	5	1/22/2020 1:51:12 PM	A65992
2,2-Dichloropropane	ND	0.035	0.21		mg/Kg	5	1/22/2020 1:51:12 PM	A65992
1,1-Dichloropropene	ND	0.0098	0.21		mg/Kg	5	1/22/2020 1:51:12 PM	A65992
Hexachlorobutadiene	ND	0.011	0.21		mg/Kg	5	1/22/2020 1:51:12 PM	A65992
2-Hexanone	0.099	0.018	1.1	J	mg/Kg	5	1/22/2020 1:51:12 PM	A65992
Isopropylbenzene	0.064	0.0077	0.11	J	mg/Kg	5	1/22/2020 1:51:12 PM	A65992
4-Isopropyltoluene	0.031	0.0089	0.11	J	mg/Kg	5	1/22/2020 1:51:12 PM	A65992
4-Methyl-2-pentanone	0.25	0.020	1.1	J	mg/Kg	5	1/22/2020 1:51:12 PM	A65992
Methylene chloride	ND	0.019	0.32		mg/Kg	5	1/22/2020 1:51:12 PM	A65992
n-Butylbenzene	0.12	0.010	0.32	J	mg/Kg	5	1/22/2020 1:51:12 PM	A65992
n-Propylbenzene	0.15	0.0086	0.11		mg/Kg	5	1/22/2020 1:51:12 PM	A65992
sec-Butylbenzene	0.088	0.012	0.11	J	mg/Kg	5	1/22/2020 1:51:12 PM	A65992
Styrene	ND	0.0084	0.11		mg/Kg	5	1/22/2020 1:51:12 PM	A65992
tert-Butylbenzene	ND	0.010	0.11		mg/Kg	5	1/22/2020 1:51:12 PM	A65992
1,1,1,2-Tetrachloroethane	ND	0.0072	0.11		mg/Kg	5	1/22/2020 1:51:12 PM	A65992
1,1,2,2-Tetrachloroethane	ND	0.011	0.11		mg/Kg	5	1/22/2020 1:51:12 PM	A65992

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

Qualifiers:

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

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-10 Clay 4.5-5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 9:28:00 AM
Lab ID: 2001723-024 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Tetrachloroethene (PCE)	ND	0.0086	0.11		mg/Kg	5	1/22/2020 1:51:12 PM	A65992
trans-1,2-DCE	ND	0.0098	0.11		mg/Kg	5	1/22/2020 1:51:12 PM	A65992
trans-1,3-Dichloropropene	ND	0.011	0.11		mg/Kg	5	1/22/2020 1:51:12 PM	A65992
1,2,3-Trichlorobenzene	ND	0.0094	0.21		mg/Kg	5	1/22/2020 1:51:12 PM	A65992
1,2,4-Trichlorobenzene	ND	0.011	0.11		mg/Kg	5	1/22/2020 1:51:12 PM	A65992
1,1,1-Trichloroethane	ND	0.0097	0.11		mg/Kg	5	1/22/2020 1:51:12 PM	A65992
1,1,2-Trichloroethane	ND	0.0076	0.11		mg/Kg	5	1/22/2020 1:51:12 PM	A65992
Trichloroethene (TCE)	ND	0.012	0.11		mg/Kg	5	1/22/2020 1:51:12 PM	A65992
Trichlorofluoromethane	ND	0.036	0.11		mg/Kg	5	1/22/2020 1:51:12 PM	A65992
1,2,3-Trichloropropane	ND	0.017	0.21		mg/Kg	5	1/22/2020 1:51:12 PM	A65992
Vinyl chloride	ND	0.0070	0.11		mg/Kg	5	1/22/2020 1:51:12 PM	A65992
Xylenes, Total	2.0	0.027	0.21		mg/Kg	5	1/22/2020 1:51:12 PM	A65992
Surr: Dibromofluoromethane	107		70-130		%Rec	5	1/22/2020 1:51:12 PM	A65992
Surr: 1,2-Dichloroethane-d4	92.8		70-130		%Rec	5	1/22/2020 1:51:12 PM	A65992
Surr: Toluene-d8	95.4		70-130		%Rec	5	1/22/2020 1:51:12 PM	A65992
Surr: 4-Bromofluorobenzene	77.9		70-130		%Rec	5	1/22/2020 1:51:12 PM	A65992
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	35	2.3	11		mg/Kg	5	1/22/2020 1:51:12 PM	AG659
Surr: BFB	92.1	0	70-130		%Rec	5	1/22/2020 1:51:12 PM	AG659
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/23/2020 3:07:00 PM	R66022
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	9.10				pH Units	1	1/24/2020 9:47:00 AM	R66051
SPECIFIC GRAVITY							Analyst: **PAC**	
Specific Gravity	2.010				g/cm3	1	1/27/2020	R66241

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

Qualifiers:

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

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-16 Toe 2.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 2:08:00 PM
Lab ID: 2001723-025 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	69000	210	870		mg/Kg	100	1/22/2020 2:25:10 PM	49945
Motor Oil Range Organics (MRO)	14000	4400	4400		mg/Kg	100	1/22/2020 2:25:10 PM	49945
Surr: DNOP	0	0	55.1-146	S	%Rec	100	1/22/2020 2:25:10 PM	49945
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	10	0.17	3.1	H	mg/Kg	100	2/26/2020 2:03:52 PM	50634
MERCURY, TCLP							Analyst: **rde**	
Mercury	ND	0.00075	0.020		mg/L	1	1/24/2020 12:09:32 PM	50015
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.71	4.8		mg/Kg	2	1/21/2020 10:00:55 AM	49920
Arsenic	8.7	2.8	4.8		mg/Kg	2	1/21/2020 10:00:55 AM	49920
Barium	180	0.045	0.19		mg/Kg	2	1/21/2020 10:00:55 AM	49920
Beryllium	0.21	0.018	0.29	J	mg/Kg	2	1/21/2020 10:00:55 AM	49920
Cadmium	ND	0.047	0.19		mg/Kg	2	1/21/2020 10:00:55 AM	49920
Chromium	25	0.15	0.58		mg/Kg	2	1/21/2020 10:00:55 AM	49920
Cobalt	4.2	0.20	0.58		mg/Kg	2	1/21/2020 10:00:55 AM	49920
Lead	25	0.47	0.48		mg/Kg	2	1/21/2020 10:00:55 AM	49920
Nickel	25	0.29	0.97		mg/Kg	2	1/21/2020 10:00:55 AM	49920
Selenium	7.1	2.4	4.8		mg/Kg	2	1/21/2020 10:00:55 AM	49920
Silver	ND	0.062	0.48		mg/Kg	2	1/21/2020 10:00:55 AM	49920
Vanadium	10	0.13	4.8		mg/Kg	2	1/21/2020 10:00:55 AM	49920
Zinc	1800	3.8	24		mg/Kg	10	1/21/2020 10:34:21 AM	49920
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/23/2020 10:27:36 AM	49985
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	1.8	4.8	D	mg/Kg	1	1/27/2020 2:50:04 PM	49952
Acenaphthylene	ND	2.1	4.8	D	mg/Kg	1	1/27/2020 2:50:04 PM	49952
Aniline	ND	1.6	4.8	D	mg/Kg	1	1/27/2020 2:50:04 PM	49952
Anthracene	ND	1.9	4.8	D	mg/Kg	1	1/27/2020 2:50:04 PM	49952
Azobenzene	ND	2.5	4.8	D	mg/Kg	1	1/27/2020 2:50:04 PM	49952
Benz(a)anthracene	ND	1.7	4.8	D	mg/Kg	1	1/27/2020 2:50:04 PM	49952
Benzo(a)pyrene	ND	2.6	4.8	D	mg/Kg	1	1/27/2020 2:50:04 PM	49952
Benzo(b)fluoranthene	ND	2.8	4.8	D	mg/Kg	1	1/27/2020 2:50:04 PM	49952
Benzo(g,h,i)perylene	ND	2.5	4.8	D	mg/Kg	1	1/27/2020 2:50:04 PM	49952
Benzo(k)fluoranthene	ND	1.4	4.8	D	mg/Kg	1	1/27/2020 2:50:04 PM	49952
Benzoic acid	ND	3.3	12	D	mg/Kg	1	1/27/2020 2:50:04 PM	49952
Benzyl alcohol	ND	2.0	4.8	D	mg/Kg	1	1/27/2020 2:50:04 PM	49952
Bis(2-chloroethoxy)methane	ND	2.0	4.8	D	mg/Kg	1	1/27/2020 2:50:04 PM	49952

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Qualifiers:

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ND	Not Detected at the Reporting Limit
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RL	Reporting Limit

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-16 Toe 2.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 2:08:00 PM
Lab ID: 2001723-025 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	2.8	4.8	D	mg/Kg	1	1/27/2020 2:50:04 PM	49952
Bis(2-chloroisopropyl)ether	ND	2.1	4.8	D	mg/Kg	1	1/27/2020 2:50:04 PM	49952
Bis(2-ethylhexyl)phthalate	ND	5.4	12	D	mg/Kg	1	1/27/2020 2:50:04 PM	49952
4-Bromophenyl phenyl ether	ND	2.8	4.8	D	mg/Kg	1	1/27/2020 2:50:04 PM	49952
Butyl benzyl phthalate	ND	1.6	4.8	D	mg/Kg	1	1/27/2020 2:50:04 PM	49952
Carbazole	ND	1.9	4.8	D	mg/Kg	1	1/27/2020 2:50:04 PM	49952
4-Chloro-3-methylphenol	ND	1.9	12	D	mg/Kg	1	1/27/2020 2:50:04 PM	49952
4-Chloroaniline	ND	1.8	12	D	mg/Kg	1	1/27/2020 2:50:04 PM	49952
2-Chloronaphthalene	ND	2.0	6.0	D	mg/Kg	1	1/27/2020 2:50:04 PM	49952
2-Chlorophenol	ND	2.7	4.8	D	mg/Kg	1	1/27/2020 2:50:04 PM	49952
4-Chlorophenyl phenyl ether	ND	2.0	4.8	D	mg/Kg	1	1/27/2020 2:50:04 PM	49952
Chrysene	ND	1.9	4.8	D	mg/Kg	1	1/27/2020 2:50:04 PM	49952
Di-n-butyl phthalate	ND	7.2	9.7	D	mg/Kg	1	1/27/2020 2:50:04 PM	49952
Di-n-octyl phthalate	ND	1.6	9.7	D	mg/Kg	1	1/27/2020 2:50:04 PM	49952
Dibenz(a,h)anthracene	ND	2.7	4.8	D	mg/Kg	1	1/27/2020 2:50:04 PM	49952
Dibenzofuran	ND	2.4	4.8	D	mg/Kg	1	1/27/2020 2:50:04 PM	49952
1,2-Dichlorobenzene	ND	1.9	4.8	D	mg/Kg	1	1/27/2020 2:50:04 PM	49952
1,3-Dichlorobenzene	ND	1.6	4.8	D	mg/Kg	1	1/27/2020 2:50:04 PM	49952
1,4-Dichlorobenzene	ND	2.0	4.8	D	mg/Kg	1	1/27/2020 2:50:04 PM	49952
3,3´-Dichlorobenzidine	ND	2.1	6.0	D	mg/Kg	1	1/27/2020 2:50:04 PM	49952
Diethyl phthalate	ND	7.4	12	D	mg/Kg	1	1/27/2020 2:50:04 PM	49952
Dimethyl phthalate	ND	2.0	4.8	D	mg/Kg	1	1/27/2020 2:50:04 PM	49952
2,4-Dichlorophenol	ND	2.0	9.7	D	mg/Kg	1	1/27/2020 2:50:04 PM	49952
2,4-Dimethylphenol	ND	2.0	7.2	D	mg/Kg	1	1/27/2020 2:50:04 PM	49952
4,6-Dinitro-2-methylphenol	ND	1.8	9.7	D	mg/Kg	1	1/27/2020 2:50:04 PM	49952
2,4-Dinitrophenol	ND	1.4	12	D	mg/Kg	1	1/27/2020 2:50:04 PM	49952
2,4-Dinitrotoluene	ND	2.5	12	D	mg/Kg	1	1/27/2020 2:50:04 PM	49952
2,6-Dinitrotoluene	ND	2.9	12	D	mg/Kg	1	1/27/2020 2:50:04 PM	49952
Fluoranthene	ND	1.8	4.8	D	mg/Kg	1	1/27/2020 2:50:04 PM	49952
Fluorene	44	1.9	4.8	D	mg/Kg	1	1/27/2020 2:50:04 PM	49952
Hexachlorobenzene	ND	1.9	4.8	D	mg/Kg	1	1/27/2020 2:50:04 PM	49952
Hexachlorobutadiene	ND	2.1	4.8	D	mg/Kg	1	1/27/2020 2:50:04 PM	49952
Hexachlorocyclopentadiene	ND	2.3	4.8	D	mg/Kg	1	1/27/2020 2:50:04 PM	49952
Hexachloroethane	ND	2.0	4.8	D	mg/Kg	1	1/27/2020 2:50:04 PM	49952
Indeno(1,2,3-cd)pyrene	ND	3.0	4.8	D	mg/Kg	1	1/27/2020 2:50:04 PM	49952
Isophorone	ND	2.1	9.7	D	mg/Kg	1	1/27/2020 2:50:04 PM	49952
1-Methylnaphthalene	150	11	24	D	mg/Kg	5	1/29/2020 8:56:56 PM	49952
2-Methylnaphthalene	160	9.8	24	D	mg/Kg	5	1/29/2020 8:56:56 PM	49952
2-Methylphenol	ND	2.0	9.7	D	mg/Kg	1	1/27/2020 2:50:04 PM	49952

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Qualifiers:

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ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
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B	Analyte detected in the associated Method Blank
E	Value above quantitation range
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Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-16 Toe 2.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 2:08:00 PM
Lab ID: 2001723-025 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	9.3	1.7	4.8	D	mg/Kg	1	1/27/2020 2:50:04 PM	49952
N-Nitrosodi-n-propylamine	ND	2.4	4.8	D	mg/Kg	1	1/27/2020 2:50:04 PM	49952
N-Nitrosodiphenylamine	ND	2.5	4.8	D	mg/Kg	1	1/27/2020 2:50:04 PM	49952
Naphthalene	21	2.0	4.8	D	mg/Kg	1	1/27/2020 2:50:04 PM	49952
2-Nitroaniline	ND	2.7	4.8	D	mg/Kg	1	1/27/2020 2:50:04 PM	49952
3-Nitroaniline	ND	2.4	4.8	D	mg/Kg	1	1/27/2020 2:50:04 PM	49952
4-Nitroaniline	ND	3.2	9.7	D	mg/Kg	1	1/27/2020 2:50:04 PM	49952
Nitrobenzene	ND	2.1	9.7	D	mg/Kg	1	1/27/2020 2:50:04 PM	49952
2-Nitrophenol	ND	2.0	4.8	D	mg/Kg	1	1/27/2020 2:50:04 PM	49952
4-Nitrophenol	ND	1.4	6.0	D	mg/Kg	1	1/27/2020 2:50:04 PM	49952
Pentachlorophenol	ND	2.2	9.7	D	mg/Kg	1	1/27/2020 2:50:04 PM	49952
Phenanthrene	160	12	24	D	mg/Kg	5	1/29/2020 8:56:56 PM	49952
Phenol	2.9	2.0	4.8	JD	mg/Kg	1	1/27/2020 2:50:04 PM	49952
Pyrene	56	1.6	4.8	D	mg/Kg	1	1/27/2020 2:50:04 PM	49952
Pyridine	ND	4.5	9.7	D	mg/Kg	1	1/27/2020 2:50:04 PM	49952
1,2,4-Trichlorobenzene	ND	2.1	4.8	D	mg/Kg	1	1/27/2020 2:50:04 PM	49952
2,4,5-Trichlorophenol	ND	1.6	4.8	D	mg/Kg	1	1/27/2020 2:50:04 PM	49952
2,4,6-Trichlorophenol	ND	2.4	4.8	D	mg/Kg	1	1/27/2020 2:50:04 PM	49952
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	1	1/27/2020 2:50:04 PM	49952
Surr: Phenol-d5	0		18.5-101	SD	%Rec	1	1/27/2020 2:50:04 PM	49952
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	1	1/27/2020 2:50:04 PM	49952
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	1	1/27/2020 2:50:04 PM	49952
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	1	1/27/2020 2:50:04 PM	49952
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	1	1/27/2020 2:50:04 PM	49952
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	0.26	0.043	0.26	J	mg/Kg	10	1/22/2020 3:19:08 PM	A65992
Toluene	2.0	0.050	0.52		mg/Kg	10	1/22/2020 3:19:08 PM	A65992
Ethylbenzene	0.74	0.030	0.52		mg/Kg	10	1/22/2020 3:19:08 PM	A65992
Methyl tert-butyl ether (MTBE)	ND	0.12	0.52		mg/Kg	10	1/22/2020 3:19:08 PM	A65992
1,2,4-Trimethylbenzene	3.9	0.048	0.52		mg/Kg	10	1/22/2020 3:19:08 PM	A65992
1,3,5-Trimethylbenzene	1.2	0.051	0.52		mg/Kg	10	1/22/2020 3:19:08 PM	A65992
1,2-Dichloroethane (EDC)	ND	0.053	0.52		mg/Kg	10	1/22/2020 3:19:08 PM	A65992
1,2-Dibromoethane (EDB)	ND	0.048	0.52		mg/Kg	10	1/22/2020 3:19:08 PM	A65992
Naphthalene	6.1	0.10	1.0		mg/Kg	10	1/22/2020 3:19:08 PM	A65992
1-Methylnaphthalene	22	0.30	2.1		mg/Kg	10	1/22/2020 3:19:08 PM	A65992
2-Methylnaphthalene	33	0.23	2.1		mg/Kg	10	1/22/2020 3:19:08 PM	A65992
Acetone	ND	0.43	7.9		mg/Kg	10	1/22/2020 3:19:08 PM	A65992
Bromobenzene	ND	0.050	0.52		mg/Kg	10	1/22/2020 3:19:08 PM	A65992
Bromodichloromethane	ND	0.048	0.52		mg/Kg	10	1/22/2020 3:19:08 PM	A65992

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Qualifiers:

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H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
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B	Analyte detected in the associated Method Blank
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J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-16 Toe 2.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 2:08:00 PM
Lab ID: 2001723-025 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Bromoform	ND	0.047	0.52		mg/Kg	10	1/22/2020 3:19:08 PM	A65992
Bromomethane	ND	0.13	1.6		mg/Kg	10	1/22/2020 3:19:08 PM	A65992
2-Butanone	ND	0.61	5.2		mg/Kg	10	1/22/2020 3:19:08 PM	A65992
Carbon disulfide	1.8	0.17	5.2	J	mg/Kg	10	1/22/2020 3:19:08 PM	A65992
Carbon tetrachloride	ND	0.050	0.52		mg/Kg	10	1/22/2020 3:19:08 PM	A65992
Chlorobenzene	ND	0.067	0.52		mg/Kg	10	1/22/2020 3:19:08 PM	A65992
Chloroethane	ND	0.077	1.0		mg/Kg	10	1/22/2020 3:19:08 PM	A65992
Chloroform	ND	0.042	0.52		mg/Kg	10	1/22/2020 3:19:08 PM	A65992
Chloromethane	ND	0.050	1.6		mg/Kg	10	1/22/2020 3:19:08 PM	A65992
2-Chlorotoluene	ND	0.046	0.52		mg/Kg	10	1/22/2020 3:19:08 PM	A65992
4-Chlorotoluene	ND	0.043	0.52		mg/Kg	10	1/22/2020 3:19:08 PM	A65992
cis-1,2-DCE	ND	0.072	0.52		mg/Kg	10	1/22/2020 3:19:08 PM	A65992
cis-1,3-Dichloropropene	ND	0.044	0.52		mg/Kg	10	1/22/2020 3:19:08 PM	A65992
1,2-Dibromo-3-chloropropane	ND	0.054	1.0		mg/Kg	10	1/22/2020 3:19:08 PM	A65992
Dibromochloromethane	ND	0.037	0.52		mg/Kg	10	1/22/2020 3:19:08 PM	A65992
Dibromomethane	ND	0.056	0.52		mg/Kg	10	1/22/2020 3:19:08 PM	A65992
1,2-Dichlorobenzene	ND	0.043	0.52		mg/Kg	10	1/22/2020 3:19:08 PM	A65992
1,3-Dichlorobenzene	ND	0.045	0.52		mg/Kg	10	1/22/2020 3:19:08 PM	A65992
1,4-Dichlorobenzene	ND	0.044	0.52		mg/Kg	10	1/22/2020 3:19:08 PM	A65992
Dichlorodifluoromethane	ND	0.12	0.52		mg/Kg	10	1/22/2020 3:19:08 PM	A65992
1,1-Dichloroethane	ND	0.033	0.52		mg/Kg	10	1/22/2020 3:19:08 PM	A65992
1,1-Dichloroethene	ND	0.21	0.52		mg/Kg	10	1/22/2020 3:19:08 PM	A65992
1,2-Dichloropropane	ND	0.038	0.52		mg/Kg	10	1/22/2020 3:19:08 PM	A65992
1,3-Dichloropropane	ND	0.057	0.52		mg/Kg	10	1/22/2020 3:19:08 PM	A65992
2,2-Dichloropropane	ND	0.17	1.0		mg/Kg	10	1/22/2020 3:19:08 PM	A65992
1,1-Dichloropropene	ND	0.048	1.0		mg/Kg	10	1/22/2020 3:19:08 PM	A65992
Hexachlorobutadiene	ND	0.053	1.0		mg/Kg	10	1/22/2020 3:19:08 PM	A65992
2-Hexanone	ND	0.087	5.2		mg/Kg	10	1/22/2020 3:19:08 PM	A65992
Isopropylbenzene	0.24	0.038	0.52	J	mg/Kg	10	1/22/2020 3:19:08 PM	A65992
4-Isopropyltoluene	0.26	0.043	0.52	J	mg/Kg	10	1/22/2020 3:19:08 PM	A65992
4-Methyl-2-pentanone	1.1	0.099	5.2	J	mg/Kg	10	1/22/2020 3:19:08 PM	A65992
Methylene chloride	0.23	0.092	1.6	J	mg/Kg	10	1/22/2020 3:19:08 PM	A65992
n-Butylbenzene	0.56	0.049	1.6	J	mg/Kg	10	1/22/2020 3:19:08 PM	A65992
n-Propylbenzene	0.49	0.042	0.52	J	mg/Kg	10	1/22/2020 3:19:08 PM	A65992
sec-Butylbenzene	0.46	0.059	0.52	J	mg/Kg	10	1/22/2020 3:19:08 PM	A65992
Styrene	ND	0.041	0.52		mg/Kg	10	1/22/2020 3:19:08 PM	A65992
tert-Butylbenzene	ND	0.049	0.52		mg/Kg	10	1/22/2020 3:19:08 PM	A65992
1,1,1,2-Tetrachloroethane	ND	0.035	0.52		mg/Kg	10	1/22/2020 3:19:08 PM	A65992
1,1,2,2-Tetrachloroethane	ND	0.053	0.52		mg/Kg	10	1/22/2020 3:19:08 PM	A65992

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

Qualifiers:

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

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-16 Toe 2.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 2:08:00 PM
Lab ID: 2001723-025 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Tetrachloroethene (PCE)	ND	0.042	0.52		mg/Kg	10	1/22/2020 3:19:08 PM	A65992
trans-1,2-DCE	ND	0.048	0.52		mg/Kg	10	1/22/2020 3:19:08 PM	A65992
trans-1,3-Dichloropropene	ND	0.055	0.52		mg/Kg	10	1/22/2020 3:19:08 PM	A65992
1,2,3-Trichlorobenzene	ND	0.046	1.0		mg/Kg	10	1/22/2020 3:19:08 PM	A65992
1,2,4-Trichlorobenzene	ND	0.053	0.52		mg/Kg	10	1/22/2020 3:19:08 PM	A65992
1,1,1-Trichloroethane	ND	0.047	0.52		mg/Kg	10	1/22/2020 3:19:08 PM	A65992
1,1,2-Trichloroethane	ND	0.037	0.52		mg/Kg	10	1/22/2020 3:19:08 PM	A65992
Trichloroethene (TCE)	ND	0.061	0.52		mg/Kg	10	1/22/2020 3:19:08 PM	A65992
Trichlorofluoromethane	ND	0.18	0.52		mg/Kg	10	1/22/2020 3:19:08 PM	A65992
1,2,3-Trichloropropane	ND	0.085	1.0		mg/Kg	10	1/22/2020 3:19:08 PM	A65992
Vinyl chloride	ND	0.034	0.52		mg/Kg	10	1/22/2020 3:19:08 PM	A65992
Xylenes, Total	5.5	0.13	1.0		mg/Kg	10	1/22/2020 3:19:08 PM	A65992
Surr: Dibromofluoromethane	104		70-130		%Rec	10	1/22/2020 3:19:08 PM	A65992
Surr: 1,2-Dichloroethane-d4	88.2		70-130		%Rec	10	1/22/2020 3:19:08 PM	A65992
Surr: Toluene-d8	101		70-130		%Rec	10	1/22/2020 3:19:08 PM	A65992
Surr: 4-Bromofluorobenzene	94.8		70-130		%Rec	10	1/22/2020 3:19:08 PM	A65992
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	100	11	52		mg/Kg	10	1/22/2020 3:19:08 PM	AG659
Surr: BFB	102	0	70-130		%Rec	10	1/22/2020 3:19:08 PM	AG659
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/23/2020 3:07:00 PM	R66022
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	6.98				pH Units	1	1/24/2020 9:47:00 AM	R66051
SPECIFIC GRAVITY							Analyst: **PAC**	
Specific Gravity	1.190				g/cm3	1	1/27/2020	R66241

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

Qualifiers:

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

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-8 5-5.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 8:48:00 AM
Lab ID: 2001723-026 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	56	2.3	9.4		mg/Kg	1	1/22/2020 2:34:21 PM	49945
Motor Oil Range Organics (MRO)	ND	47	47		mg/Kg	1	1/22/2020 2:34:21 PM	49945
Surr: DNOP	90.1	0	55.1-146		%Rec	1	1/22/2020 2:34:21 PM	49945
EPA METHOD 7471: MERCURY							Analyst: **rde**	
Mercury	0.016	0.0019	0.034	JH	mg/Kg	1	2/25/2020 4:56:16 PM	50634
MERCURY, TCLP							Analyst: **rde**	
Mercury	ND	0.00075	0.020		mg/L	1	1/24/2020 12:20:08 PM	50015
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.74	5.0		mg/Kg	2	1/21/2020 10:02:20 AM	49920
Arsenic	ND	2.9	5.0		mg/Kg	2	1/21/2020 10:02:20 AM	49920
Barium	270	0.047	0.20		mg/Kg	2	1/21/2020 10:02:20 AM	49920
Beryllium	0.86	0.018	0.30		mg/Kg	2	1/21/2020 10:02:20 AM	49920
Cadmium	ND	0.049	0.20		mg/Kg	2	1/21/2020 10:02:20 AM	49920
Chromium	17	0.16	0.60		mg/Kg	2	1/21/2020 10:02:20 AM	49920
Cobalt	4.5	0.21	0.60		mg/Kg	2	1/21/2020 10:02:20 AM	49920
Lead	3.0	0.49	0.50		mg/Kg	2	1/21/2020 10:02:20 AM	49920
Nickel	8.9	0.30	1.0		mg/Kg	2	1/21/2020 10:02:20 AM	49920
Selenium	ND	2.5	5.0		mg/Kg	2	1/21/2020 10:02:20 AM	49920
Silver	ND	0.064	0.50		mg/Kg	2	1/21/2020 10:02:20 AM	49920
Vanadium	35	0.13	5.0		mg/Kg	2	1/21/2020 10:02:20 AM	49920
Zinc	20	0.79	5.0		mg/Kg	2	1/21/2020 10:02:20 AM	49920
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/23/2020 10:29:01 AM	49985
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.14	0.36	D	mg/Kg	1	1/27/2020 3:18:52 PM	49952
Acenaphthylene	ND	0.16	0.36	D	mg/Kg	1	1/27/2020 3:18:52 PM	49952
Aniline	ND	0.12	0.36	D	mg/Kg	1	1/27/2020 3:18:52 PM	49952
Anthracene	ND	0.14	0.36	D	mg/Kg	1	1/27/2020 3:18:52 PM	49952
Azobenzene	ND	0.18	0.36	D	mg/Kg	1	1/27/2020 3:18:52 PM	49952
Benz(a)anthracene	ND	0.12	0.36	D	mg/Kg	1	1/27/2020 3:18:52 PM	49952
Benzo(a)pyrene	ND	0.19	0.36	D	mg/Kg	1	1/27/2020 3:18:52 PM	49952
Benzo(b)fluoranthene	ND	0.21	0.36	D	mg/Kg	1	1/27/2020 3:18:52 PM	49952
Benzo(g,h,i)perylene	ND	0.18	0.36	D	mg/Kg	1	1/27/2020 3:18:52 PM	49952
Benzo(k)fluoranthene	ND	0.11	0.36	D	mg/Kg	1	1/27/2020 3:18:52 PM	49952
Benzoic acid	ND	0.25	0.90	D	mg/Kg	1	1/27/2020 3:18:52 PM	49952
Benzyl alcohol	ND	0.15	0.36	D	mg/Kg	1	1/27/2020 3:18:52 PM	49952
Bis(2-chloroethoxy)methane	ND	0.15	0.36	D	mg/Kg	1	1/27/2020 3:18:52 PM	49952

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Qualifiers:

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

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-8 5-5.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 8:48:00 AM
Lab ID: 2001723-026 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.21	0.36	D	mg/Kg	1	1/27/2020 3:18:52 PM	49952
Bis(2-chloroisopropyl)ether	ND	0.15	0.36	D	mg/Kg	1	1/27/2020 3:18:52 PM	49952
Bis(2-ethylhexyl)phthalate	ND	0.40	0.90	D	mg/Kg	1	1/27/2020 3:18:52 PM	49952
4-Bromophenyl phenyl ether	ND	0.21	0.36	D	mg/Kg	1	1/27/2020 3:18:52 PM	49952
Butyl benzyl phthalate	ND	0.12	0.36	D	mg/Kg	1	1/27/2020 3:18:52 PM	49952
Carbazole	ND	0.14	0.36	D	mg/Kg	1	1/27/2020 3:18:52 PM	49952
4-Chloro-3-methylphenol	ND	0.14	0.90	D	mg/Kg	1	1/27/2020 3:18:52 PM	49952
4-Chloroaniline	ND	0.14	0.90	D	mg/Kg	1	1/27/2020 3:18:52 PM	49952
2-Chloronaphthalene	ND	0.15	0.45	D	mg/Kg	1	1/27/2020 3:18:52 PM	49952
2-Chlorophenol	ND	0.20	0.36	D	mg/Kg	1	1/27/2020 3:18:52 PM	49952
4-Chlorophenyl phenyl ether	ND	0.15	0.36	D	mg/Kg	1	1/27/2020 3:18:52 PM	49952
Chrysene	ND	0.14	0.36	D	mg/Kg	1	1/27/2020 3:18:52 PM	49952
Di-n-butyl phthalate	ND	0.54	0.72	D	mg/Kg	1	1/27/2020 3:18:52 PM	49952
Di-n-octyl phthalate	ND	0.12	0.72	D	mg/Kg	1	1/27/2020 3:18:52 PM	49952
Dibenz(a,h)anthracene	ND	0.20	0.36	D	mg/Kg	1	1/27/2020 3:18:52 PM	49952
Dibenzofuran	ND	0.18	0.36	D	mg/Kg	1	1/27/2020 3:18:52 PM	49952
1,2-Dichlorobenzene	ND	0.14	0.36	D	mg/Kg	1	1/27/2020 3:18:52 PM	49952
1,3-Dichlorobenzene	ND	0.12	0.36	D	mg/Kg	1	1/27/2020 3:18:52 PM	49952
1,4-Dichlorobenzene	ND	0.15	0.36	D	mg/Kg	1	1/27/2020 3:18:52 PM	49952
3,3´-Dichlorobenzidine	ND	0.15	0.45	D	mg/Kg	1	1/27/2020 3:18:52 PM	49952
Diethyl phthalate	ND	0.55	0.90	D	mg/Kg	1	1/27/2020 3:18:52 PM	49952
Dimethyl phthalate	ND	0.15	0.36	D	mg/Kg	1	1/27/2020 3:18:52 PM	49952
2,4-Dichlorophenol	ND	0.15	0.72	D	mg/Kg	1	1/27/2020 3:18:52 PM	49952
2,4-Dimethylphenol	ND	0.15	0.54	D	mg/Kg	1	1/27/2020 3:18:52 PM	49952
4,6-Dinitro-2-methylphenol	ND	0.13	0.72	D	mg/Kg	1	1/27/2020 3:18:52 PM	49952
2,4-Dinitrophenol	ND	0.10	0.90	D	mg/Kg	1	1/27/2020 3:18:52 PM	49952
2,4-Dinitrotoluene	ND	0.18	0.90	D	mg/Kg	1	1/27/2020 3:18:52 PM	49952
2,6-Dinitrotoluene	ND	0.21	0.90	D	mg/Kg	1	1/27/2020 3:18:52 PM	49952
Fluoranthene	ND	0.14	0.36	D	mg/Kg	1	1/27/2020 3:18:52 PM	49952
Fluorene	ND	0.14	0.36	D	mg/Kg	1	1/27/2020 3:18:52 PM	49952
Hexachlorobenzene	ND	0.14	0.36	D	mg/Kg	1	1/27/2020 3:18:52 PM	49952
Hexachlorobutadiene	ND	0.16	0.36	D	mg/Kg	1	1/27/2020 3:18:52 PM	49952
Hexachlorocyclopentadiene	ND	0.17	0.36	D	mg/Kg	1	1/27/2020 3:18:52 PM	49952
Hexachloroethane	ND	0.15	0.36	D	mg/Kg	1	1/27/2020 3:18:52 PM	49952
Indeno(1,2,3-cd)pyrene	ND	0.22	0.36	D	mg/Kg	1	1/27/2020 3:18:52 PM	49952
Isophorone	ND	0.16	0.72	D	mg/Kg	1	1/27/2020 3:18:52 PM	49952
1-Methylnaphthalene	0.32	0.17	0.36	JD	mg/Kg	1	1/27/2020 3:18:52 PM	49952
2-Methylnaphthalene	0.34	0.15	0.36	JD	mg/Kg	1	1/27/2020 3:18:52 PM	49952
2-Methylphenol	0.30	0.15	0.72	JD	mg/Kg	1	1/27/2020 3:18:52 PM	49952

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

Qualifiers:

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

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-8 5-5.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 8:48:00 AM
Lab ID: 2001723-026 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	0.87	0.13	0.36	D	mg/Kg	1	1/27/2020 3:18:52 PM	49952
N-Nitrosodi-n-propylamine	ND	0.18	0.36	D	mg/Kg	1	1/27/2020 3:18:52 PM	49952
N-Nitrosodiphenylamine	ND	0.19	0.36	D	mg/Kg	1	1/27/2020 3:18:52 PM	49952
Naphthalene	ND	0.15	0.36	D	mg/Kg	1	1/27/2020 3:18:52 PM	49952
2-Nitroaniline	ND	0.20	0.36	D	mg/Kg	1	1/27/2020 3:18:52 PM	49952
3-Nitroaniline	ND	0.18	0.36	D	mg/Kg	1	1/27/2020 3:18:52 PM	49952
4-Nitroaniline	ND	0.24	0.72	D	mg/Kg	1	1/27/2020 3:18:52 PM	49952
Nitrobenzene	ND	0.15	0.72	D	mg/Kg	1	1/27/2020 3:18:52 PM	49952
2-Nitrophenol	ND	0.15	0.36	D	mg/Kg	1	1/27/2020 3:18:52 PM	49952
4-Nitrophenol	ND	0.11	0.45	D	mg/Kg	1	1/27/2020 3:18:52 PM	49952
Pentachlorophenol	ND	0.16	0.72	D	mg/Kg	1	1/27/2020 3:18:52 PM	49952
Phenanthrene	ND	0.18	0.36	D	mg/Kg	1	1/27/2020 3:18:52 PM	49952
Phenol	0.51	0.15	0.36	D	mg/Kg	1	1/27/2020 3:18:52 PM	49952
Pyrene	ND	0.12	0.36	D	mg/Kg	1	1/27/2020 3:18:52 PM	49952
Pyridine	ND	0.33	0.72	D	mg/Kg	1	1/27/2020 3:18:52 PM	49952
1,2,4-Trichlorobenzene	ND	0.15	0.36	D	mg/Kg	1	1/27/2020 3:18:52 PM	49952
2,4,5-Trichlorophenol	ND	0.12	0.36	D	mg/Kg	1	1/27/2020 3:18:52 PM	49952
2,4,6-Trichlorophenol	ND	0.18	0.36	D	mg/Kg	1	1/27/2020 3:18:52 PM	49952
Surr: 2-Fluorophenol	76.4		26.7-85.9	D	%Rec	1	1/27/2020 3:18:52 PM	49952
Surr: Phenol-d5	85.0		18.5-101	D	%Rec	1	1/27/2020 3:18:52 PM	49952
Surr: 2,4,6-Tribromophenol	85.5		35.8-85.6	D	%Rec	1	1/27/2020 3:18:52 PM	49952
Surr: Nitrobenzene-d5	89.6		40.8-95.2	D	%Rec	1	1/27/2020 3:18:52 PM	49952
Surr: 2-Fluorobiphenyl	84.0		34.7-85.2	D	%Rec	1	1/27/2020 3:18:52 PM	49952
Surr: 4-Terphenyl-d14	68.7		37.4-91.3	D	%Rec	1	1/27/2020 3:18:52 PM	49952
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	0.056	0.0042	0.026		mg/Kg	2	1/22/2020 3:48:40 PM	A65992
Toluene	0.23	0.0050	0.052		mg/Kg	2	1/22/2020 3:48:40 PM	A65992
Ethylbenzene	0.095	0.0030	0.052		mg/Kg	2	1/22/2020 3:48:40 PM	A65992
Methyl tert-butyl ether (MTBE)	0.065	0.012	0.052		mg/Kg	2	1/22/2020 3:48:40 PM	A65992
1,2,4-Trimethylbenzene	0.24	0.0047	0.052		mg/Kg	2	1/22/2020 3:48:40 PM	A65992
1,3,5-Trimethylbenzene	0.068	0.0050	0.052		mg/Kg	2	1/22/2020 3:48:40 PM	A65992
1,2-Dichloroethane (EDC)	0.026	0.0053	0.052	J	mg/Kg	2	1/22/2020 3:48:40 PM	A65992
1,2-Dibromoethane (EDB)	ND	0.0047	0.052		mg/Kg	2	1/22/2020 3:48:40 PM	A65992
Naphthalene	0.17	0.010	0.10		mg/Kg	2	1/22/2020 3:48:40 PM	A65992
1-Methylnaphthalene	0.31	0.030	0.21		mg/Kg	2	1/22/2020 3:48:40 PM	A65992
2-Methylnaphthalene	0.46	0.023	0.21		mg/Kg	2	1/22/2020 3:48:40 PM	A65992
Acetone	0.32	0.043	0.78	J	mg/Kg	2	1/22/2020 3:48:40 PM	A65992
Bromobenzene	ND	0.0050	0.052		mg/Kg	2	1/22/2020 3:48:40 PM	A65992
Bromodichloromethane	ND	0.0047	0.052		mg/Kg	2	1/22/2020 3:48:40 PM	A65992

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

Qualifiers:

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

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-8 5-5.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 8:48:00 AM
Lab ID: 2001723-026 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Bromoform	ND	0.0047	0.052		mg/Kg	2	1/22/2020 3:48:40 PM	A65992
Bromomethane	ND	0.013	0.16		mg/Kg	2	1/22/2020 3:48:40 PM	A65992
2-Butanone	ND	0.060	0.52		mg/Kg	2	1/22/2020 3:48:40 PM	A65992
Carbon disulfide	0.25	0.017	0.52	J	mg/Kg	2	1/22/2020 3:48:40 PM	A65992
Carbon tetrachloride	ND	0.0049	0.052		mg/Kg	2	1/22/2020 3:48:40 PM	A65992
Chlorobenzene	ND	0.0067	0.052		mg/Kg	2	1/22/2020 3:48:40 PM	A65992
Chloroethane	ND	0.0077	0.10		mg/Kg	2	1/22/2020 3:48:40 PM	A65992
Chloroform	ND	0.0042	0.052		mg/Kg	2	1/22/2020 3:48:40 PM	A65992
Chloromethane	ND	0.0050	0.16		mg/Kg	2	1/22/2020 3:48:40 PM	A65992
2-Chlorotoluene	ND	0.0045	0.052		mg/Kg	2	1/22/2020 3:48:40 PM	A65992
4-Chlorotoluene	ND	0.0043	0.052		mg/Kg	2	1/22/2020 3:48:40 PM	A65992
cis-1,2-DCE	ND	0.0071	0.052		mg/Kg	2	1/22/2020 3:48:40 PM	A65992
cis-1,3-Dichloropropene	ND	0.0044	0.052		mg/Kg	2	1/22/2020 3:48:40 PM	A65992
1,2-Dibromo-3-chloropropane	ND	0.0053	0.10		mg/Kg	2	1/22/2020 3:48:40 PM	A65992
Dibromochloromethane	ND	0.0037	0.052		mg/Kg	2	1/22/2020 3:48:40 PM	A65992
Dibromomethane	ND	0.0056	0.052		mg/Kg	2	1/22/2020 3:48:40 PM	A65992
1,2-Dichlorobenzene	ND	0.0043	0.052		mg/Kg	2	1/22/2020 3:48:40 PM	A65992
1,3-Dichlorobenzene	ND	0.0045	0.052		mg/Kg	2	1/22/2020 3:48:40 PM	A65992
1,4-Dichlorobenzene	ND	0.0043	0.052		mg/Kg	2	1/22/2020 3:48:40 PM	A65992
Dichlorodifluoromethane	ND	0.012	0.052		mg/Kg	2	1/22/2020 3:48:40 PM	A65992
1,1-Dichloroethane	ND	0.0033	0.052		mg/Kg	2	1/22/2020 3:48:40 PM	A65992
1,1-Dichloroethene	ND	0.021	0.052		mg/Kg	2	1/22/2020 3:48:40 PM	A65992
1,2-Dichloropropane	ND	0.0038	0.052		mg/Kg	2	1/22/2020 3:48:40 PM	A65992
1,3-Dichloropropane	ND	0.0056	0.052		mg/Kg	2	1/22/2020 3:48:40 PM	A65992
2,2-Dichloropropane	ND	0.017	0.10		mg/Kg	2	1/22/2020 3:48:40 PM	A65992
1,1-Dichloropropene	ND	0.0047	0.10		mg/Kg	2	1/22/2020 3:48:40 PM	A65992
Hexachlorobutadiene	ND	0.0053	0.10		mg/Kg	2	1/22/2020 3:48:40 PM	A65992
2-Hexanone	0.041	0.0086	0.52	J	mg/Kg	2	1/22/2020 3:48:40 PM	A65992
Isopropylbenzene	0.020	0.0037	0.052	J	mg/Kg	2	1/22/2020 3:48:40 PM	A65992
4-Isopropyltoluene	0.012	0.0043	0.052	J	mg/Kg	2	1/22/2020 3:48:40 PM	A65992
4-Methyl-2-pentanone	0.094	0.0098	0.52	J	mg/Kg	2	1/22/2020 3:48:40 PM	A65992
Methylene chloride	0.025	0.0092	0.16	J	mg/Kg	2	1/22/2020 3:48:40 PM	A65992
n-Butylbenzene	0.029	0.0048	0.16	J	mg/Kg	2	1/22/2020 3:48:40 PM	A65992
n-Propylbenzene	0.035	0.0041	0.052	J	mg/Kg	2	1/22/2020 3:48:40 PM	A65992
sec-Butylbenzene	0.034	0.0059	0.052	J	mg/Kg	2	1/22/2020 3:48:40 PM	A65992
Styrene	ND	0.0041	0.052		mg/Kg	2	1/22/2020 3:48:40 PM	A65992
tert-Butylbenzene	ND	0.0049	0.052		mg/Kg	2	1/22/2020 3:48:40 PM	A65992
1,1,1,2-Tetrachloroethane	ND	0.0035	0.052		mg/Kg	2	1/22/2020 3:48:40 PM	A65992
1,1,2,2-Tetrachloroethane	ND	0.0053	0.052		mg/Kg	2	1/22/2020 3:48:40 PM	A65992

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Qualifiers:

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H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
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Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-8 5-5.5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 8:48:00 AM
Lab ID: 2001723-026 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Tetrachloroethene (PCE)	ND	0.0041	0.052		mg/Kg	2	1/22/2020 3:48:40 PM	A65992
trans-1,2-DCE	ND	0.0048	0.052		mg/Kg	2	1/22/2020 3:48:40 PM	A65992
trans-1,3-Dichloropropene	ND	0.0055	0.052		mg/Kg	2	1/22/2020 3:48:40 PM	A65992
1,2,3-Trichlorobenzene	ND	0.0046	0.10		mg/Kg	2	1/22/2020 3:48:40 PM	A65992
1,2,4-Trichlorobenzene	ND	0.0052	0.052		mg/Kg	2	1/22/2020 3:48:40 PM	A65992
1,1,1-Trichloroethane	ND	0.0047	0.052		mg/Kg	2	1/22/2020 3:48:40 PM	A65992
1,1,2-Trichloroethane	ND	0.0037	0.052		mg/Kg	2	1/22/2020 3:48:40 PM	A65992
Trichloroethene (TCE)	ND	0.0060	0.052		mg/Kg	2	1/22/2020 3:48:40 PM	A65992
Trichlorofluoromethane	ND	0.018	0.052		mg/Kg	2	1/22/2020 3:48:40 PM	A65992
1,2,3-Trichloropropane	ND	0.0084	0.10		mg/Kg	2	1/22/2020 3:48:40 PM	A65992
Vinyl chloride	ND	0.0034	0.052		mg/Kg	2	1/22/2020 3:48:40 PM	A65992
Xylenes, Total	0.53	0.013	0.10		mg/Kg	2	1/22/2020 3:48:40 PM	A65992
Surr: Dibromofluoromethane	103		70-130		%Rec	2	1/22/2020 3:48:40 PM	A65992
Surr: 1,2-Dichloroethane-d4	91.3		70-130		%Rec	2	1/22/2020 3:48:40 PM	A65992
Surr: Toluene-d8	102		70-130		%Rec	2	1/22/2020 3:48:40 PM	A65992
Surr: 4-Bromofluorobenzene	80.9		70-130		%Rec	2	1/22/2020 3:48:40 PM	A65992
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	10	1.1	5.2		mg/Kg	2	1/22/2020 3:48:40 PM	AG659
Surr: BFB	93.5	0	70-130		%Rec	2	1/22/2020 3:48:40 PM	AG659
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/23/2020 3:07:00 PM	R66022
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	8.93				pH Units	1	1/24/2020 9:47:00 AM	R66051
SPECIFIC GRAVITY							Analyst: **PAC**	
Specific Gravity	1.920				g/cm3	1	1/27/2020	R66241

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Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-12 Toe Surface
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 1:55:00 PM
Lab ID: 2001723-027 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	110000	2300	9700		mg/Kg	1E+	1/22/2020 2:43:31 PM	49945
Motor Oil Range Organics (MRO)	51000	48000	48000		mg/Kg	1E+	1/22/2020 2:43:31 PM	49945
Surr: DNOP	0	0	55.1-146	S	%Rec	1E+	1/22/2020 2:43:31 PM	49945
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	8.7	0.17	3.1	H	mg/Kg	100	2/26/2020 2:05:48 PM	50634
MERCURY, TCLP							Analyst: **rde**	
Mercury	ND	0.00075	0.020		mg/L	1	1/24/2020 12:22:08 PM	50015
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.77	5.2		mg/Kg	2	1/21/2020 10:03:44 AM	49920
Arsenic	8.0	3.0	5.2		mg/Kg	2	1/21/2020 10:03:44 AM	49920
Barium	810	0.12	0.52		mg/Kg	5	1/21/2020 10:35:46 AM	49920
Beryllium	0.53	0.019	0.31		mg/Kg	2	1/21/2020 10:03:44 AM	49920
Cadmium	ND	0.051	0.21		mg/Kg	2	1/21/2020 10:03:44 AM	49920
Chromium	25	0.17	0.62		mg/Kg	2	1/21/2020 10:03:44 AM	49920
Cobalt	4.2	0.22	0.62		mg/Kg	2	1/21/2020 10:03:44 AM	49920
Lead	20	0.51	0.52		mg/Kg	2	1/21/2020 10:03:44 AM	49920
Nickel	18	0.31	1.0		mg/Kg	2	1/21/2020 10:03:44 AM	49920
Selenium	9.0	2.6	5.2		mg/Kg	2	1/21/2020 10:03:44 AM	49920
Silver	ND	0.067	0.52		mg/Kg	2	1/21/2020 10:03:44 AM	49920
Vanadium	16	0.14	5.2		mg/Kg	2	1/21/2020 10:03:44 AM	49920
Zinc	1100	2.1	13		mg/Kg	5	1/21/2020 10:35:46 AM	49920
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/23/2020 11:39:27 AM	49985
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	1.8	4.9	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
Acenaphthylene	ND	2.2	4.9	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
Aniline	ND	1.7	4.9	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
Anthracene	ND	1.9	4.9	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
Azobenzene	ND	2.5	4.9	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
Benz(a)anthracene	ND	1.7	4.9	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
Benzo(a)pyrene	ND	2.7	4.9	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
Benzo(b)fluoranthene	ND	2.8	4.9	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
Benzo(g,h,i)perylene	ND	2.5	4.9	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
Benzo(k)fluoranthene	ND	1.5	4.9	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
Benzoic acid	ND	3.4	12	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
Benzyl alcohol	ND	2.0	4.9	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
Bis(2-chloroethoxy)methane	ND	2.0	4.9	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952

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Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-12 Toe Surface
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 1:55:00 PM
Lab ID: 2001723-027 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	2.9	4.9	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
Bis(2-chloroisopropyl)ether	ND	2.1	4.9	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
Bis(2-ethylhexyl)phthalate	ND	5.5	12	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
4-Bromophenyl phenyl ether	ND	2.9	4.9	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
Butyl benzyl phthalate	ND	1.6	4.9	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
Carbazole	ND	1.9	4.9	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
4-Chloro-3-methylphenol	ND	1.9	12	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
4-Chloroaniline	ND	1.9	12	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
2-Chloronaphthalene	ND	2.1	6.1	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
2-Chlorophenol	ND	2.8	4.9	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
4-Chlorophenyl phenyl ether	ND	2.1	4.9	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
Chrysene	ND	1.9	4.9	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
Di-n-butyl phthalate	ND	7.3	9.8	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
Di-n-octyl phthalate	ND	1.6	9.8	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
Dibenz(a,h)anthracene	ND	2.7	4.9	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
Dibenzofuran	ND	2.5	4.9	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
1,2-Dichlorobenzene	ND	1.9	4.9	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
1,3-Dichlorobenzene	ND	1.6	4.9	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
1,4-Dichlorobenzene	ND	2.0	4.9	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
3,3´-Dichlorobenzidine	ND	2.1	6.1	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
Diethyl phthalate	ND	7.5	12	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
Dimethyl phthalate	ND	2.0	4.9	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
2,4-Dichlorophenol	ND	2.1	9.8	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
2,4-Dimethylphenol	ND	2.0	7.4	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
4,6-Dinitro-2-methylphenol	ND	1.8	9.8	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
2,4-Dinitrophenol	ND	1.4	12	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
2,4-Dinitrotoluene	ND	2.5	12	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
2,6-Dinitrotoluene	ND	2.9	12	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
Fluoranthene	ND	1.9	4.9	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
Fluorene	ND	1.9	4.9	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
Hexachlorobenzene	ND	1.9	4.9	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
Hexachlorobutadiene	ND	2.1	4.9	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
Hexachlorocyclopentadiene	ND	2.4	4.9	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
Hexachloroethane	ND	2.0	4.9	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
Indeno(1,2,3-cd)pyrene	ND	3.0	4.9	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
Isophorone	ND	2.1	9.8	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
1-Methylnaphthalene	ND	2.3	4.9	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
2-Methylnaphthalene	ND	2.0	4.9	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
2-Methylphenol	ND	2.1	9.8	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952

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Qualifiers:

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

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-12 Toe Surface
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 1:55:00 PM
Lab ID: 2001723-027 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	1.8	4.9	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
N-Nitrosodi-n-propylamine	ND	2.5	4.9	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
N-Nitrosodiphenylamine	ND	2.5	4.9	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
Naphthalene	ND	2.0	4.9	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
2-Nitroaniline	ND	2.7	4.9	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
3-Nitroaniline	ND	2.4	4.9	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
4-Nitroaniline	ND	3.3	9.8	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
Nitrobenzene	ND	2.1	9.8	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
2-Nitrophenol	ND	2.0	4.9	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
4-Nitrophenol	ND	1.4	6.1	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
Pentachlorophenol	ND	2.2	9.8	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
Phenanthrene	ND	2.5	4.9	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
Phenol	ND	2.1	4.9	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
Pyrene	77	1.6	4.9	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
Pyridine	ND	4.6	9.8	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
1,2,4-Trichlorobenzene	ND	2.1	4.9	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
2,4,5-Trichlorophenol	ND	1.6	4.9	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
2,4,6-Trichlorophenol	ND	2.5	4.9	D	mg/Kg	1	1/27/2020 3:47:39 PM	49952
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	1	1/27/2020 3:47:39 PM	49952
Surr: Phenol-d5	0		18.5-101	SD	%Rec	1	1/27/2020 3:47:39 PM	49952
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	1	1/27/2020 3:47:39 PM	49952
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	1	1/27/2020 3:47:39 PM	49952
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	1	1/27/2020 3:47:39 PM	49952
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	1	1/27/2020 3:47:39 PM	49952
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.018	0.11		mg/Kg	5	1/22/2020 4:18:24 PM	A65992
Toluene	0.026	0.021	0.22	J	mg/Kg	5	1/22/2020 4:18:24 PM	A65992
Ethylbenzene	ND	0.013	0.22		mg/Kg	5	1/22/2020 4:18:24 PM	A65992
Methyl tert-butyl ether (MTBE)	ND	0.052	0.22		mg/Kg	5	1/22/2020 4:18:24 PM	A65992
1,2,4-Trimethylbenzene	0.029	0.020	0.22	J	mg/Kg	5	1/22/2020 4:18:24 PM	A65992
1,3,5-Trimethylbenzene	ND	0.021	0.22		mg/Kg	5	1/22/2020 4:18:24 PM	A65992
1,2-Dichloroethane (EDC)	ND	0.022	0.22		mg/Kg	5	1/22/2020 4:18:24 PM	A65992
1,2-Dibromoethane (EDB)	ND	0.020	0.22		mg/Kg	5	1/22/2020 4:18:24 PM	A65992
Naphthalene	0.17	0.044	0.44	J	mg/Kg	5	1/22/2020 4:18:24 PM	A65992
1-Methylnaphthalene	0.65	0.13	0.87	J	mg/Kg	5	1/22/2020 4:18:24 PM	A65992
2-Methylnaphthalene	0.64	0.095	0.87	J	mg/Kg	5	1/22/2020 4:18:24 PM	A65992
Acetone	ND	0.18	3.3		mg/Kg	5	1/22/2020 4:18:24 PM	A65992
Bromobenzene	ND	0.021	0.22		mg/Kg	5	1/22/2020 4:18:24 PM	A65992
Bromodichloromethane	ND	0.020	0.22		mg/Kg	5	1/22/2020 4:18:24 PM	A65992

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Qualifiers:

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

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-12 Toe Surface
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 1:55:00 PM
Lab ID: 2001723-027 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Bromoform	ND	0.020	0.22		mg/Kg	5	1/22/2020 4:18:24 PM	A65992
Bromomethane	ND	0.053	0.66		mg/Kg	5	1/22/2020 4:18:24 PM	A65992
2-Butanone	ND	0.25	2.2		mg/Kg	5	1/22/2020 4:18:24 PM	A65992
Carbon disulfide	ND	0.072	2.2		mg/Kg	5	1/22/2020 4:18:24 PM	A65992
Carbon tetrachloride	ND	0.021	0.22		mg/Kg	5	1/22/2020 4:18:24 PM	A65992
Chlorobenzene	ND	0.028	0.22		mg/Kg	5	1/22/2020 4:18:24 PM	A65992
Chloroethane	ND	0.032	0.44		mg/Kg	5	1/22/2020 4:18:24 PM	A65992
Chloroform	ND	0.018	0.22		mg/Kg	5	1/22/2020 4:18:24 PM	A65992
Chloromethane	ND	0.021	0.66		mg/Kg	5	1/22/2020 4:18:24 PM	A65992
2-Chlorotoluene	ND	0.019	0.22		mg/Kg	5	1/22/2020 4:18:24 PM	A65992
4-Chlorotoluene	ND	0.018	0.22		mg/Kg	5	1/22/2020 4:18:24 PM	A65992
cis-1,2-DCE	ND	0.030	0.22		mg/Kg	5	1/22/2020 4:18:24 PM	A65992
cis-1,3-Dichloropropene	ND	0.018	0.22		mg/Kg	5	1/22/2020 4:18:24 PM	A65992
1,2-Dibromo-3-chloropropane	ND	0.022	0.44		mg/Kg	5	1/22/2020 4:18:24 PM	A65992
Dibromochloromethane	ND	0.015	0.22		mg/Kg	5	1/22/2020 4:18:24 PM	A65992
Dibromomethane	ND	0.024	0.22		mg/Kg	5	1/22/2020 4:18:24 PM	A65992
1,2-Dichlorobenzene	ND	0.018	0.22		mg/Kg	5	1/22/2020 4:18:24 PM	A65992
1,3-Dichlorobenzene	ND	0.019	0.22		mg/Kg	5	1/22/2020 4:18:24 PM	A65992
1,4-Dichlorobenzene	ND	0.018	0.22		mg/Kg	5	1/22/2020 4:18:24 PM	A65992
Dichlorodifluoromethane	ND	0.051	0.22		mg/Kg	5	1/22/2020 4:18:24 PM	A65992
1,1-Dichloroethane	ND	0.014	0.22		mg/Kg	5	1/22/2020 4:18:24 PM	A65992
1,1-Dichloroethene	ND	0.087	0.22		mg/Kg	5	1/22/2020 4:18:24 PM	A65992
1,2-Dichloropropane	ND	0.016	0.22		mg/Kg	5	1/22/2020 4:18:24 PM	A65992
1,3-Dichloropropane	ND	0.024	0.22		mg/Kg	5	1/22/2020 4:18:24 PM	A65992
2,2-Dichloropropane	ND	0.071	0.44		mg/Kg	5	1/22/2020 4:18:24 PM	A65992
1,1-Dichloropropene	ND	0.020	0.44		mg/Kg	5	1/22/2020 4:18:24 PM	A65992
Hexachlorobutadiene	ND	0.022	0.44		mg/Kg	5	1/22/2020 4:18:24 PM	A65992
2-Hexanone	ND	0.036	2.2		mg/Kg	5	1/22/2020 4:18:24 PM	A65992
Isopropylbenzene	ND	0.016	0.22		mg/Kg	5	1/22/2020 4:18:24 PM	A65992
4-Isopropyltoluene	ND	0.018	0.22		mg/Kg	5	1/22/2020 4:18:24 PM	A65992
4-Methyl-2-pentanone	0.15	0.041	2.2	J	mg/Kg	5	1/22/2020 4:18:24 PM	A65992
Methylene chloride	ND	0.039	0.66		mg/Kg	5	1/22/2020 4:18:24 PM	A65992
n-Butylbenzene	ND	0.020	0.66		mg/Kg	5	1/22/2020 4:18:24 PM	A65992
n-Propylbenzene	ND	0.017	0.22		mg/Kg	5	1/22/2020 4:18:24 PM	A65992
sec-Butylbenzene	ND	0.025	0.22		mg/Kg	5	1/22/2020 4:18:24 PM	A65992
Styrene	ND	0.017	0.22		mg/Kg	5	1/22/2020 4:18:24 PM	A65992
tert-Butylbenzene	ND	0.021	0.22		mg/Kg	5	1/22/2020 4:18:24 PM	A65992
1,1,1,2-Tetrachloroethane	ND	0.015	0.22		mg/Kg	5	1/22/2020 4:18:24 PM	A65992
1,1,2,2-Tetrachloroethane	ND	0.022	0.22		mg/Kg	5	1/22/2020 4:18:24 PM	A65992

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Qualifiers:

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ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
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Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-12 Toe Surface
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 1:55:00 PM
Lab ID: 2001723-027 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Tetrachloroethene (PCE)	ND	0.017	0.22		mg/Kg	5	1/22/2020 4:18:24 PM	A65992
trans-1,2-DCE	ND	0.020	0.22		mg/Kg	5	1/22/2020 4:18:24 PM	A65992
trans-1,3-Dichloropropene	ND	0.023	0.22		mg/Kg	5	1/22/2020 4:18:24 PM	A65992
1,2,3-Trichlorobenzene	ND	0.019	0.44		mg/Kg	5	1/22/2020 4:18:24 PM	A65992
1,2,4-Trichlorobenzene	ND	0.022	0.22		mg/Kg	5	1/22/2020 4:18:24 PM	A65992
1,1,1-Trichloroethane	ND	0.020	0.22		mg/Kg	5	1/22/2020 4:18:24 PM	A65992
1,1,2-Trichloroethane	ND	0.015	0.22		mg/Kg	5	1/22/2020 4:18:24 PM	A65992
Trichloroethene (TCE)	ND	0.025	0.22		mg/Kg	5	1/22/2020 4:18:24 PM	A65992
Trichlorofluoromethane	ND	0.074	0.22		mg/Kg	5	1/22/2020 4:18:24 PM	A65992
1,2,3-Trichloropropane	ND	0.035	0.44		mg/Kg	5	1/22/2020 4:18:24 PM	A65992
Vinyl chloride	ND	0.014	0.22		mg/Kg	5	1/22/2020 4:18:24 PM	A65992
Xylenes, Total	ND	0.055	0.44		mg/Kg	5	1/22/2020 4:18:24 PM	A65992
Surr: Dibromofluoromethane	107		70-130		%Rec	5	1/22/2020 4:18:24 PM	A65992
Surr: 1,2-Dichloroethane-d4	92.1		70-130		%Rec	5	1/22/2020 4:18:24 PM	A65992
Surr: Toluene-d8	96.0		70-130		%Rec	5	1/22/2020 4:18:24 PM	A65992
Surr: 4-Bromofluorobenzene	82.2		70-130		%Rec	5	1/22/2020 4:18:24 PM	A65992
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	6.5	4.6	22	J	mg/Kg	5	1/22/2020 4:18:24 PM	AG659
Surr: BFB	93.3	0	70-130		%Rec	5	1/22/2020 4:18:24 PM	AG659
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/23/2020 3:07:00 PM	R66022
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	5.85				pH Units	1	1/24/2020 9:47:00 AM	R66051
SPECIFIC GRAVITY							Analyst: **PAC**	
Specific Gravity	1.030				g/cm3	1	1/27/2020	R66241

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P	Sample pH Not In Range
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Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-2 Sludge 2-2.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 8:29:00 AM
Lab ID: 2001723-028 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	68000	300	1300		mg/Kg	100	1/22/2020 2:52:38 PM	49945
Motor Oil Range Organics (MRO)	9400	6300	6300		mg/Kg	100	1/22/2020 2:52:38 PM	49945
Surr: DNOP	0	0	55.1-146	S	%Rec	100	1/22/2020 2:52:38 PM	49945
EPA METHOD 7471: MERCURY							Analyst: **rde**	
Mercury	6.2	0.17	3.1	H	mg/Kg	100	2/25/2020 5:30:04 PM	50634
MERCURY, TCLP							Analyst: **rde**	
Mercury	ND	0.00075	0.020		mg/L	1	1/24/2020 12:24:08 PM	50015
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	0.95	0.74	5.0	J	mg/Kg	2	1/21/2020 10:05:09 AM	49920
Arsenic	11	2.9	5.0		mg/Kg	2	1/21/2020 10:05:09 AM	49920
Barium	510	0.23	1.0		mg/Kg	10	1/21/2020 10:37:11 AM	49920
Beryllium	0.18	0.019	0.30	J	mg/Kg	2	1/21/2020 10:05:09 AM	49920
Cadmium	ND	0.049	0.20		mg/Kg	2	1/21/2020 10:05:09 AM	49920
Chromium	16	0.16	0.60		mg/Kg	2	1/21/2020 10:05:09 AM	49920
Cobalt	3.1	0.21	0.60		mg/Kg	2	1/21/2020 10:05:09 AM	49920
Lead	19	0.49	0.50		mg/Kg	2	1/21/2020 10:05:09 AM	49920
Nickel	21	0.30	1.0		mg/Kg	2	1/21/2020 10:05:09 AM	49920
Selenium	ND	2.5	5.0		mg/Kg	2	1/21/2020 10:05:09 AM	49920
Silver	ND	0.065	0.50		mg/Kg	2	1/21/2020 10:05:09 AM	49920
Vanadium	7.7	0.13	5.0		mg/Kg	2	1/21/2020 10:05:09 AM	49920
Zinc	1600	4.0	25		mg/Kg	10	1/21/2020 10:37:11 AM	49920
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/23/2020 10:31:51 AM	49985
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	1.9	5.1	D	mg/Kg	1	1/27/2020 4:16:17 PM	49952
Acenaphthylene	ND	2.2	5.1	D	mg/Kg	1	1/27/2020 4:16:17 PM	49952
Aniline	ND	1.7	5.1	D	mg/Kg	1	1/27/2020 4:16:17 PM	49952
Anthracene	ND	1.9	5.1	D	mg/Kg	1	1/27/2020 4:16:17 PM	49952
Azobenzene	ND	2.6	5.1	D	mg/Kg	1	1/27/2020 4:16:17 PM	49952
Benz(a)anthracene	ND	1.7	5.1	D	mg/Kg	1	1/27/2020 4:16:17 PM	49952
Benzo(a)pyrene	ND	2.7	5.1	D	mg/Kg	1	1/27/2020 4:16:17 PM	49952
Benzo(b)fluoranthene	ND	2.9	5.1	D	mg/Kg	1	1/27/2020 4:16:17 PM	49952
Benzo(g,h,i)perylene	ND	2.6	5.1	D	mg/Kg	1	1/27/2020 4:16:17 PM	49952
Benzo(k)fluoranthene	ND	1.5	5.1	D	mg/Kg	1	1/27/2020 4:16:17 PM	49952
Benzoic acid	ND	3.5	13	D	mg/Kg	1	1/27/2020 4:16:17 PM	49952
Benzyl alcohol	ND	2.1	5.1	D	mg/Kg	1	1/27/2020 4:16:17 PM	49952
Bis(2-chloroethoxy)methane	ND	2.1	5.1	D	mg/Kg	1	1/27/2020 4:16:17 PM	49952

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Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-2 Sludge 2-2.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 8:29:00 AM
Lab ID: 2001723-028 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	2.9	5.1	D	mg/Kg	1	1/27/2020 4:16:17 PM	49952
Bis(2-chloroisopropyl)ether	ND	2.2	5.1	D	mg/Kg	1	1/27/2020 4:16:17 PM	49952
Bis(2-ethylhexyl)phthalate	ND	5.7	13	D	mg/Kg	1	1/27/2020 4:16:17 PM	49952
4-Bromophenyl phenyl ether	ND	2.9	5.1	D	mg/Kg	1	1/27/2020 4:16:17 PM	49952
Butyl benzyl phthalate	ND	1.7	5.1	D	mg/Kg	1	1/27/2020 4:16:17 PM	49952
Carbazole	ND	2.0	5.1	D	mg/Kg	1	1/27/2020 4:16:17 PM	49952
4-Chloro-3-methylphenol	ND	2.0	13	D	mg/Kg	1	1/27/2020 4:16:17 PM	49952
4-Chloroaniline	ND	1.9	13	D	mg/Kg	1	1/27/2020 4:16:17 PM	49952
2-Chloronaphthalene	ND	2.1	6.3	D	mg/Kg	1	1/27/2020 4:16:17 PM	49952
2-Chlorophenol	ND	2.9	5.1	D	mg/Kg	1	1/27/2020 4:16:17 PM	49952
4-Chlorophenyl phenyl ether	ND	2.1	5.1	D	mg/Kg	1	1/27/2020 4:16:17 PM	49952
Chrysene	ND	2.0	5.1	D	mg/Kg	1	1/27/2020 4:16:17 PM	49952
Di-n-butyl phthalate	ND	7.6	10	D	mg/Kg	1	1/27/2020 4:16:17 PM	49952
Di-n-octyl phthalate	ND	1.7	10	D	mg/Kg	1	1/27/2020 4:16:17 PM	49952
Dibenz(a,h)anthracene	ND	2.8	5.1	D	mg/Kg	1	1/27/2020 4:16:17 PM	49952
Dibenzofuran	ND	2.5	5.1	D	mg/Kg	1	1/27/2020 4:16:17 PM	49952
1,2-Dichlorobenzene	ND	2.0	5.1	D	mg/Kg	1	1/27/2020 4:16:17 PM	49952
1,3-Dichlorobenzene	ND	1.7	5.1	D	mg/Kg	1	1/27/2020 4:16:17 PM	49952
1,4-Dichlorobenzene	ND	2.1	5.1	D	mg/Kg	1	1/27/2020 4:16:17 PM	49952
3,3´-Dichlorobenzidine	ND	2.2	6.3	D	mg/Kg	1	1/27/2020 4:16:17 PM	49952
Diethyl phthalate	ND	7.7	13	D	mg/Kg	1	1/27/2020 4:16:17 PM	49952
Dimethyl phthalate	ND	2.1	5.1	D	mg/Kg	1	1/27/2020 4:16:17 PM	49952
2,4-Dichlorophenol	ND	2.1	10	D	mg/Kg	1	1/27/2020 4:16:17 PM	49952
2,4-Dimethylphenol	ND	2.1	7.6	D	mg/Kg	1	1/27/2020 4:16:17 PM	49952
4,6-Dinitro-2-methylphenol	ND	1.9	10	D	mg/Kg	1	1/27/2020 4:16:17 PM	49952
2,4-Dinitrophenol	ND	1.5	13	D	mg/Kg	1	1/27/2020 4:16:17 PM	49952
2,4-Dinitrotoluene	ND	2.6	13	D	mg/Kg	1	1/27/2020 4:16:17 PM	49952
2,6-Dinitrotoluene	ND	3.0	13	D	mg/Kg	1	1/27/2020 4:16:17 PM	49952
Fluoranthene	ND	1.9	5.1	D	mg/Kg	1	1/27/2020 4:16:17 PM	49952
Fluorene	39	2.0	5.1	D	mg/Kg	1	1/27/2020 4:16:17 PM	49952
Hexachlorobenzene	ND	2.0	5.1	D	mg/Kg	1	1/27/2020 4:16:17 PM	49952
Hexachlorobutadiene	ND	2.2	5.1	D	mg/Kg	1	1/27/2020 4:16:17 PM	49952
Hexachlorocyclopentadiene	ND	2.4	5.1	D	mg/Kg	1	1/27/2020 4:16:17 PM	49952
Hexachloroethane	ND	2.1	5.1	D	mg/Kg	1	1/27/2020 4:16:17 PM	49952
Indeno(1,2,3-cd)pyrene	ND	3.1	5.1	D	mg/Kg	1	1/27/2020 4:16:17 PM	49952
Isophorone	ND	2.2	10	D	mg/Kg	1	1/27/2020 4:16:17 PM	49952
1-Methylnaphthalene	150	12	25	D	mg/Kg	5	1/29/2020 9:25:36 PM	49952
2-Methylnaphthalene	130	10	25	D	mg/Kg	5	1/29/2020 9:25:36 PM	49952
2-Methylphenol	ND	2.1	10	D	mg/Kg	1	1/27/2020 4:16:17 PM	49952

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

Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-2 Sludge 2-2.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 8:29:00 AM
Lab ID: 2001723-028 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	37	1.8	5.1	D	mg/Kg	1	1/27/2020 4:16:17 PM	49952
N-Nitrosodi-n-propylamine	ND	2.5	5.1	D	mg/Kg	1	1/27/2020 4:16:17 PM	49952
N-Nitrosodiphenylamine	ND	2.6	5.1	D	mg/Kg	1	1/27/2020 4:16:17 PM	49952
Naphthalene	17	2.1	5.1	D	mg/Kg	1	1/27/2020 4:16:17 PM	49952
2-Nitroaniline	ND	2.8	5.1	D	mg/Kg	1	1/27/2020 4:16:17 PM	49952
3-Nitroaniline	ND	2.5	5.1	D	mg/Kg	1	1/27/2020 4:16:17 PM	49952
4-Nitroaniline	ND	3.4	10	D	mg/Kg	1	1/27/2020 4:16:17 PM	49952
Nitrobenzene	ND	2.2	10	D	mg/Kg	1	1/27/2020 4:16:17 PM	49952
2-Nitrophenol	ND	2.1	5.1	D	mg/Kg	1	1/27/2020 4:16:17 PM	49952
4-Nitrophenol	ND	1.5	6.3	D	mg/Kg	1	1/27/2020 4:16:17 PM	49952
Pentachlorophenol	ND	2.3	10	D	mg/Kg	1	1/27/2020 4:16:17 PM	49952
Phenanthrene	130	13	25	D	mg/Kg	5	1/29/2020 9:25:36 PM	49952
Phenol	ND	2.1	5.1	D	mg/Kg	1	1/27/2020 4:16:17 PM	49952
Pyrene	53	1.7	5.1	D	mg/Kg	1	1/27/2020 4:16:17 PM	49952
Pyridine	ND	4.7	10	D	mg/Kg	1	1/27/2020 4:16:17 PM	49952
1,2,4-Trichlorobenzene	ND	2.2	5.1	D	mg/Kg	1	1/27/2020 4:16:17 PM	49952
2,4,5-Trichlorophenol	ND	1.6	5.1	D	mg/Kg	1	1/27/2020 4:16:17 PM	49952
2,4,6-Trichlorophenol	ND	2.5	5.1	D	mg/Kg	1	1/27/2020 4:16:17 PM	49952
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	1	1/27/2020 4:16:17 PM	49952
Surr: Phenol-d5	0		18.5-101	SD	%Rec	1	1/27/2020 4:16:17 PM	49952
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	1	1/27/2020 4:16:17 PM	49952
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	1	1/27/2020 4:16:17 PM	49952
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	1	1/27/2020 4:16:17 PM	49952
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	1	1/27/2020 4:16:17 PM	49952
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	0.088	0.018	0.11	J	mg/Kg	5	1/22/2020 4:47:26 PM	A65992
Toluene	0.35	0.020	0.21		mg/Kg	5	1/22/2020 4:47:26 PM	A65992
Ethylbenzene	0.11	0.012	0.21	J	mg/Kg	5	1/22/2020 4:47:26 PM	A65992
Methyl tert-butyl ether (MTBE)	ND	0.051	0.21		mg/Kg	5	1/22/2020 4:47:26 PM	A65992
1,2,4-Trimethylbenzene	0.63	0.020	0.21		mg/Kg	5	1/22/2020 4:47:26 PM	A65992
1,3,5-Trimethylbenzene	0.16	0.021	0.21	J	mg/Kg	5	1/22/2020 4:47:26 PM	A65992
1,2-Dichloroethane (EDC)	ND	0.022	0.21		mg/Kg	5	1/22/2020 4:47:26 PM	A65992
1,2-Dibromoethane (EDB)	0.060	0.020	0.21	J	mg/Kg	5	1/22/2020 4:47:26 PM	A65992
Naphthalene	1.0	0.043	0.43		mg/Kg	5	1/22/2020 4:47:26 PM	A65992
1-Methylnaphthalene	3.0	0.12	0.86		mg/Kg	5	1/22/2020 4:47:26 PM	A65992
2-Methylnaphthalene	4.3	0.094	0.86		mg/Kg	5	1/22/2020 4:47:26 PM	A65992
Acetone	0.40	0.18	3.2	J	mg/Kg	5	1/22/2020 4:47:26 PM	A65992
Bromobenzene	ND	0.021	0.21		mg/Kg	5	1/22/2020 4:47:26 PM	A65992
Bromodichloromethane	ND	0.020	0.21		mg/Kg	5	1/22/2020 4:47:26 PM	A65992

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

Qualifiers:

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P	Sample pH Not In Range
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Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-2 Sludge 2-2.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 8:29:00 AM
Lab ID: 2001723-028 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Bromoform	ND	0.019	0.21		mg/Kg	5	1/22/2020 4:47:26 PM	A65992
Bromomethane	ND	0.052	0.64		mg/Kg	5	1/22/2020 4:47:26 PM	A65992
2-Butanone	1.9	0.25	2.1	J	mg/Kg	5	1/22/2020 4:47:26 PM	A65992
Carbon disulfide	ND	0.071	2.1		mg/Kg	5	1/22/2020 4:47:26 PM	A65992
Carbon tetrachloride	ND	0.020	0.21		mg/Kg	5	1/22/2020 4:47:26 PM	A65992
Chlorobenzene	ND	0.027	0.21		mg/Kg	5	1/22/2020 4:47:26 PM	A65992
Chloroethane	ND	0.032	0.43		mg/Kg	5	1/22/2020 4:47:26 PM	A65992
Chloroform	ND	0.017	0.21		mg/Kg	5	1/22/2020 4:47:26 PM	A65992
Chloromethane	ND	0.021	0.64		mg/Kg	5	1/22/2020 4:47:26 PM	A65992
2-Chlorotoluene	ND	0.019	0.21		mg/Kg	5	1/22/2020 4:47:26 PM	A65992
4-Chlorotoluene	ND	0.018	0.21		mg/Kg	5	1/22/2020 4:47:26 PM	A65992
cis-1,2-DCE	ND	0.029	0.21		mg/Kg	5	1/22/2020 4:47:26 PM	A65992
cis-1,3-Dichloropropene	ND	0.018	0.21		mg/Kg	5	1/22/2020 4:47:26 PM	A65992
1,2-Dibromo-3-chloropropane	ND	0.022	0.43		mg/Kg	5	1/22/2020 4:47:26 PM	A65992
Dibromochloromethane	0.045	0.015	0.21	J	mg/Kg	5	1/22/2020 4:47:26 PM	A65992
Dibromomethane	ND	0.023	0.21		mg/Kg	5	1/22/2020 4:47:26 PM	A65992
1,2-Dichlorobenzene	ND	0.018	0.21		mg/Kg	5	1/22/2020 4:47:26 PM	A65992
1,3-Dichlorobenzene	ND	0.019	0.21		mg/Kg	5	1/22/2020 4:47:26 PM	A65992
1,4-Dichlorobenzene	ND	0.018	0.21		mg/Kg	5	1/22/2020 4:47:26 PM	A65992
Dichlorodifluoromethane	ND	0.050	0.21		mg/Kg	5	1/22/2020 4:47:26 PM	A65992
1,1-Dichloroethane	ND	0.014	0.21		mg/Kg	5	1/22/2020 4:47:26 PM	A65992
1,1-Dichloroethene	ND	0.086	0.21		mg/Kg	5	1/22/2020 4:47:26 PM	A65992
1,2-Dichloropropane	ND	0.016	0.21		mg/Kg	5	1/22/2020 4:47:26 PM	A65992
1,3-Dichloropropane	ND	0.023	0.21		mg/Kg	5	1/22/2020 4:47:26 PM	A65992
2,2-Dichloropropane	ND	0.070	0.43		mg/Kg	5	1/22/2020 4:47:26 PM	A65992
1,1-Dichloropropene	ND	0.020	0.43		mg/Kg	5	1/22/2020 4:47:26 PM	A65992
Hexachlorobutadiene	ND	0.022	0.43		mg/Kg	5	1/22/2020 4:47:26 PM	A65992
2-Hexanone	ND	0.036	2.1		mg/Kg	5	1/22/2020 4:47:26 PM	A65992
Isopropylbenzene	0.039	0.015	0.21	J	mg/Kg	5	1/22/2020 4:47:26 PM	A65992
4-Isopropyltoluene	0.042	0.018	0.21	J	mg/Kg	5	1/22/2020 4:47:26 PM	A65992
4-Methyl-2-pentanone	0.24	0.040	2.1	J	mg/Kg	5	1/22/2020 4:47:26 PM	A65992
Methylene chloride	ND	0.038	0.64		mg/Kg	5	1/22/2020 4:47:26 PM	A65992
n-Butylbenzene	0.073	0.020	0.64	J	mg/Kg	5	1/22/2020 4:47:26 PM	A65992
n-Propylbenzene	0.069	0.017	0.21	J	mg/Kg	5	1/22/2020 4:47:26 PM	A65992
sec-Butylbenzene	0.11	0.024	0.21	J	mg/Kg	5	1/22/2020 4:47:26 PM	A65992
Styrene	ND	0.017	0.21		mg/Kg	5	1/22/2020 4:47:26 PM	A65992
tert-Butylbenzene	ND	0.020	0.21		mg/Kg	5	1/22/2020 4:47:26 PM	A65992
1,1,1,2-Tetrachloroethane	ND	0.014	0.21		mg/Kg	5	1/22/2020 4:47:26 PM	A65992
1,1,2,2-Tetrachloroethane	ND	0.022	0.21		mg/Kg	5	1/22/2020 4:47:26 PM	A65992

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

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PQL	Practical Quanitative Limit
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E	Value above quantitation range
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P	Sample pH Not In Range
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Analytical Report
Lab Order **2001723**
Date Reported: **2/28/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-2 Sludge 2-2.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 8:29:00 AM
Lab ID: 2001723-028 **Matrix:** SOIL **Received Date:** 1/17/2020 3:59:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Tetrachloroethene (PCE)	ND	0.017	0.21		mg/Kg	5	1/22/2020 4:47:26 PM	A65992
trans-1,2-DCE	ND	0.020	0.21		mg/Kg	5	1/22/2020 4:47:26 PM	A65992
trans-1,3-Dichloropropene	ND	0.023	0.21		mg/Kg	5	1/22/2020 4:47:26 PM	A65992
1,2,3-Trichlorobenzene	ND	0.019	0.43		mg/Kg	5	1/22/2020 4:47:26 PM	A65992
1,2,4-Trichlorobenzene	ND	0.022	0.21		mg/Kg	5	1/22/2020 4:47:26 PM	A65992
1,1,1-Trichloroethane	ND	0.019	0.21		mg/Kg	5	1/22/2020 4:47:26 PM	A65992
1,1,2-Trichloroethane	ND	0.015	0.21		mg/Kg	5	1/22/2020 4:47:26 PM	A65992
Trichloroethene (TCE)	ND	0.025	0.21		mg/Kg	5	1/22/2020 4:47:26 PM	A65992
Trichlorofluoromethane	ND	0.073	0.21		mg/Kg	5	1/22/2020 4:47:26 PM	A65992
1,2,3-Trichloropropane	ND	0.035	0.43		mg/Kg	5	1/22/2020 4:47:26 PM	A65992
Vinyl chloride	ND	0.014	0.21		mg/Kg	5	1/22/2020 4:47:26 PM	A65992
Xylenes, Total	0.89	0.054	0.43		mg/Kg	5	1/22/2020 4:47:26 PM	A65992
Surr: Dibromofluoromethane	104		70-130		%Rec	5	1/22/2020 4:47:26 PM	A65992
Surr: 1,2-Dichloroethane-d4	87.7		70-130		%Rec	5	1/22/2020 4:47:26 PM	A65992
Surr: Toluene-d8	100		70-130		%Rec	5	1/22/2020 4:47:26 PM	A65992
Surr: 4-Bromofluorobenzene	92.5		70-130		%Rec	5	1/22/2020 4:47:26 PM	A65992
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	44	4.6	21		mg/Kg	5	1/22/2020 4:47:26 PM	AG659
Surr: BFB	99.3	0	70-130		%Rec	5	1/22/2020 4:47:26 PM	AG659
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/23/2020 3:07:00 PM	R66022
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	7.71				pH Units	1	1/24/2020 9:47:00 AM	R66051
SPECIFIC GRAVITY							Analyst: **PAC**	
Specific Gravity	1.200				g/cm3	1	1/27/2020	R66241

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P	Sample pH Not In Range
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Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

January 28, 2020

Hall Environmental Analysis Laboratory

Sample Delivery Group: L1181371

Samples Received: 01/21/2020

Project Number:

Description:

Report To:

4901 Hawkins NE

Albuquerque, NM 87109

Entire Report Reviewed By: Daphne R Richards

Daphne Richards
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



TABLE OF CONTENTS

Cp: Cover Page 1

Tc: Table of Contents 2

Ss: Sample Summary 3

Cn: Case Narrative 7

Sr: Sample Results 8

2001723-001C DUP 3 L1181371-01 8

2001723-002C SWMU1-21 TOE SURFACE L1181371-02 9

2001723-003C SWMU1-22 2.5' L1181371-03 10

2001723-004C SWMU1-20 2.5' L1181371-04 11

2001723-005C SWMU1-14 1.5' L1181371-05 12

2001723-006C SWMU1-22 1.5' L1181371-06 13

2001723-007C SWMU1-14 5' L1181371-07 14

2001723-008C SWMU1-21 TOE 2.5' L1181371-08 15

2001723-009C SWMU1-3 0-0.5' L1181371-09 16

2001723-010C SWMU1-4 SURF L1181371-10 17

2001723-011C SWMU1-1 TOE SURF L1181371-11 18

2001723-012C SWMU1-21 1.5' L1181371-12 19

2001723-013C SWMU1-16 TOE 4-4.5' L1181371-13 20

2001723-014C SWMU1-14 7.5' L1181371-14 21

2001723-015C SWMU1-14 TOE SURF L1181371-15 22

2001723-016C SWMU1-17 TOE SURFACE L1181371-16 23

2001723-017C SWMU1-14 2.5' L1181371-17 24

2001723-018C SWMU1-18 2.5' L1181371-18 25

2001723-019C SWMU1-12 TOE 3' L1181371-19 26

2001723-020C SWMU1-17 TOE 2.5' L1181371-20 27

2001723-021C SWMU1-17 TOE 4.5-5' L1181371-21 28

2001723-022C SWMU1-20 TOE 5' L1181371-22 29

2001723-023C SWMU1-5' L1181371-23 30

2001723-024C SWMU1-10 CLAY 4.5-5' L1181371-24 31

2001723-025C SWMU1-16 TOE 2.5' L1181371-25 32

2001723-026C SWMU1-8 5-5.5' L1181371-26 33

2001723-027C SWMU1-12 TOE SURFACE L1181371-27 34

2001723-028C SWMU1-2 SLUDGE 2-2.5 L1181371-28 35

Qc: Quality Control Summary 36

Wet Chemistry by Method 2710 F-2011 36

Gl: Glossary of Terms 38

Al: Accreditations & Locations 39

Sc: Sample Chain of Custody 40

2001723-001C DUP 3 L1181371-01 Solid

Collected by | Collected date/time 01/14/20 00:00 | Received date/time 01/21/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1416834	1	01/24/20 19:49	01/25/20 23:55	MJA	Mt. Juliet, TN

2001723-002C SWMU1-21 TOE SURFACE L1181371-02 Solid

Collected by | Collected date/time 01/14/20 10:35 | Received date/time 01/21/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1416834	1	01/24/20 19:49	01/25/20 23:55	MJA	Mt. Juliet, TN

2001723-003C SWMU1-22 2.5' L1181371-03 Solid

Collected by | Collected date/time 01/14/20 09:20 | Received date/time 01/21/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1416834	1	01/24/20 19:49	01/25/20 23:55	MJA	Mt. Juliet, TN

2001723-004C SWMU1-20 2.5' L1181371-04 Solid

Collected by | Collected date/time 01/14/20 09:40 | Received date/time 01/21/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1416834	1	01/24/20 19:49	01/25/20 23:55	MJA	Mt. Juliet, TN

2001723-005C SWMU1-14 1.5' L1181371-05 Solid

Collected by | Collected date/time 01/14/20 09:48 | Received date/time 01/21/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1416834	1	01/24/20 19:49	01/25/20 23:55	MJA	Mt. Juliet, TN

2001723-006C SWMU1-22 1.5' L1181371-06 Solid

Collected by | Collected date/time 01/14/20 09:15 | Received date/time 01/21/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1416834	1	01/24/20 19:49	01/25/20 23:55	MJA	Mt. Juliet, TN

2001723-007C SWMU1-14 5' L1181371-07 Solid

Collected by | Collected date/time 01/14/20 10:02 | Received date/time 01/21/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1416834	1	01/24/20 19:49	01/25/20 23:55	MJA	Mt. Juliet, TN

2001723-008C SWMU1-21 TOE 2.5' L1181371-08 Solid

Collected by | Collected date/time 01/14/20 10:43 | Received date/time 01/21/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1416834	1	01/24/20 19:49	01/25/20 23:55	MJA	Mt. Juliet, TN

2001723-009C SWMU1-3 0-0.5' L1181371-09 Solid

Collected by | Collected date/time 01/14/20 16:50 | Received date/time 01/21/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1416834	1	01/24/20 19:49	01/25/20 23:55	MJA	Mt. Juliet, TN

2001723-010C SWMU1-4 SURF L1181371-10 Solid

Collected by | Collected date/time 01/14/20 13:13 | Received date/time 01/21/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1416834	1	01/24/20 19:49	01/25/20 23:55	MJA	Mt. Juliet, TN

2001723-011C SWMU1-1 TOE SURF L1181371-11 Solid

Collected by | Collected date/time 01/15/20 14:50 | Received date/time 01/21/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1416834	1	01/24/20 19:49	01/25/20 23:55	MJA	Mt. Juliet, TN

2001723-012C SWMU1-21 1.5' L1181371-12 Solid

Collected by | Collected date/time 01/14/20 10:29 | Received date/time 01/21/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1416834	1	01/24/20 19:49	01/25/20 23:55	MJA	Mt. Juliet, TN

2001723-013C SWMU1-16 TOE 4-4.5' L1181371-13 Solid

Collected by | Collected date/time 01/16/20 14:16 | Received date/time 01/21/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1416834	1	01/24/20 19:49	01/25/20 23:55	MJA	Mt. Juliet, TN

2001723-014C SWMU1-14 7.5' L1181371-14 Solid

Collected by | Collected date/time 01/14/20 10:11 | Received date/time 01/21/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1416834	1	01/24/20 19:49	01/25/20 23:55	MJA	Mt. Juliet, TN

2001723-015C SWMU1-14 TOE SURF L1181371-15 Solid

Collected by | Collected date/time 01/14/20 14:44 | Received date/time 01/21/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1416834	1	01/24/20 19:49	01/25/20 23:55	MJA	Mt. Juliet, TN

2001723-016C SWMU1-17 TOE SURFACE L1181371-16 Solid

Collected by | Collected date/time 01/16/20 13:30 | Received date/time 01/21/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1416834	1	01/24/20 19:49	01/25/20 23:55	MJA	Mt. Juliet, TN

2001723-017C SWMU1-14 2.5' L1181371-17 Solid

Collected by | Collected date/time 01/14/20 09:54 | Received date/time 01/21/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1417603	1	01/27/20 21:29	01/27/20 23:50	MJA	Mt. Juliet, TN

2001723-018C SWMU1-18 2.5' L1181371-18 Solid

Collected by | Collected date/time 01/13/20 16:20 | Received date/time 01/21/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1417603	1	01/27/20 21:29	01/27/20 23:50	MJA	Mt. Juliet, TN

2001723-019C SWMU1-12 TOE 3' L1181371-19 Solid

Collected by | Collected date/time 01/15/20 14:10 | Received date/time 01/21/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1417603	1	01/27/20 21:29	01/27/20 23:50	MJA	Mt. Juliet, TN

2001723-020C SWMU1-17 TOE 2.5' L1181371-20 Solid

Collected by | Collected date/time 01/16/20 13:41 | Received date/time 01/21/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1417603	1	01/27/20 21:29	01/27/20 23:50	MJA	Mt. Juliet, TN

2001723-021C SWMU1-17 TOE 4.5-5' L1181371-21 Solid

Collected by | Collected date/time 01/16/20 13:50 | Received date/time 01/21/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1417603	1	01/27/20 21:29	01/27/20 23:50	MJA	Mt. Juliet, TN

2001723-022C SWMU1-20 TOE 5' L1181371-22 Solid

Collected by | Collected date/time 01/15/20 15:07 | Received date/time 01/21/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1417603	1	01/27/20 21:29	01/27/20 23:50	MJA	Mt. Juliet, TN

2001723-023C SWMU1-5' L1181371-23 Solid

Collected by | Collected date/time 01/15/20 09:50 | Received date/time 01/21/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1417603	1	01/27/20 21:29	01/27/20 23:50	MJA	Mt. Juliet, TN

2001723-024C SWMU1-10 CLAY 4.5-5' L1181371-24 Solid

Collected by | Collected date/time 01/16/20 09:28 | Received date/time 01/21/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1417603	1	01/27/20 21:29	01/27/20 23:50	MJA	Mt. Juliet, TN

SAMPLE SUMMARY

2001723-025C SWMU1-16 TOE 2.5' L1181371-25 Solid

Collected by	Collected date/time	Received date/time
	01/16/20 14:08	01/21/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1417603	1	01/27/20 21:29	01/27/20 23:50	MJA	Mt. Juliet, TN

2001723-026C SWMU1-8 5-5.5' L1181371-26 Solid

Collected by	Collected date/time	Received date/time
	01/16/20 08:48	01/21/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1417603	1	01/27/20 21:29	01/27/20 23:50	MJA	Mt. Juliet, TN

2001723-027C SWMU1-12 TOE SURFACE L1181371-27 Solid

Collected by	Collected date/time	Received date/time
	01/15/20 13:55	01/21/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1417603	1	01/27/20 21:29	01/27/20 23:50	MJA	Mt. Juliet, TN

2001723-028C SWMU1-2 SLUDGE 2-2.5 L1181371-28 Solid

Collected by	Collected date/time	Received date/time
	01/15/20 08:29	01/21/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1417603	1	01/27/20 21:29	01/27/20 23:50	MJA	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Daphne R Richards

Daphne Richards
Project Manager

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.64		1	01/25/2020 23:55	WG1416834

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.81		1	01/25/2020 23:55	WG1416834

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.95		1	01/25/2020 23:55	WG1416834

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.93		1	01/25/2020 23:55	WG1416834

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	2.07		1	01/25/2020 23:55	WG1416834

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	2.17		1	01/25/2020 23:55	WG1416834

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	2.15		1	01/25/2020 23:55	WG1416834

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.90		1	01/25/2020 23:55	WG1416834

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.36		1	01/25/2020 23:55	WG1416834

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.16		1	01/25/2020 23:55	WG1416834

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.58		1	01/25/2020 23:55	WG1416834

Collected date/time: 01/14/20 10:29

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	2.08		1	01/25/2020 23:55	WG1416834

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.88		1	01/25/2020 23:55	WG1416834

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.89		1	01/25/2020 23:55	WG1416834

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.39		1	01/25/2020 23:55	WG1416834

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.29		1	01/25/2020 23:55	WG1416834

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.82		1	01/27/2020 23:50	WG1417603

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.70		1	01/27/2020 23:50	WG1417603

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.91		1	01/27/2020 23:50	WG1417603

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.64		1	01/27/2020 23:50	WG1417603

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.92		1	01/27/2020 23:50	WG1417603

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.92		1	01/27/2020 23:50	WG1417603

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	2.04		1	01/27/2020 23:50	WG1417603

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	2.01		1	01/27/2020 23:50	WG1417603

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.19		1	01/27/2020 23:50	WG1417603

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.92		1	01/27/2020 23:50	WG1417603

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.03		1	01/27/2020 23:50	WG1417603

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.20		1	01/27/2020 23:50	WG1417603

L1181371-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1181371-05 01/25/20 23:55 • (DUP) R3494365-1 01/25/20 23:55

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	g/cm3	g/cm3		%		%
Density	2.07	2.02	1	2.52		20

L1181371-09 Original Sample (OS) • Duplicate (DUP)

(OS) L1181371-09 01/25/20 23:55 • (DUP) R3494365-2 01/25/20 23:55

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	g/cm3	g/cm3		%		%
Density	1.36	1.38	1	1.46		20

L1181371-20 Original Sample (OS) • Duplicate (DUP)

(OS) L1181371-20 01/27/20 23:50 • (DUP) R3494674-1 01/27/20 23:50

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	g/cm3	g/cm3		%		%
Density	1.64	1.72	1	5.12		20

L1181371-22 Original Sample (OS) • Duplicate (DUP)

(OS) L1181371-22 01/27/20 23:50 • (DUP) R3494674-2 01/27/20 23:50

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	g/cm3	g/cm3		%		%
Density	1.92	1.87	1	2.62		20

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
	The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

ACCREDITATIONS & LOCATIONS

ONE LAB. NATIONWIDE.

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

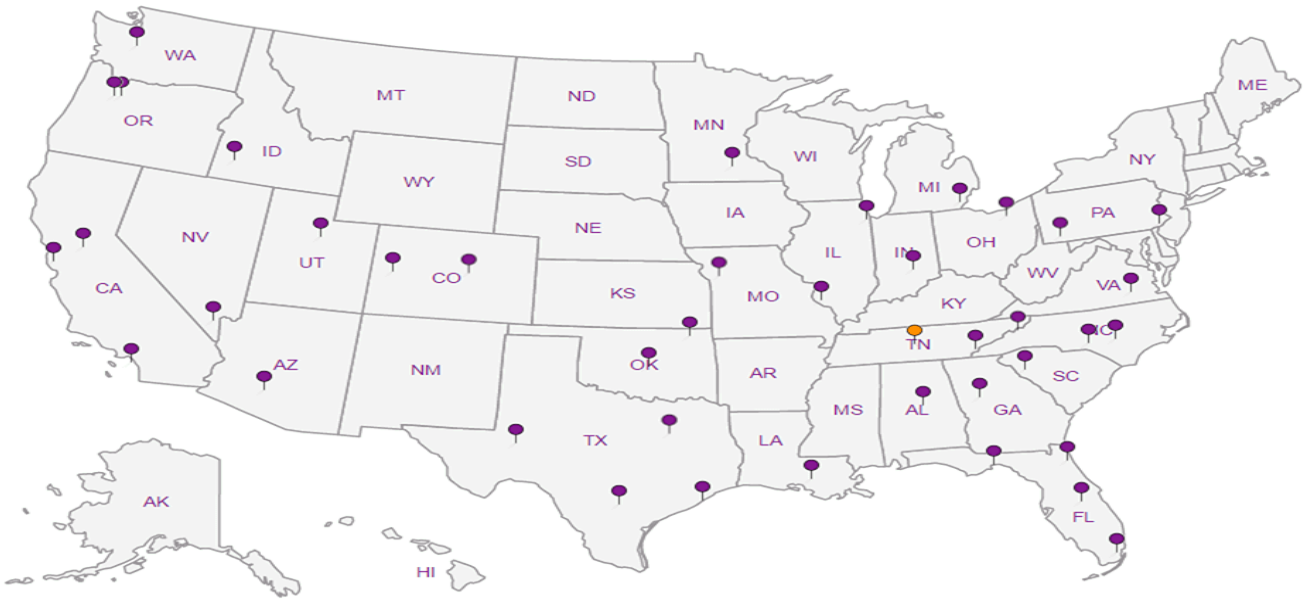
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 3

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

SUB CONTRATOR: ESC PACE	COMPANY: ESC PACE	PHONE: (800) 767-5859	FAX: (615) 758-5859
ADDRESS: 12065 Lebanon Rd		ACCOUNT #:	EMAIL:
CITY, STATE, ZIP: Mt. Juliet, TN 37122			

B203

L1181871

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS	
1	2001723-001C	Dup 3	4OZGU	Soil		1	SPECIFIC GRAVITY	-01
2	2001723-002C	SWMU1-21 Toe Surface	4OZGU	Soil	1/14/2020 10:35:00 AM	1	SPECIFIC GRAVITY	-02
3	2001723-003C	SWMU1-22 2.5'	4OZGU	Soil	1/14/2020 9:20:00 AM	1	SPECIFIC GRAVITY	-03
4	2001723-004C	SWMU1-20 2.5'	4OZGU	Soil	1/14/2020 9:40:00 AM	1	SPECIFIC GRAVITY	-04
5	2001723-005C	SWMU1-14 1.5'	4OZGU	Soil	1/14/2020 9:48:00 AM	1	SPECIFIC GRAVITY	-05
6	2001723-006C	SWMU1-22 1.5'	4OZGU	Soil	1/14/2020 9:15:00 AM	1	SPECIFIC GRAVITY	-06
7	2001723-007C	SWMU1-14 5'	4OZGU	Soil	1/14/2020 10:02:00 AM	1	SPECIFIC GRAVITY	-07
8	2001723-008C	SWMU1-21 Toe 2.5'	4OZGU	Soil	1/14/2020 10:43:00 AM	1	SPECIFIC GRAVITY	-08
9	2001723-009C	SWMU1-3 0-0.5'	4OZGU	Soil	1/14/2010 4:50:00 PM	1	SPECIFIC GRAVITY	-09
10	2001723-010C	SWMU1-4 Surf	4OZGU	Soil	1/14/2020 3:13:00 PM	1	SPECIFIC GRAVITY	-10
11	2001723-011C	SWMU1-1 Toe Surf	4OZGU	Soil	1/15/2020 2:50:00 PM	1	SPECIFIC GRAVITY	-11
12	2001723-012C	SWMU1-21 1.5'	4OZGU	Soil	1/14/2020 10:29:00 AM	1	SPECIFIC GRAVITY	-12
13	2001723-013C	SWMU1-16 Toe 4-4.5'	4OZGU	Soil	1/16/2020 2:16:00 PM	1	SPECIFIC GRAVITY	-13

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By:	Date: 1/17/2020	Time: 4:50 PM	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By: W Tuffer	Date: 1/21/20	Time: 0830

TAT: Standard ☒ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:

☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY

Temp of samples 0.1/1.7=0.4 °C ARO Attempt to Cool? Y

Comments: COC SI

RAD SCREEN: <0.5 mR/hr

Tracking # 4516 1669 2410 Containers Received 28

ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 2 OF: 3

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

SUB CONTRATOR: ESC PACE	COMPANY: ESC PACE	PHONE: (800) 767-5859	FAX: (615) 758-5859
ADDRESS: 12065 Lebanon Rd		ACCOUNT #:	EMAIL:
CITY, STATE, ZIP: Mt. Juliet, TN 37122			

L118137

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS	
14	2001723-014C	SWMU1-14 7.5'	4OZGU	Soil	1/14/2020 10:11:00 AM	1	SPECIFIC GRAVITY	-14
15	2001723-015C	SWMU1-14 Toe Surf	4OZGU	Soil	1/14/2020 2:44:00 PM	1	SPECIFIC GRAVITY	-15
16	2001723-016C	SWMU1-17 Toe Surface	4OZGU	Soil	1/16/2020 1:30:00 PM	1	SPECIFIC GRAVITY	-16
17	2001723-017C	SWMU1-14 2.5'	4OZGU	Soil	1/14/2020 9:54:00 AM	1	SPECIFIC GRAVITY	-17
18	2001723-018C	SWMU1-18 2.5'	4OZGU	Soil	1/13/2020 4:20:00 PM	1	SPECIFIC GRAVITY	-18
19	2001723-019C	SWMU1-12 Toe 3'	4OZGU	Soil	1/15/2020 2:10:00 PM	1	SPECIFIC GRAVITY	-19
20	2001723-020C	SWMU1-17 Toe 2.5'	4OZGU	Soil	1/16/2020 1:41:00 PM	1	SPECIFIC GRAVITY	-20
21	2001723-021C	SWMU1-17 Toe 4.5-5'	4OZGU	Soil	1/16/2020 1:50:00 PM	1	SPECIFIC GRAVITY	-21
22	2001723-022C	SWMU1-20 Toe 5'	4OZGU	Soil	1/15/2020 3:07:00 PM	1	SPECIFIC GRAVITY	-22
23	2001723-023C	SWMU1- 5'	4OZGU	Soil	1/15/2020 9:50:00 AM	1	SPECIFIC GRAVITY	-23
24	2001723-024C	SWMU1-10 Clay 4.5-5'	4OZGU	Soil	1/16/2020 9:28:00 AM	1	SPECIFIC GRAVITY	-24
25	2001723-025C	SWMU1-16 Toe 2.5'	4OZGU	Soil	1/16/2020 2:08:00 PM	1	SPECIFIC GRAVITY	-25
26	2001723-026C	SWMU1-8 5-5.5'	4OZGU	Soil	1/16/2020 8:48:00 AM	1	SPECIFIC GRAVITY	-26

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By:	Date: 1/17/2020	Time: 4:50 PM	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By: N Taylor	Date: 1/21/20	Time: 0830

TAT: Standard ☑ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

Tracking # 4510 1669 2410 Containers Received

REPORT TRANSMITTAL DESIRED:

☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY

Temp of samples 0.1 / 3.4 °C tzn Attempt to Cool ? Y

Comments: COC SI

RAD SCREEN: <0.5 mR/hr

Received by OCD: 3/2/2021 2:18:14 PM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 3 OF: 3

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

SUB CONTRATOR: ESC PACE	COMPANY: ESC PACE	PHONE: (800) 767-5859	FAX: (615) 758-5859
ADDRESS: 12065 Lebanon Rd		ACCOUNT #:	EMAIL:
CITY, STATE, ZIP: Mt. Juliet, TN 37122			

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS L1181371
27	2001723-027C	SWMU1-12 Toe Surface	4OZGU	Soil	1/15/2020 1:55:00 PM	1	SPECIFIC GRAVITY — 27
28	2001723-028C	SWMU1-2 Sludge 2-2.5	4OZGU	Soil	1/15/2020 8:29:00 AM	1	SPECIFIC GRAVITY — 28

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By:	Date: 1/17/2020	Time: 4:50 PM	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date: 1/21/20	Time: 0830

TAT: Standard [X] RUSH Next BD [ ] 2nd BD [ ] 3rd BD [ ]

REPORT TRANSMITTAL DESIRED:
[ ] HARDCOPY (extra cost) [ ] FAX [ ] EMAIL [ ] ONLINE

FOR LAB USE ONLY
Temp of samples 0.4+3=4.1 A2 °C Attempt to Cool ? Y
Comments: COC'd

Tracking # 4510 1669 2410 Containers Received

RAD SCREEN: <0.5 mR/hr

Released to Imaging: 3/2/2021 2:22:29 PM

Pace Analytical National Center for Testing & Innovation
Cooler Receipt Form

Client:	L118137	
Cooler Received/Opened On: 1/27/20 Temperature: .4		
Received by: Willie Taylor 0830		
Signature: Willie Taylor		

Receipt Check List	NP	Yes	No
COC Seal Present / Intact?		✓	
COC Signed / Accurate?		✓	
Bottles arrive intact?		✓	
Correct bottles used?		✓	
Sufficient volume sent?		✓	
If Applicable			
VOA Zero headspace?			
Preservation Correct / Checked?			

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001723**
28-Feb-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **LCS-49915**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **LCSS**	Batch ID: **49915**	RunNo: **65943**							
Prep Date: **1/20/2020**	Analysis Date: **1/21/2020**	SeqNo: **2264722**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	54	10	50.00	0	107	63.9	124			
Surr: DNOP	4.8		5.000		96.0	55.1	146			

Sample ID: **MB-49915**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **PBS**	Batch ID: **49915**	RunNo: **65943**							
Prep Date: **1/20/2020**	Analysis Date: **1/21/2020**	SeqNo: **2264724**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	13		10.00		129	55.1	146			

Sample ID: **LCS-49914**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **LCSS**	Batch ID: **49914**	RunNo: **65943**							
Prep Date: **1/20/2020**	Analysis Date: **1/21/2020**	SeqNo: **2266019**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	60	10	50.00	0	121	63.9	124			
Surr: DNOP	5.7		5.000		114	55.1	146			

Sample ID: **MB-49914**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **PBS**	Batch ID: **49914**	RunNo: **65943**							
Prep Date: **1/20/2020**	Analysis Date: **1/21/2020**	SeqNo: **2266021**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	10		10.00		103	55.1	146			

Sample ID: **LCS-49945**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **LCSS**	Batch ID: **49945**	RunNo: **65969**							
Prep Date: **1/21/2020**	Analysis Date: **1/22/2020**	SeqNo: **2266554**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	48	10	50.00	0	96.6	63.9	124			
Surr: DNOP	4.2		5.000		84.8	55.1	146			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001723**
28-Feb-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **MB-49945**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **49945**	RunNo: **65969**
Prep Date: **1/21/2020**	Analysis Date: **1/22/2020**	SeqNo: **2266558** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.8		10.00		88.4	55.1	146			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001723**
28-Feb-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **MBS**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**			
Client ID: **PBS**	Batch ID: **A65958**	RunNo: **65958**			
Prep Date: **1/17/2012**	Analysis Date: **1/21/2020**	SeqNo: **2265183**	Units: **mg/Kg**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	0.0049	0.050								J
Ethylbenzene	ND	0.050								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	ND	0.050								
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	ND	0.75								
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	ND	0.15								
2-Butanone	ND	0.50								
Carbon disulfide	ND	0.50								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	ND	0.050								
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.050								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.050								
1,1-Dichloroethene	ND	0.050								
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.10								

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001723**
28-Feb-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **MBS**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **A65958**	RunNo: **65958**
Prep Date: **1/17/2012**	Analysis Date: **1/21/2020**	SeqNo: **2265183** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
4-Methyl-2-pentanone	0.030	0.50								J
Methylene chloride	ND	0.15								
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
1,2,3-Trichlorobenzene	ND	0.10								
1,2,4-Trichlorobenzene	ND	0.050								
1,1,1-Trichloroethane	ND	0.050								
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	ND	0.050								
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: Dibromofluoromethane	0.51		0.5000		102	70	130			
Surr: 1,2-Dichloroethane-d4	0.47		0.5000		93.3	70	130			
Surr: Toluene-d8	0.48		0.5000		95.2	70	130			
Surr: 4-Bromofluorobenzene	0.47		0.5000		94.0	70	130			

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS**	Batch ID: **A65958**	RunNo: **65958**
Prep Date:	Analysis Date: **1/21/2020**	SeqNo: **2265184** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	1.000	0	99.7	70	130			
Toluene	0.96	0.050	1.000	0	95.6	70	130			
Chlorobenzene	0.91	0.050	1.000	0	91.4	70	130			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001723**
28-Feb-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **100ng lcs** SampType: **LCS** TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS** Batch ID: **A65958** RunNo: **65958**
Prep Date: Analysis Date: **1/21/2020** SeqNo: **2265184** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	1.0	0.050	1.000	0	103	70	130			
Trichloroethene (TCE)	0.90	0.050	1.000	0	90.1	70	130			
Surr: Dibromofluoromethane	0.48		0.5000		96.6	70	130			
Surr: 1,2-Dichloroethane-d4	0.49		0.5000		98.9	70	130			
Surr: Toluene-d8	0.49		0.5000		97.6	70	130			
Surr: 4-Bromofluorobenzene	0.47		0.5000		94.3	70	130			

Sample ID: **2001723-002ams** SampType: **MS** TestCode: **EPA Method 8260B: Volatiles**
Client ID: **SWMU1-21 Toe Surf** Batch ID: **A65958** RunNo: **65958**
Prep Date: Analysis Date: **1/21/2020** SeqNo: **2265187** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	3.9	0.10	4.020	0	97.3	70	130			
Toluene	3.9	0.20	4.020	0.03847	96.6	70	130			
Chlorobenzene	3.6	0.20	4.020	0	90.4	70	130			
1,1-Dichloroethene	4.2	0.20	4.020	0	104	70	130			
Trichloroethene (TCE)	3.5	0.20	4.020	0	87.1	70	130			
Surr: Dibromofluoromethane	1.8		2.010		91.8	70	130			
Surr: 1,2-Dichloroethane-d4	1.9		2.010		93.2	70	130			
Surr: Toluene-d8	2.0		2.010		100	70	130			
Surr: 4-Bromofluorobenzene	1.5		2.010		75.1	70	130			

Sample ID: **2001723-002amsd** SampType: **MSD** TestCode: **EPA Method 8260B: Volatiles**
Client ID: **SWMU1-21 Toe Surf** Batch ID: **A65958** RunNo: **65958**
Prep Date: Analysis Date: **1/21/2020** SeqNo: **2265188** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	3.8	0.10	4.020	0	95.4	70	130	2.02	20	
Toluene	3.7	0.20	4.020	0.03847	90.4	70	130	6.56	20	
Chlorobenzene	3.5	0.20	4.020	0	87.7	70	130	3.01	20	
1,1-Dichloroethene	4.1	0.20	4.020	0	102	70	130	2.14	20	
Trichloroethene (TCE)	3.5	0.20	4.020	0	87.5	70	130	0.463	20	
Surr: Dibromofluoromethane	2.0		2.010		97.9	70	130	0	0	
Surr: 1,2-Dichloroethane-d4	1.9		2.010		95.7	70	130	0	0	
Surr: Toluene-d8	1.9		2.010		95.7	70	130	0	0	
Surr: 4-Bromofluorobenzene	1.6		2.010		81.7	70	130	0	0	

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001723**
28-Feb-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **mb1**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **B65958**	RunNo: **65958**
Prep Date:	Analysis Date: **1/21/2020**	SeqNo: **2265209** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	ND	0.050								
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	ND	0.75								
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	ND	0.15								
2-Butanone	ND	0.50								
Carbon disulfide	ND	0.50								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	ND	0.050								
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.050								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.050								
1,1-Dichloroethene	ND	0.050								
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.10								

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001723**
28-Feb-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **mb1** SampType: **MBLK** TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS** Batch ID: **B65958** RunNo: **65958**
Prep Date: Analysis Date: **1/21/2020** SeqNo: **2265209** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
4-Methyl-2-pentanone	ND	0.50								
Methylene chloride	ND	0.15								
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
1,2,3-Trichlorobenzene	ND	0.10								
1,2,4-Trichlorobenzene	ND	0.050								
1,1,1-Trichloroethane	ND	0.050								
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	ND	0.050								
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: Dibromofluoromethane	0.55		0.5000		110	70	130			
Surr: 1,2-Dichloroethane-d4	0.47		0.5000		94.4	70	130			
Surr: Toluene-d8	0.50		0.5000		100	70	130			
Surr: 4-Bromofluorobenzene	0.49		0.5000		98.9	70	130			

Sample ID: **100ng lcs2** SampType: **LCS** TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS** Batch ID: **B65958** RunNo: **65958**
Prep Date: Analysis Date: **1/21/2020** SeqNo: **2265210** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	1.000	0	105	70	130			
Toluene	0.94	0.050	1.000	0	94.1	70	130			
Chlorobenzene	0.87	0.050	1.000	0	87.2	70	130			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001723**
28-Feb-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **100ng lcs2** SampType: **LCS** TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS** Batch ID: **B65958** RunNo: **65958**
Prep Date: Analysis Date: **1/21/2020** SeqNo: **2265210** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	1.0	0.050	1.000	0	104	70	130			
Trichloroethene (TCE)	0.92	0.050	1.000	0	92.4	70	130			
Surr: Dibromofluoromethane	0.50		0.5000		99.9	70	130			
Surr: 1,2-Dichloroethane-d4	0.46		0.5000		92.0	70	130			
Surr: Toluene-d8	0.50		0.5000		99.8	70	130			
Surr: 4-Bromofluorobenzene	0.45		0.5000		89.4	70	130			

Sample ID: **2001723-022ams** SampType: **MS** TestCode: **EPA Method 8260B: Volatiles**
Client ID: **SWMU1-20 Toe 5'** Batch ID: **B65958** RunNo: **65958**
Prep Date: Analysis Date: **1/22/2020** SeqNo: **2265214** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	5.1	0.13	5.263	0.5846	85.6	70	130			
Toluene	8.6	0.26	5.263	4.492	78.6	70	130			
Chlorobenzene	4.5	0.26	5.263	0	85.9	70	130			
1,1-Dichloroethene	4.7	0.26	5.263	0	89.2	70	130			
Trichloroethene (TCE)	4.5	0.26	5.263	0	84.7	70	130			
Surr: Dibromofluoromethane	2.4		2.632		92.4	70	130			
Surr: 1,2-Dichloroethane-d4	2.3		2.632		88.7	70	130			
Surr: Toluene-d8	2.4		2.632		93.0	70	130			
Surr: 4-Bromofluorobenzene	2.4		2.632		90.6	70	130			

Sample ID: **2001723-022amsd** SampType: **MSD** TestCode: **EPA Method 8260B: Volatiles**
Client ID: **SWMU1-20 Toe 5'** Batch ID: **B65958** RunNo: **65958**
Prep Date: Analysis Date: **1/22/2020** SeqNo: **2265215** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	5.2	0.13	5.263	0.5846	88.1	70	130	2.54	20	
Toluene	8.4	0.26	5.263	4.492	74.9	70	130	2.24	20	
Chlorobenzene	4.6	0.26	5.263	0	86.7	70	130	1.03	20	
1,1-Dichloroethene	4.7	0.26	5.263	0	89.1	70	130	0.0729	20	
Trichloroethene (TCE)	4.2	0.26	5.263	0	79.9	70	130	5.84	20	
Surr: Dibromofluoromethane	2.4		2.632		90.8	70	130	0	0	
Surr: 1,2-Dichloroethane-d4	2.3		2.632		86.6	70	130	0	0	
Surr: Toluene-d8	2.5		2.632		95.0	70	130	0	0	
Surr: 4-Bromofluorobenzene	2.4		2.632		91.9	70	130	0	0	

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001723**
28-Feb-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **mb1**	SampType: **MBLK**		TestCode: **EPA Method 8260B: Volatiles**		
Client ID: **PBS**	Batch ID: **A65992**		RunNo: **65992**		
Prep Date:	Analysis Date: **1/22/2020**		SeqNo: **2266589**	Units: **mg/Kg**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	ND	0.050								
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	ND	0.75								
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	ND	0.15								
2-Butanone	ND	0.50								
Carbon disulfide	ND	0.50								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	ND	0.050								
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.050								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.050								
1,1-Dichloroethene	ND	0.050								
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.10								

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001723**
28-Feb-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **mb1**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **A65992**	RunNo: **65992**
Prep Date:	Analysis Date: **1/22/2020**	SeqNo: **2266589** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
4-Methyl-2-pentanone	ND	0.50								
Methylene chloride	ND	0.15								
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
1,2,3-Trichlorobenzene	ND	0.10								
1,2,4-Trichlorobenzene	ND	0.050								
1,1,1-Trichloroethane	ND	0.050								
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	ND	0.050								
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: Dibromofluoromethane	0.56		0.5000		111	70	130			
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		89.7	70	130			
Surr: Toluene-d8	0.47		0.5000		94.5	70	130			
Surr: 4-Bromofluorobenzene	0.46		0.5000		91.2	70	130			

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS**	Batch ID: **A65992**	RunNo: **65992**
Prep Date:	Analysis Date: **1/22/2020**	SeqNo: **2266590** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.95	0.025	1.000	0	95.0	70	130			
Toluene	0.89	0.050	1.000	0	88.9	70	130			
Chlorobenzene	0.87	0.050	1.000	0	87.5	70	130			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001723**
28-Feb-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **100ng lcs** SampType: **LCS** TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS** Batch ID: **A65992** RunNo: **65992**
Prep Date: Analysis Date: **1/22/2020** SeqNo: **2266590** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	1.0	0.050	1.000	0	101	70	130			
Trichloroethene (TCE)	0.87	0.050	1.000	0	87.5	70	130			
Surr: Dibromofluoromethane	0.47		0.5000		94.7	70	130			
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		89.6	70	130			
Surr: Toluene-d8	0.48		0.5000		95.7	70	130			
Surr: 4-Bromofluorobenzene	0.48		0.5000		95.6	70	130			

Sample ID: **2001723-024ams** SampType: **MS** TestCode: **EPA Method 8260B: Volatiles**
Client ID: **SWMU1-10 Clay 4.5-** Batch ID: **A65992** RunNo: **65992**
Prep Date: Analysis Date: **1/22/2020** SeqNo: **2266593** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	2.2	0.054	2.148	0.1753	94.2	70	130			
Toluene	2.6	0.11	2.148	0.6506	91.3	70	130			
Chlorobenzene	1.9	0.11	2.148	0	90.2	70	130			
1,1-Dichloroethene	2.0	0.11	2.148	0	94.5	70	130			
Trichloroethene (TCE)	1.9	0.11	2.148	0	87.3	70	130			
Surr: Dibromofluoromethane	1.1		1.074		97.8	70	130			
Surr: 1,2-Dichloroethane-d4	0.98		1.074		91.1	70	130			
Surr: Toluene-d8	1.0		1.074		95.4	70	130			
Surr: 4-Bromofluorobenzene	0.90		1.074		83.8	70	130			

Sample ID: **2001723-024amsd** SampType: **MSD** TestCode: **EPA Method 8260B: Volatiles**
Client ID: **SWMU1-10 Clay 4.5-** Batch ID: **A65992** RunNo: **65992**
Prep Date: Analysis Date: **1/22/2020** SeqNo: **2266594** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	2.1	0.054	2.148	0.1753	89.6	70	130	4.53	20	
Toluene	2.6	0.11	2.148	0.6506	92.1	70	130	0.669	20	
Chlorobenzene	1.9	0.11	2.148	0	87.0	70	130	3.55	20	
1,1-Dichloroethene	2.1	0.11	2.148	0	97.4	70	130	3.02	20	
Trichloroethene (TCE)	1.8	0.11	2.148	0	83.8	70	130	4.04	20	
Surr: Dibromofluoromethane	0.99		1.074		92.3	70	130	0	0	
Surr: 1,2-Dichloroethane-d4	0.97		1.074		90.0	70	130	0	0	
Surr: Toluene-d8	1.0		1.074		97.7	70	130	0	0	
Surr: 4-Bromofluorobenzene	0.88		1.074		81.9	70	130	0	0	

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001723**
28-Feb-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **LCS-49987** SampType: **LCS** TestCode: **Volatiles by 8260B/1311**
Client ID: **LCSS** Batch ID: **49987** RunNo: **66067**
Prep Date: **1/22/2020** Analysis Date: **1/26/2020** SeqNo: **2269022** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.44	0.10	0.4000	0	110	70	130			
Surr: 1,2-Dichloroethane-d4	0.21		0.2000		105	70	130			
Surr: Dibromofluoromethane	0.20		0.2000		98.2	70	130			

Sample ID: **MB-49987** SampType: **MBLK** TestCode: **Volatiles by 8260B/1311**
Client ID: **PBS** Batch ID: **49987** RunNo: **66067**
Prep Date: **1/22/2020** Analysis Date: **1/26/2020** SeqNo: **2269023** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.50								
Surr: 1,2-Dichloroethane-d4	0.21		0.2000		105	70	130			
Surr: Dibromofluoromethane	0.20		0.2000		99.0	70	130			

Sample ID: **2001723-022ams** SampType: **MS** TestCode: **Volatiles by 8260B/1311**
Client ID: **SWMU1-20 Toe 5'** Batch ID: **49987** RunNo: **66067**
Prep Date: **1/22/2020** Analysis Date: **1/26/2020** SeqNo: **2269722** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.49	0.10	0.4000	0	123	68.3	131			
Surr: 1,2-Dichloroethane-d4	0.21		0.2000		107	70	130			
Surr: Dibromofluoromethane	0.20		0.2000		100	70	130			

Sample ID: **2001723-022amsd** SampType: **MSD** TestCode: **Volatiles by 8260B/1311**
Client ID: **SWMU1-20 Toe 5'** Batch ID: **49987** RunNo: **66067**
Prep Date: **1/22/2020** Analysis Date: **1/26/2020** SeqNo: **2269723** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.48	0.10	0.4000	0	120	68.3	131	2.65	20	
Surr: 1,2-Dichloroethane-d4	0.21		0.2000		107	70	130	0	0	
Surr: Dibromofluoromethane	0.20		0.2000		101	70	130	0	0	

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001723**
28-Feb-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **mb-49908**	SampType: **MBLK**		TestCode: **EPA Method 8270C: Semivolatiles**		
Client ID: **PBS**	Batch ID: **49908**		RunNo: **66070**		
Prep Date: **1/20/2020**	Analysis Date: **1/24/2020**		SeqNo: **2269088**	Units: **mg/Kg**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	0.20								
Acenaphthylene	ND	0.20								
Aniline	ND	0.20								
Anthracene	ND	0.20								
Azobenzene	ND	0.20								
Benz(a)anthracene	ND	0.20								
Benzo(a)pyrene	ND	0.20								
Benzo(b)fluoranthene	ND	0.20								
Benzo(g,h,i)perylene	ND	0.20								
Benzo(k)fluoranthene	ND	0.20								
Benzoic acid	ND	0.50								
Benzyl alcohol	ND	0.20								
Bis(2-chloroethoxy)methane	ND	0.20								
Bis(2-chloroethyl)ether	ND	0.20								
Bis(2-chloroisopropyl)ether	ND	0.20								
Bis(2-ethylhexyl)phthalate	ND	0.50								
4-Bromophenyl phenyl ether	ND	0.20								
Butyl benzyl phthalate	ND	0.20								
Carbazole	ND	0.20								
4-Chloro-3-methylphenol	ND	0.50								
4-Chloroaniline	ND	0.50								
2-Chloronaphthalene	ND	0.25								
2-Chlorophenol	ND	0.20								
4-Chlorophenyl phenyl ether	ND	0.20								
Chrysene	ND	0.20								
Di-n-butyl phthalate	ND	0.40								
Di-n-octyl phthalate	ND	0.40								
Dibenz(a,h)anthracene	ND	0.20								
Dibenzofuran	ND	0.20								
1,2-Dichlorobenzene	ND	0.20								
1,3-Dichlorobenzene	ND	0.20								
1,4-Dichlorobenzene	ND	0.20								
3,3´-Dichlorobenzidine	ND	0.25								
Diethyl phthalate	ND	0.50								
Dimethyl phthalate	ND	0.20								
2,4-Dichlorophenol	ND	0.40								
2,4-Dimethylphenol	ND	0.30								
4,6-Dinitro-2-methylphenol	ND	0.40								
2,4-Dinitrophenol	ND	0.50								

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001723**
28-Feb-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **mb-49908** SampType: **MBLK** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS** Batch ID: **49908** RunNo: **66070**
Prep Date: **1/20/2020** Analysis Date: **1/24/2020** SeqNo: **2269088** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	0.50								
2,6-Dinitrotoluene	ND	0.50								
Fluoranthene	ND	0.20								
Fluorene	ND	0.20								
Hexachlorobenzene	ND	0.20								
Hexachlorobutadiene	ND	0.20								
Hexachlorocyclopentadiene	ND	0.20								
Hexachloroethane	ND	0.20								
Indeno(1,2,3-cd)pyrene	ND	0.20								
Isophorone	ND	0.40								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
2-Methylphenol	ND	0.40								
3+4-Methylphenol	ND	0.20								
N-Nitrosodi-n-propylamine	ND	0.20								
N-Nitrosodiphenylamine	ND	0.20								
Naphthalene	ND	0.20								
2-Nitroaniline	ND	0.20								
3-Nitroaniline	ND	0.20								
4-Nitroaniline	ND	0.40								
Nitrobenzene	ND	0.40								
2-Nitrophenol	ND	0.20								
4-Nitrophenol	ND	0.25								
Pentachlorophenol	ND	0.40								
Phenanthrene	ND	0.20								
Phenol	ND	0.20								
Pyrene	ND	0.20								
Pyridine	ND	0.40								
1,2,4-Trichlorobenzene	ND	0.20								
2,4,5-Trichlorophenol	ND	0.20								
2,4,6-Trichlorophenol	ND	0.20								
Surr: 2-Fluorophenol	1.6		3.330		49.5	26.7	85.9			
Surr: Phenol-d5	1.7		3.330		51.9	18.5	101			
Surr: 2,4,6-Tribromophenol	2.1		3.330		61.6	35.8	85.6			
Surr: Nitrobenzene-d5	1.0		1.670		60.0	40.8	95.2			
Surr: 2-Fluorobiphenyl	1.0		1.670		59.9	34.7	85.2			
Surr: 4-Terphenyl-d14	0.97		1.670		57.9	37.4	91.3			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001723**
28-Feb-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **lcs-49908** SampType: **LCS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS** Batch ID: **49908** RunNo: **66070**
Prep Date: **1/20/2020** Analysis Date: **1/24/2020** SeqNo: **2269089** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.2	0.20	1.670	0	70.3	46	89.5			
4-Chloro-3-methylphenol	2.5	0.50	3.330	0	76.4	44.1	101			
2-Chlorophenol	2.3	0.20	3.330	0	70.1	47	91			
1,4-Dichlorobenzene	1.0	0.20	1.670	0	62.3	41.4	85.8			
2,4-Dinitrotoluene	1.2	0.50	1.670	0	70.2	37.4	82			
N-Nitrosodi-n-propylamine	1.2	0.20	1.670	0	71.9	47.8	92.9			
4-Nitrophenol	2.4	0.25	3.330	0	70.8	45	94.3			
Pentachlorophenol	2.0	0.40	3.330	0	60.8	31.7	76.9			
Phenol	2.3	0.20	3.330	0	69.7	49.4	92.5			
Pyrene	1.1	0.20	1.670	0	65.3	52.9	82.7			
1,2,4-Trichlorobenzene	1.2	0.20	1.670	0	73.3	43.6	98.1			
Surr: 2-Fluorophenol	2.0		3.330		61.3	26.7	85.9			
Surr: Phenol-d5	2.3		3.330		69.8	18.5	101			
Surr: 2,4,6-Tribromophenol	2.5		3.330		75.6	35.8	85.6			
Surr: Nitrobenzene-d5	1.4		1.670		82.9	40.8	95.2			
Surr: 2-Fluorobiphenyl	1.3		1.670		75.0	34.7	85.2			
Surr: 4-Terphenyl-d14	1.1		1.670		66.1	37.4	91.3			

Sample ID: **2001723-001Ams** SampType: **MS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **Dup 3** Batch ID: **49908** RunNo: **66070**
Prep Date: **1/20/2020** Analysis Date: **1/24/2020** SeqNo: **2269091** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.1	0.37	1.559	0	72.7	28	113			D
4-Chloro-3-methylphenol	2.6	0.93	3.109	0	84.4	28.8	121			D
2-Chlorophenol	2.0	0.37	3.109	0	64.2	15.4	115			D
1,4-Dichlorobenzene	0.75	0.37	1.559	0	48.3	15	107			D
2,4-Dinitrotoluene	1.2	0.93	1.559	0	79.5	29.9	100			D
N-Nitrosodi-n-propylamine	1.1	0.37	1.559	0	69.3	23.5	120			D
4-Nitrophenol	2.6	0.47	3.109	0	84.2	42.3	125			D
Pentachlorophenol	1.9	0.75	3.109	0	61.7	23.4	114			D
Phenol	2.0	0.37	3.109	0	65.2	16.3	117			D
Pyrene	0.99	0.37	1.559	0	63.4	34.2	122			D
1,2,4-Trichlorobenzene	1.0	0.37	1.559	0	65.5	16.3	117			D
Surr: 2-Fluorophenol	1.7		3.109		54.3	26.7	85.9			D
Surr: Phenol-d5	2.1		3.109		68.3	18.5	101			D
Surr: 2,4,6-Tribromophenol	2.7		3.109		86.0	35.8	85.6			SD
Surr: Nitrobenzene-d5	1.1		1.559		69.4	40.8	95.2			D
Surr: 2-Fluorobiphenyl	1.3		1.559		80.4	34.7	85.2			D

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001723**
28-Feb-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **2001723-001Ams** SampType: **MS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **Dup 3** Batch ID: **49908** RunNo: **66070**
Prep Date: **1/20/2020** Analysis Date: **1/24/2020** SeqNo: **2269091** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	1.2		1.559		79.2	37.4	91.3			D

Sample ID: **2001723-001Amsd** SampType: **MSD** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **Dup 3** Batch ID: **49908** RunNo: **66070**
Prep Date: **1/20/2020** Analysis Date: **1/24/2020** SeqNo: **2269092** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.96	0.39	1.619	0	59.6	28	113	16.2	33.1	D
4-Chloro-3-methylphenol	2.6	0.97	3.229	0	80.5	28.8	121	0.914	39	D
2-Chlorophenol	2.2	0.39	3.229	0	67.7	15.4	115	9.14	27.1	D
1,4-Dichlorobenzene	0.83	0.39	1.619	0	51.4	15	107	10.0	26.3	D
2,4-Dinitrotoluene	0.99	0.97	1.619	0	60.9	29.9	100	22.7	51.5	D
N-Nitrosodi-n-propylamine	1.1	0.39	1.619	0	66.6	23.5	120	0.162	22.8	D
4-Nitrophenol	2.1	0.48	3.229	0	65.1	42.3	125	21.8	52.9	D
Pentachlorophenol	1.9	0.78	3.229	0	57.8	23.4	114	2.86	52.1	D
Phenol	2.1	0.39	3.229	0	65.6	16.3	117	4.26	28.8	D
Pyrene	0.98	0.39	1.619	0	60.8	34.2	122	0.534	37.1	D
1,2,4-Trichlorobenzene	1.1	0.39	1.619	0	67.9	16.3	117	7.24	28.4	D
Surr: 2-Fluorophenol	1.8		3.229		56.0	26.7	85.9	0	0	D
Surr: Phenol-d5	2.3		3.229		70.1	18.5	101	0	0	D
Surr: 2,4,6-Tribromophenol	2.5		3.229		77.2	35.8	85.6	0	0	D
Surr: Nitrobenzene-d5	1.2		1.619		74.8	40.8	95.2	0	0	D
Surr: 2-Fluorobiphenyl	1.1		1.619		66.7	34.7	85.2	0	0	D
Surr: 4-Terphenyl-d14	1.1		1.619		67.4	37.4	91.3	0	0	D

Sample ID: **mb-49952** SampType: **MBLK** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS** Batch ID: **49952** RunNo: **66102**
Prep Date: **1/21/2020** Analysis Date: **1/27/2020** SeqNo: **2270228** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	0.20								
Acenaphthylene	ND	0.20								
Aniline	ND	0.20								
Anthracene	ND	0.20								
Azobenzene	ND	0.20								
Benz(a)anthracene	ND	0.20								
Benzo(a)pyrene	ND	0.20								
Benzo(b)fluoranthene	ND	0.20								
Benzo(g,h,i)perylene	ND	0.20								
Benzo(k)fluoranthene	ND	0.20								

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001723**
28-Feb-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **mb-49952**	SampType: **MBLK**		TestCode: **EPA Method 8270C: Semivolatiles**		
Client ID: **PBS**	Batch ID: **49952**		RunNo: **66102**		
Prep Date: **1/21/2020**	Analysis Date: **1/27/2020**		SeqNo: **2270228**	Units: **mg/Kg**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzoic acid	ND	0.50								
Benzyl alcohol	ND	0.20								
Bis(2-chloroethoxy)methane	ND	0.20								
Bis(2-chloroethyl)ether	ND	0.20								
Bis(2-chloroisopropyl)ether	ND	0.20								
Bis(2-ethylhexyl)phthalate	ND	0.50								
4-Bromophenyl phenyl ether	ND	0.20								
Butyl benzyl phthalate	ND	0.20								
Carbazole	ND	0.20								
4-Chloro-3-methylphenol	ND	0.50								
4-Chloroaniline	ND	0.50								
2-Chloronaphthalene	ND	0.25								
2-Chlorophenol	ND	0.20								
4-Chlorophenyl phenyl ether	ND	0.20								
Chrysene	ND	0.20								
Di-n-butyl phthalate	ND	0.40								
Di-n-octyl phthalate	ND	0.40								
Dibenz(a,h)anthracene	ND	0.20								
Dibenzofuran	ND	0.20								
1,2-Dichlorobenzene	ND	0.20								
1,3-Dichlorobenzene	ND	0.20								
1,4-Dichlorobenzene	ND	0.20								
3,3´-Dichlorobenzidine	ND	0.25								
Diethyl phthalate	0.32	0.50								J
Dimethyl phthalate	ND	0.20								
2,4-Dichlorophenol	ND	0.40								
2,4-Dimethylphenol	ND	0.30								
4,6-Dinitro-2-methylphenol	ND	0.40								
2,4-Dinitrophenol	ND	0.50								
2,4-Dinitrotoluene	ND	0.50								
2,6-Dinitrotoluene	ND	0.50								
Fluoranthene	ND	0.20								
Fluorene	ND	0.20								
Hexachlorobenzene	ND	0.20								
Hexachlorobutadiene	ND	0.20								
Hexachlorocyclopentadiene	ND	0.20								
Hexachloroethane	ND	0.20								
Indeno(1,2,3-cd)pyrene	ND	0.20								
Isophorone	ND	0.40								

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001723**
28-Feb-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **mb-49952**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS**	Batch ID: **49952**	RunNo: **66102**
Prep Date: **1/21/2020**	Analysis Date: **1/27/2020**	SeqNo: **2270228** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
2-Methylphenol	ND	0.40								
3+4-Methylphenol	ND	0.20								
N-Nitrosodi-n-propylamine	ND	0.20								
N-Nitrosodiphenylamine	ND	0.20								
Naphthalene	ND	0.20								
2-Nitroaniline	ND	0.20								
3-Nitroaniline	ND	0.20								
4-Nitroaniline	ND	0.40								
Nitrobenzene	ND	0.40								
2-Nitrophenol	ND	0.20								
4-Nitrophenol	ND	0.25								
Pentachlorophenol	ND	0.40								
Phenanthrene	ND	0.20								
Phenol	ND	0.20								
Pyrene	ND	0.20								
Pyridine	ND	0.40								
1,2,4-Trichlorobenzene	ND	0.20								
2,4,5-Trichlorophenol	ND	0.20								
2,4,6-Trichlorophenol	ND	0.20								
Surr: 2-Fluorophenol	1.9		3.330		57.8	26.7	85.9			
Surr: Phenol-d5	2.1		3.330		63.1	18.5	101			
Surr: 2,4,6-Tribromophenol	2.4		3.330		72.8	35.8	85.6			
Surr: Nitrobenzene-d5	1.2		1.670		72.2	40.8	95.2			
Surr: 2-Fluorobiphenyl	1.1		1.670		67.0	34.7	85.2			
Surr: 4-Terphenyl-d14	1.1		1.670		65.8	37.4	91.3			

Sample ID: **lcs-49952**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS**	Batch ID: **49952**	RunNo: **66102**
Prep Date: **1/21/2020**	Analysis Date: **1/27/2020**	SeqNo: **2270229** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.93	0.20	1.670	0	55.5	46	89.5			
4-Chloro-3-methylphenol	2.1	0.50	3.330	0	64.4	44.1	101			
2-Chlorophenol	1.7	0.20	3.330	0	52.4	47	91			
1,4-Dichlorobenzene	0.78	0.20	1.670	0	46.7	41.4	85.8			
2,4-Dinitrotoluene	0.88	0.50	1.670	0	52.8	37.4	82			
N-Nitrosodi-n-propylamine	0.96	0.20	1.670	0	57.3	47.8	92.9			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001723**
28-Feb-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **lcs-49952** SampType: **LCS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS** Batch ID: **49952** RunNo: **66102**
Prep Date: **1/21/2020** Analysis Date: **1/27/2020** SeqNo: **2270229** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Nitrophenol	1.8	0.25	3.330	0	53.8	45	94.3			
Pentachlorophenol	1.5	0.40	3.330	0	44.8	31.7	76.9			
Phenol	1.8	0.20	3.330	0	54.0	49.4	92.5			
Pyrene	0.98	0.20	1.670	0	58.6	52.9	82.7			
1,2,4-Trichlorobenzene	0.91	0.20	1.670	0	54.2	43.6	98.1			
Surr: 2-Fluorophenol	1.6		3.330		49.4	26.7	85.9			
Surr: Phenol-d5	1.8		3.330		55.5	18.5	101			
Surr: 2,4,6-Tribromophenol	2.2		3.330		67.5	35.8	85.6			
Surr: Nitrobenzene-d5	1.1		1.670		63.4	40.8	95.2			
Surr: 2-Fluorobiphenyl	0.95		1.670		57.1	34.7	85.2			
Surr: 4-Terphenyl-d14	1.0		1.670		61.5	37.4	91.3			

Qualifiers:

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

WO#: **2001723**
28-Feb-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **MB-50632**	SampType: **MBLK**	TestCode: **EPA Method 7471: Mercury**
Client ID: **PBS**	Batch ID: **50632**	RunNo: **66794**
Prep Date: **2/24/2020**	Analysis Date: **2/25/2020**	SeqNo: **2296759** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.033								

Sample ID: **LCS-50632**	SampType: **LCS**	TestCode: **EPA Method 7471: Mercury**
Client ID: **LCSS**	Batch ID: **50632**	RunNo: **66794**
Prep Date: **2/24/2020**	Analysis Date: **2/25/2020**	SeqNo: **2296760** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.17	0.033	0.1667	0	104	80	120			

Sample ID: **LLLCS-50632**	SampType: **LCSLL**	TestCode: **EPA Method 7471: Mercury**
Client ID: **BatchQC**	Batch ID: **50632**	RunNo: **66794**
Prep Date: **2/24/2020**	Analysis Date: **2/25/2020**	SeqNo: **2296765** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.043	0.033	0.006660	0	639	70	130			S

Sample ID: **2001723-001BMS**	SampType: **MS**	TestCode: **EPA Method 7471: Mercury**
Client ID: **Dup 3**	Batch ID: **50632**	RunNo: **66794**
Prep Date: **2/24/2020**	Analysis Date: **2/25/2020**	SeqNo: **2296767** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.25	0.16	0.1619	0	155	80	120			S

Sample ID: **2001723-001BMSD**	SampType: **MSD**	TestCode: **EPA Method 7471: Mercury**
Client ID: **Dup 3**	Batch ID: **50632**	RunNo: **66794**
Prep Date: **2/24/2020**	Analysis Date: **2/25/2020**	SeqNo: **2296768** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.21	0.16	0.1664	0	125	80	120	18.9	20	S

Sample ID: **MB-50634**	SampType: **MBLK**	TestCode: **EPA Method 7471: Mercury**
Client ID: **PBS**	Batch ID: **50634**	RunNo: **66794**
Prep Date: **2/24/2020**	Analysis Date: **2/25/2020**	SeqNo: **2296801** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.033								

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001723**
28-Feb-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **LCS-50634** SampType: **LCS** TestCode: **EPA Method 7471: Mercury**
Client ID: **LCSS** Batch ID: **50634** RunNo: **66794**
Prep Date: **2/24/2020** Analysis Date: **2/25/2020** SeqNo: **2296802** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.17	0.033	0.1667	0	102	80	120			

Sample ID: **LLLCS-50634** SampType: **LCSLL** TestCode: **EPA Method 7471: Mercury**
Client ID: **BatchQC** Batch ID: **50634** RunNo: **66794**
Prep Date: **2/24/2020** Analysis Date: **2/25/2020** SeqNo: **2296803** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0083	0.033	0.006660	0	125	70	130			J

Sample ID: **2001723-021BMS** SampType: **MS** TestCode: **EPA Method 7471: Mercury**
Client ID: **SWMU1-17 Toe 4.5-** Batch ID: **50634** RunNo: **66794**
Prep Date: **2/24/2020** Analysis Date: **2/25/2020** SeqNo: **2296805** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.27	0.032	0.1618	0.08031	117	80	120			H

Sample ID: **2001723-021BMSD** SampType: **MSD** TestCode: **EPA Method 7471: Mercury**
Client ID: **SWMU1-17 Toe 4.5-** Batch ID: **50634** RunNo: **66794**
Prep Date: **2/24/2020** Analysis Date: **2/25/2020** SeqNo: **2296806** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.19	0.032	0.1595	0.08031	71.3	80	120	32.6	20	RSH

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001723**
28-Feb-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **MB-49924** SampType: **MBLK** TestCode: **MERCURY, TCLP**
Client ID: **PBW** Batch ID: **49924** RunNo: **65928**
Prep Date: **1/20/2020** Analysis Date: **1/20/2020** SeqNo: **2264217** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.020								

Sample ID: **LCS-49924** SampType: **LCS** TestCode: **MERCURY, TCLP**
Client ID: **LCSW** Batch ID: **49924** RunNo: **65928**
Prep Date: **1/20/2020** Analysis Date: **1/20/2020** SeqNo: **2264219** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0044	0.020	0.005000	0	87.5	80	120			J

Sample ID: **LLLCS-49924** SampType: **LCSLL** TestCode: **MERCURY, TCLP**
Client ID: **BatchQC** Batch ID: **49924** RunNo: **65928**
Prep Date: Analysis Date: **1/20/2020** SeqNo: **2264220** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.000065	0.020	0.0001500	0	43.4	50	150			JS

Sample ID: **MB-49926** SampType: **MBLK** TestCode: **MERCURY, TCLP**
Client ID: **PBW** Batch ID: **49926** RunNo: **65928**
Prep Date: **1/20/2020** Analysis Date: **1/20/2020** SeqNo: **2264221** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.020								

Sample ID: **LLLCS-49926** SampType: **LCSLL** TestCode: **MERCURY, TCLP**
Client ID: **BatchQC** Batch ID: **49926** RunNo: **65928**
Prep Date: Analysis Date: **1/20/2020** SeqNo: **2264222** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.000029	0.020	0.0001500	0	19.4	50	150			JS

Sample ID: **LCS-49926** SampType: **LCS** TestCode: **MERCURY, TCLP**
Client ID: **LCSW** Batch ID: **49926** RunNo: **65928**
Prep Date: **1/20/2020** Analysis Date: **1/20/2020** SeqNo: **2264223** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0044	0.020	0.005000	0	87.2	80	120			J

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2001723**

28-Feb-20

Client: Marathon Refining Gallup

Project: Gallup SWMUI Sampling Event

Sample ID: **2001723-015BMS** SampType: **MS** TestCode: **MERCURY, TCLP**
Client ID: **SWMU1-14 Toe Surf** Batch ID: **49926** RunNo: **65928**
Prep Date: **1/20/2020** Analysis Date: **1/20/2020** SeqNo: **2264281** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0049	0.020	0.005000	0	98.9	75	125			J

Sample ID: **2001723-015BMSD** SampType: **MSD** TestCode: **MERCURY, TCLP**
Client ID: **SWMU1-14 Toe Surf** Batch ID: **49926** RunNo: **65928**
Prep Date: **1/20/2020** Analysis Date: **1/20/2020** SeqNo: **2264282** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0042	0.020	0.005000	0	84.1	75	125	16.2	20	J

Sample ID: **MB-50015** SampType: **MBLK** TestCode: **MERCURY, TCLP**
Client ID: **PBW** Batch ID: **50015** RunNo: **66059**
Prep Date: **1/23/2020** Analysis Date: **1/24/2020** SeqNo: **2268512** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.020								

Sample ID: **LCS-50015** SampType: **LCS** TestCode: **MERCURY, TCLP**
Client ID: **LCSW** Batch ID: **50015** RunNo: **66059**
Prep Date: **1/23/2020** Analysis Date: **1/24/2020** SeqNo: **2268513** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0047	0.020	0.005000	0	94.4	80	120			J

Sample ID: **LLLCS-50015** SampType: **LCSLL** TestCode: **MERCURY, TCLP**
Client ID: **BatchQC** Batch ID: **50015** RunNo: **66059**
Prep Date: **1/23/2020** Analysis Date: **1/24/2020** SeqNo: **2268514** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00019	0.020	0.0001500	0	128	50	150			J

Sample ID: **2001723-025BMS** SampType: **MS** TestCode: **MERCURY, TCLP**
Client ID: **SWMU1-16 Toe 2.5'** Batch ID: **50015** RunNo: **66059**
Prep Date: **1/23/2020** Analysis Date: **1/24/2020** SeqNo: **2268516** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0050	0.020	0.005000	0	101	75	125			J

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001723**
28-Feb-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **2001723-025BMSD** SampType: **MSD** TestCode: **MERCURY, TCLP**
Client ID: **SWMU1-16 Toe 2.5'** Batch ID: **50015** RunNo: **66059**
Prep Date: **1/23/2020** Analysis Date: **1/24/2020** SeqNo: **2268519** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0050	0.020	0.005000	0	99.6	75	125	1.34	20	J

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001723**
28-Feb-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **MB-49919**	SampType: **MBLK**	TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **PBS**	Batch ID: **49919**	RunNo: **65936**
Prep Date: **1/20/2020**	Analysis Date: **1/21/2020**	SeqNo: **2264462** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.38	2.5								J
Arsenic	ND	2.5								
Barium	ND	0.10								
Beryllium	ND	0.15								
Cadmium	ND	0.10								
Chromium	ND	0.30								
Cobalt	ND	0.30								
Lead	ND	0.25								
Nickel	ND	0.50								
Selenium	ND	2.5								
Silver	ND	0.25								
Vanadium	ND	2.5								
Zinc	ND	2.5								

Sample ID: **LCS-49919**	SampType: **LCS**	TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **LCSS**	Batch ID: **49919**	RunNo: **65936**
Prep Date: **1/20/2020**	Analysis Date: **1/21/2020**	SeqNo: **2264463** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	25	2.5	25.00	0	98.6	80	120			
Arsenic	25	2.5	25.00	0	99.1	80	120			
Barium	25	0.10	25.00	0	101	80	120			
Beryllium	26	0.15	25.00	0	102	80	120			
Cadmium	25	0.10	25.00	0	101	80	120			
Chromium	25	0.30	25.00	0	100	80	120			
Cobalt	25	0.30	25.00	0	99.0	80	120			
Lead	25	0.25	25.00	0	99.8	80	120			
Nickel	25	0.50	25.00	0	100	80	120			
Selenium	24	2.5	25.00	0	95.8	80	120			
Silver	5.1	0.25	5.000	0	103	80	120			
Vanadium	26	2.5	25.00	0	102	80	120			
Zinc	24	2.5	25.00	0	97.5	80	120			

Sample ID: **MB-49920**	SampType: **MBLK**	TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **PBS**	Batch ID: **49920**	RunNo: **65936**
Prep Date: **1/20/2020**	Analysis Date: **1/21/2020**	SeqNo: **2264465** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	2.5								
Arsenic	ND	2.5								

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001723**
28-Feb-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **MB-49920** SampType: **MBLK** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **PBS** Batch ID: **49920** RunNo: **65936**
Prep Date: **1/20/2020** Analysis Date: **1/21/2020** SeqNo: **2264465** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.10								
Beryllium	ND	0.15								
Cadmium	0.035	0.10								J
Chromium	ND	0.30								
Cobalt	ND	0.30								
Lead	ND	0.25								
Nickel	ND	0.50								
Selenium	ND	2.5								
Silver	ND	0.25								
Vanadium	ND	2.5								
Zinc	ND	2.5								

Sample ID: **LCS-49920** SampType: **LCS** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **LCSS** Batch ID: **49920** RunNo: **65936**
Prep Date: **1/20/2020** Analysis Date: **1/21/2020** SeqNo: **2264466** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	25	2.5	25.00	0	98.3	80	120			
Arsenic	25	2.5	25.00	0	100	80	120			
Barium	25	0.10	25.00	0	101	80	120			
Beryllium	26	0.15	25.00	0	103	80	120			
Cadmium	25	0.10	25.00	0	101	80	120			
Chromium	25	0.30	25.00	0	99.7	80	120			
Cobalt	25	0.30	25.00	0	98.7	80	120			
Lead	26	0.25	25.00	0	103	80	120			
Nickel	25	0.50	25.00	0	99.7	80	120			
Selenium	25	2.5	25.00	0	100	80	120			
Silver	5.2	0.25	5.000	0	103	80	120			
Vanadium	26	2.5	25.00	0	102	80	120			
Zinc	25	2.5	25.00	0	98.6	80	120			

Sample ID: **2001723-001BMS** SampType: **MS** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **Dup 3** Batch ID: **49919** RunNo: **65936**
Prep Date: **1/20/2020** Analysis Date: **1/21/2020** SeqNo: **2264484** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	5.1	4.9	24.59	0	20.6	75	125			S
Arsenic	22	4.9	24.59	0	91.4	75	125			
Barium	350	0.20	24.59	278.8	293	75	125			S
Beryllium	25	0.30	24.59	1.166	95.0	75	125			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001723**
28-Feb-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **2001723-001BMS** SampType: **MS** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **Dup 3** Batch ID: **49919** RunNo: **65936**
Prep Date: **1/20/2020** Analysis Date: **1/21/2020** SeqNo: **2264484** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	22	0.20	24.59	0	90.0	75	125			
Chromium	39	0.59	24.59	12.89	105	75	125			
Cobalt	29	0.59	24.59	5.981	93.2	75	125			
Lead	24	0.49	24.59	3.313	83.6	75	125			
Nickel	35	0.98	24.59	10.62	97.7	75	125			
Selenium	23	4.9	24.59	0	93.5	75	125			
Silver	3.4	0.49	4.917	0	68.6	75	125			S
Vanadium	49	4.9	24.59	19.54	120	75	125			
Zinc	43	4.9	24.59	18.22	99.1	75	125			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2001723**

28-Feb-20

Client: Marathon Refining Gallup

Project: Gallup SWMUI Sampling Event

Sample ID: **MB-49933** SampType: **MBLK** TestCode: **EPA Method 6010B: TCLP Metals**
Client ID: **PBW** Batch ID: **49933** RunNo: **65936**
Prep Date: **1/20/2020** Analysis Date: **1/21/2020** SeqNo: **2264471** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	ND	5.0								

Sample ID: **LCS-49933** SampType: **LCS** TestCode: **EPA Method 6010B: TCLP Metals**
Client ID: **LCSW** Batch ID: **49933** RunNo: **65936**
Prep Date: **1/20/2020** Analysis Date: **1/21/2020** SeqNo: **2264474** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.49	5.0	0.5000	0	98.9	80	120			J

Sample ID: **2001723-001BMS** SampType: **MS** TestCode: **EPA Method 6010B: TCLP Metals**
Client ID: **Dup 3** Batch ID: **49933** RunNo: **65936**
Prep Date: **1/20/2020** Analysis Date: **1/21/2020** SeqNo: **2264559** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.48	5.0	0.5000	0	95.8	75	125			J

Sample ID: **2001723-001BMSD** SampType: **MSD** TestCode: **EPA Method 6010B: TCLP Metals**
Client ID: **Dup 3** Batch ID: **49933** RunNo: **65936**
Prep Date: **1/20/2020** Analysis Date: **1/21/2020** SeqNo: **2264560** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.47	5.0	0.5000	0	94.8	75	125	1.07	20	J

Sample ID: **MB-49985** SampType: **MBLK** TestCode: **EPA Method 6010B: TCLP Metals**
Client ID: **PBW** Batch ID: **49985** RunNo: **66013**
Prep Date: **1/22/2020** Analysis Date: **1/23/2020** SeqNo: **2267033** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	ND	5.0								

Sample ID: **LCS-49985** SampType: **LCS** TestCode: **EPA Method 6010B: TCLP Metals**
Client ID: **LCSW** Batch ID: **49985** RunNo: **66013**
Prep Date: **1/22/2020** Analysis Date: **1/23/2020** SeqNo: **2267034** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.51	5.0	0.5000	0	102	80	120			J

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001723**
28-Feb-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **2001723-020BMS** SampType: **MS** TestCode: **EPA Method 6010B: TCLP Metals**
Client ID: **SWMU1-17 Toe 2.5'** Batch ID: **49985** RunNo: **66013**
Prep Date: **1/22/2020** Analysis Date: **1/23/2020** SeqNo: **2267111** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.51	5.0	0.5000	0	101	75	125			J

Sample ID: **2001723-020BMSD** SampType: **MSD** TestCode: **EPA Method 6010B: TCLP Metals**
Client ID: **SWMU1-17 Toe 2.5'** Batch ID: **49985** RunNo: **66013**
Prep Date: **1/22/2020** Analysis Date: **1/23/2020** SeqNo: **2267112** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.52	5.0	0.5000	0	103	75	125	2.08	20	J

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001723**
28-Feb-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **MBS**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Gasoline Range**							
Client ID: **PBS**	Batch ID: **AG65958**	RunNo: **65958**							
Prep Date: **1/17/2012**	Analysis Date: **1/21/2020**	SeqNo: **2265243**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	450		500.0		90.3	70	130			

Sample ID: **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Gasoline Range**							
Client ID: **LCSS**	Batch ID: **AG65958**	RunNo: **65958**							
Prep Date:	Analysis Date: **1/21/2020**	SeqNo: **2265244**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	94.3	70	130			
Surr: BFB	470		500.0		94.6	70	130			

Sample ID: **2001723-001ams**	SampType: **MS**	TestCode: **EPA Method 8015D Mod: Gasoline Range**							
Client ID: **Dup 3**	Batch ID: **AG65958**	RunNo: **65958**							
Prep Date:	Analysis Date: **1/21/2020**	SeqNo: **2265933**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	16	3.4	16.89	0	95.0	70	130			
Surr: BFB	300		337.9		88.1	70	130			

Sample ID: **2001723-001amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D Mod: Gasoline Range**							
Client ID: **Dup 3**	Batch ID: **AG65958**	RunNo: **65958**							
Prep Date:	Analysis Date: **1/21/2020**	SeqNo: **2265934**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	15	3.4	16.89	0	90.0	70	130	5.36	20	
Surr: BFB	300		337.9		89.1	70	130	0	0	

Sample ID: **mb1**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Gasoline Range**							
Client ID: **PBS**	Batch ID: **BG65958**	RunNo: **65958**							
Prep Date:	Analysis Date: **1/21/2020**	SeqNo: **2265956**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	500		500.0		100	70	130			

Sample ID: **2.5ug gro lcs2**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Gasoline Range**							
Client ID: **LCSS**	Batch ID: **BG65958**	RunNo: **65958**							
Prep Date:	Analysis Date: **1/21/2020**	SeqNo: **2265957**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2001723**

28-Feb-20

Client: Marathon Refining Gallup

Project: Gallup SWMUI Sampling Event

Sample ID: **2.5ug gro lcs2** SampType: **LCS** TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **LCSS** Batch ID: **BG65958** RunNo: **65958**
Prep Date: Analysis Date: **1/21/2020** SeqNo: **2265957** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	91.0	70	130			
Surr: BFB	490		500.0		97.3	70	130			

Sample ID: **2001723-021ams** SampType: **MS** TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **SWMU1-17 Toe 4.5-** Batch ID: **BG65958** RunNo: **65958**
Prep Date: Analysis Date: **1/22/2020** SeqNo: **2265960** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	13	2.9	14.51	0.9461	86.3	70	130			
Surr: BFB	270		290.2		92.2	70	130			

Sample ID: **2001723-021amsd** SampType: **MSD** TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **SWMU1-17 Toe 4.5-** Batch ID: **BG65958** RunNo: **65958**
Prep Date: Analysis Date: **1/22/2020** SeqNo: **2265971** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	13	2.9	14.51	0.9461	84.7	70	130	1.74	20	
Surr: BFB	270		290.2		91.9	70	130	0	0	

Sample ID: **mb1** SampType: **MBLK** TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **PBS** Batch ID: **AG65992** RunNo: **65992**
Prep Date: Analysis Date: **1/22/2020** SeqNo: **2266651** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	460		500.0		91.1	70	130			

Sample ID: **2.5ug gro lcs** SampType: **LCS** TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **LCSS** Batch ID: **AG65992** RunNo: **65992**
Prep Date: Analysis Date: **1/22/2020** SeqNo: **2266652** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	93.9	70	130			
Surr: BFB	480		500.0		95.9	70	130			

Sample ID: **2001723-023ams** SampType: **MS** TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **SWMU1- 5'** Batch ID: **AG65992** RunNo: **65992**
Prep Date: Analysis Date: **1/22/2020** SeqNo: **2266654** Units: **mg/Kg**

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

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001723**
28-Feb-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **2001723-023ams**	SampType: **MS**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **SWMU1- 5'**	Batch ID: **AG65992**	RunNo: **65992**
Prep Date:	Analysis Date: **1/22/2020**	SeqNo: **2266654** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	12	2.6	13.16	0.8105	86.8	70	130			
Surr: BFB	250		263.2		94.9	70	130			

Sample ID: **2001723-023amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **SWMU1- 5'**	Batch ID: **AG65992**	RunNo: **65992**
Prep Date:	Analysis Date: **1/22/2020**	SeqNo: **2266661** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	13	2.6	13.16	0.8105	92.7	70	130	6.17	20	
Surr: BFB	260		263.2		100	70	130	0	0	

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001723**
28-Feb-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **2001723-017BDUP** SampType: **DUP** TestCode: **FREE LIQUID/PAINT FILTER**
Client ID: **SWMU1-14 2.5'** Batch ID: **R66022** RunNo: **66022**
Prep Date: Analysis Date: **1/23/2020** SeqNo: **2267353** Units: **Pos/Neg**

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

Qualifiers:

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: MARATHON GALLUP Work Order Number: 2001723 RcptNo: 1

Received By: **Erin Melendrez** 1/17/2020 3:59:00 PM

Completed By: **Anne Thorne** 1/17/2020 4:14:32 PM

Reviewed By: DAD 1/17/20

Chain of Custody

1. Is Chain of Custody sufficiently complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Courier		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☐	No ☐	NA ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: ENM 1/17/20

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:

CUSTODY SEALS INTACT ON SOIL JARS/at 1/17/20

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.0	Good	Yes			
2	5.0	Good	Yes			
3	5.6	Good	Yes			

Released to Imaging: 3/2/2021 2:22:29 PM

Chain-of-Custody Record

Client: Marathon Petroleum Company

Mailing Address: 72 East Crossing Rd
Gallup, NM 87347

Phone #: 505-729-9745

email or Fax#:

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other _____

☒ EDD (Type) _____

Turn-Around Time:
☒ Standard ☐ Rush _____

Project Name: Gallup SWMU Sampling Event

Project #: 697-070-001

Project Manager: Paul H. Idebrandt

Sampler:

On Ice: ☒ Yes ☐ No

Sample Temperature: 5.1 - 0.1 (CF) = 5.0°C

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 2001723	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	pH Paint Filter	Specific Gravity	TCLP Lead, Mercury	Sb, As, Ba, Be, Cd, Cr, Co, Pb	Air Bubbles (Y or N)
		Sed	Dup 3	bottles 4	—	001			X							X	X	X	X	X	X	
1/14/20	1035	sed	SWMU1-21 Tie surface	"	—	002			X							X	X	X	X	X	X	
1/14/20	920	Sed	SWMU1-22 2.5ft	"	—	003			X							X	X	X	X	X	X	
1/14/20	940	sed	SWMU1-20 2.5ft	"	—	004			X							X	X	X	X	X	X	
1/14/20	948	sed	SWMU1-14 1.5ft	"	—	005			X							X	X	X	X	X	X	
1/14/20	915	Sed	SWMU1-22 1.5ft	"	—	006			X							X	X	X	X	X	X	
1/14/20	1002	sed	SWMU1-14 5ft	"	—	007			X							X	X	X	X	X	X	
1/14/20	1043	Sed	SWMU1-21 Tie 2.5	"	—	008			X							X	X	X	X	X	X	
1/14/20	1650	sed	SWMU1-3 0-0.5ft	"	—	009			X							X	X	X	X	X	X	
~~1/14/20~~																						

Date:	Time:	Relinquished by:	Received by:	Date	Time
1/17/20	1233		Courier	1/17/20	1559
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks:
If Benzene detected
Please Run TCLP Benzene
DW

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.

Received by OCD: 3/2/2021 2:22:29 PM

Released to Imaging: 3/2/2021 2:22:29 PM
Received by OCD: 3/2/2021 2:18:14 PM

Chain-of-Custody Record

Client: Marathon Petroleum Company

Mailing Address: 92 Giant Crossing Rd
Gallup NM 87347

Phone #: 505-726-9745

email or Fax#:

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other

☒ EDD (Type)

Turn-Around Time:
☐ Standard ☐ Rush

Project Name: Gallup SWMU1 Sampling Event

Project #: 697-070-001

Project Manager: Paul Hildebrandt

Sampler:
On Ice: ☒ Yes ☐ No

Sample Temperature: 5.1-0.1(CF)=5.0°C

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 2001723	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	pH Paint Filter	Specific Gravity	TCLP Lead, Mercury	Sb, As, Ba, Be, Cd, Cr, Co, Pb	Air Bubbles (Y or N)
1/14/20	15:13	Sed	SWMU1-4 Surf	6oz Hcs 4	—	001			X							X	X	Y	X	X	X	
1/15/20	1450	Sed	SWMU1-1 Toe Surf	"	—	011			X							X	X	N	X	N	N	
1/14/20	1029	Sed	SWMU1-21 1.5ft	"	—	012			X							X	X	N	X	X	X	
1/16/20	1416	Sed	SWMU1-16 Toe 4-4.5	"	—	013			X							X	X	N	X	X	X	
1/14/20	1011	Sed	SWMU1-14 7.5ft	"		014			X							X	X	X	X	N	N	
1/14/20	1444	Sed	SWMU1-14 Toe Surf	"		015			X							X	X	N	X	N	N	
1/16/20	1330	Sed	SWMU1-17 Toe Surface	"		016			X							X	N	X	X	N	N	
1/14/20	954	Sed	SWMU1-14 2.5ft	"		017			X							X	X	X	X	N	N	
1/13/20	1620	Sed	SWMU1-18 2.5ft	"		018			X							X	X	X	X	N	N	
1/15/20	1410	Sed	SWMU1-12 Toe 3ft	"		019			X							X	N	N	N	N	N	

Date	Time	Relinquished by:	Received by:	Date	Time
1/17/20	1224		courier	1/17/20	1559

Remarks:
If Benzene detected,
Please Run TCLP Benzene

Red

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Released to Imaging: 3/2/2021 2:22:29 PM
Received by OCD: 3/2/2021 2:48:14 PM

Chain-of-Custody Record

Client: Marathon Petroleum Company

Mailing Address: 92 Giant Crossing Rd
Gallup, NM 87347

Phone #: 505-726-9745

email or Fax#:

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other _____

☒ EDD (Type) _____

Turn-Around Time:
☒ Standard ☐ Rush _____

Project Name: Gallup SWMU Sampling Event

Project #: 697-070-001

Project Manager: Paul Hibbebrandt

Sampler:

On Ice: ☒ Yes ☐ No

Sample Temperature: 5.7-0.1(CF)=5.6°C

HALL ENVIRONMENTAL ANALYSIS LABORATORY
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4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 2001723	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	pH Paint Filter	Specific Gravity	TCLP Lead, Mercury	Sb, As, Ba, Be, Cd, Cr, Co, Pb	Air Bubbles (Y or N) Ni, Se, Ag, V
1/16/20	1341	sed	SWMU-17 Toe 2.5'	bottle-4	-	020			X							X	X	X	X	X	X	
1/16/20	1350	sed	SWMU-17 Toe 4.5-5'	1	-	021			X							X	X	X	X	X	X	
1/15/20	1507	sed	SWMU-20 Toe 5' Ft	"	-	022			X							X	X	X	X	X	X	
1/15/20	950	sed	SWMU-1 5 Ft	"	-	023			X							X	X	X	X	X	X	
1/16/20	928	Sed	SWMU-10 clay 4.5-5' Ft	"	-	024			X							X	X	X	X	X	X	
1/16/20	1408	sed	SWMU-16 Toe 2.5'	"	-	025			X							X	X	X	X	X	X	
1/16/20	848	sed	SWMU-8 5-5.5' Ft	"	-	026			X							X	X	X	X	X	X	
1/15/20	1355	sed	SWMU-12 Toe surface	"	-	027			X							X	X	X	X	X	X	
1/15/20	829	sed	SWMU-2 sludge 2-2.5'	"	-	-028			X							X	X	X	X	X	X	

Date:	Time:	Relinquished by:	Received by:	Date	Time
1/17/20	1223		Courier	1/17/20	1559
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks:
If Benzene detected please TCLP Benzene

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

March 03, 2020

Paul Hildebrandt

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

RE: Gallup SWMUI Sampling Event OrderNo.: 2001739

Dear Paul Hildebrandt:

Hall Environmental Analysis Laboratory received 60 sample(s) on 1/18/2020 for the analyses presented in the following report.

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

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

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

Sincerely,



Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: Dup 4
Project: Gallup SWMUI Sampling Event
Collection Date:
Lab ID: 2001739-001 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	9300	42	180		mg/Kg	20	1/24/2020 9:06:53 AM	49947
Motor Oil Range Organics (MRO)	2800	880	880		mg/Kg	20	1/24/2020 9:06:53 AM	49947
Surr: DNOP	0	0	55.1-146	S	%Rec	20	1/24/2020 9:06:53 AM	49947
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	0.23	0.0087	0.16		mg/Kg	5	2/26/2020 12:59:22 PM	50654
MERCURY, TCLP							Analyst: **rde**	
Mercury	ND	0.00075	0.020		mg/L	1	1/24/2020 11:09:26 AM	50014
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.8	12		mg/Kg	5	1/23/2020 9:49:14 AM	49956
Arsenic	ND	7.0	12		mg/Kg	5	1/23/2020 9:49:14 AM	49956
Barium	230	0.11	0.49		mg/Kg	5	1/23/2020 9:49:14 AM	49956
Beryllium	1.1	0.045	0.74		mg/Kg	5	1/23/2020 9:49:14 AM	49956
Cadmium	ND	0.12	0.49		mg/Kg	5	1/23/2020 9:49:14 AM	49956
Chromium	13	0.39	1.5		mg/Kg	5	1/23/2020 9:49:14 AM	49956
Cobalt	4.5	0.52	1.5		mg/Kg	5	1/23/2020 9:49:14 AM	49956
Lead	5.7	1.2	1.2		mg/Kg	5	1/23/2020 9:49:14 AM	49956
Nickel	11	0.74	2.5		mg/Kg	5	1/23/2020 9:49:14 AM	49956
Selenium	ND	6.2	12		mg/Kg	5	1/23/2020 11:11:07 AM	49956
Silver	ND	0.16	1.2		mg/Kg	5	1/23/2020 9:49:14 AM	49956
Vanadium	58	0.33	12		mg/Kg	5	1/23/2020 9:49:14 AM	49956
Zinc	28	2.0	12		mg/Kg	5	1/23/2020 11:11:07 AM	49956
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/23/2020 11:45:20 AM	49986
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.63	1.7	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952
Acenaphthylene	ND	0.74	1.7	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952
Aniline	ND	0.57	1.7	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952
Anthracene	ND	0.65	1.7	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952
Azobenzene	ND	0.85	1.7	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952
Benz(a)anthracene	ND	0.58	1.7	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952
Benzo(a)pyrene	ND	0.91	1.7	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952
Benzo(b)fluoranthene	ND	0.96	1.7	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952
Benzo(g,h,i)perylene	ND	0.86	1.7	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952
Benzo(k)fluoranthene	ND	0.50	1.7	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952
Benzoic acid	ND	1.2	4.2	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952
Benzyl alcohol	ND	0.70	1.7	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952
Bis(2-chloroethoxy)methane	ND	0.69	1.7	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952

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Qualifiers:

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D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: Dup 4
Project: Gallup SWMUI Sampling Event
Collection Date:
Lab ID: 2001739-001 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.98	1.7	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952
Bis(2-chloroisopropyl)ether	ND	0.72	1.7	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952
Bis(2-ethylhexyl)phthalate	ND	1.9	4.2	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952
4-Bromophenyl phenyl ether	ND	0.98	1.7	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952
Butyl benzyl phthalate	ND	0.56	1.7	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952
Carbazole	ND	0.67	1.7	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952
4-Chloro-3-methylphenol	ND	0.66	4.2	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952
4-Chloroaniline	ND	0.64	4.2	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952
2-Chloronaphthalene	ND	0.70	2.1	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952
2-Chlorophenol	ND	0.95	1.7	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952
4-Chlorophenyl phenyl ether	ND	0.70	1.7	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952
Chrysene	ND	0.66	1.7	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952
Di-n-butyl phthalate	ND	2.5	3.4	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952
Di-n-octyl phthalate	ND	0.56	3.4	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952
Dibenz(a,h)anthracene	ND	0.93	1.7	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952
Dibenzofuran	ND	0.84	1.7	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952
1,2-Dichlorobenzene	ND	0.66	1.7	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952
1,3-Dichlorobenzene	ND	0.56	1.7	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952
1,4-Dichlorobenzene	ND	0.69	1.7	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952
3,3´-Dichlorobenzidine	ND	0.72	2.1	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952
Diethyl phthalate	ND	2.6	4.2	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952
Dimethyl phthalate	ND	0.68	1.7	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952
2,4-Dichlorophenol	ND	0.71	3.4	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952
2,4-Dimethylphenol	ND	0.70	2.5	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952
4,6-Dinitro-2-methylphenol	ND	0.62	3.4	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952
2,4-Dinitrophenol	ND	0.49	4.2	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952
2,4-Dinitrotoluene	ND	0.86	4.2	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952
2,6-Dinitrotoluene	ND	1.0	4.2	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952
Fluoranthene	ND	0.64	1.7	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952
Fluorene	1.5	0.66	1.7	JD	mg/Kg	1	1/27/2020 4:45:26 PM	49952
Hexachlorobenzene	ND	0.66	1.7	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952
Hexachlorobutadiene	ND	0.73	1.7	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952
Hexachlorocyclopentadiene	ND	0.80	1.7	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952
Hexachloroethane	ND	0.69	1.7	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952
Indeno(1,2,3-cd)pyrene	ND	1.0	1.7	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952
Isophorone	ND	0.73	3.4	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952
1-Methylnaphthalene	4.9	0.78	1.7	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952
2-Methylnaphthalene	7.3	0.68	1.7	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952
2-Methylphenol	ND	0.71	3.4	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952

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Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: Dup 4
Project: Gallup SWMUI Sampling Event
Collection Date:
Lab ID: 2001739-001 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.61	1.7	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952
N-Nitrosodi-n-propylamine	ND	0.84	1.7	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952
N-Nitrosodiphenylamine	ND	0.86	1.7	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952
Naphthalene	1.5	0.69	1.7	JD	mg/Kg	1	1/27/2020 4:45:26 PM	49952
2-Nitroaniline	ND	0.93	1.7	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952
3-Nitroaniline	ND	0.82	1.7	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952
4-Nitroaniline	ND	1.1	3.4	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952
Nitrobenzene	ND	0.71	3.4	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952
2-Nitrophenol	ND	0.69	1.7	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952
4-Nitrophenol	ND	0.49	2.1	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952
Pentachlorophenol	ND	0.75	3.4	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952
Phenanthrene	3.2	0.85	1.7	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952
Phenol	ND	0.71	1.7	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952
Pyrene	ND	0.55	1.7	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952
Pyridine	ND	1.6	3.4	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952
1,2,4-Trichlorobenzene	ND	0.72	1.7	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952
2,4,5-Trichlorophenol	ND	0.54	1.7	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952
2,4,6-Trichlorophenol	ND	0.84	1.7	D	mg/Kg	1	1/27/2020 4:45:26 PM	49952
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	1	1/27/2020 4:45:26 PM	49952
Surr: Phenol-d5	0		18.5-101	SD	%Rec	1	1/27/2020 4:45:26 PM	49952
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	1	1/27/2020 4:45:26 PM	49952
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	1	1/27/2020 4:45:26 PM	49952
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	1	1/27/2020 4:45:26 PM	49952
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	1	1/27/2020 4:45:26 PM	49952
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Benzene	0.22	0.024	0.15		mg/Kg	10	1/21/2020 5:15:20 PM	R65960
Toluene	1.8	0.028	0.29		mg/Kg	10	1/21/2020 5:15:20 PM	R65960
Ethylbenzene	0.95	0.017	0.29		mg/Kg	10	1/21/2020 5:15:20 PM	R65960
Methyl tert-butyl ether (MTBE)	ND	0.069	0.29		mg/Kg	10	1/21/2020 5:15:20 PM	R65960
1,2,4-Trimethylbenzene	3.7	0.027	0.29		mg/Kg	10	1/21/2020 5:15:20 PM	R65960
1,3,5-Trimethylbenzene	1.3	0.028	0.29		mg/Kg	10	1/21/2020 5:15:20 PM	R65960
1,2-Dichloroethane (EDC)	ND	0.030	0.29		mg/Kg	10	1/21/2020 5:15:20 PM	R65960
1,2-Dibromoethane (EDB)	ND	0.027	0.29		mg/Kg	10	1/21/2020 5:15:20 PM	R65960
Naphthalene	2.3	0.058	0.58		mg/Kg	10	1/21/2020 5:15:20 PM	R65960
1-Methylnaphthalene	5.2	0.17	1.2		mg/Kg	10	1/21/2020 5:15:20 PM	R65960
2-Methylnaphthalene	8.3	0.13	1.2		mg/Kg	10	1/21/2020 5:15:20 PM	R65960
Acetone	ND	0.24	4.4		mg/Kg	10	1/21/2020 5:15:20 PM	R65960
Bromobenzene	ND	0.028	0.29		mg/Kg	10	1/21/2020 5:15:20 PM	R65960
Bromodichloromethane	ND	0.027	0.29		mg/Kg	10	1/21/2020 5:15:20 PM	R65960

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P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: Dup 4
Project: Gallup SWMUI Sampling Event
Collection Date:
Lab ID: 2001739-001 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Bromoform	ND	0.026	0.29		mg/Kg	10	1/21/2020 5:15:20 PM	R65960
Bromomethane	ND	0.070	0.88		mg/Kg	10	1/21/2020 5:15:20 PM	R65960
2-Butanone	ND	0.34	2.9		mg/Kg	10	1/21/2020 5:15:20 PM	R65960
Carbon disulfide	0.13	0.096	2.9	J	mg/Kg	10	1/21/2020 5:15:20 PM	R65960
Carbon tetrachloride	ND	0.028	0.29		mg/Kg	10	1/21/2020 5:15:20 PM	R65960
Chlorobenzene	ND	0.037	0.29		mg/Kg	10	1/21/2020 5:15:20 PM	R65960
Chloroethane	ND	0.043	0.58		mg/Kg	10	1/21/2020 5:15:20 PM	R65960
Chloroform	ND	0.023	0.29		mg/Kg	10	1/21/2020 5:15:20 PM	R65960
Chloromethane	ND	0.028	0.88		mg/Kg	10	1/21/2020 5:15:20 PM	R65960
2-Chlorotoluene	ND	0.025	0.29		mg/Kg	10	1/21/2020 5:15:20 PM	R65960
4-Chlorotoluene	ND	0.024	0.29		mg/Kg	10	1/21/2020 5:15:20 PM	R65960
cis-1,2-DCE	ND	0.040	0.29		mg/Kg	10	1/21/2020 5:15:20 PM	R65960
cis-1,3-Dichloropropene	ND	0.025	0.29		mg/Kg	10	1/21/2020 5:15:20 PM	R65960
1,2-Dibromo-3-chloropropane	ND	0.030	0.58		mg/Kg	10	1/21/2020 5:15:20 PM	R65960
Dibromochloromethane	ND	0.021	0.29		mg/Kg	10	1/21/2020 5:15:20 PM	R65960
Dibromomethane	ND	0.031	0.29		mg/Kg	10	1/21/2020 5:15:20 PM	R65960
1,2-Dichlorobenzene	ND	0.024	0.29		mg/Kg	10	1/21/2020 5:15:20 PM	R65960
1,3-Dichlorobenzene	ND	0.025	0.29		mg/Kg	10	1/21/2020 5:15:20 PM	R65960
1,4-Dichlorobenzene	ND	0.024	0.29		mg/Kg	10	1/21/2020 5:15:20 PM	R65960
Dichlorodifluoromethane	ND	0.068	0.29		mg/Kg	10	1/21/2020 5:15:20 PM	R65960
1,1-Dichloroethane	ND	0.019	0.29		mg/Kg	10	1/21/2020 5:15:20 PM	R65960
1,1-Dichloroethene	ND	0.12	0.29		mg/Kg	10	1/21/2020 5:15:20 PM	R65960
1,2-Dichloropropane	ND	0.021	0.29		mg/Kg	10	1/21/2020 5:15:20 PM	R65960
1,3-Dichloropropane	ND	0.032	0.29		mg/Kg	10	1/21/2020 5:15:20 PM	R65960
2,2-Dichloropropane	ND	0.095	0.58		mg/Kg	10	1/21/2020 5:15:20 PM	R65960
1,1-Dichloropropene	ND	0.027	0.58		mg/Kg	10	1/21/2020 5:15:20 PM	R65960
Hexachlorobutadiene	ND	0.030	0.58		mg/Kg	10	1/21/2020 5:15:20 PM	R65960
2-Hexanone	ND	0.048	2.9		mg/Kg	10	1/21/2020 5:15:20 PM	R65960
Isopropylbenzene	0.24	0.021	0.29	J	mg/Kg	10	1/21/2020 5:15:20 PM	R65960
4-Isopropyltoluene	0.21	0.024	0.29	J	mg/Kg	10	1/21/2020 5:15:20 PM	R65960
4-Methyl-2-pentanone	ND	0.055	2.9		mg/Kg	10	1/21/2020 5:15:20 PM	R65960
Methylene chloride	ND	0.052	0.88		mg/Kg	10	1/21/2020 5:15:20 PM	R65960
n-Butylbenzene	0.53	0.027	0.88	J	mg/Kg	10	1/21/2020 5:15:20 PM	R65960
n-Propylbenzene	0.66	0.023	0.29		mg/Kg	10	1/21/2020 5:15:20 PM	R65960
sec-Butylbenzene	0.23	0.033	0.29	J	mg/Kg	10	1/21/2020 5:15:20 PM	R65960
Styrene	ND	0.023	0.29		mg/Kg	10	1/21/2020 5:15:20 PM	R65960
tert-Butylbenzene	ND	0.028	0.29		mg/Kg	10	1/21/2020 5:15:20 PM	R65960
1,1,1,2-Tetrachloroethane	ND	0.020	0.29		mg/Kg	10	1/21/2020 5:15:20 PM	R65960
1,1,2,2-Tetrachloroethane	ND	0.030	0.29		mg/Kg	10	1/21/2020 5:15:20 PM	R65960

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J	Analyte detected below quantitation limits
P	Sample pH Not In Range
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: Dup 4
Project: Gallup SWMUI Sampling Event
Collection Date:
Lab ID: 2001739-001 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Tetrachloroethene (PCE)	ND	0.023	0.29		mg/Kg	10	1/21/2020 5:15:20 PM	R65960
trans-1,2-DCE	ND	0.027	0.29		mg/Kg	10	1/21/2020 5:15:20 PM	R65960
trans-1,3-Dichloropropene	ND	0.031	0.29		mg/Kg	10	1/21/2020 5:15:20 PM	R65960
1,2,3-Trichlorobenzene	ND	0.026	0.58		mg/Kg	10	1/21/2020 5:15:20 PM	R65960
1,2,4-Trichlorobenzene	ND	0.029	0.29		mg/Kg	10	1/21/2020 5:15:20 PM	R65960
1,1,1-Trichloroethane	ND	0.026	0.29		mg/Kg	10	1/21/2020 5:15:20 PM	R65960
1,1,2-Trichloroethane	ND	0.021	0.29		mg/Kg	10	1/21/2020 5:15:20 PM	R65960
Trichloroethene (TCE)	ND	0.034	0.29		mg/Kg	10	1/21/2020 5:15:20 PM	R65960
Trichlorofluoromethane	ND	0.099	0.29		mg/Kg	10	1/21/2020 5:15:20 PM	R65960
1,2,3-Trichloropropane	ND	0.047	0.58		mg/Kg	10	1/21/2020 5:15:20 PM	R65960
Vinyl chloride	ND	0.019	0.29		mg/Kg	10	1/21/2020 5:15:20 PM	R65960
Xylenes, Total	6.1	0.074	0.58		mg/Kg	10	1/21/2020 5:15:20 PM	R65960
Surr: Dibromofluoromethane	98.8		70-130		%Rec	10	1/21/2020 5:15:20 PM	R65960
Surr: 1,2-Dichloroethane-d4	98.2		70-130		%Rec	10	1/21/2020 5:15:20 PM	R65960
Surr: Toluene-d8	96.7		70-130		%Rec	10	1/21/2020 5:15:20 PM	R65960
Surr: 4-Bromofluorobenzene	83.9		70-130		%Rec	10	1/21/2020 5:15:20 PM	R65960
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **JMR**	
Gasoline Range Organics (GRO)	180	6.2	29		mg/Kg	10	1/21/2020 5:15:20 PM	G65960
Surr: BFB	94.6	0	70-130		%Rec	10	1/21/2020 5:15:20 PM	G65960
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/23/2020 3:07:00 PM	R66022
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	8.98				pH Units	1	1/24/2020 9:47:00 AM	R66051

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Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: Dup 5
Project: Gallup SWMUI Sampling Event
Collection Date:
Lab ID: 2001739-002 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	73000	1100	4500		mg/Kg	500	1/24/2020 9:16:10 AM	49947
Motor Oil Range Organics (MRO)	38000	23000	23000		mg/Kg	500	1/24/2020 9:16:10 AM	49947
Surr: DNOP	0	0	55.1-146	S	%Rec	500	1/24/2020 9:16:10 AM	49947
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	5.8	0.037	0.67		mg/Kg	20	3/2/2020 5:02:00 PM	50789
MERCURY, TCLP							Analyst: **rde**	
Mercury	ND	0.00075	0.020		mg/L	1	1/24/2020 11:15:33 AM	50014
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.74	5.0		mg/Kg	2	1/23/2020 8:45:26 AM	49956
Arsenic	9.9	2.9	5.0		mg/Kg	2	1/23/2020 8:45:26 AM	49956
Barium	500	0.12	0.50		mg/Kg	5	1/23/2020 9:50:37 AM	49956
Beryllium	0.38	0.018	0.30		mg/Kg	2	1/23/2020 8:45:26 AM	49956
Cadmium	ND	0.049	0.20		mg/Kg	2	1/23/2020 8:45:26 AM	49956
Chromium	62	0.16	0.60		mg/Kg	2	1/23/2020 8:45:26 AM	49956
Cobalt	3.0	0.21	0.60		mg/Kg	2	1/23/2020 8:45:26 AM	49956
Lead	32	0.49	0.50		mg/Kg	2	1/23/2020 8:45:26 AM	49956
Nickel	17	0.30	1.0		mg/Kg	2	1/23/2020 8:45:26 AM	49956
Selenium	3.9	2.5	5.0	J	mg/Kg	2	1/23/2020 8:45:26 AM	49956
Silver	ND	0.064	0.50		mg/Kg	2	1/23/2020 8:45:26 AM	49956
Vanadium	25	0.13	5.0		mg/Kg	2	1/23/2020 8:45:26 AM	49956
Zinc	190	0.80	5.0		mg/Kg	2	1/23/2020 8:45:26 AM	49956
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	0.011	0.0085	5.0	J	mg/L	1	1/23/2020 10:37:33 AM	49986
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	1.9	5.0	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
Acenaphthylene	ND	2.2	5.0	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
Aniline	ND	1.7	5.0	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
Anthracene	ND	1.9	5.0	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
Azobenzene	ND	2.6	5.0	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
Benz(a)anthracene	ND	1.7	5.0	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
Benzo(a)pyrene	ND	2.7	5.0	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
Benzo(b)fluoranthene	ND	2.9	5.0	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
Benzo(g,h,i)perylene	ND	2.6	5.0	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
Benzo(k)fluoranthene	ND	1.5	5.0	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
Benzoic acid	ND	3.5	13	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
Benzyl alcohol	ND	2.1	5.0	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
Bis(2-chloroethoxy)methane	ND	2.1	5.0	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952

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Qualifiers:

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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: Dup 5
Project: Gallup SWMUI Sampling Event
Collection Date:
Lab ID: 2001739-002 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	2.9	5.0	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
Bis(2-chloroisopropyl)ether	ND	2.2	5.0	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
Bis(2-ethylhexyl)phthalate	ND	5.7	13	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
4-Bromophenyl phenyl ether	ND	2.9	5.0	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
Butyl benzyl phthalate	ND	1.7	5.0	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
Carbazole	ND	2.0	5.0	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
4-Chloro-3-methylphenol	ND	2.0	13	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
4-Chloroaniline	ND	1.9	13	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
2-Chloronaphthalene	ND	2.1	6.3	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
2-Chlorophenol	ND	2.9	5.0	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
4-Chlorophenyl phenyl ether	ND	2.1	5.0	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
Chrysene	21	2.0	5.0	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
Di-n-butyl phthalate	ND	7.5	10	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
Di-n-octyl phthalate	ND	1.7	10	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
Dibenz(a,h)anthracene	ND	2.8	5.0	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
Dibenzofuran	ND	2.5	5.0	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
1,2-Dichlorobenzene	ND	2.0	5.0	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
1,3-Dichlorobenzene	ND	1.7	5.0	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
1,4-Dichlorobenzene	ND	2.1	5.0	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
3,3´-Dichlorobenzidine	ND	2.2	6.3	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
Diethyl phthalate	ND	7.7	13	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
Dimethyl phthalate	ND	2.0	5.0	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
2,4-Dichlorophenol	ND	2.1	10	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
2,4-Dimethylphenol	ND	2.1	7.6	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
4,6-Dinitro-2-methylphenol	ND	1.9	10	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
2,4-Dinitrophenol	ND	1.5	13	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
2,4-Dinitrotoluene	ND	2.6	13	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
2,6-Dinitrotoluene	ND	3.0	13	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
Fluoranthene	ND	1.9	5.0	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
Fluorene	ND	2.0	5.0	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
Hexachlorobenzene	ND	2.0	5.0	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
Hexachlorobutadiene	ND	2.2	5.0	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
Hexachlorocyclopentadiene	ND	2.4	5.0	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
Hexachloroethane	ND	2.1	5.0	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
Indeno(1,2,3-cd)pyrene	ND	3.1	5.0	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
Isophorone	ND	2.2	10	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
1-Methylnaphthalene	ND	2.3	5.0	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
2-Methylnaphthalene	ND	2.0	5.0	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
2-Methylphenol	ND	2.1	10	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952

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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: Dup 5
Project: Gallup SWMUI Sampling Event
Collection Date:
Lab ID: 2001739-002 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	1.8	5.0	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
N-Nitrosodi-n-propylamine	ND	2.5	5.0	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
N-Nitrosodiphenylamine	ND	2.6	5.0	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
Naphthalene	ND	2.1	5.0	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
2-Nitroaniline	ND	2.8	5.0	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
3-Nitroaniline	ND	2.5	5.0	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
4-Nitroaniline	ND	3.4	10	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
Nitrobenzene	ND	2.2	10	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
2-Nitrophenol	ND	2.1	5.0	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
4-Nitrophenol	ND	1.5	6.3	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
Pentachlorophenol	ND	2.3	10	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
Phenanthrene	20	2.6	5.0	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
Phenol	ND	2.1	5.0	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
Pyrene	ND	1.7	5.0	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
Pyridine	ND	4.7	10	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
1,2,4-Trichlorobenzene	ND	2.2	5.0	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
2,4,5-Trichlorophenol	ND	1.6	5.0	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
2,4,6-Trichlorophenol	ND	2.5	5.0	D	mg/Kg	1	1/27/2020 5:14:15 PM	49952
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	1	1/27/2020 5:14:15 PM	49952
Surr: Phenol-d5	0		18.5-101	SD	%Rec	1	1/27/2020 5:14:15 PM	49952
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	1	1/27/2020 5:14:15 PM	49952
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	1	1/27/2020 5:14:15 PM	49952
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	1	1/27/2020 5:14:15 PM	49952
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	1	1/27/2020 5:14:15 PM	49952
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Benzene	ND	0.0072	0.044		mg/Kg	2	1/22/2020 4:23:13 PM	R66015
Toluene	0.011	0.0084	0.088	J	mg/Kg	2	1/22/2020 4:23:13 PM	R66015
Ethylbenzene	ND	0.0051	0.088		mg/Kg	2	1/22/2020 4:23:13 PM	R66015
Methyl tert-butyl ether (MTBE)	ND	0.021	0.088		mg/Kg	2	1/22/2020 4:23:13 PM	R66015
1,2,4-Trimethylbenzene	0.087	0.0080	0.088	J	mg/Kg	2	1/22/2020 4:23:13 PM	R66015
1,3,5-Trimethylbenzene	0.061	0.0085	0.088	J	mg/Kg	2	1/22/2020 4:23:13 PM	R66015
1,2-Dichloroethane (EDC)	ND	0.0090	0.088		mg/Kg	2	1/22/2020 4:23:13 PM	R66015
1,2-Dibromoethane (EDB)	ND	0.0080	0.088		mg/Kg	2	1/22/2020 4:23:13 PM	R66015
Naphthalene	ND	0.018	0.18		mg/Kg	2	1/22/2020 4:23:13 PM	R66015
1-Methylnaphthalene	0.066	0.051	0.35	J	mg/Kg	2	1/22/2020 4:23:13 PM	R66015
2-Methylnaphthalene	0.079	0.038	0.35	J	mg/Kg	2	1/22/2020 4:23:13 PM	R66015
Acetone	0.13	0.073	1.3	J	mg/Kg	2	1/22/2020 4:23:13 PM	R66015
Bromobenzene	ND	0.0084	0.088		mg/Kg	2	1/22/2020 4:23:13 PM	R66015
Bromodichloromethane	ND	0.0080	0.088		mg/Kg	2	1/22/2020 4:23:13 PM	R66015

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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: Dup 5
Project: Gallup SWMUI Sampling Event
Collection Date:
Lab ID: 2001739-002 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Bromoform	ND	0.0079	0.088		mg/Kg	2	1/22/2020 4:23:13 PM	R66015
Bromomethane	0.045	0.021	0.26	J	mg/Kg	2	1/22/2020 4:23:13 PM	R66015
2-Butanone	0.11	0.10	0.88	J	mg/Kg	2	1/22/2020 4:23:13 PM	R66015
Carbon disulfide	ND	0.029	0.88		mg/Kg	2	1/22/2020 4:23:13 PM	R66015
Carbon tetrachloride	ND	0.0083	0.088		mg/Kg	2	1/22/2020 4:23:13 PM	R66015
Chlorobenzene	ND	0.011	0.088		mg/Kg	2	1/22/2020 4:23:13 PM	R66015
Chloroethane	ND	0.013	0.18		mg/Kg	2	1/22/2020 4:23:13 PM	R66015
Chloroform	ND	0.0071	0.088		mg/Kg	2	1/22/2020 4:23:13 PM	R66015
Chloromethane	ND	0.0084	0.26		mg/Kg	2	1/22/2020 4:23:13 PM	R66015
2-Chlorotoluene	ND	0.0077	0.088		mg/Kg	2	1/22/2020 4:23:13 PM	R66015
4-Chlorotoluene	ND	0.0072	0.088		mg/Kg	2	1/22/2020 4:23:13 PM	R66015
cis-1,2-DCE	ND	0.012	0.088		mg/Kg	2	1/22/2020 4:23:13 PM	R66015
cis-1,3-Dichloropropene	ND	0.0074	0.088		mg/Kg	2	1/22/2020 4:23:13 PM	R66015
1,2-Dibromo-3-chloropropane	ND	0.0090	0.18		mg/Kg	2	1/22/2020 4:23:13 PM	R66015
Dibromochloromethane	ND	0.0062	0.088		mg/Kg	2	1/22/2020 4:23:13 PM	R66015
Dibromomethane	ND	0.0095	0.088		mg/Kg	2	1/22/2020 4:23:13 PM	R66015
1,2-Dichlorobenzene	ND	0.0072	0.088		mg/Kg	2	1/22/2020 4:23:13 PM	R66015
1,3-Dichlorobenzene	ND	0.0076	0.088		mg/Kg	2	1/22/2020 4:23:13 PM	R66015
1,4-Dichlorobenzene	ND	0.0074	0.088		mg/Kg	2	1/22/2020 4:23:13 PM	R66015
Dichlorodifluoromethane	ND	0.020	0.088		mg/Kg	2	1/22/2020 4:23:13 PM	R66015
1,1-Dichloroethane	ND	0.0056	0.088		mg/Kg	2	1/22/2020 4:23:13 PM	R66015
1,1-Dichloroethene	ND	0.035	0.088		mg/Kg	2	1/22/2020 4:23:13 PM	R66015
1,2-Dichloropropane	ND	0.0064	0.088		mg/Kg	2	1/22/2020 4:23:13 PM	R66015
1,3-Dichloropropane	ND	0.0095	0.088		mg/Kg	2	1/22/2020 4:23:13 PM	R66015
2,2-Dichloropropane	ND	0.029	0.18		mg/Kg	2	1/22/2020 4:23:13 PM	R66015
1,1-Dichloropropene	ND	0.0080	0.18		mg/Kg	2	1/22/2020 4:23:13 PM	R66015
Hexachlorobutadiene	ND	0.0090	0.18		mg/Kg	2	1/22/2020 4:23:13 PM	R66015
2-Hexanone	0.064	0.015	0.88	J	mg/Kg	2	1/22/2020 4:23:13 PM	R66015
Isopropylbenzene	ND	0.0063	0.088		mg/Kg	2	1/22/2020 4:23:13 PM	R66015
4-Isopropyltoluene	ND	0.0073	0.088		mg/Kg	2	1/22/2020 4:23:13 PM	R66015
4-Methyl-2-pentanone	ND	0.017	0.88		mg/Kg	2	1/22/2020 4:23:13 PM	R66015
Methylene chloride	ND	0.016	0.26		mg/Kg	2	1/22/2020 4:23:13 PM	R66015
n-Butylbenzene	ND	0.0082	0.26		mg/Kg	2	1/22/2020 4:23:13 PM	R66015
n-Propylbenzene	ND	0.0070	0.088		mg/Kg	2	1/22/2020 4:23:13 PM	R66015
sec-Butylbenzene	ND	0.0099	0.088		mg/Kg	2	1/22/2020 4:23:13 PM	R66015
Styrene	ND	0.0069	0.088		mg/Kg	2	1/22/2020 4:23:13 PM	R66015
tert-Butylbenzene	ND	0.0083	0.088		mg/Kg	2	1/22/2020 4:23:13 PM	R66015
1,1,1,2-Tetrachloroethane	ND	0.0059	0.088		mg/Kg	2	1/22/2020 4:23:13 PM	R66015
1,1,2,2-Tetrachloroethane	ND	0.0089	0.088		mg/Kg	2	1/22/2020 4:23:13 PM	R66015

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: Dup 5
Project: Gallup SWMUI Sampling Event
Collection Date:
Lab ID: 2001739-002 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Tetrachloroethene (PCE)	ND	0.0070	0.088		mg/Kg	2	1/22/2020 4:23:13 PM	R66015
trans-1,2-DCE	ND	0.0081	0.088		mg/Kg	2	1/22/2020 4:23:13 PM	R66015
trans-1,3-Dichloropropene	ND	0.0093	0.088		mg/Kg	2	1/22/2020 4:23:13 PM	R66015
1,2,3-Trichlorobenzene	ND	0.0077	0.18		mg/Kg	2	1/22/2020 4:23:13 PM	R66015
1,2,4-Trichlorobenzene	ND	0.0089	0.088		mg/Kg	2	1/22/2020 4:23:13 PM	R66015
1,1,1-Trichloroethane	ND	0.0079	0.088		mg/Kg	2	1/22/2020 4:23:13 PM	R66015
1,1,2-Trichloroethane	ND	0.0062	0.088		mg/Kg	2	1/22/2020 4:23:13 PM	R66015
Trichloroethene (TCE)	ND	0.010	0.088		mg/Kg	2	1/22/2020 4:23:13 PM	R66015
Trichlorofluoromethane	ND	0.030	0.088		mg/Kg	2	1/22/2020 4:23:13 PM	R66015
1,2,3-Trichloropropane	ND	0.014	0.18		mg/Kg	2	1/22/2020 4:23:13 PM	R66015
Vinyl chloride	ND	0.0058	0.088		mg/Kg	2	1/22/2020 4:23:13 PM	R66015
Xylenes, Total	0.024	0.022	0.18	J	mg/Kg	2	1/22/2020 4:23:13 PM	R66015
Surr: Dibromofluoromethane	97.8		70-130		%Rec	2	1/22/2020 4:23:13 PM	R66015
Surr: 1,2-Dichloroethane-d4	93.0		70-130		%Rec	2	1/22/2020 4:23:13 PM	R66015
Surr: Toluene-d8	99.7		70-130		%Rec	2	1/22/2020 4:23:13 PM	R66015
Surr: 4-Bromofluorobenzene	85.9		70-130		%Rec	2	1/22/2020 4:23:13 PM	R66015
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **JMR**	
Gasoline Range Organics (GRO)	4.7	1.9	8.8	J	mg/Kg	2	1/22/2020 4:23:13 PM	G66015
Surr: BFB	95.8	0	70-130		%Rec	2	1/22/2020 4:23:13 PM	G66015
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/23/2020 3:07:00 PM	R66022
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	3.48				pH Units	1	1/28/2020 9:49:00 AM	R66112

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E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-9 Surf
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 8:55:00 AM
Lab ID: 2001739-003 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	150000	1200	5100		mg/Kg	500	1/24/2020 9:25:24 AM	49947
Motor Oil Range Organics (MRO)	51000	25000	25000		mg/Kg	500	1/24/2020 9:25:24 AM	49947
Surr: DNOP	0	0	55.1-146	S	%Rec	500	1/24/2020 9:25:24 AM	49947
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	16	0.092	1.7	H	mg/Kg	50	3/2/2020 5:04:32 PM	50789
MERCURY, TCLP							Analyst: **rde**	
Mercury	ND	0.00075	0.020		mg/L	1	1/24/2020 11:17:37 AM	50014
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.72	4.9		mg/Kg	2	1/23/2020 8:51:38 AM	49956
Arsenic	15	2.8	4.9		mg/Kg	2	1/23/2020 8:51:38 AM	49956
Barium	290	0.045	0.20		mg/Kg	2	1/23/2020 8:51:38 AM	49956
Beryllium	0.30	0.018	0.29		mg/Kg	2	1/23/2020 8:51:38 AM	49956
Cadmium	ND	0.048	0.20		mg/Kg	2	1/23/2020 8:51:38 AM	49956
Chromium	28	0.16	0.59		mg/Kg	2	1/23/2020 8:51:38 AM	49956
Cobalt	4.1	0.21	0.59		mg/Kg	2	1/23/2020 8:51:38 AM	49956
Lead	40	0.48	0.49		mg/Kg	2	1/23/2020 8:51:38 AM	49956
Nickel	49	0.29	0.98		mg/Kg	2	1/23/2020 8:51:38 AM	49956
Selenium	ND	2.5	4.9		mg/Kg	2	1/23/2020 8:51:38 AM	49956
Silver	ND	0.063	0.49		mg/Kg	2	1/23/2020 8:51:38 AM	49956
Vanadium	30	0.13	4.9		mg/Kg	2	1/23/2020 8:51:38 AM	49956
Zinc	1700	3.9	24		mg/Kg	10	1/23/2020 11:12:31 AM	49956
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/23/2020 11:49:42 AM	49986
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	2.1	5.6	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952
Acenaphthylene	ND	2.5	5.6	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952
Aniline	ND	1.9	5.6	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952
Anthracene	ND	2.2	5.6	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952
Azobenzene	ND	2.8	5.6	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952
Benz(a)anthracene	48	1.9	5.6	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952
Benzo(a)pyrene	25	3.0	5.6	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952
Benzo(b)fluoranthene	ND	3.2	5.6	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952
Benzo(g,h,i)perylene	12	2.9	5.6	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952
Benzo(k)fluoranthene	ND	1.7	5.6	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952
Benzoic acid	ND	3.9	14	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952
Benzyl alcohol	ND	2.3	5.6	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952
Bis(2-chloroethoxy)methane	ND	2.3	5.6	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952

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Qualifiers:

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D	Sample Diluted Due to Matrix
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PQL	Practical Quanitative Limit
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-9 Surf
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 8:55:00 AM
Lab ID: 2001739-003 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	3.3	5.6	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952
Bis(2-chloroisopropyl)ether	ND	2.4	5.6	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952
Bis(2-ethylhexyl)phthalate	ND	6.3	14	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952
4-Bromophenyl phenyl ether	ND	3.3	5.6	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952
Butyl benzyl phthalate	ND	1.9	5.6	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952
Carbazole	ND	2.2	5.6	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952
4-Chloro-3-methylphenol	ND	2.2	14	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952
4-Chloroaniline	ND	2.1	14	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952
2-Chloronaphthalene	ND	2.3	7.0	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952
2-Chlorophenol	ND	3.2	5.6	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952
4-Chlorophenyl phenyl ether	ND	2.3	5.6	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952
Chrysene	ND	2.2	5.6	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952
Di-n-butyl phthalate	ND	8.3	11	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952
Di-n-octyl phthalate	ND	1.9	11	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952
Dibenz(a,h)anthracene	ND	3.1	5.6	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952
Dibenzofuran	ND	2.8	5.6	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952
1,2-Dichlorobenzene	ND	2.2	5.6	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952
1,3-Dichlorobenzene	ND	1.9	5.6	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952
1,4-Dichlorobenzene	ND	2.3	5.6	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952
3,3´-Dichlorobenzidine	ND	2.4	7.0	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952
Diethyl phthalate	ND	8.5	14	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952
Dimethyl phthalate	ND	2.3	5.6	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952
2,4-Dichlorophenol	ND	2.4	11	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952
2,4-Dimethylphenol	ND	2.3	8.4	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952
4,6-Dinitro-2-methylphenol	ND	2.1	11	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952
2,4-Dinitrophenol	ND	1.6	14	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952
2,4-Dinitrotoluene	ND	2.9	14	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952
2,6-Dinitrotoluene	ND	3.3	14	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952
Fluoranthene	ND	2.1	5.6	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952
Fluorene	26	2.2	5.6	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952
Hexachlorobenzene	ND	2.2	5.6	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952
Hexachlorobutadiene	ND	2.4	5.6	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952
Hexachlorocyclopentadiene	ND	2.7	5.6	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952
Hexachloroethane	ND	2.3	5.6	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952
Indeno(1,2,3-cd)pyrene	ND	3.5	5.6	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952
Isophorone	ND	2.4	11	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952
1-Methylnaphthalene	75	2.6	5.6	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952
2-Methylnaphthalene	77	2.3	5.6	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952
2-Methylphenol	ND	2.4	11	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952

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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-9 Surf
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 8:55:00 AM
Lab ID: 2001739-003 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	2.0	5.6	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952
N-Nitrosodi-n-propylamine	ND	2.8	5.6	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952
N-Nitrosodiphenylamine	ND	2.9	5.6	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952
Naphthalene	13	2.3	5.6	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952
2-Nitroaniline	ND	3.1	5.6	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952
3-Nitroaniline	ND	2.7	5.6	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952
4-Nitroaniline	ND	3.8	11	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952
Nitrobenzene	ND	2.4	11	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952
2-Nitrophenol	ND	2.3	5.6	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952
4-Nitrophenol	ND	1.6	7.0	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952
Pentachlorophenol	ND	2.5	11	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952
Phenanthrene	160	14	28	D	mg/Kg	5	1/29/2020 9:54:27 PM	49952
Phenol	ND	2.4	5.6	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952
Pyrene	140	9.2	28	D	mg/Kg	5	1/29/2020 9:54:27 PM	49952
Pyridine	ND	5.2	11	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952
1,2,4-Trichlorobenzene	ND	2.4	5.6	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952
2,4,5-Trichlorophenol	ND	1.8	5.6	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952
2,4,6-Trichlorophenol	ND	2.8	5.6	D	mg/Kg	1	1/27/2020 5:42:55 PM	49952
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	1	1/27/2020 5:42:55 PM	49952
Surr: Phenol-d5	0		18.5-101	SD	%Rec	1	1/27/2020 5:42:55 PM	49952
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	1	1/27/2020 5:42:55 PM	49952
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	1	1/27/2020 5:42:55 PM	49952
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	1	1/27/2020 5:42:55 PM	49952
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	1	1/27/2020 5:42:55 PM	49952
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Benzene	1.4	0.061	0.37		mg/Kg	20	1/21/2020 7:09:28 PM	R65960
Toluene	14	0.071	0.74		mg/Kg	20	1/21/2020 7:09:28 PM	R65960
Ethylbenzene	4.0	0.043	0.74		mg/Kg	20	1/21/2020 7:09:28 PM	R65960
Methyl tert-butyl ether (MTBE)	ND	0.18	0.74		mg/Kg	20	1/21/2020 7:09:28 PM	R65960
1,2,4-Trimethylbenzene	10	0.068	0.74		mg/Kg	20	1/21/2020 7:09:28 PM	R65960
1,3,5-Trimethylbenzene	3.7	0.072	0.74		mg/Kg	20	1/21/2020 7:09:28 PM	R65960
1,2-Dichloroethane (EDC)	ND	0.076	0.74		mg/Kg	20	1/21/2020 7:09:28 PM	R65960
1,2-Dibromoethane (EDB)	ND	0.068	0.74		mg/Kg	20	1/21/2020 7:09:28 PM	R65960
Naphthalene	13	0.15	1.5		mg/Kg	20	1/21/2020 7:09:28 PM	R65960
1-Methylnaphthalene	32	0.43	3.0		mg/Kg	20	1/21/2020 7:09:28 PM	R65960
2-Methylnaphthalene	49	0.32	3.0		mg/Kg	20	1/21/2020 7:09:28 PM	R65960
Acetone	ND	0.61	11		mg/Kg	20	1/21/2020 7:09:28 PM	R65960
Bromobenzene	ND	0.071	0.74		mg/Kg	20	1/21/2020 7:09:28 PM	R65960
Bromodichloromethane	ND	0.068	0.74		mg/Kg	20	1/21/2020 7:09:28 PM	R65960

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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-9 Surf
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 8:55:00 AM
Lab ID: 2001739-003 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Bromoform	ND	0.067	0.74		mg/Kg	20	1/21/2020 7:09:28 PM	R65960
Bromomethane	ND	0.18	2.2		mg/Kg	20	1/21/2020 7:09:28 PM	R65960
2-Butanone	ND	0.86	7.4		mg/Kg	20	1/21/2020 7:09:28 PM	R65960
Carbon disulfide	0.42	0.24	7.4	J	mg/Kg	20	1/21/2020 7:09:28 PM	R65960
Carbon tetrachloride	ND	0.070	0.74		mg/Kg	20	1/21/2020 7:09:28 PM	R65960
Chlorobenzene	ND	0.095	0.74		mg/Kg	20	1/21/2020 7:09:28 PM	R65960
Chloroethane	ND	0.11	1.5		mg/Kg	20	1/21/2020 7:09:28 PM	R65960
Chloroform	ND	0.060	0.74		mg/Kg	20	1/21/2020 7:09:28 PM	R65960
Chloromethane	ND	0.071	2.2		mg/Kg	20	1/21/2020 7:09:28 PM	R65960
2-Chlorotoluene	ND	0.065	0.74		mg/Kg	20	1/21/2020 7:09:28 PM	R65960
4-Chlorotoluene	ND	0.061	0.74		mg/Kg	20	1/21/2020 7:09:28 PM	R65960
cis-1,2-DCE	ND	0.10	0.74		mg/Kg	20	1/21/2020 7:09:28 PM	R65960
cis-1,3-Dichloropropene	ND	0.063	0.74		mg/Kg	20	1/21/2020 7:09:28 PM	R65960
1,2-Dibromo-3-chloropropane	ND	0.076	1.5		mg/Kg	20	1/21/2020 7:09:28 PM	R65960
Dibromochloromethane	ND	0.053	0.74		mg/Kg	20	1/21/2020 7:09:28 PM	R65960
Dibromomethane	ND	0.080	0.74		mg/Kg	20	1/21/2020 7:09:28 PM	R65960
1,2-Dichlorobenzene	ND	0.061	0.74		mg/Kg	20	1/21/2020 7:09:28 PM	R65960
1,3-Dichlorobenzene	ND	0.064	0.74		mg/Kg	20	1/21/2020 7:09:28 PM	R65960
1,4-Dichlorobenzene	ND	0.062	0.74		mg/Kg	20	1/21/2020 7:09:28 PM	R65960
Dichlorodifluoromethane	ND	0.17	0.74		mg/Kg	20	1/21/2020 7:09:28 PM	R65960
1,1-Dichloroethane	ND	0.047	0.74		mg/Kg	20	1/21/2020 7:09:28 PM	R65960
1,1-Dichloroethene	ND	0.30	0.74		mg/Kg	20	1/21/2020 7:09:28 PM	R65960
1,2-Dichloropropane	ND	0.054	0.74		mg/Kg	20	1/21/2020 7:09:28 PM	R65960
1,3-Dichloropropane	ND	0.080	0.74		mg/Kg	20	1/21/2020 7:09:28 PM	R65960
2,2-Dichloropropane	ND	0.24	1.5		mg/Kg	20	1/21/2020 7:09:28 PM	R65960
1,1-Dichloropropene	ND	0.068	1.5		mg/Kg	20	1/21/2020 7:09:28 PM	R65960
Hexachlorobutadiene	ND	0.075	1.5		mg/Kg	20	1/21/2020 7:09:28 PM	R65960
2-Hexanone	ND	0.12	7.4		mg/Kg	20	1/21/2020 7:09:28 PM	R65960
Isopropylbenzene	0.86	0.053	0.74		mg/Kg	20	1/21/2020 7:09:28 PM	R65960
4-Isopropyltoluene	0.63	0.061	0.74	J	mg/Kg	20	1/21/2020 7:09:28 PM	R65960
4-Methyl-2-pentanone	ND	0.14	7.4		mg/Kg	20	1/21/2020 7:09:28 PM	R65960
Methylene chloride	ND	0.13	2.2		mg/Kg	20	1/21/2020 7:09:28 PM	R65960
n-Butylbenzene	1.1	0.069	2.2	J	mg/Kg	20	1/21/2020 7:09:28 PM	R65960
n-Propylbenzene	1.7	0.059	0.74		mg/Kg	20	1/21/2020 7:09:28 PM	R65960
sec-Butylbenzene	0.71	0.084	0.74	J	mg/Kg	20	1/21/2020 7:09:28 PM	R65960
Styrene	ND	0.058	0.74		mg/Kg	20	1/21/2020 7:09:28 PM	R65960
tert-Butylbenzene	ND	0.070	0.74		mg/Kg	20	1/21/2020 7:09:28 PM	R65960
1,1,1,2-Tetrachloroethane	ND	0.050	0.74		mg/Kg	20	1/21/2020 7:09:28 PM	R65960
1,1,2,2-Tetrachloroethane	ND	0.075	0.74		mg/Kg	20	1/21/2020 7:09:28 PM	R65960

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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-9 Surf
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 8:55:00 AM
Lab ID: 2001739-003 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Tetrachloroethene (PCE)	ND	0.059	0.74		mg/Kg	20	1/21/2020 7:09:28 PM	R65960
trans-1,2-DCE	ND	0.068	0.74		mg/Kg	20	1/21/2020 7:09:28 PM	R65960
trans-1,3-Dichloropropene	ND	0.078	0.74		mg/Kg	20	1/21/2020 7:09:28 PM	R65960
1,2,3-Trichlorobenzene	ND	0.065	1.5		mg/Kg	20	1/21/2020 7:09:28 PM	R65960
1,2,4-Trichlorobenzene	ND	0.075	0.74		mg/Kg	20	1/21/2020 7:09:28 PM	R65960
1,1,1-Trichloroethane	ND	0.067	0.74		mg/Kg	20	1/21/2020 7:09:28 PM	R65960
1,1,2-Trichloroethane	ND	0.052	0.74		mg/Kg	20	1/21/2020 7:09:28 PM	R65960
Trichloroethene (TCE)	ND	0.086	0.74		mg/Kg	20	1/21/2020 7:09:28 PM	R65960
Trichlorofluoromethane	ND	0.25	0.74		mg/Kg	20	1/21/2020 7:09:28 PM	R65960
1,2,3-Trichloropropane	ND	0.12	1.5		mg/Kg	20	1/21/2020 7:09:28 PM	R65960
Vinyl chloride	ND	0.048	0.74		mg/Kg	20	1/21/2020 7:09:28 PM	R65960
Xylenes, Total	26	0.19	1.5		mg/Kg	20	1/21/2020 7:09:28 PM	R65960
Surr: Dibromofluoromethane	99.1		70-130		%Rec	20	1/21/2020 7:09:28 PM	R65960
Surr: 1,2-Dichloroethane-d4	99.4		70-130		%Rec	20	1/21/2020 7:09:28 PM	R65960
Surr: Toluene-d8	99.0		70-130		%Rec	20	1/21/2020 7:09:28 PM	R65960
Surr: 4-Bromofluorobenzene	84.7		70-130		%Rec	20	1/21/2020 7:09:28 PM	R65960
VOLATILES BY 8260B/1311							Analyst: **RAA**	
Benzene	ND	0.10	0.50		mg/L	1	1/26/2020 2:16:00 PM	49987
Surr: 1,2-Dichloroethane-d4	104	0	70-130		%Rec	1	1/26/2020 2:16:00 PM	49987
Surr: Dibromofluoromethane	99.5	0	70-130		%Rec	1	1/26/2020 2:16:00 PM	49987
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **JMR**	
Gasoline Range Organics (GRO)	370	16	74		mg/Kg	20	1/21/2020 7:09:28 PM	G65960
Surr: BFB	95.1	0	70-130		%Rec	20	1/21/2020 7:09:28 PM	G65960
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/23/2020 3:07:00 PM	R66022
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	5.90				pH Units	1	1/28/2020 9:49:00 AM	R66112

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-19 Toe Clay 6-6.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 10:15:00 AM
Lab ID: 2001739-004 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	2800	23	99		mg/Kg	10	1/22/2020 4:47:39 PM	49947
Motor Oil Range Organics (MRO)	730	490	490		mg/Kg	10	1/22/2020 4:47:39 PM	49947
Surr: DNOP	0	0	55.1-146	S	%Rec	10	1/22/2020 4:47:39 PM	49947
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	0.29	0.0019	0.034	H	mg/Kg	1	2/26/2020 11:58:11 AM	50654
MERCURY, TCLP							Analyst: **rde**	
Mercury	ND	0.00075	0.020		mg/L	1	1/24/2020 11:19:41 AM	50014
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.72	4.9		mg/Kg	2	1/23/2020 8:53:05 AM	49956
Arsenic	ND	2.8	4.9		mg/Kg	2	1/23/2020 8:53:05 AM	49956
Barium	350	0.045	0.19		mg/Kg	2	1/23/2020 8:53:05 AM	49956
Beryllium	1.1	0.018	0.29		mg/Kg	2	1/23/2020 8:53:05 AM	49956
Cadmium	ND	0.047	0.19		mg/Kg	2	1/23/2020 8:53:05 AM	49956
Chromium	24	0.16	0.58		mg/Kg	2	1/23/2020 8:53:05 AM	49956
Cobalt	5.2	0.21	0.58		mg/Kg	2	1/23/2020 8:53:05 AM	49956
Lead	8.9	0.47	0.49		mg/Kg	2	1/23/2020 8:53:05 AM	49956
Nickel	12	0.29	0.97		mg/Kg	2	1/23/2020 8:53:05 AM	49956
Selenium	ND	2.4	4.9		mg/Kg	2	1/23/2020 8:53:05 AM	49956
Silver	ND	0.062	0.49		mg/Kg	2	1/23/2020 8:53:05 AM	49956
Vanadium	28	0.13	4.9		mg/Kg	2	1/23/2020 8:53:05 AM	49956
Zinc	76	0.77	4.9		mg/Kg	2	1/23/2020 8:53:05 AM	49956
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/23/2020 11:51:06 AM	49986
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.33	0.89	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952
Acenaphthylene	ND	0.39	0.89	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952
Aniline	ND	0.30	0.89	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952
Anthracene	ND	0.34	0.89	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952
Azobenzene	ND	0.45	0.89	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952
Benz(a)anthracene	ND	0.31	0.89	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952
Benzo(a)pyrene	ND	0.48	0.89	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952
Benzo(b)fluoranthene	ND	0.51	0.89	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952
Benzo(g,h,i)perylene	ND	0.46	0.89	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952
Benzo(k)fluoranthene	ND	0.27	0.89	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952
Benzoic acid	ND	0.61	2.2	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952
Benzyl alcohol	ND	0.37	0.89	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952
Bis(2-chloroethoxy)methane	ND	0.37	0.89	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952

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Qualifiers:

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P	Sample pH Not In Range
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-19 Toe Clay 6-6.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 10:15:00 AM
Lab ID: 2001739-004 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.52	0.89	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952
Bis(2-chloroisopropyl)ether	ND	0.38	0.89	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952
Bis(2-ethylhexyl)phthalate	ND	1.0	2.2	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952
4-Bromophenyl phenyl ether	ND	0.52	0.89	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952
Butyl benzyl phthalate	ND	0.30	0.89	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952
Carbazole	ND	0.35	0.89	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952
4-Chloro-3-methylphenol	ND	0.35	2.2	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952
4-Chloroaniline	ND	0.34	2.2	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952
2-Chloronaphthalene	ND	0.37	1.1	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952
2-Chlorophenol	ND	0.50	0.89	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952
4-Chlorophenyl phenyl ether	ND	0.37	0.89	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952
Chrysene	ND	0.35	0.89	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952
Di-n-butyl phthalate	ND	1.3	1.8	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952
Di-n-octyl phthalate	ND	0.30	1.8	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952
Dibenz(a,h)anthracene	ND	0.49	0.89	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952
Dibenzofuran	ND	0.44	0.89	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952
1,2-Dichlorobenzene	ND	0.35	0.89	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952
1,3-Dichlorobenzene	ND	0.30	0.89	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952
1,4-Dichlorobenzene	ND	0.37	0.89	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952
3,3´-Dichlorobenzidine	ND	0.38	1.1	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952
Diethyl phthalate	ND	1.4	2.2	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952
Dimethyl phthalate	ND	0.36	0.89	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952
2,4-Dichlorophenol	ND	0.38	1.8	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952
2,4-Dimethylphenol	ND	0.37	1.3	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952
4,6-Dinitro-2-methylphenol	ND	0.33	1.8	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952
2,4-Dinitrophenol	ND	0.26	2.2	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952
2,4-Dinitrotoluene	ND	0.46	2.2	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952
2,6-Dinitrotoluene	ND	0.53	2.2	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952
Fluoranthene	ND	0.34	0.89	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952
Fluorene	ND	0.35	0.89	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952
Hexachlorobenzene	ND	0.35	0.89	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952
Hexachlorobutadiene	ND	0.39	0.89	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952
Hexachlorocyclopentadiene	ND	0.43	0.89	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952
Hexachloroethane	ND	0.36	0.89	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952
Indeno(1,2,3-cd)pyrene	ND	0.55	0.89	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952
Isophorone	ND	0.39	1.8	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952
1-Methylnaphthalene	ND	0.41	0.89	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952
2-Methylnaphthalene	ND	0.36	0.89	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952
2-Methylphenol	ND	0.37	1.8	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952

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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-19 Toe Clay 6-6.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 10:15:00 AM
Lab ID: 2001739-004 **Matrix:** SOIL
Received Date: 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.32	0.89	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952
N-Nitrosodi-n-propylamine	ND	0.45	0.89	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952
N-Nitrosodiphenylamine	ND	0.46	0.89	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952
Naphthalene	ND	0.36	0.89	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952
2-Nitroaniline	ND	0.49	0.89	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952
3-Nitroaniline	ND	0.44	0.89	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952
4-Nitroaniline	ND	0.60	1.8	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952
Nitrobenzene	ND	0.38	1.8	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952
2-Nitrophenol	ND	0.37	0.89	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952
4-Nitrophenol	ND	0.26	1.1	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952
Pentachlorophenol	ND	0.40	1.8	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952
Phenanthrene	0.58	0.45	0.89	JD	mg/Kg	1	1/27/2020 6:11:33 PM	49952
Phenol	ND	0.38	0.89	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952
Pyrene	ND	0.29	0.89	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952
Pyridine	ND	0.83	1.8	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952
1,2,4-Trichlorobenzene	ND	0.38	0.89	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952
2,4,5-Trichlorophenol	ND	0.29	0.89	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952
2,4,6-Trichlorophenol	ND	0.45	0.89	D	mg/Kg	1	1/27/2020 6:11:33 PM	49952
Surr: 2-Fluorophenol	59.3		26.7-85.9	D	%Rec	1	1/27/2020 6:11:33 PM	49952
Surr: Phenol-d5	64.2		18.5-101	D	%Rec	1	1/27/2020 6:11:33 PM	49952
Surr: 2,4,6-Tribromophenol	67.9		35.8-85.6	D	%Rec	1	1/27/2020 6:11:33 PM	49952
Surr: Nitrobenzene-d5	68.1		40.8-95.2	D	%Rec	1	1/27/2020 6:11:33 PM	49952
Surr: 2-Fluorobiphenyl	79.5		34.7-85.2	D	%Rec	1	1/27/2020 6:11:33 PM	49952
Surr: 4-Terphenyl-d14	64.5		37.4-91.3	D	%Rec	1	1/27/2020 6:11:33 PM	49952
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Benzene	0.14	0.0040	0.024		mg/Kg	2	1/22/2020 5:20:19 PM	R66015
Toluene	0.25	0.0046	0.048		mg/Kg	2	1/22/2020 5:20:19 PM	R66015
Ethylbenzene	0.28	0.0028	0.048		mg/Kg	2	1/22/2020 5:20:19 PM	R66015
Methyl tert-butyl ether (MTBE)	0.041	0.011	0.048	J	mg/Kg	2	1/22/2020 5:20:19 PM	R66015
1,2,4-Trimethylbenzene	0.31	0.0044	0.048		mg/Kg	2	1/22/2020 5:20:19 PM	R66015
1,3,5-Trimethylbenzene	0.095	0.0047	0.048		mg/Kg	2	1/22/2020 5:20:19 PM	R66015
1,2-Dichloroethane (EDC)	ND	0.0049	0.048		mg/Kg	2	1/22/2020 5:20:19 PM	R66015
1,2-Dibromoethane (EDB)	ND	0.0044	0.048		mg/Kg	2	1/22/2020 5:20:19 PM	R66015
Naphthalene	0.23	0.0097	0.097		mg/Kg	2	1/22/2020 5:20:19 PM	R66015
1-Methylnaphthalene	0.28	0.028	0.19		mg/Kg	2	1/22/2020 5:20:19 PM	R66015
2-Methylnaphthalene	0.34	0.021	0.19		mg/Kg	2	1/22/2020 5:20:19 PM	R66015
Acetone	ND	0.040	0.72		mg/Kg	2	1/22/2020 5:20:19 PM	R66015
Bromobenzene	ND	0.0046	0.048		mg/Kg	2	1/22/2020 5:20:19 PM	R66015
Bromodichloromethane	ND	0.0044	0.048		mg/Kg	2	1/22/2020 5:20:19 PM	R66015

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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-19 Toe Clay 6-6.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 10:15:00 AM
Lab ID: 2001739-004 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Bromoform	ND	0.0044	0.048		mg/Kg	2	1/22/2020 5:20:19 PM	R66015
Bromomethane	0.024	0.012	0.14	J	mg/Kg	2	1/22/2020 5:20:19 PM	R66015
2-Butanone	0.44	0.056	0.48	J	mg/Kg	2	1/22/2020 5:20:19 PM	R66015
Carbon disulfide	0.048	0.016	0.48	J	mg/Kg	2	1/22/2020 5:20:19 PM	R66015
Carbon tetrachloride	ND	0.0046	0.048		mg/Kg	2	1/22/2020 5:20:19 PM	R66015
Chlorobenzene	ND	0.0062	0.048		mg/Kg	2	1/22/2020 5:20:19 PM	R66015
Chloroethane	ND	0.0071	0.097		mg/Kg	2	1/22/2020 5:20:19 PM	R66015
Chloroform	0.0080	0.0039	0.048	J	mg/Kg	2	1/22/2020 5:20:19 PM	R66015
Chloromethane	ND	0.0046	0.14		mg/Kg	2	1/22/2020 5:20:19 PM	R66015
2-Chlorotoluene	ND	0.0042	0.048		mg/Kg	2	1/22/2020 5:20:19 PM	R66015
4-Chlorotoluene	ND	0.0040	0.048		mg/Kg	2	1/22/2020 5:20:19 PM	R66015
cis-1,2-DCE	0.012	0.0066	0.048	J	mg/Kg	2	1/22/2020 5:20:19 PM	R66015
cis-1,3-Dichloropropene	ND	0.0041	0.048		mg/Kg	2	1/22/2020 5:20:19 PM	R66015
1,2-Dibromo-3-chloropropane	ND	0.0050	0.097		mg/Kg	2	1/22/2020 5:20:19 PM	R66015
Dibromochloromethane	ND	0.0034	0.048		mg/Kg	2	1/22/2020 5:20:19 PM	R66015
Dibromomethane	ND	0.0052	0.048		mg/Kg	2	1/22/2020 5:20:19 PM	R66015
1,2-Dichlorobenzene	ND	0.0040	0.048		mg/Kg	2	1/22/2020 5:20:19 PM	R66015
1,3-Dichlorobenzene	ND	0.0042	0.048		mg/Kg	2	1/22/2020 5:20:19 PM	R66015
1,4-Dichlorobenzene	ND	0.0040	0.048		mg/Kg	2	1/22/2020 5:20:19 PM	R66015
Dichlorodifluoromethane	ND	0.011	0.048		mg/Kg	2	1/22/2020 5:20:19 PM	R66015
1,1-Dichloroethane	ND	0.0031	0.048		mg/Kg	2	1/22/2020 5:20:19 PM	R66015
1,1-Dichloroethene	ND	0.019	0.048		mg/Kg	2	1/22/2020 5:20:19 PM	R66015
1,2-Dichloropropane	ND	0.0035	0.048		mg/Kg	2	1/22/2020 5:20:19 PM	R66015
1,3-Dichloropropane	ND	0.0052	0.048		mg/Kg	2	1/22/2020 5:20:19 PM	R66015
2,2-Dichloropropane	ND	0.016	0.097		mg/Kg	2	1/22/2020 5:20:19 PM	R66015
1,1-Dichloropropene	ND	0.0044	0.097		mg/Kg	2	1/22/2020 5:20:19 PM	R66015
Hexachlorobutadiene	ND	0.0049	0.097		mg/Kg	2	1/22/2020 5:20:19 PM	R66015
2-Hexanone	ND	0.0080	0.48		mg/Kg	2	1/22/2020 5:20:19 PM	R66015
Isopropylbenzene	0.041	0.0035	0.048	J	mg/Kg	2	1/22/2020 5:20:19 PM	R66015
4-Isopropyltoluene	ND	0.0040	0.048		mg/Kg	2	1/22/2020 5:20:19 PM	R66015
4-Methyl-2-pentanone	ND	0.0091	0.48		mg/Kg	2	1/22/2020 5:20:19 PM	R66015
Methylene chloride	0.010	0.0085	0.14	J	mg/Kg	2	1/22/2020 5:20:19 PM	R66015
n-Butylbenzene	ND	0.0045	0.14		mg/Kg	2	1/22/2020 5:20:19 PM	R66015
n-Propylbenzene	0.067	0.0038	0.048		mg/Kg	2	1/22/2020 5:20:19 PM	R66015
sec-Butylbenzene	0.016	0.0054	0.048	J	mg/Kg	2	1/22/2020 5:20:19 PM	R66015
Styrene	ND	0.0038	0.048		mg/Kg	2	1/22/2020 5:20:19 PM	R66015
tert-Butylbenzene	ND	0.0046	0.048		mg/Kg	2	1/22/2020 5:20:19 PM	R66015
1,1,1,2-Tetrachloroethane	ND	0.0033	0.048		mg/Kg	2	1/22/2020 5:20:19 PM	R66015
1,1,2,2-Tetrachloroethane	ND	0.0049	0.048		mg/Kg	2	1/22/2020 5:20:19 PM	R66015

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

Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-19 Toe Clay 6-6.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 10:15:00 AM
Lab ID: 2001739-004 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Tetrachloroethene (PCE)	ND	0.0039	0.048		mg/Kg	2	1/22/2020 5:20:19 PM	R66015
trans-1,2-DCE	ND	0.0044	0.048		mg/Kg	2	1/22/2020 5:20:19 PM	R66015
trans-1,3-Dichloropropene	ND	0.0051	0.048		mg/Kg	2	1/22/2020 5:20:19 PM	R66015
1,2,3-Trichlorobenzene	ND	0.0042	0.097		mg/Kg	2	1/22/2020 5:20:19 PM	R66015
1,2,4-Trichlorobenzene	ND	0.0049	0.048		mg/Kg	2	1/22/2020 5:20:19 PM	R66015
1,1,1-Trichloroethane	ND	0.0044	0.048		mg/Kg	2	1/22/2020 5:20:19 PM	R66015
1,1,2-Trichloroethane	ND	0.0034	0.048		mg/Kg	2	1/22/2020 5:20:19 PM	R66015
Trichloroethene (TCE)	ND	0.0056	0.048		mg/Kg	2	1/22/2020 5:20:19 PM	R66015
Trichlorofluoromethane	ND	0.016	0.048		mg/Kg	2	1/22/2020 5:20:19 PM	R66015
1,2,3-Trichloropropane	ND	0.0078	0.097		mg/Kg	2	1/22/2020 5:20:19 PM	R66015
Vinyl chloride	ND	0.0032	0.048		mg/Kg	2	1/22/2020 5:20:19 PM	R66015
Xylenes, Total	0.89	0.012	0.097		mg/Kg	2	1/22/2020 5:20:19 PM	R66015
Surr: Dibromofluoromethane	96.2		70-130		%Rec	2	1/22/2020 5:20:19 PM	R66015
Surr: 1,2-Dichloroethane-d4	93.7		70-130		%Rec	2	1/22/2020 5:20:19 PM	R66015
Surr: Toluene-d8	98.3		70-130		%Rec	2	1/22/2020 5:20:19 PM	R66015
Surr: 4-Bromofluorobenzene	75.1		70-130		%Rec	2	1/22/2020 5:20:19 PM	R66015
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **JMR**	
Gasoline Range Organics (GRO)	20	1.0	4.8		mg/Kg	2	1/22/2020 5:20:19 PM	G66015
Surr: BFB	98.6	0	70-130		%Rec	2	1/22/2020 5:20:19 PM	G66015
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/27/2020 12:20:00 PM	R66110
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	8.03				pH Units	1	1/28/2020 9:49:00 AM	R66112

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Qualifiers:

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ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-18 Toe Clay 5 ft
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 2:55:00 PM
Lab ID: 2001739-005 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	520	3.8	16		mg/Kg	2	1/24/2020 9:34:35 AM	49947
Motor Oil Range Organics (MRO)	150	81	81		mg/Kg	2	1/24/2020 9:34:35 AM	49947
Surr: DNOP	107	0	55.1-146		%Rec	2	1/24/2020 9:34:35 AM	49947
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	0.012	0.0017	0.031	JH	mg/Kg	1	2/26/2020 12:00:15 PM	50654
MERCURY, TCLP							Analyst: **rde**	
Mercury	ND	0.00075	0.020		mg/L	1	1/24/2020 11:21:46 AM	50014
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.73	5.0		mg/Kg	2	1/23/2020 8:54:29 AM	49956
Arsenic	ND	2.8	5.0		mg/Kg	2	1/23/2020 8:54:29 AM	49956
Barium	400	0.046	0.20		mg/Kg	2	1/23/2020 8:54:29 AM	49956
Beryllium	0.79	0.018	0.30		mg/Kg	2	1/23/2020 8:54:29 AM	49956
Cadmium	ND	0.048	0.20		mg/Kg	2	1/23/2020 8:54:29 AM	49956
Chromium	11	0.16	0.60		mg/Kg	2	1/23/2020 8:54:29 AM	49956
Cobalt	4.1	0.21	0.60		mg/Kg	2	1/23/2020 8:54:29 AM	49956
Lead	1.3	0.48	0.50		mg/Kg	2	1/23/2020 8:54:29 AM	49956
Nickel	7.5	0.30	1.0		mg/Kg	2	1/23/2020 8:54:29 AM	49956
Selenium	ND	2.5	5.0		mg/Kg	2	1/23/2020 8:54:29 AM	49956
Silver	ND	0.064	0.50		mg/Kg	2	1/23/2020 8:54:29 AM	49956
Vanadium	21	0.13	5.0		mg/Kg	2	1/23/2020 8:54:29 AM	49956
Zinc	26	0.79	5.0		mg/Kg	2	1/23/2020 8:54:29 AM	49956
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/23/2020 11:52:29 AM	49986
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.37	0.99	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952
Acenaphthylene	ND	0.44	0.99	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952
Aniline	ND	0.34	0.99	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952
Anthracene	ND	0.38	0.99	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952
Azobenzene	ND	0.50	0.99	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952
Benz(a)anthracene	ND	0.34	0.99	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952
Benzo(a)pyrene	ND	0.53	0.99	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952
Benzo(b)fluoranthene	ND	0.56	0.99	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952
Benzo(g,h,i)perylene	ND	0.51	0.99	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952
Benzo(k)fluoranthene	ND	0.29	0.99	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952
Benzoic acid	ND	0.68	2.5	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952
Benzyl alcohol	ND	0.41	0.99	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952
Bis(2-chloroethoxy)methane	ND	0.41	0.99	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952

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Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-18 Toe Clay 5 ft
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 2:55:00 PM
Lab ID: 2001739-005 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.57	0.99	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952
Bis(2-chloroisopropyl)ether	ND	0.42	0.99	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952
Bis(2-ethylhexyl)phthalate	ND	1.1	2.5	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952
4-Bromophenyl phenyl ether	ND	0.57	0.99	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952
Butyl benzyl phthalate	ND	0.33	0.99	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952
Carbazole	ND	0.39	0.99	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952
4-Chloro-3-methylphenol	ND	0.39	2.5	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952
4-Chloroaniline	ND	0.38	2.5	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952
2-Chloronaphthalene	ND	0.41	1.2	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952
2-Chlorophenol	ND	0.56	0.99	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952
4-Chlorophenyl phenyl ether	ND	0.41	0.99	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952
Chrysene	ND	0.39	0.99	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952
Di-n-butyl phthalate	ND	1.5	2.0	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952
Di-n-octyl phthalate	ND	0.33	2.0	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952
Dibenz(a,h)anthracene	ND	0.55	0.99	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952
Dibenzofuran	ND	0.49	0.99	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952
1,2-Dichlorobenzene	ND	0.39	0.99	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952
1,3-Dichlorobenzene	ND	0.33	0.99	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952
1,4-Dichlorobenzene	ND	0.41	0.99	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952
3,3´-Dichlorobenzidine	ND	0.42	1.2	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952
Diethyl phthalate	ND	1.5	2.5	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952
Dimethyl phthalate	ND	0.40	0.99	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952
2,4-Dichlorophenol	ND	0.42	2.0	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952
2,4-Dimethylphenol	ND	0.41	1.5	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952
4,6-Dinitro-2-methylphenol	ND	0.36	2.0	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952
2,4-Dinitrophenol	ND	0.29	2.5	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952
2,4-Dinitrotoluene	ND	0.51	2.5	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952
2,6-Dinitrotoluene	ND	0.59	2.5	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952
Fluoranthene	ND	0.38	0.99	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952
Fluorene	0.57	0.39	0.99	JD	mg/Kg	1	1/27/2020 6:40:08 PM	49952
Hexachlorobenzene	ND	0.39	0.99	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952
Hexachlorobutadiene	ND	0.43	0.99	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952
Hexachlorocyclopentadiene	ND	0.47	0.99	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952
Hexachloroethane	ND	0.40	0.99	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952
Indeno(1,2,3-cd)pyrene	ND	0.61	0.99	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952
Isophorone	ND	0.43	2.0	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952
1-Methylnaphthalene	2.7	0.46	0.99	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952
2-Methylnaphthalene	2.3	0.40	0.99	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952
2-Methylphenol	ND	0.42	2.0	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952

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

Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-18 Toe Clay 5 ft
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 2:55:00 PM
Lab ID: 2001739-005 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.36	0.99	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952
N-Nitrosodi-n-propylamine	ND	0.50	0.99	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952
N-Nitrosodiphenylamine	ND	0.51	0.99	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952
Naphthalene	ND	0.40	0.99	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952
2-Nitroaniline	ND	0.55	0.99	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952
3-Nitroaniline	ND	0.48	0.99	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952
4-Nitroaniline	ND	0.66	2.0	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952
Nitrobenzene	ND	0.42	2.0	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952
2-Nitrophenol	ND	0.41	0.99	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952
4-Nitrophenol	ND	0.29	1.2	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952
Pentachlorophenol	ND	0.44	2.0	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952
Phenanthrene	1.2	0.50	0.99	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952
Phenol	ND	0.42	0.99	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952
Pyrene	ND	0.33	0.99	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952
Pyridine	ND	0.92	2.0	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952
1,2,4-Trichlorobenzene	ND	0.42	0.99	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952
2,4,5-Trichlorophenol	ND	0.32	0.99	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952
2,4,6-Trichlorophenol	ND	0.49	0.99	D	mg/Kg	1	1/27/2020 6:40:08 PM	49952
Surr: 2-Fluorophenol	59.9		26.7-85.9	D	%Rec	1	1/27/2020 6:40:08 PM	49952
Surr: Phenol-d5	63.0		18.5-101	D	%Rec	1	1/27/2020 6:40:08 PM	49952
Surr: 2,4,6-Tribromophenol	68.4		35.8-85.6	D	%Rec	1	1/27/2020 6:40:08 PM	49952
Surr: Nitrobenzene-d5	69.2		40.8-95.2	D	%Rec	1	1/27/2020 6:40:08 PM	49952
Surr: 2-Fluorobiphenyl	72.8		34.7-85.2	D	%Rec	1	1/27/2020 6:40:08 PM	49952
Surr: 4-Terphenyl-d14	58.6		37.4-91.3	D	%Rec	1	1/27/2020 6:40:08 PM	49952
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Benzene	0.0022	0.0021	0.013	J	mg/Kg	1	1/22/2020 6:17:27 PM	R66015
Toluene	0.023	0.0025	0.026	J	mg/Kg	1	1/22/2020 6:17:27 PM	R66015
Ethylbenzene	0.0070	0.0015	0.026	J	mg/Kg	1	1/22/2020 6:17:27 PM	R66015
Methyl tert-butyl ether (MTBE)	ND	0.0062	0.026		mg/Kg	1	1/22/2020 6:17:27 PM	R66015
1,2,4-Trimethylbenzene	0.089	0.0024	0.026		mg/Kg	1	1/22/2020 6:17:27 PM	R66015
1,3,5-Trimethylbenzene	0.024	0.0025	0.026	J	mg/Kg	1	1/22/2020 6:17:27 PM	R66015
1,2-Dichloroethane (EDC)	ND	0.0027	0.026		mg/Kg	1	1/22/2020 6:17:27 PM	R66015
1,2-Dibromoethane (EDB)	ND	0.0024	0.026		mg/Kg	1	1/22/2020 6:17:27 PM	R66015
Naphthalene	0.12	0.0052	0.052		mg/Kg	1	1/22/2020 6:17:27 PM	R66015
1-Methylnaphthalene	0.55	0.015	0.10		mg/Kg	1	1/22/2020 6:17:27 PM	R66015
2-Methylnaphthalene	0.73	0.011	0.10		mg/Kg	1	1/22/2020 6:17:27 PM	R66015
Acetone	0.083	0.022	0.39	J	mg/Kg	1	1/22/2020 6:17:27 PM	R66015
Bromobenzene	ND	0.0025	0.026		mg/Kg	1	1/22/2020 6:17:27 PM	R66015
Bromodichloromethane	ND	0.0024	0.026		mg/Kg	1	1/22/2020 6:17:27 PM	R66015

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Qualifiers:

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H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-18 Toe Clay 5 ft
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 2:55:00 PM
Lab ID: 2001739-005 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Bromoform	ND	0.0024	0.026		mg/Kg	1	1/22/2020 6:17:27 PM	R66015
Bromomethane	0.013	0.0063	0.078	J	mg/Kg	1	1/22/2020 6:17:27 PM	R66015
2-Butanone	0.17	0.030	0.26	J	mg/Kg	1	1/22/2020 6:17:27 PM	R66015
Carbon disulfide	0.55	0.0086	0.26		mg/Kg	1	1/22/2020 6:17:27 PM	R66015
Carbon tetrachloride	ND	0.0025	0.026		mg/Kg	1	1/22/2020 6:17:27 PM	R66015
Chlorobenzene	ND	0.0033	0.026		mg/Kg	1	1/22/2020 6:17:27 PM	R66015
Chloroethane	ND	0.0038	0.052		mg/Kg	1	1/22/2020 6:17:27 PM	R66015
Chloroform	0.0034	0.0021	0.026	J	mg/Kg	1	1/22/2020 6:17:27 PM	R66015
Chloromethane	ND	0.0025	0.078		mg/Kg	1	1/22/2020 6:17:27 PM	R66015
2-Chlorotoluene	ND	0.0023	0.026		mg/Kg	1	1/22/2020 6:17:27 PM	R66015
4-Chlorotoluene	ND	0.0021	0.026		mg/Kg	1	1/22/2020 6:17:27 PM	R66015
cis-1,2-DCE	ND	0.0036	0.026		mg/Kg	1	1/22/2020 6:17:27 PM	R66015
cis-1,3-Dichloropropene	ND	0.0022	0.026		mg/Kg	1	1/22/2020 6:17:27 PM	R66015
1,2-Dibromo-3-chloropropane	ND	0.0027	0.052		mg/Kg	1	1/22/2020 6:17:27 PM	R66015
Dibromochloromethane	ND	0.0019	0.026		mg/Kg	1	1/22/2020 6:17:27 PM	R66015
Dibromomethane	ND	0.0028	0.026		mg/Kg	1	1/22/2020 6:17:27 PM	R66015
1,2-Dichlorobenzene	ND	0.0021	0.026		mg/Kg	1	1/22/2020 6:17:27 PM	R66015
1,3-Dichlorobenzene	ND	0.0023	0.026		mg/Kg	1	1/22/2020 6:17:27 PM	R66015
1,4-Dichlorobenzene	ND	0.0022	0.026		mg/Kg	1	1/22/2020 6:17:27 PM	R66015
Dichlorodifluoromethane	ND	0.0061	0.026		mg/Kg	1	1/22/2020 6:17:27 PM	R66015
1,1-Dichloroethane	0.0077	0.0017	0.026	J	mg/Kg	1	1/22/2020 6:17:27 PM	R66015
1,1-Dichloroethene	ND	0.010	0.026		mg/Kg	1	1/22/2020 6:17:27 PM	R66015
1,2-Dichloropropane	ND	0.0019	0.026		mg/Kg	1	1/22/2020 6:17:27 PM	R66015
1,3-Dichloropropane	ND	0.0028	0.026		mg/Kg	1	1/22/2020 6:17:27 PM	R66015
2,2-Dichloropropane	ND	0.0085	0.052		mg/Kg	1	1/22/2020 6:17:27 PM	R66015
1,1-Dichloropropene	ND	0.0024	0.052		mg/Kg	1	1/22/2020 6:17:27 PM	R66015
Hexachlorobutadiene	ND	0.0027	0.052		mg/Kg	1	1/22/2020 6:17:27 PM	R66015
2-Hexanone	0.035	0.0043	0.26	J	mg/Kg	1	1/22/2020 6:17:27 PM	R66015
Isopropylbenzene	ND	0.0019	0.026		mg/Kg	1	1/22/2020 6:17:27 PM	R66015
4-Isopropyltoluene	0.0057	0.0022	0.026	J	mg/Kg	1	1/22/2020 6:17:27 PM	R66015
4-Methyl-2-pentanone	ND	0.0049	0.26		mg/Kg	1	1/22/2020 6:17:27 PM	R66015
Methylene chloride	0.0099	0.0046	0.078	J	mg/Kg	1	1/22/2020 6:17:27 PM	R66015
n-Butylbenzene	0.018	0.0024	0.078	J	mg/Kg	1	1/22/2020 6:17:27 PM	R66015
n-Propylbenzene	0.0072	0.0021	0.026	J	mg/Kg	1	1/22/2020 6:17:27 PM	R66015
sec-Butylbenzene	0.0053	0.0029	0.026	J	mg/Kg	1	1/22/2020 6:17:27 PM	R66015
Styrene	ND	0.0021	0.026		mg/Kg	1	1/22/2020 6:17:27 PM	R66015
tert-Butylbenzene	ND	0.0025	0.026		mg/Kg	1	1/22/2020 6:17:27 PM	R66015
1,1,1,2-Tetrachloroethane	ND	0.0018	0.026		mg/Kg	1	1/22/2020 6:17:27 PM	R66015
1,1,2,2-Tetrachloroethane	ND	0.0027	0.026		mg/Kg	1	1/22/2020 6:17:27 PM	R66015

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

Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-18 Toe Clay 5 ft
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 2:55:00 PM
Lab ID: 2001739-005 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Tetrachloroethene (PCE)	ND	0.0021	0.026		mg/Kg	1	1/22/2020 6:17:27 PM	R66015
trans-1,2-DCE	ND	0.0024	0.026		mg/Kg	1	1/22/2020 6:17:27 PM	R66015
trans-1,3-Dichloropropene	ND	0.0028	0.026		mg/Kg	1	1/22/2020 6:17:27 PM	R66015
1,2,3-Trichlorobenzene	ND	0.0023	0.052		mg/Kg	1	1/22/2020 6:17:27 PM	R66015
1,2,4-Trichlorobenzene	ND	0.0026	0.026		mg/Kg	1	1/22/2020 6:17:27 PM	R66015
1,1,1-Trichloroethane	ND	0.0024	0.026		mg/Kg	1	1/22/2020 6:17:27 PM	R66015
1,1,2-Trichloroethane	ND	0.0018	0.026		mg/Kg	1	1/22/2020 6:17:27 PM	R66015
Trichloroethene (TCE)	ND	0.0030	0.026		mg/Kg	1	1/22/2020 6:17:27 PM	R66015
Trichlorofluoromethane	ND	0.0089	0.026		mg/Kg	1	1/22/2020 6:17:27 PM	R66015
1,2,3-Trichloropropane	ND	0.0042	0.052		mg/Kg	1	1/22/2020 6:17:27 PM	R66015
Vinyl chloride	ND	0.0017	0.026		mg/Kg	1	1/22/2020 6:17:27 PM	R66015
Xylenes, Total	0.073	0.0066	0.052		mg/Kg	1	1/22/2020 6:17:27 PM	R66015
Surr: Dibromofluoromethane	94.0		70-130		%Rec	1	1/22/2020 6:17:27 PM	R66015
Surr: 1,2-Dichloroethane-d4	91.1		70-130		%Rec	1	1/22/2020 6:17:27 PM	R66015
Surr: Toluene-d8	98.9		70-130		%Rec	1	1/22/2020 6:17:27 PM	R66015
Surr: 4-Bromofluorobenzene	82.3		70-130		%Rec	1	1/22/2020 6:17:27 PM	R66015
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **JMR**	
Gasoline Range Organics (GRO)	4.1	0.56	2.6		mg/Kg	1	1/22/2020 6:17:27 PM	G66015
Surr: BFB	95.9	0	70-130		%Rec	1	1/22/2020 6:17:27 PM	G66015
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/27/2020 12:20:00 PM	R66110
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	8.39				pH Units	1	1/28/2020 9:49:00 AM	R66112

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

Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-19 Toe Surf
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 10:05:00 AM
Lab ID: 2001739-006 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	81000	1200	4800		mg/Kg	500	1/24/2020 9:43:44 AM	49947
Motor Oil Range Organics (MRO)	43000	24000	24000		mg/Kg	500	1/24/2020 9:43:44 AM	49947
Surr: DNOP	0	0	55.1-146	S	%Rec	500	1/24/2020 9:43:44 AM	49947
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	5.0	0.037	0.66	H	mg/Kg	20	3/2/2020 5:07:04 PM	50789
MERCURY, TCLP							Analyst: **rde**	
Mercury	ND	0.00075	0.020		mg/L	1	1/24/2020 11:28:06 AM	50014
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.72	4.9		mg/Kg	2	1/23/2020 8:55:53 AM	49956
Arsenic	8.4	2.8	4.9		mg/Kg	2	1/23/2020 8:55:53 AM	49956
Barium	340	0.046	0.20		mg/Kg	2	1/23/2020 8:55:53 AM	49956
Beryllium	0.34	0.018	0.30		mg/Kg	2	1/23/2020 8:55:53 AM	49956
Cadmium	ND	0.048	0.20		mg/Kg	2	1/23/2020 8:55:53 AM	49956
Chromium	65	0.16	0.59		mg/Kg	2	1/23/2020 8:55:53 AM	49956
Cobalt	2.8	0.21	0.59		mg/Kg	2	1/23/2020 8:55:53 AM	49956
Lead	35	0.48	0.49		mg/Kg	2	1/23/2020 8:55:53 AM	49956
Nickel	16	0.29	0.98		mg/Kg	2	1/23/2020 8:55:53 AM	49956
Selenium	5.3	2.5	4.9		mg/Kg	2	1/23/2020 8:55:53 AM	49956
Silver	ND	0.063	0.49		mg/Kg	2	1/23/2020 8:55:53 AM	49956
Vanadium	25	0.13	4.9		mg/Kg	2	1/23/2020 8:55:53 AM	49956
Zinc	230	0.78	4.9		mg/Kg	2	1/23/2020 8:55:53 AM	49956
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	0.0095	0.0085	5.0	J	mg/L	1	1/23/2020 11:53:54 AM	49986
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	1.9	5.0	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
Acenaphthylene	ND	2.2	5.0	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
Aniline	ND	1.7	5.0	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
Anthracene	ND	1.9	5.0	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
Azobenzene	ND	2.5	5.0	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
Benz(a)anthracene	ND	1.7	5.0	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
Benzo(a)pyrene	ND	2.7	5.0	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
Benzo(b)fluoranthene	ND	2.9	5.0	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
Benzo(g,h,i)perylene	ND	2.6	5.0	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
Benzo(k)fluoranthene	ND	1.5	5.0	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
Benzoic acid	ND	3.5	13	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
Benzyl alcohol	ND	2.1	5.0	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
Bis(2-chloroethoxy)methane	ND	2.1	5.0	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952

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

Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-19 Toe Surf
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 10:05:00 AM
Lab ID: 2001739-006 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	2.9	5.0	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
Bis(2-chloroisopropyl)ether	ND	2.1	5.0	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
Bis(2-ethylhexyl)phthalate	ND	5.6	13	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
4-Bromophenyl phenyl ether	ND	2.9	5.0	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
Butyl benzyl phthalate	ND	1.7	5.0	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
Carbazole	ND	2.0	5.0	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
4-Chloro-3-methylphenol	ND	2.0	13	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
4-Chloroaniline	ND	1.9	13	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
2-Chloronaphthalene	ND	2.1	6.3	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
2-Chlorophenol	ND	2.8	5.0	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
4-Chlorophenyl phenyl ether	ND	2.1	5.0	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
Chrysene	23	2.0	5.0	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
Di-n-butyl phthalate	ND	7.5	10	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
Di-n-octyl phthalate	ND	1.7	10	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
Dibenz(a,h)anthracene	ND	2.8	5.0	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
Dibenzofuran	ND	2.5	5.0	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
1,2-Dichlorobenzene	ND	2.0	5.0	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
1,3-Dichlorobenzene	ND	1.7	5.0	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
1,4-Dichlorobenzene	ND	2.1	5.0	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
3,3´-Dichlorobenzidine	ND	2.1	6.3	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
Diethyl phthalate	ND	7.6	13	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
Dimethyl phthalate	ND	2.0	5.0	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
2,4-Dichlorophenol	ND	2.1	10	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
2,4-Dimethylphenol	ND	2.1	7.5	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
4,6-Dinitro-2-methylphenol	ND	1.8	10	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
2,4-Dinitrophenol	ND	1.4	13	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
2,4-Dinitrotoluene	ND	2.6	13	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
2,6-Dinitrotoluene	ND	3.0	13	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
Fluoranthene	ND	1.9	5.0	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
Fluorene	ND	2.0	5.0	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
Hexachlorobenzene	ND	2.0	5.0	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
Hexachlorobutadiene	ND	2.2	5.0	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
Hexachlorocyclopentadiene	ND	2.4	5.0	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
Hexachloroethane	ND	2.0	5.0	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
Indeno(1,2,3-cd)pyrene	ND	3.1	5.0	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
Isophorone	ND	2.2	10	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
1-Methylnaphthalene	ND	2.3	5.0	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
2-Methylnaphthalene	ND	2.0	5.0	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
2-Methylphenol	ND	2.1	10	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952

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

Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-19 Toe Surf
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 10:05:00 AM
Lab ID: 2001739-006 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	1.8	5.0	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
N-Nitrosodi-n-propylamine	ND	2.5	5.0	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
N-Nitrosodiphenylamine	ND	2.6	5.0	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
Naphthalene	ND	2.0	5.0	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
2-Nitroaniline	ND	2.8	5.0	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
3-Nitroaniline	ND	2.5	5.0	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
4-Nitroaniline	ND	3.4	10	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
Nitrobenzene	ND	2.1	10	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
2-Nitrophenol	ND	2.1	5.0	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
4-Nitrophenol	ND	1.5	6.3	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
Pentachlorophenol	ND	2.2	10	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
Phenanthrene	20	2.5	5.0	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
Phenol	ND	2.1	5.0	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
Pyrene	ND	1.7	5.0	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
Pyridine	ND	4.6	10	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
1,2,4-Trichlorobenzene	ND	2.1	5.0	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
2,4,5-Trichlorophenol	ND	1.6	5.0	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
2,4,6-Trichlorophenol	ND	2.5	5.0	D	mg/Kg	1	1/27/2020 7:08:38 PM	49952
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	1	1/27/2020 7:08:38 PM	49952
Surr: Phenol-d5	0		18.5-101	SD	%Rec	1	1/27/2020 7:08:38 PM	49952
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	1	1/27/2020 7:08:38 PM	49952
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	1	1/27/2020 7:08:38 PM	49952
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	1	1/27/2020 7:08:38 PM	49952
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	1	1/27/2020 7:08:38 PM	49952
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Benzene	ND	0.0032	0.019		mg/Kg	1	1/22/2020 7:14:27 PM	R66015
Toluene	0.014	0.0037	0.039	J	mg/Kg	1	1/22/2020 7:14:27 PM	R66015
Ethylbenzene	ND	0.0022	0.039		mg/Kg	1	1/22/2020 7:14:27 PM	R66015
Methyl tert-butyl ether (MTBE)	ND	0.0092	0.039		mg/Kg	1	1/22/2020 7:14:27 PM	R66015
1,2,4-Trimethylbenzene	0.058	0.0035	0.039		mg/Kg	1	1/22/2020 7:14:27 PM	R66015
1,3,5-Trimethylbenzene	0.046	0.0037	0.039		mg/Kg	1	1/22/2020 7:14:27 PM	R66015
1,2-Dichloroethane (EDC)	ND	0.0039	0.039		mg/Kg	1	1/22/2020 7:14:27 PM	R66015
1,2-Dibromoethane (EDB)	ND	0.0035	0.039		mg/Kg	1	1/22/2020 7:14:27 PM	R66015
Naphthalene	ND	0.0077	0.077		mg/Kg	1	1/22/2020 7:14:27 PM	R66015
1-Methylnaphthalene	0.043	0.022	0.15	J	mg/Kg	1	1/22/2020 7:14:27 PM	R66015
2-Methylnaphthalene	0.057	0.017	0.15	J	mg/Kg	1	1/22/2020 7:14:27 PM	R66015
Acetone	0.13	0.032	0.58	J	mg/Kg	1	1/22/2020 7:14:27 PM	R66015
Bromobenzene	ND	0.0037	0.039		mg/Kg	1	1/22/2020 7:14:27 PM	R66015
Bromodichloromethane	ND	0.0035	0.039		mg/Kg	1	1/22/2020 7:14:27 PM	R66015

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

Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-19 Toe Surf
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 10:05:00 AM
Lab ID: 2001739-006 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Bromoform	ND	0.0035	0.039		mg/Kg	1	1/22/2020 7:14:27 PM	R66015
Bromomethane	0.020	0.0093	0.12	J	mg/Kg	1	1/22/2020 7:14:27 PM	R66015
2-Butanone	0.080	0.045	0.39	J	mg/Kg	1	1/22/2020 7:14:27 PM	R66015
Carbon disulfide	0.023	0.013	0.39	J	mg/Kg	1	1/22/2020 7:14:27 PM	R66015
Carbon tetrachloride	ND	0.0037	0.039		mg/Kg	1	1/22/2020 7:14:27 PM	R66015
Chlorobenzene	ND	0.0049	0.039		mg/Kg	1	1/22/2020 7:14:27 PM	R66015
Chloroethane	ND	0.0057	0.077		mg/Kg	1	1/22/2020 7:14:27 PM	R66015
Chloroform	ND	0.0031	0.039		mg/Kg	1	1/22/2020 7:14:27 PM	R66015
Chloromethane	ND	0.0037	0.12		mg/Kg	1	1/22/2020 7:14:27 PM	R66015
2-Chlorotoluene	ND	0.0034	0.039		mg/Kg	1	1/22/2020 7:14:27 PM	R66015
4-Chlorotoluene	ND	0.0032	0.039		mg/Kg	1	1/22/2020 7:14:27 PM	R66015
cis-1,2-DCE	ND	0.0053	0.039		mg/Kg	1	1/22/2020 7:14:27 PM	R66015
cis-1,3-Dichloropropene	ND	0.0033	0.039		mg/Kg	1	1/22/2020 7:14:27 PM	R66015
1,2-Dibromo-3-chloropropane	ND	0.0040	0.077		mg/Kg	1	1/22/2020 7:14:27 PM	R66015
Dibromochloromethane	ND	0.0027	0.039		mg/Kg	1	1/22/2020 7:14:27 PM	R66015
Dibromomethane	ND	0.0042	0.039		mg/Kg	1	1/22/2020 7:14:27 PM	R66015
1,2-Dichlorobenzene	ND	0.0032	0.039		mg/Kg	1	1/22/2020 7:14:27 PM	R66015
1,3-Dichlorobenzene	ND	0.0034	0.039		mg/Kg	1	1/22/2020 7:14:27 PM	R66015
1,4-Dichlorobenzene	ND	0.0032	0.039		mg/Kg	1	1/22/2020 7:14:27 PM	R66015
Dichlorodifluoromethane	ND	0.0090	0.039		mg/Kg	1	1/22/2020 7:14:27 PM	R66015
1,1-Dichloroethane	ND	0.0025	0.039		mg/Kg	1	1/22/2020 7:14:27 PM	R66015
1,1-Dichloroethene	ND	0.015	0.039		mg/Kg	1	1/22/2020 7:14:27 PM	R66015
1,2-Dichloropropane	ND	0.0028	0.039		mg/Kg	1	1/22/2020 7:14:27 PM	R66015
1,3-Dichloropropane	ND	0.0042	0.039		mg/Kg	1	1/22/2020 7:14:27 PM	R66015
2,2-Dichloropropane	ND	0.013	0.077		mg/Kg	1	1/22/2020 7:14:27 PM	R66015
1,1-Dichloropropene	ND	0.0035	0.077		mg/Kg	1	1/22/2020 7:14:27 PM	R66015
Hexachlorobutadiene	ND	0.0039	0.077		mg/Kg	1	1/22/2020 7:14:27 PM	R66015
2-Hexanone	0.041	0.0064	0.39	J	mg/Kg	1	1/22/2020 7:14:27 PM	R66015
Isopropylbenzene	ND	0.0028	0.039		mg/Kg	1	1/22/2020 7:14:27 PM	R66015
4-Isopropyltoluene	ND	0.0032	0.039		mg/Kg	1	1/22/2020 7:14:27 PM	R66015
4-Methyl-2-pentanone	ND	0.0073	0.39		mg/Kg	1	1/22/2020 7:14:27 PM	R66015
Methylene chloride	0.014	0.0068	0.12	J	mg/Kg	1	1/22/2020 7:14:27 PM	R66015
n-Butylbenzene	ND	0.0036	0.12		mg/Kg	1	1/22/2020 7:14:27 PM	R66015
n-Propylbenzene	ND	0.0031	0.039		mg/Kg	1	1/22/2020 7:14:27 PM	R66015
sec-Butylbenzene	ND	0.0044	0.039		mg/Kg	1	1/22/2020 7:14:27 PM	R66015
Styrene	ND	0.0030	0.039		mg/Kg	1	1/22/2020 7:14:27 PM	R66015
tert-Butylbenzene	ND	0.0036	0.039		mg/Kg	1	1/22/2020 7:14:27 PM	R66015
1,1,1,2-Tetrachloroethane	ND	0.0026	0.039		mg/Kg	1	1/22/2020 7:14:27 PM	R66015
1,1,2,2-Tetrachloroethane	ND	0.0039	0.039		mg/Kg	1	1/22/2020 7:14:27 PM	R66015

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-19 Toe Surf
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 10:05:00 AM
Lab ID: 2001739-006 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Tetrachloroethene (PCE)	ND	0.0031	0.039		mg/Kg	1	1/22/2020 7:14:27 PM	R66015
trans-1,2-DCE	ND	0.0035	0.039		mg/Kg	1	1/22/2020 7:14:27 PM	R66015
trans-1,3-Dichloropropene	ND	0.0041	0.039		mg/Kg	1	1/22/2020 7:14:27 PM	R66015
1,2,3-Trichlorobenzene	ND	0.0034	0.077		mg/Kg	1	1/22/2020 7:14:27 PM	R66015
1,2,4-Trichlorobenzene	ND	0.0039	0.039		mg/Kg	1	1/22/2020 7:14:27 PM	R66015
1,1,1-Trichloroethane	ND	0.0035	0.039		mg/Kg	1	1/22/2020 7:14:27 PM	R66015
1,1,2-Trichloroethane	ND	0.0027	0.039		mg/Kg	1	1/22/2020 7:14:27 PM	R66015
Trichloroethene (TCE)	ND	0.0045	0.039		mg/Kg	1	1/22/2020 7:14:27 PM	R66015
Trichlorofluoromethane	ND	0.013	0.039		mg/Kg	1	1/22/2020 7:14:27 PM	R66015
1,2,3-Trichloropropane	ND	0.0063	0.077		mg/Kg	1	1/22/2020 7:14:27 PM	R66015
Vinyl chloride	ND	0.0025	0.039		mg/Kg	1	1/22/2020 7:14:27 PM	R66015
Xylenes, Total	0.039	0.0097	0.077	J	mg/Kg	1	1/22/2020 7:14:27 PM	R66015
Surr: Dibromofluoromethane	94.5		70-130		%Rec	1	1/22/2020 7:14:27 PM	R66015
Surr: 1,2-Dichloroethane-d4	90.6		70-130		%Rec	1	1/22/2020 7:14:27 PM	R66015
Surr: Toluene-d8	98.7		70-130		%Rec	1	1/22/2020 7:14:27 PM	R66015
Surr: 4-Bromofluorobenzene	89.0		70-130		%Rec	1	1/22/2020 7:14:27 PM	R66015
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **JMR**	
Gasoline Range Organics (GRO)	3.4	0.82	3.9	J	mg/Kg	1	1/22/2020 7:14:27 PM	G66015
Surr: BFB	94.4	0	70-130		%Rec	1	1/22/2020 7:14:27 PM	G66015
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/27/2020 12:20:00 PM	R66110
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	3.63				pH Units	1	1/28/2020 9:49:00 AM	R66112

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J	Analyte detected below quantitation limits
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-4 Clay 3-3.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 4:40:00 PM
Lab ID: 2001739-007 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	810	4.5	19		mg/Kg	2	1/24/2020 9:52:51 AM	49947
Motor Oil Range Organics (MRO)	160	94	94		mg/Kg	2	1/24/2020 9:52:51 AM	49947
Surr: DNOP	102	0	55.1-146		%Rec	2	1/24/2020 9:52:51 AM	49947
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	0.028	0.0019	0.034	JH	mg/Kg	1	2/26/2020 12:04:30 PM	50654
MERCURY, TCLP							Analyst: **rde**	
Mercury	ND	0.00075	0.020		mg/L	1	1/24/2020 11:30:11 AM	50014
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.9	13		mg/Kg	5	1/23/2020 9:53:21 AM	49956
Arsenic	ND	7.3	13		mg/Kg	5	1/23/2020 9:53:21 AM	49956
Barium	770	0.12	0.51		mg/Kg	5	1/23/2020 9:53:21 AM	49956
Beryllium	1.1	0.047	0.77		mg/Kg	5	1/23/2020 9:53:21 AM	49956
Cadmium	ND	0.12	0.51		mg/Kg	5	1/23/2020 9:53:21 AM	49956
Chromium	15	0.41	1.5		mg/Kg	5	1/23/2020 9:53:21 AM	49956
Cobalt	4.9	0.54	1.5		mg/Kg	5	1/23/2020 9:53:21 AM	49956
Lead	ND	1.2	1.3		mg/Kg	5	1/23/2020 9:53:21 AM	49956
Nickel	11	0.76	2.6		mg/Kg	5	1/23/2020 9:53:21 AM	49956
Selenium	ND	6.4	13		mg/Kg	5	1/23/2020 11:13:55 AM	49956
Silver	ND	0.16	1.3		mg/Kg	5	1/23/2020 9:53:21 AM	49956
Vanadium	27	0.34	13		mg/Kg	5	1/23/2020 9:53:21 AM	49956
Zinc	30	2.0	13		mg/Kg	5	1/23/2020 11:13:55 AM	49956
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/23/2020 11:55:18 AM	49986
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.14	0.38	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952
Acenaphthylene	ND	0.17	0.38	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952
Aniline	ND	0.13	0.38	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952
Anthracene	ND	0.15	0.38	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952
Azobenzene	ND	0.20	0.38	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952
Benz(a)anthracene	ND	0.13	0.38	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952
Benzo(a)pyrene	ND	0.21	0.38	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952
Benzo(b)fluoranthene	ND	0.22	0.38	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952
Benzo(g,h,i)perylene	ND	0.20	0.38	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952
Benzo(k)fluoranthene	ND	0.11	0.38	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952
Benzoic acid	ND	0.27	0.96	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952
Benzyl alcohol	ND	0.16	0.38	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952
Bis(2-chloroethoxy)methane	ND	0.16	0.38	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952

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Qualifiers:

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ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
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J	Analyte detected below quantitation limits
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RL	Reporting Limit

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-4 Clay 3-3.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 4:40:00 PM
Lab ID: 2001739-007 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.22	0.38	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952
Bis(2-chloroisopropyl)ether	ND	0.17	0.38	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952
Bis(2-ethylhexyl)phthalate	ND	0.43	0.96	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952
4-Bromophenyl phenyl ether	ND	0.22	0.38	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952
Butyl benzyl phthalate	ND	0.13	0.38	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952
Carbazole	ND	0.15	0.38	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952
4-Chloro-3-methylphenol	ND	0.15	0.96	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952
4-Chloroaniline	ND	0.15	0.96	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952
2-Chloronaphthalene	ND	0.16	0.48	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952
2-Chlorophenol	ND	0.22	0.38	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952
4-Chlorophenyl phenyl ether	ND	0.16	0.38	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952
Chrysene	ND	0.15	0.38	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952
Di-n-butyl phthalate	ND	0.57	0.77	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952
Di-n-octyl phthalate	ND	0.13	0.77	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952
Dibenz(a,h)anthracene	ND	0.21	0.38	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952
Dibenzofuran	ND	0.19	0.38	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952
1,2-Dichlorobenzene	ND	0.15	0.38	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952
1,3-Dichlorobenzene	ND	0.13	0.38	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952
1,4-Dichlorobenzene	ND	0.16	0.38	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952
3,3´-Dichlorobenzidine	ND	0.16	0.48	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952
Diethyl phthalate	ND	0.59	0.96	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952
Dimethyl phthalate	ND	0.16	0.38	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952
2,4-Dichlorophenol	ND	0.16	0.77	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952
2,4-Dimethylphenol	ND	0.16	0.58	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952
4,6-Dinitro-2-methylphenol	ND	0.14	0.77	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952
2,4-Dinitrophenol	ND	0.11	0.96	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952
2,4-Dinitrotoluene	ND	0.20	0.96	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952
2,6-Dinitrotoluene	ND	0.23	0.96	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952
Fluoranthene	ND	0.15	0.38	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952
Fluorene	0.17	0.15	0.38	JD	mg/Kg	1	1/27/2020 7:37:11 PM	49952
Hexachlorobenzene	ND	0.15	0.38	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952
Hexachlorobutadiene	ND	0.17	0.38	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952
Hexachlorocyclopentadiene	ND	0.18	0.38	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952
Hexachloroethane	ND	0.16	0.38	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952
Indeno(1,2,3-cd)pyrene	ND	0.24	0.38	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952
Isophorone	ND	0.17	0.77	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952
1-Methylnaphthalene	0.45	0.18	0.38	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952
2-Methylnaphthalene	0.27	0.16	0.38	JD	mg/Kg	1	1/27/2020 7:37:11 PM	49952
2-Methylphenol	ND	0.16	0.77	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952

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

Qualifiers:

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D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-4 Clay 3-3.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 4:40:00 PM
Lab ID: 2001739-007 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.14	0.38	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952
N-Nitrosodi-n-propylamine	ND	0.19	0.38	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952
N-Nitrosodiphenylamine	ND	0.20	0.38	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952
Naphthalene	ND	0.16	0.38	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952
2-Nitroaniline	ND	0.21	0.38	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952
3-Nitroaniline	ND	0.19	0.38	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952
4-Nitroaniline	ND	0.26	0.77	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952
Nitrobenzene	ND	0.16	0.77	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952
2-Nitrophenol	ND	0.16	0.38	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952
4-Nitrophenol	ND	0.11	0.48	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952
Pentachlorophenol	ND	0.17	0.77	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952
Phenanthrene	0.44	0.20	0.38	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952
Phenol	ND	0.16	0.38	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952
Pyrene	ND	0.13	0.38	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952
Pyridine	ND	0.36	0.77	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952
1,2,4-Trichlorobenzene	ND	0.16	0.38	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952
2,4,5-Trichlorophenol	ND	0.12	0.38	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952
2,4,6-Trichlorophenol	ND	0.19	0.38	D	mg/Kg	1	1/27/2020 7:37:11 PM	49952
Surr: 2-Fluorophenol	67.1		26.7-85.9	D	%Rec	1	1/27/2020 7:37:11 PM	49952
Surr: Phenol-d5	73.0		18.5-101	D	%Rec	1	1/27/2020 7:37:11 PM	49952
Surr: 2,4,6-Tribromophenol	81.0		35.8-85.6	D	%Rec	1	1/27/2020 7:37:11 PM	49952
Surr: Nitrobenzene-d5	69.1		40.8-95.2	D	%Rec	1	1/27/2020 7:37:11 PM	49952
Surr: 2-Fluorobiphenyl	85.3		34.7-85.2	SD	%Rec	1	1/27/2020 7:37:11 PM	49952
Surr: 4-Terphenyl-d14	72.7		37.4-91.3	D	%Rec	1	1/27/2020 7:37:11 PM	49952
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Benzene	ND	0.0020	0.012		mg/Kg	1	1/22/2020 8:11:23 PM	R66015
Toluene	0.020	0.0024	0.025	J	mg/Kg	1	1/22/2020 8:11:23 PM	R66015
Ethylbenzene	0.0099	0.0014	0.025	J	mg/Kg	1	1/22/2020 8:11:23 PM	R66015
Methyl tert-butyl ether (MTBE)	ND	0.0059	0.025		mg/Kg	1	1/22/2020 8:11:23 PM	R66015
1,2,4-Trimethylbenzene	0.069	0.0023	0.025		mg/Kg	1	1/22/2020 8:11:23 PM	R66015
1,3,5-Trimethylbenzene	0.017	0.0024	0.025	J	mg/Kg	1	1/22/2020 8:11:23 PM	R66015
1,2-Dichloroethane (EDC)	ND	0.0025	0.025		mg/Kg	1	1/22/2020 8:11:23 PM	R66015
1,2-Dibromoethane (EDB)	ND	0.0023	0.025		mg/Kg	1	1/22/2020 8:11:23 PM	R66015
Naphthalene	ND	0.0050	0.050		mg/Kg	1	1/22/2020 8:11:23 PM	R66015
1-Methylnaphthalene	0.40	0.014	0.099		mg/Kg	1	1/22/2020 8:11:23 PM	R66015
2-Methylnaphthalene	0.14	0.011	0.099		mg/Kg	1	1/22/2020 8:11:23 PM	R66015
Acetone	0.043	0.021	0.37	J	mg/Kg	1	1/22/2020 8:11:23 PM	R66015
Bromobenzene	ND	0.0024	0.025		mg/Kg	1	1/22/2020 8:11:23 PM	R66015
Bromodichloromethane	ND	0.0023	0.025		mg/Kg	1	1/22/2020 8:11:23 PM	R66015

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Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-4 Clay 3-3.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 4:40:00 PM
Lab ID: 2001739-007 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Bromoform	ND	0.0022	0.025		mg/Kg	1	1/22/2020 8:11:23 PM	R66015
Bromomethane	0.013	0.0060	0.074	J	mg/Kg	1	1/22/2020 8:11:23 PM	R66015
2-Butanone	0.16	0.029	0.25	J	mg/Kg	1	1/22/2020 8:11:23 PM	R66015
Carbon disulfide	0.032	0.0082	0.25	J	mg/Kg	1	1/22/2020 8:11:23 PM	R66015
Carbon tetrachloride	ND	0.0024	0.025		mg/Kg	1	1/22/2020 8:11:23 PM	R66015
Chlorobenzene	ND	0.0032	0.025		mg/Kg	1	1/22/2020 8:11:23 PM	R66015
Chloroethane	ND	0.0037	0.050		mg/Kg	1	1/22/2020 8:11:23 PM	R66015
Chloroform	0.0069	0.0020	0.025	J	mg/Kg	1	1/22/2020 8:11:23 PM	R66015
Chloromethane	ND	0.0024	0.074		mg/Kg	1	1/22/2020 8:11:23 PM	R66015
2-Chlorotoluene	ND	0.0022	0.025		mg/Kg	1	1/22/2020 8:11:23 PM	R66015
4-Chlorotoluene	ND	0.0020	0.025		mg/Kg	1	1/22/2020 8:11:23 PM	R66015
cis-1,2-DCE	ND	0.0034	0.025		mg/Kg	1	1/22/2020 8:11:23 PM	R66015
cis-1,3-Dichloropropene	ND	0.0021	0.025		mg/Kg	1	1/22/2020 8:11:23 PM	R66015
1,2-Dibromo-3-chloropropane	ND	0.0025	0.050		mg/Kg	1	1/22/2020 8:11:23 PM	R66015
Dibromochloromethane	ND	0.0018	0.025		mg/Kg	1	1/22/2020 8:11:23 PM	R66015
Dibromomethane	ND	0.0027	0.025		mg/Kg	1	1/22/2020 8:11:23 PM	R66015
1,2-Dichlorobenzene	ND	0.0020	0.025		mg/Kg	1	1/22/2020 8:11:23 PM	R66015
1,3-Dichlorobenzene	ND	0.0022	0.025		mg/Kg	1	1/22/2020 8:11:23 PM	R66015
1,4-Dichlorobenzene	ND	0.0021	0.025		mg/Kg	1	1/22/2020 8:11:23 PM	R66015
Dichlorodifluoromethane	ND	0.0058	0.025		mg/Kg	1	1/22/2020 8:11:23 PM	R66015
1,1-Dichloroethane	ND	0.0016	0.025		mg/Kg	1	1/22/2020 8:11:23 PM	R66015
1,1-Dichloroethene	ND	0.0099	0.025		mg/Kg	1	1/22/2020 8:11:23 PM	R66015
1,2-Dichloropropane	ND	0.0018	0.025		mg/Kg	1	1/22/2020 8:11:23 PM	R66015
1,3-Dichloropropane	ND	0.0027	0.025		mg/Kg	1	1/22/2020 8:11:23 PM	R66015
2,2-Dichloropropane	ND	0.0081	0.050		mg/Kg	1	1/22/2020 8:11:23 PM	R66015
1,1-Dichloropropene	ND	0.0023	0.050		mg/Kg	1	1/22/2020 8:11:23 PM	R66015
Hexachlorobutadiene	ND	0.0025	0.050		mg/Kg	1	1/22/2020 8:11:23 PM	R66015
2-Hexanone	ND	0.0041	0.25		mg/Kg	1	1/22/2020 8:11:23 PM	R66015
Isopropylbenzene	0.0019	0.0018	0.025	J	mg/Kg	1	1/22/2020 8:11:23 PM	R66015
4-Isopropyltoluene	0.0099	0.0021	0.025	J	mg/Kg	1	1/22/2020 8:11:23 PM	R66015
4-Methyl-2-pentanone	ND	0.0047	0.25		mg/Kg	1	1/22/2020 8:11:23 PM	R66015
Methylene chloride	0.010	0.0044	0.074	J	mg/Kg	1	1/22/2020 8:11:23 PM	R66015
n-Butylbenzene	0.011	0.0023	0.074	J	mg/Kg	1	1/22/2020 8:11:23 PM	R66015
n-Propylbenzene	0.0097	0.0020	0.025	J	mg/Kg	1	1/22/2020 8:11:23 PM	R66015
sec-Butylbenzene	0.0096	0.0028	0.025	J	mg/Kg	1	1/22/2020 8:11:23 PM	R66015
Styrene	ND	0.0019	0.025		mg/Kg	1	1/22/2020 8:11:23 PM	R66015
tert-Butylbenzene	ND	0.0023	0.025		mg/Kg	1	1/22/2020 8:11:23 PM	R66015
1,1,1,2-Tetrachloroethane	ND	0.0017	0.025		mg/Kg	1	1/22/2020 8:11:23 PM	R66015
1,1,2,2-Tetrachloroethane	ND	0.0025	0.025		mg/Kg	1	1/22/2020 8:11:23 PM	R66015

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Qualifiers:

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H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-4 Clay 3-3.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 4:40:00 PM
Lab ID: 2001739-007 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Tetrachloroethene (PCE)	ND	0.0020	0.025		mg/Kg	1	1/22/2020 8:11:23 PM	R66015
trans-1,2-DCE	ND	0.0023	0.025		mg/Kg	1	1/22/2020 8:11:23 PM	R66015
trans-1,3-Dichloropropene	ND	0.0026	0.025		mg/Kg	1	1/22/2020 8:11:23 PM	R66015
1,2,3-Trichlorobenzene	ND	0.0022	0.050		mg/Kg	1	1/22/2020 8:11:23 PM	R66015
1,2,4-Trichlorobenzene	ND	0.0025	0.025		mg/Kg	1	1/22/2020 8:11:23 PM	R66015
1,1,1-Trichloroethane	ND	0.0022	0.025		mg/Kg	1	1/22/2020 8:11:23 PM	R66015
1,1,2-Trichloroethane	ND	0.0018	0.025		mg/Kg	1	1/22/2020 8:11:23 PM	R66015
Trichloroethene (TCE)	ND	0.0029	0.025		mg/Kg	1	1/22/2020 8:11:23 PM	R66015
Trichlorofluoromethane	ND	0.0084	0.025		mg/Kg	1	1/22/2020 8:11:23 PM	R66015
1,2,3-Trichloropropane	ND	0.0040	0.050		mg/Kg	1	1/22/2020 8:11:23 PM	R66015
Vinyl chloride	ND	0.0016	0.025		mg/Kg	1	1/22/2020 8:11:23 PM	R66015
Xylenes, Total	0.062	0.0063	0.050		mg/Kg	1	1/22/2020 8:11:23 PM	R66015
Surr: Dibromofluoromethane	95.9		70-130		%Rec	1	1/22/2020 8:11:23 PM	R66015
Surr: 1,2-Dichloroethane-d4	93.9		70-130		%Rec	1	1/22/2020 8:11:23 PM	R66015
Surr: Toluene-d8	95.6		70-130		%Rec	1	1/22/2020 8:11:23 PM	R66015
Surr: 4-Bromofluorobenzene	77.8		70-130		%Rec	1	1/22/2020 8:11:23 PM	R66015
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **JMR**	
Gasoline Range Organics (GRO)	13	0.53	2.5		mg/Kg	1	1/22/2020 8:11:23 PM	G66015
Surr: BFB	101	0	70-130		%Rec	1	1/22/2020 8:11:23 PM	G66015
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/27/2020 12:20:00 PM	R66110
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	8.86				pH Units	1	1/28/2020 9:49:00 AM	R66112

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-8 Sludge 2.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 8:35:00 AM
Lab ID: 2001739-008 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	7800	43	180		mg/Kg	20	1/24/2020 10:01:57 AM	49947
Motor Oil Range Organics (MRO)	1100	910	910		mg/Kg	20	1/24/2020 10:01:57 AM	49947
Surr: DNOP	0	0	55.1-146	S	%Rec	20	1/24/2020 10:01:57 AM	49947
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	5.1	0.036	0.65	H	mg/Kg	20	3/2/2020 5:09:37 PM	50789
MERCURY, TCLP							Analyst: **rde**	
Mercury	ND	0.00075	0.020		mg/L	1	1/24/2020 11:32:17 AM	50014
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.75	5.1		mg/Kg	2	1/23/2020 8:58:42 AM	49956
Arsenic	7.8	2.9	5.1		mg/Kg	2	1/23/2020 8:58:42 AM	49956
Barium	610	0.12	0.51		mg/Kg	5	1/23/2020 9:54:41 AM	49956
Beryllium	0.24	0.019	0.30	J	mg/Kg	2	1/23/2020 8:58:42 AM	49956
Cadmium	ND	0.049	0.20		mg/Kg	2	1/23/2020 8:58:42 AM	49956
Chromium	22	0.16	0.61		mg/Kg	2	1/23/2020 8:58:42 AM	49956
Cobalt	3.5	0.21	0.61		mg/Kg	2	1/23/2020 8:58:42 AM	49956
Lead	22	0.49	0.51		mg/Kg	2	1/23/2020 8:58:42 AM	49956
Nickel	25	0.30	1.0		mg/Kg	2	1/23/2020 8:58:42 AM	49956
Selenium	4.0	2.5	5.1	J	mg/Kg	2	1/23/2020 8:58:42 AM	49956
Silver	ND	0.065	0.51		mg/Kg	2	1/23/2020 8:58:42 AM	49956
Vanadium	13	0.14	5.1		mg/Kg	2	1/23/2020 8:58:42 AM	49956
Zinc	1200	4.0	25		mg/Kg	10	1/23/2020 11:15:19 AM	49956
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/23/2020 11:56:42 AM	49986
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	1.7	4.6	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952
Acenaphthylene	ND	2.1	4.6	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952
Aniline	ND	1.6	4.6	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952
Anthracene	ND	1.8	4.6	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952
Azobenzene	ND	2.4	4.6	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952
Benz(a)anthracene	ND	1.6	4.6	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952
Benzo(a)pyrene	ND	2.5	4.6	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952
Benzo(b)fluoranthene	ND	2.7	4.6	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952
Benzo(g,h,i)perylene	ND	2.4	4.6	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952
Benzo(k)fluoranthene	ND	1.4	4.6	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952
Benzoic acid	ND	3.2	12	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952
Benzyl alcohol	ND	1.9	4.6	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952
Bis(2-chloroethoxy)methane	ND	1.9	4.6	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952

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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-8 Sludge 2.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 8:35:00 AM
Lab ID: 2001739-008 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	2.7	4.6	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952
Bis(2-chloroisopropyl)ether	ND	2.0	4.6	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952
Bis(2-ethylhexyl)phthalate	ND	5.2	12	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952
4-Bromophenyl phenyl ether	ND	2.7	4.6	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952
Butyl benzyl phthalate	ND	1.6	4.6	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952
Carbazole	ND	1.8	4.6	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952
4-Chloro-3-methylphenol	ND	1.8	12	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952
4-Chloroaniline	ND	1.8	12	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952
2-Chloronaphthalene	ND	2.0	5.8	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952
2-Chlorophenol	ND	2.6	4.6	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952
4-Chlorophenyl phenyl ether	ND	2.0	4.6	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952
Chrysene	ND	1.8	4.6	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952
Di-n-butyl phthalate	ND	6.9	9.3	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952
Di-n-octyl phthalate	ND	1.6	9.3	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952
Dibenz(a,h)anthracene	ND	2.6	4.6	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952
Dibenzofuran	ND	2.3	4.6	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952
1,2-Dichlorobenzene	ND	1.8	4.6	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952
1,3-Dichlorobenzene	ND	1.6	4.6	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952
1,4-Dichlorobenzene	ND	1.9	4.6	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952
3,3´-Dichlorobenzidine	ND	2.0	5.8	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952
Diethyl phthalate	ND	7.1	12	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952
Dimethyl phthalate	ND	1.9	4.6	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952
2,4-Dichlorophenol	ND	2.0	9.3	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952
2,4-Dimethylphenol	ND	1.9	7.0	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952
4,6-Dinitro-2-methylphenol	ND	1.7	9.3	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952
2,4-Dinitrophenol	ND	1.3	12	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952
2,4-Dinitrotoluene	ND	2.4	12	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952
2,6-Dinitrotoluene	ND	2.8	12	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952
Fluoranthene	ND	1.8	4.6	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952
Fluorene	21	1.8	4.6	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952
Hexachlorobenzene	ND	1.8	4.6	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952
Hexachlorobutadiene	ND	2.0	4.6	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952
Hexachlorocyclopentadiene	ND	2.2	4.6	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952
Hexachloroethane	ND	1.9	4.6	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952
Indeno(1,2,3-cd)pyrene	ND	2.9	4.6	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952
Isophorone	ND	2.0	9.3	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952
1-Methylnaphthalene	83	2.2	4.6	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952
2-Methylnaphthalene	120	9.4	23	D	mg/Kg	5	1/31/2020 12:54:43 PM	49952
2-Methylphenol	ND	2.0	9.3	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952

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E	Value above quantitation range
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P	Sample pH Not In Range
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-8 Sludge 2.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 8:35:00 AM
Lab ID: 2001739-008 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	9.5	1.7	4.6	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952
N-Nitrosodi-n-propylamine	ND	2.3	4.6	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952
N-Nitrosodiphenylamine	ND	2.4	4.6	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952
Naphthalene	25	1.9	4.6	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952
2-Nitroaniline	ND	2.6	4.6	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952
3-Nitroaniline	ND	2.3	4.6	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952
4-Nitroaniline	ND	3.1	9.3	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952
Nitrobenzene	ND	2.0	9.3	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952
2-Nitrophenol	ND	1.9	4.6	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952
4-Nitrophenol	ND	1.4	5.8	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952
Pentachlorophenol	ND	2.1	9.3	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952
Phenanthrene	64	2.4	4.6	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952
Phenol	2.1	2.0	4.6	JD	mg/Kg	1	1/27/2020 8:06:11 PM	49952
Pyrene	17	1.5	4.6	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952
Pyridine	ND	4.3	9.3	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952
1,2,4-Trichlorobenzene	ND	2.0	4.6	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952
2,4,5-Trichlorophenol	ND	1.5	4.6	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952
2,4,6-Trichlorophenol	ND	2.3	4.6	D	mg/Kg	1	1/27/2020 8:06:11 PM	49952
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	1	1/27/2020 8:06:11 PM	49952
Surr: Phenol-d5	0		18.5-101	SD	%Rec	1	1/27/2020 8:06:11 PM	49952
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	1	1/27/2020 8:06:11 PM	49952
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	1	1/27/2020 8:06:11 PM	49952
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	1	1/27/2020 8:06:11 PM	49952
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	1	1/27/2020 8:06:11 PM	49952
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Benzene	0.65	0.028	0.17		mg/Kg	10	1/22/2020 9:08:23 PM	R66015
Toluene	3.8	0.033	0.34		mg/Kg	10	1/22/2020 9:08:23 PM	R66015
Ethylbenzene	1.4	0.020	0.34		mg/Kg	10	1/22/2020 9:08:23 PM	R66015
Methyl tert-butyl ether (MTBE)	ND	0.081	0.34		mg/Kg	10	1/22/2020 9:08:23 PM	R66015
1,2,4-Trimethylbenzene	4.3	0.031	0.34		mg/Kg	10	1/22/2020 9:08:23 PM	R66015
1,3,5-Trimethylbenzene	1.5	0.033	0.34		mg/Kg	10	1/22/2020 9:08:23 PM	R66015
1,2-Dichloroethane (EDC)	ND	0.035	0.34		mg/Kg	10	1/22/2020 9:08:23 PM	R66015
1,2-Dibromoethane (EDB)	ND	0.031	0.34		mg/Kg	10	1/22/2020 9:08:23 PM	R66015
Naphthalene	5.5	0.069	0.69		mg/Kg	10	1/22/2020 9:08:23 PM	R66015
1-Methylnaphthalene	12	0.20	1.4		mg/Kg	10	1/22/2020 9:08:23 PM	R66015
2-Methylnaphthalene	19	0.15	1.4		mg/Kg	10	1/22/2020 9:08:23 PM	R66015
Acetone	ND	0.28	5.1		mg/Kg	10	1/22/2020 9:08:23 PM	R66015
Bromobenzene	ND	0.033	0.34		mg/Kg	10	1/22/2020 9:08:23 PM	R66015
Bromodichloromethane	ND	0.031	0.34		mg/Kg	10	1/22/2020 9:08:23 PM	R66015

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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-8 Sludge 2.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 8:35:00 AM
Lab ID: 2001739-008 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Bromoform	ND	0.031	0.34		mg/Kg	10	1/22/2020 9:08:23 PM	R66015
Bromomethane	ND	0.083	1.0		mg/Kg	10	1/22/2020 9:08:23 PM	R66015
2-Butanone	ND	0.40	3.4		mg/Kg	10	1/22/2020 9:08:23 PM	R66015
Carbon disulfide	2.4	0.11	3.4	J	mg/Kg	10	1/22/2020 9:08:23 PM	R66015
Carbon tetrachloride	ND	0.033	0.34		mg/Kg	10	1/22/2020 9:08:23 PM	R66015
Chlorobenzene	ND	0.044	0.34		mg/Kg	10	1/22/2020 9:08:23 PM	R66015
Chloroethane	ND	0.051	0.69		mg/Kg	10	1/22/2020 9:08:23 PM	R66015
Chloroform	0.058	0.028	0.34	J	mg/Kg	10	1/22/2020 9:08:23 PM	R66015
Chloromethane	ND	0.033	1.0		mg/Kg	10	1/22/2020 9:08:23 PM	R66015
2-Chlorotoluene	ND	0.030	0.34		mg/Kg	10	1/22/2020 9:08:23 PM	R66015
4-Chlorotoluene	ND	0.028	0.34		mg/Kg	10	1/22/2020 9:08:23 PM	R66015
cis-1,2-DCE	0.061	0.047	0.34	J	mg/Kg	10	1/22/2020 9:08:23 PM	R66015
cis-1,3-Dichloropropene	ND	0.029	0.34		mg/Kg	10	1/22/2020 9:08:23 PM	R66015
1,2-Dibromo-3-chloropropane	ND	0.035	0.69		mg/Kg	10	1/22/2020 9:08:23 PM	R66015
Dibromochloromethane	ND	0.024	0.34		mg/Kg	10	1/22/2020 9:08:23 PM	R66015
Dibromomethane	ND	0.037	0.34		mg/Kg	10	1/22/2020 9:08:23 PM	R66015
1,2-Dichlorobenzene	ND	0.028	0.34		mg/Kg	10	1/22/2020 9:08:23 PM	R66015
1,3-Dichlorobenzene	ND	0.030	0.34		mg/Kg	10	1/22/2020 9:08:23 PM	R66015
1,4-Dichlorobenzene	ND	0.029	0.34		mg/Kg	10	1/22/2020 9:08:23 PM	R66015
Dichlorodifluoromethane	ND	0.080	0.34		mg/Kg	10	1/22/2020 9:08:23 PM	R66015
1,1-Dichloroethane	0.12	0.022	0.34	J	mg/Kg	10	1/22/2020 9:08:23 PM	R66015
1,1-Dichloroethene	ND	0.14	0.34		mg/Kg	10	1/22/2020 9:08:23 PM	R66015
1,2-Dichloropropane	ND	0.025	0.34		mg/Kg	10	1/22/2020 9:08:23 PM	R66015
1,3-Dichloropropane	ND	0.037	0.34		mg/Kg	10	1/22/2020 9:08:23 PM	R66015
2,2-Dichloropropane	ND	0.11	0.69		mg/Kg	10	1/22/2020 9:08:23 PM	R66015
1,1-Dichloropropene	ND	0.031	0.69		mg/Kg	10	1/22/2020 9:08:23 PM	R66015
Hexachlorobutadiene	ND	0.035	0.69		mg/Kg	10	1/22/2020 9:08:23 PM	R66015
2-Hexanone	1.1	0.057	3.4	J	mg/Kg	10	1/22/2020 9:08:23 PM	R66015
Isopropylbenzene	0.29	0.025	0.34	J	mg/Kg	10	1/22/2020 9:08:23 PM	R66015
4-Isopropyltoluene	0.22	0.028	0.34	J	mg/Kg	10	1/22/2020 9:08:23 PM	R66015
4-Methyl-2-pentanone	ND	0.065	3.4		mg/Kg	10	1/22/2020 9:08:23 PM	R66015
Methylene chloride	ND	0.061	1.0		mg/Kg	10	1/22/2020 9:08:23 PM	R66015
n-Butylbenzene	0.50	0.032	1.0	J	mg/Kg	10	1/22/2020 9:08:23 PM	R66015
n-Propylbenzene	0.77	0.027	0.34		mg/Kg	10	1/22/2020 9:08:23 PM	R66015
sec-Butylbenzene	0.28	0.039	0.34	J	mg/Kg	10	1/22/2020 9:08:23 PM	R66015
Styrene	ND	0.027	0.34		mg/Kg	10	1/22/2020 9:08:23 PM	R66015
tert-Butylbenzene	ND	0.032	0.34		mg/Kg	10	1/22/2020 9:08:23 PM	R66015
1,1,1,2-Tetrachloroethane	ND	0.023	0.34		mg/Kg	10	1/22/2020 9:08:23 PM	R66015
1,1,2,2-Tetrachloroethane	ND	0.035	0.34		mg/Kg	10	1/22/2020 9:08:23 PM	R66015

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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-8 Sludge 2.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 8:35:00 AM
Lab ID: 2001739-008 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Tetrachloroethene (PCE)	ND	0.027	0.34		mg/Kg	10	1/22/2020 9:08:23 PM	R66015
trans-1,2-DCE	ND	0.031	0.34		mg/Kg	10	1/22/2020 9:08:23 PM	R66015
trans-1,3-Dichloropropene	ND	0.036	0.34		mg/Kg	10	1/22/2020 9:08:23 PM	R66015
1,2,3-Trichlorobenzene	ND	0.030	0.69		mg/Kg	10	1/22/2020 9:08:23 PM	R66015
1,2,4-Trichlorobenzene	ND	0.035	0.34		mg/Kg	10	1/22/2020 9:08:23 PM	R66015
1,1,1-Trichloroethane	ND	0.031	0.34		mg/Kg	10	1/22/2020 9:08:23 PM	R66015
1,1,2-Trichloroethane	ND	0.024	0.34		mg/Kg	10	1/22/2020 9:08:23 PM	R66015
Trichloroethene (TCE)	ND	0.040	0.34		mg/Kg	10	1/22/2020 9:08:23 PM	R66015
Trichlorofluoromethane	ND	0.12	0.34		mg/Kg	10	1/22/2020 9:08:23 PM	R66015
1,2,3-Trichloropropane	ND	0.056	0.69		mg/Kg	10	1/22/2020 9:08:23 PM	R66015
Vinyl chloride	ND	0.022	0.34		mg/Kg	10	1/22/2020 9:08:23 PM	R66015
Xylenes, Total	8.6	0.087	0.69		mg/Kg	10	1/22/2020 9:08:23 PM	R66015
Surr: Dibromofluoromethane	97.3		70-130		%Rec	10	1/22/2020 9:08:23 PM	R66015
Surr: 1,2-Dichloroethane-d4	96.7		70-130		%Rec	10	1/22/2020 9:08:23 PM	R66015
Surr: Toluene-d8	99.5		70-130		%Rec	10	1/22/2020 9:08:23 PM	R66015
Surr: 4-Bromofluorobenzene	88.0		70-130		%Rec	10	1/22/2020 9:08:23 PM	R66015
VOLATILES BY 8260B/1311							Analyst: **RAA**	
Benzene	0.060	0.010	0.50	J	mg/L	1	1/26/2020 4:39:00 PM	50019
Surr: 1,2-Dichloroethane-d4	107	0	70-130		%Rec	1	1/26/2020 4:39:00 PM	50019
Surr: Dibromofluoromethane	100	0	70-130		%Rec	1	1/26/2020 4:39:00 PM	50019
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **JMR**	
Gasoline Range Organics (GRO)	150	7.3	34		mg/Kg	10	1/22/2020 9:08:23 PM	G66015
Surr: BFB	94.7	0	70-130		%Rec	10	1/22/2020 9:08:23 PM	G66015
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Positve				Pos/Neg	1	1/27/2020 12:20:00 PM	R66110
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	7.75				pH Units	1	1/28/2020 9:49:00 AM	R66112

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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-18 Toe Surf
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 2:23:00 PM
Lab ID: 2001739-009 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	96000	1000	4300		mg/Kg	500	1/22/2020 5:33:55 PM	49947
Motor Oil Range Organics (MRO)	31000	21000	21000		mg/Kg	500	1/22/2020 5:33:55 PM	49947
Surr: DNOP	0	0	55.1-146	S	%Rec	500	1/22/2020 5:33:55 PM	49947
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	0.79	0.0088	0.16	H	mg/Kg	5	2/26/2020 1:18:13 PM	50654
MERCURY, TCLP							Analyst: **rde**	
Mercury	ND	0.00075	0.020		mg/L	1	1/24/2020 11:34:24 AM	50014
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.74	5.1		mg/Kg	2	1/23/2020 9:00:07 AM	49956
Arsenic	ND	2.9	5.1		mg/Kg	2	1/23/2020 9:00:07 AM	49956
Barium	310	0.047	0.20		mg/Kg	2	1/23/2020 9:00:07 AM	49956
Beryllium	0.60	0.019	0.30		mg/Kg	2	1/23/2020 9:00:07 AM	49956
Cadmium	ND	0.049	0.20		mg/Kg	2	1/23/2020 9:00:07 AM	49956
Chromium	16	0.16	0.61		mg/Kg	2	1/23/2020 9:00:07 AM	49956
Cobalt	3.3	0.21	0.61		mg/Kg	2	1/23/2020 9:00:07 AM	49956
Lead	2.4	0.49	0.51		mg/Kg	2	1/23/2020 9:00:07 AM	49956
Nickel	8.6	0.30	1.0		mg/Kg	2	1/23/2020 9:00:07 AM	49956
Selenium	ND	2.5	5.1		mg/Kg	2	1/23/2020 9:00:07 AM	49956
Silver	ND	0.065	0.51		mg/Kg	2	1/23/2020 9:00:07 AM	49956
Vanadium	17	0.13	5.1		mg/Kg	2	1/23/2020 9:00:07 AM	49956
Zinc	130	0.80	5.1		mg/Kg	2	1/23/2020 9:00:07 AM	49956
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/23/2020 11:58:06 AM	49986
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	3.4	9.2	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
Acenaphthylene	ND	4.1	9.2	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
Aniline	ND	3.1	9.2	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
Anthracene	ND	3.5	9.2	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
Azobenzene	ND	4.7	9.2	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
Benz(a)anthracene	ND	3.2	9.2	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
Benzo(a)pyrene	ND	5.0	9.2	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
Benzo(b)fluoranthene	ND	5.2	9.2	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
Benzo(g,h,i)perylene	ND	4.7	9.2	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
Benzo(k)fluoranthene	ND	2.7	9.2	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
Benzoic acid	ND	6.3	23	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
Benzyl alcohol	ND	3.8	9.2	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
Bis(2-chloroethoxy)methane	ND	3.8	9.2	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952

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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-18 Toe Surf
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 2:23:00 PM
Lab ID: 2001739-009 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	5.3	9.2	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
Bis(2-chloroisopropyl)ether	ND	3.9	9.2	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
Bis(2-ethylhexyl)phthalate	ND	10	23	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
4-Bromophenyl phenyl ether	ND	5.3	9.2	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
Butyl benzyl phthalate	ND	3.1	9.2	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
Carbazole	ND	3.6	9.2	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
4-Chloro-3-methylphenol	ND	3.6	23	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
4-Chloroaniline	ND	3.5	23	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
2-Chloronaphthalene	ND	3.8	11	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
2-Chlorophenol	ND	5.2	9.2	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
4-Chlorophenyl phenyl ether	ND	3.9	9.2	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
Chrysene	28	3.6	9.2	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
Di-n-butyl phthalate	ND	14	18	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
Di-n-octyl phthalate	ND	3.1	18	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
Dibenz(a,h)anthracene	ND	5.1	9.2	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
Dibenzofuran	ND	4.6	9.2	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
1,2-Dichlorobenzene	ND	3.6	9.2	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
1,3-Dichlorobenzene	ND	3.1	9.2	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
1,4-Dichlorobenzene	ND	3.8	9.2	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
3,3´-Dichlorobenzidine	ND	3.9	11	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
Diethyl phthalate	ND	14	23	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
Dimethyl phthalate	ND	3.7	9.2	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
2,4-Dichlorophenol	ND	3.9	18	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
2,4-Dimethylphenol	ND	3.8	14	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
4,6-Dinitro-2-methylphenol	ND	3.4	18	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
2,4-Dinitrophenol	ND	2.7	23	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
2,4-Dinitrotoluene	ND	4.7	23	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
2,6-Dinitrotoluene	ND	5.4	23	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
Fluoranthene	ND	3.5	9.2	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
Fluorene	ND	3.6	9.2	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
Hexachlorobenzene	ND	3.6	9.2	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
Hexachlorobutadiene	ND	4.0	9.2	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
Hexachlorocyclopentadiene	ND	4.4	9.2	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
Hexachloroethane	ND	3.8	9.2	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
Indeno(1,2,3-cd)pyrene	ND	5.7	9.2	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
Isophorone	ND	4.0	18	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
1-Methylnaphthalene	ND	4.3	9.2	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
2-Methylnaphthalene	ND	3.7	9.2	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
2-Methylphenol	ND	3.9	18	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952

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

Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-18 Toe Surf
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 2:23:00 PM
Lab ID: 2001739-009 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	3.3	9.2	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
N-Nitrosodi-n-propylamine	ND	4.6	9.2	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
N-Nitrosodiphenylamine	ND	4.7	9.2	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
Naphthalene	ND	3.8	9.2	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
2-Nitroaniline	ND	5.1	9.2	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
3-Nitroaniline	ND	4.5	9.2	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
4-Nitroaniline	ND	6.2	18	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
Nitrobenzene	ND	3.9	18	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
2-Nitrophenol	ND	3.8	9.2	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
4-Nitrophenol	ND	2.7	11	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
Pentachlorophenol	ND	4.1	18	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
Phenanthrene	36	4.7	9.2	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
Phenol	ND	3.9	9.2	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
Pyrene	ND	3.0	9.2	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
Pyridine	ND	8.5	18	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
1,2,4-Trichlorobenzene	ND	3.9	9.2	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
2,4,5-Trichlorophenol	ND	3.0	9.2	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
2,4,6-Trichlorophenol	ND	4.6	9.2	D	mg/Kg	1	1/27/2020 8:34:52 PM	49952
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	1	1/27/2020 8:34:52 PM	49952
Surr: Phenol-d5	0		18.5-101	SD	%Rec	1	1/27/2020 8:34:52 PM	49952
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	1	1/27/2020 8:34:52 PM	49952
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	1	1/27/2020 8:34:52 PM	49952
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	1	1/27/2020 8:34:52 PM	49952
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	1	1/27/2020 8:34:52 PM	49952
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Benzene	ND	0.014	0.086		mg/Kg	5	1/22/2020 10:05:22 PM	R66015
Toluene	0.051	0.017	0.17	J	mg/Kg	5	1/22/2020 10:05:22 PM	R66015
Ethylbenzene	ND	0.010	0.17		mg/Kg	5	1/22/2020 10:05:22 PM	R66015
Methyl tert-butyl ether (MTBE)	ND	0.041	0.17		mg/Kg	5	1/22/2020 10:05:22 PM	R66015
1,2,4-Trimethylbenzene	0.059	0.016	0.17	J	mg/Kg	5	1/22/2020 10:05:22 PM	R66015
1,3,5-Trimethylbenzene	ND	0.017	0.17		mg/Kg	5	1/22/2020 10:05:22 PM	R66015
1,2-Dichloroethane (EDC)	ND	0.018	0.17		mg/Kg	5	1/22/2020 10:05:22 PM	R66015
1,2-Dibromoethane (EDB)	ND	0.016	0.17		mg/Kg	5	1/22/2020 10:05:22 PM	R66015
Naphthalene	ND	0.035	0.35		mg/Kg	5	1/22/2020 10:05:22 PM	R66015
1-Methylnaphthalene	0.38	0.099	0.69	J	mg/Kg	5	1/22/2020 10:05:22 PM	R66015
2-Methylnaphthalene	0.51	0.076	0.69	J	mg/Kg	5	1/22/2020 10:05:22 PM	R66015
Acetone	0.26	0.14	2.6	J	mg/Kg	5	1/22/2020 10:05:22 PM	R66015
Bromobenzene	ND	0.017	0.17		mg/Kg	5	1/22/2020 10:05:22 PM	R66015
Bromodichloromethane	ND	0.016	0.17		mg/Kg	5	1/22/2020 10:05:22 PM	R66015

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-18 Toe Surf
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 2:23:00 PM
Lab ID: 2001739-009 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Bromoform	ND	0.016	0.17		mg/Kg	5	1/22/2020 10:05:22 PM	R66015
Bromomethane	ND	0.042	0.52		mg/Kg	5	1/22/2020 10:05:22 PM	R66015
2-Butanone	ND	0.20	1.7		mg/Kg	5	1/22/2020 10:05:22 PM	R66015
Carbon disulfide	0.17	0.057	1.7	J	mg/Kg	5	1/22/2020 10:05:22 PM	R66015
Carbon tetrachloride	ND	0.016	0.17		mg/Kg	5	1/22/2020 10:05:22 PM	R66015
Chlorobenzene	ND	0.022	0.17		mg/Kg	5	1/22/2020 10:05:22 PM	R66015
Chloroethane	ND	0.025	0.35		mg/Kg	5	1/22/2020 10:05:22 PM	R66015
Chloroform	ND	0.014	0.17		mg/Kg	5	1/22/2020 10:05:22 PM	R66015
Chloromethane	ND	0.017	0.52		mg/Kg	5	1/22/2020 10:05:22 PM	R66015
2-Chlorotoluene	ND	0.015	0.17		mg/Kg	5	1/22/2020 10:05:22 PM	R66015
4-Chlorotoluene	ND	0.014	0.17		mg/Kg	5	1/22/2020 10:05:22 PM	R66015
cis-1,2-DCE	ND	0.024	0.17		mg/Kg	5	1/22/2020 10:05:22 PM	R66015
cis-1,3-Dichloropropene	ND	0.015	0.17		mg/Kg	5	1/22/2020 10:05:22 PM	R66015
1,2-Dibromo-3-chloropropane	ND	0.018	0.35		mg/Kg	5	1/22/2020 10:05:22 PM	R66015
Dibromochloromethane	ND	0.012	0.17		mg/Kg	5	1/22/2020 10:05:22 PM	R66015
Dibromomethane	ND	0.019	0.17		mg/Kg	5	1/22/2020 10:05:22 PM	R66015
1,2-Dichlorobenzene	ND	0.014	0.17		mg/Kg	5	1/22/2020 10:05:22 PM	R66015
1,3-Dichlorobenzene	ND	0.015	0.17		mg/Kg	5	1/22/2020 10:05:22 PM	R66015
1,4-Dichlorobenzene	ND	0.014	0.17		mg/Kg	5	1/22/2020 10:05:22 PM	R66015
Dichlorodifluoromethane	ND	0.040	0.17		mg/Kg	5	1/22/2020 10:05:22 PM	R66015
1,1-Dichloroethane	ND	0.011	0.17		mg/Kg	5	1/22/2020 10:05:22 PM	R66015
1,1-Dichloroethene	ND	0.069	0.17		mg/Kg	5	1/22/2020 10:05:22 PM	R66015
1,2-Dichloropropane	ND	0.013	0.17		mg/Kg	5	1/22/2020 10:05:22 PM	R66015
1,3-Dichloropropane	ND	0.019	0.17		mg/Kg	5	1/22/2020 10:05:22 PM	R66015
2,2-Dichloropropane	ND	0.056	0.35		mg/Kg	5	1/22/2020 10:05:22 PM	R66015
1,1-Dichloropropene	ND	0.016	0.35		mg/Kg	5	1/22/2020 10:05:22 PM	R66015
Hexachlorobutadiene	ND	0.018	0.35		mg/Kg	5	1/22/2020 10:05:22 PM	R66015
2-Hexanone	ND	0.029	1.7		mg/Kg	5	1/22/2020 10:05:22 PM	R66015
Isopropylbenzene	ND	0.012	0.17		mg/Kg	5	1/22/2020 10:05:22 PM	R66015
4-Isopropyltoluene	ND	0.014	0.17		mg/Kg	5	1/22/2020 10:05:22 PM	R66015
4-Methyl-2-pentanone	ND	0.033	1.7		mg/Kg	5	1/22/2020 10:05:22 PM	R66015
Methylene chloride	0.050	0.031	0.52	J	mg/Kg	5	1/22/2020 10:05:22 PM	R66015
n-Butylbenzene	ND	0.016	0.52		mg/Kg	5	1/22/2020 10:05:22 PM	R66015
n-Propylbenzene	ND	0.014	0.17		mg/Kg	5	1/22/2020 10:05:22 PM	R66015
sec-Butylbenzene	ND	0.019	0.17		mg/Kg	5	1/22/2020 10:05:22 PM	R66015
Styrene	ND	0.014	0.17		mg/Kg	5	1/22/2020 10:05:22 PM	R66015
tert-Butylbenzene	ND	0.016	0.17		mg/Kg	5	1/22/2020 10:05:22 PM	R66015
1,1,1,2-Tetrachloroethane	ND	0.012	0.17		mg/Kg	5	1/22/2020 10:05:22 PM	R66015
1,1,2,2-Tetrachloroethane	ND	0.018	0.17		mg/Kg	5	1/22/2020 10:05:22 PM	R66015

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Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-18 Toe Surf
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 2:23:00 PM
Lab ID: 2001739-009 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Tetrachloroethene (PCE)	ND	0.014	0.17		mg/Kg	5	1/22/2020 10:05:22 PM	R66015
trans-1,2-DCE	ND	0.016	0.17		mg/Kg	5	1/22/2020 10:05:22 PM	R66015
trans-1,3-Dichloropropene	ND	0.018	0.17		mg/Kg	5	1/22/2020 10:05:22 PM	R66015
1,2,3-Trichlorobenzene	ND	0.015	0.35		mg/Kg	5	1/22/2020 10:05:22 PM	R66015
1,2,4-Trichlorobenzene	ND	0.017	0.17		mg/Kg	5	1/22/2020 10:05:22 PM	R66015
1,1,1-Trichloroethane	ND	0.016	0.17		mg/Kg	5	1/22/2020 10:05:22 PM	R66015
1,1,2-Trichloroethane	ND	0.012	0.17		mg/Kg	5	1/22/2020 10:05:22 PM	R66015
Trichloroethene (TCE)	ND	0.020	0.17		mg/Kg	5	1/22/2020 10:05:22 PM	R66015
Trichlorofluoromethane	ND	0.059	0.17		mg/Kg	5	1/22/2020 10:05:22 PM	R66015
1,2,3-Trichloropropane	ND	0.028	0.35		mg/Kg	5	1/22/2020 10:05:22 PM	R66015
Vinyl chloride	ND	0.011	0.17		mg/Kg	5	1/22/2020 10:05:22 PM	R66015
Xylenes, Total	ND	0.044	0.35		mg/Kg	5	1/22/2020 10:05:22 PM	R66015
Surr: Dibromofluoromethane	97.5		70-130		%Rec	5	1/22/2020 10:05:22 PM	R66015
Surr: 1,2-Dichloroethane-d4	90.4		70-130		%Rec	5	1/22/2020 10:05:22 PM	R66015
Surr: Toluene-d8	98.1		70-130		%Rec	5	1/22/2020 10:05:22 PM	R66015
Surr: 4-Bromofluorobenzene	88.8		70-130		%Rec	5	1/22/2020 10:05:22 PM	R66015
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **JMR**	
Gasoline Range Organics (GRO)	4.8	3.7	17	J	mg/Kg	5	1/22/2020 10:05:22 PM	G66015
Surr: BFB	96.0	0	70-130		%Rec	5	1/22/2020 10:05:22 PM	G66015
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Positve				Pos/Neg	1	1/27/2020 12:20:00 PM	R66110
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	7.80				pH Units	1	1/28/2020 9:49:00 AM	R66112

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S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-22 Toe 0
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 9:45:00 AM
Lab ID: 2001739-010 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	89000	1000	4400		mg/Kg	500	1/24/2020 10:11:07 AM	49947
Motor Oil Range Organics (MRO)	36000	22000	22000		mg/Kg	500	1/24/2020 10:11:07 AM	49947
Surr: DNOP	0	0	55.1-146	S	%Rec	500	1/24/2020 10:11:07 AM	49947
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	6.8	0.099	1.8	H	mg/Kg	50	2/26/2020 2:15:39 PM	50654
MERCURY, TCLP							Analyst: **rde**	
Mercury	ND	0.00075	0.020		mg/L	1	1/24/2020 11:36:31 AM	50014
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.75	5.1		mg/Kg	2	1/23/2020 9:01:32 AM	49956
Arsenic	3.5	2.9	5.1	J	mg/Kg	2	1/23/2020 9:01:32 AM	49956
Barium	570	0.12	0.51		mg/Kg	5	1/23/2020 9:56:03 AM	49956
Beryllium	0.49	0.019	0.31		mg/Kg	2	1/23/2020 9:01:32 AM	49956
Cadmium	ND	0.050	0.20		mg/Kg	2	1/23/2020 9:01:32 AM	49956
Chromium	16	0.16	0.61		mg/Kg	2	1/23/2020 9:01:32 AM	49956
Cobalt	3.3	0.22	0.61		mg/Kg	2	1/23/2020 9:01:32 AM	49956
Lead	12	0.50	0.51		mg/Kg	2	1/23/2020 9:01:32 AM	49956
Nickel	21	0.30	1.0		mg/Kg	2	1/23/2020 9:01:32 AM	49956
Selenium	ND	2.6	5.1		mg/Kg	2	1/23/2020 9:01:32 AM	49956
Silver	ND	0.065	0.51		mg/Kg	2	1/23/2020 9:01:32 AM	49956
Vanadium	17	0.14	5.1		mg/Kg	2	1/23/2020 9:01:32 AM	49956
Zinc	680	2.0	13		mg/Kg	5	1/23/2020 11:16:43 AM	49956
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/23/2020 12:02:21 PM	49986
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	1.8	4.8	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952
Acenaphthylene	ND	2.1	4.8	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952
Aniline	ND	1.6	4.8	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952
Anthracene	ND	1.9	4.8	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952
Azobenzene	ND	2.4	4.8	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952
Benz(a)anthracene	ND	1.7	4.8	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952
Benzo(a)pyrene	ND	2.6	4.8	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952
Benzo(b)fluoranthene	ND	2.7	4.8	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952
Benzo(g,h,i)perylene	ND	2.5	4.8	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952
Benzo(k)fluoranthene	ND	1.4	4.8	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952
Benzoic acid	ND	3.3	12	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952
Benzyl alcohol	ND	2.0	4.8	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952
Bis(2-chloroethoxy)methane	ND	2.0	4.8	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952

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B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-22 Toe 0
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 9:45:00 AM
Lab ID: 2001739-010 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	2.8	4.8	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952
Bis(2-chloroisopropyl)ether	ND	2.1	4.8	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952
Bis(2-ethylhexyl)phthalate	ND	5.4	12	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952
4-Bromophenyl phenyl ether	ND	2.8	4.8	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952
Butyl benzyl phthalate	ND	1.6	4.8	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952
Carbazole	ND	1.9	4.8	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952
4-Chloro-3-methylphenol	ND	1.9	12	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952
4-Chloroaniline	ND	1.8	12	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952
2-Chloronaphthalene	ND	2.0	6.0	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952
2-Chlorophenol	ND	2.7	4.8	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952
4-Chlorophenyl phenyl ether	ND	2.0	4.8	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952
Chrysene	ND	1.9	4.8	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952
Di-n-butyl phthalate	ND	7.2	9.6	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952
Di-n-octyl phthalate	ND	1.6	9.6	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952
Dibenz(a,h)anthracene	ND	2.7	4.8	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952
Dibenzofuran	ND	2.4	4.8	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952
1,2-Dichlorobenzene	ND	1.9	4.8	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952
1,3-Dichlorobenzene	ND	1.6	4.8	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952
1,4-Dichlorobenzene	ND	2.0	4.8	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952
3,3´-Dichlorobenzidine	ND	2.1	6.0	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952
Diethyl phthalate	ND	7.3	12	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952
Dimethyl phthalate	ND	2.0	4.8	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952
2,4-Dichlorophenol	ND	2.0	9.6	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952
2,4-Dimethylphenol	ND	2.0	7.2	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952
4,6-Dinitro-2-methylphenol	ND	1.8	9.6	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952
2,4-Dinitrophenol	ND	1.4	12	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952
2,4-Dinitrotoluene	ND	2.5	12	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952
2,6-Dinitrotoluene	ND	2.9	12	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952
Fluoranthene	ND	1.8	4.8	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952
Fluorene	ND	1.9	4.8	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952
Hexachlorobenzene	ND	1.9	4.8	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952
Hexachlorobutadiene	ND	2.1	4.8	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952
Hexachlorocyclopentadiene	ND	2.3	4.8	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952
Hexachloroethane	ND	2.0	4.8	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952
Indeno(1,2,3-cd)pyrene	ND	3.0	4.8	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952
Isophorone	ND	2.1	9.6	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952
1-Methylnaphthalene	26	2.2	4.8	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952
2-Methylnaphthalene	22	2.0	4.8	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952
2-Methylphenol	ND	2.0	9.6	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952

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

Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-22 Toe 0
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 9:45:00 AM
Lab ID: 2001739-010 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	1.7	4.8	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952
N-Nitrosodi-n-propylamine	ND	2.4	4.8	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952
N-Nitrosodiphenylamine	ND	2.5	4.8	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952
Naphthalene	4.3	2.0	4.8	JD	mg/Kg	1	1/27/2020 9:03:41 PM	49952
2-Nitroaniline	ND	2.7	4.8	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952
3-Nitroaniline	ND	2.4	4.8	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952
4-Nitroaniline	ND	3.2	9.6	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952
Nitrobenzene	ND	2.0	9.6	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952
2-Nitrophenol	ND	2.0	4.8	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952
4-Nitrophenol	ND	1.4	6.0	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952
Pentachlorophenol	ND	2.2	9.6	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952
Phenanthrene	15	2.4	4.8	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952
Phenol	ND	2.0	4.8	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952
Pyrene	ND	1.6	4.8	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952
Pyridine	ND	4.5	9.6	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952
1,2,4-Trichlorobenzene	ND	2.1	4.8	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952
2,4,5-Trichlorophenol	ND	1.6	4.8	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952
2,4,6-Trichlorophenol	ND	2.4	4.8	D	mg/Kg	1	1/27/2020 9:03:41 PM	49952
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	1	1/27/2020 9:03:41 PM	49952
Surr: Phenol-d5	0		18.5-101	SD	%Rec	1	1/27/2020 9:03:41 PM	49952
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	1	1/27/2020 9:03:41 PM	49952
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	1	1/27/2020 9:03:41 PM	49952
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	1	1/27/2020 9:03:41 PM	49952
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	1	1/27/2020 9:03:41 PM	49952
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Benzene	0.40	0.034	0.21		mg/Kg	10	1/23/2020 12:55:49 AM	R66015
Toluene	3.4	0.039	0.41		mg/Kg	10	1/23/2020 12:55:49 AM	R66015
Ethylbenzene	1.3	0.024	0.41		mg/Kg	10	1/23/2020 12:55:49 AM	R66015
Methyl tert-butyl ether (MTBE)	ND	0.098	0.41		mg/Kg	10	1/23/2020 12:55:49 AM	R66015
1,2,4-Trimethylbenzene	4.5	0.038	0.41		mg/Kg	10	1/23/2020 12:55:49 AM	R66015
1,3,5-Trimethylbenzene	1.9	0.040	0.41		mg/Kg	10	1/23/2020 12:55:49 AM	R66015
1,2-Dichloroethane (EDC)	ND	0.042	0.41		mg/Kg	10	1/23/2020 12:55:49 AM	R66015
1,2-Dibromoethane (EDB)	ND	0.038	0.41		mg/Kg	10	1/23/2020 12:55:49 AM	R66015
Naphthalene	3.5	0.083	0.83		mg/Kg	10	1/23/2020 12:55:49 AM	R66015
1-Methylnaphthalene	12	0.24	1.7		mg/Kg	10	1/23/2020 12:55:49 AM	R66015
2-Methylnaphthalene	15	0.18	1.7		mg/Kg	10	1/23/2020 12:55:49 AM	R66015
Acetone	0.44	0.34	6.2	J	mg/Kg	10	1/23/2020 12:55:49 AM	R66015
Bromobenzene	ND	0.040	0.41		mg/Kg	10	1/23/2020 12:55:49 AM	R66015
Bromodichloromethane	ND	0.038	0.41		mg/Kg	10	1/23/2020 12:55:49 AM	R66015

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Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-22 Toe 0
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 9:45:00 AM
Lab ID: 2001739-010 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Bromoform	ND	0.037	0.41		mg/Kg	10	1/23/2020 12:55:49 AM	R66015
Bromomethane	0.20	0.099	1.2	J	mg/Kg	10	1/23/2020 12:55:49 AM	R66015
2-Butanone	2.5	0.48	4.1	J	mg/Kg	10	1/23/2020 12:55:49 AM	R66015
Carbon disulfide	0.14	0.14	4.1	J	mg/Kg	10	1/23/2020 12:55:49 AM	R66015
Carbon tetrachloride	ND	0.039	0.41		mg/Kg	10	1/23/2020 12:55:49 AM	R66015
Chlorobenzene	ND	0.053	0.41		mg/Kg	10	1/23/2020 12:55:49 AM	R66015
Chloroethane	ND	0.061	0.83		mg/Kg	10	1/23/2020 12:55:49 AM	R66015
Chloroform	0.048	0.033	0.41	J	mg/Kg	10	1/23/2020 12:55:49 AM	R66015
Chloromethane	ND	0.039	1.2		mg/Kg	10	1/23/2020 12:55:49 AM	R66015
2-Chlorotoluene	ND	0.036	0.41		mg/Kg	10	1/23/2020 12:55:49 AM	R66015
4-Chlorotoluene	ND	0.034	0.41		mg/Kg	10	1/23/2020 12:55:49 AM	R66015
cis-1,2-DCE	ND	0.056	0.41		mg/Kg	10	1/23/2020 12:55:49 AM	R66015
cis-1,3-Dichloropropene	ND	0.035	0.41		mg/Kg	10	1/23/2020 12:55:49 AM	R66015
1,2-Dibromo-3-chloropropane	ND	0.042	0.83		mg/Kg	10	1/23/2020 12:55:49 AM	R66015
Dibromochloromethane	ND	0.029	0.41		mg/Kg	10	1/23/2020 12:55:49 AM	R66015
Dibromomethane	ND	0.044	0.41		mg/Kg	10	1/23/2020 12:55:49 AM	R66015
1,2-Dichlorobenzene	ND	0.034	0.41		mg/Kg	10	1/23/2020 12:55:49 AM	R66015
1,3-Dichlorobenzene	ND	0.036	0.41		mg/Kg	10	1/23/2020 12:55:49 AM	R66015
1,4-Dichlorobenzene	ND	0.035	0.41		mg/Kg	10	1/23/2020 12:55:49 AM	R66015
Dichlorodifluoromethane	ND	0.096	0.41		mg/Kg	10	1/23/2020 12:55:49 AM	R66015
1,1-Dichloroethane	ND	0.026	0.41		mg/Kg	10	1/23/2020 12:55:49 AM	R66015
1,1-Dichloroethene	ND	0.17	0.41		mg/Kg	10	1/23/2020 12:55:49 AM	R66015
1,2-Dichloropropane	ND	0.030	0.41		mg/Kg	10	1/23/2020 12:55:49 AM	R66015
1,3-Dichloropropane	ND	0.045	0.41		mg/Kg	10	1/23/2020 12:55:49 AM	R66015
2,2-Dichloropropane	ND	0.13	0.83		mg/Kg	10	1/23/2020 12:55:49 AM	R66015
1,1-Dichloropropene	ND	0.038	0.83		mg/Kg	10	1/23/2020 12:55:49 AM	R66015
Hexachlorobutadiene	ND	0.042	0.83		mg/Kg	10	1/23/2020 12:55:49 AM	R66015
2-Hexanone	ND	0.069	4.1		mg/Kg	10	1/23/2020 12:55:49 AM	R66015
Isopropylbenzene	0.26	0.030	0.41	J	mg/Kg	10	1/23/2020 12:55:49 AM	R66015
4-Isopropyltoluene	0.36	0.034	0.41	J	mg/Kg	10	1/23/2020 12:55:49 AM	R66015
4-Methyl-2-pentanone	ND	0.078	4.1		mg/Kg	10	1/23/2020 12:55:49 AM	R66015
Methylene chloride	ND	0.073	1.2		mg/Kg	10	1/23/2020 12:55:49 AM	R66015
n-Butylbenzene	ND	0.038	1.2		mg/Kg	10	1/23/2020 12:55:49 AM	R66015
n-Propylbenzene	0.67	0.033	0.41		mg/Kg	10	1/23/2020 12:55:49 AM	R66015
sec-Butylbenzene	0.32	0.046	0.41	J	mg/Kg	10	1/23/2020 12:55:49 AM	R66015
Styrene	ND	0.032	0.41		mg/Kg	10	1/23/2020 12:55:49 AM	R66015
tert-Butylbenzene	ND	0.039	0.41		mg/Kg	10	1/23/2020 12:55:49 AM	R66015
1,1,1,2-Tetrachloroethane	ND	0.028	0.41		mg/Kg	10	1/23/2020 12:55:49 AM	R66015
1,1,2,2-Tetrachloroethane	ND	0.042	0.41		mg/Kg	10	1/23/2020 12:55:49 AM	R66015

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

Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-22 Toe 0
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 9:45:00 AM
Lab ID: 2001739-010 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Tetrachloroethene (PCE)	ND	0.033	0.41		mg/Kg	10	1/23/2020 12:55:49 AM	R66015
trans-1,2-DCE	ND	0.038	0.41		mg/Kg	10	1/23/2020 12:55:49 AM	R66015
trans-1,3-Dichloropropene	ND	0.044	0.41		mg/Kg	10	1/23/2020 12:55:49 AM	R66015
1,2,3-Trichlorobenzene	ND	0.036	0.83		mg/Kg	10	1/23/2020 12:55:49 AM	R66015
1,2,4-Trichlorobenzene	ND	0.042	0.41		mg/Kg	10	1/23/2020 12:55:49 AM	R66015
1,1,1-Trichloroethane	ND	0.037	0.41		mg/Kg	10	1/23/2020 12:55:49 AM	R66015
1,1,2-Trichloroethane	ND	0.029	0.41		mg/Kg	10	1/23/2020 12:55:49 AM	R66015
Trichloroethene (TCE)	ND	0.048	0.41		mg/Kg	10	1/23/2020 12:55:49 AM	R66015
Trichlorofluoromethane	ND	0.14	0.41		mg/Kg	10	1/23/2020 12:55:49 AM	R66015
1,2,3-Trichloropropane	ND	0.067	0.83		mg/Kg	10	1/23/2020 12:55:49 AM	R66015
Vinyl chloride	ND	0.027	0.41		mg/Kg	10	1/23/2020 12:55:49 AM	R66015
Xylenes, Total	8.3	0.10	0.83		mg/Kg	10	1/23/2020 12:55:49 AM	R66015
Surr: Dibromofluoromethane	98.5		70-130		%Rec	10	1/23/2020 12:55:49 AM	R66015
Surr: 1,2-Dichloroethane-d4	96.4		70-130		%Rec	10	1/23/2020 12:55:49 AM	R66015
Surr: Toluene-d8	99.4		70-130		%Rec	10	1/23/2020 12:55:49 AM	R66015
Surr: 4-Bromofluorobenzene	84.9		70-130		%Rec	10	1/23/2020 12:55:49 AM	R66015
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **JMR**	
Gasoline Range Organics (GRO)	140	8.8	41		mg/Kg	10	1/23/2020 12:55:49 AM	G66015
Surr: BFB	95.5	0	70-130		%Rec	10	1/23/2020 12:55:49 AM	G66015
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/27/2020 12:20:00 PM	R66110
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	6.77				pH Units	1	1/28/2020 9:49:00 AM	R66112

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

Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: Dup-6
Project: Gallup SWMUI Sampling Event
Collection Date:
Lab ID: 2001739-011 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	130000	2300	9900		mg/Kg	1000	1/22/2020 5:52:16 PM	49947
Motor Oil Range Organics (MRO)	69000	49000	49000		mg/Kg	1000	1/22/2020 5:52:16 PM	49947
Surr: DNOP	0	0	55.1-146	S	%Rec	1000	1/22/2020 5:52:16 PM	49947
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	6.7	0.037	0.67		mg/Kg	20	2/26/2020 1:22:28 PM	50654
MERCURY, TCLP							Analyst: **rde**	
Mercury	ND	0.00075	0.020		mg/L	1	1/24/2020 11:38:39 AM	50014
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.75	5.1		mg/Kg	2	1/23/2020 9:02:57 AM	49956
Arsenic	8.8	2.9	5.1		mg/Kg	2	1/23/2020 9:02:57 AM	49956
Barium	500	0.047	0.20		mg/Kg	2	1/23/2020 9:02:57 AM	49956
Beryllium	0.22	0.019	0.31	J	mg/Kg	2	1/23/2020 9:02:57 AM	49956
Cadmium	ND	0.050	0.20		mg/Kg	2	1/23/2020 9:02:57 AM	49956
Chromium	30	0.16	0.61		mg/Kg	2	1/23/2020 9:02:57 AM	49956
Cobalt	3.0	0.22	0.61		mg/Kg	2	1/23/2020 9:02:57 AM	49956
Lead	6.9	0.50	0.51		mg/Kg	2	1/23/2020 9:02:57 AM	49956
Nickel	6.8	0.31	1.0		mg/Kg	2	1/23/2020 9:02:57 AM	49956
Selenium	12	2.6	5.1		mg/Kg	2	1/23/2020 9:02:57 AM	49956
Silver	ND	0.066	0.51		mg/Kg	2	1/23/2020 9:02:57 AM	49956
Vanadium	10	0.14	5.1		mg/Kg	2	1/23/2020 9:02:57 AM	49956
Zinc	220	0.81	5.1		mg/Kg	2	1/23/2020 9:02:57 AM	49956
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/23/2020 12:03:47 PM	49986
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	2.7	7.3	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952
Acenaphthylene	ND	3.2	7.3	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952
Aniline	ND	2.5	7.3	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952
Anthracene	ND	2.8	7.3	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952
Azobenzene	ND	3.7	7.3	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952
Benz(a)anthracene	ND	2.5	7.3	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952
Benzo(a)pyrene	ND	4.0	7.3	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952
Benzo(b)fluoranthene	ND	4.2	7.3	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952
Benzo(g,h,i)perylene	ND	3.8	7.3	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952
Benzo(k)fluoranthene	ND	2.2	7.3	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952
Benzoic acid	ND	5.0	18	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952
Benzyl alcohol	ND	3.0	7.3	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952
Bis(2-chloroethoxy)methane	ND	3.0	7.3	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952

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

Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: Dup-6
Project: Gallup SWMUI Sampling Event
Collection Date:
Lab ID: 2001739-011 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	4.3	7.3	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952
Bis(2-chloroisopropyl)ether	ND	3.1	7.3	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952
Bis(2-ethylhexyl)phthalate	ND	8.2	18	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952
4-Bromophenyl phenyl ether	ND	4.3	7.3	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952
Butyl benzyl phthalate	ND	2.5	7.3	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952
Carbazole	ND	2.9	7.3	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952
4-Chloro-3-methylphenol	ND	2.9	18	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952
4-Chloroaniline	ND	2.8	18	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952
2-Chloronaphthalene	ND	3.1	9.1	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952
2-Chlorophenol	ND	4.1	7.3	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952
4-Chlorophenyl phenyl ether	ND	3.1	7.3	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952
Chrysene	ND	2.9	7.3	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952
Di-n-butyl phthalate	ND	11	15	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952
Di-n-octyl phthalate	ND	2.4	15	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952
Dibenz(a,h)anthracene	ND	4.1	7.3	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952
Dibenzofuran	ND	3.7	7.3	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952
1,2-Dichlorobenzene	ND	2.9	7.3	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952
1,3-Dichlorobenzene	ND	2.4	7.3	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952
1,4-Dichlorobenzene	ND	3.0	7.3	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952
3,3´-Dichlorobenzidine	ND	3.1	9.1	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952
Diethyl phthalate	ND	11	18	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952
Dimethyl phthalate	ND	3.0	7.3	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952
2,4-Dichlorophenol	ND	3.1	15	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952
2,4-Dimethylphenol	ND	3.0	11	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952
4,6-Dinitro-2-methylphenol	ND	2.7	15	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952
2,4-Dinitrophenol	ND	2.1	18	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952
2,4-Dinitrotoluene	ND	3.8	18	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952
2,6-Dinitrotoluene	ND	4.3	18	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952
Fluoranthene	ND	2.8	7.3	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952
Fluorene	32	2.9	7.3	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952
Hexachlorobenzene	ND	2.9	7.3	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952
Hexachlorobutadiene	ND	3.2	7.3	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952
Hexachlorocyclopentadiene	ND	3.5	7.3	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952
Hexachloroethane	ND	3.0	7.3	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952
Indeno(1,2,3-cd)pyrene	ND	4.5	7.3	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952
Isophorone	ND	3.2	15	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952
1-Methylnaphthalene	71	3.4	7.3	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952
2-Methylnaphthalene	64	3.0	7.3	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952
2-Methylphenol	ND	3.1	15	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952

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Qualifiers:

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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: Dup-6
Project: Gallup SWMUI Sampling Event
Collection Date:
Lab ID: 2001739-011 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	2.6	7.3	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952
N-Nitrosodi-n-propylamine	ND	3.7	7.3	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952
N-Nitrosodiphenylamine	ND	3.8	7.3	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952
Naphthalene	5.4	3.0	7.3	JD	mg/Kg	1	1/27/2020 9:32:29 PM	49952
2-Nitroaniline	ND	4.1	7.3	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952
3-Nitroaniline	ND	3.6	7.3	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952
4-Nitroaniline	ND	4.9	15	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952
Nitrobenzene	ND	3.1	15	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952
2-Nitrophenol	ND	3.0	7.3	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952
4-Nitrophenol	ND	2.1	9.1	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952
Pentachlorophenol	ND	3.3	15	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952
Phenanthrene	200	19	37	D	mg/Kg	5	1/31/2020 11:28:28 AM	49952
Phenol	ND	3.1	7.3	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952
Pyrene	74	2.4	7.3	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952
Pyridine	ND	6.8	15	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952
1,2,4-Trichlorobenzene	ND	3.1	7.3	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952
2,4,5-Trichlorophenol	ND	2.4	7.3	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952
2,4,6-Trichlorophenol	ND	3.7	7.3	D	mg/Kg	1	1/27/2020 9:32:29 PM	49952
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	1	1/27/2020 9:32:29 PM	49952
Surr: Phenol-d5	0		18.5-101	SD	%Rec	1	1/27/2020 9:32:29 PM	49952
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	1	1/27/2020 9:32:29 PM	49952
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	1	1/27/2020 9:32:29 PM	49952
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	1	1/27/2020 9:32:29 PM	49952
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	1	1/27/2020 9:32:29 PM	49952
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Benzene	ND	0.039	0.24		mg/Kg	10	1/23/2020 1:52:32 AM	R66015
Toluene	0.20	0.045	0.47	J	mg/Kg	10	1/23/2020 1:52:32 AM	R66015
Ethylbenzene	0.067	0.028	0.47	J	mg/Kg	10	1/23/2020 1:52:32 AM	R66015
Methyl tert-butyl ether (MTBE)	ND	0.11	0.47		mg/Kg	10	1/23/2020 1:52:32 AM	R66015
1,2,4-Trimethylbenzene	1.3	0.043	0.47		mg/Kg	10	1/23/2020 1:52:32 AM	R66015
1,3,5-Trimethylbenzene	0.37	0.046	0.47	J	mg/Kg	10	1/23/2020 1:52:32 AM	R66015
1,2-Dichloroethane (EDC)	ND	0.048	0.47		mg/Kg	10	1/23/2020 1:52:32 AM	R66015
1,2-Dibromoethane (EDB)	ND	0.043	0.47		mg/Kg	10	1/23/2020 1:52:32 AM	R66015
Naphthalene	2.9	0.095	0.95		mg/Kg	10	1/23/2020 1:52:32 AM	R66015
1-Methylnaphthalene	18	0.27	1.9		mg/Kg	10	1/23/2020 1:52:32 AM	R66015
2-Methylnaphthalene	25	0.21	1.9		mg/Kg	10	1/23/2020 1:52:32 AM	R66015
Acetone	0.60	0.39	7.1	J	mg/Kg	10	1/23/2020 1:52:32 AM	R66015
Bromobenzene	ND	0.046	0.47		mg/Kg	10	1/23/2020 1:52:32 AM	R66015
Bromodichloromethane	ND	0.043	0.47		mg/Kg	10	1/23/2020 1:52:32 AM	R66015

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P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: Dup-6
Project: Gallup SWMUI Sampling Event
Collection Date:
Lab ID: 2001739-011 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Bromoform	ND	0.043	0.47		mg/Kg	10	1/23/2020 1:52:32 AM	R66015
Bromomethane	0.23	0.11	1.4	J	mg/Kg	10	1/23/2020 1:52:32 AM	R66015
2-Butanone	ND	0.55	4.7		mg/Kg	10	1/23/2020 1:52:32 AM	R66015
Carbon disulfide	ND	0.16	4.7		mg/Kg	10	1/23/2020 1:52:32 AM	R66015
Carbon tetrachloride	ND	0.045	0.47		mg/Kg	10	1/23/2020 1:52:32 AM	R66015
Chlorobenzene	ND	0.061	0.47		mg/Kg	10	1/23/2020 1:52:32 AM	R66015
Chloroethane	ND	0.070	0.95		mg/Kg	10	1/23/2020 1:52:32 AM	R66015
Chloroform	ND	0.038	0.47		mg/Kg	10	1/23/2020 1:52:32 AM	R66015
Chloromethane	ND	0.045	1.4		mg/Kg	10	1/23/2020 1:52:32 AM	R66015
2-Chlorotoluene	ND	0.041	0.47		mg/Kg	10	1/23/2020 1:52:32 AM	R66015
4-Chlorotoluene	ND	0.039	0.47		mg/Kg	10	1/23/2020 1:52:32 AM	R66015
cis-1,2-DCE	ND	0.065	0.47		mg/Kg	10	1/23/2020 1:52:32 AM	R66015
cis-1,3-Dichloropropene	ND	0.040	0.47		mg/Kg	10	1/23/2020 1:52:32 AM	R66015
1,2-Dibromo-3-chloropropane	ND	0.049	0.95		mg/Kg	10	1/23/2020 1:52:32 AM	R66015
Dibromochloromethane	ND	0.034	0.47		mg/Kg	10	1/23/2020 1:52:32 AM	R66015
Dibromomethane	ND	0.051	0.47		mg/Kg	10	1/23/2020 1:52:32 AM	R66015
1,2-Dichlorobenzene	ND	0.039	0.47		mg/Kg	10	1/23/2020 1:52:32 AM	R66015
1,3-Dichlorobenzene	ND	0.041	0.47		mg/Kg	10	1/23/2020 1:52:32 AM	R66015
1,4-Dichlorobenzene	ND	0.040	0.47		mg/Kg	10	1/23/2020 1:52:32 AM	R66015
Dichlorodifluoromethane	ND	0.11	0.47		mg/Kg	10	1/23/2020 1:52:32 AM	R66015
1,1-Dichloroethane	ND	0.030	0.47		mg/Kg	10	1/23/2020 1:52:32 AM	R66015
1,1-Dichloroethene	ND	0.19	0.47		mg/Kg	10	1/23/2020 1:52:32 AM	R66015
1,2-Dichloropropane	ND	0.035	0.47		mg/Kg	10	1/23/2020 1:52:32 AM	R66015
1,3-Dichloropropane	ND	0.051	0.47		mg/Kg	10	1/23/2020 1:52:32 AM	R66015
2,2-Dichloropropane	ND	0.15	0.95		mg/Kg	10	1/23/2020 1:52:32 AM	R66015
1,1-Dichloropropene	ND	0.043	0.95		mg/Kg	10	1/23/2020 1:52:32 AM	R66015
Hexachlorobutadiene	ND	0.048	0.95		mg/Kg	10	1/23/2020 1:52:32 AM	R66015
2-Hexanone	ND	0.079	4.7		mg/Kg	10	1/23/2020 1:52:32 AM	R66015
Isopropylbenzene	ND	0.034	0.47		mg/Kg	10	1/23/2020 1:52:32 AM	R66015
4-Isopropyltoluene	0.042	0.039	0.47	J	mg/Kg	10	1/23/2020 1:52:32 AM	R66015
4-Methyl-2-pentanone	ND	0.090	4.7		mg/Kg	10	1/23/2020 1:52:32 AM	R66015
Methylene chloride	0.12	0.084	1.4	J	mg/Kg	10	1/23/2020 1:52:32 AM	R66015
n-Butylbenzene	0.19	0.044	1.4	J	mg/Kg	10	1/23/2020 1:52:32 AM	R66015
n-Propylbenzene	0.081	0.038	0.47	J	mg/Kg	10	1/23/2020 1:52:32 AM	R66015
sec-Butylbenzene	ND	0.053	0.47		mg/Kg	10	1/23/2020 1:52:32 AM	R66015
Styrene	ND	0.037	0.47		mg/Kg	10	1/23/2020 1:52:32 AM	R66015
tert-Butylbenzene	ND	0.045	0.47		mg/Kg	10	1/23/2020 1:52:32 AM	R66015
1,1,1,2-Tetrachloroethane	ND	0.032	0.47		mg/Kg	10	1/23/2020 1:52:32 AM	R66015
1,1,2,2-Tetrachloroethane	ND	0.048	0.47		mg/Kg	10	1/23/2020 1:52:32 AM	R66015

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Qualifiers:

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S	% Recovery outside of range due to dilution or matrix

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: Dup-6
Project: Gallup SWMUI Sampling Event
Collection Date:
Lab ID: 2001739-011 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Tetrachloroethene (PCE)	ND	0.038	0.47		mg/Kg	10	1/23/2020 1:52:32 AM	R66015
trans-1,2-DCE	ND	0.043	0.47		mg/Kg	10	1/23/2020 1:52:32 AM	R66015
trans-1,3-Dichloropropene	ND	0.050	0.47		mg/Kg	10	1/23/2020 1:52:32 AM	R66015
1,2,3-Trichlorobenzene	ND	0.042	0.95		mg/Kg	10	1/23/2020 1:52:32 AM	R66015
1,2,4-Trichlorobenzene	ND	0.048	0.47		mg/Kg	10	1/23/2020 1:52:32 AM	R66015
1,1,1-Trichloroethane	ND	0.043	0.47		mg/Kg	10	1/23/2020 1:52:32 AM	R66015
1,1,2-Trichloroethane	ND	0.033	0.47		mg/Kg	10	1/23/2020 1:52:32 AM	R66015
Trichloroethene (TCE)	ND	0.055	0.47		mg/Kg	10	1/23/2020 1:52:32 AM	R66015
Trichlorofluoromethane	ND	0.16	0.47		mg/Kg	10	1/23/2020 1:52:32 AM	R66015
1,2,3-Trichloropropane	ND	0.077	0.95		mg/Kg	10	1/23/2020 1:52:32 AM	R66015
Vinyl chloride	ND	0.031	0.47		mg/Kg	10	1/23/2020 1:52:32 AM	R66015
Xylenes, Total	1.0	0.12	0.95		mg/Kg	10	1/23/2020 1:52:32 AM	R66015
Surr: Dibromofluoromethane	98.2		70-130		%Rec	10	1/23/2020 1:52:32 AM	R66015
Surr: 1,2-Dichloroethane-d4	95.5		70-130		%Rec	10	1/23/2020 1:52:32 AM	R66015
Surr: Toluene-d8	99.5		70-130		%Rec	10	1/23/2020 1:52:32 AM	R66015
Surr: 4-Bromofluorobenzene	91.3		70-130		%Rec	10	1/23/2020 1:52:32 AM	R66015
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **JMR**	
Gasoline Range Organics (GRO)	28	10	47	J	mg/Kg	10	1/23/2020 1:52:32 AM	G66015
Surr: BFB	97.1	0	70-130		%Rec	10	1/23/2020 1:52:32 AM	G66015
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/27/2020 12:20:00 PM	R6611C
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	4.56				pH Units	1	1/28/2020 9:49:00 AM	R66112

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E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-5 Surf
Project: Gallup SWMUI Sampling Event
Collection Date: 1/17/2020 8:35:00 AM
Lab ID: 2001739-012 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	130000	1100	4500		mg/Kg	500	1/24/2020 10:20:13 AM	49947
Motor Oil Range Organics (MRO)	42000	23000	23000		mg/Kg	500	1/24/2020 10:20:13 AM	49947
Surr: DNOP	0	0	55.1-146	S	%Rec	500	1/24/2020 10:20:13 AM	49947
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	7.7	0.092	1.7	H	mg/Kg	50	3/2/2020 5:22:26 PM	50789
MERCURY, TCLP							Analyst: **rde**	
Mercury	ND	0.00075	0.020		mg/L	1	1/24/2020 11:40:39 AM	50014
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.75	5.1		mg/Kg	2	1/23/2020 9:04:20 AM	49956
Arsenic	5.3	2.9	5.1		mg/Kg	2	1/23/2020 9:04:20 AM	49956
Barium	300	0.048	0.21		mg/Kg	2	1/23/2020 9:04:20 AM	49956
Beryllium	0.28	0.019	0.31	J	mg/Kg	2	1/23/2020 9:04:20 AM	49956
Cadmium	ND	0.050	0.21		mg/Kg	2	1/23/2020 9:04:20 AM	49956
Chromium	17	0.16	0.62		mg/Kg	2	1/23/2020 9:04:20 AM	49956
Cobalt	3.4	0.22	0.62		mg/Kg	2	1/23/2020 9:04:20 AM	49956
Lead	2.4	0.50	0.51		mg/Kg	2	1/23/2020 9:04:20 AM	49956
Nickel	19	0.31	1.0		mg/Kg	2	1/23/2020 9:04:20 AM	49956
Selenium	4.7	2.6	5.1	J	mg/Kg	2	1/23/2020 9:04:20 AM	49956
Silver	0.63	0.066	0.51		mg/Kg	2	1/23/2020 9:04:20 AM	49956
Vanadium	9.1	0.14	5.1		mg/Kg	2	1/23/2020 9:04:20 AM	49956
Zinc	510	0.81	5.1		mg/Kg	2	1/23/2020 9:04:20 AM	49956
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/23/2020 12:05:11 PM	49986
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	1.8	4.8	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952
Acenaphthylene	ND	2.1	4.8	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952
Aniline	ND	1.6	4.8	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952
Anthracene	ND	1.8	4.8	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952
Azobenzene	ND	2.4	4.8	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952
Benz(a)anthracene	ND	1.6	4.8	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952
Benzo(a)pyrene	ND	2.6	4.8	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952
Benzo(b)fluoranthene	ND	2.7	4.8	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952
Benzo(g,h,i)perylene	ND	2.5	4.8	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952
Benzo(k)fluoranthene	ND	1.4	4.8	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952
Benzoic acid	ND	3.3	12	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952
Benzyl alcohol	ND	2.0	4.8	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952
Bis(2-chloroethoxy)methane	ND	2.0	4.8	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952

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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-5 Surf
Project: Gallup SWMUI Sampling Event
Collection Date: 1/17/2020 8:35:00 AM
Lab ID: 2001739-012 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	2.8	4.8	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952
Bis(2-chloroisopropyl)ether	ND	2.1	4.8	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952
Bis(2-ethylhexyl)phthalate	ND	5.4	12	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952
4-Bromophenyl phenyl ether	ND	2.8	4.8	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952
Butyl benzyl phthalate	ND	1.6	4.8	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952
Carbazole	ND	1.9	4.8	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952
4-Chloro-3-methylphenol	ND	1.9	12	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952
4-Chloroaniline	ND	1.8	12	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952
2-Chloronaphthalene	ND	2.0	6.0	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952
2-Chlorophenol	ND	2.7	4.8	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952
4-Chlorophenyl phenyl ether	ND	2.0	4.8	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952
Chrysene	ND	1.9	4.8	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952
Di-n-butyl phthalate	ND	7.1	9.6	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952
Di-n-octyl phthalate	ND	1.6	9.6	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952
Dibenz(a,h)anthracene	ND	2.7	4.8	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952
Dibenzofuran	ND	2.4	4.8	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952
1,2-Dichlorobenzene	ND	1.9	4.8	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952
1,3-Dichlorobenzene	ND	1.6	4.8	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952
1,4-Dichlorobenzene	ND	2.0	4.8	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952
3,3´-Dichlorobenzidine	ND	2.0	6.0	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952
Diethyl phthalate	ND	7.3	12	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952
Dimethyl phthalate	ND	1.9	4.8	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952
2,4-Dichlorophenol	ND	2.0	9.6	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952
2,4-Dimethylphenol	ND	2.0	7.2	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952
4,6-Dinitro-2-methylphenol	ND	1.8	9.6	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952
2,4-Dinitrophenol	ND	1.4	12	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952
2,4-Dinitrotoluene	ND	2.5	12	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952
2,6-Dinitrotoluene	ND	2.8	12	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952
Fluoranthene	ND	1.8	4.8	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952
Fluorene	28	1.9	4.8	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952
Hexachlorobenzene	ND	1.9	4.8	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952
Hexachlorobutadiene	ND	2.1	4.8	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952
Hexachlorocyclopentadiene	ND	2.3	4.8	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952
Hexachloroethane	ND	2.0	4.8	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952
Indeno(1,2,3-cd)pyrene	ND	3.0	4.8	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952
Isophorone	ND	2.1	9.6	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952
1-Methylnaphthalene	87	2.2	4.8	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952
2-Methylnaphthalene	81	1.9	4.8	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952
2-Methylphenol	ND	2.0	9.6	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952

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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-5 Surf
Project: Gallup SWMUI Sampling Event
Collection Date: 1/17/2020 8:35:00 AM
Lab ID: 2001739-012 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	1.7	4.8	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952
N-Nitrosodi-n-propylamine	ND	2.4	4.8	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952
N-Nitrosodiphenylamine	ND	2.5	4.8	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952
Naphthalene	10	2.0	4.8	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952
2-Nitroaniline	ND	2.7	4.8	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952
3-Nitroaniline	ND	2.3	4.8	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952
4-Nitroaniline	ND	3.2	9.6	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952
Nitrobenzene	ND	2.0	9.6	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952
2-Nitrophenol	ND	2.0	4.8	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952
4-Nitrophenol	ND	1.4	6.0	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952
Pentachlorophenol	ND	2.1	9.6	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952
Phenanthrene	120	12	24	D	mg/Kg	5	1/31/2020 12:25:57 PM	49952
Phenol	ND	2.0	4.8	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952
Pyrene	ND	1.6	4.8	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952
Pyridine	ND	4.4	9.6	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952
1,2,4-Trichlorobenzene	ND	2.0	4.8	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952
2,4,5-Trichlorophenol	ND	1.5	4.8	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952
2,4,6-Trichlorophenol	ND	2.4	4.8	D	mg/Kg	1	1/31/2020 11:57:12 AM	49952
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	1	1/31/2020 11:57:12 AM	49952
Surr: Phenol-d5	0		18.5-101	SD	%Rec	1	1/31/2020 11:57:12 AM	49952
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	1	1/31/2020 11:57:12 AM	49952
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	1	1/31/2020 11:57:12 AM	49952
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	1	1/31/2020 11:57:12 AM	49952
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	1	1/31/2020 11:57:12 AM	49952
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Benzene	ND	0.074	0.45		mg/Kg	20	1/23/2020 2:49:15 AM	R66015
Toluene	0.56	0.087	0.91	J	mg/Kg	20	1/23/2020 2:49:15 AM	R66015
Ethylbenzene	0.33	0.053	0.91	J	mg/Kg	20	1/23/2020 2:49:15 AM	R66015
Methyl tert-butyl ether (MTBE)	ND	0.22	0.91		mg/Kg	20	1/23/2020 2:49:15 AM	R66015
1,2,4-Trimethylbenzene	3.8	0.083	0.91		mg/Kg	20	1/23/2020 2:49:15 AM	R66015
1,3,5-Trimethylbenzene	1.2	0.088	0.91		mg/Kg	20	1/23/2020 2:49:15 AM	R66015
1,2-Dichloroethane (EDC)	ND	0.093	0.91		mg/Kg	20	1/23/2020 2:49:15 AM	R66015
1,2-Dibromoethane (EDB)	ND	0.083	0.91		mg/Kg	20	1/23/2020 2:49:15 AM	R66015
Naphthalene	6.5	0.18	1.8		mg/Kg	20	1/23/2020 2:49:15 AM	R66015
1-Methylnaphthalene	31	0.52	3.6		mg/Kg	20	1/23/2020 2:49:15 AM	R66015
2-Methylnaphthalene	44	0.40	3.6		mg/Kg	20	1/23/2020 2:49:15 AM	R66015
Acetone	0.89	0.75	14	J	mg/Kg	20	1/23/2020 2:49:15 AM	R66015
Bromobenzene	ND	0.087	0.91		mg/Kg	20	1/23/2020 2:49:15 AM	R66015
Bromodichloromethane	ND	0.083	0.91		mg/Kg	20	1/23/2020 2:49:15 AM	R66015

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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-5 Surf
Project: Gallup SWMUI Sampling Event
Collection Date: 1/17/2020 8:35:00 AM
Lab ID: 2001739-012 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Bromoform	ND	0.082	0.91		mg/Kg	20	1/23/2020 2:49:15 AM	R66015
Bromomethane	ND	0.22	2.7		mg/Kg	20	1/23/2020 2:49:15 AM	R66015
2-Butanone	1.4	1.0	9.1	J	mg/Kg	20	1/23/2020 2:49:15 AM	R66015
Carbon disulfide	0.56	0.30	9.1	J	mg/Kg	20	1/23/2020 2:49:15 AM	R66015
Carbon tetrachloride	ND	0.086	0.91		mg/Kg	20	1/23/2020 2:49:15 AM	R66015
Chlorobenzene	ND	0.12	0.91		mg/Kg	20	1/23/2020 2:49:15 AM	R66015
Chloroethane	ND	0.13	1.8		mg/Kg	20	1/23/2020 2:49:15 AM	R66015
Chloroform	ND	0.073	0.91		mg/Kg	20	1/23/2020 2:49:15 AM	R66015
Chloromethane	ND	0.087	2.7		mg/Kg	20	1/23/2020 2:49:15 AM	R66015
2-Chlorotoluene	ND	0.079	0.91		mg/Kg	20	1/23/2020 2:49:15 AM	R66015
4-Chlorotoluene	ND	0.074	0.91		mg/Kg	20	1/23/2020 2:49:15 AM	R66015
cis-1,2-DCE	ND	0.12	0.91		mg/Kg	20	1/23/2020 2:49:15 AM	R66015
cis-1,3-Dichloropropene	ND	0.077	0.91		mg/Kg	20	1/23/2020 2:49:15 AM	R66015
1,2-Dibromo-3-chloropropane	ND	0.093	1.8		mg/Kg	20	1/23/2020 2:49:15 AM	R66015
Dibromochloromethane	ND	0.064	0.91		mg/Kg	20	1/23/2020 2:49:15 AM	R66015
Dibromomethane	ND	0.098	0.91		mg/Kg	20	1/23/2020 2:49:15 AM	R66015
1,2-Dichlorobenzene	ND	0.074	0.91		mg/Kg	20	1/23/2020 2:49:15 AM	R66015
1,3-Dichlorobenzene	ND	0.079	0.91		mg/Kg	20	1/23/2020 2:49:15 AM	R66015
1,4-Dichlorobenzene	ND	0.076	0.91		mg/Kg	20	1/23/2020 2:49:15 AM	R66015
Dichlorodifluoromethane	ND	0.21	0.91		mg/Kg	20	1/23/2020 2:49:15 AM	R66015
1,1-Dichloroethane	ND	0.058	0.91		mg/Kg	20	1/23/2020 2:49:15 AM	R66015
1,1-Dichloroethene	ND	0.36	0.91		mg/Kg	20	1/23/2020 2:49:15 AM	R66015
1,2-Dichloropropane	ND	0.066	0.91		mg/Kg	20	1/23/2020 2:49:15 AM	R66015
1,3-Dichloropropane	ND	0.098	0.91		mg/Kg	20	1/23/2020 2:49:15 AM	R66015
2,2-Dichloropropane	ND	0.30	1.8		mg/Kg	20	1/23/2020 2:49:15 AM	R66015
1,1-Dichloropropene	ND	0.083	1.8		mg/Kg	20	1/23/2020 2:49:15 AM	R66015
Hexachlorobutadiene	ND	0.092	1.8		mg/Kg	20	1/23/2020 2:49:15 AM	R66015
2-Hexanone	ND	0.15	9.1		mg/Kg	20	1/23/2020 2:49:15 AM	R66015
Isopropylbenzene	0.067	0.065	0.91	J	mg/Kg	20	1/23/2020 2:49:15 AM	R66015
4-Isopropyltoluene	0.25	0.075	0.91	J	mg/Kg	20	1/23/2020 2:49:15 AM	R66015
4-Methyl-2-pentanone	ND	0.17	9.1		mg/Kg	20	1/23/2020 2:49:15 AM	R66015
Methylene chloride	ND	0.16	2.7		mg/Kg	20	1/23/2020 2:49:15 AM	R66015
n-Butylbenzene	0.64	0.085	2.7	J	mg/Kg	20	1/23/2020 2:49:15 AM	R66015
n-Propylbenzene	0.38	0.072	0.91	J	mg/Kg	20	1/23/2020 2:49:15 AM	R66015
sec-Butylbenzene	0.26	0.10	0.91	J	mg/Kg	20	1/23/2020 2:49:15 AM	R66015
Styrene	ND	0.071	0.91		mg/Kg	20	1/23/2020 2:49:15 AM	R66015
tert-Butylbenzene	ND	0.086	0.91		mg/Kg	20	1/23/2020 2:49:15 AM	R66015
1,1,1,2-Tetrachloroethane	ND	0.061	0.91		mg/Kg	20	1/23/2020 2:49:15 AM	R66015
1,1,2,2-Tetrachloroethane	ND	0.092	0.91		mg/Kg	20	1/23/2020 2:49:15 AM	R66015

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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-5 Surf
Project: Gallup SWMUI Sampling Event
Collection Date: 1/17/2020 8:35:00 AM
Lab ID: 2001739-012 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Tetrachloroethene (PCE)	ND	0.072	0.91		mg/Kg	20	1/23/2020 2:49:15 AM	R66015
trans-1,2-DCE	ND	0.083	0.91		mg/Kg	20	1/23/2020 2:49:15 AM	R66015
trans-1,3-Dichloropropene	ND	0.096	0.91		mg/Kg	20	1/23/2020 2:49:15 AM	R66015
1,2,3-Trichlorobenzene	ND	0.080	1.8		mg/Kg	20	1/23/2020 2:49:15 AM	R66015
1,2,4-Trichlorobenzene	ND	0.092	0.91		mg/Kg	20	1/23/2020 2:49:15 AM	R66015
1,1,1-Trichloroethane	ND	0.082	0.91		mg/Kg	20	1/23/2020 2:49:15 AM	R66015
1,1,2-Trichloroethane	ND	0.064	0.91		mg/Kg	20	1/23/2020 2:49:15 AM	R66015
Trichloroethene (TCE)	ND	0.11	0.91		mg/Kg	20	1/23/2020 2:49:15 AM	R66015
Trichlorofluoromethane	ND	0.31	0.91		mg/Kg	20	1/23/2020 2:49:15 AM	R66015
1,2,3-Trichloropropane	ND	0.15	1.8		mg/Kg	20	1/23/2020 2:49:15 AM	R66015
Vinyl chloride	ND	0.059	0.91		mg/Kg	20	1/23/2020 2:49:15 AM	R66015
Xylenes, Total	3.1	0.23	1.8		mg/Kg	20	1/23/2020 2:49:15 AM	R66015
Surr: Dibromofluoromethane	95.7		70-130		%Rec	20	1/23/2020 2:49:15 AM	R66015
Surr: 1,2-Dichloroethane-d4	93.8		70-130		%Rec	20	1/23/2020 2:49:15 AM	R66015
Surr: Toluene-d8	99.2		70-130		%Rec	20	1/23/2020 2:49:15 AM	R66015
Surr: 4-Bromofluorobenzene	83.1		70-130		%Rec	20	1/23/2020 2:49:15 AM	R66015
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **JMR**	
Gasoline Range Organics (GRO)	110	19	91		mg/Kg	20	1/23/2020 2:49:15 AM	G66015
Surr: BFB	91.4	0	70-130		%Rec	20	1/23/2020 2:49:15 AM	G66015
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/27/2020 12:20:00 PM	R66110
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	5.42				pH Units	1	1/28/2020 9:49:00 AM	R66112

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E	Value above quantitation range
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P	Sample pH Not In Range
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-5 5.5-6
Project: Gallup SWMUI Sampling Event
Collection Date: 1/17/2020 8:45:00 AM
Lab ID: 2001739-013 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	1200	9.4	39		mg/Kg	5	1/24/2020 10:29:22 AM	49947
Motor Oil Range Organics (MRO)	310	200	200		mg/Kg	5	1/24/2020 10:29:22 AM	49947
Surr: DNOP	118	0	55.1-146		%Rec	5	1/24/2020 10:29:22 AM	49947
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	0.15	0.0017	0.032	H	mg/Kg	1	2/26/2020 12:21:16 PM	50654
MERCURY, TCLP							Analyst: **rde**	
Mercury	ND	0.00075	0.020		mg/L	1	1/24/2020 11:42:39 AM	50014
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.75	5.1		mg/Kg	2	1/23/2020 9:10:22 AM	49956
Arsenic	ND	2.9	5.1		mg/Kg	2	1/23/2020 9:10:22 AM	49956
Barium	230	0.047	0.20		mg/Kg	2	1/23/2020 9:10:22 AM	49956
Beryllium	0.77	0.019	0.30		mg/Kg	2	1/23/2020 9:10:22 AM	49956
Cadmium	ND	0.049	0.20		mg/Kg	2	1/23/2020 9:10:22 AM	49956
Chromium	21	0.16	0.61		mg/Kg	2	1/23/2020 9:10:22 AM	49956
Cobalt	5.3	0.21	0.61		mg/Kg	2	1/23/2020 9:10:22 AM	49956
Lead	5.9	0.49	0.51		mg/Kg	2	1/23/2020 9:10:22 AM	49956
Nickel	14	0.30	1.0		mg/Kg	2	1/23/2020 9:10:22 AM	49956
Selenium	ND	2.5	5.1		mg/Kg	2	1/23/2020 9:10:22 AM	49956
Silver	ND	0.065	0.51		mg/Kg	2	1/23/2020 9:10:22 AM	49956
Vanadium	21	0.13	5.1		mg/Kg	2	1/23/2020 9:10:22 AM	49956
Zinc	170	0.80	5.1		mg/Kg	2	1/23/2020 11:18:07 AM	49956
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/25/2020 12:09:52 PM	50036
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.14	0.36	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975
Acenaphthylene	ND	0.16	0.36	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975
Aniline	ND	0.12	0.36	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975
Anthracene	ND	0.14	0.36	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975
Azobenzene	ND	0.18	0.36	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975
Benz(a)anthracene	ND	0.12	0.36	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975
Benzo(a)pyrene	ND	0.20	0.36	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975
Benzo(b)fluoranthene	ND	0.21	0.36	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975
Benzo(g,h,i)perylene	ND	0.19	0.36	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975
Benzo(k)fluoranthene	ND	0.11	0.36	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975
Benzoic acid	ND	0.25	0.91	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975
Benzyl alcohol	ND	0.15	0.36	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975
Bis(2-chloroethoxy)methane	ND	0.15	0.36	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975

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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-5 5.5-6
Project: Gallup SWMUI Sampling Event
Collection Date: 1/17/2020 8:45:00 AM
Lab ID: 2001739-013 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.21	0.36	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975
Bis(2-chloroisopropyl)ether	ND	0.16	0.36	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975
Bis(2-ethylhexyl)phthalate	ND	0.41	0.91	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975
4-Bromophenyl phenyl ether	ND	0.21	0.36	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975
Butyl benzyl phthalate	ND	0.12	0.36	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975
Carbazole	ND	0.14	0.36	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975
4-Chloro-3-methylphenol	ND	0.14	0.91	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975
4-Chloroaniline	ND	0.14	0.91	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975
2-Chloronaphthalene	ND	0.15	0.45	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975
2-Chlorophenol	ND	0.21	0.36	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975
4-Chlorophenyl phenyl ether	ND	0.15	0.36	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975
Chrysene	ND	0.14	0.36	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975
Di-n-butyl phthalate	ND	0.54	0.73	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975
Di-n-octyl phthalate	ND	0.12	0.73	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975
Dibenz(a,h)anthracene	ND	0.20	0.36	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975
Dibenzofuran	ND	0.18	0.36	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975
1,2-Dichlorobenzene	ND	0.14	0.36	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975
1,3-Dichlorobenzene	ND	0.12	0.36	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975
1,4-Dichlorobenzene	ND	0.15	0.36	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975
3,3´-Dichlorobenzidine	ND	0.16	0.45	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975
Diethyl phthalate	ND	0.55	0.91	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975
Dimethyl phthalate	ND	0.15	0.36	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975
2,4-Dichlorophenol	ND	0.15	0.73	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975
2,4-Dimethylphenol	ND	0.15	0.55	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975
4,6-Dinitro-2-methylphenol	ND	0.13	0.73	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975
2,4-Dinitrophenol	ND	0.11	0.91	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975
2,4-Dinitrotoluene	ND	0.19	0.91	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975
2,6-Dinitrotoluene	ND	0.22	0.91	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975
Fluoranthene	ND	0.14	0.36	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975
Fluorene	0.57	0.14	0.36	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975
Hexachlorobenzene	ND	0.14	0.36	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975
Hexachlorobutadiene	ND	0.16	0.36	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975
Hexachlorocyclopentadiene	ND	0.17	0.36	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975
Hexachloroethane	ND	0.15	0.36	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975
Indeno(1,2,3-cd)pyrene	ND	0.22	0.36	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975
Isophorone	ND	0.16	0.73	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975
1-Methylnaphthalene	1.6	0.17	0.36	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975
2-Methylnaphthalene	1.8	0.15	0.36	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975
2-Methylphenol	0.22	0.15	0.73	JD	mg/Kg	1	1/31/2020 1:23:37 PM	49975

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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-5 5.5-6
Project: Gallup SWMUI Sampling Event
Collection Date: 1/17/2020 8:45:00 AM
Lab ID: 2001739-013 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	3.3	0.13	0.36	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975
N-Nitrosodi-n-propylamine	ND	0.18	0.36	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975
N-Nitrosodiphenylamine	ND	0.19	0.36	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975
Naphthalene	0.25	0.15	0.36	JD	mg/Kg	1	1/31/2020 1:23:37 PM	49975
2-Nitroaniline	ND	0.20	0.36	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975
3-Nitroaniline	ND	0.18	0.36	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975
4-Nitroaniline	ND	0.24	0.73	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975
Nitrobenzene	ND	0.15	0.73	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975
2-Nitrophenol	ND	0.15	0.36	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975
4-Nitrophenol	ND	0.11	0.45	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975
Pentachlorophenol	ND	0.16	0.73	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975
Phenanthrene	1.4	0.19	0.36	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975
Phenol	0.48	0.15	0.36	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975
Pyrene	ND	0.12	0.36	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975
Pyridine	ND	0.34	0.73	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975
1,2,4-Trichlorobenzene	ND	0.16	0.36	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975
2,4,5-Trichlorophenol	ND	0.12	0.36	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975
2,4,6-Trichlorophenol	ND	0.18	0.36	D	mg/Kg	1	1/31/2020 1:23:37 PM	49975
Surr: 2-Fluorophenol	66.6		26.7-85.9	D	%Rec	1	1/31/2020 1:23:37 PM	49975
Surr: Phenol-d5	76.4		18.5-101	D	%Rec	1	1/31/2020 1:23:37 PM	49975
Surr: 2,4,6-Tribromophenol	72.5		35.8-85.6	D	%Rec	1	1/31/2020 1:23:37 PM	49975
Surr: Nitrobenzene-d5	69.4		40.8-95.2	D	%Rec	1	1/31/2020 1:23:37 PM	49975
Surr: 2-Fluorobiphenyl	77.2		34.7-85.2	D	%Rec	1	1/31/2020 1:23:37 PM	49975
Surr: 4-Terphenyl-d14	85.5		37.4-91.3	D	%Rec	1	1/31/2020 1:23:37 PM	49975
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Benzene	ND	0.011	0.070		mg/Kg	5	1/23/2020 3:45:53 AM	R66015
Toluene	0.043	0.013	0.14	J	mg/Kg	5	1/23/2020 3:45:53 AM	R66015
Ethylbenzene	0.014	0.0081	0.14	J	mg/Kg	5	1/23/2020 3:45:53 AM	R66015
Methyl tert-butyl ether (MTBE)	ND	0.033	0.14		mg/Kg	5	1/23/2020 3:45:53 AM	R66015
1,2,4-Trimethylbenzene	0.30	0.013	0.14		mg/Kg	5	1/23/2020 3:45:53 AM	R66015
1,3,5-Trimethylbenzene	0.067	0.014	0.14	J	mg/Kg	5	1/23/2020 3:45:53 AM	R66015
1,2-Dichloroethane (EDC)	ND	0.014	0.14		mg/Kg	5	1/23/2020 3:45:53 AM	R66015
1,2-Dibromoethane (EDB)	ND	0.013	0.14		mg/Kg	5	1/23/2020 3:45:53 AM	R66015
Naphthalene	0.33	0.028	0.28		mg/Kg	5	1/23/2020 3:45:53 AM	R66015
1-Methylnaphthalene	2.0	0.081	0.56		mg/Kg	5	1/23/2020 3:45:53 AM	R66015
2-Methylnaphthalene	2.8	0.061	0.56		mg/Kg	5	1/23/2020 3:45:53 AM	R66015
Acetone	0.31	0.12	2.1	J	mg/Kg	5	1/23/2020 3:45:53 AM	R66015
Bromobenzene	ND	0.013	0.14		mg/Kg	5	1/23/2020 3:45:53 AM	R66015
Bromodichloromethane	ND	0.013	0.14		mg/Kg	5	1/23/2020 3:45:53 AM	R66015

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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-5 5.5-6
Project: Gallup SWMUI Sampling Event
Collection Date: 1/17/2020 8:45:00 AM
Lab ID: 2001739-013 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Bromoform	ND	0.013	0.14		mg/Kg	5	1/23/2020 3:45:53 AM	R66015
Bromomethane	0.067	0.034	0.42	J	mg/Kg	5	1/23/2020 3:45:53 AM	R66015
2-Butanone	0.29	0.16	1.4	J	mg/Kg	5	1/23/2020 3:45:53 AM	R66015
Carbon disulfide	1.0	0.046	1.4	J	mg/Kg	5	1/23/2020 3:45:53 AM	R66015
Carbon tetrachloride	ND	0.013	0.14		mg/Kg	5	1/23/2020 3:45:53 AM	R66015
Chlorobenzene	ND	0.018	0.14		mg/Kg	5	1/23/2020 3:45:53 AM	R66015
Chloroethane	ND	0.021	0.28		mg/Kg	5	1/23/2020 3:45:53 AM	R66015
Chloroform	ND	0.011	0.14		mg/Kg	5	1/23/2020 3:45:53 AM	R66015
Chloromethane	ND	0.013	0.42		mg/Kg	5	1/23/2020 3:45:53 AM	R66015
2-Chlorotoluene	ND	0.012	0.14		mg/Kg	5	1/23/2020 3:45:53 AM	R66015
4-Chlorotoluene	ND	0.011	0.14		mg/Kg	5	1/23/2020 3:45:53 AM	R66015
cis-1,2-DCE	ND	0.019	0.14		mg/Kg	5	1/23/2020 3:45:53 AM	R66015
cis-1,3-Dichloropropene	ND	0.012	0.14		mg/Kg	5	1/23/2020 3:45:53 AM	R66015
1,2-Dibromo-3-chloropropane	ND	0.014	0.28		mg/Kg	5	1/23/2020 3:45:53 AM	R66015
Dibromochloromethane	ND	0.0099	0.14		mg/Kg	5	1/23/2020 3:45:53 AM	R66015
Dibromomethane	ND	0.015	0.14		mg/Kg	5	1/23/2020 3:45:53 AM	R66015
1,2-Dichlorobenzene	ND	0.011	0.14		mg/Kg	5	1/23/2020 3:45:53 AM	R66015
1,3-Dichlorobenzene	ND	0.012	0.14		mg/Kg	5	1/23/2020 3:45:53 AM	R66015
1,4-Dichlorobenzene	ND	0.012	0.14		mg/Kg	5	1/23/2020 3:45:53 AM	R66015
Dichlorodifluoromethane	ND	0.033	0.14		mg/Kg	5	1/23/2020 3:45:53 AM	R66015
1,1-Dichloroethane	ND	0.0090	0.14		mg/Kg	5	1/23/2020 3:45:53 AM	R66015
1,1-Dichloroethene	ND	0.056	0.14		mg/Kg	5	1/23/2020 3:45:53 AM	R66015
1,2-Dichloropropane	ND	0.010	0.14		mg/Kg	5	1/23/2020 3:45:53 AM	R66015
1,3-Dichloropropane	ND	0.015	0.14		mg/Kg	5	1/23/2020 3:45:53 AM	R66015
2,2-Dichloropropane	ND	0.046	0.28		mg/Kg	5	1/23/2020 3:45:53 AM	R66015
1,1-Dichloropropene	ND	0.013	0.28		mg/Kg	5	1/23/2020 3:45:53 AM	R66015
Hexachlorobutadiene	ND	0.014	0.28		mg/Kg	5	1/23/2020 3:45:53 AM	R66015
2-Hexanone	ND	0.023	1.4		mg/Kg	5	1/23/2020 3:45:53 AM	R66015
Isopropylbenzene	ND	0.010	0.14		mg/Kg	5	1/23/2020 3:45:53 AM	R66015
4-Isopropyltoluene	ND	0.012	0.14		mg/Kg	5	1/23/2020 3:45:53 AM	R66015
4-Methyl-2-pentanone	ND	0.026	1.4		mg/Kg	5	1/23/2020 3:45:53 AM	R66015
Methylene chloride	ND	0.025	0.42		mg/Kg	5	1/23/2020 3:45:53 AM	R66015
n-Butylbenzene	0.048	0.013	0.42	J	mg/Kg	5	1/23/2020 3:45:53 AM	R66015
n-Propylbenzene	0.017	0.011	0.14	J	mg/Kg	5	1/23/2020 3:45:53 AM	R66015
sec-Butylbenzene	ND	0.016	0.14		mg/Kg	5	1/23/2020 3:45:53 AM	R66015
Styrene	ND	0.011	0.14		mg/Kg	5	1/23/2020 3:45:53 AM	R66015
tert-Butylbenzene	ND	0.013	0.14		mg/Kg	5	1/23/2020 3:45:53 AM	R66015
1,1,1,2-Tetrachloroethane	ND	0.0095	0.14		mg/Kg	5	1/23/2020 3:45:53 AM	R66015
1,1,2,2-Tetrachloroethane	ND	0.014	0.14		mg/Kg	5	1/23/2020 3:45:53 AM	R66015

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

Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-5 5.5-6
Project: Gallup SWMUI Sampling Event
Collection Date: 1/17/2020 8:45:00 AM
Lab ID: 2001739-013 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Tetrachloroethene (PCE)	ND	0.011	0.14		mg/Kg	5	1/23/2020 3:45:53 AM	R66015
trans-1,2-DCE	ND	0.013	0.14		mg/Kg	5	1/23/2020 3:45:53 AM	R66015
trans-1,3-Dichloropropene	ND	0.015	0.14		mg/Kg	5	1/23/2020 3:45:53 AM	R66015
1,2,3-Trichlorobenzene	ND	0.012	0.28		mg/Kg	5	1/23/2020 3:45:53 AM	R66015
1,2,4-Trichlorobenzene	ND	0.014	0.14		mg/Kg	5	1/23/2020 3:45:53 AM	R66015
1,1,1-Trichloroethane	ND	0.013	0.14		mg/Kg	5	1/23/2020 3:45:53 AM	R66015
1,1,2-Trichloroethane	ND	0.0099	0.14		mg/Kg	5	1/23/2020 3:45:53 AM	R66015
Trichloroethene (TCE)	ND	0.016	0.14		mg/Kg	5	1/23/2020 3:45:53 AM	R66015
Trichlorofluoromethane	ND	0.048	0.14		mg/Kg	5	1/23/2020 3:45:53 AM	R66015
1,2,3-Trichloropropane	ND	0.023	0.28		mg/Kg	5	1/23/2020 3:45:53 AM	R66015
Vinyl chloride	ND	0.0092	0.14		mg/Kg	5	1/23/2020 3:45:53 AM	R66015
Xylenes, Total	0.15	0.035	0.28	J	mg/Kg	5	1/23/2020 3:45:53 AM	R66015
Surr: Dibromofluoromethane	95.2		70-130		%Rec	5	1/23/2020 3:45:53 AM	R66015
Surr: 1,2-Dichloroethane-d4	95.0		70-130		%Rec	5	1/23/2020 3:45:53 AM	R66015
Surr: Toluene-d8	98.9		70-130		%Rec	5	1/23/2020 3:45:53 AM	R66015
Surr: 4-Bromofluorobenzene	88.4		70-130		%Rec	5	1/23/2020 3:45:53 AM	R66015
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **JMR**	
Gasoline Range Organics (GRO)	12	3.0	14	J	mg/Kg	5	1/23/2020 3:45:53 AM	G66015
Surr: BFB	95.2	0	70-130		%Rec	5	1/23/2020 3:45:53 AM	G66015
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/27/2020 12:20:00 PM	R66110
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	8.83				pH Units	1	1/28/2020 9:49:00 AM	R66112

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E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-16 Toe Surf
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 2:05:00 PM
Lab ID: 2001739-014 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	130000	2300	9800		mg/Kg	1000	1/22/2020 6:19:35 PM	49947
Motor Oil Range Organics (MRO)	72000	49000	49000		mg/Kg	1000	1/22/2020 6:19:35 PM	49947
Surr: DNOP	0	0	55.1-146	S	%Rec	1000	1/22/2020 6:19:35 PM	49947
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	5.2	0.036	0.65	H	mg/Kg	20	2/26/2020 1:26:29 PM	50654
MERCURY, TCLP							Analyst: **rde**	
Mercury	ND	0.00075	0.020		mg/L	1	1/24/2020 11:44:41 AM	50014
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.75	5.1		mg/Kg	2	1/23/2020 9:11:46 AM	49956
Arsenic	8.1	2.9	5.1		mg/Kg	2	1/23/2020 9:11:46 AM	49956
Barium	450	0.047	0.20		mg/Kg	2	1/23/2020 9:11:46 AM	49956
Beryllium	0.26	0.019	0.30	J	mg/Kg	2	1/23/2020 9:11:46 AM	49956
Cadmium	ND	0.049	0.20		mg/Kg	2	1/23/2020 9:11:46 AM	49956
Chromium	29	0.16	0.61		mg/Kg	2	1/23/2020 9:11:46 AM	49956
Cobalt	3.2	0.21	0.61		mg/Kg	2	1/23/2020 9:11:46 AM	49956
Lead	6.2	0.49	0.51		mg/Kg	2	1/23/2020 9:11:46 AM	49956
Nickel	9.0	0.30	1.0		mg/Kg	2	1/23/2020 9:11:46 AM	49956
Selenium	9.2	2.6	5.1		mg/Kg	2	1/23/2020 9:11:46 AM	49956
Silver	0.16	0.065	0.51	J	mg/Kg	2	1/23/2020 9:11:46 AM	49956
Vanadium	13	0.14	5.1		mg/Kg	2	1/23/2020 9:11:46 AM	49956
Zinc	250	0.80	5.1		mg/Kg	2	1/23/2020 11:19:31 AM	49956
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/25/2020 12:13:58 PM	50036
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	2.3	6.2	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975
Acenaphthylene	ND	2.8	6.2	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975
Aniline	ND	2.1	6.2	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975
Anthracene	ND	2.4	6.2	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975
Azobenzene	ND	3.2	6.2	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975
Benz(a)anthracene	ND	2.1	6.2	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975
Benzo(a)pyrene	ND	3.4	6.2	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975
Benzo(b)fluoranthene	ND	3.6	6.2	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975
Benzo(g,h,i)perylene	ND	3.2	6.2	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975
Benzo(k)fluoranthene	ND	1.9	6.2	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975
Benzoic acid	ND	4.3	16	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975
Benzyl alcohol	ND	2.6	6.2	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975
Bis(2-chloroethoxy)methane	ND	2.6	6.2	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975

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Qualifiers:

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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-16 Toe Surf
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 2:05:00 PM
Lab ID: 2001739-014 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	3.6	6.2	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975
Bis(2-chloroisopropyl)ether	ND	2.7	6.2	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975
Bis(2-ethylhexyl)phthalate	ND	7.0	16	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975
4-Bromophenyl phenyl ether	ND	3.6	6.2	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975
Butyl benzyl phthalate	ND	2.1	6.2	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975
Carbazole	ND	2.5	6.2	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975
4-Chloro-3-methylphenol	ND	2.5	16	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975
4-Chloroaniline	ND	2.4	16	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975
2-Chloronaphthalene	ND	2.6	7.8	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975
2-Chlorophenol	ND	3.5	6.2	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975
4-Chlorophenyl phenyl ether	ND	2.6	6.2	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975
Chrysene	50	2.4	6.2	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975
Di-n-butyl phthalate	ND	9.3	12	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975
Di-n-octyl phthalate	ND	2.1	12	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975
Dibenz(a,h)anthracene	ND	3.5	6.2	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975
Dibenzofuran	ND	3.1	6.2	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975
1,2-Dichlorobenzene	ND	2.5	6.2	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975
1,3-Dichlorobenzene	ND	2.1	6.2	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975
1,4-Dichlorobenzene	ND	2.6	6.2	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975
3,3´-Dichlorobenzidine	ND	2.7	7.8	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975
Diethyl phthalate	ND	9.5	16	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975
Dimethyl phthalate	ND	2.5	6.2	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975
2,4-Dichlorophenol	ND	2.6	12	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975
2,4-Dimethylphenol	ND	2.6	9.3	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975
4,6-Dinitro-2-methylphenol	ND	2.3	12	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975
2,4-Dinitrophenol	ND	1.8	16	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975
2,4-Dinitrotoluene	ND	3.2	16	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975
2,6-Dinitrotoluene	ND	3.7	16	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975
Fluoranthene	ND	2.4	6.2	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975
Fluorene	28	2.5	6.2	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975
Hexachlorobenzene	ND	2.4	6.2	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975
Hexachlorobutadiene	ND	2.7	6.2	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975
Hexachlorocyclopentadiene	ND	3.0	6.2	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975
Hexachloroethane	ND	2.5	6.2	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975
Indeno(1,2,3-cd)pyrene	ND	3.8	6.2	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975
Isophorone	ND	2.7	12	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975
1-Methylnaphthalene	56	2.9	6.2	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975
2-Methylnaphthalene	54	2.5	6.2	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975
2-Methylphenol	ND	2.6	12	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975

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Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-16 Toe Surf
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 2:05:00 PM
Lab ID: 2001739-014 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	2.3	6.2	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975
N-Nitrosodi-n-propylamine	ND	3.1	6.2	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975
N-Nitrosodiphenylamine	ND	3.2	6.2	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975
Naphthalene	5.2	2.5	6.2	JD	mg/Kg	1	1/31/2020 2:50:10 PM	49975
2-Nitroaniline	ND	3.5	6.2	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975
3-Nitroaniline	ND	3.1	6.2	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975
4-Nitroaniline	ND	4.2	12	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975
Nitrobenzene	ND	2.7	12	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975
2-Nitrophenol	ND	2.6	6.2	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975
4-Nitrophenol	ND	1.8	7.8	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975
Pentachlorophenol	ND	2.8	12	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975
Phenanthrene	210	32	62	D	mg/Kg	10	2/4/2020 5:46:41 PM	49975
Phenol	ND	2.6	6.2	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975
Pyrene	72	2.1	6.2	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975
Pyridine	ND	5.8	12	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975
1,2,4-Trichlorobenzene	ND	2.7	6.2	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975
2,4,5-Trichlorophenol	ND	2.0	6.2	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975
2,4,6-Trichlorophenol	ND	3.1	6.2	D	mg/Kg	1	1/31/2020 2:50:10 PM	49975
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	1	1/31/2020 2:50:10 PM	49975
Surr: Phenol-d5	0		18.5-101	SD	%Rec	1	1/31/2020 2:50:10 PM	49975
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	1	1/31/2020 2:50:10 PM	49975
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	1	1/31/2020 2:50:10 PM	49975
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	1	1/31/2020 2:50:10 PM	49975
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	1	1/31/2020 2:50:10 PM	49975
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Benzene	ND	0.042	0.26		mg/Kg	10	1/23/2020 4:42:29 AM	R66015
Toluene	0.21	0.049	0.51	J	mg/Kg	10	1/23/2020 4:42:29 AM	R66015
Ethylbenzene	0.054	0.030	0.51	J	mg/Kg	10	1/23/2020 4:42:29 AM	R66015
Methyl tert-butyl ether (MTBE)	ND	0.12	0.51		mg/Kg	10	1/23/2020 4:42:29 AM	R66015
1,2,4-Trimethylbenzene	1.2	0.047	0.51		mg/Kg	10	1/23/2020 4:42:29 AM	R66015
1,3,5-Trimethylbenzene	0.36	0.050	0.51	J	mg/Kg	10	1/23/2020 4:42:29 AM	R66015
1,2-Dichloroethane (EDC)	ND	0.052	0.51		mg/Kg	10	1/23/2020 4:42:29 AM	R66015
1,2-Dibromoethane (EDB)	ND	0.047	0.51		mg/Kg	10	1/23/2020 4:42:29 AM	R66015
Naphthalene	2.8	0.10	1.0		mg/Kg	10	1/23/2020 4:42:29 AM	R66015
1-Methylnaphthalene	18	0.29	2.1		mg/Kg	10	1/23/2020 4:42:29 AM	R66015
2-Methylnaphthalene	25	0.22	2.1		mg/Kg	10	1/23/2020 4:42:29 AM	R66015
Acetone	ND	0.42	7.7		mg/Kg	10	1/23/2020 4:42:29 AM	R66015
Bromobenzene	ND	0.049	0.51		mg/Kg	10	1/23/2020 4:42:29 AM	R66015
Bromodichloromethane	ND	0.047	0.51		mg/Kg	10	1/23/2020 4:42:29 AM	R66015

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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-16 Toe Surf
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 2:05:00 PM
Lab ID: 2001739-014 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Bromoform	ND	0.046	0.51		mg/Kg	10	1/23/2020 4:42:29 AM	R66015
Bromomethane	ND	0.12	1.5		mg/Kg	10	1/23/2020 4:42:29 AM	R66015
2-Butanone	ND	0.59	5.1		mg/Kg	10	1/23/2020 4:42:29 AM	R66015
Carbon disulfide	ND	0.17	5.1		mg/Kg	10	1/23/2020 4:42:29 AM	R66015
Carbon tetrachloride	ND	0.049	0.51		mg/Kg	10	1/23/2020 4:42:29 AM	R66015
Chlorobenzene	ND	0.066	0.51		mg/Kg	10	1/23/2020 4:42:29 AM	R66015
Chloroethane	ND	0.076	1.0		mg/Kg	10	1/23/2020 4:42:29 AM	R66015
Chloroform	ND	0.041	0.51		mg/Kg	10	1/23/2020 4:42:29 AM	R66015
Chloromethane	ND	0.049	1.5		mg/Kg	10	1/23/2020 4:42:29 AM	R66015
2-Chlorotoluene	ND	0.045	0.51		mg/Kg	10	1/23/2020 4:42:29 AM	R66015
4-Chlorotoluene	ND	0.042	0.51		mg/Kg	10	1/23/2020 4:42:29 AM	R66015
cis-1,2-DCE	ND	0.070	0.51		mg/Kg	10	1/23/2020 4:42:29 AM	R66015
cis-1,3-Dichloropropene	ND	0.043	0.51		mg/Kg	10	1/23/2020 4:42:29 AM	R66015
1,2-Dibromo-3-chloropropane	ND	0.053	1.0		mg/Kg	10	1/23/2020 4:42:29 AM	R66015
Dibromochloromethane	ND	0.036	0.51		mg/Kg	10	1/23/2020 4:42:29 AM	R66015
Dibromomethane	ND	0.055	0.51		mg/Kg	10	1/23/2020 4:42:29 AM	R66015
1,2-Dichlorobenzene	ND	0.042	0.51		mg/Kg	10	1/23/2020 4:42:29 AM	R66015
1,3-Dichlorobenzene	ND	0.045	0.51		mg/Kg	10	1/23/2020 4:42:29 AM	R66015
1,4-Dichlorobenzene	ND	0.043	0.51		mg/Kg	10	1/23/2020 4:42:29 AM	R66015
Dichlorodifluoromethane	ND	0.12	0.51		mg/Kg	10	1/23/2020 4:42:29 AM	R66015
1,1-Dichloroethane	ND	0.033	0.51		mg/Kg	10	1/23/2020 4:42:29 AM	R66015
1,1-Dichloroethene	ND	0.21	0.51		mg/Kg	10	1/23/2020 4:42:29 AM	R66015
1,2-Dichloropropane	ND	0.037	0.51		mg/Kg	10	1/23/2020 4:42:29 AM	R66015
1,3-Dichloropropane	ND	0.055	0.51		mg/Kg	10	1/23/2020 4:42:29 AM	R66015
2,2-Dichloropropane	ND	0.17	1.0		mg/Kg	10	1/23/2020 4:42:29 AM	R66015
1,1-Dichloropropene	ND	0.047	1.0		mg/Kg	10	1/23/2020 4:42:29 AM	R66015
Hexachlorobutadiene	ND	0.052	1.0		mg/Kg	10	1/23/2020 4:42:29 AM	R66015
2-Hexanone	ND	0.085	5.1		mg/Kg	10	1/23/2020 4:42:29 AM	R66015
Isopropylbenzene	ND	0.037	0.51		mg/Kg	10	1/23/2020 4:42:29 AM	R66015
4-Isopropyltoluene	ND	0.042	0.51		mg/Kg	10	1/23/2020 4:42:29 AM	R66015
4-Methyl-2-pentanone	ND	0.097	5.1		mg/Kg	10	1/23/2020 4:42:29 AM	R66015
Methylene chloride	ND	0.091	1.5		mg/Kg	10	1/23/2020 4:42:29 AM	R66015
n-Butylbenzene	0.17	0.048	1.5	J	mg/Kg	10	1/23/2020 4:42:29 AM	R66015
n-Propylbenzene	0.069	0.041	0.51	J	mg/Kg	10	1/23/2020 4:42:29 AM	R66015
sec-Butylbenzene	ND	0.058	0.51		mg/Kg	10	1/23/2020 4:42:29 AM	R66015
Styrene	ND	0.040	0.51		mg/Kg	10	1/23/2020 4:42:29 AM	R66015
tert-Butylbenzene	ND	0.048	0.51		mg/Kg	10	1/23/2020 4:42:29 AM	R66015
1,1,1,2-Tetrachloroethane	ND	0.035	0.51		mg/Kg	10	1/23/2020 4:42:29 AM	R66015
1,1,2,2-Tetrachloroethane	0.43	0.052	0.51	J	mg/Kg	10	1/23/2020 4:42:29 AM	R66015

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

Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-16 Toe Surf
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 2:05:00 PM
Lab ID: 2001739-014 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Tetrachloroethene (PCE)	ND	0.041	0.51		mg/Kg	10	1/23/2020 4:42:29 AM	R66015
trans-1,2-DCE	ND	0.047	0.51		mg/Kg	10	1/23/2020 4:42:29 AM	R66015
trans-1,3-Dichloropropene	ND	0.054	0.51		mg/Kg	10	1/23/2020 4:42:29 AM	R66015
1,2,3-Trichlorobenzene	ND	0.045	1.0		mg/Kg	10	1/23/2020 4:42:29 AM	R66015
1,2,4-Trichlorobenzene	ND	0.052	0.51		mg/Kg	10	1/23/2020 4:42:29 AM	R66015
1,1,1-Trichloroethane	ND	0.046	0.51		mg/Kg	10	1/23/2020 4:42:29 AM	R66015
1,1,2-Trichloroethane	ND	0.036	0.51		mg/Kg	10	1/23/2020 4:42:29 AM	R66015
Trichloroethene (TCE)	ND	0.059	0.51		mg/Kg	10	1/23/2020 4:42:29 AM	R66015
Trichlorofluoromethane	ND	0.17	0.51		mg/Kg	10	1/23/2020 4:42:29 AM	R66015
1,2,3-Trichloropropane	ND	0.083	1.0		mg/Kg	10	1/23/2020 4:42:29 AM	R66015
Vinyl chloride	ND	0.034	0.51		mg/Kg	10	1/23/2020 4:42:29 AM	R66015
Xylenes, Total	0.71	0.13	1.0	J	mg/Kg	10	1/23/2020 4:42:29 AM	R66015
Surr: Dibromofluoromethane	94.2		70-130		%Rec	10	1/23/2020 4:42:29 AM	R66015
Surr: 1,2-Dichloroethane-d4	93.2		70-130		%Rec	10	1/23/2020 4:42:29 AM	R66015
Surr: Toluene-d8	97.6		70-130		%Rec	10	1/23/2020 4:42:29 AM	R66015
Surr: 4-Bromofluorobenzene	89.3		70-130		%Rec	10	1/23/2020 4:42:29 AM	R66015
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **JMR**	
Gasoline Range Organics (GRO)	25	11	51	J	mg/Kg	10	1/23/2020 4:42:29 AM	G66015
Surr: BFB	94.8	0	70-130		%Rec	10	1/23/2020 4:42:29 AM	G66015
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/27/2020 12:20:00 PM	R6611C
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	4.40				pH Units	1	1/28/2020 9:49:00 AM	R66112

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PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-8 Suface
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 8:20:00 AM
Lab ID: 2001739-015 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	49000	220	930		mg/Kg	100	1/22/2020 6:28:38 PM	49947
Motor Oil Range Organics (MRO)	11000	4700	4700		mg/Kg	100	1/22/2020 6:28:38 PM	49947
Surr: DNOP	0	0	55.1-146	S	%Rec	100	1/22/2020 6:28:38 PM	49947
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	4.3	0.037	0.67	H	mg/Kg	20	3/2/2020 5:14:49 PM	50789
MERCURY, TCLP							Analyst: **rde**	
Mercury	ND	0.00075	0.020		mg/L	1	1/24/2020 11:46:42 AM	50014
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.71	4.8		mg/Kg	2	1/23/2020 9:13:07 AM	49957
Arsenic	7.0	2.8	4.8		mg/Kg	2	1/23/2020 9:13:07 AM	49957
Barium	760	0.22	0.97		mg/Kg	10	1/23/2020 9:57:28 AM	49957
Beryllium	0.32	0.018	0.29		mg/Kg	2	1/23/2020 9:13:07 AM	49957
Cadmium	ND	0.047	0.19		mg/Kg	2	1/23/2020 9:13:07 AM	49957
Chromium	23	0.15	0.58		mg/Kg	2	1/23/2020 9:13:07 AM	49957
Cobalt	3.8	0.20	0.58		mg/Kg	2	1/23/2020 9:13:07 AM	49957
Lead	24	0.47	0.48		mg/Kg	2	1/23/2020 9:13:07 AM	49957
Nickel	32	0.29	0.97		mg/Kg	2	1/23/2020 9:13:07 AM	49957
Selenium	ND	2.4	4.8		mg/Kg	2	1/23/2020 9:13:07 AM	49957
Silver	ND	0.062	0.48		mg/Kg	2	1/23/2020 9:13:07 AM	49957
Vanadium	16	0.13	4.8		mg/Kg	2	1/23/2020 9:13:07 AM	49957
Zinc	1200	3.8	24		mg/Kg	10	1/23/2020 11:20:55 AM	49957
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/25/2020 12:15:21 PM	50036
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	1.8	4.8	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
Acenaphthylene	ND	2.1	4.8	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
Aniline	ND	1.6	4.8	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
Anthracene	ND	1.8	4.8	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
Azobenzene	ND	2.4	4.8	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
Benz(a)anthracene	ND	1.6	4.8	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
Benzo(a)pyrene	ND	2.6	4.8	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
Benzo(b)fluoranthene	ND	2.7	4.8	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
Benzo(g,h,i)perylene	ND	2.5	4.8	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
Benzo(k)fluoranthene	ND	1.4	4.8	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
Benzoic acid	ND	3.3	12	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
Benzyl alcohol	ND	2.0	4.8	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
Bis(2-chloroethoxy)methane	ND	2.0	4.8	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975

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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-8 Suface
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 8:20:00 AM
Lab ID: 2001739-015 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	2.8	4.8	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
Bis(2-chloroisopropyl)ether	ND	2.0	4.8	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
Bis(2-ethylhexyl)phthalate	ND	5.3	12	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
4-Bromophenyl phenyl ether	ND	2.8	4.8	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
Butyl benzyl phthalate	ND	1.6	4.8	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
Carbazole	ND	1.9	4.8	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
4-Chloro-3-methylphenol	ND	1.9	12	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
4-Chloroaniline	ND	1.8	12	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
2-Chloronaphthalene	ND	2.0	6.0	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
2-Chlorophenol	ND	2.7	4.8	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
4-Chlorophenyl phenyl ether	ND	2.0	4.8	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
Chrysene	24	1.9	4.8	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
Di-n-butyl phthalate	ND	7.1	9.5	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
Di-n-octyl phthalate	ND	1.6	9.5	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
Dibenz(a,h)anthracene	ND	2.7	4.8	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
Dibenzofuran	ND	2.4	4.8	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
1,2-Dichlorobenzene	ND	1.9	4.8	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
1,3-Dichlorobenzene	ND	1.6	4.8	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
1,4-Dichlorobenzene	ND	2.0	4.8	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
3,3´-Dichlorobenzidine	ND	2.0	6.0	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
Diethyl phthalate	ND	7.3	12	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
Dimethyl phthalate	ND	1.9	4.8	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
2,4-Dichlorophenol	ND	2.0	9.5	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
2,4-Dimethylphenol	ND	2.0	7.2	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
4,6-Dinitro-2-methylphenol	ND	1.8	9.5	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
2,4-Dinitrophenol	ND	1.4	12	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
2,4-Dinitrotoluene	ND	2.4	12	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
2,6-Dinitrotoluene	ND	2.8	12	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
Fluoranthene	ND	1.8	4.8	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
Fluorene	15	1.9	4.8	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
Hexachlorobenzene	ND	1.9	4.8	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
Hexachlorobutadiene	ND	2.1	4.8	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
Hexachlorocyclopentadiene	ND	2.3	4.8	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
Hexachloroethane	ND	2.0	4.8	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
Indeno(1,2,3-cd)pyrene	ND	2.9	4.8	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
Isophorone	ND	2.1	9.5	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
1-Methylnaphthalene	52	2.2	4.8	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
2-Methylnaphthalene	56	1.9	4.8	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
2-Methylphenol	ND	2.0	9.5	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975

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

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PQL	Practical Quanitative Limit
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P	Sample pH Not In Range
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-8 Suface
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 8:20:00 AM
Lab ID: 2001739-015 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	9.3	1.7	4.8	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
N-Nitrosodi-n-propylamine	ND	2.4	4.8	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
N-Nitrosodiphenylamine	ND	2.5	4.8	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
Naphthalene	9.5	2.0	4.8	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
2-Nitroaniline	ND	2.6	4.8	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
3-Nitroaniline	ND	2.3	4.8	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
4-Nitroaniline	ND	3.2	9.5	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
Nitrobenzene	ND	2.0	9.5	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
2-Nitrophenol	ND	2.0	4.8	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
4-Nitrophenol	ND	1.4	6.0	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
Pentachlorophenol	ND	2.1	9.5	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
Phenanthrene	85	2.4	4.8	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
Phenol	ND	2.0	4.8	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
Pyrene	ND	1.6	4.8	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
Pyridine	ND	4.4	9.5	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
1,2,4-Trichlorobenzene	ND	2.0	4.8	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
2,4,5-Trichlorophenol	ND	1.5	4.8	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
2,4,6-Trichlorophenol	ND	2.4	4.8	D	mg/Kg	1	1/31/2020 3:19:00 PM	49975
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	1	1/31/2020 3:19:00 PM	49975
Surr: Phenol-d5	0		18.5-101	SD	%Rec	1	1/31/2020 3:19:00 PM	49975
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	1	1/31/2020 3:19:00 PM	49975
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	1	1/31/2020 3:19:00 PM	49975
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	1	1/31/2020 3:19:00 PM	49975
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	1	1/31/2020 3:19:00 PM	49975
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Benzene	0.18	0.015	0.092		mg/Kg	5	1/23/2020 5:39:06 AM	R66015
Toluene	1.3	0.017	0.18		mg/Kg	5	1/23/2020 5:39:06 AM	R66015
Ethylbenzene	0.49	0.011	0.18		mg/Kg	5	1/23/2020 5:39:06 AM	R66015
Methyl tert-butyl ether (MTBE)	ND	0.043	0.18		mg/Kg	5	1/23/2020 5:39:06 AM	R66015
1,2,4-Trimethylbenzene	1.5	0.017	0.18		mg/Kg	5	1/23/2020 5:39:06 AM	R66015
1,3,5-Trimethylbenzene	0.51	0.018	0.18		mg/Kg	5	1/23/2020 5:39:06 AM	R66015
1,2-Dichloroethane (EDC)	ND	0.019	0.18		mg/Kg	5	1/23/2020 5:39:06 AM	R66015
1,2-Dibromoethane (EDB)	ND	0.017	0.18		mg/Kg	5	1/23/2020 5:39:06 AM	R66015
Naphthalene	1.9	0.037	0.37		mg/Kg	5	1/23/2020 5:39:06 AM	R66015
1-Methylnaphthalene	4.7	0.11	0.73		mg/Kg	5	1/23/2020 5:39:06 AM	R66015
2-Methylnaphthalene	7.2	0.080	0.73		mg/Kg	5	1/23/2020 5:39:06 AM	R66015
Acetone	ND	0.15	2.7		mg/Kg	5	1/23/2020 5:39:06 AM	R66015
Bromobenzene	ND	0.018	0.18		mg/Kg	5	1/23/2020 5:39:06 AM	R66015
Bromodichloromethane	ND	0.017	0.18		mg/Kg	5	1/23/2020 5:39:06 AM	R66015

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Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-8 Suface
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 8:20:00 AM
Lab ID: 2001739-015 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Bromoform	ND	0.017	0.18		mg/Kg	5	1/23/2020 5:39:06 AM	R66015
Bromomethane	ND	0.044	0.55		mg/Kg	5	1/23/2020 5:39:06 AM	R66015
2-Butanone	1.4	0.21	1.8	J	mg/Kg	5	1/23/2020 5:39:06 AM	R66015
Carbon disulfide	0.54	0.060	1.8	J	mg/Kg	5	1/23/2020 5:39:06 AM	R66015
Carbon tetrachloride	ND	0.017	0.18		mg/Kg	5	1/23/2020 5:39:06 AM	R66015
Chlorobenzene	ND	0.023	0.18		mg/Kg	5	1/23/2020 5:39:06 AM	R66015
Chloroethane	ND	0.027	0.37		mg/Kg	5	1/23/2020 5:39:06 AM	R66015
Chloroform	ND	0.015	0.18		mg/Kg	5	1/23/2020 5:39:06 AM	R66015
Chloromethane	ND	0.018	0.55		mg/Kg	5	1/23/2020 5:39:06 AM	R66015
2-Chlorotoluene	ND	0.016	0.18		mg/Kg	5	1/23/2020 5:39:06 AM	R66015
4-Chlorotoluene	ND	0.015	0.18		mg/Kg	5	1/23/2020 5:39:06 AM	R66015
cis-1,2-DCE	0.061	0.025	0.18	J	mg/Kg	5	1/23/2020 5:39:06 AM	R66015
cis-1,3-Dichloropropene	ND	0.015	0.18		mg/Kg	5	1/23/2020 5:39:06 AM	R66015
1,2-Dibromo-3-chloropropane	ND	0.019	0.37		mg/Kg	5	1/23/2020 5:39:06 AM	R66015
Dibromochloromethane	ND	0.013	0.18		mg/Kg	5	1/23/2020 5:39:06 AM	R66015
Dibromomethane	ND	0.020	0.18		mg/Kg	5	1/23/2020 5:39:06 AM	R66015
1,2-Dichlorobenzene	ND	0.015	0.18		mg/Kg	5	1/23/2020 5:39:06 AM	R66015
1,3-Dichlorobenzene	ND	0.016	0.18		mg/Kg	5	1/23/2020 5:39:06 AM	R66015
1,4-Dichlorobenzene	ND	0.015	0.18		mg/Kg	5	1/23/2020 5:39:06 AM	R66015
Dichlorodifluoromethane	ND	0.042	0.18		mg/Kg	5	1/23/2020 5:39:06 AM	R66015
1,1-Dichloroethane	0.059	0.012	0.18	J	mg/Kg	5	1/23/2020 5:39:06 AM	R66015
1,1-Dichloroethene	ND	0.073	0.18		mg/Kg	5	1/23/2020 5:39:06 AM	R66015
1,2-Dichloropropane	ND	0.013	0.18		mg/Kg	5	1/23/2020 5:39:06 AM	R66015
1,3-Dichloropropane	ND	0.020	0.18		mg/Kg	5	1/23/2020 5:39:06 AM	R66015
2,2-Dichloropropane	ND	0.060	0.37		mg/Kg	5	1/23/2020 5:39:06 AM	R66015
1,1-Dichloropropene	ND	0.017	0.37		mg/Kg	5	1/23/2020 5:39:06 AM	R66015
Hexachlorobutadiene	ND	0.019	0.37		mg/Kg	5	1/23/2020 5:39:06 AM	R66015
2-Hexanone	ND	0.030	1.8		mg/Kg	5	1/23/2020 5:39:06 AM	R66015
Isopropylbenzene	0.099	0.013	0.18	J	mg/Kg	5	1/23/2020 5:39:06 AM	R66015
4-Isopropyltoluene	0.081	0.015	0.18	J	mg/Kg	5	1/23/2020 5:39:06 AM	R66015
4-Methyl-2-pentanone	ND	0.035	1.8		mg/Kg	5	1/23/2020 5:39:06 AM	R66015
Methylene chloride	0.048	0.032	0.55	J	mg/Kg	5	1/23/2020 5:39:06 AM	R66015
n-Butylbenzene	0.18	0.017	0.55	J	mg/Kg	5	1/23/2020 5:39:06 AM	R66015
n-Propylbenzene	0.26	0.015	0.18		mg/Kg	5	1/23/2020 5:39:06 AM	R66015
sec-Butylbenzene	0.11	0.021	0.18	J	mg/Kg	5	1/23/2020 5:39:06 AM	R66015
Styrene	ND	0.014	0.18		mg/Kg	5	1/23/2020 5:39:06 AM	R66015
tert-Butylbenzene	ND	0.017	0.18		mg/Kg	5	1/23/2020 5:39:06 AM	R66015
1,1,1,2-Tetrachloroethane	ND	0.012	0.18		mg/Kg	5	1/23/2020 5:39:06 AM	R66015
1,1,2,2-Tetrachloroethane	ND	0.019	0.18		mg/Kg	5	1/23/2020 5:39:06 AM	R66015

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

Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-8 Suface
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 8:20:00 AM
Lab ID: 2001739-015 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Tetrachloroethene (PCE)	ND	0.015	0.18		mg/Kg	5	1/23/2020 5:39:06 AM	R66015
trans-1,2-DCE	ND	0.017	0.18		mg/Kg	5	1/23/2020 5:39:06 AM	R66015
trans-1,3-Dichloropropene	ND	0.019	0.18		mg/Kg	5	1/23/2020 5:39:06 AM	R66015
1,2,3-Trichlorobenzene	ND	0.016	0.37		mg/Kg	5	1/23/2020 5:39:06 AM	R66015
1,2,4-Trichlorobenzene	ND	0.018	0.18		mg/Kg	5	1/23/2020 5:39:06 AM	R66015
1,1,1-Trichloroethane	ND	0.017	0.18		mg/Kg	5	1/23/2020 5:39:06 AM	R66015
1,1,2-Trichloroethane	ND	0.013	0.18		mg/Kg	5	1/23/2020 5:39:06 AM	R66015
Trichloroethene (TCE)	ND	0.021	0.18		mg/Kg	5	1/23/2020 5:39:06 AM	R66015
Trichlorofluoromethane	ND	0.062	0.18		mg/Kg	5	1/23/2020 5:39:06 AM	R66015
1,2,3-Trichloropropane	ND	0.030	0.37		mg/Kg	5	1/23/2020 5:39:06 AM	R66015
Vinyl chloride	ND	0.012	0.18		mg/Kg	5	1/23/2020 5:39:06 AM	R66015
Xylenes, Total	3.1	0.046	0.37		mg/Kg	5	1/23/2020 5:39:06 AM	R66015
Surr: Dibromofluoromethane	97.0		70-130		%Rec	5	1/23/2020 5:39:06 AM	R66015
Surr: 1,2-Dichloroethane-d4	97.9		70-130		%Rec	5	1/23/2020 5:39:06 AM	R66015
Surr: Toluene-d8	96.6		70-130		%Rec	5	1/23/2020 5:39:06 AM	R66015
Surr: 4-Bromofluorobenzene	88.0		70-130		%Rec	5	1/23/2020 5:39:06 AM	R66015
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **JMR**	
Gasoline Range Organics (GRO)	52	3.9	18		mg/Kg	5	1/23/2020 5:39:06 AM	G66015
Surr: BFB	92.6	0	70-130		%Rec	5	1/23/2020 5:39:06 AM	G66015
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/27/2020 12:20:00 PM	R66110
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	7.54				pH Units	1	1/28/2020 9:49:00 AM	R66112

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

Qualifiers:

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PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-12 Toe 2.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 2:06:00 PM
Lab ID: 2001739-016 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	150	1.8	7.6		mg/Kg	1	1/24/2020 10:38:32 AM	49947
Motor Oil Range Organics (MRO)	48	38	38		mg/Kg	1	1/24/2020 10:38:32 AM	49947
Surr: DNOP	97.0	0	55.1-146		%Rec	1	1/24/2020 10:38:32 AM	49947
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	0.031	0.0018	0.033	JH	mg/Kg	1	2/26/2020 12:27:33 PM	50654
MERCURY, TCLP							Analyst: **rde**	
Mercury	ND	0.00075	0.020		mg/L	1	1/24/2020 11:52:59 AM	50014
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.74	5.0		mg/Kg	2	1/23/2020 9:14:31 AM	49957
Arsenic	3.0	2.9	5.0	J	mg/Kg	2	1/23/2020 9:14:31 AM	49957
Barium	140	0.047	0.20		mg/Kg	2	1/23/2020 9:14:31 AM	49957
Beryllium	1.2	0.018	0.30		mg/Kg	2	1/23/2020 9:14:31 AM	49957
Cadmium	ND	0.049	0.20		mg/Kg	2	1/23/2020 9:14:31 AM	49957
Chromium	12	0.16	0.60		mg/Kg	2	1/23/2020 9:14:31 AM	49957
Cobalt	5.5	0.21	0.60		mg/Kg	2	1/23/2020 9:14:31 AM	49957
Lead	0.64	0.49	0.50		mg/Kg	2	1/23/2020 9:14:31 AM	49957
Nickel	11	0.30	1.0		mg/Kg	2	1/23/2020 9:14:31 AM	49957
Selenium	ND	2.5	5.0		mg/Kg	2	1/23/2020 9:14:31 AM	49957
Silver	ND	0.064	0.50		mg/Kg	2	1/23/2020 9:14:31 AM	49957
Vanadium	22	0.13	5.0		mg/Kg	2	1/23/2020 9:14:31 AM	49957
Zinc	19	0.79	5.0		mg/Kg	2	1/23/2020 11:22:19 AM	49957
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/25/2020 12:16:44 PM	50036
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.14	0.36	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
Acenaphthylene	ND	0.16	0.36	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
Aniline	ND	0.12	0.36	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
Anthracene	ND	0.14	0.36	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
Azobenzene	ND	0.18	0.36	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
Benz(a)anthracene	ND	0.12	0.36	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
Benzo(a)pyrene	ND	0.19	0.36	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
Benzo(b)fluoranthene	ND	0.21	0.36	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
Benzo(g,h,i)perylene	ND	0.19	0.36	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
Benzo(k)fluoranthene	ND	0.11	0.36	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
Benzoic acid	ND	0.25	0.90	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
Benzyl alcohol	ND	0.15	0.36	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
Bis(2-chloroethoxy)methane	ND	0.15	0.36	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975

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

Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-12 Toe 2.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 2:06:00 PM
Lab ID: 2001739-016 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.21	0.36	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
Bis(2-chloroisopropyl)ether	ND	0.15	0.36	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
Bis(2-ethylhexyl)phthalate	ND	0.40	0.90	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
4-Bromophenyl phenyl ether	ND	0.21	0.36	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
Butyl benzyl phthalate	ND	0.12	0.36	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
Carbazole	ND	0.14	0.36	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
4-Chloro-3-methylphenol	ND	0.14	0.90	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
4-Chloroaniline	ND	0.14	0.90	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
2-Chloronaphthalene	ND	0.15	0.45	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
2-Chlorophenol	ND	0.20	0.36	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
4-Chlorophenyl phenyl ether	ND	0.15	0.36	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
Chrysene	ND	0.14	0.36	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
Di-n-butyl phthalate	ND	0.54	0.72	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
Di-n-octyl phthalate	ND	0.12	0.72	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
Dibenz(a,h)anthracene	ND	0.20	0.36	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
Dibenzofuran	ND	0.18	0.36	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
1,2-Dichlorobenzene	ND	0.14	0.36	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
1,3-Dichlorobenzene	ND	0.12	0.36	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
1,4-Dichlorobenzene	ND	0.15	0.36	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
3,3´-Dichlorobenzidine	ND	0.15	0.45	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
Diethyl phthalate	ND	0.55	0.90	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
Dimethyl phthalate	ND	0.15	0.36	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
2,4-Dichlorophenol	ND	0.15	0.72	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
2,4-Dimethylphenol	ND	0.15	0.54	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
4,6-Dinitro-2-methylphenol	ND	0.13	0.72	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
2,4-Dinitrophenol	ND	0.10	0.90	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
2,4-Dinitrotoluene	ND	0.18	0.90	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
2,6-Dinitrotoluene	ND	0.21	0.90	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
Fluoranthene	ND	0.14	0.36	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
Fluorene	ND	0.14	0.36	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
Hexachlorobenzene	ND	0.14	0.36	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
Hexachlorobutadiene	ND	0.16	0.36	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
Hexachlorocyclopentadiene	ND	0.17	0.36	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
Hexachloroethane	ND	0.15	0.36	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
Indeno(1,2,3-cd)pyrene	ND	0.22	0.36	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
Isophorone	ND	0.16	0.72	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
1-Methylnaphthalene	ND	0.17	0.36	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
2-Methylnaphthalene	ND	0.15	0.36	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
2-Methylphenol	ND	0.15	0.72	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975

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

Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-12 Toe 2.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 2:06:00 PM
Lab ID: 2001739-016 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.13	0.36	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
N-Nitrosodi-n-propylamine	ND	0.18	0.36	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
N-Nitrosodiphenylamine	ND	0.19	0.36	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
Naphthalene	ND	0.15	0.36	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
2-Nitroaniline	ND	0.20	0.36	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
3-Nitroaniline	ND	0.18	0.36	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
4-Nitroaniline	ND	0.24	0.72	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
Nitrobenzene	ND	0.15	0.72	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
2-Nitrophenol	ND	0.15	0.36	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
4-Nitrophenol	ND	0.11	0.45	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
Pentachlorophenol	ND	0.16	0.72	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
Phenanthrene	ND	0.18	0.36	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
Phenol	ND	0.15	0.36	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
Pyrene	ND	0.12	0.36	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
Pyridine	ND	0.33	0.72	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
1,2,4-Trichlorobenzene	ND	0.15	0.36	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
2,4,5-Trichlorophenol	ND	0.12	0.36	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
2,4,6-Trichlorophenol	ND	0.18	0.36	D	mg/Kg	1	1/31/2020 3:47:51 PM	49975
Surr: 2-Fluorophenol	53.4		26.7-85.9	D	%Rec	1	1/31/2020 3:47:51 PM	49975
Surr: Phenol-d5	63.3		18.5-101	D	%Rec	1	1/31/2020 3:47:51 PM	49975
Surr: 2,4,6-Tribromophenol	54.0		35.8-85.6	D	%Rec	1	1/31/2020 3:47:51 PM	49975
Surr: Nitrobenzene-d5	56.2		40.8-95.2	D	%Rec	1	1/31/2020 3:47:51 PM	49975
Surr: 2-Fluorobiphenyl	71.8		34.7-85.2	D	%Rec	1	1/31/2020 3:47:51 PM	49975
Surr: 4-Terphenyl-d14	74.1		37.4-91.3	D	%Rec	1	1/31/2020 3:47:51 PM	49975
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Benzene	ND	0.0021	0.013		mg/Kg	1	1/23/2020 6:35:45 AM	R66015
Toluene	ND	0.0024	0.025		mg/Kg	1	1/23/2020 6:35:45 AM	R66015
Ethylbenzene	ND	0.0015	0.025		mg/Kg	1	1/23/2020 6:35:45 AM	R66015
Methyl tert-butyl ether (MTBE)	ND	0.0060	0.025		mg/Kg	1	1/23/2020 6:35:45 AM	R66015
1,2,4-Trimethylbenzene	0.0062	0.0023	0.025	J	mg/Kg	1	1/23/2020 6:35:45 AM	R66015
1,3,5-Trimethylbenzene	ND	0.0024	0.025		mg/Kg	1	1/23/2020 6:35:45 AM	R66015
1,2-Dichloroethane (EDC)	ND	0.0026	0.025		mg/Kg	1	1/23/2020 6:35:45 AM	R66015
1,2-Dibromoethane (EDB)	ND	0.0023	0.025		mg/Kg	1	1/23/2020 6:35:45 AM	R66015
Naphthalene	ND	0.0050	0.050		mg/Kg	1	1/23/2020 6:35:45 AM	R66015
1-Methylnaphthalene	0.015	0.014	0.10	J	mg/Kg	1	1/23/2020 6:35:45 AM	R66015
2-Methylnaphthalene	0.026	0.011	0.10	J	mg/Kg	1	1/23/2020 6:35:45 AM	R66015
Acetone	0.075	0.021	0.38	J	mg/Kg	1	1/23/2020 6:35:45 AM	R66015
Bromobenzene	ND	0.0024	0.025		mg/Kg	1	1/23/2020 6:35:45 AM	R66015
Bromodichloromethane	ND	0.0023	0.025		mg/Kg	1	1/23/2020 6:35:45 AM	R66015

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

Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-12 Toe 2.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 2:06:00 PM
Lab ID: 2001739-016 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Bromoform	ND	0.0023	0.025		mg/Kg	1	1/23/2020 6:35:45 AM	R66015
Bromomethane	0.013	0.0061	0.076	J	mg/Kg	1	1/23/2020 6:35:45 AM	R66015
2-Butanone	ND	0.029	0.25		mg/Kg	1	1/23/2020 6:35:45 AM	R66015
Carbon disulfide	ND	0.0083	0.25		mg/Kg	1	1/23/2020 6:35:45 AM	R66015
Carbon tetrachloride	ND	0.0024	0.025		mg/Kg	1	1/23/2020 6:35:45 AM	R66015
Chlorobenzene	ND	0.0032	0.025		mg/Kg	1	1/23/2020 6:35:45 AM	R66015
Chloroethane	ND	0.0037	0.050		mg/Kg	1	1/23/2020 6:35:45 AM	R66015
Chloroform	ND	0.0020	0.025		mg/Kg	1	1/23/2020 6:35:45 AM	R66015
Chloromethane	ND	0.0024	0.076		mg/Kg	1	1/23/2020 6:35:45 AM	R66015
2-Chlorotoluene	ND	0.0022	0.025		mg/Kg	1	1/23/2020 6:35:45 AM	R66015
4-Chlorotoluene	ND	0.0021	0.025		mg/Kg	1	1/23/2020 6:35:45 AM	R66015
cis-1,2-DCE	ND	0.0034	0.025		mg/Kg	1	1/23/2020 6:35:45 AM	R66015
cis-1,3-Dichloropropene	ND	0.0021	0.025		mg/Kg	1	1/23/2020 6:35:45 AM	R66015
1,2-Dibromo-3-chloropropane	ND	0.0026	0.050		mg/Kg	1	1/23/2020 6:35:45 AM	R66015
Dibromochloromethane	ND	0.0018	0.025		mg/Kg	1	1/23/2020 6:35:45 AM	R66015
Dibromomethane	ND	0.0027	0.025		mg/Kg	1	1/23/2020 6:35:45 AM	R66015
1,2-Dichlorobenzene	ND	0.0021	0.025		mg/Kg	1	1/23/2020 6:35:45 AM	R66015
1,3-Dichlorobenzene	ND	0.0022	0.025		mg/Kg	1	1/23/2020 6:35:45 AM	R66015
1,4-Dichlorobenzene	ND	0.0021	0.025		mg/Kg	1	1/23/2020 6:35:45 AM	R66015
Dichlorodifluoromethane	ND	0.0058	0.025		mg/Kg	1	1/23/2020 6:35:45 AM	R66015
1,1-Dichloroethane	ND	0.0016	0.025		mg/Kg	1	1/23/2020 6:35:45 AM	R66015
1,1-Dichloroethene	ND	0.010	0.025		mg/Kg	1	1/23/2020 6:35:45 AM	R66015
1,2-Dichloropropane	ND	0.0018	0.025		mg/Kg	1	1/23/2020 6:35:45 AM	R66015
1,3-Dichloropropane	ND	0.0027	0.025		mg/Kg	1	1/23/2020 6:35:45 AM	R66015
2,2-Dichloropropane	ND	0.0082	0.050		mg/Kg	1	1/23/2020 6:35:45 AM	R66015
1,1-Dichloropropene	ND	0.0023	0.050		mg/Kg	1	1/23/2020 6:35:45 AM	R66015
Hexachlorobutadiene	ND	0.0026	0.050		mg/Kg	1	1/23/2020 6:35:45 AM	R66015
2-Hexanone	ND	0.0042	0.25		mg/Kg	1	1/23/2020 6:35:45 AM	R66015
Isopropylbenzene	ND	0.0018	0.025		mg/Kg	1	1/23/2020 6:35:45 AM	R66015
4-Isopropyltoluene	ND	0.0021	0.025		mg/Kg	1	1/23/2020 6:35:45 AM	R66015
4-Methyl-2-pentanone	ND	0.0048	0.25		mg/Kg	1	1/23/2020 6:35:45 AM	R66015
Methylene chloride	0.0074	0.0045	0.076	J	mg/Kg	1	1/23/2020 6:35:45 AM	R66015
n-Butylbenzene	ND	0.0024	0.076		mg/Kg	1	1/23/2020 6:35:45 AM	R66015
n-Propylbenzene	ND	0.0020	0.025		mg/Kg	1	1/23/2020 6:35:45 AM	R66015
sec-Butylbenzene	ND	0.0028	0.025		mg/Kg	1	1/23/2020 6:35:45 AM	R66015
Styrene	ND	0.0020	0.025		mg/Kg	1	1/23/2020 6:35:45 AM	R66015
tert-Butylbenzene	ND	0.0024	0.025		mg/Kg	1	1/23/2020 6:35:45 AM	R66015
1,1,1,2-Tetrachloroethane	ND	0.0017	0.025		mg/Kg	1	1/23/2020 6:35:45 AM	R66015
1,1,2,2-Tetrachloroethane	0.0081	0.0026	0.025	J	mg/Kg	1	1/23/2020 6:35:45 AM	R66015

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

Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-12 Toe 2.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 2:06:00 PM
Lab ID: 2001739-016 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Tetrachloroethene (PCE)	ND	0.0020	0.025		mg/Kg	1	1/23/2020 6:35:45 AM	R66015
trans-1,2-DCE	ND	0.0023	0.025		mg/Kg	1	1/23/2020 6:35:45 AM	R66015
trans-1,3-Dichloropropene	ND	0.0027	0.025		mg/Kg	1	1/23/2020 6:35:45 AM	R66015
1,2,3-Trichlorobenzene	ND	0.0022	0.050		mg/Kg	1	1/23/2020 6:35:45 AM	R66015
1,2,4-Trichlorobenzene	ND	0.0025	0.025		mg/Kg	1	1/23/2020 6:35:45 AM	R66015
1,1,1-Trichloroethane	ND	0.0023	0.025		mg/Kg	1	1/23/2020 6:35:45 AM	R66015
1,1,2-Trichloroethane	ND	0.0018	0.025		mg/Kg	1	1/23/2020 6:35:45 AM	R66015
Trichloroethene (TCE)	ND	0.0029	0.025		mg/Kg	1	1/23/2020 6:35:45 AM	R66015
Trichlorofluoromethane	ND	0.0086	0.025		mg/Kg	1	1/23/2020 6:35:45 AM	R66015
1,2,3-Trichloropropane	ND	0.0041	0.050		mg/Kg	1	1/23/2020 6:35:45 AM	R66015
Vinyl chloride	ND	0.0016	0.025		mg/Kg	1	1/23/2020 6:35:45 AM	R66015
Xylenes, Total	ND	0.0064	0.050		mg/Kg	1	1/23/2020 6:35:45 AM	R66015
Surr: Dibromofluoromethane	91.6		70-130		%Rec	1	1/23/2020 6:35:45 AM	R66015
Surr: 1,2-Dichloroethane-d4	87.5		70-130		%Rec	1	1/23/2020 6:35:45 AM	R66015
Surr: Toluene-d8	96.3		70-130		%Rec	1	1/23/2020 6:35:45 AM	R66015
Surr: 4-Bromofluorobenzene	88.5		70-130		%Rec	1	1/23/2020 6:35:45 AM	R66015
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **JMR**	
Gasoline Range Organics (GRO)	ND	0.54	2.5		mg/Kg	1	1/23/2020 6:35:45 AM	G66015
Surr: BFB	91.0	0	70-130		%Rec	1	1/23/2020 6:35:45 AM	G66015
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/27/2020 12:20:00 PM	R6611C
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	8.72				pH Units	1	1/28/2020 9:49:00 AM	R66112

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S	% Recovery outside of range due to dilution or matrix
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E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-19 Toe Sludge 0.5-6 ft
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 10:10:00 AM
Lab ID: 2001739-017 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	22000	210	890		mg/Kg	100	1/22/2020 6:46:44 PM	49947
Motor Oil Range Organics (MRO)	4500	4500	4500		mg/Kg	100	1/22/2020 6:46:44 PM	49947
Surr: DNOP	0	0	55.1-146	S	%Rec	100	1/22/2020 6:46:44 PM	49947
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	9.9	0.092	1.7	H	mg/Kg	50	3/2/2020 5:24:59 PM	50789
MERCURY, TCLP							Analyst: **rde**	
Mercury	ND	0.00075	0.020		mg/L	1	1/24/2020 11:55:01 AM	50014
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.72	4.9		mg/Kg	2	1/23/2020 9:15:52 AM	49957
Arsenic	14	2.8	4.9		mg/Kg	2	1/23/2020 9:15:52 AM	49957
Barium	270	0.045	0.19		mg/Kg	2	1/23/2020 9:15:52 AM	49957
Beryllium	0.36	0.018	0.29		mg/Kg	2	1/23/2020 9:15:52 AM	49957
Cadmium	0.37	0.047	0.19		mg/Kg	2	1/23/2020 9:15:52 AM	49957
Chromium	42	0.16	0.58		mg/Kg	2	1/23/2020 9:15:52 AM	49957
Cobalt	5.7	0.21	0.58		mg/Kg	2	1/23/2020 9:15:52 AM	49957
Lead	62	0.47	0.49		mg/Kg	2	1/23/2020 9:15:52 AM	49957
Nickel	48	0.29	0.97		mg/Kg	2	1/23/2020 9:15:52 AM	49957
Selenium	2.5	2.4	4.9	J	mg/Kg	2	1/23/2020 9:15:52 AM	49957
Silver	ND	0.062	0.49		mg/Kg	2	1/23/2020 9:15:52 AM	49957
Vanadium	19	0.13	4.9		mg/Kg	2	1/23/2020 9:15:52 AM	49957
Zinc	2100	3.9	24		mg/Kg	10	1/23/2020 11:23:42 AM	49957
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/25/2020 12:22:24 PM	50036
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	1.8	4.9	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
Acenaphthylene	ND	2.2	4.9	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
Aniline	ND	1.7	4.9	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
Anthracene	ND	1.9	4.9	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
Azobenzene	ND	2.5	4.9	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
Benz(a)anthracene	ND	1.7	4.9	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
Benzo(a)pyrene	ND	2.6	4.9	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
Benzo(b)fluoranthene	ND	2.8	4.9	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
Benzo(g,h,i)perylene	ND	2.5	4.9	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
Benzo(k)fluoranthene	ND	1.5	4.9	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
Benzoic acid	ND	3.4	12	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
Benzyl alcohol	ND	2.0	4.9	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
Bis(2-chloroethoxy)methane	ND	2.0	4.9	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975

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D	Sample Diluted Due to Matrix
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PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
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E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-19 Toe Sludge 0.5-6 ft
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 10:10:00 AM
Lab ID: 2001739-017 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	2.8	4.9	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
Bis(2-chloroisopropyl)ether	ND	2.1	4.9	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
Bis(2-ethylhexyl)phthalate	ND	5.4	12	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
4-Bromophenyl phenyl ether	ND	2.8	4.9	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
Butyl benzyl phthalate	ND	1.6	4.9	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
Carbazole	ND	1.9	4.9	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
4-Chloro-3-methylphenol	ND	1.9	12	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
4-Chloroaniline	ND	1.9	12	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
2-Chloronaphthalene	ND	2.0	6.1	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
2-Chlorophenol	ND	2.7	4.9	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
4-Chlorophenyl phenyl ether	ND	2.0	4.9	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
Chrysene	ND	1.9	4.9	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
Di-n-butyl phthalate	ND	7.2	9.7	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
Di-n-octyl phthalate	ND	1.6	9.7	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
Dibenz(a,h)anthracene	ND	2.7	4.9	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
Dibenzofuran	ND	2.4	4.9	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
1,2-Dichlorobenzene	ND	1.9	4.9	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
1,3-Dichlorobenzene	ND	1.6	4.9	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
1,4-Dichlorobenzene	ND	2.0	4.9	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
3,3´-Dichlorobenzidine	ND	2.1	6.1	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
Diethyl phthalate	ND	7.4	12	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
Dimethyl phthalate	ND	2.0	4.9	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
2,4-Dichlorophenol	ND	2.1	9.7	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
2,4-Dimethylphenol	ND	2.0	7.3	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
4,6-Dinitro-2-methylphenol	ND	1.8	9.7	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
2,4-Dinitrophenol	ND	1.4	12	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
2,4-Dinitrotoluene	ND	2.5	12	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
2,6-Dinitrotoluene	ND	2.9	12	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
Fluoranthene	ND	1.9	4.9	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
Fluorene	16	1.9	4.9	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
Hexachlorobenzene	ND	1.9	4.9	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
Hexachlorobutadiene	ND	2.1	4.9	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
Hexachlorocyclopentadiene	ND	2.3	4.9	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
Hexachloroethane	ND	2.0	4.9	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
Indeno(1,2,3-cd)pyrene	ND	3.0	4.9	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
Isophorone	ND	2.1	9.7	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
1-Methylnaphthalene	62	2.3	4.9	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
2-Methylnaphthalene	89	2.0	4.9	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
2-Methylphenol	ND	2.0	9.7	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975

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

Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-19 Toe Sludge 0.5-6 ft
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 10:10:00 AM
Lab ID: 2001739-017 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	9.9	1.8	4.9	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
N-Nitrosodi-n-propylamine	ND	2.4	4.9	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
N-Nitrosodiphenylamine	ND	2.5	4.9	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
Naphthalene	20	2.0	4.9	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
2-Nitroaniline	ND	2.7	4.9	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
3-Nitroaniline	ND	2.4	4.9	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
4-Nitroaniline	ND	3.3	9.7	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
Nitrobenzene	ND	2.1	9.7	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
2-Nitrophenol	ND	2.0	4.9	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
4-Nitrophenol	ND	1.4	6.1	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
Pentachlorophenol	ND	2.2	9.7	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
Phenanthrene	54	2.5	4.9	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
Phenol	6.0	2.1	4.9	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
Pyrene	ND	1.6	4.9	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
Pyridine	ND	4.5	9.7	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
1,2,4-Trichlorobenzene	ND	2.1	4.9	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
2,4,5-Trichlorophenol	ND	1.6	4.9	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
2,4,6-Trichlorophenol	ND	2.4	4.9	D	mg/Kg	1	1/31/2020 4:16:46 PM	49975
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	1	1/31/2020 4:16:46 PM	49975
Surr: Phenol-d5	0		18.5-101	SD	%Rec	1	1/31/2020 4:16:46 PM	49975
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	1	1/31/2020 4:16:46 PM	49975
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	1	1/31/2020 4:16:46 PM	49975
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	1	1/31/2020 4:16:46 PM	49975
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	1	1/31/2020 4:16:46 PM	49975
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Benzene	2.4	0.061	0.37		mg/Kg	20	1/22/2020 2:28:48 PM	R66015
Toluene	11	0.071	0.75		mg/Kg	20	1/22/2020 2:28:48 PM	R66015
Ethylbenzene	2.9	0.043	0.75		mg/Kg	20	1/22/2020 2:28:48 PM	R66015
Methyl tert-butyl ether (MTBE)	0.23	0.18	0.75	J	mg/Kg	20	1/22/2020 2:28:48 PM	R66015
1,2,4-Trimethylbenzene	6.3	0.068	0.75		mg/Kg	20	1/22/2020 2:28:48 PM	R66015
1,3,5-Trimethylbenzene	2.0	0.072	0.75		mg/Kg	20	1/22/2020 2:28:48 PM	R66015
1,2-Dichloroethane (EDC)	ND	0.076	0.75		mg/Kg	20	1/22/2020 2:28:48 PM	R66015
1,2-Dibromoethane (EDB)	ND	0.068	0.75		mg/Kg	20	1/22/2020 2:28:48 PM	R66015
Naphthalene	7.5	0.15	1.5		mg/Kg	20	1/22/2020 2:28:48 PM	R66015
1-Methylnaphthalene	14	0.43	3.0		mg/Kg	20	1/22/2020 2:28:48 PM	R66015
2-Methylnaphthalene	22	0.33	3.0		mg/Kg	20	1/22/2020 2:28:48 PM	R66015
Acetone	0.83	0.62	11	J	mg/Kg	20	1/22/2020 2:28:48 PM	R66015
Bromobenzene	ND	0.072	0.75		mg/Kg	20	1/22/2020 2:28:48 PM	R66015
Bromodichloromethane	ND	0.068	0.75		mg/Kg	20	1/22/2020 2:28:48 PM	R66015

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Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-19 Toe Sludge 0.5-6 ft
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 10:10:00 AM
Lab ID: 2001739-017 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Bromoform	ND	0.067	0.75		mg/Kg	20	1/22/2020 2:28:48 PM	R66015
Bromomethane	0.36	0.18	2.2	J	mg/Kg	20	1/22/2020 2:28:48 PM	R66015
2-Butanone	ND	0.86	7.5		mg/Kg	20	1/22/2020 2:28:48 PM	R66015
Carbon disulfide	1.5	0.25	7.5	J	mg/Kg	20	1/22/2020 2:28:48 PM	R66015
Carbon tetrachloride	ND	0.071	0.75		mg/Kg	20	1/22/2020 2:28:48 PM	R66015
Chlorobenzene	ND	0.096	0.75		mg/Kg	20	1/22/2020 2:28:48 PM	R66015
Chloroethane	ND	0.11	1.5		mg/Kg	20	1/22/2020 2:28:48 PM	R66015
Chloroform	0.16	0.060	0.75	J	mg/Kg	20	1/22/2020 2:28:48 PM	R66015
Chloromethane	ND	0.071	2.2		mg/Kg	20	1/22/2020 2:28:48 PM	R66015
2-Chlorotoluene	ND	0.065	0.75		mg/Kg	20	1/22/2020 2:28:48 PM	R66015
4-Chlorotoluene	ND	0.061	0.75		mg/Kg	20	1/22/2020 2:28:48 PM	R66015
cis-1,2-DCE	0.30	0.10	0.75	J	mg/Kg	20	1/22/2020 2:28:48 PM	R66015
cis-1,3-Dichloropropene	ND	0.063	0.75		mg/Kg	20	1/22/2020 2:28:48 PM	R66015
1,2-Dibromo-3-chloropropane	ND	0.076	1.5		mg/Kg	20	1/22/2020 2:28:48 PM	R66015
Dibromochloromethane	ND	0.053	0.75		mg/Kg	20	1/22/2020 2:28:48 PM	R66015
Dibromomethane	ND	0.080	0.75		mg/Kg	20	1/22/2020 2:28:48 PM	R66015
1,2-Dichlorobenzene	ND	0.061	0.75		mg/Kg	20	1/22/2020 2:28:48 PM	R66015
1,3-Dichlorobenzene	ND	0.065	0.75		mg/Kg	20	1/22/2020 2:28:48 PM	R66015
1,4-Dichlorobenzene	ND	0.062	0.75		mg/Kg	20	1/22/2020 2:28:48 PM	R66015
Dichlorodifluoromethane	ND	0.17	0.75		mg/Kg	20	1/22/2020 2:28:48 PM	R66015
1,1-Dichloroethane	0.22	0.048	0.75	J	mg/Kg	20	1/22/2020 2:28:48 PM	R66015
1,1-Dichloroethene	ND	0.30	0.75		mg/Kg	20	1/22/2020 2:28:48 PM	R66015
1,2-Dichloropropane	ND	0.054	0.75		mg/Kg	20	1/22/2020 2:28:48 PM	R66015
1,3-Dichloropropane	ND	0.081	0.75		mg/Kg	20	1/22/2020 2:28:48 PM	R66015
2,2-Dichloropropane	ND	0.24	1.5		mg/Kg	20	1/22/2020 2:28:48 PM	R66015
1,1-Dichloropropene	ND	0.068	1.5		mg/Kg	20	1/22/2020 2:28:48 PM	R66015
Hexachlorobutadiene	ND	0.076	1.5		mg/Kg	20	1/22/2020 2:28:48 PM	R66015
2-Hexanone	1.0	0.12	7.5	J	mg/Kg	20	1/22/2020 2:28:48 PM	R66015
Isopropylbenzene	0.41	0.054	0.75	J	mg/Kg	20	1/22/2020 2:28:48 PM	R66015
4-Isopropyltoluene	0.18	0.062	0.75	J	mg/Kg	20	1/22/2020 2:28:48 PM	R66015
4-Methyl-2-pentanone	ND	0.14	7.5		mg/Kg	20	1/22/2020 2:28:48 PM	R66015
Methylene chloride	ND	0.13	2.2		mg/Kg	20	1/22/2020 2:28:48 PM	R66015
n-Butylbenzene	0.56	0.070	2.2	J	mg/Kg	20	1/22/2020 2:28:48 PM	R66015
n-Propylbenzene	1.1	0.059	0.75		mg/Kg	20	1/22/2020 2:28:48 PM	R66015
sec-Butylbenzene	0.23	0.084	0.75	J	mg/Kg	20	1/22/2020 2:28:48 PM	R66015
Styrene	ND	0.059	0.75		mg/Kg	20	1/22/2020 2:28:48 PM	R66015
tert-Butylbenzene	ND	0.070	0.75		mg/Kg	20	1/22/2020 2:28:48 PM	R66015
1,1,1,2-Tetrachloroethane	ND	0.050	0.75		mg/Kg	20	1/22/2020 2:28:48 PM	R66015
1,1,2,2-Tetrachloroethane	0.42	0.076	0.75	J	mg/Kg	20	1/22/2020 2:28:48 PM	R66015

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

Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-19 Toe Sludge 0.5-6 ft
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 10:10:00 AM
Lab ID: 2001739-017 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Tetrachloroethene (PCE)	ND	0.060	0.75		mg/Kg	20	1/22/2020 2:28:48 PM	R66015
trans-1,2-DCE	ND	0.068	0.75		mg/Kg	20	1/22/2020 2:28:48 PM	R66015
trans-1,3-Dichloropropene	ND	0.079	0.75		mg/Kg	20	1/22/2020 2:28:48 PM	R66015
1,2,3-Trichlorobenzene	ND	0.065	1.5		mg/Kg	20	1/22/2020 2:28:48 PM	R66015
1,2,4-Trichlorobenzene	ND	0.075	0.75		mg/Kg	20	1/22/2020 2:28:48 PM	R66015
1,1,1-Trichloroethane	ND	0.067	0.75		mg/Kg	20	1/22/2020 2:28:48 PM	R66015
1,1,2-Trichloroethane	ND	0.053	0.75		mg/Kg	20	1/22/2020 2:28:48 PM	R66015
Trichloroethene (TCE)	ND	0.086	0.75		mg/Kg	20	1/22/2020 2:28:48 PM	R66015
Trichlorofluoromethane	ND	0.25	0.75		mg/Kg	20	1/22/2020 2:28:48 PM	R66015
1,2,3-Trichloropropane	ND	0.12	1.5		mg/Kg	20	1/22/2020 2:28:48 PM	R66015
Vinyl chloride	ND	0.049	0.75		mg/Kg	20	1/22/2020 2:28:48 PM	R66015
Xylenes, Total	19	0.19	1.5		mg/Kg	20	1/22/2020 2:28:48 PM	R66015
Surr: Dibromofluoromethane	97.9		70-130		%Rec	20	1/22/2020 2:28:48 PM	R66015
Surr: 1,2-Dichloroethane-d4	96.8		70-130		%Rec	20	1/22/2020 2:28:48 PM	R66015
Surr: Toluene-d8	103		70-130		%Rec	20	1/22/2020 2:28:48 PM	R66015
Surr: 4-Bromofluorobenzene	89.5		70-130		%Rec	20	1/22/2020 2:28:48 PM	R66015
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **JMR**	
Gasoline Range Organics (GRO)	250	16	75		mg/Kg	20	1/22/2020 2:28:48 PM	G66015
Surr: BFB	97.3	0	70-130		%Rec	20	1/22/2020 2:28:48 PM	G66015
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/27/2020 12:20:00 PM	R66110
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	7.52				pH Units	1	1/28/2020 9:49:00 AM	R66112

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PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-11 Surface
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 10:00:00 AM
Lab ID: 2001739-018 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	92000	2200	9400		mg/Kg	1000	1/22/2020 6:55:46 PM	49947
Motor Oil Range Organics (MRO)	52000	47000	47000		mg/Kg	1000	1/22/2020 6:55:46 PM	49947
Surr: DNOP	0	0	55.1-146	S	%Rec	1000	1/22/2020 6:55:46 PM	49947
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	9.6	0.092	1.7	H	mg/Kg	50	3/2/2020 5:27:32 PM	50789
MERCURY, TCLP							Analyst: **rde**	
Mercury	ND	0.00075	0.020		mg/L	1	1/24/2020 11:57:04 AM	50014
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	62	0.75	5.1		mg/Kg	2	1/23/2020 9:17:14 AM	49957
Arsenic	30	2.9	5.1		mg/Kg	2	1/23/2020 9:17:14 AM	49957
Barium	590	0.12	0.51		mg/Kg	5	1/23/2020 10:00:17 AM	49957
Beryllium	0.47	0.019	0.30		mg/Kg	2	1/23/2020 9:17:14 AM	49957
Cadmium	ND	0.049	0.20		mg/Kg	2	1/23/2020 9:17:14 AM	49957
Chromium	37	0.16	0.61		mg/Kg	2	1/23/2020 9:17:14 AM	49957
Cobalt	6.3	0.21	0.61		mg/Kg	2	1/23/2020 9:17:14 AM	49957
Lead	94	0.49	0.51		mg/Kg	2	1/23/2020 9:17:14 AM	49957
Nickel	68	0.30	1.0		mg/Kg	2	1/23/2020 9:17:14 AM	49957
Selenium	7.3	2.6	5.1		mg/Kg	2	1/23/2020 9:17:14 AM	49957
Silver	ND	0.065	0.51		mg/Kg	2	1/23/2020 9:17:14 AM	49957
Vanadium	27	0.14	5.1		mg/Kg	2	1/23/2020 9:17:14 AM	49957
Zinc	7600	20	130		mg/Kg	50	1/23/2020 11:28:12 AM	49957
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	0.010	0.0085	5.0	J	mg/L	1	1/25/2020 12:23:50 PM	50036
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	2.3	6.1	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975
Acenaphthylene	ND	2.7	6.1	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975
Aniline	ND	2.1	6.1	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975
Anthracene	ND	2.4	6.1	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975
Azobenzene	ND	3.1	6.1	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975
Benz(a)anthracene	ND	2.1	6.1	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975
Benzo(a)pyrene	ND	3.3	6.1	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975
Benzo(b)fluoranthene	ND	3.5	6.1	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975
Benzo(g,h,i)perylene	ND	3.2	6.1	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975
Benzo(k)fluoranthene	ND	1.8	6.1	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975
Benzoic acid	ND	4.2	15	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975
Benzyl alcohol	ND	2.5	6.1	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975
Bis(2-chloroethoxy)methane	ND	2.5	6.1	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975

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ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-11 Surface
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 10:00:00 AM
Lab ID: 2001739-018 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	3.6	6.1	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975
Bis(2-chloroisopropyl)ether	ND	2.6	6.1	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975
Bis(2-ethylhexyl)phthalate	ND	6.9	15	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975
4-Bromophenyl phenyl ether	ND	3.6	6.1	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975
Butyl benzyl phthalate	ND	2.1	6.1	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975
Carbazole	ND	2.4	6.1	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975
4-Chloro-3-methylphenol	ND	2.4	15	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975
4-Chloroaniline	ND	2.3	15	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975
2-Chloronaphthalene	ND	2.6	7.7	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975
2-Chlorophenol	ND	3.5	6.1	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975
4-Chlorophenyl phenyl ether	ND	2.6	6.1	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975
Chrysene	27	2.4	6.1	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975
Di-n-butyl phthalate	ND	9.2	12	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975
Di-n-octyl phthalate	ND	2.0	12	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975
Dibenz(a,h)anthracene	ND	3.4	6.1	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975
Dibenzofuran	ND	3.1	6.1	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975
1,2-Dichlorobenzene	ND	2.4	6.1	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975
1,3-Dichlorobenzene	ND	2.1	6.1	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975
1,4-Dichlorobenzene	ND	2.5	6.1	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975
3,3´-Dichlorobenzidine	ND	2.6	7.7	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975
Diethyl phthalate	ND	9.3	15	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975
Dimethyl phthalate	ND	2.5	6.1	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975
2,4-Dichlorophenol	ND	2.6	12	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975
2,4-Dimethylphenol	ND	2.5	9.2	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975
4,6-Dinitro-2-methylphenol	ND	2.3	12	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975
2,4-Dinitrophenol	ND	1.8	15	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975
2,4-Dinitrotoluene	ND	3.1	15	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975
2,6-Dinitrotoluene	ND	3.6	15	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975
Fluoranthene	ND	2.3	6.1	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975
Fluorene	16	2.4	6.1	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975
Hexachlorobenzene	ND	2.4	6.1	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975
Hexachlorobutadiene	ND	2.7	6.1	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975
Hexachlorocyclopentadiene	ND	2.9	6.1	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975
Hexachloroethane	ND	2.5	6.1	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975
Indeno(1,2,3-cd)pyrene	ND	3.8	6.1	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975
Isophorone	ND	2.7	12	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975
1-Methylnaphthalene	38	2.9	6.1	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975
2-Methylnaphthalene	39	2.5	6.1	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975
2-Methylphenol	ND	2.6	12	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975

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

Qualifiers:

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D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-11 Surface
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 10:00:00 AM
Lab ID: 2001739-018 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	3.6	2.2	6.1	JD	mg/Kg	1	1/31/2020 4:45:33 PM	49975
N-Nitrosodi-n-propylamine	ND	3.1	6.1	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975
N-Nitrosodiphenylamine	ND	3.2	6.1	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975
Naphthalene	3.8	2.5	6.1	JD	mg/Kg	1	1/31/2020 4:45:33 PM	49975
2-Nitroaniline	ND	3.4	6.1	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975
3-Nitroaniline	ND	3.0	6.1	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975
4-Nitroaniline	ND	4.1	12	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975
Nitrobenzene	ND	2.6	12	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975
2-Nitrophenol	ND	2.5	6.1	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975
4-Nitrophenol	ND	1.8	7.7	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975
Pentachlorophenol	ND	2.7	12	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975
Phenanthrene	62	3.1	6.1	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975
Phenol	ND	2.6	6.1	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975
Pyrene	ND	2.0	6.1	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975
Pyridine	ND	5.7	12	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975
1,2,4-Trichlorobenzene	ND	2.6	6.1	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975
2,4,5-Trichlorophenol	ND	2.0	6.1	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975
2,4,6-Trichlorophenol	ND	3.1	6.1	D	mg/Kg	1	1/31/2020 4:45:33 PM	49975
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	1	1/31/2020 4:45:33 PM	49975
Surr: Phenol-d5	0		18.5-101	SD	%Rec	1	1/31/2020 4:45:33 PM	49975
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	1	1/31/2020 4:45:33 PM	49975
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	1	1/31/2020 4:45:33 PM	49975
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	1	1/31/2020 4:45:33 PM	49975
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	1	1/31/2020 4:45:33 PM	49975
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Benzene	0.029	0.021	0.13	J	mg/Kg	5	1/23/2020 8:58:43 AM	R66015
Toluene	0.46	0.024	0.25		mg/Kg	5	1/23/2020 8:58:43 AM	R66015
Ethylbenzene	0.27	0.015	0.25		mg/Kg	5	1/23/2020 8:58:43 AM	R66015
Methyl tert-butyl ether (MTBE)	ND	0.060	0.25		mg/Kg	5	1/23/2020 8:58:43 AM	R66015
1,2,4-Trimethylbenzene	2.0	0.023	0.25		mg/Kg	5	1/23/2020 8:58:43 AM	R66015
1,3,5-Trimethylbenzene	0.59	0.024	0.25		mg/Kg	5	1/23/2020 8:58:43 AM	R66015
1,2-Dichloroethane (EDC)	ND	0.026	0.25		mg/Kg	5	1/23/2020 8:58:43 AM	R66015
1,2-Dibromoethane (EDB)	ND	0.023	0.25		mg/Kg	5	1/23/2020 8:58:43 AM	R66015
Naphthalene	3.4	0.050	0.50		mg/Kg	5	1/23/2020 8:58:43 AM	R66015
1-Methylnaphthalene	21	0.14	1.0		mg/Kg	5	1/23/2020 8:58:43 AM	R66015
2-Methylnaphthalene	31	1.1	10		mg/Kg	50	1/22/2020 6:03:29 AM	S65960
Acetone	0.79	0.21	3.8	J	mg/Kg	5	1/23/2020 8:58:43 AM	R66015
Bromobenzene	ND	0.024	0.25		mg/Kg	5	1/23/2020 8:58:43 AM	R66015
Bromodichloromethane	ND	0.023	0.25		mg/Kg	5	1/23/2020 8:58:43 AM	R66015

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ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
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P	Sample pH Not In Range
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-11 Surface
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 10:00:00 AM
Lab ID: 2001739-018 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Bromoform	ND	0.023	0.25		mg/Kg	5	1/23/2020 8:58:43 AM	R66015
Bromomethane	0.12	0.061	0.75	J	mg/Kg	5	1/23/2020 8:58:43 AM	R66015
2-Butanone	1.1	0.29	2.5	J	mg/Kg	5	1/23/2020 8:58:43 AM	R66015
Carbon disulfide	ND	0.083	2.5		mg/Kg	5	1/23/2020 8:58:43 AM	R66015
Carbon tetrachloride	ND	0.024	0.25		mg/Kg	5	1/23/2020 8:58:43 AM	R66015
Chlorobenzene	ND	0.032	0.25		mg/Kg	5	1/23/2020 8:58:43 AM	R66015
Chloroethane	ND	0.037	0.50		mg/Kg	5	1/23/2020 8:58:43 AM	R66015
Chloroform	ND	0.020	0.25		mg/Kg	5	1/23/2020 8:58:43 AM	R66015
Chloromethane	ND	0.024	0.75		mg/Kg	5	1/23/2020 8:58:43 AM	R66015
2-Chlorotoluene	ND	0.022	0.25		mg/Kg	5	1/23/2020 8:58:43 AM	R66015
4-Chlorotoluene	ND	0.021	0.25		mg/Kg	5	1/23/2020 8:58:43 AM	R66015
cis-1,2-DCE	0.055	0.034	0.25	J	mg/Kg	5	1/23/2020 8:58:43 AM	R66015
cis-1,3-Dichloropropene	ND	0.021	0.25		mg/Kg	5	1/23/2020 8:58:43 AM	R66015
1,2-Dibromo-3-chloropropane	ND	0.026	0.50		mg/Kg	5	1/23/2020 8:58:43 AM	R66015
Dibromochloromethane	ND	0.018	0.25		mg/Kg	5	1/23/2020 8:58:43 AM	R66015
Dibromomethane	ND	0.027	0.25		mg/Kg	5	1/23/2020 8:58:43 AM	R66015
1,2-Dichlorobenzene	ND	0.021	0.25		mg/Kg	5	1/23/2020 8:58:43 AM	R66015
1,3-Dichlorobenzene	ND	0.022	0.25		mg/Kg	5	1/23/2020 8:58:43 AM	R66015
1,4-Dichlorobenzene	ND	0.021	0.25		mg/Kg	5	1/23/2020 8:58:43 AM	R66015
Dichlorodifluoromethane	ND	0.058	0.25		mg/Kg	5	1/23/2020 8:58:43 AM	R66015
1,1-Dichloroethane	0.073	0.016	0.25	J	mg/Kg	5	1/23/2020 8:58:43 AM	R66015
1,1-Dichloroethene	ND	0.10	0.25		mg/Kg	5	1/23/2020 8:58:43 AM	R66015
1,2-Dichloropropane	ND	0.018	0.25		mg/Kg	5	1/23/2020 8:58:43 AM	R66015
1,3-Dichloropropane	ND	0.027	0.25		mg/Kg	5	1/23/2020 8:58:43 AM	R66015
2,2-Dichloropropane	ND	0.082	0.50		mg/Kg	5	1/23/2020 8:58:43 AM	R66015
1,1-Dichloropropene	ND	0.023	0.50		mg/Kg	5	1/23/2020 8:58:43 AM	R66015
Hexachlorobutadiene	ND	0.026	0.50		mg/Kg	5	1/23/2020 8:58:43 AM	R66015
2-Hexanone	0.51	0.042	2.5	J	mg/Kg	5	1/23/2020 8:58:43 AM	R66015
Isopropylbenzene	0.12	0.018	0.25	J	mg/Kg	5	1/23/2020 8:58:43 AM	R66015
4-Isopropyltoluene	0.20	0.021	0.25	J	mg/Kg	5	1/23/2020 8:58:43 AM	R66015
4-Methyl-2-pentanone	ND	0.047	2.5		mg/Kg	5	1/23/2020 8:58:43 AM	R66015
Methylene chloride	0.053	0.044	0.75	J	mg/Kg	5	1/23/2020 8:58:43 AM	R66015
n-Butylbenzene	0.36	0.023	0.75	J	mg/Kg	5	1/23/2020 8:58:43 AM	R66015
n-Propylbenzene	0.27	0.020	0.25		mg/Kg	5	1/23/2020 8:58:43 AM	R66015
sec-Butylbenzene	0.21	0.028	0.25	J	mg/Kg	5	1/23/2020 8:58:43 AM	R66015
Styrene	ND	0.020	0.25		mg/Kg	5	1/23/2020 8:58:43 AM	R66015
tert-Butylbenzene	ND	0.024	0.25		mg/Kg	5	1/23/2020 8:58:43 AM	R66015
1,1,1,2-Tetrachloroethane	ND	0.017	0.25		mg/Kg	5	1/23/2020 8:58:43 AM	R66015
1,1,2,2-Tetrachloroethane	ND	0.026	0.25		mg/Kg	5	1/23/2020 8:58:43 AM	R66015

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Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-11 Surface
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 10:00:00 AM
Lab ID: 2001739-018 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Tetrachloroethene (PCE)	ND	0.020	0.25		mg/Kg	5	1/23/2020 8:58:43 AM	R66015
trans-1,2-DCE	ND	0.023	0.25		mg/Kg	5	1/23/2020 8:58:43 AM	R66015
trans-1,3-Dichloropropene	ND	0.027	0.25		mg/Kg	5	1/23/2020 8:58:43 AM	R66015
1,2,3-Trichlorobenzene	ND	0.022	0.50		mg/Kg	5	1/23/2020 8:58:43 AM	R66015
1,2,4-Trichlorobenzene	ND	0.025	0.25		mg/Kg	5	1/23/2020 8:58:43 AM	R66015
1,1,1-Trichloroethane	ND	0.023	0.25		mg/Kg	5	1/23/2020 8:58:43 AM	R66015
1,1,2-Trichloroethane	ND	0.018	0.25		mg/Kg	5	1/23/2020 8:58:43 AM	R66015
Trichloroethene (TCE)	ND	0.029	0.25		mg/Kg	5	1/23/2020 8:58:43 AM	R66015
Trichlorofluoromethane	ND	0.085	0.25		mg/Kg	5	1/23/2020 8:58:43 AM	R66015
1,2,3-Trichloropropane	ND	0.041	0.50		mg/Kg	5	1/23/2020 8:58:43 AM	R66015
Vinyl chloride	ND	0.016	0.25		mg/Kg	5	1/23/2020 8:58:43 AM	R66015
Xylenes, Total	1.9	0.063	0.50		mg/Kg	5	1/23/2020 8:58:43 AM	R66015
Surr: Dibromofluoromethane	101		70-130		%Rec	5	1/23/2020 8:58:43 AM	R66015
Surr: 1,2-Dichloroethane-d4	96.8		70-130		%Rec	5	1/23/2020 8:58:43 AM	R66015
Surr: Toluene-d8	101		70-130		%Rec	5	1/23/2020 8:58:43 AM	R66015
Surr: 4-Bromofluorobenzene	89.3		70-130		%Rec	5	1/23/2020 8:58:43 AM	R66015
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **JMR**	
Gasoline Range Organics (GRO)	91	5.3	25		mg/Kg	5	1/23/2020 8:58:43 AM	G66015
Surr: BFB	104	0	70-130		%Rec	5	1/23/2020 8:58:43 AM	G66015
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/27/2020 12:20:00 PM	R6611C
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	6.73				pH Units	1	1/28/2020 9:49:00 AM	R66112

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P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-6 Sludge 0-5.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/17/2020 9:00:00 AM
Lab ID: 2001739-019 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	19000	110	460		mg/Kg	50	1/22/2020 7:04:47 PM	49947
Motor Oil Range Organics (MRO)	2500	2300	2300		mg/Kg	50	1/22/2020 7:04:47 PM	49947
Surr: DNOP	0	0	55.1-146	S	%Rec	50	1/22/2020 7:04:47 PM	49947
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	2.3	0.017	0.31	H	mg/Kg	10	2/26/2020 1:38:54 PM	50654
MERCURY, TCLP							Analyst: **rde**	
Mercury	ND	0.00075	0.020		mg/L	1	1/24/2020 11:59:07 AM	50014
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.75	5.1		mg/Kg	2	1/23/2020 9:22:43 AM	49957
Arsenic	15	2.9	5.1		mg/Kg	2	1/23/2020 9:22:43 AM	49957
Barium	500	0.047	0.20		mg/Kg	2	1/23/2020 9:22:43 AM	49957
Beryllium	0.30	0.019	0.30	J	mg/Kg	2	1/23/2020 9:22:43 AM	49957
Cadmium	2.4	0.049	0.20		mg/Kg	2	1/23/2020 9:22:43 AM	49957
Chromium	39	0.16	0.61		mg/Kg	2	1/23/2020 9:22:43 AM	49957
Cobalt	3.2	0.21	0.61		mg/Kg	2	1/23/2020 9:22:43 AM	49957
Lead	44	0.49	0.51		mg/Kg	2	1/23/2020 9:22:43 AM	49957
Nickel	25	0.30	1.0		mg/Kg	2	1/23/2020 9:22:43 AM	49957
Selenium	ND	2.5	5.1		mg/Kg	2	1/23/2020 9:22:43 AM	49957
Silver	ND	0.065	0.51		mg/Kg	2	1/23/2020 9:22:43 AM	49957
Vanadium	19	0.14	5.1		mg/Kg	2	1/23/2020 9:22:43 AM	49957
Zinc	1400	4.0	25		mg/Kg	10	1/23/2020 11:29:39 AM	49957
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/25/2020 12:25:14 PM	50036
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	1.8	4.8	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
Acenaphthylene	ND	2.1	4.8	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
Aniline	ND	1.6	4.8	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
Anthracene	ND	1.9	4.8	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
Azobenzene	ND	2.4	4.8	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
Benz(a)anthracene	ND	1.7	4.8	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
Benzo(a)pyrene	ND	2.6	4.8	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
Benzo(b)fluoranthene	ND	2.7	4.8	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
Benzo(g,h,i)perylene	ND	2.5	4.8	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
Benzo(k)fluoranthene	ND	1.4	4.8	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
Benzoic acid	ND	3.3	12	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
Benzyl alcohol	ND	2.0	4.8	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
Bis(2-chloroethoxy)methane	ND	2.0	4.8	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975

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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-6 Sludge 0-5.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/17/2020 9:00:00 AM
Lab ID: 2001739-019 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	2.8	4.8	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
Bis(2-chloroisopropyl)ether	ND	2.1	4.8	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
Bis(2-ethylhexyl)phthalate	ND	5.4	12	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
4-Bromophenyl phenyl ether	ND	2.8	4.8	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
Butyl benzyl phthalate	ND	1.6	4.8	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
Carbazole	ND	1.9	4.8	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
4-Chloro-3-methylphenol	ND	1.9	12	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
4-Chloroaniline	ND	1.8	12	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
2-Chloronaphthalene	ND	2.0	6.0	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
2-Chlorophenol	ND	2.7	4.8	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
4-Chlorophenyl phenyl ether	ND	2.0	4.8	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
Chrysene	ND	1.9	4.8	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
Di-n-butyl phthalate	ND	7.2	9.6	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
Di-n-octyl phthalate	ND	1.6	9.6	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
Dibenz(a,h)anthracene	ND	2.7	4.8	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
Dibenzofuran	ND	2.4	4.8	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
1,2-Dichlorobenzene	ND	1.9	4.8	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
1,3-Dichlorobenzene	ND	1.6	4.8	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
1,4-Dichlorobenzene	ND	2.0	4.8	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
3,3´-Dichlorobenzidine	ND	2.1	6.0	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
Diethyl phthalate	ND	7.3	12	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
Dimethyl phthalate	ND	2.0	4.8	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
2,4-Dichlorophenol	ND	2.0	9.6	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
2,4-Dimethylphenol	ND	2.0	7.2	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
4,6-Dinitro-2-methylphenol	ND	1.8	9.6	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
2,4-Dinitrophenol	ND	1.4	12	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
2,4-Dinitrotoluene	ND	2.5	12	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
2,6-Dinitrotoluene	ND	2.9	12	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
Fluoranthene	ND	1.8	4.8	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
Fluorene	21	1.9	4.8	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
Hexachlorobenzene	ND	1.9	4.8	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
Hexachlorobutadiene	ND	2.1	4.8	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
Hexachlorocyclopentadiene	ND	2.3	4.8	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
Hexachloroethane	ND	2.0	4.8	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
Indeno(1,2,3-cd)pyrene	ND	3.0	4.8	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
Isophorone	ND	2.1	9.6	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
1-Methylnaphthalene	76	2.2	4.8	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
2-Methylnaphthalene	85	2.0	4.8	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
2-Methylphenol	ND	2.0	9.6	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975

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

Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-6 Sludge 0-5.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/17/2020 9:00:00 AM
Lab ID: 2001739-019 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	13	1.7	4.8	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
N-Nitrosodi-n-propylamine	ND	2.4	4.8	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
N-Nitrosodiphenylamine	ND	2.5	4.8	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
Naphthalene	13	2.0	4.8	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
2-Nitroaniline	ND	2.7	4.8	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
3-Nitroaniline	ND	2.4	4.8	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
4-Nitroaniline	ND	3.2	9.6	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
Nitrobenzene	ND	2.1	9.6	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
2-Nitrophenol	ND	2.0	4.8	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
4-Nitrophenol	ND	1.4	6.0	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
Pentachlorophenol	ND	2.2	9.6	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
Phenanthrene	62	2.5	4.8	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
Phenol	ND	2.0	4.8	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
Pyrene	ND	1.6	4.8	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
Pyridine	ND	4.5	9.6	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
1,2,4-Trichlorobenzene	ND	2.1	4.8	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
2,4,5-Trichlorophenol	ND	1.6	4.8	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
2,4,6-Trichlorophenol	ND	2.4	4.8	D	mg/Kg	1	1/31/2020 5:14:20 PM	49975
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	1	1/31/2020 5:14:20 PM	49975
Surr: Phenol-d5	0		18.5-101	SD	%Rec	1	1/31/2020 5:14:20 PM	49975
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	1	1/31/2020 5:14:20 PM	49975
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	1	1/31/2020 5:14:20 PM	49975
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	1	1/31/2020 5:14:20 PM	49975
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	1	1/31/2020 5:14:20 PM	49975
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Benzene	0.18	0.013	0.082		mg/Kg	5	1/23/2020 9:56:01 AM	R66015
Toluene	1.2	0.016	0.16		mg/Kg	5	1/23/2020 9:56:01 AM	R66015
Ethylbenzene	0.40	0.0095	0.16		mg/Kg	5	1/23/2020 9:56:01 AM	R66015
Methyl tert-butyl ether (MTBE)	ND	0.039	0.16		mg/Kg	5	1/23/2020 9:56:01 AM	R66015
1,2,4-Trimethylbenzene	1.4	0.015	0.16		mg/Kg	5	1/23/2020 9:56:01 AM	R66015
1,3,5-Trimethylbenzene	0.40	0.016	0.16		mg/Kg	5	1/23/2020 9:56:01 AM	R66015
1,2-Dichloroethane (EDC)	ND	0.017	0.16		mg/Kg	5	1/23/2020 9:56:01 AM	R66015
1,2-Dibromoethane (EDB)	ND	0.015	0.16		mg/Kg	5	1/23/2020 9:56:01 AM	R66015
Naphthalene	2.1	0.033	0.33		mg/Kg	5	1/23/2020 9:56:01 AM	R66015
1-Methylnaphthalene	7.0	0.094	0.66		mg/Kg	5	1/23/2020 9:56:01 AM	R66015
2-Methylnaphthalene	9.4	0.072	0.66		mg/Kg	5	1/23/2020 9:56:01 AM	R66015
Acetone	0.33	0.14	2.5	J	mg/Kg	5	1/23/2020 9:56:01 AM	R66015
Bromobenzene	ND	0.016	0.16		mg/Kg	5	1/23/2020 9:56:01 AM	R66015
Bromodichloromethane	ND	0.015	0.16		mg/Kg	5	1/23/2020 9:56:01 AM	R66015

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-6 Sludge 0-5.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/17/2020 9:00:00 AM
Lab ID: 2001739-019 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Bromoform	ND	0.015	0.16		mg/Kg	5	1/23/2020 9:56:01 AM	R66015
Bromomethane	ND	0.040	0.49		mg/Kg	5	1/23/2020 9:56:01 AM	R66015
2-Butanone	1.3	0.19	1.6	J	mg/Kg	5	1/23/2020 9:56:01 AM	R66015
Carbon disulfide	0.86	0.054	1.6	J	mg/Kg	5	1/23/2020 9:56:01 AM	R66015
Carbon tetrachloride	ND	0.016	0.16		mg/Kg	5	1/23/2020 9:56:01 AM	R66015
Chlorobenzene	ND	0.021	0.16		mg/Kg	5	1/23/2020 9:56:01 AM	R66015
Chloroethane	ND	0.024	0.33		mg/Kg	5	1/23/2020 9:56:01 AM	R66015
Chloroform	0.019	0.013	0.16	J	mg/Kg	5	1/23/2020 9:56:01 AM	R66015
Chloromethane	ND	0.016	0.49		mg/Kg	5	1/23/2020 9:56:01 AM	R66015
2-Chlorotoluene	ND	0.014	0.16		mg/Kg	5	1/23/2020 9:56:01 AM	R66015
4-Chlorotoluene	ND	0.013	0.16		mg/Kg	5	1/23/2020 9:56:01 AM	R66015
cis-1,2-DCE	ND	0.022	0.16		mg/Kg	5	1/23/2020 9:56:01 AM	R66015
cis-1,3-Dichloropropene	ND	0.014	0.16		mg/Kg	5	1/23/2020 9:56:01 AM	R66015
1,2-Dibromo-3-chloropropane	ND	0.017	0.33		mg/Kg	5	1/23/2020 9:56:01 AM	R66015
Dibromochloromethane	ND	0.012	0.16		mg/Kg	5	1/23/2020 9:56:01 AM	R66015
Dibromomethane	ND	0.018	0.16		mg/Kg	5	1/23/2020 9:56:01 AM	R66015
1,2-Dichlorobenzene	ND	0.013	0.16		mg/Kg	5	1/23/2020 9:56:01 AM	R66015
1,3-Dichlorobenzene	ND	0.014	0.16		mg/Kg	5	1/23/2020 9:56:01 AM	R66015
1,4-Dichlorobenzene	ND	0.014	0.16		mg/Kg	5	1/23/2020 9:56:01 AM	R66015
Dichlorodifluoromethane	ND	0.038	0.16		mg/Kg	5	1/23/2020 9:56:01 AM	R66015
1,1-Dichloroethane	0.053	0.011	0.16	J	mg/Kg	5	1/23/2020 9:56:01 AM	R66015
1,1-Dichloroethene	ND	0.066	0.16		mg/Kg	5	1/23/2020 9:56:01 AM	R66015
1,2-Dichloropropane	ND	0.012	0.16		mg/Kg	5	1/23/2020 9:56:01 AM	R66015
1,3-Dichloropropane	ND	0.018	0.16		mg/Kg	5	1/23/2020 9:56:01 AM	R66015
2,2-Dichloropropane	ND	0.053	0.33		mg/Kg	5	1/23/2020 9:56:01 AM	R66015
1,1-Dichloropropene	ND	0.015	0.33		mg/Kg	5	1/23/2020 9:56:01 AM	R66015
Hexachlorobutadiene	ND	0.017	0.33		mg/Kg	5	1/23/2020 9:56:01 AM	R66015
2-Hexanone	0.26	0.027	1.6	J	mg/Kg	5	1/23/2020 9:56:01 AM	R66015
Isopropylbenzene	0.075	0.012	0.16	J	mg/Kg	5	1/23/2020 9:56:01 AM	R66015
4-Isopropyltoluene	0.074	0.014	0.16	J	mg/Kg	5	1/23/2020 9:56:01 AM	R66015
4-Methyl-2-pentanone	ND	0.031	1.6		mg/Kg	5	1/23/2020 9:56:01 AM	R66015
Methylene chloride	0.046	0.029	0.49	J	mg/Kg	5	1/23/2020 9:56:01 AM	R66015
n-Butylbenzene	0.16	0.015	0.49	J	mg/Kg	5	1/23/2020 9:56:01 AM	R66015
n-Propylbenzene	0.19	0.013	0.16		mg/Kg	5	1/23/2020 9:56:01 AM	R66015
sec-Butylbenzene	0.080	0.019	0.16	J	mg/Kg	5	1/23/2020 9:56:01 AM	R66015
Styrene	ND	0.013	0.16		mg/Kg	5	1/23/2020 9:56:01 AM	R66015
tert-Butylbenzene	ND	0.015	0.16		mg/Kg	5	1/23/2020 9:56:01 AM	R66015
1,1,1,2-Tetrachloroethane	ND	0.011	0.16		mg/Kg	5	1/23/2020 9:56:01 AM	R66015
1,1,2,2-Tetrachloroethane	ND	0.017	0.16		mg/Kg	5	1/23/2020 9:56:01 AM	R66015

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Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-6 Sludge 0-5.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/17/2020 9:00:00 AM
Lab ID: 2001739-019 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Tetrachloroethene (PCE)	ND	0.013	0.16		mg/Kg	5	1/23/2020 9:56:01 AM	R66015
trans-1,2-DCE	ND	0.015	0.16		mg/Kg	5	1/23/2020 9:56:01 AM	R66015
trans-1,3-Dichloropropene	0.025	0.017	0.16	J	mg/Kg	5	1/23/2020 9:56:01 AM	R66015
1,2,3-Trichlorobenzene	ND	0.014	0.33		mg/Kg	5	1/23/2020 9:56:01 AM	R66015
1,2,4-Trichlorobenzene	ND	0.017	0.16		mg/Kg	5	1/23/2020 9:56:01 AM	R66015
1,1,1-Trichloroethane	ND	0.015	0.16		mg/Kg	5	1/23/2020 9:56:01 AM	R66015
1,1,2-Trichloroethane	ND	0.012	0.16		mg/Kg	5	1/23/2020 9:56:01 AM	R66015
Trichloroethene (TCE)	ND	0.019	0.16		mg/Kg	5	1/23/2020 9:56:01 AM	R66015
Trichlorofluoromethane	ND	0.056	0.16		mg/Kg	5	1/23/2020 9:56:01 AM	R66015
1,2,3-Trichloropropane	ND	0.027	0.33		mg/Kg	5	1/23/2020 9:56:01 AM	R66015
Vinyl chloride	ND	0.011	0.16		mg/Kg	5	1/23/2020 9:56:01 AM	R66015
Xylenes, Total	2.6	0.041	0.33		mg/Kg	5	1/23/2020 9:56:01 AM	R66015
Surr: Dibromofluoromethane	98.8		70-130		%Rec	5	1/23/2020 9:56:01 AM	R66015
Surr: 1,2-Dichloroethane-d4	96.3		70-130		%Rec	5	1/23/2020 9:56:01 AM	R66015
Surr: Toluene-d8	100		70-130		%Rec	5	1/23/2020 9:56:01 AM	R66015
Surr: 4-Bromofluorobenzene	89.2		70-130		%Rec	5	1/23/2020 9:56:01 AM	R66015
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **JMR**	
Gasoline Range Organics (GRO)	55	3.5	16		mg/Kg	5	1/23/2020 9:56:01 AM	G66015
Surr: BFB	97.6	0	70-130		%Rec	5	1/23/2020 9:56:01 AM	G66015
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/27/2020 12:20:00 PM	R6611C
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	7.66				pH Units	1	1/28/2020 9:49:00 AM	R66112

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

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-14 Toe 2.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 2:50:00 PM
Lab ID: 2001739-020 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	59000	230	950		mg/Kg	100	1/22/2020 7:13:48 PM	49947
Motor Oil Range Organics (MRO)	12000	4700	4700		mg/Kg	100	1/22/2020 7:13:48 PM	49947
Surr: DNOP	0	0	55.1-146	S	%Rec	100	1/22/2020 7:13:48 PM	49947
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	0.088	0.0018	0.033	H	mg/Kg	1	3/2/2020 3:55:50 PM	50789
MERCURY, TCLP							Analyst: **rde**	
Mercury	ND	0.00075	0.020		mg/L	1	1/24/2020 12:01:12 PM	50014
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	5.1	0.72	4.9		mg/Kg	2	1/23/2020 9:30:17 AM	49957
Arsenic	12	2.8	4.9		mg/Kg	2	1/23/2020 9:30:17 AM	49957
Barium	470	0.046	0.20		mg/Kg	2	1/23/2020 9:30:17 AM	49957
Beryllium	0.47	0.018	0.29		mg/Kg	2	1/23/2020 9:30:17 AM	49957
Cadmium	ND	0.048	0.20		mg/Kg	2	1/23/2020 9:30:17 AM	49957
Chromium	22	0.16	0.59		mg/Kg	2	1/23/2020 9:30:17 AM	49957
Cobalt	4.4	0.21	0.59		mg/Kg	2	1/23/2020 9:30:17 AM	49957
Lead	19	0.48	0.49		mg/Kg	2	1/23/2020 9:30:17 AM	49957
Nickel	20	0.29	0.98		mg/Kg	2	1/23/2020 9:30:17 AM	49957
Selenium	ND	2.5	4.9		mg/Kg	2	1/23/2020 9:30:17 AM	49957
Silver	ND	0.063	0.49		mg/Kg	2	1/23/2020 9:30:17 AM	49957
Vanadium	14	0.13	4.9		mg/Kg	2	1/23/2020 9:30:17 AM	49957
Zinc	1400	3.9	25		mg/Kg	10	1/23/2020 11:31:02 AM	49957
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/25/2020 12:26:37 PM	50036
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	1.7	4.6	D	mg/Kg	1	1/31/2020 5:43:08 PM	49975
Acenaphthylene	ND	2.1	4.6	D	mg/Kg	1	1/31/2020 5:43:08 PM	49975
Aniline	ND	1.6	4.6	D	mg/Kg	1	1/31/2020 5:43:08 PM	49975
Anthracene	ND	1.8	4.6	D	mg/Kg	1	1/31/2020 5:43:08 PM	49975
Azobenzene	ND	2.4	4.6	D	mg/Kg	1	1/31/2020 5:43:08 PM	49975
Benz(a)anthracene	ND	1.6	4.6	D	mg/Kg	1	1/31/2020 5:43:08 PM	49975
Benzo(a)pyrene	ND	2.5	4.6	D	mg/Kg	1	1/31/2020 5:43:08 PM	49975
Benzo(b)fluoranthene	ND	2.6	4.6	D	mg/Kg	1	1/31/2020 5:43:08 PM	49975
Benzo(g,h,i)perylene	ND	2.4	4.6	D	mg/Kg	1	1/31/2020 5:43:08 PM	49975
Benzo(k)fluoranthene	ND	1.4	4.6	D	mg/Kg	1	1/31/2020 5:43:08 PM	49975
Benzoic acid	ND	3.2	12	D	mg/Kg	1	1/31/2020 5:43:08 PM	49975
Benzyl alcohol	ND	1.9	4.6	D	mg/Kg	1	1/31/2020 5:43:08 PM	49975
Bis(2-chloroethoxy)methane	ND	1.9	4.6	D	mg/Kg	1	1/31/2020 5:43:08 PM	49975

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

Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-14 Toe 2.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 2:50:00 PM
Lab ID: 2001739-020 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	2.7	4.6	D	mg/Kg	1	1/31/2020 5:43:08 PM	49975
Bis(2-chloroisopropyl)ether	ND	2.0	4.6	D	mg/Kg	1	1/31/2020 5:43:08 PM	49975
Bis(2-ethylhexyl)phthalate	ND	5.2	12	D	mg/Kg	1	1/31/2020 5:43:08 PM	49975
4-Bromophenyl phenyl ether	ND	2.7	4.6	D	mg/Kg	1	1/31/2020 5:43:08 PM	49975
Butyl benzyl phthalate	ND	1.6	4.6	D	mg/Kg	1	1/31/2020 5:43:08 PM	49975
Carbazole	ND	1.8	4.6	D	mg/Kg	1	1/31/2020 5:43:08 PM	49975
4-Chloro-3-methylphenol	ND	1.8	12	D	mg/Kg	1	1/31/2020 5:43:08 PM	49975
4-Chloroaniline	ND	1.8	12	D	mg/Kg	1	1/31/2020 5:43:08 PM	49975
2-Chloronaphthalene	ND	1.9	5.8	D	mg/Kg	1	1/31/2020 5:43:08 PM	49975
2-Chlorophenol	ND	2.6	4.6	D	mg/Kg	1	1/31/2020 5:43:08 PM	49975
4-Chlorophenyl phenyl ether	ND	1.9	4.6	D	mg/Kg	1	1/31/2020 5:43:08 PM	49975
Chrysene	ND	1.8	4.6	D	mg/Kg	1	1/31/2020 5:43:08 PM	49975
Di-n-butyl phthalate	ND	6.9	9.3	D	mg/Kg	1	1/31/2020 5:43:08 PM	49975
Di-n-octyl phthalate	ND	1.5	9.3	D	mg/Kg	1	1/31/2020 5:43:08 PM	49975
Dibenz(a,h)anthracene	ND	2.6	4.6	D	mg/Kg	1	1/31/2020 5:43:08 PM	49975
Dibenzofuran	ND	2.3	4.6	D	mg/Kg	1	1/31/2020 5:43:08 PM	49975
1,2-Dichlorobenzene	ND	1.8	4.6	D	mg/Kg	1	1/31/2020 5:43:08 PM	49975
1,3-Dichlorobenzene	ND	1.5	4.6	D	mg/Kg	1	1/31/2020 5:43:08 PM	49975
1,4-Dichlorobenzene	ND	1.9	4.6	D	mg/Kg	1	1/31/2020 5:43:08 PM	49975
3,3´-Dichlorobenzidine	ND	2.0	5.8	D	mg/Kg	1	1/31/2020 5:43:08 PM	49975
Diethyl phthalate	ND	7.1	12	D	mg/Kg	1	1/31/2020 5:43:08 PM	49975
Dimethyl phthalate	ND	1.9	4.6	D	mg/Kg	1	1/31/2020 5:43:08 PM	49975
2,4-Dichlorophenol	ND	2.0	9.3	D	mg/Kg	1	1/31/2020 5:43:08 PM	49975
2,4-Dimethylphenol	ND	1.9	6.9	D	mg/Kg	1	1/31/2020 5:43:08 PM	49975
4,6-Dinitro-2-methylphenol	ND	1.7	9.3	D	mg/Kg	1	1/31/2020 5:43:08 PM	49975
2,4-Dinitrophenol	ND	1.3	12	D	mg/Kg	1	1/31/2020 5:43:08 PM	49975
2,4-Dinitrotoluene	ND	2.4	12	D	mg/Kg	1	1/31/2020 5:43:08 PM	49975
2,6-Dinitrotoluene	ND	2.8	12	D	mg/Kg	1	1/31/2020 5:43:08 PM	49975
Fluoranthene	ND	1.8	4.6	D	mg/Kg	1	1/31/2020 5:43:08 PM	49975
Fluorene	26	1.8	4.6	D	mg/Kg	1	1/31/2020 5:43:08 PM	49975
Hexachlorobenzene	ND	1.8	4.6	D	mg/Kg	1	1/31/2020 5:43:08 PM	49975
Hexachlorobutadiene	ND	2.0	4.6	D	mg/Kg	1	1/31/2020 5:43:08 PM	49975
Hexachlorocyclopentadiene	ND	2.2	4.6	D	mg/Kg	1	1/31/2020 5:43:08 PM	49975
Hexachloroethane	ND	1.9	4.6	D	mg/Kg	1	1/31/2020 5:43:08 PM	49975
Indeno(1,2,3-cd)pyrene	ND	2.9	4.6	D	mg/Kg	1	1/31/2020 5:43:08 PM	49975
Isophorone	ND	2.0	9.3	D	mg/Kg	1	1/31/2020 5:43:08 PM	49975
1-Methylnaphthalene	110	22	46	D	mg/Kg	10	2/4/2020 6:15:14 PM	49975
2-Methylnaphthalene	120	19	46	D	mg/Kg	10	2/4/2020 6:15:14 PM	49975
2-Methylphenol	ND	2.0	9.3	D	mg/Kg	1	1/31/2020 5:43:08 PM	49975

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

Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-14 Toe 2.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 2:50:00 PM
Lab ID: 2001739-020 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	11	1.7	4.6	D	mg/Kg	1	1/31/2020 5:43:08 PM	49975
N-Nitrosodi-n-propylamine	ND	2.3	4.6	D	mg/Kg	1	1/31/2020 5:43:08 PM	49975
N-Nitrosodiphenylamine	ND	2.4	4.6	D	mg/Kg	1	1/31/2020 5:43:08 PM	49975
Naphthalene	11	1.9	4.6	D	mg/Kg	1	1/31/2020 5:43:08 PM	49975
2-Nitroaniline	ND	2.6	4.6	D	mg/Kg	1	1/31/2020 5:43:08 PM	49975
3-Nitroaniline	ND	2.3	4.6	D	mg/Kg	1	1/31/2020 5:43:08 PM	49975
4-Nitroaniline	ND	3.1	9.3	D	mg/Kg	1	1/31/2020 5:43:08 PM	49975
Nitrobenzene	ND	2.0	9.3	D	mg/Kg	1	1/31/2020 5:43:08 PM	49975
2-Nitrophenol	ND	1.9	4.6	D	mg/Kg	1	1/31/2020 5:43:08 PM	49975
4-Nitrophenol	ND	1.4	5.8	D	mg/Kg	1	1/31/2020 5:43:08 PM	49975
Pentachlorophenol	ND	2.1	9.3	D	mg/Kg	1	1/31/2020 5:43:08 PM	49975
Phenanthrene	98	24	46	D	mg/Kg	10	2/4/2020 6:15:14 PM	49975
Phenol	ND	2.0	4.6	D	mg/Kg	1	1/31/2020 5:43:08 PM	49975
Pyrene	ND	1.5	4.6	D	mg/Kg	1	1/31/2020 5:43:08 PM	49975
Pyridine	ND	4.3	9.3	D	mg/Kg	1	1/31/2020 5:43:08 PM	49975
1,2,4-Trichlorobenzene	ND	2.0	4.6	D	mg/Kg	1	1/31/2020 5:43:08 PM	49975
2,4,5-Trichlorophenol	ND	1.5	4.6	D	mg/Kg	1	1/31/2020 5:43:08 PM	49975
2,4,6-Trichlorophenol	ND	2.3	4.6	D	mg/Kg	1	1/31/2020 5:43:08 PM	49975
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	1	1/31/2020 5:43:08 PM	49975
Surr: Phenol-d5	0		18.5-101	SD	%Rec	1	1/31/2020 5:43:08 PM	49975
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	1	1/31/2020 5:43:08 PM	49975
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	1	1/31/2020 5:43:08 PM	49975
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	1	1/31/2020 5:43:08 PM	49975
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	1	1/31/2020 5:43:08 PM	49975
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Benzene	0.079	0.019	0.12	J	mg/Kg	5	1/23/2020 10:53:19 AM	R66015
Toluene	0.61	0.023	0.24		mg/Kg	5	1/23/2020 10:53:19 AM	R66015
Ethylbenzene	0.20	0.014	0.24	J	mg/Kg	5	1/23/2020 10:53:19 AM	R66015
Methyl tert-butyl ether (MTBE)	ND	0.056	0.24		mg/Kg	5	1/23/2020 10:53:19 AM	R66015
1,2,4-Trimethylbenzene	1.2	0.022	0.24		mg/Kg	5	1/23/2020 10:53:19 AM	R66015
1,3,5-Trimethylbenzene	0.34	0.023	0.24		mg/Kg	5	1/23/2020 10:53:19 AM	R66015
1,2-Dichloroethane (EDC)	ND	0.024	0.24		mg/Kg	5	1/23/2020 10:53:19 AM	R66015
1,2-Dibromoethane (EDB)	ND	0.022	0.24		mg/Kg	5	1/23/2020 10:53:19 AM	R66015
Naphthalene	2.4	0.047	0.47		mg/Kg	5	1/23/2020 10:53:19 AM	R66015
1-Methylnaphthalene	11	0.14	0.94		mg/Kg	5	1/23/2020 10:53:19 AM	R66015
2-Methylnaphthalene	16	0.10	0.94		mg/Kg	5	1/23/2020 10:53:19 AM	R66015
Acetone	0.32	0.20	3.5	J	mg/Kg	5	1/23/2020 10:53:19 AM	R66015
Bromobenzene	ND	0.023	0.24		mg/Kg	5	1/23/2020 10:53:19 AM	R66015
Bromodichloromethane	ND	0.022	0.24		mg/Kg	5	1/23/2020 10:53:19 AM	R66015

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Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-14 Toe 2.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 2:50:00 PM
Lab ID: 2001739-020 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Bromoform	ND	0.021	0.24		mg/Kg	5	1/23/2020 10:53:19 AM	R66015
Bromomethane	ND	0.057	0.71		mg/Kg	5	1/23/2020 10:53:19 AM	R66015
2-Butanone	1.1	0.27	2.4	J	mg/Kg	5	1/23/2020 10:53:19 AM	R66015
Carbon disulfide	ND	0.078	2.4		mg/Kg	5	1/23/2020 10:53:19 AM	R66015
Carbon tetrachloride	ND	0.022	0.24		mg/Kg	5	1/23/2020 10:53:19 AM	R66015
Chlorobenzene	ND	0.030	0.24		mg/Kg	5	1/23/2020 10:53:19 AM	R66015
Chloroethane	ND	0.035	0.47		mg/Kg	5	1/23/2020 10:53:19 AM	R66015
Chloroform	ND	0.019	0.24		mg/Kg	5	1/23/2020 10:53:19 AM	R66015
Chloromethane	ND	0.023	0.71		mg/Kg	5	1/23/2020 10:53:19 AM	R66015
2-Chlorotoluene	ND	0.021	0.24		mg/Kg	5	1/23/2020 10:53:19 AM	R66015
4-Chlorotoluene	ND	0.019	0.24		mg/Kg	5	1/23/2020 10:53:19 AM	R66015
cis-1,2-DCE	0.033	0.032	0.24	J	mg/Kg	5	1/23/2020 10:53:19 AM	R66015
cis-1,3-Dichloropropene	ND	0.020	0.24		mg/Kg	5	1/23/2020 10:53:19 AM	R66015
1,2-Dibromo-3-chloropropane	ND	0.024	0.47		mg/Kg	5	1/23/2020 10:53:19 AM	R66015
Dibromochloromethane	ND	0.017	0.24		mg/Kg	5	1/23/2020 10:53:19 AM	R66015
Dibromomethane	ND	0.025	0.24		mg/Kg	5	1/23/2020 10:53:19 AM	R66015
1,2-Dichlorobenzene	ND	0.019	0.24		mg/Kg	5	1/23/2020 10:53:19 AM	R66015
1,3-Dichlorobenzene	ND	0.021	0.24		mg/Kg	5	1/23/2020 10:53:19 AM	R66015
1,4-Dichlorobenzene	ND	0.020	0.24		mg/Kg	5	1/23/2020 10:53:19 AM	R66015
Dichlorodifluoromethane	ND	0.055	0.24		mg/Kg	5	1/23/2020 10:53:19 AM	R66015
1,1-Dichloroethane	0.070	0.015	0.24	J	mg/Kg	5	1/23/2020 10:53:19 AM	R66015
1,1-Dichloroethene	ND	0.094	0.24		mg/Kg	5	1/23/2020 10:53:19 AM	R66015
1,2-Dichloropropane	ND	0.017	0.24		mg/Kg	5	1/23/2020 10:53:19 AM	R66015
1,3-Dichloropropane	ND	0.026	0.24		mg/Kg	5	1/23/2020 10:53:19 AM	R66015
2,2-Dichloropropane	ND	0.077	0.47		mg/Kg	5	1/23/2020 10:53:19 AM	R66015
1,1-Dichloropropene	ND	0.022	0.47		mg/Kg	5	1/23/2020 10:53:19 AM	R66015
Hexachlorobutadiene	ND	0.024	0.47		mg/Kg	5	1/23/2020 10:53:19 AM	R66015
2-Hexanone	0.31	0.039	2.4	J	mg/Kg	5	1/23/2020 10:53:19 AM	R66015
Isopropylbenzene	0.041	0.017	0.24	J	mg/Kg	5	1/23/2020 10:53:19 AM	R66015
4-Isopropyltoluene	0.084	0.020	0.24	J	mg/Kg	5	1/23/2020 10:53:19 AM	R66015
4-Methyl-2-pentanone	ND	0.045	2.4		mg/Kg	5	1/23/2020 10:53:19 AM	R66015
Methylene chloride	0.064	0.042	0.71	J	mg/Kg	5	1/23/2020 10:53:19 AM	R66015
n-Butylbenzene	0.17	0.022	0.71	J	mg/Kg	5	1/23/2020 10:53:19 AM	R66015
n-Propylbenzene	0.15	0.019	0.24	J	mg/Kg	5	1/23/2020 10:53:19 AM	R66015
sec-Butylbenzene	0.084	0.027	0.24	J	mg/Kg	5	1/23/2020 10:53:19 AM	R66015
Styrene	ND	0.019	0.24		mg/Kg	5	1/23/2020 10:53:19 AM	R66015
tert-Butylbenzene	ND	0.022	0.24		mg/Kg	5	1/23/2020 10:53:19 AM	R66015
1,1,1,2-Tetrachloroethane	ND	0.016	0.24		mg/Kg	5	1/23/2020 10:53:19 AM	R66015
1,1,2,2-Tetrachloroethane	ND	0.024	0.24		mg/Kg	5	1/23/2020 10:53:19 AM	R66015

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-14 Toe 2.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 2:50:00 PM
Lab ID: 2001739-020 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Tetrachloroethene (PCE)	ND	0.019	0.24		mg/Kg	5	1/23/2020 10:53:19 AM	R66015
trans-1,2-DCE	ND	0.022	0.24		mg/Kg	5	1/23/2020 10:53:19 AM	R66015
trans-1,3-Dichloropropene	ND	0.025	0.24		mg/Kg	5	1/23/2020 10:53:19 AM	R66015
1,2,3-Trichlorobenzene	ND	0.021	0.47		mg/Kg	5	1/23/2020 10:53:19 AM	R66015
1,2,4-Trichlorobenzene	ND	0.024	0.24		mg/Kg	5	1/23/2020 10:53:19 AM	R66015
1,1,1-Trichloroethane	ND	0.021	0.24		mg/Kg	5	1/23/2020 10:53:19 AM	R66015
1,1,2-Trichloroethane	ND	0.017	0.24		mg/Kg	5	1/23/2020 10:53:19 AM	R66015
Trichloroethene (TCE)	ND	0.027	0.24		mg/Kg	5	1/23/2020 10:53:19 AM	R66015
Trichlorofluoromethane	ND	0.080	0.24		mg/Kg	5	1/23/2020 10:53:19 AM	R66015
1,2,3-Trichloropropane	ND	0.038	0.47		mg/Kg	5	1/23/2020 10:53:19 AM	R66015
Vinyl chloride	ND	0.015	0.24		mg/Kg	5	1/23/2020 10:53:19 AM	R66015
Xylenes, Total	1.5	0.060	0.47		mg/Kg	5	1/23/2020 10:53:19 AM	R66015
Surr: Dibromofluoromethane	99.4		70-130		%Rec	5	1/23/2020 10:53:19 AM	R66015
Surr: 1,2-Dichloroethane-d4	94.9		70-130		%Rec	5	1/23/2020 10:53:19 AM	R66015
Surr: Toluene-d8	101		70-130		%Rec	5	1/23/2020 10:53:19 AM	R66015
Surr: 4-Bromofluorobenzene	95.4		70-130		%Rec	5	1/23/2020 10:53:19 AM	R66015
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **JMR**	
Gasoline Range Organics (GRO)	82	5.0	24		mg/Kg	5	1/23/2020 10:53:19 AM	G66015
Surr: BFB	103	0	70-130		%Rec	5	1/23/2020 10:53:19 AM	G66015
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/27/2020 12:20:00 PM	R6611C
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	7.97				pH Units	1	1/29/2020 10:26:00 AM	R66160

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

Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-9 Sludge 4.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 9:00:00 AM
Lab ID: 2001739-021 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	65000	230	980		mg/Kg	100	1/22/2020 8:07:35 PM	49948
Motor Oil Range Organics (MRO)	8600	4900	4900		mg/Kg	100	1/22/2020 8:07:35 PM	49948
Surr: DNOP	0	0	55.1-146	S	%Rec	100	1/22/2020 8:07:35 PM	49948
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	12	0.092	1.7	H	mg/Kg	50	3/2/2020 5:30:06 PM	50789
MERCURY, TCLP							Analyst: **rde**	
Mercury	ND	0.00075	0.020		mg/L	1	1/24/2020 12:26:08 PM	50015
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.75	5.1		mg/Kg	2	1/23/2020 9:31:43 AM	49957
Arsenic	15	2.9	5.1		mg/Kg	2	1/23/2020 9:31:43 AM	49957
Barium	470	0.047	0.20		mg/Kg	2	1/23/2020 9:31:43 AM	49957
Beryllium	0.25	0.019	0.31	J	mg/Kg	2	1/23/2020 9:31:43 AM	49957
Cadmium	ND	0.050	0.20		mg/Kg	2	1/23/2020 9:31:43 AM	49957
Chromium	32	0.16	0.61		mg/Kg	2	1/23/2020 9:31:43 AM	49957
Cobalt	5.3	0.22	0.61		mg/Kg	2	1/23/2020 9:31:43 AM	49957
Lead	61	0.50	0.51		mg/Kg	2	1/23/2020 9:31:43 AM	49957
Nickel	62	0.30	1.0		mg/Kg	2	1/23/2020 9:31:43 AM	49957
Selenium	ND	2.6	5.1		mg/Kg	2	1/23/2020 9:31:43 AM	49957
Silver	ND	0.065	0.51		mg/Kg	2	1/23/2020 9:31:43 AM	49957
Vanadium	27	0.14	5.1		mg/Kg	2	1/23/2020 9:31:43 AM	49957
Zinc	3100	8.1	51		mg/Kg	20	1/23/2020 11:40:51 AM	49957
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/25/2020 12:28:00 PM	50036
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	1.7	4.5	D	mg/Kg	1	1/31/2020 6:11:52 PM	49975
Acenaphthylene	ND	2.0	4.5	D	mg/Kg	1	1/31/2020 6:11:52 PM	49975
Aniline	ND	1.6	4.5	D	mg/Kg	1	1/31/2020 6:11:52 PM	49975
Anthracene	ND	1.7	4.5	D	mg/Kg	1	1/31/2020 6:11:52 PM	49975
Azobenzene	ND	2.3	4.5	D	mg/Kg	1	1/31/2020 6:11:52 PM	49975
Benz(a)anthracene	ND	1.6	4.5	D	mg/Kg	1	1/31/2020 6:11:52 PM	49975
Benzo(a)pyrene	10	2.5	4.5	D	mg/Kg	1	1/31/2020 6:11:52 PM	49975
Benzo(b)fluoranthene	ND	2.6	4.5	D	mg/Kg	1	1/31/2020 6:11:52 PM	49975
Benzo(g,h,i)perylene	ND	2.3	4.5	D	mg/Kg	1	1/31/2020 6:11:52 PM	49975
Benzo(k)fluoranthene	ND	1.4	4.5	D	mg/Kg	1	1/31/2020 6:11:52 PM	49975
Benzoic acid	ND	3.1	11	D	mg/Kg	1	1/31/2020 6:11:52 PM	49975
Benzyl alcohol	ND	1.9	4.5	D	mg/Kg	1	1/31/2020 6:11:52 PM	49975
Bis(2-chloroethoxy)methane	ND	1.9	4.5	D	mg/Kg	1	1/31/2020 6:11:52 PM	49975

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Qualifiers:

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D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-9 Sludge 4.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 9:00:00 AM
Lab ID: 2001739-021 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	2.6	4.5	D	mg/Kg	1	1/31/2020 6:11:52 PM	49975
Bis(2-chloroisopropyl)ether	ND	2.0	4.5	D	mg/Kg	1	1/31/2020 6:11:52 PM	49975
Bis(2-ethylhexyl)phthalate	ND	5.1	11	D	mg/Kg	1	1/31/2020 6:11:52 PM	49975
4-Bromophenyl phenyl ether	ND	2.6	4.5	D	mg/Kg	1	1/31/2020 6:11:52 PM	49975
Butyl benzyl phthalate	ND	1.5	4.5	D	mg/Kg	1	1/31/2020 6:11:52 PM	49975
Carbazole	ND	1.8	4.5	D	mg/Kg	1	1/31/2020 6:11:52 PM	49975
4-Chloro-3-methylphenol	ND	1.8	11	D	mg/Kg	1	1/31/2020 6:11:52 PM	49975
4-Chloroaniline	ND	1.7	11	D	mg/Kg	1	1/31/2020 6:11:52 PM	49975
2-Chloronaphthalene	ND	1.9	5.7	D	mg/Kg	1	1/31/2020 6:11:52 PM	49975
2-Chlorophenol	ND	2.6	4.5	D	mg/Kg	1	1/31/2020 6:11:52 PM	49975
4-Chlorophenyl phenyl ether	ND	1.9	4.5	D	mg/Kg	1	1/31/2020 6:11:52 PM	49975
Chrysene	ND	1.8	4.5	D	mg/Kg	1	1/31/2020 6:11:52 PM	49975
Di-n-butyl phthalate	ND	6.8	9.1	D	mg/Kg	1	1/31/2020 6:11:52 PM	49975
Di-n-octyl phthalate	ND	1.5	9.1	D	mg/Kg	1	1/31/2020 6:11:52 PM	49975
Dibenz(a,h)anthracene	ND	2.5	4.5	D	mg/Kg	1	1/31/2020 6:11:52 PM	49975
Dibenzofuran	ND	2.3	4.5	D	mg/Kg	1	1/31/2020 6:11:52 PM	49975
1,2-Dichlorobenzene	ND	1.8	4.5	D	mg/Kg	1	1/31/2020 6:11:52 PM	49975
1,3-Dichlorobenzene	ND	1.5	4.5	D	mg/Kg	1	1/31/2020 6:11:52 PM	49975
1,4-Dichlorobenzene	ND	1.9	4.5	D	mg/Kg	1	1/31/2020 6:11:52 PM	49975
3,3´-Dichlorobenzidine	ND	1.9	5.7	D	mg/Kg	1	1/31/2020 6:11:52 PM	49975
Diethyl phthalate	ND	6.9	11	D	mg/Kg	1	1/31/2020 6:11:52 PM	49975
Dimethyl phthalate	ND	1.8	4.5	D	mg/Kg	1	1/31/2020 6:11:52 PM	49975
2,4-Dichlorophenol	ND	1.9	9.1	D	mg/Kg	1	1/31/2020 6:11:52 PM	49975
2,4-Dimethylphenol	ND	1.9	6.8	D	mg/Kg	1	1/31/2020 6:11:52 PM	49975
4,6-Dinitro-2-methylphenol	ND	1.7	9.1	D	mg/Kg	1	1/31/2020 6:11:52 PM	49975
2,4-Dinitrophenol	ND	1.3	11	D	mg/Kg	1	1/31/2020 6:11:52 PM	49975
2,4-Dinitrotoluene	ND	2.3	11	D	mg/Kg	1	1/31/2020 6:11:52 PM	49975
2,6-Dinitrotoluene	ND	2.7	11	D	mg/Kg	1	1/31/2020 6:11:52 PM	49975
Fluoranthene	ND	1.7	4.5	D	mg/Kg	1	1/31/2020 6:11:52 PM	49975
Fluorene	43	1.8	4.5	D	mg/Kg	1	1/31/2020 6:11:52 PM	49975
Hexachlorobenzene	ND	1.8	4.5	D	mg/Kg	1	1/31/2020 6:11:52 PM	49975
Hexachlorobutadiene	ND	2.0	4.5	D	mg/Kg	1	1/31/2020 6:11:52 PM	49975
Hexachlorocyclopentadiene	ND	2.2	4.5	D	mg/Kg	1	1/31/2020 6:11:52 PM	49975
Hexachloroethane	ND	1.9	4.5	D	mg/Kg	1	1/31/2020 6:11:52 PM	49975
Indeno(1,2,3-cd)pyrene	ND	2.8	4.5	D	mg/Kg	1	1/31/2020 6:11:52 PM	49975
Isophorone	ND	2.0	9.1	D	mg/Kg	1	1/31/2020 6:11:52 PM	49975
1-Methylnaphthalene	290	21	45	D	mg/Kg	10	2/4/2020 6:43:39 PM	49975
2-Methylnaphthalene	340	18	45	D	mg/Kg	10	2/4/2020 6:43:39 PM	49975
2-Methylphenol	ND	1.9	9.1	D	mg/Kg	1	1/31/2020 6:11:52 PM	49975

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Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-9 Sludge 4.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 9:00:00 AM
Lab ID: 2001739-021 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	17	1.6	4.5	D	mg/Kg	1	1/31/2020 6:11:52 PM	49975
N-Nitrosodi-n-propylamine	ND	2.3	4.5	D	mg/Kg	1	1/31/2020 6:11:52 PM	49975
N-Nitrosodiphenylamine	ND	2.3	4.5	D	mg/Kg	1	1/31/2020 6:11:52 PM	49975
Naphthalene	72	1.9	4.5	D	mg/Kg	1	1/31/2020 6:11:52 PM	49975
2-Nitroaniline	ND	2.5	4.5	D	mg/Kg	1	1/31/2020 6:11:52 PM	49975
3-Nitroaniline	ND	2.2	4.5	D	mg/Kg	1	1/31/2020 6:11:52 PM	49975
4-Nitroaniline	ND	3.0	9.1	D	mg/Kg	1	1/31/2020 6:11:52 PM	49975
Nitrobenzene	ND	1.9	9.1	D	mg/Kg	1	1/31/2020 6:11:52 PM	49975
2-Nitrophenol	ND	1.9	4.5	D	mg/Kg	1	1/31/2020 6:11:52 PM	49975
4-Nitrophenol	ND	1.3	5.7	D	mg/Kg	1	1/31/2020 6:11:52 PM	49975
Pentachlorophenol	ND	2.0	9.1	D	mg/Kg	1	1/31/2020 6:11:52 PM	49975
Phenanthrene	190	23	45	D	mg/Kg	10	2/4/2020 6:43:39 PM	49975
Phenol	ND	1.9	4.5	D	mg/Kg	1	1/31/2020 6:11:52 PM	49975
Pyrene	84	1.5	4.5	D	mg/Kg	1	1/31/2020 6:11:52 PM	49975
Pyridine	ND	4.2	9.1	D	mg/Kg	1	1/31/2020 6:11:52 PM	49975
1,2,4-Trichlorobenzene	ND	1.9	4.5	D	mg/Kg	1	1/31/2020 6:11:52 PM	49975
2,4,5-Trichlorophenol	ND	1.5	4.5	D	mg/Kg	1	1/31/2020 6:11:52 PM	49975
2,4,6-Trichlorophenol	ND	2.3	4.5	D	mg/Kg	1	1/31/2020 6:11:52 PM	49975
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	1	1/31/2020 6:11:52 PM	49975
Surr: Phenol-d5	0		18.5-101	SD	%Rec	1	1/31/2020 6:11:52 PM	49975
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	1	1/31/2020 6:11:52 PM	49975
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	1	1/31/2020 6:11:52 PM	49975
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	1	1/31/2020 6:11:52 PM	49975
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	1	1/31/2020 6:11:52 PM	49975
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Benzene	2.7	0.016	0.096		mg/Kg	5	1/23/2020 4:37:14 PM	R66046
Toluene	15	0.018	0.19		mg/Kg	5	1/23/2020 4:37:14 PM	R66046
Ethylbenzene	3.4	0.011	0.19		mg/Kg	5	1/23/2020 4:37:14 PM	R66046
Methyl tert-butyl ether (MTBE)	0.49	0.045	0.19		mg/Kg	5	1/23/2020 4:37:14 PM	R66046
1,2,4-Trimethylbenzene	7.3	0.017	0.19		mg/Kg	5	1/23/2020 4:37:14 PM	R66046
1,3,5-Trimethylbenzene	2.3	0.019	0.19		mg/Kg	5	1/23/2020 4:37:14 PM	R66046
1,2-Dichloroethane (EDC)	ND	0.019	0.19		mg/Kg	5	1/23/2020 4:37:14 PM	R66046
1,2-Dibromoethane (EDB)	ND	0.017	0.19		mg/Kg	5	1/23/2020 4:37:14 PM	R66046
Naphthalene	10	0.038	0.38		mg/Kg	5	1/23/2020 4:37:14 PM	R66046
1-Methylnaphthalene	19	1.1	7.6		mg/Kg	50	1/24/2020 1:51:13 PM	R66078
2-Methylnaphthalene	30	0.84	7.6		mg/Kg	50	1/24/2020 1:51:13 PM	R66078
Acetone	0.46	0.16	2.9	J	mg/Kg	5	1/23/2020 4:37:14 PM	R66046
Bromobenzene	ND	0.018	0.19		mg/Kg	5	1/23/2020 4:37:14 PM	R66046
Bromodichloromethane	ND	0.017	0.19		mg/Kg	5	1/23/2020 4:37:14 PM	R66046

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J	Analyte detected below quantitation limits
P	Sample pH Not In Range
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-9 Sludge 4.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 9:00:00 AM
Lab ID: 2001739-021 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Bromoform	ND	0.017	0.19		mg/Kg	5	1/23/2020 4:37:14 PM	R66046
Bromomethane	ND	0.046	0.57		mg/Kg	5	1/23/2020 4:37:14 PM	R66046
2-Butanone	ND	0.22	1.9		mg/Kg	5	1/23/2020 4:37:14 PM	R66046
Carbon disulfide	0.17	0.063	1.9	J	mg/Kg	5	1/23/2020 4:37:14 PM	R66046
Carbon tetrachloride	ND	0.018	0.19		mg/Kg	5	1/23/2020 4:37:14 PM	R66046
Chlorobenzene	ND	0.024	0.19		mg/Kg	5	1/23/2020 4:37:14 PM	R66046
Chloroethane	0.096	0.028	0.38	J	mg/Kg	5	1/23/2020 4:37:14 PM	R66046
Chloroform	0.052	0.015	0.19	J	mg/Kg	5	1/23/2020 4:37:14 PM	R66046
Chloromethane	0.077	0.018	0.57	J	mg/Kg	5	1/23/2020 4:37:14 PM	R66046
2-Chlorotoluene	ND	0.017	0.19		mg/Kg	5	1/23/2020 4:37:14 PM	R66046
4-Chlorotoluene	ND	0.016	0.19		mg/Kg	5	1/23/2020 4:37:14 PM	R66046
cis-1,2-DCE	ND	0.026	0.19		mg/Kg	5	1/23/2020 4:37:14 PM	R66046
cis-1,3-Dichloropropene	0.022	0.016	0.19	J	mg/Kg	5	1/23/2020 4:37:14 PM	R66046
1,2-Dibromo-3-chloropropane	ND	0.020	0.38		mg/Kg	5	1/23/2020 4:37:14 PM	R66046
Dibromochloromethane	ND	0.014	0.19		mg/Kg	5	1/23/2020 4:37:14 PM	R66046
Dibromomethane	ND	0.021	0.19		mg/Kg	5	1/23/2020 4:37:14 PM	R66046
1,2-Dichlorobenzene	ND	0.016	0.19		mg/Kg	5	1/23/2020 4:37:14 PM	R66046
1,3-Dichlorobenzene	ND	0.017	0.19		mg/Kg	5	1/23/2020 4:37:14 PM	R66046
1,4-Dichlorobenzene	ND	0.016	0.19		mg/Kg	5	1/23/2020 4:37:14 PM	R66046
Dichlorodifluoromethane	ND	0.044	0.19		mg/Kg	5	1/23/2020 4:37:14 PM	R66046
1,1-Dichloroethane	0.070	0.012	0.19	J	mg/Kg	5	1/23/2020 4:37:14 PM	R66046
1,1-Dichloroethene	ND	0.076	0.19		mg/Kg	5	1/23/2020 4:37:14 PM	R66046
1,2-Dichloropropane	ND	0.014	0.19		mg/Kg	5	1/23/2020 4:37:14 PM	R66046
1,3-Dichloropropane	ND	0.021	0.19		mg/Kg	5	1/23/2020 4:37:14 PM	R66046
2,2-Dichloropropane	ND	0.062	0.38		mg/Kg	5	1/23/2020 4:37:14 PM	R66046
1,1-Dichloropropene	ND	0.017	0.38		mg/Kg	5	1/23/2020 4:37:14 PM	R66046
Hexachlorobutadiene	ND	0.019	0.38		mg/Kg	5	1/23/2020 4:37:14 PM	R66046
2-Hexanone	0.66	0.032	1.9	J	mg/Kg	5	1/23/2020 4:37:14 PM	R66046
Isopropylbenzene	0.63	0.014	0.19		mg/Kg	5	1/23/2020 4:37:14 PM	R66046
4-Isopropyltoluene	0.44	0.016	0.19		mg/Kg	5	1/23/2020 4:37:14 PM	R66046
4-Methyl-2-pentanone	ND	0.036	1.9		mg/Kg	5	1/23/2020 4:37:14 PM	R66046
Methylene chloride	ND	0.034	0.57		mg/Kg	5	1/23/2020 4:37:14 PM	R66046
n-Butylbenzene	0.75	0.018	0.57		mg/Kg	5	1/23/2020 4:37:14 PM	R66046
n-Propylbenzene	1.3	0.015	0.19		mg/Kg	5	1/23/2020 4:37:14 PM	R66046
sec-Butylbenzene	0.50	0.022	0.19		mg/Kg	5	1/23/2020 4:37:14 PM	R66046
Styrene	ND	0.015	0.19		mg/Kg	5	1/23/2020 4:37:14 PM	R66046
tert-Butylbenzene	ND	0.018	0.19		mg/Kg	5	1/23/2020 4:37:14 PM	R66046
1,1,1,2-Tetrachloroethane	ND	0.013	0.19		mg/Kg	5	1/23/2020 4:37:14 PM	R66046
1,1,2,2-Tetrachloroethane	ND	0.019	0.19		mg/Kg	5	1/23/2020 4:37:14 PM	R66046

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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-9 Sludge 4.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 9:00:00 AM
Lab ID: 2001739-021 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Tetrachloroethene (PCE)	ND	0.015	0.19		mg/Kg	5	1/23/2020 4:37:14 PM	R66046
trans-1,2-DCE	ND	0.017	0.19		mg/Kg	5	1/23/2020 4:37:14 PM	R66046
trans-1,3-Dichloropropene	0.093	0.020	0.19	J	mg/Kg	5	1/23/2020 4:37:14 PM	R66046
1,2,3-Trichlorobenzene	ND	0.017	0.38		mg/Kg	5	1/23/2020 4:37:14 PM	R66046
1,2,4-Trichlorobenzene	ND	0.019	0.19		mg/Kg	5	1/23/2020 4:37:14 PM	R66046
1,1,1-Trichloroethane	ND	0.017	0.19		mg/Kg	5	1/23/2020 4:37:14 PM	R66046
1,1,2-Trichloroethane	ND	0.013	0.19		mg/Kg	5	1/23/2020 4:37:14 PM	R66046
Trichloroethene (TCE)	ND	0.022	0.19		mg/Kg	5	1/23/2020 4:37:14 PM	R66046
Trichlorofluoromethane	ND	0.065	0.19		mg/Kg	5	1/23/2020 4:37:14 PM	R66046
1,2,3-Trichloropropane	ND	0.031	0.38		mg/Kg	5	1/23/2020 4:37:14 PM	R66046
Vinyl chloride	ND	0.012	0.19		mg/Kg	5	1/23/2020 4:37:14 PM	R66046
Xylenes, Total	19	0.048	0.38		mg/Kg	5	1/23/2020 4:37:14 PM	R66046
Surr: Dibromofluoromethane	99.0		70-130		%Rec	5	1/23/2020 4:37:14 PM	R66046
Surr: 1,2-Dichloroethane-d4	96.7		70-130		%Rec	5	1/23/2020 4:37:14 PM	R66046
Surr: Toluene-d8	99.1		70-130		%Rec	5	1/23/2020 4:37:14 PM	R66046
Surr: 4-Bromofluorobenzene	89.1		70-130		%Rec	5	1/23/2020 4:37:14 PM	R66046
VOLATILES BY 8260B/1311							Analyst: **CCM**	
Benzene	0.17	0.10	0.50	J	mg/L	1	1/27/2020 2:33:00 PM	50050
Surr: 1,2-Dichloroethane-d4	106	0	70-130		%Rec	1	1/27/2020 2:33:00 PM	50050
Surr: 4-Bromofluorobenzene	105	0	70-130		%Rec	1	1/27/2020 2:33:00 PM	50050
Surr: Dibromofluoromethane	100	0	70-130		%Rec	1	1/27/2020 2:33:00 PM	50050
Surr: Toluene-d8	93.5	0	70-130		%Rec	1	1/27/2020 2:33:00 PM	50050
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **JMR**	
Gasoline Range Organics (GRO)	240	4.1	19		mg/Kg	5	1/23/2020 4:37:14 PM	G66046
Surr: BFB	98.0	0	70-130		%Rec	5	1/23/2020 4:37:14 PM	G66046
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Positve				Pos/Neg	1	1/27/2020 12:20:00 PM	R66110
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	7.47				pH Units	1	1/29/2020 10:26:00 AM	R66160

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PQL	Practical Quanitative Limit
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E	Value above quantitation range
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P	Sample pH Not In Range
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-20 Toe 0.5-3
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 3:02:00 PM
Lab ID: 2001739-022 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	17000	110	480		mg/Kg	50	1/24/2020 10:47:41 AM	49948
Motor Oil Range Organics (MRO)	2900	2400	2400		mg/Kg	50	1/24/2020 10:47:41 AM	49948
Surr: DNOP	0	0	55.1-146	S	%Rec	50	1/24/2020 10:47:41 AM	49948
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	13	0.092	1.7	H	mg/Kg	50	3/2/2020 5:32:40 PM	50789
MERCURY, TCLP							Analyst: **rde**	
Mercury	ND	0.00075	0.020		mg/L	1	1/24/2020 12:28:10 PM	50015
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	34	0.73	5.0		mg/Kg	2	1/23/2020 9:33:08 AM	49957
Arsenic	14	2.8	5.0		mg/Kg	2	1/23/2020 9:33:08 AM	49957
Barium	350	0.046	0.20		mg/Kg	2	1/23/2020 9:33:08 AM	49957
Beryllium	0.19	0.018	0.30	J	mg/Kg	2	1/23/2020 9:33:08 AM	49957
Cadmium	ND	0.048	0.20		mg/Kg	2	1/23/2020 9:33:08 AM	49957
Chromium	32	0.16	0.60		mg/Kg	2	1/23/2020 9:33:08 AM	49957
Cobalt	4.2	0.21	0.60		mg/Kg	2	1/23/2020 9:33:08 AM	49957
Lead	47	0.48	0.50		mg/Kg	2	1/23/2020 9:33:08 AM	49957
Nickel	57	0.30	1.0		mg/Kg	2	1/23/2020 9:33:08 AM	49957
Selenium	ND	2.5	5.0		mg/Kg	2	1/23/2020 9:33:08 AM	49957
Silver	ND	0.064	0.50		mg/Kg	2	1/23/2020 9:33:08 AM	49957
Vanadium	6.7	0.13	5.0		mg/Kg	2	1/23/2020 9:33:08 AM	49957
Zinc	1300	3.9	25		mg/Kg	10	1/23/2020 11:33:51 AM	49957
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/25/2020 12:29:23 PM	50036
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	1.8	4.9	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975
Acenaphthylene	ND	2.2	4.9	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975
Aniline	ND	1.7	4.9	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975
Anthracene	ND	1.9	4.9	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975
Azobenzene	ND	2.5	4.9	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975
Benz(a)anthracene	ND	1.7	4.9	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975
Benzo(a)pyrene	ND	2.7	4.9	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975
Benzo(b)fluoranthene	ND	2.8	4.9	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975
Benzo(g,h,i)perylene	ND	2.5	4.9	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975
Benzo(k)fluoranthene	ND	1.5	4.9	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975
Benzoic acid	ND	3.4	12	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975
Benzyl alcohol	ND	2.0	4.9	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975
Bis(2-chloroethoxy)methane	ND	2.0	4.9	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975

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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-20 Toe 0.5-3
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 3:02:00 PM
Lab ID: 2001739-022 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	2.9	4.9	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975
Bis(2-chloroisopropyl)ether	ND	2.1	4.9	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975
Bis(2-ethylhexyl)phthalate	ND	5.5	12	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975
4-Bromophenyl phenyl ether	ND	2.9	4.9	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975
Butyl benzyl phthalate	ND	1.6	4.9	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975
Carbazole	ND	2.0	4.9	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975
4-Chloro-3-methylphenol	ND	1.9	12	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975
4-Chloroaniline	ND	1.9	12	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975
2-Chloronaphthalene	ND	2.1	6.1	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975
2-Chlorophenol	ND	2.8	4.9	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975
4-Chlorophenyl phenyl ether	ND	2.1	4.9	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975
Chrysene	ND	1.9	4.9	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975
Di-n-butyl phthalate	ND	7.3	9.8	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975
Di-n-octyl phthalate	ND	1.6	9.8	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975
Dibenz(a,h)anthracene	ND	2.7	4.9	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975
Dibenzofuran	ND	2.5	4.9	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975
1,2-Dichlorobenzene	ND	1.9	4.9	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975
1,3-Dichlorobenzene	ND	1.6	4.9	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975
1,4-Dichlorobenzene	ND	2.0	4.9	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975
3,3´-Dichlorobenzidine	ND	2.1	6.1	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975
Diethyl phthalate	ND	7.5	12	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975
Dimethyl phthalate	ND	2.0	4.9	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975
2,4-Dichlorophenol	ND	2.1	9.8	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975
2,4-Dimethylphenol	ND	2.0	7.4	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975
4,6-Dinitro-2-methylphenol	ND	1.8	9.8	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975
2,4-Dinitrophenol	ND	1.4	12	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975
2,4-Dinitrotoluene	ND	2.5	12	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975
2,6-Dinitrotoluene	ND	2.9	12	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975
Fluoranthene	ND	1.9	4.9	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975
Fluorene	15	1.9	4.9	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975
Hexachlorobenzene	ND	1.9	4.9	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975
Hexachlorobutadiene	ND	2.2	4.9	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975
Hexachlorocyclopentadiene	ND	2.4	4.9	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975
Hexachloroethane	ND	2.0	4.9	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975
Indeno(1,2,3-cd)pyrene	ND	3.0	4.9	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975
Isophorone	ND	2.1	9.8	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975
1-Methylnaphthalene	65	2.3	4.9	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975
2-Methylnaphthalene	120	20	49	D	mg/Kg	10	2/4/2020 7:12:21 PM	49975
2-Methylphenol	ND	2.1	9.8	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975

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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-20 Toe 0.5-3
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 3:02:00 PM
Lab ID: 2001739-022 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	5.5	1.8	4.9	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975
N-Nitrosodi-n-propylamine	ND	2.5	4.9	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975
N-Nitrosodiphenylamine	ND	2.5	4.9	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975
Naphthalene	28	2.0	4.9	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975
2-Nitroaniline	ND	2.7	4.9	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975
3-Nitroaniline	ND	2.4	4.9	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975
4-Nitroaniline	ND	3.3	9.8	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975
Nitrobenzene	ND	2.1	9.8	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975
2-Nitrophenol	ND	2.0	4.9	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975
4-Nitrophenol	ND	1.4	6.1	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975
Pentachlorophenol	ND	2.2	9.8	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975
Phenanthrene	38	2.5	4.9	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975
Phenol	ND	2.1	4.9	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975
Pyrene	ND	1.6	4.9	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975
Pyridine	ND	4.6	9.8	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975
1,2,4-Trichlorobenzene	ND	2.1	4.9	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975
2,4,5-Trichlorophenol	ND	1.6	4.9	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975
2,4,6-Trichlorophenol	ND	2.5	4.9	D	mg/Kg	1	1/31/2020 6:40:33 PM	49975
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	1	1/31/2020 6:40:33 PM	49975
Surr: Phenol-d5	0		18.5-101	SD	%Rec	1	1/31/2020 6:40:33 PM	49975
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	1	1/31/2020 6:40:33 PM	49975
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	1	1/31/2020 6:40:33 PM	49975
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	1	1/31/2020 6:40:33 PM	49975
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	1	1/31/2020 6:40:33 PM	49975
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Benzene	2.3	0.014	0.088		mg/Kg	5	1/23/2020 6:02:55 PM	R66046
Toluene	8.0	0.017	0.18		mg/Kg	5	1/23/2020 6:02:55 PM	R66046
Ethylbenzene	2.1	0.010	0.18		mg/Kg	5	1/23/2020 6:02:55 PM	R66046
Methyl tert-butyl ether (MTBE)	0.14	0.042	0.18	J	mg/Kg	5	1/23/2020 6:02:55 PM	R66046
1,2,4-Trimethylbenzene	4.2	0.016	0.18		mg/Kg	5	1/23/2020 6:02:55 PM	R66046
1,3,5-Trimethylbenzene	1.4	0.017	0.18		mg/Kg	5	1/23/2020 6:02:55 PM	R66046
1,2-Dichloroethane (EDC)	ND	0.018	0.18		mg/Kg	5	1/23/2020 6:02:55 PM	R66046
1,2-Dibromoethane (EDB)	ND	0.016	0.18		mg/Kg	5	1/23/2020 6:02:55 PM	R66046
Naphthalene	5.4	0.035	0.35		mg/Kg	5	1/23/2020 6:02:55 PM	R66046
1-Methylnaphthalene	8.5	0.10	0.70		mg/Kg	5	1/23/2020 6:02:55 PM	R66046
2-Methylnaphthalene	13	0.077	0.70		mg/Kg	5	1/23/2020 6:02:55 PM	R66046
Acetone	0.51	0.15	2.6	J	mg/Kg	5	1/23/2020 6:02:55 PM	R66046
Bromobenzene	ND	0.017	0.18		mg/Kg	5	1/23/2020 6:02:55 PM	R66046
Bromodichloromethane	ND	0.016	0.18		mg/Kg	5	1/23/2020 6:02:55 PM	R66046

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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-20 Toe 0.5-3
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 3:02:00 PM
Lab ID: 2001739-022 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Bromoform	ND	0.016	0.18		mg/Kg	5	1/23/2020 6:02:55 PM	R66046
Bromomethane	ND	0.042	0.53		mg/Kg	5	1/23/2020 6:02:55 PM	R66046
2-Butanone	ND	0.20	1.8		mg/Kg	5	1/23/2020 6:02:55 PM	R66046
Carbon disulfide	0.28	0.058	1.8	J	mg/Kg	5	1/23/2020 6:02:55 PM	R66046
Carbon tetrachloride	ND	0.017	0.18		mg/Kg	5	1/23/2020 6:02:55 PM	R66046
Chlorobenzene	ND	0.023	0.18		mg/Kg	5	1/23/2020 6:02:55 PM	R66046
Chloroethane	0.075	0.026	0.35	J	mg/Kg	5	1/23/2020 6:02:55 PM	R66046
Chloroform	0.091	0.014	0.18	J	mg/Kg	5	1/23/2020 6:02:55 PM	R66046
Chloromethane	0.079	0.017	0.53	J	mg/Kg	5	1/23/2020 6:02:55 PM	R66046
2-Chlorotoluene	ND	0.015	0.18		mg/Kg	5	1/23/2020 6:02:55 PM	R66046
4-Chlorotoluene	ND	0.014	0.18		mg/Kg	5	1/23/2020 6:02:55 PM	R66046
cis-1,2-DCE	0.030	0.024	0.18	J	mg/Kg	5	1/23/2020 6:02:55 PM	R66046
cis-1,3-Dichloropropene	ND	0.015	0.18		mg/Kg	5	1/23/2020 6:02:55 PM	R66046
1,2-Dibromo-3-chloropropane	ND	0.018	0.35		mg/Kg	5	1/23/2020 6:02:55 PM	R66046
Dibromochloromethane	ND	0.012	0.18		mg/Kg	5	1/23/2020 6:02:55 PM	R66046
Dibromomethane	ND	0.019	0.18		mg/Kg	5	1/23/2020 6:02:55 PM	R66046
1,2-Dichlorobenzene	ND	0.014	0.18		mg/Kg	5	1/23/2020 6:02:55 PM	R66046
1,3-Dichlorobenzene	ND	0.015	0.18		mg/Kg	5	1/23/2020 6:02:55 PM	R66046
1,4-Dichlorobenzene	ND	0.015	0.18		mg/Kg	5	1/23/2020 6:02:55 PM	R66046
Dichlorodifluoromethane	ND	0.041	0.18		mg/Kg	5	1/23/2020 6:02:55 PM	R66046
1,1-Dichloroethane	0.054	0.011	0.18	J	mg/Kg	5	1/23/2020 6:02:55 PM	R66046
1,1-Dichloroethene	ND	0.070	0.18		mg/Kg	5	1/23/2020 6:02:55 PM	R66046
1,2-Dichloropropane	ND	0.013	0.18		mg/Kg	5	1/23/2020 6:02:55 PM	R66046
1,3-Dichloropropane	ND	0.019	0.18		mg/Kg	5	1/23/2020 6:02:55 PM	R66046
2,2-Dichloropropane	ND	0.057	0.35		mg/Kg	5	1/23/2020 6:02:55 PM	R66046
1,1-Dichloropropene	ND	0.016	0.35		mg/Kg	5	1/23/2020 6:02:55 PM	R66046
Hexachlorobutadiene	ND	0.018	0.35		mg/Kg	5	1/23/2020 6:02:55 PM	R66046
2-Hexanone	0.83	0.029	1.8	J	mg/Kg	5	1/23/2020 6:02:55 PM	R66046
Isopropylbenzene	0.38	0.013	0.18		mg/Kg	5	1/23/2020 6:02:55 PM	R66046
4-Isopropyltoluene	0.23	0.015	0.18		mg/Kg	5	1/23/2020 6:02:55 PM	R66046
4-Methyl-2-pentanone	ND	0.033	1.8		mg/Kg	5	1/23/2020 6:02:55 PM	R66046
Methylene chloride	ND	0.031	0.53		mg/Kg	5	1/23/2020 6:02:55 PM	R66046
n-Butylbenzene	0.46	0.016	0.53	J	mg/Kg	5	1/23/2020 6:02:55 PM	R66046
n-Propylbenzene	0.87	0.014	0.18		mg/Kg	5	1/23/2020 6:02:55 PM	R66046
sec-Butylbenzene	0.29	0.020	0.18		mg/Kg	5	1/23/2020 6:02:55 PM	R66046
Styrene	ND	0.014	0.18		mg/Kg	5	1/23/2020 6:02:55 PM	R66046
tert-Butylbenzene	ND	0.017	0.18		mg/Kg	5	1/23/2020 6:02:55 PM	R66046
1,1,1,2-Tetrachloroethane	ND	0.012	0.18		mg/Kg	5	1/23/2020 6:02:55 PM	R66046
1,1,2,2-Tetrachloroethane	ND	0.018	0.18		mg/Kg	5	1/23/2020 6:02:55 PM	R66046

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

Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-20 Toe 0.5-3
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 3:02:00 PM
Lab ID: 2001739-022 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Tetrachloroethene (PCE)	ND	0.014	0.18		mg/Kg	5	1/23/2020 6:02:55 PM	R66046
trans-1,2-DCE	ND	0.016	0.18		mg/Kg	5	1/23/2020 6:02:55 PM	R66046
trans-1,3-Dichloropropene	ND	0.019	0.18		mg/Kg	5	1/23/2020 6:02:55 PM	R66046
1,2,3-Trichlorobenzene	ND	0.015	0.35		mg/Kg	5	1/23/2020 6:02:55 PM	R66046
1,2,4-Trichlorobenzene	ND	0.018	0.18		mg/Kg	5	1/23/2020 6:02:55 PM	R66046
1,1,1-Trichloroethane	ND	0.016	0.18		mg/Kg	5	1/23/2020 6:02:55 PM	R66046
1,1,2-Trichloroethane	ND	0.012	0.18		mg/Kg	5	1/23/2020 6:02:55 PM	R66046
Trichloroethene (TCE)	ND	0.020	0.18		mg/Kg	5	1/23/2020 6:02:55 PM	R66046
Trichlorofluoromethane	ND	0.060	0.18		mg/Kg	5	1/23/2020 6:02:55 PM	R66046
1,2,3-Trichloropropane	ND	0.028	0.35		mg/Kg	5	1/23/2020 6:02:55 PM	R66046
Vinyl chloride	ND	0.011	0.18		mg/Kg	5	1/23/2020 6:02:55 PM	R66046
Xylenes, Total	12	0.044	0.35		mg/Kg	5	1/23/2020 6:02:55 PM	R66046
Surr: Dibromofluoromethane	101		70-130		%Rec	5	1/23/2020 6:02:55 PM	R66046
Surr: 1,2-Dichloroethane-d4	95.8		70-130		%Rec	5	1/23/2020 6:02:55 PM	R66046
Surr: Toluene-d8	102		70-130		%Rec	5	1/23/2020 6:02:55 PM	R66046
Surr: 4-Bromofluorobenzene	83.9		70-130		%Rec	5	1/23/2020 6:02:55 PM	R66046
VOLATILES BY 8260B/1311							Analyst: **CCM**	
Benzene	0.15	0.10	0.50	J	mg/L	1	1/27/2020 2:57:00 PM	50050
Surr: 1,2-Dichloroethane-d4	106	0	70-130		%Rec	1	1/27/2020 2:57:00 PM	50050
Surr: 4-Bromofluorobenzene	103	0	70-130		%Rec	1	1/27/2020 2:57:00 PM	50050
Surr: Dibromofluoromethane	100	0	70-130		%Rec	1	1/27/2020 2:57:00 PM	50050
Surr: Toluene-d8	93.7	0	70-130		%Rec	1	1/27/2020 2:57:00 PM	50050
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **JMR**	
Gasoline Range Organics (GRO)	200	3.7	18		mg/Kg	5	1/23/2020 6:02:55 PM	G66046
Surr: BFB	92.8	0	70-130		%Rec	5	1/23/2020 6:02:55 PM	G66046
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Positve				Pos/Neg	1	1/27/2020 12:20:00 PM	R66110
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	7.52				pH Units	1	1/29/2020 10:26:00 AM	R66160

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PQL	Practical Quanitative Limit
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P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-22 Toe Sludge 2.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 9:50:00 AM
Lab ID: 2001739-023 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	21000	110	470		mg/Kg	50	1/24/2020 10:56:53 AM	49948
Motor Oil Range Organics (MRO)	4400	2300	2300		mg/Kg	50	1/24/2020 10:56:53 AM	49948
Surr: DNOP	0	0	55.1-146	S	%Rec	50	1/24/2020 10:56:53 AM	49948
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	7.5	0.092	1.7	H	mg/Kg	50	3/2/2020 5:43:06 PM	50789
MERCURY, TCLP							Analyst: **rde**	
Mercury	ND	0.00075	0.020		mg/L	1	1/24/2020 12:30:11 PM	50015
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.75	5.1		mg/Kg	2	1/23/2020 9:34:32 AM	49957
Arsenic	22	2.9	5.1		mg/Kg	2	1/23/2020 9:34:32 AM	49957
Barium	550	0.12	0.51		mg/Kg	5	1/23/2020 10:11:39 AM	49957
Beryllium	0.31	0.019	0.30		mg/Kg	2	1/23/2020 9:34:32 AM	49957
Cadmium	ND	0.049	0.20		mg/Kg	2	1/23/2020 9:34:32 AM	49957
Chromium	35	0.16	0.61		mg/Kg	2	1/23/2020 9:34:32 AM	49957
Cobalt	4.6	0.21	0.61		mg/Kg	2	1/23/2020 9:34:32 AM	49957
Lead	130	1.2	1.3		mg/Kg	5	1/23/2020 10:11:39 AM	49957
Nickel	61	0.30	1.0		mg/Kg	2	1/23/2020 9:34:32 AM	49957
Selenium	ND	2.5	5.1		mg/Kg	2	1/23/2020 9:34:32 AM	49957
Silver	ND	0.065	0.51		mg/Kg	2	1/23/2020 9:34:32 AM	49957
Vanadium	18	0.13	5.1		mg/Kg	2	1/23/2020 9:34:32 AM	49957
Zinc	2800	8.0	51		mg/Kg	20	1/23/2020 11:35:15 AM	49957
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/25/2020 12:30:47 PM	50036
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	1.8	4.7	D	mg/Kg	1	1/31/2020 7:09:10 PM	49975
Acenaphthylene	ND	2.1	4.7	D	mg/Kg	1	1/31/2020 7:09:10 PM	49975
Aniline	ND	1.6	4.7	D	mg/Kg	1	1/31/2020 7:09:10 PM	49975
Anthracene	ND	1.8	4.7	D	mg/Kg	1	1/31/2020 7:09:10 PM	49975
Azobenzene	ND	2.4	4.7	D	mg/Kg	1	1/31/2020 7:09:10 PM	49975
Benz(a)anthracene	ND	1.6	4.7	D	mg/Kg	1	1/31/2020 7:09:10 PM	49975
Benzo(a)pyrene	ND	2.6	4.7	D	mg/Kg	1	1/31/2020 7:09:10 PM	49975
Benzo(b)fluoranthene	ND	2.7	4.7	D	mg/Kg	1	1/31/2020 7:09:10 PM	49975
Benzo(g,h,i)perylene	ND	2.4	4.7	D	mg/Kg	1	1/31/2020 7:09:10 PM	49975
Benzo(k)fluoranthene	ND	1.4	4.7	D	mg/Kg	1	1/31/2020 7:09:10 PM	49975
Benzoic acid	ND	3.3	12	D	mg/Kg	1	1/31/2020 7:09:10 PM	49975
Benzyl alcohol	ND	2.0	4.7	D	mg/Kg	1	1/31/2020 7:09:10 PM	49975
Bis(2-chloroethoxy)methane	ND	2.0	4.7	D	mg/Kg	1	1/31/2020 7:09:10 PM	49975

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Qualifiers:

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ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-22 Toe Sludge 2.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 9:50:00 AM
Lab ID: 2001739-023 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	2.8	4.7	D	mg/Kg	1	1/31/2020 7:09:10 PM	49975
Bis(2-chloroisopropyl)ether	ND	2.0	4.7	D	mg/Kg	1	1/31/2020 7:09:10 PM	49975
Bis(2-ethylhexyl)phthalate	ND	5.3	12	D	mg/Kg	1	1/31/2020 7:09:10 PM	49975
4-Bromophenyl phenyl ether	ND	2.8	4.7	D	mg/Kg	1	1/31/2020 7:09:10 PM	49975
Butyl benzyl phthalate	ND	1.6	4.7	D	mg/Kg	1	1/31/2020 7:09:10 PM	49975
Carbazole	ND	1.9	4.7	D	mg/Kg	1	1/31/2020 7:09:10 PM	49975
4-Chloro-3-methylphenol	ND	1.9	12	D	mg/Kg	1	1/31/2020 7:09:10 PM	49975
4-Chloroaniline	ND	1.8	12	D	mg/Kg	1	1/31/2020 7:09:10 PM	49975
2-Chloronaphthalene	ND	2.0	5.9	D	mg/Kg	1	1/31/2020 7:09:10 PM	49975
2-Chlorophenol	ND	2.7	4.7	D	mg/Kg	1	1/31/2020 7:09:10 PM	49975
4-Chlorophenyl phenyl ether	ND	2.0	4.7	D	mg/Kg	1	1/31/2020 7:09:10 PM	49975
Chrysene	ND	1.9	4.7	D	mg/Kg	1	1/31/2020 7:09:10 PM	49975
Di-n-butyl phthalate	ND	7.1	9.5	D	mg/Kg	1	1/31/2020 7:09:10 PM	49975
Di-n-octyl phthalate	ND	1.6	9.5	D	mg/Kg	1	1/31/2020 7:09:10 PM	49975
Dibenz(a,h)anthracene	ND	2.6	4.7	D	mg/Kg	1	1/31/2020 7:09:10 PM	49975
Dibenzofuran	ND	2.4	4.7	D	mg/Kg	1	1/31/2020 7:09:10 PM	49975
1,2-Dichlorobenzene	ND	1.9	4.7	D	mg/Kg	1	1/31/2020 7:09:10 PM	49975
1,3-Dichlorobenzene	ND	1.6	4.7	D	mg/Kg	1	1/31/2020 7:09:10 PM	49975
1,4-Dichlorobenzene	ND	2.0	4.7	D	mg/Kg	1	1/31/2020 7:09:10 PM	49975
3,3´-Dichlorobenzidine	ND	2.0	5.9	D	mg/Kg	1	1/31/2020 7:09:10 PM	49975
Diethyl phthalate	ND	7.2	12	D	mg/Kg	1	1/31/2020 7:09:10 PM	49975
Dimethyl phthalate	ND	1.9	4.7	D	mg/Kg	1	1/31/2020 7:09:10 PM	49975
2,4-Dichlorophenol	ND	2.0	9.5	D	mg/Kg	1	1/31/2020 7:09:10 PM	49975
2,4-Dimethylphenol	ND	2.0	7.1	D	mg/Kg	1	1/31/2020 7:09:10 PM	49975
4,6-Dinitro-2-methylphenol	ND	1.7	9.5	D	mg/Kg	1	1/31/2020 7:09:10 PM	49975
2,4-Dinitrophenol	ND	1.4	12	D	mg/Kg	1	1/31/2020 7:09:10 PM	49975
2,4-Dinitrotoluene	ND	2.4	12	D	mg/Kg	1	1/31/2020 7:09:10 PM	49975
2,6-Dinitrotoluene	ND	2.8	12	D	mg/Kg	1	1/31/2020 7:09:10 PM	49975
Fluoranthene	ND	1.8	4.7	D	mg/Kg	1	1/31/2020 7:09:10 PM	49975
Fluorene	27	1.9	4.7	D	mg/Kg	1	1/31/2020 7:09:10 PM	49975
Hexachlorobenzene	ND	1.9	4.7	D	mg/Kg	1	1/31/2020 7:09:10 PM	49975
Hexachlorobutadiene	ND	2.1	4.7	D	mg/Kg	1	1/31/2020 7:09:10 PM	49975
Hexachlorocyclopentadiene	ND	2.3	4.7	D	mg/Kg	1	1/31/2020 7:09:10 PM	49975
Hexachloroethane	ND	1.9	4.7	D	mg/Kg	1	1/31/2020 7:09:10 PM	49975
Indeno(1,2,3-cd)pyrene	ND	2.9	4.7	D	mg/Kg	1	1/31/2020 7:09:10 PM	49975
Isophorone	ND	2.1	9.5	D	mg/Kg	1	1/31/2020 7:09:10 PM	49975
1-Methylnaphthalene	170	22	47	D	mg/Kg	10	2/4/2020 7:41:11 PM	49975
2-Methylnaphthalene	230	19	47	D	mg/Kg	10	2/4/2020 7:41:11 PM	49975
2-Methylphenol	ND	2.0	9.5	D	mg/Kg	1	1/31/2020 7:09:10 PM	49975

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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-22 Toe Sludge 2.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 9:50:00 AM
Lab ID: 2001739-023 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	14	1.7	4.7	D	mg/Kg	1	1/31/2020 7:09:10 PM	49975
N-Nitrosodi-n-propylamine	ND	2.4	4.7	D	mg/Kg	1	1/31/2020 7:09:10 PM	49975
N-Nitrosodiphenylamine	ND	2.4	4.7	D	mg/Kg	1	1/31/2020 7:09:10 PM	49975
Naphthalene	46	1.9	4.7	D	mg/Kg	1	1/31/2020 7:09:10 PM	49975
2-Nitroaniline	ND	2.6	4.7	D	mg/Kg	1	1/31/2020 7:09:10 PM	49975
3-Nitroaniline	ND	2.3	4.7	D	mg/Kg	1	1/31/2020 7:09:10 PM	49975
4-Nitroaniline	ND	3.2	9.5	D	mg/Kg	1	1/31/2020 7:09:10 PM	49975
Nitrobenzene	ND	2.0	9.5	D	mg/Kg	1	1/31/2020 7:09:10 PM	49975
2-Nitrophenol	ND	2.0	4.7	D	mg/Kg	1	1/31/2020 7:09:10 PM	49975
4-Nitrophenol	ND	1.4	5.9	D	mg/Kg	1	1/31/2020 7:09:10 PM	49975
Pentachlorophenol	ND	2.1	9.5	D	mg/Kg	1	1/31/2020 7:09:10 PM	49975
Phenanthrene	100	24	47	D	mg/Kg	10	2/4/2020 7:41:11 PM	49975
Phenol	4.0	2.0	4.7	JD	mg/Kg	1	1/31/2020 7:09:10 PM	49975
Pyrene	24	1.6	4.7	D	mg/Kg	1	1/31/2020 7:09:10 PM	49975
Pyridine	ND	4.4	9.5	D	mg/Kg	1	1/31/2020 7:09:10 PM	49975
1,2,4-Trichlorobenzene	ND	2.0	4.7	D	mg/Kg	1	1/31/2020 7:09:10 PM	49975
2,4,5-Trichlorophenol	ND	1.5	4.7	D	mg/Kg	1	1/31/2020 7:09:10 PM	49975
2,4,6-Trichlorophenol	ND	2.4	4.7	D	mg/Kg	1	1/31/2020 7:09:10 PM	49975
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	1	1/31/2020 7:09:10 PM	49975
Surr: Phenol-d5	0		18.5-101	SD	%Rec	1	1/31/2020 7:09:10 PM	49975
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	1	1/31/2020 7:09:10 PM	49975
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	1	1/31/2020 7:09:10 PM	49975
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	1	1/31/2020 7:09:10 PM	49975
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	1	1/31/2020 7:09:10 PM	49975
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Benzene	2.4	0.014	0.087		mg/Kg	5	1/23/2020 7:28:22 PM	R66046
Toluene	17	0.017	0.17		mg/Kg	5	1/23/2020 7:28:22 PM	R66046
Ethylbenzene	6.3	0.010	0.17		mg/Kg	5	1/23/2020 7:28:22 PM	R66046
Methyl tert-butyl ether (MTBE)	0.52	0.041	0.17		mg/Kg	5	1/23/2020 7:28:22 PM	R66046
1,2,4-Trimethylbenzene	14	0.016	0.17		mg/Kg	5	1/23/2020 7:28:22 PM	R66046
1,3,5-Trimethylbenzene	4.3	0.017	0.17		mg/Kg	5	1/23/2020 7:28:22 PM	R66046
1,2-Dichloroethane (EDC)	ND	0.018	0.17		mg/Kg	5	1/23/2020 7:28:22 PM	R66046
1,2-Dibromoethane (EDB)	ND	0.016	0.17		mg/Kg	5	1/23/2020 7:28:22 PM	R66046
Naphthalene	18	0.35	3.5		mg/Kg	50	1/24/2020 2:19:40 PM	R66078
1-Methylnaphthalene	24	1.0	7.0		mg/Kg	50	1/24/2020 2:19:40 PM	R66078
2-Methylnaphthalene	41	0.76	7.0		mg/Kg	50	1/24/2020 2:19:40 PM	R66078
Acetone	0.50	0.14	2.6	J	mg/Kg	5	1/23/2020 7:28:22 PM	R66046
Bromobenzene	ND	0.017	0.17		mg/Kg	5	1/23/2020 7:28:22 PM	R66046
Bromodichloromethane	0.033	0.016	0.17	J	mg/Kg	5	1/23/2020 7:28:22 PM	R66046

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Qualifiers:

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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-22 Toe Sludge 2.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 9:50:00 AM
Lab ID: 2001739-023 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Bromoform	ND	0.016	0.17		mg/Kg	5	1/23/2020 7:28:22 PM	R66046
Bromomethane	ND	0.042	0.52		mg/Kg	5	1/23/2020 7:28:22 PM	R66046
2-Butanone	ND	0.20	1.7		mg/Kg	5	1/23/2020 7:28:22 PM	R66046
Carbon disulfide	0.11	0.058	1.7	J	mg/Kg	5	1/23/2020 7:28:22 PM	R66046
Carbon tetrachloride	ND	0.017	0.17		mg/Kg	5	1/23/2020 7:28:22 PM	R66046
Chlorobenzene	ND	0.022	0.17		mg/Kg	5	1/23/2020 7:28:22 PM	R66046
Chloroethane	ND	0.026	0.35		mg/Kg	5	1/23/2020 7:28:22 PM	R66046
Chloroform	0.10	0.014	0.17	J	mg/Kg	5	1/23/2020 7:28:22 PM	R66046
Chloromethane	0.070	0.017	0.52	J	mg/Kg	5	1/23/2020 7:28:22 PM	R66046
2-Chlorotoluene	ND	0.015	0.17		mg/Kg	5	1/23/2020 7:28:22 PM	R66046
4-Chlorotoluene	ND	0.014	0.17		mg/Kg	5	1/23/2020 7:28:22 PM	R66046
cis-1,2-DCE	ND	0.024	0.17		mg/Kg	5	1/23/2020 7:28:22 PM	R66046
cis-1,3-Dichloropropene	ND	0.015	0.17		mg/Kg	5	1/23/2020 7:28:22 PM	R66046
1,2-Dibromo-3-chloropropane	ND	0.018	0.35		mg/Kg	5	1/23/2020 7:28:22 PM	R66046
Dibromochloromethane	ND	0.012	0.17		mg/Kg	5	1/23/2020 7:28:22 PM	R66046
Dibromomethane	ND	0.019	0.17		mg/Kg	5	1/23/2020 7:28:22 PM	R66046
1,2-Dichlorobenzene	ND	0.014	0.17		mg/Kg	5	1/23/2020 7:28:22 PM	R66046
1,3-Dichlorobenzene	ND	0.015	0.17		mg/Kg	5	1/23/2020 7:28:22 PM	R66046
1,4-Dichlorobenzene	ND	0.015	0.17		mg/Kg	5	1/23/2020 7:28:22 PM	R66046
Dichlorodifluoromethane	ND	0.041	0.17		mg/Kg	5	1/23/2020 7:28:22 PM	R66046
1,1-Dichloroethane	ND	0.011	0.17		mg/Kg	5	1/23/2020 7:28:22 PM	R66046
1,1-Dichloroethene	ND	0.070	0.17		mg/Kg	5	1/23/2020 7:28:22 PM	R66046
1,2-Dichloropropane	ND	0.013	0.17		mg/Kg	5	1/23/2020 7:28:22 PM	R66046
1,3-Dichloropropane	ND	0.019	0.17		mg/Kg	5	1/23/2020 7:28:22 PM	R66046
2,2-Dichloropropane	ND	0.057	0.35		mg/Kg	5	1/23/2020 7:28:22 PM	R66046
1,1-Dichloropropene	ND	0.016	0.35		mg/Kg	5	1/23/2020 7:28:22 PM	R66046
Hexachlorobutadiene	ND	0.018	0.35		mg/Kg	5	1/23/2020 7:28:22 PM	R66046
2-Hexanone	1.4	0.029	1.7	J	mg/Kg	5	1/23/2020 7:28:22 PM	R66046
Isopropylbenzene	0.89	0.013	0.17		mg/Kg	5	1/23/2020 7:28:22 PM	R66046
4-Isopropyltoluene	0.43	0.014	0.17		mg/Kg	5	1/23/2020 7:28:22 PM	R66046
4-Methyl-2-pentanone	ND	0.033	1.7		mg/Kg	5	1/23/2020 7:28:22 PM	R66046
Methylene chloride	ND	0.031	0.52		mg/Kg	5	1/23/2020 7:28:22 PM	R66046
n-Butylbenzene	1.1	0.016	0.52		mg/Kg	5	1/23/2020 7:28:22 PM	R66046
n-Propylbenzene	2.4	0.014	0.17		mg/Kg	5	1/23/2020 7:28:22 PM	R66046
sec-Butylbenzene	0.50	0.020	0.17		mg/Kg	5	1/23/2020 7:28:22 PM	R66046
Styrene	ND	0.014	0.17		mg/Kg	5	1/23/2020 7:28:22 PM	R66046
tert-Butylbenzene	ND	0.016	0.17		mg/Kg	5	1/23/2020 7:28:22 PM	R66046
1,1,1,2-Tetrachloroethane	ND	0.012	0.17		mg/Kg	5	1/23/2020 7:28:22 PM	R66046
1,1,2,2-Tetrachloroethane	ND	0.018	0.17		mg/Kg	5	1/23/2020 7:28:22 PM	R66046

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

Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-22 Toe Sludge 2.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 9:50:00 AM
Lab ID: 2001739-023 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Tetrachloroethene (PCE)	ND	0.014	0.17		mg/Kg	5	1/23/2020 7:28:22 PM	R66046
trans-1,2-DCE	ND	0.016	0.17		mg/Kg	5	1/23/2020 7:28:22 PM	R66046
trans-1,3-Dichloropropene	ND	0.018	0.17		mg/Kg	5	1/23/2020 7:28:22 PM	R66046
1,2,3-Trichlorobenzene	ND	0.015	0.35		mg/Kg	5	1/23/2020 7:28:22 PM	R66046
1,2,4-Trichlorobenzene	ND	0.018	0.17		mg/Kg	5	1/23/2020 7:28:22 PM	R66046
1,1,1-Trichloroethane	ND	0.016	0.17		mg/Kg	5	1/23/2020 7:28:22 PM	R66046
1,1,2-Trichloroethane	ND	0.012	0.17		mg/Kg	5	1/23/2020 7:28:22 PM	R66046
Trichloroethene (TCE)	ND	0.020	0.17		mg/Kg	5	1/23/2020 7:28:22 PM	R66046
Trichlorofluoromethane	ND	0.059	0.17		mg/Kg	5	1/23/2020 7:28:22 PM	R66046
1,2,3-Trichloropropane	ND	0.028	0.35		mg/Kg	5	1/23/2020 7:28:22 PM	R66046
Vinyl chloride	ND	0.011	0.17		mg/Kg	5	1/23/2020 7:28:22 PM	R66046
Xylenes, Total	36	0.044	0.35		mg/Kg	5	1/23/2020 7:28:22 PM	R66046
Surr: Dibromofluoromethane	97.6		70-130		%Rec	5	1/23/2020 7:28:22 PM	R66046
Surr: 1,2-Dichloroethane-d4	97.0		70-130		%Rec	5	1/23/2020 7:28:22 PM	R66046
Surr: Toluene-d8	101		70-130		%Rec	5	1/23/2020 7:28:22 PM	R66046
Surr: 4-Bromofluorobenzene	90.3		70-130		%Rec	5	1/23/2020 7:28:22 PM	R66046
VOLATILES BY 8260B/1311							Analyst: **CCM**	
Benzene	0.15	0.10	0.50	J	mg/L	1	1/27/2020 3:21:00 PM	50050
Surr: 1,2-Dichloroethane-d4	103	0	70-130		%Rec	1	1/27/2020 3:21:00 PM	50050
Surr: 4-Bromofluorobenzene	102	0	70-130		%Rec	1	1/27/2020 3:21:00 PM	50050
Surr: Dibromofluoromethane	100	0	70-130		%Rec	1	1/27/2020 3:21:00 PM	50050
Surr: Toluene-d8	92.7	0	70-130		%Rec	1	1/27/2020 3:21:00 PM	50050
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **JMR**	
Gasoline Range Organics (GRO)	410	3.7	17		mg/Kg	5	1/23/2020 7:28:22 PM	G66046
Surr: BFB	99.8	0	70-130		%Rec	5	1/23/2020 7:28:22 PM	G66046
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/28/2020 3:11:00 PM	R66159
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	8.31				pH Units	1	1/29/2020 10:26:00 AM	R66160

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

Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-7 2.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/17/2020 9:16:00 AM
Lab ID: 2001739-024 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	66000	230	950		mg/Kg	100	1/22/2020 8:34:24 PM	49948
Motor Oil Range Organics (MRO)	13000	4800	4800		mg/Kg	100	1/22/2020 8:34:24 PM	49948
Surr: DNOP	0	0	55.1-146	S	%Rec	100	1/22/2020 8:34:24 PM	49948
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	5.9	0.036	0.66	H	mg/Kg	20	3/2/2020 5:37:54 PM	50789
MERCURY, TCLP							Analyst: **rde**	
Mercury	ND	0.00075	0.020		mg/L	1	1/24/2020 12:32:13 PM	50015
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.77	5.2		mg/Kg	2	1/23/2020 9:35:57 AM	49957
Arsenic	10	3.0	5.2		mg/Kg	2	1/23/2020 9:35:57 AM	49957
Barium	300	0.049	0.21		mg/Kg	2	1/23/2020 9:35:57 AM	49957
Beryllium	0.21	0.019	0.31	J	mg/Kg	2	1/23/2020 9:35:57 AM	49957
Cadmium	ND	0.051	0.21		mg/Kg	2	1/23/2020 9:35:57 AM	49957
Chromium	35	0.17	0.63		mg/Kg	2	1/23/2020 9:35:57 AM	49957
Cobalt	4.1	0.22	0.63		mg/Kg	2	1/23/2020 9:35:57 AM	49957
Lead	28	0.51	0.52		mg/Kg	2	1/23/2020 9:35:57 AM	49957
Nickel	32	0.31	1.0		mg/Kg	2	1/23/2020 9:35:57 AM	49957
Selenium	ND	2.6	5.2		mg/Kg	2	1/23/2020 9:35:57 AM	49957
Silver	ND	0.067	0.52		mg/Kg	2	1/23/2020 9:35:57 AM	49957
Vanadium	11	0.14	5.2		mg/Kg	2	1/23/2020 9:35:57 AM	49957
Zinc	2000	4.1	26		mg/Kg	10	1/23/2020 11:36:39 AM	49957
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/25/2020 12:32:11 PM	50036
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	1.9	5.0	D	mg/Kg	1	1/31/2020 7:37:44 PM	49975
Acenaphthylene	ND	2.2	5.0	D	mg/Kg	1	1/31/2020 7:37:44 PM	49975
Aniline	ND	1.7	5.0	D	mg/Kg	1	1/31/2020 7:37:44 PM	49975
Anthracene	ND	1.9	5.0	D	mg/Kg	1	1/31/2020 7:37:44 PM	49975
Azobenzene	ND	2.5	5.0	D	mg/Kg	1	1/31/2020 7:37:44 PM	49975
Benz(a)anthracene	ND	1.7	5.0	D	mg/Kg	1	1/31/2020 7:37:44 PM	49975
Benzo(a)pyrene	11	2.7	5.0	D	mg/Kg	1	1/31/2020 7:37:44 PM	49975
Benzo(b)fluoranthene	ND	2.8	5.0	D	mg/Kg	1	1/31/2020 7:37:44 PM	49975
Benzo(g,h,i)perylene	ND	2.6	5.0	D	mg/Kg	1	1/31/2020 7:37:44 PM	49975
Benzo(k)fluoranthene	ND	1.5	5.0	D	mg/Kg	1	1/31/2020 7:37:44 PM	49975
Benzoic acid	ND	3.4	12	D	mg/Kg	1	1/31/2020 7:37:44 PM	49975
Benzyl alcohol	ND	2.1	5.0	D	mg/Kg	1	1/31/2020 7:37:44 PM	49975
Bis(2-chloroethoxy)methane	ND	2.1	5.0	D	mg/Kg	1	1/31/2020 7:37:44 PM	49975

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Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-7 2.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/17/2020 9:16:00 AM
Lab ID: 2001739-024 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	2.9	5.0	D	mg/Kg	1	1/31/2020 7:37:44 PM	49975
Bis(2-chloroisopropyl)ether	ND	2.1	5.0	D	mg/Kg	1	1/31/2020 7:37:44 PM	49975
Bis(2-ethylhexyl)phthalate	ND	5.6	12	D	mg/Kg	1	1/31/2020 7:37:44 PM	49975
4-Bromophenyl phenyl ether	ND	2.9	5.0	D	mg/Kg	1	1/31/2020 7:37:44 PM	49975
Butyl benzyl phthalate	ND	1.7	5.0	D	mg/Kg	1	1/31/2020 7:37:44 PM	49975
Carbazole	ND	2.0	5.0	D	mg/Kg	1	1/31/2020 7:37:44 PM	49975
4-Chloro-3-methylphenol	ND	2.0	12	D	mg/Kg	1	1/31/2020 7:37:44 PM	49975
4-Chloroaniline	ND	1.9	12	D	mg/Kg	1	1/31/2020 7:37:44 PM	49975
2-Chloronaphthalene	ND	2.1	6.2	D	mg/Kg	1	1/31/2020 7:37:44 PM	49975
2-Chlorophenol	ND	2.8	5.0	D	mg/Kg	1	1/31/2020 7:37:44 PM	49975
4-Chlorophenyl phenyl ether	ND	2.1	5.0	D	mg/Kg	1	1/31/2020 7:37:44 PM	49975
Chrysene	ND	1.9	5.0	D	mg/Kg	1	1/31/2020 7:37:44 PM	49975
Di-n-butyl phthalate	ND	7.4	10	D	mg/Kg	1	1/31/2020 7:37:44 PM	49975
Di-n-octyl phthalate	ND	1.7	10	D	mg/Kg	1	1/31/2020 7:37:44 PM	49975
Dibenz(a,h)anthracene	ND	2.8	5.0	D	mg/Kg	1	1/31/2020 7:37:44 PM	49975
Dibenzofuran	ND	2.5	5.0	D	mg/Kg	1	1/31/2020 7:37:44 PM	49975
1,2-Dichlorobenzene	ND	2.0	5.0	D	mg/Kg	1	1/31/2020 7:37:44 PM	49975
1,3-Dichlorobenzene	ND	1.7	5.0	D	mg/Kg	1	1/31/2020 7:37:44 PM	49975
1,4-Dichlorobenzene	ND	2.1	5.0	D	mg/Kg	1	1/31/2020 7:37:44 PM	49975
3,3´-Dichlorobenzidine	ND	2.1	6.2	D	mg/Kg	1	1/31/2020 7:37:44 PM	49975
Diethyl phthalate	ND	7.6	12	D	mg/Kg	1	1/31/2020 7:37:44 PM	49975
Dimethyl phthalate	ND	2.0	5.0	D	mg/Kg	1	1/31/2020 7:37:44 PM	49975
2,4-Dichlorophenol	ND	2.1	10	D	mg/Kg	1	1/31/2020 7:37:44 PM	49975
2,4-Dimethylphenol	ND	2.1	7.5	D	mg/Kg	1	1/31/2020 7:37:44 PM	49975
4,6-Dinitro-2-methylphenol	ND	1.8	10	D	mg/Kg	1	1/31/2020 7:37:44 PM	49975
2,4-Dinitrophenol	ND	1.4	12	D	mg/Kg	1	1/31/2020 7:37:44 PM	49975
2,4-Dinitrotoluene	ND	2.6	12	D	mg/Kg	1	1/31/2020 7:37:44 PM	49975
2,6-Dinitrotoluene	ND	3.0	12	D	mg/Kg	1	1/31/2020 7:37:44 PM	49975
Fluoranthene	ND	1.9	5.0	D	mg/Kg	1	1/31/2020 7:37:44 PM	49975
Fluorene	54	2.0	5.0	D	mg/Kg	1	1/31/2020 7:37:44 PM	49975
Hexachlorobenzene	ND	1.9	5.0	D	mg/Kg	1	1/31/2020 7:37:44 PM	49975
Hexachlorobutadiene	ND	2.2	5.0	D	mg/Kg	1	1/31/2020 7:37:44 PM	49975
Hexachlorocyclopentadiene	ND	2.4	5.0	D	mg/Kg	1	1/31/2020 7:37:44 PM	49975
Hexachloroethane	ND	2.0	5.0	D	mg/Kg	1	1/31/2020 7:37:44 PM	49975
Indeno(1,2,3-cd)pyrene	ND	3.1	5.0	D	mg/Kg	1	1/31/2020 7:37:44 PM	49975
Isophorone	ND	2.2	10	D	mg/Kg	1	1/31/2020 7:37:44 PM	49975
1-Methylnaphthalene	180	23	50	D	mg/Kg	10	2/4/2020 8:10:04 PM	49975
2-Methylnaphthalene	230	20	50	D	mg/Kg	10	2/4/2020 8:10:04 PM	49975
2-Methylphenol	ND	2.1	10	D	mg/Kg	1	1/31/2020 7:37:44 PM	49975

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
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ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-7 2.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/17/2020 9:16:00 AM
Lab ID: 2001739-024 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	12	1.8	5.0	D	mg/Kg	1	1/31/2020 7:37:44 PM	49975
N-Nitrosodi-n-propylamine	ND	2.5	5.0	D	mg/Kg	1	1/31/2020 7:37:44 PM	49975
N-Nitrosodiphenylamine	ND	2.6	5.0	D	mg/Kg	1	1/31/2020 7:37:44 PM	49975
Naphthalene	38	2.0	5.0	D	mg/Kg	1	1/31/2020 7:37:44 PM	49975
2-Nitroaniline	ND	2.8	5.0	D	mg/Kg	1	1/31/2020 7:37:44 PM	49975
3-Nitroaniline	ND	2.4	5.0	D	mg/Kg	1	1/31/2020 7:37:44 PM	49975
4-Nitroaniline	ND	3.3	10	D	mg/Kg	1	1/31/2020 7:37:44 PM	49975
Nitrobenzene	ND	2.1	10	D	mg/Kg	1	1/31/2020 7:37:44 PM	49975
2-Nitrophenol	ND	2.1	5.0	D	mg/Kg	1	1/31/2020 7:37:44 PM	49975
4-Nitrophenol	ND	1.5	6.2	D	mg/Kg	1	1/31/2020 7:37:44 PM	49975
Pentachlorophenol	ND	2.2	10	D	mg/Kg	1	1/31/2020 7:37:44 PM	49975
Phenanthrene	210	25	50	D	mg/Kg	10	2/4/2020 8:10:04 PM	49975
Phenol	5.5	2.1	5.0	D	mg/Kg	1	1/31/2020 7:37:44 PM	49975
Pyrene	82	1.6	5.0	D	mg/Kg	1	1/31/2020 7:37:44 PM	49975
Pyridine	ND	4.6	10	D	mg/Kg	1	1/31/2020 7:37:44 PM	49975
1,2,4-Trichlorobenzene	ND	2.1	5.0	D	mg/Kg	1	1/31/2020 7:37:44 PM	49975
2,4,5-Trichlorophenol	ND	1.6	5.0	D	mg/Kg	1	1/31/2020 7:37:44 PM	49975
2,4,6-Trichlorophenol	ND	2.5	5.0	D	mg/Kg	1	1/31/2020 7:37:44 PM	49975
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	1	1/31/2020 7:37:44 PM	49975
Surr: Phenol-d5	0		18.5-101	SD	%Rec	1	1/31/2020 7:37:44 PM	49975
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	1	1/31/2020 7:37:44 PM	49975
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	1	1/31/2020 7:37:44 PM	49975
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	1	1/31/2020 7:37:44 PM	49975
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	1	1/31/2020 7:37:44 PM	49975
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Benzene	0.23	0.016	0.096		mg/Kg	5	1/23/2020 7:56:55 PM	R66046
Toluene	1.9	0.018	0.19		mg/Kg	5	1/23/2020 7:56:55 PM	R66046
Ethylbenzene	0.75	0.011	0.19		mg/Kg	5	1/23/2020 7:56:55 PM	R66046
Methyl tert-butyl ether (MTBE)	ND	0.046	0.19		mg/Kg	5	1/23/2020 7:56:55 PM	R66046
1,2,4-Trimethylbenzene	2.6	0.018	0.19		mg/Kg	5	1/23/2020 7:56:55 PM	R66046
1,3,5-Trimethylbenzene	0.93	0.019	0.19		mg/Kg	5	1/23/2020 7:56:55 PM	R66046
1,2-Dichloroethane (EDC)	0.050	0.020	0.19	J	mg/Kg	5	1/23/2020 7:56:55 PM	R66046
1,2-Dibromoethane (EDB)	ND	0.018	0.19		mg/Kg	5	1/23/2020 7:56:55 PM	R66046
Naphthalene	4.9	0.039	0.39		mg/Kg	5	1/23/2020 7:56:55 PM	R66046
1-Methylnaphthalene	12	0.11	0.77		mg/Kg	5	1/23/2020 7:56:55 PM	R66046
2-Methylnaphthalene	19	0.084	0.77		mg/Kg	5	1/23/2020 7:56:55 PM	R66046
Acetone	1.0	0.16	2.9	J	mg/Kg	5	1/23/2020 7:56:55 PM	R66046
Bromobenzene	ND	0.018	0.19		mg/Kg	5	1/23/2020 7:56:55 PM	R66046
Bromodichloromethane	ND	0.018	0.19		mg/Kg	5	1/23/2020 7:56:55 PM	R66046

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Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-7 2.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/17/2020 9:16:00 AM
Lab ID: 2001739-024 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Bromoform	ND	0.017	0.19		mg/Kg	5	1/23/2020 7:56:55 PM	R66046
Bromomethane	ND	0.047	0.58		mg/Kg	5	1/23/2020 7:56:55 PM	R66046
2-Butanone	ND	0.22	1.9		mg/Kg	5	1/23/2020 7:56:55 PM	R66046
Carbon disulfide	2.6	0.064	1.9		mg/Kg	5	1/23/2020 7:56:55 PM	R66046
Carbon tetrachloride	ND	0.018	0.19		mg/Kg	5	1/23/2020 7:56:55 PM	R66046
Chlorobenzene	ND	0.025	0.19		mg/Kg	5	1/23/2020 7:56:55 PM	R66046
Chloroethane	0.081	0.028	0.39	J	mg/Kg	5	1/23/2020 7:56:55 PM	R66046
Chloroform	0.044	0.016	0.19	J	mg/Kg	5	1/23/2020 7:56:55 PM	R66046
Chloromethane	ND	0.018	0.58		mg/Kg	5	1/23/2020 7:56:55 PM	R66046
2-Chlorotoluene	ND	0.017	0.19		mg/Kg	5	1/23/2020 7:56:55 PM	R66046
4-Chlorotoluene	ND	0.016	0.19		mg/Kg	5	1/23/2020 7:56:55 PM	R66046
cis-1,2-DCE	0.036	0.026	0.19	J	mg/Kg	5	1/23/2020 7:56:55 PM	R66046
cis-1,3-Dichloropropene	ND	0.016	0.19		mg/Kg	5	1/23/2020 7:56:55 PM	R66046
1,2-Dibromo-3-chloropropane	ND	0.020	0.39		mg/Kg	5	1/23/2020 7:56:55 PM	R66046
Dibromochloromethane	ND	0.014	0.19		mg/Kg	5	1/23/2020 7:56:55 PM	R66046
Dibromomethane	ND	0.021	0.19		mg/Kg	5	1/23/2020 7:56:55 PM	R66046
1,2-Dichlorobenzene	ND	0.016	0.19		mg/Kg	5	1/23/2020 7:56:55 PM	R66046
1,3-Dichlorobenzene	ND	0.017	0.19		mg/Kg	5	1/23/2020 7:56:55 PM	R66046
1,4-Dichlorobenzene	ND	0.016	0.19		mg/Kg	5	1/23/2020 7:56:55 PM	R66046
Dichlorodifluoromethane	ND	0.045	0.19		mg/Kg	5	1/23/2020 7:56:55 PM	R66046
1,1-Dichloroethane	0.070	0.012	0.19	J	mg/Kg	5	1/23/2020 7:56:55 PM	R66046
1,1-Dichloroethene	ND	0.077	0.19		mg/Kg	5	1/23/2020 7:56:55 PM	R66046
1,2-Dichloropropane	ND	0.014	0.19		mg/Kg	5	1/23/2020 7:56:55 PM	R66046
1,3-Dichloropropane	ND	0.021	0.19		mg/Kg	5	1/23/2020 7:56:55 PM	R66046
2,2-Dichloropropane	ND	0.063	0.39		mg/Kg	5	1/23/2020 7:56:55 PM	R66046
1,1-Dichloropropene	ND	0.018	0.39		mg/Kg	5	1/23/2020 7:56:55 PM	R66046
Hexachlorobutadiene	ND	0.020	0.39		mg/Kg	5	1/23/2020 7:56:55 PM	R66046
2-Hexanone	0.54	0.032	1.9	J	mg/Kg	5	1/23/2020 7:56:55 PM	R66046
Isopropylbenzene	0.12	0.014	0.19	J	mg/Kg	5	1/23/2020 7:56:55 PM	R66046
4-Isopropyltoluene	0.086	0.016	0.19	J	mg/Kg	5	1/23/2020 7:56:55 PM	R66046
4-Methyl-2-pentanone	ND	0.036	1.9		mg/Kg	5	1/23/2020 7:56:55 PM	R66046
Methylene chloride	ND	0.034	0.58		mg/Kg	5	1/23/2020 7:56:55 PM	R66046
n-Butylbenzene	0.29	0.018	0.58	J	mg/Kg	5	1/23/2020 7:56:55 PM	R66046
n-Propylbenzene	0.41	0.015	0.19		mg/Kg	5	1/23/2020 7:56:55 PM	R66046
sec-Butylbenzene	0.11	0.022	0.19	J	mg/Kg	5	1/23/2020 7:56:55 PM	R66046
Styrene	ND	0.015	0.19		mg/Kg	5	1/23/2020 7:56:55 PM	R66046
tert-Butylbenzene	ND	0.018	0.19		mg/Kg	5	1/23/2020 7:56:55 PM	R66046
1,1,1,2-Tetrachloroethane	ND	0.013	0.19		mg/Kg	5	1/23/2020 7:56:55 PM	R66046
1,1,2,2-Tetrachloroethane	ND	0.020	0.19		mg/Kg	5	1/23/2020 7:56:55 PM	R66046

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Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-7 2.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/17/2020 9:16:00 AM
Lab ID: 2001739-024 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Tetrachloroethene (PCE)	ND	0.015	0.19		mg/Kg	5	1/23/2020 7:56:55 PM	R66046
trans-1,2-DCE	ND	0.018	0.19		mg/Kg	5	1/23/2020 7:56:55 PM	R66046
trans-1,3-Dichloropropene	0.12	0.020	0.19	J	mg/Kg	5	1/23/2020 7:56:55 PM	R66046
1,2,3-Trichlorobenzene	ND	0.017	0.39		mg/Kg	5	1/23/2020 7:56:55 PM	R66046
1,2,4-Trichlorobenzene	ND	0.019	0.19		mg/Kg	5	1/23/2020 7:56:55 PM	R66046
1,1,1-Trichloroethane	ND	0.017	0.19		mg/Kg	5	1/23/2020 7:56:55 PM	R66046
1,1,2-Trichloroethane	ND	0.014	0.19		mg/Kg	5	1/23/2020 7:56:55 PM	R66046
Trichloroethene (TCE)	ND	0.022	0.19		mg/Kg	5	1/23/2020 7:56:55 PM	R66046
Trichlorofluoromethane	ND	0.065	0.19		mg/Kg	5	1/23/2020 7:56:55 PM	R66046
1,2,3-Trichloropropane	ND	0.031	0.39		mg/Kg	5	1/23/2020 7:56:55 PM	R66046
Vinyl chloride	ND	0.013	0.19		mg/Kg	5	1/23/2020 7:56:55 PM	R66046
Xylenes, Total	5.0	0.049	0.39		mg/Kg	5	1/23/2020 7:56:55 PM	R66046
Surr: Dibromofluoromethane	96.2		70-130		%Rec	5	1/23/2020 7:56:55 PM	R66046
Surr: 1,2-Dichloroethane-d4	97.5		70-130		%Rec	5	1/23/2020 7:56:55 PM	R66046
Surr: Toluene-d8	102		70-130		%Rec	5	1/23/2020 7:56:55 PM	R66046
Surr: 4-Bromofluorobenzene	86.6		70-130		%Rec	5	1/23/2020 7:56:55 PM	R66046
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **JMR**	
Gasoline Range Organics (GRO)	74	4.1	19		mg/Kg	5	1/24/2020 3:16:52 PM	G66078
Surr: BFB	92.4	0	70-130		%Rec	5	1/24/2020 3:16:52 PM	G66078
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/28/2020 3:11:00 PM	R66159
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	7.47				pH Units	1	1/29/2020 10:26:00 AM	R66160

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P	Sample pH Not In Range
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-5 Sludge 2.5-5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/17/2020 8:40:00 AM
Lab ID: 2001739-025 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	99000	240	1000		mg/Kg	100	1/22/2020 8:43:19 PM	49948
Motor Oil Range Organics (MRO)	21000	5100	5100		mg/Kg	100	1/22/2020 8:43:19 PM	49948
Surr: DNOP	0	0	55.1-146	S	%Rec	100	1/22/2020 8:43:19 PM	49948
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	2.9	0.037	0.67	H	mg/Kg	20	3/2/2020 5:45:40 PM	50789
MERCURY, TCLP							Analyst: **rde**	
Mercury	ND	0.00075	0.020		mg/L	1	1/28/2020 11:55:28 AM	50081
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.76	5.1		mg/Kg	2	1/24/2020 9:38:35 AM	49993
Arsenic	ND	2.9	5.1		mg/Kg	2	1/24/2020 12:27:11 PM	49993
Barium	450	0.048	0.21		mg/Kg	2	1/24/2020 9:38:35 AM	49993
Beryllium	0.59	0.019	0.31		mg/Kg	2	1/24/2020 9:38:35 AM	49993
Cadmium	ND	0.050	0.21		mg/Kg	2	1/24/2020 9:38:35 AM	49993
Chromium	15	0.16	0.62		mg/Kg	2	1/24/2020 9:38:35 AM	49993
Cobalt	3.8	0.22	0.62		mg/Kg	2	1/24/2020 9:38:35 AM	49993
Lead	9.7	0.50	0.51		mg/Kg	2	1/24/2020 9:38:35 AM	49993
Nickel	14	0.31	1.0		mg/Kg	2	1/24/2020 9:38:35 AM	49993
Selenium	ND	2.6	5.1		mg/Kg	2	1/24/2020 12:27:11 PM	49993
Silver	ND	0.066	0.51		mg/Kg	2	1/24/2020 9:38:35 AM	49993
Vanadium	18	0.14	5.1		mg/Kg	2	1/24/2020 9:38:35 AM	49993
Zinc	840	2.0	13		mg/Kg	5	1/24/2020 10:48:42 AM	49993
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/25/2020 12:33:35 PM	50045
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	1.8	4.9	D	mg/Kg	1	1/31/2020 8:06:16 PM	49975
Acenaphthylene	ND	2.2	4.9	D	mg/Kg	1	1/31/2020 8:06:16 PM	49975
Aniline	ND	1.7	4.9	D	mg/Kg	1	1/31/2020 8:06:16 PM	49975
Anthracene	ND	1.9	4.9	D	mg/Kg	1	1/31/2020 8:06:16 PM	49975
Azobenzene	ND	2.5	4.9	D	mg/Kg	1	1/31/2020 8:06:16 PM	49975
Benz(a)anthracene	ND	1.7	4.9	D	mg/Kg	1	1/31/2020 8:06:16 PM	49975
Benzo(a)pyrene	8.5	2.7	4.9	D	mg/Kg	1	1/31/2020 8:06:16 PM	49975
Benzo(b)fluoranthene	ND	2.8	4.9	D	mg/Kg	1	1/31/2020 8:06:16 PM	49975
Benzo(g,h,i)perylene	ND	2.5	4.9	D	mg/Kg	1	1/31/2020 8:06:16 PM	49975
Benzo(k)fluoranthene	ND	1.5	4.9	D	mg/Kg	1	1/31/2020 8:06:16 PM	49975
Benzoic acid	ND	3.4	12	D	mg/Kg	1	1/31/2020 8:06:16 PM	49975
Benzyl alcohol	ND	2.0	4.9	D	mg/Kg	1	1/31/2020 8:06:16 PM	49975
Bis(2-chloroethoxy)methane	ND	2.0	4.9	D	mg/Kg	1	1/31/2020 8:06:16 PM	49975

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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-5 Sludge 2.5-5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/17/2020 8:40:00 AM
Lab ID: 2001739-025 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	2.9	4.9	D	mg/Kg	1	1/31/2020 8:06:16 PM	49975
Bis(2-chloroisopropyl)ether	ND	2.1	4.9	D	mg/Kg	1	1/31/2020 8:06:16 PM	49975
Bis(2-ethylhexyl)phthalate	ND	5.5	12	D	mg/Kg	1	1/31/2020 8:06:16 PM	49975
4-Bromophenyl phenyl ether	ND	2.9	4.9	D	mg/Kg	1	1/31/2020 8:06:16 PM	49975
Butyl benzyl phthalate	ND	1.6	4.9	D	mg/Kg	1	1/31/2020 8:06:16 PM	49975
Carbazole	ND	1.9	4.9	D	mg/Kg	1	1/31/2020 8:06:16 PM	49975
4-Chloro-3-methylphenol	ND	1.9	12	D	mg/Kg	1	1/31/2020 8:06:16 PM	49975
4-Chloroaniline	ND	1.9	12	D	mg/Kg	1	1/31/2020 8:06:16 PM	49975
2-Chloronaphthalene	ND	2.1	6.1	D	mg/Kg	1	1/31/2020 8:06:16 PM	49975
2-Chlorophenol	ND	2.8	4.9	D	mg/Kg	1	1/31/2020 8:06:16 PM	49975
4-Chlorophenyl phenyl ether	ND	2.1	4.9	D	mg/Kg	1	1/31/2020 8:06:16 PM	49975
Chrysene	ND	1.9	4.9	D	mg/Kg	1	1/31/2020 8:06:16 PM	49975
Di-n-butyl phthalate	ND	7.3	9.8	D	mg/Kg	1	1/31/2020 8:06:16 PM	49975
Di-n-octyl phthalate	ND	1.6	9.8	D	mg/Kg	1	1/31/2020 8:06:16 PM	49975
Dibenz(a,h)anthracene	ND	2.7	4.9	D	mg/Kg	1	1/31/2020 8:06:16 PM	49975
Dibenzofuran	ND	2.4	4.9	D	mg/Kg	1	1/31/2020 8:06:16 PM	49975
1,2-Dichlorobenzene	ND	1.9	4.9	D	mg/Kg	1	1/31/2020 8:06:16 PM	49975
1,3-Dichlorobenzene	ND	1.6	4.9	D	mg/Kg	1	1/31/2020 8:06:16 PM	49975
1,4-Dichlorobenzene	ND	2.0	4.9	D	mg/Kg	1	1/31/2020 8:06:16 PM	49975
3,3´-Dichlorobenzidine	ND	2.1	6.1	D	mg/Kg	1	1/31/2020 8:06:16 PM	49975
Diethyl phthalate	ND	7.5	12	D	mg/Kg	1	1/31/2020 8:06:16 PM	49975
Dimethyl phthalate	ND	2.0	4.9	D	mg/Kg	1	1/31/2020 8:06:16 PM	49975
2,4-Dichlorophenol	ND	2.1	9.8	D	mg/Kg	1	1/31/2020 8:06:16 PM	49975
2,4-Dimethylphenol	ND	2.0	7.3	D	mg/Kg	1	1/31/2020 8:06:16 PM	49975
4,6-Dinitro-2-methylphenol	ND	1.8	9.8	D	mg/Kg	1	1/31/2020 8:06:16 PM	49975
2,4-Dinitrophenol	ND	1.4	12	D	mg/Kg	1	1/31/2020 8:06:16 PM	49975
2,4-Dinitrotoluene	ND	2.5	12	D	mg/Kg	1	1/31/2020 8:06:16 PM	49975
2,6-Dinitrotoluene	ND	2.9	12	D	mg/Kg	1	1/31/2020 8:06:16 PM	49975
Fluoranthene	ND	1.9	4.9	D	mg/Kg	1	1/31/2020 8:06:16 PM	49975
Fluorene	64	1.9	4.9	D	mg/Kg	1	1/31/2020 8:06:16 PM	49975
Hexachlorobenzene	ND	1.9	4.9	D	mg/Kg	1	1/31/2020 8:06:16 PM	49975
Hexachlorobutadiene	ND	2.1	4.9	D	mg/Kg	1	1/31/2020 8:06:16 PM	49975
Hexachlorocyclopentadiene	ND	2.3	4.9	D	mg/Kg	1	1/31/2020 8:06:16 PM	49975
Hexachloroethane	ND	2.0	4.9	D	mg/Kg	1	1/31/2020 8:06:16 PM	49975
Indeno(1,2,3-cd)pyrene	ND	3.0	4.9	D	mg/Kg	1	1/31/2020 8:06:16 PM	49975
Isophorone	ND	2.1	9.8	D	mg/Kg	1	1/31/2020 8:06:16 PM	49975
1-Methylnaphthalene	360	23	49	D	mg/Kg	10	2/4/2020 8:38:45 PM	49975
2-Methylnaphthalene	350	20	49	D	mg/Kg	10	2/4/2020 8:38:45 PM	49975
2-Methylphenol	ND	2.1	9.8	D	mg/Kg	1	1/31/2020 8:06:16 PM	49975

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Qualifiers:

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ND	Not Detected at the Reporting Limit
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-5 Sludge 2.5-5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/17/2020 8:40:00 AM
Lab ID: 2001739-025 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	7.4	1.8	4.9	D	mg/Kg	1	1/31/2020 8:06:16 PM	49975
N-Nitrosodi-n-propylamine	ND	2.5	4.9	D	mg/Kg	1	1/31/2020 8:06:16 PM	49975
N-Nitrosodiphenylamine	ND	2.5	4.9	D	mg/Kg	1	1/31/2020 8:06:16 PM	49975
Naphthalene	41	2.0	4.9	D	mg/Kg	1	1/31/2020 8:06:16 PM	49975
2-Nitroaniline	ND	2.7	4.9	D	mg/Kg	1	1/31/2020 8:06:16 PM	49975
3-Nitroaniline	ND	2.4	4.9	D	mg/Kg	1	1/31/2020 8:06:16 PM	49975
4-Nitroaniline	ND	3.3	9.8	D	mg/Kg	1	1/31/2020 8:06:16 PM	49975
Nitrobenzene	ND	2.1	9.8	D	mg/Kg	1	1/31/2020 8:06:16 PM	49975
2-Nitrophenol	ND	2.0	4.9	D	mg/Kg	1	1/31/2020 8:06:16 PM	49975
4-Nitrophenol	ND	1.4	6.1	D	mg/Kg	1	1/31/2020 8:06:16 PM	49975
Pentachlorophenol	ND	2.2	9.8	D	mg/Kg	1	1/31/2020 8:06:16 PM	49975
Phenanthrene	220	25	49	D	mg/Kg	10	2/4/2020 8:38:45 PM	49975
Phenol	4.4	2.1	4.9	JD	mg/Kg	1	1/31/2020 8:06:16 PM	49975
Pyrene	80	1.6	4.9	D	mg/Kg	1	1/31/2020 8:06:16 PM	49975
Pyridine	ND	4.5	9.8	D	mg/Kg	1	1/31/2020 8:06:16 PM	49975
1,2,4-Trichlorobenzene	ND	2.1	4.9	D	mg/Kg	1	1/31/2020 8:06:16 PM	49975
2,4,5-Trichlorophenol	ND	1.6	4.9	D	mg/Kg	1	1/31/2020 8:06:16 PM	49975
2,4,6-Trichlorophenol	ND	2.5	4.9	D	mg/Kg	1	1/31/2020 8:06:16 PM	49975
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	1	1/31/2020 8:06:16 PM	49975
Surr: Phenol-d5	0		18.5-101	SD	%Rec	1	1/31/2020 8:06:16 PM	49975
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	1	1/31/2020 8:06:16 PM	49975
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	1	1/31/2020 8:06:16 PM	49975
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	1	1/31/2020 8:06:16 PM	49975
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	1	1/31/2020 8:06:16 PM	49975
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Benzene	0.13	0.016	0.097		mg/Kg	5	1/23/2020 8:25:25 PM	R66046
Toluene	0.97	0.018	0.19		mg/Kg	5	1/23/2020 8:25:25 PM	R66046
Ethylbenzene	0.37	0.011	0.19		mg/Kg	5	1/23/2020 8:25:25 PM	R66046
Methyl tert-butyl ether (MTBE)	0.24	0.046	0.19		mg/Kg	5	1/23/2020 8:25:25 PM	R66046
1,2,4-Trimethylbenzene	1.8	0.018	0.19		mg/Kg	5	1/23/2020 8:25:25 PM	R66046
1,3,5-Trimethylbenzene	0.58	0.019	0.19		mg/Kg	5	1/23/2020 8:25:25 PM	R66046
1,2-Dichloroethane (EDC)	ND	0.020	0.19		mg/Kg	5	1/23/2020 8:25:25 PM	R66046
1,2-Dibromoethane (EDB)	ND	0.018	0.19		mg/Kg	5	1/23/2020 8:25:25 PM	R66046
Naphthalene	3.4	0.039	0.39		mg/Kg	5	1/23/2020 8:25:25 PM	R66046
1-Methylnaphthalene	14	0.11	0.77		mg/Kg	5	1/23/2020 8:25:25 PM	R66046
2-Methylnaphthalene	19	0.084	0.77		mg/Kg	5	1/23/2020 8:25:25 PM	R66046
Acetone	0.97	0.16	2.9	J	mg/Kg	5	1/23/2020 8:25:25 PM	R66046
Bromobenzene	ND	0.019	0.19		mg/Kg	5	1/23/2020 8:25:25 PM	R66046
Bromodichloromethane	ND	0.018	0.19		mg/Kg	5	1/23/2020 8:25:25 PM	R66046

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Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-5 Sludge 2.5-5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/17/2020 8:40:00 AM
Lab ID: 2001739-025 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Bromoform	ND	0.017	0.19		mg/Kg	5	1/23/2020 8:25:25 PM	R66046
Bromomethane	ND	0.047	0.58		mg/Kg	5	1/23/2020 8:25:25 PM	R66046
2-Butanone	1.5	0.22	1.9	J	mg/Kg	5	1/23/2020 8:25:25 PM	R66046
Carbon disulfide	1.3	0.064	1.9	J	mg/Kg	5	1/23/2020 8:25:25 PM	R66046
Carbon tetrachloride	ND	0.018	0.19		mg/Kg	5	1/23/2020 8:25:25 PM	R66046
Chlorobenzene	ND	0.025	0.19		mg/Kg	5	1/23/2020 8:25:25 PM	R66046
Chloroethane	0.10	0.028	0.39	J	mg/Kg	5	1/23/2020 8:25:25 PM	R66046
Chloroform	0.021	0.016	0.19	J	mg/Kg	5	1/23/2020 8:25:25 PM	R66046
Chloromethane	ND	0.018	0.58		mg/Kg	5	1/23/2020 8:25:25 PM	R66046
2-Chlorotoluene	ND	0.017	0.19		mg/Kg	5	1/23/2020 8:25:25 PM	R66046
4-Chlorotoluene	ND	0.016	0.19		mg/Kg	5	1/23/2020 8:25:25 PM	R66046
cis-1,2-DCE	0.030	0.026	0.19	J	mg/Kg	5	1/23/2020 8:25:25 PM	R66046
cis-1,3-Dichloropropene	ND	0.016	0.19		mg/Kg	5	1/23/2020 8:25:25 PM	R66046
1,2-Dibromo-3-chloropropane	ND	0.020	0.39		mg/Kg	5	1/23/2020 8:25:25 PM	R66046
Dibromochloromethane	ND	0.014	0.19		mg/Kg	5	1/23/2020 8:25:25 PM	R66046
Dibromomethane	ND	0.021	0.19		mg/Kg	5	1/23/2020 8:25:25 PM	R66046
1,2-Dichlorobenzene	ND	0.016	0.19		mg/Kg	5	1/23/2020 8:25:25 PM	R66046
1,3-Dichlorobenzene	ND	0.017	0.19		mg/Kg	5	1/23/2020 8:25:25 PM	R66046
1,4-Dichlorobenzene	ND	0.016	0.19		mg/Kg	5	1/23/2020 8:25:25 PM	R66046
Dichlorodifluoromethane	ND	0.045	0.19		mg/Kg	5	1/23/2020 8:25:25 PM	R66046
1,1-Dichloroethane	0.067	0.012	0.19	J	mg/Kg	5	1/23/2020 8:25:25 PM	R66046
1,1-Dichloroethene	ND	0.077	0.19		mg/Kg	5	1/23/2020 8:25:25 PM	R66046
1,2-Dichloropropane	ND	0.014	0.19		mg/Kg	5	1/23/2020 8:25:25 PM	R66046
1,3-Dichloropropane	ND	0.021	0.19		mg/Kg	5	1/23/2020 8:25:25 PM	R66046
2,2-Dichloropropane	ND	0.063	0.39		mg/Kg	5	1/23/2020 8:25:25 PM	R66046
1,1-Dichloropropene	ND	0.018	0.39		mg/Kg	5	1/23/2020 8:25:25 PM	R66046
Hexachlorobutadiene	ND	0.020	0.39		mg/Kg	5	1/23/2020 8:25:25 PM	R66046
2-Hexanone	0.33	0.032	1.9	J	mg/Kg	5	1/23/2020 8:25:25 PM	R66046
Isopropylbenzene	0.076	0.014	0.19	J	mg/Kg	5	1/23/2020 8:25:25 PM	R66046
4-Isopropyltoluene	0.094	0.016	0.19	J	mg/Kg	5	1/23/2020 8:25:25 PM	R66046
4-Methyl-2-pentanone	ND	0.036	1.9		mg/Kg	5	1/23/2020 8:25:25 PM	R66046
Methylene chloride	ND	0.034	0.58		mg/Kg	5	1/23/2020 8:25:25 PM	R66046
n-Butylbenzene	0.24	0.018	0.58	J	mg/Kg	5	1/23/2020 8:25:25 PM	R66046
n-Propylbenzene	0.24	0.015	0.19		mg/Kg	5	1/23/2020 8:25:25 PM	R66046
sec-Butylbenzene	0.11	0.022	0.19	J	mg/Kg	5	1/23/2020 8:25:25 PM	R66046
Styrene	ND	0.015	0.19		mg/Kg	5	1/23/2020 8:25:25 PM	R66046
tert-Butylbenzene	ND	0.018	0.19		mg/Kg	5	1/23/2020 8:25:25 PM	R66046
1,1,1,2-Tetrachloroethane	ND	0.013	0.19		mg/Kg	5	1/23/2020 8:25:25 PM	R66046
1,1,2,2-Tetrachloroethane	ND	0.020	0.19		mg/Kg	5	1/23/2020 8:25:25 PM	R66046

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Qualifiers:

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H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-5 Sludge 2.5-5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/17/2020 8:40:00 AM
Lab ID: 2001739-025 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Tetrachloroethene (PCE)	ND	0.015	0.19		mg/Kg	5	1/23/2020 8:25:25 PM	R66046
trans-1,2-DCE	ND	0.018	0.19		mg/Kg	5	1/23/2020 8:25:25 PM	R66046
trans-1,3-Dichloropropene	0.042	0.020	0.19	J	mg/Kg	5	1/23/2020 8:25:25 PM	R66046
1,2,3-Trichlorobenzene	ND	0.017	0.39		mg/Kg	5	1/23/2020 8:25:25 PM	R66046
1,2,4-Trichlorobenzene	ND	0.020	0.19		mg/Kg	5	1/23/2020 8:25:25 PM	R66046
1,1,1-Trichloroethane	ND	0.017	0.19		mg/Kg	5	1/23/2020 8:25:25 PM	R66046
1,1,2-Trichloroethane	ND	0.014	0.19		mg/Kg	5	1/23/2020 8:25:25 PM	R66046
Trichloroethene (TCE)	ND	0.022	0.19		mg/Kg	5	1/23/2020 8:25:25 PM	R66046
Trichlorofluoromethane	ND	0.066	0.19		mg/Kg	5	1/23/2020 8:25:25 PM	R66046
1,2,3-Trichloropropane	ND	0.031	0.39		mg/Kg	5	1/23/2020 8:25:25 PM	R66046
Vinyl chloride	ND	0.013	0.19		mg/Kg	5	1/23/2020 8:25:25 PM	R66046
Xylenes, Total	2.6	0.049	0.39		mg/Kg	5	1/23/2020 8:25:25 PM	R66046
Surr: Dibromofluoromethane	99.8		70-130		%Rec	5	1/23/2020 8:25:25 PM	R66046
Surr: 1,2-Dichloroethane-d4	96.7		70-130		%Rec	5	1/23/2020 8:25:25 PM	R66046
Surr: Toluene-d8	99.6		70-130		%Rec	5	1/23/2020 8:25:25 PM	R66046
Surr: 4-Bromofluorobenzene	84.1		70-130		%Rec	5	1/23/2020 8:25:25 PM	R66046
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **JMR**	
Gasoline Range Organics (GRO)	48	4.1	19		mg/Kg	5	1/24/2020 4:14:07 PM	G66078
Surr: BFB	91.7	0	70-130		%Rec	5	1/24/2020 4:14:07 PM	G66078
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/28/2020 3:11:00 PM	R66159
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	7.45				pH Units	1	1/29/2020 10:26:00 AM	R66160

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E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-1 Sludge 0.5-3
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 8:45:00 AM
Lab ID: 2001739-026 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	47000	240	1000		mg/Kg	100	1/22/2020 8:52:14 PM	49948
Motor Oil Range Organics (MRO)	8700	5000	5000		mg/Kg	100	1/22/2020 8:52:14 PM	49948
Surr: DNOP	0	0	55.1-146	S	%Rec	100	1/22/2020 8:52:14 PM	49948
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	5.7	0.037	0.67	H	mg/Kg	20	3/2/2020 5:53:17 PM	50789
MERCURY, TCLP							Analyst: **rde**	
Mercury	ND	0.00075	0.020		mg/L	1	1/28/2020 12:01:35 PM	50081
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	4.8	0.75	5.1	J	mg/Kg	2	1/24/2020 9:40:08 AM	49993
Arsenic	7.6	2.9	5.1		mg/Kg	2	1/24/2020 12:28:36 PM	49993
Barium	520	0.24	1.0		mg/Kg	10	1/24/2020 10:50:09 AM	49993
Beryllium	0.18	0.019	0.31	J	mg/Kg	2	1/24/2020 9:40:08 AM	49993
Cadmium	ND	0.049	0.20		mg/Kg	2	1/24/2020 9:40:08 AM	49993
Chromium	15	0.16	0.61		mg/Kg	2	1/24/2020 9:40:08 AM	49993
Cobalt	3.3	0.22	0.61		mg/Kg	2	1/24/2020 9:40:08 AM	49993
Lead	19	0.50	0.51		mg/Kg	2	1/24/2020 9:40:08 AM	49993
Nickel	20	0.30	1.0		mg/Kg	2	1/24/2020 9:40:08 AM	49993
Selenium	ND	2.6	5.1		mg/Kg	2	1/24/2020 12:28:36 PM	49993
Silver	ND	0.065	0.51		mg/Kg	2	1/24/2020 9:40:08 AM	49993
Vanadium	8.9	0.14	5.1		mg/Kg	2	1/24/2020 9:40:08 AM	49993
Zinc	1800	4.0	25		mg/Kg	10	1/24/2020 10:50:09 AM	49993
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/25/2020 12:42:04 PM	50045
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	1.8	4.9	D	mg/Kg	1	1/31/2020 8:34:48 PM	49975
Acenaphthylene	ND	2.2	4.9	D	mg/Kg	1	1/31/2020 8:34:48 PM	49975
Aniline	ND	1.7	4.9	D	mg/Kg	1	1/31/2020 8:34:48 PM	49975
Anthracene	ND	1.9	4.9	D	mg/Kg	1	1/31/2020 8:34:48 PM	49975
Azobenzene	ND	2.5	4.9	D	mg/Kg	1	1/31/2020 8:34:48 PM	49975
Benz(a)anthracene	ND	1.7	4.9	D	mg/Kg	1	1/31/2020 8:34:48 PM	49975
Benzo(a)pyrene	ND	2.6	4.9	D	mg/Kg	1	1/31/2020 8:34:48 PM	49975
Benzo(b)fluoranthene	ND	2.8	4.9	D	mg/Kg	1	1/31/2020 8:34:48 PM	49975
Benzo(g,h,i)perylene	ND	2.5	4.9	D	mg/Kg	1	1/31/2020 8:34:48 PM	49975
Benzo(k)fluoranthene	ND	1.5	4.9	D	mg/Kg	1	1/31/2020 8:34:48 PM	49975
Benzoic acid	ND	3.4	12	D	mg/Kg	1	1/31/2020 8:34:48 PM	49975
Benzyl alcohol	ND	2.0	4.9	D	mg/Kg	1	1/31/2020 8:34:48 PM	49975
Bis(2-chloroethoxy)methane	ND	2.0	4.9	D	mg/Kg	1	1/31/2020 8:34:48 PM	49975

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J	Analyte detected below quantitation limits
P	Sample pH Not In Range
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-1 Sludge 0.5-3
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 8:45:00 AM
Lab ID: 2001739-026 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	2.8	4.9	D	mg/Kg	1	1/31/2020 8:34:48 PM	49975
Bis(2-chloroisopropyl)ether	ND	2.1	4.9	D	mg/Kg	1	1/31/2020 8:34:48 PM	49975
Bis(2-ethylhexyl)phthalate	ND	5.4	12	D	mg/Kg	1	1/31/2020 8:34:48 PM	49975
4-Bromophenyl phenyl ether	ND	2.8	4.9	D	mg/Kg	1	1/31/2020 8:34:48 PM	49975
Butyl benzyl phthalate	ND	1.6	4.9	D	mg/Kg	1	1/31/2020 8:34:48 PM	49975
Carbazole	ND	1.9	4.9	D	mg/Kg	1	1/31/2020 8:34:48 PM	49975
4-Chloro-3-methylphenol	ND	1.9	12	D	mg/Kg	1	1/31/2020 8:34:48 PM	49975
4-Chloroaniline	ND	1.9	12	D	mg/Kg	1	1/31/2020 8:34:48 PM	49975
2-Chloronaphthalene	ND	2.0	6.1	D	mg/Kg	1	1/31/2020 8:34:48 PM	49975
2-Chlorophenol	ND	2.7	4.9	D	mg/Kg	1	1/31/2020 8:34:48 PM	49975
4-Chlorophenyl phenyl ether	ND	2.0	4.9	D	mg/Kg	1	1/31/2020 8:34:48 PM	49975
Chrysene	ND	1.9	4.9	D	mg/Kg	1	1/31/2020 8:34:48 PM	49975
Di-n-butyl phthalate	ND	7.2	9.7	D	mg/Kg	1	1/31/2020 8:34:48 PM	49975
Di-n-octyl phthalate	ND	1.6	9.7	D	mg/Kg	1	1/31/2020 8:34:48 PM	49975
Dibenz(a,h)anthracene	ND	2.7	4.9	D	mg/Kg	1	1/31/2020 8:34:48 PM	49975
Dibenzofuran	ND	2.4	4.9	D	mg/Kg	1	1/31/2020 8:34:48 PM	49975
1,2-Dichlorobenzene	ND	1.9	4.9	D	mg/Kg	1	1/31/2020 8:34:48 PM	49975
1,3-Dichlorobenzene	ND	1.6	4.9	D	mg/Kg	1	1/31/2020 8:34:48 PM	49975
1,4-Dichlorobenzene	ND	2.0	4.9	D	mg/Kg	1	1/31/2020 8:34:48 PM	49975
3,3´-Dichlorobenzidine	ND	2.1	6.1	D	mg/Kg	1	1/31/2020 8:34:48 PM	49975
Diethyl phthalate	ND	7.4	12	D	mg/Kg	1	1/31/2020 8:34:48 PM	49975
Dimethyl phthalate	ND	2.0	4.9	D	mg/Kg	1	1/31/2020 8:34:48 PM	49975
2,4-Dichlorophenol	ND	2.1	9.7	D	mg/Kg	1	1/31/2020 8:34:48 PM	49975
2,4-Dimethylphenol	ND	2.0	7.3	D	mg/Kg	1	1/31/2020 8:34:48 PM	49975
4,6-Dinitro-2-methylphenol	ND	1.8	9.7	D	mg/Kg	1	1/31/2020 8:34:48 PM	49975
2,4-Dinitrophenol	ND	1.4	12	D	mg/Kg	1	1/31/2020 8:34:48 PM	49975
2,4-Dinitrotoluene	ND	2.5	12	D	mg/Kg	1	1/31/2020 8:34:48 PM	49975
2,6-Dinitrotoluene	ND	2.9	12	D	mg/Kg	1	1/31/2020 8:34:48 PM	49975
Fluoranthene	ND	1.9	4.9	D	mg/Kg	1	1/31/2020 8:34:48 PM	49975
Fluorene	47	1.9	4.9	D	mg/Kg	1	1/31/2020 8:34:48 PM	49975
Hexachlorobenzene	ND	1.9	4.9	D	mg/Kg	1	1/31/2020 8:34:48 PM	49975
Hexachlorobutadiene	ND	2.1	4.9	D	mg/Kg	1	1/31/2020 8:34:48 PM	49975
Hexachlorocyclopentadiene	ND	2.3	4.9	D	mg/Kg	1	1/31/2020 8:34:48 PM	49975
Hexachloroethane	ND	2.0	4.9	D	mg/Kg	1	1/31/2020 8:34:48 PM	49975
Indeno(1,2,3-cd)pyrene	ND	3.0	4.9	D	mg/Kg	1	1/31/2020 8:34:48 PM	49975
Isophorone	ND	2.1	9.7	D	mg/Kg	1	1/31/2020 8:34:48 PM	49975
1-Methylnaphthalene	160	23	49	D	mg/Kg	10	2/4/2020 9:07:31 PM	49975
2-Methylnaphthalene	200	20	49	D	mg/Kg	10	2/4/2020 9:07:31 PM	49975
2-Methylphenol	ND	2.0	9.7	D	mg/Kg	1	1/31/2020 8:34:48 PM	49975

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

Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-1 Sludge 0.5-3
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 8:45:00 AM
Lab ID: 2001739-026 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	99	18	49	D	mg/Kg	10	2/4/2020 9:07:31 PM	49975
N-Nitrosodi-n-propylamine	ND	2.4	4.9	D	mg/Kg	1	1/31/2020 8:34:48 PM	49975
N-Nitrosodiphenylamine	ND	2.5	4.9	D	mg/Kg	1	1/31/2020 8:34:48 PM	49975
Naphthalene	23	2.0	4.9	D	mg/Kg	1	1/31/2020 8:34:48 PM	49975
2-Nitroaniline	ND	2.7	4.9	D	mg/Kg	1	1/31/2020 8:34:48 PM	49975
3-Nitroaniline	ND	2.4	4.9	D	mg/Kg	1	1/31/2020 8:34:48 PM	49975
4-Nitroaniline	ND	3.3	9.7	D	mg/Kg	1	1/31/2020 8:34:48 PM	49975
Nitrobenzene	ND	2.1	9.7	D	mg/Kg	1	1/31/2020 8:34:48 PM	49975
2-Nitrophenol	ND	2.0	4.9	D	mg/Kg	1	1/31/2020 8:34:48 PM	49975
4-Nitrophenol	ND	1.4	6.1	D	mg/Kg	1	1/31/2020 8:34:48 PM	49975
Pentachlorophenol	ND	2.2	9.7	D	mg/Kg	1	1/31/2020 8:34:48 PM	49975
Phenanthrene	160	25	49	D	mg/Kg	10	2/4/2020 9:07:31 PM	49975
Phenol	6.9	2.1	4.9	D	mg/Kg	1	1/31/2020 8:34:48 PM	49975
Pyrene	47	1.6	4.9	D	mg/Kg	1	1/31/2020 8:34:48 PM	49975
Pyridine	ND	4.5	9.7	D	mg/Kg	1	1/31/2020 8:34:48 PM	49975
1,2,4-Trichlorobenzene	ND	2.1	4.9	D	mg/Kg	1	1/31/2020 8:34:48 PM	49975
2,4,5-Trichlorophenol	ND	1.6	4.9	D	mg/Kg	1	1/31/2020 8:34:48 PM	49975
2,4,6-Trichlorophenol	ND	2.4	4.9	D	mg/Kg	1	1/31/2020 8:34:48 PM	49975
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	1	1/31/2020 8:34:48 PM	49975
Surr: Phenol-d5	0		18.5-101	SD	%Rec	1	1/31/2020 8:34:48 PM	49975
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	1	1/31/2020 8:34:48 PM	49975
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	1	1/31/2020 8:34:48 PM	49975
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	1	1/31/2020 8:34:48 PM	49975
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	1	1/31/2020 8:34:48 PM	49975
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Benzene	0.073	0.0068	0.042		mg/Kg	2	1/24/2020 5:11:04 PM	R66078
Toluene	0.51	0.0080	0.083		mg/Kg	2	1/24/2020 5:11:04 PM	R66078
Ethylbenzene	0.19	0.0049	0.083		mg/Kg	2	1/24/2020 5:11:04 PM	R66078
Methyl tert-butyl ether (MTBE)	0.057	0.020	0.083	J	mg/Kg	2	1/24/2020 5:11:04 PM	R66078
1,2,4-Trimethylbenzene	0.89	0.0076	0.083		mg/Kg	2	1/24/2020 5:11:04 PM	R66078
1,3,5-Trimethylbenzene	0.28	0.0081	0.083		mg/Kg	2	1/24/2020 5:11:04 PM	R66078
1,2-Dichloroethane (EDC)	ND	0.0085	0.083		mg/Kg	2	1/24/2020 5:11:04 PM	R66078
1,2-Dibromoethane (EDB)	ND	0.0076	0.083		mg/Kg	2	1/24/2020 5:11:04 PM	R66078
Naphthalene	2.0	0.017	0.17		mg/Kg	2	1/24/2020 5:11:04 PM	R66078
1-Methylnaphthalene	5.5	0.048	0.33		mg/Kg	2	1/24/2020 5:11:04 PM	R66078
2-Methylnaphthalene	8.0	0.036	0.33		mg/Kg	2	1/24/2020 5:11:04 PM	R66078
Acetone	0.55	0.069	1.3	J	mg/Kg	2	1/24/2020 5:11:04 PM	R66078
Bromobenzene	ND	0.0080	0.083		mg/Kg	2	1/24/2020 5:11:04 PM	R66078
Bromodichloromethane	ND	0.0076	0.083		mg/Kg	2	1/24/2020 5:11:04 PM	R66078

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H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
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J	Analyte detected below quantitation limits
P	Sample pH Not In Range
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-1 Sludge 0.5-3
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 8:45:00 AM
Lab ID: 2001739-026 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Bromoform	ND	0.0075	0.083		mg/Kg	2	1/24/2020 5:11:04 PM	R66078
Bromomethane	ND	0.020	0.25		mg/Kg	2	1/24/2020 5:11:04 PM	R66078
2-Butanone	0.69	0.097	0.83	J	mg/Kg	2	1/24/2020 5:11:04 PM	R66078
Carbon disulfide	0.11	0.028	0.83	J	mg/Kg	2	1/24/2020 5:11:04 PM	R66078
Carbon tetrachloride	ND	0.0079	0.083		mg/Kg	2	1/24/2020 5:11:04 PM	R66078
Chlorobenzene	ND	0.011	0.083		mg/Kg	2	1/24/2020 5:11:04 PM	R66078
Chloroethane	ND	0.012	0.17		mg/Kg	2	1/24/2020 5:11:04 PM	R66078
Chloroform	0.0095	0.0067	0.083	J	mg/Kg	2	1/24/2020 5:11:04 PM	R66078
Chloromethane	0.033	0.0080	0.25	J	mg/Kg	2	1/24/2020 5:11:04 PM	R66078
2-Chlorotoluene	ND	0.0073	0.083		mg/Kg	2	1/24/2020 5:11:04 PM	R66078
4-Chlorotoluene	ND	0.0068	0.083		mg/Kg	2	1/24/2020 5:11:04 PM	R66078
cis-1,2-DCE	0.029	0.011	0.083	J	mg/Kg	2	1/24/2020 5:11:04 PM	R66078
cis-1,3-Dichloropropene	ND	0.0070	0.083		mg/Kg	2	1/24/2020 5:11:04 PM	R66078
1,2-Dibromo-3-chloropropane	ND	0.0086	0.17		mg/Kg	2	1/24/2020 5:11:04 PM	R66078
Dibromochloromethane	ND	0.0059	0.083		mg/Kg	2	1/24/2020 5:11:04 PM	R66078
Dibromomethane	ND	0.0090	0.083		mg/Kg	2	1/24/2020 5:11:04 PM	R66078
1,2-Dichlorobenzene	ND	0.0068	0.083		mg/Kg	2	1/24/2020 5:11:04 PM	R66078
1,3-Dichlorobenzene	ND	0.0073	0.083		mg/Kg	2	1/24/2020 5:11:04 PM	R66078
1,4-Dichlorobenzene	ND	0.0070	0.083		mg/Kg	2	1/24/2020 5:11:04 PM	R66078
Dichlorodifluoromethane	ND	0.019	0.083		mg/Kg	2	1/24/2020 5:11:04 PM	R66078
1,1-Dichloroethane	0.029	0.0053	0.083	J	mg/Kg	2	1/24/2020 5:11:04 PM	R66078
1,1-Dichloroethene	ND	0.033	0.083		mg/Kg	2	1/24/2020 5:11:04 PM	R66078
1,2-Dichloropropane	ND	0.0061	0.083		mg/Kg	2	1/24/2020 5:11:04 PM	R66078
1,3-Dichloropropane	ND	0.0090	0.083		mg/Kg	2	1/24/2020 5:11:04 PM	R66078
2,2-Dichloropropane	ND	0.027	0.17		mg/Kg	2	1/24/2020 5:11:04 PM	R66078
1,1-Dichloropropene	ND	0.0076	0.17		mg/Kg	2	1/24/2020 5:11:04 PM	R66078
Hexachlorobutadiene	ND	0.0085	0.17		mg/Kg	2	1/24/2020 5:11:04 PM	R66078
2-Hexanone	0.11	0.014	0.83	J	mg/Kg	2	1/24/2020 5:11:04 PM	R66078
Isopropylbenzene	0.039	0.0060	0.083	J	mg/Kg	2	1/24/2020 5:11:04 PM	R66078
4-Isopropyltoluene	0.043	0.0069	0.083	J	mg/Kg	2	1/24/2020 5:11:04 PM	R66078
4-Methyl-2-pentanone	ND	0.016	0.83		mg/Kg	2	1/24/2020 5:11:04 PM	R66078
Methylene chloride	ND	0.015	0.25		mg/Kg	2	1/24/2020 5:11:04 PM	R66078
n-Butylbenzene	0.10	0.0078	0.25	J	mg/Kg	2	1/24/2020 5:11:04 PM	R66078
n-Propylbenzene	0.11	0.0067	0.083		mg/Kg	2	1/24/2020 5:11:04 PM	R66078
sec-Butylbenzene	0.045	0.0094	0.083	J	mg/Kg	2	1/24/2020 5:11:04 PM	R66078
Styrene	ND	0.0066	0.083		mg/Kg	2	1/24/2020 5:11:04 PM	R66078
tert-Butylbenzene	ND	0.0079	0.083		mg/Kg	2	1/24/2020 5:11:04 PM	R66078
1,1,1,2-Tetrachloroethane	ND	0.0056	0.083		mg/Kg	2	1/24/2020 5:11:04 PM	R66078
1,1,2,2-Tetrachloroethane	ND	0.0085	0.083		mg/Kg	2	1/24/2020 5:11:04 PM	R66078

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ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
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B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-1 Sludge 0.5-3
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 8:45:00 AM
Lab ID: 2001739-026 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Tetrachloroethene (PCE)	ND	0.0067	0.083		mg/Kg	2	1/24/2020 5:11:04 PM	R66078
trans-1,2-DCE	ND	0.0076	0.083		mg/Kg	2	1/24/2020 5:11:04 PM	R66078
trans-1,3-Dichloropropene	0.024	0.0088	0.083	J	mg/Kg	2	1/24/2020 5:11:04 PM	R66078
1,2,3-Trichlorobenzene	ND	0.0073	0.17		mg/Kg	2	1/24/2020 5:11:04 PM	R66078
1,2,4-Trichlorobenzene	ND	0.0084	0.083		mg/Kg	2	1/24/2020 5:11:04 PM	R66078
1,1,1-Trichloroethane	ND	0.0075	0.083		mg/Kg	2	1/24/2020 5:11:04 PM	R66078
1,1,2-Trichloroethane	ND	0.0059	0.083		mg/Kg	2	1/24/2020 5:11:04 PM	R66078
Trichloroethene (TCE)	ND	0.0097	0.083		mg/Kg	2	1/24/2020 5:11:04 PM	R66078
Trichlorofluoromethane	ND	0.028	0.083		mg/Kg	2	1/24/2020 5:11:04 PM	R66078
1,2,3-Trichloropropane	ND	0.014	0.17		mg/Kg	2	1/24/2020 5:11:04 PM	R66078
Vinyl chloride	ND	0.0055	0.083		mg/Kg	2	1/24/2020 5:11:04 PM	R66078
Xylenes, Total	1.4	0.021	0.17		mg/Kg	2	1/24/2020 5:11:04 PM	R66078
Surr: Dibromofluoromethane	98.2		70-130		%Rec	2	1/24/2020 5:11:04 PM	R66078
Surr: 1,2-Dichloroethane-d4	98.7		70-130		%Rec	2	1/24/2020 5:11:04 PM	R66078
Surr: Toluene-d8	97.1		70-130		%Rec	2	1/24/2020 5:11:04 PM	R66078
Surr: 4-Bromofluorobenzene	93.1		70-130		%Rec	2	1/24/2020 5:11:04 PM	R66078
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **JMR**	
Gasoline Range Organics (GRO)	39	1.8	8.3		mg/Kg	2	1/24/2020 5:11:04 PM	G66078
Surr: BFB	103	0	70-130		%Rec	2	1/24/2020 5:11:04 PM	G66078
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/28/2020 3:11:00 PM	R66159
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	7.62				pH Units	1	1/29/2020 10:26:00 AM	R66160

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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-4 3 ft
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 4:27:00 PM
Lab ID: 2001739-027 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	42000	200	820		mg/Kg	100	1/22/2020 9:01:09 PM	49948
Motor Oil Range Organics (MRO)	6400	4100	4100		mg/Kg	100	1/22/2020 9:01:09 PM	49948
Surr: DNOP	0	0	55.1-146	S	%Rec	100	1/22/2020 9:01:09 PM	49948
EPA METHOD 7471: MERCURY							Analyst: **JLF**	
Mercury	ND	0.0019	0.034	H	mg/Kg	1	2/28/2020 6:53:48 PM	50752
MERCURY, TCLP							Analyst: **rde**	
Mercury	ND	0.00075	0.020		mg/L	1	1/28/2020 12:03:38 PM	50081
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	11	0.72	4.9		mg/Kg	2	1/24/2020 9:41:42 AM	49993
Arsenic	10	2.8	4.9		mg/Kg	2	1/24/2020 12:30:01 PM	49993
Barium	490	0.23	0.98		mg/Kg	10	1/24/2020 10:51:42 AM	49993
Beryllium	0.15	0.018	0.30	J	mg/Kg	2	1/24/2020 9:41:42 AM	49993
Cadmium	ND	0.048	0.20		mg/Kg	2	1/24/2020 9:41:42 AM	49993
Chromium	14	0.16	0.59		mg/Kg	2	1/24/2020 9:41:42 AM	49993
Cobalt	2.8	0.21	0.59		mg/Kg	2	1/24/2020 9:41:42 AM	49993
Lead	23	0.48	0.49		mg/Kg	2	1/24/2020 9:41:42 AM	49993
Nickel	19	0.29	0.98		mg/Kg	2	1/24/2020 9:41:42 AM	49993
Selenium	ND	2.5	4.9		mg/Kg	2	1/24/2020 12:30:01 PM	49993
Silver	ND	0.063	0.49		mg/Kg	2	1/24/2020 9:41:42 AM	49993
Vanadium	7.1	0.13	4.9		mg/Kg	2	1/24/2020 9:41:42 AM	49993
Zinc	1600	3.9	25		mg/Kg	10	1/24/2020 10:51:42 AM	49993
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/25/2020 12:43:28 PM	50045
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	1.8	4.7	D	mg/Kg	1	1/31/2020 9:03:28 PM	49975
Acenaphthylene	ND	2.1	4.7	D	mg/Kg	1	1/31/2020 9:03:28 PM	49975
Aniline	ND	1.6	4.7	D	mg/Kg	1	1/31/2020 9:03:28 PM	49975
Anthracene	ND	1.8	4.7	D	mg/Kg	1	1/31/2020 9:03:28 PM	49975
Azobenzene	ND	2.4	4.7	D	mg/Kg	1	1/31/2020 9:03:28 PM	49975
Benz(a)anthracene	ND	1.6	4.7	D	mg/Kg	1	1/31/2020 9:03:28 PM	49975
Benzo(a)pyrene	ND	2.6	4.7	D	mg/Kg	1	1/31/2020 9:03:28 PM	49975
Benzo(b)fluoranthene	ND	2.7	4.7	D	mg/Kg	1	1/31/2020 9:03:28 PM	49975
Benzo(g,h,i)perylene	ND	2.4	4.7	D	mg/Kg	1	1/31/2020 9:03:28 PM	49975
Benzo(k)fluoranthene	ND	1.4	4.7	D	mg/Kg	1	1/31/2020 9:03:28 PM	49975
Benzoic acid	ND	3.3	12	D	mg/Kg	1	1/31/2020 9:03:28 PM	49975
Benzyl alcohol	ND	2.0	4.7	D	mg/Kg	1	1/31/2020 9:03:28 PM	49975
Bis(2-chloroethoxy)methane	ND	2.0	4.7	D	mg/Kg	1	1/31/2020 9:03:28 PM	49975

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

Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-4 3 ft
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 4:27:00 PM
Lab ID: 2001739-027 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	2.8	4.7	D	mg/Kg	1	1/31/2020 9:03:28 PM	49975
Bis(2-chloroisopropyl)ether	ND	2.0	4.7	D	mg/Kg	1	1/31/2020 9:03:28 PM	49975
Bis(2-ethylhexyl)phthalate	ND	5.3	12	D	mg/Kg	1	1/31/2020 9:03:28 PM	49975
4-Bromophenyl phenyl ether	ND	2.8	4.7	D	mg/Kg	1	1/31/2020 9:03:28 PM	49975
Butyl benzyl phthalate	ND	1.6	4.7	D	mg/Kg	1	1/31/2020 9:03:28 PM	49975
Carbazole	ND	1.9	4.7	D	mg/Kg	1	1/31/2020 9:03:28 PM	49975
4-Chloro-3-methylphenol	ND	1.9	12	D	mg/Kg	1	1/31/2020 9:03:28 PM	49975
4-Chloroaniline	ND	1.8	12	D	mg/Kg	1	1/31/2020 9:03:28 PM	49975
2-Chloronaphthalene	ND	2.0	5.9	D	mg/Kg	1	1/31/2020 9:03:28 PM	49975
2-Chlorophenol	ND	2.7	4.7	D	mg/Kg	1	1/31/2020 9:03:28 PM	49975
4-Chlorophenyl phenyl ether	ND	2.0	4.7	D	mg/Kg	1	1/31/2020 9:03:28 PM	49975
Chrysene	ND	1.9	4.7	D	mg/Kg	1	1/31/2020 9:03:28 PM	49975
Di-n-butyl phthalate	ND	7.1	9.5	D	mg/Kg	1	1/31/2020 9:03:28 PM	49975
Di-n-octyl phthalate	ND	1.6	9.5	D	mg/Kg	1	1/31/2020 9:03:28 PM	49975
Dibenz(a,h)anthracene	ND	2.6	4.7	D	mg/Kg	1	1/31/2020 9:03:28 PM	49975
Dibenzofuran	ND	2.4	4.7	D	mg/Kg	1	1/31/2020 9:03:28 PM	49975
1,2-Dichlorobenzene	ND	1.9	4.7	D	mg/Kg	1	1/31/2020 9:03:28 PM	49975
1,3-Dichlorobenzene	ND	1.6	4.7	D	mg/Kg	1	1/31/2020 9:03:28 PM	49975
1,4-Dichlorobenzene	ND	2.0	4.7	D	mg/Kg	1	1/31/2020 9:03:28 PM	49975
3,3´-Dichlorobenzidine	ND	2.0	5.9	D	mg/Kg	1	1/31/2020 9:03:28 PM	49975
Diethyl phthalate	ND	7.2	12	D	mg/Kg	1	1/31/2020 9:03:28 PM	49975
Dimethyl phthalate	ND	1.9	4.7	D	mg/Kg	1	1/31/2020 9:03:28 PM	49975
2,4-Dichlorophenol	ND	2.0	9.5	D	mg/Kg	1	1/31/2020 9:03:28 PM	49975
2,4-Dimethylphenol	ND	2.0	7.1	D	mg/Kg	1	1/31/2020 9:03:28 PM	49975
4,6-Dinitro-2-methylphenol	ND	1.7	9.5	D	mg/Kg	1	1/31/2020 9:03:28 PM	49975
2,4-Dinitrophenol	ND	1.4	12	D	mg/Kg	1	1/31/2020 9:03:28 PM	49975
2,4-Dinitrotoluene	ND	2.4	12	D	mg/Kg	1	1/31/2020 9:03:28 PM	49975
2,6-Dinitrotoluene	ND	2.8	12	D	mg/Kg	1	1/31/2020 9:03:28 PM	49975
Fluoranthene	ND	1.8	4.7	D	mg/Kg	1	1/31/2020 9:03:28 PM	49975
Fluorene	40	1.9	4.7	D	mg/Kg	1	1/31/2020 9:03:28 PM	49975
Hexachlorobenzene	ND	1.9	4.7	D	mg/Kg	1	1/31/2020 9:03:28 PM	49975
Hexachlorobutadiene	ND	2.1	4.7	D	mg/Kg	1	1/31/2020 9:03:28 PM	49975
Hexachlorocyclopentadiene	ND	2.3	4.7	D	mg/Kg	1	1/31/2020 9:03:28 PM	49975
Hexachloroethane	ND	1.9	4.7	D	mg/Kg	1	1/31/2020 9:03:28 PM	49975
Indeno(1,2,3-cd)pyrene	ND	2.9	4.7	D	mg/Kg	1	1/31/2020 9:03:28 PM	49975
Isophorone	ND	2.1	9.5	D	mg/Kg	1	1/31/2020 9:03:28 PM	49975
1-Methylnaphthalene	180	22	47	D	mg/Kg	10	2/4/2020 9:36:06 PM	49975
2-Methylnaphthalene	150	19	47	D	mg/Kg	10	2/4/2020 9:36:06 PM	49975
2-Methylphenol	ND	2.0	9.5	D	mg/Kg	1	1/31/2020 9:03:28 PM	49975

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

Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-4 3 ft
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 4:27:00 PM
Lab ID: 2001739-027 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	56	1.7	4.7	D	mg/Kg	1	1/31/2020 9:03:28 PM	49975
N-Nitrosodi-n-propylamine	ND	2.4	4.7	D	mg/Kg	1	1/31/2020 9:03:28 PM	49975
N-Nitrosodiphenylamine	ND	2.4	4.7	D	mg/Kg	1	1/31/2020 9:03:28 PM	49975
Naphthalene	20	1.9	4.7	D	mg/Kg	1	1/31/2020 9:03:28 PM	49975
2-Nitroaniline	ND	2.6	4.7	D	mg/Kg	1	1/31/2020 9:03:28 PM	49975
3-Nitroaniline	ND	2.3	4.7	D	mg/Kg	1	1/31/2020 9:03:28 PM	49975
4-Nitroaniline	ND	3.2	9.5	D	mg/Kg	1	1/31/2020 9:03:28 PM	49975
Nitrobenzene	ND	2.0	9.5	D	mg/Kg	1	1/31/2020 9:03:28 PM	49975
2-Nitrophenol	ND	2.0	4.7	D	mg/Kg	1	1/31/2020 9:03:28 PM	49975
4-Nitrophenol	ND	1.4	5.9	D	mg/Kg	1	1/31/2020 9:03:28 PM	49975
Pentachlorophenol	ND	2.1	9.5	D	mg/Kg	1	1/31/2020 9:03:28 PM	49975
Phenanthrene	130	24	47	D	mg/Kg	10	2/4/2020 9:36:06 PM	49975
Phenol	3.5	2.0	4.7	JD	mg/Kg	1	1/31/2020 9:03:28 PM	49975
Pyrene	44	1.6	4.7	D	mg/Kg	1	1/31/2020 9:03:28 PM	49975
Pyridine	ND	4.4	9.5	D	mg/Kg	1	1/31/2020 9:03:28 PM	49975
1,2,4-Trichlorobenzene	ND	2.0	4.7	D	mg/Kg	1	1/31/2020 9:03:28 PM	49975
2,4,5-Trichlorophenol	ND	1.5	4.7	D	mg/Kg	1	1/31/2020 9:03:28 PM	49975
2,4,6-Trichlorophenol	ND	2.4	4.7	D	mg/Kg	1	1/31/2020 9:03:28 PM	49975
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	1	1/31/2020 9:03:28 PM	49975
Surr: Phenol-d5	0		18.5-101	SD	%Rec	1	1/31/2020 9:03:28 PM	49975
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	1	1/31/2020 9:03:28 PM	49975
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	1	1/31/2020 9:03:28 PM	49975
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	1	1/31/2020 9:03:28 PM	49975
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	1	1/31/2020 9:03:28 PM	49975
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Benzene	0.16	0.023	0.14		mg/Kg	5	1/23/2020 9:22:13 PM	R66046
Toluene	1.1	0.027	0.28		mg/Kg	5	1/23/2020 9:22:13 PM	R66046
Ethylbenzene	0.39	0.016	0.28		mg/Kg	5	1/23/2020 9:22:13 PM	R66046
Methyl tert-butyl ether (MTBE)	ND	0.066	0.28		mg/Kg	5	1/23/2020 9:22:13 PM	R66046
1,2,4-Trimethylbenzene	1.8	0.026	0.28		mg/Kg	5	1/23/2020 9:22:13 PM	R66046
1,3,5-Trimethylbenzene	0.52	0.027	0.28		mg/Kg	5	1/23/2020 9:22:13 PM	R66046
1,2-Dichloroethane (EDC)	ND	0.029	0.28		mg/Kg	5	1/23/2020 9:22:13 PM	R66046
1,2-Dibromoethane (EDB)	ND	0.026	0.28		mg/Kg	5	1/23/2020 9:22:13 PM	R66046
Naphthalene	3.8	0.056	0.56		mg/Kg	5	1/23/2020 9:22:13 PM	R66046
1-Methylnaphthalene	14	0.16	1.1		mg/Kg	5	1/23/2020 9:22:13 PM	R66046
2-Methylnaphthalene	18	0.12	1.1		mg/Kg	5	1/23/2020 9:22:13 PM	R66046
Acetone	0.38	0.23	4.2	J	mg/Kg	5	1/23/2020 9:22:13 PM	R66046
Bromobenzene	ND	0.027	0.28		mg/Kg	5	1/23/2020 9:22:13 PM	R66046
Bromodichloromethane	ND	0.026	0.28		mg/Kg	5	1/23/2020 9:22:13 PM	R66046

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P	Sample pH Not In Range
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-4 3 ft
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 4:27:00 PM
Lab ID: 2001739-027 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Bromoform	ND	0.025	0.28		mg/Kg	5	1/23/2020 9:22:13 PM	R66046
Bromomethane	ND	0.068	0.84		mg/Kg	5	1/23/2020 9:22:13 PM	R66046
2-Butanone	1.2	0.32	2.8	J	mg/Kg	5	1/23/2020 9:22:13 PM	R66046
Carbon disulfide	ND	0.092	2.8		mg/Kg	5	1/23/2020 9:22:13 PM	R66046
Carbon tetrachloride	ND	0.027	0.28		mg/Kg	5	1/23/2020 9:22:13 PM	R66046
Chlorobenzene	ND	0.036	0.28		mg/Kg	5	1/23/2020 9:22:13 PM	R66046
Chloroethane	ND	0.041	0.56		mg/Kg	5	1/23/2020 9:22:13 PM	R66046
Chloroform	ND	0.023	0.28		mg/Kg	5	1/23/2020 9:22:13 PM	R66046
Chloromethane	ND	0.027	0.84		mg/Kg	5	1/23/2020 9:22:13 PM	R66046
2-Chlorotoluene	ND	0.024	0.28		mg/Kg	5	1/23/2020 9:22:13 PM	R66046
4-Chlorotoluene	ND	0.023	0.28		mg/Kg	5	1/23/2020 9:22:13 PM	R66046
cis-1,2-DCE	ND	0.038	0.28		mg/Kg	5	1/23/2020 9:22:13 PM	R66046
cis-1,3-Dichloropropene	ND	0.024	0.28		mg/Kg	5	1/23/2020 9:22:13 PM	R66046
1,2-Dibromo-3-chloropropane	ND	0.029	0.56		mg/Kg	5	1/23/2020 9:22:13 PM	R66046
Dibromochloromethane	ND	0.020	0.28		mg/Kg	5	1/23/2020 9:22:13 PM	R66046
Dibromomethane	ND	0.030	0.28		mg/Kg	5	1/23/2020 9:22:13 PM	R66046
1,2-Dichlorobenzene	ND	0.023	0.28		mg/Kg	5	1/23/2020 9:22:13 PM	R66046
1,3-Dichlorobenzene	ND	0.024	0.28		mg/Kg	5	1/23/2020 9:22:13 PM	R66046
1,4-Dichlorobenzene	ND	0.023	0.28		mg/Kg	5	1/23/2020 9:22:13 PM	R66046
Dichlorodifluoromethane	ND	0.065	0.28		mg/Kg	5	1/23/2020 9:22:13 PM	R66046
1,1-Dichloroethane	0.088	0.018	0.28	J	mg/Kg	5	1/23/2020 9:22:13 PM	R66046
1,1-Dichloroethene	ND	0.11	0.28		mg/Kg	5	1/23/2020 9:22:13 PM	R66046
1,2-Dichloropropane	ND	0.020	0.28		mg/Kg	5	1/23/2020 9:22:13 PM	R66046
1,3-Dichloropropane	ND	0.030	0.28		mg/Kg	5	1/23/2020 9:22:13 PM	R66046
2,2-Dichloropropane	ND	0.091	0.56		mg/Kg	5	1/23/2020 9:22:13 PM	R66046
1,1-Dichloropropene	ND	0.025	0.56		mg/Kg	5	1/23/2020 9:22:13 PM	R66046
Hexachlorobutadiene	ND	0.028	0.56		mg/Kg	5	1/23/2020 9:22:13 PM	R66046
2-Hexanone	0.23	0.046	2.8	J	mg/Kg	5	1/23/2020 9:22:13 PM	R66046
Isopropylbenzene	0.061	0.020	0.28	J	mg/Kg	5	1/23/2020 9:22:13 PM	R66046
4-Isopropyltoluene	0.079	0.023	0.28	J	mg/Kg	5	1/23/2020 9:22:13 PM	R66046
4-Methyl-2-pentanone	ND	0.053	2.8		mg/Kg	5	1/23/2020 9:22:13 PM	R66046
Methylene chloride	ND	0.049	0.84		mg/Kg	5	1/23/2020 9:22:13 PM	R66046
n-Butylbenzene	0.23	0.026	0.84	J	mg/Kg	5	1/23/2020 9:22:13 PM	R66046
n-Propylbenzene	0.24	0.022	0.28	J	mg/Kg	5	1/23/2020 9:22:13 PM	R66046
sec-Butylbenzene	0.10	0.032	0.28	J	mg/Kg	5	1/23/2020 9:22:13 PM	R66046
Styrene	ND	0.022	0.28		mg/Kg	5	1/23/2020 9:22:13 PM	R66046
tert-Butylbenzene	ND	0.026	0.28		mg/Kg	5	1/23/2020 9:22:13 PM	R66046
1,1,1,2-Tetrachloroethane	ND	0.019	0.28		mg/Kg	5	1/23/2020 9:22:13 PM	R66046
1,1,2,2-Tetrachloroethane	ND	0.028	0.28		mg/Kg	5	1/23/2020 9:22:13 PM	R66046

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Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-4 3 ft
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 4:27:00 PM
Lab ID: 2001739-027 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Tetrachloroethene (PCE)	ND	0.022	0.28		mg/Kg	5	1/23/2020 9:22:13 PM	R66046
trans-1,2-DCE	ND	0.026	0.28		mg/Kg	5	1/23/2020 9:22:13 PM	R66046
trans-1,3-Dichloropropene	ND	0.030	0.28		mg/Kg	5	1/23/2020 9:22:13 PM	R66046
1,2,3-Trichlorobenzene	ND	0.025	0.56		mg/Kg	5	1/23/2020 9:22:13 PM	R66046
1,2,4-Trichlorobenzene	ND	0.028	0.28		mg/Kg	5	1/23/2020 9:22:13 PM	R66046
1,1,1-Trichloroethane	ND	0.025	0.28		mg/Kg	5	1/23/2020 9:22:13 PM	R66046
1,1,2-Trichloroethane	ND	0.020	0.28		mg/Kg	5	1/23/2020 9:22:13 PM	R66046
Trichloroethene (TCE)	ND	0.032	0.28		mg/Kg	5	1/23/2020 9:22:13 PM	R66046
Trichlorofluoromethane	ND	0.095	0.28		mg/Kg	5	1/23/2020 9:22:13 PM	R66046
1,2,3-Trichloropropane	ND	0.045	0.56		mg/Kg	5	1/23/2020 9:22:13 PM	R66046
Vinyl chloride	ND	0.018	0.28		mg/Kg	5	1/23/2020 9:22:13 PM	R66046
Xylenes, Total	2.8	0.071	0.56		mg/Kg	5	1/23/2020 9:22:13 PM	R66046
Surr: Dibromofluoromethane	98.8		70-130		%Rec	5	1/23/2020 9:22:13 PM	R66046
Surr: 1,2-Dichloroethane-d4	93.5		70-130		%Rec	5	1/23/2020 9:22:13 PM	R66046
Surr: Toluene-d8	98.3		70-130		%Rec	5	1/23/2020 9:22:13 PM	R66046
Surr: 4-Bromofluorobenzene	91.7		70-130		%Rec	5	1/23/2020 9:22:13 PM	R66046
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **JMR**	
Gasoline Range Organics (GRO)	86	5.9	28		mg/Kg	5	1/24/2020 6:07:59 PM	G66078
Surr: BFB	98.6	0	70-130		%Rec	5	1/24/2020 6:07:59 PM	G66078
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/28/2020 3:11:00 PM	R66159
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	7.99				pH Units	1	1/29/2020 10:26:00 AM	R66160

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-15 Toe 4-5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 2:35:00 PM
Lab ID: 2001739-028 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	56000	250	1000		mg/Kg	100	1/22/2020 9:10:06 PM	49948
Motor Oil Range Organics (MRO)	14000	5200	5200		mg/Kg	100	1/22/2020 9:10:06 PM	49948
Surr: DNOP	0	0	55.1-146	S	%Rec	100	1/22/2020 9:10:06 PM	49948
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	6.6	0.036	0.66	H	mg/Kg	20	3/2/2020 5:55:50 PM	50789
MERCURY, TCLP							Analyst: **rde**	
Mercury	ND	0.00075	0.020		mg/L	1	1/28/2020 12:05:41 PM	50081
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	1.4	0.75	5.1	J	mg/Kg	2	1/24/2020 9:43:16 AM	49993
Arsenic	11	2.9	5.1		mg/Kg	2	1/24/2020 12:31:27 PM	49993
Barium	380	0.047	0.20		mg/Kg	2	1/24/2020 9:43:16 AM	49993
Beryllium	0.19	0.019	0.31	J	mg/Kg	2	1/24/2020 9:43:16 AM	49993
Cadmium	ND	0.049	0.20		mg/Kg	2	1/24/2020 9:43:16 AM	49993
Chromium	29	0.16	0.61		mg/Kg	2	1/24/2020 9:43:16 AM	49993
Cobalt	3.7	0.22	0.61		mg/Kg	2	1/24/2020 9:43:16 AM	49993
Lead	30	0.49	0.51		mg/Kg	2	1/24/2020 9:43:16 AM	49993
Nickel	26	0.30	1.0		mg/Kg	2	1/24/2020 9:43:16 AM	49993
Selenium	ND	2.6	5.1		mg/Kg	2	1/24/2020 12:31:27 PM	49993
Silver	ND	0.065	0.51		mg/Kg	2	1/24/2020 9:43:16 AM	49993
Vanadium	9.3	0.14	5.1		mg/Kg	2	1/24/2020 9:43:16 AM	49993
Zinc	2200	8.1	51		mg/Kg	20	1/24/2020 10:53:14 AM	49993
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/25/2020 12:44:51 PM	50045
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	1.7	4.5	D	mg/Kg	1	1/31/2020 9:32:01 PM	49975
Acenaphthylene	ND	2.0	4.5	D	mg/Kg	1	1/31/2020 9:32:01 PM	49975
Aniline	ND	1.5	4.5	D	mg/Kg	1	1/31/2020 9:32:01 PM	49975
Anthracene	ND	1.7	4.5	D	mg/Kg	1	1/31/2020 9:32:01 PM	49975
Azobenzene	ND	2.3	4.5	D	mg/Kg	1	1/31/2020 9:32:01 PM	49975
Benz(a)anthracene	ND	1.6	4.5	D	mg/Kg	1	1/31/2020 9:32:01 PM	49975
Benzo(a)pyrene	ND	2.5	4.5	D	mg/Kg	1	1/31/2020 9:32:01 PM	49975
Benzo(b)fluoranthene	ND	2.6	4.5	D	mg/Kg	1	1/31/2020 9:32:01 PM	49975
Benzo(g,h,i)perylene	ND	2.3	4.5	D	mg/Kg	1	1/31/2020 9:32:01 PM	49975
Benzo(k)fluoranthene	ND	1.4	4.5	D	mg/Kg	1	1/31/2020 9:32:01 PM	49975
Benzoic acid	ND	3.1	11	D	mg/Kg	1	1/31/2020 9:32:01 PM	49975
Benzyl alcohol	ND	1.9	4.5	D	mg/Kg	1	1/31/2020 9:32:01 PM	49975
Bis(2-chloroethoxy)methane	ND	1.9	4.5	D	mg/Kg	1	1/31/2020 9:32:01 PM	49975

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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-15 Toe 4-5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 2:35:00 PM
Lab ID: 2001739-028 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	2.6	4.5	D	mg/Kg	1	1/31/2020 9:32:01 PM	49975
Bis(2-chloroisopropyl)ether	ND	1.9	4.5	D	mg/Kg	1	1/31/2020 9:32:01 PM	49975
Bis(2-ethylhexyl)phthalate	ND	5.1	11	D	mg/Kg	1	1/31/2020 9:32:01 PM	49975
4-Bromophenyl phenyl ether	ND	2.6	4.5	D	mg/Kg	1	1/31/2020 9:32:01 PM	49975
Butyl benzyl phthalate	ND	1.5	4.5	D	mg/Kg	1	1/31/2020 9:32:01 PM	49975
Carbazole	ND	1.8	4.5	D	mg/Kg	1	1/31/2020 9:32:01 PM	49975
4-Chloro-3-methylphenol	ND	1.8	11	D	mg/Kg	1	1/31/2020 9:32:01 PM	49975
4-Chloroaniline	ND	1.7	11	D	mg/Kg	1	1/31/2020 9:32:01 PM	49975
2-Chloronaphthalene	ND	1.9	5.7	D	mg/Kg	1	1/31/2020 9:32:01 PM	49975
2-Chlorophenol	ND	2.6	4.5	D	mg/Kg	1	1/31/2020 9:32:01 PM	49975
4-Chlorophenyl phenyl ether	ND	1.9	4.5	D	mg/Kg	1	1/31/2020 9:32:01 PM	49975
Chrysene	ND	1.8	4.5	D	mg/Kg	1	1/31/2020 9:32:01 PM	49975
Di-n-butyl phthalate	ND	6.8	9.1	D	mg/Kg	1	1/31/2020 9:32:01 PM	49975
Di-n-octyl phthalate	ND	1.5	9.1	D	mg/Kg	1	1/31/2020 9:32:01 PM	49975
Dibenz(a,h)anthracene	ND	2.5	4.5	D	mg/Kg	1	1/31/2020 9:32:01 PM	49975
Dibenzofuran	ND	2.3	4.5	D	mg/Kg	1	1/31/2020 9:32:01 PM	49975
1,2-Dichlorobenzene	ND	1.8	4.5	D	mg/Kg	1	1/31/2020 9:32:01 PM	49975
1,3-Dichlorobenzene	ND	1.5	4.5	D	mg/Kg	1	1/31/2020 9:32:01 PM	49975
1,4-Dichlorobenzene	ND	1.9	4.5	D	mg/Kg	1	1/31/2020 9:32:01 PM	49975
3,3´-Dichlorobenzidine	ND	1.9	5.7	D	mg/Kg	1	1/31/2020 9:32:01 PM	49975
Diethyl phthalate	ND	6.9	11	D	mg/Kg	1	1/31/2020 9:32:01 PM	49975
Dimethyl phthalate	ND	1.8	4.5	D	mg/Kg	1	1/31/2020 9:32:01 PM	49975
2,4-Dichlorophenol	ND	1.9	9.1	D	mg/Kg	1	1/31/2020 9:32:01 PM	49975
2,4-Dimethylphenol	ND	1.9	6.8	D	mg/Kg	1	1/31/2020 9:32:01 PM	49975
4,6-Dinitro-2-methylphenol	ND	1.7	9.1	D	mg/Kg	1	1/31/2020 9:32:01 PM	49975
2,4-Dinitrophenol	ND	1.3	11	D	mg/Kg	1	1/31/2020 9:32:01 PM	49975
2,4-Dinitrotoluene	ND	2.3	11	D	mg/Kg	1	1/31/2020 9:32:01 PM	49975
2,6-Dinitrotoluene	ND	2.7	11	D	mg/Kg	1	1/31/2020 9:32:01 PM	49975
Fluoranthene	ND	1.7	4.5	D	mg/Kg	1	1/31/2020 9:32:01 PM	49975
Fluorene	38	1.8	4.5	D	mg/Kg	1	1/31/2020 9:32:01 PM	49975
Hexachlorobenzene	ND	1.8	4.5	D	mg/Kg	1	1/31/2020 9:32:01 PM	49975
Hexachlorobutadiene	ND	2.0	4.5	D	mg/Kg	1	1/31/2020 9:32:01 PM	49975
Hexachlorocyclopentadiene	ND	2.2	4.5	D	mg/Kg	1	1/31/2020 9:32:01 PM	49975
Hexachloroethane	ND	1.9	4.5	D	mg/Kg	1	1/31/2020 9:32:01 PM	49975
Indeno(1,2,3-cd)pyrene	ND	2.8	4.5	D	mg/Kg	1	1/31/2020 9:32:01 PM	49975
Isophorone	ND	2.0	9.1	D	mg/Kg	1	1/31/2020 9:32:01 PM	49975
1-Methylnaphthalene	140	21	45	D	mg/Kg	10	2/4/2020 10:04:35 PM	49975
2-Methylnaphthalene	170	18	45	D	mg/Kg	10	2/4/2020 10:04:35 PM	49975
2-Methylphenol	14	1.9	9.1	D	mg/Kg	1	1/31/2020 9:32:01 PM	49975

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

Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-15 Toe 4-5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 2:35:00 PM
Lab ID: 2001739-028 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	22	1.6	4.5	D	mg/Kg	1	1/31/2020 9:32:01 PM	49975
N-Nitrosodi-n-propylamine	ND	2.3	4.5	D	mg/Kg	1	1/31/2020 9:32:01 PM	49975
N-Nitrosodiphenylamine	ND	2.3	4.5	D	mg/Kg	1	1/31/2020 9:32:01 PM	49975
Naphthalene	27	1.9	4.5	D	mg/Kg	1	1/31/2020 9:32:01 PM	49975
2-Nitroaniline	ND	2.5	4.5	D	mg/Kg	1	1/31/2020 9:32:01 PM	49975
3-Nitroaniline	ND	2.2	4.5	D	mg/Kg	1	1/31/2020 9:32:01 PM	49975
4-Nitroaniline	ND	3.0	9.1	D	mg/Kg	1	1/31/2020 9:32:01 PM	49975
Nitrobenzene	ND	1.9	9.1	D	mg/Kg	1	1/31/2020 9:32:01 PM	49975
2-Nitrophenol	ND	1.9	4.5	D	mg/Kg	1	1/31/2020 9:32:01 PM	49975
4-Nitrophenol	ND	1.3	5.7	D	mg/Kg	1	1/31/2020 9:32:01 PM	49975
Pentachlorophenol	ND	2.0	9.1	D	mg/Kg	1	1/31/2020 9:32:01 PM	49975
Phenanthrene	150	23	45	D	mg/Kg	10	2/4/2020 10:04:35 PM	49975
Phenol	17	1.9	4.5	D	mg/Kg	1	1/31/2020 9:32:01 PM	49975
Pyrene	45	1.5	4.5	D	mg/Kg	1	1/31/2020 9:32:01 PM	49975
Pyridine	ND	4.2	9.1	D	mg/Kg	1	1/31/2020 9:32:01 PM	49975
1,2,4-Trichlorobenzene	ND	1.9	4.5	D	mg/Kg	1	1/31/2020 9:32:01 PM	49975
2,4,5-Trichlorophenol	ND	1.5	4.5	D	mg/Kg	1	1/31/2020 9:32:01 PM	49975
2,4,6-Trichlorophenol	ND	2.3	4.5	D	mg/Kg	1	1/31/2020 9:32:01 PM	49975
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	1	1/31/2020 9:32:01 PM	49975
Surr: Phenol-d5	0		18.5-101	SD	%Rec	1	1/31/2020 9:32:01 PM	49975
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	1	1/31/2020 9:32:01 PM	49975
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	1	1/31/2020 9:32:01 PM	49975
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	1	1/31/2020 9:32:01 PM	49975
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	1	1/31/2020 9:32:01 PM	49975
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Benzene	0.21	0.017	0.11		mg/Kg	5	1/23/2020 9:50:42 PM	R66046
Toluene	1.5	0.020	0.21		mg/Kg	5	1/23/2020 9:50:42 PM	R66046
Ethylbenzene	0.60	0.012	0.21		mg/Kg	5	1/23/2020 9:50:42 PM	R66046
Methyl tert-butyl ether (MTBE)	ND	0.050	0.21		mg/Kg	5	1/23/2020 9:50:42 PM	R66046
1,2,4-Trimethylbenzene	2.1	0.019	0.21		mg/Kg	5	1/23/2020 9:50:42 PM	R66046
1,3,5-Trimethylbenzene	0.68	0.020	0.21		mg/Kg	5	1/23/2020 9:50:42 PM	R66046
1,2-Dichloroethane (EDC)	ND	0.022	0.21		mg/Kg	5	1/23/2020 9:50:42 PM	R66046
1,2-Dibromoethane (EDB)	ND	0.019	0.21		mg/Kg	5	1/23/2020 9:50:42 PM	R66046
Naphthalene	4.4	0.042	0.42		mg/Kg	5	1/23/2020 9:50:42 PM	R66046
1-Methylnaphthalene	13	0.12	0.84		mg/Kg	5	1/23/2020 9:50:42 PM	R66046
2-Methylnaphthalene	19	0.092	0.84		mg/Kg	5	1/23/2020 9:50:42 PM	R66046
Acetone	0.91	0.17	3.2	J	mg/Kg	5	1/23/2020 9:50:42 PM	R66046
Bromobenzene	ND	0.020	0.21		mg/Kg	5	1/23/2020 9:50:42 PM	R66046
Bromodichloromethane	ND	0.019	0.21		mg/Kg	5	1/23/2020 9:50:42 PM	R66046

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ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-15 Toe 4-5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 2:35:00 PM
Lab ID: 2001739-028 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Bromoform	ND	0.019	0.21		mg/Kg	5	1/23/2020 9:50:42 PM	R66046
Bromomethane	ND	0.051	0.63		mg/Kg	5	1/23/2020 9:50:42 PM	R66046
2-Butanone	2.0	0.24	2.1	J	mg/Kg	5	1/23/2020 9:50:42 PM	R66046
Carbon disulfide	1.5	0.070	2.1	J	mg/Kg	5	1/23/2020 9:50:42 PM	R66046
Carbon tetrachloride	ND	0.020	0.21		mg/Kg	5	1/23/2020 9:50:42 PM	R66046
Chlorobenzene	ND	0.027	0.21		mg/Kg	5	1/23/2020 9:50:42 PM	R66046
Chloroethane	ND	0.031	0.42		mg/Kg	5	1/23/2020 9:50:42 PM	R66046
Chloroform	0.033	0.017	0.21	J	mg/Kg	5	1/23/2020 9:50:42 PM	R66046
Chloromethane	ND	0.020	0.63		mg/Kg	5	1/23/2020 9:50:42 PM	R66046
2-Chlorotoluene	ND	0.018	0.21		mg/Kg	5	1/23/2020 9:50:42 PM	R66046
4-Chlorotoluene	ND	0.017	0.21		mg/Kg	5	1/23/2020 9:50:42 PM	R66046
cis-1,2-DCE	0.072	0.029	0.21	J	mg/Kg	5	1/23/2020 9:50:42 PM	R66046
cis-1,3-Dichloropropene	ND	0.018	0.21		mg/Kg	5	1/23/2020 9:50:42 PM	R66046
1,2-Dibromo-3-chloropropane	ND	0.022	0.42		mg/Kg	5	1/23/2020 9:50:42 PM	R66046
Dibromochloromethane	ND	0.015	0.21		mg/Kg	5	1/23/2020 9:50:42 PM	R66046
Dibromomethane	ND	0.023	0.21		mg/Kg	5	1/23/2020 9:50:42 PM	R66046
1,2-Dichlorobenzene	ND	0.017	0.21		mg/Kg	5	1/23/2020 9:50:42 PM	R66046
1,3-Dichlorobenzene	ND	0.018	0.21		mg/Kg	5	1/23/2020 9:50:42 PM	R66046
1,4-Dichlorobenzene	ND	0.018	0.21		mg/Kg	5	1/23/2020 9:50:42 PM	R66046
Dichlorodifluoromethane	ND	0.049	0.21		mg/Kg	5	1/23/2020 9:50:42 PM	R66046
1,1-Dichloroethane	0.066	0.013	0.21	J	mg/Kg	5	1/23/2020 9:50:42 PM	R66046
1,1-Dichloroethene	ND	0.084	0.21		mg/Kg	5	1/23/2020 9:50:42 PM	R66046
1,2-Dichloropropane	ND	0.015	0.21		mg/Kg	5	1/23/2020 9:50:42 PM	R66046
1,3-Dichloropropane	ND	0.023	0.21		mg/Kg	5	1/23/2020 9:50:42 PM	R66046
2,2-Dichloropropane	ND	0.069	0.42		mg/Kg	5	1/23/2020 9:50:42 PM	R66046
1,1-Dichloropropene	ND	0.019	0.42		mg/Kg	5	1/23/2020 9:50:42 PM	R66046
Hexachlorobutadiene	ND	0.021	0.42		mg/Kg	5	1/23/2020 9:50:42 PM	R66046
2-Hexanone	0.65	0.035	2.1	J	mg/Kg	5	1/23/2020 9:50:42 PM	R66046
Isopropylbenzene	0.11	0.015	0.21	J	mg/Kg	5	1/23/2020 9:50:42 PM	R66046
4-Isopropyltoluene	0.11	0.017	0.21	J	mg/Kg	5	1/23/2020 9:50:42 PM	R66046
4-Methyl-2-pentanone	ND	0.040	2.1		mg/Kg	5	1/23/2020 9:50:42 PM	R66046
Methylene chloride	ND	0.037	0.63		mg/Kg	5	1/23/2020 9:50:42 PM	R66046
n-Butylbenzene	0.30	0.020	0.63	J	mg/Kg	5	1/23/2020 9:50:42 PM	R66046
n-Propylbenzene	0.33	0.017	0.21		mg/Kg	5	1/23/2020 9:50:42 PM	R66046
sec-Butylbenzene	0.13	0.024	0.21	J	mg/Kg	5	1/23/2020 9:50:42 PM	R66046
Styrene	ND	0.017	0.21		mg/Kg	5	1/23/2020 9:50:42 PM	R66046
tert-Butylbenzene	ND	0.020	0.21		mg/Kg	5	1/23/2020 9:50:42 PM	R66046
1,1,1,2-Tetrachloroethane	ND	0.014	0.21		mg/Kg	5	1/23/2020 9:50:42 PM	R66046
1,1,2,2-Tetrachloroethane	ND	0.021	0.21		mg/Kg	5	1/23/2020 9:50:42 PM	R66046

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-15 Toe 4-5'
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 2:35:00 PM
Lab ID: 2001739-028 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Tetrachloroethene (PCE)	ND	0.017	0.21		mg/Kg	5	1/23/2020 9:50:42 PM	R66046
trans-1,2-DCE	ND	0.019	0.21		mg/Kg	5	1/23/2020 9:50:42 PM	R66046
trans-1,3-Dichloropropene	ND	0.022	0.21		mg/Kg	5	1/23/2020 9:50:42 PM	R66046
1,2,3-Trichlorobenzene	ND	0.019	0.42		mg/Kg	5	1/23/2020 9:50:42 PM	R66046
1,2,4-Trichlorobenzene	ND	0.021	0.21		mg/Kg	5	1/23/2020 9:50:42 PM	R66046
1,1,1-Trichloroethane	ND	0.019	0.21		mg/Kg	5	1/23/2020 9:50:42 PM	R66046
1,1,2-Trichloroethane	ND	0.015	0.21		mg/Kg	5	1/23/2020 9:50:42 PM	R66046
Trichloroethene (TCE)	ND	0.024	0.21		mg/Kg	5	1/23/2020 9:50:42 PM	R66046
Trichlorofluoromethane	ND	0.072	0.21		mg/Kg	5	1/23/2020 9:50:42 PM	R66046
1,2,3-Trichloropropane	ND	0.034	0.42		mg/Kg	5	1/23/2020 9:50:42 PM	R66046
Vinyl chloride	ND	0.014	0.21		mg/Kg	5	1/23/2020 9:50:42 PM	R66046
Xylenes, Total	3.8	0.053	0.42		mg/Kg	5	1/23/2020 9:50:42 PM	R66046
Surr: Dibromofluoromethane	100		70-130		%Rec	5	1/23/2020 9:50:42 PM	R66046
Surr: 1,2-Dichloroethane-d4	96.0		70-130		%Rec	5	1/23/2020 9:50:42 PM	R66046
Surr: Toluene-d8	99.4		70-130		%Rec	5	1/23/2020 9:50:42 PM	R66046
Surr: 4-Bromofluorobenzene	85.9		70-130		%Rec	5	1/23/2020 9:50:42 PM	R66046
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **JMR**	
Gasoline Range Organics (GRO)	78	4.5	21		mg/Kg	5	1/24/2020 7:04:55 PM	G66078
Surr: BFB	94.8	0	70-130		%Rec	5	1/24/2020 7:04:55 PM	G66078
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/28/2020 3:11:00 PM	R66159
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	7.33				pH Units	1	1/29/2020 10:26:00 AM	R66160

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PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-7 Surface
Project: Gallup SWMUI Sampling Event
Collection Date: 1/17/2020 9:12:00 AM
Lab ID: 2001739-029 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	61000	810	3400		mg/Kg	500	1/22/2020 9:19:01 PM	49948
Motor Oil Range Organics (MRO)	29000	17000	17000		mg/Kg	500	1/22/2020 9:19:01 PM	49948
Surr: DNOP	0	0	55.1-146	S	%Rec	500	1/22/2020 9:19:01 PM	49948
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	1.1	0.0085	0.15	H	mg/Kg	5	2/26/2020 4:22:34 PM	50700
MERCURY, TCLP							Analyst: **rde**	
Mercury	ND	0.00075	0.020		mg/L	1	1/28/2020 12:07:45 PM	50081
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.75	5.1		mg/Kg	2	1/24/2020 9:44:50 AM	49993
Arsenic	ND	2.9	5.1		mg/Kg	2	1/24/2020 12:32:51 PM	49993
Barium	360	0.048	0.21		mg/Kg	2	1/24/2020 9:44:50 AM	49993
Beryllium	0.43	0.019	0.31		mg/Kg	2	1/24/2020 9:44:50 AM	49993
Cadmium	ND	0.050	0.21		mg/Kg	2	1/24/2020 9:44:50 AM	49993
Chromium	11	0.16	0.62		mg/Kg	2	1/24/2020 9:44:50 AM	49993
Cobalt	3.0	0.22	0.62		mg/Kg	2	1/24/2020 9:44:50 AM	49993
Lead	4.1	0.50	0.51		mg/Kg	2	1/24/2020 9:44:50 AM	49993
Nickel	7.3	0.31	1.0		mg/Kg	2	1/24/2020 9:44:50 AM	49993
Selenium	ND	2.6	5.1		mg/Kg	2	1/24/2020 12:32:51 PM	49993
Silver	ND	0.066	0.51		mg/Kg	2	1/24/2020 9:44:50 AM	49993
Vanadium	16	0.14	5.1		mg/Kg	2	1/24/2020 9:44:50 AM	49993
Zinc	150	0.81	5.1		mg/Kg	2	1/24/2020 9:44:50 AM	49993
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/25/2020 12:46:14 PM	50045
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	1.7	4.5	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
Acenaphthylene	ND	2.0	4.5	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
Aniline	ND	1.5	4.5	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
Anthracene	ND	1.7	4.5	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
Azobenzene	ND	2.3	4.5	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
Benz(a)anthracene	ND	1.5	4.5	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
Benzo(a)pyrene	ND	2.4	4.5	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
Benzo(b)fluoranthene	ND	2.6	4.5	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
Benzo(g,h,i)perylene	ND	2.3	4.5	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
Benzo(k)fluoranthene	ND	1.3	4.5	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
Benzoic acid	ND	3.1	11	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
Benzyl alcohol	ND	1.9	4.5	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
Bis(2-chloroethoxy)methane	ND	1.9	4.5	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975

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

Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-7 Surface
Project: Gallup SWMUI Sampling Event
Collection Date: 1/17/2020 9:12:00 AM
Lab ID: 2001739-029 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	2.6	4.5	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
Bis(2-chloroisopropyl)ether	ND	1.9	4.5	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
Bis(2-ethylhexyl)phthalate	ND	5.0	11	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
4-Bromophenyl phenyl ether	ND	2.6	4.5	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
Butyl benzyl phthalate	ND	1.5	4.5	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
Carbazole	ND	1.8	4.5	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
4-Chloro-3-methylphenol	ND	1.8	11	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
4-Chloroaniline	ND	1.7	11	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
2-Chloronaphthalene	ND	1.9	5.6	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
2-Chlorophenol	ND	2.5	4.5	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
4-Chlorophenyl phenyl ether	ND	1.9	4.5	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
Chrysene	13	1.8	4.5	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
Di-n-butyl phthalate	ND	6.7	9.0	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
Di-n-octyl phthalate	ND	1.5	9.0	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
Dibenz(a,h)anthracene	ND	2.5	4.5	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
Dibenzofuran	ND	2.2	4.5	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
1,2-Dichlorobenzene	ND	1.8	4.5	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
1,3-Dichlorobenzene	ND	1.5	4.5	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
1,4-Dichlorobenzene	ND	1.9	4.5	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
3,3´-Dichlorobenzidine	ND	1.9	5.6	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
Diethyl phthalate	ND	6.8	11	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
Dimethyl phthalate	ND	1.8	4.5	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
2,4-Dichlorophenol	ND	1.9	9.0	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
2,4-Dimethylphenol	ND	1.9	6.7	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
4,6-Dinitro-2-methylphenol	ND	1.6	9.0	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
2,4-Dinitrophenol	ND	1.3	11	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
2,4-Dinitrotoluene	ND	2.3	11	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
2,6-Dinitrotoluene	ND	2.7	11	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
Fluoranthene	ND	1.7	4.5	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
Fluorene	ND	1.8	4.5	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
Hexachlorobenzene	ND	1.8	4.5	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
Hexachlorobutadiene	ND	2.0	4.5	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
Hexachlorocyclopentadiene	ND	2.1	4.5	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
Hexachloroethane	ND	1.8	4.5	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
Indeno(1,2,3-cd)pyrene	ND	2.8	4.5	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
Isophorone	ND	1.9	9.0	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
1-Methylnaphthalene	ND	2.1	4.5	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
2-Methylnaphthalene	ND	1.8	4.5	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
2-Methylphenol	ND	1.9	9.0	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975

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

Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-7 Surface
Project: Gallup SWMUI Sampling Event
Collection Date: 1/17/2020 9:12:00 AM
Lab ID: 2001739-029 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	1.6	4.5	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
N-Nitrosodi-n-propylamine	ND	2.3	4.5	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
N-Nitrosodiphenylamine	ND	2.3	4.5	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
Naphthalene	ND	1.8	4.5	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
2-Nitroaniline	ND	2.5	4.5	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
3-Nitroaniline	ND	2.2	4.5	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
4-Nitroaniline	ND	3.0	9.0	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
Nitrobenzene	ND	1.9	9.0	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
2-Nitrophenol	ND	1.8	4.5	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
4-Nitrophenol	ND	1.3	5.6	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
Pentachlorophenol	ND	2.0	9.0	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
Phenanthrene	12	2.3	4.5	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
Phenol	ND	1.9	4.5	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
Pyrene	ND	1.5	4.5	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
Pyridine	ND	4.2	9.0	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
1,2,4-Trichlorobenzene	ND	1.9	4.5	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
2,4,5-Trichlorophenol	ND	1.4	4.5	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
2,4,6-Trichlorophenol	ND	2.2	4.5	D	mg/Kg	1	1/31/2020 10:00:31 PM	49975
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	1	1/31/2020 10:00:31 PM	49975
Surr: Phenol-d5	0		18.5-101	SD	%Rec	1	1/31/2020 10:00:31 PM	49975
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	1	1/31/2020 10:00:31 PM	49975
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	1	1/31/2020 10:00:31 PM	49975
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	1	1/31/2020 10:00:31 PM	49975
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	1	1/31/2020 10:00:31 PM	49975
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Benzene	ND	0.014	0.084		mg/Kg	5	1/23/2020 10:19:09 PM	R66046
Toluene	0.30	0.016	0.17		mg/Kg	5	1/23/2020 10:19:09 PM	R66046
Ethylbenzene	0.17	0.0097	0.17		mg/Kg	5	1/23/2020 10:19:09 PM	R66046
Methyl tert-butyl ether (MTBE)	ND	0.040	0.17		mg/Kg	5	1/23/2020 10:19:09 PM	R66046
1,2,4-Trimethylbenzene	0.88	0.015	0.17		mg/Kg	5	1/23/2020 10:19:09 PM	R66046
1,3,5-Trimethylbenzene	0.40	0.016	0.17		mg/Kg	5	1/23/2020 10:19:09 PM	R66046
1,2-Dichloroethane (EDC)	ND	0.017	0.17		mg/Kg	5	1/23/2020 10:19:09 PM	R66046
1,2-Dibromoethane (EDB)	ND	0.015	0.17		mg/Kg	5	1/23/2020 10:19:09 PM	R66046
Naphthalene	0.99	0.033	0.33		mg/Kg	5	1/23/2020 10:19:09 PM	R66046
1-Methylnaphthalene	4.7	0.096	0.67		mg/Kg	5	1/23/2020 10:19:09 PM	R66046
2-Methylnaphthalene	5.7	0.073	0.67		mg/Kg	5	1/23/2020 10:19:09 PM	R66046
Acetone	0.28	0.14	2.5	J	mg/Kg	5	1/23/2020 10:19:09 PM	R66046
Bromobenzene	ND	0.016	0.17		mg/Kg	5	1/23/2020 10:19:09 PM	R66046
Bromodichloromethane	ND	0.015	0.17		mg/Kg	5	1/23/2020 10:19:09 PM	R66046

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J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-7 Surface
Project: Gallup SWMUI Sampling Event
Collection Date: 1/17/2020 9:12:00 AM
Lab ID: 2001739-029 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Bromoform	ND	0.015	0.17		mg/Kg	5	1/23/2020 10:19:09 PM	R66046
Bromomethane	ND	0.040	0.50		mg/Kg	5	1/23/2020 10:19:09 PM	R66046
2-Butanone	0.45	0.19	1.7	J	mg/Kg	5	1/23/2020 10:19:09 PM	R66046
Carbon disulfide	0.29	0.055	1.7	J	mg/Kg	5	1/23/2020 10:19:09 PM	R66046
Carbon tetrachloride	ND	0.016	0.17		mg/Kg	5	1/23/2020 10:19:09 PM	R66046
Chlorobenzene	ND	0.021	0.17		mg/Kg	5	1/23/2020 10:19:09 PM	R66046
Chloroethane	ND	0.025	0.33		mg/Kg	5	1/23/2020 10:19:09 PM	R66046
Chloroform	ND	0.013	0.17		mg/Kg	5	1/23/2020 10:19:09 PM	R66046
Chloromethane	ND	0.016	0.50		mg/Kg	5	1/23/2020 10:19:09 PM	R66046
2-Chlorotoluene	ND	0.015	0.17		mg/Kg	5	1/23/2020 10:19:09 PM	R66046
4-Chlorotoluene	ND	0.014	0.17		mg/Kg	5	1/23/2020 10:19:09 PM	R66046
cis-1,2-DCE	0.035	0.023	0.17	J	mg/Kg	5	1/23/2020 10:19:09 PM	R66046
cis-1,3-Dichloropropene	ND	0.014	0.17		mg/Kg	5	1/23/2020 10:19:09 PM	R66046
1,2-Dibromo-3-chloropropane	ND	0.017	0.33		mg/Kg	5	1/23/2020 10:19:09 PM	R66046
Dibromochloromethane	ND	0.012	0.17		mg/Kg	5	1/23/2020 10:19:09 PM	R66046
Dibromomethane	ND	0.018	0.17		mg/Kg	5	1/23/2020 10:19:09 PM	R66046
1,2-Dichlorobenzene	ND	0.014	0.17		mg/Kg	5	1/23/2020 10:19:09 PM	R66046
1,3-Dichlorobenzene	ND	0.015	0.17		mg/Kg	5	1/23/2020 10:19:09 PM	R66046
1,4-Dichlorobenzene	ND	0.014	0.17		mg/Kg	5	1/23/2020 10:19:09 PM	R66046
Dichlorodifluoromethane	ND	0.039	0.17		mg/Kg	5	1/23/2020 10:19:09 PM	R66046
1,1-Dichloroethane	0.049	0.011	0.17	J	mg/Kg	5	1/23/2020 10:19:09 PM	R66046
1,1-Dichloroethene	ND	0.067	0.17		mg/Kg	5	1/23/2020 10:19:09 PM	R66046
1,2-Dichloropropane	ND	0.012	0.17		mg/Kg	5	1/23/2020 10:19:09 PM	R66046
1,3-Dichloropropane	ND	0.018	0.17		mg/Kg	5	1/23/2020 10:19:09 PM	R66046
2,2-Dichloropropane	ND	0.054	0.33		mg/Kg	5	1/23/2020 10:19:09 PM	R66046
1,1-Dichloropropene	ND	0.015	0.33		mg/Kg	5	1/23/2020 10:19:09 PM	R66046
Hexachlorobutadiene	ND	0.017	0.33		mg/Kg	5	1/23/2020 10:19:09 PM	R66046
2-Hexanone	0.44	0.028	1.7	J	mg/Kg	5	1/23/2020 10:19:09 PM	R66046
Isopropylbenzene	0.017	0.012	0.17	J	mg/Kg	5	1/23/2020 10:19:09 PM	R66046
4-Isopropyltoluene	0.048	0.014	0.17	J	mg/Kg	5	1/23/2020 10:19:09 PM	R66046
4-Methyl-2-pentanone	ND	0.032	1.7		mg/Kg	5	1/23/2020 10:19:09 PM	R66046
Methylene chloride	0.033	0.030	0.50	J	mg/Kg	5	1/23/2020 10:19:09 PM	R66046
n-Butylbenzene	0.11	0.016	0.50	J	mg/Kg	5	1/23/2020 10:19:09 PM	R66046
n-Propylbenzene	0.096	0.013	0.17	J	mg/Kg	5	1/23/2020 10:19:09 PM	R66046
sec-Butylbenzene	0.046	0.019	0.17	J	mg/Kg	5	1/23/2020 10:19:09 PM	R66046
Styrene	ND	0.013	0.17		mg/Kg	5	1/23/2020 10:19:09 PM	R66046
tert-Butylbenzene	ND	0.016	0.17		mg/Kg	5	1/23/2020 10:19:09 PM	R66046
1,1,1,2-Tetrachloroethane	ND	0.011	0.17		mg/Kg	5	1/23/2020 10:19:09 PM	R66046
1,1,2,2-Tetrachloroethane	ND	0.017	0.17		mg/Kg	5	1/23/2020 10:19:09 PM	R66046

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Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-7 Surface
Project: Gallup SWMUI Sampling Event
Collection Date: 1/17/2020 9:12:00 AM
Lab ID: 2001739-029 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Tetrachloroethene (PCE)	ND	0.013	0.17		mg/Kg	5	1/23/2020 10:19:09 PM	R66046
trans-1,2-DCE	ND	0.015	0.17		mg/Kg	5	1/23/2020 10:19:09 PM	R66046
trans-1,3-Dichloropropene	ND	0.018	0.17		mg/Kg	5	1/23/2020 10:19:09 PM	R66046
1,2,3-Trichlorobenzene	ND	0.015	0.33		mg/Kg	5	1/23/2020 10:19:09 PM	R66046
1,2,4-Trichlorobenzene	ND	0.017	0.17		mg/Kg	5	1/23/2020 10:19:09 PM	R66046
1,1,1-Trichloroethane	ND	0.015	0.17		mg/Kg	5	1/23/2020 10:19:09 PM	R66046
1,1,2-Trichloroethane	ND	0.012	0.17		mg/Kg	5	1/23/2020 10:19:09 PM	R66046
Trichloroethene (TCE)	ND	0.019	0.17		mg/Kg	5	1/23/2020 10:19:09 PM	R66046
Trichlorofluoromethane	ND	0.057	0.17		mg/Kg	5	1/23/2020 10:19:09 PM	R66046
1,2,3-Trichloropropane	ND	0.027	0.33		mg/Kg	5	1/23/2020 10:19:09 PM	R66046
Vinyl chloride	ND	0.011	0.17		mg/Kg	5	1/23/2020 10:19:09 PM	R66046
Xylenes, Total	1.3	0.042	0.33		mg/Kg	5	1/23/2020 10:19:09 PM	R66046
Surr: Dibromofluoromethane	96.7		70-130		%Rec	5	1/23/2020 10:19:09 PM	R66046
Surr: 1,2-Dichloroethane-d4	94.6		70-130		%Rec	5	1/23/2020 10:19:09 PM	R66046
Surr: Toluene-d8	101		70-130		%Rec	5	1/23/2020 10:19:09 PM	R66046
Surr: 4-Bromofluorobenzene	83.2		70-130		%Rec	5	1/23/2020 10:19:09 PM	R66046
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **JMR**	
Gasoline Range Organics (GRO)	32	3.6	17		mg/Kg	5	1/24/2020 8:01:53 PM	G66078
Surr: BFB	94.5	0	70-130		%Rec	5	1/24/2020 8:01:53 PM	G66078
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/28/2020 3:11:00 PM	R66159
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	6.23				pH Units	1	1/29/2020 10:26:00 AM	R66160

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

Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup **Client Sample ID:** Dup 7
Project: Gallup SWMUI Sampling Event **Collection Date:**
Lab ID: 2001739-030 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	87000	940	4000		mg/Kg	500	1/22/2020 9:27:56 PM	49948
Motor Oil Range Organics (MRO)	38000	20000	20000		mg/Kg	500	1/22/2020 9:27:56 PM	49948
Surr: DNOP	0	0	55.1-146	S	%Rec	500	1/22/2020 9:27:56 PM	49948
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	0.59	0.0085	0.15		mg/Kg	5	2/26/2020 4:28:45 PM	50700
MERCURY, TCLP							Analyst: **rde**	
Mercury	ND	0.00075	0.020		mg/L	1	1/28/2020 12:14:03 PM	50081
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.75	5.1		mg/Kg	2	1/24/2020 9:46:23 AM	49993
Arsenic	ND	2.9	5.1		mg/Kg	2	1/24/2020 12:34:15 PM	49993
Barium	410	0.047	0.20		mg/Kg	2	1/24/2020 9:46:23 AM	49993
Beryllium	0.43	0.019	0.31		mg/Kg	2	1/24/2020 9:46:23 AM	49993
Cadmium	ND	0.049	0.20		mg/Kg	2	1/24/2020 9:46:23 AM	49993
Chromium	13	0.16	0.61		mg/Kg	2	1/24/2020 9:46:23 AM	49993
Cobalt	3.1	0.22	0.61		mg/Kg	2	1/24/2020 9:46:23 AM	49993
Lead	5.4	0.49	0.51		mg/Kg	2	1/24/2020 9:46:23 AM	49993
Nickel	7.6	0.30	1.0		mg/Kg	2	1/24/2020 9:46:23 AM	49993
Selenium	ND	2.6	5.1		mg/Kg	2	1/24/2020 12:34:15 PM	49993
Silver	ND	0.065	0.51		mg/Kg	2	1/24/2020 9:46:23 AM	49993
Vanadium	24	0.14	5.1		mg/Kg	2	1/24/2020 9:46:23 AM	49993
Zinc	160	0.81	5.1		mg/Kg	2	1/24/2020 9:46:23 AM	49993
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/25/2020 12:47:38 PM	50045
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	8.6	23	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975
Acenaphthylene	ND	10	23	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975
Aniline	ND	7.8	23	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975
Anthracene	ND	8.8	23	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975
Azobenzene	ND	12	23	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975
Benz(a)anthracene	24	7.8	23	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975
Benzo(a)pyrene	ND	12	23	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975
Benzo(b)fluoranthene	ND	13	23	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975
Benzo(g,h,i)perylene	ND	12	23	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975
Benzo(k)fluoranthene	ND	6.8	23	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975
Benzoic acid	ND	16	57	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975
Benzyl alcohol	ND	9.4	23	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975
Bis(2-chloroethoxy)methane	ND	9.4	23	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975

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Qualifiers:

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D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: Dup 7
Project: Gallup SWMUI Sampling Event
Collection Date:
Lab ID: 2001739-030 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	13	23	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975
Bis(2-chloroisopropyl)ether	ND	9.8	23	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975
Bis(2-ethylhexyl)phthalate	ND	26	57	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975
4-Bromophenyl phenyl ether	ND	13	23	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975
Butyl benzyl phthalate	ND	7.6	23	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975
Carbazole	ND	9.0	23	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975
4-Chloro-3-methylphenol	ND	9.0	57	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975
4-Chloroaniline	ND	8.7	57	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975
2-Chloronaphthalene	ND	9.6	28	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975
2-Chlorophenol	ND	13	23	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975
4-Chlorophenyl phenyl ether	ND	9.6	23	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975
Chrysene	18	8.9	23	JD	mg/Kg	5	2/3/2020 11:46:22 AM	49975
Di-n-butyl phthalate	ND	34	46	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975
Di-n-octyl phthalate	ND	7.6	46	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975
Dibenz(a,h)anthracene	ND	13	23	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975
Dibenzofuran	ND	11	23	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975
1,2-Dichlorobenzene	ND	9.0	23	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975
1,3-Dichlorobenzene	ND	7.6	23	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975
1,4-Dichlorobenzene	ND	9.4	23	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975
3,3´-Dichlorobenzidine	ND	9.7	28	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975
Diethyl phthalate	ND	35	57	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975
Dimethyl phthalate	ND	9.2	23	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975
2,4-Dichlorophenol	ND	9.6	46	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975
2,4-Dimethylphenol	ND	9.4	34	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975
4,6-Dinitro-2-methylphenol	ND	8.4	46	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975
2,4-Dinitrophenol	ND	6.6	57	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975
2,4-Dinitrotoluene	ND	12	57	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975
2,6-Dinitrotoluene	ND	14	57	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975
Fluoranthene	ND	8.7	23	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975
Fluorene	ND	9.0	23	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975
Hexachlorobenzene	ND	8.9	23	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975
Hexachlorobutadiene	ND	10	23	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975
Hexachlorocyclopentadiene	ND	11	23	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975
Hexachloroethane	ND	9.3	23	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975
Indeno(1,2,3-cd)pyrene	ND	14	23	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975
Isophorone	ND	9.9	46	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975
1-Methylnaphthalene	ND	11	23	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975
2-Methylnaphthalene	ND	9.2	23	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975
2-Methylphenol	ND	9.6	46	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975

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Qualifiers:

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D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
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P	Sample pH Not In Range
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: Dup 7
Project: Gallup SWMUI Sampling Event
Collection Date:
Lab ID: 2001739-030 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	8.2	23	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975
N-Nitrosodi-n-propylamine	ND	11	23	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975
N-Nitrosodiphenylamine	ND	12	23	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975
Naphthalene	ND	9.3	23	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975
2-Nitroaniline	ND	13	23	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975
3-Nitroaniline	ND	11	23	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975
4-Nitroaniline	ND	15	46	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975
Nitrobenzene	ND	9.7	46	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975
2-Nitrophenol	ND	9.4	23	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975
4-Nitrophenol	ND	6.7	28	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975
Pentachlorophenol	ND	10	46	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975
Phenanthrene	ND	12	23	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975
Phenol	ND	9.7	23	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975
Pyrene	18	7.5	23	JD	mg/Kg	5	2/3/2020 11:46:22 AM	49975
Pyridine	ND	21	46	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975
1,2,4-Trichlorobenzene	ND	9.7	23	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975
2,4,5-Trichlorophenol	ND	7.3	23	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975
2,4,6-Trichlorophenol	ND	11	23	D	mg/Kg	5	2/3/2020 11:46:22 AM	49975
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	5	2/3/2020 11:46:22 AM	49975
Surr: Phenol-d5	0		18.5-101	SD	%Rec	5	2/3/2020 11:46:22 AM	49975
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	5	2/3/2020 11:46:22 AM	49975
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	5	2/3/2020 11:46:22 AM	49975
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	5	2/3/2020 11:46:22 AM	49975
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	5	2/3/2020 11:46:22 AM	49975
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Benzene	ND	0.013	0.081		mg/Kg	5	1/23/2020 10:47:36 PM	R66046
Toluene	0.25	0.015	0.16		mg/Kg	5	1/23/2020 10:47:36 PM	R66046
Ethylbenzene	0.15	0.0094	0.16	J	mg/Kg	5	1/23/2020 10:47:36 PM	R66046
Methyl tert-butyl ether (MTBE)	ND	0.038	0.16		mg/Kg	5	1/23/2020 10:47:36 PM	R66046
1,2,4-Trimethylbenzene	0.75	0.015	0.16		mg/Kg	5	1/23/2020 10:47:36 PM	R66046
1,3,5-Trimethylbenzene	0.35	0.016	0.16		mg/Kg	5	1/23/2020 10:47:36 PM	R66046
1,2-Dichloroethane (EDC)	ND	0.017	0.16		mg/Kg	5	1/23/2020 10:47:36 PM	R66046
1,2-Dibromoethane (EDB)	ND	0.015	0.16		mg/Kg	5	1/23/2020 10:47:36 PM	R66046
Naphthalene	0.62	0.032	0.32		mg/Kg	5	1/23/2020 10:47:36 PM	R66046
1-Methylnaphthalene	3.4	0.093	0.65		mg/Kg	5	1/23/2020 10:47:36 PM	R66046
2-Methylnaphthalene	3.9	0.071	0.65		mg/Kg	5	1/23/2020 10:47:36 PM	R66046
Acetone	0.28	0.13	2.4	J	mg/Kg	5	1/23/2020 10:47:36 PM	R66046
Bromobenzene	ND	0.016	0.16		mg/Kg	5	1/23/2020 10:47:36 PM	R66046
Bromodichloromethane	ND	0.015	0.16		mg/Kg	5	1/23/2020 10:47:36 PM	R66046

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Qualifiers:

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B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
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ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: Dup 7
Project: Gallup SWMUI Sampling Event
Collection Date:
Lab ID: 2001739-030 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Bromoform	ND	0.015	0.16		mg/Kg	5	1/23/2020 10:47:36 PM	R66046
Bromomethane	ND	0.039	0.49		mg/Kg	5	1/23/2020 10:47:36 PM	R66046
2-Butanone	0.44	0.19	1.6	J	mg/Kg	5	1/23/2020 10:47:36 PM	R66046
Carbon disulfide	0.27	0.054	1.6	J	mg/Kg	5	1/23/2020 10:47:36 PM	R66046
Carbon tetrachloride	ND	0.015	0.16		mg/Kg	5	1/23/2020 10:47:36 PM	R66046
Chlorobenzene	ND	0.021	0.16		mg/Kg	5	1/23/2020 10:47:36 PM	R66046
Chloroethane	ND	0.024	0.32		mg/Kg	5	1/23/2020 10:47:36 PM	R66046
Chloroform	ND	0.013	0.16		mg/Kg	5	1/23/2020 10:47:36 PM	R66046
Chloromethane	ND	0.016	0.49		mg/Kg	5	1/23/2020 10:47:36 PM	R66046
2-Chlorotoluene	ND	0.014	0.16		mg/Kg	5	1/23/2020 10:47:36 PM	R66046
4-Chlorotoluene	ND	0.013	0.16		mg/Kg	5	1/23/2020 10:47:36 PM	R66046
cis-1,2-DCE	0.024	0.022	0.16	J	mg/Kg	5	1/23/2020 10:47:36 PM	R66046
cis-1,3-Dichloropropene	ND	0.014	0.16		mg/Kg	5	1/23/2020 10:47:36 PM	R66046
1,2-Dibromo-3-chloropropane	ND	0.017	0.32		mg/Kg	5	1/23/2020 10:47:36 PM	R66046
Dibromochloromethane	ND	0.011	0.16		mg/Kg	5	1/23/2020 10:47:36 PM	R66046
Dibromomethane	ND	0.017	0.16		mg/Kg	5	1/23/2020 10:47:36 PM	R66046
1,2-Dichlorobenzene	ND	0.013	0.16		mg/Kg	5	1/23/2020 10:47:36 PM	R66046
1,3-Dichlorobenzene	ND	0.014	0.16		mg/Kg	5	1/23/2020 10:47:36 PM	R66046
1,4-Dichlorobenzene	ND	0.014	0.16		mg/Kg	5	1/23/2020 10:47:36 PM	R66046
Dichlorodifluoromethane	ND	0.038	0.16		mg/Kg	5	1/23/2020 10:47:36 PM	R66046
1,1-Dichloroethane	0.047	0.010	0.16	J	mg/Kg	5	1/23/2020 10:47:36 PM	R66046
1,1-Dichloroethene	ND	0.065	0.16		mg/Kg	5	1/23/2020 10:47:36 PM	R66046
1,2-Dichloropropane	ND	0.012	0.16		mg/Kg	5	1/23/2020 10:47:36 PM	R66046
1,3-Dichloropropane	ND	0.018	0.16		mg/Kg	5	1/23/2020 10:47:36 PM	R66046
2,2-Dichloropropane	ND	0.053	0.32		mg/Kg	5	1/23/2020 10:47:36 PM	R66046
1,1-Dichloropropene	ND	0.015	0.32		mg/Kg	5	1/23/2020 10:47:36 PM	R66046
Hexachlorobutadiene	ND	0.016	0.32		mg/Kg	5	1/23/2020 10:47:36 PM	R66046
2-Hexanone	0.41	0.027	1.6	J	mg/Kg	5	1/23/2020 10:47:36 PM	R66046
Isopropylbenzene	0.014	0.012	0.16	J	mg/Kg	5	1/23/2020 10:47:36 PM	R66046
4-Isopropyltoluene	0.042	0.013	0.16	J	mg/Kg	5	1/23/2020 10:47:36 PM	R66046
4-Methyl-2-pentanone	ND	0.031	1.6		mg/Kg	5	1/23/2020 10:47:36 PM	R66046
Methylene chloride	ND	0.029	0.49		mg/Kg	5	1/23/2020 10:47:36 PM	R66046
n-Butylbenzene	ND	0.015	0.49		mg/Kg	5	1/23/2020 10:47:36 PM	R66046
n-Propylbenzene	0.087	0.013	0.16	J	mg/Kg	5	1/23/2020 10:47:36 PM	R66046
sec-Butylbenzene	0.039	0.018	0.16	J	mg/Kg	5	1/23/2020 10:47:36 PM	R66046
Styrene	ND	0.013	0.16		mg/Kg	5	1/23/2020 10:47:36 PM	R66046
tert-Butylbenzene	ND	0.015	0.16		mg/Kg	5	1/23/2020 10:47:36 PM	R66046
1,1,1,2-Tetrachloroethane	ND	0.011	0.16		mg/Kg	5	1/23/2020 10:47:36 PM	R66046
1,1,2,2-Tetrachloroethane	ND	0.016	0.16		mg/Kg	5	1/23/2020 10:47:36 PM	R66046

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Qualifiers:

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H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: Dup 7
Project: Gallup SWMUI Sampling Event
Collection Date:
Lab ID: 2001739-030 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Tetrachloroethene (PCE)	ND	0.013	0.16		mg/Kg	5	1/23/2020 10:47:36 PM	R66046
trans-1,2-DCE	ND	0.015	0.16		mg/Kg	5	1/23/2020 10:47:36 PM	R66046
trans-1,3-Dichloropropene	ND	0.017	0.16		mg/Kg	5	1/23/2020 10:47:36 PM	R66046
1,2,3-Trichlorobenzene	ND	0.014	0.32		mg/Kg	5	1/23/2020 10:47:36 PM	R66046
1,2,4-Trichlorobenzene	ND	0.016	0.16		mg/Kg	5	1/23/2020 10:47:36 PM	R66046
1,1,1-Trichloroethane	ND	0.015	0.16		mg/Kg	5	1/23/2020 10:47:36 PM	R66046
1,1,2-Trichloroethane	ND	0.011	0.16		mg/Kg	5	1/23/2020 10:47:36 PM	R66046
Trichloroethene (TCE)	ND	0.019	0.16		mg/Kg	5	1/23/2020 10:47:36 PM	R66046
Trichlorofluoromethane	ND	0.055	0.16		mg/Kg	5	1/23/2020 10:47:36 PM	R66046
1,2,3-Trichloropropane	ND	0.026	0.32		mg/Kg	5	1/23/2020 10:47:36 PM	R66046
Vinyl chloride	ND	0.011	0.16		mg/Kg	5	1/23/2020 10:47:36 PM	R66046
Xylenes, Total	1.1	0.041	0.32		mg/Kg	5	1/23/2020 10:47:36 PM	R66046
Surr: Dibromofluoromethane	97.3		70-130		%Rec	5	1/23/2020 10:47:36 PM	R66046
Surr: 1,2-Dichloroethane-d4	97.0		70-130		%Rec	5	1/23/2020 10:47:36 PM	R66046
Surr: Toluene-d8	104		70-130		%Rec	5	1/23/2020 10:47:36 PM	R66046
Surr: 4-Bromofluorobenzene	82.7		70-130		%Rec	5	1/23/2020 10:47:36 PM	R66046
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **JMR**	
Gasoline Range Organics (GRO)	30	3.4	16		mg/Kg	5	1/24/2020 8:58:44 PM	G66078
Surr: BFB	96.1	0	70-130		%Rec	5	1/24/2020 8:58:44 PM	G66078
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/28/2020 3:11:00 PM	R66159
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	6.39				pH Units	1	1/29/2020 10:26:00 AM	R66160

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Qualifiers:

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S	% Recovery outside of range due to dilution or matrix
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P	Sample pH Not In Range
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-18 Toe Sludge 2.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 2:50:00 PM
Lab ID: 2001739-031 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	23000	280	1200		mg/Kg	100	1/22/2020 9:36:51 PM	49948
Motor Oil Range Organics (MRO)	8300	5800	5800		mg/Kg	100	1/22/2020 9:36:51 PM	49948
Surr: DNOP	0	0	55.1-146	S	%Rec	100	1/22/2020 9:36:51 PM	49948
EPA METHOD 7471: MERCURY							Analyst: **JLF**	
Mercury	ND	0.0019	0.035	H	mg/Kg	1	2/28/2020 6:56:20 PM	50752
MERCURY, TCLP							Analyst: **rde**	
Mercury	ND	0.00075	0.020		mg/L	1	1/28/2020 12:16:07 PM	50081
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.72	4.9		mg/Kg	2	1/24/2020 9:55:45 AM	49993
Arsenic	5.0	2.8	4.9		mg/Kg	2	1/24/2020 12:35:38 PM	49993
Barium	370	0.046	0.20		mg/Kg	2	1/24/2020 9:55:45 AM	49993
Beryllium	0.31	0.018	0.29		mg/Kg	2	1/24/2020 9:55:45 AM	49993
Cadmium	ND	0.048	0.20		mg/Kg	2	1/24/2020 9:55:45 AM	49993
Chromium	19	0.16	0.59		mg/Kg	2	1/24/2020 9:55:45 AM	49993
Cobalt	2.7	0.21	0.59		mg/Kg	2	1/24/2020 9:55:45 AM	49993
Lead	9.5	0.48	0.49		mg/Kg	2	1/24/2020 9:55:45 AM	49993
Nickel	13	0.29	0.98		mg/Kg	2	1/24/2020 9:55:45 AM	49993
Selenium	2.6	2.5	4.9	J	mg/Kg	2	1/24/2020 12:35:38 PM	49993
Silver	ND	0.063	0.49		mg/Kg	2	1/24/2020 9:55:45 AM	49993
Vanadium	11	0.13	4.9		mg/Kg	2	1/24/2020 9:55:45 AM	49993
Zinc	700	1.9	12		mg/Kg	5	1/24/2020 11:01:40 AM	49993
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/25/2020 12:49:01 PM	50045
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	8.5	23	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975
Acenaphthylene	ND	10	23	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975
Aniline	ND	7.7	23	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975
Anthracene	ND	8.7	23	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975
Azobenzene	ND	11	23	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975
Benz(a)anthracene	ND	7.8	23	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975
Benzo(a)pyrene	ND	12	23	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975
Benzo(b)fluoranthene	ND	13	23	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975
Benzo(g,h,i)perylene	ND	12	23	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975
Benzo(k)fluoranthene	ND	6.8	23	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975
Benzoic acid	ND	16	57	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975
Benzyl alcohol	ND	9.4	23	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975
Bis(2-chloroethoxy)methane	ND	9.3	23	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975

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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-18 Toe Sludge 2.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 2:50:00 PM
Lab ID: 2001739-031 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	13	23	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975
Bis(2-chloroisopropyl)ether	ND	9.7	23	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975
Bis(2-ethylhexyl)phthalate	ND	25	57	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975
4-Bromophenyl phenyl ether	ND	13	23	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975
Butyl benzyl phthalate	ND	7.6	23	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975
Carbazole	ND	9.0	23	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975
4-Chloro-3-methylphenol	ND	8.9	57	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975
4-Chloroaniline	ND	8.7	57	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975
2-Chloronaphthalene	ND	9.5	28	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975
2-Chlorophenol	ND	13	23	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975
4-Chlorophenyl phenyl ether	ND	9.5	23	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975
Chrysene	24	8.8	23	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975
Di-n-butyl phthalate	ND	34	45	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975
Di-n-octyl phthalate	ND	7.6	45	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975
Dibenz(a,h)anthracene	ND	13	23	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975
Dibenzofuran	ND	11	23	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975
1,2-Dichlorobenzene	ND	8.9	23	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975
1,3-Dichlorobenzene	ND	7.6	23	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975
1,4-Dichlorobenzene	ND	9.4	23	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975
3,3´-Dichlorobenzidine	ND	9.7	28	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975
Diethyl phthalate	ND	34	57	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975
Dimethyl phthalate	ND	9.2	23	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975
2,4-Dichlorophenol	ND	9.6	45	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975
2,4-Dimethylphenol	ND	9.4	34	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975
4,6-Dinitro-2-methylphenol	ND	8.3	45	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975
2,4-Dinitrophenol	ND	6.5	57	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975
2,4-Dinitrotoluene	ND	12	57	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975
2,6-Dinitrotoluene	ND	13	57	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975
Fluoranthene	ND	8.6	23	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975
Fluorene	25	8.9	23	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975
Hexachlorobenzene	ND	8.8	23	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975
Hexachlorobutadiene	ND	9.9	23	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975
Hexachlorocyclopentadiene	ND	11	23	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975
Hexachloroethane	ND	9.3	23	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975
Indeno(1,2,3-cd)pyrene	ND	14	23	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975
Isophorone	ND	9.8	45	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975
1-Methylnaphthalene	80	11	23	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975
2-Methylnaphthalene	81	9.2	23	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975
2-Methylphenol	ND	9.5	45	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975

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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-18 Toe Sludge 2.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 2:50:00 PM
Lab ID: 2001739-031 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	8.2	23	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975
N-Nitrosodi-n-propylamine	ND	11	23	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975
N-Nitrosodiphenylamine	ND	12	23	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975
Naphthalene	11	9.3	23	JD	mg/Kg	5	2/3/2020 12:15:12 PM	49975
2-Nitroaniline	ND	13	23	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975
3-Nitroaniline	ND	11	23	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975
4-Nitroaniline	ND	15	45	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975
Nitrobenzene	ND	9.6	45	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975
2-Nitrophenol	ND	9.3	23	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975
4-Nitrophenol	ND	6.6	28	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975
Pentachlorophenol	ND	10	45	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975
Phenanthrene	66	12	23	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975
Phenol	ND	9.6	23	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975
Pyrene	21	7.5	23	JD	mg/Kg	5	2/3/2020 12:15:12 PM	49975
Pyridine	ND	21	45	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975
1,2,4-Trichlorobenzene	ND	9.7	23	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975
2,4,5-Trichlorophenol	ND	7.3	23	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975
2,4,6-Trichlorophenol	ND	11	23	D	mg/Kg	5	2/3/2020 12:15:12 PM	49975
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	5	2/3/2020 12:15:12 PM	49975
Surr: Phenol-d5	0		18.5-101	SD	%Rec	5	2/3/2020 12:15:12 PM	49975
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	5	2/3/2020 12:15:12 PM	49975
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	5	2/3/2020 12:15:12 PM	49975
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	5	2/3/2020 12:15:12 PM	49975
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	5	2/3/2020 12:15:12 PM	49975
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Benzene	0.13	0.017	0.10		mg/Kg	5	1/23/2020 11:16:06 PM	R66046
Toluene	1.1	0.020	0.21		mg/Kg	5	1/23/2020 11:16:06 PM	R66046
Ethylbenzene	0.36	0.012	0.21		mg/Kg	5	1/23/2020 11:16:06 PM	R66046
Methyl tert-butyl ether (MTBE)	ND	0.049	0.21		mg/Kg	5	1/23/2020 11:16:06 PM	R66046
1,2,4-Trimethylbenzene	1.5	0.019	0.21		mg/Kg	5	1/23/2020 11:16:06 PM	R66046
1,3,5-Trimethylbenzene	0.46	0.020	0.21		mg/Kg	5	1/23/2020 11:16:06 PM	R66046
1,2-Dichloroethane (EDC)	ND	0.021	0.21		mg/Kg	5	1/23/2020 11:16:06 PM	R66046
1,2-Dibromoethane (EDB)	ND	0.019	0.21		mg/Kg	5	1/23/2020 11:16:06 PM	R66046
Naphthalene	2.7	0.042	0.42		mg/Kg	5	1/23/2020 11:16:06 PM	R66046
1-Methylnaphthalene	8.9	0.12	0.83		mg/Kg	5	1/23/2020 11:16:06 PM	R66046
2-Methylnaphthalene	12	0.091	0.83		mg/Kg	5	1/23/2020 11:16:06 PM	R66046
Acetone	0.52	0.17	3.1	J	mg/Kg	5	1/23/2020 11:16:06 PM	R66046
Bromobenzene	ND	0.020	0.21		mg/Kg	5	1/23/2020 11:16:06 PM	R66046
Bromodichloromethane	ND	0.019	0.21		mg/Kg	5	1/23/2020 11:16:06 PM	R66046

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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-18 Toe Sludge 2.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 2:50:00 PM
Lab ID: 2001739-031 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Bromoform	ND	0.019	0.21		mg/Kg	5	1/23/2020 11:16:06 PM	R66046
Bromomethane	0.10	0.050	0.63	J	mg/Kg	5	1/23/2020 11:16:06 PM	R66046
2-Butanone	0.98	0.24	2.1	J	mg/Kg	5	1/23/2020 11:16:06 PM	R66046
Carbon disulfide	1.4	0.069	2.1	J	mg/Kg	5	1/23/2020 11:16:06 PM	R66046
Carbon tetrachloride	ND	0.020	0.21		mg/Kg	5	1/23/2020 11:16:06 PM	R66046
Chlorobenzene	ND	0.027	0.21		mg/Kg	5	1/23/2020 11:16:06 PM	R66046
Chloroethane	ND	0.031	0.42		mg/Kg	5	1/23/2020 11:16:06 PM	R66046
Chloroform	0.017	0.017	0.21	J	mg/Kg	5	1/23/2020 11:16:06 PM	R66046
Chloromethane	ND	0.020	0.63		mg/Kg	5	1/23/2020 11:16:06 PM	R66046
2-Chlorotoluene	ND	0.018	0.21		mg/Kg	5	1/23/2020 11:16:06 PM	R66046
4-Chlorotoluene	ND	0.017	0.21		mg/Kg	5	1/23/2020 11:16:06 PM	R66046
cis-1,2-DCE	ND	0.029	0.21		mg/Kg	5	1/23/2020 11:16:06 PM	R66046
cis-1,3-Dichloropropene	ND	0.018	0.21		mg/Kg	5	1/23/2020 11:16:06 PM	R66046
1,2-Dibromo-3-chloropropane	ND	0.021	0.42		mg/Kg	5	1/23/2020 11:16:06 PM	R66046
Dibromochloromethane	ND	0.015	0.21		mg/Kg	5	1/23/2020 11:16:06 PM	R66046
Dibromomethane	ND	0.022	0.21		mg/Kg	5	1/23/2020 11:16:06 PM	R66046
1,2-Dichlorobenzene	ND	0.017	0.21		mg/Kg	5	1/23/2020 11:16:06 PM	R66046
1,3-Dichlorobenzene	ND	0.018	0.21		mg/Kg	5	1/23/2020 11:16:06 PM	R66046
1,4-Dichlorobenzene	ND	0.017	0.21		mg/Kg	5	1/23/2020 11:16:06 PM	R66046
Dichlorodifluoromethane	ND	0.048	0.21		mg/Kg	5	1/23/2020 11:16:06 PM	R66046
1,1-Dichloroethane	0.069	0.013	0.21	J	mg/Kg	5	1/23/2020 11:16:06 PM	R66046
1,1-Dichloroethene	ND	0.083	0.21		mg/Kg	5	1/23/2020 11:16:06 PM	R66046
1,2-Dichloropropane	ND	0.015	0.21		mg/Kg	5	1/23/2020 11:16:06 PM	R66046
1,3-Dichloropropane	ND	0.023	0.21		mg/Kg	5	1/23/2020 11:16:06 PM	R66046
2,2-Dichloropropane	ND	0.068	0.42		mg/Kg	5	1/23/2020 11:16:06 PM	R66046
1,1-Dichloropropene	ND	0.019	0.42		mg/Kg	5	1/23/2020 11:16:06 PM	R66046
Hexachlorobutadiene	ND	0.021	0.42		mg/Kg	5	1/23/2020 11:16:06 PM	R66046
2-Hexanone	0.40	0.035	2.1	J	mg/Kg	5	1/23/2020 11:16:06 PM	R66046
Isopropylbenzene	0.070	0.015	0.21	J	mg/Kg	5	1/23/2020 11:16:06 PM	R66046
4-Isopropyltoluene	0.090	0.017	0.21	J	mg/Kg	5	1/23/2020 11:16:06 PM	R66046
4-Methyl-2-pentanone	ND	0.039	2.1		mg/Kg	5	1/23/2020 11:16:06 PM	R66046
Methylene chloride	0.044	0.037	0.63	J	mg/Kg	5	1/23/2020 11:16:06 PM	R66046
n-Butylbenzene	0.22	0.019	0.63	J	mg/Kg	5	1/23/2020 11:16:06 PM	R66046
n-Propylbenzene	0.21	0.017	0.21	J	mg/Kg	5	1/23/2020 11:16:06 PM	R66046
sec-Butylbenzene	0.10	0.023	0.21	J	mg/Kg	5	1/23/2020 11:16:06 PM	R66046
Styrene	ND	0.016	0.21		mg/Kg	5	1/23/2020 11:16:06 PM	R66046
tert-Butylbenzene	ND	0.020	0.21		mg/Kg	5	1/23/2020 11:16:06 PM	R66046
1,1,1,2-Tetrachloroethane	ND	0.014	0.21		mg/Kg	5	1/23/2020 11:16:06 PM	R66046
1,1,2,2-Tetrachloroethane	ND	0.021	0.21		mg/Kg	5	1/23/2020 11:16:06 PM	R66046

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Qualifiers:

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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-18 Toe Sludge 2.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 2:50:00 PM
Lab ID: 2001739-031 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Tetrachloroethene (PCE)	ND	0.017	0.21		mg/Kg	5	1/23/2020 11:16:06 PM	R66046
trans-1,2-DCE	ND	0.019	0.21		mg/Kg	5	1/23/2020 11:16:06 PM	R66046
trans-1,3-Dichloropropene	0.036	0.022	0.21	J	mg/Kg	5	1/23/2020 11:16:06 PM	R66046
1,2,3-Trichlorobenzene	ND	0.018	0.42		mg/Kg	5	1/23/2020 11:16:06 PM	R66046
1,2,4-Trichlorobenzene	ND	0.021	0.21		mg/Kg	5	1/23/2020 11:16:06 PM	R66046
1,1,1-Trichloroethane	ND	0.019	0.21		mg/Kg	5	1/23/2020 11:16:06 PM	R66046
1,1,2-Trichloroethane	ND	0.015	0.21		mg/Kg	5	1/23/2020 11:16:06 PM	R66046
Trichloroethene (TCE)	ND	0.024	0.21		mg/Kg	5	1/23/2020 11:16:06 PM	R66046
Trichlorofluoromethane	ND	0.071	0.21		mg/Kg	5	1/23/2020 11:16:06 PM	R66046
1,2,3-Trichloropropane	ND	0.034	0.42		mg/Kg	5	1/23/2020 11:16:06 PM	R66046
Vinyl chloride	ND	0.014	0.21		mg/Kg	5	1/23/2020 11:16:06 PM	R66046
Xylenes, Total	2.3	0.053	0.42		mg/Kg	5	1/23/2020 11:16:06 PM	R66046
Surr: Dibromofluoromethane	99.0		70-130		%Rec	5	1/23/2020 11:16:06 PM	R66046
Surr: 1,2-Dichloroethane-d4	96.8		70-130		%Rec	5	1/23/2020 11:16:06 PM	R66046
Surr: Toluene-d8	102		70-130		%Rec	5	1/23/2020 11:16:06 PM	R66046
Surr: 4-Bromofluorobenzene	86.5		70-130		%Rec	5	1/23/2020 11:16:06 PM	R66046
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **JMR**	
Gasoline Range Organics (GRO)	45	4.4	21		mg/Kg	5	1/24/2020 9:55:43 PM	G66078
Surr: BFB	93.4	0	70-130		%Rec	5	1/24/2020 9:55:43 PM	G66078
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Positive				Pos/Neg	1	1/28/2020 3:11:00 PM	R66159
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	7.10				pH Units	1	1/29/2020 10:26:00 AM	R66160

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Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-10 Sludge 4-4.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 9:26:00 AM
Lab ID: 2001739-032 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	33000	230	950		mg/Kg	100	1/22/2020 9:45:46 PM	49948
Motor Oil Range Organics (MRO)	4800	4700	4700		mg/Kg	100	1/22/2020 9:45:46 PM	49948
Surr: DNOP	0	0	55.1-146	S	%Rec	100	1/22/2020 9:45:46 PM	49948
EPA METHOD 7471: MERCURY							Analyst: **JLF**	
Mercury	ND	0.0018	0.032	H	mg/Kg	1	2/28/2020 6:58:52 PM	50752
MERCURY, TCLP							Analyst: **rde**	
Mercury	ND	0.00075	0.020		mg/L	1	1/28/2020 12:18:12 PM	50081
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	16	0.77	5.2		mg/Kg	2	1/24/2020 9:57:14 AM	49993
Arsenic	26	3.0	5.2		mg/Kg	2	1/24/2020 12:37:02 PM	49993
Barium	550	0.12	0.52		mg/Kg	5	1/24/2020 11:03:16 AM	49993
Beryllium	0.25	0.019	0.31	J	mg/Kg	2	1/24/2020 9:57:14 AM	49993
Cadmium	ND	0.051	0.21		mg/Kg	2	1/24/2020 9:57:14 AM	49993
Chromium	38	0.17	0.63		mg/Kg	2	1/24/2020 9:57:14 AM	49993
Cobalt	6.3	0.22	0.63		mg/Kg	2	1/24/2020 9:57:14 AM	49993
Lead	130	1.3	1.3		mg/Kg	5	1/24/2020 1:28:37 PM	49993
Nickel	72	0.31	1.0		mg/Kg	2	1/24/2020 9:57:14 AM	49993
Selenium	ND	2.6	5.2		mg/Kg	2	1/24/2020 12:37:02 PM	49993
Silver	ND	0.067	0.52		mg/Kg	2	1/24/2020 9:57:14 AM	49993
Vanadium	21	0.14	5.2		mg/Kg	2	1/24/2020 9:57:14 AM	49993
Zinc	5500	21	130		mg/Kg	50	1/24/2020 11:04:50 AM	49993
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/25/2020 12:50:24 PM	50045
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	8.1	22	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
Acenaphthylene	ND	9.5	22	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
Aniline	ND	7.4	22	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
Anthracene	ND	8.3	22	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
Azobenzene	ND	11	22	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
Benz(a)anthracene	ND	7.4	22	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
Benzo(a)pyrene	ND	12	22	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
Benzo(b)fluoranthene	ND	12	22	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
Benzo(g,h,i)perylene	ND	11	22	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
Benzo(k)fluoranthene	ND	6.4	22	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
Benzoic acid	ND	15	54	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
Benzyl alcohol	ND	8.9	22	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
Bis(2-chloroethoxy)methane	ND	8.9	22	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975

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Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-10 Sludge 4-4.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 9:26:00 AM
Lab ID: 2001739-032 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	13	22	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
Bis(2-chloroisopropyl)ether	ND	9.2	22	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
Bis(2-ethylhexyl)phthalate	ND	24	54	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
4-Bromophenyl phenyl ether	ND	13	22	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
Butyl benzyl phthalate	ND	7.2	22	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
Carbazole	ND	8.5	22	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
4-Chloro-3-methylphenol	ND	8.5	54	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
4-Chloroaniline	ND	8.2	54	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
2-Chloronaphthalene	ND	9.0	27	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
2-Chlorophenol	ND	12	22	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
4-Chlorophenyl phenyl ether	ND	9.0	22	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
Chrysene	ND	8.4	22	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
Di-n-butyl phthalate	ND	32	43	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
Di-n-octyl phthalate	ND	7.2	43	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
Dibenz(a,h)anthracene	ND	12	22	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
Dibenzofuran	ND	11	22	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
1,2-Dichlorobenzene	ND	8.5	22	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
1,3-Dichlorobenzene	ND	7.2	22	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
1,4-Dichlorobenzene	ND	8.9	22	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
3,3´-Dichlorobenzidine	ND	9.2	27	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
Diethyl phthalate	ND	33	54	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
Dimethyl phthalate	ND	8.7	22	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
2,4-Dichlorophenol	ND	9.1	43	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
2,4-Dimethylphenol	ND	8.9	32	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
4,6-Dinitro-2-methylphenol	ND	7.9	43	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
2,4-Dinitrophenol	ND	6.2	54	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
2,4-Dinitrotoluene	ND	11	54	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
2,6-Dinitrotoluene	ND	13	54	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
Fluoranthene	ND	8.2	22	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
Fluorene	40	8.5	22	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
Hexachlorobenzene	ND	8.4	22	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
Hexachlorobutadiene	ND	9.4	22	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
Hexachlorocyclopentadiene	ND	10	22	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
Hexachloroethane	ND	8.8	22	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
Indeno(1,2,3-cd)pyrene	ND	13	22	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
Isophorone	ND	9.4	43	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
1-Methylnaphthalene	270	10	22	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
2-Methylnaphthalene	360	8.7	22	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
2-Methylphenol	ND	9.1	43	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975

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P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-10 Sludge 4-4.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 9:26:00 AM
Lab ID: 2001739-032 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	25	7.8	22	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
N-Nitrosodi-n-propylamine	ND	11	22	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
N-Nitrosodiphenylamine	ND	11	22	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
Naphthalene	77	8.8	22	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
2-Nitroaniline	ND	12	22	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
3-Nitroaniline	ND	11	22	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
4-Nitroaniline	ND	14	43	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
Nitrobenzene	ND	9.2	43	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
2-Nitrophenol	ND	8.9	22	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
4-Nitrophenol	ND	6.3	27	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
Pentachlorophenol	ND	9.6	43	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
Phenanthrene	140	11	22	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
Phenol	ND	9.1	22	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
Pyrene	25	7.1	22	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
Pyridine	ND	20	43	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
1,2,4-Trichlorobenzene	ND	9.2	22	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
2,4,5-Trichlorophenol	ND	6.9	22	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
2,4,6-Trichlorophenol	ND	11	22	D	mg/Kg	5	2/3/2020 12:44:01 PM	49975
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	5	2/3/2020 12:44:01 PM	49975
Surr: Phenol-d5	0		18.5-101	SD	%Rec	5	2/3/2020 12:44:01 PM	49975
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	5	2/3/2020 12:44:01 PM	49975
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	5	2/3/2020 12:44:01 PM	49975
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	5	2/3/2020 12:44:01 PM	49975
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	5	2/3/2020 12:44:01 PM	49975
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Benzene	4.0	0.014	0.088		mg/Kg	5	1/23/2020 11:44:31 PM	R66046
Toluene	25	0.17	1.8		mg/Kg	50	1/25/2020 12:46:23 AM	R66078
Ethylbenzene	8.7	0.010	0.18		mg/Kg	5	1/23/2020 11:44:31 PM	R66046
Methyl tert-butyl ether (MTBE)	0.54	0.042	0.18		mg/Kg	5	1/23/2020 11:44:31 PM	R66046
1,2,4-Trimethylbenzene	15	0.016	0.18		mg/Kg	5	1/23/2020 11:44:31 PM	R66046
1,3,5-Trimethylbenzene	4.9	0.017	0.18		mg/Kg	5	1/23/2020 11:44:31 PM	R66046
1,2-Dichloroethane (EDC)	ND	0.018	0.18		mg/Kg	5	1/23/2020 11:44:31 PM	R66046
1,2-Dibromoethane (EDB)	ND	0.016	0.18		mg/Kg	5	1/23/2020 11:44:31 PM	R66046
Naphthalene	14	0.035	0.35		mg/Kg	5	1/23/2020 11:44:31 PM	R66046
1-Methylnaphthalene	28	1.0	7.0		mg/Kg	50	1/25/2020 12:46:23 AM	R66078
2-Methylnaphthalene	43	0.77	7.0		mg/Kg	50	1/25/2020 12:46:23 AM	R66078
Acetone	0.70	0.15	2.6	J	mg/Kg	5	1/23/2020 11:44:31 PM	R66046
Bromobenzene	ND	0.017	0.18		mg/Kg	5	1/23/2020 11:44:31 PM	R66046
Bromodichloromethane	ND	0.016	0.18		mg/Kg	5	1/23/2020 11:44:31 PM	R66046

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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-10 Sludge 4-4.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 9:26:00 AM
Lab ID: 2001739-032 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Bromoform	ND	0.016	0.18		mg/Kg	5	1/23/2020 11:44:31 PM	R66046
Bromomethane	ND	0.042	0.53		mg/Kg	5	1/23/2020 11:44:31 PM	R66046
2-Butanone	ND	0.20	1.8		mg/Kg	5	1/23/2020 11:44:31 PM	R66046
Carbon disulfide	0.34	0.058	1.8	J	mg/Kg	5	1/23/2020 11:44:31 PM	R66046
Carbon tetrachloride	ND	0.017	0.18		mg/Kg	5	1/23/2020 11:44:31 PM	R66046
Chlorobenzene	ND	0.022	0.18		mg/Kg	5	1/23/2020 11:44:31 PM	R66046
Chloroethane	ND	0.026	0.35		mg/Kg	5	1/23/2020 11:44:31 PM	R66046
Chloroform	ND	0.014	0.18		mg/Kg	5	1/23/2020 11:44:31 PM	R66046
Chloromethane	0.090	0.017	0.53	J	mg/Kg	5	1/23/2020 11:44:31 PM	R66046
2-Chlorotoluene	ND	0.015	0.18		mg/Kg	5	1/23/2020 11:44:31 PM	R66046
4-Chlorotoluene	ND	0.014	0.18		mg/Kg	5	1/23/2020 11:44:31 PM	R66046
cis-1,2-DCE	0.14	0.024	0.18	J	mg/Kg	5	1/23/2020 11:44:31 PM	R66046
cis-1,3-Dichloropropene	ND	0.015	0.18		mg/Kg	5	1/23/2020 11:44:31 PM	R66046
1,2-Dibromo-3-chloropropane	ND	0.018	0.35		mg/Kg	5	1/23/2020 11:44:31 PM	R66046
Dibromochloromethane	ND	0.012	0.18		mg/Kg	5	1/23/2020 11:44:31 PM	R66046
Dibromomethane	ND	0.019	0.18		mg/Kg	5	1/23/2020 11:44:31 PM	R66046
1,2-Dichlorobenzene	ND	0.014	0.18		mg/Kg	5	1/23/2020 11:44:31 PM	R66046
1,3-Dichlorobenzene	ND	0.015	0.18		mg/Kg	5	1/23/2020 11:44:31 PM	R66046
1,4-Dichlorobenzene	ND	0.015	0.18		mg/Kg	5	1/23/2020 11:44:31 PM	R66046
Dichlorodifluoromethane	ND	0.041	0.18		mg/Kg	5	1/23/2020 11:44:31 PM	R66046
1,1-Dichloroethane	0.055	0.011	0.18	J	mg/Kg	5	1/23/2020 11:44:31 PM	R66046
1,1-Dichloroethene	ND	0.070	0.18		mg/Kg	5	1/23/2020 11:44:31 PM	R66046
1,2-Dichloropropane	ND	0.013	0.18		mg/Kg	5	1/23/2020 11:44:31 PM	R66046
1,3-Dichloropropane	ND	0.019	0.18		mg/Kg	5	1/23/2020 11:44:31 PM	R66046
2,2-Dichloropropane	ND	0.057	0.35		mg/Kg	5	1/23/2020 11:44:31 PM	R66046
1,1-Dichloropropene	ND	0.016	0.35		mg/Kg	5	1/23/2020 11:44:31 PM	R66046
Hexachlorobutadiene	ND	0.018	0.35		mg/Kg	5	1/23/2020 11:44:31 PM	R66046
2-Hexanone	ND	0.029	1.8		mg/Kg	5	1/23/2020 11:44:31 PM	R66046
Isopropylbenzene	1.8	0.013	0.18		mg/Kg	5	1/23/2020 11:44:31 PM	R66046
4-Isopropyltoluene	0.88	0.014	0.18		mg/Kg	5	1/23/2020 11:44:31 PM	R66046
4-Methyl-2-pentanone	ND	0.033	1.8		mg/Kg	5	1/23/2020 11:44:31 PM	R66046
Methylene chloride	ND	0.031	0.53		mg/Kg	5	1/23/2020 11:44:31 PM	R66046
n-Butylbenzene	1.5	0.016	0.53		mg/Kg	5	1/23/2020 11:44:31 PM	R66046
n-Propylbenzene	3.2	0.014	0.18		mg/Kg	5	1/23/2020 11:44:31 PM	R66046
sec-Butylbenzene	1.1	0.020	0.18		mg/Kg	5	1/23/2020 11:44:31 PM	R66046
Styrene	ND	0.014	0.18		mg/Kg	5	1/23/2020 11:44:31 PM	R66046
tert-Butylbenzene	ND	0.017	0.18		mg/Kg	5	1/23/2020 11:44:31 PM	R66046
1,1,1,2-Tetrachloroethane	ND	0.012	0.18		mg/Kg	5	1/23/2020 11:44:31 PM	R66046
1,1,2,2-Tetrachloroethane	ND	0.018	0.18		mg/Kg	5	1/23/2020 11:44:31 PM	R66046

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

Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-10 Sludge 4-4.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 9:26:00 AM
Lab ID: 2001739-032 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Tetrachloroethene (PCE)	ND	0.014	0.18		mg/Kg	5	1/23/2020 11:44:31 PM	R66046
trans-1,2-DCE	0.069	0.016	0.18	J	mg/Kg	5	1/23/2020 11:44:31 PM	R66046
trans-1,3-Dichloropropene	ND	0.019	0.18		mg/Kg	5	1/23/2020 11:44:31 PM	R66046
1,2,3-Trichlorobenzene	ND	0.015	0.35		mg/Kg	5	1/23/2020 11:44:31 PM	R66046
1,2,4-Trichlorobenzene	ND	0.018	0.18		mg/Kg	5	1/23/2020 11:44:31 PM	R66046
1,1,1-Trichloroethane	ND	0.016	0.18		mg/Kg	5	1/23/2020 11:44:31 PM	R66046
1,1,2-Trichloroethane	ND	0.012	0.18		mg/Kg	5	1/23/2020 11:44:31 PM	R66046
Trichloroethene (TCE)	ND	0.020	0.18		mg/Kg	5	1/23/2020 11:44:31 PM	R66046
Trichlorofluoromethane	ND	0.059	0.18		mg/Kg	5	1/23/2020 11:44:31 PM	R66046
1,2,3-Trichloropropane	ND	0.028	0.35		mg/Kg	5	1/23/2020 11:44:31 PM	R66046
Vinyl chloride	ND	0.011	0.18		mg/Kg	5	1/23/2020 11:44:31 PM	R66046
Xylenes, Total	44	0.44	3.5		mg/Kg	50	1/25/2020 12:46:23 AM	R66078
Surr: Dibromofluoromethane	102		70-130		%Rec	5	1/23/2020 11:44:31 PM	R66046
Surr: 1,2-Dichloroethane-d4	98.5		70-130		%Rec	5	1/23/2020 11:44:31 PM	R66046
Surr: Toluene-d8	103		70-130		%Rec	5	1/23/2020 11:44:31 PM	R66046
Surr: 4-Bromofluorobenzene	75.7		70-130		%Rec	5	1/23/2020 11:44:31 PM	R66046
VOLATILES BY 8260B/1311							Analyst: **CCM**	
Benzene	0.27	0.10	0.50	J	mg/L	1	1/27/2020 3:44:00 PM	50050
Surr: 1,2-Dichloroethane-d4	105	0	70-130		%Rec	1	1/27/2020 3:44:00 PM	50050
Surr: 4-Bromofluorobenzene	143	0	70-130	S	%Rec	1	1/27/2020 3:44:00 PM	50050
Surr: Dibromofluoromethane	99.4	0	70-130		%Rec	1	1/27/2020 3:44:00 PM	50050
Surr: Toluene-d8	92.1	0	70-130		%Rec	1	1/27/2020 3:44:00 PM	50050
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **JMR**	
Gasoline Range Organics (GRO)	600	3.7	18		mg/Kg	5	1/23/2020 11:44:31 PM	G66046
Surr: BFB	97.3	0	70-130		%Rec	5	1/23/2020 11:44:31 PM	G66046
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Positive				Pos/Neg	1	1/28/2020 3:11:00 PM	R66159
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	7.85				pH Units	1	1/29/2020 10:26:00 AM	R66160

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

Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-7 Clay 4-5 ft
Project: Gallup SWMUI Sampling Event
Collection Date: 1/17/2020 9:16:00 AM
Lab ID: 2001739-033 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	3800	17	72		mg/Kg	10	1/22/2020 9:54:40 PM	49948
Motor Oil Range Organics (MRO)	1200	360	360		mg/Kg	10	1/22/2020 9:54:40 PM	49948
Surr: DNOP	0	0	55.1-146	S	%Rec	10	1/22/2020 9:54:40 PM	49948
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	0.033	0.0018	0.033	H	mg/Kg	1	2/26/2020 3:20:01 PM	50700
MERCURY, TCLP							Analyst: **rde**	
Mercury	ND	0.00075	0.020		mg/L	1	1/28/2020 12:20:19 PM	50081
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.74	5.0		mg/Kg	2	1/24/2020 9:58:54 AM	49993
Arsenic	ND	2.9	5.0		mg/Kg	2	1/24/2020 12:38:26 PM	49993
Barium	200	0.047	0.20		mg/Kg	2	1/24/2020 9:58:54 AM	49993
Beryllium	0.94	0.018	0.30		mg/Kg	2	1/24/2020 9:58:54 AM	49993
Cadmium	ND	0.049	0.20		mg/Kg	2	1/24/2020 9:58:54 AM	49993
Chromium	12	0.16	0.60		mg/Kg	2	1/24/2020 9:58:54 AM	49993
Cobalt	4.4	0.21	0.60		mg/Kg	2	1/24/2020 9:58:54 AM	49993
Lead	1.0	0.49	0.50		mg/Kg	2	1/24/2020 9:58:54 AM	49993
Nickel	9.3	0.30	1.0		mg/Kg	2	1/24/2020 9:58:54 AM	49993
Selenium	ND	2.5	5.0		mg/Kg	2	1/24/2020 12:38:26 PM	49993
Silver	ND	0.064	0.50		mg/Kg	2	1/24/2020 9:58:54 AM	49993
Vanadium	23	0.13	5.0		mg/Kg	2	1/24/2020 9:58:54 AM	49993
Zinc	29	0.80	5.0		mg/Kg	2	1/24/2020 9:58:54 AM	49993
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/25/2020 12:51:48 PM	50045
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.15	0.41	D	mg/Kg	1	2/3/2020 1:13:08 PM	49999
Acenaphthylene	ND	0.18	0.41	D	mg/Kg	1	2/3/2020 1:13:08 PM	49999
Aniline	ND	0.14	0.41	D	mg/Kg	1	2/3/2020 1:13:08 PM	49999
Anthracene	ND	0.16	0.41	D	mg/Kg	1	2/3/2020 1:13:08 PM	49999
Azobenzene	ND	0.21	0.41	D	mg/Kg	1	2/3/2020 1:13:08 PM	49999
Benz(a)anthracene	ND	0.14	0.41	D	mg/Kg	1	2/3/2020 1:13:08 PM	49999
Benzo(a)pyrene	ND	0.22	0.41	D	mg/Kg	1	2/3/2020 1:13:08 PM	49999
Benzo(b)fluoranthene	ND	0.23	0.41	D	mg/Kg	1	2/3/2020 1:13:08 PM	49999
Benzo(g,h,i)perylene	ND	0.21	0.41	D	mg/Kg	1	2/3/2020 1:13:08 PM	49999
Benzo(k)fluoranthene	ND	0.12	0.41	D	mg/Kg	1	2/3/2020 1:13:08 PM	49999
Benzoic acid	ND	0.28	1.0	D	mg/Kg	1	2/3/2020 1:13:08 PM	49999
Benzyl alcohol	ND	0.17	0.41	D	mg/Kg	1	2/3/2020 1:13:08 PM	49999
Bis(2-chloroethoxy)methane	ND	0.17	0.41	D	mg/Kg	1	2/3/2020 1:13:08 PM	49999

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Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-7 Clay 4-5 ft
Project: Gallup SWMUI Sampling Event
Collection Date: 1/17/2020 9:16:00 AM
Lab ID: 2001739-033 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.24	0.41	D	mg/Kg	1	2/3/2020 1:13:08 PM	49999
Bis(2-chloroisopropyl)ether	ND	0.17	0.41	D	mg/Kg	1	2/3/2020 1:13:08 PM	49999
Bis(2-ethylhexyl)phthalate	ND	0.46	1.0	D	mg/Kg	1	2/3/2020 1:13:08 PM	49999
4-Bromophenyl phenyl ether	ND	0.24	0.41	D	mg/Kg	1	2/3/2020 1:13:08 PM	49999
Butyl benzyl phthalate	ND	0.14	0.41	D	mg/Kg	1	2/3/2020 1:13:08 PM	49999
Carbazole	ND	0.16	0.41	D	mg/Kg	1	2/3/2020 1:13:08 PM	49999
4-Chloro-3-methylphenol	ND	0.16	1.0	D	mg/Kg	1	2/3/2020 1:13:08 PM	49999
4-Chloroaniline	ND	0.16	1.0	D	mg/Kg	1	2/3/2020 1:13:08 PM	49999
2-Chloronaphthalene	ND	0.17	0.51	D	mg/Kg	1	2/3/2020 1:13:08 PM	49999
2-Chlorophenol	ND	0.23	0.41	D	mg/Kg	1	2/3/2020 1:13:08 PM	49999
4-Chlorophenyl phenyl ether	ND	0.17	0.41	D	mg/Kg	1	2/3/2020 1:13:08 PM	49999
Chrysene	ND	0.16	0.41	D	mg/Kg	1	2/3/2020 1:13:08 PM	49999
Di-n-butyl phthalate	ND	0.61	0.81	D	mg/Kg	1	2/3/2020 1:13:08 PM	49999
Di-n-octyl phthalate	ND	0.14	0.81	D	mg/Kg	1	2/3/2020 1:13:08 PM	49999
Dibenz(a,h)anthracene	ND	0.23	0.41	D	mg/Kg	1	2/3/2020 1:13:08 PM	49999
Dibenzofuran	ND	0.20	0.41	D	mg/Kg	1	2/3/2020 1:13:08 PM	49999
1,2-Dichlorobenzene	ND	0.16	0.41	D	mg/Kg	1	2/3/2020 1:13:08 PM	49999
1,3-Dichlorobenzene	ND	0.14	0.41	D	mg/Kg	1	2/3/2020 1:13:08 PM	49999
1,4-Dichlorobenzene	ND	0.17	0.41	D	mg/Kg	1	2/3/2020 1:13:08 PM	49999
3,3´-Dichlorobenzidine	ND	0.17	0.51	D	mg/Kg	1	2/3/2020 1:13:08 PM	49999
Diethyl phthalate	ND	0.62	1.0	D	mg/Kg	1	2/3/2020 1:13:08 PM	49999
Dimethyl phthalate	ND	0.16	0.41	D	mg/Kg	1	2/3/2020 1:13:08 PM	49999
2,4-Dichlorophenol	ND	0.17	0.81	D	mg/Kg	1	2/3/2020 1:13:08 PM	49999
2,4-Dimethylphenol	ND	0.17	0.61	D	mg/Kg	1	2/3/2020 1:13:08 PM	49999
4,6-Dinitro-2-methylphenol	ND	0.15	0.81	D	mg/Kg	1	2/3/2020 1:13:08 PM	49999
2,4-Dinitrophenol	ND	0.12	1.0	D	mg/Kg	1	2/3/2020 1:13:08 PM	49999
2,4-Dinitrotoluene	ND	0.21	1.0	D	mg/Kg	1	2/3/2020 1:13:08 PM	49999
2,6-Dinitrotoluene	ND	0.24	1.0	D	mg/Kg	1	2/3/2020 1:13:08 PM	49999
Fluoranthene	ND	0.16	0.41	D	mg/Kg	1	2/3/2020 1:13:08 PM	49999
Fluorene	0.24	0.16	0.41	JD	mg/Kg	1	2/3/2020 1:13:08 PM	49999
Hexachlorobenzene	ND	0.16	0.41	D	mg/Kg	1	2/3/2020 1:13:08 PM	49999
Hexachlorobutadiene	ND	0.18	0.41	D	mg/Kg	1	2/3/2020 1:13:08 PM	49999
Hexachlorocyclopentadiene	ND	0.19	0.41	D	mg/Kg	1	2/3/2020 1:13:08 PM	49999
Hexachloroethane	ND	0.17	0.41	D	mg/Kg	1	2/3/2020 1:13:08 PM	49999
Indeno(1,2,3-cd)pyrene	ND	0.25	0.41	D	mg/Kg	1	2/3/2020 1:13:08 PM	49999
Isophorone	ND	0.18	0.81	D	mg/Kg	1	2/3/2020 1:13:08 PM	49999
1-Methylnaphthalene	0.60	0.19	0.41	D	mg/Kg	1	2/3/2020 1:13:08 PM	49999
2-Methylnaphthalene	0.73	0.17	0.41	D	mg/Kg	1	2/3/2020 1:13:08 PM	49999
2-Methylphenol	ND	0.17	0.81	D	mg/Kg	1	2/3/2020 1:13:08 PM	49999

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Qualifiers:

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D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-7 Clay 4-5 ft
Project: Gallup SWMUI Sampling Event
Collection Date: 1/17/2020 9:16:00 AM
Lab ID: 2001739-033 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	0.34	0.15	0.41	JD	mg/Kg	1	2/3/2020 1:13:08 PM	49999
N-Nitrosodi-n-propylamine	ND	0.20	0.41	D	mg/Kg	1	2/3/2020 1:13:08 PM	49999
N-Nitrosodiphenylamine	ND	0.21	0.41	D	mg/Kg	1	2/3/2020 1:13:08 PM	49999
Naphthalene	ND	0.17	0.41	D	mg/Kg	1	2/3/2020 1:13:08 PM	49999
2-Nitroaniline	ND	0.23	0.41	D	mg/Kg	1	2/3/2020 1:13:08 PM	49999
3-Nitroaniline	ND	0.20	0.41	D	mg/Kg	1	2/3/2020 1:13:08 PM	49999
4-Nitroaniline	ND	0.27	0.81	D	mg/Kg	1	2/3/2020 1:13:08 PM	49999
Nitrobenzene	ND	0.17	0.81	D	mg/Kg	1	2/3/2020 1:13:08 PM	49999
2-Nitrophenol	ND	0.17	0.41	D	mg/Kg	1	2/3/2020 1:13:08 PM	49999
4-Nitrophenol	ND	0.12	0.51	D	mg/Kg	1	2/3/2020 1:13:08 PM	49999
Pentachlorophenol	ND	0.18	0.81	D	mg/Kg	1	2/3/2020 1:13:08 PM	49999
Phenanthrene	0.79	0.21	0.41	D	mg/Kg	1	2/3/2020 1:13:08 PM	49999
Phenol	ND	0.17	0.41	D	mg/Kg	1	2/3/2020 1:13:08 PM	49999
Pyrene	0.28	0.13	0.41	JD	mg/Kg	1	2/3/2020 1:13:08 PM	49999
Pyridine	ND	0.38	0.81	D	mg/Kg	1	2/3/2020 1:13:08 PM	49999
1,2,4-Trichlorobenzene	ND	0.17	0.41	D	mg/Kg	1	2/3/2020 1:13:08 PM	49999
2,4,5-Trichlorophenol	ND	0.13	0.41	D	mg/Kg	1	2/3/2020 1:13:08 PM	49999
2,4,6-Trichlorophenol	ND	0.20	0.41	D	mg/Kg	1	2/3/2020 1:13:08 PM	49999
Surr: 2-Fluorophenol	43.6		26.7-85.9	D	%Rec	1	2/3/2020 1:13:08 PM	49999
Surr: Phenol-d5	52.0		18.5-101	D	%Rec	1	2/3/2020 1:13:08 PM	49999
Surr: 2,4,6-Tribromophenol	48.5		35.8-85.6	D	%Rec	1	2/3/2020 1:13:08 PM	49999
Surr: Nitrobenzene-d5	48.2		40.8-95.2	D	%Rec	1	2/3/2020 1:13:08 PM	49999
Surr: 2-Fluorobiphenyl	57.1		34.7-85.2	D	%Rec	1	2/3/2020 1:13:08 PM	49999
Surr: 4-Terphenyl-d14	55.9		37.4-91.3	D	%Rec	1	2/3/2020 1:13:08 PM	49999
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Benzene	0.036	0.0022	0.014		mg/Kg	1	1/25/2020 1:43:10 AM	R66078
Toluene	0.27	0.0026	0.027		mg/Kg	1	1/25/2020 1:43:10 AM	R66078
Ethylbenzene	0.12	0.0016	0.027		mg/Kg	1	1/25/2020 1:43:10 AM	R66078
Methyl tert-butyl ether (MTBE)	ND	0.0064	0.027		mg/Kg	1	1/25/2020 1:43:10 AM	R66078
1,2,4-Trimethylbenzene	0.28	0.0025	0.027		mg/Kg	1	1/25/2020 1:43:10 AM	R66078
1,3,5-Trimethylbenzene	0.097	0.0026	0.027		mg/Kg	1	1/25/2020 1:43:10 AM	R66078
1,2-Dichloroethane (EDC)	ND	0.0028	0.027		mg/Kg	1	1/25/2020 1:43:10 AM	R66078
1,2-Dibromoethane (EDB)	ND	0.0025	0.027		mg/Kg	1	1/25/2020 1:43:10 AM	R66078
Naphthalene	0.32	0.0054	0.054		mg/Kg	1	1/25/2020 1:43:10 AM	R66078
1-Methylnaphthalene	1.1	0.016	0.11		mg/Kg	1	1/25/2020 1:43:10 AM	R66078
2-Methylnaphthalene	1.6	0.012	0.11		mg/Kg	1	1/25/2020 1:43:10 AM	R66078
Acetone	0.27	0.022	0.41	J	mg/Kg	1	1/25/2020 1:43:10 AM	R66078
Bromobenzene	ND	0.0026	0.027		mg/Kg	1	1/25/2020 1:43:10 AM	R66078
Bromodichloromethane	ND	0.0025	0.027		mg/Kg	1	1/25/2020 1:43:10 AM	R66078

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Qualifiers:

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ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-7 Clay 4-5 ft
Project: Gallup SWMUI Sampling Event
Collection Date: 1/17/2020 9:16:00 AM
Lab ID: 2001739-033 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Bromoform	ND	0.0024	0.027		mg/Kg	1	1/25/2020 1:43:10 AM	R66078
Bromomethane	0.016	0.0065	0.081	J	mg/Kg	1	1/25/2020 1:43:10 AM	R66078
2-Butanone	ND	0.031	0.27		mg/Kg	1	1/25/2020 1:43:10 AM	R66078
Carbon disulfide	1.2	0.0089	0.27		mg/Kg	1	1/25/2020 1:43:10 AM	R66078
Carbon tetrachloride	ND	0.0026	0.027		mg/Kg	1	1/25/2020 1:43:10 AM	R66078
Chlorobenzene	ND	0.0035	0.027		mg/Kg	1	1/25/2020 1:43:10 AM	R66078
Chloroethane	ND	0.0040	0.054		mg/Kg	1	1/25/2020 1:43:10 AM	R66078
Chloroform	0.0093	0.0022	0.027	J	mg/Kg	1	1/25/2020 1:43:10 AM	R66078
Chloromethane	0.011	0.0026	0.081	J	mg/Kg	1	1/25/2020 1:43:10 AM	R66078
2-Chlorotoluene	ND	0.0024	0.027		mg/Kg	1	1/25/2020 1:43:10 AM	R66078
4-Chlorotoluene	ND	0.0022	0.027		mg/Kg	1	1/25/2020 1:43:10 AM	R66078
cis-1,2-DCE	ND	0.0037	0.027		mg/Kg	1	1/25/2020 1:43:10 AM	R66078
cis-1,3-Dichloropropene	ND	0.0023	0.027		mg/Kg	1	1/25/2020 1:43:10 AM	R66078
1,2-Dibromo-3-chloropropane	ND	0.0028	0.054		mg/Kg	1	1/25/2020 1:43:10 AM	R66078
Dibromochloromethane	ND	0.0019	0.027		mg/Kg	1	1/25/2020 1:43:10 AM	R66078
Dibromomethane	ND	0.0029	0.027		mg/Kg	1	1/25/2020 1:43:10 AM	R66078
1,2-Dichlorobenzene	ND	0.0022	0.027		mg/Kg	1	1/25/2020 1:43:10 AM	R66078
1,3-Dichlorobenzene	ND	0.0023	0.027		mg/Kg	1	1/25/2020 1:43:10 AM	R66078
1,4-Dichlorobenzene	ND	0.0023	0.027		mg/Kg	1	1/25/2020 1:43:10 AM	R66078
Dichlorodifluoromethane	ND	0.0063	0.027		mg/Kg	1	1/25/2020 1:43:10 AM	R66078
1,1-Dichloroethane	0.0081	0.0017	0.027	J	mg/Kg	1	1/25/2020 1:43:10 AM	R66078
1,1-Dichloroethene	ND	0.011	0.027		mg/Kg	1	1/25/2020 1:43:10 AM	R66078
1,2-Dichloropropane	ND	0.0020	0.027		mg/Kg	1	1/25/2020 1:43:10 AM	R66078
1,3-Dichloropropane	ND	0.0029	0.027		mg/Kg	1	1/25/2020 1:43:10 AM	R66078
2,2-Dichloropropane	ND	0.0088	0.054		mg/Kg	1	1/25/2020 1:43:10 AM	R66078
1,1-Dichloropropene	ND	0.0025	0.054		mg/Kg	1	1/25/2020 1:43:10 AM	R66078
Hexachlorobutadiene	ND	0.0027	0.054		mg/Kg	1	1/25/2020 1:43:10 AM	R66078
2-Hexanone	ND	0.0045	0.27		mg/Kg	1	1/25/2020 1:43:10 AM	R66078
Isopropylbenzene	0.017	0.0019	0.027	J	mg/Kg	1	1/25/2020 1:43:10 AM	R66078
4-Isopropyltoluene	0.012	0.0022	0.027	J	mg/Kg	1	1/25/2020 1:43:10 AM	R66078
4-Methyl-2-pentanone	ND	0.0051	0.27		mg/Kg	1	1/25/2020 1:43:10 AM	R66078
Methylene chloride	0.026	0.0048	0.081	J	mg/Kg	1	1/25/2020 1:43:10 AM	R66078
n-Butylbenzene	0.029	0.0025	0.081	J	mg/Kg	1	1/25/2020 1:43:10 AM	R66078
n-Propylbenzene	0.038	0.0022	0.027		mg/Kg	1	1/25/2020 1:43:10 AM	R66078
sec-Butylbenzene	0.012	0.0030	0.027	J	mg/Kg	1	1/25/2020 1:43:10 AM	R66078
Styrene	ND	0.0021	0.027		mg/Kg	1	1/25/2020 1:43:10 AM	R66078
tert-Butylbenzene	ND	0.0025	0.027		mg/Kg	1	1/25/2020 1:43:10 AM	R66078
1,1,1,2-Tetrachloroethane	ND	0.0018	0.027		mg/Kg	1	1/25/2020 1:43:10 AM	R66078
1,1,2,2-Tetrachloroethane	ND	0.0027	0.027		mg/Kg	1	1/25/2020 1:43:10 AM	R66078

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

Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-7 Clay 4-5 ft
Project: Gallup SWMUI Sampling Event
Collection Date: 1/17/2020 9:16:00 AM
Lab ID: 2001739-033 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Tetrachloroethene (PCE)	ND	0.0022	0.027		mg/Kg	1	1/25/2020 1:43:10 AM	R66078
trans-1,2-DCE	ND	0.0025	0.027		mg/Kg	1	1/25/2020 1:43:10 AM	R66078
trans-1,3-Dichloropropene	ND	0.0029	0.027		mg/Kg	1	1/25/2020 1:43:10 AM	R66078
1,2,3-Trichlorobenzene	ND	0.0024	0.054		mg/Kg	1	1/25/2020 1:43:10 AM	R66078
1,2,4-Trichlorobenzene	ND	0.0027	0.027		mg/Kg	1	1/25/2020 1:43:10 AM	R66078
1,1,1-Trichloroethane	ND	0.0024	0.027		mg/Kg	1	1/25/2020 1:43:10 AM	R66078
1,1,2-Trichloroethane	ND	0.0019	0.027		mg/Kg	1	1/25/2020 1:43:10 AM	R66078
Trichloroethene (TCE)	ND	0.0031	0.027		mg/Kg	1	1/25/2020 1:43:10 AM	R66078
Trichlorofluoromethane	ND	0.0092	0.027		mg/Kg	1	1/25/2020 1:43:10 AM	R66078
1,2,3-Trichloropropane	ND	0.0044	0.054		mg/Kg	1	1/25/2020 1:43:10 AM	R66078
Vinyl chloride	ND	0.0018	0.027		mg/Kg	1	1/25/2020 1:43:10 AM	R66078
Xylenes, Total	0.80	0.0068	0.054		mg/Kg	1	1/25/2020 1:43:10 AM	R66078
Surr: Dibromofluoromethane	95.2		70-130		%Rec	1	1/25/2020 1:43:10 AM	R66078
Surr: 1,2-Dichloroethane-d4	95.9		70-130		%Rec	1	1/25/2020 1:43:10 AM	R66078
Surr: Toluene-d8	95.8		70-130		%Rec	1	1/25/2020 1:43:10 AM	R66078
Surr: 4-Bromofluorobenzene	77.6		70-130		%Rec	1	1/25/2020 1:43:10 AM	R66078
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **JMR**	
Gasoline Range Organics (GRO)	17	0.57	2.7		mg/Kg	1	1/25/2020 1:43:10 AM	G66078
Surr: BFB	101	0	70-130		%Rec	1	1/25/2020 1:43:10 AM	G66078
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/28/2020 3:11:00 PM	R66159
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	8.55				pH Units	1	1/29/2020 10:26:00 AM	R66160

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Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-6 Clay 5.5-6 ft
Project: Gallup SWMUI Sampling Event
Collection Date: 1/17/2020 9:25:00 AM
Lab ID: 2001739-034 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	25	2.0	8.5		mg/Kg	1	1/22/2020 10:03:35 PM	49948
Motor Oil Range Organics (MRO)	ND	42	42		mg/Kg	1	1/22/2020 10:03:35 PM	49948
Surr: DNOP	99.7	0	55.1-146		%Rec	1	1/22/2020 10:03:35 PM	49948
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	0.018	0.0019	0.035	JH	mg/Kg	1	2/26/2020 3:22:06 PM	50700
MERCURY, TCLP							Analyst: **rde**	
Mercury	ND	0.00075	0.020		mg/L	1	1/28/2020 12:22:25 PM	50081
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.75	5.1		mg/Kg	2	1/24/2020 10:00:27 AM	49993
Arsenic	ND	2.9	5.1		mg/Kg	2	1/24/2020 12:39:49 PM	49993
Barium	230	0.047	0.20		mg/Kg	2	1/24/2020 10:00:27 AM	49993
Beryllium	0.82	0.019	0.30		mg/Kg	2	1/24/2020 10:00:27 AM	49993
Cadmium	ND	0.049	0.20		mg/Kg	2	1/24/2020 10:00:27 AM	49993
Chromium	11	0.16	0.61		mg/Kg	2	1/24/2020 10:00:27 AM	49993
Cobalt	5.7	0.21	0.61		mg/Kg	2	1/24/2020 10:00:27 AM	49993
Lead	0.90	0.49	0.51		mg/Kg	2	1/24/2020 10:00:27 AM	49993
Nickel	8.8	0.30	1.0		mg/Kg	2	1/24/2020 10:00:27 AM	49993
Selenium	ND	2.5	5.1		mg/Kg	2	1/24/2020 12:39:49 PM	49993
Silver	ND	0.065	0.51		mg/Kg	2	1/24/2020 10:00:27 AM	49993
Vanadium	21	0.14	5.1		mg/Kg	2	1/24/2020 10:00:27 AM	49993
Zinc	19	0.80	5.1		mg/Kg	2	1/24/2020 10:00:27 AM	49993
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/28/2020 11:13:13 AM	50045
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.14	0.38	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
Acenaphthylene	ND	0.17	0.38	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
Aniline	ND	0.13	0.38	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
Anthracene	ND	0.15	0.38	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
Azobenzene	ND	0.19	0.38	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
Benz(a)anthracene	ND	0.13	0.38	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
Benzo(a)pyrene	ND	0.21	0.38	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
Benzo(b)fluoranthene	ND	0.22	0.38	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
Benzo(g,h,i)perylene	ND	0.20	0.38	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
Benzo(k)fluoranthene	ND	0.11	0.38	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
Benzoic acid	ND	0.26	0.96	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
Benzyl alcohol	ND	0.16	0.38	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
Bis(2-chloroethoxy)methane	ND	0.16	0.38	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999

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Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-6 Clay 5.5-6 ft
Project: Gallup SWMUI Sampling Event
Collection Date: 1/17/2020 9:25:00 AM
Lab ID: 2001739-034 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.22	0.38	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
Bis(2-chloroisopropyl)ether	ND	0.16	0.38	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
Bis(2-ethylhexyl)phthalate	ND	0.43	0.96	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
4-Bromophenyl phenyl ether	ND	0.22	0.38	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
Butyl benzyl phthalate	ND	0.13	0.38	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
Carbazole	ND	0.15	0.38	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
4-Chloro-3-methylphenol	ND	0.15	0.96	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
4-Chloroaniline	ND	0.15	0.96	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
2-Chloronaphthalene	ND	0.16	0.48	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
2-Chlorophenol	ND	0.22	0.38	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
4-Chlorophenyl phenyl ether	ND	0.16	0.38	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
Chrysene	ND	0.15	0.38	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
Di-n-butyl phthalate	ND	0.57	0.77	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
Di-n-octyl phthalate	ND	0.13	0.77	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
Dibenz(a,h)anthracene	ND	0.21	0.38	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
Dibenzofuran	ND	0.19	0.38	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
1,2-Dichlorobenzene	ND	0.15	0.38	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
1,3-Dichlorobenzene	ND	0.13	0.38	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
1,4-Dichlorobenzene	ND	0.16	0.38	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
3,3´-Dichlorobenzidine	ND	0.16	0.48	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
Diethyl phthalate	ND	0.58	0.96	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
Dimethyl phthalate	ND	0.16	0.38	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
2,4-Dichlorophenol	ND	0.16	0.77	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
2,4-Dimethylphenol	ND	0.16	0.58	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
4,6-Dinitro-2-methylphenol	ND	0.14	0.77	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
2,4-Dinitrophenol	ND	0.11	0.96	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
2,4-Dinitrotoluene	ND	0.20	0.96	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
2,6-Dinitrotoluene	ND	0.23	0.96	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
Fluoranthene	ND	0.15	0.38	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
Fluorene	ND	0.15	0.38	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
Hexachlorobenzene	ND	0.15	0.38	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
Hexachlorobutadiene	ND	0.17	0.38	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
Hexachlorocyclopentadiene	ND	0.18	0.38	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
Hexachloroethane	ND	0.16	0.38	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
Indeno(1,2,3-cd)pyrene	ND	0.24	0.38	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
Isophorone	ND	0.17	0.77	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
1-Methylnaphthalene	ND	0.18	0.38	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
2-Methylnaphthalene	ND	0.16	0.38	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
2-Methylphenol	ND	0.16	0.77	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
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P	Sample pH Not In Range
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-6 Clay 5.5-6 ft
Project: Gallup SWMUI Sampling Event
Collection Date: 1/17/2020 9:25:00 AM
Lab ID: 2001739-034 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.14	0.38	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
N-Nitrosodi-n-propylamine	ND	0.19	0.38	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
N-Nitrosodiphenylamine	ND	0.20	0.38	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
Naphthalene	ND	0.16	0.38	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
2-Nitroaniline	ND	0.21	0.38	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
3-Nitroaniline	ND	0.19	0.38	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
4-Nitroaniline	ND	0.26	0.77	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
Nitrobenzene	ND	0.16	0.77	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
2-Nitrophenol	ND	0.16	0.38	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
4-Nitrophenol	ND	0.11	0.48	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
Pentachlorophenol	ND	0.17	0.77	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
Phenanthrene	ND	0.20	0.38	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
Phenol	ND	0.16	0.38	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
Pyrene	ND	0.13	0.38	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
Pyridine	ND	0.36	0.77	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
1,2,4-Trichlorobenzene	ND	0.16	0.38	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
2,4,5-Trichlorophenol	ND	0.12	0.38	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
2,4,6-Trichlorophenol	ND	0.19	0.38	D	mg/Kg	1	2/3/2020 2:40:21 PM	49999
Surr: 2-Fluorophenol	73.9		26.7-85.9	D	%Rec	1	2/3/2020 2:40:21 PM	49999
Surr: Phenol-d5	81.8		18.5-101	D	%Rec	1	2/3/2020 2:40:21 PM	49999
Surr: 2,4,6-Tribromophenol	2.94		35.8-85.6	SD	%Rec	1	2/3/2020 2:40:21 PM	49999
Surr: Nitrobenzene-d5	78.2		40.8-95.2	D	%Rec	1	2/3/2020 2:40:21 PM	49999
Surr: 2-Fluorobiphenyl	74.3		34.7-85.2	D	%Rec	1	2/3/2020 2:40:21 PM	49999
Surr: 4-Terphenyl-d14	85.0		37.4-91.3	D	%Rec	1	2/3/2020 2:40:21 PM	49999
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Benzene	ND	0.0024	0.014		mg/Kg	1	1/25/2020 2:39:58 AM	R66078
Toluene	0.018	0.0028	0.029	J	mg/Kg	1	1/25/2020 2:39:58 AM	R66078
Ethylbenzene	0.0066	0.0017	0.029	J	mg/Kg	1	1/25/2020 2:39:58 AM	R66078
Methyl tert-butyl ether (MTBE)	ND	0.0068	0.029		mg/Kg	1	1/25/2020 2:39:58 AM	R66078
1,2,4-Trimethylbenzene	0.068	0.0026	0.029		mg/Kg	1	1/25/2020 2:39:58 AM	R66078
1,3,5-Trimethylbenzene	0.020	0.0028	0.029	J	mg/Kg	1	1/25/2020 2:39:58 AM	R66078
1,2-Dichloroethane (EDC)	ND	0.0029	0.029		mg/Kg	1	1/25/2020 2:39:58 AM	R66078
1,2-Dibromoethane (EDB)	ND	0.0026	0.029		mg/Kg	1	1/25/2020 2:39:58 AM	R66078
Naphthalene	0.037	0.0058	0.058	J	mg/Kg	1	1/25/2020 2:39:58 AM	R66078
1-Methylnaphthalene	0.28	0.017	0.12		mg/Kg	1	1/25/2020 2:39:58 AM	R66078
2-Methylnaphthalene	0.39	0.013	0.12		mg/Kg	1	1/25/2020 2:39:58 AM	R66078
Acetone	0.065	0.024	0.43	J	mg/Kg	1	1/25/2020 2:39:58 AM	R66078
Bromobenzene	ND	0.0028	0.029		mg/Kg	1	1/25/2020 2:39:58 AM	R66078
Bromodichloromethane	ND	0.0026	0.029		mg/Kg	1	1/25/2020 2:39:58 AM	R66078

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Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-6 Clay 5.5-6 ft
Project: Gallup SWMUI Sampling Event
Collection Date: 1/17/2020 9:25:00 AM
Lab ID: 2001739-034 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Bromoform	ND	0.0026	0.029		mg/Kg	1	1/25/2020 2:39:58 AM	R66078
Bromomethane	0.017	0.0070	0.087	J	mg/Kg	1	1/25/2020 2:39:58 AM	R66078
2-Butanone	0.17	0.033	0.29	J	mg/Kg	1	1/25/2020 2:39:58 AM	R66078
Carbon disulfide	0.14	0.0095	0.29	J	mg/Kg	1	1/25/2020 2:39:58 AM	R66078
Carbon tetrachloride	ND	0.0027	0.029		mg/Kg	1	1/25/2020 2:39:58 AM	R66078
Chlorobenzene	ND	0.0037	0.029		mg/Kg	1	1/25/2020 2:39:58 AM	R66078
Chloroethane	ND	0.0043	0.058		mg/Kg	1	1/25/2020 2:39:58 AM	R66078
Chloroform	0.0071	0.0023	0.029	J	mg/Kg	1	1/25/2020 2:39:58 AM	R66078
Chloromethane	ND	0.0028	0.087		mg/Kg	1	1/25/2020 2:39:58 AM	R66078
2-Chlorotoluene	ND	0.0025	0.029		mg/Kg	1	1/25/2020 2:39:58 AM	R66078
4-Chlorotoluene	ND	0.0024	0.029		mg/Kg	1	1/25/2020 2:39:58 AM	R66078
cis-1,2-DCE	0.0063	0.0039	0.029	J	mg/Kg	1	1/25/2020 2:39:58 AM	R66078
cis-1,3-Dichloropropene	ND	0.0024	0.029		mg/Kg	1	1/25/2020 2:39:58 AM	R66078
1,2-Dibromo-3-chloropropane	ND	0.0030	0.058		mg/Kg	1	1/25/2020 2:39:58 AM	R66078
Dibromochloromethane	ND	0.0020	0.029		mg/Kg	1	1/25/2020 2:39:58 AM	R66078
Dibromomethane	ND	0.0031	0.029		mg/Kg	1	1/25/2020 2:39:58 AM	R66078
1,2-Dichlorobenzene	ND	0.0024	0.029		mg/Kg	1	1/25/2020 2:39:58 AM	R66078
1,3-Dichlorobenzene	ND	0.0025	0.029		mg/Kg	1	1/25/2020 2:39:58 AM	R66078
1,4-Dichlorobenzene	ND	0.0024	0.029		mg/Kg	1	1/25/2020 2:39:58 AM	R66078
Dichlorodifluoromethane	ND	0.0067	0.029		mg/Kg	1	1/25/2020 2:39:58 AM	R66078
1,1-Dichloroethane	ND	0.0018	0.029		mg/Kg	1	1/25/2020 2:39:58 AM	R66078
1,1-Dichloroethene	ND	0.012	0.029		mg/Kg	1	1/25/2020 2:39:58 AM	R66078
1,2-Dichloropropane	ND	0.0021	0.029		mg/Kg	1	1/25/2020 2:39:58 AM	R66078
1,3-Dichloropropane	ND	0.0031	0.029		mg/Kg	1	1/25/2020 2:39:58 AM	R66078
2,2-Dichloropropane	ND	0.0094	0.058		mg/Kg	1	1/25/2020 2:39:58 AM	R66078
1,1-Dichloropropene	ND	0.0026	0.058		mg/Kg	1	1/25/2020 2:39:58 AM	R66078
Hexachlorobutadiene	ND	0.0029	0.058		mg/Kg	1	1/25/2020 2:39:58 AM	R66078
2-Hexanone	0.17	0.0048	0.29	J	mg/Kg	1	1/25/2020 2:39:58 AM	R66078
Isopropylbenzene	ND	0.0021	0.029		mg/Kg	1	1/25/2020 2:39:58 AM	R66078
4-Isopropyltoluene	0.0041	0.0024	0.029	J	mg/Kg	1	1/25/2020 2:39:58 AM	R66078
4-Methyl-2-pentanone	ND	0.0055	0.29		mg/Kg	1	1/25/2020 2:39:58 AM	R66078
Methylene chloride	0.033	0.0051	0.087	J	mg/Kg	1	1/25/2020 2:39:58 AM	R66078
n-Butylbenzene	0.015	0.0027	0.087	J	mg/Kg	1	1/25/2020 2:39:58 AM	R66078
n-Propylbenzene	0.0061	0.0023	0.029	J	mg/Kg	1	1/25/2020 2:39:58 AM	R66078
sec-Butylbenzene	0.0046	0.0033	0.029	J	mg/Kg	1	1/25/2020 2:39:58 AM	R66078
Styrene	ND	0.0023	0.029		mg/Kg	1	1/25/2020 2:39:58 AM	R66078
tert-Butylbenzene	ND	0.0027	0.029		mg/Kg	1	1/25/2020 2:39:58 AM	R66078
1,1,1,2-Tetrachloroethane	ND	0.0019	0.029		mg/Kg	1	1/25/2020 2:39:58 AM	R66078
1,1,2,2-Tetrachloroethane	ND	0.0029	0.029		mg/Kg	1	1/25/2020 2:39:58 AM	R66078

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-6 Clay 5.5-6 ft
Project: Gallup SWMUI Sampling Event
Collection Date: 1/17/2020 9:25:00 AM
Lab ID: 2001739-034 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Tetrachloroethene (PCE)	ND	0.0023	0.029		mg/Kg	1	1/25/2020 2:39:58 AM	R66078
trans-1,2-DCE	ND	0.0026	0.029		mg/Kg	1	1/25/2020 2:39:58 AM	R66078
trans-1,3-Dichloropropene	ND	0.0031	0.029		mg/Kg	1	1/25/2020 2:39:58 AM	R66078
1,2,3-Trichlorobenzene	ND	0.0025	0.058		mg/Kg	1	1/25/2020 2:39:58 AM	R66078
1,2,4-Trichlorobenzene	ND	0.0029	0.029		mg/Kg	1	1/25/2020 2:39:58 AM	R66078
1,1,1-Trichloroethane	ND	0.0026	0.029		mg/Kg	1	1/25/2020 2:39:58 AM	R66078
1,1,2-Trichloroethane	ND	0.0020	0.029		mg/Kg	1	1/25/2020 2:39:58 AM	R66078
Trichloroethene (TCE)	ND	0.0033	0.029		mg/Kg	1	1/25/2020 2:39:58 AM	R66078
Trichlorofluoromethane	ND	0.0098	0.029		mg/Kg	1	1/25/2020 2:39:58 AM	R66078
1,2,3-Trichloropropane	ND	0.0047	0.058		mg/Kg	1	1/25/2020 2:39:58 AM	R66078
Vinyl chloride	ND	0.0019	0.029		mg/Kg	1	1/25/2020 2:39:58 AM	R66078
Xylenes, Total	0.067	0.0073	0.058		mg/Kg	1	1/25/2020 2:39:58 AM	R66078
Surr: Dibromofluoromethane	95.5		70-130		%Rec	1	1/25/2020 2:39:58 AM	R66078
Surr: 1,2-Dichloroethane-d4	93.4		70-130		%Rec	1	1/25/2020 2:39:58 AM	R66078
Surr: Toluene-d8	96.1		70-130		%Rec	1	1/25/2020 2:39:58 AM	R66078
Surr: 4-Bromofluorobenzene	77.7		70-130		%Rec	1	1/25/2020 2:39:58 AM	R66078
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **JMR**	
Gasoline Range Organics (GRO)	7.7	0.61	2.9		mg/Kg	1	1/25/2020 2:39:58 AM	G66078
Surr: BFB	94.9	0	70-130		%Rec	1	1/25/2020 2:39:58 AM	G66078
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/28/2020 3:11:00 PM	R66159
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	8.92				pH Units	1	1/29/2020 10:26:00 AM	R66160

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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-3 0.5-3.0
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 4:54:00 PM
Lab ID: 2001739-035 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	46000	140	570		mg/Kg	50	1/22/2020 10:12:29 PM	49948
Motor Oil Range Organics (MRO)	7200	2800	2800		mg/Kg	50	1/22/2020 10:12:29 PM	49948
Surr: DNOP	0	0	55.1-146	S	%Rec	50	1/22/2020 10:12:29 PM	49948
EPA METHOD 7471: MERCURY							Analyst: **JLF**	
Mercury	ND	0.0019	0.034	H	mg/Kg	1	2/28/2020 7:01:25 PM	50752
MERCURY, TCLP							Analyst: **rde**	
Mercury	ND	0.00075	0.020		mg/L	1	1/28/2020 12:24:31 PM	50081
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.71	4.8		mg/Kg	2	1/24/2020 10:02:00 AM	49993
Arsenic	5.3	2.7	4.8		mg/Kg	2	1/24/2020 1:35:13 PM	49993
Barium	420	0.045	0.19		mg/Kg	2	1/24/2020 10:02:00 AM	49993
Beryllium	0.25	0.018	0.29	J	mg/Kg	2	1/24/2020 10:02:00 AM	49993
Cadmium	ND	0.047	0.19		mg/Kg	2	1/24/2020 10:02:00 AM	49993
Chromium	10	0.15	0.58		mg/Kg	2	1/24/2020 10:02:00 AM	49993
Cobalt	2.7	0.20	0.58		mg/Kg	2	1/24/2020 10:02:00 AM	49993
Lead	11	0.47	0.48		mg/Kg	2	1/24/2020 10:02:00 AM	49993
Nickel	14	0.29	0.96		mg/Kg	2	1/24/2020 10:02:00 AM	49993
Selenium	ND	2.4	4.8		mg/Kg	2	1/24/2020 12:48:18 PM	49993
Silver	ND	0.062	0.48		mg/Kg	2	1/24/2020 10:02:00 AM	49993
Vanadium	9.3	0.13	4.8		mg/Kg	2	1/24/2020 10:02:00 AM	49993
Zinc	1600	3.8	24		mg/Kg	10	1/24/2020 11:06:36 AM	49993
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/25/2020 12:58:53 PM	50045
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	8.9	24	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999
Acenaphthylene	ND	11	24	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999
Aniline	ND	8.1	24	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999
Anthracene	ND	9.2	24	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999
Azobenzene	ND	12	24	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999
Benz(a)anthracene	ND	8.2	24	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999
Benzo(a)pyrene	ND	13	24	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999
Benzo(b)fluoranthene	ND	14	24	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999
Benzo(g,h,i)perylene	ND	12	24	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999
Benzo(k)fluoranthene	ND	7.1	24	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999
Benzoic acid	ND	16	60	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999
Benzyl alcohol	ND	9.9	24	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999
Bis(2-chloroethoxy)methane	ND	9.8	24	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999

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E	Value above quantitation range
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J	Analyte detected below quantitation limits
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S	% Recovery outside of range due to dilution or matrix

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-3 0.5-3.0
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 4:54:00 PM
Lab ID: 2001739-035 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	14	24	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999
Bis(2-chloroisopropyl)ether	ND	10	24	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999
Bis(2-ethylhexyl)phthalate	ND	27	60	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999
4-Bromophenyl phenyl ether	ND	14	24	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999
Butyl benzyl phthalate	ND	8.0	24	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999
Carbazole	ND	9.5	24	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999
4-Chloro-3-methylphenol	ND	9.4	60	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999
4-Chloroaniline	ND	9.1	60	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999
2-Chloronaphthalene	ND	10	30	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999
2-Chlorophenol	ND	13	24	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999
4-Chlorophenyl phenyl ether	ND	10	24	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999
Chrysene	ND	9.3	24	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999
Di-n-butyl phthalate	ND	36	48	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999
Di-n-octyl phthalate	ND	8.0	48	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999
Dibenz(a,h)anthracene	ND	13	24	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999
Dibenzofuran	ND	12	24	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999
1,2-Dichlorobenzene	ND	9.4	24	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999
1,3-Dichlorobenzene	ND	8.0	24	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999
1,4-Dichlorobenzene	ND	9.9	24	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999
3,3´-Dichlorobenzidine	ND	10	30	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999
Diethyl phthalate	ND	36	60	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999
Dimethyl phthalate	ND	9.7	24	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999
2,4-Dichlorophenol	ND	10	48	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999
2,4-Dimethylphenol	ND	9.9	36	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999
4,6-Dinitro-2-methylphenol	ND	8.7	48	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999
2,4-Dinitrophenol	ND	6.9	60	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999
2,4-Dinitrotoluene	ND	12	60	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999
2,6-Dinitrotoluene	ND	14	60	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999
Fluoranthene	ND	9.1	24	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999
Fluorene	33	9.4	24	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999
Hexachlorobenzene	ND	9.3	24	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999
Hexachlorobutadiene	ND	10	24	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999
Hexachlorocyclopentadiene	ND	11	24	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999
Hexachloroethane	ND	9.7	24	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999
Indeno(1,2,3-cd)pyrene	ND	15	24	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999
Isophorone	ND	10	48	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999
1-Methylnaphthalene	180	11	24	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999
2-Methylnaphthalene	160	9.7	24	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999
2-Methylphenol	ND	10	48	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999

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Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-3 0.5-3.0
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 4:54:00 PM
Lab ID: 2001739-035 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	22	8.6	24	JD	mg/Kg	5	2/3/2020 3:09:35 PM	49999
N-Nitrosodi-n-propylamine	ND	12	24	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999
N-Nitrosodiphenylamine	ND	12	24	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999
Naphthalene	21	9.7	24	JD	mg/Kg	5	2/3/2020 3:09:35 PM	49999
2-Nitroaniline	ND	13	24	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999
3-Nitroaniline	ND	12	24	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999
4-Nitroaniline	ND	16	48	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999
Nitrobenzene	ND	10	48	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999
2-Nitrophenol	ND	9.8	24	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999
4-Nitrophenol	ND	7.0	30	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999
Pentachlorophenol	ND	11	48	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999
Phenanthrene	140	12	24	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999
Phenol	ND	10	24	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999
Pyrene	31	7.9	24	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999
Pyridine	ND	22	48	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999
1,2,4-Trichlorobenzene	ND	10	24	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999
2,4,5-Trichlorophenol	ND	7.7	24	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999
2,4,6-Trichlorophenol	ND	12	24	D	mg/Kg	5	2/3/2020 3:09:35 PM	49999
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	5	2/3/2020 3:09:35 PM	49999
Surr: Phenol-d5	0		18.5-101	SD	%Rec	5	2/3/2020 3:09:35 PM	49999
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	5	2/3/2020 3:09:35 PM	49999
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	5	2/3/2020 3:09:35 PM	49999
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	5	2/3/2020 3:09:35 PM	49999
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	5	2/3/2020 3:09:35 PM	49999
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Benzene	0.12	0.020	0.12	J	mg/Kg	5	1/24/2020 1:09:44 AM	R66046
Toluene	1.3	0.024	0.25		mg/Kg	5	1/24/2020 1:09:44 AM	R66046
Ethylbenzene	0.46	0.014	0.25		mg/Kg	5	1/24/2020 1:09:44 AM	R66046
Methyl tert-butyl ether (MTBE)	ND	0.059	0.25		mg/Kg	5	1/24/2020 1:09:44 AM	R66046
1,2,4-Trimethylbenzene	2.0	0.023	0.25		mg/Kg	5	1/24/2020 1:09:44 AM	R66046
1,3,5-Trimethylbenzene	0.61	0.024	0.25		mg/Kg	5	1/24/2020 1:09:44 AM	R66046
1,2-Dichloroethane (EDC)	ND	0.025	0.25		mg/Kg	5	1/24/2020 1:09:44 AM	R66046
1,2-Dibromoethane (EDB)	ND	0.023	0.25		mg/Kg	5	1/24/2020 1:09:44 AM	R66046
Naphthalene	3.9	0.050	0.49		mg/Kg	5	1/24/2020 1:09:44 AM	R66046
1-Methylnaphthalene	12	0.14	0.99		mg/Kg	5	1/24/2020 1:09:44 AM	R66046
2-Methylnaphthalene	17	0.11	0.99		mg/Kg	5	1/24/2020 1:09:44 AM	R66046
Acetone	0.28	0.20	3.7	J	mg/Kg	5	1/24/2020 1:09:44 AM	R66046
Bromobenzene	ND	0.024	0.25		mg/Kg	5	1/24/2020 1:09:44 AM	R66046
Bromodichloromethane	ND	0.023	0.25		mg/Kg	5	1/24/2020 1:09:44 AM	R66046

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

Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-3 0.5-3.0
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 4:54:00 PM
Lab ID: 2001739-035 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Bromoform	ND	0.022	0.25		mg/Kg	5	1/24/2020 1:09:44 AM	R66046
Bromomethane	ND	0.060	0.74		mg/Kg	5	1/24/2020 1:09:44 AM	R66046
2-Butanone	1.0	0.29	2.5	J	mg/Kg	5	1/24/2020 1:09:44 AM	R66046
Carbon disulfide	ND	0.082	2.5		mg/Kg	5	1/24/2020 1:09:44 AM	R66046
Carbon tetrachloride	ND	0.023	0.25		mg/Kg	5	1/24/2020 1:09:44 AM	R66046
Chlorobenzene	ND	0.032	0.25		mg/Kg	5	1/24/2020 1:09:44 AM	R66046
Chloroethane	ND	0.036	0.49		mg/Kg	5	1/24/2020 1:09:44 AM	R66046
Chloroform	ND	0.020	0.25		mg/Kg	5	1/24/2020 1:09:44 AM	R66046
Chloromethane	0.097	0.024	0.74	J	mg/Kg	5	1/24/2020 1:09:44 AM	R66046
2-Chlorotoluene	ND	0.022	0.25		mg/Kg	5	1/24/2020 1:09:44 AM	R66046
4-Chlorotoluene	ND	0.020	0.25		mg/Kg	5	1/24/2020 1:09:44 AM	R66046
cis-1,2-DCE	0.052	0.034	0.25	J	mg/Kg	5	1/24/2020 1:09:44 AM	R66046
cis-1,3-Dichloropropene	ND	0.021	0.25		mg/Kg	5	1/24/2020 1:09:44 AM	R66046
1,2-Dibromo-3-chloropropane	ND	0.025	0.49		mg/Kg	5	1/24/2020 1:09:44 AM	R66046
Dibromochloromethane	ND	0.018	0.25		mg/Kg	5	1/24/2020 1:09:44 AM	R66046
Dibromomethane	ND	0.027	0.25		mg/Kg	5	1/24/2020 1:09:44 AM	R66046
1,2-Dichlorobenzene	ND	0.020	0.25		mg/Kg	5	1/24/2020 1:09:44 AM	R66046
1,3-Dichlorobenzene	ND	0.021	0.25		mg/Kg	5	1/24/2020 1:09:44 AM	R66046
1,4-Dichlorobenzene	ND	0.021	0.25		mg/Kg	5	1/24/2020 1:09:44 AM	R66046
Dichlorodifluoromethane	ND	0.057	0.25		mg/Kg	5	1/24/2020 1:09:44 AM	R66046
1,1-Dichloroethane	0.077	0.016	0.25	J	mg/Kg	5	1/24/2020 1:09:44 AM	R66046
1,1-Dichloroethene	ND	0.099	0.25		mg/Kg	5	1/24/2020 1:09:44 AM	R66046
1,2-Dichloropropane	ND	0.018	0.25		mg/Kg	5	1/24/2020 1:09:44 AM	R66046
1,3-Dichloropropane	ND	0.027	0.25		mg/Kg	5	1/24/2020 1:09:44 AM	R66046
2,2-Dichloropropane	ND	0.080	0.49		mg/Kg	5	1/24/2020 1:09:44 AM	R66046
1,1-Dichloropropene	ND	0.023	0.49		mg/Kg	5	1/24/2020 1:09:44 AM	R66046
Hexachlorobutadiene	ND	0.025	0.49		mg/Kg	5	1/24/2020 1:09:44 AM	R66046
2-Hexanone	0.23	0.041	2.5	J	mg/Kg	5	1/24/2020 1:09:44 AM	R66046
Isopropylbenzene	0.087	0.018	0.25	J	mg/Kg	5	1/24/2020 1:09:44 AM	R66046
4-Isopropyltoluene	0.10	0.020	0.25	J	mg/Kg	5	1/24/2020 1:09:44 AM	R66046
4-Methyl-2-pentanone	ND	0.047	2.5		mg/Kg	5	1/24/2020 1:09:44 AM	R66046
Methylene chloride	ND	0.044	0.74		mg/Kg	5	1/24/2020 1:09:44 AM	R66046
n-Butylbenzene	0.23	0.023	0.74	J	mg/Kg	5	1/24/2020 1:09:44 AM	R66046
n-Propylbenzene	0.26	0.020	0.25		mg/Kg	5	1/24/2020 1:09:44 AM	R66046
sec-Butylbenzene	0.11	0.028	0.25	J	mg/Kg	5	1/24/2020 1:09:44 AM	R66046
Styrene	ND	0.019	0.25		mg/Kg	5	1/24/2020 1:09:44 AM	R66046
tert-Butylbenzene	ND	0.023	0.25		mg/Kg	5	1/24/2020 1:09:44 AM	R66046
1,1,1,2-Tetrachloroethane	ND	0.017	0.25		mg/Kg	5	1/24/2020 1:09:44 AM	R66046
1,1,2,2-Tetrachloroethane	ND	0.025	0.25		mg/Kg	5	1/24/2020 1:09:44 AM	R66046

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Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-3 0.5-3.0
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 4:54:00 PM
Lab ID: 2001739-035 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Tetrachloroethene (PCE)	ND	0.020	0.25		mg/Kg	5	1/24/2020 1:09:44 AM	R66046
trans-1,2-DCE	ND	0.023	0.25		mg/Kg	5	1/24/2020 1:09:44 AM	R66046
trans-1,3-Dichloropropene	ND	0.026	0.25		mg/Kg	5	1/24/2020 1:09:44 AM	R66046
1,2,3-Trichlorobenzene	ND	0.022	0.49		mg/Kg	5	1/24/2020 1:09:44 AM	R66046
1,2,4-Trichlorobenzene	ND	0.025	0.25		mg/Kg	5	1/24/2020 1:09:44 AM	R66046
1,1,1-Trichloroethane	ND	0.022	0.25		mg/Kg	5	1/24/2020 1:09:44 AM	R66046
1,1,2-Trichloroethane	ND	0.017	0.25		mg/Kg	5	1/24/2020 1:09:44 AM	R66046
Trichloroethene (TCE)	ND	0.029	0.25		mg/Kg	5	1/24/2020 1:09:44 AM	R66046
Trichlorofluoromethane	ND	0.084	0.25		mg/Kg	5	1/24/2020 1:09:44 AM	R66046
1,2,3-Trichloropropane	ND	0.040	0.49		mg/Kg	5	1/24/2020 1:09:44 AM	R66046
Vinyl chloride	ND	0.016	0.25		mg/Kg	5	1/24/2020 1:09:44 AM	R66046
Xylenes, Total	3.2	0.062	0.49		mg/Kg	5	1/24/2020 1:09:44 AM	R66046
Surr: Dibromofluoromethane	95.8		70-130		%Rec	5	1/24/2020 1:09:44 AM	R66046
Surr: 1,2-Dichloroethane-d4	96.1		70-130		%Rec	5	1/24/2020 1:09:44 AM	R66046
Surr: Toluene-d8	104		70-130		%Rec	5	1/24/2020 1:09:44 AM	R66046
Surr: 4-Bromofluorobenzene	90.1		70-130		%Rec	5	1/24/2020 1:09:44 AM	R66046
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **JMR**	
Gasoline Range Organics (GRO)	78	5.3	25		mg/Kg	5	1/24/2020 1:09:44 AM	G66046
Surr: BFB	99.8	0	70-130		%Rec	5	1/24/2020 1:09:44 AM	G66046
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/28/2020 3:11:00 PM	R66159
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	7.91				pH Units	1	1/29/2020 10:26:00 AM	R66160

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J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-13 Toe Surf
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 2:19:00 PM
Lab ID: 2001739-036 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	37000	940	4000		mg/Kg	500	1/22/2020 10:21:24 PM	49948
Motor Oil Range Organics (MRO)	21000	20000	20000		mg/Kg	500	1/22/2020 10:21:24 PM	49948
Surr: DNOP	0	0	55.1-146	S	%Rec	500	1/22/2020 10:21:24 PM	49948
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	0.74	0.0095	0.17	H	mg/Kg	5	2/26/2020 4:47:52 PM	50700
MERCURY, TCLP							Analyst: **rde**	
Mercury	ND	0.00075	0.020		mg/L	1	1/28/2020 12:26:30 PM	50081
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.72	4.9		mg/Kg	2	1/24/2020 10:03:34 AM	49993
Arsenic	ND	2.8	4.9		mg/Kg	2	1/24/2020 1:36:32 PM	49993
Barium	300	0.045	0.20		mg/Kg	2	1/24/2020 10:03:34 AM	49993
Beryllium	0.69	0.018	0.29		mg/Kg	2	1/24/2020 10:03:34 AM	49993
Cadmium	ND	0.048	0.20		mg/Kg	2	1/24/2020 10:03:34 AM	49993
Chromium	15	0.16	0.59		mg/Kg	2	1/24/2020 10:03:34 AM	49993
Cobalt	4.2	0.21	0.59		mg/Kg	2	1/24/2020 10:03:34 AM	49993
Lead	ND	0.48	0.49		mg/Kg	2	1/24/2020 10:03:34 AM	49993
Nickel	11	0.29	0.98		mg/Kg	2	1/24/2020 10:03:34 AM	49993
Selenium	ND	2.5	4.9		mg/Kg	2	1/24/2020 12:49:45 PM	49993
Silver	ND	0.063	0.49		mg/Kg	2	1/24/2020 10:03:34 AM	49993
Vanadium	17	0.13	4.9		mg/Kg	2	1/24/2020 10:03:34 AM	49993
Zinc	350	0.77	4.9		mg/Kg	2	1/24/2020 10:03:34 AM	49993
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/25/2020 1:00:18 PM	50045
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	9.3	25	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
Acenaphthylene	ND	11	25	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
Aniline	ND	8.4	25	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
Anthracene	ND	9.5	25	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
Azobenzene	ND	13	25	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
Benz(a)anthracene	ND	8.5	25	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
Benzo(a)pyrene	ND	13	25	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
Benzo(b)fluoranthene	ND	14	25	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
Benzo(g,h,i)perylene	ND	13	25	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
Benzo(k)fluoranthene	ND	7.4	25	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
Benzoic acid	ND	17	62	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
Benzyl alcohol	ND	10	25	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
Bis(2-chloroethoxy)methane	ND	10	25	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999

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Qualifiers:

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ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
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E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-13 Toe Surf
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 2:19:00 PM
Lab ID: 2001739-036 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	14	25	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
Bis(2-chloroisopropyl)ether	ND	11	25	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
Bis(2-ethylhexyl)phthalate	ND	28	62	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
4-Bromophenyl phenyl ether	ND	14	25	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
Butyl benzyl phthalate	ND	8.3	25	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
Carbazole	ND	9.8	25	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
4-Chloro-3-methylphenol	ND	9.7	62	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
4-Chloroaniline	ND	9.4	62	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
2-Chloronaphthalene	ND	10	31	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
2-Chlorophenol	ND	14	25	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
4-Chlorophenyl phenyl ether	ND	10	25	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
Chrysene	ND	9.6	25	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
Di-n-butyl phthalate	ND	37	49	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
Di-n-octyl phthalate	ND	8.2	49	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
Dibenz(a,h)anthracene	ND	14	25	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
Dibenzofuran	ND	12	25	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
1,2-Dichlorobenzene	ND	9.7	25	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
1,3-Dichlorobenzene	ND	8.2	25	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
1,4-Dichlorobenzene	ND	10	25	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
3,3´-Dichlorobenzidine	ND	11	31	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
Diethyl phthalate	ND	38	62	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
Dimethyl phthalate	ND	10	25	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
2,4-Dichlorophenol	ND	10	49	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
2,4-Dimethylphenol	ND	10	37	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
4,6-Dinitro-2-methylphenol	ND	9.0	49	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
2,4-Dinitrophenol	ND	7.1	62	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
2,4-Dinitrotoluene	ND	13	62	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
2,6-Dinitrotoluene	ND	15	62	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
Fluoranthene	ND	9.4	25	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
Fluorene	ND	9.7	25	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
Hexachlorobenzene	ND	9.6	25	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
Hexachlorobutadiene	ND	11	25	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
Hexachlorocyclopentadiene	ND	12	25	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
Hexachloroethane	ND	10	25	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
Indeno(1,2,3-cd)pyrene	ND	15	25	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
Isophorone	ND	11	49	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
1-Methylnaphthalene	ND	11	25	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
2-Methylnaphthalene	ND	10	25	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
2-Methylphenol	ND	10	49	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999

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

Qualifiers:

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D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-13 Toe Surf
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 2:19:00 PM
Lab ID: 2001739-036 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	8.9	25	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
N-Nitrosodi-n-propylamine	ND	12	25	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
N-Nitrosodiphenylamine	ND	13	25	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
Naphthalene	ND	10	25	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
2-Nitroaniline	ND	14	25	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
3-Nitroaniline	ND	12	25	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
4-Nitroaniline	ND	17	49	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
Nitrobenzene	ND	11	49	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
2-Nitrophenol	ND	10	25	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
4-Nitrophenol	ND	7.2	31	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
Pentachlorophenol	ND	11	49	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
Phenanthrene	ND	13	25	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
Phenol	ND	10	25	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
Pyrene	ND	8.1	25	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
Pyridine	ND	23	49	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
1,2,4-Trichlorobenzene	ND	11	25	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
2,4,5-Trichlorophenol	ND	8.0	25	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
2,4,6-Trichlorophenol	ND	12	25	D	mg/Kg	5	2/3/2020 3:38:36 PM	49999
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	5	2/3/2020 3:38:36 PM	49999
Surr: Phenol-d5	0		18.5-101	SD	%Rec	5	2/3/2020 3:38:36 PM	49999
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	5	2/3/2020 3:38:36 PM	49999
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	5	2/3/2020 3:38:36 PM	49999
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	5	2/3/2020 3:38:36 PM	49999
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	5	2/3/2020 3:38:36 PM	49999
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Benzene	ND	0.015	0.090		mg/Kg	5	1/24/2020 3:59:51 AM	R66046
Toluene	ND	0.017	0.18		mg/Kg	5	1/24/2020 3:59:51 AM	R66046
Ethylbenzene	ND	0.010	0.18		mg/Kg	5	1/24/2020 3:59:51 AM	R66046
Methyl tert-butyl ether (MTBE)	ND	0.043	0.18		mg/Kg	5	1/24/2020 3:59:51 AM	R66046
1,2,4-Trimethylbenzene	0.030	0.017	0.18	J	mg/Kg	5	1/24/2020 3:59:51 AM	R66046
1,3,5-Trimethylbenzene	ND	0.017	0.18		mg/Kg	5	1/24/2020 3:59:51 AM	R66046
1,2-Dichloroethane (EDC)	ND	0.018	0.18		mg/Kg	5	1/24/2020 3:59:51 AM	R66046
1,2-Dibromoethane (EDB)	ND	0.016	0.18		mg/Kg	5	1/24/2020 3:59:51 AM	R66046
Naphthalene	ND	0.036	0.36		mg/Kg	5	1/24/2020 3:59:51 AM	R66046
1-Methylnaphthalene	ND	0.10	0.72		mg/Kg	5	1/24/2020 3:59:51 AM	R66046
2-Methylnaphthalene	ND	0.079	0.72		mg/Kg	5	1/24/2020 3:59:51 AM	R66046
Acetone	ND	0.15	2.7		mg/Kg	5	1/24/2020 3:59:51 AM	R66046
Bromobenzene	ND	0.017	0.18		mg/Kg	5	1/24/2020 3:59:51 AM	R66046
Bromodichloromethane	ND	0.016	0.18		mg/Kg	5	1/24/2020 3:59:51 AM	R66046

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Qualifiers:

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D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
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J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-13 Toe Surf
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 2:19:00 PM
Lab ID: 2001739-036 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Bromoform	ND	0.016	0.18		mg/Kg	5	1/24/2020 3:59:51 AM	R66046
Bromomethane	0.087	0.044	0.54	J	mg/Kg	5	1/24/2020 3:59:51 AM	R66046
2-Butanone	ND	0.21	1.8		mg/Kg	5	1/24/2020 3:59:51 AM	R66046
Carbon disulfide	ND	0.060	1.8		mg/Kg	5	1/24/2020 3:59:51 AM	R66046
Carbon tetrachloride	ND	0.017	0.18		mg/Kg	5	1/24/2020 3:59:51 AM	R66046
Chlorobenzene	ND	0.023	0.18		mg/Kg	5	1/24/2020 3:59:51 AM	R66046
Chloroethane	ND	0.027	0.36		mg/Kg	5	1/24/2020 3:59:51 AM	R66046
Chloroform	ND	0.015	0.18		mg/Kg	5	1/24/2020 3:59:51 AM	R66046
Chloromethane	ND	0.017	0.54		mg/Kg	5	1/24/2020 3:59:51 AM	R66046
2-Chlorotoluene	ND	0.016	0.18		mg/Kg	5	1/24/2020 3:59:51 AM	R66046
4-Chlorotoluene	ND	0.015	0.18		mg/Kg	5	1/24/2020 3:59:51 AM	R66046
cis-1,2-DCE	ND	0.025	0.18		mg/Kg	5	1/24/2020 3:59:51 AM	R66046
cis-1,3-Dichloropropene	ND	0.015	0.18		mg/Kg	5	1/24/2020 3:59:51 AM	R66046
1,2-Dibromo-3-chloropropane	ND	0.019	0.36		mg/Kg	5	1/24/2020 3:59:51 AM	R66046
Dibromochloromethane	ND	0.013	0.18		mg/Kg	5	1/24/2020 3:59:51 AM	R66046
Dibromomethane	ND	0.019	0.18		mg/Kg	5	1/24/2020 3:59:51 AM	R66046
1,2-Dichlorobenzene	ND	0.015	0.18		mg/Kg	5	1/24/2020 3:59:51 AM	R66046
1,3-Dichlorobenzene	ND	0.016	0.18		mg/Kg	5	1/24/2020 3:59:51 AM	R66046
1,4-Dichlorobenzene	ND	0.015	0.18		mg/Kg	5	1/24/2020 3:59:51 AM	R66046
Dichlorodifluoromethane	ND	0.042	0.18		mg/Kg	5	1/24/2020 3:59:51 AM	R66046
1,1-Dichloroethane	ND	0.012	0.18		mg/Kg	5	1/24/2020 3:59:51 AM	R66046
1,1-Dichloroethene	ND	0.072	0.18		mg/Kg	5	1/24/2020 3:59:51 AM	R66046
1,2-Dichloropropane	ND	0.013	0.18		mg/Kg	5	1/24/2020 3:59:51 AM	R66046
1,3-Dichloropropane	ND	0.020	0.18		mg/Kg	5	1/24/2020 3:59:51 AM	R66046
2,2-Dichloropropane	ND	0.059	0.36		mg/Kg	5	1/24/2020 3:59:51 AM	R66046
1,1-Dichloropropene	ND	0.016	0.36		mg/Kg	5	1/24/2020 3:59:51 AM	R66046
Hexachlorobutadiene	ND	0.018	0.36		mg/Kg	5	1/24/2020 3:59:51 AM	R66046
2-Hexanone	ND	0.030	1.8		mg/Kg	5	1/24/2020 3:59:51 AM	R66046
Isopropylbenzene	ND	0.013	0.18		mg/Kg	5	1/24/2020 3:59:51 AM	R66046
4-Isopropyltoluene	ND	0.015	0.18		mg/Kg	5	1/24/2020 3:59:51 AM	R66046
4-Methyl-2-pentanone	ND	0.034	1.8		mg/Kg	5	1/24/2020 3:59:51 AM	R66046
Methylene chloride	ND	0.032	0.54		mg/Kg	5	1/24/2020 3:59:51 AM	R66046
n-Butylbenzene	ND	0.017	0.54		mg/Kg	5	1/24/2020 3:59:51 AM	R66046
n-Propylbenzene	ND	0.014	0.18		mg/Kg	5	1/24/2020 3:59:51 AM	R66046
sec-Butylbenzene	ND	0.020	0.18		mg/Kg	5	1/24/2020 3:59:51 AM	R66046
Styrene	ND	0.014	0.18		mg/Kg	5	1/24/2020 3:59:51 AM	R66046
tert-Butylbenzene	ND	0.017	0.18		mg/Kg	5	1/24/2020 3:59:51 AM	R66046
1,1,1,2-Tetrachloroethane	ND	0.012	0.18		mg/Kg	5	1/24/2020 3:59:51 AM	R66046
1,1,2,2-Tetrachloroethane	ND	0.018	0.18		mg/Kg	5	1/24/2020 3:59:51 AM	R66046

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Qualifiers:

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H	Holding times for preparation or analysis exceeded
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PQL	Practical Quanitative Limit
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-13 Toe Surf
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 2:19:00 PM
Lab ID: 2001739-036 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Tetrachloroethene (PCE)	ND	0.014	0.18		mg/Kg	5	1/24/2020 3:59:51 AM	R66046
trans-1,2-DCE	ND	0.017	0.18		mg/Kg	5	1/24/2020 3:59:51 AM	R66046
trans-1,3-Dichloropropene	ND	0.019	0.18		mg/Kg	5	1/24/2020 3:59:51 AM	R66046
1,2,3-Trichlorobenzene	ND	0.016	0.36		mg/Kg	5	1/24/2020 3:59:51 AM	R66046
1,2,4-Trichlorobenzene	ND	0.018	0.18		mg/Kg	5	1/24/2020 3:59:51 AM	R66046
1,1,1-Trichloroethane	ND	0.016	0.18		mg/Kg	5	1/24/2020 3:59:51 AM	R66046
1,1,2-Trichloroethane	ND	0.013	0.18		mg/Kg	5	1/24/2020 3:59:51 AM	R66046
Trichloroethene (TCE)	ND	0.021	0.18		mg/Kg	5	1/24/2020 3:59:51 AM	R66046
Trichlorofluoromethane	ND	0.061	0.18		mg/Kg	5	1/24/2020 3:59:51 AM	R66046
1,2,3-Trichloropropane	ND	0.029	0.36		mg/Kg	5	1/24/2020 3:59:51 AM	R66046
Vinyl chloride	ND	0.012	0.18		mg/Kg	5	1/24/2020 3:59:51 AM	R66046
Xylenes, Total	ND	0.046	0.36		mg/Kg	5	1/24/2020 3:59:51 AM	R66046
Surr: Dibromofluoromethane	97.9		70-130		%Rec	5	1/24/2020 3:59:51 AM	R66046
Surr: 1,2-Dichloroethane-d4	89.5		70-130		%Rec	5	1/24/2020 3:59:51 AM	R66046
Surr: Toluene-d8	100		70-130		%Rec	5	1/24/2020 3:59:51 AM	R66046
Surr: 4-Bromofluorobenzene	87.8		70-130		%Rec	5	1/24/2020 3:59:51 AM	R66046
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **JMR**	
Gasoline Range Organics (GRO)	ND	3.8	18		mg/Kg	5	1/24/2020 3:59:51 AM	G66046
Surr: BFB	96.1	0	70-130		%Rec	5	1/24/2020 3:59:51 AM	G66046
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/28/2020 3:11:00 PM	R66159
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	6.81				pH Units	1	1/29/2020 10:26:00 AM	R66160

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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-1 Surf
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 8:45:00 AM
Lab ID: 2001739-037 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	84000	1300	5500		mg/Kg	500	1/22/2020 10:30:18 PM	49948
Motor Oil Range Organics (MRO)	29000	27000	27000		mg/Kg	500	1/22/2020 10:30:18 PM	49948
Surr: DNOP	0	0	55.1-146	S	%Rec	500	1/22/2020 10:30:18 PM	49948
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	5.6	0.037	0.67	H	mg/Kg	20	2/26/2020 4:49:56 PM	50700
MERCURY, TCLP							Analyst: **rde**	
Mercury	ND	0.00075	0.020		mg/L	1	1/28/2020 12:28:30 PM	50081
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.71	4.8		mg/Kg	2	1/24/2020 10:05:07 AM	49993
Arsenic	5.1	2.8	4.8		mg/Kg	2	1/24/2020 1:37:55 PM	49993
Barium	270	0.045	0.19		mg/Kg	2	1/24/2020 10:05:07 AM	49993
Beryllium	0.25	0.018	0.29	J	mg/Kg	2	1/24/2020 10:05:07 AM	49993
Cadmium	ND	0.047	0.19		mg/Kg	2	1/24/2020 10:05:07 AM	49993
Chromium	19	0.15	0.58		mg/Kg	2	1/24/2020 10:05:07 AM	49993
Cobalt	3.2	0.20	0.58		mg/Kg	2	1/24/2020 10:05:07 AM	49993
Lead	3.8	0.47	0.48		mg/Kg	2	1/24/2020 10:05:07 AM	49993
Nickel	15	0.29	0.96		mg/Kg	2	1/24/2020 10:05:07 AM	49993
Selenium	ND	2.4	4.8		mg/Kg	2	1/24/2020 12:51:08 PM	49993
Silver	ND	0.062	0.48		mg/Kg	2	1/24/2020 10:05:07 AM	49993
Vanadium	10	0.13	4.8		mg/Kg	2	1/24/2020 10:05:07 AM	49993
Zinc	680	1.9	12		mg/Kg	5	1/24/2020 11:08:11 AM	49993
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/25/2020 1:01:42 PM	50045
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	9.2	24	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
Acenaphthylene	ND	11	24	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
Aniline	ND	8.4	24	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
Anthracene	ND	9.4	24	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
Azobenzene	ND	12	24	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
Benz(a)anthracene	ND	8.4	24	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
Benzo(a)pyrene	ND	13	24	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
Benzo(b)fluoranthene	ND	14	24	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
Benzo(g,h,i)perylene	ND	13	24	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
Benzo(k)fluoranthene	ND	7.3	24	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
Benzoic acid	ND	17	61	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
Benzyl alcohol	ND	10	24	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
Bis(2-chloroethoxy)methane	ND	10	24	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999

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Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-1 Surf
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 8:45:00 AM
Lab ID: 2001739-037 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	14	24	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
Bis(2-chloroisopropyl)ether	ND	11	24	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
Bis(2-ethylhexyl)phthalate	ND	27	61	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
4-Bromophenyl phenyl ether	ND	14	24	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
Butyl benzyl phthalate	ND	8.2	24	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
Carbazole	ND	9.7	24	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
4-Chloro-3-methylphenol	ND	9.6	61	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
4-Chloroaniline	ND	9.4	61	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
2-Chloronaphthalene	ND	10	31	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
2-Chlorophenol	ND	14	24	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
4-Chlorophenyl phenyl ether	ND	10	24	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
Chrysene	ND	9.6	24	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
Di-n-butyl phthalate	ND	37	49	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
Di-n-octyl phthalate	ND	8.2	49	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
Dibenz(a,h)anthracene	ND	14	24	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
Dibenzofuran	ND	12	24	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
1,2-Dichlorobenzene	ND	9.6	24	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
1,3-Dichlorobenzene	ND	8.2	24	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
1,4-Dichlorobenzene	ND	10	24	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
3,3´-Dichlorobenzidine	ND	10	31	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
Diethyl phthalate	ND	37	61	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
Dimethyl phthalate	ND	9.9	24	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
2,4-Dichlorophenol	ND	10	49	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
2,4-Dimethylphenol	ND	10	37	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
4,6-Dinitro-2-methylphenol	ND	9.0	49	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
2,4-Dinitrophenol	ND	7.1	61	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
2,4-Dinitrotoluene	ND	13	61	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
2,6-Dinitrotoluene	ND	15	61	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
Fluoranthene	ND	9.3	24	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
Fluorene	ND	9.6	24	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
Hexachlorobenzene	ND	9.6	24	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
Hexachlorobutadiene	ND	11	24	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
Hexachlorocyclopentadiene	ND	12	24	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
Hexachloroethane	ND	10	24	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
Indeno(1,2,3-cd)pyrene	ND	15	24	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
Isophorone	ND	11	49	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
1-Methylnaphthalene	ND	11	24	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
2-Methylnaphthalene	ND	9.9	24	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
2-Methylphenol	ND	10	49	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999

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Qualifiers:

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D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-1 Surf
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 8:45:00 AM
Lab ID: 2001739-037 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	8.8	24	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
N-Nitrosodi-n-propylamine	ND	12	24	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
N-Nitrosodiphenylamine	ND	13	24	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
Naphthalene	ND	10	24	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
2-Nitroaniline	ND	14	24	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
3-Nitroaniline	ND	12	24	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
4-Nitroaniline	ND	16	49	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
Nitrobenzene	ND	10	49	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
2-Nitrophenol	ND	10	24	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
4-Nitrophenol	ND	7.2	31	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
Pentachlorophenol	ND	11	49	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
Phenanthrene	34	12	24	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
Phenol	ND	10	24	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
Pyrene	95	8.1	24	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
Pyridine	ND	23	49	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
1,2,4-Trichlorobenzene	ND	10	24	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
2,4,5-Trichlorophenol	ND	7.9	24	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
2,4,6-Trichlorophenol	ND	12	24	D	mg/Kg	5	2/3/2020 4:07:44 PM	49999
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	5	2/3/2020 4:07:44 PM	49999
Surr: Phenol-d5	0		18.5-101	SD	%Rec	5	2/3/2020 4:07:44 PM	49999
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	5	2/3/2020 4:07:44 PM	49999
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	5	2/3/2020 4:07:44 PM	49999
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	5	2/3/2020 4:07:44 PM	49999
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	5	2/3/2020 4:07:44 PM	49999
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Benzene	ND	0.019	0.12		mg/Kg	5	1/24/2020 4:28:10 AM	R66046
Toluene	0.028	0.022	0.23	J	mg/Kg	5	1/24/2020 4:28:10 AM	R66046
Ethylbenzene	ND	0.013	0.23		mg/Kg	5	1/24/2020 4:28:10 AM	R66046
Methyl tert-butyl ether (MTBE)	ND	0.055	0.23		mg/Kg	5	1/24/2020 4:28:10 AM	R66046
1,2,4-Trimethylbenzene	0.14	0.021	0.23	J	mg/Kg	5	1/24/2020 4:28:10 AM	R66046
1,3,5-Trimethylbenzene	0.028	0.022	0.23	J	mg/Kg	5	1/24/2020 4:28:10 AM	R66046
1,2-Dichloroethane (EDC)	ND	0.024	0.23		mg/Kg	5	1/24/2020 4:28:10 AM	R66046
1,2-Dibromoethane (EDB)	ND	0.021	0.23		mg/Kg	5	1/24/2020 4:28:10 AM	R66046
Naphthalene	ND	0.046	0.46		mg/Kg	5	1/24/2020 4:28:10 AM	R66046
1-Methylnaphthalene	0.40	0.13	0.92	J	mg/Kg	5	1/24/2020 4:28:10 AM	R66046
2-Methylnaphthalene	0.47	0.10	0.92	J	mg/Kg	5	1/24/2020 4:28:10 AM	R66046
Acetone	0.78	0.19	3.5	J	mg/Kg	5	1/24/2020 4:28:10 AM	R66046
Bromobenzene	ND	0.022	0.23		mg/Kg	5	1/24/2020 4:28:10 AM	R66046
Bromodichloromethane	ND	0.021	0.23		mg/Kg	5	1/24/2020 4:28:10 AM	R66046

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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-1 Surf
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 8:45:00 AM
Lab ID: 2001739-037 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Bromoform	ND	0.021	0.23		mg/Kg	5	1/24/2020 4:28:10 AM	R66046
Bromomethane	ND	0.056	0.69		mg/Kg	5	1/24/2020 4:28:10 AM	R66046
2-Butanone	ND	0.27	2.3		mg/Kg	5	1/24/2020 4:28:10 AM	R66046
Carbon disulfide	ND	0.076	2.3		mg/Kg	5	1/24/2020 4:28:10 AM	R66046
Carbon tetrachloride	ND	0.022	0.23		mg/Kg	5	1/24/2020 4:28:10 AM	R66046
Chlorobenzene	ND	0.030	0.23		mg/Kg	5	1/24/2020 4:28:10 AM	R66046
Chloroethane	ND	0.034	0.46		mg/Kg	5	1/24/2020 4:28:10 AM	R66046
Chloroform	ND	0.019	0.23		mg/Kg	5	1/24/2020 4:28:10 AM	R66046
Chloromethane	ND	0.022	0.69		mg/Kg	5	1/24/2020 4:28:10 AM	R66046
2-Chlorotoluene	ND	0.020	0.23		mg/Kg	5	1/24/2020 4:28:10 AM	R66046
4-Chlorotoluene	ND	0.019	0.23		mg/Kg	5	1/24/2020 4:28:10 AM	R66046
cis-1,2-DCE	ND	0.032	0.23		mg/Kg	5	1/24/2020 4:28:10 AM	R66046
cis-1,3-Dichloropropene	ND	0.019	0.23		mg/Kg	5	1/24/2020 4:28:10 AM	R66046
1,2-Dibromo-3-chloropropane	ND	0.024	0.46		mg/Kg	5	1/24/2020 4:28:10 AM	R66046
Dibromochloromethane	ND	0.016	0.23		mg/Kg	5	1/24/2020 4:28:10 AM	R66046
Dibromomethane	ND	0.025	0.23		mg/Kg	5	1/24/2020 4:28:10 AM	R66046
1,2-Dichlorobenzene	ND	0.019	0.23		mg/Kg	5	1/24/2020 4:28:10 AM	R66046
1,3-Dichlorobenzene	ND	0.020	0.23		mg/Kg	5	1/24/2020 4:28:10 AM	R66046
1,4-Dichlorobenzene	ND	0.019	0.23		mg/Kg	5	1/24/2020 4:28:10 AM	R66046
Dichlorodifluoromethane	ND	0.054	0.23		mg/Kg	5	1/24/2020 4:28:10 AM	R66046
1,1-Dichloroethane	ND	0.015	0.23		mg/Kg	5	1/24/2020 4:28:10 AM	R66046
1,1-Dichloroethene	ND	0.092	0.23		mg/Kg	5	1/24/2020 4:28:10 AM	R66046
1,2-Dichloropropane	ND	0.017	0.23		mg/Kg	5	1/24/2020 4:28:10 AM	R66046
1,3-Dichloropropane	ND	0.025	0.23		mg/Kg	5	1/24/2020 4:28:10 AM	R66046
2,2-Dichloropropane	ND	0.075	0.46		mg/Kg	5	1/24/2020 4:28:10 AM	R66046
1,1-Dichloropropene	ND	0.021	0.46		mg/Kg	5	1/24/2020 4:28:10 AM	R66046
Hexachlorobutadiene	ND	0.023	0.46		mg/Kg	5	1/24/2020 4:28:10 AM	R66046
2-Hexanone	ND	0.038	2.3		mg/Kg	5	1/24/2020 4:28:10 AM	R66046
Isopropylbenzene	ND	0.017	0.23		mg/Kg	5	1/24/2020 4:28:10 AM	R66046
4-Isopropyltoluene	ND	0.019	0.23		mg/Kg	5	1/24/2020 4:28:10 AM	R66046
4-Methyl-2-pentanone	ND	0.044	2.3		mg/Kg	5	1/24/2020 4:28:10 AM	R66046
Methylene chloride	ND	0.041	0.69		mg/Kg	5	1/24/2020 4:28:10 AM	R66046
n-Butylbenzene	ND	0.022	0.69		mg/Kg	5	1/24/2020 4:28:10 AM	R66046
n-Propylbenzene	ND	0.018	0.23		mg/Kg	5	1/24/2020 4:28:10 AM	R66046
sec-Butylbenzene	ND	0.026	0.23		mg/Kg	5	1/24/2020 4:28:10 AM	R66046
Styrene	ND	0.018	0.23		mg/Kg	5	1/24/2020 4:28:10 AM	R66046
tert-Butylbenzene	ND	0.022	0.23		mg/Kg	5	1/24/2020 4:28:10 AM	R66046
1,1,1,2-Tetrachloroethane	ND	0.016	0.23		mg/Kg	5	1/24/2020 4:28:10 AM	R66046
1,1,2,2-Tetrachloroethane	ND	0.023	0.23		mg/Kg	5	1/24/2020 4:28:10 AM	R66046

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Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-1 Surf
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 8:45:00 AM
Lab ID: 2001739-037 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Tetrachloroethene (PCE)	ND	0.018	0.23		mg/Kg	5	1/24/2020 4:28:10 AM	R66046
trans-1,2-DCE	ND	0.021	0.23		mg/Kg	5	1/24/2020 4:28:10 AM	R66046
trans-1,3-Dichloropropene	ND	0.024	0.23		mg/Kg	5	1/24/2020 4:28:10 AM	R66046
1,2,3-Trichlorobenzene	ND	0.020	0.46		mg/Kg	5	1/24/2020 4:28:10 AM	R66046
1,2,4-Trichlorobenzene	ND	0.023	0.23		mg/Kg	5	1/24/2020 4:28:10 AM	R66046
1,1,1-Trichloroethane	ND	0.021	0.23		mg/Kg	5	1/24/2020 4:28:10 AM	R66046
1,1,2-Trichloroethane	ND	0.016	0.23		mg/Kg	5	1/24/2020 4:28:10 AM	R66046
Trichloroethene (TCE)	ND	0.027	0.23		mg/Kg	5	1/24/2020 4:28:10 AM	R66046
Trichlorofluoromethane	ND	0.078	0.23		mg/Kg	5	1/24/2020 4:28:10 AM	R66046
1,2,3-Trichloropropane	ND	0.037	0.46		mg/Kg	5	1/24/2020 4:28:10 AM	R66046
Vinyl chloride	ND	0.015	0.23		mg/Kg	5	1/24/2020 4:28:10 AM	R66046
Xylenes, Total	ND	0.058	0.46		mg/Kg	5	1/24/2020 4:28:10 AM	R66046
Surr: Dibromofluoromethane	96.5		70-130		%Rec	5	1/24/2020 4:28:10 AM	R66046
Surr: 1,2-Dichloroethane-d4	93.8		70-130		%Rec	5	1/24/2020 4:28:10 AM	R66046
Surr: Toluene-d8	99.8		70-130		%Rec	5	1/24/2020 4:28:10 AM	R66046
Surr: 4-Bromofluorobenzene	92.0		70-130		%Rec	5	1/24/2020 4:28:10 AM	R66046
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **JMR**	
Gasoline Range Organics (GRO)	6.9	4.9	23	J	mg/Kg	5	1/24/2020 4:28:10 AM	G66046
Surr: BFB	95.9	0	70-130		%Rec	5	1/24/2020 4:28:10 AM	G66046
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/28/2020 3:11:00 PM	R66159
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	6.45				pH Units	1	1/29/2020 10:26:00 AM	R66160

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-3 Clay 3 ft
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 5:05:00 PM
Lab ID: 2001739-038 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	1700	8.9	37		mg/Kg	5	1/24/2020 11:06:03 AM	49948
Motor Oil Range Organics (MRO)	370	190	190		mg/Kg	5	1/24/2020 11:06:03 AM	49948
Surr: DNOP	143	0	55.1-146		%Rec	5	1/24/2020 11:06:03 AM	49948
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	0.54	0.0093	0.17	H	mg/Kg	5	2/26/2020 4:51:53 PM	50700
MERCURY, TCLP							Analyst: **rde**	
Mercury	ND	0.00075	0.020		mg/L	1	1/28/2020 12:30:31 PM	50081
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.74	5.0		mg/Kg	2	1/24/2020 10:06:40 AM	49993
Arsenic	ND	2.9	5.0		mg/Kg	2	1/24/2020 1:39:18 PM	49993
Barium	160	0.047	0.20		mg/Kg	2	1/24/2020 10:06:40 AM	49993
Beryllium	1.4	0.019	0.30		mg/Kg	2	1/24/2020 10:06:40 AM	49993
Cadmium	ND	0.049	0.20		mg/Kg	2	1/24/2020 10:06:40 AM	49993
Chromium	19	0.16	0.60		mg/Kg	2	1/24/2020 10:06:40 AM	49993
Cobalt	7.6	0.21	0.60		mg/Kg	2	1/24/2020 10:06:40 AM	49993
Lead	ND	0.49	0.50		mg/Kg	2	1/24/2020 10:06:40 AM	49993
Nickel	18	0.30	1.0		mg/Kg	2	1/24/2020 10:06:40 AM	49993
Selenium	ND	2.5	5.0		mg/Kg	2	1/24/2020 12:52:31 PM	49993
Silver	ND	0.065	0.50		mg/Kg	2	1/24/2020 10:06:40 AM	49993
Vanadium	33	0.13	5.0		mg/Kg	2	1/24/2020 10:06:40 AM	49993
Zinc	140	0.80	5.0		mg/Kg	2	1/24/2020 10:06:40 AM	49993
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/25/2020 1:03:05 PM	50045
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.15	0.40	D	mg/Kg	1	2/3/2020 4:36:55 PM	49999
Acenaphthylene	ND	0.18	0.40	D	mg/Kg	1	2/3/2020 4:36:55 PM	49999
Aniline	ND	0.14	0.40	D	mg/Kg	1	2/3/2020 4:36:55 PM	49999
Anthracene	ND	0.15	0.40	D	mg/Kg	1	2/3/2020 4:36:55 PM	49999
Azobenzene	ND	0.20	0.40	D	mg/Kg	1	2/3/2020 4:36:55 PM	49999
Benz(a)anthracene	ND	0.14	0.40	D	mg/Kg	1	2/3/2020 4:36:55 PM	49999
Benzo(a)pyrene	ND	0.22	0.40	D	mg/Kg	1	2/3/2020 4:36:55 PM	49999
Benzo(b)fluoranthene	ND	0.23	0.40	D	mg/Kg	1	2/3/2020 4:36:55 PM	49999
Benzo(g,h,i)perylene	ND	0.21	0.40	D	mg/Kg	1	2/3/2020 4:36:55 PM	49999
Benzo(k)fluoranthene	ND	0.12	0.40	D	mg/Kg	1	2/3/2020 4:36:55 PM	49999
Benzoic acid	ND	0.28	1.0	D	mg/Kg	1	2/3/2020 4:36:55 PM	49999
Benzyl alcohol	ND	0.17	0.40	D	mg/Kg	1	2/3/2020 4:36:55 PM	49999
Bis(2-chloroethoxy)methane	ND	0.17	0.40	D	mg/Kg	1	2/3/2020 4:36:55 PM	49999

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Qualifiers:

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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-3 Clay 3 ft
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 5:05:00 PM
Lab ID: 2001739-038 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.23	0.40	D	mg/Kg	1	2/3/2020 4:36:55 PM	49999
Bis(2-chloroisopropyl)ether	ND	0.17	0.40	D	mg/Kg	1	2/3/2020 4:36:55 PM	49999
Bis(2-ethylhexyl)phthalate	ND	0.45	1.0	D	mg/Kg	1	2/3/2020 4:36:55 PM	49999
4-Bromophenyl phenyl ether	ND	0.23	0.40	D	mg/Kg	1	2/3/2020 4:36:55 PM	49999
Butyl benzyl phthalate	ND	0.13	0.40	D	mg/Kg	1	2/3/2020 4:36:55 PM	49999
Carbazole	ND	0.16	0.40	D	mg/Kg	1	2/3/2020 4:36:55 PM	49999
4-Chloro-3-methylphenol	ND	0.16	1.0	D	mg/Kg	1	2/3/2020 4:36:55 PM	49999
4-Chloroaniline	ND	0.15	1.0	D	mg/Kg	1	2/3/2020 4:36:55 PM	49999
2-Chloronaphthalene	ND	0.17	0.50	D	mg/Kg	1	2/3/2020 4:36:55 PM	49999
2-Chlorophenol	ND	0.23	0.40	D	mg/Kg	1	2/3/2020 4:36:55 PM	49999
4-Chlorophenyl phenyl ether	ND	0.17	0.40	D	mg/Kg	1	2/3/2020 4:36:55 PM	49999
Chrysene	0.25	0.16	0.40	JD	mg/Kg	1	2/3/2020 4:36:55 PM	49999
Di-n-butyl phthalate	ND	0.60	0.80	D	mg/Kg	1	2/3/2020 4:36:55 PM	49999
Di-n-octyl phthalate	ND	0.13	0.80	D	mg/Kg	1	2/3/2020 4:36:55 PM	49999
Dibenz(a,h)anthracene	ND	0.22	0.40	D	mg/Kg	1	2/3/2020 4:36:55 PM	49999
Dibenzofuran	ND	0.20	0.40	D	mg/Kg	1	2/3/2020 4:36:55 PM	49999
1,2-Dichlorobenzene	ND	0.16	0.40	D	mg/Kg	1	2/3/2020 4:36:55 PM	49999
1,3-Dichlorobenzene	ND	0.13	0.40	D	mg/Kg	1	2/3/2020 4:36:55 PM	49999
1,4-Dichlorobenzene	ND	0.17	0.40	D	mg/Kg	1	2/3/2020 4:36:55 PM	49999
3,3´-Dichlorobenzidine	ND	0.17	0.50	D	mg/Kg	1	2/3/2020 4:36:55 PM	49999
Diethyl phthalate	ND	0.61	1.0	D	mg/Kg	1	2/3/2020 4:36:55 PM	49999
Dimethyl phthalate	ND	0.16	0.40	D	mg/Kg	1	2/3/2020 4:36:55 PM	49999
2,4-Dichlorophenol	ND	0.17	0.80	D	mg/Kg	1	2/3/2020 4:36:55 PM	49999
2,4-Dimethylphenol	ND	0.17	0.60	D	mg/Kg	1	2/3/2020 4:36:55 PM	49999
4,6-Dinitro-2-methylphenol	ND	0.15	0.80	D	mg/Kg	1	2/3/2020 4:36:55 PM	49999
2,4-Dinitrophenol	ND	0.12	1.0	D	mg/Kg	1	2/3/2020 4:36:55 PM	49999
2,4-Dinitrotoluene	ND	0.21	1.0	D	mg/Kg	1	2/3/2020 4:36:55 PM	49999
2,6-Dinitrotoluene	ND	0.24	1.0	D	mg/Kg	1	2/3/2020 4:36:55 PM	49999
Fluoranthene	ND	0.15	0.40	D	mg/Kg	1	2/3/2020 4:36:55 PM	49999
Fluorene	0.30	0.16	0.40	JD	mg/Kg	1	2/3/2020 4:36:55 PM	49999
Hexachlorobenzene	ND	0.16	0.40	D	mg/Kg	1	2/3/2020 4:36:55 PM	49999
Hexachlorobutadiene	ND	0.18	0.40	D	mg/Kg	1	2/3/2020 4:36:55 PM	49999
Hexachlorocyclopentadiene	ND	0.19	0.40	D	mg/Kg	1	2/3/2020 4:36:55 PM	49999
Hexachloroethane	ND	0.16	0.40	D	mg/Kg	1	2/3/2020 4:36:55 PM	49999
Indeno(1,2,3-cd)pyrene	ND	0.25	0.40	D	mg/Kg	1	2/3/2020 4:36:55 PM	49999
Isophorone	ND	0.17	0.80	D	mg/Kg	1	2/3/2020 4:36:55 PM	49999
1-Methylnaphthalene	1.0	0.19	0.40	D	mg/Kg	1	2/3/2020 4:36:55 PM	49999
2-Methylnaphthalene	1.0	0.16	0.40	D	mg/Kg	1	2/3/2020 4:36:55 PM	49999
2-Methylphenol	ND	0.17	0.80	D	mg/Kg	1	2/3/2020 4:36:55 PM	49999

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Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-3 Clay 3 ft
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 5:05:00 PM
Lab ID: 2001739-038 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.14	0.40	D	mg/Kg	1	2/3/2020 4:36:55 PM	49999
N-Nitrosodi-n-propylamine	ND	0.20	0.40	D	mg/Kg	1	2/3/2020 4:36:55 PM	49999
N-Nitrosodiphenylamine	ND	0.21	0.40	D	mg/Kg	1	2/3/2020 4:36:55 PM	49999
Naphthalene	ND	0.16	0.40	D	mg/Kg	1	2/3/2020 4:36:55 PM	49999
2-Nitroaniline	ND	0.22	0.40	D	mg/Kg	1	2/3/2020 4:36:55 PM	49999
3-Nitroaniline	ND	0.20	0.40	D	mg/Kg	1	2/3/2020 4:36:55 PM	49999
4-Nitroaniline	ND	0.27	0.80	D	mg/Kg	1	2/3/2020 4:36:55 PM	49999
Nitrobenzene	ND	0.17	0.80	D	mg/Kg	1	2/3/2020 4:36:55 PM	49999
2-Nitrophenol	ND	0.17	0.40	D	mg/Kg	1	2/3/2020 4:36:55 PM	49999
4-Nitrophenol	ND	0.12	0.50	D	mg/Kg	1	2/3/2020 4:36:55 PM	49999
Pentachlorophenol	ND	0.18	0.80	D	mg/Kg	1	2/3/2020 4:36:55 PM	49999
Phenanthrene	1.0	0.20	0.40	D	mg/Kg	1	2/3/2020 4:36:55 PM	49999
Phenol	ND	0.17	0.40	D	mg/Kg	1	2/3/2020 4:36:55 PM	49999
Pyrene	0.33	0.13	0.40	JD	mg/Kg	1	2/3/2020 4:36:55 PM	49999
Pyridine	ND	0.37	0.80	D	mg/Kg	1	2/3/2020 4:36:55 PM	49999
1,2,4-Trichlorobenzene	ND	0.17	0.40	D	mg/Kg	1	2/3/2020 4:36:55 PM	49999
2,4,5-Trichlorophenol	ND	0.13	0.40	D	mg/Kg	1	2/3/2020 4:36:55 PM	49999
2,4,6-Trichlorophenol	ND	0.20	0.40	D	mg/Kg	1	2/3/2020 4:36:55 PM	49999
Surr: 2-Fluorophenol	26.1		26.7-85.9	SD	%Rec	1	2/3/2020 4:36:55 PM	49999
Surr: Phenol-d5	33.5		18.5-101	D	%Rec	1	2/3/2020 4:36:55 PM	49999
Surr: 2,4,6-Tribromophenol	10.3		35.8-85.6	SD	%Rec	1	2/3/2020 4:36:55 PM	49999
Surr: Nitrobenzene-d5	40.6		40.8-95.2	SD	%Rec	1	2/3/2020 4:36:55 PM	49999
Surr: 2-Fluorobiphenyl	38.1		34.7-85.2	D	%Rec	1	2/3/2020 4:36:55 PM	49999
Surr: 4-Terphenyl-d14	31.9		37.4-91.3	SD	%Rec	1	2/3/2020 4:36:55 PM	49999
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Benzene	ND	0.013	0.079		mg/Kg	5	1/24/2020 4:56:29 AM	R66046
Toluene	0.085	0.015	0.16	J	mg/Kg	5	1/24/2020 4:56:29 AM	R66046
Ethylbenzene	0.031	0.0092	0.16	J	mg/Kg	5	1/24/2020 4:56:29 AM	R66046
Methyl tert-butyl ether (MTBE)	ND	0.038	0.16		mg/Kg	5	1/24/2020 4:56:29 AM	R66046
1,2,4-Trimethylbenzene	0.43	0.015	0.16		mg/Kg	5	1/24/2020 4:56:29 AM	R66046
1,3,5-Trimethylbenzene	0.13	0.015	0.16	J	mg/Kg	5	1/24/2020 4:56:29 AM	R66046
1,2-Dichloroethane (EDC)	ND	0.016	0.16		mg/Kg	5	1/24/2020 4:56:29 AM	R66046
1,2-Dibromoethane (EDB)	ND	0.014	0.16		mg/Kg	5	1/24/2020 4:56:29 AM	R66046
Naphthalene	0.51	0.032	0.32		mg/Kg	5	1/24/2020 4:56:29 AM	R66046
1-Methylnaphthalene	2.5	0.091	0.63		mg/Kg	5	1/24/2020 4:56:29 AM	R66046
2-Methylnaphthalene	3.6	0.069	0.63		mg/Kg	5	1/24/2020 4:56:29 AM	R66046
Acetone	ND	0.13	2.4		mg/Kg	5	1/24/2020 4:56:29 AM	R66046
Bromobenzene	ND	0.015	0.16		mg/Kg	5	1/24/2020 4:56:29 AM	R66046
Bromodichloromethane	ND	0.014	0.16		mg/Kg	5	1/24/2020 4:56:29 AM	R66046

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ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
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J	Analyte detected below quantitation limits
P	Sample pH Not In Range
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-3 Clay 3 ft
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 5:05:00 PM
Lab ID: 2001739-038 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Bromoform	ND	0.014	0.16		mg/Kg	5	1/24/2020 4:56:29 AM	R66046
Bromomethane	ND	0.038	0.48		mg/Kg	5	1/24/2020 4:56:29 AM	R66046
2-Butanone	0.32	0.18	1.6	J	mg/Kg	5	1/24/2020 4:56:29 AM	R66046
Carbon disulfide	ND	0.052	1.6		mg/Kg	5	1/24/2020 4:56:29 AM	R66046
Carbon tetrachloride	ND	0.015	0.16		mg/Kg	5	1/24/2020 4:56:29 AM	R66046
Chlorobenzene	ND	0.020	0.16		mg/Kg	5	1/24/2020 4:56:29 AM	R66046
Chloroethane	ND	0.023	0.32		mg/Kg	5	1/24/2020 4:56:29 AM	R66046
Chloroform	ND	0.013	0.16		mg/Kg	5	1/24/2020 4:56:29 AM	R66046
Chloromethane	ND	0.015	0.48		mg/Kg	5	1/24/2020 4:56:29 AM	R66046
2-Chlorotoluene	ND	0.014	0.16		mg/Kg	5	1/24/2020 4:56:29 AM	R66046
4-Chlorotoluene	ND	0.013	0.16		mg/Kg	5	1/24/2020 4:56:29 AM	R66046
cis-1,2-DCE	0.032	0.022	0.16	J	mg/Kg	5	1/24/2020 4:56:29 AM	R66046
cis-1,3-Dichloropropene	ND	0.013	0.16		mg/Kg	5	1/24/2020 4:56:29 AM	R66046
1,2-Dibromo-3-chloropropane	ND	0.016	0.32		mg/Kg	5	1/24/2020 4:56:29 AM	R66046
Dibromochloromethane	ND	0.011	0.16		mg/Kg	5	1/24/2020 4:56:29 AM	R66046
Dibromomethane	ND	0.017	0.16		mg/Kg	5	1/24/2020 4:56:29 AM	R66046
1,2-Dichlorobenzene	ND	0.013	0.16		mg/Kg	5	1/24/2020 4:56:29 AM	R66046
1,3-Dichlorobenzene	ND	0.014	0.16		mg/Kg	5	1/24/2020 4:56:29 AM	R66046
1,4-Dichlorobenzene	ND	0.013	0.16		mg/Kg	5	1/24/2020 4:56:29 AM	R66046
Dichlorodifluoromethane	ND	0.037	0.16		mg/Kg	5	1/24/2020 4:56:29 AM	R66046
1,1-Dichloroethane	ND	0.010	0.16		mg/Kg	5	1/24/2020 4:56:29 AM	R66046
1,1-Dichloroethene	ND	0.063	0.16		mg/Kg	5	1/24/2020 4:56:29 AM	R66046
1,2-Dichloropropane	ND	0.012	0.16		mg/Kg	5	1/24/2020 4:56:29 AM	R66046
1,3-Dichloropropane	ND	0.017	0.16		mg/Kg	5	1/24/2020 4:56:29 AM	R66046
2,2-Dichloropropane	ND	0.052	0.32		mg/Kg	5	1/24/2020 4:56:29 AM	R66046
1,1-Dichloropropene	ND	0.014	0.32		mg/Kg	5	1/24/2020 4:56:29 AM	R66046
Hexachlorobutadiene	ND	0.016	0.32		mg/Kg	5	1/24/2020 4:56:29 AM	R66046
2-Hexanone	0.28	0.026	1.6	J	mg/Kg	5	1/24/2020 4:56:29 AM	R66046
Isopropylbenzene	ND	0.011	0.16		mg/Kg	5	1/24/2020 4:56:29 AM	R66046
4-Isopropyltoluene	0.018	0.013	0.16	J	mg/Kg	5	1/24/2020 4:56:29 AM	R66046
4-Methyl-2-pentanone	ND	0.030	1.6		mg/Kg	5	1/24/2020 4:56:29 AM	R66046
Methylene chloride	ND	0.028	0.48		mg/Kg	5	1/24/2020 4:56:29 AM	R66046
n-Butylbenzene	0.070	0.015	0.48	J	mg/Kg	5	1/24/2020 4:56:29 AM	R66046
n-Propylbenzene	0.033	0.013	0.16	J	mg/Kg	5	1/24/2020 4:56:29 AM	R66046
sec-Butylbenzene	ND	0.018	0.16		mg/Kg	5	1/24/2020 4:56:29 AM	R66046
Styrene	ND	0.012	0.16		mg/Kg	5	1/24/2020 4:56:29 AM	R66046
tert-Butylbenzene	ND	0.015	0.16		mg/Kg	5	1/24/2020 4:56:29 AM	R66046
1,1,1,2-Tetrachloroethane	ND	0.011	0.16		mg/Kg	5	1/24/2020 4:56:29 AM	R66046
1,1,2,2-Tetrachloroethane	ND	0.016	0.16		mg/Kg	5	1/24/2020 4:56:29 AM	R66046

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Qualifiers:

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PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-3 Clay 3 ft
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 5:05:00 PM
Lab ID: 2001739-038 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Tetrachloroethene (PCE)	ND	0.013	0.16		mg/Kg	5	1/24/2020 4:56:29 AM	R66046
trans-1,2-DCE	ND	0.015	0.16		mg/Kg	5	1/24/2020 4:56:29 AM	R66046
trans-1,3-Dichloropropene	ND	0.017	0.16		mg/Kg	5	1/24/2020 4:56:29 AM	R66046
1,2,3-Trichlorobenzene	ND	0.014	0.32		mg/Kg	5	1/24/2020 4:56:29 AM	R66046
1,2,4-Trichlorobenzene	ND	0.016	0.16		mg/Kg	5	1/24/2020 4:56:29 AM	R66046
1,1,1-Trichloroethane	ND	0.014	0.16		mg/Kg	5	1/24/2020 4:56:29 AM	R66046
1,1,2-Trichloroethane	ND	0.011	0.16		mg/Kg	5	1/24/2020 4:56:29 AM	R66046
Trichloroethene (TCE)	ND	0.018	0.16		mg/Kg	5	1/24/2020 4:56:29 AM	R66046
Trichlorofluoromethane	ND	0.054	0.16		mg/Kg	5	1/24/2020 4:56:29 AM	R66046
1,2,3-Trichloropropane	ND	0.026	0.32		mg/Kg	5	1/24/2020 4:56:29 AM	R66046
Vinyl chloride	ND	0.010	0.16		mg/Kg	5	1/24/2020 4:56:29 AM	R66046
Xylenes, Total	0.37	0.040	0.32		mg/Kg	5	1/24/2020 4:56:29 AM	R66046
Surr: Dibromofluoromethane	95.1		70-130		%Rec	5	1/24/2020 4:56:29 AM	R66046
Surr: 1,2-Dichloroethane-d4	98.0		70-130		%Rec	5	1/24/2020 4:56:29 AM	R66046
Surr: Toluene-d8	102		70-130		%Rec	5	1/24/2020 4:56:29 AM	R66046
Surr: 4-Bromofluorobenzene	87.0		70-130		%Rec	5	1/24/2020 4:56:29 AM	R66046
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **JMR**	
Gasoline Range Organics (GRO)	23	3.4	16		mg/Kg	5	1/24/2020 4:56:29 AM	G66046
Surr: BFB	96.0	0	70-130		%Rec	5	1/24/2020 4:56:29 AM	G66046
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/28/2020 3:11:00 PM	R66159
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	6.61				pH Units	1	1/29/2020 10:26:00 AM	R66160

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E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-10 0.0
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 9:21:00 AM
Lab ID: 2001739-039 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	110000	1100	4700		mg/Kg	500	1/22/2020 10:48:07 PM	49948
Motor Oil Range Organics (MRO)	29000	24000	24000		mg/Kg	500	1/22/2020 10:48:07 PM	49948
Surr: DNOP	0	0	55.1-146	S	%Rec	500	1/22/2020 10:48:07 PM	49948
EPA METHOD 7471: MERCURY							Analyst: **JLF**	
Mercury	ND	0.0019	0.034	H	mg/Kg	1	2/28/2020 7:03:59 PM	50752
MERCURY, TCLP							Analyst: **rde**	
Mercury	ND	0.00075	0.020		mg/L	1	1/28/2020 12:32:31 PM	50081
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.76	5.2		mg/Kg	2	1/24/2020 10:08:20 AM	49993
Arsenic	16	3.0	5.2		mg/Kg	2	1/24/2020 1:40:42 PM	49993
Barium	170	0.048	0.21		mg/Kg	2	1/24/2020 10:08:20 AM	49993
Beryllium	0.33	0.019	0.31		mg/Kg	2	1/24/2020 10:08:20 AM	49993
Cadmium	ND	0.050	0.21		mg/Kg	2	1/24/2020 10:08:20 AM	49993
Chromium	51	0.17	0.62		mg/Kg	2	1/24/2020 10:08:20 AM	49993
Cobalt	8.2	0.22	0.62		mg/Kg	2	1/24/2020 10:08:20 AM	49993
Lead	100	0.50	0.52		mg/Kg	2	1/24/2020 10:08:20 AM	49993
Nickel	93	0.31	1.0		mg/Kg	2	1/24/2020 10:08:20 AM	49993
Selenium	ND	2.6	5.2		mg/Kg	2	1/24/2020 12:53:55 PM	49993
Silver	ND	0.067	0.52		mg/Kg	2	1/24/2020 10:08:20 AM	49993
Vanadium	26	0.14	5.2		mg/Kg	2	1/24/2020 10:08:20 AM	49993
Zinc	5200	21	130		mg/Kg	50	1/24/2020 11:09:45 AM	49993
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/28/2020 11:14:36 AM	50060
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	14	37	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999
Acenaphthylene	ND	16	37	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999
Aniline	ND	13	37	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999
Anthracene	ND	14	37	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999
Azobenzene	ND	19	37	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999
Benz(a)anthracene	ND	13	37	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999
Benzo(a)pyrene	ND	20	37	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999
Benzo(b)fluoranthene	ND	21	37	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999
Benzo(g,h,i)perylene	ND	19	37	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999
Benzo(k)fluoranthene	ND	11	37	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999
Benzoic acid	ND	25	92	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999
Benzyl alcohol	ND	15	37	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999
Bis(2-chloroethoxy)methane	ND	15	37	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-10 0.0
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 9:21:00 AM
Lab ID: 2001739-039 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	21	37	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999
Bis(2-chloroisopropyl)ether	ND	16	37	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999
Bis(2-ethylhexyl)phthalate	ND	41	92	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999
4-Bromophenyl phenyl ether	ND	21	37	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999
Butyl benzyl phthalate	ND	12	37	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999
Carbazole	ND	15	37	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999
4-Chloro-3-methylphenol	ND	14	92	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999
4-Chloroaniline	ND	14	92	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999
2-Chloronaphthalene	ND	15	46	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999
2-Chlorophenol	ND	21	37	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999
4-Chlorophenyl phenyl ether	ND	15	37	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999
Chrysene	ND	14	37	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999
Di-n-butyl phthalate	ND	55	73	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999
Di-n-octyl phthalate	ND	12	73	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999
Dibenz(a,h)anthracene	ND	20	37	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999
Dibenzofuran	ND	18	37	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999
1,2-Dichlorobenzene	ND	14	37	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999
1,3-Dichlorobenzene	ND	12	37	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999
1,4-Dichlorobenzene	ND	15	37	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999
3,3´-Dichlorobenzidine	ND	16	46	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999
Diethyl phthalate	ND	56	92	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999
Dimethyl phthalate	ND	15	37	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999
2,4-Dichlorophenol	ND	15	73	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999
2,4-Dimethylphenol	ND	15	55	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999
4,6-Dinitro-2-methylphenol	ND	13	73	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999
2,4-Dinitrophenol	ND	11	92	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999
2,4-Dinitrotoluene	ND	19	92	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999
2,6-Dinitrotoluene	ND	22	92	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999
Fluoranthene	ND	14	37	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999
Fluorene	47	14	37	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999
Hexachlorobenzene	ND	14	37	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999
Hexachlorobutadiene	ND	16	37	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999
Hexachlorocyclopentadiene	ND	18	37	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999
Hexachloroethane	ND	15	37	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999
Indeno(1,2,3-cd)pyrene	ND	23	37	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999
Isophorone	ND	16	73	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999
1-Methylnaphthalene	210	17	37	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999
2-Methylnaphthalene	190	15	37	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999
2-Methylphenol	ND	15	73	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999

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Qualifiers:

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B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-10 0.0
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 9:21:00 AM
Lab ID: 2001739-039 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	13	37	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999
N-Nitrosodi-n-propylamine	ND	18	37	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999
N-Nitrosodiphenylamine	ND	19	37	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999
Naphthalene	32	15	37	JD	mg/Kg	2	2/3/2020 5:06:02 PM	49999
2-Nitroaniline	ND	20	37	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999
3-Nitroaniline	ND	18	37	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999
4-Nitroaniline	ND	25	73	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999
Nitrobenzene	ND	16	73	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999
2-Nitrophenol	ND	15	37	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999
4-Nitrophenol	ND	11	46	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999
Pentachlorophenol	ND	16	73	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999
Phenanthrene	130	19	37	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999
Phenol	ND	16	37	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999
Pyrene	30	12	37	JD	mg/Kg	2	2/3/2020 5:06:02 PM	49999
Pyridine	ND	34	73	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999
1,2,4-Trichlorobenzene	ND	16	37	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999
2,4,5-Trichlorophenol	ND	12	37	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999
2,4,6-Trichlorophenol	ND	18	37	D	mg/Kg	2	2/3/2020 5:06:02 PM	49999
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	2	2/3/2020 5:06:02 PM	49999
Surr: Phenol-d5	0		18.5-101	SD	%Rec	2	2/3/2020 5:06:02 PM	49999
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	2	2/3/2020 5:06:02 PM	49999
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	2	2/3/2020 5:06:02 PM	49999
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	2	2/3/2020 5:06:02 PM	49999
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	2	2/3/2020 5:06:02 PM	49999
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Benzene	0.94	0.020	0.12		mg/Kg	5	1/24/2020 5:24:48 AM	R66046
Toluene	9.3	0.023	0.24		mg/Kg	5	1/24/2020 5:24:48 AM	R66046
Ethylbenzene	4.1	0.014	0.24		mg/Kg	5	1/24/2020 5:24:48 AM	R66046
Methyl tert-butyl ether (MTBE)	0.063	0.058	0.24	J	mg/Kg	5	1/24/2020 5:24:48 AM	R66046
1,2,4-Trimethylbenzene	13	0.089	0.97		mg/Kg	20	1/25/2020 3:36:42 AM	R66078
1,3,5-Trimethylbenzene	4.7	0.094	0.97		mg/Kg	20	1/25/2020 3:36:42 AM	R66078
1,2-Dichloroethane (EDC)	ND	0.025	0.24		mg/Kg	5	1/24/2020 5:24:48 AM	R66046
1,2-Dibromoethane (EDB)	ND	0.022	0.24		mg/Kg	5	1/24/2020 5:24:48 AM	R66046
Naphthalene	8.9	0.19	1.9		mg/Kg	20	1/25/2020 3:36:42 AM	R66078
1-Methylnaphthalene	35	0.56	3.9		mg/Kg	20	1/25/2020 3:36:42 AM	R66078
2-Methylnaphthalene	42	0.42	3.9		mg/Kg	20	1/25/2020 3:36:42 AM	R66078
Acetone	0.39	0.20	3.6	J	mg/Kg	5	1/24/2020 5:24:48 AM	R66046
Bromobenzene	ND	0.093	0.97		mg/Kg	20	1/25/2020 3:36:42 AM	R66078
Bromodichloromethane	0.12	0.022	0.24	J	mg/Kg	5	1/24/2020 5:24:48 AM	R66046

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Qualifiers:

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ND	Not Detected at the Reporting Limit
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-10 0.0
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 9:21:00 AM
Lab ID: 2001739-039 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Bromoform	ND	0.088	0.97		mg/Kg	20	1/25/2020 3:36:42 AM	R66078
Bromomethane	0.12	0.059	0.73	J	mg/Kg	5	1/24/2020 5:24:48 AM	R66046
2-Butanone	ND	0.28	2.4		mg/Kg	5	1/24/2020 5:24:48 AM	R66046
Carbon disulfide	0.26	0.080	2.4	J	mg/Kg	5	1/24/2020 5:24:48 AM	R66046
Carbon tetrachloride	ND	0.023	0.24		mg/Kg	5	1/24/2020 5:24:48 AM	R66046
Chlorobenzene	ND	0.031	0.24		mg/Kg	5	1/24/2020 5:24:48 AM	R66046
Chloroethane	ND	0.036	0.49		mg/Kg	5	1/24/2020 5:24:48 AM	R66046
Chloroform	0.19	0.020	0.24	J	mg/Kg	5	1/24/2020 5:24:48 AM	R66046
Chloromethane	ND	0.023	0.73		mg/Kg	5	1/24/2020 5:24:48 AM	R66046
2-Chlorotoluene	ND	0.085	0.97		mg/Kg	20	1/25/2020 3:36:42 AM	R66078
4-Chlorotoluene	ND	0.080	0.97		mg/Kg	20	1/25/2020 3:36:42 AM	R66078
cis-1,2-DCE	0.12	0.033	0.24	J	mg/Kg	5	1/24/2020 5:24:48 AM	R66046
cis-1,3-Dichloropropene	ND	0.020	0.24		mg/Kg	5	1/24/2020 5:24:48 AM	R66046
1,2-Dibromo-3-chloropropane	ND	0.10	1.9		mg/Kg	20	1/25/2020 3:36:42 AM	R66078
Dibromochloromethane	ND	0.017	0.24		mg/Kg	5	1/24/2020 5:24:48 AM	R66046
Dibromomethane	ND	0.026	0.24		mg/Kg	5	1/24/2020 5:24:48 AM	R66046
1,2-Dichlorobenzene	ND	0.080	0.97		mg/Kg	20	1/25/2020 3:36:42 AM	R66078
1,3-Dichlorobenzene	ND	0.084	0.97		mg/Kg	20	1/25/2020 3:36:42 AM	R66078
1,4-Dichlorobenzene	ND	0.081	0.97		mg/Kg	20	1/25/2020 3:36:42 AM	R66078
Dichlorodifluoromethane	ND	0.056	0.24		mg/Kg	5	1/24/2020 5:24:48 AM	R66046
1,1-Dichloroethane	ND	0.016	0.24		mg/Kg	5	1/24/2020 5:24:48 AM	R66046
1,1-Dichloroethene	ND	0.097	0.24		mg/Kg	5	1/24/2020 5:24:48 AM	R66046
1,2-Dichloropropane	ND	0.018	0.24		mg/Kg	5	1/24/2020 5:24:48 AM	R66046
1,3-Dichloropropane	ND	0.026	0.24		mg/Kg	5	1/24/2020 5:24:48 AM	R66046
2,2-Dichloropropane	ND	0.079	0.49		mg/Kg	5	1/24/2020 5:24:48 AM	R66046
1,1-Dichloropropene	ND	0.022	0.49		mg/Kg	5	1/24/2020 5:24:48 AM	R66046
Hexachlorobutadiene	ND	0.099	1.9		mg/Kg	20	1/25/2020 3:36:42 AM	R66078
2-Hexanone	ND	0.040	2.4		mg/Kg	5	1/24/2020 5:24:48 AM	R66046
Isopropylbenzene	1.4	0.017	0.24		mg/Kg	5	1/24/2020 5:24:48 AM	R66046
4-Isopropyltoluene	1.2	0.080	0.97		mg/Kg	20	1/25/2020 3:36:42 AM	R66078
4-Methyl-2-pentanone	ND	0.046	2.4		mg/Kg	5	1/24/2020 5:24:48 AM	R66046
Methylene chloride	ND	0.043	0.73		mg/Kg	5	1/24/2020 5:24:48 AM	R66046
n-Butylbenzene	1.9	0.091	2.9	J	mg/Kg	20	1/25/2020 3:36:42 AM	R66078
n-Propylbenzene	2.3	0.077	0.97		mg/Kg	20	1/25/2020 3:36:42 AM	R66078
sec-Butylbenzene	1.4	0.11	0.97		mg/Kg	20	1/25/2020 3:36:42 AM	R66078
Styrene	ND	0.019	0.24		mg/Kg	5	1/24/2020 5:24:48 AM	R66046
tert-Butylbenzene	ND	0.092	0.97		mg/Kg	20	1/25/2020 3:36:42 AM	R66078
1,1,1,2-Tetrachloroethane	ND	0.016	0.24		mg/Kg	5	1/24/2020 5:24:48 AM	R66046
1,1,2,2-Tetrachloroethane	ND	0.098	0.97		mg/Kg	20	1/25/2020 3:36:42 AM	R66078

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

Qualifiers:

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D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
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J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-10 0.0
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 9:21:00 AM
Lab ID: 2001739-039 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Tetrachloroethene (PCE)	ND	0.019	0.24		mg/Kg	5	1/24/2020 5:24:48 AM	R66046
trans-1,2-DCE	ND	0.022	0.24		mg/Kg	5	1/24/2020 5:24:48 AM	R66046
trans-1,3-Dichloropropene	ND	0.026	0.24		mg/Kg	5	1/24/2020 5:24:48 AM	R66046
1,2,3-Trichlorobenzene	ND	0.085	1.9		mg/Kg	20	1/25/2020 3:36:42 AM	R66078
1,2,4-Trichlorobenzene	ND	0.098	0.97		mg/Kg	20	1/25/2020 3:36:42 AM	R66078
1,1,1-Trichloroethane	ND	0.022	0.24		mg/Kg	5	1/24/2020 5:24:48 AM	R66046
1,1,2-Trichloroethane	ND	0.017	0.24		mg/Kg	5	1/24/2020 5:24:48 AM	R66046
Trichloroethene (TCE)	ND	0.028	0.24		mg/Kg	5	1/24/2020 5:24:48 AM	R66046
Trichlorofluoromethane	ND	0.082	0.24		mg/Kg	5	1/24/2020 5:24:48 AM	R66046
1,2,3-Trichloropropane	ND	0.16	1.9		mg/Kg	20	1/25/2020 3:36:42 AM	R66078
Vinyl chloride	ND	0.016	0.24		mg/Kg	5	1/24/2020 5:24:48 AM	R66046
Xylenes, Total	25	0.061	0.49		mg/Kg	5	1/24/2020 5:24:48 AM	R66046
Surr: Dibromofluoromethane	98.6		70-130		%Rec	5	1/24/2020 5:24:48 AM	R66046
Surr: 1,2-Dichloroethane-d4	96.2		70-130		%Rec	5	1/24/2020 5:24:48 AM	R66046
Surr: Toluene-d8	102		70-130		%Rec	5	1/24/2020 5:24:48 AM	R66046
Surr: 4-Bromofluorobenzene	80.6		70-130		%Rec	20	1/25/2020 3:36:42 AM	R66078
VOLATILES BY 8260B/1311							Analyst: **RAA**	
Benzene	0.018	0.010	0.50	J	mg/L	1	1/26/2020 7:02:00 PM	50049
Surr: 1,2-Dichloroethane-d4	108	0	70-130		%Rec	1	1/26/2020 7:02:00 PM	50049
Surr: Dibromofluoromethane	101	0	70-130		%Rec	1	1/26/2020 7:02:00 PM	50049
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **JMR**	
Gasoline Range Organics (GRO)	450	5.2	24		mg/Kg	5	1/24/2020 5:24:48 AM	G66046
Surr: BFB	101	0	70-130		%Rec	5	1/24/2020 5:24:48 AM	G66046
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/28/2020 3:11:00 PM	R66159
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	6.35				pH Units	1	1/29/2020 10:26:00 AM	R66160

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

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup **Client Sample ID:** Dup 8
Project: Gallup SWMUI Sampling Event **Collection Date:**
Lab ID: 2001739-040 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	26000	830	3500		mg/Kg	500	1/22/2020 10:57:02 PM	49948
Motor Oil Range Organics (MRO)	18000	17000	17000		mg/Kg	500	1/22/2020 10:57:02 PM	49948
Surr: DNOP	0	0	55.1-146	S	%Rec	500	1/22/2020 10:57:02 PM	49948
EPA METHOD 7471: MERCURY							Analyst: **JLF**	
Mercury	0.081	0.0018	0.033		mg/Kg	1	2/28/2020 7:06:32 PM	50752
MERCURY, TCLP							Analyst: **rde**	
Mercury	ND	0.00075	0.020		mg/L	1	1/28/2020 12:38:46 PM	50081
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.73	5.0		mg/Kg	2	1/24/2020 10:10:01 AM	49993
Arsenic	ND	2.8	5.0		mg/Kg	2	1/24/2020 1:42:07 PM	49993
Barium	360	0.046	0.20		mg/Kg	2	1/24/2020 10:10:01 AM	49993
Beryllium	0.65	0.018	0.30		mg/Kg	2	1/24/2020 10:10:01 AM	49993
Cadmium	ND	0.048	0.20		mg/Kg	2	1/24/2020 10:10:01 AM	49993
Chromium	13	0.16	0.60		mg/Kg	2	1/24/2020 10:10:01 AM	49993
Cobalt	3.8	0.21	0.60		mg/Kg	2	1/24/2020 10:10:01 AM	49993
Lead	0.74	0.48	0.50		mg/Kg	2	1/24/2020 10:10:01 AM	49993
Nickel	7.6	0.30	1.0		mg/Kg	2	1/24/2020 10:10:01 AM	49993
Selenium	ND	2.5	5.0		mg/Kg	2	1/24/2020 12:55:19 PM	49993
Silver	ND	0.064	0.50		mg/Kg	2	1/24/2020 10:10:01 AM	49993
Vanadium	18	0.13	5.0		mg/Kg	2	1/24/2020 10:10:01 AM	49993
Zinc	130	0.79	5.0		mg/Kg	2	1/24/2020 10:10:01 AM	49993
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/28/2020 11:18:47 AM	50060
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	8.8	23	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999
Acenaphthylene	ND	10	23	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999
Aniline	ND	8.0	23	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999
Anthracene	ND	9.0	23	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999
Azobenzene	ND	12	23	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999
Benz(a)anthracene	ND	8.1	23	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999
Benzo(a)pyrene	ND	13	23	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999
Benzo(b)fluoranthene	ND	13	23	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999
Benzo(g,h,i)perylene	ND	12	23	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999
Benzo(k)fluoranthene	ND	7.0	23	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999
Benzoic acid	ND	16	59	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999
Benzyl alcohol	ND	9.7	23	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999
Bis(2-chloroethoxy)methane	ND	9.7	23	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999

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

Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: Dup 8
Project: Gallup SWMUI Sampling Event
Collection Date:
Lab ID: 2001739-040 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	14	23	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999
Bis(2-chloroisopropyl)ether	ND	10	23	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999
Bis(2-ethylhexyl)phthalate	ND	26	59	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999
4-Bromophenyl phenyl ether	ND	14	23	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999
Butyl benzyl phthalate	ND	7.9	23	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999
Carbazole	ND	9.3	23	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999
4-Chloro-3-methylphenol	ND	9.2	59	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999
4-Chloroaniline	ND	9.0	59	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999
2-Chloronaphthalene	ND	9.9	29	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999
2-Chlorophenol	ND	13	23	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999
4-Chlorophenyl phenyl ether	ND	9.9	23	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999
Chrysene	19	9.2	23	JD	mg/Kg	5	2/3/2020 5:35:07 PM	49999
Di-n-butyl phthalate	ND	35	47	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999
Di-n-octyl phthalate	ND	7.8	47	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999
Dibenz(a,h)anthracene	ND	13	23	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999
Dibenzofuran	ND	12	23	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999
1,2-Dichlorobenzene	ND	9.2	23	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999
1,3-Dichlorobenzene	ND	7.8	23	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999
1,4-Dichlorobenzene	ND	9.7	23	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999
3,3´-Dichlorobenzidine	ND	10	29	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999
Diethyl phthalate	ND	36	59	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999
Dimethyl phthalate	ND	9.5	23	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999
2,4-Dichlorophenol	ND	9.9	47	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999
2,4-Dimethylphenol	ND	9.7	35	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999
4,6-Dinitro-2-methylphenol	ND	8.6	47	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999
2,4-Dinitrophenol	ND	6.8	59	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999
2,4-Dinitrotoluene	ND	12	59	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999
2,6-Dinitrotoluene	ND	14	59	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999
Fluoranthene	ND	9.0	23	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999
Fluorene	ND	9.2	23	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999
Hexachlorobenzene	ND	9.2	23	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999
Hexachlorobutadiene	ND	10	23	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999
Hexachlorocyclopentadiene	ND	11	23	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999
Hexachloroethane	ND	9.6	23	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999
Indeno(1,2,3-cd)pyrene	ND	14	23	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999
Isophorone	ND	10	47	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999
1-Methylnaphthalene	ND	11	23	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999
2-Methylnaphthalene	ND	9.5	23	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999
2-Methylphenol	ND	9.9	47	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999

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

Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: Dup 8
Project: Gallup SWMUI Sampling Event
Collection Date:
Lab ID: 2001739-040 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	8.5	23	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999
N-Nitrosodi-n-propylamine	ND	12	23	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999
N-Nitrosodiphenylamine	ND	12	23	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999
Naphthalene	ND	9.6	23	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999
2-Nitroaniline	ND	13	23	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999
3-Nitroaniline	ND	12	23	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999
4-Nitroaniline	ND	16	47	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999
Nitrobenzene	ND	10	47	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999
2-Nitrophenol	ND	9.7	23	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999
4-Nitrophenol	ND	6.9	29	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999
Pentachlorophenol	ND	11	47	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999
Phenanthrene	ND	12	23	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999
Phenol	ND	10	23	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999
Pyrene	9.2	7.8	23	JD	mg/Kg	5	2/3/2020 5:35:07 PM	49999
Pyridine	ND	22	47	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999
1,2,4-Trichlorobenzene	ND	10	23	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999
2,4,5-Trichlorophenol	ND	7.6	23	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999
2,4,6-Trichlorophenol	ND	12	23	D	mg/Kg	5	2/3/2020 5:35:07 PM	49999
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	5	2/3/2020 5:35:07 PM	49999
Surr: Phenol-d5	0		18.5-101	SD	%Rec	5	2/3/2020 5:35:07 PM	49999
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	5	2/3/2020 5:35:07 PM	49999
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	5	2/3/2020 5:35:07 PM	49999
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	5	2/3/2020 5:35:07 PM	49999
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	5	2/3/2020 5:35:07 PM	49999
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Benzene	ND	0.0031	0.019		mg/Kg	1	1/25/2020 4:33:22 AM	R66078
Toluene	0.0094	0.0036	0.038	J	mg/Kg	1	1/25/2020 4:33:22 AM	R66078
Ethylbenzene	ND	0.0022	0.038		mg/Kg	1	1/25/2020 4:33:22 AM	R66078
Methyl tert-butyl ether (MTBE)	ND	0.0090	0.038		mg/Kg	1	1/25/2020 4:33:22 AM	R66078
1,2,4-Trimethylbenzene	0.011	0.0035	0.038	J	mg/Kg	1	1/25/2020 4:33:22 AM	R66078
1,3,5-Trimethylbenzene	ND	0.0037	0.038		mg/Kg	1	1/25/2020 4:33:22 AM	R66078
1,2-Dichloroethane (EDC)	ND	0.0039	0.038		mg/Kg	1	1/25/2020 4:33:22 AM	R66078
1,2-Dibromoethane (EDB)	ND	0.0034	0.038		mg/Kg	1	1/25/2020 4:33:22 AM	R66078
Naphthalene	ND	0.0076	0.076		mg/Kg	1	1/25/2020 4:33:22 AM	R66078
1-Methylnaphthalene	ND	0.022	0.15		mg/Kg	1	1/25/2020 4:33:22 AM	R66078
2-Methylnaphthalene	0.027	0.017	0.15	J	mg/Kg	1	1/25/2020 4:33:22 AM	R66078
Acetone	0.064	0.031	0.57	J	mg/Kg	1	1/25/2020 4:33:22 AM	R66078
Bromobenzene	ND	0.0036	0.038		mg/Kg	1	1/25/2020 4:33:22 AM	R66078
Bromodichloromethane	ND	0.0034	0.038		mg/Kg	1	1/25/2020 4:33:22 AM	R66078

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Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: Dup 8
Project: Gallup SWMUI Sampling Event
Collection Date:
Lab ID: 2001739-040 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Bromoform	ND	0.0034	0.038		mg/Kg	1	1/25/2020 4:33:22 AM	R66078
Bromomethane	0.021	0.0091	0.11	J	mg/Kg	1	1/25/2020 4:33:22 AM	R66078
2-Butanone	0.047	0.044	0.38	J	mg/Kg	1	1/25/2020 4:33:22 AM	R66078
Carbon disulfide	ND	0.012	0.38		mg/Kg	1	1/25/2020 4:33:22 AM	R66078
Carbon tetrachloride	ND	0.0036	0.038		mg/Kg	1	1/25/2020 4:33:22 AM	R66078
Chlorobenzene	ND	0.0048	0.038		mg/Kg	1	1/25/2020 4:33:22 AM	R66078
Chloroethane	ND	0.0056	0.076		mg/Kg	1	1/25/2020 4:33:22 AM	R66078
Chloroform	ND	0.0030	0.038		mg/Kg	1	1/25/2020 4:33:22 AM	R66078
Chloromethane	ND	0.0036	0.11		mg/Kg	1	1/25/2020 4:33:22 AM	R66078
2-Chlorotoluene	ND	0.0033	0.038		mg/Kg	1	1/25/2020 4:33:22 AM	R66078
4-Chlorotoluene	ND	0.0031	0.038		mg/Kg	1	1/25/2020 4:33:22 AM	R66078
cis-1,2-DCE	ND	0.0052	0.038		mg/Kg	1	1/25/2020 4:33:22 AM	R66078
cis-1,3-Dichloropropene	ND	0.0032	0.038		mg/Kg	1	1/25/2020 4:33:22 AM	R66078
1,2-Dibromo-3-chloropropane	ND	0.0039	0.076		mg/Kg	1	1/25/2020 4:33:22 AM	R66078
Dibromochloromethane	ND	0.0027	0.038		mg/Kg	1	1/25/2020 4:33:22 AM	R66078
Dibromomethane	ND	0.0041	0.038		mg/Kg	1	1/25/2020 4:33:22 AM	R66078
1,2-Dichlorobenzene	ND	0.0031	0.038		mg/Kg	1	1/25/2020 4:33:22 AM	R66078
1,3-Dichlorobenzene	ND	0.0033	0.038		mg/Kg	1	1/25/2020 4:33:22 AM	R66078
1,4-Dichlorobenzene	ND	0.0032	0.038		mg/Kg	1	1/25/2020 4:33:22 AM	R66078
Dichlorodifluoromethane	ND	0.0088	0.038		mg/Kg	1	1/25/2020 4:33:22 AM	R66078
1,1-Dichloroethane	ND	0.0024	0.038		mg/Kg	1	1/25/2020 4:33:22 AM	R66078
1,1-Dichloroethene	ND	0.015	0.038		mg/Kg	1	1/25/2020 4:33:22 AM	R66078
1,2-Dichloropropane	ND	0.0028	0.038		mg/Kg	1	1/25/2020 4:33:22 AM	R66078
1,3-Dichloropropane	ND	0.0041	0.038		mg/Kg	1	1/25/2020 4:33:22 AM	R66078
2,2-Dichloropropane	ND	0.012	0.076		mg/Kg	1	1/25/2020 4:33:22 AM	R66078
1,1-Dichloropropene	ND	0.0034	0.076		mg/Kg	1	1/25/2020 4:33:22 AM	R66078
Hexachlorobutadiene	ND	0.0038	0.076		mg/Kg	1	1/25/2020 4:33:22 AM	R66078
2-Hexanone	ND	0.0063	0.38		mg/Kg	1	1/25/2020 4:33:22 AM	R66078
Isopropylbenzene	ND	0.0027	0.038		mg/Kg	1	1/25/2020 4:33:22 AM	R66078
4-Isopropyltoluene	ND	0.0031	0.038		mg/Kg	1	1/25/2020 4:33:22 AM	R66078
4-Methyl-2-pentanone	ND	0.0071	0.38		mg/Kg	1	1/25/2020 4:33:22 AM	R66078
Methylene chloride	0.010	0.0067	0.11	J	mg/Kg	1	1/25/2020 4:33:22 AM	R66078
n-Butylbenzene	ND	0.0035	0.11		mg/Kg	1	1/25/2020 4:33:22 AM	R66078
n-Propylbenzene	ND	0.0030	0.038		mg/Kg	1	1/25/2020 4:33:22 AM	R66078
sec-Butylbenzene	ND	0.0043	0.038		mg/Kg	1	1/25/2020 4:33:22 AM	R66078
Styrene	ND	0.0030	0.038		mg/Kg	1	1/25/2020 4:33:22 AM	R66078
tert-Butylbenzene	ND	0.0036	0.038		mg/Kg	1	1/25/2020 4:33:22 AM	R66078
1,1,1,2-Tetrachloroethane	ND	0.0026	0.038		mg/Kg	1	1/25/2020 4:33:22 AM	R66078
1,1,2,2-Tetrachloroethane	ND	0.0038	0.038		mg/Kg	1	1/25/2020 4:33:22 AM	R66078

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

Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: Dup 8
Project: Gallup SWMUI Sampling Event
Collection Date:
Lab ID: 2001739-040 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **JMR**	
Tetrachloroethene (PCE)	ND	0.0030	0.038		mg/Kg	1	1/25/2020 4:33:22 AM	R66078
trans-1,2-DCE	ND	0.0035	0.038		mg/Kg	1	1/25/2020 4:33:22 AM	R66078
trans-1,3-Dichloropropene	ND	0.0040	0.038		mg/Kg	1	1/25/2020 4:33:22 AM	R66078
1,2,3-Trichlorobenzene	ND	0.0033	0.076		mg/Kg	1	1/25/2020 4:33:22 AM	R66078
1,2,4-Trichlorobenzene	ND	0.0038	0.038		mg/Kg	1	1/25/2020 4:33:22 AM	R66078
1,1,1-Trichloroethane	ND	0.0034	0.038		mg/Kg	1	1/25/2020 4:33:22 AM	R66078
1,1,2-Trichloroethane	ND	0.0027	0.038		mg/Kg	1	1/25/2020 4:33:22 AM	R66078
Trichloroethene (TCE)	ND	0.0044	0.038		mg/Kg	1	1/25/2020 4:33:22 AM	R66078
Trichlorofluoromethane	ND	0.013	0.038		mg/Kg	1	1/25/2020 4:33:22 AM	R66078
1,2,3-Trichloropropane	ND	0.0061	0.076		mg/Kg	1	1/25/2020 4:33:22 AM	R66078
Vinyl chloride	ND	0.0025	0.038		mg/Kg	1	1/25/2020 4:33:22 AM	R66078
Xylenes, Total	ND	0.0095	0.076		mg/Kg	1	1/25/2020 4:33:22 AM	R66078
Surr: Dibromofluoromethane	95.3		70-130		%Rec	1	1/25/2020 4:33:22 AM	R66078
Surr: 1,2-Dichloroethane-d4	89.2		70-130		%Rec	1	1/25/2020 4:33:22 AM	R66078
Surr: Toluene-d8	93.4		70-130		%Rec	1	1/25/2020 4:33:22 AM	R66078
Surr: 4-Bromofluorobenzene	87.4		70-130		%Rec	1	1/25/2020 4:33:22 AM	R66078
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **JMR**	
Gasoline Range Organics (GRO)	1.9	0.80	3.8	J	mg/Kg	1	1/25/2020 4:33:22 AM	G66078
Surr: BFB	98.4	0	70-130		%Rec	1	1/25/2020 4:33:22 AM	G66078
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/28/2020 3:11:00 PM	R66159
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	6.82				pH Units	1	1/30/2020 1:06:00 PM	R66199

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

Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-2 Surface
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 8:25:00 AM
Lab ID: 2001739-041 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	150000	2300	9600		mg/Kg	1000	1/22/2020 11:50:30 PM	49949
Motor Oil Range Organics (MRO)	50000	48000	48000		mg/Kg	1000	1/22/2020 11:50:30 PM	49949
Surr: DNOP	0	0	55.1-146	S	%Rec	1000	1/22/2020 11:50:30 PM	49949
EPA METHOD 7471: MERCURY							Analyst: **JLF**	
Mercury	ND	0.0020	0.036	H	mg/Kg	1	2/28/2020 7:14:10 PM	50752
MERCURY, TCLP							Analyst: **rde**	
Mercury	ND	0.00075	0.020		mg/L	1	1/28/2020 12:40:48 PM	50081
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.74	5.0		mg/Kg	2	1/24/2020 10:16:40 AM	49993
Arsenic	6.0	2.9	5.0		mg/Kg	2	1/24/2020 1:43:31 PM	49993
Barium	450	0.047	0.20		mg/Kg	2	1/24/2020 10:16:40 AM	49993
Beryllium	0.31	0.019	0.30		mg/Kg	2	1/24/2020 10:16:40 AM	49993
Cadmium	ND	0.049	0.20		mg/Kg	2	1/24/2020 10:16:40 AM	49993
Chromium	46	0.16	0.60		mg/Kg	2	1/24/2020 10:16:40 AM	49993
Cobalt	3.4	0.21	0.60		mg/Kg	2	1/24/2020 10:16:40 AM	49993
Lead	8.8	0.49	0.50		mg/Kg	2	1/24/2020 12:56:43 PM	49993
Nickel	11	0.30	1.0		mg/Kg	2	1/24/2020 10:16:40 AM	49993
Selenium	ND	2.5	5.0		mg/Kg	2	1/24/2020 12:56:43 PM	49993
Silver	ND	0.065	0.50		mg/Kg	2	1/24/2020 10:16:40 AM	49993
Vanadium	12	0.13	5.0		mg/Kg	2	1/24/2020 10:16:40 AM	49993
Zinc	340	0.80	5.0		mg/Kg	2	1/24/2020 10:16:40 AM	49993
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/28/2020 11:20:11 AM	50060
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	12	33	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
Acenaphthylene	ND	15	33	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
Aniline	ND	11	33	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
Anthracene	ND	13	33	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
Azobenzene	ND	17	33	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
Benz(a)anthracene	ND	11	33	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
Benzo(a)pyrene	ND	18	33	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
Benzo(b)fluoranthene	ND	19	33	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
Benzo(g,h,i)perylene	ND	17	33	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
Benzo(k)fluoranthene	ND	9.9	33	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
Benzoic acid	ND	23	83	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
Benzyl alcohol	ND	14	33	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
Bis(2-chloroethoxy)methane	ND	14	33	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999

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Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-2 Surface
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 8:25:00 AM
Lab ID: 2001739-041 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	19	33	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
Bis(2-chloroisopropyl)ether	ND	14	33	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
Bis(2-ethylhexyl)phthalate	ND	37	83	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
4-Bromophenyl phenyl ether	ND	19	33	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
Butyl benzyl phthalate	ND	11	33	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
Carbazole	ND	13	33	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
4-Chloro-3-methylphenol	ND	13	83	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
4-Chloroaniline	ND	13	83	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
2-Chloronaphthalene	ND	14	41	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
2-Chlorophenol	ND	19	33	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
4-Chlorophenyl phenyl ether	ND	14	33	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
Chrysene	83	13	33	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
Di-n-butyl phthalate	ND	50	66	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
Di-n-octyl phthalate	ND	11	66	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
Dibenz(a,h)anthracene	ND	18	33	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
Dibenzofuran	ND	17	33	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
1,2-Dichlorobenzene	ND	13	33	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
1,3-Dichlorobenzene	ND	11	33	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
1,4-Dichlorobenzene	ND	14	33	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
3,3´-Dichlorobenzidine	ND	14	41	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
Diethyl phthalate	ND	51	83	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
Dimethyl phthalate	ND	13	33	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
2,4-Dichlorophenol	ND	14	66	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
2,4-Dimethylphenol	ND	14	50	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
4,6-Dinitro-2-methylphenol	ND	12	66	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
2,4-Dinitrophenol	ND	9.6	83	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
2,4-Dinitrotoluene	ND	17	83	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
2,6-Dinitrotoluene	ND	20	83	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
Fluoranthene	ND	13	33	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
Fluorene	ND	13	33	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
Hexachlorobenzene	ND	13	33	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
Hexachlorobutadiene	ND	15	33	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
Hexachlorocyclopentadiene	ND	16	33	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
Hexachloroethane	ND	14	33	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
Indeno(1,2,3-cd)pyrene	ND	20	33	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
Isophorone	ND	14	66	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
1-Methylnaphthalene	ND	15	33	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
2-Methylnaphthalene	ND	13	33	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
2-Methylphenol	ND	14	66	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999

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Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-2 Surface
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 8:25:00 AM
Lab ID: 2001739-041 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	12	33	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
N-Nitrosodi-n-propylamine	ND	17	33	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
N-Nitrosodiphenylamine	ND	17	33	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
Naphthalene	ND	14	33	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
2-Nitroaniline	ND	18	33	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
3-Nitroaniline	ND	16	33	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
4-Nitroaniline	ND	22	66	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
Nitrobenzene	ND	14	66	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
2-Nitrophenol	ND	14	33	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
4-Nitrophenol	ND	9.7	41	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
Pentachlorophenol	ND	15	66	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
Phenanthrene	ND	17	33	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
Phenol	ND	14	33	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
Pyrene	81	11	33	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
Pyridine	ND	31	66	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
1,2,4-Trichlorobenzene	ND	14	33	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
2,4,5-Trichlorophenol	ND	11	33	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
2,4,6-Trichlorophenol	ND	17	33	D	mg/Kg	5	2/3/2020 6:04:13 PM	49999
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	5	2/3/2020 6:04:13 PM	49999
Surr: Phenol-d5	0		18.5-101	SD	%Rec	5	2/3/2020 6:04:13 PM	49999
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	5	2/3/2020 6:04:13 PM	49999
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	5	2/3/2020 6:04:13 PM	49999
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	5	2/3/2020 6:04:13 PM	49999
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	5	2/3/2020 6:04:13 PM	49999
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.021	0.13		mg/Kg	5	1/22/2020 5:16:38 PM	A65992
Toluene	0.040	0.025	0.26	J	mg/Kg	5	1/22/2020 5:16:38 PM	A65992
Ethylbenzene	ND	0.015	0.26		mg/Kg	5	1/22/2020 5:16:38 PM	A65992
Methyl tert-butyl ether (MTBE)	ND	0.062	0.26		mg/Kg	5	1/22/2020 5:16:38 PM	A65992
1,2,4-Trimethylbenzene	0.034	0.024	0.26	J	mg/Kg	5	1/22/2020 5:16:38 PM	A65992
1,3,5-Trimethylbenzene	ND	0.025	0.26		mg/Kg	5	1/22/2020 5:16:38 PM	A65992
1,2-Dichloroethane (EDC)	ND	0.027	0.26		mg/Kg	5	1/22/2020 5:16:38 PM	A65992
1,2-Dibromoethane (EDB)	ND	0.024	0.26		mg/Kg	5	1/22/2020 5:16:38 PM	A65992
Naphthalene	0.14	0.052	0.52	J	mg/Kg	5	1/22/2020 5:16:38 PM	A65992
1-Methylnaphthalene	0.53	0.15	1.0	J	mg/Kg	5	1/22/2020 5:16:38 PM	A65992
2-Methylnaphthalene	0.49	0.11	1.0	J	mg/Kg	5	1/22/2020 5:16:38 PM	A65992
Acetone	0.76	0.22	3.9	J	mg/Kg	5	1/22/2020 5:16:38 PM	A65992
Bromobenzene	ND	0.025	0.26		mg/Kg	5	1/22/2020 5:16:38 PM	A65992
Bromodichloromethane	ND	0.024	0.26		mg/Kg	5	1/22/2020 5:16:38 PM	A65992

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D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-2 Surface
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 8:25:00 AM
Lab ID: 2001739-041 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Bromoform	ND	0.024	0.26		mg/Kg	5	1/22/2020 5:16:38 PM	A65992
Bromomethane	ND	0.063	0.78		mg/Kg	5	1/22/2020 5:16:38 PM	A65992
2-Butanone	0.64	0.30	2.6	J	mg/Kg	5	1/22/2020 5:16:38 PM	A65992
Carbon disulfide	ND	0.086	2.6		mg/Kg	5	1/22/2020 5:16:38 PM	A65992
Carbon tetrachloride	ND	0.025	0.26		mg/Kg	5	1/22/2020 5:16:38 PM	A65992
Chlorobenzene	ND	0.033	0.26		mg/Kg	5	1/22/2020 5:16:38 PM	A65992
Chloroethane	ND	0.039	0.52		mg/Kg	5	1/22/2020 5:16:38 PM	A65992
Chloroform	ND	0.021	0.26		mg/Kg	5	1/22/2020 5:16:38 PM	A65992
Chloromethane	ND	0.025	0.78		mg/Kg	5	1/22/2020 5:16:38 PM	A65992
2-Chlorotoluene	ND	0.023	0.26		mg/Kg	5	1/22/2020 5:16:38 PM	A65992
4-Chlorotoluene	ND	0.021	0.26		mg/Kg	5	1/22/2020 5:16:38 PM	A65992
cis-1,2-DCE	ND	0.036	0.26		mg/Kg	5	1/22/2020 5:16:38 PM	A65992
cis-1,3-Dichloropropene	ND	0.022	0.26		mg/Kg	5	1/22/2020 5:16:38 PM	A65992
1,2-Dibromo-3-chloropropane	ND	0.027	0.52		mg/Kg	5	1/22/2020 5:16:38 PM	A65992
Dibromochloromethane	ND	0.019	0.26		mg/Kg	5	1/22/2020 5:16:38 PM	A65992
Dibromomethane	ND	0.028	0.26		mg/Kg	5	1/22/2020 5:16:38 PM	A65992
1,2-Dichlorobenzene	ND	0.021	0.26		mg/Kg	5	1/22/2020 5:16:38 PM	A65992
1,3-Dichlorobenzene	ND	0.023	0.26		mg/Kg	5	1/22/2020 5:16:38 PM	A65992
1,4-Dichlorobenzene	ND	0.022	0.26		mg/Kg	5	1/22/2020 5:16:38 PM	A65992
Dichlorodifluoromethane	ND	0.061	0.26		mg/Kg	5	1/22/2020 5:16:38 PM	A65992
1,1-Dichloroethane	ND	0.017	0.26		mg/Kg	5	1/22/2020 5:16:38 PM	A65992
1,1-Dichloroethene	ND	0.10	0.26		mg/Kg	5	1/22/2020 5:16:38 PM	A65992
1,2-Dichloropropane	ND	0.019	0.26		mg/Kg	5	1/22/2020 5:16:38 PM	A65992
1,3-Dichloropropane	ND	0.028	0.26		mg/Kg	5	1/22/2020 5:16:38 PM	A65992
2,2-Dichloropropane	ND	0.085	0.52		mg/Kg	5	1/22/2020 5:16:38 PM	A65992
1,1-Dichloropropene	ND	0.024	0.52		mg/Kg	5	1/22/2020 5:16:38 PM	A65992
Hexachlorobutadiene	ND	0.027	0.52		mg/Kg	5	1/22/2020 5:16:38 PM	A65992
2-Hexanone	ND	0.043	2.6		mg/Kg	5	1/22/2020 5:16:38 PM	A65992
Isopropylbenzene	ND	0.019	0.26		mg/Kg	5	1/22/2020 5:16:38 PM	A65992
4-Isopropyltoluene	ND	0.022	0.26		mg/Kg	5	1/22/2020 5:16:38 PM	A65992
4-Methyl-2-pentanone	0.21	0.049	2.6	J	mg/Kg	5	1/22/2020 5:16:38 PM	A65992
Methylene chloride	0.11	0.046	0.78	J	mg/Kg	5	1/22/2020 5:16:38 PM	A65992
n-Butylbenzene	ND	0.024	0.78		mg/Kg	5	1/22/2020 5:16:38 PM	A65992
n-Propylbenzene	ND	0.021	0.26		mg/Kg	5	1/22/2020 5:16:38 PM	A65992
sec-Butylbenzene	ND	0.029	0.26		mg/Kg	5	1/22/2020 5:16:38 PM	A65992
Styrene	ND	0.021	0.26		mg/Kg	5	1/22/2020 5:16:38 PM	A65992
tert-Butylbenzene	ND	0.025	0.26		mg/Kg	5	1/22/2020 5:16:38 PM	A65992
1,1,1,2-Tetrachloroethane	ND	0.018	0.26		mg/Kg	5	1/22/2020 5:16:38 PM	A65992
1,1,2,2-Tetrachloroethane	ND	0.027	0.26		mg/Kg	5	1/22/2020 5:16:38 PM	A65992

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-2 Surface
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 8:25:00 AM
Lab ID: 2001739-041 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Tetrachloroethene (PCE)	ND	0.021	0.26		mg/Kg	5	1/22/2020 5:16:38 PM	A65992
trans-1,2-DCE	ND	0.024	0.26		mg/Kg	5	1/22/2020 5:16:38 PM	A65992
trans-1,3-Dichloropropene	ND	0.028	0.26		mg/Kg	5	1/22/2020 5:16:38 PM	A65992
1,2,3-Trichlorobenzene	ND	0.023	0.52		mg/Kg	5	1/22/2020 5:16:38 PM	A65992
1,2,4-Trichlorobenzene	ND	0.026	0.26		mg/Kg	5	1/22/2020 5:16:38 PM	A65992
1,1,1-Trichloroethane	ND	0.024	0.26		mg/Kg	5	1/22/2020 5:16:38 PM	A65992
1,1,2-Trichloroethane	ND	0.018	0.26		mg/Kg	5	1/22/2020 5:16:38 PM	A65992
Trichloroethene (TCE)	ND	0.030	0.26		mg/Kg	5	1/22/2020 5:16:38 PM	A65992
Trichlorofluoromethane	ND	0.089	0.26		mg/Kg	5	1/22/2020 5:16:38 PM	A65992
1,2,3-Trichloropropane	ND	0.042	0.52		mg/Kg	5	1/22/2020 5:16:38 PM	A65992
Vinyl chloride	ND	0.017	0.26		mg/Kg	5	1/22/2020 5:16:38 PM	A65992
Xylenes, Total	ND	0.066	0.52		mg/Kg	5	1/22/2020 5:16:38 PM	A65992
Surr: Dibromofluoromethane	105		70-130		%Rec	5	1/22/2020 5:16:38 PM	A65992
Surr: 1,2-Dichloroethane-d4	90.2		70-130		%Rec	5	1/22/2020 5:16:38 PM	A65992
Surr: Toluene-d8	97.0		70-130		%Rec	5	1/22/2020 5:16:38 PM	A65992
Surr: 4-Bromofluorobenzene	91.1		70-130		%Rec	5	1/22/2020 5:16:38 PM	A65992
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	7.7	5.6	26	J	mg/Kg	5	1/22/2020 5:16:38 PM	AG659
Surr: BFB	97.2	0	70-130		%Rec	5	1/22/2020 5:16:38 PM	AG659
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/28/2020 3:11:00 PM	R66159
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	4.43				pH Units	1	1/30/2020 1:06:00 PM	R66199

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Qualifiers:

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PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: Dup 9
Project: Gallup SWMUI Sampling Event
Collection Date:
Lab ID: 2001739-042 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	130000	1200	4900		mg/Kg	500	1/24/2020 11:15:12 AM	49949
Motor Oil Range Organics (MRO)	42000	25000	25000		mg/Kg	500	1/24/2020 11:15:12 AM	49949
Surr: DNOP	0	0	55.1-146	S	%Rec	500	1/24/2020 11:15:12 AM	49949
EPA METHOD 7471: MERCURY							Analyst: **JLF**	
Mercury	ND	0.0020	0.035		mg/Kg	1	2/28/2020 7:16:42 PM	50752
MERCURY, TCLP							Analyst: **rde**	
Mercury	ND	0.00075	0.020		mg/L	1	1/28/2020 12:42:50 PM	50081
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.74	5.0		mg/Kg	2	1/24/2020 10:18:21 AM	49993
Arsenic	8.5	2.9	5.0		mg/Kg	2	1/24/2020 1:44:55 PM	49993
Barium	520	0.12	0.50		mg/Kg	5	1/24/2020 11:11:31 AM	49993
Beryllium	0.34	0.019	0.30		mg/Kg	2	1/24/2020 10:18:21 AM	49993
Cadmium	ND	0.049	0.20		mg/Kg	2	1/24/2020 10:18:21 AM	49993
Chromium	52	0.16	0.60		mg/Kg	2	1/24/2020 10:18:21 AM	49993
Cobalt	3.9	0.21	0.60		mg/Kg	2	1/24/2020 10:18:21 AM	49993
Lead	10	0.49	0.50		mg/Kg	2	1/24/2020 12:58:07 PM	49993
Nickel	15	0.30	1.0		mg/Kg	2	1/24/2020 10:18:21 AM	49993
Selenium	ND	2.5	5.0		mg/Kg	2	1/24/2020 12:58:07 PM	49993
Silver	ND	0.065	0.50		mg/Kg	2	1/24/2020 10:18:21 AM	49993
Vanadium	13	0.13	5.0		mg/Kg	2	1/24/2020 10:18:21 AM	49993
Zinc	840	2.0	13		mg/Kg	5	1/24/2020 11:11:31 AM	49993
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/28/2020 11:21:35 AM	50060
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	8.9	24	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
Acenaphthylene	ND	11	24	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
Aniline	ND	8.1	24	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
Anthracene	ND	9.1	24	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
Azobenzene	ND	12	24	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
Benz(a)anthracene	ND	8.1	24	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
Benzo(a)pyrene	ND	13	24	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
Benzo(b)fluoranthene	ND	14	24	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
Benzo(g,h,i)perylene	ND	12	24	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
Benzo(k)fluoranthene	ND	7.1	24	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
Benzoic acid	ND	16	59	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
Benzyl alcohol	ND	9.8	24	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
Bis(2-chloroethoxy)methane	ND	9.8	24	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999

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ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
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J	Analyte detected below quantitation limits
P	Sample pH Not In Range
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: Dup 9
Project: Gallup SWMUI Sampling Event
Collection Date:
Lab ID: 2001739-042 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	14	24	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
Bis(2-chloroisopropyl)ether	ND	10	24	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
Bis(2-ethylhexyl)phthalate	ND	27	59	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
4-Bromophenyl phenyl ether	ND	14	24	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
Butyl benzyl phthalate	ND	8.0	24	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
Carbazole	ND	9.4	24	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
4-Chloro-3-methylphenol	ND	9.3	59	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
4-Chloroaniline	ND	9.1	59	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
2-Chloronaphthalene	ND	10	30	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
2-Chlorophenol	ND	13	24	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
4-Chlorophenyl phenyl ether	ND	10	24	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
Chrysene	ND	9.3	24	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
Di-n-butyl phthalate	ND	35	47	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
Di-n-octyl phthalate	ND	7.9	47	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
Dibenz(a,h)anthracene	ND	13	24	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
Dibenzofuran	ND	12	24	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
1,2-Dichlorobenzene	ND	9.3	24	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
1,3-Dichlorobenzene	ND	7.9	24	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
1,4-Dichlorobenzene	ND	9.8	24	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
3,3´-Dichlorobenzidine	ND	10	30	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
Diethyl phthalate	ND	36	59	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
Dimethyl phthalate	ND	9.6	24	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
2,4-Dichlorophenol	ND	10	47	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
2,4-Dimethylphenol	ND	9.8	36	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
4,6-Dinitro-2-methylphenol	ND	8.7	47	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
2,4-Dinitrophenol	ND	6.9	59	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
2,4-Dinitrotoluene	ND	12	59	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
2,6-Dinitrotoluene	ND	14	59	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
Fluoranthene	ND	9.0	24	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
Fluorene	ND	9.3	24	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
Hexachlorobenzene	ND	9.3	24	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
Hexachlorobutadiene	ND	10	24	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
Hexachlorocyclopentadiene	ND	11	24	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
Hexachloroethane	ND	9.7	24	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
Indeno(1,2,3-cd)pyrene	ND	15	24	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
Isophorone	ND	10	47	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
1-Methylnaphthalene	ND	11	24	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
2-Methylnaphthalene	ND	9.6	24	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
2-Methylphenol	ND	10	47	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999

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D	Sample Diluted Due to Matrix
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J	Analyte detected below quantitation limits
P	Sample pH Not In Range
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup **Client Sample ID:** Dup 9
Project: Gallup SWMUI Sampling Event **Collection Date:**
Lab ID: 2001739-042 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	8.6	24	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
N-Nitrosodi-n-propylamine	ND	12	24	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
N-Nitrosodiphenylamine	ND	12	24	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
Naphthalene	ND	9.7	24	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
2-Nitroaniline	ND	13	24	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
3-Nitroaniline	ND	12	24	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
4-Nitroaniline	ND	16	47	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
Nitrobenzene	ND	10	47	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
2-Nitrophenol	ND	9.8	24	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
4-Nitrophenol	ND	7.0	30	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
Pentachlorophenol	ND	11	47	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
Phenanthrene	32	12	24	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
Phenol	ND	10	24	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
Pyrene	69	7.8	24	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
Pyridine	ND	22	47	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
1,2,4-Trichlorobenzene	ND	10	24	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
2,4,5-Trichlorophenol	ND	7.6	24	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
2,4,6-Trichlorophenol	ND	12	24	D	mg/Kg	5	2/3/2020 6:33:14 PM	49999
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	5	2/3/2020 6:33:14 PM	49999
Surr: Phenol-d5	0		18.5-101	SD	%Rec	5	2/3/2020 6:33:14 PM	49999
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	5	2/3/2020 6:33:14 PM	49999
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	5	2/3/2020 6:33:14 PM	49999
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	5	2/3/2020 6:33:14 PM	49999
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	5	2/3/2020 6:33:14 PM	49999
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.022	0.14		mg/Kg	5	1/22/2020 5:45:55 PM	A65992
Toluene	0.045	0.026	0.27	J	mg/Kg	5	1/22/2020 5:45:55 PM	A65992
Ethylbenzene	ND	0.016	0.27		mg/Kg	5	1/22/2020 5:45:55 PM	A65992
Methyl tert-butyl ether (MTBE)	ND	0.065	0.27		mg/Kg	5	1/22/2020 5:45:55 PM	A65992
1,2,4-Trimethylbenzene	ND	0.025	0.27		mg/Kg	5	1/22/2020 5:45:55 PM	A65992
1,3,5-Trimethylbenzene	ND	0.026	0.27		mg/Kg	5	1/22/2020 5:45:55 PM	A65992
1,2-Dichloroethane (EDC)	ND	0.028	0.27		mg/Kg	5	1/22/2020 5:45:55 PM	A65992
1,2-Dibromoethane (EDB)	ND	0.025	0.27		mg/Kg	5	1/22/2020 5:45:55 PM	A65992
Naphthalene	0.15	0.055	0.55	J	mg/Kg	5	1/22/2020 5:45:55 PM	A65992
1-Methylnaphthalene	0.48	0.16	1.1	J	mg/Kg	5	1/22/2020 5:45:55 PM	A65992
2-Methylnaphthalene	0.40	0.12	1.1	J	mg/Kg	5	1/22/2020 5:45:55 PM	A65992
Acetone	0.69	0.23	4.1	J	mg/Kg	5	1/22/2020 5:45:55 PM	A65992
Bromobenzene	ND	0.026	0.27		mg/Kg	5	1/22/2020 5:45:55 PM	A65992
Bromodichloromethane	ND	0.025	0.27		mg/Kg	5	1/22/2020 5:45:55 PM	A65992

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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: Dup 9
Project: Gallup SWMUI Sampling Event
Collection Date:
Lab ID: 2001739-042 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Bromoform	ND	0.025	0.27		mg/Kg	5	1/22/2020 5:45:55 PM	A65992
Bromomethane	ND	0.066	0.82		mg/Kg	5	1/22/2020 5:45:55 PM	A65992
2-Butanone	0.97	0.32	2.7	J	mg/Kg	5	1/22/2020 5:45:55 PM	A65992
Carbon disulfide	ND	0.090	2.7		mg/Kg	5	1/22/2020 5:45:55 PM	A65992
Carbon tetrachloride	ND	0.026	0.27		mg/Kg	5	1/22/2020 5:45:55 PM	A65992
Chlorobenzene	ND	0.035	0.27		mg/Kg	5	1/22/2020 5:45:55 PM	A65992
Chloroethane	ND	0.040	0.55		mg/Kg	5	1/22/2020 5:45:55 PM	A65992
Chloroform	ND	0.022	0.27		mg/Kg	5	1/22/2020 5:45:55 PM	A65992
Chloromethane	ND	0.026	0.82		mg/Kg	5	1/22/2020 5:45:55 PM	A65992
2-Chlorotoluene	ND	0.024	0.27		mg/Kg	5	1/22/2020 5:45:55 PM	A65992
4-Chlorotoluene	ND	0.022	0.27		mg/Kg	5	1/22/2020 5:45:55 PM	A65992
cis-1,2-DCE	ND	0.037	0.27		mg/Kg	5	1/22/2020 5:45:55 PM	A65992
cis-1,3-Dichloropropene	ND	0.023	0.27		mg/Kg	5	1/22/2020 5:45:55 PM	A65992
1,2-Dibromo-3-chloropropane	ND	0.028	0.55		mg/Kg	5	1/22/2020 5:45:55 PM	A65992
Dibromochloromethane	ND	0.019	0.27		mg/Kg	5	1/22/2020 5:45:55 PM	A65992
Dibromomethane	ND	0.029	0.27		mg/Kg	5	1/22/2020 5:45:55 PM	A65992
1,2-Dichlorobenzene	ND	0.022	0.27		mg/Kg	5	1/22/2020 5:45:55 PM	A65992
1,3-Dichlorobenzene	ND	0.024	0.27		mg/Kg	5	1/22/2020 5:45:55 PM	A65992
1,4-Dichlorobenzene	ND	0.023	0.27		mg/Kg	5	1/22/2020 5:45:55 PM	A65992
Dichlorodifluoromethane	ND	0.063	0.27		mg/Kg	5	1/22/2020 5:45:55 PM	A65992
1,1-Dichloroethane	ND	0.017	0.27		mg/Kg	5	1/22/2020 5:45:55 PM	A65992
1,1-Dichloroethene	ND	0.11	0.27		mg/Kg	5	1/22/2020 5:45:55 PM	A65992
1,2-Dichloropropane	ND	0.020	0.27		mg/Kg	5	1/22/2020 5:45:55 PM	A65992
1,3-Dichloropropane	ND	0.030	0.27		mg/Kg	5	1/22/2020 5:45:55 PM	A65992
2,2-Dichloropropane	ND	0.089	0.55		mg/Kg	5	1/22/2020 5:45:55 PM	A65992
1,1-Dichloropropene	ND	0.025	0.55		mg/Kg	5	1/22/2020 5:45:55 PM	A65992
Hexachlorobutadiene	ND	0.028	0.55		mg/Kg	5	1/22/2020 5:45:55 PM	A65992
2-Hexanone	ND	0.045	2.7		mg/Kg	5	1/22/2020 5:45:55 PM	A65992
Isopropylbenzene	ND	0.020	0.27		mg/Kg	5	1/22/2020 5:45:55 PM	A65992
4-Isopropyltoluene	ND	0.023	0.27		mg/Kg	5	1/22/2020 5:45:55 PM	A65992
4-Methyl-2-pentanone	0.26	0.052	2.7	J	mg/Kg	5	1/22/2020 5:45:55 PM	A65992
Methylene chloride	0.13	0.048	0.82	J	mg/Kg	5	1/22/2020 5:45:55 PM	A65992
n-Butylbenzene	ND	0.026	0.82		mg/Kg	5	1/22/2020 5:45:55 PM	A65992
n-Propylbenzene	ND	0.022	0.27		mg/Kg	5	1/22/2020 5:45:55 PM	A65992
sec-Butylbenzene	ND	0.031	0.27		mg/Kg	5	1/22/2020 5:45:55 PM	A65992
Styrene	ND	0.021	0.27		mg/Kg	5	1/22/2020 5:45:55 PM	A65992
tert-Butylbenzene	ND	0.026	0.27		mg/Kg	5	1/22/2020 5:45:55 PM	A65992
1,1,1,2-Tetrachloroethane	ND	0.018	0.27		mg/Kg	5	1/22/2020 5:45:55 PM	A65992
1,1,2,2-Tetrachloroethane	ND	0.028	0.27		mg/Kg	5	1/22/2020 5:45:55 PM	A65992

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Qualifiers:

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PQL	Practical Quanitative Limit
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: Dup 9
Project: Gallup SWMUI Sampling Event
Collection Date:
Lab ID: 2001739-042 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Tetrachloroethene (PCE)	ND	0.022	0.27		mg/Kg	5	1/22/2020 5:45:55 PM	A65992
trans-1,2-DCE	ND	0.025	0.27		mg/Kg	5	1/22/2020 5:45:55 PM	A65992
trans-1,3-Dichloropropene	ND	0.029	0.27		mg/Kg	5	1/22/2020 5:45:55 PM	A65992
1,2,3-Trichlorobenzene	ND	0.024	0.55		mg/Kg	5	1/22/2020 5:45:55 PM	A65992
1,2,4-Trichlorobenzene	ND	0.028	0.27		mg/Kg	5	1/22/2020 5:45:55 PM	A65992
1,1,1-Trichloroethane	ND	0.025	0.27		mg/Kg	5	1/22/2020 5:45:55 PM	A65992
1,1,2-Trichloroethane	ND	0.019	0.27		mg/Kg	5	1/22/2020 5:45:55 PM	A65992
Trichloroethene (TCE)	ND	0.032	0.27		mg/Kg	5	1/22/2020 5:45:55 PM	A65992
Trichlorofluoromethane	ND	0.093	0.27		mg/Kg	5	1/22/2020 5:45:55 PM	A65992
1,2,3-Trichloropropane	ND	0.044	0.55		mg/Kg	5	1/22/2020 5:45:55 PM	A65992
Vinyl chloride	ND	0.018	0.27		mg/Kg	5	1/22/2020 5:45:55 PM	A65992
Xylenes, Total	ND	0.069	0.55		mg/Kg	5	1/22/2020 5:45:55 PM	A65992
Surr: Dibromofluoromethane	111		70-130		%Rec	5	1/22/2020 5:45:55 PM	A65992
Surr: 1,2-Dichloroethane-d4	92.3		70-130		%Rec	5	1/22/2020 5:45:55 PM	A65992
Surr: Toluene-d8	98.1		70-130		%Rec	5	1/22/2020 5:45:55 PM	A65992
Surr: 4-Bromofluorobenzene	86.6		70-130		%Rec	5	1/22/2020 5:45:55 PM	A65992
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	8.2	5.8	27	J	mg/Kg	5	1/22/2020 5:45:55 PM	AG659
Surr: BFB	98.2	0	70-130		%Rec	5	1/22/2020 5:45:55 PM	AG659
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/28/2020 3:11:00 PM	R66159
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	4.36				pH Units	1	1/30/2020 1:06:00 PM	R66199

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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-15 Toe 3 ft
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 2:28:00 PM
Lab ID: 2001739-043 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	18000	210	880		mg/Kg	100	1/23/2020 12:08:23 AM	49949
Motor Oil Range Organics (MRO)	4700	4400	4400		mg/Kg	100	1/23/2020 12:08:23 AM	49949
Surr: DNOP	0	0	55.1-146	S	%Rec	100	1/23/2020 12:08:23 AM	49949
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	0.079	0.0017	0.031	H	mg/Kg	1	2/26/2020 3:47:26 PM	50700
MERCURY, TCLP							Analyst: **rde**	
Mercury	ND	0.00075	0.020		mg/L	1	1/28/2020 12:44:52 PM	50081
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.73	4.9		mg/Kg	2	1/24/2020 10:20:01 AM	49993
Arsenic	ND	2.8	4.9		mg/Kg	2	1/24/2020 1:46:19 PM	49993
Barium	160	0.046	0.20		mg/Kg	2	1/24/2020 10:20:01 AM	49993
Beryllium	0.58	0.018	0.30		mg/Kg	2	1/24/2020 10:20:01 AM	49993
Cadmium	ND	0.048	0.20		mg/Kg	2	1/24/2020 10:20:01 AM	49993
Chromium	10	0.16	0.59		mg/Kg	2	1/24/2020 10:20:01 AM	49993
Cobalt	3.4	0.21	0.59		mg/Kg	2	1/24/2020 10:20:01 AM	49993
Lead	4.4	0.48	0.49		mg/Kg	2	1/24/2020 12:59:31 PM	49993
Nickel	7.2	0.29	0.99		mg/Kg	2	1/24/2020 10:20:01 AM	49993
Selenium	ND	2.5	4.9		mg/Kg	2	1/24/2020 12:59:31 PM	49993
Silver	ND	0.063	0.49		mg/Kg	2	1/24/2020 10:20:01 AM	49993
Vanadium	11	0.13	4.9		mg/Kg	2	1/24/2020 10:20:01 AM	49993
Zinc	23	0.78	4.9		mg/Kg	2	1/24/2020 10:20:01 AM	49993
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/28/2020 11:27:13 AM	50060
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	1.7	4.6	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999
Acenaphthylene	ND	2.0	4.6	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999
Aniline	ND	1.6	4.6	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999
Anthracene	ND	1.8	4.6	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999
Azobenzene	ND	2.3	4.6	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999
Benz(a)anthracene	ND	1.6	4.6	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999
Benzo(a)pyrene	ND	2.5	4.6	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999
Benzo(b)fluoranthene	ND	2.6	4.6	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999
Benzo(g,h,i)perylene	ND	2.3	4.6	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999
Benzo(k)fluoranthene	ND	1.4	4.6	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999
Benzoic acid	ND	3.2	11	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999
Benzyl alcohol	ND	1.9	4.6	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999
Bis(2-chloroethoxy)methane	ND	1.9	4.6	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999

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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-15 Toe 3 ft
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 2:28:00 PM
Lab ID: 2001739-043 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	2.7	4.6	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999
Bis(2-chloroisopropyl)ether	ND	2.0	4.6	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999
Bis(2-ethylhexyl)phthalate	ND	5.1	11	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999
4-Bromophenyl phenyl ether	ND	2.7	4.6	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999
Butyl benzyl phthalate	ND	1.5	4.6	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999
Carbazole	ND	1.8	4.6	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999
4-Chloro-3-methylphenol	ND	1.8	11	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999
4-Chloroaniline	ND	1.7	11	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999
2-Chloronaphthalene	ND	1.9	5.7	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999
2-Chlorophenol	ND	2.6	4.6	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999
4-Chlorophenyl phenyl ether	ND	1.9	4.6	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999
Chrysene	ND	1.8	4.6	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999
Di-n-butyl phthalate	ND	6.8	9.1	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999
Di-n-octyl phthalate	ND	1.5	9.1	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999
Dibenz(a,h)anthracene	ND	2.5	4.6	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999
Dibenzofuran	ND	2.3	4.6	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999
1,2-Dichlorobenzene	ND	1.8	4.6	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999
1,3-Dichlorobenzene	ND	1.5	4.6	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999
1,4-Dichlorobenzene	ND	1.9	4.6	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999
3,3´-Dichlorobenzidine	ND	1.9	5.7	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999
Diethyl phthalate	ND	7.0	11	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999
Dimethyl phthalate	ND	1.9	4.6	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999
2,4-Dichlorophenol	ND	1.9	9.1	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999
2,4-Dimethylphenol	ND	1.9	6.8	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999
4,6-Dinitro-2-methylphenol	ND	1.7	9.1	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999
2,4-Dinitrophenol	ND	1.3	11	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999
2,4-Dinitrotoluene	ND	2.3	11	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999
2,6-Dinitrotoluene	ND	2.7	11	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999
Fluoranthene	ND	1.7	4.6	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999
Fluorene	10	1.8	4.6	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999
Hexachlorobenzene	ND	1.8	4.6	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999
Hexachlorobutadiene	ND	2.0	4.6	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999
Hexachlorocyclopentadiene	ND	2.2	4.6	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999
Hexachloroethane	ND	1.9	4.6	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999
Indeno(1,2,3-cd)pyrene	ND	2.8	4.6	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999
Isophorone	ND	2.0	9.1	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999
1-Methylnaphthalene	28	2.1	4.6	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999
2-Methylnaphthalene	32	1.9	4.6	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999
2-Methylphenol	ND	1.9	9.1	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999

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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-15 Toe 3 ft
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 2:28:00 PM
Lab ID: 2001739-043 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	1.7	1.6	4.6	JD	mg/Kg	1	2/3/2020 7:02:11 PM	49999
N-Nitrosodi-n-propylamine	ND	2.3	4.6	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999
N-Nitrosodiphenylamine	ND	2.4	4.6	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999
Naphthalene	3.3	1.9	4.6	JD	mg/Kg	1	2/3/2020 7:02:11 PM	49999
2-Nitroaniline	ND	2.5	4.6	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999
3-Nitroaniline	ND	2.2	4.6	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999
4-Nitroaniline	ND	3.1	9.1	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999
Nitrobenzene	ND	1.9	9.1	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999
2-Nitrophenol	ND	1.9	4.6	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999
4-Nitrophenol	ND	1.3	5.7	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999
Pentachlorophenol	ND	2.0	9.1	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999
Phenanthrene	32	2.3	4.6	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999
Phenol	ND	1.9	4.6	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999
Pyrene	7.2	1.5	4.6	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999
Pyridine	ND	4.2	9.1	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999
1,2,4-Trichlorobenzene	ND	1.9	4.6	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999
2,4,5-Trichlorophenol	ND	1.5	4.6	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999
2,4,6-Trichlorophenol	ND	2.3	4.6	D	mg/Kg	1	2/3/2020 7:02:11 PM	49999
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	1	2/3/2020 7:02:11 PM	49999
Surr: Phenol-d5	0		18.5-101	SD	%Rec	1	2/3/2020 7:02:11 PM	49999
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	1	2/3/2020 7:02:11 PM	49999
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	1	2/3/2020 7:02:11 PM	49999
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	1	2/3/2020 7:02:11 PM	49999
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	1	2/3/2020 7:02:11 PM	49999
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.014	0.084		mg/Kg	5	1/22/2020 6:15:18 PM	A65992
Toluene	0.10	0.016	0.17	J	mg/Kg	5	1/22/2020 6:15:18 PM	A65992
Ethylbenzene	0.085	0.0097	0.17	J	mg/Kg	5	1/22/2020 6:15:18 PM	A65992
Methyl tert-butyl ether (MTBE)	ND	0.040	0.17		mg/Kg	5	1/22/2020 6:15:18 PM	A65992
1,2,4-Trimethylbenzene	0.88	0.015	0.17		mg/Kg	5	1/22/2020 6:15:18 PM	A65992
1,3,5-Trimethylbenzene	0.24	0.016	0.17		mg/Kg	5	1/22/2020 6:15:18 PM	A65992
1,2-Dichloroethane (EDC)	ND	0.017	0.17		mg/Kg	5	1/22/2020 6:15:18 PM	A65992
1,2-Dibromoethane (EDB)	0.046	0.015	0.17	J	mg/Kg	5	1/22/2020 6:15:18 PM	A65992
Naphthalene	0.80	0.034	0.34		mg/Kg	5	1/22/2020 6:15:18 PM	A65992
1-Methylnaphthalene	3.8	0.096	0.67		mg/Kg	5	1/22/2020 6:15:18 PM	A65992
2-Methylnaphthalene	6.0	0.073	0.67		mg/Kg	5	1/22/2020 6:15:18 PM	A65992
Acetone	0.28	0.14	2.5	J	mg/Kg	5	1/22/2020 6:15:18 PM	A65992
Bromobenzene	ND	0.016	0.17		mg/Kg	5	1/22/2020 6:15:18 PM	A65992
Bromodichloromethane	ND	0.015	0.17		mg/Kg	5	1/22/2020 6:15:18 PM	A65992

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Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-15 Toe 3 ft
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 2:28:00 PM
Lab ID: 2001739-043 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Bromoform	ND	0.015	0.17		mg/Kg	5	1/22/2020 6:15:18 PM	A65992
Bromomethane	ND	0.040	0.50		mg/Kg	5	1/22/2020 6:15:18 PM	A65992
2-Butanone	ND	0.19	1.7		mg/Kg	5	1/22/2020 6:15:18 PM	A65992
Carbon disulfide	0.53	0.055	1.7	J	mg/Kg	5	1/22/2020 6:15:18 PM	A65992
Carbon tetrachloride	ND	0.016	0.17		mg/Kg	5	1/22/2020 6:15:18 PM	A65992
Chlorobenzene	ND	0.021	0.17		mg/Kg	5	1/22/2020 6:15:18 PM	A65992
Chloroethane	ND	0.025	0.34		mg/Kg	5	1/22/2020 6:15:18 PM	A65992
Chloroform	ND	0.013	0.17		mg/Kg	5	1/22/2020 6:15:18 PM	A65992
Chloromethane	ND	0.016	0.50		mg/Kg	5	1/22/2020 6:15:18 PM	A65992
2-Chlorotoluene	ND	0.015	0.17		mg/Kg	5	1/22/2020 6:15:18 PM	A65992
4-Chlorotoluene	ND	0.014	0.17		mg/Kg	5	1/22/2020 6:15:18 PM	A65992
cis-1,2-DCE	ND	0.023	0.17		mg/Kg	5	1/22/2020 6:15:18 PM	A65992
cis-1,3-Dichloropropene	ND	0.014	0.17		mg/Kg	5	1/22/2020 6:15:18 PM	A65992
1,2-Dibromo-3-chloropropane	ND	0.017	0.34		mg/Kg	5	1/22/2020 6:15:18 PM	A65992
Dibromochloromethane	ND	0.012	0.17		mg/Kg	5	1/22/2020 6:15:18 PM	A65992
Dibromomethane	ND	0.018	0.17		mg/Kg	5	1/22/2020 6:15:18 PM	A65992
1,2-Dichlorobenzene	ND	0.014	0.17		mg/Kg	5	1/22/2020 6:15:18 PM	A65992
1,3-Dichlorobenzene	ND	0.015	0.17		mg/Kg	5	1/22/2020 6:15:18 PM	A65992
1,4-Dichlorobenzene	ND	0.014	0.17		mg/Kg	5	1/22/2020 6:15:18 PM	A65992
Dichlorodifluoromethane	ND	0.039	0.17		mg/Kg	5	1/22/2020 6:15:18 PM	A65992
1,1-Dichloroethane	ND	0.011	0.17		mg/Kg	5	1/22/2020 6:15:18 PM	A65992
1,1-Dichloroethene	ND	0.067	0.17		mg/Kg	5	1/22/2020 6:15:18 PM	A65992
1,2-Dichloropropane	ND	0.012	0.17		mg/Kg	5	1/22/2020 6:15:18 PM	A65992
1,3-Dichloropropane	ND	0.018	0.17		mg/Kg	5	1/22/2020 6:15:18 PM	A65992
2,2-Dichloropropane	ND	0.054	0.34		mg/Kg	5	1/22/2020 6:15:18 PM	A65992
1,1-Dichloropropene	ND	0.015	0.34		mg/Kg	5	1/22/2020 6:15:18 PM	A65992
Hexachlorobutadiene	ND	0.017	0.34		mg/Kg	5	1/22/2020 6:15:18 PM	A65992
2-Hexanone	0.16	0.028	1.7	J	mg/Kg	5	1/22/2020 6:15:18 PM	A65992
Isopropylbenzene	0.042	0.012	0.17	J	mg/Kg	5	1/22/2020 6:15:18 PM	A65992
4-Isopropyltoluene	0.088	0.014	0.17	J	mg/Kg	5	1/22/2020 6:15:18 PM	A65992
4-Methyl-2-pentanone	0.45	0.032	1.7	J	mg/Kg	5	1/22/2020 6:15:18 PM	A65992
Methylene chloride	0.084	0.030	0.50	J	mg/Kg	5	1/22/2020 6:15:18 PM	A65992
n-Butylbenzene	0.19	0.016	0.50	J	mg/Kg	5	1/22/2020 6:15:18 PM	A65992
n-Propylbenzene	0.098	0.013	0.17	J	mg/Kg	5	1/22/2020 6:15:18 PM	A65992
sec-Butylbenzene	0.15	0.019	0.17	J	mg/Kg	5	1/22/2020 6:15:18 PM	A65992
Styrene	ND	0.013	0.17		mg/Kg	5	1/22/2020 6:15:18 PM	A65992
tert-Butylbenzene	ND	0.016	0.17		mg/Kg	5	1/22/2020 6:15:18 PM	A65992
1,1,1,2-Tetrachloroethane	ND	0.011	0.17		mg/Kg	5	1/22/2020 6:15:18 PM	A65992
1,1,2,2-Tetrachloroethane	ND	0.017	0.17		mg/Kg	5	1/22/2020 6:15:18 PM	A65992

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

Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-15 Toe 3 ft
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 2:28:00 PM
Lab ID: 2001739-043 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Tetrachloroethene (PCE)	ND	0.013	0.17		mg/Kg	5	1/22/2020 6:15:18 PM	A65992
trans-1,2-DCE	ND	0.015	0.17		mg/Kg	5	1/22/2020 6:15:18 PM	A65992
trans-1,3-Dichloropropene	ND	0.018	0.17		mg/Kg	5	1/22/2020 6:15:18 PM	A65992
1,2,3-Trichlorobenzene	ND	0.015	0.34		mg/Kg	5	1/22/2020 6:15:18 PM	A65992
1,2,4-Trichlorobenzene	ND	0.017	0.17		mg/Kg	5	1/22/2020 6:15:18 PM	A65992
1,1,1-Trichloroethane	ND	0.015	0.17		mg/Kg	5	1/22/2020 6:15:18 PM	A65992
1,1,2-Trichloroethane	ND	0.012	0.17		mg/Kg	5	1/22/2020 6:15:18 PM	A65992
Trichloroethene (TCE)	ND	0.019	0.17		mg/Kg	5	1/22/2020 6:15:18 PM	A65992
Trichlorofluoromethane	ND	0.057	0.17		mg/Kg	5	1/22/2020 6:15:18 PM	A65992
1,2,3-Trichloropropane	ND	0.027	0.34		mg/Kg	5	1/22/2020 6:15:18 PM	A65992
Vinyl chloride	ND	0.011	0.17		mg/Kg	5	1/22/2020 6:15:18 PM	A65992
Xylenes, Total	0.65	0.042	0.34		mg/Kg	5	1/22/2020 6:15:18 PM	A65992
Surr: Dibromofluoromethane	116		70-130		%Rec	5	1/22/2020 6:15:18 PM	A65992
Surr: 1,2-Dichloroethane-d4	98.1		70-130		%Rec	5	1/22/2020 6:15:18 PM	A65992
Surr: Toluene-d8	100		70-130		%Rec	5	1/22/2020 6:15:18 PM	A65992
Surr: 4-Bromofluorobenzene	89.4		70-130		%Rec	5	1/22/2020 6:15:18 PM	A65992
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	32	3.6	17		mg/Kg	5	1/22/2020 6:15:18 PM	AG659
Surr: BFB	103	0	70-130		%Rec	5	1/22/2020 6:15:18 PM	AG659
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/29/2020 2:53:00 PM	R66198
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	8.66				pH Units	1	1/30/2020 1:06:00 PM	R66199

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

Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-22 Toe 3.5-4.0
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 9:55:00 AM
Lab ID: 2001739-044 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	530	4.0	17		mg/Kg	2	1/24/2020 11:24:19 AM	49949
Motor Oil Range Organics (MRO)	110	83	83		mg/Kg	2	1/24/2020 11:24:19 AM	49949
Surr: DNOP	135	0	55.1-146		%Rec	2	1/24/2020 11:24:19 AM	49949
EPA METHOD 7471: MERCURY							Analyst: **JLF**	
Mercury	0.096	0.0019	0.035	H	mg/Kg	1	2/28/2020 7:19:14 PM	50752
MERCURY, TCLP							Analyst: **rde**	
Mercury	ND	0.00075	0.020		mg/L	1	1/28/2020 12:46:55 PM	50081
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.72	4.9		mg/Kg	2	1/24/2020 10:21:35 AM	49994
Arsenic	ND	2.8	4.9		mg/Kg	2	1/24/2020 1:47:43 PM	49994
Barium	250	0.046	0.20		mg/Kg	2	1/24/2020 10:21:35 AM	49994
Beryllium	0.88	0.018	0.29		mg/Kg	2	1/24/2020 10:21:35 AM	49994
Cadmium	ND	0.048	0.20		mg/Kg	2	1/24/2020 10:21:35 AM	49994
Chromium	27	0.16	0.59		mg/Kg	2	1/24/2020 10:21:35 AM	49994
Cobalt	4.6	0.21	0.59		mg/Kg	2	1/24/2020 10:21:35 AM	49994
Lead	3.9	0.48	0.49		mg/Kg	2	1/24/2020 1:00:55 PM	49994
Nickel	9.3	0.29	0.98		mg/Kg	2	1/24/2020 10:21:35 AM	49994
Selenium	ND	2.5	4.9		mg/Kg	2	1/24/2020 1:00:55 PM	49994
Silver	ND	0.063	0.49		mg/Kg	2	1/24/2020 10:21:35 AM	49994
Vanadium	24	0.13	4.9		mg/Kg	2	1/24/2020 10:21:35 AM	49994
Zinc	78	0.78	4.9		mg/Kg	2	1/24/2020 10:21:35 AM	49994
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/28/2020 11:28:39 AM	50060
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.14	0.38	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999
Acenaphthylene	ND	0.17	0.38	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999
Aniline	ND	0.13	0.38	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999
Anthracene	ND	0.14	0.38	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999
Azobenzene	ND	0.19	0.38	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999
Benz(a)anthracene	ND	0.13	0.38	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999
Benzo(a)pyrene	ND	0.20	0.38	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999
Benzo(b)fluoranthene	ND	0.21	0.38	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999
Benzo(g,h,i)perylene	ND	0.19	0.38	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999
Benzo(k)fluoranthene	ND	0.11	0.38	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999
Benzoic acid	ND	0.26	0.94	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999
Benzyl alcohol	ND	0.16	0.38	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999
Bis(2-chloroethoxy)methane	ND	0.16	0.38	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999

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Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-22 Toe 3.5-4.0
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 9:55:00 AM
Lab ID: 2001739-044 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.22	0.38	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999
Bis(2-chloroisopropyl)ether	ND	0.16	0.38	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999
Bis(2-ethylhexyl)phthalate	ND	0.42	0.94	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999
4-Bromophenyl phenyl ether	ND	0.22	0.38	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999
Butyl benzyl phthalate	ND	0.13	0.38	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999
Carbazole	ND	0.15	0.38	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999
4-Chloro-3-methylphenol	ND	0.15	0.94	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999
4-Chloroaniline	ND	0.14	0.94	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999
2-Chloronaphthalene	ND	0.16	0.47	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999
2-Chlorophenol	ND	0.21	0.38	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999
4-Chlorophenyl phenyl ether	ND	0.16	0.38	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999
Chrysene	ND	0.15	0.38	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999
Di-n-butyl phthalate	ND	0.56	0.75	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999
Di-n-octyl phthalate	ND	0.13	0.75	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999
Dibenz(a,h)anthracene	ND	0.21	0.38	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999
Dibenzofuran	ND	0.19	0.38	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999
1,2-Dichlorobenzene	ND	0.15	0.38	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999
1,3-Dichlorobenzene	ND	0.13	0.38	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999
1,4-Dichlorobenzene	ND	0.16	0.38	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999
3,3´-Dichlorobenzidine	ND	0.16	0.47	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999
Diethyl phthalate	ND	0.57	0.94	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999
Dimethyl phthalate	ND	0.15	0.38	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999
2,4-Dichlorophenol	ND	0.16	0.75	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999
2,4-Dimethylphenol	ND	0.16	0.56	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999
4,6-Dinitro-2-methylphenol	ND	0.14	0.75	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999
2,4-Dinitrophenol	ND	0.11	0.94	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999
2,4-Dinitrotoluene	ND	0.19	0.94	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999
2,6-Dinitrotoluene	ND	0.22	0.94	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999
Fluoranthene	ND	0.14	0.38	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999
Fluorene	ND	0.15	0.38	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999
Hexachlorobenzene	ND	0.15	0.38	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999
Hexachlorobutadiene	ND	0.16	0.38	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999
Hexachlorocyclopentadiene	ND	0.18	0.38	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999
Hexachloroethane	ND	0.15	0.38	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999
Indeno(1,2,3-cd)pyrene	ND	0.23	0.38	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999
Isophorone	ND	0.16	0.75	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999
1-Methylnaphthalene	0.82	0.17	0.38	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999
2-Methylnaphthalene	ND	0.15	0.38	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999
2-Methylphenol	0.21	0.16	0.75	JD	mg/Kg	1	2/3/2020 7:31:06 PM	49999

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Qualifiers:

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D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-22 Toe 3.5-4.0
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 9:55:00 AM
Lab ID: 2001739-044 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.14	0.38	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999
N-Nitrosodi-n-propylamine	ND	0.19	0.38	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999
N-Nitrosodiphenylamine	ND	0.19	0.38	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999
Naphthalene	ND	0.15	0.38	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999
2-Nitroaniline	ND	0.21	0.38	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999
3-Nitroaniline	ND	0.18	0.38	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999
4-Nitroaniline	ND	0.25	0.75	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999
Nitrobenzene	ND	0.16	0.75	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999
2-Nitrophenol	ND	0.16	0.38	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999
4-Nitrophenol	ND	0.11	0.47	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999
Pentachlorophenol	ND	0.17	0.75	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999
Phenanthrene	0.29	0.19	0.38	JD	mg/Kg	1	2/3/2020 7:31:06 PM	49999
Phenol	ND	0.16	0.38	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999
Pyrene	ND	0.12	0.38	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999
Pyridine	ND	0.35	0.75	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999
1,2,4-Trichlorobenzene	ND	0.16	0.38	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999
2,4,5-Trichlorophenol	ND	0.12	0.38	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999
2,4,6-Trichlorophenol	ND	0.19	0.38	D	mg/Kg	1	2/3/2020 7:31:06 PM	49999
Surr: 2-Fluorophenol	65.6		26.7-85.9	D	%Rec	1	2/3/2020 7:31:06 PM	49999
Surr: Phenol-d5	74.2		18.5-101	D	%Rec	1	2/3/2020 7:31:06 PM	49999
Surr: 2,4,6-Tribromophenol	55.2		35.8-85.6	D	%Rec	1	2/3/2020 7:31:06 PM	49999
Surr: Nitrobenzene-d5	55.5		40.8-95.2	D	%Rec	1	2/3/2020 7:31:06 PM	49999
Surr: 2-Fluorobiphenyl	70.2		34.7-85.2	D	%Rec	1	2/3/2020 7:31:06 PM	49999
Surr: 4-Terphenyl-d14	80.1		37.4-91.3	D	%Rec	1	2/3/2020 7:31:06 PM	49999
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.013	0.082		mg/Kg	5	1/22/2020 6:44:26 PM	A65992
Toluene	0.019	0.016	0.16	J	mg/Kg	5	1/22/2020 6:44:26 PM	A65992
Ethylbenzene	ND	0.0095	0.16		mg/Kg	5	1/22/2020 6:44:26 PM	A65992
Methyl tert-butyl ether (MTBE)	0.052	0.039	0.16	J	mg/Kg	5	1/22/2020 6:44:26 PM	A65992
1,2,4-Trimethylbenzene	0.028	0.015	0.16	J	mg/Kg	5	1/22/2020 6:44:26 PM	A65992
1,3,5-Trimethylbenzene	ND	0.016	0.16		mg/Kg	5	1/22/2020 6:44:26 PM	A65992
1,2-Dichloroethane (EDC)	ND	0.017	0.16		mg/Kg	5	1/22/2020 6:44:26 PM	A65992
1,2-Dibromoethane (EDB)	ND	0.015	0.16		mg/Kg	5	1/22/2020 6:44:26 PM	A65992
Naphthalene	0.040	0.033	0.33	J	mg/Kg	5	1/22/2020 6:44:26 PM	A65992
1-Methylnaphthalene	0.35	0.094	0.65	J	mg/Kg	5	1/22/2020 6:44:26 PM	A65992
2-Methylnaphthalene	0.31	0.072	0.65	J	mg/Kg	5	1/22/2020 6:44:26 PM	A65992
Acetone	ND	0.14	2.5		mg/Kg	5	1/22/2020 6:44:26 PM	A65992
Bromobenzene	ND	0.016	0.16		mg/Kg	5	1/22/2020 6:44:26 PM	A65992
Bromodichloromethane	ND	0.015	0.16		mg/Kg	5	1/22/2020 6:44:26 PM	A65992

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Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-22 Toe 3.5-4.0
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 9:55:00 AM
Lab ID: 2001739-044 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Bromoform	ND	0.015	0.16		mg/Kg	5	1/22/2020 6:44:26 PM	A65992
Bromomethane	ND	0.039	0.49		mg/Kg	5	1/22/2020 6:44:26 PM	A65992
2-Butanone	ND	0.19	1.6		mg/Kg	5	1/22/2020 6:44:26 PM	A65992
Carbon disulfide	ND	0.054	1.6		mg/Kg	5	1/22/2020 6:44:26 PM	A65992
Carbon tetrachloride	ND	0.016	0.16		mg/Kg	5	1/22/2020 6:44:26 PM	A65992
Chlorobenzene	ND	0.021	0.16		mg/Kg	5	1/22/2020 6:44:26 PM	A65992
Chloroethane	ND	0.024	0.33		mg/Kg	5	1/22/2020 6:44:26 PM	A65992
Chloroform	ND	0.013	0.16		mg/Kg	5	1/22/2020 6:44:26 PM	A65992
Chloromethane	ND	0.016	0.49		mg/Kg	5	1/22/2020 6:44:26 PM	A65992
2-Chlorotoluene	ND	0.014	0.16		mg/Kg	5	1/22/2020 6:44:26 PM	A65992
4-Chlorotoluene	ND	0.013	0.16		mg/Kg	5	1/22/2020 6:44:26 PM	A65992
cis-1,2-DCE	ND	0.022	0.16		mg/Kg	5	1/22/2020 6:44:26 PM	A65992
cis-1,3-Dichloropropene	ND	0.014	0.16		mg/Kg	5	1/22/2020 6:44:26 PM	A65992
1,2-Dibromo-3-chloropropane	ND	0.017	0.33		mg/Kg	5	1/22/2020 6:44:26 PM	A65992
Dibromochloromethane	ND	0.012	0.16		mg/Kg	5	1/22/2020 6:44:26 PM	A65992
Dibromomethane	ND	0.018	0.16		mg/Kg	5	1/22/2020 6:44:26 PM	A65992
1,2-Dichlorobenzene	ND	0.013	0.16		mg/Kg	5	1/22/2020 6:44:26 PM	A65992
1,3-Dichlorobenzene	ND	0.014	0.16		mg/Kg	5	1/22/2020 6:44:26 PM	A65992
1,4-Dichlorobenzene	ND	0.014	0.16		mg/Kg	5	1/22/2020 6:44:26 PM	A65992
Dichlorodifluoromethane	ND	0.038	0.16		mg/Kg	5	1/22/2020 6:44:26 PM	A65992
1,1-Dichloroethane	ND	0.010	0.16		mg/Kg	5	1/22/2020 6:44:26 PM	A65992
1,1-Dichloroethene	ND	0.065	0.16		mg/Kg	5	1/22/2020 6:44:26 PM	A65992
1,2-Dichloropropane	ND	0.012	0.16		mg/Kg	5	1/22/2020 6:44:26 PM	A65992
1,3-Dichloropropane	ND	0.018	0.16		mg/Kg	5	1/22/2020 6:44:26 PM	A65992
2,2-Dichloropropane	ND	0.053	0.33		mg/Kg	5	1/22/2020 6:44:26 PM	A65992
1,1-Dichloropropene	ND	0.015	0.33		mg/Kg	5	1/22/2020 6:44:26 PM	A65992
Hexachlorobutadiene	ND	0.017	0.33		mg/Kg	5	1/22/2020 6:44:26 PM	A65992
2-Hexanone	ND	0.027	1.6		mg/Kg	5	1/22/2020 6:44:26 PM	A65992
Isopropylbenzene	ND	0.012	0.16		mg/Kg	5	1/22/2020 6:44:26 PM	A65992
4-Isopropyltoluene	ND	0.014	0.16		mg/Kg	5	1/22/2020 6:44:26 PM	A65992
4-Methyl-2-pentanone	0.11	0.031	1.6	J	mg/Kg	5	1/22/2020 6:44:26 PM	A65992
Methylene chloride	0.085	0.029	0.49	J	mg/Kg	5	1/22/2020 6:44:26 PM	A65992
n-Butylbenzene	ND	0.015	0.49		mg/Kg	5	1/22/2020 6:44:26 PM	A65992
n-Propylbenzene	ND	0.013	0.16		mg/Kg	5	1/22/2020 6:44:26 PM	A65992
sec-Butylbenzene	ND	0.018	0.16		mg/Kg	5	1/22/2020 6:44:26 PM	A65992
Styrene	ND	0.013	0.16		mg/Kg	5	1/22/2020 6:44:26 PM	A65992
tert-Butylbenzene	ND	0.015	0.16		mg/Kg	5	1/22/2020 6:44:26 PM	A65992
1,1,1,2-Tetrachloroethane	ND	0.011	0.16		mg/Kg	5	1/22/2020 6:44:26 PM	A65992
1,1,2,2-Tetrachloroethane	ND	0.017	0.16		mg/Kg	5	1/22/2020 6:44:26 PM	A65992

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

Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-22 Toe 3.5-4.0
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 9:55:00 AM
Lab ID: 2001739-044 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Tetrachloroethene (PCE)	ND	0.013	0.16		mg/Kg	5	1/22/2020 6:44:26 PM	A65992
trans-1,2-DCE	ND	0.015	0.16		mg/Kg	5	1/22/2020 6:44:26 PM	A65992
trans-1,3-Dichloropropene	ND	0.017	0.16		mg/Kg	5	1/22/2020 6:44:26 PM	A65992
1,2,3-Trichlorobenzene	ND	0.014	0.33		mg/Kg	5	1/22/2020 6:44:26 PM	A65992
1,2,4-Trichlorobenzene	ND	0.017	0.16		mg/Kg	5	1/22/2020 6:44:26 PM	A65992
1,1,1-Trichloroethane	ND	0.015	0.16		mg/Kg	5	1/22/2020 6:44:26 PM	A65992
1,1,2-Trichloroethane	ND	0.012	0.16		mg/Kg	5	1/22/2020 6:44:26 PM	A65992
Trichloroethene (TCE)	ND	0.019	0.16		mg/Kg	5	1/22/2020 6:44:26 PM	A65992
Trichlorofluoromethane	ND	0.056	0.16		mg/Kg	5	1/22/2020 6:44:26 PM	A65992
1,2,3-Trichloropropane	ND	0.026	0.33		mg/Kg	5	1/22/2020 6:44:26 PM	A65992
Vinyl chloride	ND	0.011	0.16		mg/Kg	5	1/22/2020 6:44:26 PM	A65992
Xylenes, Total	0.049	0.041	0.33	J	mg/Kg	5	1/22/2020 6:44:26 PM	A65992
Surr: Dibromofluoromethane	110		70-130		%Rec	5	1/22/2020 6:44:26 PM	A65992
Surr: 1,2-Dichloroethane-d4	91.0		70-130		%Rec	5	1/22/2020 6:44:26 PM	A65992
Surr: Toluene-d8	94.2		70-130		%Rec	5	1/22/2020 6:44:26 PM	A65992
Surr: 4-Bromofluorobenzene	90.7		70-130		%Rec	5	1/22/2020 6:44:26 PM	A65992
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	ND	3.5	16		mg/Kg	5	1/22/2020 6:44:26 PM	AG659
Surr: BFB	89.3	0	70-130		%Rec	5	1/22/2020 6:44:26 PM	AG659
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/29/2020 2:53:00 PM	R66198
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	9.13				pH Units	1	1/30/2020 1:06:00 PM	R66199

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Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-9 Clay 5.5-6
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 9:05:00 AM
Lab ID: 2001739-045 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	110	2.3	9.6		mg/Kg	1	1/24/2020 11:33:30 AM	49949
Motor Oil Range Organics (MRO)	ND	48	48		mg/Kg	1	1/24/2020 11:33:30 AM	49949
Surr: DNOP	83.1	0	55.1-146		%Rec	1	1/24/2020 11:33:30 AM	49949
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	0.072	0.0019	0.034	H	mg/Kg	1	2/26/2020 3:51:38 PM	50700
MERCURY, TCLP							Analyst: **rde**	
Mercury	ND	0.00075	0.020		mg/L	1	1/28/2020 12:55:14 PM	50082
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.72	4.9		mg/Kg	2	1/24/2020 10:23:09 AM	49994
Arsenic	3.1	2.8	4.9	J	mg/Kg	2	1/25/2020 10:34:02 AM	49994
Barium	230	0.045	0.20		mg/Kg	2	1/24/2020 10:23:09 AM	49994
Beryllium	0.82	0.018	0.29		mg/Kg	2	1/24/2020 10:23:09 AM	49994
Cadmium	ND	0.047	0.20		mg/Kg	2	1/24/2020 10:23:09 AM	49994
Chromium	27	0.16	0.59		mg/Kg	2	1/24/2020 10:23:09 AM	49994
Cobalt	5.0	0.21	0.59		mg/Kg	2	1/24/2020 10:23:09 AM	49994
Lead	2.4	0.47	0.49		mg/Kg	2	1/24/2020 1:07:31 PM	49994
Nickel	8.6	0.29	0.98		mg/Kg	2	1/24/2020 10:23:09 AM	49994
Selenium	ND	2.5	4.9		mg/Kg	2	1/24/2020 1:07:31 PM	49994
Silver	ND	0.063	0.49		mg/Kg	2	1/24/2020 10:23:09 AM	49994
Vanadium	23	0.13	4.9		mg/Kg	2	1/24/2020 10:23:09 AM	49994
Zinc	30	0.77	4.9		mg/Kg	2	1/24/2020 10:23:09 AM	49994
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/28/2020 11:30:02 AM	50060
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.13	0.35	D	mg/Kg	1	2/3/2020 7:59:58 PM	49999
Acenaphthylene	ND	0.16	0.35	D	mg/Kg	1	2/3/2020 7:59:58 PM	49999
Aniline	ND	0.12	0.35	D	mg/Kg	1	2/3/2020 7:59:58 PM	49999
Anthracene	ND	0.13	0.35	D	mg/Kg	1	2/3/2020 7:59:58 PM	49999
Azobenzene	ND	0.18	0.35	D	mg/Kg	1	2/3/2020 7:59:58 PM	49999
Benz(a)anthracene	ND	0.12	0.35	D	mg/Kg	1	2/3/2020 7:59:58 PM	49999
Benzo(a)pyrene	ND	0.19	0.35	D	mg/Kg	1	2/3/2020 7:59:58 PM	49999
Benzo(b)fluoranthene	ND	0.20	0.35	D	mg/Kg	1	2/3/2020 7:59:58 PM	49999
Benzo(g,h,i)perylene	ND	0.18	0.35	D	mg/Kg	1	2/3/2020 7:59:58 PM	49999
Benzo(k)fluoranthene	ND	0.10	0.35	D	mg/Kg	1	2/3/2020 7:59:58 PM	49999
Benzoic acid	ND	0.24	0.88	D	mg/Kg	1	2/3/2020 7:59:58 PM	49999
Benzyl alcohol	ND	0.15	0.35	D	mg/Kg	1	2/3/2020 7:59:58 PM	49999
Bis(2-chloroethoxy)methane	ND	0.14	0.35	D	mg/Kg	1	2/3/2020 7:59:58 PM	49999

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Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-9 Clay 5.5-6
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 9:05:00 AM
Lab ID: 2001739-045 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.20	0.35	D	mg/Kg	1	2/3/2020 7:59:58 PM	49999
Bis(2-chloroisopropyl)ether	ND	0.15	0.35	D	mg/Kg	1	2/3/2020 7:59:58 PM	49999
Bis(2-ethylhexyl)phthalate	ND	0.39	0.88	D	mg/Kg	1	2/3/2020 7:59:58 PM	49999
4-Bromophenyl phenyl ether	ND	0.20	0.35	D	mg/Kg	1	2/3/2020 7:59:58 PM	49999
Butyl benzyl phthalate	ND	0.12	0.35	D	mg/Kg	1	2/3/2020 7:59:58 PM	49999
Carbazole	ND	0.14	0.35	D	mg/Kg	1	2/3/2020 7:59:58 PM	49999
4-Chloro-3-methylphenol	ND	0.14	0.88	D	mg/Kg	1	2/3/2020 7:59:58 PM	49999
4-Chloroaniline	ND	0.13	0.88	D	mg/Kg	1	2/3/2020 7:59:58 PM	49999
2-Chloronaphthalene	ND	0.15	0.44	D	mg/Kg	1	2/3/2020 7:59:58 PM	49999
2-Chlorophenol	ND	0.20	0.35	D	mg/Kg	1	2/3/2020 7:59:58 PM	49999
4-Chlorophenyl phenyl ether	ND	0.15	0.35	D	mg/Kg	1	2/3/2020 7:59:58 PM	49999
Chrysene	ND	0.14	0.35	D	mg/Kg	1	2/3/2020 7:59:58 PM	49999
Di-n-butyl phthalate	ND	0.52	0.70	D	mg/Kg	1	2/3/2020 7:59:58 PM	49999
Di-n-octyl phthalate	ND	0.12	0.70	D	mg/Kg	1	2/3/2020 7:59:58 PM	49999
Dibenz(a,h)anthracene	ND	0.19	0.35	D	mg/Kg	1	2/3/2020 7:59:58 PM	49999
Dibenzofuran	ND	0.18	0.35	D	mg/Kg	1	2/3/2020 7:59:58 PM	49999
1,2-Dichlorobenzene	ND	0.14	0.35	D	mg/Kg	1	2/3/2020 7:59:58 PM	49999
1,3-Dichlorobenzene	ND	0.12	0.35	D	mg/Kg	1	2/3/2020 7:59:58 PM	49999
1,4-Dichlorobenzene	ND	0.15	0.35	D	mg/Kg	1	2/3/2020 7:59:58 PM	49999
3,3´-Dichlorobenzidine	ND	0.15	0.44	D	mg/Kg	1	2/3/2020 7:59:58 PM	49999
Diethyl phthalate	ND	0.53	0.88	D	mg/Kg	1	2/3/2020 7:59:58 PM	49999
Dimethyl phthalate	ND	0.14	0.35	D	mg/Kg	1	2/3/2020 7:59:58 PM	49999
2,4-Dichlorophenol	ND	0.15	0.70	D	mg/Kg	1	2/3/2020 7:59:58 PM	49999
2,4-Dimethylphenol	ND	0.15	0.53	D	mg/Kg	1	2/3/2020 7:59:58 PM	49999
4,6-Dinitro-2-methylphenol	ND	0.13	0.70	D	mg/Kg	1	2/3/2020 7:59:58 PM	49999
2,4-Dinitrophenol	ND	0.10	0.88	D	mg/Kg	1	2/3/2020 7:59:58 PM	49999
2,4-Dinitrotoluene	ND	0.18	0.88	D	mg/Kg	1	2/3/2020 7:59:58 PM	49999
2,6-Dinitrotoluene	ND	0.21	0.88	D	mg/Kg	1	2/3/2020 7:59:58 PM	49999
Fluoranthene	ND	0.13	0.35	D	mg/Kg	1	2/3/2020 7:59:58 PM	49999
Fluorene	ND	0.14	0.35	D	mg/Kg	1	2/3/2020 7:59:58 PM	49999
Hexachlorobenzene	ND	0.14	0.35	D	mg/Kg	1	2/3/2020 7:59:58 PM	49999
Hexachlorobutadiene	ND	0.15	0.35	D	mg/Kg	1	2/3/2020 7:59:58 PM	49999
Hexachlorocyclopentadiene	ND	0.17	0.35	D	mg/Kg	1	2/3/2020 7:59:58 PM	49999
Hexachloroethane	ND	0.14	0.35	D	mg/Kg	1	2/3/2020 7:59:58 PM	49999
Indeno(1,2,3-cd)pyrene	ND	0.22	0.35	D	mg/Kg	1	2/3/2020 7:59:58 PM	49999
Isophorone	ND	0.15	0.70	D	mg/Kg	1	2/3/2020 7:59:58 PM	49999
1-Methylnaphthalene	0.21	0.16	0.35	JD	mg/Kg	1	2/3/2020 7:59:58 PM	49999
2-Methylnaphthalene	0.32	0.14	0.35	JD	mg/Kg	1	2/3/2020 7:59:58 PM	49999
2-Methylphenol	0.43	0.15	0.70	JD	mg/Kg	1	2/3/2020 7:59:58 PM	49999

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

Qualifiers:

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D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-9 Clay 5.5-6
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 9:05:00 AM
Lab ID: 2001739-045 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	0.36	0.13	0.35	D	mg/Kg	1	2/3/2020 7:59:58 PM	49999
N-Nitrosodi-n-propylamine	ND	0.18	0.35	D	mg/Kg	1	2/3/2020 7:59:58 PM	49999
N-Nitrosodiphenylamine	ND	0.18	0.35	D	mg/Kg	1	2/3/2020 7:59:58 PM	49999
Naphthalene	ND	0.14	0.35	D	mg/Kg	1	2/3/2020 7:59:58 PM	49999
2-Nitroaniline	ND	0.19	0.35	D	mg/Kg	1	2/3/2020 7:59:58 PM	49999
3-Nitroaniline	ND	0.17	0.35	D	mg/Kg	1	2/3/2020 7:59:58 PM	49999
4-Nitroaniline	ND	0.23	0.70	D	mg/Kg	1	2/3/2020 7:59:58 PM	49999
Nitrobenzene	ND	0.15	0.70	D	mg/Kg	1	2/3/2020 7:59:58 PM	49999
2-Nitrophenol	ND	0.14	0.35	D	mg/Kg	1	2/3/2020 7:59:58 PM	49999
4-Nitrophenol	ND	0.10	0.44	D	mg/Kg	1	2/3/2020 7:59:58 PM	49999
Pentachlorophenol	ND	0.16	0.70	D	mg/Kg	1	2/3/2020 7:59:58 PM	49999
Phenanthrene	ND	0.18	0.35	D	mg/Kg	1	2/3/2020 7:59:58 PM	49999
Phenol	ND	0.15	0.35	D	mg/Kg	1	2/3/2020 7:59:58 PM	49999
Pyrene	ND	0.12	0.35	D	mg/Kg	1	2/3/2020 7:59:58 PM	49999
Pyridine	ND	0.33	0.70	D	mg/Kg	1	2/3/2020 7:59:58 PM	49999
1,2,4-Trichlorobenzene	ND	0.15	0.35	D	mg/Kg	1	2/3/2020 7:59:58 PM	49999
2,4,5-Trichlorophenol	ND	0.11	0.35	D	mg/Kg	1	2/3/2020 7:59:58 PM	49999
2,4,6-Trichlorophenol	ND	0.18	0.35	D	mg/Kg	1	2/3/2020 7:59:58 PM	49999
Surr: 2-Fluorophenol	62.4		26.7-85.9	D	%Rec	1	2/3/2020 7:59:58 PM	49999
Surr: Phenol-d5	71.4		18.5-101	D	%Rec	1	2/3/2020 7:59:58 PM	49999
Surr: 2,4,6-Tribromophenol	49.9		35.8-85.6	D	%Rec	1	2/3/2020 7:59:58 PM	49999
Surr: Nitrobenzene-d5	73.5		40.8-95.2	D	%Rec	1	2/3/2020 7:59:58 PM	49999
Surr: 2-Fluorobiphenyl	67.4		34.7-85.2	D	%Rec	1	2/3/2020 7:59:58 PM	49999
Surr: 4-Terphenyl-d14	77.0		37.4-91.3	D	%Rec	1	2/3/2020 7:59:58 PM	49999
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	0.067	0.0097	0.060		mg/Kg	5	1/22/2020 7:13:47 PM	A65992
Toluene	0.17	0.011	0.12		mg/Kg	5	1/22/2020 7:13:47 PM	A65992
Ethylbenzene	0.12	0.0069	0.12		mg/Kg	5	1/22/2020 7:13:47 PM	A65992
Methyl tert-butyl ether (MTBE)	0.095	0.028	0.12	J	mg/Kg	5	1/22/2020 7:13:47 PM	A65992
1,2,4-Trimethylbenzene	0.56	0.011	0.12		mg/Kg	5	1/22/2020 7:13:47 PM	A65992
1,3,5-Trimethylbenzene	0.17	0.012	0.12		mg/Kg	5	1/22/2020 7:13:47 PM	A65992
1,2-Dichloroethane (EDC)	0.052	0.012	0.12	J	mg/Kg	5	1/22/2020 7:13:47 PM	A65992
1,2-Dibromoethane (EDB)	ND	0.011	0.12		mg/Kg	5	1/22/2020 7:13:47 PM	A65992
Naphthalene	0.37	0.024	0.24		mg/Kg	5	1/22/2020 7:13:47 PM	A65992
1-Methylnaphthalene	0.60	0.069	0.48		mg/Kg	5	1/22/2020 7:13:47 PM	A65992
2-Methylnaphthalene	0.99	0.052	0.48		mg/Kg	5	1/22/2020 7:13:47 PM	A65992
Acetone	ND	0.099	1.8		mg/Kg	5	1/22/2020 7:13:47 PM	A65992
Bromobenzene	ND	0.011	0.12		mg/Kg	5	1/22/2020 7:13:47 PM	A65992
Bromodichloromethane	ND	0.011	0.12		mg/Kg	5	1/22/2020 7:13:47 PM	A65992

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Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-9 Clay 5.5-6
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 9:05:00 AM
Lab ID: 2001739-045 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Bromoform	ND	0.011	0.12		mg/Kg	5	1/22/2020 7:13:47 PM	A65992
Bromomethane	ND	0.029	0.36		mg/Kg	5	1/22/2020 7:13:47 PM	A65992
2-Butanone	0.27	0.14	1.2	J	mg/Kg	5	1/22/2020 7:13:47 PM	A65992
Carbon disulfide	0.77	0.039	1.2	J	mg/Kg	5	1/22/2020 7:13:47 PM	A65992
Carbon tetrachloride	ND	0.011	0.12		mg/Kg	5	1/22/2020 7:13:47 PM	A65992
Chlorobenzene	ND	0.015	0.12		mg/Kg	5	1/22/2020 7:13:47 PM	A65992
Chloroethane	ND	0.018	0.24		mg/Kg	5	1/22/2020 7:13:47 PM	A65992
Chloroform	ND	0.0096	0.12		mg/Kg	5	1/22/2020 7:13:47 PM	A65992
Chloromethane	ND	0.011	0.36		mg/Kg	5	1/22/2020 7:13:47 PM	A65992
2-Chlorotoluene	ND	0.010	0.12		mg/Kg	5	1/22/2020 7:13:47 PM	A65992
4-Chlorotoluene	ND	0.0098	0.12		mg/Kg	5	1/22/2020 7:13:47 PM	A65992
cis-1,2-DCE	ND	0.016	0.12		mg/Kg	5	1/22/2020 7:13:47 PM	A65992
cis-1,3-Dichloropropene	ND	0.010	0.12		mg/Kg	5	1/22/2020 7:13:47 PM	A65992
1,2-Dibromo-3-chloropropane	ND	0.012	0.24		mg/Kg	5	1/22/2020 7:13:47 PM	A65992
Dibromochloromethane	ND	0.0085	0.12		mg/Kg	5	1/22/2020 7:13:47 PM	A65992
Dibromomethane	ND	0.013	0.12		mg/Kg	5	1/22/2020 7:13:47 PM	A65992
1,2-Dichlorobenzene	ND	0.0098	0.12		mg/Kg	5	1/22/2020 7:13:47 PM	A65992
1,3-Dichlorobenzene	ND	0.010	0.12		mg/Kg	5	1/22/2020 7:13:47 PM	A65992
1,4-Dichlorobenzene	ND	0.010	0.12		mg/Kg	5	1/22/2020 7:13:47 PM	A65992
Dichlorodifluoromethane	ND	0.028	0.12		mg/Kg	5	1/22/2020 7:13:47 PM	A65992
1,1-Dichloroethane	ND	0.0076	0.12		mg/Kg	5	1/22/2020 7:13:47 PM	A65992
1,1-Dichloroethene	ND	0.048	0.12		mg/Kg	5	1/22/2020 7:13:47 PM	A65992
1,2-Dichloropropane	ND	0.0087	0.12		mg/Kg	5	1/22/2020 7:13:47 PM	A65992
1,3-Dichloropropane	ND	0.013	0.12		mg/Kg	5	1/22/2020 7:13:47 PM	A65992
2,2-Dichloropropane	ND	0.039	0.24		mg/Kg	5	1/22/2020 7:13:47 PM	A65992
1,1-Dichloropropene	ND	0.011	0.24		mg/Kg	5	1/22/2020 7:13:47 PM	A65992
Hexachlorobutadiene	ND	0.012	0.24		mg/Kg	5	1/22/2020 7:13:47 PM	A65992
2-Hexanone	ND	0.020	1.2		mg/Kg	5	1/22/2020 7:13:47 PM	A65992
Isopropylbenzene	0.038	0.0086	0.12	J	mg/Kg	5	1/22/2020 7:13:47 PM	A65992
4-Isopropyltoluene	0.027	0.0099	0.12	J	mg/Kg	5	1/22/2020 7:13:47 PM	A65992
4-Methyl-2-pentanone	0.091	0.023	1.2	J	mg/Kg	5	1/22/2020 7:13:47 PM	A65992
Methylene chloride	0.064	0.021	0.36	J	mg/Kg	5	1/22/2020 7:13:47 PM	A65992
n-Butylbenzene	0.054	0.011	0.36	J	mg/Kg	5	1/22/2020 7:13:47 PM	A65992
n-Propylbenzene	0.078	0.0095	0.12	J	mg/Kg	5	1/22/2020 7:13:47 PM	A65992
sec-Butylbenzene	0.072	0.013	0.12	J	mg/Kg	5	1/22/2020 7:13:47 PM	A65992
Styrene	ND	0.0094	0.12		mg/Kg	5	1/22/2020 7:13:47 PM	A65992
tert-Butylbenzene	ND	0.011	0.12		mg/Kg	5	1/22/2020 7:13:47 PM	A65992
1,1,1,2-Tetrachloroethane	ND	0.0080	0.12		mg/Kg	5	1/22/2020 7:13:47 PM	A65992
1,1,2,2-Tetrachloroethane	ND	0.012	0.12		mg/Kg	5	1/22/2020 7:13:47 PM	A65992

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
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P	Sample pH Not In Range
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-9 Clay 5.5-6
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 9:05:00 AM
Lab ID: 2001739-045 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Tetrachloroethene (PCE)	ND	0.0095	0.12		mg/Kg	5	1/22/2020 7:13:47 PM	A65992
trans-1,2-DCE	ND	0.011	0.12		mg/Kg	5	1/22/2020 7:13:47 PM	A65992
trans-1,3-Dichloropropene	ND	0.013	0.12		mg/Kg	5	1/22/2020 7:13:47 PM	A65992
1,2,3-Trichlorobenzene	ND	0.010	0.24		mg/Kg	5	1/22/2020 7:13:47 PM	A65992
1,2,4-Trichlorobenzene	ND	0.012	0.12		mg/Kg	5	1/22/2020 7:13:47 PM	A65992
1,1,1-Trichloroethane	ND	0.011	0.12		mg/Kg	5	1/22/2020 7:13:47 PM	A65992
1,1,2-Trichloroethane	ND	0.0084	0.12		mg/Kg	5	1/22/2020 7:13:47 PM	A65992
Trichloroethene (TCE)	ND	0.014	0.12		mg/Kg	5	1/22/2020 7:13:47 PM	A65992
Trichlorofluoromethane	ND	0.040	0.12		mg/Kg	5	1/22/2020 7:13:47 PM	A65992
1,2,3-Trichloropropane	ND	0.019	0.24		mg/Kg	5	1/22/2020 7:13:47 PM	A65992
Vinyl chloride	ND	0.0078	0.12		mg/Kg	5	1/22/2020 7:13:47 PM	A65992
Xylenes, Total	0.65	0.030	0.24		mg/Kg	5	1/22/2020 7:13:47 PM	A65992
Surr: Dibromofluoromethane	101		70-130		%Rec	5	1/22/2020 7:13:47 PM	A65992
Surr: 1,2-Dichloroethane-d4	82.3		70-130		%Rec	5	1/22/2020 7:13:47 PM	A65992
Surr: Toluene-d8	94.5		70-130		%Rec	5	1/22/2020 7:13:47 PM	A65992
Surr: 4-Bromofluorobenzene	84.4		70-130		%Rec	5	1/22/2020 7:13:47 PM	A65992
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	12	2.5	12	J	mg/Kg	5	1/22/2020 7:13:47 PM	AG659
Surr: BFB	88.8	0	70-130		%Rec	5	1/22/2020 7:13:47 PM	AG659
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/29/2020 2:53:00 PM	R66198
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	8.91				pH Units	1	1/30/2020 1:06:00 PM	R66199

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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-15 Toe Surf
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 2:24:00 PM
Lab ID: 2001739-046 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	160000	2300	9700		mg/Kg	1000	1/23/2020 12:35:43 AM	49949
Motor Oil Range Organics (MRO)	68000	48000	48000		mg/Kg	1000	1/23/2020 12:35:43 AM	49949
Surr: DNOP	0	0	55.1-146	S	%Rec	1000	1/23/2020 12:35:43 AM	49949
EPA METHOD 7471: MERCURY							Analyst: **JLF**	
Mercury	ND	0.0018	0.033	H	mg/Kg	1	2/28/2020 7:21:47 PM	50752
MERCURY, TCLP							Analyst: **rde**	
Mercury	ND	0.00075	0.020		mg/L	1	1/28/2020 1:05:48 PM	50082
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.74	5.0		mg/Kg	2	1/24/2020 10:24:43 AM	49994
Arsenic	9.5	2.9	5.0		mg/Kg	2	1/25/2020 10:35:26 AM	49994
Barium	310	0.047	0.20		mg/Kg	2	1/24/2020 10:24:43 AM	49994
Beryllium	0.19	0.019	0.30	J	mg/Kg	2	1/24/2020 10:24:43 AM	49994
Cadmium	ND	0.049	0.20		mg/Kg	2	1/24/2020 10:24:43 AM	49994
Chromium	19	0.16	0.61		mg/Kg	2	1/24/2020 10:24:43 AM	49994
Cobalt	2.7	0.21	0.61		mg/Kg	2	1/24/2020 10:24:43 AM	49994
Lead	3.4	0.49	0.50		mg/Kg	2	1/24/2020 1:08:57 PM	49994
Nickel	6.7	0.30	1.0		mg/Kg	2	1/24/2020 10:24:43 AM	49994
Selenium	6.0	2.5	5.0		mg/Kg	2	1/24/2020 1:08:57 PM	49994
Silver	0.62	0.065	0.50		mg/Kg	2	1/24/2020 10:24:43 AM	49994
Vanadium	9.8	0.13	5.0		mg/Kg	2	1/24/2020 10:24:43 AM	49994
Zinc	280	0.80	5.0		mg/Kg	2	1/24/2020 10:24:43 AM	49994
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/28/2020 11:31:25 AM	50060
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	8.5	23	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999
Acenaphthylene	ND	10	23	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999
Aniline	ND	7.8	23	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999
Anthracene	ND	8.7	23	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999
Azobenzene	ND	12	23	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999
Benz(a)anthracene	ND	7.8	23	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999
Benzo(a)pyrene	ND	12	23	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999
Benzo(b)fluoranthene	ND	13	23	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999
Benzo(g,h,i)perylene	ND	12	23	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999
Benzo(k)fluoranthene	ND	6.8	23	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999
Benzoic acid	ND	16	57	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999
Benzyl alcohol	ND	9.4	23	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999
Bis(2-chloroethoxy)methane	ND	9.4	23	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999

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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-15 Toe Surf
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 2:24:00 PM
Lab ID: 2001739-046 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	13	23	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999
Bis(2-chloroisopropyl)ether	ND	9.8	23	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999
Bis(2-ethylhexyl)phthalate	ND	25	57	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999
4-Bromophenyl phenyl ether	ND	13	23	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999
Butyl benzyl phthalate	ND	7.6	23	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999
Carbazole	ND	9.0	23	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999
4-Chloro-3-methylphenol	ND	8.9	57	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999
4-Chloroaniline	ND	8.7	57	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999
2-Chloronaphthalene	ND	9.5	28	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999
2-Chlorophenol	ND	13	23	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999
4-Chlorophenyl phenyl ether	ND	9.5	23	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999
Chrysene	ND	8.9	23	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999
Di-n-butyl phthalate	ND	34	45	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999
Di-n-octyl phthalate	ND	7.6	45	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999
Dibenz(a,h)anthracene	ND	13	23	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999
Dibenzofuran	ND	11	23	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999
1,2-Dichlorobenzene	ND	8.9	23	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999
1,3-Dichlorobenzene	ND	7.6	23	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999
1,4-Dichlorobenzene	ND	9.4	23	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999
3,3´-Dichlorobenzidine	ND	9.7	28	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999
Diethyl phthalate	ND	35	57	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999
Dimethyl phthalate	ND	9.2	23	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999
2,4-Dichlorophenol	ND	9.6	45	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999
2,4-Dimethylphenol	ND	9.4	34	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999
4,6-Dinitro-2-methylphenol	ND	8.3	45	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999
2,4-Dinitrophenol	ND	6.6	57	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999
2,4-Dinitrotoluene	ND	12	57	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999
2,6-Dinitrotoluene	ND	13	57	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999
Fluoranthene	ND	8.7	23	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999
Fluorene	20	8.9	23	JD	mg/Kg	5	2/3/2020 8:28:47 PM	49999
Hexachlorobenzene	ND	8.9	23	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999
Hexachlorobutadiene	ND	9.9	23	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999
Hexachlorocyclopentadiene	ND	11	23	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999
Hexachloroethane	ND	9.3	23	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999
Indeno(1,2,3-cd)pyrene	ND	14	23	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999
Isophorone	ND	9.9	45	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999
1-Methylnaphthalene	58	11	23	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999
2-Methylnaphthalene	31	9.2	23	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999
2-Methylphenol	ND	9.6	45	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999

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

Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-15 Toe Surf
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 2:24:00 PM
Lab ID: 2001739-046 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	8.2	23	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999
N-Nitrosodi-n-propylamine	ND	11	23	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999
N-Nitrosodiphenylamine	ND	12	23	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999
Naphthalene	ND	9.3	23	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999
2-Nitroaniline	ND	13	23	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999
3-Nitroaniline	ND	11	23	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999
4-Nitroaniline	ND	15	45	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999
Nitrobenzene	ND	9.7	45	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999
2-Nitrophenol	ND	9.4	23	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999
4-Nitrophenol	ND	6.7	28	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999
Pentachlorophenol	ND	10	45	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999
Phenanthrene	65	12	23	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999
Phenol	ND	9.6	23	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999
Pyrene	37	7.5	23	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999
Pyridine	ND	21	45	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999
1,2,4-Trichlorobenzene	ND	9.7	23	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999
2,4,5-Trichlorophenol	ND	7.3	23	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999
2,4,6-Trichlorophenol	ND	11	23	D	mg/Kg	5	2/3/2020 8:28:47 PM	49999
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	5	2/3/2020 8:28:47 PM	49999
Surr: Phenol-d5	0		18.5-101	SD	%Rec	5	2/3/2020 8:28:47 PM	49999
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	5	2/3/2020 8:28:47 PM	49999
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	5	2/3/2020 8:28:47 PM	49999
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	5	2/3/2020 8:28:47 PM	49999
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	5	2/3/2020 8:28:47 PM	49999
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	0.035	0.016	0.098	J	mg/Kg	5	1/22/2020 7:43:07 PM	A65992
Toluene	0.43	0.019	0.20		mg/Kg	5	1/22/2020 7:43:07 PM	A65992
Ethylbenzene	0.27	0.011	0.20		mg/Kg	5	1/22/2020 7:43:07 PM	A65992
Methyl tert-butyl ether (MTBE)	ND	0.047	0.20		mg/Kg	5	1/22/2020 7:43:07 PM	A65992
1,2,4-Trimethylbenzene	1.8	0.018	0.20		mg/Kg	5	1/22/2020 7:43:07 PM	A65992
1,3,5-Trimethylbenzene	0.63	0.019	0.20		mg/Kg	5	1/22/2020 7:43:07 PM	A65992
1,2-Dichloroethane (EDC)	0.14	0.020	0.20	J	mg/Kg	5	1/22/2020 7:43:07 PM	A65992
1,2-Dibromoethane (EDB)	ND	0.018	0.20		mg/Kg	5	1/22/2020 7:43:07 PM	A65992
Naphthalene	2.4	0.039	0.39		mg/Kg	5	1/22/2020 7:43:07 PM	A65992
1-Methylnaphthalene	10	0.11	0.79		mg/Kg	5	1/22/2020 7:43:07 PM	A65992
2-Methylnaphthalene	12	0.086	0.79		mg/Kg	5	1/22/2020 7:43:07 PM	A65992
Acetone	0.19	0.16	2.9	J	mg/Kg	5	1/22/2020 7:43:07 PM	A65992
Bromobenzene	ND	0.019	0.20		mg/Kg	5	1/22/2020 7:43:07 PM	A65992
Bromodichloromethane	ND	0.018	0.20		mg/Kg	5	1/22/2020 7:43:07 PM	A65992

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

Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-15 Toe Surf
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 2:24:00 PM
Lab ID: 2001739-046 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Bromoform	ND	0.018	0.20		mg/Kg	5	1/22/2020 7:43:07 PM	A65992
Bromomethane	ND	0.047	0.59		mg/Kg	5	1/22/2020 7:43:07 PM	A65992
2-Butanone	1.3	0.23	2.0	J	mg/Kg	5	1/22/2020 7:43:07 PM	A65992
Carbon disulfide	0.10	0.065	2.0	J	mg/Kg	5	1/22/2020 7:43:07 PM	A65992
Carbon tetrachloride	ND	0.019	0.20		mg/Kg	5	1/22/2020 7:43:07 PM	A65992
Chlorobenzene	ND	0.025	0.20		mg/Kg	5	1/22/2020 7:43:07 PM	A65992
Chloroethane	ND	0.029	0.39		mg/Kg	5	1/22/2020 7:43:07 PM	A65992
Chloroform	ND	0.016	0.20		mg/Kg	5	1/22/2020 7:43:07 PM	A65992
Chloromethane	ND	0.019	0.59		mg/Kg	5	1/22/2020 7:43:07 PM	A65992
2-Chlorotoluene	ND	0.017	0.20		mg/Kg	5	1/22/2020 7:43:07 PM	A65992
4-Chlorotoluene	ND	0.016	0.20		mg/Kg	5	1/22/2020 7:43:07 PM	A65992
cis-1,2-DCE	ND	0.027	0.20		mg/Kg	5	1/22/2020 7:43:07 PM	A65992
cis-1,3-Dichloropropene	ND	0.017	0.20		mg/Kg	5	1/22/2020 7:43:07 PM	A65992
1,2-Dibromo-3-chloropropane	ND	0.020	0.39		mg/Kg	5	1/22/2020 7:43:07 PM	A65992
Dibromochloromethane	ND	0.014	0.20		mg/Kg	5	1/22/2020 7:43:07 PM	A65992
Dibromomethane	ND	0.021	0.20		mg/Kg	5	1/22/2020 7:43:07 PM	A65992
1,2-Dichlorobenzene	ND	0.016	0.20		mg/Kg	5	1/22/2020 7:43:07 PM	A65992
1,3-Dichlorobenzene	ND	0.017	0.20		mg/Kg	5	1/22/2020 7:43:07 PM	A65992
1,4-Dichlorobenzene	ND	0.016	0.20		mg/Kg	5	1/22/2020 7:43:07 PM	A65992
Dichlorodifluoromethane	ND	0.046	0.20		mg/Kg	5	1/22/2020 7:43:07 PM	A65992
1,1-Dichloroethane	ND	0.013	0.20		mg/Kg	5	1/22/2020 7:43:07 PM	A65992
1,1-Dichloroethene	ND	0.079	0.20		mg/Kg	5	1/22/2020 7:43:07 PM	A65992
1,2-Dichloropropane	ND	0.014	0.20		mg/Kg	5	1/22/2020 7:43:07 PM	A65992
1,3-Dichloropropane	ND	0.021	0.20		mg/Kg	5	1/22/2020 7:43:07 PM	A65992
2,2-Dichloropropane	ND	0.064	0.39		mg/Kg	5	1/22/2020 7:43:07 PM	A65992
1,1-Dichloropropene	ND	0.018	0.39		mg/Kg	5	1/22/2020 7:43:07 PM	A65992
Hexachlorobutadiene	ND	0.020	0.39		mg/Kg	5	1/22/2020 7:43:07 PM	A65992
2-Hexanone	0.18	0.033	2.0	J	mg/Kg	5	1/22/2020 7:43:07 PM	A65992
Isopropylbenzene	0.099	0.014	0.20	J	mg/Kg	5	1/22/2020 7:43:07 PM	A65992
4-Isopropyltoluene	0.18	0.016	0.20	J	mg/Kg	5	1/22/2020 7:43:07 PM	A65992
4-Methyl-2-pentanone	0.43	0.037	2.0	J	mg/Kg	5	1/22/2020 7:43:07 PM	A65992
Methylene chloride	0.11	0.035	0.59	J	mg/Kg	5	1/22/2020 7:43:07 PM	A65992
n-Butylbenzene	0.34	0.018	0.59	J	mg/Kg	5	1/22/2020 7:43:07 PM	A65992
n-Propylbenzene	0.22	0.016	0.20		mg/Kg	5	1/22/2020 7:43:07 PM	A65992
sec-Butylbenzene	0.24	0.022	0.20		mg/Kg	5	1/22/2020 7:43:07 PM	A65992
Styrene	ND	0.015	0.20		mg/Kg	5	1/22/2020 7:43:07 PM	A65992
tert-Butylbenzene	ND	0.019	0.20		mg/Kg	5	1/22/2020 7:43:07 PM	A65992
1,1,1,2-Tetrachloroethane	ND	0.013	0.20		mg/Kg	5	1/22/2020 7:43:07 PM	A65992
1,1,2,2-Tetrachloroethane	ND	0.020	0.20		mg/Kg	5	1/22/2020 7:43:07 PM	A65992

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Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-15 Toe Surf
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 2:24:00 PM
Lab ID: 2001739-046 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Tetrachloroethene (PCE)	ND	0.016	0.20		mg/Kg	5	1/22/2020 7:43:07 PM	A65992
trans-1,2-DCE	ND	0.018	0.20		mg/Kg	5	1/22/2020 7:43:07 PM	A65992
trans-1,3-Dichloropropene	ND	0.021	0.20		mg/Kg	5	1/22/2020 7:43:07 PM	A65992
1,2,3-Trichlorobenzene	ND	0.017	0.39		mg/Kg	5	1/22/2020 7:43:07 PM	A65992
1,2,4-Trichlorobenzene	ND	0.020	0.20		mg/Kg	5	1/22/2020 7:43:07 PM	A65992
1,1,1-Trichloroethane	ND	0.018	0.20		mg/Kg	5	1/22/2020 7:43:07 PM	A65992
1,1,2-Trichloroethane	ND	0.014	0.20		mg/Kg	5	1/22/2020 7:43:07 PM	A65992
Trichloroethene (TCE)	ND	0.023	0.20		mg/Kg	5	1/22/2020 7:43:07 PM	A65992
Trichlorofluoromethane	ND	0.067	0.20		mg/Kg	5	1/22/2020 7:43:07 PM	A65992
1,2,3-Trichloropropane	ND	0.032	0.39		mg/Kg	5	1/22/2020 7:43:07 PM	A65992
Vinyl chloride	ND	0.013	0.20		mg/Kg	5	1/22/2020 7:43:07 PM	A65992
Xylenes, Total	2.0	0.050	0.39		mg/Kg	5	1/22/2020 7:43:07 PM	A65992
Surr: Dibromofluoromethane	107		70-130		%Rec	5	1/22/2020 7:43:07 PM	A65992
Surr: 1,2-Dichloroethane-d4	89.7		70-130		%Rec	5	1/22/2020 7:43:07 PM	A65992
Surr: Toluene-d8	98.4		70-130		%Rec	5	1/22/2020 7:43:07 PM	A65992
Surr: 4-Bromofluorobenzene	87.8		70-130		%Rec	5	1/22/2020 7:43:07 PM	A65992
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	42	4.2	20		mg/Kg	5	1/22/2020 7:43:07 PM	AG659
Surr: BFB	97.7	0	70-130		%Rec	5	1/22/2020 7:43:07 PM	AG659
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/29/2020 2:53:00 PM	R66198
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	4.62				pH Units	1	1/30/2020 1:06:00 PM	R66199

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J	Analyte detected below quantitation limits
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-11 2.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 10:10:00 AM
Lab ID: 2001739-047 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	8100	100	420		mg/Kg	50	1/24/2020 11:42:44 AM	49949
Motor Oil Range Organics (MRO)	3300	2100	2100		mg/Kg	50	1/24/2020 11:42:44 AM	49949
Surr: DNOP	0	0	55.1-146	S	%Rec	50	1/24/2020 11:42:44 AM	49949
EPA METHOD 7471: MERCURY							Analyst: **JLF**	
Mercury	0.19	0.0018	0.032	H	mg/Kg	1	2/28/2020 7:24:19 PM	50752
MERCURY, TCLP							Analyst: **rde**	
Mercury	ND	0.00075	0.020		mg/L	1	1/28/2020 1:07:47 PM	50082
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.73	5.0		mg/Kg	2	1/24/2020 10:26:17 AM	49994
Arsenic	ND	2.8	5.0		mg/Kg	2	1/25/2020 10:36:50 AM	49994
Barium	220	0.046	0.20		mg/Kg	2	1/24/2020 10:26:17 AM	49994
Beryllium	0.98	0.018	0.30		mg/Kg	2	1/24/2020 10:26:17 AM	49994
Cadmium	ND	0.048	0.20		mg/Kg	2	1/24/2020 10:26:17 AM	49994
Chromium	14	0.16	0.60		mg/Kg	2	1/24/2020 10:26:17 AM	49994
Cobalt	5.0	0.21	0.60		mg/Kg	2	1/24/2020 10:26:17 AM	49994
Lead	2.6	0.48	0.50		mg/Kg	2	1/24/2020 1:10:21 PM	49994
Nickel	11	0.30	1.0		mg/Kg	2	1/24/2020 10:26:17 AM	49994
Selenium	ND	2.5	5.0		mg/Kg	2	1/24/2020 1:10:21 PM	49994
Silver	ND	0.064	0.50		mg/Kg	2	1/24/2020 10:26:17 AM	49994
Vanadium	22	0.13	5.0		mg/Kg	2	1/24/2020 10:26:17 AM	49994
Zinc	210	0.79	5.0		mg/Kg	2	1/24/2020 10:26:17 AM	49994
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/28/2020 11:32:48 AM	50060
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.15	0.39	D	mg/Kg	1	2/3/2020 8:57:33 PM	49999
Acenaphthylene	ND	0.17	0.39	D	mg/Kg	1	2/3/2020 8:57:33 PM	49999
Aniline	ND	0.13	0.39	D	mg/Kg	1	2/3/2020 8:57:33 PM	49999
Anthracene	ND	0.15	0.39	D	mg/Kg	1	2/3/2020 8:57:33 PM	49999
Azobenzene	ND	0.20	0.39	D	mg/Kg	1	2/3/2020 8:57:33 PM	49999
Benz(a)anthracene	ND	0.13	0.39	D	mg/Kg	1	2/3/2020 8:57:33 PM	49999
Benzo(a)pyrene	ND	0.21	0.39	D	mg/Kg	1	2/3/2020 8:57:33 PM	49999
Benzo(b)fluoranthene	ND	0.22	0.39	D	mg/Kg	1	2/3/2020 8:57:33 PM	49999
Benzo(g,h,i)perylene	ND	0.20	0.39	D	mg/Kg	1	2/3/2020 8:57:33 PM	49999
Benzo(k)fluoranthene	ND	0.12	0.39	D	mg/Kg	1	2/3/2020 8:57:33 PM	49999
Benzoic acid	ND	0.27	0.97	D	mg/Kg	1	2/3/2020 8:57:33 PM	49999
Benzyl alcohol	ND	0.16	0.39	D	mg/Kg	1	2/3/2020 8:57:33 PM	49999
Bis(2-chloroethoxy)methane	ND	0.16	0.39	D	mg/Kg	1	2/3/2020 8:57:33 PM	49999

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J	Analyte detected below quantitation limits
P	Sample pH Not In Range
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-11 2.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 10:10:00 AM
Lab ID: 2001739-047 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.23	0.39	D	mg/Kg	1	2/3/2020 8:57:33 PM	49999
Bis(2-chloroisopropyl)ether	ND	0.17	0.39	D	mg/Kg	1	2/3/2020 8:57:33 PM	49999
Bis(2-ethylhexyl)phthalate	ND	0.43	0.97	D	mg/Kg	1	2/3/2020 8:57:33 PM	49999
4-Bromophenyl phenyl ether	ND	0.23	0.39	D	mg/Kg	1	2/3/2020 8:57:33 PM	49999
Butyl benzyl phthalate	ND	0.13	0.39	D	mg/Kg	1	2/3/2020 8:57:33 PM	49999
Carbazole	ND	0.15	0.39	D	mg/Kg	1	2/3/2020 8:57:33 PM	49999
4-Chloro-3-methylphenol	ND	0.15	0.97	D	mg/Kg	1	2/3/2020 8:57:33 PM	49999
4-Chloroaniline	ND	0.15	0.97	D	mg/Kg	1	2/3/2020 8:57:33 PM	49999
2-Chloronaphthalene	ND	0.16	0.48	D	mg/Kg	1	2/3/2020 8:57:33 PM	49999
2-Chlorophenol	ND	0.22	0.39	D	mg/Kg	1	2/3/2020 8:57:33 PM	49999
4-Chlorophenyl phenyl ether	ND	0.16	0.39	D	mg/Kg	1	2/3/2020 8:57:33 PM	49999
Chrysene	ND	0.15	0.39	D	mg/Kg	1	2/3/2020 8:57:33 PM	49999
Di-n-butyl phthalate	ND	0.58	0.78	D	mg/Kg	1	2/3/2020 8:57:33 PM	49999
Di-n-octyl phthalate	ND	0.13	0.78	D	mg/Kg	1	2/3/2020 8:57:33 PM	49999
Dibenz(a,h)anthracene	ND	0.22	0.39	D	mg/Kg	1	2/3/2020 8:57:33 PM	49999
Dibenzofuran	ND	0.19	0.39	D	mg/Kg	1	2/3/2020 8:57:33 PM	49999
1,2-Dichlorobenzene	ND	0.15	0.39	D	mg/Kg	1	2/3/2020 8:57:33 PM	49999
1,3-Dichlorobenzene	ND	0.13	0.39	D	mg/Kg	1	2/3/2020 8:57:33 PM	49999
1,4-Dichlorobenzene	ND	0.16	0.39	D	mg/Kg	1	2/3/2020 8:57:33 PM	49999
3,3´-Dichlorobenzidine	ND	0.17	0.48	D	mg/Kg	1	2/3/2020 8:57:33 PM	49999
Diethyl phthalate	ND	0.59	0.97	D	mg/Kg	1	2/3/2020 8:57:33 PM	49999
Dimethyl phthalate	ND	0.16	0.39	D	mg/Kg	1	2/3/2020 8:57:33 PM	49999
2,4-Dichlorophenol	ND	0.16	0.78	D	mg/Kg	1	2/3/2020 8:57:33 PM	49999
2,4-Dimethylphenol	ND	0.16	0.58	D	mg/Kg	1	2/3/2020 8:57:33 PM	49999
4,6-Dinitro-2-methylphenol	ND	0.14	0.78	D	mg/Kg	1	2/3/2020 8:57:33 PM	49999
2,4-Dinitrophenol	ND	0.11	0.97	D	mg/Kg	1	2/3/2020 8:57:33 PM	49999
2,4-Dinitrotoluene	ND	0.20	0.97	D	mg/Kg	1	2/3/2020 8:57:33 PM	49999
2,6-Dinitrotoluene	ND	0.23	0.97	D	mg/Kg	1	2/3/2020 8:57:33 PM	49999
Fluoranthene	ND	0.15	0.39	D	mg/Kg	1	2/3/2020 8:57:33 PM	49999
Fluorene	ND	0.15	0.39	D	mg/Kg	1	2/3/2020 8:57:33 PM	49999
Hexachlorobenzene	ND	0.15	0.39	D	mg/Kg	1	2/3/2020 8:57:33 PM	49999
Hexachlorobutadiene	ND	0.17	0.39	D	mg/Kg	1	2/3/2020 8:57:33 PM	49999
Hexachlorocyclopentadiene	ND	0.19	0.39	D	mg/Kg	1	2/3/2020 8:57:33 PM	49999
Hexachloroethane	ND	0.16	0.39	D	mg/Kg	1	2/3/2020 8:57:33 PM	49999
Indeno(1,2,3-cd)pyrene	ND	0.24	0.39	D	mg/Kg	1	2/3/2020 8:57:33 PM	49999
Isophorone	ND	0.17	0.78	D	mg/Kg	1	2/3/2020 8:57:33 PM	49999
1-Methylnaphthalene	0.35	0.18	0.39	JD	mg/Kg	1	2/3/2020 8:57:33 PM	49999
2-Methylnaphthalene	0.53	0.16	0.39	D	mg/Kg	1	2/3/2020 8:57:33 PM	49999
2-Methylphenol	0.48	0.16	0.78	JD	mg/Kg	1	2/3/2020 8:57:33 PM	49999

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Qualifiers:

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D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
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P	Sample pH Not In Range
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-11 2.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 10:10:00 AM
Lab ID: 2001739-047 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	0.58	0.14	0.39	D	mg/Kg	1	2/3/2020 8:57:33 PM	49999
N-Nitrosodi-n-propylamine	ND	0.20	0.39	D	mg/Kg	1	2/3/2020 8:57:33 PM	49999
N-Nitrosodiphenylamine	ND	0.20	0.39	D	mg/Kg	1	2/3/2020 8:57:33 PM	49999
Naphthalene	0.20	0.16	0.39	JD	mg/Kg	1	2/3/2020 8:57:33 PM	49999
2-Nitroaniline	ND	0.22	0.39	D	mg/Kg	1	2/3/2020 8:57:33 PM	49999
3-Nitroaniline	ND	0.19	0.39	D	mg/Kg	1	2/3/2020 8:57:33 PM	49999
4-Nitroaniline	ND	0.26	0.78	D	mg/Kg	1	2/3/2020 8:57:33 PM	49999
Nitrobenzene	ND	0.17	0.78	D	mg/Kg	1	2/3/2020 8:57:33 PM	49999
2-Nitrophenol	ND	0.16	0.39	D	mg/Kg	1	2/3/2020 8:57:33 PM	49999
4-Nitrophenol	ND	0.11	0.48	D	mg/Kg	1	2/3/2020 8:57:33 PM	49999
Pentachlorophenol	ND	0.17	0.78	D	mg/Kg	1	2/3/2020 8:57:33 PM	49999
Phenanthrene	ND	0.20	0.39	D	mg/Kg	1	2/3/2020 8:57:33 PM	49999
Phenol	ND	0.16	0.39	D	mg/Kg	1	2/3/2020 8:57:33 PM	49999
Pyrene	ND	0.13	0.39	D	mg/Kg	1	2/3/2020 8:57:33 PM	49999
Pyridine	ND	0.36	0.78	D	mg/Kg	1	2/3/2020 8:57:33 PM	49999
1,2,4-Trichlorobenzene	ND	0.17	0.39	D	mg/Kg	1	2/3/2020 8:57:33 PM	49999
2,4,5-Trichlorophenol	ND	0.13	0.39	D	mg/Kg	1	2/3/2020 8:57:33 PM	49999
2,4,6-Trichlorophenol	ND	0.19	0.39	D	mg/Kg	1	2/3/2020 8:57:33 PM	49999
Surr: 2-Fluorophenol	62.8		26.7-85.9	D	%Rec	1	2/3/2020 8:57:33 PM	49999
Surr: Phenol-d5	72.9		18.5-101	D	%Rec	1	2/3/2020 8:57:33 PM	49999
Surr: 2,4,6-Tribromophenol	65.8		35.8-85.6	D	%Rec	1	2/3/2020 8:57:33 PM	49999
Surr: Nitrobenzene-d5	75.9		40.8-95.2	D	%Rec	1	2/3/2020 8:57:33 PM	49999
Surr: 2-Fluorobiphenyl	75.8		34.7-85.2	D	%Rec	1	2/3/2020 8:57:33 PM	49999
Surr: 4-Terphenyl-d14	84.0		37.4-91.3	D	%Rec	1	2/3/2020 8:57:33 PM	49999
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	0.041	0.012	0.075	J	mg/Kg	5	1/22/2020 8:12:10 PM	A65992
Toluene	0.32	0.014	0.15		mg/Kg	5	1/22/2020 8:12:10 PM	A65992
Ethylbenzene	0.16	0.0087	0.15		mg/Kg	5	1/22/2020 8:12:10 PM	A65992
Methyl tert-butyl ether (MTBE)	ND	0.036	0.15		mg/Kg	5	1/22/2020 8:12:10 PM	A65992
1,2,4-Trimethylbenzene	1.0	0.014	0.15		mg/Kg	5	1/22/2020 8:12:10 PM	A65992
1,3,5-Trimethylbenzene	0.30	0.015	0.15		mg/Kg	5	1/22/2020 8:12:10 PM	A65992
1,2-Dichloroethane (EDC)	ND	0.015	0.15		mg/Kg	5	1/22/2020 8:12:10 PM	A65992
1,2-Dibromoethane (EDB)	0.081	0.014	0.15	J	mg/Kg	5	1/22/2020 8:12:10 PM	A65992
Naphthalene	1.4	0.030	0.30		mg/Kg	5	1/22/2020 8:12:10 PM	A65992
1-Methylnaphthalene	5.9	0.086	0.60		mg/Kg	5	1/22/2020 8:12:10 PM	A65992
2-Methylnaphthalene	9.2	0.066	0.60		mg/Kg	5	1/22/2020 8:12:10 PM	A65992
Acetone	0.91	0.12	2.3	J	mg/Kg	5	1/22/2020 8:12:10 PM	A65992
Bromobenzene	ND	0.014	0.15		mg/Kg	5	1/22/2020 8:12:10 PM	A65992
Bromodichloromethane	ND	0.014	0.15		mg/Kg	5	1/22/2020 8:12:10 PM	A65992

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

Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-11 2.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 10:10:00 AM
Lab ID: 2001739-047 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Bromoform	ND	0.014	0.15		mg/Kg	5	1/22/2020 8:12:10 PM	A65992
Bromomethane	ND	0.036	0.45		mg/Kg	5	1/22/2020 8:12:10 PM	A65992
2-Butanone	ND	0.17	1.5		mg/Kg	5	1/22/2020 8:12:10 PM	A65992
Carbon disulfide	ND	0.050	1.5		mg/Kg	5	1/22/2020 8:12:10 PM	A65992
Carbon tetrachloride	ND	0.014	0.15		mg/Kg	5	1/22/2020 8:12:10 PM	A65992
Chlorobenzene	ND	0.019	0.15		mg/Kg	5	1/22/2020 8:12:10 PM	A65992
Chloroethane	ND	0.022	0.30		mg/Kg	5	1/22/2020 8:12:10 PM	A65992
Chloroform	ND	0.012	0.15		mg/Kg	5	1/22/2020 8:12:10 PM	A65992
Chloromethane	ND	0.014	0.45		mg/Kg	5	1/22/2020 8:12:10 PM	A65992
2-Chlorotoluene	ND	0.013	0.15		mg/Kg	5	1/22/2020 8:12:10 PM	A65992
4-Chlorotoluene	ND	0.012	0.15		mg/Kg	5	1/22/2020 8:12:10 PM	A65992
cis-1,2-DCE	ND	0.021	0.15		mg/Kg	5	1/22/2020 8:12:10 PM	A65992
cis-1,3-Dichloropropene	ND	0.013	0.15		mg/Kg	5	1/22/2020 8:12:10 PM	A65992
1,2-Dibromo-3-chloropropane	ND	0.015	0.30		mg/Kg	5	1/22/2020 8:12:10 PM	A65992
Dibromochloromethane	ND	0.011	0.15		mg/Kg	5	1/22/2020 8:12:10 PM	A65992
Dibromomethane	ND	0.016	0.15		mg/Kg	5	1/22/2020 8:12:10 PM	A65992
1,2-Dichlorobenzene	ND	0.012	0.15		mg/Kg	5	1/22/2020 8:12:10 PM	A65992
1,3-Dichlorobenzene	ND	0.013	0.15		mg/Kg	5	1/22/2020 8:12:10 PM	A65992
1,4-Dichlorobenzene	ND	0.013	0.15		mg/Kg	5	1/22/2020 8:12:10 PM	A65992
Dichlorodifluoromethane	ND	0.035	0.15		mg/Kg	5	1/22/2020 8:12:10 PM	A65992
1,1-Dichloroethane	ND	0.0096	0.15		mg/Kg	5	1/22/2020 8:12:10 PM	A65992
1,1-Dichloroethene	ND	0.060	0.15		mg/Kg	5	1/22/2020 8:12:10 PM	A65992
1,2-Dichloropropane	ND	0.011	0.15		mg/Kg	5	1/22/2020 8:12:10 PM	A65992
1,3-Dichloropropane	ND	0.016	0.15		mg/Kg	5	1/22/2020 8:12:10 PM	A65992
2,2-Dichloropropane	ND	0.049	0.30		mg/Kg	5	1/22/2020 8:12:10 PM	A65992
1,1-Dichloropropene	ND	0.014	0.30		mg/Kg	5	1/22/2020 8:12:10 PM	A65992
Hexachlorobutadiene	ND	0.015	0.30		mg/Kg	5	1/22/2020 8:12:10 PM	A65992
2-Hexanone	0.17	0.025	1.5	J	mg/Kg	5	1/22/2020 8:12:10 PM	A65992
Isopropylbenzene	0.071	0.011	0.15	J	mg/Kg	5	1/22/2020 8:12:10 PM	A65992
4-Isopropyltoluene	0.091	0.012	0.15	J	mg/Kg	5	1/22/2020 8:12:10 PM	A65992
4-Methyl-2-pentanone	0.38	0.028	1.5	J	mg/Kg	5	1/22/2020 8:12:10 PM	A65992
Methylene chloride	0.081	0.027	0.45	J	mg/Kg	5	1/22/2020 8:12:10 PM	A65992
n-Butylbenzene	0.17	0.014	0.45	J	mg/Kg	5	1/22/2020 8:12:10 PM	A65992
n-Propylbenzene	0.14	0.012	0.15	J	mg/Kg	5	1/22/2020 8:12:10 PM	A65992
sec-Butylbenzene	0.16	0.017	0.15		mg/Kg	5	1/22/2020 8:12:10 PM	A65992
Styrene	ND	0.012	0.15		mg/Kg	5	1/22/2020 8:12:10 PM	A65992
tert-Butylbenzene	ND	0.014	0.15		mg/Kg	5	1/22/2020 8:12:10 PM	A65992
1,1,1,2-Tetrachloroethane	ND	0.010	0.15		mg/Kg	5	1/22/2020 8:12:10 PM	A65992
1,1,2,2-Tetrachloroethane	ND	0.015	0.15		mg/Kg	5	1/22/2020 8:12:10 PM	A65992

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

Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-11 2.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 10:10:00 AM
Lab ID: 2001739-047 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Tetrachloroethene (PCE)	ND	0.012	0.15		mg/Kg	5	1/22/2020 8:12:10 PM	A65992
trans-1,2-DCE	ND	0.014	0.15		mg/Kg	5	1/22/2020 8:12:10 PM	A65992
trans-1,3-Dichloropropene	0.025	0.016	0.15	J	mg/Kg	5	1/22/2020 8:12:10 PM	A65992
1,2,3-Trichlorobenzene	ND	0.013	0.30		mg/Kg	5	1/22/2020 8:12:10 PM	A65992
1,2,4-Trichlorobenzene	ND	0.015	0.15		mg/Kg	5	1/22/2020 8:12:10 PM	A65992
1,1,1-Trichloroethane	ND	0.014	0.15		mg/Kg	5	1/22/2020 8:12:10 PM	A65992
1,1,2-Trichloroethane	ND	0.011	0.15		mg/Kg	5	1/22/2020 8:12:10 PM	A65992
Trichloroethene (TCE)	ND	0.017	0.15		mg/Kg	5	1/22/2020 8:12:10 PM	A65992
Trichlorofluoromethane	ND	0.051	0.15		mg/Kg	5	1/22/2020 8:12:10 PM	A65992
1,2,3-Trichloropropane	ND	0.024	0.30		mg/Kg	5	1/22/2020 8:12:10 PM	A65992
Vinyl chloride	ND	0.0098	0.15		mg/Kg	5	1/22/2020 8:12:10 PM	A65992
Xylenes, Total	1.2	0.038	0.30		mg/Kg	5	1/22/2020 8:12:10 PM	A65992
Surr: Dibromofluoromethane	104		70-130		%Rec	5	1/22/2020 8:12:10 PM	A65992
Surr: 1,2-Dichloroethane-d4	87.5		70-130		%Rec	5	1/22/2020 8:12:10 PM	A65992
Surr: Toluene-d8	101		70-130		%Rec	5	1/22/2020 8:12:10 PM	A65992
Surr: 4-Bromofluorobenzene	91.6		70-130		%Rec	5	1/22/2020 8:12:10 PM	A65992
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	71	3.2	15		mg/Kg	5	1/22/2020 8:12:10 PM	AG659
Surr: BFB	101	0	70-130		%Rec	5	1/22/2020 8:12:10 PM	AG659
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/29/2020 2:53:00 PM	R66198
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	8.74				pH Units	1	1/30/2020 1:06:00 PM	R66199

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

Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-14 Toe 3 ft
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 2:58:00 PM
Lab ID: 2001739-048 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	120	2.1	8.9		mg/Kg	1	1/24/2020 11:51:59 AM	49949
Motor Oil Range Organics (MRO)	ND	44	44		mg/Kg	1	1/24/2020 11:51:59 AM	49949
Surr: DNOP	88.6	0	55.1-146		%Rec	1	1/24/2020 11:51:59 AM	49949
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	0.037	0.0019	0.034	H	mg/Kg	1	2/26/2020 3:58:02 PM	50701
MERCURY, TCLP							Analyst: **rde**	
Mercury	ND	0.00075	0.020		mg/L	1	1/28/2020 1:09:47 PM	50082
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.73	5.0		mg/Kg	2	1/24/2020 10:27:51 AM	49994
Arsenic	ND	7.1	12		mg/Kg	5	1/25/2020 11:28:53 AM	49994
Barium	200	0.046	0.20		mg/Kg	2	1/24/2020 10:27:51 AM	49994
Beryllium	0.93	0.018	0.30		mg/Kg	2	1/24/2020 10:27:51 AM	49994
Cadmium	ND	0.048	0.20		mg/Kg	2	1/24/2020 10:27:51 AM	49994
Chromium	8.8	0.16	0.60		mg/Kg	2	1/24/2020 10:27:51 AM	49994
Cobalt	4.8	0.21	0.60		mg/Kg	2	1/24/2020 10:27:51 AM	49994
Lead	2.0	0.48	0.50		mg/Kg	2	1/24/2020 1:11:45 PM	49994
Nickel	8.3	0.30	1.0		mg/Kg	2	1/24/2020 10:27:51 AM	49994
Selenium	ND	2.5	5.0		mg/Kg	2	1/24/2020 1:11:45 PM	49994
Silver	ND	0.064	0.50		mg/Kg	2	1/24/2020 10:27:51 AM	49994
Vanadium	16	0.13	5.0		mg/Kg	2	1/24/2020 10:27:51 AM	49994
Zinc	18	0.79	5.0		mg/Kg	2	1/24/2020 10:27:51 AM	49994
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/28/2020 11:34:11 AM	50060
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	1.7	4.6	D	mg/Kg	1	2/3/2020 9:26:15 PM	49999
Acenaphthylene	ND	2.0	4.6	D	mg/Kg	1	2/3/2020 9:26:15 PM	49999
Aniline	ND	1.6	4.6	D	mg/Kg	1	2/3/2020 9:26:15 PM	49999
Anthracene	ND	1.8	4.6	D	mg/Kg	1	2/3/2020 9:26:15 PM	49999
Azobenzene	ND	2.3	4.6	D	mg/Kg	1	2/3/2020 9:26:15 PM	49999
Benz(a)anthracene	ND	1.6	4.6	D	mg/Kg	1	2/3/2020 9:26:15 PM	49999
Benzo(a)pyrene	ND	2.5	4.6	D	mg/Kg	1	2/3/2020 9:26:15 PM	49999
Benzo(b)fluoranthene	ND	2.6	4.6	D	mg/Kg	1	2/3/2020 9:26:15 PM	49999
Benzo(g,h,i)perylene	ND	2.4	4.6	D	mg/Kg	1	2/3/2020 9:26:15 PM	49999
Benzo(k)fluoranthene	ND	1.4	4.6	D	mg/Kg	1	2/3/2020 9:26:15 PM	49999
Benzoic acid	ND	3.2	12	D	mg/Kg	1	2/3/2020 9:26:15 PM	49999
Benzyl alcohol	ND	1.9	4.6	D	mg/Kg	1	2/3/2020 9:26:15 PM	49999
Bis(2-chloroethoxy)methane	ND	1.9	4.6	D	mg/Kg	1	2/3/2020 9:26:15 PM	49999

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Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-14 Toe 3 ft
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 2:58:00 PM
Lab ID: 2001739-048 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	2.7	4.6	D	mg/Kg	1	2/3/2020 9:26:15 PM	49999
Bis(2-chloroisopropyl)ether	ND	2.0	4.6	D	mg/Kg	1	2/3/2020 9:26:15 PM	49999
Bis(2-ethylhexyl)phthalate	ND	5.2	12	D	mg/Kg	1	2/3/2020 9:26:15 PM	49999
4-Bromophenyl phenyl ether	ND	2.7	4.6	D	mg/Kg	1	2/3/2020 9:26:15 PM	49999
Butyl benzyl phthalate	ND	1.5	4.6	D	mg/Kg	1	2/3/2020 9:26:15 PM	49999
Carbazole	ND	1.8	4.6	D	mg/Kg	1	2/3/2020 9:26:15 PM	49999
4-Chloro-3-methylphenol	ND	1.8	12	D	mg/Kg	1	2/3/2020 9:26:15 PM	49999
4-Chloroaniline	ND	1.8	12	D	mg/Kg	1	2/3/2020 9:26:15 PM	49999
2-Chloronaphthalene	ND	1.9	5.8	D	mg/Kg	1	2/3/2020 9:26:15 PM	49999
2-Chlorophenol	ND	2.6	4.6	D	mg/Kg	1	2/3/2020 9:26:15 PM	49999
4-Chlorophenyl phenyl ether	ND	1.9	4.6	D	mg/Kg	1	2/3/2020 9:26:15 PM	49999
Chrysene	ND	1.8	4.6	D	mg/Kg	1	2/3/2020 9:26:15 PM	49999
Di-n-butyl phthalate	ND	6.9	9.2	D	mg/Kg	1	2/3/2020 9:26:15 PM	49999
Di-n-octyl phthalate	ND	1.5	9.2	D	mg/Kg	1	2/3/2020 9:26:15 PM	49999
Dibenz(a,h)anthracene	ND	2.6	4.6	D	mg/Kg	1	2/3/2020 9:26:15 PM	49999
Dibenzofuran	ND	2.3	4.6	D	mg/Kg	1	2/3/2020 9:26:15 PM	49999
1,2-Dichlorobenzene	ND	1.8	4.6	D	mg/Kg	1	2/3/2020 9:26:15 PM	49999
1,3-Dichlorobenzene	ND	1.5	4.6	D	mg/Kg	1	2/3/2020 9:26:15 PM	49999
1,4-Dichlorobenzene	ND	1.9	4.6	D	mg/Kg	1	2/3/2020 9:26:15 PM	49999
3,3´-Dichlorobenzidine	ND	2.0	5.8	D	mg/Kg	1	2/3/2020 9:26:15 PM	49999
Diethyl phthalate	ND	7.0	12	D	mg/Kg	1	2/3/2020 9:26:15 PM	49999
Dimethyl phthalate	ND	1.9	4.6	D	mg/Kg	1	2/3/2020 9:26:15 PM	49999
2,4-Dichlorophenol	ND	1.9	9.2	D	mg/Kg	1	2/3/2020 9:26:15 PM	49999
2,4-Dimethylphenol	ND	1.9	6.9	D	mg/Kg	1	2/3/2020 9:26:15 PM	49999
4,6-Dinitro-2-methylphenol	ND	1.7	9.2	D	mg/Kg	1	2/3/2020 9:26:15 PM	49999
2,4-Dinitrophenol	ND	1.3	12	D	mg/Kg	1	2/3/2020 9:26:15 PM	49999
2,4-Dinitrotoluene	ND	2.4	12	D	mg/Kg	1	2/3/2020 9:26:15 PM	49999
2,6-Dinitrotoluene	ND	2.7	12	D	mg/Kg	1	2/3/2020 9:26:15 PM	49999
Fluoranthene	ND	1.8	4.6	D	mg/Kg	1	2/3/2020 9:26:15 PM	49999
Fluorene	2.2	1.8	4.6	JD	mg/Kg	1	2/3/2020 9:26:15 PM	49999
Hexachlorobenzene	ND	1.8	4.6	D	mg/Kg	1	2/3/2020 9:26:15 PM	49999
Hexachlorobutadiene	ND	2.0	4.6	D	mg/Kg	1	2/3/2020 9:26:15 PM	49999
Hexachlorocyclopentadiene	ND	2.2	4.6	D	mg/Kg	1	2/3/2020 9:26:15 PM	49999
Hexachloroethane	ND	1.9	4.6	D	mg/Kg	1	2/3/2020 9:26:15 PM	49999
Indeno(1,2,3-cd)pyrene	ND	2.8	4.6	D	mg/Kg	1	2/3/2020 9:26:15 PM	49999
Isophorone	ND	2.0	9.2	D	mg/Kg	1	2/3/2020 9:26:15 PM	49999
1-Methylnaphthalene	6.5	2.1	4.6	D	mg/Kg	1	2/3/2020 9:26:15 PM	49999
2-Methylnaphthalene	7.8	1.9	4.6	D	mg/Kg	1	2/3/2020 9:26:15 PM	49999
2-Methylphenol	ND	1.9	9.2	D	mg/Kg	1	2/3/2020 9:26:15 PM	49999

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

Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-14 Toe 3 ft
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 2:58:00 PM
Lab ID: 2001739-048 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	1.9	1.7	4.6	JD	mg/Kg	1	2/3/2020 9:26:15 PM	49999
N-Nitrosodi-n-propylamine	ND	2.3	4.6	D	mg/Kg	1	2/3/2020 9:26:15 PM	49999
N-Nitrosodiphenylamine	ND	2.4	4.6	D	mg/Kg	1	2/3/2020 9:26:15 PM	49999
Naphthalene	ND	1.9	4.6	D	mg/Kg	1	2/3/2020 9:26:15 PM	49999
2-Nitroaniline	ND	2.6	4.6	D	mg/Kg	1	2/3/2020 9:26:15 PM	49999
3-Nitroaniline	ND	2.3	4.6	D	mg/Kg	1	2/3/2020 9:26:15 PM	49999
4-Nitroaniline	ND	3.1	9.2	D	mg/Kg	1	2/3/2020 9:26:15 PM	49999
Nitrobenzene	ND	2.0	9.2	D	mg/Kg	1	2/3/2020 9:26:15 PM	49999
2-Nitrophenol	ND	1.9	4.6	D	mg/Kg	1	2/3/2020 9:26:15 PM	49999
4-Nitrophenol	ND	1.4	5.8	D	mg/Kg	1	2/3/2020 9:26:15 PM	49999
Pentachlorophenol	ND	2.1	9.2	D	mg/Kg	1	2/3/2020 9:26:15 PM	49999
Phenanthrene	7.8	2.3	4.6	D	mg/Kg	1	2/3/2020 9:26:15 PM	49999
Phenol	ND	2.0	4.6	D	mg/Kg	1	2/3/2020 9:26:15 PM	49999
Pyrene	1.9	1.5	4.6	JD	mg/Kg	1	2/3/2020 9:26:15 PM	49999
Pyridine	ND	4.3	9.2	D	mg/Kg	1	2/3/2020 9:26:15 PM	49999
1,2,4-Trichlorobenzene	ND	2.0	4.6	D	mg/Kg	1	2/3/2020 9:26:15 PM	49999
2,4,5-Trichlorophenol	ND	1.5	4.6	D	mg/Kg	1	2/3/2020 9:26:15 PM	49999
2,4,6-Trichlorophenol	ND	2.3	4.6	D	mg/Kg	1	2/3/2020 9:26:15 PM	49999
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	1	2/3/2020 9:26:15 PM	49999
Surr: Phenol-d5	0		18.5-101	SD	%Rec	1	2/3/2020 9:26:15 PM	49999
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	1	2/3/2020 9:26:15 PM	49999
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	1	2/3/2020 9:26:15 PM	49999
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	1	2/3/2020 9:26:15 PM	49999
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	1	2/3/2020 9:26:15 PM	49999
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.012	0.072		mg/Kg	5	1/22/2020 8:41:27 PM	A65992
Toluene	ND	0.014	0.14		mg/Kg	5	1/22/2020 8:41:27 PM	A65992
Ethylbenzene	ND	0.0084	0.14		mg/Kg	5	1/22/2020 8:41:27 PM	A65992
Methyl tert-butyl ether (MTBE)	ND	0.034	0.14		mg/Kg	5	1/22/2020 8:41:27 PM	A65992
1,2,4-Trimethylbenzene	0.015	0.013	0.14	J	mg/Kg	5	1/22/2020 8:41:27 PM	A65992
1,3,5-Trimethylbenzene	ND	0.014	0.14		mg/Kg	5	1/22/2020 8:41:27 PM	A65992
1,2-Dichloroethane (EDC)	ND	0.015	0.14		mg/Kg	5	1/22/2020 8:41:27 PM	A65992
1,2-Dibromoethane (EDB)	ND	0.013	0.14		mg/Kg	5	1/22/2020 8:41:27 PM	A65992
Naphthalene	0.034	0.029	0.29	J	mg/Kg	5	1/22/2020 8:41:27 PM	A65992
1-Methylnaphthalene	0.33	0.083	0.58	J	mg/Kg	5	1/22/2020 8:41:27 PM	A65992
2-Methylnaphthalene	0.45	0.063	0.58	J	mg/Kg	5	1/22/2020 8:41:27 PM	A65992
Acetone	ND	0.12	2.2		mg/Kg	5	1/22/2020 8:41:27 PM	A65992
Bromobenzene	ND	0.014	0.14		mg/Kg	5	1/22/2020 8:41:27 PM	A65992
Bromodichloromethane	ND	0.013	0.14		mg/Kg	5	1/22/2020 8:41:27 PM	A65992

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Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-14 Toe 3 ft
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 2:58:00 PM
Lab ID: 2001739-048 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Bromoform	ND	0.013	0.14		mg/Kg	5	1/22/2020 8:41:27 PM	A65992
Bromomethane	ND	0.035	0.43		mg/Kg	5	1/22/2020 8:41:27 PM	A65992
2-Butanone	ND	0.17	1.4		mg/Kg	5	1/22/2020 8:41:27 PM	A65992
Carbon disulfide	ND	0.048	1.4		mg/Kg	5	1/22/2020 8:41:27 PM	A65992
Carbon tetrachloride	ND	0.014	0.14		mg/Kg	5	1/22/2020 8:41:27 PM	A65992
Chlorobenzene	ND	0.018	0.14		mg/Kg	5	1/22/2020 8:41:27 PM	A65992
Chloroethane	ND	0.021	0.29		mg/Kg	5	1/22/2020 8:41:27 PM	A65992
Chloroform	ND	0.012	0.14		mg/Kg	5	1/22/2020 8:41:27 PM	A65992
Chloromethane	ND	0.014	0.43		mg/Kg	5	1/22/2020 8:41:27 PM	A65992
2-Chlorotoluene	ND	0.013	0.14		mg/Kg	5	1/22/2020 8:41:27 PM	A65992
4-Chlorotoluene	ND	0.012	0.14		mg/Kg	5	1/22/2020 8:41:27 PM	A65992
cis-1,2-DCE	ND	0.020	0.14		mg/Kg	5	1/22/2020 8:41:27 PM	A65992
cis-1,3-Dichloropropene	ND	0.012	0.14		mg/Kg	5	1/22/2020 8:41:27 PM	A65992
1,2-Dibromo-3-chloropropane	ND	0.015	0.29		mg/Kg	5	1/22/2020 8:41:27 PM	A65992
Dibromochloromethane	ND	0.010	0.14		mg/Kg	5	1/22/2020 8:41:27 PM	A65992
Dibromomethane	ND	0.015	0.14		mg/Kg	5	1/22/2020 8:41:27 PM	A65992
1,2-Dichlorobenzene	ND	0.012	0.14		mg/Kg	5	1/22/2020 8:41:27 PM	A65992
1,3-Dichlorobenzene	ND	0.013	0.14		mg/Kg	5	1/22/2020 8:41:27 PM	A65992
1,4-Dichlorobenzene	ND	0.012	0.14		mg/Kg	5	1/22/2020 8:41:27 PM	A65992
Dichlorodifluoromethane	ND	0.033	0.14		mg/Kg	5	1/22/2020 8:41:27 PM	A65992
1,1-Dichloroethane	ND	0.0092	0.14		mg/Kg	5	1/22/2020 8:41:27 PM	A65992
1,1-Dichloroethene	ND	0.058	0.14		mg/Kg	5	1/22/2020 8:41:27 PM	A65992
1,2-Dichloropropane	ND	0.010	0.14		mg/Kg	5	1/22/2020 8:41:27 PM	A65992
1,3-Dichloropropane	ND	0.016	0.14		mg/Kg	5	1/22/2020 8:41:27 PM	A65992
2,2-Dichloropropane	ND	0.047	0.29		mg/Kg	5	1/22/2020 8:41:27 PM	A65992
1,1-Dichloropropene	ND	0.013	0.29		mg/Kg	5	1/22/2020 8:41:27 PM	A65992
Hexachlorobutadiene	ND	0.015	0.29		mg/Kg	5	1/22/2020 8:41:27 PM	A65992
2-Hexanone	ND	0.024	1.4		mg/Kg	5	1/22/2020 8:41:27 PM	A65992
Isopropylbenzene	ND	0.010	0.14		mg/Kg	5	1/22/2020 8:41:27 PM	A65992
4-Isopropyltoluene	ND	0.012	0.14		mg/Kg	5	1/22/2020 8:41:27 PM	A65992
4-Methyl-2-pentanone	ND	0.027	1.4		mg/Kg	5	1/22/2020 8:41:27 PM	A65992
Methylene chloride	0.080	0.025	0.43	J	mg/Kg	5	1/22/2020 8:41:27 PM	A65992
n-Butylbenzene	ND	0.013	0.43		mg/Kg	5	1/22/2020 8:41:27 PM	A65992
n-Propylbenzene	ND	0.011	0.14		mg/Kg	5	1/22/2020 8:41:27 PM	A65992
sec-Butylbenzene	ND	0.016	0.14		mg/Kg	5	1/22/2020 8:41:27 PM	A65992
Styrene	ND	0.011	0.14		mg/Kg	5	1/22/2020 8:41:27 PM	A65992
tert-Butylbenzene	ND	0.014	0.14		mg/Kg	5	1/22/2020 8:41:27 PM	A65992
1,1,1,2-Tetrachloroethane	ND	0.0097	0.14		mg/Kg	5	1/22/2020 8:41:27 PM	A65992
1,1,2,2-Tetrachloroethane	ND	0.015	0.14		mg/Kg	5	1/22/2020 8:41:27 PM	A65992

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Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-14 Toe 3 ft
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 2:58:00 PM
Lab ID: 2001739-048 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Tetrachloroethene (PCE)	ND	0.011	0.14		mg/Kg	5	1/22/2020 8:41:27 PM	A65992
trans-1,2-DCE	ND	0.013	0.14		mg/Kg	5	1/22/2020 8:41:27 PM	A65992
trans-1,3-Dichloropropene	ND	0.015	0.14		mg/Kg	5	1/22/2020 8:41:27 PM	A65992
1,2,3-Trichlorobenzene	ND	0.013	0.29		mg/Kg	5	1/22/2020 8:41:27 PM	A65992
1,2,4-Trichlorobenzene	ND	0.015	0.14		mg/Kg	5	1/22/2020 8:41:27 PM	A65992
1,1,1-Trichloroethane	ND	0.013	0.14		mg/Kg	5	1/22/2020 8:41:27 PM	A65992
1,1,2-Trichloroethane	ND	0.010	0.14		mg/Kg	5	1/22/2020 8:41:27 PM	A65992
Trichloroethene (TCE)	ND	0.017	0.14		mg/Kg	5	1/22/2020 8:41:27 PM	A65992
Trichlorofluoromethane	ND	0.049	0.14		mg/Kg	5	1/22/2020 8:41:27 PM	A65992
1,2,3-Trichloropropane	ND	0.023	0.29		mg/Kg	5	1/22/2020 8:41:27 PM	A65992
Vinyl chloride	ND	0.0094	0.14		mg/Kg	5	1/22/2020 8:41:27 PM	A65992
Xylenes, Total	ND	0.036	0.29		mg/Kg	5	1/22/2020 8:41:27 PM	A65992
Surr: Dibromofluoromethane	112		70-130		%Rec	5	1/22/2020 8:41:27 PM	A65992
Surr: 1,2-Dichloroethane-d4	94.6		70-130		%Rec	5	1/22/2020 8:41:27 PM	A65992
Surr: Toluene-d8	101		70-130		%Rec	5	1/22/2020 8:41:27 PM	A65992
Surr: 4-Bromofluorobenzene	94.0		70-130		%Rec	5	1/22/2020 8:41:27 PM	A65992
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	4.4	3.1	14	J	mg/Kg	5	1/22/2020 8:41:27 PM	AG659
Surr: BFB	98.7	0	70-130		%Rec	5	1/22/2020 8:41:27 PM	AG659
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/29/2020 2:53:00 PM	R66198
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	8.66				pH Units	1	1/30/2020 1:06:00 PM	R66199

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J	Analyte detected below quantitation limits
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-20 1.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 9:25:00 AM
Lab ID: 2001739-049 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	300	10	42		mg/Kg	5	1/24/2020 12:01:15 PM	49949
Motor Oil Range Organics (MRO)	450	210	210		mg/Kg	5	1/24/2020 12:01:15 PM	49949
Surr: DNOP	117	0	55.1-146		%Rec	5	1/24/2020 12:01:15 PM	49949
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	0.24	0.0019	0.034	H	mg/Kg	1	2/26/2020 4:04:19 PM	50701
MERCURY, TCLP							Analyst: **rde**	
Mercury	ND	0.00075	0.020		mg/L	1	1/28/2020 1:11:47 PM	50082
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.76	5.1		mg/Kg	2	1/24/2020 10:40:33 AM	49994
Arsenic	ND	7.3	13		mg/Kg	5	1/25/2020 11:34:29 AM	49994
Barium	410	0.048	0.21		mg/Kg	2	1/24/2020 10:40:33 AM	49994
Beryllium	0.87	0.019	0.31		mg/Kg	2	1/24/2020 10:40:33 AM	49994
Cadmium	ND	0.050	0.21		mg/Kg	2	1/24/2020 10:40:33 AM	49994
Chromium	19	0.16	0.62		mg/Kg	2	1/24/2020 10:40:33 AM	49994
Cobalt	4.4	0.22	0.62		mg/Kg	2	1/24/2020 10:40:33 AM	49994
Lead	4.8	0.50	0.51		mg/Kg	2	1/24/2020 1:17:20 PM	49994
Nickel	8.5	0.31	1.0		mg/Kg	2	1/24/2020 10:40:33 AM	49994
Selenium	ND	2.6	5.1		mg/Kg	2	1/24/2020 1:17:20 PM	49994
Silver	ND	0.066	0.51		mg/Kg	2	1/24/2020 10:40:33 AM	49994
Vanadium	20	0.14	5.1		mg/Kg	2	1/24/2020 10:40:33 AM	49994
Zinc	76	0.81	5.1		mg/Kg	2	1/24/2020 10:40:33 AM	49994
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/28/2020 11:35:34 AM	50060
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.14	0.36	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999
Acenaphthylene	ND	0.16	0.36	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999
Aniline	ND	0.12	0.36	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999
Anthracene	ND	0.14	0.36	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999
Azobenzene	ND	0.18	0.36	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999
Benz(a)anthracene	ND	0.12	0.36	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999
Benzo(a)pyrene	ND	0.20	0.36	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999
Benzo(b)fluoranthene	ND	0.21	0.36	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999
Benzo(g,h,i)perylene	ND	0.19	0.36	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999
Benzo(k)fluoranthene	ND	0.11	0.36	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999
Benzoic acid	ND	0.25	0.91	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999
Benzyl alcohol	ND	0.15	0.36	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999
Bis(2-chloroethoxy)methane	ND	0.15	0.36	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999

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Qualifiers:

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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-20 1.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 9:25:00 AM
Lab ID: 2001739-049 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.21	0.36	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999
Bis(2-chloroisopropyl)ether	ND	0.16	0.36	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999
Bis(2-ethylhexyl)phthalate	ND	0.41	0.91	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999
4-Bromophenyl phenyl ether	ND	0.21	0.36	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999
Butyl benzyl phthalate	ND	0.12	0.36	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999
Carbazole	ND	0.14	0.36	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999
4-Chloro-3-methylphenol	ND	0.14	0.91	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999
4-Chloroaniline	ND	0.14	0.91	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999
2-Chloronaphthalene	ND	0.15	0.45	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999
2-Chlorophenol	ND	0.20	0.36	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999
4-Chlorophenyl phenyl ether	ND	0.15	0.36	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999
Chrysene	ND	0.14	0.36	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999
Di-n-butyl phthalate	ND	0.54	0.72	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999
Di-n-octyl phthalate	ND	0.12	0.72	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999
Dibenz(a,h)anthracene	ND	0.20	0.36	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999
Dibenzofuran	ND	0.18	0.36	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999
1,2-Dichlorobenzene	ND	0.14	0.36	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999
1,3-Dichlorobenzene	ND	0.12	0.36	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999
1,4-Dichlorobenzene	ND	0.15	0.36	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999
3,3´-Dichlorobenzidine	ND	0.15	0.45	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999
Diethyl phthalate	ND	0.55	0.91	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999
Dimethyl phthalate	ND	0.15	0.36	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999
2,4-Dichlorophenol	ND	0.15	0.72	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999
2,4-Dimethylphenol	ND	0.15	0.54	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999
4,6-Dinitro-2-methylphenol	ND	0.13	0.72	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999
2,4-Dinitrophenol	ND	0.10	0.91	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999
2,4-Dinitrotoluene	ND	0.19	0.91	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999
2,6-Dinitrotoluene	ND	0.22	0.91	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999
Fluoranthene	ND	0.14	0.36	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999
Fluorene	ND	0.14	0.36	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999
Hexachlorobenzene	ND	0.14	0.36	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999
Hexachlorobutadiene	ND	0.16	0.36	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999
Hexachlorocyclopentadiene	ND	0.17	0.36	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999
Hexachloroethane	ND	0.15	0.36	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999
Indeno(1,2,3-cd)pyrene	ND	0.22	0.36	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999
Isophorone	ND	0.16	0.72	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999
1-Methylnaphthalene	ND	0.17	0.36	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999
2-Methylnaphthalene	ND	0.15	0.36	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999
2-Methylphenol	ND	0.15	0.72	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999

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Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-20 1.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 9:25:00 AM
Lab ID: 2001739-049 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.13	0.36	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999
N-Nitrosodi-n-propylamine	ND	0.18	0.36	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999
N-Nitrosodiphenylamine	ND	0.19	0.36	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999
Naphthalene	ND	0.15	0.36	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999
2-Nitroaniline	ND	0.20	0.36	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999
3-Nitroaniline	ND	0.18	0.36	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999
4-Nitroaniline	ND	0.24	0.72	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999
Nitrobenzene	ND	0.15	0.72	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999
2-Nitrophenol	ND	0.15	0.36	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999
4-Nitrophenol	ND	0.11	0.45	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999
Pentachlorophenol	ND	0.16	0.72	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999
Phenanthrene	0.34	0.18	0.36	JD	mg/Kg	1	2/3/2020 9:54:55 PM	49999
Phenol	ND	0.15	0.36	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999
Pyrene	ND	0.12	0.36	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999
Pyridine	ND	0.34	0.72	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999
1,2,4-Trichlorobenzene	ND	0.15	0.36	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999
2,4,5-Trichlorophenol	ND	0.12	0.36	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999
2,4,6-Trichlorophenol	ND	0.18	0.36	D	mg/Kg	1	2/3/2020 9:54:55 PM	49999
Surr: 2-Fluorophenol	53.8		26.7-85.9	D	%Rec	1	2/3/2020 9:54:55 PM	49999
Surr: Phenol-d5	63.3		18.5-101	D	%Rec	1	2/3/2020 9:54:55 PM	49999
Surr: 2,4,6-Tribromophenol	52.2		35.8-85.6	D	%Rec	1	2/3/2020 9:54:55 PM	49999
Surr: Nitrobenzene-d5	66.7		40.8-95.2	D	%Rec	1	2/3/2020 9:54:55 PM	49999
Surr: 2-Fluorobiphenyl	73.3		34.7-85.2	D	%Rec	1	2/3/2020 9:54:55 PM	49999
Surr: 4-Terphenyl-d14	79.2		37.4-91.3	D	%Rec	1	2/3/2020 9:54:55 PM	49999
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.013	0.080		mg/Kg	5	1/22/2020 9:10:45 PM	A65992
Toluene	0.024	0.015	0.16	J	mg/Kg	5	1/22/2020 9:10:45 PM	A65992
Ethylbenzene	ND	0.0093	0.16		mg/Kg	5	1/22/2020 9:10:45 PM	A65992
Methyl tert-butyl ether (MTBE)	ND	0.038	0.16		mg/Kg	5	1/22/2020 9:10:45 PM	A65992
1,2,4-Trimethylbenzene	ND	0.015	0.16		mg/Kg	5	1/22/2020 9:10:45 PM	A65992
1,3,5-Trimethylbenzene	ND	0.016	0.16		mg/Kg	5	1/22/2020 9:10:45 PM	A65992
1,2-Dichloroethane (EDC)	ND	0.016	0.16		mg/Kg	5	1/22/2020 9:10:45 PM	A65992
1,2-Dibromoethane (EDB)	ND	0.015	0.16		mg/Kg	5	1/22/2020 9:10:45 PM	A65992
Naphthalene	ND	0.032	0.32		mg/Kg	5	1/22/2020 9:10:45 PM	A65992
1-Methylnaphthalene	0.17	0.092	0.64	J	mg/Kg	5	1/22/2020 9:10:45 PM	A65992
2-Methylnaphthalene	0.18	0.070	0.64	J	mg/Kg	5	1/22/2020 9:10:45 PM	A65992
Acetone	ND	0.13	2.4		mg/Kg	5	1/22/2020 9:10:45 PM	A65992
Bromobenzene	ND	0.015	0.16		mg/Kg	5	1/22/2020 9:10:45 PM	A65992
Bromodichloromethane	ND	0.015	0.16		mg/Kg	5	1/22/2020 9:10:45 PM	A65992

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Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-20 1.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 9:25:00 AM
Lab ID: 2001739-049 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Bromoform	ND	0.014	0.16		mg/Kg	5	1/22/2020 9:10:45 PM	A65992
Bromomethane	ND	0.039	0.48		mg/Kg	5	1/22/2020 9:10:45 PM	A65992
2-Butanone	ND	0.19	1.6		mg/Kg	5	1/22/2020 9:10:45 PM	A65992
Carbon disulfide	ND	0.053	1.6		mg/Kg	5	1/22/2020 9:10:45 PM	A65992
Carbon tetrachloride	ND	0.015	0.16		mg/Kg	5	1/22/2020 9:10:45 PM	A65992
Chlorobenzene	ND	0.021	0.16		mg/Kg	5	1/22/2020 9:10:45 PM	A65992
Chloroethane	ND	0.024	0.32		mg/Kg	5	1/22/2020 9:10:45 PM	A65992
Chloroform	ND	0.013	0.16		mg/Kg	5	1/22/2020 9:10:45 PM	A65992
Chloromethane	ND	0.015	0.48		mg/Kg	5	1/22/2020 9:10:45 PM	A65992
2-Chlorotoluene	ND	0.014	0.16		mg/Kg	5	1/22/2020 9:10:45 PM	A65992
4-Chlorotoluene	ND	0.013	0.16		mg/Kg	5	1/22/2020 9:10:45 PM	A65992
cis-1,2-DCE	ND	0.022	0.16		mg/Kg	5	1/22/2020 9:10:45 PM	A65992
cis-1,3-Dichloropropene	ND	0.014	0.16		mg/Kg	5	1/22/2020 9:10:45 PM	A65992
1,2-Dibromo-3-chloropropane	ND	0.016	0.32		mg/Kg	5	1/22/2020 9:10:45 PM	A65992
Dibromochloromethane	ND	0.011	0.16		mg/Kg	5	1/22/2020 9:10:45 PM	A65992
Dibromomethane	ND	0.017	0.16		mg/Kg	5	1/22/2020 9:10:45 PM	A65992
1,2-Dichlorobenzene	ND	0.013	0.16		mg/Kg	5	1/22/2020 9:10:45 PM	A65992
1,3-Dichlorobenzene	ND	0.014	0.16		mg/Kg	5	1/22/2020 9:10:45 PM	A65992
1,4-Dichlorobenzene	ND	0.013	0.16		mg/Kg	5	1/22/2020 9:10:45 PM	A65992
Dichlorodifluoromethane	ND	0.037	0.16		mg/Kg	5	1/22/2020 9:10:45 PM	A65992
1,1-Dichloroethane	ND	0.010	0.16		mg/Kg	5	1/22/2020 9:10:45 PM	A65992
1,1-Dichloroethene	ND	0.064	0.16		mg/Kg	5	1/22/2020 9:10:45 PM	A65992
1,2-Dichloropropane	ND	0.012	0.16		mg/Kg	5	1/22/2020 9:10:45 PM	A65992
1,3-Dichloropropane	ND	0.017	0.16		mg/Kg	5	1/22/2020 9:10:45 PM	A65992
2,2-Dichloropropane	ND	0.052	0.32		mg/Kg	5	1/22/2020 9:10:45 PM	A65992
1,1-Dichloropropene	ND	0.015	0.32		mg/Kg	5	1/22/2020 9:10:45 PM	A65992
Hexachlorobutadiene	ND	0.016	0.32		mg/Kg	5	1/22/2020 9:10:45 PM	A65992
2-Hexanone	ND	0.027	1.6		mg/Kg	5	1/22/2020 9:10:45 PM	A65992
Isopropylbenzene	ND	0.012	0.16		mg/Kg	5	1/22/2020 9:10:45 PM	A65992
4-Isopropyltoluene	ND	0.013	0.16		mg/Kg	5	1/22/2020 9:10:45 PM	A65992
4-Methyl-2-pentanone	0.098	0.030	1.6	J	mg/Kg	5	1/22/2020 9:10:45 PM	A65992
Methylene chloride	0.088	0.028	0.48	J	mg/Kg	5	1/22/2020 9:10:45 PM	A65992
n-Butylbenzene	ND	0.015	0.48		mg/Kg	5	1/22/2020 9:10:45 PM	A65992
n-Propylbenzene	ND	0.013	0.16		mg/Kg	5	1/22/2020 9:10:45 PM	A65992
sec-Butylbenzene	ND	0.018	0.16		mg/Kg	5	1/22/2020 9:10:45 PM	A65992
Styrene	ND	0.013	0.16		mg/Kg	5	1/22/2020 9:10:45 PM	A65992
tert-Butylbenzene	ND	0.015	0.16		mg/Kg	5	1/22/2020 9:10:45 PM	A65992
1,1,1,2-Tetrachloroethane	ND	0.011	0.16		mg/Kg	5	1/22/2020 9:10:45 PM	A65992
1,1,2,2-Tetrachloroethane	ND	0.016	0.16		mg/Kg	5	1/22/2020 9:10:45 PM	A65992

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Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-20 1.5
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 9:25:00 AM
Lab ID: 2001739-049 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Tetrachloroethene (PCE)	ND	0.013	0.16		mg/Kg	5	1/22/2020 9:10:45 PM	A65992
trans-1,2-DCE	ND	0.015	0.16		mg/Kg	5	1/22/2020 9:10:45 PM	A65992
trans-1,3-Dichloropropene	ND	0.017	0.16		mg/Kg	5	1/22/2020 9:10:45 PM	A65992
1,2,3-Trichlorobenzene	ND	0.014	0.32		mg/Kg	5	1/22/2020 9:10:45 PM	A65992
1,2,4-Trichlorobenzene	ND	0.016	0.16		mg/Kg	5	1/22/2020 9:10:45 PM	A65992
1,1,1-Trichloroethane	ND	0.014	0.16		mg/Kg	5	1/22/2020 9:10:45 PM	A65992
1,1,2-Trichloroethane	ND	0.011	0.16		mg/Kg	5	1/22/2020 9:10:45 PM	A65992
Trichloroethene (TCE)	ND	0.019	0.16		mg/Kg	5	1/22/2020 9:10:45 PM	A65992
Trichlorofluoromethane	ND	0.055	0.16		mg/Kg	5	1/22/2020 9:10:45 PM	A65992
1,2,3-Trichloropropane	ND	0.026	0.32		mg/Kg	5	1/22/2020 9:10:45 PM	A65992
Vinyl chloride	ND	0.010	0.16		mg/Kg	5	1/22/2020 9:10:45 PM	A65992
Xylenes, Total	ND	0.040	0.32		mg/Kg	5	1/22/2020 9:10:45 PM	A65992
Surr: Dibromofluoromethane	104		70-130		%Rec	5	1/22/2020 9:10:45 PM	A65992
Surr: 1,2-Dichloroethane-d4	88.8		70-130		%Rec	5	1/22/2020 9:10:45 PM	A65992
Surr: Toluene-d8	94.0		70-130		%Rec	5	1/22/2020 9:10:45 PM	A65992
Surr: 4-Bromofluorobenzene	89.0		70-130		%Rec	5	1/22/2020 9:10:45 PM	A65992
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	ND	3.4	16		mg/Kg	5	1/22/2020 9:10:45 PM	AG659
Surr: BFB	91.3	0	70-130		%Rec	5	1/22/2020 9:10:45 PM	AG659
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/29/2020 2:53:00 PM	R66198
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	8.19				pH Units	1	1/30/2020 1:06:00 PM	R66199

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ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: Dup 10
Project: Gallup SWMUI Sampling Event
Collection Date:
Lab ID: 2001739-050 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	170000	2400	10000		mg/Kg	1000	1/23/2020 1:11:55 AM	49949
Motor Oil Range Organics (MRO)	67000	50000	50000		mg/Kg	1000	1/23/2020 1:11:55 AM	49949
Surr: DNOP	0	0	55.1-146	S	%Rec	1000	1/23/2020 1:11:55 AM	49949
EPA METHOD 7471: MERCURY							Analyst: **JLF**	
Mercury	0.0026	0.0019	0.034	J	mg/Kg	1	2/28/2020 7:26:52 PM	50752
MERCURY, TCLP							Analyst: **rde**	
Mercury	ND	0.00075	0.020		mg/L	1	1/28/2020 1:13:47 PM	50082
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.72	4.9		mg/Kg	2	1/24/2020 10:42:08 AM	49994
Arsenic	5.0	2.8	4.9		mg/Kg	2	1/25/2020 10:50:36 AM	49994
Barium	380	0.045	0.19		mg/Kg	2	1/24/2020 10:42:08 AM	49994
Beryllium	0.24	0.018	0.29	J	mg/Kg	2	1/24/2020 10:42:08 AM	49994
Cadmium	ND	0.047	0.19		mg/Kg	2	1/24/2020 10:42:08 AM	49994
Chromium	15	0.16	0.58		mg/Kg	2	1/24/2020 10:42:08 AM	49994
Cobalt	2.4	0.21	0.58		mg/Kg	2	1/24/2020 10:42:08 AM	49994
Lead	3.5	0.47	0.49		mg/Kg	2	1/24/2020 1:18:44 PM	49994
Nickel	5.7	0.29	0.97		mg/Kg	2	1/24/2020 10:42:08 AM	49994
Selenium	7.9	2.4	4.9		mg/Kg	2	1/24/2020 1:18:44 PM	49994
Silver	0.47	0.063	0.49	J	mg/Kg	2	1/24/2020 10:42:08 AM	49994
Vanadium	9.2	0.13	4.9		mg/Kg	2	1/24/2020 10:42:08 AM	49994
Zinc	240	0.77	4.9		mg/Kg	2	1/24/2020 10:42:08 AM	49994
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/28/2020 11:36:58 AM	50060
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	9.8	26	D	mg/Kg	5	2/4/2020 12:01:12 PM	49999
Acenaphthylene	ND	12	26	D	mg/Kg	5	2/4/2020 12:01:12 PM	49999
Aniline	ND	8.9	26	D	mg/Kg	5	2/4/2020 12:01:12 PM	49999
Anthracene	ND	10	26	D	mg/Kg	5	2/4/2020 12:01:12 PM	49999
Azobenzene	ND	13	26	D	mg/Kg	5	2/4/2020 12:01:12 PM	49999
Benz(a)anthracene	ND	8.9	26	D	mg/Kg	5	2/4/2020 12:01:12 PM	49999
Benzo(a)pyrene	ND	14	26	D	mg/Kg	5	2/4/2020 12:01:12 PM	49999
Benzo(b)fluoranthene	ND	15	26	D	mg/Kg	5	2/4/2020 12:01:12 PM	49999
Benzo(g,h,i)perylene	ND	13	26	D	mg/Kg	5	2/4/2020 12:01:12 PM	49999
Benzo(k)fluoranthene	ND	7.8	26	D	mg/Kg	5	2/4/2020 12:01:12 PM	49999
Benzoic acid	ND	18	65	D	mg/Kg	5	2/4/2020 12:01:12 PM	49999
Benzyl alcohol	ND	11	26	D	mg/Kg	5	2/4/2020 12:01:12 PM	49999
Bis(2-chloroethoxy)methane	ND	11	26	D	mg/Kg	5	2/4/2020 12:01:12 PM	49999

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

Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: Dup 10
Project: Gallup SWMUI Sampling Event
Collection Date:
Lab ID: 2001739-050 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	15	26	D	mg/Kg	5	2/4/2020 12:01:12 PM	49999
Bis(2-chloroisopropyl)ether	ND	11	26	D	mg/Kg	5	2/4/2020 12:01:12 PM	49999
Bis(2-ethylhexyl)phthalate	ND	29	65	D	mg/Kg	5	2/4/2020 12:01:12 PM	49999
4-Bromophenyl phenyl ether	ND	15	26	D	mg/Kg	5	2/4/2020 12:01:12 PM	49999
Butyl benzyl phthalate	ND	8.7	26	D	mg/Kg	5	2/4/2020 12:01:12 PM	49999
Carbazole	ND	10	26	D	mg/Kg	5	2/4/2020 12:01:12 PM	49999
4-Chloro-3-methylphenol	ND	10	65	D	mg/Kg	5	2/4/2020 12:01:12 PM	49999
4-Chloroaniline	ND	10	65	D	mg/Kg	5	2/4/2020 12:01:12 PM	49999
2-Chloronaphthalene	ND	11	33	D	mg/Kg	5	2/4/2020 12:01:12 PM	49999
2-Chlorophenol	ND	15	26	D	mg/Kg	5	2/4/2020 12:01:12 PM	49999
4-Chlorophenyl phenyl ether	ND	11	26	D	mg/Kg	5	2/4/2020 12:01:12 PM	49999
Chrysene	22	10	26	JD	mg/Kg	5	2/4/2020 12:01:12 PM	49999
Di-n-butyl phthalate	ND	39	52	D	mg/Kg	5	2/4/2020 12:01:12 PM	49999
Di-n-octyl phthalate	ND	8.7	52	D	mg/Kg	5	2/4/2020 12:01:12 PM	49999
Dibenz(a,h)anthracene	ND	14	26	D	mg/Kg	5	2/4/2020 12:01:12 PM	49999
Dibenzofuran	ND	13	26	D	mg/Kg	5	2/4/2020 12:01:12 PM	49999
1,2-Dichlorobenzene	ND	10	26	D	mg/Kg	5	2/4/2020 12:01:12 PM	49999
1,3-Dichlorobenzene	ND	8.7	26	D	mg/Kg	5	2/4/2020 12:01:12 PM	49999
1,4-Dichlorobenzene	ND	11	26	D	mg/Kg	5	2/4/2020 12:01:12 PM	49999
3,3´-Dichlorobenzidine	ND	11	33	D	mg/Kg	5	2/4/2020 12:01:12 PM	49999
Diethyl phthalate	ND	40	65	D	mg/Kg	5	2/4/2020 12:01:12 PM	49999
Dimethyl phthalate	ND	11	26	D	mg/Kg	5	2/4/2020 12:01:12 PM	49999
2,4-Dichlorophenol	ND	11	52	D	mg/Kg	5	2/4/2020 12:01:12 PM	49999
2,4-Dimethylphenol	ND	11	39	D	mg/Kg	5	2/4/2020 12:01:12 PM	49999
4,6-Dinitro-2-methylphenol	ND	9.6	52	D	mg/Kg	5	2/4/2020 12:01:12 PM	49999
2,4-Dinitrophenol	ND	7.5	65	D	mg/Kg	5	2/4/2020 12:01:12 PM	49999
2,4-Dinitrotoluene	ND	13	65	D	mg/Kg	5	2/4/2020 12:01:12 PM	49999
2,6-Dinitrotoluene	ND	15	65	D	mg/Kg	5	2/4/2020 12:01:12 PM	49999
Fluoranthene	ND	9.9	26	D	mg/Kg	5	2/4/2020 12:01:12 PM	49999
Fluorene	11	10	26	JD	mg/Kg	5	2/4/2020 12:01:12 PM	49999
Hexachlorobenzene	ND	10	26	D	mg/Kg	5	2/4/2020 12:01:12 PM	49999
Hexachlorobutadiene	ND	11	26	D	mg/Kg	5	2/4/2020 12:01:12 PM	49999
Hexachlorocyclopentadiene	ND	12	26	D	mg/Kg	5	2/4/2020 12:01:12 PM	49999
Hexachloroethane	ND	11	26	D	mg/Kg	5	2/4/2020 12:01:12 PM	49999
Indeno(1,2,3-cd)pyrene	ND	16	26	D	mg/Kg	5	2/4/2020 12:01:12 PM	49999
Isophorone	ND	11	52	D	mg/Kg	5	2/4/2020 12:01:12 PM	49999
1-Methylnaphthalene	27	12	26	D	mg/Kg	5	2/4/2020 12:01:12 PM	49999
2-Methylnaphthalene	17	11	26	JD	mg/Kg	5	2/4/2020 12:01:12 PM	49999
2-Methylphenol	ND	11	52	D	mg/Kg	5	2/4/2020 12:01:12 PM	49999

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Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup **Client Sample ID:** Dup 10
Project: Gallup SWMUI Sampling Event **Collection Date:**
Lab ID: 2001739-050 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	9.4	26	D	mg/Kg	5	2/4/2020 12:01:12 PM	49999
N-Nitrosodi-n-propylamine	ND	13	26	D	mg/Kg	5	2/4/2020 12:01:12 PM	49999
N-Nitrosodiphenylamine	ND	13	26	D	mg/Kg	5	2/4/2020 12:01:12 PM	49999
Naphthalene	ND	11	26	D	mg/Kg	5	2/4/2020 12:01:12 PM	49999
2-Nitroaniline	ND	14	26	D	mg/Kg	5	2/4/2020 12:01:12 PM	49999
3-Nitroaniline	ND	13	26	D	mg/Kg	5	2/4/2020 12:01:12 PM	49999
4-Nitroaniline	ND	17	52	D	mg/Kg	5	2/4/2020 12:01:12 PM	49999
Nitrobenzene	ND	11	52	D	mg/Kg	5	2/4/2020 12:01:12 PM	49999
2-Nitrophenol	ND	11	26	D	mg/Kg	5	2/4/2020 12:01:12 PM	49999
4-Nitrophenol	ND	7.6	33	D	mg/Kg	5	2/4/2020 12:01:12 PM	49999
Pentachlorophenol	ND	12	52	D	mg/Kg	5	2/4/2020 12:01:12 PM	49999
Phenanthrene	40	13	26	D	mg/Kg	5	2/4/2020 12:01:12 PM	49999
Phenol	ND	11	26	D	mg/Kg	5	2/4/2020 12:01:12 PM	49999
Pyrene	20	8.6	26	JD	mg/Kg	5	2/4/2020 12:01:12 PM	49999
Pyridine	ND	24	52	D	mg/Kg	5	2/4/2020 12:01:12 PM	49999
1,2,4-Trichlorobenzene	ND	11	26	D	mg/Kg	5	2/4/2020 12:01:12 PM	49999
2,4,5-Trichlorophenol	ND	8.4	26	D	mg/Kg	5	2/4/2020 12:01:12 PM	49999
2,4,6-Trichlorophenol	ND	13	26	D	mg/Kg	5	2/4/2020 12:01:12 PM	49999
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	5	2/4/2020 12:01:12 PM	49999
Surr: Phenol-d5	0		18.5-101	SD	%Rec	5	2/4/2020 12:01:12 PM	49999
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	5	2/4/2020 12:01:12 PM	49999
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	5	2/4/2020 12:01:12 PM	49999
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	5	2/4/2020 12:01:12 PM	49999
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	5	2/4/2020 12:01:12 PM	49999
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	0.039	0.016	0.099	J	mg/Kg	5	1/22/2020 9:40:00 PM	A65992
Toluene	0.48	0.019	0.20		mg/Kg	5	1/22/2020 9:40:00 PM	A65992
Ethylbenzene	0.33	0.011	0.20		mg/Kg	5	1/22/2020 9:40:00 PM	A65992
Methyl tert-butyl ether (MTBE)	ND	0.047	0.20		mg/Kg	5	1/22/2020 9:40:00 PM	A65992
1,2,4-Trimethylbenzene	2.2	0.018	0.20		mg/Kg	5	1/22/2020 9:40:00 PM	A65992
1,3,5-Trimethylbenzene	0.77	0.019	0.20		mg/Kg	5	1/22/2020 9:40:00 PM	A65992
1,2-Dichloroethane (EDC)	0.15	0.020	0.20	J	mg/Kg	5	1/22/2020 9:40:00 PM	A65992
1,2-Dibromoethane (EDB)	ND	0.018	0.20		mg/Kg	5	1/22/2020 9:40:00 PM	A65992
Naphthalene	2.8	0.040	0.40		mg/Kg	5	1/22/2020 9:40:00 PM	A65992
1-Methylnaphthalene	12	0.11	0.79		mg/Kg	5	1/22/2020 9:40:00 PM	A65992
2-Methylnaphthalene	14	0.086	0.79		mg/Kg	5	1/22/2020 9:40:00 PM	A65992
Acetone	0.21	0.16	3.0	J	mg/Kg	5	1/22/2020 9:40:00 PM	A65992
Bromobenzene	ND	0.019	0.20		mg/Kg	5	1/22/2020 9:40:00 PM	A65992
Bromodichloromethane	ND	0.018	0.20		mg/Kg	5	1/22/2020 9:40:00 PM	A65992

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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: Dup 10
Project: Gallup SWMUI Sampling Event
Collection Date:
Lab ID: 2001739-050 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Bromoform	ND	0.018	0.20		mg/Kg	5	1/22/2020 9:40:00 PM	A65992
Bromomethane	ND	0.048	0.59		mg/Kg	5	1/22/2020 9:40:00 PM	A65992
2-Butanone	1.2	0.23	2.0	J	mg/Kg	5	1/22/2020 9:40:00 PM	A65992
Carbon disulfide	0.11	0.065	2.0	J	mg/Kg	5	1/22/2020 9:40:00 PM	A65992
Carbon tetrachloride	ND	0.019	0.20		mg/Kg	5	1/22/2020 9:40:00 PM	A65992
Chlorobenzene	ND	0.025	0.20		mg/Kg	5	1/22/2020 9:40:00 PM	A65992
Chloroethane	ND	0.029	0.40		mg/Kg	5	1/22/2020 9:40:00 PM	A65992
Chloroform	ND	0.016	0.20		mg/Kg	5	1/22/2020 9:40:00 PM	A65992
Chloromethane	ND	0.019	0.59		mg/Kg	5	1/22/2020 9:40:00 PM	A65992
2-Chlorotoluene	ND	0.017	0.20		mg/Kg	5	1/22/2020 9:40:00 PM	A65992
4-Chlorotoluene	ND	0.016	0.20		mg/Kg	5	1/22/2020 9:40:00 PM	A65992
cis-1,2-DCE	ND	0.027	0.20		mg/Kg	5	1/22/2020 9:40:00 PM	A65992
cis-1,3-Dichloropropene	ND	0.017	0.20		mg/Kg	5	1/22/2020 9:40:00 PM	A65992
1,2-Dibromo-3-chloropropane	ND	0.020	0.40		mg/Kg	5	1/22/2020 9:40:00 PM	A65992
Dibromochloromethane	ND	0.014	0.20		mg/Kg	5	1/22/2020 9:40:00 PM	A65992
Dibromomethane	ND	0.021	0.20		mg/Kg	5	1/22/2020 9:40:00 PM	A65992
1,2-Dichlorobenzene	ND	0.016	0.20		mg/Kg	5	1/22/2020 9:40:00 PM	A65992
1,3-Dichlorobenzene	ND	0.017	0.20		mg/Kg	5	1/22/2020 9:40:00 PM	A65992
1,4-Dichlorobenzene	ND	0.017	0.20		mg/Kg	5	1/22/2020 9:40:00 PM	A65992
Dichlorodifluoromethane	ND	0.046	0.20		mg/Kg	5	1/22/2020 9:40:00 PM	A65992
1,1-Dichloroethane	ND	0.013	0.20		mg/Kg	5	1/22/2020 9:40:00 PM	A65992
1,1-Dichloroethene	ND	0.079	0.20		mg/Kg	5	1/22/2020 9:40:00 PM	A65992
1,2-Dichloropropane	ND	0.014	0.20		mg/Kg	5	1/22/2020 9:40:00 PM	A65992
1,3-Dichloropropane	ND	0.021	0.20		mg/Kg	5	1/22/2020 9:40:00 PM	A65992
2,2-Dichloropropane	ND	0.064	0.40		mg/Kg	5	1/22/2020 9:40:00 PM	A65992
1,1-Dichloropropene	ND	0.018	0.40		mg/Kg	5	1/22/2020 9:40:00 PM	A65992
Hexachlorobutadiene	ND	0.020	0.40		mg/Kg	5	1/22/2020 9:40:00 PM	A65992
2-Hexanone	0.19	0.033	2.0	J	mg/Kg	5	1/22/2020 9:40:00 PM	A65992
Isopropylbenzene	0.13	0.014	0.20	J	mg/Kg	5	1/22/2020 9:40:00 PM	A65992
4-Isopropyltoluene	0.22	0.016	0.20		mg/Kg	5	1/22/2020 9:40:00 PM	A65992
4-Methyl-2-pentanone	0.54	0.037	2.0	J	mg/Kg	5	1/22/2020 9:40:00 PM	A65992
Methylene chloride	0.11	0.035	0.59	J	mg/Kg	5	1/22/2020 9:40:00 PM	A65992
n-Butylbenzene	0.41	0.018	0.59	J	mg/Kg	5	1/22/2020 9:40:00 PM	A65992
n-Propylbenzene	0.29	0.016	0.20		mg/Kg	5	1/22/2020 9:40:00 PM	A65992
sec-Butylbenzene	0.27	0.022	0.20		mg/Kg	5	1/22/2020 9:40:00 PM	A65992
Styrene	ND	0.016	0.20		mg/Kg	5	1/22/2020 9:40:00 PM	A65992
tert-Butylbenzene	ND	0.019	0.20		mg/Kg	5	1/22/2020 9:40:00 PM	A65992
1,1,1,2-Tetrachloroethane	ND	0.013	0.20		mg/Kg	5	1/22/2020 9:40:00 PM	A65992
1,1,2,2-Tetrachloroethane	ND	0.020	0.20		mg/Kg	5	1/22/2020 9:40:00 PM	A65992

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Qualifiers:

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D	Sample Diluted Due to Matrix
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Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

CLIENT: Marathon Refining Gallup
Client Sample ID: Dup 10
Project: Gallup SWMUI Sampling Event
Collection Date:
Lab ID: 2001739-050 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Tetrachloroethene (PCE)	ND	0.016	0.20		mg/Kg	5	1/22/2020 9:40:00 PM	A65992
trans-1,2-DCE	ND	0.018	0.20		mg/Kg	5	1/22/2020 9:40:00 PM	A65992
trans-1,3-Dichloropropene	ND	0.021	0.20		mg/Kg	5	1/22/2020 9:40:00 PM	A65992
1,2,3-Trichlorobenzene	ND	0.017	0.40		mg/Kg	5	1/22/2020 9:40:00 PM	A65992
1,2,4-Trichlorobenzene	ND	0.020	0.20		mg/Kg	5	1/22/2020 9:40:00 PM	A65992
1,1,1-Trichloroethane	ND	0.018	0.20		mg/Kg	5	1/22/2020 9:40:00 PM	A65992
1,1,2-Trichloroethane	ND	0.014	0.20		mg/Kg	5	1/22/2020 9:40:00 PM	A65992
Trichloroethene (TCE)	ND	0.023	0.20		mg/Kg	5	1/22/2020 9:40:00 PM	A65992
Trichlorofluoromethane	ND	0.067	0.20		mg/Kg	5	1/22/2020 9:40:00 PM	A65992
1,2,3-Trichloropropane	ND	0.032	0.40		mg/Kg	5	1/22/2020 9:40:00 PM	A65992
Vinyl chloride	ND	0.013	0.20		mg/Kg	5	1/22/2020 9:40:00 PM	A65992
Xylenes, Total	2.5	0.050	0.40		mg/Kg	5	1/22/2020 9:40:00 PM	A65992
Surr: Dibromofluoromethane	109		70-130		%Rec	5	1/22/2020 9:40:00 PM	A65992
Surr: 1,2-Dichloroethane-d4	90.8		70-130		%Rec	5	1/22/2020 9:40:00 PM	A65992
Surr: Toluene-d8	102		70-130		%Rec	5	1/22/2020 9:40:00 PM	A65992
Surr: 4-Bromofluorobenzene	77.0		70-130		%Rec	5	1/22/2020 9:40:00 PM	A65992
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	55	4.2	20		mg/Kg	5	1/22/2020 9:40:00 PM	AG659
Surr: BFB	94.6	0	70-130		%Rec	5	1/22/2020 9:40:00 PM	AG659
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/29/2020 2:53:00 PM	R66198
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	4.74				pH Units	1	1/30/2020 1:06:00 PM	R66199

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

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J	Analyte detected below quantitation limits
P	Sample pH Not In Range
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-21 Toe 5 ft
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 11:00:00 AM
Lab ID: 2001739-051 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	950	22	93		mg/Kg	10	1/24/2020 12:10:32 PM	49949
Motor Oil Range Organics (MRO)	620	460	460		mg/Kg	10	1/24/2020 12:10:32 PM	49949
Surr: DNOP	0	0	55.1-146	S	%Rec	10	1/24/2020 12:10:32 PM	49949
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	0.22	0.0018	0.033	H	mg/Kg	1	2/26/2020 4:08:22 PM	50701
MERCURY, TCLP							Analyst: **pmf**	
Mercury	ND	0.00075	0.020		mg/L	1	1/28/2020 4:41:23 PM	50098
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.75	5.1		mg/Kg	2	1/24/2020 10:43:42 AM	49994
Arsenic	ND	2.9	5.1		mg/Kg	2	1/25/2020 10:52:00 AM	49994
Barium	290	0.047	0.20		mg/Kg	2	1/24/2020 10:43:42 AM	49994
Beryllium	1.1	0.019	0.31		mg/Kg	2	1/24/2020 10:43:42 AM	49994
Cadmium	ND	0.050	0.20		mg/Kg	2	1/24/2020 10:43:42 AM	49994
Chromium	13	0.16	0.61		mg/Kg	2	1/24/2020 10:43:42 AM	49994
Cobalt	4.5	0.22	0.61		mg/Kg	2	1/24/2020 10:43:42 AM	49994
Lead	1.9	0.50	0.51		mg/Kg	2	1/24/2020 1:20:08 PM	49994
Nickel	10	0.31	1.0		mg/Kg	2	1/24/2020 10:43:42 AM	49994
Selenium	ND	2.6	5.1		mg/Kg	2	1/24/2020 1:20:08 PM	49994
Silver	ND	0.066	0.51		mg/Kg	2	1/24/2020 10:43:42 AM	49994
Vanadium	26	0.14	5.1		mg/Kg	2	1/24/2020 10:43:42 AM	49994
Zinc	54	0.81	5.1		mg/Kg	2	1/24/2020 10:43:42 AM	49994
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/28/2020 11:38:21 AM	50060
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.71	1.9	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
Acenaphthylene	ND	0.84	1.9	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
Aniline	ND	0.65	1.9	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
Anthracene	ND	0.73	1.9	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
Azobenzene	ND	0.96	1.9	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
Benz(a)anthracene	ND	0.65	1.9	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
Benzo(a)pyrene	ND	1.0	1.9	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
Benzo(b)fluoranthene	ND	1.1	1.9	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
Benzo(g,h,i)perylene	ND	0.98	1.9	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
Benzo(k)fluoranthene	ND	0.57	1.9	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
Benzoic acid	ND	1.3	4.7	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
Benzyl alcohol	ND	0.79	1.9	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
Bis(2-chloroethoxy)methane	ND	0.78	1.9	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999

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Qualifiers:

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D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-21 Toe 5 ft
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 11:00:00 AM
Lab ID: 2001739-051 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	1.1	1.9	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
Bis(2-chloroisopropyl)ether	ND	0.81	1.9	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
Bis(2-ethylhexyl)phthalate	ND	2.1	4.7	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
4-Bromophenyl phenyl ether	ND	1.1	1.9	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
Butyl benzyl phthalate	ND	0.64	1.9	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
Carbazole	ND	0.75	1.9	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
4-Chloro-3-methylphenol	ND	0.75	4.7	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
4-Chloroaniline	ND	0.73	4.7	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
2-Chloronaphthalene	ND	0.80	2.4	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
2-Chlorophenol	ND	1.1	1.9	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
4-Chlorophenyl phenyl ether	ND	0.80	1.9	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
Chrysene	ND	0.74	1.9	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
Di-n-butyl phthalate	ND	2.8	3.8	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
Di-n-octyl phthalate	ND	0.63	3.8	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
Dibenz(a,h)anthracene	ND	1.1	1.9	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
Dibenzofuran	ND	0.95	1.9	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
1,2-Dichlorobenzene	ND	0.75	1.9	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
1,3-Dichlorobenzene	ND	0.63	1.9	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
1,4-Dichlorobenzene	ND	0.79	1.9	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
3,3´-Dichlorobenzidine	ND	0.81	2.4	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
Diethyl phthalate	ND	2.9	4.7	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
Dimethyl phthalate	ND	0.77	1.9	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
2,4-Dichlorophenol	ND	0.80	3.8	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
2,4-Dimethylphenol	ND	0.79	2.8	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
4,6-Dinitro-2-methylphenol	ND	0.70	3.8	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
2,4-Dinitrophenol	ND	0.55	4.7	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
2,4-Dinitrotoluene	ND	0.97	4.7	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
2,6-Dinitrotoluene	ND	1.1	4.7	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
Fluoranthene	ND	0.72	1.9	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
Fluorene	ND	0.75	1.9	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
Hexachlorobenzene	ND	0.74	1.9	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
Hexachlorobutadiene	ND	0.83	1.9	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
Hexachlorocyclopentadiene	ND	0.91	1.9	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
Hexachloroethane	ND	0.78	1.9	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
Indeno(1,2,3-cd)pyrene	ND	1.2	1.9	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
Isophorone	ND	0.83	3.8	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
1-Methylnaphthalene	ND	0.88	1.9	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
2-Methylnaphthalene	ND	0.77	1.9	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
2-Methylphenol	ND	0.80	3.8	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999

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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-21 Toe 5 ft
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 11:00:00 AM
Lab ID: 2001739-051 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.69	1.9	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
N-Nitrosodi-n-propylamine	ND	0.95	1.9	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
N-Nitrosodiphenylamine	ND	0.98	1.9	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
Naphthalene	ND	0.78	1.9	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
2-Nitroaniline	ND	1.1	1.9	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
3-Nitroaniline	ND	0.93	1.9	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
4-Nitroaniline	ND	1.3	3.8	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
Nitrobenzene	ND	0.81	3.8	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
2-Nitrophenol	ND	0.78	1.9	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
4-Nitrophenol	ND	0.56	2.4	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
Pentachlorophenol	ND	0.85	3.8	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
Phenanthrene	ND	0.97	1.9	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
Phenol	ND	0.81	1.9	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
Pyrene	ND	0.63	1.9	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
Pyridine	ND	1.8	3.8	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
1,2,4-Trichlorobenzene	ND	0.81	1.9	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
2,4,5-Trichlorophenol	ND	0.61	1.9	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
2,4,6-Trichlorophenol	ND	0.95	1.9	D	mg/Kg	1	2/4/2020 12:30:09 PM	49999
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	1	2/4/2020 12:30:09 PM	49999
Surr: Phenol-d5	0		18.5-101	SD	%Rec	1	2/4/2020 12:30:09 PM	49999
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	1	2/4/2020 12:30:09 PM	49999
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	1	2/4/2020 12:30:09 PM	49999
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	1	2/4/2020 12:30:09 PM	49999
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	1	2/4/2020 12:30:09 PM	49999
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.012	0.073		mg/Kg	5	1/23/2020 1:03:41 AM	B65992
Toluene	0.029	0.014	0.15	J	mg/Kg	5	1/23/2020 1:03:41 AM	B65992
Ethylbenzene	ND	0.0085	0.15		mg/Kg	5	1/23/2020 1:03:41 AM	B65992
Methyl tert-butyl ether (MTBE)	ND	0.035	0.15		mg/Kg	5	1/23/2020 1:03:41 AM	B65992
1,2,4-Trimethylbenzene	0.097	0.013	0.15	J	mg/Kg	5	1/23/2020 1:03:41 AM	B65992
1,3,5-Trimethylbenzene	0.027	0.014	0.15	J	mg/Kg	5	1/23/2020 1:03:41 AM	B65992
1,2-Dichloroethane (EDC)	ND	0.015	0.15		mg/Kg	5	1/23/2020 1:03:41 AM	B65992
1,2-Dibromoethane (EDB)	ND	0.013	0.15		mg/Kg	5	1/23/2020 1:03:41 AM	B65992
Naphthalene	0.069	0.029	0.29	J	mg/Kg	5	1/23/2020 1:03:41 AM	B65992
1-Methylnaphthalene	0.33	0.084	0.58	J	mg/Kg	5	1/23/2020 1:03:41 AM	B65992
2-Methylnaphthalene	0.34	0.064	0.58	J	mg/Kg	5	1/23/2020 1:03:41 AM	B65992
Acetone	ND	0.12	2.2		mg/Kg	5	1/23/2020 1:03:41 AM	B65992
Bromobenzene	ND	0.014	0.15		mg/Kg	5	1/23/2020 1:03:41 AM	B65992
Bromodichloromethane	ND	0.013	0.15		mg/Kg	5	1/23/2020 1:03:41 AM	B65992

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ND	Not Detected at the Reporting Limit
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S	% Recovery outside of range due to dilution or matrix
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J	Analyte detected below quantitation limits
P	Sample pH Not In Range
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-21 Toe 5 ft
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 11:00:00 AM
Lab ID: 2001739-051 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Bromoform	ND	0.013	0.15		mg/Kg	5	1/23/2020 1:03:41 AM	B65992
Bromomethane	ND	0.035	0.44		mg/Kg	5	1/23/2020 1:03:41 AM	B65992
2-Butanone	ND	0.17	1.5		mg/Kg	5	1/23/2020 1:03:41 AM	B65992
Carbon disulfide	0.064	0.048	1.5	J	mg/Kg	5	1/23/2020 1:03:41 AM	B65992
Carbon tetrachloride	ND	0.014	0.15		mg/Kg	5	1/23/2020 1:03:41 AM	B65992
Chlorobenzene	ND	0.019	0.15		mg/Kg	5	1/23/2020 1:03:41 AM	B65992
Chloroethane	ND	0.021	0.29		mg/Kg	5	1/23/2020 1:03:41 AM	B65992
Chloroform	ND	0.012	0.15		mg/Kg	5	1/23/2020 1:03:41 AM	B65992
Chloromethane	ND	0.014	0.44		mg/Kg	5	1/23/2020 1:03:41 AM	B65992
2-Chlorotoluene	ND	0.013	0.15		mg/Kg	5	1/23/2020 1:03:41 AM	B65992
4-Chlorotoluene	ND	0.012	0.15		mg/Kg	5	1/23/2020 1:03:41 AM	B65992
cis-1,2-DCE	ND	0.020	0.15		mg/Kg	5	1/23/2020 1:03:41 AM	B65992
cis-1,3-Dichloropropene	ND	0.012	0.15		mg/Kg	5	1/23/2020 1:03:41 AM	B65992
1,2-Dibromo-3-chloropropane	ND	0.015	0.29		mg/Kg	5	1/23/2020 1:03:41 AM	B65992
Dibromochloromethane	ND	0.010	0.15		mg/Kg	5	1/23/2020 1:03:41 AM	B65992
Dibromomethane	ND	0.016	0.15		mg/Kg	5	1/23/2020 1:03:41 AM	B65992
1,2-Dichlorobenzene	ND	0.012	0.15		mg/Kg	5	1/23/2020 1:03:41 AM	B65992
1,3-Dichlorobenzene	ND	0.013	0.15		mg/Kg	5	1/23/2020 1:03:41 AM	B65992
1,4-Dichlorobenzene	ND	0.012	0.15		mg/Kg	5	1/23/2020 1:03:41 AM	B65992
Dichlorodifluoromethane	ND	0.034	0.15		mg/Kg	5	1/23/2020 1:03:41 AM	B65992
1,1-Dichloroethane	ND	0.0093	0.15		mg/Kg	5	1/23/2020 1:03:41 AM	B65992
1,1-Dichloroethene	ND	0.058	0.15		mg/Kg	5	1/23/2020 1:03:41 AM	B65992
1,2-Dichloropropane	ND	0.011	0.15		mg/Kg	5	1/23/2020 1:03:41 AM	B65992
1,3-Dichloropropane	ND	0.016	0.15		mg/Kg	5	1/23/2020 1:03:41 AM	B65992
2,2-Dichloropropane	ND	0.047	0.29		mg/Kg	5	1/23/2020 1:03:41 AM	B65992
1,1-Dichloropropene	ND	0.013	0.29		mg/Kg	5	1/23/2020 1:03:41 AM	B65992
Hexachlorobutadiene	ND	0.015	0.29		mg/Kg	5	1/23/2020 1:03:41 AM	B65992
2-Hexanone	ND	0.024	1.5		mg/Kg	5	1/23/2020 1:03:41 AM	B65992
Isopropylbenzene	ND	0.010	0.15		mg/Kg	5	1/23/2020 1:03:41 AM	B65992
4-Isopropyltoluene	ND	0.012	0.15		mg/Kg	5	1/23/2020 1:03:41 AM	B65992
4-Methyl-2-pentanone	0.11	0.027	1.5	J	mg/Kg	5	1/23/2020 1:03:41 AM	B65992
Methylene chloride	0.080	0.026	0.44	J	mg/Kg	5	1/23/2020 1:03:41 AM	B65992
n-Butylbenzene	ND	0.014	0.44		mg/Kg	5	1/23/2020 1:03:41 AM	B65992
n-Propylbenzene	ND	0.012	0.15		mg/Kg	5	1/23/2020 1:03:41 AM	B65992
sec-Butylbenzene	ND	0.016	0.15		mg/Kg	5	1/23/2020 1:03:41 AM	B65992
Styrene	ND	0.011	0.15		mg/Kg	5	1/23/2020 1:03:41 AM	B65992
tert-Butylbenzene	ND	0.014	0.15		mg/Kg	5	1/23/2020 1:03:41 AM	B65992
1,1,1,2-Tetrachloroethane	ND	0.0098	0.15		mg/Kg	5	1/23/2020 1:03:41 AM	B65992
1,1,2,2-Tetrachloroethane	ND	0.015	0.15		mg/Kg	5	1/23/2020 1:03:41 AM	B65992

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Qualifiers:

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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-21 Toe 5 ft
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 11:00:00 AM
Lab ID: 2001739-051 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Tetrachloroethene (PCE)	ND	0.012	0.15		mg/Kg	5	1/23/2020 1:03:41 AM	B65992
trans-1,2-DCE	ND	0.013	0.15		mg/Kg	5	1/23/2020 1:03:41 AM	B65992
trans-1,3-Dichloropropene	ND	0.015	0.15		mg/Kg	5	1/23/2020 1:03:41 AM	B65992
1,2,3-Trichlorobenzene	ND	0.013	0.29		mg/Kg	5	1/23/2020 1:03:41 AM	B65992
1,2,4-Trichlorobenzene	ND	0.015	0.15		mg/Kg	5	1/23/2020 1:03:41 AM	B65992
1,1,1-Trichloroethane	ND	0.013	0.15		mg/Kg	5	1/23/2020 1:03:41 AM	B65992
1,1,2-Trichloroethane	ND	0.010	0.15		mg/Kg	5	1/23/2020 1:03:41 AM	B65992
Trichloroethene (TCE)	ND	0.017	0.15		mg/Kg	5	1/23/2020 1:03:41 AM	B65992
Trichlorofluoromethane	ND	0.049	0.15		mg/Kg	5	1/23/2020 1:03:41 AM	B65992
1,2,3-Trichloropropane	ND	0.024	0.29		mg/Kg	5	1/23/2020 1:03:41 AM	B65992
Vinyl chloride	ND	0.0095	0.15		mg/Kg	5	1/23/2020 1:03:41 AM	B65992
Xylenes, Total	0.099	0.037	0.29	J	mg/Kg	5	1/23/2020 1:03:41 AM	B65992
Surr: Dibromofluoromethane	110		70-130		%Rec	5	1/23/2020 1:03:41 AM	B65992
Surr: 1,2-Dichloroethane-d4	90.3		70-130		%Rec	5	1/23/2020 1:03:41 AM	B65992
Surr: Toluene-d8	102		70-130		%Rec	5	1/23/2020 1:03:41 AM	B65992
Surr: 4-Bromofluorobenzene	94.3		70-130		%Rec	5	1/23/2020 1:03:41 AM	B65992
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	3.3	3.1	15	J	mg/Kg	5	1/23/2020 1:03:41 AM	BG659
Surr: BFB	93.8	0	70-130		%Rec	5	1/23/2020 1:03:41 AM	BG659
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/29/2020 2:53:00 PM	R66198
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	7.98				pH Units	1	1/30/2020 1:06:00 PM	R66199

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ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-14 9 ft
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 10:20:00 AM
Lab ID: 2001739-052 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	24	2.2	9.2		mg/Kg	1	1/23/2020 1:29:50 AM	49949
Motor Oil Range Organics (MRO)	ND	46	46		mg/Kg	1	1/23/2020 1:29:50 AM	49949
Surr: DNOP	95.4	0	55.1-146		%Rec	1	1/23/2020 1:29:50 AM	49949
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	0.0043	0.0019	0.034	JH	mg/Kg	1	2/26/2020 4:10:20 PM	50701
MERCURY, TCLP							Analyst: **pmf**	
Mercury	ND	0.00075	0.020		mg/L	1	1/28/2020 4:50:10 PM	50098
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.75	5.1		mg/Kg	2	1/24/2020 10:45:15 AM	49994
Arsenic	ND	2.9	5.1		mg/Kg	2	1/24/2020 1:25:47 PM	49994
Barium	310	0.047	0.20		mg/Kg	2	1/24/2020 10:45:15 AM	49994
Beryllium	1.3	0.019	0.30		mg/Kg	2	1/24/2020 10:45:15 AM	49994
Cadmium	ND	0.049	0.20		mg/Kg	2	1/24/2020 10:45:15 AM	49994
Chromium	12	0.16	0.61		mg/Kg	2	1/24/2020 10:45:15 AM	49994
Cobalt	5.2	0.21	0.61		mg/Kg	2	1/24/2020 10:45:15 AM	49994
Lead	2.4	0.49	0.51		mg/Kg	2	1/24/2020 1:25:47 PM	49994
Nickel	11	0.30	1.0		mg/Kg	2	1/24/2020 10:45:15 AM	49994
Selenium	ND	2.6	5.1		mg/Kg	2	1/24/2020 1:25:47 PM	49994
Silver	ND	0.065	0.51		mg/Kg	2	1/24/2020 10:45:15 AM	49994
Vanadium	18	0.14	5.1		mg/Kg	2	1/24/2020 10:45:15 AM	49994
Zinc	22	0.80	5.1		mg/Kg	2	1/24/2020 10:45:15 AM	49994
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/28/2020 11:39:45 AM	50060
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.083	0.22		mg/Kg	1	2/4/2020 12:58:51 PM	49999
Acenaphthylene	ND	0.098	0.22		mg/Kg	1	2/4/2020 12:58:51 PM	49999
Aniline	ND	0.076	0.22		mg/Kg	1	2/4/2020 12:58:51 PM	49999
Anthracene	ND	0.085	0.22		mg/Kg	1	2/4/2020 12:58:51 PM	49999
Azobenzene	ND	0.11	0.22		mg/Kg	1	2/4/2020 12:58:51 PM	49999
Benz(a)anthracene	ND	0.076	0.22		mg/Kg	1	2/4/2020 12:58:51 PM	49999
Benzo(a)pyrene	ND	0.12	0.22		mg/Kg	1	2/4/2020 12:58:51 PM	49999
Benzo(b)fluoranthene	ND	0.13	0.22		mg/Kg	1	2/4/2020 12:58:51 PM	49999
Benzo(g,h,i)perylene	ND	0.11	0.22		mg/Kg	1	2/4/2020 12:58:51 PM	49999
Benzo(k)fluoranthene	ND	0.066	0.22		mg/Kg	1	2/4/2020 12:58:51 PM	49999
Benzoic acid	ND	0.15	0.55		mg/Kg	1	2/4/2020 12:58:51 PM	49999
Benzyl alcohol	ND	0.092	0.22		mg/Kg	1	2/4/2020 12:58:51 PM	49999
Bis(2-chloroethoxy)methane	ND	0.091	0.22		mg/Kg	1	2/4/2020 12:58:51 PM	49999

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Qualifiers:

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B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
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ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-14 9 ft
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 10:20:00 AM
Lab ID: 2001739-052 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.13	0.22		mg/Kg	1	2/4/2020 12:58:51 PM	49999
Bis(2-chloroisopropyl)ether	ND	0.095	0.22		mg/Kg	1	2/4/2020 12:58:51 PM	49999
Bis(2-ethylhexyl)phthalate	ND	0.25	0.55		mg/Kg	1	2/4/2020 12:58:51 PM	49999
4-Bromophenyl phenyl ether	ND	0.13	0.22		mg/Kg	1	2/4/2020 12:58:51 PM	49999
Butyl benzyl phthalate	ND	0.074	0.22		mg/Kg	1	2/4/2020 12:58:51 PM	49999
Carbazole	ND	0.088	0.22		mg/Kg	1	2/4/2020 12:58:51 PM	49999
4-Chloro-3-methylphenol	ND	0.087	0.55		mg/Kg	1	2/4/2020 12:58:51 PM	49999
4-Chloroaniline	ND	0.085	0.55		mg/Kg	1	2/4/2020 12:58:51 PM	49999
2-Chloronaphthalene	ND	0.093	0.28		mg/Kg	1	2/4/2020 12:58:51 PM	49999
2-Chlorophenol	ND	0.13	0.22		mg/Kg	1	2/4/2020 12:58:51 PM	49999
4-Chlorophenyl phenyl ether	ND	0.093	0.22		mg/Kg	1	2/4/2020 12:58:51 PM	49999
Chrysene	ND	0.087	0.22		mg/Kg	1	2/4/2020 12:58:51 PM	49999
Di-n-butyl phthalate	ND	0.33	0.44		mg/Kg	1	2/4/2020 12:58:51 PM	49999
Di-n-octyl phthalate	ND	0.074	0.44		mg/Kg	1	2/4/2020 12:58:51 PM	49999
Dibenz(a,h)anthracene	ND	0.12	0.22		mg/Kg	1	2/4/2020 12:58:51 PM	49999
Dibenzofuran	ND	0.11	0.22		mg/Kg	1	2/4/2020 12:58:51 PM	49999
1,2-Dichlorobenzene	ND	0.087	0.22		mg/Kg	1	2/4/2020 12:58:51 PM	49999
1,3-Dichlorobenzene	ND	0.074	0.22		mg/Kg	1	2/4/2020 12:58:51 PM	49999
1,4-Dichlorobenzene	ND	0.092	0.22		mg/Kg	1	2/4/2020 12:58:51 PM	49999
3,3´-Dichlorobenzidine	ND	0.094	0.28		mg/Kg	1	2/4/2020 12:58:51 PM	49999
Diethyl phthalate	ND	0.34	0.55		mg/Kg	1	2/4/2020 12:58:51 PM	49999
Dimethyl phthalate	ND	0.090	0.22		mg/Kg	1	2/4/2020 12:58:51 PM	49999
2,4-Dichlorophenol	ND	0.093	0.44		mg/Kg	1	2/4/2020 12:58:51 PM	49999
2,4-Dimethylphenol	ND	0.092	0.33		mg/Kg	1	2/4/2020 12:58:51 PM	49999
4,6-Dinitro-2-methylphenol	ND	0.081	0.44		mg/Kg	1	2/4/2020 12:58:51 PM	49999
2,4-Dinitrophenol	ND	0.064	0.55		mg/Kg	1	2/4/2020 12:58:51 PM	49999
2,4-Dinitrotoluene	ND	0.11	0.55		mg/Kg	1	2/4/2020 12:58:51 PM	49999
2,6-Dinitrotoluene	ND	0.13	0.55		mg/Kg	1	2/4/2020 12:58:51 PM	49999
Fluoranthene	ND	0.084	0.22		mg/Kg	1	2/4/2020 12:58:51 PM	49999
Fluorene	ND	0.087	0.22		mg/Kg	1	2/4/2020 12:58:51 PM	49999
Hexachlorobenzene	ND	0.086	0.22		mg/Kg	1	2/4/2020 12:58:51 PM	49999
Hexachlorobutadiene	ND	0.097	0.22		mg/Kg	1	2/4/2020 12:58:51 PM	49999
Hexachlorocyclopentadiene	ND	0.11	0.22		mg/Kg	1	2/4/2020 12:58:51 PM	49999
Hexachloroethane	ND	0.091	0.22		mg/Kg	1	2/4/2020 12:58:51 PM	49999
Indeno(1,2,3-cd)pyrene	ND	0.14	0.22		mg/Kg	1	2/4/2020 12:58:51 PM	49999
Isophorone	ND	0.096	0.44		mg/Kg	1	2/4/2020 12:58:51 PM	49999
1-Methylnaphthalene	ND	0.10	0.22		mg/Kg	1	2/4/2020 12:58:51 PM	49999
2-Methylnaphthalene	ND	0.090	0.22		mg/Kg	1	2/4/2020 12:58:51 PM	49999
2-Methylphenol	ND	0.093	0.44		mg/Kg	1	2/4/2020 12:58:51 PM	49999

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Qualifiers:

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D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-14 9 ft
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 10:20:00 AM
Lab ID: 2001739-052 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.080	0.22		mg/Kg	1	2/4/2020 12:58:51 PM	49999
N-Nitrosodi-n-propylamine	ND	0.11	0.22		mg/Kg	1	2/4/2020 12:58:51 PM	49999
N-Nitrosodiphenylamine	ND	0.11	0.22		mg/Kg	1	2/4/2020 12:58:51 PM	49999
Naphthalene	ND	0.091	0.22		mg/Kg	1	2/4/2020 12:58:51 PM	49999
2-Nitroaniline	ND	0.12	0.22		mg/Kg	1	2/4/2020 12:58:51 PM	49999
3-Nitroaniline	ND	0.11	0.22		mg/Kg	1	2/4/2020 12:58:51 PM	49999
4-Nitroaniline	ND	0.15	0.44		mg/Kg	1	2/4/2020 12:58:51 PM	49999
Nitrobenzene	ND	0.094	0.44		mg/Kg	1	2/4/2020 12:58:51 PM	49999
2-Nitrophenol	ND	0.091	0.22		mg/Kg	1	2/4/2020 12:58:51 PM	49999
4-Nitrophenol	ND	0.065	0.28		mg/Kg	1	2/4/2020 12:58:51 PM	49999
Pentachlorophenol	ND	0.099	0.44		mg/Kg	1	2/4/2020 12:58:51 PM	49999
Phenanthrene	ND	0.11	0.22		mg/Kg	1	2/4/2020 12:58:51 PM	49999
Phenol	ND	0.094	0.22		mg/Kg	1	2/4/2020 12:58:51 PM	49999
Pyrene	ND	0.073	0.22		mg/Kg	1	2/4/2020 12:58:51 PM	49999
Pyridine	ND	0.21	0.44		mg/Kg	1	2/4/2020 12:58:51 PM	49999
1,2,4-Trichlorobenzene	ND	0.095	0.22		mg/Kg	1	2/4/2020 12:58:51 PM	49999
2,4,5-Trichlorophenol	ND	0.071	0.22		mg/Kg	1	2/4/2020 12:58:51 PM	49999
2,4,6-Trichlorophenol	ND	0.11	0.22		mg/Kg	1	2/4/2020 12:58:51 PM	49999
Surr: 2-Fluorophenol	53.9		26.7-85.9		%Rec	1	2/4/2020 12:58:51 PM	49999
Surr: Phenol-d5	63.7		18.5-101		%Rec	1	2/4/2020 12:58:51 PM	49999
Surr: 2,4,6-Tribromophenol	61.0		35.8-85.6		%Rec	1	2/4/2020 12:58:51 PM	49999
Surr: Nitrobenzene-d5	68.7		40.8-95.2		%Rec	1	2/4/2020 12:58:51 PM	49999
Surr: 2-Fluorobiphenyl	67.2		34.7-85.2		%Rec	1	2/4/2020 12:58:51 PM	49999
Surr: 4-Terphenyl-d14	70.9		37.4-91.3		%Rec	1	2/4/2020 12:58:51 PM	49999
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.013	0.077		mg/Kg	5	1/23/2020 2:30:37 AM	B65992
Toluene	ND	0.015	0.15		mg/Kg	5	1/23/2020 2:30:37 AM	B65992
Ethylbenzene	ND	0.0090	0.15		mg/Kg	5	1/23/2020 2:30:37 AM	B65992
Methyl tert-butyl ether (MTBE)	ND	0.037	0.15		mg/Kg	5	1/23/2020 2:30:37 AM	B65992
1,2,4-Trimethylbenzene	ND	0.014	0.15		mg/Kg	5	1/23/2020 2:30:37 AM	B65992
1,3,5-Trimethylbenzene	ND	0.015	0.15		mg/Kg	5	1/23/2020 2:30:37 AM	B65992
1,2-Dichloroethane (EDC)	ND	0.016	0.15		mg/Kg	5	1/23/2020 2:30:37 AM	B65992
1,2-Dibromoethane (EDB)	ND	0.014	0.15		mg/Kg	5	1/23/2020 2:30:37 AM	B65992
Naphthalene	ND	0.031	0.31		mg/Kg	5	1/23/2020 2:30:37 AM	B65992
1-Methylnaphthalene	ND	0.089	0.62		mg/Kg	5	1/23/2020 2:30:37 AM	B65992
2-Methylnaphthalene	ND	0.067	0.62		mg/Kg	5	1/23/2020 2:30:37 AM	B65992
Acetone	ND	0.13	2.3		mg/Kg	5	1/23/2020 2:30:37 AM	B65992
Bromobenzene	ND	0.015	0.15		mg/Kg	5	1/23/2020 2:30:37 AM	B65992
Bromodichloromethane	ND	0.014	0.15		mg/Kg	5	1/23/2020 2:30:37 AM	B65992

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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-14 9 ft
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 10:20:00 AM
Lab ID: 2001739-052 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Bromoform	ND	0.014	0.15		mg/Kg	5	1/23/2020 2:30:37 AM	B65992
Bromomethane	ND	0.037	0.46		mg/Kg	5	1/23/2020 2:30:37 AM	B65992
2-Butanone	ND	0.18	1.5		mg/Kg	5	1/23/2020 2:30:37 AM	B65992
Carbon disulfide	ND	0.051	1.5		mg/Kg	5	1/23/2020 2:30:37 AM	B65992
Carbon tetrachloride	ND	0.015	0.15		mg/Kg	5	1/23/2020 2:30:37 AM	B65992
Chlorobenzene	ND	0.020	0.15		mg/Kg	5	1/23/2020 2:30:37 AM	B65992
Chloroethane	ND	0.023	0.31		mg/Kg	5	1/23/2020 2:30:37 AM	B65992
Chloroform	ND	0.012	0.15		mg/Kg	5	1/23/2020 2:30:37 AM	B65992
Chloromethane	ND	0.015	0.46		mg/Kg	5	1/23/2020 2:30:37 AM	B65992
2-Chlorotoluene	ND	0.013	0.15		mg/Kg	5	1/23/2020 2:30:37 AM	B65992
4-Chlorotoluene	ND	0.013	0.15		mg/Kg	5	1/23/2020 2:30:37 AM	B65992
cis-1,2-DCE	ND	0.021	0.15		mg/Kg	5	1/23/2020 2:30:37 AM	B65992
cis-1,3-Dichloropropene	ND	0.013	0.15		mg/Kg	5	1/23/2020 2:30:37 AM	B65992
1,2-Dibromo-3-chloropropane	ND	0.016	0.31		mg/Kg	5	1/23/2020 2:30:37 AM	B65992
Dibromochloromethane	ND	0.011	0.15		mg/Kg	5	1/23/2020 2:30:37 AM	B65992
Dibromomethane	ND	0.017	0.15		mg/Kg	5	1/23/2020 2:30:37 AM	B65992
1,2-Dichlorobenzene	ND	0.013	0.15		mg/Kg	5	1/23/2020 2:30:37 AM	B65992
1,3-Dichlorobenzene	ND	0.013	0.15		mg/Kg	5	1/23/2020 2:30:37 AM	B65992
1,4-Dichlorobenzene	ND	0.013	0.15		mg/Kg	5	1/23/2020 2:30:37 AM	B65992
Dichlorodifluoromethane	ND	0.036	0.15		mg/Kg	5	1/23/2020 2:30:37 AM	B65992
1,1-Dichloroethane	ND	0.0098	0.15		mg/Kg	5	1/23/2020 2:30:37 AM	B65992
1,1-Dichloroethene	ND	0.062	0.15		mg/Kg	5	1/23/2020 2:30:37 AM	B65992
1,2-Dichloropropane	ND	0.011	0.15		mg/Kg	5	1/23/2020 2:30:37 AM	B65992
1,3-Dichloropropane	ND	0.017	0.15		mg/Kg	5	1/23/2020 2:30:37 AM	B65992
2,2-Dichloropropane	ND	0.050	0.31		mg/Kg	5	1/23/2020 2:30:37 AM	B65992
1,1-Dichloropropene	ND	0.014	0.31		mg/Kg	5	1/23/2020 2:30:37 AM	B65992
Hexachlorobutadiene	ND	0.016	0.31		mg/Kg	5	1/23/2020 2:30:37 AM	B65992
2-Hexanone	ND	0.026	1.5		mg/Kg	5	1/23/2020 2:30:37 AM	B65992
Isopropylbenzene	ND	0.011	0.15		mg/Kg	5	1/23/2020 2:30:37 AM	B65992
4-Isopropyltoluene	ND	0.013	0.15		mg/Kg	5	1/23/2020 2:30:37 AM	B65992
4-Methyl-2-pentanone	ND	0.029	1.5		mg/Kg	5	1/23/2020 2:30:37 AM	B65992
Methylene chloride	0.078	0.027	0.46	J	mg/Kg	5	1/23/2020 2:30:37 AM	B65992
n-Butylbenzene	ND	0.014	0.46		mg/Kg	5	1/23/2020 2:30:37 AM	B65992
n-Propylbenzene	ND	0.012	0.15		mg/Kg	5	1/23/2020 2:30:37 AM	B65992
sec-Butylbenzene	ND	0.017	0.15		mg/Kg	5	1/23/2020 2:30:37 AM	B65992
Styrene	ND	0.012	0.15		mg/Kg	5	1/23/2020 2:30:37 AM	B65992
tert-Butylbenzene	ND	0.015	0.15		mg/Kg	5	1/23/2020 2:30:37 AM	B65992
1,1,1,2-Tetrachloroethane	ND	0.010	0.15		mg/Kg	5	1/23/2020 2:30:37 AM	B65992
1,1,2,2-Tetrachloroethane	ND	0.016	0.15		mg/Kg	5	1/23/2020 2:30:37 AM	B65992

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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-14 9 ft
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 10:20:00 AM
Lab ID: 2001739-052 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Tetrachloroethene (PCE)	ND	0.012	0.15		mg/Kg	5	1/23/2020 2:30:37 AM	B65992
trans-1,2-DCE	ND	0.014	0.15		mg/Kg	5	1/23/2020 2:30:37 AM	B65992
trans-1,3-Dichloropropene	ND	0.016	0.15		mg/Kg	5	1/23/2020 2:30:37 AM	B65992
1,2,3-Trichlorobenzene	ND	0.014	0.31		mg/Kg	5	1/23/2020 2:30:37 AM	B65992
1,2,4-Trichlorobenzene	ND	0.016	0.15		mg/Kg	5	1/23/2020 2:30:37 AM	B65992
1,1,1-Trichloroethane	ND	0.014	0.15		mg/Kg	5	1/23/2020 2:30:37 AM	B65992
1,1,2-Trichloroethane	ND	0.011	0.15		mg/Kg	5	1/23/2020 2:30:37 AM	B65992
Trichloroethene (TCE)	ND	0.018	0.15		mg/Kg	5	1/23/2020 2:30:37 AM	B65992
Trichlorofluoromethane	ND	0.052	0.15		mg/Kg	5	1/23/2020 2:30:37 AM	B65992
1,2,3-Trichloropropane	ND	0.025	0.31		mg/Kg	5	1/23/2020 2:30:37 AM	B65992
Vinyl chloride	ND	0.010	0.15		mg/Kg	5	1/23/2020 2:30:37 AM	B65992
Xylenes, Total	ND	0.039	0.31		mg/Kg	5	1/23/2020 2:30:37 AM	B65992
Surr: Dibromofluoromethane	110		70-130		%Rec	5	1/23/2020 2:30:37 AM	B65992
Surr: 1,2-Dichloroethane-d4	91.8		70-130		%Rec	5	1/23/2020 2:30:37 AM	B65992
Surr: Toluene-d8	96.3		70-130		%Rec	5	1/23/2020 2:30:37 AM	B65992
Surr: 4-Bromofluorobenzene	95.3		70-130		%Rec	5	1/23/2020 2:30:37 AM	B65992
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	ND	3.3	15		mg/Kg	5	1/23/2020 2:30:37 AM	BG659
Surr: BFB	90.6	0	70-130		%Rec	5	1/23/2020 2:30:37 AM	BG659
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/29/2020 2:53:00 PM	R66198
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	8.87				pH Units	1	1/30/2020 1:06:00 PM	R66199

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B	Analyte detected in the associated Method Blank
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-2 Clay 3-3.5 ft
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 8:29:00 AM
Lab ID: 2001739-053 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	1700	12	49		mg/Kg	5	1/24/2020 12:19:53 PM	49949
Motor Oil Range Organics (MRO)	280	250	250		mg/Kg	5	1/24/2020 12:19:53 PM	49949
Surr: DNOP	110	0	55.1-146		%Rec	5	1/24/2020 12:19:53 PM	49949
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	0.037	0.0019	0.034	H	mg/Kg	1	2/26/2020 4:12:19 PM	50701
MERCURY, TCLP							Analyst: **pmf**	
Mercury	ND	0.00075	0.020		mg/L	1	1/28/2020 4:53:04 PM	50098
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.72	4.9		mg/Kg	2	1/24/2020 10:46:44 AM	49994
Arsenic	ND	2.8	4.9		mg/Kg	2	1/24/2020 1:27:13 PM	49994
Barium	480	0.046	0.20		mg/Kg	2	1/24/2020 10:46:44 AM	49994
Beryllium	0.96	0.018	0.30		mg/Kg	2	1/24/2020 10:46:44 AM	49994
Cadmium	ND	0.048	0.20		mg/Kg	2	1/24/2020 10:46:44 AM	49994
Chromium	14	0.16	0.59		mg/Kg	2	1/24/2020 10:46:44 AM	49994
Cobalt	4.8	0.21	0.59		mg/Kg	2	1/24/2020 10:46:44 AM	49994
Lead	1.6	0.48	0.49		mg/Kg	2	1/24/2020 1:27:13 PM	49994
Nickel	11	0.29	0.98		mg/Kg	2	1/24/2020 10:46:44 AM	49994
Selenium	ND	2.5	4.9		mg/Kg	2	1/24/2020 1:27:13 PM	49994
Silver	ND	0.063	0.49		mg/Kg	2	1/24/2020 10:46:44 AM	49994
Vanadium	21	0.13	4.9		mg/Kg	2	1/24/2020 10:46:44 AM	49994
Zinc	46	0.78	4.9		mg/Kg	2	1/24/2020 10:46:44 AM	49994
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/28/2020 11:45:23 AM	50060
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.15	0.40	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034
Acenaphthylene	ND	0.18	0.40	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034
Aniline	ND	0.14	0.40	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034
Anthracene	ND	0.15	0.40	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034
Azobenzene	ND	0.20	0.40	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034
Benz(a)anthracene	ND	0.14	0.40	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034
Benzo(a)pyrene	ND	0.22	0.40	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034
Benzo(b)fluoranthene	ND	0.23	0.40	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034
Benzo(g,h,i)perylene	ND	0.21	0.40	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034
Benzo(k)fluoranthene	ND	0.12	0.40	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034
Benzoic acid	ND	0.28	1.0	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034
Benzyl alcohol	ND	0.17	0.40	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034
Bis(2-chloroethoxy)methane	ND	0.16	0.40	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034

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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-2 Clay 3-3.5 ft
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 8:29:00 AM
Lab ID: 2001739-053 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.23	0.40	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034
Bis(2-chloroisopropyl)ether	ND	0.17	0.40	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034
Bis(2-ethylhexyl)phthalate	ND	0.45	1.0	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034
4-Bromophenyl phenyl ether	ND	0.23	0.40	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034
Butyl benzyl phthalate	ND	0.13	0.40	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034
Carbazole	ND	0.16	0.40	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034
4-Chloro-3-methylphenol	ND	0.16	1.0	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034
4-Chloroaniline	ND	0.15	1.0	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034
2-Chloronaphthalene	ND	0.17	0.50	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034
2-Chlorophenol	ND	0.23	0.40	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034
4-Chlorophenyl phenyl ether	ND	0.17	0.40	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034
Chrysene	ND	0.16	0.40	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034
Di-n-butyl phthalate	ND	0.60	0.80	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034
Di-n-octyl phthalate	ND	0.13	0.80	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034
Dibenz(a,h)anthracene	ND	0.22	0.40	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034
Dibenzofuran	ND	0.20	0.40	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034
1,2-Dichlorobenzene	ND	0.16	0.40	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034
1,3-Dichlorobenzene	ND	0.13	0.40	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034
1,4-Dichlorobenzene	ND	0.17	0.40	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034
3,3´-Dichlorobenzidine	ND	0.17	0.50	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034
Diethyl phthalate	ND	0.61	1.0	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034
Dimethyl phthalate	ND	0.16	0.40	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034
2,4-Dichlorophenol	ND	0.17	0.80	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034
2,4-Dimethylphenol	ND	0.17	0.60	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034
4,6-Dinitro-2-methylphenol	ND	0.15	0.80	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034
2,4-Dinitrophenol	ND	0.12	1.0	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034
2,4-Dinitrotoluene	ND	0.20	1.0	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034
2,6-Dinitrotoluene	ND	0.24	1.0	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034
Fluoranthene	ND	0.15	0.40	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034
Fluorene	ND	0.16	0.40	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034
Hexachlorobenzene	ND	0.16	0.40	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034
Hexachlorobutadiene	ND	0.17	0.40	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034
Hexachlorocyclopentadiene	ND	0.19	0.40	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034
Hexachloroethane	ND	0.16	0.40	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034
Indeno(1,2,3-cd)pyrene	ND	0.25	0.40	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034
Isophorone	ND	0.17	0.80	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034
1-Methylnaphthalene	ND	0.19	0.40	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034
2-Methylnaphthalene	ND	0.16	0.40	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034
2-Methylphenol	ND	0.17	0.80	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034

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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-2 Clay 3-3.5 ft
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 8:29:00 AM
Lab ID: 2001739-053 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.14	0.40	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034
N-Nitrosodi-n-propylamine	ND	0.20	0.40	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034
N-Nitrosodiphenylamine	ND	0.21	0.40	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034
Naphthalene	ND	0.16	0.40	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034
2-Nitroaniline	ND	0.22	0.40	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034
3-Nitroaniline	ND	0.20	0.40	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034
4-Nitroaniline	ND	0.27	0.80	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034
Nitrobenzene	ND	0.17	0.80	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034
2-Nitrophenol	ND	0.16	0.40	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034
4-Nitrophenol	ND	0.12	0.50	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034
Pentachlorophenol	ND	0.18	0.80	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034
Phenanthrene	0.39	0.20	0.40	JD	mg/Kg	1	2/4/2020 1:27:33 PM	50034
Phenol	ND	0.17	0.40	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034
Pyrene	ND	0.13	0.40	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034
Pyridine	ND	0.37	0.80	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034
1,2,4-Trichlorobenzene	ND	0.17	0.40	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034
2,4,5-Trichlorophenol	ND	0.13	0.40	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034
2,4,6-Trichlorophenol	ND	0.20	0.40	D	mg/Kg	1	2/4/2020 1:27:33 PM	50034
Surr: 2-Fluorophenol	51.1		26.7-85.9	D	%Rec	1	2/4/2020 1:27:33 PM	50034
Surr: Phenol-d5	65.3		18.5-101	D	%Rec	1	2/4/2020 1:27:33 PM	50034
Surr: 2,4,6-Tribromophenol	55.9		35.8-85.6	D	%Rec	1	2/4/2020 1:27:33 PM	50034
Surr: Nitrobenzene-d5	67.1		40.8-95.2	D	%Rec	1	2/4/2020 1:27:33 PM	50034
Surr: 2-Fluorobiphenyl	69.0		34.7-85.2	D	%Rec	1	2/4/2020 1:27:33 PM	50034
Surr: 4-Terphenyl-d14	68.9		37.4-91.3	D	%Rec	1	2/4/2020 1:27:33 PM	50034
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.011	0.066		mg/Kg	5	1/23/2020 3:57:22 AM	B65992
Toluene	ND	0.013	0.13		mg/Kg	5	1/23/2020 3:57:22 AM	B65992
Ethylbenzene	ND	0.0077	0.13		mg/Kg	5	1/23/2020 3:57:22 AM	B65992
Methyl tert-butyl ether (MTBE)	ND	0.031	0.13		mg/Kg	5	1/23/2020 3:57:22 AM	B65992
1,2,4-Trimethylbenzene	0.015	0.012	0.13	J	mg/Kg	5	1/23/2020 3:57:22 AM	B65992
1,3,5-Trimethylbenzene	ND	0.013	0.13		mg/Kg	5	1/23/2020 3:57:22 AM	B65992
1,2-Dichloroethane (EDC)	ND	0.013	0.13		mg/Kg	5	1/23/2020 3:57:22 AM	B65992
1,2-Dibromoethane (EDB)	ND	0.012	0.13		mg/Kg	5	1/23/2020 3:57:22 AM	B65992
Naphthalene	ND	0.026	0.26		mg/Kg	5	1/23/2020 3:57:22 AM	B65992
1-Methylnaphthalene	ND	0.076	0.53		mg/Kg	5	1/23/2020 3:57:22 AM	B65992
2-Methylnaphthalene	ND	0.058	0.53		mg/Kg	5	1/23/2020 3:57:22 AM	B65992
Acetone	0.13	0.11	2.0	J	mg/Kg	5	1/23/2020 3:57:22 AM	B65992
Bromobenzene	ND	0.013	0.13		mg/Kg	5	1/23/2020 3:57:22 AM	B65992
Bromodichloromethane	ND	0.012	0.13		mg/Kg	5	1/23/2020 3:57:22 AM	B65992

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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-2 Clay 3-3.5 ft
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 8:29:00 AM
Lab ID: 2001739-053 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Bromoform	ND	0.012	0.13		mg/Kg	5	1/23/2020 3:57:22 AM	B65992
Bromomethane	ND	0.032	0.40		mg/Kg	5	1/23/2020 3:57:22 AM	B65992
2-Butanone	ND	0.15	1.3		mg/Kg	5	1/23/2020 3:57:22 AM	B65992
Carbon disulfide	ND	0.044	1.3		mg/Kg	5	1/23/2020 3:57:22 AM	B65992
Carbon tetrachloride	ND	0.013	0.13		mg/Kg	5	1/23/2020 3:57:22 AM	B65992
Chlorobenzene	ND	0.017	0.13		mg/Kg	5	1/23/2020 3:57:22 AM	B65992
Chloroethane	ND	0.019	0.26		mg/Kg	5	1/23/2020 3:57:22 AM	B65992
Chloroform	ND	0.011	0.13		mg/Kg	5	1/23/2020 3:57:22 AM	B65992
Chloromethane	ND	0.013	0.40		mg/Kg	5	1/23/2020 3:57:22 AM	B65992
2-Chlorotoluene	ND	0.012	0.13		mg/Kg	5	1/23/2020 3:57:22 AM	B65992
4-Chlorotoluene	ND	0.011	0.13		mg/Kg	5	1/23/2020 3:57:22 AM	B65992
cis-1,2-DCE	ND	0.018	0.13		mg/Kg	5	1/23/2020 3:57:22 AM	B65992
cis-1,3-Dichloropropene	ND	0.011	0.13		mg/Kg	5	1/23/2020 3:57:22 AM	B65992
1,2-Dibromo-3-chloropropane	ND	0.014	0.26		mg/Kg	5	1/23/2020 3:57:22 AM	B65992
Dibromochloromethane	ND	0.0094	0.13		mg/Kg	5	1/23/2020 3:57:22 AM	B65992
Dibromomethane	ND	0.014	0.13		mg/Kg	5	1/23/2020 3:57:22 AM	B65992
1,2-Dichlorobenzene	ND	0.011	0.13		mg/Kg	5	1/23/2020 3:57:22 AM	B65992
1,3-Dichlorobenzene	ND	0.011	0.13		mg/Kg	5	1/23/2020 3:57:22 AM	B65992
1,4-Dichlorobenzene	ND	0.011	0.13		mg/Kg	5	1/23/2020 3:57:22 AM	B65992
Dichlorodifluoromethane	ND	0.031	0.13		mg/Kg	5	1/23/2020 3:57:22 AM	B65992
1,1-Dichloroethane	ND	0.0084	0.13		mg/Kg	5	1/23/2020 3:57:22 AM	B65992
1,1-Dichloroethene	ND	0.053	0.13		mg/Kg	5	1/23/2020 3:57:22 AM	B65992
1,2-Dichloropropane	ND	0.0096	0.13		mg/Kg	5	1/23/2020 3:57:22 AM	B65992
1,3-Dichloropropane	ND	0.014	0.13		mg/Kg	5	1/23/2020 3:57:22 AM	B65992
2,2-Dichloropropane	ND	0.043	0.26		mg/Kg	5	1/23/2020 3:57:22 AM	B65992
1,1-Dichloropropene	ND	0.012	0.26		mg/Kg	5	1/23/2020 3:57:22 AM	B65992
Hexachlorobutadiene	ND	0.013	0.26		mg/Kg	5	1/23/2020 3:57:22 AM	B65992
2-Hexanone	0.077	0.022	1.3	J	mg/Kg	5	1/23/2020 3:57:22 AM	B65992
Isopropylbenzene	ND	0.0095	0.13		mg/Kg	5	1/23/2020 3:57:22 AM	B65992
4-Isopropyltoluene	ND	0.011	0.13		mg/Kg	5	1/23/2020 3:57:22 AM	B65992
4-Methyl-2-pentanone	ND	0.025	1.3		mg/Kg	5	1/23/2020 3:57:22 AM	B65992
Methylene chloride	0.072	0.023	0.40	J	mg/Kg	5	1/23/2020 3:57:22 AM	B65992
n-Butylbenzene	ND	0.012	0.40		mg/Kg	5	1/23/2020 3:57:22 AM	B65992
n-Propylbenzene	ND	0.011	0.13		mg/Kg	5	1/23/2020 3:57:22 AM	B65992
sec-Butylbenzene	ND	0.015	0.13		mg/Kg	5	1/23/2020 3:57:22 AM	B65992
Styrene	ND	0.010	0.13		mg/Kg	5	1/23/2020 3:57:22 AM	B65992
tert-Butylbenzene	ND	0.012	0.13		mg/Kg	5	1/23/2020 3:57:22 AM	B65992
1,1,1,2-Tetrachloroethane	ND	0.0089	0.13		mg/Kg	5	1/23/2020 3:57:22 AM	B65992
1,1,2,2-Tetrachloroethane	ND	0.013	0.13		mg/Kg	5	1/23/2020 3:57:22 AM	B65992

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-2 Clay 3-3.5 ft
Project: Gallup SWMUI Sampling Event
Collection Date: 1/15/2020 8:29:00 AM
Lab ID: 2001739-053 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Tetrachloroethene (PCE)	ND	0.011	0.13		mg/Kg	5	1/23/2020 3:57:22 AM	B65992
trans-1,2-DCE	ND	0.012	0.13		mg/Kg	5	1/23/2020 3:57:22 AM	B65992
trans-1,3-Dichloropropene	ND	0.014	0.13		mg/Kg	5	1/23/2020 3:57:22 AM	B65992
1,2,3-Trichlorobenzene	ND	0.012	0.26		mg/Kg	5	1/23/2020 3:57:22 AM	B65992
1,2,4-Trichlorobenzene	ND	0.013	0.13		mg/Kg	5	1/23/2020 3:57:22 AM	B65992
1,1,1-Trichloroethane	ND	0.012	0.13		mg/Kg	5	1/23/2020 3:57:22 AM	B65992
1,1,2-Trichloroethane	ND	0.0093	0.13		mg/Kg	5	1/23/2020 3:57:22 AM	B65992
Trichloroethene (TCE)	ND	0.015	0.13		mg/Kg	5	1/23/2020 3:57:22 AM	B65992
Trichlorofluoromethane	ND	0.045	0.13		mg/Kg	5	1/23/2020 3:57:22 AM	B65992
1,2,3-Trichloropropane	ND	0.021	0.26		mg/Kg	5	1/23/2020 3:57:22 AM	B65992
Vinyl chloride	ND	0.0086	0.13		mg/Kg	5	1/23/2020 3:57:22 AM	B65992
Xylenes, Total	ND	0.033	0.26		mg/Kg	5	1/23/2020 3:57:22 AM	B65992
Surr: Dibromofluoromethane	113		70-130		%Rec	5	1/23/2020 3:57:22 AM	B65992
Surr: 1,2-Dichloroethane-d4	98.2		70-130		%Rec	5	1/23/2020 3:57:22 AM	B65992
Surr: Toluene-d8	98.4		70-130		%Rec	5	1/23/2020 3:57:22 AM	B65992
Surr: 4-Bromofluorobenzene	96.1		70-130		%Rec	5	1/23/2020 3:57:22 AM	B65992
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	ND	2.8	13		mg/Kg	5	1/23/2020 3:57:22 AM	BG659
Surr: BFB	96.2	0	70-130		%Rec	5	1/23/2020 3:57:22 AM	BG659
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/29/2020 2:53:00 PM	R66198
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	8.77				pH Units	1	1/30/2020 1:06:00 PM	R66199

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S	% Recovery outside of range due to dilution or matrix
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E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-8 5-5.5 ft
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 8:48:00 AM
Lab ID: 2001739-054 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	100	2.1	8.9		mg/Kg	1	1/24/2020 12:29:16 PM	49949
Motor Oil Range Organics (MRO)	ND	45	45		mg/Kg	1	1/24/2020 12:29:16 PM	49949
Surr: DNOP	93.7	0	55.1-146		%Rec	1	1/24/2020 12:29:16 PM	49949
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	0.027	0.0018	0.032	JH	mg/Kg	1	2/26/2020 4:14:18 PM	50701
MERCURY, TCLP							Analyst: **pmf**	
Mercury	ND	0.00075	0.020		mg/L	1	1/28/2020 4:55:57 PM	50098
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.73	4.9		mg/Kg	2	1/25/2020 10:53:27 AM	50026
Arsenic	ND	2.8	4.9		mg/Kg	2	1/25/2020 10:53:27 AM	50026
Barium	270	0.046	0.20		mg/Kg	2	1/25/2020 10:53:27 AM	50026
Beryllium	0.98	0.018	0.30		mg/Kg	2	1/25/2020 10:53:27 AM	50026
Cadmium	ND	0.048	0.20		mg/Kg	2	1/25/2020 10:53:27 AM	50026
Chromium	11	0.16	0.59		mg/Kg	2	1/25/2020 10:53:27 AM	50026
Cobalt	4.2	0.21	0.59		mg/Kg	2	1/25/2020 10:53:27 AM	50026
Lead	1.5	0.48	0.49		mg/Kg	2	1/25/2020 10:53:27 AM	50026
Nickel	9.3	0.30	0.99		mg/Kg	2	1/25/2020 10:53:27 AM	50026
Selenium	ND	2.5	4.9		mg/Kg	2	1/25/2020 10:53:27 AM	50026
Silver	ND	0.063	0.49		mg/Kg	2	1/25/2020 10:53:27 AM	50026
Vanadium	20	0.13	4.9		mg/Kg	2	1/25/2020 10:53:27 AM	50026
Zinc	22	0.78	4.9		mg/Kg	2	1/25/2020 10:53:27 AM	50026
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/28/2020 11:46:49 AM	50060
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.15	0.40	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
Acenaphthylene	ND	0.18	0.40	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
Aniline	ND	0.14	0.40	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
Anthracene	ND	0.15	0.40	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
Azobenzene	ND	0.20	0.40	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
Benz(a)anthracene	ND	0.14	0.40	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
Benzo(a)pyrene	ND	0.22	0.40	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
Benzo(b)fluoranthene	ND	0.23	0.40	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
Benzo(g,h,i)perylene	ND	0.21	0.40	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
Benzo(k)fluoranthene	ND	0.12	0.40	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
Benzoic acid	ND	0.28	1.0	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
Benzyl alcohol	ND	0.17	0.40	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
Bis(2-chloroethoxy)methane	ND	0.16	0.40	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034

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Qualifiers:

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S	% Recovery outside of range due to dilution or matrix
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J	Analyte detected below quantitation limits
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-8 5-5.5 ft
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 8:48:00 AM
Lab ID: 2001739-054 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.23	0.40	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
Bis(2-chloroisopropyl)ether	ND	0.17	0.40	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
Bis(2-ethylhexyl)phthalate	ND	0.45	1.0	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
4-Bromophenyl phenyl ether	ND	0.23	0.40	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
Butyl benzyl phthalate	ND	0.13	0.40	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
Carbazole	ND	0.16	0.40	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
4-Chloro-3-methylphenol	ND	0.16	1.0	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
4-Chloroaniline	ND	0.15	1.0	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
2-Chloronaphthalene	ND	0.17	0.50	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
2-Chlorophenol	ND	0.23	0.40	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
4-Chlorophenyl phenyl ether	ND	0.17	0.40	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
Chrysene	ND	0.16	0.40	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
Di-n-butyl phthalate	ND	0.60	0.80	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
Di-n-octyl phthalate	ND	0.13	0.80	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
Dibenz(a,h)anthracene	ND	0.22	0.40	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
Dibenzofuran	ND	0.20	0.40	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
1,2-Dichlorobenzene	ND	0.16	0.40	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
1,3-Dichlorobenzene	ND	0.13	0.40	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
1,4-Dichlorobenzene	ND	0.17	0.40	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
3,3´-Dichlorobenzidine	ND	0.17	0.50	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
Diethyl phthalate	ND	0.61	1.0	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
Dimethyl phthalate	ND	0.16	0.40	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
2,4-Dichlorophenol	ND	0.17	0.80	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
2,4-Dimethylphenol	ND	0.17	0.60	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
4,6-Dinitro-2-methylphenol	ND	0.15	0.80	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
2,4-Dinitrophenol	ND	0.12	1.0	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
2,4-Dinitrotoluene	ND	0.21	1.0	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
2,6-Dinitrotoluene	ND	0.24	1.0	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
Fluoranthene	ND	0.15	0.40	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
Fluorene	ND	0.16	0.40	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
Hexachlorobenzene	ND	0.16	0.40	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
Hexachlorobutadiene	ND	0.17	0.40	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
Hexachlorocyclopentadiene	ND	0.19	0.40	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
Hexachloroethane	ND	0.16	0.40	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
Indeno(1,2,3-cd)pyrene	ND	0.25	0.40	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
Isophorone	ND	0.17	0.80	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
1-Methylnaphthalene	ND	0.19	0.40	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
2-Methylnaphthalene	ND	0.16	0.40	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
2-Methylphenol	ND	0.17	0.80	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034

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Qualifiers:

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H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
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P	Sample pH Not In Range
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-8 5-5.5 ft
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 8:48:00 AM
Lab ID: 2001739-054 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.14	0.40	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
N-Nitrosodi-n-propylamine	ND	0.20	0.40	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
N-Nitrosodiphenylamine	ND	0.21	0.40	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
Naphthalene	ND	0.16	0.40	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
2-Nitroaniline	ND	0.22	0.40	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
3-Nitroaniline	ND	0.20	0.40	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
4-Nitroaniline	ND	0.27	0.80	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
Nitrobenzene	ND	0.17	0.80	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
2-Nitrophenol	ND	0.16	0.40	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
4-Nitrophenol	ND	0.12	0.50	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
Pentachlorophenol	ND	0.18	0.80	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
Phenanthrene	ND	0.20	0.40	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
Phenol	ND	0.17	0.40	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
Pyrene	ND	0.13	0.40	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
Pyridine	ND	0.37	0.80	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
1,2,4-Trichlorobenzene	ND	0.17	0.40	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
2,4,5-Trichlorophenol	ND	0.13	0.40	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
2,4,6-Trichlorophenol	ND	0.20	0.40	D	mg/Kg	1	2/4/2020 2:54:14 PM	50034
Surr: 2-Fluorophenol	59.9		26.7-85.9	D	%Rec	1	2/4/2020 2:54:14 PM	50034
Surr: Phenol-d5	70.4		18.5-101	D	%Rec	1	2/4/2020 2:54:14 PM	50034
Surr: 2,4,6-Tribromophenol	68.8		35.8-85.6	D	%Rec	1	2/4/2020 2:54:14 PM	50034
Surr: Nitrobenzene-d5	70.5		40.8-95.2	D	%Rec	1	2/4/2020 2:54:14 PM	50034
Surr: 2-Fluorobiphenyl	76.9		34.7-85.2	D	%Rec	1	2/4/2020 2:54:14 PM	50034
Surr: 4-Terphenyl-d14	90.7		37.4-91.3	D	%Rec	1	2/4/2020 2:54:14 PM	50034
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.011	0.066		mg/Kg	5	1/23/2020 4:26:15 AM	B65992
Toluene	ND	0.013	0.13		mg/Kg	5	1/23/2020 4:26:15 AM	B65992
Ethylbenzene	ND	0.0076	0.13		mg/Kg	5	1/23/2020 4:26:15 AM	B65992
Methyl tert-butyl ether (MTBE)	ND	0.031	0.13		mg/Kg	5	1/23/2020 4:26:15 AM	B65992
1,2,4-Trimethylbenzene	ND	0.012	0.13		mg/Kg	5	1/23/2020 4:26:15 AM	B65992
1,3,5-Trimethylbenzene	ND	0.013	0.13		mg/Kg	5	1/23/2020 4:26:15 AM	B65992
1,2-Dichloroethane (EDC)	ND	0.013	0.13		mg/Kg	5	1/23/2020 4:26:15 AM	B65992
1,2-Dibromoethane (EDB)	ND	0.012	0.13		mg/Kg	5	1/23/2020 4:26:15 AM	B65992
Naphthalene	ND	0.026	0.26		mg/Kg	5	1/23/2020 4:26:15 AM	B65992
1-Methylnaphthalene	ND	0.076	0.53		mg/Kg	5	1/23/2020 4:26:15 AM	B65992
2-Methylnaphthalene	ND	0.057	0.53		mg/Kg	5	1/23/2020 4:26:15 AM	B65992
Acetone	0.11	0.11	2.0	J	mg/Kg	5	1/23/2020 4:26:15 AM	B65992
Bromobenzene	ND	0.013	0.13		mg/Kg	5	1/23/2020 4:26:15 AM	B65992
Bromodichloromethane	ND	0.012	0.13		mg/Kg	5	1/23/2020 4:26:15 AM	B65992

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Qualifiers:

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P	Sample pH Not In Range
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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-8 5-5.5 ft
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 8:48:00 AM
Lab ID: 2001739-054 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Bromoform	ND	0.012	0.13		mg/Kg	5	1/23/2020 4:26:15 AM	B65992
Bromomethane	ND	0.032	0.39		mg/Kg	5	1/23/2020 4:26:15 AM	B65992
2-Butanone	ND	0.15	1.3		mg/Kg	5	1/23/2020 4:26:15 AM	B65992
Carbon disulfide	ND	0.043	1.3		mg/Kg	5	1/23/2020 4:26:15 AM	B65992
Carbon tetrachloride	ND	0.012	0.13		mg/Kg	5	1/23/2020 4:26:15 AM	B65992
Chlorobenzene	ND	0.017	0.13		mg/Kg	5	1/23/2020 4:26:15 AM	B65992
Chloroethane	ND	0.019	0.26		mg/Kg	5	1/23/2020 4:26:15 AM	B65992
Chloroform	ND	0.011	0.13		mg/Kg	5	1/23/2020 4:26:15 AM	B65992
Chloromethane	ND	0.013	0.39		mg/Kg	5	1/23/2020 4:26:15 AM	B65992
2-Chlorotoluene	ND	0.011	0.13		mg/Kg	5	1/23/2020 4:26:15 AM	B65992
4-Chlorotoluene	ND	0.011	0.13		mg/Kg	5	1/23/2020 4:26:15 AM	B65992
cis-1,2-DCE	ND	0.018	0.13		mg/Kg	5	1/23/2020 4:26:15 AM	B65992
cis-1,3-Dichloropropene	ND	0.011	0.13		mg/Kg	5	1/23/2020 4:26:15 AM	B65992
1,2-Dibromo-3-chloropropane	ND	0.013	0.26		mg/Kg	5	1/23/2020 4:26:15 AM	B65992
Dibromochloromethane	ND	0.0093	0.13		mg/Kg	5	1/23/2020 4:26:15 AM	B65992
Dibromomethane	ND	0.014	0.13		mg/Kg	5	1/23/2020 4:26:15 AM	B65992
1,2-Dichlorobenzene	ND	0.011	0.13		mg/Kg	5	1/23/2020 4:26:15 AM	B65992
1,3-Dichlorobenzene	ND	0.011	0.13		mg/Kg	5	1/23/2020 4:26:15 AM	B65992
1,4-Dichlorobenzene	ND	0.011	0.13		mg/Kg	5	1/23/2020 4:26:15 AM	B65992
Dichlorodifluoromethane	ND	0.031	0.13		mg/Kg	5	1/23/2020 4:26:15 AM	B65992
1,1-Dichloroethane	ND	0.0084	0.13		mg/Kg	5	1/23/2020 4:26:15 AM	B65992
1,1-Dichloroethene	ND	0.053	0.13		mg/Kg	5	1/23/2020 4:26:15 AM	B65992
1,2-Dichloropropane	ND	0.0096	0.13		mg/Kg	5	1/23/2020 4:26:15 AM	B65992
1,3-Dichloropropane	ND	0.014	0.13		mg/Kg	5	1/23/2020 4:26:15 AM	B65992
2,2-Dichloropropane	ND	0.043	0.26		mg/Kg	5	1/23/2020 4:26:15 AM	B65992
1,1-Dichloropropene	ND	0.012	0.26		mg/Kg	5	1/23/2020 4:26:15 AM	B65992
Hexachlorobutadiene	ND	0.013	0.26		mg/Kg	5	1/23/2020 4:26:15 AM	B65992
2-Hexanone	ND	0.022	1.3		mg/Kg	5	1/23/2020 4:26:15 AM	B65992
Isopropylbenzene	ND	0.0095	0.13		mg/Kg	5	1/23/2020 4:26:15 AM	B65992
4-Isopropyltoluene	ND	0.011	0.13		mg/Kg	5	1/23/2020 4:26:15 AM	B65992
4-Methyl-2-pentanone	ND	0.025	1.3		mg/Kg	5	1/23/2020 4:26:15 AM	B65992
Methylene chloride	0.069	0.023	0.39	J	mg/Kg	5	1/23/2020 4:26:15 AM	B65992
n-Butylbenzene	ND	0.012	0.39		mg/Kg	5	1/23/2020 4:26:15 AM	B65992
n-Propylbenzene	ND	0.010	0.13		mg/Kg	5	1/23/2020 4:26:15 AM	B65992
sec-Butylbenzene	ND	0.015	0.13		mg/Kg	5	1/23/2020 4:26:15 AM	B65992
Styrene	ND	0.010	0.13		mg/Kg	5	1/23/2020 4:26:15 AM	B65992
tert-Butylbenzene	ND	0.012	0.13		mg/Kg	5	1/23/2020 4:26:15 AM	B65992
1,1,1,2-Tetrachloroethane	ND	0.0089	0.13		mg/Kg	5	1/23/2020 4:26:15 AM	B65992
1,1,2,2-Tetrachloroethane	ND	0.013	0.13		mg/Kg	5	1/23/2020 4:26:15 AM	B65992

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

Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-8 5-5.5 ft
Project: Gallup SWMUI Sampling Event
Collection Date: 1/16/2020 8:48:00 AM
Lab ID: 2001739-054 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Tetrachloroethene (PCE)	ND	0.011	0.13		mg/Kg	5	1/23/2020 4:26:15 AM	B65992
trans-1,2-DCE	ND	0.012	0.13		mg/Kg	5	1/23/2020 4:26:15 AM	B65992
trans-1,3-Dichloropropene	ND	0.014	0.13		mg/Kg	5	1/23/2020 4:26:15 AM	B65992
1,2,3-Trichlorobenzene	ND	0.012	0.26		mg/Kg	5	1/23/2020 4:26:15 AM	B65992
1,2,4-Trichlorobenzene	ND	0.013	0.13		mg/Kg	5	1/23/2020 4:26:15 AM	B65992
1,1,1-Trichloroethane	ND	0.012	0.13		mg/Kg	5	1/23/2020 4:26:15 AM	B65992
1,1,2-Trichloroethane	ND	0.0093	0.13		mg/Kg	5	1/23/2020 4:26:15 AM	B65992
Trichloroethene (TCE)	ND	0.015	0.13		mg/Kg	5	1/23/2020 4:26:15 AM	B65992
Trichlorofluoromethane	ND	0.045	0.13		mg/Kg	5	1/23/2020 4:26:15 AM	B65992
1,2,3-Trichloropropane	ND	0.021	0.26		mg/Kg	5	1/23/2020 4:26:15 AM	B65992
Vinyl chloride	ND	0.0086	0.13		mg/Kg	5	1/23/2020 4:26:15 AM	B65992
Xylenes, Total	ND	0.033	0.26		mg/Kg	5	1/23/2020 4:26:15 AM	B65992
Surr: Dibromofluoromethane	110		70-130		%Rec	5	1/23/2020 4:26:15 AM	B65992
Surr: 1,2-Dichloroethane-d4	90.9		70-130		%Rec	5	1/23/2020 4:26:15 AM	B65992
Surr: Toluene-d8	100		70-130		%Rec	5	1/23/2020 4:26:15 AM	B65992
Surr: 4-Bromofluorobenzene	98.1		70-130		%Rec	5	1/23/2020 4:26:15 AM	B65992
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	ND	2.8	13		mg/Kg	5	1/23/2020 4:26:15 AM	BG659
Surr: BFB	93.1	0	70-130		%Rec	5	1/23/2020 4:26:15 AM	BG659
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/29/2020 2:53:00 PM	R66198
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	9.01				pH Units	1	1/30/2020 1:06:00 PM	R66199

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-22 5 ft
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 9:53:00 AM
Lab ID: 2001739-055 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **BRM**	
Diesel Range Organics (DRO)	140000	1200	5000		mg/Kg	500	1/24/2020 12:38:41 PM	49949
Motor Oil Range Organics (MRO)	27000	25000	25000		mg/Kg	500	1/24/2020 12:38:41 PM	49949
Surr: DNOP	0	0	55.1-146	S	%Rec	500	1/24/2020 12:38:41 PM	49949
EPA METHOD 7471: MERCURY							Analyst: **JLF**	
Mercury	ND	0.0018	0.032	H	mg/Kg	1	2/28/2020 7:29:24 PM	50752
MERCURY, TCLP							Analyst: **pmf**	
Mercury	ND	0.00075	0.020		mg/L	1	1/28/2020 4:58:51 PM	50098
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	0.74	5.0		mg/Kg	2	1/25/2020 10:54:51 AM	50026
Arsenic	25	2.9	5.0		mg/Kg	2	1/25/2020 10:54:51 AM	50026
Barium	73	0.046	0.20		mg/Kg	2	1/25/2020 10:54:51 AM	50026
Beryllium	0.35	0.018	0.30		mg/Kg	2	1/25/2020 10:54:51 AM	50026
Cadmium	ND	0.049	0.20		mg/Kg	2	1/25/2020 10:54:51 AM	50026
Chromium	88	0.16	0.60		mg/Kg	2	1/25/2020 10:54:51 AM	50026
Cobalt	10	0.21	0.60		mg/Kg	2	1/25/2020 10:54:51 AM	50026
Lead	200	1.2	1.3		mg/Kg	5	1/25/2020 11:37:12 AM	50026
Nickel	170	0.30	1.0		mg/Kg	2	1/25/2020 10:54:51 AM	50026
Selenium	2.9	2.5	5.0	J	mg/Kg	2	1/25/2020 10:54:51 AM	50026
Silver	ND	0.064	0.50		mg/Kg	2	1/25/2020 10:54:51 AM	50026
Vanadium	42	0.13	5.0		mg/Kg	2	1/25/2020 10:54:51 AM	50026
Zinc	6500	20	130		mg/Kg	50	1/25/2020 11:42:49 AM	50026
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Lead	ND	0.0085	5.0		mg/L	1	1/28/2020 11:48:12 AM	50060
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	9.3	25	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
Acenaphthylene	ND	11	25	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
Aniline	ND	8.5	25	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
Anthracene	ND	9.6	25	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
Azobenzene	ND	13	25	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
Benz(a)anthracene	ND	8.5	25	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
Benzo(a)pyrene	ND	13	25	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
Benzo(b)fluoranthene	ND	14	25	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
Benzo(g,h,i)perylene	ND	13	25	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
Benzo(k)fluoranthene	ND	7.4	25	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
Benzoic acid	ND	17	62	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
Benzyl alcohol	ND	10	25	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
Bis(2-chloroethoxy)methane	ND	10	25	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034

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Qualifiers:

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ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-22 5 ft
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 9:53:00 AM
Lab ID: 2001739-055 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	14	25	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
Bis(2-chloroisopropyl)ether	ND	11	25	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
Bis(2-ethylhexyl)phthalate	ND	28	62	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
4-Bromophenyl phenyl ether	ND	14	25	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
Butyl benzyl phthalate	ND	8.3	25	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
Carbazole	ND	9.9	25	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
4-Chloro-3-methylphenol	ND	9.8	62	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
4-Chloroaniline	ND	9.5	62	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
2-Chloronaphthalene	ND	10	31	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
2-Chlorophenol	ND	14	25	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
4-Chlorophenyl phenyl ether	ND	10	25	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
Chrysene	52	9.7	25	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
Di-n-butyl phthalate	ND	37	50	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
Di-n-octyl phthalate	ND	8.3	50	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
Dibenz(a,h)anthracene	ND	14	25	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
Dibenzofuran	ND	12	25	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
1,2-Dichlorobenzene	ND	9.8	25	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
1,3-Dichlorobenzene	ND	8.3	25	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
1,4-Dichlorobenzene	ND	10	25	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
3,3´-Dichlorobenzidine	ND	11	31	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
Diethyl phthalate	ND	38	62	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
Dimethyl phthalate	ND	10	25	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
2,4-Dichlorophenol	ND	11	50	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
2,4-Dimethylphenol	ND	10	37	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
4,6-Dinitro-2-methylphenol	ND	9.1	50	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
2,4-Dinitrophenol	ND	7.2	62	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
2,4-Dinitrotoluene	ND	13	62	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
2,6-Dinitrotoluene	ND	15	62	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
Fluoranthene	ND	9.5	25	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
Fluorene	ND	9.8	25	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
Hexachlorobenzene	ND	9.7	25	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
Hexachlorobutadiene	ND	11	25	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
Hexachlorocyclopentadiene	ND	12	25	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
Hexachloroethane	ND	10	25	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
Indeno(1,2,3-cd)pyrene	ND	15	25	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
Isophorone	ND	11	50	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
1-Methylnaphthalene	ND	12	25	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
2-Methylnaphthalene	ND	10	25	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
2-Methylphenol	ND	10	50	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034

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

Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-22 5 ft
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 9:53:00 AM
Lab ID: 2001739-055 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	9.0	25	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
N-Nitrosodi-n-propylamine	ND	13	25	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
N-Nitrosodiphenylamine	ND	13	25	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
Naphthalene	ND	10	25	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
2-Nitroaniline	ND	14	25	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
3-Nitroaniline	ND	12	25	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
4-Nitroaniline	ND	17	50	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
Nitrobenzene	ND	11	50	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
2-Nitrophenol	ND	10	25	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
4-Nitrophenol	ND	7.3	31	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
Pentachlorophenol	ND	11	50	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
Phenanthrene	160	13	25	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
Phenol	ND	11	25	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
Pyrene	75	8.2	25	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
Pyridine	ND	23	50	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
1,2,4-Trichlorobenzene	ND	11	25	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
2,4,5-Trichlorophenol	ND	8.0	25	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
2,4,6-Trichlorophenol	ND	12	25	D	mg/Kg	5	2/4/2020 3:23:06 PM	50034
Surr: 2-Fluorophenol	0		26.7-85.9	SD	%Rec	5	2/4/2020 3:23:06 PM	50034
Surr: Phenol-d5	0		18.5-101	SD	%Rec	5	2/4/2020 3:23:06 PM	50034
Surr: 2,4,6-Tribromophenol	0		35.8-85.6	SD	%Rec	5	2/4/2020 3:23:06 PM	50034
Surr: Nitrobenzene-d5	0		40.8-95.2	SD	%Rec	5	2/4/2020 3:23:06 PM	50034
Surr: 2-Fluorobiphenyl	0		34.7-85.2	SD	%Rec	5	2/4/2020 3:23:06 PM	50034
Surr: 4-Terphenyl-d14	0		37.4-91.3	SD	%Rec	5	2/4/2020 3:23:06 PM	50034
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.015	0.090		mg/Kg	5	1/23/2020 4:55:08 AM	B65992
Toluene	0.12	0.017	0.18	J	mg/Kg	5	1/23/2020 4:55:08 AM	B65992
Ethylbenzene	0.30	0.010	0.18		mg/Kg	5	1/23/2020 4:55:08 AM	B65992
Methyl tert-butyl ether (MTBE)	ND	0.043	0.18		mg/Kg	5	1/23/2020 4:55:08 AM	B65992
1,2,4-Trimethylbenzene	4.6	0.066	0.72	D	mg/Kg	20	1/23/2020 12:47:52 PM	S66039
1,3,5-Trimethylbenzene	2.7	0.070	0.72	D	mg/Kg	20	1/23/2020 12:47:52 PM	S66039
1,2-Dichloroethane (EDC)	ND	0.018	0.18		mg/Kg	5	1/23/2020 4:55:08 AM	B65992
1,2-Dibromoethane (EDB)	0.071	0.016	0.18	J	mg/Kg	5	1/23/2020 4:55:08 AM	B65992
Naphthalene	2.0	0.14	1.4	D	mg/Kg	20	1/23/2020 12:47:52 PM	S66039
1-Methylnaphthalene	15	0.41	2.9	D	mg/Kg	20	1/23/2020 12:47:52 PM	S66039
2-Methylnaphthalene	18	0.32	2.9	D	mg/Kg	20	1/23/2020 12:47:52 PM	S66039
Acetone	0.72	0.15	2.7	J	mg/Kg	5	1/23/2020 4:55:08 AM	B65992
Bromobenzene	ND	0.069	0.72	D	mg/Kg	20	1/23/2020 12:47:52 PM	S66039
Bromodichloromethane	ND	0.016	0.18		mg/Kg	5	1/23/2020 4:55:08 AM	B65992

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Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-22 5 ft
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 9:53:00 AM
Lab ID: 2001739-055 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Bromoform	ND	0.065	0.72	D	mg/Kg	20	1/23/2020 12:47:52 PM	S66039
Bromomethane	ND	0.043	0.54		mg/Kg	5	1/23/2020 4:55:08 AM	B65992
2-Butanone	0.80	0.21	1.8	J	mg/Kg	5	1/23/2020 4:55:08 AM	B65992
Carbon disulfide	ND	0.060	1.8		mg/Kg	5	1/23/2020 4:55:08 AM	B65992
Carbon tetrachloride	ND	0.017	0.18		mg/Kg	5	1/23/2020 4:55:08 AM	B65992
Chlorobenzene	ND	0.023	0.18		mg/Kg	5	1/23/2020 4:55:08 AM	B65992
Chloroethane	ND	0.027	0.36		mg/Kg	5	1/23/2020 4:55:08 AM	B65992
Chloroform	ND	0.014	0.18		mg/Kg	5	1/23/2020 4:55:08 AM	B65992
Chloromethane	ND	0.017	0.54		mg/Kg	5	1/23/2020 4:55:08 AM	B65992
2-Chlorotoluene	ND	0.063	0.72	D	mg/Kg	20	1/23/2020 12:47:52 PM	S66039
4-Chlorotoluene	ND	0.059	0.72	D	mg/Kg	20	1/23/2020 12:47:52 PM	S66039
cis-1,2-DCE	ND	0.025	0.18		mg/Kg	5	1/23/2020 4:55:08 AM	B65992
cis-1,3-Dichloropropene	ND	0.015	0.18		mg/Kg	5	1/23/2020 4:55:08 AM	B65992
1,2-Dibromo-3-chloropropane	ND	0.074	1.4	D	mg/Kg	20	1/23/2020 12:47:52 PM	S66039
Dibromochloromethane	ND	0.013	0.18		mg/Kg	5	1/23/2020 4:55:08 AM	B65992
Dibromomethane	ND	0.019	0.18		mg/Kg	5	1/23/2020 4:55:08 AM	B65992
1,2-Dichlorobenzene	ND	0.059	0.72	D	mg/Kg	20	1/23/2020 12:47:52 PM	S66039
1,3-Dichlorobenzene	ND	0.063	0.72	D	mg/Kg	20	1/23/2020 12:47:52 PM	S66039
1,4-Dichlorobenzene	ND	0.060	0.72	D	mg/Kg	20	1/23/2020 12:47:52 PM	S66039
Dichlorodifluoromethane	ND	0.042	0.18		mg/Kg	5	1/23/2020 4:55:08 AM	B65992
1,1-Dichloroethane	ND	0.012	0.18		mg/Kg	5	1/23/2020 4:55:08 AM	B65992
1,1-Dichloroethene	ND	0.072	0.18		mg/Kg	5	1/23/2020 4:55:08 AM	B65992
1,2-Dichloropropane	ND	0.013	0.18		mg/Kg	5	1/23/2020 4:55:08 AM	B65992
1,3-Dichloropropane	ND	0.019	0.18		mg/Kg	5	1/23/2020 4:55:08 AM	B65992
2,2-Dichloropropane	ND	0.059	0.36		mg/Kg	5	1/23/2020 4:55:08 AM	B65992
1,1-Dichloropropene	ND	0.016	0.36		mg/Kg	5	1/23/2020 4:55:08 AM	B65992
Hexachlorobutadiene	ND	0.073	1.4	D	mg/Kg	20	1/23/2020 12:47:52 PM	S66039
2-Hexanone	ND	0.030	1.8		mg/Kg	5	1/23/2020 4:55:08 AM	B65992
Isopropylbenzene	0.19	0.013	0.18		mg/Kg	5	1/23/2020 4:55:08 AM	B65992
4-Isopropyltoluene	0.55	0.060	0.72	JD	mg/Kg	20	1/23/2020 12:47:52 PM	S66039
4-Methyl-2-pentanone	0.20	0.034	1.8	J	mg/Kg	5	1/23/2020 4:55:08 AM	B65992
Methylene chloride	0.086	0.032	0.54	J	mg/Kg	5	1/23/2020 4:55:08 AM	B65992
n-Butylbenzene	0.30	0.067	2.2	JD	mg/Kg	20	1/23/2020 12:47:52 PM	S66039
n-Propylbenzene	0.24	0.057	0.72	JD	mg/Kg	20	1/23/2020 12:47:52 PM	S66039
sec-Butylbenzene	0.60	0.081	0.72	JD	mg/Kg	20	1/23/2020 12:47:52 PM	S66039
Styrene	ND	0.014	0.18		mg/Kg	5	1/23/2020 4:55:08 AM	B65992
tert-Butylbenzene	ND	0.068	0.72	D	mg/Kg	20	1/23/2020 12:47:52 PM	S66039
1,1,1,2-Tetrachloroethane	ND	0.012	0.18		mg/Kg	5	1/23/2020 4:55:08 AM	B65992
1,1,2,2-Tetrachloroethane	ND	0.073	0.72	D	mg/Kg	20	1/23/2020 12:47:52 PM	S66039

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

Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: SWMU1-22 5 ft
Project: Gallup SWMUI Sampling Event
Collection Date: 1/14/2020 9:53:00 AM
Lab ID: 2001739-055 **Matrix:** SOIL **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Tetrachloroethene (PCE)	ND	0.014	0.18		mg/Kg	5	1/23/2020 4:55:08 AM	B65992
trans-1,2-DCE	ND	0.016	0.18		mg/Kg	5	1/23/2020 4:55:08 AM	B65992
trans-1,3-Dichloropropene	ND	0.019	0.18		mg/Kg	5	1/23/2020 4:55:08 AM	B65992
1,2,3-Trichlorobenzene	ND	0.063	1.4	D	mg/Kg	20	1/23/2020 12:47:52 PM	S66039
1,2,4-Trichlorobenzene	ND	0.073	0.72	D	mg/Kg	20	1/23/2020 12:47:52 PM	S66039
1,1,1-Trichloroethane	ND	0.016	0.18		mg/Kg	5	1/23/2020 4:55:08 AM	B65992
1,1,2-Trichloroethane	ND	0.013	0.18		mg/Kg	5	1/23/2020 4:55:08 AM	B65992
Trichloroethene (TCE)	ND	0.021	0.18		mg/Kg	5	1/23/2020 4:55:08 AM	B65992
Trichlorofluoromethane	ND	0.061	0.18		mg/Kg	5	1/23/2020 4:55:08 AM	B65992
1,2,3-Trichloropropane	ND	0.12	1.4	D	mg/Kg	20	1/23/2020 12:47:52 PM	S66039
Vinyl chloride	ND	0.012	0.18		mg/Kg	5	1/23/2020 4:55:08 AM	B65992
Xylenes, Total	2.9	0.045	0.36		mg/Kg	5	1/23/2020 4:55:08 AM	B65992
Surr: Dibromofluoromethane	110		70-130		%Rec	5	1/23/2020 4:55:08 AM	B65992
Surr: 1,2-Dichloroethane-d4	92.3		70-130		%Rec	5	1/23/2020 4:55:08 AM	B65992
Surr: Toluene-d8	101		70-130		%Rec	5	1/23/2020 4:55:08 AM	B65992
Surr: 4-Bromofluorobenzene	79.4		70-130	D	%Rec	20	1/23/2020 12:47:52 PM	S66039
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	120	3.8	18		mg/Kg	5	1/23/2020 4:55:08 AM	BG659
Surr: BFB	89.2	0	70-130		%Rec	5	1/23/2020 4:55:08 AM	BG659
FREE LIQUID/PAINT FILTER							Analyst: **JRR**	
Free Liquid	Negative				Pos/Neg	1	1/29/2020 2:53:00 PM	R66198
SM4500H+B/EPA 9040C							Analyst: **JRR**	
pH	4.93				pH Units	1	1/30/2020 1:06:00 PM	R66199

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

Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: MeOH Blank
Project: Gallup SWMUI Sampling Event
Collection Date:
Lab ID: 2001739-056 **Matrix:** MEOH BLAN **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.0041	0.025		mg/Kg	1	1/23/2020 5:24:03 AM	B65992
Toluene	ND	0.0048	0.050		mg/Kg	1	1/23/2020 5:24:03 AM	B65992
Ethylbenzene	ND	0.0029	0.050		mg/Kg	1	1/23/2020 5:24:03 AM	B65992
Methyl tert-butyl ether (MTBE)	ND	0.012	0.050		mg/Kg	1	1/23/2020 5:24:03 AM	B65992
1,2,4-Trimethylbenzene	0.0065	0.0046	0.050	J	mg/Kg	1	1/23/2020 5:24:03 AM	B65992
1,3,5-Trimethylbenzene	ND	0.0048	0.050		mg/Kg	1	1/23/2020 5:24:03 AM	B65992
1,2-Dichloroethane (EDC)	ND	0.0051	0.050		mg/Kg	1	1/23/2020 5:24:03 AM	B65992
1,2-Dibromoethane (EDB)	ND	0.0046	0.050		mg/Kg	1	1/23/2020 5:24:03 AM	B65992
Naphthalene	ND	0.010	0.10		mg/Kg	1	1/23/2020 5:24:03 AM	B65992
1-Methylnaphthalene	0.14	0.029	0.20	J	mg/Kg	1	1/23/2020 5:24:03 AM	B65992
2-Methylnaphthalene	0.14	0.022	0.20	J	mg/Kg	1	1/23/2020 5:24:03 AM	B65992
Acetone	ND	0.041	0.75		mg/Kg	1	1/23/2020 5:24:03 AM	B65992
Bromobenzene	ND	0.0048	0.050		mg/Kg	1	1/23/2020 5:24:03 AM	B65992
Bromodichloromethane	ND	0.0046	0.050		mg/Kg	1	1/23/2020 5:24:03 AM	B65992
Bromoform	ND	0.0045	0.050		mg/Kg	1	1/23/2020 5:24:03 AM	B65992
Bromomethane	ND	0.012	0.15		mg/Kg	1	1/23/2020 5:24:03 AM	B65992
2-Butanone	ND	0.058	0.50		mg/Kg	1	1/23/2020 5:24:03 AM	B65992
Carbon disulfide	ND	0.017	0.50		mg/Kg	1	1/23/2020 5:24:03 AM	B65992
Carbon tetrachloride	ND	0.0047	0.050		mg/Kg	1	1/23/2020 5:24:03 AM	B65992
Chlorobenzene	ND	0.0064	0.050		mg/Kg	1	1/23/2020 5:24:03 AM	B65992
Chloroethane	ND	0.0074	0.10		mg/Kg	1	1/23/2020 5:24:03 AM	B65992
Chloroform	ND	0.0040	0.050		mg/Kg	1	1/23/2020 5:24:03 AM	B65992
Chloromethane	ND	0.0048	0.15		mg/Kg	1	1/23/2020 5:24:03 AM	B65992
2-Chlorotoluene	ND	0.0044	0.050		mg/Kg	1	1/23/2020 5:24:03 AM	B65992
4-Chlorotoluene	ND	0.0041	0.050		mg/Kg	1	1/23/2020 5:24:03 AM	B65992
cis-1,2-DCE	ND	0.0068	0.050		mg/Kg	1	1/23/2020 5:24:03 AM	B65992
cis-1,3-Dichloropropene	ND	0.0042	0.050		mg/Kg	1	1/23/2020 5:24:03 AM	B65992
1,2-Dibromo-3-chloropropane	ND	0.0051	0.10		mg/Kg	1	1/23/2020 5:24:03 AM	B65992
Dibromochloromethane	ND	0.0035	0.050		mg/Kg	1	1/23/2020 5:24:03 AM	B65992
Dibromomethane	ND	0.0054	0.050		mg/Kg	1	1/23/2020 5:24:03 AM	B65992
1,2-Dichlorobenzene	ND	0.0041	0.050		mg/Kg	1	1/23/2020 5:24:03 AM	B65992
1,3-Dichlorobenzene	ND	0.0043	0.050		mg/Kg	1	1/23/2020 5:24:03 AM	B65992
1,4-Dichlorobenzene	ND	0.0042	0.050		mg/Kg	1	1/23/2020 5:24:03 AM	B65992
Dichlorodifluoromethane	ND	0.012	0.050		mg/Kg	1	1/23/2020 5:24:03 AM	B65992
1,1-Dichloroethane	ND	0.0032	0.050		mg/Kg	1	1/23/2020 5:24:03 AM	B65992
1,1-Dichloroethene	ND	0.020	0.050		mg/Kg	1	1/23/2020 5:24:03 AM	B65992
1,2-Dichloropropane	ND	0.0036	0.050		mg/Kg	1	1/23/2020 5:24:03 AM	B65992
1,3-Dichloropropane	ND	0.0054	0.050		mg/Kg	1	1/23/2020 5:24:03 AM	B65992
2,2-Dichloropropane	ND	0.016	0.10		mg/Kg	1	1/23/2020 5:24:03 AM	B65992

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

Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: MeOH Blank
Project: Gallup SWMUI Sampling Event
Collection Date:
Lab ID: 2001739-056 **Matrix:** MEOH BLAN **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
1,1-Dichloropropene	ND	0.0046	0.10		mg/Kg	1	1/23/2020 5:24:03 AM	B65992
Hexachlorobutadiene	ND	0.0051	0.10		mg/Kg	1	1/23/2020 5:24:03 AM	B65992
2-Hexanone	ND	0.0083	0.50		mg/Kg	1	1/23/2020 5:24:03 AM	B65992
Isopropylbenzene	ND	0.0036	0.050		mg/Kg	1	1/23/2020 5:24:03 AM	B65992
4-Isopropyltoluene	ND	0.0041	0.050		mg/Kg	1	1/23/2020 5:24:03 AM	B65992
4-Methyl-2-pentanone	0.031	0.0094	0.50	J	mg/Kg	1	1/23/2020 5:24:03 AM	B65992
Methylene chloride	0.023	0.0088	0.15	J	mg/Kg	1	1/23/2020 5:24:03 AM	B65992
n-Butylbenzene	ND	0.0047	0.15		mg/Kg	1	1/23/2020 5:24:03 AM	B65992
n-Propylbenzene	ND	0.0040	0.050		mg/Kg	1	1/23/2020 5:24:03 AM	B65992
sec-Butylbenzene	ND	0.0056	0.050		mg/Kg	1	1/23/2020 5:24:03 AM	B65992
Styrene	ND	0.0039	0.050		mg/Kg	1	1/23/2020 5:24:03 AM	B65992
tert-Butylbenzene	ND	0.0047	0.050		mg/Kg	1	1/23/2020 5:24:03 AM	B65992
1,1,1,2-Tetrachloroethane	ND	0.0034	0.050		mg/Kg	1	1/23/2020 5:24:03 AM	B65992
1,1,2,2-Tetrachloroethane	ND	0.0051	0.050		mg/Kg	1	1/23/2020 5:24:03 AM	B65992
Tetrachloroethene (PCE)	ND	0.0040	0.050		mg/Kg	1	1/23/2020 5:24:03 AM	B65992
trans-1,2-DCE	ND	0.0046	0.050		mg/Kg	1	1/23/2020 5:24:03 AM	B65992
trans-1,3-Dichloropropene	ND	0.0053	0.050		mg/Kg	1	1/23/2020 5:24:03 AM	B65992
1,2,3-Trichlorobenzene	ND	0.0044	0.10		mg/Kg	1	1/23/2020 5:24:03 AM	B65992
1,2,4-Trichlorobenzene	ND	0.0051	0.050		mg/Kg	1	1/23/2020 5:24:03 AM	B65992
1,1,1-Trichloroethane	ND	0.0045	0.050		mg/Kg	1	1/23/2020 5:24:03 AM	B65992
1,1,2-Trichloroethane	ND	0.0035	0.050		mg/Kg	1	1/23/2020 5:24:03 AM	B65992
Trichloroethene (TCE)	ND	0.0058	0.050		mg/Kg	1	1/23/2020 5:24:03 AM	B65992
Trichlorofluoromethane	ND	0.017	0.050		mg/Kg	1	1/23/2020 5:24:03 AM	B65992
1,2,3-Trichloropropane	ND	0.0081	0.10		mg/Kg	1	1/23/2020 5:24:03 AM	B65992
Vinyl chloride	ND	0.0033	0.050		mg/Kg	1	1/23/2020 5:24:03 AM	B65992
Xylenes, Total	ND	0.013	0.10		mg/Kg	1	1/23/2020 5:24:03 AM	B65992
Surr: Dibromofluoromethane	106		70-130		%Rec	1	1/23/2020 5:24:03 AM	B65992
Surr: 1,2-Dichloroethane-d4	87.1		70-130		%Rec	1	1/23/2020 5:24:03 AM	B65992
Surr: Toluene-d8	97.5		70-130		%Rec	1	1/23/2020 5:24:03 AM	B65992
Surr: 4-Bromofluorobenzene	96.9		70-130		%Rec	1	1/23/2020 5:24:03 AM	B65992
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	ND	1.1	5.0		mg/Kg	1	1/23/2020 5:24:03 AM	BG659
Surr: BFB	92.4	0	70-130		%Rec	1	1/23/2020 5:24:03 AM	BG659

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

Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: MeOH Blank
Project: Gallup SWMUI Sampling Event
Collection Date:
Lab ID: 2001739-057 **Matrix:** MEOH BLAN **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.0041	0.025		mg/Kg	1	1/23/2020 5:53:03 AM	B65992
Toluene	0.0065	0.0048	0.050	J	mg/Kg	1	1/23/2020 5:53:03 AM	B65992
Ethylbenzene	ND	0.0029	0.050		mg/Kg	1	1/23/2020 5:53:03 AM	B65992
Methyl tert-butyl ether (MTBE)	ND	0.012	0.050		mg/Kg	1	1/23/2020 5:53:03 AM	B65992
1,2,4-Trimethylbenzene	ND	0.0046	0.050		mg/Kg	1	1/23/2020 5:53:03 AM	B65992
1,3,5-Trimethylbenzene	ND	0.0048	0.050		mg/Kg	1	1/23/2020 5:53:03 AM	B65992
1,2-Dichloroethane (EDC)	ND	0.0051	0.050		mg/Kg	1	1/23/2020 5:53:03 AM	B65992
1,2-Dibromoethane (EDB)	ND	0.0046	0.050		mg/Kg	1	1/23/2020 5:53:03 AM	B65992
Naphthalene	ND	0.010	0.10		mg/Kg	1	1/23/2020 5:53:03 AM	B65992
1-Methylnaphthalene	0.052	0.029	0.20	J	mg/Kg	1	1/23/2020 5:53:03 AM	B65992
2-Methylnaphthalene	ND	0.022	0.20		mg/Kg	1	1/23/2020 5:53:03 AM	B65992
Acetone	ND	0.041	0.75		mg/Kg	1	1/23/2020 5:53:03 AM	B65992
Bromobenzene	ND	0.0048	0.050		mg/Kg	1	1/23/2020 5:53:03 AM	B65992
Bromodichloromethane	ND	0.0046	0.050		mg/Kg	1	1/23/2020 5:53:03 AM	B65992
Bromoform	ND	0.0045	0.050		mg/Kg	1	1/23/2020 5:53:03 AM	B65992
Bromomethane	ND	0.012	0.15		mg/Kg	1	1/23/2020 5:53:03 AM	B65992
2-Butanone	ND	0.058	0.50		mg/Kg	1	1/23/2020 5:53:03 AM	B65992
Carbon disulfide	ND	0.017	0.50		mg/Kg	1	1/23/2020 5:53:03 AM	B65992
Carbon tetrachloride	ND	0.0047	0.050		mg/Kg	1	1/23/2020 5:53:03 AM	B65992
Chlorobenzene	ND	0.0064	0.050		mg/Kg	1	1/23/2020 5:53:03 AM	B65992
Chloroethane	ND	0.0074	0.10		mg/Kg	1	1/23/2020 5:53:03 AM	B65992
Chloroform	ND	0.0040	0.050		mg/Kg	1	1/23/2020 5:53:03 AM	B65992
Chloromethane	ND	0.0048	0.15		mg/Kg	1	1/23/2020 5:53:03 AM	B65992
2-Chlorotoluene	ND	0.0044	0.050		mg/Kg	1	1/23/2020 5:53:03 AM	B65992
4-Chlorotoluene	ND	0.0041	0.050		mg/Kg	1	1/23/2020 5:53:03 AM	B65992
cis-1,2-DCE	ND	0.0068	0.050		mg/Kg	1	1/23/2020 5:53:03 AM	B65992
cis-1,3-Dichloropropene	ND	0.0042	0.050		mg/Kg	1	1/23/2020 5:53:03 AM	B65992
1,2-Dibromo-3-chloropropane	ND	0.0051	0.10		mg/Kg	1	1/23/2020 5:53:03 AM	B65992
Dibromochloromethane	ND	0.0035	0.050		mg/Kg	1	1/23/2020 5:53:03 AM	B65992
Dibromomethane	ND	0.0054	0.050		mg/Kg	1	1/23/2020 5:53:03 AM	B65992
1,2-Dichlorobenzene	ND	0.0041	0.050		mg/Kg	1	1/23/2020 5:53:03 AM	B65992
1,3-Dichlorobenzene	ND	0.0043	0.050		mg/Kg	1	1/23/2020 5:53:03 AM	B65992
1,4-Dichlorobenzene	ND	0.0042	0.050		mg/Kg	1	1/23/2020 5:53:03 AM	B65992
Dichlorodifluoromethane	ND	0.012	0.050		mg/Kg	1	1/23/2020 5:53:03 AM	B65992
1,1-Dichloroethane	ND	0.0032	0.050		mg/Kg	1	1/23/2020 5:53:03 AM	B65992
1,1-Dichloroethene	ND	0.020	0.050		mg/Kg	1	1/23/2020 5:53:03 AM	B65992
1,2-Dichloropropane	ND	0.0036	0.050		mg/Kg	1	1/23/2020 5:53:03 AM	B65992
1,3-Dichloropropane	ND	0.0054	0.050		mg/Kg	1	1/23/2020 5:53:03 AM	B65992
2,2-Dichloropropane	ND	0.016	0.10		mg/Kg	1	1/23/2020 5:53:03 AM	B65992

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

Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: MeOH Blank
Project: Gallup SWMUI Sampling Event
Collection Date:
Lab ID: 2001739-057 **Matrix:** MEOH BLAN **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
1,1-Dichloropropene	ND	0.0046	0.10		mg/Kg	1	1/23/2020 5:53:03 AM	B65992
Hexachlorobutadiene	ND	0.0051	0.10		mg/Kg	1	1/23/2020 5:53:03 AM	B65992
2-Hexanone	ND	0.0083	0.50		mg/Kg	1	1/23/2020 5:53:03 AM	B65992
Isopropylbenzene	ND	0.0036	0.050		mg/Kg	1	1/23/2020 5:53:03 AM	B65992
4-Isopropyltoluene	ND	0.0041	0.050		mg/Kg	1	1/23/2020 5:53:03 AM	B65992
4-Methyl-2-pentanone	ND	0.0094	0.50		mg/Kg	1	1/23/2020 5:53:03 AM	B65992
Methylene chloride	0.077	0.0088	0.15	J	mg/Kg	1	1/23/2020 5:53:03 AM	B65992
n-Butylbenzene	ND	0.0047	0.15		mg/Kg	1	1/23/2020 5:53:03 AM	B65992
n-Propylbenzene	ND	0.0040	0.050		mg/Kg	1	1/23/2020 5:53:03 AM	B65992
sec-Butylbenzene	ND	0.0056	0.050		mg/Kg	1	1/23/2020 5:53:03 AM	B65992
Styrene	ND	0.0039	0.050		mg/Kg	1	1/23/2020 5:53:03 AM	B65992
tert-Butylbenzene	ND	0.0047	0.050		mg/Kg	1	1/23/2020 5:53:03 AM	B65992
1,1,1,2-Tetrachloroethane	ND	0.0034	0.050		mg/Kg	1	1/23/2020 5:53:03 AM	B65992
1,1,2,2-Tetrachloroethane	ND	0.0051	0.050		mg/Kg	1	1/23/2020 5:53:03 AM	B65992
Tetrachloroethene (PCE)	ND	0.0040	0.050		mg/Kg	1	1/23/2020 5:53:03 AM	B65992
trans-1,2-DCE	ND	0.0046	0.050		mg/Kg	1	1/23/2020 5:53:03 AM	B65992
trans-1,3-Dichloropropene	ND	0.0053	0.050		mg/Kg	1	1/23/2020 5:53:03 AM	B65992
1,2,3-Trichlorobenzene	ND	0.0044	0.10		mg/Kg	1	1/23/2020 5:53:03 AM	B65992
1,2,4-Trichlorobenzene	ND	0.0051	0.050		mg/Kg	1	1/23/2020 5:53:03 AM	B65992
1,1,1-Trichloroethane	ND	0.0045	0.050		mg/Kg	1	1/23/2020 5:53:03 AM	B65992
1,1,2-Trichloroethane	ND	0.0035	0.050		mg/Kg	1	1/23/2020 5:53:03 AM	B65992
Trichloroethene (TCE)	ND	0.0058	0.050		mg/Kg	1	1/23/2020 5:53:03 AM	B65992
Trichlorofluoromethane	ND	0.017	0.050		mg/Kg	1	1/23/2020 5:53:03 AM	B65992
1,2,3-Trichloropropane	ND	0.0081	0.10		mg/Kg	1	1/23/2020 5:53:03 AM	B65992
Vinyl chloride	ND	0.0033	0.050		mg/Kg	1	1/23/2020 5:53:03 AM	B65992
Xylenes, Total	ND	0.013	0.10		mg/Kg	1	1/23/2020 5:53:03 AM	B65992
Surr: Dibromofluoromethane	102		70-130		%Rec	1	1/23/2020 5:53:03 AM	B65992
Surr: 1,2-Dichloroethane-d4	84.9		70-130		%Rec	1	1/23/2020 5:53:03 AM	B65992
Surr: Toluene-d8	100		70-130		%Rec	1	1/23/2020 5:53:03 AM	B65992
Surr: 4-Bromofluorobenzene	94.9		70-130		%Rec	1	1/23/2020 5:53:03 AM	B65992
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	ND	1.1	5.0		mg/Kg	1	1/23/2020 5:53:03 AM	BG659
Surr: BFB	94.2	0	70-130		%Rec	1	1/23/2020 5:53:03 AM	BG659

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

Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: MeOH Blank
Project: Gallup SWMUI Sampling Event
Collection Date:
Lab ID: 2001739-058 **Matrix:** MEOH BLAN **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.0041	0.025		mg/Kg	1	1/23/2020 6:22:00 AM	B65992
Toluene	ND	0.0048	0.050		mg/Kg	1	1/23/2020 6:22:00 AM	B65992
Ethylbenzene	ND	0.0029	0.050		mg/Kg	1	1/23/2020 6:22:00 AM	B65992
Methyl tert-butyl ether (MTBE)	ND	0.012	0.050		mg/Kg	1	1/23/2020 6:22:00 AM	B65992
1,2,4-Trimethylbenzene	ND	0.0046	0.050		mg/Kg	1	1/23/2020 6:22:00 AM	B65992
1,3,5-Trimethylbenzene	ND	0.0048	0.050		mg/Kg	1	1/23/2020 6:22:00 AM	B65992
1,2-Dichloroethane (EDC)	ND	0.0051	0.050		mg/Kg	1	1/23/2020 6:22:00 AM	B65992
1,2-Dibromoethane (EDB)	ND	0.0046	0.050		mg/Kg	1	1/23/2020 6:22:00 AM	B65992
Naphthalene	ND	0.010	0.10		mg/Kg	1	1/23/2020 6:22:00 AM	B65992
1-Methylnaphthalene	ND	0.029	0.20		mg/Kg	1	1/23/2020 6:22:00 AM	B65992
2-Methylnaphthalene	ND	0.022	0.20		mg/Kg	1	1/23/2020 6:22:00 AM	B65992
Acetone	ND	0.041	0.75		mg/Kg	1	1/23/2020 6:22:00 AM	B65992
Bromobenzene	ND	0.0048	0.050		mg/Kg	1	1/23/2020 6:22:00 AM	B65992
Bromodichloromethane	ND	0.0046	0.050		mg/Kg	1	1/23/2020 6:22:00 AM	B65992
Bromoform	ND	0.0045	0.050		mg/Kg	1	1/23/2020 6:22:00 AM	B65992
Bromomethane	ND	0.012	0.15		mg/Kg	1	1/23/2020 6:22:00 AM	B65992
2-Butanone	ND	0.058	0.50		mg/Kg	1	1/23/2020 6:22:00 AM	B65992
Carbon disulfide	ND	0.017	0.50		mg/Kg	1	1/23/2020 6:22:00 AM	B65992
Carbon tetrachloride	ND	0.0047	0.050		mg/Kg	1	1/23/2020 6:22:00 AM	B65992
Chlorobenzene	ND	0.0064	0.050		mg/Kg	1	1/23/2020 6:22:00 AM	B65992
Chloroethane	ND	0.0074	0.10		mg/Kg	1	1/23/2020 6:22:00 AM	B65992
Chloroform	ND	0.0040	0.050		mg/Kg	1	1/23/2020 6:22:00 AM	B65992
Chloromethane	ND	0.0048	0.15		mg/Kg	1	1/23/2020 6:22:00 AM	B65992
2-Chlorotoluene	ND	0.0044	0.050		mg/Kg	1	1/23/2020 6:22:00 AM	B65992
4-Chlorotoluene	ND	0.0041	0.050		mg/Kg	1	1/23/2020 6:22:00 AM	B65992
cis-1,2-DCE	ND	0.0068	0.050		mg/Kg	1	1/23/2020 6:22:00 AM	B65992
cis-1,3-Dichloropropene	ND	0.0042	0.050		mg/Kg	1	1/23/2020 6:22:00 AM	B65992
1,2-Dibromo-3-chloropropane	ND	0.0051	0.10		mg/Kg	1	1/23/2020 6:22:00 AM	B65992
Dibromochloromethane	ND	0.0035	0.050		mg/Kg	1	1/23/2020 6:22:00 AM	B65992
Dibromomethane	ND	0.0054	0.050		mg/Kg	1	1/23/2020 6:22:00 AM	B65992
1,2-Dichlorobenzene	ND	0.0041	0.050		mg/Kg	1	1/23/2020 6:22:00 AM	B65992
1,3-Dichlorobenzene	ND	0.0043	0.050		mg/Kg	1	1/23/2020 6:22:00 AM	B65992
1,4-Dichlorobenzene	ND	0.0042	0.050		mg/Kg	1	1/23/2020 6:22:00 AM	B65992
Dichlorodifluoromethane	ND	0.012	0.050		mg/Kg	1	1/23/2020 6:22:00 AM	B65992
1,1-Dichloroethane	ND	0.0032	0.050		mg/Kg	1	1/23/2020 6:22:00 AM	B65992
1,1-Dichloroethene	ND	0.020	0.050		mg/Kg	1	1/23/2020 6:22:00 AM	B65992
1,2-Dichloropropane	ND	0.0036	0.050		mg/Kg	1	1/23/2020 6:22:00 AM	B65992
1,3-Dichloropropane	ND	0.0054	0.050		mg/Kg	1	1/23/2020 6:22:00 AM	B65992
2,2-Dichloropropane	ND	0.016	0.10		mg/Kg	1	1/23/2020 6:22:00 AM	B65992

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

Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: MeOH Blank
Project: Gallup SWMUI Sampling Event
Collection Date:
Lab ID: 2001739-058 **Matrix:** MEOH BLAN **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
1,1-Dichloropropene	ND	0.0046	0.10		mg/Kg	1	1/23/2020 6:22:00 AM	B65992
Hexachlorobutadiene	ND	0.0051	0.10		mg/Kg	1	1/23/2020 6:22:00 AM	B65992
2-Hexanone	ND	0.0083	0.50		mg/Kg	1	1/23/2020 6:22:00 AM	B65992
Isopropylbenzene	ND	0.0036	0.050		mg/Kg	1	1/23/2020 6:22:00 AM	B65992
4-Isopropyltoluene	ND	0.0041	0.050		mg/Kg	1	1/23/2020 6:22:00 AM	B65992
4-Methyl-2-pentanone	ND	0.0094	0.50		mg/Kg	1	1/23/2020 6:22:00 AM	B65992
Methylene chloride	0.048	0.0088	0.15	J	mg/Kg	1	1/23/2020 6:22:00 AM	B65992
n-Butylbenzene	ND	0.0047	0.15		mg/Kg	1	1/23/2020 6:22:00 AM	B65992
n-Propylbenzene	ND	0.0040	0.050		mg/Kg	1	1/23/2020 6:22:00 AM	B65992
sec-Butylbenzene	ND	0.0056	0.050		mg/Kg	1	1/23/2020 6:22:00 AM	B65992
Styrene	ND	0.0039	0.050		mg/Kg	1	1/23/2020 6:22:00 AM	B65992
tert-Butylbenzene	ND	0.0047	0.050		mg/Kg	1	1/23/2020 6:22:00 AM	B65992
1,1,1,2-Tetrachloroethane	ND	0.0034	0.050		mg/Kg	1	1/23/2020 6:22:00 AM	B65992
1,1,2,2-Tetrachloroethane	ND	0.0051	0.050		mg/Kg	1	1/23/2020 6:22:00 AM	B65992
Tetrachloroethene (PCE)	ND	0.0040	0.050		mg/Kg	1	1/23/2020 6:22:00 AM	B65992
trans-1,2-DCE	ND	0.0046	0.050		mg/Kg	1	1/23/2020 6:22:00 AM	B65992
trans-1,3-Dichloropropene	ND	0.0053	0.050		mg/Kg	1	1/23/2020 6:22:00 AM	B65992
1,2,3-Trichlorobenzene	ND	0.0044	0.10		mg/Kg	1	1/23/2020 6:22:00 AM	B65992
1,2,4-Trichlorobenzene	ND	0.0051	0.050		mg/Kg	1	1/23/2020 6:22:00 AM	B65992
1,1,1-Trichloroethane	ND	0.0045	0.050		mg/Kg	1	1/23/2020 6:22:00 AM	B65992
1,1,2-Trichloroethane	ND	0.0035	0.050		mg/Kg	1	1/23/2020 6:22:00 AM	B65992
Trichloroethene (TCE)	ND	0.0058	0.050		mg/Kg	1	1/23/2020 6:22:00 AM	B65992
Trichlorofluoromethane	ND	0.017	0.050		mg/Kg	1	1/23/2020 6:22:00 AM	B65992
1,2,3-Trichloropropane	ND	0.0081	0.10		mg/Kg	1	1/23/2020 6:22:00 AM	B65992
Vinyl chloride	ND	0.0033	0.050		mg/Kg	1	1/23/2020 6:22:00 AM	B65992
Xylenes, Total	ND	0.013	0.10		mg/Kg	1	1/23/2020 6:22:00 AM	B65992
Surr: Dibromofluoromethane	106		70-130		%Rec	1	1/23/2020 6:22:00 AM	B65992
Surr: 1,2-Dichloroethane-d4	87.0		70-130		%Rec	1	1/23/2020 6:22:00 AM	B65992
Surr: Toluene-d8	99.5		70-130		%Rec	1	1/23/2020 6:22:00 AM	B65992
Surr: 4-Bromofluorobenzene	90.1		70-130		%Rec	1	1/23/2020 6:22:00 AM	B65992
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	ND	1.1	5.0		mg/Kg	1	1/23/2020 6:22:00 AM	BG659
Surr: BFB	90.1	0	70-130		%Rec	1	1/23/2020 6:22:00 AM	BG659

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

Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: MeOH Blank
Project: Gallup SWMUI Sampling Event
Collection Date:
Lab ID: 2001739-059 **Matrix:** MEOH BLAN **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.0041	0.025		mg/Kg	1	1/23/2020 6:52:11 AM	B65992
Toluene	ND	0.0048	0.050		mg/Kg	1	1/23/2020 6:52:11 AM	B65992
Ethylbenzene	ND	0.0029	0.050		mg/Kg	1	1/23/2020 6:52:11 AM	B65992
Methyl tert-butyl ether (MTBE)	ND	0.012	0.050		mg/Kg	1	1/23/2020 6:52:11 AM	B65992
1,2,4-Trimethylbenzene	ND	0.0046	0.050		mg/Kg	1	1/23/2020 6:52:11 AM	B65992
1,3,5-Trimethylbenzene	ND	0.0048	0.050		mg/Kg	1	1/23/2020 6:52:11 AM	B65992
1,2-Dichloroethane (EDC)	ND	0.0051	0.050		mg/Kg	1	1/23/2020 6:52:11 AM	B65992
1,2-Dibromoethane (EDB)	ND	0.0046	0.050		mg/Kg	1	1/23/2020 6:52:11 AM	B65992
Naphthalene	ND	0.010	0.10		mg/Kg	1	1/23/2020 6:52:11 AM	B65992
1-Methylnaphthalene	ND	0.029	0.20		mg/Kg	1	1/23/2020 6:52:11 AM	B65992
2-Methylnaphthalene	ND	0.022	0.20		mg/Kg	1	1/23/2020 6:52:11 AM	B65992
Acetone	ND	0.041	0.75		mg/Kg	1	1/23/2020 6:52:11 AM	B65992
Bromobenzene	ND	0.0048	0.050		mg/Kg	1	1/23/2020 6:52:11 AM	B65992
Bromodichloromethane	ND	0.0046	0.050		mg/Kg	1	1/23/2020 6:52:11 AM	B65992
Bromoform	ND	0.0045	0.050		mg/Kg	1	1/23/2020 6:52:11 AM	B65992
Bromomethane	ND	0.012	0.15		mg/Kg	1	1/23/2020 6:52:11 AM	B65992
2-Butanone	ND	0.058	0.50		mg/Kg	1	1/23/2020 6:52:11 AM	B65992
Carbon disulfide	ND	0.017	0.50		mg/Kg	1	1/23/2020 6:52:11 AM	B65992
Carbon tetrachloride	ND	0.0047	0.050		mg/Kg	1	1/23/2020 6:52:11 AM	B65992
Chlorobenzene	ND	0.0064	0.050		mg/Kg	1	1/23/2020 6:52:11 AM	B65992
Chloroethane	ND	0.0074	0.10		mg/Kg	1	1/23/2020 6:52:11 AM	B65992
Chloroform	ND	0.0040	0.050		mg/Kg	1	1/23/2020 6:52:11 AM	B65992
Chloromethane	ND	0.0048	0.15		mg/Kg	1	1/23/2020 6:52:11 AM	B65992
2-Chlorotoluene	ND	0.0044	0.050		mg/Kg	1	1/23/2020 6:52:11 AM	B65992
4-Chlorotoluene	ND	0.0041	0.050		mg/Kg	1	1/23/2020 6:52:11 AM	B65992
cis-1,2-DCE	ND	0.0068	0.050		mg/Kg	1	1/23/2020 6:52:11 AM	B65992
cis-1,3-Dichloropropene	ND	0.0042	0.050		mg/Kg	1	1/23/2020 6:52:11 AM	B65992
1,2-Dibromo-3-chloropropane	ND	0.0051	0.10		mg/Kg	1	1/23/2020 6:52:11 AM	B65992
Dibromochloromethane	ND	0.0035	0.050		mg/Kg	1	1/23/2020 6:52:11 AM	B65992
Dibromomethane	ND	0.0054	0.050		mg/Kg	1	1/23/2020 6:52:11 AM	B65992
1,2-Dichlorobenzene	ND	0.0041	0.050		mg/Kg	1	1/23/2020 6:52:11 AM	B65992
1,3-Dichlorobenzene	ND	0.0043	0.050		mg/Kg	1	1/23/2020 6:52:11 AM	B65992
1,4-Dichlorobenzene	ND	0.0042	0.050		mg/Kg	1	1/23/2020 6:52:11 AM	B65992
Dichlorodifluoromethane	ND	0.012	0.050		mg/Kg	1	1/23/2020 6:52:11 AM	B65992
1,1-Dichloroethane	ND	0.0032	0.050		mg/Kg	1	1/23/2020 6:52:11 AM	B65992
1,1-Dichloroethene	ND	0.020	0.050		mg/Kg	1	1/23/2020 6:52:11 AM	B65992
1,2-Dichloropropane	ND	0.0036	0.050		mg/Kg	1	1/23/2020 6:52:11 AM	B65992
1,3-Dichloropropane	ND	0.0054	0.050		mg/Kg	1	1/23/2020 6:52:11 AM	B65992
2,2-Dichloropropane	ND	0.016	0.10		mg/Kg	1	1/23/2020 6:52:11 AM	B65992

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

Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: MeOH Blank
Project: Gallup SWMUI Sampling Event
Collection Date:
Lab ID: 2001739-059 **Matrix:** MEOH BLAN **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
1,1-Dichloropropene	ND	0.0046	0.10		mg/Kg	1	1/23/2020 6:52:11 AM	B65992
Hexachlorobutadiene	ND	0.0051	0.10		mg/Kg	1	1/23/2020 6:52:11 AM	B65992
2-Hexanone	ND	0.0083	0.50		mg/Kg	1	1/23/2020 6:52:11 AM	B65992
Isopropylbenzene	ND	0.0036	0.050		mg/Kg	1	1/23/2020 6:52:11 AM	B65992
4-Isopropyltoluene	ND	0.0041	0.050		mg/Kg	1	1/23/2020 6:52:11 AM	B65992
4-Methyl-2-pentanone	ND	0.0094	0.50		mg/Kg	1	1/23/2020 6:52:11 AM	B65992
Methylene chloride	0.036	0.0088	0.15	J	mg/Kg	1	1/23/2020 6:52:11 AM	B65992
n-Butylbenzene	ND	0.0047	0.15		mg/Kg	1	1/23/2020 6:52:11 AM	B65992
n-Propylbenzene	ND	0.0040	0.050		mg/Kg	1	1/23/2020 6:52:11 AM	B65992
sec-Butylbenzene	ND	0.0056	0.050		mg/Kg	1	1/23/2020 6:52:11 AM	B65992
Styrene	ND	0.0039	0.050		mg/Kg	1	1/23/2020 6:52:11 AM	B65992
tert-Butylbenzene	ND	0.0047	0.050		mg/Kg	1	1/23/2020 6:52:11 AM	B65992
1,1,1,2-Tetrachloroethane	ND	0.0034	0.050		mg/Kg	1	1/23/2020 6:52:11 AM	B65992
1,1,2,2-Tetrachloroethane	ND	0.0051	0.050		mg/Kg	1	1/23/2020 6:52:11 AM	B65992
Tetrachloroethene (PCE)	ND	0.0040	0.050		mg/Kg	1	1/23/2020 6:52:11 AM	B65992
trans-1,2-DCE	ND	0.0046	0.050		mg/Kg	1	1/23/2020 6:52:11 AM	B65992
trans-1,3-Dichloropropene	ND	0.0053	0.050		mg/Kg	1	1/23/2020 6:52:11 AM	B65992
1,2,3-Trichlorobenzene	ND	0.0044	0.10		mg/Kg	1	1/23/2020 6:52:11 AM	B65992
1,2,4-Trichlorobenzene	ND	0.0051	0.050		mg/Kg	1	1/23/2020 6:52:11 AM	B65992
1,1,1-Trichloroethane	ND	0.0045	0.050		mg/Kg	1	1/23/2020 6:52:11 AM	B65992
1,1,2-Trichloroethane	ND	0.0035	0.050		mg/Kg	1	1/23/2020 6:52:11 AM	B65992
Trichloroethene (TCE)	ND	0.0058	0.050		mg/Kg	1	1/23/2020 6:52:11 AM	B65992
Trichlorofluoromethane	ND	0.017	0.050		mg/Kg	1	1/23/2020 6:52:11 AM	B65992
1,2,3-Trichloropropane	ND	0.0081	0.10		mg/Kg	1	1/23/2020 6:52:11 AM	B65992
Vinyl chloride	ND	0.0033	0.050		mg/Kg	1	1/23/2020 6:52:11 AM	B65992
Xylenes, Total	ND	0.013	0.10		mg/Kg	1	1/23/2020 6:52:11 AM	B65992
Surr: Dibromofluoromethane	98.8		70-130		%Rec	1	1/23/2020 6:52:11 AM	B65992
Surr: 1,2-Dichloroethane-d4	83.8		70-130		%Rec	1	1/23/2020 6:52:11 AM	B65992
Surr: Toluene-d8	99.5		70-130		%Rec	1	1/23/2020 6:52:11 AM	B65992
Surr: 4-Bromofluorobenzene	93.7		70-130		%Rec	1	1/23/2020 6:52:11 AM	B65992
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	ND	1.1	5.0		mg/Kg	1	1/23/2020 6:52:11 AM	BG659
Surr: BFB	92.4	0	70-130		%Rec	1	1/23/2020 6:52:11 AM	BG659

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

Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: MeOH Blank
Project: Gallup SWMUI Sampling Event
Collection Date:
Lab ID: 2001739-060 **Matrix:** MEOH BLAN **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.0041	0.025		mg/Kg	1	1/23/2020 7:21:38 AM	B65992
Toluene	0.0055	0.0048	0.050	J	mg/Kg	1	1/23/2020 7:21:38 AM	B65992
Ethylbenzene	ND	0.0029	0.050		mg/Kg	1	1/23/2020 7:21:38 AM	B65992
Methyl tert-butyl ether (MTBE)	ND	0.012	0.050		mg/Kg	1	1/23/2020 7:21:38 AM	B65992
1,2,4-Trimethylbenzene	ND	0.0046	0.050		mg/Kg	1	1/23/2020 7:21:38 AM	B65992
1,3,5-Trimethylbenzene	ND	0.0048	0.050		mg/Kg	1	1/23/2020 7:21:38 AM	B65992
1,2-Dichloroethane (EDC)	ND	0.0051	0.050		mg/Kg	1	1/23/2020 7:21:38 AM	B65992
1,2-Dibromoethane (EDB)	ND	0.0046	0.050		mg/Kg	1	1/23/2020 7:21:38 AM	B65992
Naphthalene	ND	0.010	0.10		mg/Kg	1	1/23/2020 7:21:38 AM	B65992
1-Methylnaphthalene	ND	0.029	0.20		mg/Kg	1	1/23/2020 7:21:38 AM	B65992
2-Methylnaphthalene	ND	0.022	0.20		mg/Kg	1	1/23/2020 7:21:38 AM	B65992
Acetone	ND	0.041	0.75		mg/Kg	1	1/23/2020 7:21:38 AM	B65992
Bromobenzene	ND	0.0048	0.050		mg/Kg	1	1/23/2020 7:21:38 AM	B65992
Bromodichloromethane	ND	0.0046	0.050		mg/Kg	1	1/23/2020 7:21:38 AM	B65992
Bromoform	ND	0.0045	0.050		mg/Kg	1	1/23/2020 7:21:38 AM	B65992
Bromomethane	ND	0.012	0.15		mg/Kg	1	1/23/2020 7:21:38 AM	B65992
2-Butanone	ND	0.058	0.50		mg/Kg	1	1/23/2020 7:21:38 AM	B65992
Carbon disulfide	ND	0.017	0.50		mg/Kg	1	1/23/2020 7:21:38 AM	B65992
Carbon tetrachloride	ND	0.0047	0.050		mg/Kg	1	1/23/2020 7:21:38 AM	B65992
Chlorobenzene	ND	0.0064	0.050		mg/Kg	1	1/23/2020 7:21:38 AM	B65992
Chloroethane	ND	0.0074	0.10		mg/Kg	1	1/23/2020 7:21:38 AM	B65992
Chloroform	ND	0.0040	0.050		mg/Kg	1	1/23/2020 7:21:38 AM	B65992
Chloromethane	ND	0.0048	0.15		mg/Kg	1	1/23/2020 7:21:38 AM	B65992
2-Chlorotoluene	ND	0.0044	0.050		mg/Kg	1	1/23/2020 7:21:38 AM	B65992
4-Chlorotoluene	ND	0.0041	0.050		mg/Kg	1	1/23/2020 7:21:38 AM	B65992
cis-1,2-DCE	ND	0.0068	0.050		mg/Kg	1	1/23/2020 7:21:38 AM	B65992
cis-1,3-Dichloropropene	ND	0.0042	0.050		mg/Kg	1	1/23/2020 7:21:38 AM	B65992
1,2-Dibromo-3-chloropropane	ND	0.0051	0.10		mg/Kg	1	1/23/2020 7:21:38 AM	B65992
Dibromochloromethane	ND	0.0035	0.050		mg/Kg	1	1/23/2020 7:21:38 AM	B65992
Dibromomethane	ND	0.0054	0.050		mg/Kg	1	1/23/2020 7:21:38 AM	B65992
1,2-Dichlorobenzene	ND	0.0041	0.050		mg/Kg	1	1/23/2020 7:21:38 AM	B65992
1,3-Dichlorobenzene	ND	0.0043	0.050		mg/Kg	1	1/23/2020 7:21:38 AM	B65992
1,4-Dichlorobenzene	ND	0.0042	0.050		mg/Kg	1	1/23/2020 7:21:38 AM	B65992
Dichlorodifluoromethane	ND	0.012	0.050		mg/Kg	1	1/23/2020 7:21:38 AM	B65992
1,1-Dichloroethane	ND	0.0032	0.050		mg/Kg	1	1/23/2020 7:21:38 AM	B65992
1,1-Dichloroethene	ND	0.020	0.050		mg/Kg	1	1/23/2020 7:21:38 AM	B65992
1,2-Dichloropropane	ND	0.0036	0.050		mg/Kg	1	1/23/2020 7:21:38 AM	B65992
1,3-Dichloropropane	ND	0.0054	0.050		mg/Kg	1	1/23/2020 7:21:38 AM	B65992
2,2-Dichloropropane	ND	0.016	0.10		mg/Kg	1	1/23/2020 7:21:38 AM	B65992

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

Qualifiers:

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

Analytical Report
Lab Order **2001739**
Date Reported: **3/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Refining Gallup
Client Sample ID: MeOH Blank
Project: Gallup SWMUI Sampling Event
Collection Date:
Lab ID: 2001739-060 **Matrix:** MEOH BLAN **Received Date:** 1/18/2020 12:15:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
1,1-Dichloropropene	ND	0.0046	0.10		mg/Kg	1	1/23/2020 7:21:38 AM	B65992
Hexachlorobutadiene	ND	0.0051	0.10		mg/Kg	1	1/23/2020 7:21:38 AM	B65992
2-Hexanone	ND	0.0083	0.50		mg/Kg	1	1/23/2020 7:21:38 AM	B65992
Isopropylbenzene	ND	0.0036	0.050		mg/Kg	1	1/23/2020 7:21:38 AM	B65992
4-Isopropyltoluene	ND	0.0041	0.050		mg/Kg	1	1/23/2020 7:21:38 AM	B65992
4-Methyl-2-pentanone	ND	0.0094	0.50		mg/Kg	1	1/23/2020 7:21:38 AM	B65992
Methylene chloride	0.048	0.0088	0.15	J	mg/Kg	1	1/23/2020 7:21:38 AM	B65992
n-Butylbenzene	ND	0.0047	0.15		mg/Kg	1	1/23/2020 7:21:38 AM	B65992
n-Propylbenzene	ND	0.0040	0.050		mg/Kg	1	1/23/2020 7:21:38 AM	B65992
sec-Butylbenzene	ND	0.0056	0.050		mg/Kg	1	1/23/2020 7:21:38 AM	B65992
Styrene	ND	0.0039	0.050		mg/Kg	1	1/23/2020 7:21:38 AM	B65992
tert-Butylbenzene	ND	0.0047	0.050		mg/Kg	1	1/23/2020 7:21:38 AM	B65992
1,1,1,2-Tetrachloroethane	ND	0.0034	0.050		mg/Kg	1	1/23/2020 7:21:38 AM	B65992
1,1,2,2-Tetrachloroethane	ND	0.0051	0.050		mg/Kg	1	1/23/2020 7:21:38 AM	B65992
Tetrachloroethene (PCE)	ND	0.0040	0.050		mg/Kg	1	1/23/2020 7:21:38 AM	B65992
trans-1,2-DCE	ND	0.0046	0.050		mg/Kg	1	1/23/2020 7:21:38 AM	B65992
trans-1,3-Dichloropropene	ND	0.0053	0.050		mg/Kg	1	1/23/2020 7:21:38 AM	B65992
1,2,3-Trichlorobenzene	ND	0.0044	0.10		mg/Kg	1	1/23/2020 7:21:38 AM	B65992
1,2,4-Trichlorobenzene	ND	0.0051	0.050		mg/Kg	1	1/23/2020 7:21:38 AM	B65992
1,1,1-Trichloroethane	ND	0.0045	0.050		mg/Kg	1	1/23/2020 7:21:38 AM	B65992
1,1,2-Trichloroethane	ND	0.0035	0.050		mg/Kg	1	1/23/2020 7:21:38 AM	B65992
Trichloroethene (TCE)	ND	0.0058	0.050		mg/Kg	1	1/23/2020 7:21:38 AM	B65992
Trichlorofluoromethane	ND	0.017	0.050		mg/Kg	1	1/23/2020 7:21:38 AM	B65992
1,2,3-Trichloropropane	ND	0.0081	0.10		mg/Kg	1	1/23/2020 7:21:38 AM	B65992
Vinyl chloride	ND	0.0033	0.050		mg/Kg	1	1/23/2020 7:21:38 AM	B65992
Xylenes, Total	ND	0.013	0.10		mg/Kg	1	1/23/2020 7:21:38 AM	B65992
Surr: Dibromofluoromethane	100		70-130		%Rec	1	1/23/2020 7:21:38 AM	B65992
Surr: 1,2-Dichloroethane-d4	88.2		70-130		%Rec	1	1/23/2020 7:21:38 AM	B65992
Surr: Toluene-d8	104		70-130		%Rec	1	1/23/2020 7:21:38 AM	B65992
Surr: 4-Bromofluorobenzene	90.1		70-130		%Rec	1	1/23/2020 7:21:38 AM	B65992
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **DJF**	
Gasoline Range Organics (GRO)	ND	1.1	5.0		mg/Kg	1	1/23/2020 7:21:38 AM	BG659
Surr: BFB	97.8	0	70-130		%Rec	1	1/23/2020 7:21:38 AM	BG659

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

Qualifiers:

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

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

January 29, 2020

Hall Environmental Analysis Laboratory

Sample Delivery Group: L1181772

Samples Received: 01/22/2020

Project Number:

Description:

Report To:

4901 Hawkins NE

Albuquerque, NM 87109

Entire Report Reviewed By: Daphne R Richards

Daphne Richards
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



TABLE OF CONTENTS

Cp: Cover Page 1

Tc: Table of Contents 2

Ss: Sample Summary 4

Cn: Case Narrative 11

Sr: Sample Results 12

2001739-001C DUP 4 L1181772-01 12

2001739-002C DUP 5 L1181772-02 13

2001739-003C SWMU1-9 SURF L1181772-03 14

2001739-004C SWMU1-19 TOE CLAY 6-6.5 L1181772-04 15

2001739-005C SWMU1-18 TOE CLAY 5FT L1181772-05 16

2001739-006C SWMU1-19 TOE SURF L1181772-06 17

2001739-007C SWMU1-4 CLAY 3-3.5 L1181772-07 18

2001739-008C SWMU1-8 SLUDGE 2.5 L1181772-08 19

2001739-009C SWMU1-18 TOE SURF L1181772-09 20

2001739-010C SWMU1-22 TOE 0 L1181772-10 21

2001739-011C DUP-6 L1181772-11 22

2001739-012C SWMU1-5 SURF L1181772-12 23

2001739-013C SWMU1-5 5.5-6 L1181772-13 24

2001739-014C SWMU1-16 TOE SURF L1181772-14 25

2001739-015C SWMU1-8 SURFACE L1181772-15 26

2001739-016C SWMU1-12 TOE 2.5 L1181772-16 27

2001739-017C SWMU1-19 TOE SLUDGE 0.5-6FT L1181772-17 28

2001739-018C SWMU1-11 SURFACE L1181772-18 29

2001739-019C SWMU1-6 SLUDGE 0-5.5 L1181772-19 30

2001739-020C SWMU1-14 TOE 2.5 L1181772-20 31

2001739-021C SWMU1-9 SLUDGE 4.5 L1181772-21 32

2001739-022C SWMU1-20 TOE 0.5-3 L1181772-22 33

2001739-023C SWMU1-22 TOE SLUDGE 2.5 L1181772-23 34

2001739-024C SWMU1-7 2.5 L1181772-24 35

2001739-025C SWMU1-5 SLUDGE 2.5-5 L1181772-25 36

2001739-026C SWMU1-1 SLUDGE 0.5-3 L1181772-26 37

2001739-027C SWMU1-4 3FT L1181772-27 38

2001739-028C SWMU1-15 TOE 4-5' L1181772-28 39

2001739-029C SWMU1-7 SURFACE L1181772-29 40

2001739-030C DUP 7 L1181772-30 41

2001739-031C SWMU1-18 TOE SLUDGE 2.5 L1181772-31 42

2001739-032C SWMU1-10 SLUDGE 4-4.5 L1181772-32 43

2001739-033C SWMU1-7 CLAY 4-5FT L1181772-33 44

2001739-034C SWMU1-6 CLAY 5.5-6FT L1181772-34 45

2001739-035C SWMU1-3 0.5-3.0 L1181772-35 46

2001739-036C SWMU1-13 TOE SURF L1181772-36 47
2001739-037C SWMU1-1 SURF L1181772-37 48
2001739-038C SWMU1-3 CLAY 3FT L1181772-38 49
2001739-039C SWMU1-10 0.0 L1181772-39 50
2001739-040C DUP 8 L1181772-40 51
2001739-041C SWMU1-2 SURFACE L1181772-41 52
2001739-042C DUP 9 L1181772-42 53
2001739-043C SWMU1-15 TOE 3FT L1181772-43 54
2001739-044C SWMU1-22 TOE 3.5-4.0 L1181772-44 55
2001739-045C SWMU1-9 CLAY 5.5-6 L1181772-45 56
2001739-046C SWMU1-15 TOE SURF L1181772-46 57
2001739-047C SWMU1-11 2.5 L1181772-47 58
2001739-048C SWMU1-14 TOE 3FT L1181772-48 59
2001739-049C SWMU1-20 1.5 L1181772-49 60
2001739-050C DUP 10 L1181772-50 61
2001739-051C SWMU1-21 TOE 5FT L1181772-51 62
2001739-052C SWMU1-14 9FT L1181772-52 63
2001739-053C SWMU1-2 CLAY 3-3.5FT L1181772-53 64
2001739-054C SWMU1-8 5-5.5FT L1181772-54 65
2001739-055C SWMU1-22 5FT L1181772-55 66
Qc: Quality Control Summary 67
Wet Chemistry by Method 2710 F-2011 67
Gl: Glossary of Terms 70
Al: Accreditations & Locations 71
Sc: Sample Chain of Custody 72

2001739-001C DUP 4 L1181772-01 Solid

Collected by | Collected date/time 01/16/20 00:00 | Received date/time 01/22/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1417923	1	01/28/20 00:41	01/28/20 02:55	MJA	Mt. Juliet, TN

2001739-002C DUP 5 L1181772-02 Solid

Collected by | Collected date/time 01/16/20 00:00 | Received date/time 01/22/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1417923	1	01/28/20 00:41	01/28/20 02:55	MJA	Mt. Juliet, TN

2001739-003C SWMU1-9 SURF L1181772-03 Solid

Collected by | Collected date/time 01/16/20 08:55 | Received date/time 01/22/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1417923	1	01/28/20 00:41	01/28/20 02:55	MJA	Mt. Juliet, TN

2001739-004C SWMU1-19 TOE CLAY 6-6.5 L1181772-04 Solid

Collected by | Collected date/time 01/16/20 10:15 | Received date/time 01/22/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1417923	1	01/28/20 00:41	01/28/20 02:55	MJA	Mt. Juliet, TN

2001739-005C SWMU1-18 TOE CLAY 5FT L1181772-05 Solid

Collected by | Collected date/time 01/16/20 14:55 | Received date/time 01/22/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1417923	1	01/28/20 00:41	01/28/20 02:55	MJA	Mt. Juliet, TN

2001739-006C SWMU1-19 TOE SURF L1181772-06 Solid

Collected by | Collected date/time 01/16/20 10:05 | Received date/time 01/22/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1417923	1	01/28/20 00:41	01/28/20 02:55	MJA	Mt. Juliet, TN

2001739-007C SWMU1-4 CLAY 3-3.5 L1181772-07 Solid

Collected by | Collected date/time 01/14/20 16:40 | Received date/time 01/22/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1417923	1	01/28/20 00:41	01/28/20 02:55	MJA	Mt. Juliet, TN

2001739-008C SWMU1-8 SLUDGE 2.5 L1181772-08 Solid

Collected by | Collected date/time 01/16/20 08:35 | Received date/time 01/22/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1417923	1	01/28/20 00:41	01/28/20 02:55	MJA	Mt. Juliet, TN

2001739-009C SWMU1-18 TOE SURF L1181772-09 Solid

Collected by | Collected date/time 01/16/20 14:23 | Received date/time 01/22/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1417923	1	01/28/20 00:41	01/28/20 02:55	MJA	Mt. Juliet, TN

2001739-010C SWMU1-22 TOE 0 L1181772-10 Solid

Collected by | Collected date/time 01/16/20 09:45 | Received date/time 01/22/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1417923	1	01/28/20 00:41	01/28/20 02:55	MJA	Mt. Juliet, TN

2001739-011C DUP-6 L1181772-11 Solid

Collected by | Collected date/time 01/16/20 00:00 | Received date/time 01/22/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1417923	1	01/28/20 00:41	01/28/20 02:55	MJA	Mt. Juliet, TN

2001739-012C SWMU1-5 SURF L1181772-12 Solid

Collected by | Collected date/time 01/17/20 08:35 | Received date/time 01/22/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1417923	1	01/28/20 00:41	01/28/20 02:55	MJA	Mt. Juliet, TN

2001739-013C SWMU1-5 5.5-6 L1181772-13 Solid

Collected by | Collected date/time 01/17/20 08:45 | Received date/time 01/22/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1417923	1	01/28/20 00:41	01/28/20 02:55	MJA	Mt. Juliet, TN

2001739-014C SWMU1-16 TOE SURF L1181772-14 Solid

Collected by | Collected date/time 01/16/20 14:05 | Received date/time 01/22/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1417923	1	01/28/20 00:41	01/28/20 02:55	MJA	Mt. Juliet, TN

2001739-015C SWMU1-8 SURFACE L1181772-15 Solid

Collected by | Collected date/time 01/16/20 08:20 | Received date/time 01/22/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1417923	1	01/28/20 00:41	01/28/20 02:55	MJA	Mt. Juliet, TN

2001739-016C SWMU1-12 TOE 2.5 L1181772-16 Solid

Collected by | Collected date/time 01/15/20 14:06 | Received date/time 01/22/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1417923	1	01/28/20 00:41	01/28/20 02:55	MJA	Mt. Juliet, TN

2001739-017C SWMU1-19 TOE SLUDGE 0.5-6FT L1181772-17 Solid

Collected by | Collected date/time 01/16/20 10:10 | Received date/time 01/22/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1417923	1	01/28/20 00:41	01/28/20 02:55	MJA	Mt. Juliet, TN

2001739-018C SWMU1-11 SURFACE L1181772-18 Solid

Collected by | Collected date/time 01/15/20 10:00 | Received date/time 01/22/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1417923	1	01/28/20 00:41	01/28/20 02:55	MJA	Mt. Juliet, TN

2001739-019C SWMU1-6 SLUDGE 0-5.5 L1181772-19 Solid

Collected by | Collected date/time 01/17/20 09:00 | Received date/time 01/22/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1417923	1	01/28/20 00:41	01/28/20 02:55	MJA	Mt. Juliet, TN

2001739-020C SWMU1-14 TOE 2.5 L1181772-20 Solid

Collected by | Collected date/time 01/14/20 14:50 | Received date/time 01/22/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1417923	1	01/28/20 00:41	01/28/20 02:55	MJA	Mt. Juliet, TN

2001739-021C SWMU1-9 SLUDGE 4.5 L1181772-21 Solid

Collected by | Collected date/time 01/16/20 09:00 | Received date/time 01/22/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1418345	1	01/28/20 15:29	01/28/20 16:55	MJA	Mt. Juliet, TN

2001739-022C SWMU1-20 TOE 0.5-3 L1181772-22 Solid

Collected by | Collected date/time 01/15/20 15:02 | Received date/time 01/22/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1418345	1	01/28/20 15:29	01/28/20 16:55	MJA	Mt. Juliet, TN

2001739-023C SWMU1-22 TOE SLUDGE 2.5 L1181772-23 Solid

Collected by | Collected date/time 01/16/20 09:50 | Received date/time 01/22/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1418345	1	01/28/20 15:29	01/28/20 16:55	MJA	Mt. Juliet, TN

2001739-024C SWMU1-7 2.5 L1181772-24 Solid

Collected by | Collected date/time 01/17/20 09:16 | Received date/time 01/22/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1418345	1	01/28/20 15:29	01/28/20 16:55	MJA	Mt. Juliet, TN

2001739-025C SWMU1-5 SLUDGE 2.5-5 L1181772-25 Solid

Collected by | Collected date/time 01/17/20 08:40 | Received date/time 01/22/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1418345	1	01/28/20 15:29	01/28/20 16:55	MJA	Mt. Juliet, TN

2001739-026C SWMU1-1 SLUDGE 0.5-3 L1181772-26 Solid

Collected by | Collected date/time 01/15/20 08:45 | Received date/time 01/22/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1418345	1	01/28/20 15:29	01/28/20 16:55	MJA	Mt. Juliet, TN

2001739-027C SWMU1-4 3FT L1181772-27 Solid

Collected by | Collected date/time 01/14/20 16:27 | Received date/time 01/22/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1418345	1	01/28/20 15:29	01/28/20 16:55	MJA	Mt. Juliet, TN

2001739-028C SWMU1-15 TOE 4-5' L1181772-28 Solid

Collected by | Collected date/time 01/16/20 14:35 | Received date/time 01/22/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1418345	1	01/28/20 15:29	01/28/20 16:55	MJA	Mt. Juliet, TN

2001739-029C SWMU1-7 SURFACE L1181772-29 Solid

Collected by | Collected date/time 01/17/20 09:12 | Received date/time 01/22/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1418345	1	01/28/20 15:29	01/28/20 16:55	MJA	Mt. Juliet, TN

2001739-030C DUP 7 L1181772-30 Solid

Collected by | Collected date/time 01/16/20 00:00 | Received date/time 01/22/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1418345	1	01/28/20 15:29	01/28/20 16:55	MJA	Mt. Juliet, TN

2001739-031C SWMU1-18 TOE SLUDGE 2.5 L1181772-31 Solid

Collected by | Collected date/time 01/16/20 14:50 | Received date/time 01/22/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1418345	1	01/28/20 15:29	01/28/20 16:55	MJA	Mt. Juliet, TN

2001739-032C SWMU1-10 SLUDGE 4-4.5 L1181772-32 Solid

Collected by | Collected date/time 01/16/20 09:26 | Received date/time 01/22/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1418345	1	01/28/20 15:29	01/28/20 16:55	MJA	Mt. Juliet, TN

Collected by | Collected date/time 01/17/20 09:16 | Received date/time 01/22/20 08:45

2001739-033C SWMU1-7 CLAY 4-5FT L1181772-33 Solid

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1418345	1	01/28/20 15:29	01/28/20 16:55	MJA	Mt. Juliet, TN

Collected by | Collected date/time 01/17/20 09:25 | Received date/time 01/22/20 08:45

2001739-034C SWMU1-6 CLAY 5.5-6FT L1181772-34 Solid

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1418345	1	01/28/20 15:29	01/28/20 16:55	MJA	Mt. Juliet, TN

Collected by | Collected date/time 01/14/20 16:54 | Received date/time 01/22/20 08:45

2001739-035C SWMU1-3 0.5-3.0 L1181772-35 Solid

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1418345	1	01/28/20 15:29	01/28/20 16:55	MJA	Mt. Juliet, TN

Collected by | Collected date/time 01/14/20 14:19 | Received date/time 01/22/20 08:45

2001739-036C SWMU1-13 TOE SURF L1181772-36 Solid

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1418345	1	01/28/20 15:29	01/28/20 16:55	MJA	Mt. Juliet, TN

Collected by | Collected date/time 01/15/20 08:45 | Received date/time 01/22/20 08:45

2001739-037C SWMU1-1 SURF L1181772-37 Solid

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1418345	1	01/28/20 15:29	01/28/20 16:55	MJA	Mt. Juliet, TN

Collected by | Collected date/time 01/14/20 17:05 | Received date/time 01/22/20 08:45

2001739-038C SWMU1-3 CLAY 3FT L1181772-38 Solid

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1418345	1	01/28/20 15:29	01/28/20 16:55	MJA	Mt. Juliet, TN

Collected by | Collected date/time 01/16/20 09:21 | Received date/time 01/22/20 08:45

2001739-039C SWMU1-10 0.0 L1181772-39 Solid

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1418345	1	01/28/20 15:29	01/28/20 16:55	MJA	Mt. Juliet, TN

Collected by | Collected date/time 01/16/20 00:00 | Received date/time 01/22/20 08:45

2001739-040C DUP 8 L1181772-40 Solid

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1418345	1	01/28/20 15:29	01/28/20 16:55	MJA	Mt. Juliet, TN

2001739-041C SWMU1-2 SURFACE L1181772-41 Solid

Collected by | Collected date/time 01/15/20 08:25 | Received date/time 01/22/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1418499	1	01/28/20 18:16	01/29/20 00:21	MJA	Mt. Juliet, TN

2001739-042C DUP 9 L1181772-42 Solid

Collected by | Collected date/time 01/16/20 00:00 | Received date/time 01/22/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1418499	1	01/28/20 18:16	01/29/20 00:21	MJA	Mt. Juliet, TN

2001739-043C SWMU1-15 TOE 3FT L1181772-43 Solid

Collected by | Collected date/time 01/16/20 14:28 | Received date/time 01/22/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1418499	1	01/28/20 18:16	01/29/20 00:21	MJA	Mt. Juliet, TN

2001739-044C SWMU1-22 TOE 3.5-4.0 L1181772-44 Solid

Collected by | Collected date/time 01/16/20 09:55 | Received date/time 01/22/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1418499	1	01/28/20 18:16	01/29/20 00:21	MJA	Mt. Juliet, TN

2001739-045C SWMU1-9 CLAY 5.5-6 L1181772-45 Solid

Collected by | Collected date/time 01/16/20 09:05 | Received date/time 01/22/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1418499	1	01/28/20 18:16	01/29/20 00:21	MJA	Mt. Juliet, TN

2001739-046C SWMU1-15 TOE SURF L1181772-46 Solid

Collected by | Collected date/time 01/16/20 14:24 | Received date/time 01/22/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1418499	1	01/28/20 18:16	01/29/20 00:21	MJA	Mt. Juliet, TN

2001739-047C SWMU1-11 2.5 L1181772-47 Solid

Collected by | Collected date/time 01/15/20 10:10 | Received date/time 01/22/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1418499	1	01/28/20 18:16	01/29/20 00:21	MJA	Mt. Juliet, TN

2001739-048C SWMU1-14 TOE 3FT L1181772-48 Solid

Collected by | Collected date/time 01/14/20 14:58 | Received date/time 01/22/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1418499	1	01/28/20 18:16	01/29/20 00:21	MJA	Mt. Juliet, TN

2001739-049C SWMU1-20 1.5 L1181772-49 Solid

Collected by | Collected date/time 01/14/20 09:25 | Received date/time 01/22/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1418499	1	01/28/20 18:16	01/29/20 00:21	MJA	Mt. Juliet, TN

2001739-050C DUP 10 L1181772-50 Solid

Collected by | Collected date/time 01/16/20 00:00 | Received date/time 01/22/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1418499	1	01/28/20 18:16	01/29/20 00:21	MJA	Mt. Juliet, TN

2001739-051C SWMU1-21 TOE 5FT L1181772-51 Solid

Collected by | Collected date/time 01/14/20 11:00 | Received date/time 01/22/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1418499	1	01/28/20 18:16	01/29/20 00:21	MJA	Mt. Juliet, TN

2001739-052C SWMU1-14 9FT L1181772-52 Solid

Collected by | Collected date/time 01/14/20 10:20 | Received date/time 01/22/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1418499	1	01/28/20 18:16	01/29/20 00:21	MJA	Mt. Juliet, TN

2001739-053C SWMU1-2 CLAY 3-3.5FT L1181772-53 Solid

Collected by | Collected date/time 01/15/20 08:29 | Received date/time 01/22/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1418499	1	01/28/20 18:16	01/29/20 00:21	MJA	Mt. Juliet, TN

2001739-054C SWMU1-8 5-5.5FT L1181772-54 Solid

Collected by | Collected date/time 01/16/20 08:48 | Received date/time 01/22/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1418499	1	01/28/20 18:16	01/29/20 00:21	MJA	Mt. Juliet, TN

2001739-055C SWMU1-22 5FT L1181772-55 Solid

Collected by | Collected date/time 01/14/20 09:53 | Received date/time 01/22/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2710 F-2011	WG1418499	1	01/28/20 18:16	01/29/20 00:21	MJA	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Daphne R Richards

Daphne Richards
Project Manager

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.91		1	01/28/2020 02:55	WG1417923

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.36		1	01/28/2020 02:55	WG1417923

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.51		1	01/28/2020 02:55	WG1417923

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.90		1	01/28/2020 02:55	WG1417923

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.94		1	01/28/2020 02:55	WG1417923

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.39		1	01/28/2020 02:55	WG1417923

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.92		1	01/28/2020 02:55	WG1417923

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.42		1	01/28/2020 02:55	WG1417923

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.34		1	01/28/2020 02:55	WG1417923

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.36		1	01/28/2020 02:55	WG1417923

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.10		1	01/28/2020 02:55	WG1417923

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.28		1	01/28/2020 02:55	WG1417923

Received by OCD: 3/2/2021 2:18:14 PM

Collected date/time: 01/17/20 08:45

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.78		1	01/28/2020 02:55	WG1417923

Released to Imaging: 3/2/2021 2:22:29 PM

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.13		1	01/28/2020 02:55	WG1417923

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.35		1	01/28/2020 02:55	WG1417923

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.98		1	01/28/2020 02:55	WG1417923

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.37		1	01/28/2020 02:55	WG1417923

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.09		1	01/28/2020 02:55	WG1417923

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.25		1	01/28/2020 02:55	WG1417923

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.39		1	01/28/2020 02:55	WG1417923

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.24		1	01/28/2020 16:55	WG1418345

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.18		1	01/28/2020 16:55	WG1418345

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.36		1	01/28/2020 16:55	WG1418345

Collected date/time: 01/17/20 09:16

L1181772

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.15		1	01/28/2020 16:55	WG1418345

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.20		1	01/28/2020 16:55	WG1418345

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.12		1	01/28/2020 16:55	WG1418345

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.12		1	01/28/2020 16:55	WG1418345

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.20		1	01/28/2020 16:55	WG1418345

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.58		1	01/28/2020 16:55	WG1418345

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.56		1	01/28/2020 16:55	WG1418345

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.26		1	01/28/2020 16:55	WG1418345

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.27		1	01/28/2020 16:55	WG1418345

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.97		1	01/28/2020 16:55	WG1418345

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.95		1	01/28/2020 16:55	WG1418345

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.27		1	01/28/2020 16:55	WG1418345

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.77		1	01/28/2020 16:55	WG1418345

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.21		1	01/28/2020 16:55	WG1418345

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.85		1	01/28/2020 16:55	WG1418345

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.20		1	01/28/2020 16:55	WG1418345

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.77		1	01/28/2020 16:55	WG1418345

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.12		1	01/29/2020 00:21	WG1418499

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.16		1	01/29/2020 00:21	WG1418499

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.92		1	01/29/2020 00:21	WG1418499

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.99		1	01/29/2020 00:21	WG1418499

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.92		1	01/29/2020 00:21	WG1418499

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.29		1	01/29/2020 00:21	WG1418499

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.96		1	01/29/2020 00:21	WG1418499

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.97		1	01/29/2020 00:21	WG1418499

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	2.10		1	01/29/2020 00:21	WG1418499

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.25		1	01/29/2020 00:21	WG1418499

Collected date/time: 01/14/20 11:00

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	2.04		1	01/29/2020 00:21	WG1418499

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.97		1	01/29/2020 00:21	WG1418499

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.90		1	01/29/2020 00:21	WG1418499

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	2.09		1	01/29/2020 00:21	WG1418499

Wet Chemistry by Method 2710 F-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	g/cm3			date / time	
Density	1.58		1	01/29/2020 00:21	WG1418499

L1181772-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1181772-05 01/28/20 02:55 • (DUP) R3494656-1 01/28/20 02:55

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	g/cm3	g/cm3		%		%
Density	1.94	1.90	1	1.89		20

L1181772-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1181772-06 01/28/20 02:55 • (DUP) R3494656-2 01/28/20 02:55

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	g/cm3	g/cm3		%		%
Density	1.39	1.38	1	0.231		20

L1181772-21 Original Sample (OS) • Duplicate (DUP)

(OS) L1181772-21 01/28/20 16:55 • (DUP) R3494871-1 01/28/20 16:55

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	g/cm3	g/cm3		%		%
Density	1.24	1.24	1	0.000		20

L1181772-31 Original Sample (OS) • Duplicate (DUP)

(OS) L1181772-31 01/28/20 16:55 • (DUP) R3494871-2 01/28/20 16:55

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	g/cm3	g/cm3		%		%
Density	1.26	1.25	1	0.878		20

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

L1181772-47 Original Sample (OS) • Duplicate (DUP)

(OS) L1181772-47 01/29/20 00:21 • (DUP) R3494953-1 01/29/20 00:21

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	g/cm3	g/cm3		%		%
Density	1.96	1.88	1	4.47		20

L1181772-49 Original Sample (OS) • Duplicate (DUP)

(OS) L1181772-49 01/29/20 00:21 • (DUP) R3494953-2 01/29/20 00:21

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	g/cm3	g/cm3		%		%
Density	2.10	2.09	1	0.0191		20

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
	The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

ACCREDITATIONS & LOCATIONS

ONE LAB. NATIONWIDE.

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

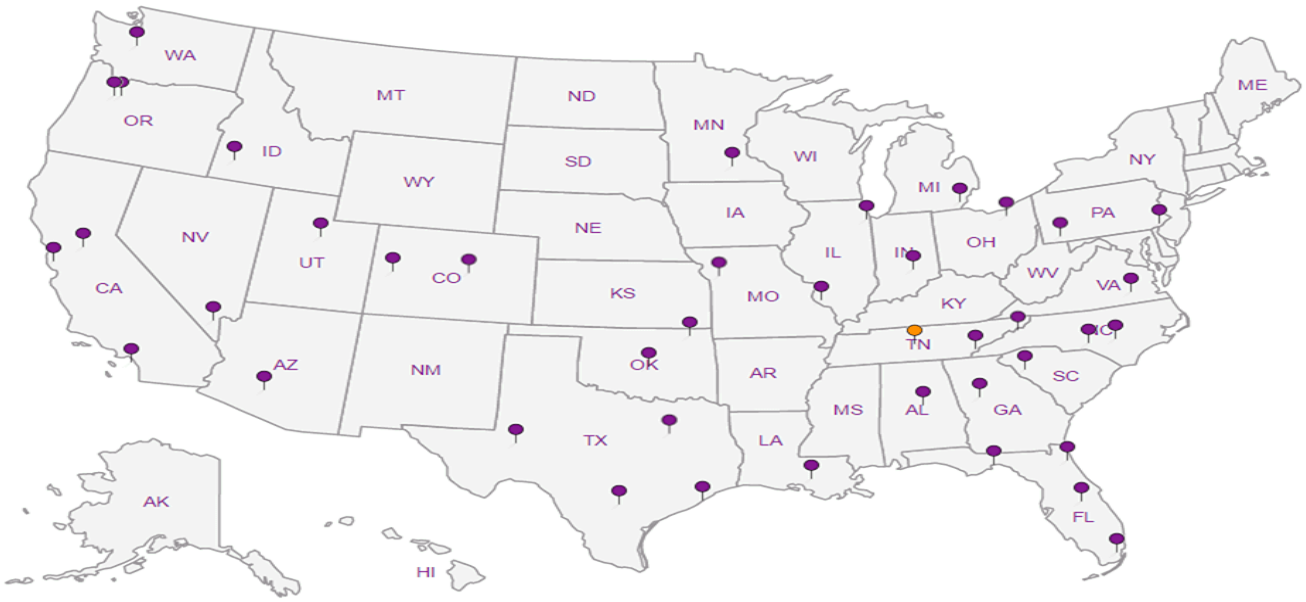
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



Received by OCD: 3/2/2021 2:18:14 PM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 5

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

SUB CONTRATOR: ESC PACE	COMPANY: ESC PACE	PHONE: (800) 767-5859	FAX: (615) 758-5859
ADDRESS: 12065 Lebanon Rd		ACCOUNT #:	EMAIL:
CITY, STATE, ZIP: Mt. Juliet, TN 37122			

L1181772

B232

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS	
1	2001739-001C	Dup 4	4OZGU	Soil		1	SPECIFIC GRAVITY	-01
2	2001739-002C	Dup 5	4OZGU	Soil		1	SPECIFIC GRAVITY	-02
3	2001739-003C	SWMU1-9 Surf	4OZGU	Soil	1/16/2020 8:55:00 AM	1	SPECIFIC GRAVITY	-03
4	2001739-004C	SWMU1-19 Toe Clay 6-6.5	4OZGU	Soil	1/16/2020 10:15:00 AM	1	SPECIFIC GRAVITY	-04
5	2001739-005C	SWMU1-18 Toe Clay 5 ft	4OZGU	Soil	1/16/2020 2:55:00 PM	1	SPECIFIC GRAVITY	-05
6	2001739-006C	SWMU1-19 Toe Surf	4OZGU	Soil	1/16/2020 10:05:00 AM	1	SPECIFIC GRAVITY	-06
7	2001739-007C	SWMU1-4 Clay 3-3.5	4OZGU	Soil	~~1/16/2020~~ 4:40:00 PM 1/14 20	1	SPECIFIC GRAVITY	-07
8	2001739-008C	SWMU1-8 Sludge 2.5	4OZGU	Soil	1/16/2020 8:35:00 AM	1	SPECIFIC GRAVITY	-08
9	2001739-009C	SWMU1-18 Toe Surf	4OZGU	Soil	1/16/2020 2:23:00 PM	1	SPECIFIC GRAVITY	-09
10	2001739-010C	SWMU1-22 Toe 0	4OZGU	Soil	1/16/2020 9:45:00 AM	1	SPECIFIC GRAVITY	-10
11	2001739-011C	Dup-6	4OZGU	Soil		1	SPECIFIC GRAVITY	-11
12	2001739-012C	SWMU1-5 Surf	4OZGU	Soil	1/17/2020 8:35:00 AM	1	SPECIFIC GRAVITY	-12
13	2001739-013C	SWMU1-5 5.5-6	4OZGU	Soil	1/17/2020 8:45:00 AM	1	SPECIFIC GRAVITY	-13

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

RAD SCREEN: <0.5 mR/hr

Relinquished By:	Date: 1/20/2020	Time: 11:55 AM	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date: 1/16/20	Time: 0845

TAT: Standard ☒ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:

☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY

Temp of samples 3.0-5=2.5 °C Attempt to Cool ?

Comments:

Invoice # 2615 1149 7342 Containers Received 55

Released to Imaging: 3/2/2021 2:22:29 PM

Received by OCD: 3/2/2021 2:18:14 PM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 2 OF: 5

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

SUB CONTRATOR: **ESC PACE**	COMPANY: **ESC PACE**	PHONE: **(800) 767-5859**	FAX: **(615) 758-5859**
ADDRESS: **12065 Lebanon Rd**		ACCOUNT #:	EMAIL:
CITY, STATE, ZIP: **Mt. Juliet, TN 37122**			

L1181772

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS	
14	2001739-014C	SWMU1-16 Toe Surf	4OZGU	Soil	1/16/2020 2:05:00 PM	1	SPECIFIC GRAVITY	-14
15	2001739-015C	SWMU1-8 Suface	4OZGU	Soil	1/16/2020 8:20:00 AM	1	SPECIFIC GRAVITY	-15
16	2001739-016C	SWMU1-12 Toe 2.5	4OZGU	Soil	1/15/2020 2:06:00 PM	1	SPECIFIC GRAVITY	-16
17	2001739-017C	SWMU1-19 Toe Sludge 0.5-6 ft	4OZGU	Soil	1/16/2020 10:10:00 AM	1	SPECIFIC GRAVITY	-17
18	2001739-018C	SWMU1-11 Surface	4OZGU	Soil	1/15/2020 10:00:00 AM	1	SPECIFIC GRAVITY	-18
19	2001739-019C	SWMU1-6 Sludge 0-5.5	4OZGU	Soil	1/17/2020 9:00:00 AM	1	SPECIFIC GRAVITY	-19
20	2001739-020C	SWMU1-14 Toe 2.5	4OZGU	Soil	1/14/2020 2:50:00 PM	1	SPECIFIC GRAVITY	-20
21	2001739-021C	SWMU1-9 Sludge 4.5	4OZGU	Soil	1/16/2020 9:00:00 AM	1	SPECIFIC GRAVITY	-21
22	2001739-022C	SWMU1-20 Toe 0.5-3	4OZGU	Soil	1/15/2020 3:02:00 PM	1	SPECIFIC GRAVITY	-22
23	2001739-023C	SWMU1-22 Toe Sludge 2.5	4OZGU	Soil	1/16/2020 9:50:00 AM	1	SPECIFIC GRAVITY	-23
24	2001739-024C	SWMU1-7 2.5	4OZGU	Soil	1/17/2020 9:16:00 AM	1	SPECIFIC GRAVITY	-24
25	2001739-025C	SWMU1-5 Sludge 2.5-5	4OZGU	Soil	1/17/2020 8:40:00 AM	1	SPECIFIC GRAVITY	-25
26	2001739-026C	SWMU1-1 Sludge 0.5-3	4OZGU	Soil	1/15/2020 8:45:00 AM	1	SPECIFIC GRAVITY	-26

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

RAD SCREEN: <0.5 mR/hr

Relinquished By:	Date: 1/20/2020	Time: 11:55 AM	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard ■ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:
☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY Cool

Temp of samples 30.5-25.1/2 °C Attempt to Cool ? _____

Comments: _____

Tracking # 4510 1164 2962 Container Received 55

Released to Imaging: 3/2/2021 2:22:29 PM

Received by OCD: 3/2/2021 2:18:14 PM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 3 OF: 5

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

SUB CONTRATOR: ESC PACE	COMPANY: ESC PACE		PHONE: (800) 767-5859	FAX: (615) 758-5859	
ADDRESS: 12065 Lebanon Rd			ACCOUNT #:	EMAIL:	
CITY, STATE, ZIP: Mt. Juliet, TN 37122					

L1181772

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS
27	2001739-027C	SWMU1-4 3 ft	4OZGU	Soil	1/14/2020 4:27:00 PM	1	SPECIFIC GRAVITY – 27
28	2001739-028C	SWMU1-15 Toe 4-5'	4OZGU	Soil	1/16/2020 2:35:00 PM	1	SPECIFIC GRAVITY – 28
29	2001739-029C	SWMU1-7 Surface	4OZGU	Soil	1/17/2020 9:12:00 AM	1	SPECIFIC GRAVITY – 29
30	2001739-030C	Dup 7	4OZGU	Soil		1	SPECIFIC GRAVITY – 30
31	2001739-031C	SWMU1-18 Toe Sludge 2.5	4OZGU	Soil	1/16/2020 2:50:00 PM	1	SPECIFIC GRAVITY – 31
32	2001739-032C	SWMU1-10 Sludge 4-4.5	4OZGU	Soil	1/16/2020 9:26:00 AM	1	SPECIFIC GRAVITY – 32
33	2001739-033C	SWMU1-7 Clay 4-5 ft	4OZGU	Soil	1/17/2020 9:16:00 AM	1	SPECIFIC GRAVITY – 33
34	2001739-034C	SWMU1-6 Clay 5.5-6 ft	4OZGU	Soil	1/17/2020 9:25:00 AM	1	SPECIFIC GRAVITY – 34
35	2001739-035C	SWMU1-3 0.5-3.0	4OZGU	Soil	1/14/2020 4:54:00 PM	1	SPECIFIC GRAVITY – 35
36	2001739-036C	SWMU1-13 Toe Surf	4OZGU	Soil	1/14/2020 2:19:00 PM	1	SPECIFIC GRAVITY – 36
37	2001739-037C	SWMU1-1 Surf	4OZGU	Soil	1/15/2020 8:45:00 AM	1	SPECIFIC GRAVITY – 37
38	2001739-038C	SWMU1-3 Clay 3 ft	4OZGU	Soil	1/14/2020 5:05:00 PM	1	SPECIFIC GRAVITY – 38
39	2001739-039C	SWMU1-10 0.0	4OZGU	Soil	1/16/2020 9:21:00 AM	1	SPECIFIC GRAVITY – 39

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

RAD SCREEN: <0.5 mR/hr

Relinquished By:	Date: 1/20/2020	Time: 11:55 AM	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By: W Taylor	Date: 1/21/20	Time: 0845

TAT: Standard ☒ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:
☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY COC#5

Temp of samples 3.0-5.3-25.6 °C Attempt to Cool ? _____

Comments: _____

Carrier # 1Z6103 1164 2362 Containers Received 55

Released to Imaging: 3/2/2021 2:22:29 PM

Received by OCD: 3/2/2021 2:18:14 PM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 4 OF: 5

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

SUB CONTRATOR:	ESC PACE	COMPANY: ESC PACE	PHONE: (800) 767-5859	FAX:	(615) 758-5859
ADDRESS:	12065 Lebanon Rd		ACCOUNT #:	EMAIL:	
CITY, STATE, ZIP:	Mt. Juliet, TN 37122				

L1181772

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS
40	2001739-040C	Dup 8	4OZGU	Soil		1	SPECIFIC GRAVITY — 40
41	2001739-041C	SWMU1-2 Surface	4OZGU	Soil	1/15/2020 8:25:00 AM	1	SPECIFIC GRAVITY — 41
42	2001739-042C	Dup 9	4OZGU	Soil		1	SPECIFIC GRAVITY — 42
43	2001739-043C	SWMU1-15 Toe 3 ft	4OZGU	Soil	1/16/2020 2:28:00 PM	1	SPECIFIC GRAVITY — 43
44	2001739-044C	SWMU1-22 Toe 3.5-4.0	4OZGU	Soil	1/16/2020 9:55:00 AM	1	SPECIFIC GRAVITY — 44
45	2001739-045C	SWMU1-9 Clay 5.5-6	4OZGU	Soil	1/16/2020 9:05:00 AM	1	SPECIFIC GRAVITY — 45
46	2001739-046C	SWMU1-15 Toe Surf	4OZGU	Soil	1/16/2020 2:24:00 PM	1	SPECIFIC GRAVITY — 46
47	2001739-047C	SWMU1-11 2.5	4OZGU	Soil	1/15/2020 10:10:00 AM	1	SPECIFIC GRAVITY — 47
48	2001739-048C	SWMU1-14 Toe 3 ft	4OZGU	Soil	1/14/2020 2:58:00 PM	1	SPECIFIC GRAVITY — 48
49	2001739-049C	SWMU1-20 1.5	4OZGU	Soil	1/14/2020 9:25:00 AM	1	SPECIFIC GRAVITY — 49
50	2001739-050C	Dup 10	4OZGU	Soil		1	SPECIFIC GRAVITY — 50
51	2001739-051C	SWMU1-21 Toe 5 ft	4OZGU	Soil	1/14/2020 11:00:00 AM	1	SPECIFIC GRAVITY — 51
52	2001739-052C	SWMU1-14 9 ft	4OZGU	Soil	1/14/2020 10:20:00 AM	1	SPECIFIC GRAVITY — 52

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

RAD SCREEN: <0.5 mR/hr

Relinquished By:	Date: 1/20/2020	Time: 11:55 AM	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date: 1/21/20	Time: 0815

TAT: Standard ☑ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:
☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY Cost

Temp of samples 30.5-2.5=28 °C Attempt to Cool? _____

Comments: _____

Containers Received 55

Released to Imaging: 3/2/2021 2:22:29 PM

Received by OCD: 3/2/2021 2:18:14 PM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 5 OF: 5

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

SUB CONTRATOR:	ESC PACE	COMPANY: ESC PACE	PHONE: (800) 767-5859	FAX:	(615) 758-5859
ADDRESS:	12065 Lebanon Rd		ACCOUNT #:	EMAIL:	
CITY, STATE, ZIP:	Mt. Juliet, TN 37122				

L1181772

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS	
53	2001739-053C	SWMU1-2 Clay 3-3.5 ft	4OZGU	Soil	1/15/2020 8:29:00 AM	1	SPECIFIC GRAVITY	-53
54	2001739-054C	SWMU1-8 5-5.5 ft	4OZGU	Soil	1/16/2020 8:48:00 AM	1	SPECIFIC GRAVITY	-54
55	2001739-055C	SWMU1-22 5 ft	4OZGU	Soil	1/14/2020 9:53:00 AM	1	SPECIFIC GRAVITY	-55

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

BAD SCREEN: <0.5 mR/hr

Relinquished By:	Date: 1/20/2020	Time: 11:55 AM	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By: W Tuckla	Date: 1/21/20	Time: 0845

TAT: Standard ■ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:
☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY Cool

Temp of samples 3.0 +2.5 °C Attempt to Cool ?

Comments:

Containers Received 55

Released to Imaging: 3/2/2021 2:22:29 PM

Pace Analytical National Center for Testing & Innovation
Cooler Receipt Form

Client:	L1181772	
Cooler Received/Opened On: 1/22/20 Temperature: 2.5		
Received By: Willie Taylor 0845		
Signature: Willie Taylor		

Receipt Check List	NP	Yes	No
COC Seal Present / Intact?		✓	
COC Signed / Accurate?		✓	
Bottles arrive intact?		✓	
Correct bottles used?		✓	
Sufficient volume sent?		✓	
If Applicable			
VOA Zero headspace?			
Preservation Correct / Checked?			

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001739**
03-Mar-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **LCS-49947** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **49947** RunNo: **65969**
Prep Date: **1/21/2020** Analysis Date: **1/22/2020** SeqNo: **2266555** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	54	10	50.00	0	108	63.9	124			
Surr: DNOP	4.9		5.000		98.6	55.1	146			

Sample ID: **LCS-49948** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **49948** RunNo: **65969**
Prep Date: **1/21/2020** Analysis Date: **1/22/2020** SeqNo: **2266556** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	56	10	50.00	0	112	63.9	124			
Surr: DNOP	5.2		5.000		104	55.1	146			

Sample ID: **LCS-49949** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **49949** RunNo: **65969**
Prep Date: **1/21/2020** Analysis Date: **1/22/2020** SeqNo: **2266557** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	49	10	50.00	0	97.2	63.9	124			
Surr: DNOP	4.9		5.000		97.2	55.1	146			

Sample ID: **MB-49947** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **49947** RunNo: **65969**
Prep Date: **1/21/2020** Analysis Date: **1/22/2020** SeqNo: **2266559** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	2.5	10								J
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	12		10.00		115	55.1	146			

Sample ID: **MB-49948** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **49948** RunNo: **65969**
Prep Date: **1/21/2020** Analysis Date: **1/22/2020** SeqNo: **2266560** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	10		10.00		100	55.1	146			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001739**
03-Mar-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **MB-49949**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **49949**	RunNo: **65969**
Prep Date: **1/21/2020**	Analysis Date: **1/22/2020**	SeqNo: **2266561** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	12		10.00		122	55.1	146			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001739**
03-Mar-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **mb1**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **R65960**	RunNo: **65960**
Prep Date:	Analysis Date: **1/21/2020**	SeqNo: **2265307** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	ND	0.050								
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	ND	0.75								
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	ND	0.15								
2-Butanone	ND	0.50								
Carbon disulfide	ND	0.50								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	ND	0.050								
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.050								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.050								
1,1-Dichloroethene	ND	0.050								
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.10								

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001739**
03-Mar-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **mb1**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **R65960**	RunNo: **65960**
Prep Date:	Analysis Date: **1/21/2020**	SeqNo: **2265307** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
4-Methyl-2-pentanone	ND	0.50								
Methylene chloride	ND	0.15								
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
1,2,3-Trichlorobenzene	ND	0.10								
1,2,4-Trichlorobenzene	ND	0.050								
1,1,1-Trichloroethane	ND	0.050								
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	ND	0.050								
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: Dibromofluoromethane	0.48		0.5000		96.5	70	130			
Surr: 1,2-Dichloroethane-d4	0.48		0.5000		95.8	70	130			
Surr: Toluene-d8	0.49		0.5000		97.7	70	130			
Surr: 4-Bromofluorobenzene	0.45		0.5000		90.9	70	130			

Sample ID: **mb2**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **S65960**	RunNo: **65960**
Prep Date:	Analysis Date: **1/22/2020**	SeqNo: **2265309** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2-Methylnaphthalene	ND	0.20								
Surr: Dibromofluoromethane	0.47		0.5000		95.0	70	130			
Surr: 1,2-Dichloroethane-d4	0.48		0.5000		95.0	70	130			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001739**
03-Mar-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **mb2**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **S65960**	RunNo: **65960**
Prep Date:	Analysis Date: **1/22/2020**	SeqNo: **2265309** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Toluene-d8	0.49		0.5000		98.5	70	130			
Surr: 4-Bromofluorobenzene	0.48		0.5000		95.5	70	130			

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS**	Batch ID: **R65960**	RunNo: **65960**
Prep Date:	Analysis Date: **1/21/2020**	SeqNo: **2265311** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	1.000	0	108	70	130			
Toluene	0.99	0.050	1.000	0	98.8	70	130			
Chlorobenzene	0.99	0.050	1.000	0	99.0	70	130			
1,1-Dichloroethene	1.1	0.050	1.000	0	112	70	130			
Trichloroethene (TCE)	0.94	0.050	1.000	0	94.3	70	130			
Surr: Dibromofluoromethane	0.49		0.5000		97.7	70	130			
Surr: 1,2-Dichloroethane-d4	0.46		0.5000		92.8	70	130			
Surr: Toluene-d8	0.49		0.5000		98.1	70	130			
Surr: 4-Bromofluorobenzene	0.47		0.5000		93.4	70	130			

Sample ID: **100ng lcs2**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS**	Batch ID: **S65960**	RunNo: **65960**
Prep Date:	Analysis Date: **1/22/2020**	SeqNo: **2265314** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Dibromofluoromethane	0.47		0.5000		93.4	70	130			
Surr: 1,2-Dichloroethane-d4	0.47		0.5000		94.3	70	130			
Surr: Toluene-d8	0.48		0.5000		95.2	70	130			
Surr: 4-Bromofluorobenzene	0.45		0.5000		90.1	70	130			

Sample ID: **mb1**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **A65992**	RunNo: **65992**
Prep Date:	Analysis Date: **1/22/2020**	SeqNo: **2266589** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	ND	0.050								
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001739**
03-Mar-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **mb1**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **A65992**	RunNo: **65992**
Prep Date:	Analysis Date: **1/22/2020**	SeqNo: **2266589** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	ND	0.75								
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	ND	0.15								
2-Butanone	ND	0.50								
Carbon disulfide	ND	0.50								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	ND	0.050								
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.050								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.050								
1,1-Dichloroethene	ND	0.050								
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.10								
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
4-Methyl-2-pentanone	ND	0.50								
Methylene chloride	ND	0.15								

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001739**
03-Mar-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **mb1** SampType: **MBLK** TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS** Batch ID: **A65992** RunNo: **65992**
Prep Date: Analysis Date: **1/22/2020** SeqNo: **2266589** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
1,2,3-Trichlorobenzene	ND	0.10								
1,2,4-Trichlorobenzene	ND	0.050								
1,1,1-Trichloroethane	ND	0.050								
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	ND	0.050								
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: Dibromofluoromethane	0.56		0.5000		111	70	130			
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		89.7	70	130			
Surr: Toluene-d8	0.47		0.5000		94.5	70	130			
Surr: 4-Bromofluorobenzene	0.46		0.5000		91.2	70	130			

Sample ID: **100ng lcs** SampType: **LCS** TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS** Batch ID: **A65992** RunNo: **65992**
Prep Date: Analysis Date: **1/22/2020** SeqNo: **2266590** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.95	0.025	1.000	0	95.0	70	130			
Toluene	0.89	0.050	1.000	0	88.9	70	130			
Chlorobenzene	0.87	0.050	1.000	0	87.5	70	130			
1,1-Dichloroethene	1.0	0.050	1.000	0	101	70	130			
Trichloroethene (TCE)	0.87	0.050	1.000	0	87.5	70	130			
Surr: Dibromofluoromethane	0.47		0.5000		94.7	70	130			
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		89.6	70	130			
Surr: Toluene-d8	0.48		0.5000		95.7	70	130			
Surr: 4-Bromofluorobenzene	0.48		0.5000		95.6	70	130			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001739**
03-Mar-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **mb2**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **B65992**	RunNo: **65992**
Prep Date:	Analysis Date: **1/23/2020**	SeqNo: **2266632** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	ND	0.050								
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	ND	0.75								
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	ND	0.15								
2-Butanone	ND	0.50								
Carbon disulfide	ND	0.50								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	ND	0.050								
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.050								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.050								
1,1-Dichloroethene	ND	0.050								
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.10								

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001739**
03-Mar-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **mb2**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **B65992**	RunNo: **65992**
Prep Date:	Analysis Date: **1/23/2020**	SeqNo: **2266632** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
4-Methyl-2-pentanone	0.031	0.50								J
Methylene chloride	0.024	0.15								J
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
1,2,3-Trichlorobenzene	ND	0.10								
1,2,4-Trichlorobenzene	ND	0.050								
1,1,1-Trichloroethane	ND	0.050								
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	ND	0.050								
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: Dibromofluoromethane	0.57		0.5000		115	70	130			
Surr: 1,2-Dichloroethane-d4	0.46		0.5000		91.3	70	130			
Surr: Toluene-d8	0.51		0.5000		102	70	130			
Surr: 4-Bromofluorobenzene	0.48		0.5000		96.9	70	130			

Sample ID: **100ng lcs2**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS**	Batch ID: **B65992**	RunNo: **65992**
Prep Date:	Analysis Date: **1/23/2020**	SeqNo: **2266633** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	1.000	0	101	70	130			
Toluene	0.89	0.050	1.000	0	89.2	70	130			
Chlorobenzene	0.87	0.050	1.000	0	87.1	70	130			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001739**
03-Mar-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **100ng lcs2** SampType: **LCS** TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS** Batch ID: **B65992** RunNo: **65992**
Prep Date: Analysis Date: **1/23/2020** SeqNo: **2266633** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	1.0	0.050	1.000	0	101	70	130			
Trichloroethene (TCE)	0.88	0.050	1.000	0	87.9	70	130			
Surr: Dibromofluoromethane	0.49		0.5000		97.2	70	130			
Surr: 1,2-Dichloroethane-d4	0.47		0.5000		93.2	70	130			
Surr: Toluene-d8	0.48		0.5000		96.7	70	130			
Surr: 4-Bromofluorobenzene	0.47		0.5000		93.7	70	130			

Sample ID: **2001739-052ams** SampType: **MS** TestCode: **EPA Method 8260B: Volatiles**
Client ID: **SWMU1-14 9 ft** Batch ID: **B65992** RunNo: **65992**
Prep Date: Analysis Date: **1/23/2020** SeqNo: **2266640** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	3.0	0.077	3.080	0	96.0	70	130			
Toluene	3.0	0.15	3.080	0	96.8	70	130			
Chlorobenzene	2.8	0.15	3.080	0	91.6	70	130			
1,1-Dichloroethene	3.0	0.15	3.080	0	96.7	70	130			
Trichloroethene (TCE)	2.7	0.15	3.080	0	87.4	70	130			
Surr: Dibromofluoromethane	1.5		1.540		95.0	70	130			
Surr: 1,2-Dichloroethane-d4	1.4		1.540		90.8	70	130			
Surr: Toluene-d8	1.6		1.540		102	70	130			
Surr: 4-Bromofluorobenzene	1.4		1.540		93.2	70	130			

Sample ID: **2001739-052amsd** SampType: **MSD** TestCode: **EPA Method 8260B: Volatiles**
Client ID: **SWMU1-14 9 ft** Batch ID: **B65992** RunNo: **65992**
Prep Date: Analysis Date: **1/23/2020** SeqNo: **2266641** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	3.0	0.077	3.080	0	98.3	70	130	2.32	20	
Toluene	2.7	0.15	3.080	0	88.2	70	130	9.22	20	
Chlorobenzene	2.7	0.15	3.080	0	87.5	70	130	4.54	20	
1,1-Dichloroethene	3.0	0.15	3.080	0	97.3	70	130	0.630	20	
Trichloroethene (TCE)	2.7	0.15	3.080	0	86.2	70	130	1.35	20	
Surr: Dibromofluoromethane	1.4		1.540		93.6	70	130	0	0	
Surr: 1,2-Dichloroethane-d4	1.4		1.540		87.9	70	130	0	0	
Surr: Toluene-d8	1.5		1.540		98.4	70	130	0	0	
Surr: 4-Bromofluorobenzene	1.5		1.540		97.3	70	130	0	0	

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001739**
03-Mar-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **100ng lcs** SampType: **LCS** TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS** Batch ID: **R66015** RunNo: **66015**
Prep Date: Analysis Date: **1/22/2020** SeqNo: **2267186** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	1.000	0	102	70	130			
Toluene	0.95	0.050	1.000	0	94.9	70	130			
Chlorobenzene	0.99	0.050	1.000	0	98.9	70	130			
1,1-Dichloroethene	1.1	0.050	1.000	0	108	70	130			
Trichloroethene (TCE)	0.90	0.050	1.000	0	89.5	70	130			
Surr: Dibromofluoromethane	0.48		0.5000		96.9	70	130			
Surr: 1,2-Dichloroethane-d4	0.46		0.5000		92.7	70	130			
Surr: Toluene-d8	0.47		0.5000		94.8	70	130			
Surr: 4-Bromofluorobenzene	0.46		0.5000		91.2	70	130			

Sample ID: **2001739-016a ms** SampType: **MS** TestCode: **EPA Method 8260B: Volatiles**
Client ID: **SWMU1-12 Toe 2.5** Batch ID: **R66015** RunNo: **66015**
Prep Date: Analysis Date: **1/23/2020** SeqNo: **2267204** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.50	0.013	0.5040	0	99.8	70	130			
Toluene	0.48	0.025	0.5040	0	95.1	70	130			
Chlorobenzene	0.50	0.025	0.5040	0	99.9	70	130			
1,1-Dichloroethene	0.52	0.025	0.5040	0	104	70	130			
Trichloroethene (TCE)	0.45	0.025	0.5040	0	89.8	70	130			
Surr: Dibromofluoromethane	0.24		0.2520		96.2	70	130			
Surr: 1,2-Dichloroethane-d4	0.23		0.2520		89.4	70	130			
Surr: Toluene-d8	0.24		0.2520		95.9	70	130			
Surr: 4-Bromofluorobenzene	0.23		0.2520		91.2	70	130			

Sample ID: **2001739-016a msd** SampType: **MSD** TestCode: **EPA Method 8260B: Volatiles**
Client ID: **SWMU1-12 Toe 2.5** Batch ID: **R66015** RunNo: **66015**
Prep Date: Analysis Date: **1/23/2020** SeqNo: **2267205** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.49	0.013	0.5040	0	98.0	70	130	1.87	20	
Toluene	0.47	0.025	0.5040	0	92.7	70	130	2.55	20	
Chlorobenzene	0.49	0.025	0.5040	0	97.1	70	130	2.85	20	
1,1-Dichloroethene	0.49	0.025	0.5040	0	97.9	70	130	5.76	20	
Trichloroethene (TCE)	0.42	0.025	0.5040	0	84.2	70	130	6.42	20	
Surr: Dibromofluoromethane	0.24		0.2520		94.5	70	130	0	0	
Surr: 1,2-Dichloroethane-d4	0.22		0.2520		88.9	70	130	0	0	
Surr: Toluene-d8	0.24		0.2520		95.6	70	130	0	0	
Surr: 4-Bromofluorobenzene	0.23		0.2520		92.6	70	130	0	0	

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001739**
03-Mar-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **mb1**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**	
Client ID: **PBS**	Batch ID: **R66015**	RunNo: **66015**	
Prep Date:	Analysis Date: **1/22/2020**	SeqNo: **2267212**	Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	ND	0.050								
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	ND	0.75								
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	ND	0.15								
2-Butanone	ND	0.50								
Carbon disulfide	ND	0.50								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	ND	0.050								
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.050								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.050								
1,1-Dichloroethene	ND	0.050								
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.10								

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001739**
03-Mar-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **mb1**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**							
Client ID: **PBS**	Batch ID: **R66015**	RunNo: **66015**							
Prep Date:	Analysis Date: **1/22/2020**	SeqNo: **2267212**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
4-Methyl-2-pentanone	ND	0.50								
Methylene chloride	ND	0.15								
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
1,2,3-Trichlorobenzene	ND	0.10								
1,2,4-Trichlorobenzene	ND	0.050								
1,1,1-Trichloroethane	ND	0.050								
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	ND	0.050								
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: Dibromofluoromethane	0.50		0.5000		100	70	130			
Surr: 1,2-Dichloroethane-d4	0.46		0.5000		92.3	70	130			
Surr: Toluene-d8	0.50		0.5000		99.9	70	130			
Surr: 4-Bromofluorobenzene	0.46		0.5000		92.5	70	130			

Sample ID: **mb1**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**							
Client ID: **PBS**	Batch ID: **S66039**	RunNo: **66039**							
Prep Date:	Analysis Date: **1/23/2020**	SeqNo: **2267783**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2,4-Trimethylbenzene	ND	0.050								
1,3,5-Trimethylbenzene	ND	0.050								
Naphthalene	ND	0.10								

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 Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001739**
03-Mar-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **mb1**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **S66039**	RunNo: **66039**
Prep Date:	Analysis Date: **1/23/2020**	SeqNo: **2267783** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Bromobenzene	ND	0.050								
Bromoform	ND	0.050								
2-Chlorotoluene	ND	0.050								
4-Chlorotoluene	ND	0.050								
1,2-Dibromo-3-chloropropane	ND	0.10								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Hexachlorobutadiene	ND	0.10								
4-Isopropyltoluene	ND	0.050								
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
1,2,3-Trichlorobenzene	ND	0.10								
1,2,4-Trichlorobenzene	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								
Surr: Dibromofluoromethane	0.53		0.5000		107	70	130			
Surr: 1,2-Dichloroethane-d4	0.46		0.5000		92.5	70	130			
Surr: Toluene-d8	0.48		0.5000		95.5	70	130			
Surr: 4-Bromofluorobenzene	0.49		0.5000		97.5	70	130			

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS**	Batch ID: **S66039**	RunNo: **66039**
Prep Date:	Analysis Date: **1/23/2020**	SeqNo: **2267784** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Dibromofluoromethane	0.49		0.5000		97.8	70	130			
Surr: 1,2-Dichloroethane-d4	0.47		0.5000		93.9	70	130			
Surr: Toluene-d8	0.48		0.5000		96.5	70	130			
Surr: 4-Bromofluorobenzene	0.49		0.5000		97.3	70	130			

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS**	Batch ID: **R66046**	RunNo: **66046**
Prep Date:	Analysis Date: **1/23/2020**	SeqNo: **2268075** Units: **mg/Kg**

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

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001739**
03-Mar-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS**	Batch ID: **R66046**	RunNo: **66046**
Prep Date:	Analysis Date: **1/23/2020**	SeqNo: **2268075** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	1.000	0	102	70	130			
Toluene	0.95	0.050	1.000	0	94.5	70	130			
Chlorobenzene	0.99	0.050	1.000	0	99.3	70	130			
1,1-Dichloroethene	1.0	0.050	1.000	0	102	70	130			
Trichloroethene (TCE)	0.90	0.050	1.000	0	90.2	70	130			
Surr: Dibromofluoromethane	0.50		0.5000		100	70	130			
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		90.1	70	130			
Surr: Toluene-d8	0.48		0.5000		96.8	70	130			
Surr: 4-Bromofluorobenzene	0.47		0.5000		93.6	70	130			

Sample ID: **2001739-022ams**	SampType: **MS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **SWMU1-20 Toe 0.5-**	Batch ID: **R66046**	RunNo: **66046**
Prep Date:	Analysis Date: **1/23/2020**	SeqNo: **2268078** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	6.0	0.088	3.516	2.277	106	70	130			
Toluene	11	0.18	3.516	7.980	95.7	70	130			
Chlorobenzene	3.6	0.18	3.516	0	102	70	130			
1,1-Dichloroethene	3.8	0.18	3.516	0	109	70	130			
Trichloroethene (TCE)	3.4	0.18	3.516	0	96.0	70	130			
Surr: Dibromofluoromethane	1.8		1.758		102	70	130			
Surr: 1,2-Dichloroethane-d4	1.7		1.758		96.9	70	130			
Surr: Toluene-d8	1.8		1.758		102	70	130			
Surr: 4-Bromofluorobenzene	1.5		1.758		87.1	70	130			

Sample ID: **2001739-022amsd**	SampType: **MSD**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **SWMU1-20 Toe 0.5-**	Batch ID: **R66046**	RunNo: **66046**
Prep Date:	Analysis Date: **1/23/2020**	SeqNo: **2268079** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	5.8	0.088	3.516	2.277	99.9	70	130	3.43	20	
Toluene	11	0.18	3.516	7.980	77.0	70	130	5.96	20	
Chlorobenzene	3.3	0.18	3.516	0	94.8	70	130	7.09	20	
1,1-Dichloroethene	3.5	0.18	3.516	0	99.0	70	130	9.30	20	
Trichloroethene (TCE)	3.2	0.18	3.516	0	90.1	70	130	6.35	20	
Surr: Dibromofluoromethane	1.8		1.758		103	70	130	0	0	
Surr: 1,2-Dichloroethane-d4	1.7		1.758		99.4	70	130	0	0	
Surr: Toluene-d8	1.7		1.758		99.4	70	130	0	0	
Surr: 4-Bromofluorobenzene	1.5		1.758		86.7	70	130	0	0	

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001739**
03-Mar-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **mb1**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**	
Client ID: **PBS**	Batch ID: **R66046**	RunNo: **66046**	
Prep Date:	Analysis Date: **1/23/2020**	SeqNo: **2268098**	Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	ND	0.050								
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	ND	0.75								
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	ND	0.15								
2-Butanone	ND	0.50								
Carbon disulfide	ND	0.50								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	ND	0.050								
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.050								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.050								
1,1-Dichloroethene	ND	0.050								
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.10								

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 Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001739**
03-Mar-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **mb1**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **R66046**	RunNo: **66046**
Prep Date:	Analysis Date: **1/23/2020**	SeqNo: **2268098** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
4-Methyl-2-pentanone	ND	0.50								
Methylene chloride	ND	0.15								
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
1,2,3-Trichlorobenzene	ND	0.10								
1,2,4-Trichlorobenzene	ND	0.050								
1,1,1-Trichloroethane	ND	0.050								
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	ND	0.050								
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: Dibromofluoromethane	0.49		0.5000		98.6	70	130			
Surr: 1,2-Dichloroethane-d4	0.46		0.5000		91.0	70	130			
Surr: Toluene-d8	0.51		0.5000		101	70	130			
Surr: 4-Bromofluorobenzene	0.47		0.5000		94.4	70	130			

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS**	Batch ID: **R66078**	RunNo: **66078**
Prep Date:	Analysis Date: **1/24/2020**	SeqNo: **2269455** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	1.000	0	107	70	130			
Toluene	0.96	0.050	1.000	0	95.7	70	130			
Chlorobenzene	1.0	0.050	1.000	0	100	70	130			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001739**
03-Mar-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS**	Batch ID: **R66078**	RunNo: **66078**
Prep Date:	Analysis Date: **1/24/2020**	SeqNo: **2269455** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	1.1	0.050	1.000	0	109	70	130			
Trichloroethene (TCE)	0.94	0.050	1.000	0	93.6	70	130			
Surr: Dibromofluoromethane	0.49		0.5000		97.1	70	130			
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		90.0	70	130			
Surr: Toluene-d8	0.47		0.5000		93.8	70	130			
Surr: 4-Bromofluorobenzene	0.45		0.5000		90.8	70	130			

Sample ID: **mb1**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **R66078**	RunNo: **66078**
Prep Date:	Analysis Date: **1/24/2020**	SeqNo: **2269464** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	ND	0.050								
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	ND	0.75								
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	ND	0.15								
2-Butanone	ND	0.50								
Carbon disulfide	ND	0.50								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	ND	0.050								
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001739**
03-Mar-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **mb1**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **R66078**	RunNo: **66078**
Prep Date:	Analysis Date: **1/24/2020**	SeqNo: **2269464** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.050								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.050								
1,1-Dichloroethene	ND	0.050								
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.10								
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
4-Methyl-2-pentanone	ND	0.50								
Methylene chloride	ND	0.15								
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
1,2,3-Trichlorobenzene	ND	0.10								
1,2,4-Trichlorobenzene	ND	0.050								
1,1,1-Trichloroethane	ND	0.050								
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	ND	0.050								
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: Dibromofluoromethane	0.49		0.5000		97.3	70	130			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001739**
03-Mar-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **mb1**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **R66078**	RunNo: **66078**
Prep Date:	Analysis Date: **1/24/2020**	SeqNo: **2269464** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	0.46		0.5000		91.2	70	130			
Surr: Toluene-d8	0.49		0.5000		98.1	70	130			
Surr: 4-Bromofluorobenzene	0.46		0.5000		92.6	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2001739**

03-Mar-20

Client: Marathon Refining Gallup

Project: Gallup SWMUI Sampling Event

Sample ID: **LCS-49987** SampType: **LCS** TestCode: **Volatiles by 8260B/1311**

Client ID: **LCSS** Batch ID: **49987** RunNo: **66067**

Prep Date: **1/22/2020** Analysis Date: **1/26/2020** SeqNo: **2269022** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.44	0.10	0.4000	0	110	70	130			
Surr: 1,2-Dichloroethane-d4	0.21		0.2000		105	70	130			
Surr: Dibromofluoromethane	0.20		0.2000		98.2	70	130			

Sample ID: **MB-49987** SampType: **MBLK** TestCode: **Volatiles by 8260B/1311**

Client ID: **PBS** Batch ID: **49987** RunNo: **66067**

Prep Date: **1/22/2020** Analysis Date: **1/26/2020** SeqNo: **2269023** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.50								
Surr: 1,2-Dichloroethane-d4	0.21		0.2000		105	70	130			
Surr: Dibromofluoromethane	0.20		0.2000		99.0	70	130			

Sample ID: **LCS-50019** SampType: **LCS** TestCode: **Volatiles by 8260B/1311**

Client ID: **LCSS** Batch ID: **50019** RunNo: **66067**

Prep Date: **1/23/2020** Analysis Date: **1/26/2020** SeqNo: **2269724** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.47	0.10	0.4000	0	118	70	130			
Surr: 1,2-Dichloroethane-d4	0.22		0.2000		108	70	130			
Surr: Dibromofluoromethane	0.21		0.2000		104	70	130			

Sample ID: **MB-50019** SampType: **MBLK** TestCode: **Volatiles by 8260B/1311**

Client ID: **PBS** Batch ID: **50019** RunNo: **66067**

Prep Date: **1/23/2020** Analysis Date: **1/26/2020** SeqNo: **2269725** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.50								
Surr: 1,2-Dichloroethane-d4	0.22		0.2000		109	70	130			
Surr: Dibromofluoromethane	0.21		0.2000		103	70	130			

Sample ID: **2001739-008ams** SampType: **MS** TestCode: **Volatiles by 8260B/1311**

Client ID: **SWMU1-8 Sludge 2.** Batch ID: **50019** RunNo: **66067**

Prep Date: **1/23/2020** Analysis Date: **1/26/2020** SeqNo: **2269743** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.53	0.10	0.4000	0.05956	118	68.3	131			
Surr: 1,2-Dichloroethane-d4	0.21		0.2000		107	70	130			
Surr: Dibromofluoromethane	0.20		0.2000		102	70	130			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001739**
03-Mar-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **2001739-008amsd** SampType: **MSD** TestCode: **Volatiles by 8260B/1311**
Client ID: **SWMU1-8 Sludge 2.** Batch ID: **50019** RunNo: **66067**
Prep Date: **1/23/2020** Analysis Date: **1/26/2020** SeqNo: **2269752** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.51	0.50	0.4000	0.05956	113	68.3	131	3.87	20	
Surr: 1,2-Dichloroethane-d4	0.22		0.2000		110	70	130	0	0	
Surr: Dibromofluoromethane	0.21		0.2000		103	70	130	0	0	

Sample ID: **LCS-50049** SampType: **LCS** TestCode: **Volatiles by 8260B/1311**
Client ID: **LCSS** Batch ID: **50049** RunNo: **66067**
Prep Date: **1/25/2020** Analysis Date: **1/26/2020** SeqNo: **2269753** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.44	0.10	0.4000	0	109	70	130			
Surr: 1,2-Dichloroethane-d4	0.21		0.2000		106	70	130			
Surr: Dibromofluoromethane	0.20		0.2000		101	70	130			

Sample ID: **MB-50049** SampType: **MBLK** TestCode: **Volatiles by 8260B/1311**
Client ID: **PBS** Batch ID: **50049** RunNo: **66067**
Prep Date: **1/25/2020** Analysis Date: **1/26/2020** SeqNo: **2269754** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.50								
Surr: 1,2-Dichloroethane-d4	0.21		0.2000		106	70	130			
Surr: Dibromofluoromethane	0.20		0.2000		101	70	130			

Sample ID: **2001739-039ams** SampType: **MS** TestCode: **Volatiles by 8260B/1311**
Client ID: **SWMU1-10 0.0** Batch ID: **50049** RunNo: **66067**
Prep Date: **1/25/2020** Analysis Date: **1/26/2020** SeqNo: **2269756** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.50	0.40	0.4000	0.01752	121	68.3	131			
Surr: 1,2-Dichloroethane-d4	0.22		0.2000		109	70	130			
Surr: Dibromofluoromethane	0.20		0.2000		102	70	130			

Sample ID: **2001739-039amsd** SampType: **MSD** TestCode: **Volatiles by 8260B/1311**
Client ID: **SWMU1-10 0.0** Batch ID: **50049** RunNo: **66067**
Prep Date: **1/25/2020** Analysis Date: **1/26/2020** SeqNo: **2269757** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.48	0.40	0.4000	0.01752	114	68.3	131	5.44	20	
Surr: 1,2-Dichloroethane-d4	0.21		0.2000		105	70	130	0	0	
Surr: Dibromofluoromethane	0.20		0.2000		101	70	130	0	0	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2001739**

03-Mar-20

Client: Marathon Refining Gallup

Project: Gallup SWMUI Sampling Event

Sample ID: **LCS-50050** SampType: **LCS** TestCode: **Volatiles by 8260B/1311**

Client ID: **LCSS** Batch ID: **50050** RunNo: **66079**

Prep Date: **1/26/2020** Analysis Date: **1/27/2020** SeqNo: **2269991** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.48	0.30	0.4000	0	121	70	130			
Surr: 1,2-Dichloroethane-d4	0.21		0.2000		106	70	130			
Surr: Dibromofluoromethane	0.20		0.2000		99.9	70	130			

Sample ID: **MB-50050** SampType: **MBLK** TestCode: **Volatiles by 8260B/1311**

Client ID: **PBS** Batch ID: **50050** RunNo: **66079**

Prep Date: **1/26/2020** Analysis Date: **1/27/2020** SeqNo: **2269992** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.50								
Surr: 1,2-Dichloroethane-d4	0.21		0.2000		105	70	130			
Surr: 4-Bromofluorobenzene	0.21		0.2000		104	70	130			
Surr: Dibromofluoromethane	0.20		0.2000		99.4	70	130			
Surr: Toluene-d8	0.19		0.2000		92.9	70	130			

Sample ID: **2001739-032amsd** SampType: **MSD** TestCode: **Volatiles by 8260B/1311**

Client ID: **SWMU1-10 Sludge 4** Batch ID: **50050** RunNo: **66079**

Prep Date: **1/26/2020** Analysis Date: **1/27/2020** SeqNo: **2269998** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.72	0.30	0.4000	0.2702	111	68.3	131	0	20	
Surr: 1,2-Dichloroethane-d4	0.20		0.2000		101	70	130	0	0	
Surr: Dibromofluoromethane	0.19		0.2000		96.8	70	130	0	0	

Sample ID: **2001739-032ams** SampType: **MS** TestCode: **Volatiles by 8260B/1311**

Client ID: **SWMU1-10 Sludge 4** Batch ID: **50050** RunNo: **66079**

Prep Date: **1/26/2020** Analysis Date: **1/27/2020** SeqNo: **2269999** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.84	0.30	0.4000	0.2702	143	68.3	131			S
Surr: 1,2-Dichloroethane-d4	0.24		0.2000		122	70	130			
Surr: 4-Bromofluorobenzene	0.21		0.2000		104	70	130			
Surr: Dibromofluoromethane	0.20		0.2000		98.6	70	130			
Surr: Toluene-d8	0.19		0.2000		93.5	70	130			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001739**
03-Mar-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **mb-49952**	SampType: **MBLK**		TestCode: **EPA Method 8270C: Semivolatiles**		
Client ID: **PBS**	Batch ID: **49952**		RunNo: **66102**		
Prep Date: **1/21/2020**	Analysis Date: **1/27/2020**		SeqNo: **2270228**	Units: **mg/Kg**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	0.20								
Acenaphthylene	ND	0.20								
Aniline	ND	0.20								
Anthracene	ND	0.20								
Azobenzene	ND	0.20								
Benz(a)anthracene	ND	0.20								
Benzo(a)pyrene	ND	0.20								
Benzo(b)fluoranthene	ND	0.20								
Benzo(g,h,i)perylene	ND	0.20								
Benzo(k)fluoranthene	ND	0.20								
Benzoic acid	ND	0.50								
Benzyl alcohol	ND	0.20								
Bis(2-chloroethoxy)methane	ND	0.20								
Bis(2-chloroethyl)ether	ND	0.20								
Bis(2-chloroisopropyl)ether	ND	0.20								
Bis(2-ethylhexyl)phthalate	ND	0.50								
4-Bromophenyl phenyl ether	ND	0.20								
Butyl benzyl phthalate	ND	0.20								
Carbazole	ND	0.20								
4-Chloro-3-methylphenol	ND	0.50								
4-Chloroaniline	ND	0.50								
2-Chloronaphthalene	ND	0.25								
2-Chlorophenol	ND	0.20								
4-Chlorophenyl phenyl ether	ND	0.20								
Chrysene	ND	0.20								
Di-n-butyl phthalate	ND	0.40								
Di-n-octyl phthalate	ND	0.40								
Dibenz(a,h)anthracene	ND	0.20								
Dibenzofuran	ND	0.20								
1,2-Dichlorobenzene	ND	0.20								
1,3-Dichlorobenzene	ND	0.20								
1,4-Dichlorobenzene	ND	0.20								
3,3´-Dichlorobenzidine	ND	0.25								
Diethyl phthalate	0.32	0.50								J
Dimethyl phthalate	ND	0.20								
2,4-Dichlorophenol	ND	0.40								
2,4-Dimethylphenol	ND	0.30								
4,6-Dinitro-2-methylphenol	ND	0.40								
2,4-Dinitrophenol	ND	0.50								

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001739**
03-Mar-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **mb-49952**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS**	Batch ID: **49952**	RunNo: **66102**
Prep Date: **1/21/2020**	Analysis Date: **1/27/2020**	SeqNo: **2270228** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	0.50								
2,6-Dinitrotoluene	ND	0.50								
Fluoranthene	ND	0.20								
Fluorene	ND	0.20								
Hexachlorobenzene	ND	0.20								
Hexachlorobutadiene	ND	0.20								
Hexachlorocyclopentadiene	ND	0.20								
Hexachloroethane	ND	0.20								
Indeno(1,2,3-cd)pyrene	ND	0.20								
Isophorone	ND	0.40								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
2-Methylphenol	ND	0.40								
3+4-Methylphenol	ND	0.20								
N-Nitrosodi-n-propylamine	ND	0.20								
N-Nitrosodiphenylamine	ND	0.20								
Naphthalene	ND	0.20								
2-Nitroaniline	ND	0.20								
3-Nitroaniline	ND	0.20								
4-Nitroaniline	ND	0.40								
Nitrobenzene	ND	0.40								
2-Nitrophenol	ND	0.20								
4-Nitrophenol	ND	0.25								
Pentachlorophenol	ND	0.40								
Phenanthrene	ND	0.20								
Phenol	ND	0.20								
Pyrene	ND	0.20								
Pyridine	ND	0.40								
1,2,4-Trichlorobenzene	ND	0.20								
2,4,5-Trichlorophenol	ND	0.20								
2,4,6-Trichlorophenol	ND	0.20								
Surr: 2-Fluorophenol	1.9		3.330		57.8	26.7	85.9			
Surr: Phenol-d5	2.1		3.330		63.1	18.5	101			
Surr: 2,4,6-Tribromophenol	2.4		3.330		72.8	35.8	85.6			
Surr: Nitrobenzene-d5	1.2		1.670		72.2	40.8	95.2			
Surr: 2-Fluorobiphenyl	1.1		1.670		67.0	34.7	85.2			
Surr: 4-Terphenyl-d14	1.1		1.670		65.8	37.4	91.3			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001739**
03-Mar-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **lcs-49952**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS**	Batch ID: **49952**	RunNo: **66102**
Prep Date: **1/21/2020**	Analysis Date: **1/27/2020**	SeqNo: **2270229** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.93	0.20	1.670	0	55.5	46	89.5			
4-Chloro-3-methylphenol	2.1	0.50	3.330	0	64.4	44.1	101			
2-Chlorophenol	1.7	0.20	3.330	0	52.4	47	91			
1,4-Dichlorobenzene	0.78	0.20	1.670	0	46.7	41.4	85.8			
2,4-Dinitrotoluene	0.88	0.50	1.670	0	52.8	37.4	82			
N-Nitrosodi-n-propylamine	0.96	0.20	1.670	0	57.3	47.8	92.9			
4-Nitrophenol	1.8	0.25	3.330	0	53.8	45	94.3			
Pentachlorophenol	1.5	0.40	3.330	0	44.8	31.7	76.9			
Phenol	1.8	0.20	3.330	0	54.0	49.4	92.5			
Pyrene	0.98	0.20	1.670	0	58.6	52.9	82.7			
1,2,4-Trichlorobenzene	0.91	0.20	1.670	0	54.2	43.6	98.1			
Surr: 2-Fluorophenol	1.6		3.330		49.4	26.7	85.9			
Surr: Phenol-d5	1.8		3.330		55.5	18.5	101			
Surr: 2,4,6-Tribromophenol	2.2		3.330		67.5	35.8	85.6			
Surr: Nitrobenzene-d5	1.1		1.670		63.4	40.8	95.2			
Surr: 2-Fluorobiphenyl	0.95		1.670		57.1	34.7	85.2			
Surr: 4-Terphenyl-d14	1.0		1.670		61.5	37.4	91.3			

Sample ID: **MB-49975**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS**	Batch ID: **49975**	RunNo: **66232**
Prep Date: **1/22/2020**	Analysis Date: **1/31/2020**	SeqNo: **2275059** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	0.20								
Acenaphthylene	ND	0.20								
Aniline	ND	0.20								
Anthracene	ND	0.20								
Azobenzene	ND	0.20								
Benz(a)anthracene	ND	0.20								
Benzo(a)pyrene	ND	0.20								
Benzo(b)fluoranthene	ND	0.20								
Benzo(g,h,i)perylene	ND	0.20								
Benzo(k)fluoranthene	ND	0.20								
Benzoic acid	ND	0.50								
Benzyl alcohol	ND	0.20								
Bis(2-chloroethoxy)methane	ND	0.20								
Bis(2-chloroethyl)ether	ND	0.20								
Bis(2-chloroisopropyl)ether	ND	0.20								
Bis(2-ethylhexyl)phthalate	ND	0.50								

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001739**
03-Mar-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **MB-49975**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS**	Batch ID: **49975**	RunNo: **66232**
Prep Date: **1/22/2020**	Analysis Date: **1/31/2020**	SeqNo: **2275059** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Bromophenyl phenyl ether	ND	0.20								
Butyl benzyl phthalate	ND	0.20								
Carbazole	ND	0.20								
4-Chloro-3-methylphenol	ND	0.50								
4-Chloroaniline	ND	0.50								
2-Chloronaphthalene	ND	0.25								
2-Chlorophenol	ND	0.20								
4-Chlorophenyl phenyl ether	ND	0.20								
Chrysene	ND	0.20								
Di-n-butyl phthalate	ND	0.40								
Di-n-octyl phthalate	ND	0.40								
Dibenz(a,h)anthracene	ND	0.20								
Dibenzofuran	ND	0.20								
1,2-Dichlorobenzene	ND	0.20								
1,3-Dichlorobenzene	ND	0.20								
1,4-Dichlorobenzene	ND	0.20								
3,3´-Dichlorobenzidine	ND	0.25								
Diethyl phthalate	ND	0.50								
Dimethyl phthalate	ND	0.20								
2,4-Dichlorophenol	ND	0.40								
2,4-Dimethylphenol	ND	0.30								
4,6-Dinitro-2-methylphenol	ND	0.40								
2,4-Dinitrophenol	ND	0.50								
2,4-Dinitrotoluene	ND	0.50								
2,6-Dinitrotoluene	ND	0.50								
Fluoranthene	ND	0.20								
Fluorene	ND	0.20								
Hexachlorobenzene	ND	0.20								
Hexachlorobutadiene	ND	0.20								
Hexachlorocyclopentadiene	ND	0.20								
Hexachloroethane	ND	0.20								
Indeno(1,2,3-cd)pyrene	ND	0.20								
Isophorone	ND	0.40								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
2-Methylphenol	ND	0.40								
3+4-Methylphenol	ND	0.20								
N-Nitrosodi-n-propylamine	ND	0.20								
N-Nitrosodiphenylamine	ND	0.20								

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001739**
03-Mar-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **MB-49975** SampType: **MBLK** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS** Batch ID: **49975** RunNo: **66232**
Prep Date: **1/22/2020** Analysis Date: **1/31/2020** SeqNo: **2275059** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	0.20								
2-Nitroaniline	ND	0.20								
3-Nitroaniline	ND	0.20								
4-Nitroaniline	ND	0.40								
Nitrobenzene	ND	0.40								
2-Nitrophenol	ND	0.20								
4-Nitrophenol	ND	0.25								
Pentachlorophenol	ND	0.40								
Phenanthrene	ND	0.20								
Phenol	ND	0.20								
Pyrene	ND	0.20								
Pyridine	ND	0.40								
1,2,4-Trichlorobenzene	ND	0.20								
2,4,5-Trichlorophenol	ND	0.20								
2,4,6-Trichlorophenol	ND	0.20								
Surr: 2-Fluorophenol	1.5		3.330		45.9	26.7	85.9			
Surr: Phenol-d5	1.6		3.330		48.6	18.5	101			
Surr: 2,4,6-Tribromophenol	2.1		3.330		63.6	35.8	85.6			
Surr: Nitrobenzene-d5	0.92		1.670		54.9	40.8	95.2			
Surr: 2-Fluorobiphenyl	1.0		1.670		60.2	34.7	85.2			
Surr: 4-Terphenyl-d14	0.97		1.670		58.3	37.4	91.3			

Sample ID: **lcs-49975** SampType: **LCS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS** Batch ID: **49975** RunNo: **66232**
Prep Date: **1/22/2020** Analysis Date: **1/31/2020** SeqNo: **2275060** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.2	0.20	1.670	0	69.0	46	89.5			
4-Chloro-3-methylphenol	2.2	0.50	3.330	0	65.7	44.1	101			
2-Chlorophenol	2.2	0.20	3.330	0	65.0	47	91			
1,4-Dichlorobenzene	0.96	0.20	1.670	0	57.7	41.4	85.8			
2,4-Dinitrotoluene	1.0	0.50	1.670	0	62.7	37.4	82			
N-Nitrosodi-n-propylamine	1.1	0.20	1.670	0	66.9	47.8	92.9			
4-Nitrophenol	1.9	0.25	3.330	0	57.9	45	94.3			
Pentachlorophenol	1.8	0.40	3.330	0	55.3	31.7	76.9			
Phenol	2.1	0.20	3.330	0	62.8	49.4	92.5			
Pyrene	1.1	0.20	1.670	0	65.8	52.9	82.7			
1,2,4-Trichlorobenzene	1.1	0.20	1.670	0	66.3	43.6	98.1			
Surr: 2-Fluorophenol	2.1		3.330		61.9	26.7	85.9			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001739**
03-Mar-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **lcs-49975** SampType: **LCS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS** Batch ID: **49975** RunNo: **66232**
Prep Date: **1/22/2020** Analysis Date: **1/31/2020** SeqNo: **2275060** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Phenol-d5	2.2		3.330		65.4	18.5	101			
Surr: 2,4,6-Tribromophenol	2.3		3.330		69.2	35.8	85.6			
Surr: Nitrobenzene-d5	1.3		1.670		76.1	40.8	95.2			
Surr: 2-Fluorobiphenyl	1.2		1.670		74.4	34.7	85.2			
Surr: 4-Terphenyl-d14	1.2		1.670		73.9	37.4	91.3			

Sample ID: **2001739-013Ams** SampType: **MS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **SWMU1-5 5.5-6** Batch ID: **49975** RunNo: **66232**
Prep Date: **1/22/2020** Analysis Date: **1/31/2020** SeqNo: **2275066** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.2	0.40	1.690	0	70.7	28	113			D
4-Chloro-3-methylphenol	2.0	1.0	3.369	0	60.1	28.8	121			D
2-Chlorophenol	1.7	0.40	3.369	0	50.7	15.4	115			D
1,4-Dichlorobenzene	0.68	0.40	1.690	0	40.3	15	107			D
2,4-Dinitrotoluene	ND	1.0	1.690	0	0	29.9	100			SD
N-Nitrosodi-n-propylamine	1.0	0.40	1.690	0	61.6	23.5	120			D
4-Nitrophenol	ND	0.51	3.369	0	0	42.3	125			SD
Pentachlorophenol	0.58	0.81	3.369	0	17.3	23.4	114			JSD
Phenol	2.0	0.40	3.369	0.4833	45.2	16.3	117			D
Pyrene	1.4	0.40	1.690	0	83.9	34.2	122			D
1,2,4-Trichlorobenzene	0.85	0.40	1.690	0	50.5	16.3	117			D
Surr: 2-Fluorophenol	1.5		3.369		45.0	26.7	85.9			D
Surr: Phenol-d5	1.8		3.369		52.3	18.5	101			D
Surr: 2,4,6-Tribromophenol	1.4		3.369		41.0	35.8	85.6			D
Surr: Nitrobenzene-d5	0.95		1.690		56.3	40.8	95.2			D
Surr: 2-Fluorobiphenyl	0.91		1.690		53.7	34.7	85.2			D
Surr: 4-Terphenyl-d14	0.81		1.690		48.1	37.4	91.3			D

Sample ID: **2001739-013Amsd** SampType: **MSD** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **SWMU1-5 5.5-6** Batch ID: **49975** RunNo: **66232**
Prep Date: **1/22/2020** Analysis Date: **1/31/2020** SeqNo: **2275067** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.3	0.36	1.513	0	83.6	28	113	5.71	33.1	D
4-Chloro-3-methylphenol	2.2	0.91	3.017	0	73.7	28.8	121	9.26	39	D
2-Chlorophenol	1.9	0.36	3.017	0	61.6	15.4	115	8.38	27.1	D
1,4-Dichlorobenzene	0.76	0.36	1.513	0	49.9	15	107	10.4	26.3	D
2,4-Dinitrotoluene	0.77	0.91	1.513	0	51.0	29.9	100	200	51.5	JRD
N-Nitrosodi-n-propylamine	0.90	0.36	1.513	0	59.4	23.5	120	14.5	22.8	D

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001739**
03-Mar-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **2001739-013Amsd** SampType: **MSD** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **SWMU1-5 5.5-6** Batch ID: **49975** RunNo: **66232**
Prep Date: **1/22/2020** Analysis Date: **1/31/2020** SeqNo: **2275067** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Nitrophenol	2.5	0.45	3.017	0	81.7	42.3	125	200	52.9	RD
Pentachlorophenol	0.47	0.72	3.017	0	15.4	23.4	114	22.2	52.1	JSD
Phenol	2.3	0.36	3.017	0.4833	59.1	16.3	117	12.1	28.8	D
Pyrene	1.3	0.36	1.513	0	84.1	34.2	122	10.8	37.1	D
1,2,4-Trichlorobenzene	0.99	0.36	1.513	0	65.5	16.3	117	15.0	28.4	D
Surr: 2-Fluorophenol	1.6		3.017		53.8	26.7	85.9	0	0	D
Surr: Phenol-d5	2.0		3.017		65.2	18.5	101	0	0	D
Surr: 2,4,6-Tribromophenol	1.3		3.017		42.6	35.8	85.6	0	0	D
Surr: Nitrobenzene-d5	0.96		1.513		63.2	40.8	95.2	0	0	D
Surr: 2-Fluorobiphenyl	1.1		1.513		70.8	34.7	85.2	0	0	D
Surr: 4-Terphenyl-d14	0.97		1.513		64.0	37.4	91.3	0	0	D

Sample ID: **mb-49999** SampType: **MBLK** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS** Batch ID: **49999** RunNo: **66266**
Prep Date: **1/23/2020** Analysis Date: **2/3/2020** SeqNo: **2276407** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	0.20								
Acenaphthylene	ND	0.20								
Aniline	ND	0.20								
Anthracene	ND	0.20								
Azobenzene	ND	0.20								
Benz(a)anthracene	ND	0.20								
Benzo(a)pyrene	ND	0.20								
Benzo(b)fluoranthene	ND	0.20								
Benzo(g,h,i)perylene	ND	0.20								
Benzo(k)fluoranthene	ND	0.20								
Benzoic acid	ND	0.50								
Benzyl alcohol	ND	0.20								
Bis(2-chloroethoxy)methane	ND	0.20								
Bis(2-chloroethyl)ether	ND	0.20								
Bis(2-chloroisopropyl)ether	ND	0.20								
Bis(2-ethylhexyl)phthalate	0.30	0.50								J
4-Bromophenyl phenyl ether	ND	0.20								
Butyl benzyl phthalate	ND	0.20								
Carbazole	ND	0.20								
4-Chloro-3-methylphenol	ND	0.50								
4-Chloroaniline	ND	0.50								
2-Chloronaphthalene	ND	0.25								

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001739**
03-Mar-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **mb-49999**	SampType: **MBLK**		TestCode: **EPA Method 8270C: Semivolatiles**		
Client ID: **PBS**	Batch ID: **49999**		RunNo: **66266**		
Prep Date: **1/23/2020**	Analysis Date: **2/3/2020**		SeqNo: **2276407**	Units: **mg/Kg**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2-Chlorophenol	ND	0.20								
4-Chlorophenyl phenyl ether	ND	0.20								
Chrysene	ND	0.20								
Di-n-butyl phthalate	ND	0.40								
Di-n-octyl phthalate	ND	0.40								
Dibenz(a,h)anthracene	ND	0.20								
Dibenzofuran	ND	0.20								
1,2-Dichlorobenzene	ND	0.20								
1,3-Dichlorobenzene	ND	0.20								
1,4-Dichlorobenzene	ND	0.20								
3,3´-Dichlorobenzidine	ND	0.25								
Diethyl phthalate	ND	0.50								
Dimethyl phthalate	ND	0.20								
2,4-Dichlorophenol	ND	0.40								
2,4-Dimethylphenol	ND	0.30								
4,6-Dinitro-2-methylphenol	ND	0.40								
2,4-Dinitrophenol	ND	0.50								
2,4-Dinitrotoluene	ND	0.50								
2,6-Dinitrotoluene	ND	0.50								
Fluoranthene	ND	0.20								
Fluorene	ND	0.20								
Hexachlorobenzene	ND	0.20								
Hexachlorobutadiene	ND	0.20								
Hexachlorocyclopentadiene	ND	0.20								
Hexachloroethane	ND	0.20								
Indeno(1,2,3-cd)pyrene	ND	0.20								
Isophorone	ND	0.40								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
2-Methylphenol	ND	0.40								
3+4-Methylphenol	ND	0.20								
N-Nitrosodi-n-propylamine	ND	0.20								
N-Nitrosodiphenylamine	ND	0.20								
Naphthalene	ND	0.20								
2-Nitroaniline	ND	0.20								
3-Nitroaniline	ND	0.20								
4-Nitroaniline	ND	0.40								
Nitrobenzene	ND	0.40								
2-Nitrophenol	ND	0.20								

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001739**
03-Mar-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **mb-49999** SampType: **MBLK** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS** Batch ID: **49999** RunNo: **66266**
Prep Date: **1/23/2020** Analysis Date: **2/3/2020** SeqNo: **2276407** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Nitrophenol	ND	0.25								
Pentachlorophenol	ND	0.40								
Phenanthrene	ND	0.20								
Phenol	ND	0.20								
Pyrene	ND	0.20								
Pyridine	ND	0.40								
1,2,4-Trichlorobenzene	ND	0.20								
2,4,5-Trichlorophenol	ND	0.20								
2,4,6-Trichlorophenol	ND	0.20								
Surr: 2-Fluorophenol	1.3		3.330		39.5	26.7	85.9			
Surr: Phenol-d5	1.6		3.330		49.3	18.5	101			
Surr: 2,4,6-Tribromophenol	2.1		3.330		61.9	35.8	85.6			
Surr: Nitrobenzene-d5	0.87		1.670		52.0	40.8	95.2			
Surr: 2-Fluorobiphenyl	1.0		1.670		60.2	34.7	85.2			
Surr: 4-Terphenyl-d14	1.3		1.670		76.8	37.4	91.3			

Sample ID: **lcs-49999** SampType: **LCS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS** Batch ID: **49999** RunNo: **66266**
Prep Date: **1/23/2020** Analysis Date: **2/3/2020** SeqNo: **2276418** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.2	0.20	1.670	0	72.6	46	89.5			
4-Chloro-3-methylphenol	2.6	0.50	3.330	0	78.7	44.1	101			
2-Chlorophenol	2.2	0.20	3.330	0	66.5	47	91			
1,4-Dichlorobenzene	1.0	0.20	1.670	0	61.2	41.4	85.8			
2,4-Dinitrotoluene	1.1	0.50	1.670	0	67.5	37.4	82			
N-Nitrosodi-n-propylamine	1.2	0.20	1.670	0	72.1	47.8	92.9			
4-Nitrophenol	2.4	0.25	3.330	0	71.1	45	94.3			
Pentachlorophenol	2.2	0.40	3.330	0	65.3	31.7	76.9			
Phenol	2.3	0.20	3.330	0	69.1	49.4	92.5			
Pyrene	1.1	0.20	1.670	0	68.7	52.9	82.7			
1,2,4-Trichlorobenzene	1.2	0.20	1.670	0	70.3	43.6	98.1			
Surr: 2-Fluorophenol	2.0		3.330		61.3	26.7	85.9			
Surr: Phenol-d5	2.3		3.330		68.6	18.5	101			
Surr: 2,4,6-Tribromophenol	2.4		3.330		72.3	35.8	85.6			
Surr: Nitrobenzene-d5	1.3		1.670		75.0	40.8	95.2			
Surr: 2-Fluorobiphenyl	1.3		1.670		76.3	34.7	85.2			
Surr: 4-Terphenyl-d14	1.3		1.670		76.4	37.4	91.3			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001739**
03-Mar-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **2001739-033Ams** SampType: **MS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **SWMU1-7 Clay 4-5 ft** Batch ID: **49999** RunNo: **66266**
Prep Date: **1/23/2020** Analysis Date: **2/3/2020** SeqNo: **2276423** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.99	0.38	1.571	0	63.0	28	113			D
4-Chloro-3-methylphenol	2.0	0.94	3.132	0	63.6	28.8	121			D
2-Chlorophenol	1.8	0.38	3.132	0	56.1	15.4	115			D
1,4-Dichlorobenzene	0.66	0.38	1.571	0	42.0	15	107			D
2,4-Dinitrotoluene	0.96	0.94	1.571	0	61.2	29.9	100			D
N-Nitrosodi-n-propylamine	0.88	0.38	1.571	0	56.0	23.5	120			D
4-Nitrophenol	1.5	0.47	3.132	0	48.6	42.3	125			D
Pentachlorophenol	1.2	0.75	3.132	0	37.3	23.4	114			D
Phenol	1.9	0.38	3.132	0	61.3	16.3	117			D
Pyrene	1.2	0.38	1.571	0.2751	58.5	34.2	122			D
1,2,4-Trichlorobenzene	0.89	0.38	1.571	0	56.5	16.3	117			D
Surr: 2-Fluorophenol	1.5		3.132		47.1	26.7	85.9			D
Surr: Phenol-d5	1.9		3.132		60.0	18.5	101			D
Surr: 2,4,6-Tribromophenol	1.6		3.132		52.5	35.8	85.6			D
Surr: Nitrobenzene-d5	0.72		1.571		46.0	40.8	95.2			D
Surr: 2-Fluorobiphenyl	0.95		1.571		60.6	34.7	85.2			D
Surr: 4-Terphenyl-d14	0.94		1.571		60.2	37.4	91.3			D

Sample ID: **2001739-033Amsd** SampType: **MSD** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **SWMU1-7 Clay 4-5 ft** Batch ID: **49999** RunNo: **66266**
Prep Date: **1/23/2020** Analysis Date: **2/3/2020** SeqNo: **2276424** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.86	0.39	1.635	0	52.6	28	113	13.9	33.1	D
4-Chloro-3-methylphenol	1.6	0.98	3.260	0	48.7	28.8	121	22.4	39	D
2-Chlorophenol	0.83	0.39	3.260	0	25.5	15.4	115	71.4	27.1	RD
1,4-Dichlorobenzene	0.25	0.39	1.635	0	15.6	15	107	88.5	26.3	JRD
2,4-Dinitrotoluene	ND	0.98	1.635	0	0	29.9	100	200	51.5	RSD
N-Nitrosodi-n-propylamine	0.46	0.39	1.635	0	28.3	23.5	120	61.9	22.8	RD
4-Nitrophenol	ND	0.49	3.260	0	0	42.3	125	200	52.9	RSD
Pentachlorophenol	0.42	0.78	3.260	0	12.8	23.4	114	95.0	52.1	JRSD
Phenol	0.97	0.39	3.260	0	29.7	16.3	117	65.9	28.8	RD
Pyrene	2.1	0.39	1.635	0.2751	113	34.2	122	55.8	37.1	RD
1,2,4-Trichlorobenzene	0.53	0.39	1.635	0	32.2	16.3	117	51.0	28.4	RD
Surr: 2-Fluorophenol	0.61		3.260		18.6	26.7	85.9	0	0	SD
Surr: Phenol-d5	0.91		3.260		27.9	18.5	101	0	0	D
Surr: 2,4,6-Tribromophenol	0.70		3.260		21.6	35.8	85.6	0	0	SD
Surr: Nitrobenzene-d5	0.40		1.635		24.6	40.8	95.2	0	0	SD
Surr: 2-Fluorobiphenyl	0.69		1.635		42.0	34.7	85.2	0	0	D

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001739**
03-Mar-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **2001739-033Amsd** SampType: **MSD** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **SWMU1-7 Clay 4-5 ft** Batch ID: **49999** RunNo: **66266**
Prep Date: **1/23/2020** Analysis Date: **2/3/2020** SeqNo: **2276424** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	0.70		1.635		42.6	37.4	91.3	0	0	D

Sample ID: **mb-50034** SampType: **MBLK** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS** Batch ID: **50034** RunNo: **66301**
Prep Date: **1/24/2020** Analysis Date: **2/4/2020** SeqNo: **2277567** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	0.20								
Acenaphthylene	ND	0.20								
Aniline	ND	0.20								
Anthracene	ND	0.20								
Azobenzene	ND	0.20								
Benz(a)anthracene	ND	0.20								
Benzo(a)pyrene	ND	0.20								
Benzo(b)fluoranthene	ND	0.20								
Benzo(g,h,i)perylene	ND	0.20								
Benzo(k)fluoranthene	ND	0.20								
Benzoic acid	ND	0.50								
Benzyl alcohol	ND	0.20								
Bis(2-chloroethoxy)methane	ND	0.20								
Bis(2-chloroethyl)ether	ND	0.20								
Bis(2-chloroisopropyl)ether	ND	0.20								
Bis(2-ethylhexyl)phthalate	ND	0.50								
4-Bromophenyl phenyl ether	ND	0.20								
Butyl benzyl phthalate	ND	0.20								
Carbazole	ND	0.20								
4-Chloro-3-methylphenol	ND	0.50								
4-Chloroaniline	ND	0.50								
2-Chloronaphthalene	ND	0.25								
2-Chlorophenol	ND	0.20								
4-Chlorophenyl phenyl ether	ND	0.20								
Chrysene	ND	0.20								
Di-n-butyl phthalate	ND	0.40								
Di-n-octyl phthalate	ND	0.40								
Dibenz(a,h)anthracene	ND	0.20								
Dibenzofuran	ND	0.20								
1,2-Dichlorobenzene	ND	0.20								
1,3-Dichlorobenzene	ND	0.20								
1,4-Dichlorobenzene	ND	0.20								

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001739**
03-Mar-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **mb-50034**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS**	Batch ID: **50034**	RunNo: **66301**
Prep Date: **1/24/2020**	Analysis Date: **2/4/2020**	SeqNo: **2277567** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
3,3´-Dichlorobenzidine	ND	0.25								
Diethyl phthalate	ND	0.50								
Dimethyl phthalate	ND	0.20								
2,4-Dichlorophenol	ND	0.40								
2,4-Dimethylphenol	ND	0.30								
4,6-Dinitro-2-methylphenol	ND	0.40								
2,4-Dinitrophenol	ND	0.50								
2,4-Dinitrotoluene	ND	0.50								
2,6-Dinitrotoluene	ND	0.50								
Fluoranthene	ND	0.20								
Fluorene	ND	0.20								
Hexachlorobenzene	ND	0.20								
Hexachlorobutadiene	ND	0.20								
Hexachlorocyclopentadiene	ND	0.20								
Hexachloroethane	ND	0.20								
Indeno(1,2,3-cd)pyrene	ND	0.20								
Isophorone	ND	0.40								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
2-Methylphenol	ND	0.40								
3+4-Methylphenol	ND	0.20								
N-Nitrosodi-n-propylamine	ND	0.20								
N-Nitrosodiphenylamine	ND	0.20								
Naphthalene	ND	0.20								
2-Nitroaniline	ND	0.20								
3-Nitroaniline	ND	0.20								
4-Nitroaniline	ND	0.40								
Nitrobenzene	ND	0.40								
2-Nitrophenol	ND	0.20								
4-Nitrophenol	ND	0.25								
Pentachlorophenol	ND	0.40								
Phenanthrene	ND	0.20								
Phenol	ND	0.20								
Pyrene	ND	0.20								
Pyridine	ND	0.40								
1,2,4-Trichlorobenzene	ND	0.20								
2,4,5-Trichlorophenol	ND	0.20								
2,4,6-Trichlorophenol	ND	0.20								
Surr: 2-Fluorophenol	1.6		3.330		48.8	26.7	85.9			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001739**
03-Mar-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **mb-50034** SampType: **MBLK** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS** Batch ID: **50034** RunNo: **66301**
Prep Date: **1/24/2020** Analysis Date: **2/4/2020** SeqNo: **2277567** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Phenol-d5	1.9		3.330		56.5	18.5	101			
Surr: 2,4,6-Tribromophenol	1.8		3.330		53.2	35.8	85.6			
Surr: Nitrobenzene-d5	0.99		1.670		59.5	40.8	95.2			
Surr: 2-Fluorobiphenyl	1.0		1.670		60.4	34.7	85.2			
Surr: 4-Terphenyl-d14	1.3		1.670		75.6	37.4	91.3			

Sample ID: **lcs-50034** SampType: **LCS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS** Batch ID: **50034** RunNo: **66301**
Prep Date: **1/24/2020** Analysis Date: **2/4/2020** SeqNo: **2277568** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.0	0.20	1.670	0	61.5	46	89.5			
4-Chloro-3-methylphenol	2.2	0.50	3.330	0	65.3	44.1	101			
2-Chlorophenol	2.1	0.20	3.330	0	62.3	47	91			
1,4-Dichlorobenzene	0.95	0.20	1.670	0	57.0	41.4	85.8			
2,4-Dinitrotoluene	0.98	0.50	1.670	0	58.5	37.4	82			
N-Nitrosodi-n-propylamine	1.0	0.20	1.670	0	59.9	47.8	92.9			
4-Nitrophenol	1.8	0.25	3.330	0	53.4	45	94.3			
Pentachlorophenol	1.2	0.40	3.330	0	37.2	31.7	76.9			
Phenol	2.1	0.20	3.330	0	62.5	49.4	92.5			
Pyrene	1.1	0.20	1.670	0	64.9	52.9	82.7			
1,2,4-Trichlorobenzene	1.0	0.20	1.670	0	61.7	43.6	98.1			
Surr: 2-Fluorophenol	1.9		3.330		56.6	26.7	85.9			
Surr: Phenol-d5	2.1		3.330		62.6	18.5	101			
Surr: 2,4,6-Tribromophenol	1.9		3.330		55.7	35.8	85.6			
Surr: Nitrobenzene-d5	1.2		1.670		70.3	40.8	95.2			
Surr: 2-Fluorobiphenyl	1.1		1.670		68.3	34.7	85.2			
Surr: 4-Terphenyl-d14	1.2		1.670		71.9	37.4	91.3			

Sample ID: **2001739-053Ams** SampType: **MS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **SWMU1-2 Clay 3-3.5** Batch ID: **50034** RunNo: **66301**
Prep Date: **1/24/2020** Analysis Date: **2/4/2020** SeqNo: **2277588** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.2	0.39	1.625	0	73.1	28	113			D
4-Chloro-3-methylphenol	2.4	0.97	3.239	0	75.4	28.8	121			D
2-Chlorophenol	2.0	0.39	3.239	0	62.3	15.4	115			D
1,4-Dichlorobenzene	0.77	0.39	1.625	0	47.2	15	107			D
2,4-Dinitrotoluene	0.89	0.97	1.625	0	54.6	29.9	100			JD
N-Nitrosodi-n-propylamine	1.1	0.39	1.625	0	68.2	23.5	120			D

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001739**
03-Mar-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **2001739-053Ams** SampType: **MS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **SWMU1-2 Clay 3-3.5** Batch ID: **50034** RunNo: **66301**
Prep Date: **1/24/2020** Analysis Date: **2/4/2020** SeqNo: **2277588** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Nitrophenol	2.2	0.49	3.239	0	67.0	42.3	125			D
Pentachlorophenol	1.0	0.78	3.239	0	31.1	23.4	114			D
Phenol	2.1	0.39	3.239	0	66.0	16.3	117			D
Pyrene	1.4	0.39	1.625	0	84.2	34.2	122			D
1,2,4-Trichlorobenzene	1.1	0.39	1.625	0	69.3	16.3	117			D
Surr: 2-Fluorophenol	1.8		3.239		56.5	26.7	85.9			D
Surr: Phenol-d5	2.3		3.239		71.5	18.5	101			D
Surr: 2,4,6-Tribromophenol	2.1		3.239		65.2	35.8	85.6			D
Surr: Nitrobenzene-d5	1.2		1.625		74.1	40.8	95.2			D
Surr: 2-Fluorobiphenyl	1.2		1.625		73.3	34.7	85.2			D
Surr: 4-Terphenyl-d14	1.3		1.625		80.2	37.4	91.3			D

Sample ID: **2001739-053Amsd** SampType: **MSD** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **SWMU1-2 Clay 3-3.5** Batch ID: **50034** RunNo: **66301**
Prep Date: **1/24/2020** Analysis Date: **2/4/2020** SeqNo: **2277589** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.0	0.39	1.635	0	61.7	28	113	16.4	33.1	D
4-Chloro-3-methylphenol	2.2	0.98	3.260	0	65.9	28.8	121	12.8	39	D
2-Chlorophenol	2.1	0.39	3.260	0	63.6	15.4	115	2.75	27.1	D
1,4-Dichlorobenzene	0.68	0.39	1.635	0	41.8	15	107	11.6	26.3	D
2,4-Dinitrotoluene	0.92	0.98	1.635	0	56.0	29.9	100	3.25	51.5	JD
N-Nitrosodi-n-propylamine	0.98	0.39	1.635	0	59.7	23.5	120	12.6	22.8	D
4-Nitrophenol	1.8	0.49	3.260	0	56.2	42.3	125	16.9	52.9	D
Pentachlorophenol	0.58	0.78	3.260	0	17.6	23.4	114	54.5	52.1	JRSD
Phenol	2.1	0.39	3.260	0	63.5	16.3	117	3.21	28.8	D
Pyrene	1.1	0.39	1.635	0	69.5	34.2	122	18.4	37.1	D
1,2,4-Trichlorobenzene	0.94	0.39	1.635	0	57.5	16.3	117	17.9	28.4	D
Surr: 2-Fluorophenol	1.9		3.260		56.9	26.7	85.9	0	0	D
Surr: Phenol-d5	2.3		3.260		69.2	18.5	101	0	0	D
Surr: 2,4,6-Tribromophenol	1.7		3.260		51.5	35.8	85.6	0	0	D
Surr: Nitrobenzene-d5	1.1		1.635		65.5	40.8	95.2	0	0	D
Surr: 2-Fluorobiphenyl	1.1		1.635		64.5	34.7	85.2	0	0	D
Surr: 4-Terphenyl-d14	1.1		1.635		65.8	37.4	91.3	0	0	D

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2001739**

03-Mar-20

Client: Marathon Refining Gallup

Project: Gallup SWMUI Sampling Event

Sample ID: **MB-50654** SampType: **MBLK** TestCode: **EPA Method 7471: Mercury**
Client ID: **PBS** Batch ID: **50654** RunNo: **66826**
Prep Date: **2/25/2020** Analysis Date: **2/26/2020** SeqNo: **2298248** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0032	0.033								J

Sample ID: **LCS-50654** SampType: **LCS** TestCode: **EPA Method 7471: Mercury**
Client ID: **LCSS** Batch ID: **50654** RunNo: **66826**
Prep Date: **2/25/2020** Analysis Date: **2/26/2020** SeqNo: **2298250** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.18	0.033	0.1667	0	105	80	120			

Sample ID: **LLLCS-50654** SampType: **LCSLL** TestCode: **EPA Method 7471: Mercury**
Client ID: **BatchQC** Batch ID: **50654** RunNo: **66826**
Prep Date: **2/25/2020** Analysis Date: **2/26/2020** SeqNo: **2298251** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.028	0.033	0.006660	0	415	70	130			JS

Sample ID: **MB-50700** SampType: **MBLK** TestCode: **EPA Method 7471: Mercury**
Client ID: **PBS** Batch ID: **50700** RunNo: **66826**
Prep Date: **2/26/2020** Analysis Date: **2/26/2020** SeqNo: **2298351** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.033								

Sample ID: **LCSLL-50700** SampType: **LCSLL** TestCode: **EPA Method 7471: Mercury**
Client ID: **BatchQC** Batch ID: **50700** RunNo: **66826**
Prep Date: **2/26/2020** Analysis Date: **2/26/2020** SeqNo: **2298352** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0057	0.033	0.006660	0	85.0	70	130			J

Sample ID: **LCS-50700** SampType: **LCS** TestCode: **EPA Method 7471: Mercury**
Client ID: **LCSS** Batch ID: **50700** RunNo: **66826**
Prep Date: **2/26/2020** Analysis Date: **2/26/2020** SeqNo: **2298353** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.19	0.033	0.1667	0	115	80	120			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2001739**

03-Mar-20

Client: Marathon Refining Gallup

Project: Gallup SWMUI Sampling Event

Sample ID: **LCSD-50700** SampType: **LCSD** TestCode: **EPA Method 7471: Mercury**
Client ID: **LCSS02** Batch ID: **50700** RunNo: **66826**
Prep Date: **2/26/2020** Analysis Date: **2/26/2020** SeqNo: **2298354** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.18	0.033	0.1667	0	109	80	120	5.18	20	

Sample ID: **MB-50701** SampType: **MBLK** TestCode: **EPA Method 7471: Mercury**
Client ID: **PBS** Batch ID: **50701** RunNo: **66826**
Prep Date: **2/26/2020** Analysis Date: **2/26/2020** SeqNo: **2298355** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.033								

Sample ID: **LCSLL-50701** SampType: **LCSLL** TestCode: **EPA Method 7471: Mercury**
Client ID: **BatchQC** Batch ID: **50701** RunNo: **66826**
Prep Date: **2/26/2020** Analysis Date: **2/26/2020** SeqNo: **2298356** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0059	0.033	0.006660	0	89.2	70	130			J

Sample ID: **LCS-50701** SampType: **LCS** TestCode: **EPA Method 7471: Mercury**
Client ID: **LCSS** Batch ID: **50701** RunNo: **66826**
Prep Date: **2/26/2020** Analysis Date: **2/26/2020** SeqNo: **2298357** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.18	0.033	0.1667	0	106	80	120			

Sample ID: **LCSD-50701** SampType: **LCSD** TestCode: **EPA Method 7471: Mercury**
Client ID: **LCSS02** Batch ID: **50701** RunNo: **66826**
Prep Date: **2/26/2020** Analysis Date: **2/26/2020** SeqNo: **2298358** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.17	0.033	0.1667	0	102	80	120	3.84	20	

Sample ID: **MB-50752** SampType: **MBLK** TestCode: **EPA Method 7471: Mercury**
Client ID: **PBS** Batch ID: **50752** RunNo: **66936**
Prep Date: **2/28/2020** Analysis Date: **2/28/2020** SeqNo: **2302487** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.033								

Qualifiers:

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S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2001739**

03-Mar-20

Client: Marathon Refining Gallup

Project: Gallup SWMUI Sampling Event

Sample ID: **LLLCS-50752** SampType: **LCSLL** TestCode: **EPA Method 7471: Mercury**
Client ID: **BatchQC** Batch ID: **50752** RunNo: **66936**
Prep Date: **2/28/2020** Analysis Date: **2/28/2020** SeqNo: **2302488** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0073	0.033	0.006660	0	110	70	130			J

Sample ID: **LCS-50752** SampType: **LCS** TestCode: **EPA Method 7471: Mercury**
Client ID: **LCSS** Batch ID: **50752** RunNo: **66936**
Prep Date: **2/28/2020** Analysis Date: **2/28/2020** SeqNo: **2302489** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.16	0.033	0.1667	0	96.8	80	120			

Sample ID: **MB-50789** SampType: **MBLK** TestCode: **EPA Method 7471: Mercury**
Client ID: **PBS** Batch ID: **50789** RunNo: **66958**
Prep Date: **3/2/2020** Analysis Date: **3/2/2020** SeqNo: **2303293** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0025	0.033								J

Sample ID: **LCSLL-50789** SampType: **LCSLL** TestCode: **EPA Method 7471: Mercury**
Client ID: **BatchQC** Batch ID: **50789** RunNo: **66958**
Prep Date: **3/2/2020** Analysis Date: **3/2/2020** SeqNo: **2303294** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0085	0.033	0.006660	0	128	70	130			J

Sample ID: **LCS-50789** SampType: **LCS** TestCode: **EPA Method 7471: Mercury**
Client ID: **LCSS** Batch ID: **50789** RunNo: **66958**
Prep Date: **3/2/2020** Analysis Date: **3/2/2020** SeqNo: **2303295** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.16	0.033	0.1667	0	96.7	80	120			

Qualifiers:

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S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
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J	Analyte detected below quantitation limits
P	Sample pH Not In Range
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QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001739**
03-Mar-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **MB-50014**	SampType: **MBLK**	TestCode: **MERCURY, TCLP**							
Client ID: **PBW**	Batch ID: **50014**	RunNo: **66059**							
Prep Date: **1/23/2020**	Analysis Date: **1/24/2020**	SeqNo: **2268480**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.020								

Sample ID: **LCS-50014**	SampType: **LCS**	TestCode: **MERCURY, TCLP**							
Client ID: **LCSW**	Batch ID: **50014**	RunNo: **66059**							
Prep Date: **1/23/2020**	Analysis Date: **1/24/2020**	SeqNo: **2268481**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0050	0.020	0.005000	0	99.5	80	120			J

Sample ID: **LLLCS-50014**	SampType: **LCSLL**	TestCode: **MERCURY, TCLP**							
Client ID: **BatchQC**	Batch ID: **50014**	RunNo: **66059**							
Prep Date: **1/23/2020**	Analysis Date: **1/24/2020**	SeqNo: **2268482**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00018	0.020	0.0001500	0	117	50	150			J

Sample ID: **2001739-001BMS**	SampType: **MS**	TestCode: **MERCURY, TCLP**							
Client ID: **Dup 4**	Batch ID: **50014**	RunNo: **66059**							
Prep Date: **1/23/2020**	Analysis Date: **1/24/2020**	SeqNo: **2268484**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0048	0.020	0.005000	0	96.9	75	125			J

Sample ID: **2001739-001BMSD**	SampType: **MSD**	TestCode: **MERCURY, TCLP**							
Client ID: **Dup 4**	Batch ID: **50014**	RunNo: **66059**							
Prep Date: **1/23/2020**	Analysis Date: **1/24/2020**	SeqNo: **2268485**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0049	0.020	0.005000	0	98.7	75	125	1.80	20	J

Sample ID: **MB-50015**	SampType: **MBLK**	TestCode: **MERCURY, TCLP**							
Client ID: **PBW**	Batch ID: **50015**	RunNo: **66059**							
Prep Date: **1/23/2020**	Analysis Date: **1/24/2020**	SeqNo: **2268512**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.020								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2001739**

03-Mar-20

Client: Marathon Refining Gallup

Project: Gallup SWMUI Sampling Event

Sample ID: **LCS-50015** SampType: **LCS** TestCode: **MERCURY, TCLP**
Client ID: **LCSW** Batch ID: **50015** RunNo: **66059**
Prep Date: **1/23/2020** Analysis Date: **1/24/2020** SeqNo: **2268513** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0047	0.020	0.005000	0	94.4	80	120			J

Sample ID: **LLLCS-50015** SampType: **LCSLL** TestCode: **MERCURY, TCLP**
Client ID: **BatchQC** Batch ID: **50015** RunNo: **66059**
Prep Date: **1/23/2020** Analysis Date: **1/24/2020** SeqNo: **2268514** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00019	0.020	0.0001500	0	128	50	150			J

Sample ID: **MB-50081** SampType: **MBLK** TestCode: **MERCURY, TCLP**
Client ID: **PBW** Batch ID: **50081** RunNo: **66120**
Prep Date: **1/27/2020** Analysis Date: **1/28/2020** SeqNo: **2271425** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.020								

Sample ID: **LCS-50081** SampType: **LCS** TestCode: **MERCURY, TCLP**
Client ID: **LCSW** Batch ID: **50081** RunNo: **66120**
Prep Date: **1/27/2020** Analysis Date: **1/28/2020** SeqNo: **2271426** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0049	0.020	0.005000	0	97.3	80	120			J

Sample ID: **LLLCS-50081** SampType: **LCSLL** TestCode: **MERCURY, TCLP**
Client ID: **BatchQC** Batch ID: **50081** RunNo: **66120**
Prep Date: **1/27/2020** Analysis Date: **1/28/2020** SeqNo: **2271427** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00012	0.020	0.0001500	0	77.3	50	150			J

Sample ID: **2001739-025BMS** SampType: **MS** TestCode: **MERCURY, TCLP**
Client ID: **SWMU1-5 Sludge 2.** Batch ID: **50081** RunNo: **66120**
Prep Date: **1/27/2020** Analysis Date: **1/28/2020** SeqNo: **2271429** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0047	0.020	0.005000	0	93.8	75	125			J

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2001739**

03-Mar-20

Client: Marathon Refining Gallup

Project: Gallup SWMUI Sampling Event

Sample ID: **2001739-025BMSD** SampType: **MSD** TestCode: **MERCURY, TCLP**
Client ID: **SWMU1-5 Sludge 2.** Batch ID: **50081** RunNo: **66120**
Prep Date: **1/27/2020** Analysis Date: **1/28/2020** SeqNo: **2271430** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0046	0.020	0.005000	0	92.7	75	125	1.21	20	J

Sample ID: **MB-50082** SampType: **MBLK** TestCode: **MERCURY, TCLP**
Client ID: **PBW** Batch ID: **50082** RunNo: **66120**
Prep Date: **1/27/2020** Analysis Date: **1/28/2020** SeqNo: **2271454** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.020								

Sample ID: **LCS-50082** SampType: **LCS** TestCode: **MERCURY, TCLP**
Client ID: **LCSW** Batch ID: **50082** RunNo: **66120**
Prep Date: **1/27/2020** Analysis Date: **1/28/2020** SeqNo: **2271455** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0046	0.020	0.005000	0	92.5	80	120			J

Sample ID: **LLLCS-50082** SampType: **LCSLL** TestCode: **MERCURY, TCLP**
Client ID: **BatchQC** Batch ID: **50082** RunNo: **66120**
Prep Date: **1/27/2020** Analysis Date: **1/28/2020** SeqNo: **2271456** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00010	0.020	0.0001500	0	67.0	50	150			J

Sample ID: **2001739-045BMS** SampType: **MS** TestCode: **MERCURY, TCLP**
Client ID: **SWMU1-9 Clay 5.5-6** Batch ID: **50082** RunNo: **66120**
Prep Date: **1/27/2020** Analysis Date: **1/28/2020** SeqNo: **2271458** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0046	0.020	0.005000	0	92.5	75	125			J

Sample ID: **2001739-045BMSD** SampType: **MSD** TestCode: **MERCURY, TCLP**
Client ID: **SWMU1-9 Clay 5.5-6** Batch ID: **50082** RunNo: **66120**
Prep Date: **1/27/2020** Analysis Date: **1/28/2020** SeqNo: **2271461** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0047	0.020	0.005000	0	93.7	75	125	1.33	20	J

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2001739**

03-Mar-20

Client: Marathon Refining Gallup

Project: Gallup SWMUI Sampling Event

Sample ID: **MB-50098** SampType: **MBLK** TestCode: **MERCURY, TCLP**
Client ID: **PBW** Batch ID: **50098** RunNo: **66136**
Prep Date: **1/28/2020** Analysis Date: **1/28/2020** SeqNo: **2271670** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.020								

Sample ID: **LLLCS-50098** SampType: **LCSLL** TestCode: **MERCURY, TCLP**
Client ID: **BatchQC** Batch ID: **50098** RunNo: **66136**
Prep Date: **1/28/2020** Analysis Date: **1/28/2020** SeqNo: **2271671** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00021	0.020	0.0001500	0	138	50	150			J

Sample ID: **LCS-50098** SampType: **LCS** TestCode: **MERCURY, TCLP**
Client ID: **LCSW** Batch ID: **50098** RunNo: **66136**
Prep Date: **1/28/2020** Analysis Date: **1/28/2020** SeqNo: **2271672** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0049	0.020	0.005000	0	98.7	80	120			J

Sample ID: **2001739-051BMS** SampType: **MS** TestCode: **MERCURY, TCLP**
Client ID: **SWMU1-21 Toe 5 ft** Batch ID: **50098** RunNo: **66136**
Prep Date: **1/28/2020** Analysis Date: **1/28/2020** SeqNo: **2271674** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0049	0.020	0.005000	0	98.0	75	125			J

Sample ID: **2001739-051BMSD** SampType: **MSD** TestCode: **MERCURY, TCLP**
Client ID: **SWMU1-21 Toe 5 ft** Batch ID: **50098** RunNo: **66136**
Prep Date: **1/28/2020** Analysis Date: **1/28/2020** SeqNo: **2271675** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0046	0.020	0.005000	0	91.5	75	125	6.85	20	J

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001739**
03-Mar-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **MB-49956** SampType: **MBLK** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **PBS** Batch ID: **49956** RunNo: **66013**
Prep Date: **1/21/2020** Analysis Date: **1/23/2020** SeqNo: **2267039** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	2.5								
Arsenic	ND	2.5								
Barium	0.025	0.10								J
Beryllium	ND	0.15								
Cadmium	0.048	0.10								J
Chromium	ND	0.30								
Cobalt	ND	0.30								
Lead	ND	0.25								
Nickel	0.22	0.50								J
Selenium	ND	2.5								
Silver	0.16	0.25								J
Vanadium	ND	2.5								
Zinc	ND	2.5								

Sample ID: **LCS-49956** SampType: **LCS** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **LCSS** Batch ID: **49956** RunNo: **66013**
Prep Date: **1/21/2020** Analysis Date: **1/23/2020** SeqNo: **2267040** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	24	2.5	25.00	0	96.4	80	120			
Arsenic	25	2.5	25.00	0	98.3	80	120			
Barium	25	0.10	25.00	0	100	80	120			
Beryllium	25	0.15	25.00	0	99.9	80	120			
Cadmium	25	0.10	25.00	0	98.3	80	120			
Chromium	25	0.30	25.00	0	99.7	80	120			
Cobalt	25	0.30	25.00	0	99.1	80	120			
Lead	25	0.25	25.00	0	101	80	120			
Nickel	25	0.50	25.00	0	99.9	80	120			
Selenium	23	2.5	25.00	0	93.9	80	120			
Silver	4.9	0.25	5.000	0	98.3	80	120			
Vanadium	25	2.5	25.00	0	99.5	80	120			
Zinc	25	2.5	25.00	0	101	80	120			

Sample ID: **MB-49957** SampType: **MBLK** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **PBS** Batch ID: **49957** RunNo: **66013**
Prep Date: **1/21/2020** Analysis Date: **1/23/2020** SeqNo: **2267042** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	2.5								
Arsenic	ND	2.5								

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001739**
03-Mar-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **MB-49957** SampType: **MBLK** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **PBS** Batch ID: **49957** RunNo: **66013**
Prep Date: **1/21/2020** Analysis Date: **1/23/2020** SeqNo: **2267042** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.025	0.10								J
Beryllium	ND	0.15								
Cadmium	0.033	0.10								J
Chromium	ND	0.30								
Cobalt	ND	0.30								
Lead	ND	0.25								
Nickel	ND	0.50								
Selenium	ND	2.5								
Silver	ND	0.25								
Vanadium	ND	2.5								
Zinc	ND	2.5								

Sample ID: **LCS-49957** SampType: **LCS** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **LCSS** Batch ID: **49957** RunNo: **66013**
Prep Date: **1/21/2020** Analysis Date: **1/23/2020** SeqNo: **2267045** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	25	2.5	25.00	0	101	80	120			
Arsenic	25	2.5	25.00	0	98.3	80	120			
Barium	26	0.10	25.00	0	104	80	120			
Beryllium	26	0.15	25.00	0	104	80	120			
Cadmium	25	0.10	25.00	0	100	80	120			
Chromium	26	0.30	25.00	0	104	80	120			
Cobalt	26	0.30	25.00	0	103	80	120			
Lead	26	0.25	25.00	0	103	80	120			
Nickel	26	0.50	25.00	0	104	80	120			
Selenium	23	2.5	25.00	0	92.8	80	120			
Silver	5.0	0.25	5.000	0	99.7	80	120			
Vanadium	26	2.5	25.00	0	103	80	120			
Zinc	27	2.5	25.00	0	106	80	120			

Sample ID: **2001739-018BMS** SampType: **MS** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **SWMU1-11 Surface** Batch ID: **49957** RunNo: **66013**
Prep Date: **1/21/2020** Analysis Date: **1/23/2020** SeqNo: **2267075** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	24	4.9	24.42	61.70	-155	75	125			S
Arsenic	37	4.9	24.42	30.46	25.0	75	125			S
Beryllium	23	0.29	24.42	0.4725	92.5	75	125			
Cadmium	22	0.20	24.42	0	89.9	75	125			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001739**
03-Mar-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **2001739-018BMS** SampType: **MS** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **SWMU1-11 Surface** Batch ID: **49957** RunNo: **66013**
Prep Date: **1/21/2020** Analysis Date: **1/23/2020** SeqNo: **2267075** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chromium	48	0.59	24.42	36.78	45.4	75	125			S
Cobalt	26	0.59	24.42	6.265	79.8	75	125			
Lead	61	0.49	24.42	94.46	-136	75	125			S
Nickel	48	0.98	24.42	68.34	-81.6	75	125			S
Selenium	28	4.9	24.42	7.339	83.0	75	125			
Silver	3.7	0.49	4.883	0	74.8	75	125			S
Vanadium	40	4.9	24.42	26.97	51.6	75	125			S

Sample ID: **2001739-018BMSD** SampType: **MSD** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **SWMU1-11 Surface** Batch ID: **49957** RunNo: **66013**
Prep Date: **1/21/2020** Analysis Date: **1/23/2020** SeqNo: **2267076** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	110	4.9	24.49	61.70	207	75	125	130	20	ERS
Arsenic	57	4.9	24.49	30.46	108	75	125	43.5	20	R
Beryllium	24	0.29	24.49	0.4725	98.1	75	125	6.04	20	
Cadmium	22	0.20	24.49	0	91.4	75	125	1.91	20	
Chromium	62	0.59	24.49	36.78	102	75	125	25.5	20	R
Cobalt	29	0.59	24.49	6.265	93.7	75	125	12.5	20	
Lead	120	0.49	24.49	94.46	99.1	75	125	64.0	20	ER
Nickel	100	0.98	24.49	68.34	127	75	125	69.1	20	RS
Selenium	31	4.9	24.49	7.339	95.0	75	125	10.3	20	
Silver	2.5	0.49	4.897	0	51.3	75	125	37.0	20	RS
Vanadium	54	4.9	24.49	26.97	112	75	125	31.6	20	R

Sample ID: **2001739-018BMS** SampType: **MS** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **SWMU1-11 Surface** Batch ID: **49957** RunNo: **66013**
Prep Date: **1/21/2020** Analysis Date: **1/23/2020** SeqNo: **2267102** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	1000	0.49	24.42	587.7	1710	75	125			S

Sample ID: **2001739-018BMSD** SampType: **MSD** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **SWMU1-11 Surface** Batch ID: **49957** RunNo: **66013**
Prep Date: **1/21/2020** Analysis Date: **1/23/2020** SeqNo: **2267105** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	640	0.49	24.49	587.7	199	75	125	45.0	20	RS

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001739**
03-Mar-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **MB-49994**	SampType: **MBLK**	TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **PBS**	Batch ID: **49994**	RunNo: **66052**
Prep Date: **1/23/2020**	Analysis Date: **1/24/2020**	SeqNo: **2268342** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.66	2.5								J
Barium	ND	0.10								
Beryllium	ND	0.15								
Cadmium	ND	0.10								
Chromium	ND	0.30								
Cobalt	ND	0.30								
Nickel	ND	0.50								
Silver	ND	0.25								
Vanadium	ND	2.5								
Zinc	ND	2.5								

Sample ID: **LCS-49994**	SampType: **LCS**	TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **LCSS**	Batch ID: **49994**	RunNo: **66052**
Prep Date: **1/23/2020**	Analysis Date: **1/24/2020**	SeqNo: **2268343** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	23	2.5	25.00	0	92.5	80	120			
Barium	23	0.10	25.00	0	93.8	80	120			
Beryllium	24	0.15	25.00	0	95.4	80	120			
Cadmium	24	0.10	25.00	0	94.2	80	120			
Chromium	23	0.30	25.00	0	93.8	80	120			
Cobalt	23	0.30	25.00	0	93.1	80	120			
Nickel	23	0.50	25.00	0	92.9	80	120			
Silver	4.8	0.25	5.000	0	95.7	80	120			
Vanadium	24	2.5	25.00	0	96.0	80	120			
Zinc	23	2.5	25.00	0	92.0	80	120			

Sample ID: **MB-49993**	SampType: **MBLK**	TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **PBS**	Batch ID: **49993**	RunNo: **66052**
Prep Date: **1/23/2020**	Analysis Date: **1/24/2020**	SeqNo: **2268345** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.46	2.5								J
Barium	ND	0.10								
Beryllium	ND	0.15								
Cadmium	ND	0.10								
Chromium	ND	0.30								
Cobalt	ND	0.30								
Lead	ND	0.25								
Nickel	ND	0.50								

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001739**
03-Mar-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **MB-49993**	SampType: **MBLK**	TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **PBS**	Batch ID: **49993**	RunNo: **66052**
Prep Date: **1/23/2020**	Analysis Date: **1/24/2020**	SeqNo: **2268345** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	ND	0.25								
Vanadium	ND	2.5								
Zinc	ND	2.5								

Sample ID: **LCS-49993**	SampType: **LCS**	TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **LCSS**	Batch ID: **49993**	RunNo: **66052**
Prep Date: **1/23/2020**	Analysis Date: **1/24/2020**	SeqNo: **2268346** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	24	2.5	25.00	0	94.1	80	120			
Barium	24	0.10	25.00	0	96.2	80	120			
Beryllium	24	0.15	25.00	0	97.5	80	120			
Cadmium	24	0.10	25.00	0	96.2	80	120			
Chromium	25	0.30	25.00	0	98.8	80	120			
Cobalt	24	0.30	25.00	0	95.1	80	120			
Lead	25	0.25	25.00	0	98.7	80	120			
Nickel	24	0.50	25.00	0	95.4	80	120			
Silver	4.9	0.25	5.000	0	97.4	80	120			
Vanadium	25	2.5	25.00	0	98.0	80	120			
Zinc	24	2.5	25.00	0	94.2	80	120			

Sample ID: **2001739-048BMS**	SampType: **MS**	TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **SWMU1-14 Toe 3 ft**	Batch ID: **49994**	RunNo: **66052**
Prep Date: **1/23/2020**	Analysis Date: **1/24/2020**	SeqNo: **2268382** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	4.9	5.0	25.04	0	19.7	75	125			JS
Barium	520	0.20	25.04	204.1	1260	75	125			ES
Beryllium	24	0.30	25.04	0.9271	91.3	75	125			
Cadmium	22	0.20	25.04	0	86.7	75	125			
Chromium	38	0.60	25.04	8.803	117	75	125			
Cobalt	27	0.60	25.04	4.770	87.3	75	125			
Nickel	32	1.0	25.04	8.335	92.8	75	125			
Silver	3.3	0.50	5.008	0	65.7	75	125			S
Vanadium	45	5.0	25.04	16.28	116	75	125			
Zinc	60	5.0	25.04	18.42	165	75	125			S

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001739**
03-Mar-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **2001739-048BMSD** SampType: **MSD** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **SWMU1-14 Toe 3 ft** Batch ID: **49994** RunNo: **66052**
Prep Date: **1/23/2020** Analysis Date: **1/24/2020** SeqNo: **2268383** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	4.7	4.9	24.54	0	19.1	75	125	4.94	20	JS
Barium	330	0.20	24.54	204.1	523	75	125	44.1	20	RS
Beryllium	24	0.29	24.54	0.9271	92.2	75	125	0.917	20	
Cadmium	21	0.20	24.54	0	86.6	75	125	2.19	20	
Chromium	35	0.59	24.54	8.803	105	75	125	9.64	20	
Cobalt	26	0.59	24.54	4.770	87.7	75	125	1.25	20	
Nickel	31	0.98	24.54	8.335	93.2	75	125	1.15	20	
Silver	3.2	0.49	4.908	0	65.2	75	125	2.87	20	S
Vanadium	44	4.9	24.54	16.28	114	75	125	2.51	20	
Zinc	42	4.9	24.54	18.42	95.3	75	125	35.2	20	R

Sample ID: **MB-49993** SampType: **MBLK** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **PBS** Batch ID: **49993** RunNo: **66052**
Prep Date: **1/23/2020** Analysis Date: **1/24/2020** SeqNo: **2268536** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	2.5								
Selenium	ND	2.5								

Sample ID: **LCS-49993** SampType: **LCS** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **LCSS** Batch ID: **49993** RunNo: **66052**
Prep Date: **1/23/2020** Analysis Date: **1/24/2020** SeqNo: **2268537** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	23	2.5	25.00	0	93.9	80	120			
Selenium	23	2.5	25.00	0	90.3	80	120			

Sample ID: **MB-49994** SampType: **MBLK** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **PBS** Batch ID: **49994** RunNo: **66052**
Prep Date: **1/23/2020** Analysis Date: **1/24/2020** SeqNo: **2268539** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	2.5								
Lead	ND	0.25								
Selenium	ND	2.5								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2001739**

03-Mar-20

Client: Marathon Refining Gallup

Project: Gallup SWMUI Sampling Event

Sample ID: **LCS-49994** SampType: **LCS** TestCode: **EPA Method 6010B: Soil Metals**

Client ID: **LCSS** Batch ID: **49994** RunNo: **66052**

Prep Date: **1/23/2020** Analysis Date: **1/24/2020** SeqNo: **2268540** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	23	2.5	25.00	0	93.7	80	120			
Lead	24	0.25	25.00	0	97.9	80	120			
Selenium	23	2.5	25.00	0	90.5	80	120			

Sample ID: **2001739-048BMS** SampType: **MS** TestCode: **EPA Method 6010B: Soil Metals**

Client ID: **SWMU1-14 Toe 3 ft** Batch ID: **49994** RunNo: **66052**

Prep Date: **1/23/2020** Analysis Date: **1/24/2020** SeqNo: **2268576** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	21	0.50	25.04	2.017	75.4	75	125			
Selenium	16	5.0	25.04	0	64.0	75	125			S

Sample ID: **2001739-048BMSD** SampType: **MSD** TestCode: **EPA Method 6010B: Soil Metals**

Client ID: **SWMU1-14 Toe 3 ft** Batch ID: **49994** RunNo: **66052**

Prep Date: **1/23/2020** Analysis Date: **1/24/2020** SeqNo: **2268577** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	20	0.49	24.54	2.017	73.4	75	125	4.13	20	S
Selenium	16	4.9	24.54	0	64.3	75	125	1.51	20	S

Sample ID: **LCS-50026** SampType: **LCS** TestCode: **EPA Method 6010B: Soil Metals**

Client ID: **LCSS** Batch ID: **50026** RunNo: **66075**

Prep Date: **1/24/2020** Analysis Date: **1/25/2020** SeqNo: **2269313** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	25	2.5	25.00	0	98.2	80	120			
Arsenic	24	2.5	25.00	0	97.2	80	120			
Barium	25	0.10	25.00	0	101	80	120			
Beryllium	25	0.15	25.00	0	101	80	120			
Cadmium	25	0.10	25.00	0	99.7	80	120			
Chromium	25	0.30	25.00	0	101	80	120			
Cobalt	25	0.30	25.00	0	99.0	80	120			
Lead	25	0.25	25.00	0	100	80	120			
Nickel	25	0.50	25.00	0	99.0	80	120			
Selenium	24	2.5	25.00	0	97.8	80	120			
Silver	5.0	0.25	5.000	0	100	80	120			
Vanadium	26	2.5	25.00	0	104	80	120			
Zinc	25	2.5	25.00	0	99.0	80	120			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001739**
03-Mar-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **MB-50026** SampType: **MBLK** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **PBS** Batch ID: **50026** RunNo: **66075**
Prep Date: **1/24/2020** Analysis Date: **1/25/2020** SeqNo: **2269318** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	2.5								
Arsenic	ND	2.5								
Barium	ND	0.10								
Beryllium	ND	0.15								
Cadmium	ND	0.10								
Chromium	ND	0.30								
Cobalt	ND	0.30								
Lead	ND	0.25								
Nickel	ND	0.50								
Selenium	ND	2.5								
Silver	ND	0.25								
Vanadium	ND	2.5								
Zinc	ND	2.5								

Sample ID: **2001739-048BMS** SampType: **MS** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **SWMU1-14 Toe 3 ft** Batch ID: **49994** RunNo: **66075**
Prep Date: **1/23/2020** Analysis Date: **1/25/2020** SeqNo: **2269374** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	31	13	25.04	0	123	75	125			

Sample ID: **2001739-048BMSD** SampType: **MSD** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **SWMU1-14 Toe 3 ft** Batch ID: **49994** RunNo: **66075**
Prep Date: **1/23/2020** Analysis Date: **1/25/2020** SeqNo: **2269375** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	25	12	24.54	0	101	75	125	22.3	20	R

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2001739**

03-Mar-20

Client: Marathon Refining Gallup

Project: Gallup SWMUI Sampling Event

Sample ID: **MB-49986** SampType: **MBLK** TestCode: **EPA Method 6010B: TCLP Metals**
Client ID: **PBW** Batch ID: **49986** RunNo: **66013**
Prep Date: **1/22/2020** Analysis Date: **1/23/2020** SeqNo: **2267036** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	ND	5.0								

Sample ID: **LCS-49986** SampType: **LCS** TestCode: **EPA Method 6010B: TCLP Metals**
Client ID: **LCSW** Batch ID: **49986** RunNo: **66013**
Prep Date: **1/22/2020** Analysis Date: **1/23/2020** SeqNo: **2267037** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.52	5.0	0.5000	0	103	80	120			J

Sample ID: **2001739-001BMS** SampType: **MS** TestCode: **EPA Method 6010B: TCLP Metals**
Client ID: **Dup 4** Batch ID: **49986** RunNo: **66013**
Prep Date: **1/22/2020** Analysis Date: **1/23/2020** SeqNo: **2267159** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.50	5.0	0.5000	0	99.8	75	125			J

Sample ID: **2001739-001BMSD** SampType: **MSD** TestCode: **EPA Method 6010B: TCLP Metals**
Client ID: **Dup 4** Batch ID: **49986** RunNo: **66013**
Prep Date: **1/22/2020** Analysis Date: **1/23/2020** SeqNo: **2267160** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.49	5.0	0.5000	0	98.6	75	125	1.24	20	J

Sample ID: **MB-50036** SampType: **MBLK** TestCode: **EPA Method 6010B: TCLP Metals**
Client ID: **PBW** Batch ID: **50036** RunNo: **66075**
Prep Date: **1/24/2020** Analysis Date: **1/25/2020** SeqNo: **2269319** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	ND	5.0								

Sample ID: **LCS-50036** SampType: **LCS** TestCode: **EPA Method 6010B: TCLP Metals**
Client ID: **LCSW** Batch ID: **50036** RunNo: **66075**
Prep Date: **1/24/2020** Analysis Date: **1/25/2020** SeqNo: **2269320** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.49	5.0	0.5000	0	99.0	80	120			J

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2001739**

03-Mar-20

Client: Marathon Refining Gallup

Project: Gallup SWMUI Sampling Event

Sample ID: **MB-50045** SampType: **MBLK** TestCode: **EPA Method 6010B: TCLP Metals**
Client ID: **PBW** Batch ID: **50045** RunNo: **66075**
Prep Date: **1/24/2020** Analysis Date: **1/25/2020** SeqNo: **2269324** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	ND	5.0								

Sample ID: **LCS-50045** SampType: **LCS** TestCode: **EPA Method 6010B: TCLP Metals**
Client ID: **LCSW** Batch ID: **50045** RunNo: **66075**
Prep Date: **1/24/2020** Analysis Date: **1/25/2020** SeqNo: **2269325** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.50	5.0	0.5000	0	99.7	80	120			J

Sample ID: **2001739-013BMS** SampType: **MS** TestCode: **EPA Method 6010B: TCLP Metals**
Client ID: **SWMU1-5 5.5-6** Batch ID: **50036** RunNo: **66075**
Prep Date: **1/24/2020** Analysis Date: **1/25/2020** SeqNo: **2269401** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.50	5.0	0.5000	0	99.2	75	125			J

Sample ID: **2001739-013BMSD** SampType: **MSD** TestCode: **EPA Method 6010B: TCLP Metals**
Client ID: **SWMU1-5 5.5-6** Batch ID: **50036** RunNo: **66075**
Prep Date: **1/24/2020** Analysis Date: **1/25/2020** SeqNo: **2269402** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.49	5.0	0.5000	0	97.1	75	125	2.14	20	J

Sample ID: **2001739-025BMS** SampType: **MS** TestCode: **EPA Method 6010B: TCLP Metals**
Client ID: **SWMU1-5 Sludge 2.** Batch ID: **50045** RunNo: **66075**
Prep Date: **1/24/2020** Analysis Date: **1/25/2020** SeqNo: **2269417** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.47	5.0	0.5000	0	94.6	75	125			J

Sample ID: **2001739-025BMSD** SampType: **MSD** TestCode: **EPA Method 6010B: TCLP Metals**
Client ID: **SWMU1-5 Sludge 2.** Batch ID: **50045** RunNo: **66075**
Prep Date: **1/24/2020** Analysis Date: **1/25/2020** SeqNo: **2269420** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.49	5.0	0.5000	0	97.4	75	125	2.95	20	J

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2001739**

03-Mar-20

Client: Marathon Refining Gallup

Project: Gallup SWMUI Sampling Event

Sample ID: **MB-50060** SampType: **MBLK** TestCode: **EPA Method 6010B: TCLP Metals**

Client ID: **PBW** Batch ID: **50060** RunNo: **66115**

Prep Date: **1/27/2020** Analysis Date: **1/28/2020** SeqNo: **2270846** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	ND	5.0								

Sample ID: **LCS-50060** SampType: **LCS** TestCode: **EPA Method 6010B: TCLP Metals**

Client ID: **LCSW** Batch ID: **50060** RunNo: **66115**

Prep Date: **1/27/2020** Analysis Date: **1/28/2020** SeqNo: **2270847** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.51	5.0	0.5000	0	102	80	120			J

Sample ID: **2001739-039BMS** SampType: **MS** TestCode: **EPA Method 6010B: TCLP Metals**

Client ID: **SWMU1-10 0.0** Batch ID: **50060** RunNo: **66115**

Prep Date: **1/27/2020** Analysis Date: **1/28/2020** SeqNo: **2270875** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.50	5.0	0.5000	0	99.0	75	125			J

Sample ID: **2001739-039BMSD** SampType: **MSD** TestCode: **EPA Method 6010B: TCLP Metals**

Client ID: **SWMU1-10 0.0** Batch ID: **50060** RunNo: **66115**

Prep Date: **1/27/2020** Analysis Date: **1/28/2020** SeqNo: **2270876** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.49	5.0	0.5000	0	98.3	75	125	0.758	20	J

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001739**
03-Mar-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **2.5ug gro lcs** SampType: **LCS** TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **LCSS** Batch ID: **G65960** RunNo: **65960**
Prep Date: Analysis Date: **1/21/2020** SeqNo: **2265771** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	5.0	25.00	0	89.3	70	130			
Surr: BFB	460		500.0		91.6	70	130			

Sample ID: **2001739-001a ms** SampType: **MS** TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **Dup 4** Batch ID: **G65960** RunNo: **65960**
Prep Date: Analysis Date: **1/21/2020** SeqNo: **2265773** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	330	29	146.0	177.2	102	70	130			
Surr: BFB	2800		2919		96.5	70	130			

Sample ID: **2001739-001a msd** SampType: **MSD** TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **Dup 4** Batch ID: **G65960** RunNo: **65960**
Prep Date: Analysis Date: **1/21/2020** SeqNo: **2265774** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	310	29	146.0	177.2	88.9	70	130	6.07	20	
Surr: BFB	2800		2919		96.6	70	130	0	0	

Sample ID: **mb1** SampType: **MBLK** TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **PBS** Batch ID: **G65960** RunNo: **65960**
Prep Date: Analysis Date: **1/21/2020** SeqNo: **2265794** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	460		500.0		92.4	70	130			

Sample ID: **mb1** SampType: **MBLK** TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **PBS** Batch ID: **AG65992** RunNo: **65992**
Prep Date: Analysis Date: **1/22/2020** SeqNo: **2266651** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	460		500.0		91.1	70	130			

Sample ID: **2.5ug gro lcs** SampType: **LCS** TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **LCSS** Batch ID: **AG65992** RunNo: **65992**
Prep Date: Analysis Date: **1/22/2020** SeqNo: **2266652** Units: **mg/Kg**

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

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001739**
03-Mar-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **2.5ug gro lcs** SampType: **LCS** TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **LCSS** Batch ID: **AG65992** RunNo: **65992**
Prep Date: Analysis Date: **1/22/2020** SeqNo: **2266652** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	93.9	70	130			
Surr: BFB	480		500.0		95.9	70	130			

Sample ID: **mb2** SampType: **MBLK** TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **PBS** Batch ID: **BG65992** RunNo: **65992**
Prep Date: Analysis Date: **1/23/2020** SeqNo: **2266678** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	500		500.0		99.3	70	130			

Sample ID: **2.5ug gro lcs2** SampType: **LCS** TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **LCSS** Batch ID: **BG65992** RunNo: **65992**
Prep Date: Analysis Date: **1/22/2020** SeqNo: **2266679** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	5.0	25.00	0	85.7	70	130			
Surr: BFB	460		500.0		92.6	70	130			

Sample ID: **2001739-051ams** SampType: **MS** TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **SWMU1-21 Toe 5 ft** Batch ID: **BG65992** RunNo: **65992**
Prep Date: Analysis Date: **1/23/2020** SeqNo: **2266681** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	62	15	72.80	3.349	80.0	70	130			
Surr: BFB	1300		1456		89.9	70	130			

Sample ID: **2001739-051amsd** SampType: **MSD** TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **SWMU1-21 Toe 5 ft** Batch ID: **BG65992** RunNo: **65992**
Prep Date: Analysis Date: **1/23/2020** SeqNo: **2266682** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	61	15	72.80	3.349	79.0	70	130	1.14	20	
Surr: BFB	1400		1456		94.8	70	130	0	0	

Sample ID: **2.5ug gro lcs2** SampType: **LCS** TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **LCSS** Batch ID: **G66015** RunNo: **66015**
Prep Date: Analysis Date: **1/22/2020** SeqNo: **2267219** Units: **mg/Kg**

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

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001739**
03-Mar-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **2.5ug gro lcs2** SampType: **LCS** TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **LCSS** Batch ID: **G66015** RunNo: **66015**
Prep Date: Analysis Date: **1/22/2020** SeqNo: **2267219** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	5.0	25.00	0	86.5	70	130			
Surr: BFB	480		500.0		95.1	70	130			

Sample ID: **mb1** SampType: **MBLK** TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **PBS** Batch ID: **G66015** RunNo: **66015**
Prep Date: Analysis Date: **1/22/2020** SeqNo: **2267244** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	470		500.0		94.2	70	130			

Sample ID: **2.5ug gro lcs** SampType: **LCS** TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **LCSS** Batch ID: **G66046** RunNo: **66046**
Prep Date: Analysis Date: **1/23/2020** SeqNo: **2268114** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	5.0	25.00	0	83.8	70	130			
Surr: BFB	480		500.0		96.2	70	130			

Sample ID: **2001739-021ams** SampType: **MS** TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **SWMU1-9 Sludge 4.** Batch ID: **G66046** RunNo: **66046**
Prep Date: Analysis Date: **1/23/2020** SeqNo: **2268118** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	350	19	95.56	244.7	113	70	130			
Surr: BFB	1800		1911		95.0	70	130			

Sample ID: **2001739-021amsd** SampType: **MSD** TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **SWMU1-9 Sludge 4.** Batch ID: **G66046** RunNo: **66046**
Prep Date: Analysis Date: **1/23/2020** SeqNo: **2268119** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	340	19	95.56	244.7	95.6	70	130	4.89	20	
Surr: BFB	1800		1911		94.9	70	130	0	0	

Sample ID: **mb1** SampType: **MBLK** TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **PBS** Batch ID: **G66046** RunNo: **66046**
Prep Date: Analysis Date: **1/23/2020** SeqNo: **2268157** Units: **mg/Kg**

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

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001739**
03-Mar-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **mb1**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Gasoline Range**							
Client ID: **PBS**	Batch ID: **G66046**	RunNo: **66046**							
Prep Date:	Analysis Date: **1/23/2020**	SeqNo: **2268157**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	490		500.0		97.7	70	130			

Sample ID: **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Gasoline Range**							
Client ID: **LCSS**	Batch ID: **G66078**	RunNo: **66078**							
Prep Date:	Analysis Date: **1/24/2020**	SeqNo: **2269467**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	5.0	25.00	0	86.8	70	130			
Surr: BFB	470		500.0		93.5	70	130			

Sample ID: **mb1**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Gasoline Range**							
Client ID: **PBS**	Batch ID: **G66078**	RunNo: **66078**							
Prep Date:	Analysis Date: **1/24/2020**	SeqNo: **2269479**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	480		500.0		96.1	70	130			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001739**
03-Mar-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **2001739-011BDUP** SampType: **DUP** TestCode: **FREE LIQUID/PAINT FILTER**
Client ID: **Dup-6** Batch ID: **R66110** RunNo: **66110**
Prep Date: Analysis Date: **1/27/2020** SeqNo: **2270720** Units: **Pos/Neg**

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

Sample ID: **2001739-034BDUP** SampType: **DUP** TestCode: **FREE LIQUID/PAINT FILTER**
Client ID: **SWMU1-6 Clay 5.5-6** Batch ID: **R66159** RunNo: **66159**
Prep Date: Analysis Date: **1/28/2020** SeqNo: **2272626** Units: **Pos/Neg**

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

Sample ID: **2001739-049BDUP** SampType: **DUP** TestCode: **FREE LIQUID/PAINT FILTER**
Client ID: **SWMU1-20 1.5** Batch ID: **R66198** RunNo: **66198**
Prep Date: Analysis Date: **1/29/2020** SeqNo: **2274013** Units: **Pos/Neg**

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

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001739**
03-Mar-20

Client: Marathon Refining Gallup
Project: Gallup SWMUI Sampling Event

Sample ID: **2001739-034BDUP** SampType: **DUP** TestCode: **SM4500H+B/EPA 9040C**
Client ID: **SWMU1-6 Clay 5.5-6** Batch ID: **R66160** RunNo: **66160**
Prep Date: Analysis Date: **1/29/2020** SeqNo: **2272652** Units: **pH Units**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
pH	9.00									

Sample ID: **2001739-049BDUP** SampType: **DUP** TestCode: **SM4500H+B/EPA 9040C**
Client ID: **SWMU1-20 1.5** Batch ID: **R66199** RunNo: **66199**
Prep Date: Analysis Date: **1/30/2020** SeqNo: **2274032** Units: **pH Units**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
pH	8.19									

Qualifiers:

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: **MARATHON GALLUP** Work Order Number: **2001739** RcptNo: **1**

Received By: **Erin Melendrez** **1/18/2020 12:15:00 PM**

Completed By: **Isaiah Ortiz** **1/20/2020 10:10:44 AM**

Reviewed By: DAD 1/20/20

Chain of Custody

1. Is Chain of Custody sufficiently complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Courier		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☐	No ☐	NA ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: ENH 1/20/20

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☑ No ☐ ~~NA ☑~~

Person Notified: Paul Hilde Brandt Date: 1/22/20

By Whom: Erin Melendrez Via: ☐ eMail ☒ Phone ☐ Fax ☐ In Person

Regarding: CG written on COC's, historicals requested CO.

Client Instructions: Run CO not CG.

-ENH 1/22/20

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	6.0	Good	Not Present			
2	5.5	Good	Not Present			
3	5.6	Good	Not Present			
4	3.8	Good	Not Present			

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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 GALLUP** Work Order Number: **2001739** RcptNo: 1

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
5	5.7	Good	Not Present			
6	5.5	Good	Not Present			

Released to Imaging: 3/2/2021 2:22:29 PM
Received by OCD: 3/2/2021 2:18:11 PM

Chain-of-Custody Record

Client: Marathon Petroleum Co.

Mailing Address: 92 Giant Crossing
Gallup NM 87347

Phone #: 505-726-9745

email or Fax#:

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other _____

☒ EDD (Type) _____

Turn-Around Time:
☒ Standard ☐ Rush _____

Project Name: Gallup
SWMU Sampling Event

Project #: 697-070-001

Project Manager: Paul Hidebrandt

Sampler:

On Ice: ☒ Yes ☐ No

Sample Temperature: 5.9+0.1(CF)=6.0°C

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 2001739	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	pH, Paint Filter	Specific Gravity	TCLP Lead, Mercury	Sb, As, Ba, Be, Cd, Cr, Co, Pb	Air Bubbles (Y or N)
		Sed	Dup 4	bottle-4	—	-001			X							X	X	X	X	X	X	
		Sed	Dup 5	bottle-4	—	-002			X							X	X	X	X	X	X	
1/16/20	8:55	Sed	SWMU-9 surf	"	—	-003			X							X	X	X	X	X	X	
1/16/20	10:15	Sed	SWMU-19 Toe clay 5-6.5'	"	—	-004			X							X	X	X	X	X	X	
1/16/20	1455	Sed	SWMU-18 Toe clay 5-6'	"	—	-005			X							X	X	X	X	X	X	
1/16/20	1005	Sed	SWMU-19 Toe Surf	"	—	-006			X							X	X	X	X	X	X	
1/14/20	1640	Sed	SWMU-4 Clay 3-3.5	"	—	-007			X							X	X	X	X	X	X	
1/16/20	8:35	Sed	SWMU-8 Sludge 2.5	"	—	-008			X							X	X	X	X	X	X	
1/14/20	1423	Sed	SWMU-18 Toe Surf	"	—	-009			X							X	X	X	X	X	X	
1/16/20	9:45	Sed	SWMU-22 Toe 0	"	—	-010			X							X	X	X	X	X	X	

Date:	Time:	Relinquished by:	Received by:	Date	Time
1/17/20	~~1518~~		courier	1/18/20	1215
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Released to Imaging: 3/2/2021 2:22:29 PM

Received by OCD: 3/2/2021 2:18:17 PM

Chain-of-Custody Record

Client: Marathon Petroleum Co

Mailing Address: 92 Giant Crossing Rd Gallup NM 87347

Phone #: 505 726-9745

email or Fax#:

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other _____

☒ EDD (Type) _____

Turn-Around Time:
☒ Standard ☐ Rush _____

Project Name: Gallup SWMU 1 Sampling Event

Project #: 697-070-001

Project Manager: Paul Hildebrandt

Sampler:

On Ice: ☒ Yes ☐ No

Sample Temperature: 5.4+0.1(CF)=5.5°C

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 2001739	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	pH, Paint Filter	Density	TCLP lead, Mercury	Sb, As, Ba, Be, Cd, Cr, Co, Pb	Are Bubbles (Y or N) Ni, Se, Ag, V, Zn
		Sed	DUP 6	Bottle-4	—	-011			X							X	X	X	X	X	X	
1/17/20	8:35	sed	SWMU1-5 surf	"	—	-012			X							X	X	X	X	X	X	
1/17/20	8:45	sed	SWMU1-5 5.5-6	"	—	-013			X							X	X	X	X	X	X	
1/16/20	14:05	sed	SWMU1-16 Toe surf	"	—	-014			X							X	X	X	X	X	X	
1/16/20	8:20	sed	SWMU1-8 surface	"	—	-015			X							X	X	X	X	X	X	
1/15/20	14:06	"	SWMU1-12 Toe 2.5'	"	—	-016			X							X	X	X	X	X	X	
1/16/20	10:10	"	SWMU1-19 Toe Sludge 0.5-6 ft	"		-017			X							X	X	X	X	X	X	
1/15/20	1000	"	SWMU1-11 surface	"		-018			X							X	X	X	X	X	X	
1/17/20	900	"	SWMU1-6 Sludge 0-5.5	"		-019			X							X	X	X	X	X	X	
1/14/20	1450	"	SWMU1-14 Toe 2.5	"		-020			X							X	X	X	X	X	X	

Date: 1/17/20 Time: 2116 Relinquished by:

Received by: Courier Date: 1/18/20 Time: 1215

Date: Time: Relinquished by:

Received by: Date: Time:

Remarks: If Benzene detected p/s TCLP Benzene

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

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Received by OCD: 3/2/2021 2:18:14 PM

Chain-of-Custody Record

Client: Marathon - Petroleum Company

Mailing Address: 92 Giant Crossing Rd Gallup NM 87317

Phone #: 505 726 - 9745

email or Fax#:

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other

☒ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: Gallup SWMU1 Sampling Event

Project #: 697-070-001

Project Manager: Paul Hildebrandt

Sampler:

On Ice: ☒ Yes ☐ No

Sample Temperature: 5.5+0.1(CF)=5.6°C

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 2001739	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	pH, Paint Filter	Specific Gravity	TCLP Lead, Mercury	Sb, As, Ba, Be, Cd, Cr, Co, Pb	Air Bubbles (Y or N)
1/16/20	900	Sed	SWMU1-9 Sludge 4.5	bottle-4	—	-021			X							X	X	X	X	+	X	
1/15/20	1502	Sed	SWMU1-20 Toe 0.5-3	"	—	-022			X							X	X	X	X	+	X	
1/16/20	950	Sed	SWMU1-22 Toe Sludge 2.5	"	—	-023			X							X	X	X	X	+	X	
1/17/20	916	Sed	SWMU1-7 2.5	"	—	-024			X							X	X	X	X	X	X	
1/17/20	840	"	SWMU1-5 Sludge 2.5-5	"	—	-025			X							X	X	X	X	X	X	
1/15/20	845	"	SWMU1-1 Sludge 0.5-3	"	—	-026			X							X	X	X	X	X	X	
1/14/20	1627	"	SWMU1-4 3ft	"	—	-027			X							X	X	X	X	X	X	
1/16/20	1435	"	SWMU1-15 Toe 4-5'	"	—	-028			X							X	X	X	X	X	X	
1/17/20	912	"	SWMU1-7 Surface	"	—	-029			X							X	X	X	X	X	X	
			DUP 7		—	-030			X							X	X	X	X	X	X	

Date:	Time:	Relinquished by:	Received by:	Date	Time
1/17/20	2120		courier	1/18/20	1215
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks:

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Released to Imaging: 3/2/2021 2:22:29 PM

Received by OCD: 3/2/2021 2:18:14 PM

Chain-of-Custody Record

Client: Marathon Petroleum Co.

Mailing Address: 92 Giant Crossing Rd
Gallup NM 87347

Phone #: 505-726-9745

email or Fax#:

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other _____

☒ EDD (Type) _____

Turn-Around Time:
☒ Standard ☐ Rush _____

Project Name: Gallup SWMU 1 Sampling Event

Project #: 697-070-001

Project Manager: Paul Hildebrandt

Sampler:

On Ice: ☒ Yes ☐ No

Sample Temperature: 3.7+0.1(CF)=3.8°C

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 2001739	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	All, Paint Filter	Specific Gravity	TCLP Lead Mercury	Sb, As, Ba, Be, Cd, Cr, Co	All Bubbles (Y or N) Pb, Ni, Se, Ag, V, Zn
1/16/20	17:50	Sed	SWMU1-18 Toe Sludge 2.5	bottle -4	—	-031			X							X	X	X	X	X	X	
1/16/20	9:26	Sed	SWMU1-10 sludge 4-4.5	"	—	-032			X							X	X	X	X	X	X	
1/17/20	9:16	Sed	SWMU1-7 Clay 4-5 Ft	"	—	-033			X							X	X	X	X	X	X	
1/17/20	9:25	Sed	SWMU1-6 Clay 5.5-6 Ft	"	—	-034			X							X	X	X	X	X	X	
1/14/20	16:54	"	SWMU1-3 0.5-3.0	"	—	-035			X							X	X	X	X	X	X	
1/14/20	14:19	"	SWMU1-13 Toe surf	"	—	-036			X							X	X	X	X	X	X	
1/15/20	8:45	"	SWMU1-1 surf	"	—	-037			X							X	X	X	X	X	X	
1/14/20	1705	"	SWMU1-3 Clay 3 Ft	"	—	-038			X							X	X	X	X	X	X	
1/16/20	0921	"	SWMU1-10 0.0	"	—	-039			X							X	X	X	X	X	X	
—	—	"	DUP 8	"	—	-040			X						1	X	X	X	X	X	X	
1/15/20	8:25	"	SWMU1-2 surface	"	—	-041			X							X	X	X	X	X	X	

Date	Time	Relinquished by:	Received by:	Date	Time
1/17/20	2120		courier	1/18/20	1215
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks: If Benzene Detected please TCLP Benzene

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

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Chain-of-Custody Record

Client: Marathon Petroleum Company

Mailing Address: 92 Giant Crossing Rd
Gallup NM 87347

Phone #: 505 726-9745

email or Fax#:

QA/QC Package:
~~Standard~~ ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other

~~EDD~~ (Type)

Turn-Around Time:
~~Standard~~ ☐ Rush

Project Name: Gallup SWMU Sampling Event

Project #: 697-070-001

Project Manager: Paul Hildebrandt

Sampler:

On Ice: ~~Yes~~ ☐ No

Sample Temperature: 5.6+0.1(CF)=5.7°C

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 2001739	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	pH, Paint Filter	TCLP Lead/Mercury	Density	Sb, As, Ba, Be, Cd, Cr, Co, Air Bubbles (Y or N)	Pb, Ni, Se, Ag, V, Zn
—	—	Sed	DUP 9	bottle-4	—	-042			X							X	X	X	X	X	X	
1/16/20	1428	sed	SWMU-15 TOE 3 Ft	"	—	-043			X							X	X	X	X	X	X	
1/16/20	955	sed	SWMU-22 Toe 35-40	"	—	-044			X							X	X	X	X	X	X	
1/16/20	9:05	"	SWMU-9 clay 5.5-6	"	—	-045			X							X	X	X	X	X	X	
1/16/20	14:24	"	SWMU-15 Toe surf	"	—	-046			X							X	X	X	X	X	X	
1/15/20	1010	"	SWMU-11 2.5	"	—	-047			X							X	X	X	X	X	X	
1/14/20	1458	"	SWMU-14 Toe 3 Ft	"	—	-048			X							X	X	X	X	X	X	
1/14/20	925	"	SWMU-20 1.5	"		-049			X							X	X	X	X	X	X	

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1/17/20	2120		courier		
Date:	Time:	Relinquished by:	Received by:	1/18/20	1215

Remarks: If benzene detected please TCLP benzene

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

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Received by OCD: 3/2/2021 2:18:14 PM

Chain-of-Custody Record

Client: Marathon Petroleum Company

Mailing Address: 92 Giant Crossing Rd
Gallup, NM 87347

Phone #: 505-726-9745

email or Fax#:

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other _____

☒ EDD (Type) _____

Turn-Around Time:
☐ Standard ☐ Rush _____

Project Name: Gallup SWMU-1 Sampling Event

Project #: 697-070-0001

Project Manager: Paul Hildebrandt

Sampler:

On Ice: ☒ Yes ☐ No

Sample Temperature: 5.4+0.1(CF)=5.5°C

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 2001739	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	pH, Paint Filter	Density	TCLP Lead, Mercury	Sb, As, Ba, Be, Cd, Cr, Co, Pb	Air Bubbles (Y or N)
—	—	Sed	DUP 10	bottle-4	—	-050			X							X	X	X	X	X	X	
1/14/20	1160	Sed	SWMU-21 Toe 5ft	"	—	-051			X							X	X	X	X	X	X	
1/14/20	1020	Sed	SWMU-14 9ft	"	—	-052			X							X	X	X	X	X	X	
1/15/20	8:29	Sed	SWMU-2 Clay 3-3.5ft	"	—	-053			X							X	X	X	X	X	X	
1/16/20	8:48	Sed	SWMU-8 5-5.5ft	"	—	-054			X							X	X	X	X	X	X	
1/14/20	9:53	Sed	SWMU-22 5ft	"	—	-055			X							X	X	X	X	X	X	
1/21/20			MeOH Blank			-056																
1/21/20			MeOH Blank			-057																
1/21/20			MeOH Blank			-058																
1/21/20			MeOH Blank			-059																
1/21/20			MeOH Blank			-060																

Date	Time	Relinquished by:	Received by:	Date	Time
1/17/20	21:16		courier	1/18/20	1215
Date	Time	Relinquished by:	Received by:	Date	Time

Remarks:
If benzene detected please do TCLP benzene

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.

Attachment B: Redline

MARATHON PETROLEUM CORPORATION

GALLUP REFINING DIVISION

REVISED SWMU 1 INVESTIGATION REPORT

~~MARCH 30~~DECEMBER 31, 2020

Approval to Proceed

I certify under penalty of law that this document and all attachments were prepared under my direction or 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.

Name: John Moore, P.E. Date

Title: Environmental Superintendent

Executive Summary

The Marathon Petroleum Company, Gallup Refining Division (MPC) is submitting this revised investigation report for sampling of soils and sediments at the former aeration lagoons (AL-1 and AL-2) and evaporation pond (EP-1), known collectively as Solid Waste Management Unit (SWMU) 1. The sampling was conducted for the purposes of soil and sediment volume determination and chemical characterization for future SWMU 1 excavation, disposal, and closure. The sampling took place the week of January 13, 2020 and was conducted in accordance with an approved work plan submitted to the New Mexico Environment Department (NMED) on September 23, 2019 (MPC 2019) and approved with modifications by NMED on October 30, 2019.

SWMU 1 was part of a former aggressive biological treatment unit where refinery wastewater flowed through the aeration lagoons in series and into the evaporation pond. Based on this usage and the concurrence of the NMED Hazardous Waste Bureau (NMED 2019), AL-1 and AL-2 sediments are classified as F-listed (F037/F038) hazardous waste, with EP-1 soils/sediment potentially classified as non-hazardous pending the results of this investigation.

Field work consisted of:

- Collection of samples at four location in EP-1 and at three locations in AL-1 and AL-2.
- Collection of samples on each of the four berms of the lagoons and the pond.
- Measuring soil/sediment thickness at all sampling locations.

The samples were collected using a hand auger and analyzed for pH, volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), metals, toxic characteristics leaching procedure (TCLP) (benzene, lead, and mercury), total petroleum hydrocarbons TPH for gasoline range organics (GRO), diesel range organics (DRO) and oil range organics (ORO). The results were compared with NMED Industrial Soil Screening Levels (ISSL) June 2019, TCLP Screening Levels (40 CFR 261.24) and United States Environmental Protection Agency (EPA) Regional Screening Levels (RSL) Industrial Soil Hazard Quotient 0.1. Analytes exceeding the NMED SSLs and/or the EPA RSLs were:

- TPH (GRO, DRO, and ORO).
- SVOCs (1-methylnaphthalene, 2-methylnapthalene, naphthalene, benzo(a)anthracene, and benzo(a)pyrene).
- metals (arsenic and mercury).

TCLP results for lead, mercury and benzene were below TCLP standards.

Based on field observations during sample collection, a material type and color change (black waste sludge ~~sludge~~ to gray native clay) is associated with a decrease in contaminant concentrations, which should assist with determining the vertical extent of excavation. Field flame ionization detector (FID) sample headspace data are also positively correlated with laboratory analytical data. Volumes for excavation were calculated using the average depth of contamination and the pond areas, and then rounded to the nearest 100 yds^3, with resulting volumes as follows:

- AL-1: Average depth 5.2 ft, surface area 13,789 square feet (ft^2), volume 2,700 cubic yards (yds^3).
- AL-2: Average depth 5.3 ft, surface area 23,211 ft^2, volume 4,500 yds^3.
- EP-1: Average depth 5.3 ft, surface area 58,757 ft^2, volume 11,500 yds^3.

Table of Contents

Approval to Proceed 2
Executive Summary 3
List of Figures 6
List of Tables 6
List of Attachments 7
Introduction 8
Background 8
Historic Sampling and Results 8
Planned Sampling Activities 9
Deviations from Approved Plan 10
Field Investigation Results 11
Summary of Field Sampling Activities 12
Field Observations of Pond Conditions 13
Quality Assurance/Quality Control Samples 13
Laboratory Analytical Results 13
VOCs 14
SVOCs 14
Metals 14
General Chemistry 14
Pond Berm Analytic Results Summary 15
Pond Clay Liner Analytic Results Summary 16
QA/QC Samples 17
Correlation of Analytical Results with FID Field Screening 17
Conclusions 17
References 18
Figures 20
Tables 21
Attachments 22
Attachment A - Field Notes 22
Attachment B - Complete Analytical Tables 22

Attachment C - Laboratory Analytical Reports 22
Attachment A - Field Notes 23
Attachment B - Complete Analytical Tables 24
Attachment C - Laboratory Analytical Reports 25

List of Figures

1. Refinery and SWMU 1 Location, Marathon Petroleum Company, Gallup Refining Division, Gallup, New Mexico

2. Sampling Locations, SWMU 1, Marathon Petroleum Company, Gallup Refining Division, Gallup, New Mexico

3. Sample Locations and Intervals with Free Liquids, Marathon Petroleum Company, Gallup Refining Division, Gallup, New Mexico

List of Tables

1. SWMU 1 Sampling Locations and Depths, Marathon Petroleum Company, Gallup, New Mexico

2A. SWMU 1 Sampling – Volatile Organic Compounds (AL-1), Marathon Petroleum Company, Gallup, New Mexico

2B. SWMU 1 Sampling – Volatile Organic Compounds (AL-2), Marathon Petroleum Company, Gallup, New Mexico

2C. SWMU 1 Sampling – Volatile Organic Compounds (EP-1), Marathon Petroleum Company, Gallup, New Mexico

3A. SWMU 1 Sampling – Semivolatile Organic Compounds (AL-1), Marathon Petroleum Company, Gallup, New Mexico

3B. SWMU 1 Sampling – Semivolatile Organic Compounds (AL-2), Marathon Petroleum Company, Gallup, New Mexico

3C. SWMU 1 Sampling – Semivolatile Organic Compounds (EP-1), Marathon Petroleum Company, Gallup, New Mexico

4A. SWMU 1 Sampling – Metals Compounds (AL-1), Marathon Petroleum Company, Gallup, New Mexico

4B. SWMU 1 Sampling – Metals Compounds (AL-2), Marathon Petroleum Company, Gallup, New Mexico

4C. SWMU 1 Sampling – Metals Compunds (EP-1), Marathon Petroleum Company, Gallup, New Mexico

5. SWMU 1 Sampling – General Chemistry, Marathon Petroleum Company, Gallup, New Mexico

6. FID Sampling Results, Marathon Petroleum Company, Gallup, New Mexico

7. SWMU-1 Berm Sample Results, Marathon Petroleum Company, Gallup, New Mexico

8. SWMU-1 Clay Sample Results, Marathon Petroleum Company, Gallup, New Mexico

List of Attachments

A. Sediment Sampling Forms

B. Analytical Results Tables

C. Lab Reports

Introduction

The Marathon Petroleum Company, Gallup Refining Division (MPC) is submitting this revised investigation report for sampling of soils and sediments at the former aeration lagoons (AL-1 and AL-2) and evaporation pond (EP-1), known collectively as Solid Waste Management Unit (SWMU) 1. The sampling was conducted for the purposes of soil and sediment volume determination and chemical characterization for future SWMU 1 excavation, disposal, and closure. The sampling took place the week of January 13, 2020 and was conducted in accordance with an approved work plan submitted to the New Mexico Environment Department (NMED) on September 23, 2019 (MPC 2019). The work plan was approved by NMED on October 30, 2019.

Prior sampling was conducted in 2008 (Trihydro 2008) when the ponds were flooded and a boat was required. The resulting sediment depths and waste volumes were affected by the presence of water. The current effort was conducted while the ponds were substantially dry, and includes specific chemical analyses, such as the Toxicity Characteristics Leaching Procedure (TCLP), not analyzed for in the prior SWMU 1 investigation.

Background

MPC, Gallup Refining Division (Refinery) is located approximately 17 miles east of Gallup, McKinley County, New Mexico along the north side of Interstate Highway I-40 (Figure 1). The physical address is I-40, Exit #39 Jamestown, New Mexico 87347. The Refinery property covers approximately 810 acres.

The Refinery is a crude oil refinery that processes crude oil transported by pipeline or tanker truck from the Four Corners region. Various process units operated at the Refinery include: crude distillation, reformer, fluidized catalytic cracker, alkylation, sulfur recovery, merox treater, and hydrotreater. Current and past operations have produced gasoline, diesel fuels, jet fuels, kerosene, propane, butane, and residual fuel.

SWMU 1 consists of the former aeration lagoons (AL-1 and AL-2) and the evaporation pond (EP-1) (Figure 1), which were constructed in 1987. Operation ceased in 2013. AL-1 and AL-2 are approximately 0.3 acres and 0.5 acres, respectively, and EP-1 is approximately 1.3 acres. The Refinery's process wastewater treatment train consisted of an American Petroleum Institute separator, benzene air strippers, and an aggressive biological treatment unit (ABTU) consisting of the two aeration lagoons in series, followed by evaporation in EP-1. AL-1, AL-2, and EP-1 are earthen surface impoundments with native clay functioning as a bottom liner (DiSorbo 2018).

Based on their usage as a component of an ABTU, AL-1 and AL-2 sediments have been classified as listed hazardous waste (F037/F038), whereas sediments in EP-1 by definition would not be classified as a listed hazardous waste, but may be hazardous depending on sampling and analysis results (NMED 2019).

Historic Sampling and Results

Prior sampling of the sediments and laboratory analysis were conducted in 2008 of AL-1, AL-2, and EP-1 (Trihydro 2008). Sampling was conducted using a boat because of the presence of water in the ponds. Laboratory sampling analyses of the sediments consisted of total petroleum hydrocarbons (TPH), diesel range organics (DRO), and gasoline range organics (GRO) by United States Environmental Protection Agency (USEPA) method 8015, semi-volatile organic

compounds (SVOCs) by USEPA method 8270, volatile organic compounds (VOCs) by USEPA Method 8260, Resource Conservation and Recovery Act (RCRA) metals by USEPA Method 6010C, and mercury by USEPA Method 7471.

In the 2008 report (Trihydro 2008), standards for comparison consisted of NMED Industrial Soil Screening Levels (ISSLs) and the USEPA Maximum Concentrations of Contaminants for the Toxicity Characteristic (CFR Title 40 Part 261). The Toxicity Characteristics Leaching Procedure (TCLP) analysis was not performed. In the absence of TCLP analyses, the sample concentrations were divided by 20 and compared to the TCLP standard as the maximum theoretical leachate concentration that could be observed from the sample. This was to evaluate the potential for soils from the sample to exceed the TCLP standard and was used as a screening tool.

Twenty-six samples, using the EPA-approved RCRA calculation for comparing total metals concentrations to the TCLP standard, from various sediment depths in the three areas exceeded the Toxicity Characteristic for mercury, and three samples from AL-1 exceeded the Toxicity Characteristic for lead. During this sampling, approximate sediment thickness and volumes were estimated as follows:

- AL-1: 3.5 feet (ft) to 6.0 ft, 1,700 cubic yards (yds^3).
- AL-2: 6.5 ft to 9.6 ft, 3,800 yds^3.
- EP-1: 1.2 ft to 5.1 ft, 3,200 yds^3.

Historical sample locations are shown on Figure 2.

Planned Sampling Activities

A Soil Sampling Investigation Work Plan (MPC 2019) was submitted and approved by the NMED in September 2019 (NMED 2019), and consisted of the following major elements:

- Samples collected using a hand-auger in locations predetermined by the RCRA Post-Closure Permit guidelines.
- Three sampling locations in each of the two aeration ponds and four sampling loctions in the evaporation pond to a depth of 8 ft or refusal.
- Pond berm sampling at locations along each of the pond berms (four berms/pond), starting at the top and then at an interval of 2.5 vertical ft and a depth of 1.5 ft in as near a horizontal direction as possible.
- Analysis of samples using field screening with a flame ionization detector (FID), and submission of laboratory samples for analysis of VOCs by Method 8260, SVOCs by Method 8270, metals by Method 6010, mercury by Method 7471, TPH-GRO, TPH-DRO, TPH - motor oil range (ORO), and TCLP analysis for lead, mercury, and benzene were planned. Free liquids, pH, and specific gravity were also analyzed by the laboratory.

- Duplicate samples for the purpose of quality assurance.

- Analytical results comparison against NMED I~~ndustrial~~ SSLs, TCLP and the ~~USEPA~~ NMED ~~Industrial~~ Residential Soil Screening Levels (RSSLs). The hazardous waste determination was completed using the TCLP standards compared against the benzene, mercury, and lead results.

Deviations from Approved Plan

Deviations from the sampling plan approved by NMED (NMED 2019) included the following:

1. Samples were to be collected at the surface and every 2.5 ft to a maximum depth of 8 ft; however, during the sampling it became apparent that immediately below the surface sediment was a homogeneous black sludge that varied in thickness above a visually distinct native clay liner. Attachment A provides the field notes from the sampling event. It was decided that only a surface, one sludge, and one native clay sample would be collected from each location in the basins.

2. Despite dewatering with a vac truck throughout the week, ~~AP~~AL-1 and ~~AP~~AL-2 pond surfaces remained too unstable to collect samples from some of the planned locations. One sample location from ~~AP~~AL-1 and all three sample locations from ~~AP~~AL-2 had to be moved closer to shore than previously planned. In addition, due to these safety concerns, the native clay liner samples were taken only to a depth of 6 to 12 inches into the native clay rather than to the planned 8-foot depth. Sample locations and depths are shown on Figure 2 and summarized in Table 1.

3. While equipment blanks were not collected, MPC does not believe the integrity of the samples was compromised. Several factors were considered in making this determination.

   In MPC Response Comment 2, it was shown that 91% of the bottom clay liner analyses from AL-1, AL-2, and EP-1 were below ISSLs for TPH (GRO/DRO/ORO). This indicates that the bottom clay samples were not significantly cross-contaminated by the sludge from the interval immediately above the bottom clay or from potential cross-contamination between sample locations. The remaining 9% of the bottom clay liner analyses were most likely impacted in-situ, not as a result of sampling.

   In addition, within each borehole, after collection of the overlying sludge sample, the hand auger had to be pushed through the sloughing black sludge to the bottom clay liner to collect the sample, so that decontamination and the importance of an equipment blank was minimal due to the issue with having to sampling the clay through the sludge. To eliminate as much cross-contamination as possible to the clay layer, the outer black sludge was removed from the clay sample, so only clay was placed in the sample jar. In addition, gloves were changed between sludge and clay sample collection. Finally, the augers were decontaminated between boreholes, including washing and rinsing to remove all visible traces of sludge.

~~The sampling plan specified equipment blank collection at a frequency of 10% of samples collected. These samples were not collected. The hand auger was decontaminated prior to each sample depth by brushing off soil and by cleaning off~~

~~any sludge until the surface of the hand auger was visibly clean. The hand auger and spade were decontaminated using Simple Green™ between each sample location.~~

~~2.~~4. The planned sampling activities included field screening with an FID. The FID received from the rental agency would not stay lit after the first day of use and a replacement was ordered. The replacement FID would not function. Due to repeated technical issues with the FIDs, only samples from the first day (approximately 20) were able to be screened in the field. While all field data were not screened, there was sufficient FID data to establish a positive correlation between the FID results and the laboratory VOC and SVOC data.

~~3.~~5. TCLP benzene analyses were performed on those samples where benzene soil concentrations exceeded 0.5 mg/kg, rather than all samples. This was a screen recommended by the laboratory Hall Environmental to optimize the number of benzene TCLP analyses.

~~4.~~6. The TCLP mercury samples, which were proposed in the approved investigation work plan, were analyzed within the holding time. Although the mercury soil analyses exceeded the holding times for the EPA Method 7471, this analysis was not proposed in the approved investigation work plan and was requested later to provide additional information on mercury concentrations across the ponds. TCLP mercury results for all samples (berm and pond) were several orders of magnitude below the Code of Federal Regulations (CFR) TCLP screening level of 0.2 milligrams per liter (mg/L). ~~Total mercury was inadvertently left off the original chain-of-custody (COC) that was sent to the laboratory. The laboratory had enough remaining sample left to analyze for total mercury, but it was completed outside the holding time of 28 days. Samples of mercury that were reported as not detected are considered unusable due to the length of time between sampling and analysis. It should be noted that mercury TCLP was analysed~~analyzed at each locations and none exceeded the TCLP standard.

~~5.~~7. A Tier I data validation was completed on all the samples. Tier II data validation will be completed on the confirmation results following excavation of SWMU 1. The Tier I validation reviewed potential problems with the data and did not identify possible biases or errors in the lab data. The data were considered accurate for the purposes of excavation delineation and waste disposal determination.

~~6.~~8. A comparison of the analytical results to Land Disposal Restrictions (LDRs) is not submitted in this report; but following selection of the waste treatment/disposal firms MPC will complete the LDR form and comparison.

Field Investigation Results

Trihydro conducted the sampling January 13-17, 2020. The samples were collected from 22 locations, including 10 pond sediment and 12 berm locations. Pond or toe sample depths ranged from surface collection to 6.5 ft below ground surface (bgs). Though designated toe samples, toe samples are effectively pond samples because they ~~showed~~ exhibit the same silty, sandy surface layer underlain by three to five feet of sludge, which lies above the native clay liner. Berm locations were taken from the inside of the pond to a vertical depth of 9 ft through the top of berm. The samples were generally collected in the locations presented in the Soil Sampling Investigation Work Plan (MPC 2019) but deviated slightly based on the conditions observed in the pond and lagoons during the sampling, as discussed above.

Summary of Field Sampling Activities

A total of 97 samples plus 10 duplicate samples and 5 trip blanks were collected from the three ponds. A summary of samples and locations are shown on Figure 2 and in Table 1.

Sampling began on the top and sidewall berms of the three ponds while AL-1 and AL-2 fluid was being removed with a vac truck. Several samples were identified as toe and berm samples. The toe samples were collected starting with sediment taken from the base of the berm, including any surface soil, another sample was taken of any sludge, and lastly a native clay sample was taken from below the sludge. Although these samples are classified as toe samples, they are, in fact, pond samples due to the presence of several feet of sludge. Surface samples on the pond and lagoons were taken with a spade and placed in a Ziplock bag. The hand auger was then advanced down through the sludge to the hard-packed native clay liner to determine the depth to the top of the native clay liner. The sludge sample was extracted from the hand auger as it came out of the hole and placed in a Ziplock bag. Dry decontamination of the auger by brushing and scraping was conducted between depths. Then the hand auger was used to obtain a sample of the native clay liner. Generally, penetration into the native clay was limited to approximately 1 foot because of difficulty turning the auger in the native clay. The field geologist visually observed the samples and recorded the observations in the field notebook. The hand auger and spade were decontaminated using Simple Green™ between each sample location.

Headspace sampling of the samples was conducted using an FID. Only samples collected on Monday, January 13, 2020 were sampled with the FID, as the FID and its replacement would not operate properly; specifically, the flame would not stay lit. The piece of equipment delivered onsite failed but the information that the FID provided while operational showed a clear correlation between contamination and elevated FID readings. Higher DRO results generally corresponded with higher FID readings. In future investigations, an additional functional FID unit will be kept on-site.

The sludge in the aeration lagoons has been accumulating since the refinery was built. These sludges consist of heavily weathered hydrocarbon products. A PID is designed to detect light volatile organic compounds (VOC) such as benzene, toluene, ethylbenzene, and xylene compounds. Additionally, a PID does not work well with pond sediments due to the moisture content of the sediments. An FID is designed to detect a broader range of compounds such as long-chained hydrocarbons, also known as SVOCs, in addition to the VOCs. Because both AL-1 and AL-2 are aeration lagoons, most of the lighter VOCs had volatilized or degraded during aeration leaving the heavier SVOCs in the sludge and hydrocarbon that infiltrated the underlying clay liner. Based on the above, an FID was selected for screening the soils and sludges as it would be able to detect the heavier hydrocarbons, as well as the lighter hydrocarbons.

The samples were placed in laboratory provided sample containers, labeled, and placed in a cooler, iced, and delivered to Hall Environmental Laboratories for analysis for VOCs by USEPA Test Method 8260B; SVOCs by USEPA Test Method 8270C; TPH by USEPA Test Method 8015M; total metals by USEPA Test Methods 6010B and 7471; benzene TCLP by USEPA Test Method 8260B; mercury and lead TCLP by USEPA Test Methods 7470 and 1311/6010A, pH, specific gravity, and free liquids (paint filter).

Field Observations of Pond Conditions

EP-1

The toe of each EP-1 berm had 6 to 12 inches of surface sediment, underlain by up to 3 ft of black sludge overlying a native clay layer. The native clay layer in the toe samples showed little to no visual evidence of staining, and the transition in color and texture from black sludge to native unstained clay was obvious. Samples in EP-1 were taken in locations as indicated in the workplan. The samples taken within the pond had minimal surface sediment with 3 to 5 ft of sludge overlying the native clay layer. Surface water was observed on approximately a quarter of the pond area. Groundwater was not encountered during the sampling.

AL-1

AL-1 conditions required sample SWMU 1-8 to be collected closer to the shoreline than the work plan proposed due to safety concerns as shown on Figure 2. Samples were collected using a pallet as a sampling platform. Samples consisted of 3 to 6 inches of surface sediment underlain by 4 to 6 ft of sludge overlying a native clay layer. As with EP-1, the transition from black sludge to unstained native clay was obvious. The maximum sample depth was dictated by the native clay layer. Samples were generally taken up to 6 to 12 inches into the native clay layer, after which it was deemed unsafe to continue due to the unstable sampling platform. Surface water was observed on approximately a third of the pond area, prior to vac truck removal, which reduced the surface water coverage to approximately 25% of the area. Groundwater was not encountered during the sampling.

AL-2

Conditions in AL-2 were similar to AL-1, but with more saturated conditions. AL-2 conditions required all sampling to be collected closer to the shoreline than the workplan indicated due to safety concerns (Figure 2). Samples consisted of 0 to 6 inches of surface sediment underlain by 4 to 5.5 ft of sludge overlying a native clay layer. As in AL-1, the maximum sample depth was dictated by an unstained native clay layer, which was readily discernible. Samples were taken 6 to 12 inches into a native clay layer, after which it was deemed unsafe to continue. Surface water was observed on approximately a third of the pond area prior to vac truck removal, which reduced the surface water coverage to approximately 25% of the area. Groundwater was not encountered during the sampling.

Quality Assurance/Quality Control Samples

Quality assurance/quality control (QA/QC) samples were recorded on the field forms.

Laboratory Analytical Results

Analytical results for exceeded detections of the various parameters are presented in the following tables:

- Table 2 – VOCs
- Table 3 – SVOCs
- Table 4 – Metals

Results are organized in these tables by pond. Tables with all the sampling results compared to the soil standards are included in Attachment B. Analytical laboratory reports are included in Attachment C. The ranges of detected

concentrations of analytes are summarized in the sections below. An interpretation of the results, including a comparison to the standards, is also presented below. The sample locations are shown on Figure 2 and summarized in Table 1.

VOCs

The detected exceedance sample results of VOCs are provided in Tables 2a through 2c. A complete summary of all sample results is included in Attachment ~~C~~B. Exceedances were observed in DRO, GRO, and Oil Range Organics (ORO) across the pond and lagoons. The NMED ~~Industrial Soil Screening Levels (~~ISSL~~)~~ for DRO and ORO are both 3,000 milligrams per kilogram (mg/kg) and 500 mg/kg for GRO. The NMED R~~esidential~~ SSL for DRO and ORO are both 1,000 mg/kg and 100 mg/kg for GRO. The detections were generally higher in locations sampled closer to the surface, and as shown in Appendix ~~C~~B Tables 1A, 1B and 1C, the concentrations relatively abruptly (several orders of magnitude) decrease with depth as the clay is encountered.. No other VOC detections exceeded the standards.

Benzene samples with concentrations greater than 0.5 mg/kg were analyzed for TCLP benzene. Only 8 samples from AL-1 met this criterion. No detections of benzene exceeded the NMED SSL's of 87.24 mg/kg for an Industrial Worker. No detections of benzene TCLP exceeded the 40 CFR 261.24 TCLP Screening Level of 0.5 mg/kg.

SVOCs

The detected exceedance sample results of SVOCs are provided in Tables 3a through 3c. 1-methylnaphthalene, 2-methylnaphthalene, and naphthalene exceeded their respective NMED ~~Residential R~~RS~~SL's~~ and the USEPA RSL's, but these analytes did not exceed the NMED I~~ndustrial~~ SSL. Benzo(a)anthracene and benzo(a)pyrene exceeded all three of the standards in one location, SWMU 1-9 in the surface sample. Benzo(a)pyrene exceeded the NMED ~~Residential~~ RSSL and USEPA RSL for SWMU 1-9 at 4.5 ft. No other exceedances were observed.

Metals

The detected exceedance sample results of metals are provided in Tables 4a through 4c. Exceedances were observed for arsenic, antimony, and mercury compared to the USEPA RSL and the NMED R~~esidential~~ SSL. Arsenic did not exceed the ~~Industrial~~ NMED ~~RSL~~ ISSL and a standard for mercury has not been established for NMED. Antimony exceeded the ~~Residential~~ NMED RSSL in two locations, SWMU 1-20 (toe) (0.5 – 3 ft) and SWMU 1-11 (toe). Lead did not exceed any of the applicable screening levels. The TCLP results for mercury and lead did not exceed the screening levels from 40 CFR 261.24.

Although the mercury analyses exceeded the holding times for the EPA Method 7471, this analysis was not included in the approved investigation work plan, thus not required. The TCLP mercury results, which were included in the approved investigation work plan, were analyzed within the holding time. TCLP mercury results for all samples (berm and pond) were several orders of magnitude below the CFR TCLP screening level of 0.2 mg/L. Therefore, additional sampling, other than confirmation samples collected after excavation, will not be necessary.

General Chemistry

Sample results of general chemistry analyses, pH, free liquids, and specific gravity are provided in Table 5. The pH ranged from 3.48 in SWMU 1-19 (toe) to 9.13 in SWMU 1-22 ((toe) (3.5-4 ft)) with an average pH for all the samples of

7.52. Specific gravity ranged from 1.03 g/cm^3 in SWMU 1-12 (toe) to 2.21 g/cm^3 in SWMU 1-17 ((berm) (1.5 ft)). Free liquids were analyzed and resulted in a positive or negative result (paint filter test). Of the 97 sample locations only six resulted in a positive paint filter test resulting in the sample having free liquid. Those locations are: SWMU 1-10 (4-4.5 ft), SWMU 1-18 (toe), SWMU 1-18 (toe) (2.5 ft), SWMU 1-20 (toe) (0.5-3 ft), SWMU 1-8 (2.5 ft), and SWMU 1-9 (4.5 ft). A summary of the free liquid detected during sampling is shown on Figure 3.

The standing water observed in AL-1 and AL-2 is likely perched within the pond clay liners and is not representative of the deeper water table. This standing water is likely from precipitation, with a possible contribution from shallow groundwater seepage (< 6 ft in depth). Test pits proposed for areas adjacent to AL-1 and AL-2 will assist in determining the potential for significant seepage which could affect waste excavation. The deeper groundwater may be present at lower depths in EP-1. For example, the depth to water in local monitoring wells GWM-1 (northwest corner of EP-1) in 2016 (2016 Annual Report) was approximately 22 ft below grade, GWM-2 and GMW-3 were dry (total depths approximately 18 and 19 ft below grade, respectively).

Pond Berm Analytic Results Summary

Soils outside of the berms were not sampled, as this was not proposed as part of the approved work plan. Other, earlier, samples outside of the bermed areas were collected, as shown on Figure 2. These results showed that only one sample (SWMU 1-1 (2-4 ft), of the 17 soil borings advanced along the berm of all three ponds, exceeded ISSL and RSSL. This boring was located near the discharge lines coming from the new American Petroleum Institute separator (Western Refining 2013). All wastewater flow was discontinued by June 2013 when the flow was diverted to the new wastewater treatment plant (Western Refining 2013). Therefore, additional seepage into the berm would not be expected since mid-2013.

Based on the berm sampling results shown in Table 7, shallow berm soils can likely be segregated in the field during excavation and composite sampled to determine suitability as backfill. Deeper berm soils and soils outside of the berms can be assessed during excavation on the basis of physical appearance, odor, and FID field screening, segregated if necessary, and sampled. ~~Table 6 presents berm analytical results, with those berm sample results exceeding standards shown in bold. Table 8 for berm soil results has been added covering the frequency of detections below standards. While FID results were limited to the first day, these results show a positive correlation between FID results and DRO/ORO results. As noted in MPC Response 2 above, Tables 2A, 2B, and 2C show only exceedances, not every sample result.~~

~~Of the three sample locations and eight samples in AL-1, three sample locations showed TPH (GRO/DRO/ORO) results above the ISSL. One sample depth is at 1.5 feet, one is at 2.5 feet, and the last location is at 7.5 feet below the top of the berm. One other location has an analysis result above the RSSL at 2.5 feet. Of the 24 analyses from AL-1, 75 percent were below the ISSL for TPH (GRO/DRO/ORO) (Table 8).~~

~~Two of the eight sample locations at AL-2 had exceedances of TPH (GRO/DRO/ORO). Of the 24 total samples analyzed for TPH (GRO/DRO/ORO), 83 percent of the analyses for TPH (GRO/DRO/ORO) were below the ISSL.~~

~~Of the 17 sample locations at EP-1, only two sample results exceeded the ISSL for TPH (GRO/DRO/ORO) and one exceeded both the ISSL and the RSSL. Of the 51 analyses of samples from AP-1, 92 percent were below the ISSL for TPH (GRO/DRO/ORO) and 88 percent were below both the ISSL and the RSSL.~~

~~In total, 86 percent of the berm samples collected at all three ponds were below the ISSL for TPH (GRO/DRO/ORO). The top sample (1.5 ft) at every berm location, except one location, is below the ISSL and RSSL for TPH (GRO/DRO/ORO). Thirteen of the 18 berm sample locations with TPH (GRO/DRO/ORO) results were less than the ISSL and RSSL at the 2.5-foot level of the berm.~~

~~As indicated in the other responses, visual observation and FID screening can provide a reliable basis for full-scale excavation to proceed, followed by confirmation sampling and laboratory analyses.~~

Pond Clay Liner Analytic Results Summary

A distinct clay liner was encountered in this investigation. This liner was evidenced by its material properties (hand-augering in clay) and unstained color. A better picture of the relatively abrupt decrease with depth of concentrations can be seen from Attachment B Tables 1A, 1B and 1C, where the TPH (GRO/DRO/ORO) results for the pond sediments show a relatively abrupt (several orders of magnitude) decrease in concentration with depth in a boring location as the clay was encountered. For ~~instance~~example, in Attachment B Table 1A, the TPH (GRO/DRO/ORO) results for the lowermost clay sample from all three AL-1 pond sample locations (SWMU 1-8 (5 - 5.5 ft), SWMU 1-9 (5.5 - 6 ft), and SWMU 1-10 (4.5 - 5 ft)) are below both the NMED Industrial Soil Screening Levels (ISSL) and Residential Soil Screening Levels (RSSL) for TPH (GRO/DRO/ORO).

~~-~~To support MPC's assertion that the extent of contamination in the clay is limited, ~~a new table (~~Table 8~~) has been added showing~~presents the frequency of detection above standards for the underlying clay for AL-1, AL-2 and EP-1. Tables 2A, 2B, and 2C show only exceedances, not every sample result. ~~For instance, in Attachment B Table 1A, the TPH (GRO/DRO/ORO) results for the lowermost clay sample from all three AL-1 pond sample locations (SWMU 1-8 (5 - 5.5 ft), SWMU 1-9 (5.5 - 6 ft), and SWMU 1-10 (4.5 - 5 ft)) are below both the NMED Industrial Soil Screening Levels (ISSL) and Residential Soil Screening Levels (RSSL) for TPH (GRO/DRO/ORO).~~

Of the 21 TPH (GRO/DRO/ORO) analyses at the seven sample locations collected from the clay liner in AL-1, which includes the toe samples, 95 percent are below the ISSL and 81 percent are below both the ISSL and RSSL (Table 8). That is five of seven locations are below both the ISSL and RSSL in AL-1 for TPH (GRO/DRO/ORO). Six of the sample locations are below the ISSL for TPH (GRO/DRO/ORO).

Three sample locations out of the six locations collected from the clay liner in AL-2, are below both ISSL and RSSL for TPH (GRO/DRO/ORO). Another sample location is below the ISSL for TPH (GRO/DRO/ORO). Overall, of the 18 analyses from AL-2, 83 percent are below the ISSL and 72 percent are below both the ISSL and the RSSL for TPH (GRO/DRO/ORO).

Six of the nine sample locations from EP-1 were below both ISSL and RSSL for TPH (GRO/DRO/ORO). Only one location had TPH (GRO/DRO/ORO) analyses above both ISSL and RSSL. Of the 27 analyses for TPH (GRO/DRO/ORO) from samples collected from EP-1, 93 percent were below the ISSL and 85 percent were below both the ISSL and RSSL (Table 8). Overall 91 percent of the 66 TPH (GRO/DRO/ORO) analyses collected from all three ponds were below the ISSL.

These results correlate with the color change observed in the clay. Available FID field data also indicate a correlation with TPH-DRO/ORO analytical data (see below). Together, field observations and FID screening should provide a practical, working basis for full-scale excavation in the field. Excavation will be followed by laboratory confirmation sampling of excavation vertical and horizontal extent.

QA/QC Samples

Five methanol blank samples were provided by the laboratory as trip blanks. These samples were sent in the coolers by the laboratory and were not altered between sampling and analysis. Methylene chloride, 1-methylnaphthalene, 2-methylnaphthalene, 1,2,4-trimethylbenzene, 4-methyl-2-pentanone, and toluene were detected in the blank samples. Methylene chloride is a common laboratory contaminant and was detected in all of the laboratory blanks and several of the soil samples. None of the detected blank samples exceeded the standards.

Tier I data validation was performed on the data package provided by the laboratory. The Tier I data validation included a review of the completeness of the data packages, COC's, sample condition receipts, sample preservations, holding times, the case narrative, and the quality control summary. Several notations were provided in the quality control summary provided by the laboratory, but the laboratory determined that the precision, accuracy, validity, and usability of the data were not compromised, and that corrective actions were not necessary. Following a review of the Tier I data validation parameters, it was determined that the data set was generally complete.

Correlation of Analytical Results with FID Field Screening

FID results from the first day were compared to the TPH results from the samples they were analyzed from. The comparison is provided in Table 6. Results with high detections of DRO (greater than 200 mg/kg) had an FID reading greater than 1.5 ions per second. These results indicate a potential positive correlation between the analytical results and soil characteristics in the field. The FID will be used during excavation to confirm that hydrocarbon contaminated soil has been excavated from the lagoons and pond along with visual indicators and laboratory confirmation sampling.

Conclusions

This investigation was conducted to characterize soils and sediments in EP-1, AL-1, and AL-2 for future excavation and closure of SWMU-1. Much of the vertical and horizontal delineation of contamination was achieved. The results provide a firm basis for proceeding with an excavation plan, which will include the field and laboratory sampling procedures. Significant findings include:

- Confirmation that EP-1 soil/sediments are not RCRA hazardous based on the toxicity criteria.

- Estimated volumes for excavation and disposal for EP-1 (non-hazardous) 11,500 yd^3, AL-1 ~~1~~2,700 yds^3 (listed hazardous) and AL-2 ~~3,8~~4,500 yds^3 (listed hazardous).
- Characterization of the berm soil for potential re-use for excavation backfill.
- Pond sediment as consisting of a thick oily sludge, whose composition was confirmed by elevated TPH results.
- Generally, the oily sludge in the ponds had a specific gravity of 1.92, and a pH of 8.66. Of the 106 samples of sludge, only 6 had free liquids in the sample. This shows that the water accumulating in the ponds is likely from outside SWMU 1 and not coming from groundwater. While it is true that all sludge samples should contain liquids, it does not necessarily mean that all sludge contains *free* liquids. Much of the liquid within the sludge was trapped within the sludge at the time of its deposition and appears to be emulsified with petroleum into a gel-like consistency."

  Ponded water observed in AL-1 and AL-2 is likely perched water trapped by the clay layer which underlies the ponds. Based on the shallow water table elevations in the Seeps area to the south, it is also possible that seepage into the ponds is occurring along the southern edge of AL-1 and AL-2.

-
- Based on the analytical data and field observations, the waste excavation of the ponds can be reliably guided by visual observation of the sludge/native clay liner interface, color change of the native clay to a natural grey color, and FID sampling. Confirmation sampling will be conducted following excavation completion including mercury analysis.

Following NMED's review of these results and approval of the characterization of SWMU 1, MPC plans to ~~proceed with~~submit and investigation work plan that is required by NMED before the ~~remedy~~ remedial ~~implementation for the~~ excavation and closure of the SWMU is implemented. MPC plans to engage with a contractor for the excavation and disposal of the ponds. Once the contractor is identified and Waste Acceptance Criteria, including LDRs, are identified based on the contractor's proposed method of treatment and disposal, an excavation sampling plan will be submitted to the NMED for review and approval.

Closure sampling will be completed to confirm that the contaminated soil has been removed and submitted to NMED for review prior to backfill. Similar to this report, following the approval of the closure sampling MPC anticipates the submittal of a Class 3 RCRA permit modification for their Final RCRA Post-Closure Permit.

References

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Figures

Tables

Attachments

Attachment A - Field Notes

Attachment B - Complete Analytical Tables

Attachment C - Laboratory Analytical Reports

Attachment A - Field Notes

Attachment B - Complete Analytical Tables

Attachment C - Laboratory Analytical Reports

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COMMENTS

Action 19495

COMMENTS

Operator:	OGRID:	Action Number:	Action Type:
WESTERN REFINING SOUTHWEST, IN 6700 Jefferson NE, Suite A-1 Albuquerque, NM87109	705791	19495	DISCHARGE PERMIT

Created By	Comment	Comment Date
cchavez	Permittee SWMU1 Revised Investigation Report 1-5-2021.	03/02/2021

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CONDITIONS

Action 19495

CONDITIONS OF APPROVAL

Operator:			OGRID:	Action Number:	Action Type:
WESTERN REFINING SOUTHWEST, IN NM87109	6700 Jefferson NE, Suite A-1	Albuquerque,	705791	19495	DISCHARGE PERMIT

OCD Reviewer	Condition
cchavez	None