District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources Department

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	NRM2006560641
District RP	
Facility ID	
Application ID	

Release Notification

DENIED

Responsible Party

Responsible Party Hilcorp Energy Company	OGRID 372171
Contact Name Lindsay Dumas	Contact Telephone 832-839-4585
Contact email ldumas@hilcorp.com	Incident # *(assigned by OCD)* NRM2006560641
Contact mailing address 1111 Travis St., Houston, TX 77002	

Location of Release Source

Latitude 36.62278 Longitude -107.37089
(NAD 83 in decimal degrees to 5 decimal places)

Site Name San Juan 28-5 Unit 68M	Site Type Gas Well
Date Release Discovered 3/4/2020	API# *(if applicable)* 30-039-25831

Unit Letter	Section	Township	Range	County
D	33	28N	05W	Rio Arriba

Operator Did not Sign C-141

Surface Owner: ☐ State ☒ Federal ☐ Tribal ☐ Private (*Name:*)

Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☒ Produced Water	Volume Released (bbls) 10 bbls	Volume Recovered (bbls) 0
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☐ No
☒ Condensate	Volume Released (bbls) 67.79 bbls	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release
The release was the result of a BS&W drain valve failure. The valve failed due to ice/freezing conditions and allowed the contents of the tanks to drain out on the ground inside the bermed area.

Was this a major release as defined by 19.15.29.7(A) NMAC? ☒ Yes ☐ No	If YES, for what reason(s) does the responsible party consider this a major release? Per 19.15.29.7 (A)(a) an unauthorized release of a volume, excluding gas, of >25 bbls
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? Yes, by Clayton Hamilton (HEC-Foreman) to NMOCD (Cory Smith) and BLM (Whitney Thomas and Emmanuel Adeloye) by email on 3/4/20 at 4:53p.m.	

Initial Response

The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury

☒ The source of the release has been stopped.

☒ The impacted area has been secured to protect human health and the environment.

☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.

☒ All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have not been undertaken, explain why:

Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: _____Lindsay Dumas_____ Title: _____Environmental Specialist_____

Signature: _____ Date: ___4/15/2020__

email: _____ldumas@hilcorp.com_____ Telephone: _____8328394585_____

OCD Only

Received by: _____ Date: _____

Site Assessment/Characterization

This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release?	243 (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☐ Yes ☒ No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

Characterization Report Checklist: ***Each of the following items must be included in the report.***

☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
☒ Field data
☒ Data table of soil contaminant concentration data
☒ Depth to water determination
☒ Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
☒ Boring or excavation logs
☒ Photographs including date and GIS information
☒ Topographic/Aerial maps
☒ Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: _____Lindsay Dumas_____ Title: _____Environmental Specialist_____

Signature:_____ Date: __4/15/2020____

email: _____ldumas@hilcorp.com_____ Telephone: ____8328394585_____

OCD Only

Received by: _____ Date: _____

Remediation Plan

Remediation Plan Checklist: ***Each of the following items must be included in the plan.***

☒ Detailed description of proposed remediation technique
☒ Scaled sitemap with GPS coordinates showing delineation points
☒ Estimated volume of material to be remediated
☒ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
☒ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

Deferral Requests Only: ***Each of the following items must be confirmed as part of any request for deferral of remediation.***

☐ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.

☐ Extents of contamination must be fully delineated.

☐ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: _____Lindsay Dumas_____ Title: _____Environmental Specialist_____

Signature: _____ Date: ____4/15/2020___

email: _____ldumas@hilcorp.com_____ Telephone: _____8328394585_____

OCD Only

Received by: _____ Date: _____

☐ Approved ☐ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral Approved

Signature: DENIED _____ Date: _____

REMEDIATION WORK PLAN

SJ 28-5 UNIT #68M
NRM2006560641
RIO ARRIBA COUNTY, NEW MEXICO

April 15, 2020

Prepared for:

MS. LINDSAY DUMAS
HILCORP LOWER 48
1111 Travis St.
Houston, Texas 77002

Prepared by:

LT ENVIRONMENTAL, INC.
848 East Second Avenue
Durango, Colorado 81301
970.385.1096

LT Environmental, Inc.
Advancing Opportunity

A proud member of WSP

LT Environmental, Inc.
848 East Second Avenue
Durango, Colorado 81301
970.385.1096

April 15, 2020

Mr. Cory Smith
Environmental Specialist
New Mexico Oil Conservation Division
1000 Rio Brazos Road
Aztec, New Mexico 87410

RE: Remediation Work Plan
Hilcorp Energy Company
SJ 28-5 Unit #68M – NRM2006560641
Rio Arriba County, New Mexico

Dear Mr. Smith:

LT Environmental, on the behalf of Hilcorp Energy Corporation (Hilcorp), is pleased to present this Remediation Work Plan to remediate impacted soil at the SJ 28-5 Unit #68M natural gas production well (Site) located in unit letter D of Section 33, Township 28 North, Range 5 West, in Rio Arriba County, New Mexico (Figure 1). This Work Plan is being submitted to detail a plan for biopiling the recovered impacted soil. Once the closure standards are achieved, Hilcorp will backfill the original excavation with the remediated soil.

SITE HISTORY AND BACKGROUND

On March 4, 2020 Hilcorp Energy Company (Hilcorp) discovered a release of approximately 69.79 barrels (bbls) of condensate and 10 bbls of produced water at the Site. The release was a result of a drain valve failure. The drain valve froze allowing the contents of the tank to release onto the ground inside the bermed area. Hilcorp notified the New Mexico Oil Conservation Division (NMOCD), the Bureau of Land Management (BLM) and the United States Forest Service (USFS) of the release on March 4, 2020 via email. Hilcorp submitted an initial *Release Notification and Corrective Action* Form C-141 on March 5, 2020 and the release was assigned incident number NRM2006560641.

The Site is approximately 470 feet northwest of an unnamed first-order tributary to Muñoz Creek and approximately 3,200 feet northeast of the Muñoz Creek. Multiple first-, second-, and third-order tributaries to the Muñoz Creek are located within one mile of the Site (Figure 2). The Site is greater than 200 feet from any lakebed, natural spring, sinkhole, or playa lake. The Site is greater the 300 feet from any wetland. The site is greater than 1,000 feet from any freshwater well or spring. The site is greater than 300 feet from any mapped wetland.

The closest water well to the Site is the Magnum Well No. 1 (SJ-00036), located approximately 2,100 feet north of the Site (Figure 2). Depth to water is reported at 243 feet bgs and total depth of the well is 303 feet bgs.

Geology at the Site was determined through observations during excavation of impacted soil and a review of the geologic data available for the area. Near surface sediments consist mainly of sand with minor occurrences of fine-grained lithology. Below the surface grade, compacted and lithified sandstones and claystone are the dominant lithology.

Land use surrounding the Site consists of natural gas development and livestock grazing areas. No occupied permanent residences, schools, hospitals, institutions, or churches are within 300 feet of the Site. The nearest residence is located approximately 3.5 miles northwest of the Site. The Site is not within the area of a subsurface mine or unstable area and is not within the 100-year flood plain (Figure 2).

LTE characterized the Site according to Table 1, *Closure Criteria for Soils Impacted by a Release*, of 19.15.29.12 of the New Mexico Administrative Code (NMAC). Due to the Site having a depth to groundwater greater than 100 feet, the following NMOCD Table 1 Closure Criteria apply: 10 milligrams per kilogram (mg/kg) benzene; 50 mg/kg total benzene, toluene, ethylbenzene, and total xylenes (BTEX); 2,500 mg/kg total petroleum hydrocarbons (TPH); 1,000 mg/kg gasoline range organics (GRO) + diesel range organics (DRO); and 20,000 mg/kg chloride

In response to the release, Hilcorp began excavating impacted soil. The excavation is currently approximately 48 feet by 80 feet (Figure 1; excavation extent) and ranges in depth from 1.5 below ground surface (bgs) in the shallow portions to 15 feet bgs in the deeper portions. The identification and delineation of impacted material was completed by a Hilcorp technician who field screened soil removed from the excavation using a photo-ionization detector (PID). The highest field screening results observed during the excavation were approximately 3,500 parts per million for volatile organic hydrocarbons (VOC's). Hilcorp ultimately removed approximately 830 cubic yards (yd^3) of impacted soil and stockpiled the material onsite.

Hilcorp completed final confirmation soil sampling on April 1, 2020 and collected a total of 18 confirmation soil samples. Sample locations were approved by NMOCD prior to collection. The Bureau of Land Management (BLM) was on site during the confirmation sampling event. Laboratory analytical results from the confirmation sampling indicated that all samples collected complied with NMOCD closure criteria. Confirmation soil sample results are presented in Table 1, displayed on Figure 1, and the complete laboratory analytical reports are included as Attachment 1.

PROPOSED BIOPILING

LTE has detailed a proposed biopiling design, monitoring, and closure methods below and provided a modified schedule for NMOCD review and approval.

Hilcorp proposes to transport the excavated impacted soil, which is currently stockpiled on site, to an adjacent active well pad to the northeast, the SJ 28-5 Unit #65N. Lateral distance between the Site and the SJ 28-5 Unit #65N is approximately 0.82 miles. After the impacted soil is transported, Hilcorp will collect vadose zone soil samples from any area at the Site where the impacted soil was stock piled. Vadose zone soil samples will be submitted for laboratory analysis of BTEX by United States Environmental Protection Agency (EPA) Method 8021, TPH-GRO, TPH-DRO, and TPH-motor oil range organics (MRO) by EPA Method 8015.

The surface owner at the alternative remediation site, SJ 28-5 Unit #65N, is the Bureau of Land Management (BLM). Hilcorp propose placing biopiles in a bermed remediation area that is approximately 23,736 square feet (Figure 3). Based on the available area at the remediation site and the volume of excavated soil, the soil will be spread into windrows that are approximately 80 feet in length, 3 feet in width, and 2 feet in height spaced approximately 3 feet apart. Hilcorp will attempt to make the windrows as small as possible given the available space. LTE anticipates creating 46 biopiles of this size that will be paced in a bermed area that is approximately 86 feet long by 276 feet wide (Figure 3). Hilcorp will construct a berm surrounding the entire area that will be approximately 3 feet high in order to prevent the unwanted discharge of soil from run-off events. Because treatment will include tilling, which could destroy a liner, no liner is proposed. Due to the lithology at the Site consisting of silty sand and fine-grained material restricting migration and anticipated depth to groundwater greater than 100 feet bgs, LTE does not believe residual impact in the treated soil poses a threat to subsurface receptors.

Prior to creating the windrows for biopiling, Hilcorp will add 400 pounds (lbs) of 20-10-5 fertilizer to the impacted soil and mix thoroughly. The 20-10-5 fertilizer consists of 20 percent (%) nitrogen, 10% available phosphate, and 5% soluble potash and is used to boost microbial growth in soils. By increasing microbial activity, the microbial consumption of hydrocarbons is increased. Application rates are based on nitrogen being the most important constituent to promote biological activity within the soil. In order to elevate nitrogen levels in soil, LTE proposes adding 3 pounds to 4 pounds of nitrogen per 1,000 cubic feet of soil. Optimal concentrations of nitrogen are between 50 mg/kg and 200 mg/kg. Concentrations above 500 mg/kg inhibit microbial growth and will be avoided. In order to establish a baseline, Hilcorp will sample background concentrations of nitrogen prior to the addition of fertilizer.

Once the biopiles are constructed, Hilcorp will turn, or aerate, the soil weekly to allow for remediation. Each weekly event will include tilling and soil monitoring to ensure remediation is progressing as designed. Soil sampling will be conducted to evaluate degradation of the hydrocarbon constituents and to ensure optimal conditions for bioremediation once a month. Subsequent addition of fertilizer or other amendments is described below and is conditional based upon soil sample analytical results determined during sample collection to monitor remediation progress

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MONITORING

During each weekly tilling event, Hilcorp will make observations to ensure soil conditions are conducive to volatilization and microbial degradation and inspect the biopiles and berms for potential damage. Observations and inspection results will be recorded on the attached inspection form and available for review at any time. All inspections forms will be included in any reports submitted to NMOCD.

Soil Sampling

Each month, Hilcorp will collect forty-six 5-point composite samples at equal intervals and various depths from each individual windrow. Hilcorp will avoid collecting sample aliquots from the surface and near surface sections of the piles. The soil headspace from these composite soil samples will be field screened using a photo-ionization detector (PID) to monitor for the presence of volatile organic vapors. The procedure for field screening soil for volatile organic vapors includes:

Calibrate the instrument and record calibration information in the field notes. The following Ambient Temperature Headspace Analysis (ATHA) field screening method will be utilized for the selection of subsurface soil samples; however, state and/or project specific requirements may be used in lieu of the following procedure:

1. When collecting samples where splits may be destined for laboratory analysis, collect laboratory supplied sample jars prior to collecting field screening samples to minimize the potential for loss of volatile organic compounds (VOC's).

2. Place a consistent amount of soil into a sealable plastic bag and seal tightly or place the soil into a pre-cleaned glass jar, covering the top of the jar with aluminum foil. Label the outside of the bag or the jar with the sample name, depth, time, and date.

3. Allow the soil to equilibrate at approximately 70 degrees (º) Fahrenheit for approximately 10 minutes.

4. Place the container on a clean work surface upwind of other volatile organic sources.

5. Insert the tip of a PID probe into the corner of the bag or through the foil jar cover to measure the meter reading of the headspace within the container. Allow the meter to equilibrate and then record the maximum measured concentration on the inspection form.

Monitoring samples will be split and submitted for laboratory analysis monthly. Laboratory analysis will include BTEX by EPA Method 8021, TPH- GRO, TPH- DRO, and TPH-MRO by EPA Method 8015, pH by Standard Method (SM) 4500 H+B, moisture content by American Standard

Test Method (ASTM) D2216-92, Sodium Absorption Ratio (SAR), and nitrogen by SM 4500 NH3. TPH and BTEX results will indicate how much hydrocarbon impact remains in the soil and at what concentration for the different constituents. The nitrogen, pH, and SAR data will indicate if the soil is suitable to allow biologic activity to continue to breakdown hydrocarbons.

When laboratory analytical results indicate that a biopile is below the Closure Criteria for TPH and BTEX, no more aeration or amendment application will occur on that biopile and the result will constitute the closure sample for that biopile.

Moisture Content

In order to maintain optimum microbial hydrocarbon degradation conditions, soil moisture percent needs to remain between 10% and 20%. Hilcorp will use a soil moisture meter to record moisture content of soil within the stockpiles monthly. Moisture content will be measured from randomly selected places within each stockpile. If moisture content results from an individual biopile indicate values less than 10%, Hilcorp will water the stockpile until moisture contents are above 10% and record the amount of water used. Hilcorp will take special care not to over water the soil and prevent the pooling of any liquids within the remediation area.

Temperature

Optimum treatment temperatures for bioremediation range between 65 degrees Fahrenheit (°F) and 85°F. Temperatures should not exceed 135°F. Hilcorp will use an infrared thermometer to measure soil temperatures of each soil piles during the monthly monitoring events. Hilcorp will take the average of 5 temperature readings from the interior of each biopile to evaluate treatment temperatures.

Visual Inspections

Hilcorp will inspect the treatment area for damage to the berm, pooling of liquids, appropriate stabilization of the windrows, evidence of disturbance from stormwater, and the general weather conditions.

Documentation

Inspections must occur prior to mixing or water application. Hilcorp will complete a Weekly Inspection Form that will document field observations and activities including:

- Inspection date;
- Name of inspector;
- Weather;
- Field screening results (PID, temperatures, and moisture content results);
- Calibration records of PID and moisture content %;

- Samples collected for laboratory analysis;
- Time spent mixing soil;
- General site conditions;
- Any breeches of containment documented and repaired;
- Amount of water applied (if any);
- Amendments applied, type, quantity, and locations; and
- Any areas within the remediation areas that have evidence of pooling liquids and actions taken to prevent similar pooling in the future.

All data will be tabulated and monitored for remediation progress. If appropriate progress is not observed, additional actions will be taken as described in the Contingencies section below. The Monthly Inspection Form is included as Attachment 1.

Backfilling

After soil sample results indicate soil has been remediated according to NMOCD Closure Criteria, Hilcorp will submit a report to the NMOCD documenting remediation progress and satisfactory sampling results with a request to backfill the excavation with soil from the biopiles. Once backfilling is approved, Hilcorp will backfill the excavation and conduct vadose zone sampling within the remediation area.

Vadose Zone Sampling

After backfilling the treated soil, Hilcorp will collect 5-point composite soil samples from vadose zone soils beneath the area that biopiles were placed (Figure 4). Hilcorp will also collect additional vadose zone soil samples from areas where water may have collected during rain or watering events. Soil samples be collected from 6 inches below the native soil surface. The locations of the additional vadose zone samples (if any) to be taken beneath areas of where water may have pooled will be determined by the GPS coordinates taken by Hilcorp during the weekly inspections. Vadose zone soil samples will be submitted for laboratory analysis of BTEX by EPA Method 8021, TPH- GRO, TPH- DRO, and TPH- MRO by EPA Method 8015.

If vadose zone samples indicate an exceedance of the Closure Criteria, Hilcorp will remove the top 3 inches of soil beneath where the soil samples were collected. Once the near surface soil is removed, Hilcorp will resample the vadose zone in that area. Hilcorp will continue to remove soil in 3-inch lifts of soil in these areas until the vadose zone sample are compliant with the Closure Criteria. Impacted soil from these areas will all be biopiled as described above.

Reclamation

The total acreage of bare mineral soil expected to result from construction activities is expected to be between 0.1 and 1.0 acre total, and revegetation will follow the Bureau of Land

Management – Farmington Field Office (BLM-FFO's) *Vegetation Reclamation Procedure A*. Areas of bare mineral soil are expected to be small and localized in nature, and spot seeding will be done by broadcasting by hand in disturbed areas utilizing a BLM-FFO approved seed mix. The seeds will be covered using the most appropriate method as determined by site conditions at the time of seeding, which may include: spreading and crimping straw over the seeded area, raking the area by hand, dragging a chain or chain-linked fence over the seeded area, or applying tackifier/mulch products designed for reclamation purposes. The proposed remediation area will be seeded within 90 days of approval of the closure request, if weather conditions are favorable. If the area is unable to be seeded within this timeframe the BLM-FFO will be consulted to establish an approved time frame for seeding. Hilcorp will provide documentation to the BLM-FFO that the vegetation percent cover standards for the Pinyon-Juniper/sagebrush vegetation community have been attained before the BLM-FFO will issue a final abandonment notice or a relinquishment.

CONTIGENCIES

Hilcorp proposes the following contingencies for lack of remediation progress or unexpected deviations from this Work Plan.

- If moisture content results from an individual biopile indicate values less than 10%, Hilcorp will water the stockpile.
- If temperature or pH values fall out of range of ideal conditions for bioremediation, Hilcorp will propose additional measures to bring improve the conditions based on results and season/weather.
- If soil samples indicate nitrogen concentrations less than 50 mg/kg, more fertilizer will be added to the soil to promote microbial growth and remediation.
- If soil field screening results indicate increasing or stable concentrations of VOCs for three consecutive weeks, MicroBlaze will be applied to individual stockpiles demonstrating this increase. MicroBlaze will be applied at a rate of 0.1 gallons of MicroBlaze and 1 gallon of water (10%) to every cubic yard of soil.
- If concentration of TPH and BTEX do not decrease by at least 25% within the first 30 days of monitoring, an additional dose of MicroBlaze will be added to the biopiles that have not shown a 25% decrease in TPH and BTEX concentrations.
- If TPH and BTEX concentrations do not decrease by 50% within the first 65 days of monitoring, an additional dose of MicroBlaze will be added to the biopiles have not shown a 25% decrease in TPH and BTEX concentrations.
- If remediation requires more 125 days, Hilcorp will submit a revised remediation work plan to address remaining impacts.

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Reporting

Hilcorp will submit either quarterly reports or a closure request to the NMOCD (based on the soil analytical results) detailing the following from each quarter:

- Field activities;
- Field screening results;
- Laboratory analytical results;
- Additional amendment application (if necessary);
- Any significant weather events and a general summary of the weather during the reporting period;
- Completed inspection forms; and
- Any recommendations.

Hilcorp will submit the quarterly report or a closure request by the last day of the quarter. The first report will be submitted at the end of the quarter when biopiling commences. If remediation has occurred within a single quarter, no quarterly report will be submitted but a request to backfill and closure request will be submitted to the NMOCD.

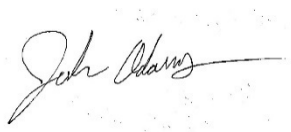
Timeline

Hilcorp proposes to begin excavating soil and immediate biopiling within two weeks of approval of this Revised Remediation Work Plan. Hilcorp believes remediation will require 125 days to complete. Once soil is remediated and no exceedances are detected in the vadose zone samples, Hilcorp will backfill the excavation with the remediated soil. Hilcorp will submit a closure request to the NMOCD with 60 days of receiving the final laboratory results.

LTE appreciates the opportunity to provide this report to the NMOCD. If you have any questions or comments regarding this Work Plan, do not hesitate to contact Devin Hencmann at (970)-385-1096 or dhencmann@ltenv.com Lindsay Dumas at (281)-794-9159 or at ldumas@hilcorp.com.

Sincerely,

LT ENVIRONMENTAL, INC.



Josh Adams, G.I.T.
Staff Geologist

Devin Hencmann
Project Geologist

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cc: Lindsay Dumas, Hilcorp Energy

Attachments:

Figure 1: Site Location Map and Soil Analytical Results
Figure 2: Receptor Map
Figure 3: Proposed Remediation Area
Figure 4: Proposed Vadose Zone Sample Locations
Table 1: Confirmation Soil Sample Results
Attachment 1: Laboratory Analytical Results
Attachment 2: Weekly Inspection Form
Attachment 3: Photographic Log

FIGURES

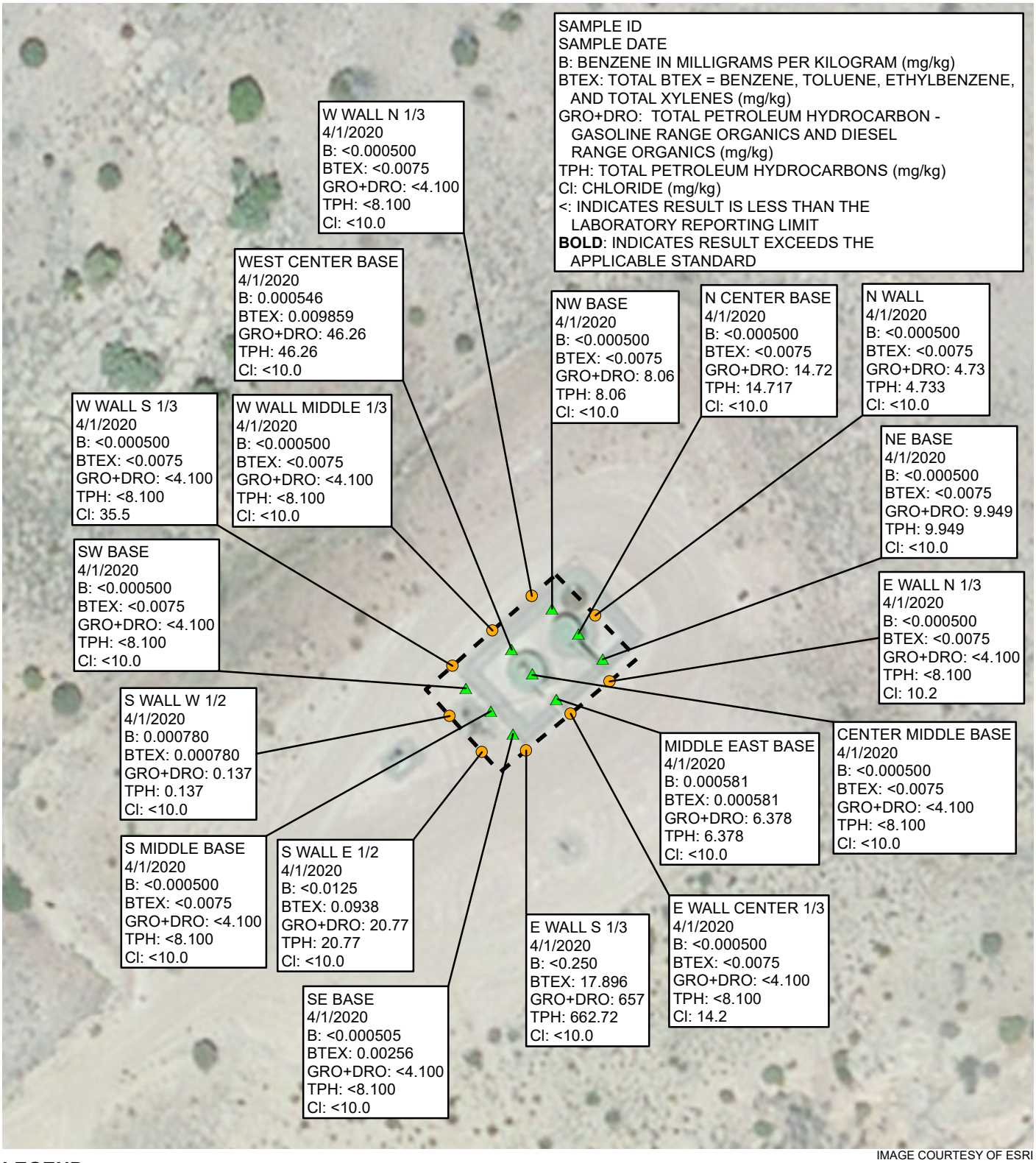


IMAGE COURTESY OF ESRI

LEGEND

- SIDEWALL SAMPLE
- FLOOR SAMPLE
- EXCAVATION EXTENT

0 60 120
Feet

N

FIGURE 1
SITE MAP
SAN JUAN 28-5 #68M
NWNW SEC 33-T28N-R5W
RIO ARRIBA COUNTY, NEW MEXICO
HILCORP ENERGY COMPANY

P:\Hilcorp\GIS\MXD\017820007_SJ 32-8_68M_65N\017820007_FIG01_SITE SJ 28-5 68M_2020.mxd

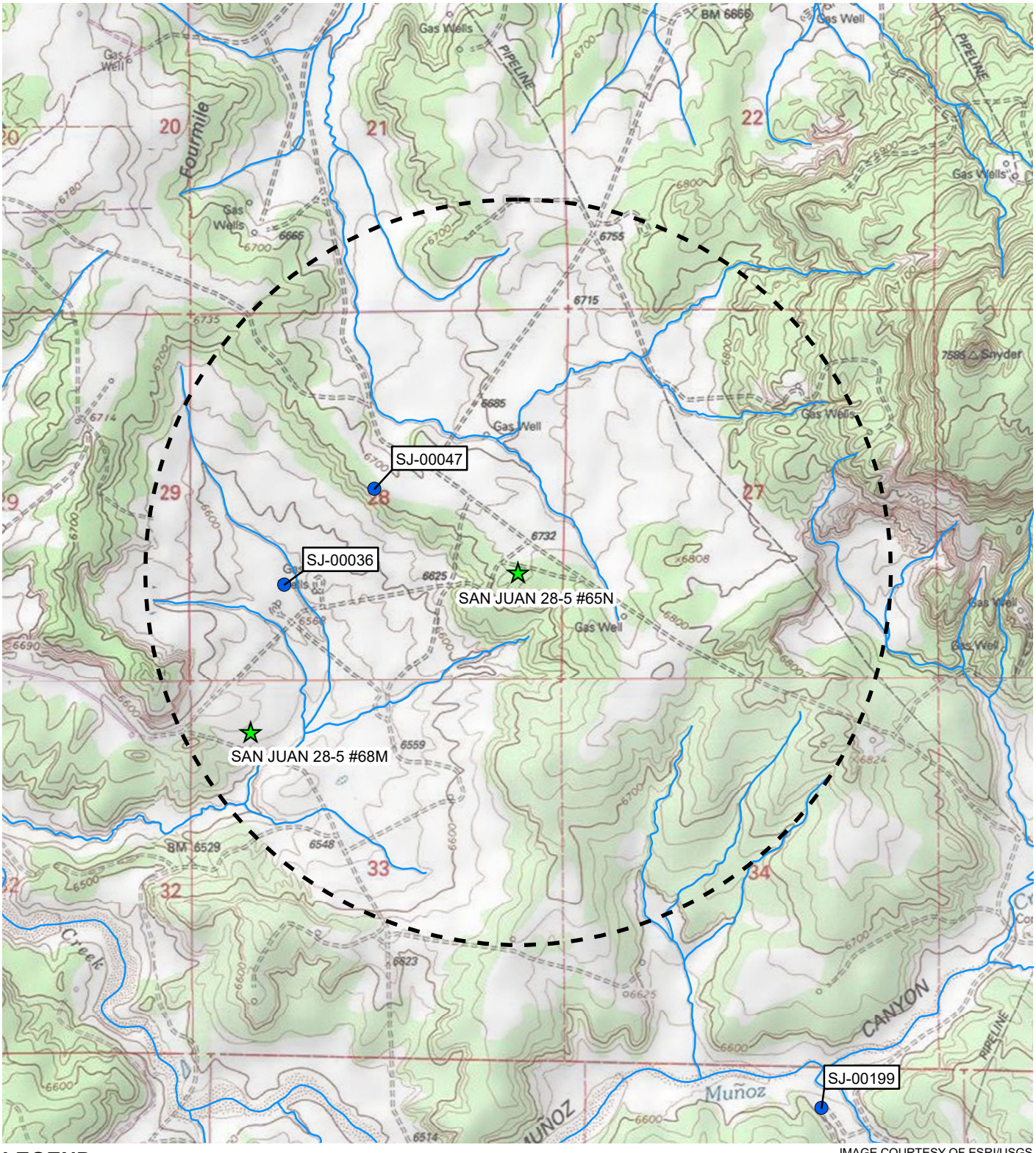


IMAGE COURTESY OF ESRI/USGS

LEGEND

- SITE LOCATION
- WATER WELL
- NATIONAL HYDROGRAPHY DATASET SURFACE WATER FEATURE
- 1 MILE RADIUS

0 2,000 4,000
Feet

N

FIGURE 2
RECEPTOR MAP
SAN JUAN 28-5 #65N
NWNW SEC 28-T28N-R5W
RIO ARRIBA COUNTY, NEW MEXICO
HILCORP ENERGY COMPANY

P:\Hilcorp\GIS\MXD\017820007_SJ 32-8_68M_65N\017820007_FIG02_RECEPTOR_MAP.mxd

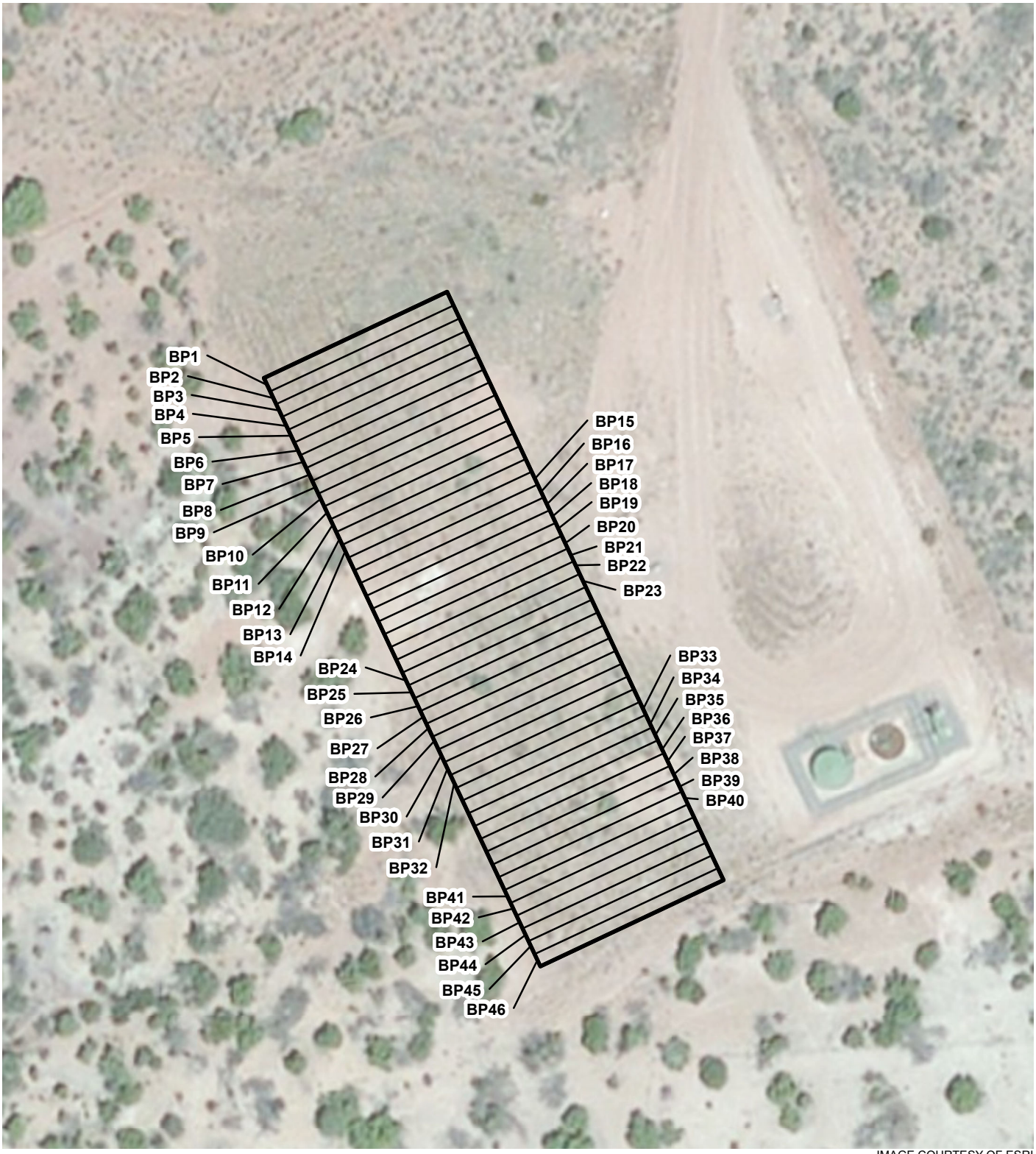


IMAGE COURTESY OF ESRI

LEGEND

PROPOSED REMEDIATION AREA (23,736 SQ FT)

SAN JUAN 28-5 #68M IS THE SOURCE OF THE BIOPILES LOCATED AT SAN JUAN 28-5 #65N

BIOPILE DIMENSIONS
80' X 6' X 3'

0 60 120
Feet

N

FIGURE 3
PROPOSED REMEDIATION AREA
SAN JUAN 28-5 #65N
NWNW SEC 28-T28N-R5W
RIO ARRIBA COUNTY, NEW MEXICO
HILCORP ENERGY COMPANY

P:\Hilcorp\GIS\MXD\017820007_SJ 32-8_68M_65N\01782007_FIG02_PROP_REM SJ 28-5 65N_2020.mxd

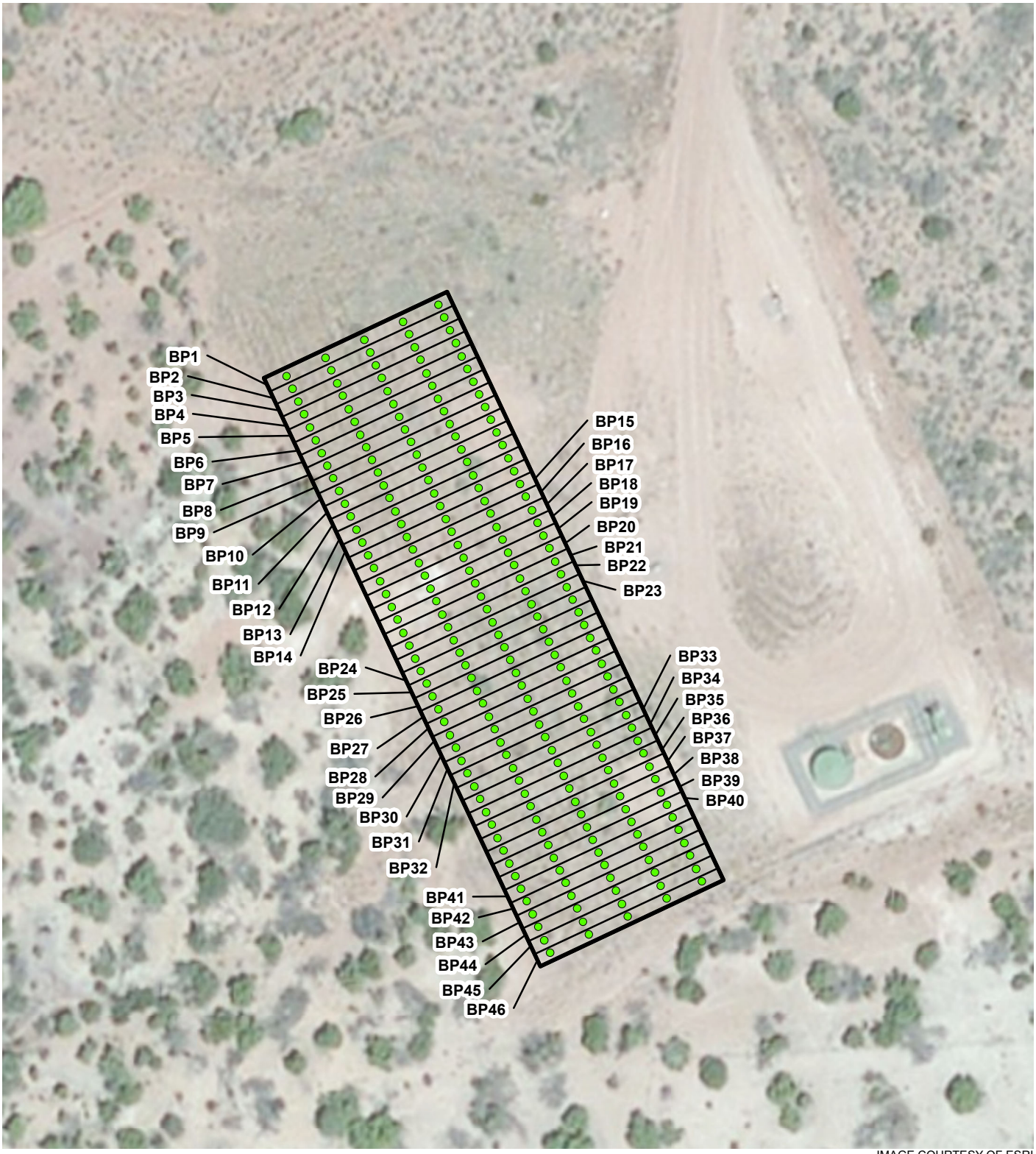


IMAGE COURTESY OF ESRI

LEGEND

- PROPOSED ALIQUOT SAMPLE
- PROPOSED REMEDIATION AREA (23,736 SQ FT)

0 60 120
Feet

N

SAN JUAN 28-5 #68M IS THE SOURCE OF THE BIOPILES LOCATED AT SAN JUAN 28-5 #65N

BIOPILE DIMENSIONS
80' X 6' X 3'

FIGURE 4
PROPOSED VADOSE ZONE SAMPLE LOCATIONS
SAN JUAN 28-5 #65N
NWNW SEC 28-T28N-R5W
RIO ARRIBA COUNTY, NEW MEXICO
HILCORP ENERGY COMPANY

P:\Hilcorp\GIS\MXD\017820007_SJ 32-8_68M_65N\01782007_FIG03_PROP_VADOSE ZONE SJ 28-5 65N_2020.mxd

TABLES

TABLE 1
SOIL ANALYTICAL RESULTS

SJ 28-5 UNIT #68M
RIO ARRIBA COUNTY, NEW MEXICO
HILCORP ENERGY COMPANY

Soil Sample Identification	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	GRO+DRO (mg/kg)	ORO (mg/kg)	TPH (mg/kg)
NW Base	4/1/2020	<0.000500	<0.00500	<0.000500	<0.00150	<0.0075	<10.0	<0.100	8.06	8.06	<4.00	8.06
N Center Base	4/1/2020	<0.000500	<0.00500	<0.000500	<0.00150	<0.0075	<10.0	0.217	14.50	14.72	<4.00	14.717
Middle East Base	4/1/2020	0.000581	<0.00500	<0.000500	<0.00150	0.000581	<10.0	0.138	6.24	6.378	<4.00	6.378
NE Base	4/1/2020	<0.000500	<0.00500	<0.000500	<0.00150	<0.0075	<10.0	0.339	9.61	9.949	<4.00	9.949
Center Middle Base	4/1/2020	<0.000500	<0.00500	<0.000500	<0.00150	<0.0075	<10.0	<0.100	<4.00	<4.100	<4.00	<8.100
West Center Base	4/1/2020	0.000546	<0.00500	0.000973	0.00834	0.009859	<10.0	2.26	44.00	46.26	<4.00	46.26
SW Base	4/1/2020	<0.000500	<0.00500	<0.000500	<0.00150	<0.0075	<10.0	<0.100	<4.00	<4.100	<4.00	<8.100
S Middle Base	4/1/2020	<0.000500	<0.00500	<0.000500	<0.00150	<0.0075	<10.0	<0.100	<4.00	<4.100	<4.00	<8.100
S Wall West 1/2	4/1/2020	0.000780	<0.00500	<0.000500	<0.00150	0.000780	<10.0	0.137	<4.00	0.137	<4.00	0.137
S Wall East 1/2	4/1/2020	<0.0125	<0.125	0.0463	0.0475	0.0938	<10.0	8.27	12.5	20.77	<4.00	20.77
W Wall S 1/3	4/1/2020	<0.000500	<0.00500	<0.000500	<0.00150	<0.0075	35.5	<0.100	<4.00	<4.100	<4.00	<8.100
W Wall Middle 1/3	4/1/2020	<0.000500	<0.00500	<0.000500	<0.00150	<0.0075	<10.0	<0.100	<4.00	<4.100	<4.00	<8.100
W Wall N 1/3	4/1/2020	<0.000500	<0.00500	<0.000500	<0.00150	<0.0075	<10.0	<0.100	<4.00	<4.100	<4.00	<8.100
N Wall	4/1/2020	<0.000500	<0.00500	<0.000500	<0.00150	<0.0075	<10.0	0.113	4.62	4.73	<4.00	4.733
E Wall N 1/3	4/1/2020	<0.000500	<0.00500	<0.000500	<0.00150	<0.0075	10.2	<0.100	<4.00	<4.100	<4.00	<8.100
E Wall Center 1/3	4/1/2020	<0.000500	<0.00500	<0.000500	<0.00150	<0.0075	14.2	<0.100	<4.00	<4.100	<4.00	<8.100
S E Base	4/1/2020	<0.000505	<0.00505	<0.000505	0.00256	0.00256	<10.0	<0.101	<4.00	<4.101	<4.00	<8.101
E Wall S 1/3	4/1/2020	<0.250	<2.5	0.996	16.9	17.896	<10.0	446	211	657	5.72	662.72
NMOCD Closure Criteria		**10**	**NE**	**NE**	**NE**	**50**	**600**	**NE**	**NE**	**1,000**	**NE**	**2,500**

NOTES:

BTEX - benzene, toluene, ethylbenzene, and total xylenes analyzed by US EPA Method 8021B
DRO - diesel range organics analyzed by US EPA Method 8015D
GRO - gasoline range organics analyzed by US EPA Method 8015D
mg/kg - milligrams per kilogram
NE - not established
NMOCD - New Mexico Oil Conservation Division
ORO - oil range organics analyzed by US EPA method 8015D
TPH - total petroleum hydrocarbon (sum of GRO, DRO, and MRO)
< - indicates result is less than the stated laboratory reporting limit
Bold - indicates value exceeds stated NMOCD standard

ATTACHMENTS

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

April 09, 2020

HilCorp-Farmington, NM

Sample Delivery Group:	L1205630
Samples Received:	04/03/2020
Project Number:	
Description:	San Juan 28-5 # 68M
Site:	SJ 28-5 # 68M
Report To:	Lindsay Dumas 382 Road 3100 Aztec, NM 87410

Entire Report Reviewed By:

Olivia Studebaker
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.

NW BASE L1205630-01 Solid

Collected by: K Hoekstra | Collected date/time: 04/01/20 09:50 | Received date/time: 04/03/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 300.0	WG1455695	1	04/05/20 21:05	04/05/20 23:59	MCG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1455881	1	04/04/20 09:54	04/05/20 17:44	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1457350	1	04/07/20 06:02	04/08/20 11:16	KME	Mt. Juliet, TN

N CENTER BASE L1205630-02 Solid

Collected by: K Hoekstra | Collected date/time: 04/01/20 09:52 | Received date/time: 04/03/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 300.0	WG1455695	1	04/05/20 21:05	04/06/20 00:34	MCG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1455881	1	04/04/20 09:54	04/05/20 18:06	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1457350	1	04/07/20 06:02	04/08/20 11:29	KME	Mt. Juliet, TN

MIDDLE EASE BASE L1205630-03 Solid

Collected by: K Hoekstra | Collected date/time: 04/01/20 09:53 | Received date/time: 04/03/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 300.0	WG1455695	1	04/05/20 21:05	04/06/20 00:52	MCG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1455881	1	04/04/20 09:54	04/05/20 18:53	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1457350	1	04/07/20 06:02	04/08/20 11:42	KME	Mt. Juliet, TN

NE BASE L1205630-04 Solid

Collected by: K Hoekstra | Collected date/time: 04/01/20 09:55 | Received date/time: 04/03/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 300.0	WG1455695	1	04/05/20 21:05	04/06/20 01:10	MCG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1455881	1	04/04/20 09:54	04/05/20 19:15	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1457350	1	04/07/20 06:02	04/08/20 11:55	KME	Mt. Juliet, TN

CENTER MIDDLE BASE L1205630-05 Solid

Collected by: K Hoekstra | Collected date/time: 04/01/20 09:58 | Received date/time: 04/03/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 300.0	WG1455695	1	04/05/20 21:05	04/06/20 01:28	MCG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1455881	1	04/04/20 09:54	04/05/20 19:37	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1457350	1	04/07/20 06:02	04/08/20 12:09	KME	Mt. Juliet, TN

WEST CENTER BASE L1205630-06 Solid

Collected by: K Hoekstra | Collected date/time: 04/01/20 10:02 | Received date/time: 04/03/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 300.0	WG1455695	1	04/05/20 21:05	04/06/20 01:46	MCG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1455881	1	04/04/20 09:54	04/05/20 20:00	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1457350	1	04/07/20 06:02	04/08/20 12:22	KME	Mt. Juliet, TN

SW BASE L1205630-07 Solid

Collected by: K Hoekstra | Collected date/time: 04/01/20 10:03 | Received date/time: 04/03/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 300.0	WG1455695	1	04/05/20 21:05	04/06/20 03:16	MCG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1455881	1	04/04/20 09:54	04/05/20 20:22	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1457350	1	04/07/20 06:02	04/08/20 12:35	KME	Mt. Juliet, TN

S MIDDLE BASE L1205630-08 Solid

Collected by: K Hoekstra | Collected date/time: 04/01/20 10:05 | Received date/time: 04/03/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 300.0	WG1455695	1	04/05/20 21:05	04/06/20 03:33	MCG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1455881	1	04/04/20 09:54	04/05/20 20:44	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1457350	1	04/07/20 06:02	04/08/20 12:48	KME	Mt. Juliet, TN

S WALL WEST 1/2 L1205630-09 Solid

Collected by: K Hoekstra | Collected date/time: 04/01/20 10:08 | Received date/time: 04/03/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 300.0	WG1455695	1	04/05/20 21:05	04/06/20 03:51	MCG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1455881	1	04/04/20 09:54	04/05/20 21:07	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1457350	1	04/07/20 06:02	04/08/20 13:02	KME	Mt. Juliet, TN

S WALL EAST 1/2 L1205630-10 Solid

Collected by: K Hoekstra | Collected date/time: 04/01/20 10:11 | Received date/time: 04/03/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 300.0	WG1455695	1	04/05/20 21:05	04/06/20 04:09	MCG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1456633	25	04/04/20 09:54	04/08/20 05:38	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1456867	1	04/07/20 23:41	04/08/20 18:08	FM	Mt. Juliet, TN

W WALL S 1/3 L1205630-11 Solid

Collected by: K Hoekstra | Collected date/time: 04/01/20 10:14 | Received date/time: 04/03/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 300.0	WG1455695	1	04/05/20 21:05	04/06/20 04:27	MCG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1456387	1	04/04/20 09:54	04/07/20 00:54	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1456867	1	04/07/20 23:41	04/08/20 18:21	FM	Mt. Juliet, TN

W WALL MIDDLE 1/3 L1205630-12 Solid

Collected by: K Hoekstra | Collected date/time: 04/01/20 10:16 | Received date/time: 04/03/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 300.0	WG1455695	1	04/05/20 21:05	04/06/20 04:45	MCG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1456387	1	04/04/20 09:54	04/07/20 01:15	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1456867	1	04/07/20 23:41	04/08/20 18:35	FM	Mt. Juliet, TN

W WALL N 1/3 L1205630-13 Solid

Collected by: K Hoekstra | Collected date/time: 04/01/20 10:17 | Received date/time: 04/03/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 300.0	WG1455695	1	04/05/20 21:05	04/06/20 05:03	MCG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1456387	1	04/04/20 09:54	04/07/20 01:36	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1456867	1	04/07/20 23:41	04/08/20 18:48	FM	Mt. Juliet, TN

N WALL L1205630-14 Solid

Collected by: K Hoekstra | Collected date/time: 04/01/20 10:19 | Received date/time: 04/03/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 300.0	WG1455695	1	04/05/20 21:05	04/06/20 05:21	MCG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1456387	1	04/04/20 09:54	04/07/20 01:56	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1456867	1	04/07/20 23:41	04/08/20 19:01	FM	Mt. Juliet, TN

E WALL N 1/3 L1205630-15 Solid

Collected by: K Hoekstra | Collected date/time: 04/01/20 10:21 | Received date/time: 04/03/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 300.0	WG1455695	1	04/05/20 21:05	04/06/20 05:39	MCG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1456387	1	04/04/20 09:54	04/07/20 02:17	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1456867	1	04/07/20 23:41	04/08/20 19:14	FM	Mt. Juliet, TN

E WALL CENTER 1/3 L1205630-16 Solid

Collected by: K Hoekstra | Collected date/time: 04/01/20 10:24 | Received date/time: 04/03/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 300.0	WG1456136	1	04/06/20 15:17	04/06/20 19:38	ST	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1456387	1	04/04/20 09:54	04/07/20 02:37	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1456867	1	04/07/20 23:41	04/08/20 17:28	FM	Mt. Juliet, TN

S E BASE L1205630-17 Solid

Collected by: K Hoekstra | Collected date/time: 04/01/20 10:30 | Received date/time: 04/03/20 08:30

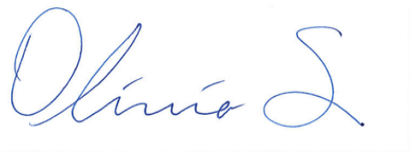
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 300.0	WG1456136	1	04/06/20 15:17	04/06/20 20:15	ST	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1456387	1.01	04/04/20 09:54	04/07/20 02:57	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1456867	1	04/07/20 23:41	04/08/20 21:53	FM	Mt. Juliet, TN

E WALL S 1/3 L1205630-18 Solid

Collected by: K Hoekstra | Collected date/time: 04/01/20 10:40 | Received date/time: 04/03/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 300.0	WG1456136	1	04/06/20 15:17	04/06/20 20:34	ST	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1456387	500	04/04/20 09:54	04/07/20 03:18	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1456867	1	04/07/20 23:41	04/08/20 21:13	FM	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.



Olivia Studebaker
Project Manager

Wet Chemistry by Method 300.0

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chloride	ND		10.0	1	04/05/2020 23:59	WG1455695

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.000500	1	04/05/2020 17:44	WG1455881
Toluene	ND		0.00500	1	04/05/2020 17:44	WG1455881
Ethylbenzene	ND		0.000500	1	04/05/2020 17:44	WG1455881
Total Xylene	ND		0.00150	1	04/05/2020 17:44	WG1455881
TPH (GC/FID) Low Fraction	ND		0.100	1	04/05/2020 17:44	WG1455881
(S) a,a,a-Trifluorotoluene(FID)	*109*		*77.0-120*		*04/05/2020 17:44*	WG1455881
(S) a,a,a-Trifluorotoluene(PID)	*106*		*72.0-128*		*04/05/2020 17:44*	WG1455881

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	8.06		4.00	1	04/08/2020 11:16	WG1457350
C28-C40 Oil Range	ND		4.00	1	04/08/2020 11:16	WG1457350
(S) o-Terphenyl	*58.3*		*18.0-148*		*04/08/2020 11:16*	WG1457350

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Wet Chemistry by Method 300.0

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chloride	ND		10.0	1	04/06/2020 00:34	WG1455695

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.000500	1	04/05/2020 18:06	WG1455881
Toluene	ND		0.00500	1	04/05/2020 18:06	WG1455881
Ethylbenzene	ND		0.000500	1	04/05/2020 18:06	WG1455881
Total Xylene	ND		0.00150	1	04/05/2020 18:06	WG1455881
TPH (GC/FID) Low Fraction	0.217	B	0.100	1	04/05/2020 18:06	WG1455881
(S) a,a,a-Trifluorotoluene(FID)	*110*		*77.0-120*		*04/05/2020 18:06*	WG1455881
(S) a,a,a-Trifluorotoluene(PID)	*106*		*72.0-128*		*04/05/2020 18:06*	WG1455881

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	14.5		4.00	1	04/08/2020 11:29	WG1457350
C28-C40 Oil Range	ND		4.00	1	04/08/2020 11:29	WG1457350
(S) o-Terphenyl	*56.8*		*18.0-148*		*04/08/2020 11:29*	WG1457350

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Wet Chemistry by Method 300.0

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chloride	ND		10.0	1	04/06/2020 00:52	WG1455695

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.000581		0.000500	1	04/05/2020 18:53	WG1455881
Toluene	ND		0.00500	1	04/05/2020 18:53	WG1455881
Ethylbenzene	ND		0.000500	1	04/05/2020 18:53	WG1455881
Total Xylene	ND		0.00150	1	04/05/2020 18:53	WG1455881
TPH (GC/FID) Low Fraction	0.138	B	0.100	1	04/05/2020 18:53	WG1455881
(S) a,a,a-Trifluorotoluene(FID)	*109*		*77.0-120*		*04/05/2020 18:53*	WG1455881
(S) a,a,a-Trifluorotoluene(PID)	*105*		*72.0-128*		*04/05/2020 18:53*	WG1455881

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	6.24		4.00	1	04/08/2020 11:42	WG1457350
C28-C40 Oil Range	ND		4.00	1	04/08/2020 11:42	WG1457350
(S) o-Terphenyl	*60.1*		*18.0-148*		*04/08/2020 11:42*	WG1457350

Wet Chemistry by Method 300.0

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chloride	ND		10.0	1	04/06/2020 01:10	WG1455695

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.000500	1	04/05/2020 19:15	WG1455881
Toluene	ND		0.00500	1	04/05/2020 19:15	WG1455881
Ethylbenzene	ND		0.000500	1	04/05/2020 19:15	WG1455881
Total Xylene	ND		0.00150	1	04/05/2020 19:15	WG1455881
TPH (GC/FID) Low Fraction	0.339	B	0.100	1	04/05/2020 19:15	WG1455881
(S) a,a,a-Trifluorotoluene(FID)	*110*		*77.0-120*		*04/05/2020 19:15*	WG1455881
(S) a,a,a-Trifluorotoluene(PID)	*105*		*72.0-128*		*04/05/2020 19:15*	WG1455881

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	9.61		4.00	1	04/08/2020 11:55	WG1457350
C28-C40 Oil Range	ND		4.00	1	04/08/2020 11:55	WG1457350
(S) o-Terphenyl	*55.1*		*18.0-148*		*04/08/2020 11:55*	WG1457350

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Wet Chemistry by Method 300.0

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chloride	ND		10.0	1	04/06/2020 01:28	WG1455695

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.000500	1	04/05/2020 19:37	WG1455881
Toluene	ND		0.00500	1	04/05/2020 19:37	WG1455881
Ethylbenzene	ND		0.000500	1	04/05/2020 19:37	WG1455881
Total Xylene	ND		0.00150	1	04/05/2020 19:37	WG1455881
TPH (GC/FID) Low Fraction	ND		0.100	1	04/05/2020 19:37	WG1455881
(S) a,a,a-Trifluorotoluene(FID)	*111*		*77.0-120*		*04/05/2020 19:37*	WG1455881
(S) a,a,a-Trifluorotoluene(PID)	*105*		*72.0-128*		*04/05/2020 19:37*	WG1455881

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	ND		4.00	1	04/08/2020 12:09	WG1457350
C28-C40 Oil Range	ND		4.00	1	04/08/2020 12:09	WG1457350
(S) o-Terphenyl	*40.9*		*18.0-148*		*04/08/2020 12:09*	WG1457350

Wet Chemistry by Method 300.0

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chloride	ND		10.0	1	04/06/2020 01:46	WG1455695

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.000546		0.000500	1	04/05/2020 20:00	WG1455881
Toluene	ND		0.00500	1	04/05/2020 20:00	WG1455881
Ethylbenzene	0.000973		0.000500	1	04/05/2020 20:00	WG1455881
Total Xylene	0.00834		0.00150	1	04/05/2020 20:00	WG1455881
TPH (GC/FID) Low Fraction	2.26		0.100	1	04/05/2020 20:00	WG1455881
(S) a,a,a-Trifluorotoluene(FID)	*109*		*77.0-120*		*04/05/2020 20:00*	WG1455881
(S) a,a,a-Trifluorotoluene(PID)	*106*		*72.0-128*		*04/05/2020 20:00*	WG1455881

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	44.0		4.00	1	04/08/2020 12:22	WG1457350
C28-C40 Oil Range	ND		4.00	1	04/08/2020 12:22	WG1457350
(S) o-Terphenyl	*55.8*		*18.0-148*		*04/08/2020 12:22*	WG1457350

Wet Chemistry by Method 300.0

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chloride	ND		10.0	1	04/06/2020 03:16	WG1455695

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.000500	1	04/05/2020 20:22	WG1455881
Toluene	ND		0.00500	1	04/05/2020 20:22	WG1455881
Ethylbenzene	ND		0.000500	1	04/05/2020 20:22	WG1455881
Total Xylene	ND		0.00150	1	04/05/2020 20:22	WG1455881
TPH (GC/FID) Low Fraction	ND		0.100	1	04/05/2020 20:22	WG1455881
(S) a,a,a-Trifluorotoluene(FID)	*110*		*77.0-120*		*04/05/2020 20:22*	WG1455881
(S) a,a,a-Trifluorotoluene(PID)	*103*		*72.0-128*		*04/05/2020 20:22*	WG1455881

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	ND		4.00	1	04/08/2020 12:35	WG1457350
C28-C40 Oil Range	ND		4.00	1	04/08/2020 12:35	WG1457350
(S) o-Terphenyl	*61.5*		*18.0-148*		*04/08/2020 12:35*	WG1457350

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Wet Chemistry by Method 300.0

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chloride	ND		10.0	1	04/06/2020 03:33	WG1455695

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.000500	1	04/05/2020 20:44	WG1455881
Toluene	ND		0.00500	1	04/05/2020 20:44	WG1455881
Ethylbenzene	ND		0.000500	1	04/05/2020 20:44	WG1455881
Total Xylene	ND		0.00150	1	04/05/2020 20:44	WG1455881
TPH (GC/FID) Low Fraction	ND		0.100	1	04/05/2020 20:44	WG1455881
(S) a,a,a-Trifluorotoluene(FID)	*111*		*77.0-120*		*04/05/2020 20:44*	WG1455881
(S) a,a,a-Trifluorotoluene(PID)	*105*		*72.0-128*		*04/05/2020 20:44*	WG1455881

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	ND		4.00	1	04/08/2020 12:48	WG1457350
C28-C40 Oil Range	ND		4.00	1	04/08/2020 12:48	WG1457350
(S) o-Terphenyl	*66.4*		*18.0-148*		*04/08/2020 12:48*	WG1457350

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Wet Chemistry by Method 300.0

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chloride	ND		10.0	1	04/06/2020 03:51	WG1455695

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.000780		0.000500	1	04/05/2020 21:07	WG1455881
Toluene	ND		0.00500	1	04/05/2020 21:07	WG1455881
Ethylbenzene	ND		0.000500	1	04/05/2020 21:07	WG1455881
Total Xylene	ND		0.00150	1	04/05/2020 21:07	WG1455881
TPH (GC/FID) Low Fraction	0.137	B	0.100	1	04/05/2020 21:07	WG1455881
(S) a,a,a-Trifluorotoluene(FID)	*110*		*77.0-120*		*04/05/2020 21:07*	WG1455881
(S) a,a,a-Trifluorotoluene(PID)	*105*		*72.0-128*		*04/05/2020 21:07*	WG1455881

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	ND		4.00	1	04/08/2020 13:02	WG1457350
C28-C40 Oil Range	ND		4.00	1	04/08/2020 13:02	WG1457350
(S) o-Terphenyl	*64.2*		*18.0-148*		*04/08/2020 13:02*	WG1457350

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Wet Chemistry by Method 300.0

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chloride	ND		10.0	1	04/06/2020 04:09	WG1455695

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.0125	25	04/08/2020 05:38	WG1456633
Toluene	ND		0.125	25	04/08/2020 05:38	WG1456633
Ethylbenzene	0.0463		0.0125	25	04/08/2020 05:38	WG1456633
Total Xylene	0.0475		0.0375	25	04/08/2020 05:38	WG1456633
TPH (GC/FID) Low Fraction	8.27		2.50	25	04/08/2020 05:38	WG1456633
(S) a,a,a-Trifluorotoluene(FID)	*102*		*77.0-120*		*04/08/2020 05:38*	WG1456633
(S) a,a,a-Trifluorotoluene(PID)	*106*		*72.0-128*		*04/08/2020 05:38*	WG1456633

Sample Narrative:

L1205630-10 WG1456633: Elevated RL due to sample matrix.

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	12.5		4.00	1	04/08/2020 18:08	WG1456867
C28-C40 Oil Range	ND		4.00	1	04/08/2020 18:08	WG1456867
(S) o-Terphenyl	*58.3*		*18.0-148*		*04/08/2020 18:08*	WG1456867

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Wet Chemistry by Method 300.0

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chloride	35.5		10.0	1	04/06/2020 04:27	WG1455695

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.000500	1	04/07/2020 00:54	WG1456387
Toluene	ND		0.00500	1	04/07/2020 00:54	WG1456387
Ethylbenzene	ND		0.000500	1	04/07/2020 00:54	WG1456387
Total Xylene	ND		0.00150	1	04/07/2020 00:54	WG1456387
TPH (GC/FID) Low Fraction	ND		0.100	1	04/07/2020 00:54	WG1456387
(S) a,a,a-Trifluorotoluene(FID)	*99.1*		*77.0-120*		*04/07/2020 00:54*	WG1456387
(S) a,a,a-Trifluorotoluene(PID)	*104*		*72.0-128*		*04/07/2020 00:54*	WG1456387

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	ND		4.00	1	04/08/2020 18:21	WG1456867
C28-C40 Oil Range	ND		4.00	1	04/08/2020 18:21	WG1456867
(S) o-Terphenyl	*66.2*		*18.0-148*		*04/08/2020 18:21*	WG1456867

Wet Chemistry by Method 300.0

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chloride	ND		10.0	1	04/06/2020 04:45	WG1455695

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.000500	1	04/07/2020 01:15	WG1456387
Toluene	ND		0.00500	1	04/07/2020 01:15	WG1456387
Ethylbenzene	ND		0.000500	1	04/07/2020 01:15	WG1456387
Total Xylene	ND		0.00150	1	04/07/2020 01:15	WG1456387
TPH (GC/FID) Low Fraction	ND		0.100	1	04/07/2020 01:15	WG1456387
(S) a,a,a-Trifluorotoluene(FID)	*96.2*		*77.0-120*		*04/07/2020 01:15*	WG1456387
(S) a,a,a-Trifluorotoluene(PID)	*104*		*72.0-128*		*04/07/2020 01:15*	WG1456387

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	ND		4.00	1	04/08/2020 18:35	WG1456867
C28-C40 Oil Range	ND		4.00	1	04/08/2020 18:35	WG1456867
(S) o-Terphenyl	*51.5*		*18.0-148*		*04/08/2020 18:35*	WG1456867

Wet Chemistry by Method 300.0

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chloride	ND		10.0	1	04/06/2020 05:03	WG1455695

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.000500	1	04/07/2020 01:36	WG1456387
Toluene	ND		0.00500	1	04/07/2020 01:36	WG1456387
Ethylbenzene	ND		0.000500	1	04/07/2020 01:36	WG1456387
Total Xylene	ND		0.00150	1	04/07/2020 01:36	WG1456387
TPH (GC/FID) Low Fraction	ND		0.100	1	04/07/2020 01:36	WG1456387
(S) a,a,a-Trifluorotoluene(FID)	*96.1*		*77.0-120*		*04/07/2020 01:36*	WG1456387
(S) a,a,a-Trifluorotoluene(PID)	*108*		*72.0-128*		*04/07/2020 01:36*	WG1456387

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	ND		4.00	1	04/08/2020 18:48	WG1456867
C28-C40 Oil Range	ND		4.00	1	04/08/2020 18:48	WG1456867
(S) o-Terphenyl	*46.7*		*18.0-148*		*04/08/2020 18:48*	WG1456867

Wet Chemistry by Method 300.0

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chloride	ND		10.0	1	04/06/2020 05:21	WG1455695

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.000500	1	04/07/2020 01:56	WG1456387
Toluene	ND		0.00500	1	04/07/2020 01:56	WG1456387
Ethylbenzene	ND		0.000500	1	04/07/2020 01:56	WG1456387
Total Xylene	ND		0.00150	1	04/07/2020 01:56	WG1456387
TPH (GC/FID) Low Fraction	0.113	B	0.100	1	04/07/2020 01:56	WG1456387
(S) a,a,a-Trifluorotoluene(FID)	*95.7*		*77.0-120*		*04/07/2020 01:56*	WG1456387
(S) a,a,a-Trifluorotoluene(PID)	*104*		*72.0-128*		*04/07/2020 01:56*	WG1456387

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	4.62		4.00	1	04/08/2020 19:01	WG1456867
C28-C40 Oil Range	ND		4.00	1	04/08/2020 19:01	WG1456867
(S) o-Terphenyl	*62.9*		*18.0-148*		*04/08/2020 19:01*	WG1456867

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Wet Chemistry by Method 300.0

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chloride	10.2	B	10.0	1	04/06/2020 05:39	WG1455695

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.000500	1	04/07/2020 02:17	WG1456387
Toluene	ND		0.00500	1	04/07/2020 02:17	WG1456387
Ethylbenzene	ND		0.000500	1	04/07/2020 02:17	WG1456387
Total Xylene	ND		0.00150	1	04/07/2020 02:17	WG1456387
TPH (GC/FID) Low Fraction	ND		0.100	1	04/07/2020 02:17	WG1456387
(S) a,a,a-Trifluorotoluene(FID)	*95.9*		*77.0-120*		*04/07/2020 02:17*	WG1456387
(S) a,a,a-Trifluorotoluene(PID)	*107*		*72.0-128*		*04/07/2020 02:17*	WG1456387

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	ND		4.00	1	04/08/2020 19:14	WG1456867
C28-C40 Oil Range	ND		4.00	1	04/08/2020 19:14	WG1456867
(S) o-Terphenyl	*62.5*		*18.0-148*		*04/08/2020 19:14*	WG1456867

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Wet Chemistry by Method 300.0

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chloride	14.2	B	10.0	1	04/06/2020 19:38	WG1456136

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.000500	1	04/07/2020 02:37	WG1456387
Toluene	ND		0.00500	1	04/07/2020 02:37	WG1456387
Ethylbenzene	ND		0.000500	1	04/07/2020 02:37	WG1456387
Total Xylene	ND		0.00150	1	04/07/2020 02:37	WG1456387
TPH (GC/FID) Low Fraction	ND		0.100	1	04/07/2020 02:37	WG1456387
(S) a,a,a-Trifluorotoluene(FID)	*96.1*		*77.0-120*		*04/07/2020 02:37*	WG1456387
(S) a,a,a-Trifluorotoluene(PID)	*104*		*72.0-128*		*04/07/2020 02:37*	WG1456387

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	ND		4.00	1	04/08/2020 17:28	WG1456867
C28-C40 Oil Range	ND		4.00	1	04/08/2020 17:28	WG1456867
(S) o-Terphenyl	*60.4*		*18.0-148*		*04/08/2020 17:28*	WG1456867

Wet Chemistry by Method 300.0

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chloride	ND		10.0	1	04/06/2020 20:15	WG1456136

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.000505	1.01	04/07/2020 02:57	WG1456387
Toluene	ND		0.00505	1.01	04/07/2020 02:57	WG1456387
Ethylbenzene	ND		0.000505	1.01	04/07/2020 02:57	WG1456387
Total Xylene	0.00256		0.00152	1.01	04/07/2020 02:57	WG1456387
TPH (GC/FID) Low Fraction	ND		0.101	1.01	04/07/2020 02:57	WG1456387
(S) a,a,a-Trifluorotoluene(FID)	*95.5*		*77.0-120*		*04/07/2020 02:57*	WG1456387
(S) a,a,a-Trifluorotoluene(PID)	*104*		*72.0-128*		*04/07/2020 02:57*	WG1456387

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	37.9		4.00	1	04/08/2020 21:53	WG1456867
C28-C40 Oil Range	105		4.00	1	04/08/2020 21:53	WG1456867
(S) o-Terphenyl	*59.3*		*18.0-148*		*04/08/2020 21:53*	WG1456867

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Wet Chemistry by Method 300.0

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chloride	ND		10.0	1	04/06/2020 20:34	WG1456136

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.250	500	04/07/2020 03:18	WG1456387
Toluene	ND		2.50	500	04/07/2020 03:18	WG1456387
Ethylbenzene	0.996		0.250	500	04/07/2020 03:18	WG1456387
Total Xylene	16.9		0.750	500	04/07/2020 03:18	WG1456387
TPH (GC/FID) Low Fraction	446		50.0	500	04/07/2020 03:18	WG1456387
(S) a,a,a-Trifluorotoluene(FID)	*96.5*		*77.0-120*		*04/07/2020 03:18*	WG1456387
(S) a,a,a-Trifluorotoluene(PID)	*104*		*72.0-128*		*04/07/2020 03:18*	WG1456387

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	211		4.00	1	04/08/2020 21:13	WG1456867
C28-C40 Oil Range	5.72		4.00	1	04/08/2020 21:13	WG1456867
(S) o-Terphenyl	*63.0*		*18.0-148*		*04/08/2020 21:13*	WG1456867

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Method Blank (MB)

(MB) R3515763-1 04/05/20 22:54

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Chloride	1.13	J	0.795	10.0

L1205630-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1205630-01 04/05/20 23:59 • (DUP) R3515763-3 04/06/20 00:16

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	ND	0.824	1	0.000		20

L1205804-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1205804-03 04/06/20 07:08 • (DUP) R3515763-6 04/06/20 07:26

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	218	228	1	4.50		20

Laboratory Control Sample (LCS)

(LCS) R3515763-2 04/05/20 23:12

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	200	207	103	90.0-110	

L1205630-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1205630-06 04/06/20 01:46 • (MS) R3515763-4 04/06/20 02:04 • (MSD) R3515763-5 04/06/20 02:58

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	500	ND	510	503	102	100	1	80.0-120			1.38	20

Method Blank (MB)

(MB) R3516088-1 04/06/20 17:46

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Chloride	1.49	J	0.795	10.0

L1205630-16 Original Sample (OS) • Duplicate (DUP)

(OS) L1205630-16 04/06/20 19:38 • (DUP) R3516088-3 04/06/20 19:57

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	14.2	17.2	1	18.8		20

L1205826-61 Original Sample (OS) • Duplicate (DUP)

(OS) L1205826-61 04/06/20 23:56 • (DUP) R3516088-6 04/07/20 00:15

Analyte	Original Result (dry) mg/kg	DUP Result (dry) mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	107	94.3	1	13.0		20

Laboratory Control Sample (LCS)

(LCS) R3516088-2 04/06/20 18:04

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	200	197	98.4	90.0-110	

L1205788-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1205788-04 04/06/20 21:10 • (MS) R3516088-4 04/06/20 21:29 • (MSD) R3516088-5 04/06/20 21:47

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	500	21.1	495	521	94.9	100	1	80.0-120			5.06	20

Method Blank (MB)

(MB) R3515766-3 04/05/20 11:56

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000120	0.000500
Toluene	U		0.000150	0.00500
Ethylbenzene	U		0.000110	0.000500
Total Xylene	U		0.000460	0.00150
TPH (GC/FID) Low Fraction	0.0535	J	0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	*110*			*77.0-120*
(S) a,a,a-Trifluorotoluene(PID)	*107*			*72.0-128*

Laboratory Control Sample (LCS)

(LCS) R3515766-1 04/05/20 09:49

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.0500	0.0542	108	76.0-121	
Toluene	0.0500	0.0559	112	80.0-120	
Ethylbenzene	0.0500	0.0568	114	80.0-124	
Total Xylene	0.150	0.157	105	37.0-160	
(S) a,a,a-Trifluorotoluene(FID)			*110*	*77.0-120*	
(S) a,a,a-Trifluorotoluene(PID)			*106*	*72.0-128*	

Laboratory Control Sample (LCS)

(LCS) R3515766-2 04/05/20 10:55

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	6.32	115	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			*114*	*77.0-120*	
(S) a,a,a-Trifluorotoluene(PID)			*113*	*72.0-128*	

Method Blank (MB)

(MB) R3516169-3 04/06/20 20:14

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000120	0.000500
Toluene	0.000230	J	0.000150	0.00500
Ethylbenzene	U		0.000110	0.000500
Total Xylene	U		0.000460	0.00150
TPH (GC/FID) Low Fraction	0.0268	J	0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	*101*			*77.0-120*
(S) a,a,a-Trifluorotoluene(PID)	*106*			*72.0-128*

Laboratory Control Sample (LCS)

(LCS) R3516169-1 04/06/20 19:13

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.0500	0.0506	101	76.0-121	
Toluene	0.0500	0.0443	88.6	80.0-120	
Ethylbenzene	0.0500	0.0481	96.2	80.0-124	
Total Xylene	0.150	0.135	90.0	37.0-160	
(S) a,a,a-Trifluorotoluene(FID)			*96.2*	*77.0-120*	
(S) a,a,a-Trifluorotoluene(PID)			*90.9*	*72.0-128*	

Laboratory Control Sample (LCS)

(LCS) R3516169-2 04/06/20 19:33

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	5.36	97.5	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			*109*	*77.0-120*	
(S) a,a,a-Trifluorotoluene(PID)			*119*	*72.0-128*	

L1205630-18 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1205630-18 04/07/20 03:18 • (MS) R3516169-4 04/07/20 03:59 • (MSD) R3516169-5 04/07/20 04:19

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	25.0	ND	26.2	27.4	105	110	500	10.0-155			4.48	32
Toluene	25.0	ND	22.5	23.5	88.4	92.4	500	10.0-160			4.35	34
Ethylbenzene	25.0	0.996	24.3	25.6	93.2	98.4	500	10.0-160			5.21	32
Total Xylene	75.0	16.9	82.9	86.4	88.0	92.7	500	10.0-160			4.13	32
(S) a,a,a-Trifluorotoluene(FID)					*95.8*	*95.7*		*77.0-120*				
(S) a,a,a-Trifluorotoluene(PID)					*89.6*	*89.9*		*72.0-128*				

L1205630-18 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1205630-18 04/07/20 03:18 • (MS) R3516169-6 04/07/20 04:40 • (MSD) R3516169-7 04/07/20 05:00

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	2750	446	2860	3080	87.8	95.8	500	10.0-151			7.41	28
(S) a,a,a-Trifluorotoluene(FID)					*106*	*109*		*77.0-120*				
(S) a,a,a-Trifluorotoluene(PID)					*119*	*120*		*72.0-128*				

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Method Blank (MB)

(MB) R3516549-3 04/07/20 23:02

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000120	0.000500
Toluene	0.000282	J	0.000150	0.00500
Ethylbenzene	U		0.000110	0.000500
Total Xylene	U		0.000460	0.00150
TPH (GC/FID) Low Fraction	0.0308	J	0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	*97.0*			*77.0-120*
(S) a,a,a-Trifluorotoluene(PID)	*106*			*72.0-128*

Laboratory Control Sample (LCS)

(LCS) R3516549-1 04/07/20 22:00

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.0500	0.0510	102	76.0-121	
Toluene	0.0500	0.0458	91.6	80.0-120	
Ethylbenzene	0.0500	0.0498	99.6	80.0-124	
Total Xylene	0.150	0.135	90.0	37.0-160	
(S) a,a,a-Trifluorotoluene(FID)			*96.6*	*77.0-120*	
(S) a,a,a-Trifluorotoluene(PID)			*88.7*	*72.0-128*	

Laboratory Control Sample (LCS)

(LCS) R3516549-2 04/07/20 22:21

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	5.10	92.7	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			*108*	*77.0-120*	
(S) a,a,a-Trifluorotoluene(PID)			*119*	*72.0-128*	

Method Blank (MB)

(MB) R3516909-1 04/08/20 17:02

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C40 Oil Range	U		0.274	4.00
(S) o-Terphenyl	*67.7*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3516909-2 04/08/20 17:15

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	32.5	65.0	50.0-150	
(S) o-Terphenyl			*63.8*	*18.0-148*	

L1205630-16 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1205630-16 04/08/20 17:28 • (MS) R3516909-3 04/08/20 17:42 • (MSD) R3516909-4 04/08/20 17:55

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
C10-C28 Diesel Range	50.0	ND	37.0	33.7	74.0	67.4	1	50.0-150			9.34	20
(S) o-Terphenyl					*63.8*	*56.2*		*18.0-148*				

Method Blank (MB)

(MB) R3516735-1 04/08/20 10:49

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C40 Oil Range	0.592	J	0.274	4.00
(S) o-Terphenyl	*69.4*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3516735-2 04/08/20 11:02

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	41.5	83.0	50.0-150	
(S) o-Terphenyl			*77.2*	*18.0-148*	

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

(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.

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

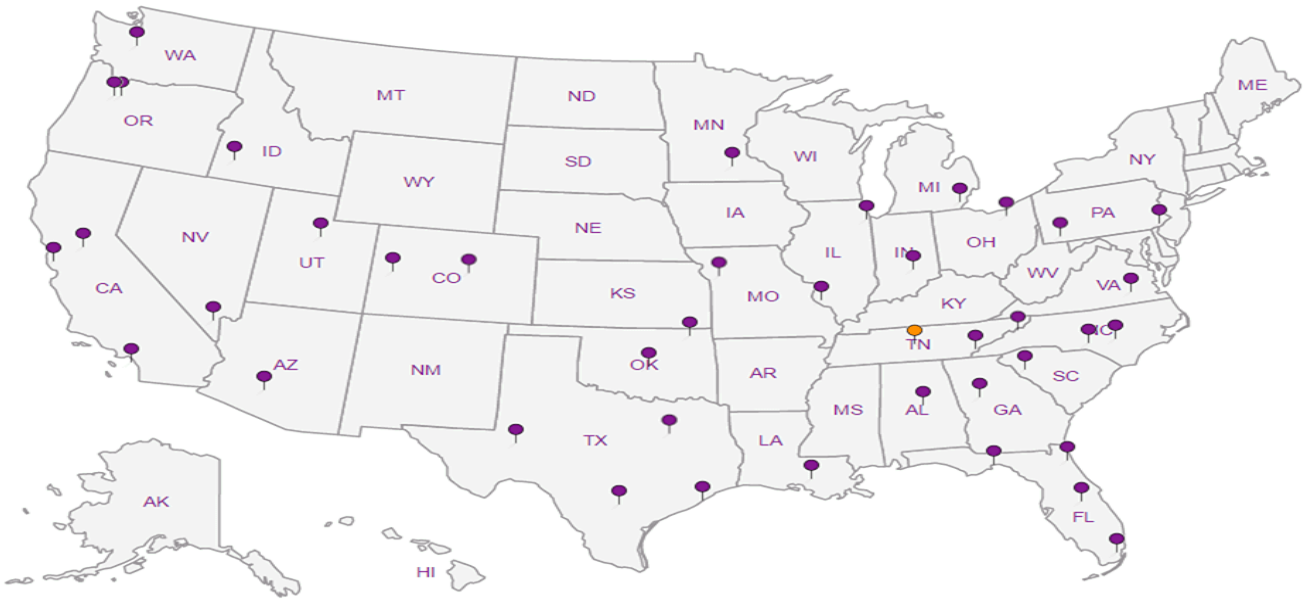
Third Party Federal Accreditations

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.



Billing Information: **ATTN: Lindsay Dumas**

Pres Chk

Analysis / Container / Preservative

Chain of Custody Page ___ of ___

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L # 1205630

J011

Acctnum: HILCORANM

Template:

Prelogin:

TSR:

PB:

Shipped Via:

Report to: **Lindsay Dumas**

Email To: **ldumas@hilcorp.com; kboekstra@hilcorp.com**

Project Description: **San Juan 28-5 # 68M**

City/State Collected: **Aztec, NM**

Phone: **281-794-9159**
Fax:

Client Project #

Lab Project #

Collected by (print): **K Hoekstra**

Site/Facility ID # **SJ 28-5 # 68M**

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day X Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	TPH - 8015 - DRO, GRO, MRO	BTEX 8021	Chloride 300.0	Remarks	Sample # (lab only)
NW Base	Comp	SS		4-1-20	9:50	1	X	X	X		-01
N Center Base	Comp	SS		4-1-20	9:52	1	X	X	X		-02
Middle East Base	Comp	SS		4-1-20	9:53	1	X	X	X		-03
NE Base	Comp	SS		4-1-20	9:55	1	X	X	X		-04
Center Middle Base	Comp	SS		4-1-20	9:58	1	X	X	X		-05
West Center Base	Comp	SS		4-1-20	10:02	1	X	X	X		-06
SW Base	Comp	SS		4-1-20	10:03	1	X	X	X		-07
S Middle Base	Comp	SS		4-1-20	10:05	1	X	X	X		-08
S Wall West 1/2	Comp	SS		4-1-20	10:08	1	X	X	X		-09
S Wall East 1/2	Comp	SS		4-1-20	10:11	1	X	X	X		-10

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Sample Receipt Checklist
COC Seal Present/Intact: NP Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N

Samples returned via:
__ UPS __ FedEx __ Courier __ _____

Tracking #

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	4-2-20	9:30	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)

Trip Blank Received: Yes / (No) HCL / MeoH TBR

Temp: 1.2 °C Bottles Received: 18

1.2-.1=1.1

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

Date: 4-3 Time: 0831

Billing Information: **ATTN: Lindsay Dumas**

Pres Chk

Analysis / Container / Preservative

Chain of Custody Page ___ of ___

Pace Analytical® National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

Report to: **Lindsay Dumas**

Email To: **ldumas@hilcorp.com; kboekstra@hilcorp.com**

Project Description: **San Juan 28-5 # 68M**

City/State Collected: **Aztec, NM**

Phone: **281-794-9159**
Fax:

Client Project #

Lab Project #

L # 1205630

Table #

Collected by (print): **K Hoekstra**

Site/Facility ID # **SJ 28-5 # 68M**

P.O. #

Acctnum: **HILCORANM**

Template:

Prelogin:

TSR:

PB:

Collected by (signature): Kurt Hoekstra

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day X Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	TPH - 8015 - DRO, GRO, MRO	BTEX 8021	Chloride 300.0	Remarks	Sample # (lab only)
W Wall S 1/3	Comp	SS		4-1-20	10:14	1	X	X	X		-11
W Wall Middle 1/3	Comp	SS		4-1-20	10:16	1	X	X	X		-12
W Wall N 1/3	Comp	SS		4-1-20	10:17	1	X	X	X		-13
N Wall	Comp	SS		4-1-20	10:19	1	X	X	X		-14
E Wall N 1/3	Comp	SS		4-1-20	10:21	1	X	X	X		-15
E Wall Center 1/3	Comp	SS		4-1-20	10:24	1	X	X	X		-16
S E Base	Comp	SS		4-1-20	10:30	1	X	X	X		-17
E Wall S 1/3	Comp	SS		4-1-20	10:40	1	X	X	X		-18

* Matrix:
SS - Soil **AIR** - Air **F** - Filter
GW - Groundwater **B** - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Sample Receipt Checklist
COC Seal Present/Intact: NP ___Y ___N
COC Signed/Accurate: ___Y ___N
Bottles arrive intact: ___Y ___N
Correct bottles used: ___Y ___N
Sufficient volume sent: ___Y ___N
If Applicable
VOA Zero Headspace: ___Y ___N
Preservation Correct/Checked: ___Y ___N

Samples returned via: ___ UPS ___ FedEx ___ Courier ___ _____

Tracking #

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	If preservation required by Login: Date/Time
Kurt Hoekstra	4-2-20	9:30			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: Huy AG °C 1.2-.1=1.1 Bottles Received:	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) IS	Date: 4-3 Time: 0830	Hold: Condition: NCF / OK

Attachment 2
Weekly Inspection Form

SJ 28-5 Unit #68M
San Juan County, New Mexico
Hilcorp Energy Company

Inspector Name: _____
Date: _____

Weather: _____

General Site Conditions:
_____
_____

Are there any breeches in the containment? Y_____ N_____
If so, were they repaired?
_____
_____

Time spent mixing soil: _____

Amount of water applied (if any): _____

Amendments applied (type, quantity, location):
_____
_____

Evidence of pooling liquids? Y _____ N _____
GPS coordinates of pooling liquids:
_____
_____

Weekly Inspection Form

SJ 28-5 #68M
Rio Arriba County, New Mexico
Hilcorp Energy Company

Inspector Name:
Date:

SAMPLE ID	PID (PPM)	SOIL MOISTURE (%)	Temp. (°F)	Sample Collected? (Y/N, date/time, analysis requested)
BP01				
BP02				
BP03				
BP04				
BP05				
BP06				
BP07				
BP08				
BP09				
BP10				
BP11				
BP12				
BP13				
BP14				
BP15				
BP16				
BP17				
BP18				
BP19				
BP20				
BP21				
BP22				
BP23				
BP24				
BP25				
BP26				
BP27				
BP28				
BP29				
BP30				
BP31				
BP32				
BP33				
BP34				
BP35				
BP36				
BP37				
BP38				
BP39				
BP40				
BP41				
BP42				
BP43				
BP44				
BP45				
BP46				

ATTACHMENT 3: PHOTOGRAPHIC LOG

Photograph 1: East Wall of excavation.

Photograph 2: North Wall of excavation.

ATTACHMENT 3: PHOTOGRAPHIC LOG

Photograph 3: South Wall of excavation.

Photograph 4: West Wall of excavation.