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

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

NMOCD
FEB 26 2018
DISTRICT III

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

# Release Notification and Corrective Action

## OPERATOR

☐ Initial Report ☒ Final Report

| | |
|---|---|
| Name of Company Hilcorp Energy Company | Contact **Linday Dumas** |
| Address 1111 Travis, Houston, TX 77002 | Telephone No. 832-839-4585 |
| Facility Name **San Juan 27-5 Unit 1** | Facility Type **Gas** |

| | | |
|---|---|---|
| Surface Owner **Federal** | Mineral Owner **SF-079393** | API No. **30-039-07154** |

## LOCATION OF RELEASE

| Unit Letter | Section | Township | Range | Feet from the | North/South Line | Feet from the | East/West Line | County |
|---|---|---|---|---|---|---|---|---|
| **P** | **4** | **27N** | **5W** | **660** | **South** | **660** | **East** | **Rio Arriba** |

**Latitude** 36.59725 **Longitude** 107.35659

## NATURE OF RELEASE

| | | |
|---|---|---|
| Type of Release **Hydrocarbon** | Volume of Release **Unknown** | Volume Recovered None |
| Source of Release **Unknown** | Date and Hour of Occurrence **Unknown** | Date and Hour of Discovery **November 30, 2015** |
| Was Immediate Notice Given? ☐ Yes ☒ No ☐ Not Required | If YES, To Whom? | |
| By Whom? | Date and Hour | |
| Was a Watercourse Reached? ☐ Yes ☒ No | If YES, Volume Impacting the Watercourse. | |

If a Watercourse was Impacted, Describe Fully.*

**Describe Cause of Problem and Remedial Action Taken.*** Historic contamination discovered while trenching for plunger lift automation upgrade. Cause of problem/release unknown. A site assessment was conducted in April 2016 to characterize the horizontal and vertical extent of impacts. Nine geoprobe borings were drilled to depths of 22 meeting refusal in shale. Preliminary site assessment data suggests an impacted area of approximately 6000 sq feet to a depth of 24 feet below existing site grade (see attached data). Collection of supplemental soils data is proposed for September 2016 in order to derive the most cost effective remedial action plan.

**Describe Area Affected and Cleanup Action Taken.*** An excavation with approx.. dimensions 60' x 55' x 15' deep was excavated. Approx. 1800 cu. yds. of soil was excavated and treated on-site using soil shredding with a hydrogen peroxide solution. Treated soils were retreated until analytical results were below regulatory standards. Some soils that were just above standards were allowed to be mixed with clean soils for use as backfill. All soils returned to excavation as backfill either were below regulatory standards, or were granted variance by NMOCD to be mixed with clean soils and placed as backfill – no further action required. The closure report and laboratory analyses reports are attached for review.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD 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 NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD 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.

| | | |
|---|---|---|
| Signature: Lindsay Dumas | OIL CONSERVATION DIVISION | |
| Printed Name: Lindsay Dumas | Approved by Environmental Specialist: | |
| Title: Environmental Specialist | Approval Date: 2/28/18 | Expiration Date: |
| E-mail Address: LDumas@hilcorp.com | Conditions of Approval: | Attached ☐ |
| Date: 2/20/18 Phone: 832-839-4585 | | |

* Attach Additional Sheets If Necessary

3RP-1047
#nCS1624337437

141

August 10, 2017 Reference No. 111145906

Ms. Lindsay Dumas
Hilcorp Energy Company
1111 Travis
Houston, TX 77002

Dear Ms. Dumas:

Re: Remediation Report and Closure Request
San Juan 27-5 No. 1
San Juan County, New Mexico

GHD Services Inc. (GHD) is pleased to provide this summary of remediation activities and request for closure for the San Juan 27-5 No. 1 site (hereafter referred to as the "Site"). The Site is located on land controlled by Bureau of Land Management (BLM) within Section 4, Township 27 North, and Range 5 West, in Rio Arriba County, New Mexico (Figure 1). Geographical coordinates for the Site are 36.59725° North, 107.35659° West (Figure 1). The Site consists of an active gas well and associated production equipment (Figure 2). Hilcorp Energy Company purchased ConocoPhillip's San Juan basin assets and assumed Site operations on August 1, 2017.

## 1. Site History

Hydrocarbon impacted soil was discovered while trenching for an equipment upgrade on November 30, 2015. ConocoPhillips Company (ConocoPhillips) conducted Site assessments in April and September 2016 to assess the horizontal and vertical extent of hydrocarbon impacted soils. A Human Health and Ecological risk assessment was also conducted in May 2017 utilizing data collected during Site assessment subsurface explorations. The New Mexico Oil Conservation Division (NMOCD) on March 29, 2017, issued a conditional approval of the GHD November 18, 2016 Site Assessment Report. The NMOCD approval correspondence specifically required submittal and implementation of a remediation plan for the highly impacted shallow zones at the Site. Subsequent correspondence defined this zone as from 0-10 feet below ground surface (ft bgs). ConocoPhillips submitted a workplan to NMOCD and the BLM Farmington Field Office on June 8, 2017 to remediate this zone; an area of approximately 60 ft by 50 ft, or 1,100 cubic yards (cy) at 10 ft deep. The GHD work plan was approved by BLM and NMOCD with the condition that additional remediation beyond 10 ft bgs may be required depending upon confirmation laboratory soil sample results.

The remediation scope of work included excavating impacted soil, mechanically shredding the soil to achieve a uniform particle size, and treating it through chemical oxidation on Site with hydrogen peroxide. The treated soil would then be used to backfill the excavation. The NMOCD Recommended Remediation Action Levels (RRAL) assigned to the Site were based on a Site ranking using the NMOCD 1993

GHD
6121 Indian School Road NE Suite 200 Albuquerque New Mexico 87110 USA
T 505 884 0672 F 505 884 4932 W www.ghd.com

Guidelines for Remediation of Leaks, Spills and Releases. The action levels thus derived are 100 ppm for total petroleum hydrocarbons (TPH); 50 ppm for BTEX (benzene, toluene, ethylbenzene and xylenes) and 10 ppm for benzene.

## 2. Excavation Sampling and Results

GHD and remediation contractor Unlimited Construction mobilized to the site and began excavation on June 27, 2016. A previously undiscovered underground tank-the likely source of contamination-was encountered during excavation. The limits of horizontal excavation were guided by the on-Site geologist from observed visual staining and field screening using a calibrated photo-ionization detector and PetroFlag hydrocarbon test kit. Confirmation soil samples were collected from the sidewalls and floor of excavation in the presence of, and as directed by, a NMOCD field Environmental Specialist. Sample locations are depicted on Figure 2. Laboratory confirmation samples were collected and submitted to Hall Environmental Analysis Laboratory (HEAL) in Albuquerque, NM, for analyses of TPH-gasoline, diesel and motor oil range organics (GRO/DRO/ORO) by EPA Method 8015 and for BTEX constituents by EPA Method 8021. Laboratory analytical reports are included as Attachment 1 and results are summarized on Table 1. Risk-based closure of the South Wall-West and the East Wall was requested and granted by NMOCD due to encroachment of the excavation on existing Site structures. A risk based closure was also granted for closure of the floor of the excavation at a final depth of 15 ft bgs. The extent of the final excavation was approximately 60 ft by 55 ft by 15 ft deep (Figure 2). A total of 1,800 cy was excavated and treated. Variance request and approval communications are included as Attachment 2.

## 3. Soil Treatment

Impacted soils removed from the excavation were processed through a backhoe shredding bucket to both aerate the soils and break them down to a smaller, uniform particle size. Soils were deposited from the shredding bucket into a hopper/conveyor belt system where they were sprayed with a hydrogen peroxide solution with a concentration generally between 1 to 7 percent by weight in water. Treated soils were stockpiled in 100 cy piles and allowed to oxidize the soils for a period of not less than 24 hours before sampling. GHD collected one 5-point composite sample from every 100 cy treated stockpile. Laboratory confirmation samples of treated stockpile soils were collected and submitted to HEAL for analyses of TPH GRO/DRO/ORO.Pace Laboratory of Lenexa, KS, was also used as an analytical laboratory resource. Treated stockpile samples were analyzed by Pace for the same constituents (TPH,BTEX) as HEAL.

Treated soils that did not meet RRALs established for the Site were either retreated or allowed additional time to oxidize before resampling. Multiple passes through the mechanical shredding and chemical treatment process were required for impacted soils at the Site. Repeated shredding and aeration and the addition of hydrogen peroxide in concentrations well in excess of typical amounts used for similarly impacted sites in the San Juan basin were necessary to reduce hydrocarbon concentrations. On August 1, 2017, final laboratory results indicated most retreated stockpiles were below RRALs and a variance was granted to mix those stockpiles with TPH concentrations above the RRAL (164 parts per

million (ppm) or less) with stockpile soils testing below 100 ppm. These blended soils were then used first for backfilling, in the bottom of the excavation. All remaining treated stockpile soils testing below the RRAL were then used as subsequent backfill. The email communication requesting this variance on final laboratory results and NMOCD approval with backfilling requirements is included as Attachment 2. Backfilling of the excavation was completed on August 2, 2017.

## 4. Conclusions

ConocoPhillips removed and treated approximately 1,800 cy of petroleum impacted soils from the Site. Excavated soils were shredded and treated with hydrogen peroxide to oxidize contaminants and reduce concentrations of hydrocarbons to levels below RRALs established for the Site. Impacted soils at the Site were inordinately difficult to treat using the standard concentrations of oxidant, based on anecdotal information from other similar projects in the San Juan basin. Site impacted soils required multiple treatments including repeated shredding/aeration and heavy application of hydrogen peroxide. All treated soil stockpiles eventually achieved TPH concentrations below RRALs or, by approved variance, were mixed with soils that had achieved the RRAL threshold. The excavation was backfilled to existing grade using the remediated soils. Based on the results presented in this report, GHD recommends ConocoPhillips request no further action at the Site and final closure status from the NMOCD and BLM.

If you have any questions or comments with regards to this report, please do not hesitate to contact GHD's Albuquerque office at (505) 884-0672.

Sincerely,

GHD

Jeff Walker, CPG, PMP
Senior Project Manager

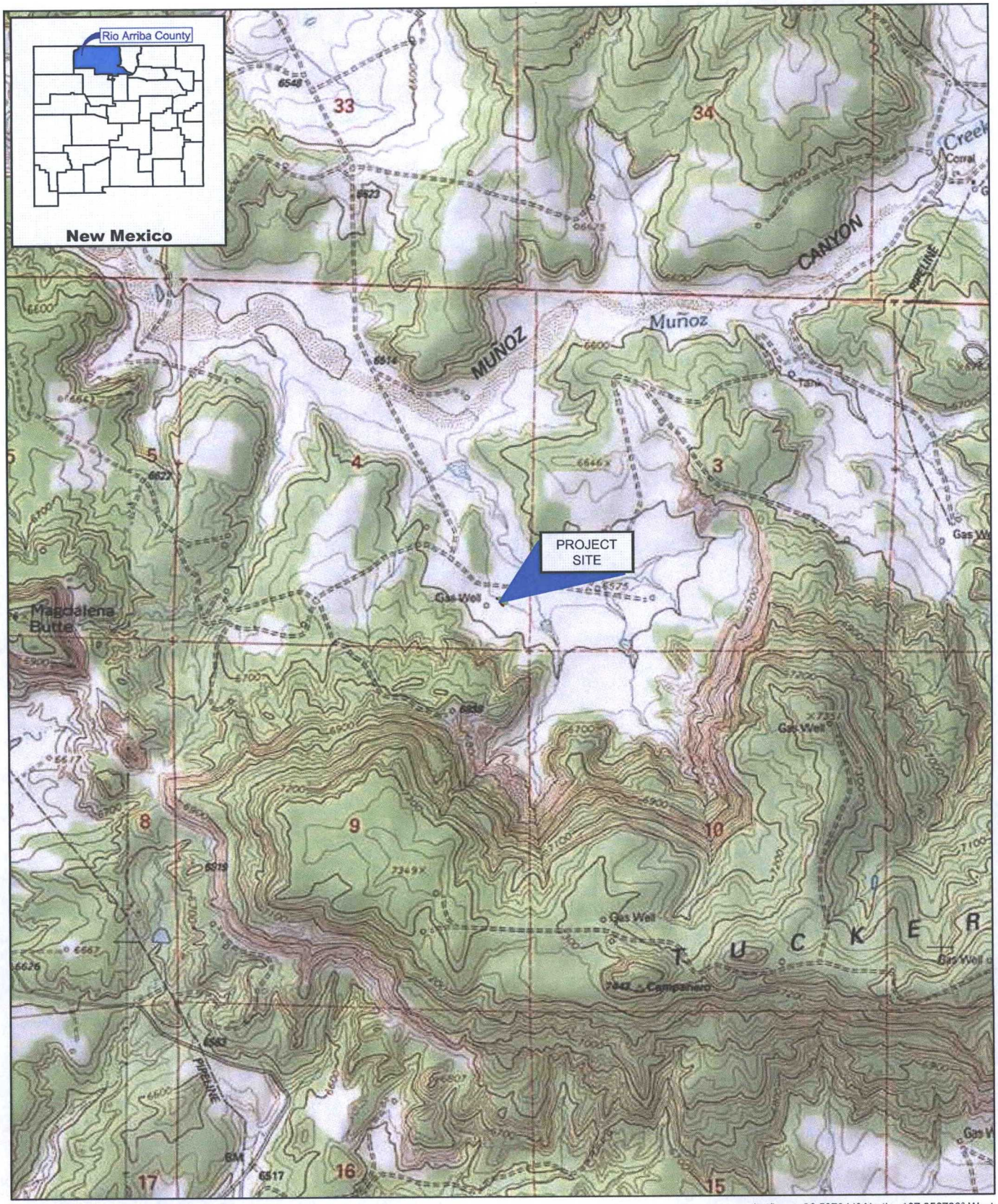
Bernard Bockisch, PMP
New Mexico Area Manager

JW/mc/01

Enclosures:

- Figure 1 – Site Location Map
- Figure 2 – Area of Excavation/Confirmation Sample Locations
- Table 1 – Soil Analytical Results Summary
- Attachment 1 – Laboratory Analytical Results
- Attachment 2 – NMOCD email variance requests and approvals

# Figures




Source: USGS 7.5 Minute Quad "Vigas Canyon and Santos Peak, New Mexico"

Lat/Long: 36.597344° North, -107.356730° West

0 1000 2000ft

Coordinate System:
NAD 1983 (2011) StatePlane-
New Mexico Central (US Feet)

HILCORP ENERGY COMPANY
RIO ARRIBA COUNTY, NEW MEXICO
SAN JUAN 27-5 No. 1

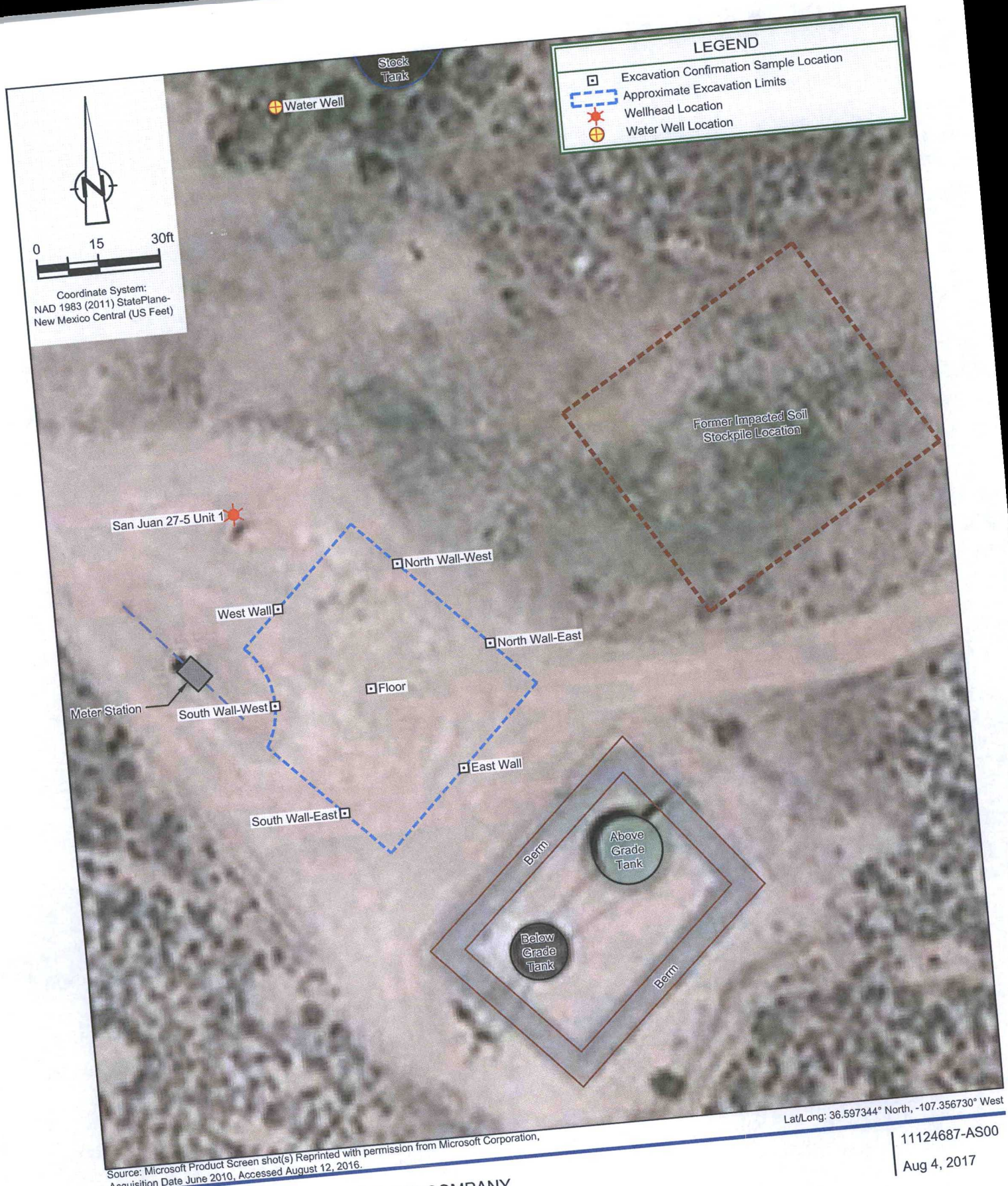
11124687-AS00

Aug 4, 2017

SITE LOCATION MAP

FIGURE 1

CAD File: I:\CAD\Files\Eight Digit Job Numbers\1112----\11124687-CoP-San Juan 27-5 No. 1\11124687-AS00\11124687-AS00(000)GN-DL003.dwg




Source: Microsoft Product Screen shot(s) Reprinted with permission from Microsoft Corporation, Acquisition Date June 2010, Accessed August 12, 2016.

Lat/Long: 36.597344° North, -107.356730° West

11124687-AS00

Aug 4, 2017

HILCORP ENERGY COMPANY
RIO ARRIBA COUNTY, NEW MEXICO
SAN JUAN 27-5 No. 1

# AREA OF EXCAVATION/ CONFIRMATION SAMPLE LOCATIONS

FIGURE 2

CAD File: I:\CAD\Files\Eight Digit Job Numbers\1112----\11124687-CoP-San Juan 27-5 No. 1\11124687-AS00\11124687-AS00(000)GN-DL003.dwg

# Tables

Table 1

GHD Soil Analytical Results Summary
Hilcorp San Juan 27-5 No. 1
Confirmation Soil Samples

| Sample ID | Date | Sample Type | Benzene (mg/kg) | Toluene (mg/kg) | Ethyl-benzene (mg/kg) | Xylenes (mg/kg) | Total BTEX (mg/kg) | TPH-GRO (mg/kg) | TPH-DRO (mg/kg) | TPH-MRO (mg/kg) | Total TPH (mg/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NMOCD RRALs (Ranking Score = 50) | | | 10 | -- | -- | -- | 50 | -- | -- | -- | 100 |
| West Wall | 6/29/2017 | Comp | <0.020 | <0.041 | <0.041 | <0.082 | <0.184 | < 4.1 | 12 | < 47 | 12 |
| South Wall-West | 6/29/2017 | Comp | < 0.089 | < 0.18 | < 0.18 | 1.1 | 1.549 | 74 | 530 | < 50 | **604** |
| South Wall-East | 6/29/2017 | Comp | <0.020 | <0.039 | <0.039 | <0.078 | <0.176 | <3.9 | <10 | < 50 | <63.9 |
| East Wall | 6/29/2017 | Comp | < 0.093 | < 0.19 | < 0.19 | 0.56 | 1.033 | 83 | 140 | < 50 | **223** |
| North Wall-East | 6/29/2017 | Comp | <0.019 | <0.038 | <0.038 | 0.075 | 0.170 | 5.1 | 34 | <47 | 39.1 |
| North Wall-West | 6/29/2017 | Comp | <0.39 | <0.77 | <0.77 | 20 | 21.93 | 510 | 190 | <50 | **700** |
| Floor @ 12 ft | 6/29/2017 | Comp | <0.90 | 4.4 | <1.8 | 50 | **57.10** | 1300 | 1800 | <470 | **3100** |
| TSP-1* | 6/29/2017 | Comp | <0.081 | 0.23 | <0.16 | 12 | 12.47 | 260 | 1100 | <490 | **1360** |
| TSP-2* | 6/29/2017 | Comp | <0.070 | 0.37 | <0.14 | 14 | 14.58 | 310 | 740 | <50 | **1050** |
| TSP-3* | 6/29/2017 | Comp | <0.071 | 0.50 | <0.14 | 19 | 19.71 | 390 | 920 | <50 | **1310** |
| TSP-4* | 6/29/2017 | Comp | <0.12 | 0.28 | 1.2 | 14 | 15.60 | 310 | 760 | <50 | **1070** |
| TSP-5* | 6/29/2017 | Comp | <0.060 | <0.12 | <0.12 | 8.6 | 8.90 | 200 | 230 | <46 | **430** |
| Floor @ 15 ft. | 7/7/2017 | Comp | <0.092 | 1.1 | <0.18 | 10.0 | 11.21 | 390 | 920 | <47 | **1310** |
| North Wall-West | 7/7/2017 | Comp | <0.019 | <0.039 | <0.039 | <0.077 | <0.17 | <3.9 | 40 | <47 | 40 |
| TSP-6 | 7/7/2017 | Comp | <0.016 | <0.032 | <0.032 | 1.8 | 1.88 | 170 | 520 | <48 | **690** |
| TSP-7 | 7/7/2017 | Comp | <0.020 | <0.040 | <0.040 | 0.99 | 1.09 | 170 | 460 | <48 | **630** |
| TSP-8 | 7/7/2017 | Comp | <0.017 | <0.034 | <0.034 | 0.83 | 0.92 | 130 | 430 | <48 | **560** |
| TSP-9 | 7/7/2017 | Comp | <0.017 | <0.034 | <0.034 | 0.65 | 0.890 | 100 | 440 | <48 | **540** |
| TSP-10 | 7/10/2017 | Comp | <0.017 | <0.034 | <0.034 | 0.30 | 0.390 | 94 | 510 | <50 | **604** |
| TSP-11 | 7/10/2017 | Comp | <0.017 | <0.034 | <0.034 | 0.30 | 0.390 | 62 | 77 | <46 | **139** |
| TSP-12 | 7/10/2017 | Comp | <0.080 | <0.16 | <0.16 | <0.32 | <0.72 | 89 | 390 | <46 | **479** |
| TSP-13 | 7/10/2017 | Comp | <0.077 | <0.15 | <0.15 | <0.31 | <0.69 | 130 | 430 | <48 | **560** |
| TSP-14 | 7/10/2017 | Comp | <0.083 | <0.17 | <0.17 | <0.33 | <0.75 | 100 | 440 | <47 | **540** |
| TSP-15** | 7/13/2017 | Comp | <0.0057 | <0.0057 | <0.0057 | <0.0115 | <0.28 | 4.3 | 1030 | <109 | **1034** |
| TSP-16** | 7/13/2017 | Comp | <0.0056 | <0.0056 | <0.0056 | <0.0113 | <0.28 | 2.4 | 1460 | 114 | **1576** |
| TSP-17** | 7/13/2017 | Comp | <0.0058 | <0.0058 | <0.0058 | <0.0115 | <0.29 | 1.6 | 810 | 67.2 | **879** |
| TSP-18** | 7/13/2017 | Comp | <0.0056 | <0.0056 | <0.0056 | 26.90 | 26.92 | 5.7 | 1210 | <107 | **1216** |
| TSP-19** | 7/13/2017 | Comp | <0.0057 | <0.0057 | <0.0057 | <0.0113 | <0.28 | 2.4 | 1750 | 111 | **1863** |
| TSP-20** | 7/13/2017 | Comp | <0.0056 | <0.0056 | <0.0056 | <0.112 | <0.28 | 4.4 | 1430 | <112 | **1434** |
| TSP-21** | 7/13/2017 | Comp | <0.0056 | <0.0056 | <0.0056 | 22.80 | 22.82 | 5.2 | 1160 | <108 | **1165** |
| TSP-22** | 7/13/2017 | Comp | <0.0056 | <0.0056 | <0.0056 | 16.50 | 16.52 | 2.8 | 1070 | 151 | **1224** |
| TSP-23** | 7/13/2017 | Comp | <0.0056 | <0.0056 | <0.0056 | 12.60 | 12.620 | 3 | 1080 | 115 | **1198** |

Table 1

GHD Soil Analytical Results Summary
Hilcorp San Juan 27-5 No. 1
Confirmation Soil Samples

| Sample ID | Date | Sample Type | Benzene (mg/kg) | Toluene (mg/kg) | Ethyl-benzene (mg/kg) | Xylenes (mg/kg) | Total BTEX (mg/kg) | TPH-GRO (mg/kg) | TPH-DRO (mg/kg) | TPH-MRO (mg/kg) | Total TPH (mg/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NMOCD RRALs (Ranking Score = 50) | | | 10 | -- | -- | -- | 50 | -- | -- | -- | 100 |
| TSP-24 | 7/19/2017 | Comp | <0.016 | <0.031 | <0.031 | <0.063 | <0.141 | 17 | 150 | <49 | **167** |
| TSP-25 | 7/19/2017 | Comp | <0.015 | <0.031 | <0.031 | <0.062 | <0.139 | 18 | 140 | <50 | **158** |
| TSP-26 | 7/19/2017 | Comp | <0.015 | <0.029 | <0.029 | <0.058 | <0.131 | 18 | 120 | <50 | **138** |
| TSP-27 | 7/19/2017 | Comp | <0.015 | <0.031 | <0.031 | <0.061 | <0.138 | 30 | 120 | <46 | **150** |
| TSP-28 | 7/19/2017 | Comp | <0.015 | <0.030 | <0.030 | <0.061 | <0.136 | 27 | 160 | <47 | **187** |
| TSP-24R | 7/24/2017 | Comp | <0.018 | <0.034 | <0.034 | <0.068 | <0.154 | 11 | 86 | <48 | 97 |
| TSP-26R | 7/24/2017 | Comp | <0.018 | <0.035 | <0.035 | <0.071 | <0.159 | 23 | 73 | <46 | 96 |
| TSP-27R | 7/24/2017 | Comp | <0.016 | <0.033 | <0.033 | <0.066 | <0.148 | 6.3 | 84 | <50 | 90 |
| TSP-28R | 7/24/2017 | Comp | <0.016 | <0.033 | <0.033 | <0.066 | <0.148 | 8.4 | 130 | <50 | **138** |
| TSP-29 | 7/24/2017 | Comp | <0.015 | <0.030 | <0.030 | <0.061 | <0.136 | 11 | 110 | <48 | **121** |
| TSP-30 | 7/24/2017 | Comp | <0.017 | <0.034 | <0.034 | <0.068 | <0.153 | 42 | 120 | <47 | **162** |
| TSP-31 | 7/24/2017 | Comp | <0.018 | <0.036 | <0.036 | <0.072 | <0.162 | 6.2 | 89 | <47 | 95 |
| TSP-32 | 7/24/2017 | Comp | <0.017 | <0.033 | <0.033 | <0.067 | <0.150 | 18 | 100 | <48 | **118** |
| TSP-33 | 7/28/2017 | Comp | <0.016 | <0.031 | <0.031 | <0.062 | <0.140 | 21 | 88 | <48 | **109** |
| TSP-34 | 7/28/2017 | Comp | <0.017 | <0.034 | <0.034 | <0.068 | <0.153 | 29 | 77 | <47 | **106** |
| TSP-35 | 7/28/2017 | Comp | <0.016 | <0.033 | <0.033 | <0.066 | <0.148 | 15 | 100 | <46 | **115** |
| TSP-36 | 7/28/2017 | Comp | <0.016 | <0.032 | <0.032 | <0.064 | <0.144 | 12 | 63 | <50 | 75 |
| TSP-37 | 7/28/2017 | Comp | <0.018 | <0.035 | <0.035 | <0.070 | <0.158 | 4.5 | 17 | <45 | 22 |
| TSP-38 | 7/28/2017 | Comp | <0.015 | <0.031 | <0.031 | <0.062 | <0.139 | 9.6 | 62 | <47 | 72 |
| TSP-39 | 7/28/2017 | Comp | <0.017 | <0.033 | <0.033 | <0.066 | <0.149 | 6.8 | 98 | <50 | **105** |
| TSP-40 | 7/28/2017 | Comp | <0.016 | <0.031 | <0.031 | <0.062 | <0.140 | 13 | 150 | <48 | **163** |
| TSP-41 | 7/28/2017 | Comp | <0.016 | <0.032 | <0.032 | <0.064 | <0.144 | 34 | 130 | <47 | **164** |
| TSP-28-RR | 7/28/2017 | Comp | <0.018 | <0.036 | <0.036 | <0.072 | <0.162 | 5.4 | 17 | <49 | 22 |
| TSP-30-RR | 7/28/2017 | Comp | <0.021 | <0.042 | <0.042 | <0.084 | <0.189 | 19 | 62 | <49 | 81 |

Notes:
mg/kg = milligrams per kilogram
BTEX = benzene, toluene, ethylbenzene, and xylene by EPA 8021 (Hall Laboratory)
TPH = total petroleum hydrocarbons by EPA 8015B (DRO/ORO)
GRO/DRO/MRO = gasoline/diesel/motor oil-range organics by EPA 8015 (Hall Laboratory)
NMOCD = New Mexico Oil Conservation Division
RRALs = Recommended Remediation Action Levels
TSP = Treated Stockpile
< x = below laboratory detection limit of x
*Stockpiles reincorporated into additional untreated soils and retreated
** Analyses by Pace Laboratories: BTEX/GRO by EPA 8260; TPH DRO/ORO by EPA 8015
RR = retest of a previously retested sample

# Attachments

# Attachment 1
# 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*

July 03, 2017

Jeff Walker
GHD
6121 Indian School Road, NE #200
Albuquerque, NM 87110
TEL: (505) 884-0672
FAX

RE: San Juan 27-5 No 1 OrderNo.: 1706F76

Dear Jeff Walker:

Hall Environmental Analysis Laboratory received 12 sample(s) on 6/29/2017 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 #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

**Analytical Report**
Lab Order **1706F76**
Date Reported: **7/3/2017**

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** GHD
**Client Sample ID:** West Wall
**Project:** San Juan 27-5 No 1
**Collection Date:** 6/29/2017 9:30:00 AM
**Lab ID:** 1706F76-001
**Matrix:** MEOH (SOIL)
**Received Date:** 6/29/2017 3:00:00 PM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **JME** | |
| Diesel Range Organics (DRO) | 12 | 9.4 | | mg/Kg | 1 | 6/30/2017 8:06:23 AM | 32573 |
| Motor Oil Range Organics (MRO) | ND | 47 | | mg/Kg | 1 | 6/30/2017 8:06:23 AM | 32573 |
| Surr: DNOP | 108 | 70-130 | | %Rec | 1 | 6/30/2017 8:06:23 AM | 32573 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | ND | 4.1 | | mg/Kg | 1 | 6/30/2017 9:43:39 AM | G43929 |
| Surr: BFB | 88.8 | 54-150 | | %Rec | 1 | 6/30/2017 9:43:39 AM | G43929 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.020 | | mg/Kg | 1 | 6/30/2017 9:43:39 AM | B43929 |
| Toluene | ND | 0.041 | | mg/Kg | 1 | 6/30/2017 9:43:39 AM | B43929 |
| Ethylbenzene | ND | 0.041 | | mg/Kg | 1 | 6/30/2017 9:43:39 AM | B43929 |
| Xylenes, Total | ND | 0.082 | | mg/Kg | 1 | 6/30/2017 9:43:39 AM | B43929 |
| Surr: 4-Bromofluorobenzene | 115 | 66.6-132 | | %Rec | 1 | 6/30/2017 9:43:39 AM | B43929 |

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

**Qualifiers:**

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

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** GHD
**Project:** San Juan 27-5 No 1
**Lab ID:** 1706F76-002
**Client Sample ID:** South Wall-W
**Collection Date:** 6/29/2017 9:40:00 AM
**Matrix:** MEOH (SOIL)
**Received Date:** 6/29/2017 3:00:00 PM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **JME** | |
| Diesel Range Organics (DRO) | 530 | 10 | | mg/Kg | 1 | 6/30/2017 8:28:28 AM | 32573 |
| Motor Oil Range Organics (MRO) | ND | 50 | | mg/Kg | 1 | 6/30/2017 8:28:28 AM | 32573 |
| Surr: DNOP | 102 | 70-130 | | %Rec | 1 | 6/30/2017 8:28:28 AM | 32573 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | 74 | 18 | | mg/Kg | 5 | 6/30/2017 10:07:52 AM | G43929 |
| Surr: BFB | 270 | 54-150 | S | %Rec | 5 | 6/30/2017 10:07:52 AM | G43929 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.089 | | mg/Kg | 5 | 6/30/2017 10:07:52 AM | B43929 |
| Toluene | ND | 0.18 | | mg/Kg | 5 | 6/30/2017 10:07:52 AM | B43929 |
| Ethylbenzene | ND | 0.18 | | mg/Kg | 5 | 6/30/2017 10:07:52 AM | B43929 |
| Xylenes, Total | 1.1 | 0.36 | | mg/Kg | 5 | 6/30/2017 10:07:52 AM | B43929 |
| Surr: 4-Bromofluorobenzene | 129 | 66.6-132 | | %Rec | 5 | 6/30/2017 10:07:52 AM | B43929 |

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

**Qualifiers:**

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

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** GHD
**Project:** San Juan 27-5 No 1
**Lab ID:** 1706F76-003

**Client Sample ID:** South Wall-E
**Collection Date:** 6/29/2017 9:45:00 AM
**Matrix:** MEOH (SOIL) **Received Date:** 6/29/2017 3:00:00 PM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **JME** | |
| Diesel Range Organics (DRO) | ND | 10 | | mg/Kg | 1 | 6/30/2017 8:50:43 AM | 32573 |
| Motor Oil Range Organics (MRO) | ND | 50 | | mg/Kg | 1 | 6/30/2017 8:50:43 AM | 32573 |
| Surr: DNOP | 107 | 70-130 | | %Rec | 1 | 6/30/2017 8:50:43 AM | 32573 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | ND | 3.9 | | mg/Kg | 1 | 6/30/2017 10:31:43 AM | G43929 |
| Surr: BFB | 92.6 | 54-150 | | %Rec | 1 | 6/30/2017 10:31:43 AM | G43929 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.020 | | mg/Kg | 1 | 6/30/2017 10:31:43 AM | B43929 |
| Toluene | ND | 0.039 | | mg/Kg | 1 | 6/30/2017 10:31:43 AM | B43929 |
| Ethylbenzene | ND | 0.039 | | mg/Kg | 1 | 6/30/2017 10:31:43 AM | B43929 |
| Xylenes, Total | ND | 0.078 | | mg/Kg | 1 | 6/30/2017 10:31:43 AM | B43929 |
| Surr: 4-Bromofluorobenzene | 121 | 66.6-132 | | %Rec | 1 | 6/30/2017 10:31:43 AM | B43929 |

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

**Qualifiers:**

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

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** GHD
**Client Sample ID:** East Wall
**Project:** San Juan 27-5 No 1
**Collection Date:** 6/29/2017 9:50:00 AM
**Lab ID:** 1706F76-004
**Matrix:** MEOH (SOIL)
**Received Date:** 6/29/2017 3:00:00 PM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **JME** | |
| Diesel Range Organics (DRO) | 140 | 10 | | mg/Kg | 1 | 6/30/2017 8:11:56 AM | 32573 |
| Motor Oil Range Organics (MRO) | ND | 50 | | mg/Kg | 1 | 6/30/2017 8:11:56 AM | 32573 |
| Surr: DNOP | 89.2 | 70-130 | | %Rec | 1 | 6/30/2017 8:11:56 AM | 32573 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | 83 | 19 | | mg/Kg | 5 | 6/30/2017 10:55:53 AM | G43929 |
| Surr: BFB | 324 | 54-150 | S | %Rec | 5 | 6/30/2017 10:55:53 AM | G43929 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.093 | | mg/Kg | 5 | 6/30/2017 10:55:53 AM | B43929 |
| Toluene | ND | 0.19 | | mg/Kg | 5 | 6/30/2017 10:55:53 AM | B43929 |
| Ethylbenzene | ND | 0.19 | | mg/Kg | 5 | 6/30/2017 10:55:53 AM | B43929 |
| Xylenes, Total | 0.56 | 0.37 | | mg/Kg | 5 | 6/30/2017 10:55:53 AM | B43929 |
| Surr: 4-Bromofluorobenzene | 132 | 66.6-132 | S | %Rec | 5 | 6/30/2017 10:55:53 AM | B43929 |

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

**Qualifiers:**

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

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** GHD
**Client Sample ID:** North Wall-E
**Project:** San Juan 27-5 No 1
**Collection Date:** 6/29/2017 10:00:00 AM
**Lab ID:** 1706F76-005
**Matrix:** MEOH (SOIL)
**Received Date:** 6/29/2017 3:00:00 PM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **JME** | |
| Diesel Range Organics (DRO) | 34 | 9.5 | | mg/Kg | 1 | 6/30/2017 8:39:44 AM | 32573 |
| Motor Oil Range Organics (MRO) | ND | 47 | | mg/Kg | 1 | 6/30/2017 8:39:44 AM | 32573 |
| Surr: DNOP | 88.6 | 70-130 | | %Rec | 1 | 6/30/2017 8:39:44 AM | 32573 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | 5.1 | 3.8 | | mg/Kg | 1 | 6/30/2017 11:19:53 AM | G43929 |
| Surr: BFB | 175 | 54-150 | S | %Rec | 1 | 6/30/2017 11:19:53 AM | G43929 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.019 | | mg/Kg | 1 | 6/30/2017 11:19:53 AM | B43929 |
| Toluene | ND | 0.038 | | mg/Kg | 1 | 6/30/2017 11:19:53 AM | B43929 |
| Ethylbenzene | ND | 0.038 | | mg/Kg | 1 | 6/30/2017 11:19:53 AM | B43929 |
| Xylenes, Total | ND | 0.075 | | mg/Kg | 1 | 6/30/2017 11:19:53 AM | B43929 |
| Surr: 4-Bromofluorobenzene | 127 | 66.6-132 | | %Rec | 1 | 6/30/2017 11:19:53 AM | B43929 |

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 Detection Limit |
| W | Sample container temperature is out of limit as specified |

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** GHD
**Client Sample ID:** North Wall-W
**Project:** San Juan 27-5 No 1
**Collection Date:** 6/29/2017 10:05:00 AM
**Lab ID:** 1706F76-006
**Matrix:** MEOH (SOIL)
**Received Date:** 6/29/2017 3:00:00 PM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **JME** | |
| Diesel Range Organics (DRO) | 190 | 10 | | mg/Kg | 1 | 6/30/2017 9:07:13 AM | 32573 |
| Motor Oil Range Organics (MRO) | ND | 50 | | mg/Kg | 1 | 6/30/2017 9:07:13 AM | 32573 |
| Surr: DNOP | 89.3 | 70-130 | | %Rec | 1 | 6/30/2017 9:07:13 AM | 32573 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | 510 | 77 | | mg/Kg | 20 | 6/30/2017 11:58:35 AM | G43929 |
| Surr: BFB | 248 | 54-150 | S | %Rec | 20 | 6/30/2017 11:58:35 AM | G43929 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.39 | | mg/Kg | 20 | 6/30/2017 11:58:35 AM | B43929 |
| Toluene | ND | 0.77 | | mg/Kg | 20 | 6/30/2017 11:58:35 AM | B43929 |
| Ethylbenzene | ND | 0.77 | | mg/Kg | 20 | 6/30/2017 11:58:35 AM | B43929 |
| Xylenes, Total | 20 | 1.5 | | mg/Kg | 20 | 6/30/2017 11:58:35 AM | B43929 |
| Surr: 4-Bromofluorobenzene | 128 | 66.6-132 | | %Rec | 20 | 6/30/2017 11:58:35 AM | B43929 |

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 Detection Limit |
| W | Sample container temperature is out of limit as specified |

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** GHD
**Client Sample ID:** Floor
**Project:** San Juan 27-5 No 1
**Collection Date:** 6/29/2017 10:15:00 AM
**Lab ID:** 1706F76-007
**Matrix:** MEOH (SOIL)
**Received Date:** 6/29/2017 3:00:00 PM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **JME** | |
| Diesel Range Organics (DRO) | 1800 | 95 | | mg/Kg | 10 | 6/30/2017 10:31:11 AM | 32573 |
| Motor Oil Range Organics (MRO) | ND | 470 | | mg/Kg | 10 | 6/30/2017 10:31:11 AM | 32573 |
| Surr: DNOP | 0 | 70-130 | S | %Rec | 10 | 6/30/2017 10:31:11 AM | 32573 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | 1300 | 180 | | mg/Kg | 50 | 6/30/2017 12:22:33 PM | G43929 |
| Surr: BFB | 321 | 54-150 | S | %Rec | 50 | 6/30/2017 12:22:33 PM | G43929 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.90 | | mg/Kg | 50 | 6/30/2017 12:22:33 PM | B43929 |
| Toluene | 4.4 | 1.8 | | mg/Kg | 50 | 6/30/2017 12:22:33 PM | B43929 |
| Ethylbenzene | ND | 1.8 | | mg/Kg | 50 | 6/30/2017 12:22:33 PM | B43929 |
| Xylenes, Total | 50 | 3.6 | | mg/Kg | 50 | 6/30/2017 12:22:33 PM | B43929 |
| Surr: 4-Bromofluorobenzene | 136 | 66.6-132 | S | %Rec | 50 | 6/30/2017 12:22:33 PM | B43929 |

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

**Qualifiers:**

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

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** GHD
**Client Sample ID:** TSP-1
**Project:** San Juan 27-5 No 1
**Collection Date:** 6/29/2017 10:30:00 AM
**Lab ID:** 1706F76-008
**Matrix:** MEOH (SOIL)
**Received Date:** 6/29/2017 3:00:00 PM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **JME** | |
| Diesel Range Organics (DRO) | 1100 | 97 | | mg/Kg | 10 | 6/30/2017 10:57:01 AM | 32573 |
| Motor Oil Range Organics (MRO) | ND | 490 | | mg/Kg | 10 | 6/30/2017 10:57:01 AM | 32573 |
| Surr: DNOP | 0 | 70-130 | S | %Rec | 10 | 6/30/2017 10:57:01 AM | 32573 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | 260 | 16 | | mg/Kg | 5 | 6/30/2017 12:46:36 PM | G43929 |
| Surr: BFB | 626 | 54-150 | S | %Rec | 5 | 6/30/2017 12:46:36 PM | G43929 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.081 | | mg/Kg | 5 | 6/30/2017 12:46:36 PM | B43929 |
| Toluene | 0.23 | 0.16 | | mg/Kg | 5 | 6/30/2017 12:46:36 PM | B43929 |
| Ethylbenzene | ND | 0.16 | | mg/Kg | 5 | 6/30/2017 12:46:36 PM | B43929 |
| Xylenes, Total | 12 | 0.32 | | mg/Kg | 5 | 6/30/2017 12:46:36 PM | B43929 |
| Surr: 4-Bromofluorobenzene | 146 | 66.6-132 | S | %Rec | 5 | 6/30/2017 12:46:36 PM | B43929 |

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

**Qualifiers:**

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

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** GHD
**Client Sample ID:** TSP-2
**Project:** San Juan 27-5 No 1
**Collection Date:** 6/29/2017 10:35:00 AM
**Lab ID:** 1706F76-009
**Matrix:** MEOH (SOIL)
**Received Date:** 6/29/2017 3:00:00 PM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **JME** | |
| Diesel Range Organics (DRO) | 740 | 10 | | mg/Kg | 1 | 6/30/2017 9:41:53 AM | 32573 |
| Motor Oil Range Organics (MRO) | ND | 50 | | mg/Kg | 1 | 6/30/2017 9:41:53 AM | 32573 |
| Surr: DNOP | 105 | 70-130 | | %Rec | 1 | 6/30/2017 9:41:53 AM | 32573 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | 310 | 14 | | mg/Kg | 5 | 6/30/2017 1:10:41 PM | G43929 |
| Surr: BFB | 820 | 54-150 | S | %Rec | 5 | 6/30/2017 1:10:41 PM | G43929 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.070 | | mg/Kg | 5 | 6/30/2017 1:10:41 PM | B43929 |
| Toluene | 0.37 | 0.14 | | mg/Kg | 5 | 6/30/2017 1:10:41 PM | B43929 |
| Ethylbenzene | ND | 0.14 | | mg/Kg | 5 | 6/30/2017 1:10:41 PM | B43929 |
| Xylenes, Total | 14 | 0.28 | | mg/Kg | 5 | 6/30/2017 1:10:41 PM | B43929 |
| Surr: 4-Bromofluorobenzene | 160 | 66.6-132 | S | %Rec | 5 | 6/30/2017 1:10:41 PM | B43929 |

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

**Qualifiers:**

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

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** GHD
**Client Sample ID:** TSP-3
**Project:** San Juan 27-5 No 1
**Collection Date:** 6/29/2017 10:40:00 AM
**Lab ID:** 1706F76-010
**Matrix:** MEOH (SOIL)
**Received Date:** 6/29/2017 3:00:00 PM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **JME** | |
| Diesel Range Organics (DRO) | 920 | 10 | | mg/Kg | 1 | 6/30/2017 10:06:31 AM | 32573 |
| Motor Oil Range Organics (MRO) | ND | 50 | | mg/Kg | 1 | 6/30/2017 10:06:31 AM | 32573 |
| Surr: DNOP | 99.4 | 70-130 | | %Rec | 1 | 6/30/2017 10:06:31 AM | 32573 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | 390 | 14 | | mg/Kg | 5 | 6/30/2017 1:34:49 PM | G43929 |
| Surr: BFB | 983 | 54-150 | S | %Rec | 5 | 6/30/2017 1:34:49 PM | G43929 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.071 | | mg/Kg | 5 | 6/30/2017 1:34:49 PM | B43929 |
| Toluene | 0.50 | 0.14 | | mg/Kg | 5 | 6/30/2017 1:34:49 PM | B43929 |
| Ethylbenzene | ND | 0.14 | | mg/Kg | 5 | 6/30/2017 1:34:49 PM | B43929 |
| Xylenes, Total | 19 | 0.28 | | mg/Kg | 5 | 6/30/2017 1:34:49 PM | B43929 |
| Surr: 4-Bromofluorobenzene | 171 | 66.6-132 | S | %Rec | 5 | 6/30/2017 1:34:49 PM | B43929 |

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

**Qualifiers:**

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

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** GHD
**Client Sample ID:** TSP-4
**Project:** San Juan 27-5 No 1
**Collection Date:** 6/29/2017 10:45:00 AM
**Lab ID:** 1706F76-011
**Matrix:** MEOH (SOIL)
**Received Date:** 6/29/2017 3:00:00 PM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **JME** | |
| Diesel Range Organics (DRO) | 760 | 10 | | mg/Kg | 1 | 6/30/2017 9:35:02 AM | 32573 |
| Motor Oil Range Organics (MRO) | ND | 50 | | mg/Kg | 1 | 6/30/2017 9:35:02 AM | 32573 |
| Surr: DNOP | 92.6 | 70-130 | | %Rec | 1 | 6/30/2017 9:35:02 AM | 32573 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | 310 | 25 | | mg/Kg | 10 | 6/30/2017 12:59:00 PM | G43930 |
| Surr: BFB | 494 | 54-150 | S | %Rec | 10 | 6/30/2017 12:59:00 PM | G43930 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.12 | | mg/Kg | 10 | 6/30/2017 12:59:00 PM | B43930 |
| Toluene | 0.28 | 0.25 | | mg/Kg | 10 | 6/30/2017 12:59:00 PM | B43930 |
| Ethylbenzene | 1.2 | 0.25 | | mg/Kg | 10 | 6/30/2017 12:59:00 PM | B43930 |
| Xylenes, Total | 14 | 0.49 | | mg/Kg | 10 | 6/30/2017 12:59:00 PM | B43930 |
| Surr: 4-Bromofluorobenzene | 115 | 66.6-132 | | %Rec | 10 | 6/30/2017 12:59:00 PM | B43930 |

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 Detection Limit |
| W | Sample container temperature is out of limit as specified |

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** GHD
**Client Sample ID:** TSP-5
**Project:** San Juan 27-5 No 1
**Collection Date:** 6/29/2017 10:50:00 AM
**Lab ID:** 1706F76-012
**Matrix:** MEOH (SOIL)
**Received Date:** 6/29/2017 3:00:00 PM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **JME** | |
| Diesel Range Organics (DRO) | 230 | 9.2 | | mg/Kg | 1 | 6/30/2017 10:02:48 AM | 32573 |
| Motor Oil Range Organics (MRO) | ND | 46 | | mg/Kg | 1 | 6/30/2017 10:02:48 AM | 32573 |
| Surr: DNOP | 93.0 | 70-130 | | %Rec | 1 | 6/30/2017 10:02:48 AM | 32573 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | 200 | 12 | | mg/Kg | 5 | 6/30/2017 1:22:44 PM | G43930 |
| Surr: BFB | 669 | 54-150 | S | %Rec | 5 | 6/30/2017 1:22:44 PM | G43930 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.060 | | mg/Kg | 5 | 6/30/2017 1:22:44 PM | B43930 |
| Toluene | ND | 0.12 | | mg/Kg | 5 | 6/30/2017 1:22:44 PM | B43930 |
| Ethylbenzene | ND | 0.12 | | mg/Kg | 5 | 6/30/2017 1:22:44 PM | B43930 |
| Xylenes, Total | 8.6 | 0.24 | | mg/Kg | 5 | 6/30/2017 1:22:44 PM | B43930 |
| Surr: 4-Bromofluorobenzene | 126 | 66.6-132 | | %Rec | 5 | 6/30/2017 1:22:44 PM | B43930 |

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

**Qualifiers:**

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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: **1706F76**

***03-Jul-17***

**Client:** GHD

**Project:** San Juan 27-5 No 1

| Sample ID **MB-32573** | SampType: **MBLK** | TestCode: **EPA Method 8015M/D: Diesel Range Organics** |
|---|---|---|
| Client ID: **PBS** | Batch ID: **32573** | RunNo: **43910** |
| Prep Date: **6/30/2017** | Analysis Date: **6/30/2017** | SeqNo: **1384022** 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 | 9.8 | | 10.00 | | 97.8 | 70 | 130 | | | |

| Sample ID **LCS-32573** | SampType: **LCS** | TestCode: **EPA Method 8015M/D: Diesel Range Organics** |
|---|---|---|
| Client ID: **LCSS** | Batch ID: **32573** | RunNo: **43910** |
| Prep Date: **6/30/2017** | Analysis Date: **6/30/2017** | SeqNo: **1384023** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics (DRO) | 47 | 10 | 50.00 | 0 | 94.7 | 73.2 | 114 | | | |
| Surr: DNOP | 4.6 | | 5.000 | | 91.7 | 70 | 130 | | | |

| Sample ID **1706F76-001AMS** | SampType: **MS** | TestCode: **EPA Method 8015M/D: Diesel Range Organics** |
|---|---|---|
| Client ID: **West Wall** | Batch ID: **32573** | RunNo: **43908** |
| Prep Date: **6/30/2017** | Analysis Date: **6/30/2017** | SeqNo: **1384947** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics (DRO) | 56 | 9.2 | 45.96 | 11.75 | 95.7 | 55.8 | 122 | | | |
| Surr: DNOP | 4.9 | | 4.596 | | 106 | 70 | 130 | | | |

| Sample ID **1706F76-001AMSD** | SampType: **MSD** | TestCode: **EPA Method 8015M/D: Diesel Range Organics** |
|---|---|---|
| Client ID: **West Wall** | Batch ID: **32573** | RunNo: **43908** |
| Prep Date: **6/30/2017** | Analysis Date: **6/30/2017** | SeqNo: **1384954** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics (DRO) | 60 | 9.9 | 49.36 | 11.75 | 98.1 | 55.8 | 122 | 7.69 | 20 | |
| Surr: DNOP | 5.2 | | 4.936 | | 106 | 70 | 130 | 0 | 0 | |

**Qualifiers:**

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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: **1706F76**

***03-Jul-17***

**Client:** GHD

**Project:** San Juan 27-5 No 1

| Sample ID **RB** | SampType: **MBLK** | TestCode: **EPA Method 8015D: Gasoline Range** |
|---|---|---|
| Client ID: **PBS** | Batch ID: **G43930** | RunNo: **43930** |
| Prep Date: | Analysis Date: **6/30/2017** | SeqNo: **1385181** 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 | 1000 | | 1000 | | 101 | 54 | 150 | | | |

| Sample ID **2.5UG GRO LCS** | SampType: **LCS** | TestCode: **EPA Method 8015D: Gasoline Range** |
|---|---|---|
| Client ID: **LCSS** | Batch ID: **G43930** | RunNo: **43930** |
| Prep Date: | Analysis Date: **6/30/2017** | SeqNo: **1385182** 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 | 91.3 | 76.4 | 125 | | | |
| Surr: BFB | 1100 | | 1000 | | 111 | 54 | 150 | | | |

| Sample ID **RB** | SampType: **MBLK** | TestCode: **EPA Method 8015D: Gasoline Range** |
|---|---|---|
| Client ID: **PBS** | Batch ID: **G43929** | RunNo: **43929** |
| Prep Date: | Analysis Date: **6/30/2017** | SeqNo: **1385226** 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 | 880 | | 1000 | | 88.5 | 54 | 150 | | | |

| Sample ID **2.5UG GRO LCS** | SampType: **LCS** | TestCode: **EPA Method 8015D: Gasoline Range** |
|---|---|---|
| Client ID: **LCSS** | Batch ID: **G43929** | RunNo: **43929** |
| Prep Date: | Analysis Date: **6/30/2017** | SeqNo: **1385227** 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 | 99.6 | 76.4 | 125 | | | |
| Surr: BFB | 1000 | | 1000 | | 102 | 54 | 150 | | | |

| Sample ID **1706F76-001AMS** | SampType: **MS** | TestCode: **EPA Method 8015D: Gasoline Range** |
|---|---|---|
| Client ID: **West Wall** | Batch ID: **G43929** | RunNo: **43929** |
| Prep Date: | Analysis Date: **6/30/2017** | SeqNo: **1385228** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO) | 21 | 4.1 | 20.39 | 0 | 104 | 77.8 | 128 | | | |
| Surr: BFB | 920 | | 815.7 | | 112 | 54 | 150 | | | |

| Sample ID **1706F76-001AMSD** | SampType: **MSD** | TestCode: **EPA Method 8015D: Gasoline Range** |
|---|---|---|
| Client ID: **West Wall** | Batch ID: **G43929** | RunNo: **43929** |
| Prep Date: | Analysis Date: **6/30/2017** | SeqNo: **1385229** Units: **mg/Kg** |

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

**Qualifiers:**

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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: **1706F76**

***03-Jul-17***

**Client:** GHD

**Project:** San Juan 27-5 No 1

| Sample ID **1706F76-001AMSD** | SampType: **MSD** | TestCode: **EPA Method 8015D: Gasoline Range** |
|---|---|---|
| Client ID: **West Wall** | Batch ID: **G43929** | RunNo: **43929** |
| Prep Date: | Analysis Date: **6/30/2017** | SeqNo: **1385229** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO) | 20 | 4.1 | 20.39 | 0 | 99.7 | 77.8 | 128 | 4.40 | 20 | |
| Surr: BFB | 900 | | 815.7 | | 110 | 54 | 150 | 0 | 0 | |

**Qualifiers:**

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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: **1706F76**

***03-Jul-17***

**Client:** GHD

**Project:** San Juan 27-5 No 1

| Sample ID **RB** | SampType: **MBLK** | TestCode: **EPA Method 8021B: Volatiles** |
|---|---|---|
| Client ID: **PBS** | Batch ID: **B43930** | RunNo: **43930** |
| Prep Date: | Analysis Date: **6/30/2017** | SeqNo: **1385187** 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 | | | | | | | | |
| Xylenes, Total | ND | 0.10 | | | | | | | | |
| Surr: 4-Bromofluorobenzene | 0.95 | | 1.000 | | 95.0 | 66.6 | 132 | | | |

| Sample ID **100NG BTEX LCS** | SampType: **LCS** | TestCode: **EPA Method 8021B: Volatiles** |
|---|---|---|
| Client ID: **LCSS** | Batch ID: **B43930** | RunNo: **43930** |
| Prep Date: | Analysis Date: **6/30/2017** | SeqNo: **1385188** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.93 | 0.025 | 1.000 | 0 | 92.9 | 80 | 120 | | | |
| Toluene | 0.93 | 0.050 | 1.000 | 0 | 93.4 | 80 | 120 | | | |
| Ethylbenzene | 0.92 | 0.050 | 1.000 | 0 | 91.8 | 80 | 120 | | | |
| Xylenes, Total | 2.7 | 0.10 | 3.000 | 0 | 91.3 | 80 | 120 | | | |
| Surr: 4-Bromofluorobenzene | 0.99 | | 1.000 | | 99.2 | 66.6 | 132 | | | |

| Sample ID **RB** | SampType: **MBLK** | TestCode: **EPA Method 8021B: Volatiles** |
|---|---|---|
| Client ID: **PBS** | Batch ID: **B43929** | RunNo: **43929** |
| Prep Date: | Analysis Date: **6/30/2017** | SeqNo: **1385242** 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 | | | | | | | | |
| Xylenes, Total | ND | 0.10 | | | | | | | | |
| Surr: 4-Bromofluorobenzene | 1.2 | | 1.000 | | 115 | 66.6 | 132 | | | |

| Sample ID **100NG BTEX LCS** | SampType: **LCS** | TestCode: **EPA Method 8021B: Volatiles** |
|---|---|---|
| Client ID: **LCSS** | Batch ID: **B43929** | RunNo: **43929** |
| Prep Date: | Analysis Date: **6/30/2017** | SeqNo: **1385243** 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 | 80 | 120 | | | |
| Toluene | 1.1 | 0.050 | 1.000 | 0 | 110 | 80 | 120 | | | |
| Ethylbenzene | 1.1 | 0.050 | 1.000 | 0 | 110 | 80 | 120 | | | |
| Xylenes, Total | 3.4 | 0.10 | 3.000 | 0 | 112 | 80 | 120 | | | |
| Surr: 4-Bromofluorobenzene | 1.2 | | 1.000 | | 121 | 66.6 | 132 | | | |

**Qualifiers:**

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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: **1706F76**

***03-Jul-17***

**Client:** GHD

**Project:** San Juan 27-5 No 1

| Sample ID **1706F76-002AMS** | SampType: **MS** | TestCode: **EPA Method 8021B: Volatiles** |
|---|---|---|
| Client ID: **South Wall-W** | Batch ID: **B43929** | RunNo: **43929** |
| Prep Date: | Analysis Date: **6/30/2017** | SeqNo: **1385253** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 3.8 | 0.089 | 3.564 | 0.03279 | 106 | 80.9 | 132 | | | |
| Toluene | 4.0 | 0.18 | 3.564 | 0.1112 | 108 | 79.8 | 136 | | | |
| Ethylbenzene | 4.2 | 0.18 | 3.564 | 0 | 116 | 79.4 | 140 | | | |
| Xylenes, Total | 13 | 0.36 | 10.69 | 1.145 | 111 | 78.5 | 142 | | | |
| Surr: 4-Bromofluorobenzene | 4.9 | | 3.564 | | 137 | 66.6 | 132 | | | S |

| Sample ID **1706F76-002AMSD** | SampType: **MSD** | TestCode: **EPA Method 8021B: Volatiles** |
|---|---|---|
| Client ID: **South Wall-W** | Batch ID: **B43929** | RunNo: **43929** |
| Prep Date: | Analysis Date: **6/30/2017** | SeqNo: **1385254** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 3.7 | 0.089 | 3.564 | 0.03279 | 103 | 80.9 | 132 | 3.05 | 20 | |
| Toluene | 3.9 | 0.18 | 3.564 | 0.1112 | 105 | 79.8 | 136 | 2.52 | 20 | |
| Ethylbenzene | 4.1 | 0.18 | 3.564 | 0 | 114 | 79.4 | 140 | 2.27 | 20 | |
| Xylenes, Total | 13 | 0.36 | 10.69 | 1.145 | 108 | 78.5 | 142 | 2.21 | 20 | |
| Surr: 4-Bromofluorobenzene | 4.7 | | 3.564 | | 132 | 66.6 | 132 | 0 | 0 | |

**Qualifiers:**

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

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: GHD | Work Order Number: 1706F76 | RcptNo: 1

Received By: Anne Thorne 6/29/2017 3:00:00 PM

Completed By: Ashley Gallegos 6/29/2017 3:16:30 PM

Reviewed By: ERE 06/29/17

## Chain of Custody

| | | | |
|---|---|---|---|
| 1. Custody seals intact on sample bottles? | Yes ☐ | No ☐ | Not Present ☑ |
| 2. Is Chain of Custody complete? | Yes ☑ | No ☐ | Not Present ☐ |
| 3. How was the sample delivered? | Client | | |

## Log In

| | | | |
|---|---|---|---|
| 4. Was an attempt made to cool the samples? | Yes ☑ | No ☐ | NA ☐ |
| 5. Were all samples received at a temperature of >0° C to 6.0°C | Yes ☑ | No ☐ | NA ☐ |
| 6. Sample(s) in proper container(s)? | Yes ☑ | No ☐ | |
| 7. Sufficient sample volume for indicated test(s)? | Yes ☑ | No ☐ | |
| 8. Are samples (except VOA and ONG) properly preserved? | Yes ☑ | No ☐ | |
| 9. Was preservative added to bottles? | Yes ☐ | No ☑ | NA ☐ |
| 10. VOA vials have zero headspace? | Yes ☐ | No ☐ | No VOA Vials ☑ |
| 11. Were any sample containers received broken? | Yes ☐ | No ☑ | |
| 12. Does paperwork match bottle labels? (Note discrepancies on chain of custody) | Yes ☑ | No ☐ | # of preserved bottles checked for pH: _____ (<2 or >12 unless noted) |
| 13. Are matrices correctly identified on Chain of Custody? | Yes ☑ | No ☐ | Adjusted? _____ |
| 14. Is it clear what analyses were requested? | Yes ☑ | No ☐ | |
| 15. Were all holding times able to be met? (If no, notify customer for authorization.) | Yes ☑ | No ☐ | Checked by: _____ |

## Special Handling (if applicable)

16. 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: _____

17. Additional remarks:

18. Cooler Information

| Cooler No | Temp °C | Condition | Seal Intact | Seal No | Seal Date | Signed By |
|---|---|---|---|---|---|---|
| 1 | 5.6 | Good | Not Present | | | |

# Chain-of-Custody Record

Client: GHD Services Inc.

Mailing Address: 6121 Indian Sch. Rd. Albuq, NM 87110

Phone #: 505-884-0672

email or Fax#: jeff.walker@ghd.com

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:
☐ Standard ☒ Rush Same Day

Project Name: San Juan 27-5 No 1

Project #: 1112467

Project Manager: Jeff Walker

Sampler: Charles Neligh

On Ice: ☒ Yes ☐ No

Sample Temperature: 5.6


**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. 1706F76 | 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) | | | | | Air Bubbles (Y or N) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/29/17 | 0930 | Soil | West Wall | 4oz gl/1 | MeOH | -001 | X | | X | | | | | | | | | | | | | |
| | 0940 | | South Wall - W | | | -002 | X | | X | | | | | | | | | | | | | |
| | 0945 | | South Wall - E | | | -003 | X | | X | | | | | | | | | | | | | |
| | 0950 | | East Wall | | | -004 | X | | X | | | | | | | | | | | | | |
| | 1000 | | North Wall - E | | | -005 | X | | X | | | | | | | | | | | | | |
| | 1005 | | North Wall - W | | | -006 | X | | X | | | | | | | | | | | | | |
| | 1015 | | Floor | | | -007 | X | | X | | | | | | | | | | | | | |
| | 1030 | | TSP-1 | | | -008 | X | | X | | | | | | | | | | | | | |
| | 1035 | | TSP-2 | | | -009 | X | | X | | | | | | | | | | | | | |
| | 1040 | | TSP-3 | | | -010 | X | | X | | | | | | | | | | | | | |
| | 1045 | | TSP-4 | | | -011 | X | | X | | | | | | | | | | | | | |
| | 1050 | | TSP-5 | | | -012 | X | | X | | | | | | | | | | | | | |

| Date: | Time: | Relinquished by: | Received by: | Date | Time |
|---|---|---|---|---|---|
| 1/29/17 | 1500 | Jeff Walker GHD | | 01/29/17 | 1500 |
| 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.

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*

July 12, 2017

Jeff Walker
GHD
6121 Indian School Road, NE #200
Albuquerque, NM 87110
TEL: (505) 884-0672
FAX

RE: 27-5 #1 OrderNo.: 1707388

Dear Jeff Walker:

Hall Environmental Analysis Laboratory received 5 sample(s) on 7/11/2017 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 #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

**Analytical Report**
Lab Order **1707388**
Date Reported: **7/12/2017**

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** GHD
**Project:** 27-5 #1
**Lab ID:** 1707388-001 **Matrix:** SOIL

**Client Sample ID:** TSP-10
**Collection Date:** 7/10/2017 10:45:00 AM
**Received Date:** 7/11/2017 7:00:00 AM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **TOM** | |
| Diesel Range Organics (DRO) | 510 | 10 | | mg/Kg | 1 | 7/11/2017 9:58:48 AM | 32724 |
| Motor Oil Range Organics (MRO) | ND | 50 | | mg/Kg | 1 | 7/11/2017 9:58:48 AM | 32724 |
| Surr: DNOP | 94.2 | 70-130 | | %Rec | 1 | 7/11/2017 9:58:48 AM | 32724 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | 94 | 3.4 | | mg/Kg | 1 | 7/11/2017 9:29:23 AM | 32708 |
| Surr: BFB | 1350 | 54-150 | S | %Rec | 1 | 7/11/2017 9:29:23 AM | 32708 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.017 | | mg/Kg | 1 | 7/11/2017 9:29:23 AM | 32708 |
| Toluene | ND | 0.034 | | mg/Kg | 1 | 7/11/2017 9:29:23 AM | 32708 |
| Ethylbenzene | ND | 0.034 | | mg/Kg | 1 | 7/11/2017 9:29:23 AM | 32708 |
| Xylenes, Total | 0.30 | 0.067 | | mg/Kg | 1 | 7/11/2017 9:29:23 AM | 32708 |
| Surr: 4-Bromofluorobenzene | 214 | 66.6-132 | S | %Rec | 1 | 7/11/2017 9:29:23 AM | 32708 |

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

**Qualifiers:**

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

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** GHD
**Project:** 27-5 #1
**Lab ID:** 1707388-002 **Matrix:** SOIL

**Client Sample ID:** TSP-11
**Collection Date:** 7/10/2017 10:50:00 AM
**Received Date:** 7/11/2017 7:00:00 AM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **TOM** | |
| Diesel Range Organics (DRO) | 77 | 9.2 | | mg/Kg | 1 | 7/11/2017 10:27:19 AM | 32724 |
| Motor Oil Range Organics (MRO) | ND | 46 | | mg/Kg | 1 | 7/11/2017 10:27:19 AM | 32724 |
| Surr: DNOP | 83.4 | 70-130 | | %Rec | 1 | 7/11/2017 10:27:19 AM | 32724 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | 62 | 3.4 | | mg/Kg | 1 | 7/11/2017 9:53:23 AM | 32708 |
| Surr: BFB | 930 | 54-150 | S | %Rec | 1 | 7/11/2017 9:53:23 AM | 32708 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.017 | | mg/Kg | 1 | 7/11/2017 9:53:23 AM | 32708 |
| Toluene | ND | 0.034 | | mg/Kg | 1 | 7/11/2017 9:53:23 AM | 32708 |
| Ethylbenzene | ND | 0.034 | | mg/Kg | 1 | 7/11/2017 9:53:23 AM | 32708 |
| Xylenes, Total | 0.11 | 0.068 | | mg/Kg | 1 | 7/11/2017 9:53:23 AM | 32708 |
| Surr: 4-Bromofluorobenzene | 186 | 66.6-132 | S | %Rec | 1 | 7/11/2017 9:53:23 AM | 32708 |

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

**Qualifiers:**

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

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** GHD
**Project:** 27-5 #1
**Lab ID:** 1707388-003
**Matrix:** SOIL
**Client Sample ID:** TSP-12
**Collection Date:** 7/10/2017 10:55:00 AM
**Received Date:** 7/11/2017 7:00:00 AM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **TOM** | |
| Diesel Range Organics (DRO) | 390 | 9.2 | | mg/Kg | 1 | 7/11/2017 10:55:24 AM | 32724 |
| Motor Oil Range Organics (MRO) | ND | 46 | | mg/Kg | 1 | 7/11/2017 10:55:24 AM | 32724 |
| Surr: DNOP | 91.3 | 70-130 | | %Rec | 1 | 7/11/2017 10:55:24 AM | 32724 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | 89 | 16 | | mg/Kg | 5 | 7/11/2017 10:17:24 AM | 32708 |
| Surr: BFB | 366 | 54-150 | S | %Rec | 5 | 7/11/2017 10:17:24 AM | 32708 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.080 | | mg/Kg | 5 | 7/11/2017 10:17:24 AM | 32708 |
| Toluene | ND | 0.16 | | mg/Kg | 5 | 7/11/2017 10:17:24 AM | 32708 |
| Ethylbenzene | ND | 0.16 | | mg/Kg | 5 | 7/11/2017 10:17:24 AM | 32708 |
| Xylenes, Total | ND | 0.32 | | mg/Kg | 5 | 7/11/2017 10:17:24 AM | 32708 |
| Surr: 4-Bromofluorobenzene | 148 | 66.6-132 | S | %Rec | 5 | 7/11/2017 10:17:24 AM | 32708 |

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

**Qualifiers:**

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

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** GHD
**Project:** 27-5 #1
**Lab ID:** 1707388-004 **Matrix:** SOIL

**Client Sample ID:** TSP-13
**Collection Date:** 7/10/2017 11:00:00 AM
**Received Date:** 7/11/2017 7:00:00 AM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **TOM** | |
| Diesel Range Organics (DRO) | 430 | 9.7 | | mg/Kg | 1 | 7/11/2017 11:23:35 AM | 32724 |
| Motor Oil Range Organics (MRO) | ND | 48 | | mg/Kg | 1 | 7/11/2017 11:23:35 AM | 32724 |
| Surr: DNOP | 92.4 | 70-130 | | %Rec | 1 | 7/11/2017 11:23:35 AM | 32724 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | 130 | 15 | | mg/Kg | 5 | 7/11/2017 10:41:25 AM | 32708 |
| Surr: BFB | 564 | 54-150 | S | %Rec | 5 | 7/11/2017 10:41:25 AM | 32708 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.077 | | mg/Kg | 5 | 7/11/2017 10:41:25 AM | 32708 |
| Toluene | ND | 0.15 | | mg/Kg | 5 | 7/11/2017 10:41:25 AM | 32708 |
| Ethylbenzene | ND | 0.15 | | mg/Kg | 5 | 7/11/2017 10:41:25 AM | 32708 |
| Xylenes, Total | ND | 0.31 | | mg/Kg | 5 | 7/11/2017 10:41:25 AM | 32708 |
| Surr: 4-Bromofluorobenzene | 160 | 66.6-132 | S | %Rec | 5 | 7/11/2017 10:41:25 AM | 32708 |

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

**Qualifiers:**

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

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** GHD
**Project:** 27-5 #1
**Lab ID:** 1707388-005 **Matrix:** SOIL

**Client Sample ID:** TSP-14
**Collection Date:** 7/10/2017 11:05:00 AM
**Received Date:** 7/11/2017 7:00:00 AM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **TOM** | |
| Diesel Range Organics (DRO) | 440 | 9.4 | | mg/Kg | 1 | 7/11/2017 11:52:00 AM | 32724 |
| Motor Oil Range Organics (MRO) | ND | 47 | | mg/Kg | 1 | 7/11/2017 11:52:00 AM | 32724 |
| Surr: DNOP | 95.4 | 70-130 | | %Rec | 1 | 7/11/2017 11:52:00 AM | 32724 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | 100 | 17 | | mg/Kg | 5 | 7/11/2017 11:05:33 AM | 32708 |
| Surr: BFB | 418 | 54-150 | S | %Rec | 5 | 7/11/2017 11:05:33 AM | 32708 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.083 | | mg/Kg | 5 | 7/11/2017 11:05:33 AM | 32708 |
| Toluene | ND | 0.17 | | mg/Kg | 5 | 7/11/2017 11:05:33 AM | 32708 |
| Ethylbenzene | ND | 0.17 | | mg/Kg | 5 | 7/11/2017 11:05:33 AM | 32708 |
| Xylenes, Total | ND | 0.33 | | mg/Kg | 5 | 7/11/2017 11:05:33 AM | 32708 |
| Surr: 4-Bromofluorobenzene | 152 | 66.6-132 | S | %Rec | 5 | 7/11/2017 11:05:33 AM | 32708 |

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

**Qualifiers:**

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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: **1707388**

*12-Jul-17*

**Client:** GHD

**Project:** 27-5 #1

| Sample ID **LCS-32724** | SampType: **LCS** | TestCode: **EPA Method 8015M/D: Diesel Range Organics** |
|---|---|---|
| Client ID: **LCSS** | Batch ID: **32724** | RunNo: **44111** |
| Prep Date: **7/11/2017** | Analysis Date: **7/11/2017** | SeqNo: **1392049** 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 | 98.8 | 73.2 | 114 | | | |
| Surr: DNOP | 4.4 | | 5.000 | | 89.0 | 70 | 130 | | | |

| Sample ID **LCS-32725** | SampType: **LCS** | TestCode: **EPA Method 8015M/D: Diesel Range Organics** |
|---|---|---|
| Client ID: **LCSS** | Batch ID: **32725** | RunNo: **44111** |
| Prep Date: **7/11/2017** | Analysis Date: **7/11/2017** | SeqNo: **1392050** Units: **%Rec** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Surr: DNOP | 4.3 | | 5.000 | | 86.5 | 70 | 130 | | | |

| Sample ID **MB-32724** | SampType: **MBLK** | TestCode: **EPA Method 8015M/D: Diesel Range Organics** |
|---|---|---|
| Client ID: **PBS** | Batch ID: **32724** | RunNo: **44111** |
| Prep Date: **7/11/2017** | Analysis Date: **7/11/2017** | SeqNo: **1392051** 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 | 9.8 | | 10.00 | | 97.6 | 70 | 130 | | | |

| Sample ID **MB-32725** | SampType: **MBLK** | TestCode: **EPA Method 8015M/D: Diesel Range Organics** |
|---|---|---|
| Client ID: **PBS** | Batch ID: **32725** | RunNo: **44111** |
| Prep Date: **7/11/2017** | Analysis Date: **7/11/2017** | SeqNo: **1392052** Units: **%Rec** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Surr: DNOP | 8.9 | | 10.00 | | 88.7 | 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 Detection Limit |
| S | % Recovery outside of range due to dilution or matrix | W | Sample container temperature is out of limit as specified |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: **1707388**

*12-Jul-17*

**Client:** GHD
**Project:** 27-5 #1

| Sample ID | **MB-32708** | SampType: | **MBLK** | TestCode: | **EPA Method 8015D: Gasoline Range** | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | **PBS** | Batch ID: | **32708** | RunNo: | **44123** | | | | | |
| Prep Date: | **7/10/2017** | Analysis Date: | **7/11/2017** | SeqNo: | **1392985** | 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 | 1000 | | 1000 | | 104 | 54 | 150 | | | |

| Sample ID | **LCS-32708** | SampType: | **LCS** | TestCode: | **EPA Method 8015D: Gasoline Range** | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | **LCSS** | Batch ID: | **32708** | RunNo: | **44123** | | | | | |
| Prep Date: | **7/10/2017** | Analysis Date: | **7/11/2017** | SeqNo: | **1392986** | 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 | 97.0 | 76.4 | 125 | | | |
| Surr: BFB | 1200 | | 1000 | | 116 | 54 | 150 | | | |

**Qualifiers:**

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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: **1707388**

*12-Jul-17*

**Client:** GHD
**Project:** 27-5 #1

| Sample ID **MB-32708** | SampType: **MBLK** | TestCode: **EPA Method 8021B: Volatiles** |
|---|---|---|
| Client ID: **PBS** | Batch ID: **32708** | RunNo: **44123** |
| Prep Date: **7/10/2017** | Analysis Date: **7/11/2017** | SeqNo: **1393004** 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 | | | | | | | | |
| Xylenes, Total | ND | 0.10 | | | | | | | | |
| Surr: 4-Bromofluorobenzene | 1.4 | | 1.000 | | 136 | 66.6 | 132 | | | S |

| Sample ID **LCS-32708** | SampType: **LCS** | TestCode: **EPA Method 8021B: Volatiles** |
|---|---|---|
| Client ID: **LCSS** | Batch ID: **32708** | RunNo: **44123** |
| Prep Date: **7/10/2017** | Analysis Date: **7/11/2017** | SeqNo: **1393005** 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 | 111 | 80 | 120 | | | |
| Toluene | 1.1 | 0.050 | 1.000 | 0 | 112 | 80 | 120 | | | |
| Ethylbenzene | 1.1 | 0.050 | 1.000 | 0 | 113 | 80 | 120 | | | |
| Xylenes, Total | 3.4 | 0.10 | 3.000 | 0 | 115 | 80 | 120 | | | |
| Surr: 4-Bromofluorobenzene | 1.4 | | 1.000 | | 141 | 66.6 | 132 | | | S |

**Qualifiers:**

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

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: GHD | Work Order Number: 1707388 | RcptNo: 1

Received By: Anne Thorne 7/11/2017 7:00:00 AM

Completed By: Anne Thorne 7/11/2017 7:38:02 AM

Reviewed By: 7/11/17

## Chain of Custody

| | | | |
|---|---|---|---|
| 1. Custody seals intact on sample bottles? | Yes ☑ | No ☐ | Not Present ☐ |
| 2. Is Chain of Custody complete? | Yes ☑ | No ☐ | Not Present ☐ |
| 3. How was the sample delivered? | Courier | | |

## Log In

| | | | |
|---|---|---|---|
| 4. Was an attempt made to cool the samples? | Yes ☑ | No ☐ | NA ☐ |
| 5. Were all samples received at a temperature of >0° C to 6.0°C | Yes ☑ | No ☐ | NA ☐ |
| 6. Sample(s) in proper container(s)? | Yes ☑ | No ☐ | |
| 7. Sufficient sample volume for indicated test(s)? | Yes ☑ | No ☐ | |
| 8. Are samples (except VOA and ONG) properly preserved? | Yes ☑ | No ☐ | |
| 9. Was preservative added to bottles? | Yes ☐ | No ☑ | NA ☐ |
| 10. VOA vials have zero headspace? | Yes ☐ | No ☐ | No VOA Vials ☑ |
| 11. Were any sample containers received broken? | Yes ☐ | No ☑ | |
| 12. Does paperwork match bottle labels? (Note discrepancies on chain of custody) | Yes ☑ | No ☐ | |
| 13. Are matrices correctly identified on Chain of Custody? | Yes ☑ | No ☐ | |
| 14. Is it clear what analyses were requested? | Yes ☑ | No ☐ | |
| 15. 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: _____

## Special Handling (if applicable)

16. 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: _____

17. Additional remarks:

18. Cooler Information

| Cooler No | Temp °C | Condition | Seal Intact | Seal No | Seal Date | Signed By |
|---|---|---|---|---|---|---|
| 1 | 1.0 | Good | Yes | | | |

# Chain-of-Custody Record

Client: GHD Services

Mailing Address: 6121 Indian School Rd NE #200
Albuquerque, NM 87110

Phone #: 505 884 0672

email or Fax#: Jeff.Walker@ghd.com

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:
☐ Standard ☐ Rush Same Day

Project Name: 27-5 #1

Project #: 111246847

Project Manager: Jeff Walker

Sampler: C. Neligh

On Ice: ☑ Yes ☐ No

Sample Temperature: 1.0


**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. 1707388 | 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) | | | | | Air Bubbles (Y or N) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7-10-17 | 1045 | Soil | TSP-10 | 4oz / 1 | Mcott | -001 | X | | X | | | | | | | | | | | | | |
| | 1050 | | TSP-11 | | | -002 | X | | X | | | | | | | | | | | | | |
| | 1055 | | TSP-12 | | | -003 | X | | X | | | | | | | | | | | | | |
| | 1100 | | TSP-13 | | | -004 | X | | X | | | | | | | | | | | | | |
| | 1105 | | TSP-14 | | | -005 | X | | X | | | | | | | | | | | | | |

| Date: | Time: | Relinquished by: | Received by: | Date | Time |
|---|---|---|---|---|---|
| 7-10-17 | 1730 | | | 7/10/17 | 1730 |
| 7/10/17 | 1810 | | | 07/11/17 | 0700 |

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

July 21, 2017

Jeff Walker
GHD
6121 Indian School Road, NE #200
Albuquerque, NM 87110
TEL: (505) 884-0672
FAX

RE: San Juan 27 5 1 OrderNo.: 1707A21

Dear Jeff Walker:

Hall Environmental Analysis Laboratory received 5 sample(s) on 7/20/2017 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 #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

**Analytical Report**
Lab Order **1707A21**
Date Reported: **7/21/2017**

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** GHD
**Project:** San Juan 27 5 1
**Lab ID:** 1707A21-001
**Matrix:** MEOH (SOIL)
**Client Sample ID:** 11124687-071917-SPTSP-24
**Collection Date:** 7/19/2017 10:16:00 AM
**Received Date:** 7/20/2017 7:30:00 AM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **TOM** | |
| Diesel Range Organics (DRO) | 150 | 9.9 | | mg/Kg | 1 | 7/20/2017 9:37:57 AM | 32909 |
| Motor Oil Range Organics (MRO) | ND | 49 | | mg/Kg | 1 | 7/20/2017 9:37:57 AM | 32909 |
| Surr: DNOP | 96.9 | 70-130 | | %Rec | 1 | 7/20/2017 9:37:57 AM | 32909 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | 17 | 3.1 | | mg/Kg | 1 | 7/20/2017 10:04:16 AM | 32884 |
| Surr: BFB | 234 | 54-150 | S | %Rec | 1 | 7/20/2017 10:04:16 AM | 32884 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.016 | | mg/Kg | 1 | 7/20/2017 10:04:16 AM | 32884 |
| Toluene | ND | 0.031 | | mg/Kg | 1 | 7/20/2017 10:04:16 AM | 32884 |
| Ethylbenzene | ND | 0.031 | | mg/Kg | 1 | 7/20/2017 10:04:16 AM | 32884 |
| Xylenes, Total | ND | 0.063 | | mg/Kg | 1 | 7/20/2017 10:04:16 AM | 32884 |
| Surr: 4-Bromofluorobenzene | 111 | 66.6-132 | | %Rec | 1 | 7/20/2017 10:04:16 AM | 32884 |

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

**Qualifiers:**

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

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** GHD
**Client Sample ID:** 11124687-071917-SPTSP-25
**Project:** San Juan 27 5 1
**Collection Date:** 7/19/2017 10:36:00 AM
**Lab ID:** 1707A21-002
**Matrix:** MEOH (SOIL)
**Received Date:** 7/20/2017 7:30:00 AM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **TOM** | |
| Diesel Range Organics (DRO) | 140 | 9.9 | | mg/Kg | 1 | 7/20/2017 9:59:53 AM | 32909 |
| Motor Oil Range Organics (MRO) | ND | 50 | | mg/Kg | 1 | 7/20/2017 9:59:53 AM | 32909 |
| Surr: DNOP | 104 | 70-130 | | %Rec | 1 | 7/20/2017 9:59:53 AM | 32909 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | 18 | 3.1 | | mg/Kg | 1 | 7/20/2017 10:28:16 AM | 32884 |
| Surr: BFB | 250 | 54-150 | S | %Rec | 1 | 7/20/2017 10:28:16 AM | 32884 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.015 | | mg/Kg | 1 | 7/20/2017 10:28:16 AM | 32884 |
| Toluene | ND | 0.031 | | mg/Kg | 1 | 7/20/2017 10:28:16 AM | 32884 |
| Ethylbenzene | ND | 0.031 | | mg/Kg | 1 | 7/20/2017 10:28:16 AM | 32884 |
| Xylenes, Total | ND | 0.062 | | mg/Kg | 1 | 7/20/2017 10:28:16 AM | 32884 |
| Surr: 4-Bromofluorobenzene | 121 | 66.6-132 | | %Rec | 1 | 7/20/2017 10:28:16 AM | 32884 |

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

**Qualifiers:**

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

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** GHD
**Project:** San Juan 27 5 1
**Lab ID:** 1707A21-003
**Matrix:** MEOH (SOIL)
**Client Sample ID:** 11124687-071917-SPTSP-26
**Collection Date:** 7/19/2017 11:00:00 AM
**Received Date:** 7/20/2017 7:30:00 AM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **TOM** | |
| Diesel Range Organics (DRO) | 120 | 9.9 | | mg/Kg | 1 | 7/20/2017 10:21:54 AM | 32909 |
| Motor Oil Range Organics (MRO) | ND | 50 | | mg/Kg | 1 | 7/20/2017 10:21:54 AM | 32909 |
| Surr: DNOP | 101 | 70-130 | | %Rec | 1 | 7/20/2017 10:21:54 AM | 32909 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | 18 | 2.9 | | mg/Kg | 1 | 7/20/2017 10:52:16 AM | 32884 |
| Surr: BFB | 266 | 54-150 | S | %Rec | 1 | 7/20/2017 10:52:16 AM | 32884 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.015 | | mg/Kg | 1 | 7/20/2017 10:52:16 AM | 32884 |
| Toluene | ND | 0.029 | | mg/Kg | 1 | 7/20/2017 10:52:16 AM | 32884 |
| Ethylbenzene | ND | 0.029 | | mg/Kg | 1 | 7/20/2017 10:52:16 AM | 32884 |
| Xylenes, Total | ND | 0.058 | | mg/Kg | 1 | 7/20/2017 10:52:16 AM | 32884 |
| Surr: 4-Bromofluorobenzene | 115 | 66.6-132 | | %Rec | 1 | 7/20/2017 10:52:16 AM | 32884 |

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

**Qualifiers:**

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

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** GHD
**Project:** San Juan 27 5 1
**Lab ID:** 1707A21-004
**Matrix:** MEOH (SOIL)
**Client Sample ID:** 11124687-071917-SPTSP-27
**Collection Date:** 7/19/2017 11:22:00 AM
**Received Date:** 7/20/2017 7:30:00 AM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **TOM** | |
| Diesel Range Organics (DRO) | 120 | 9.3 | | mg/Kg | 1 | 7/20/2017 10:43:53 AM | 32909 |
| Motor Oil Range Organics (MRO) | ND | 46 | | mg/Kg | 1 | 7/20/2017 10:43:53 AM | 32909 |
| Surr: DNOP | 102 | 70-130 | | %Rec | 1 | 7/20/2017 10:43:53 AM | 32909 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | 30 | 3.1 | | mg/Kg | 1 | 7/20/2017 11:16:15 AM | 32884 |
| Surr: BFB | 310 | 54-150 | S | %Rec | 1 | 7/20/2017 11:16:15 AM | 32884 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.015 | | mg/Kg | 1 | 7/20/2017 11:16:15 AM | 32884 |
| Toluene | ND | 0.031 | | mg/Kg | 1 | 7/20/2017 11:16:15 AM | 32884 |
| Ethylbenzene | ND | 0.031 | | mg/Kg | 1 | 7/20/2017 11:16:15 AM | 32884 |
| Xylenes, Total | ND | 0.061 | | mg/Kg | 1 | 7/20/2017 11:16:15 AM | 32884 |
| Surr: 4-Bromofluorobenzene | 121 | 66.6-132 | | %Rec | 1 | 7/20/2017 11:16:15 AM | 32884 |

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

**Qualifiers:**

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

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** GHD
**Project:** San Juan 27 5 1
**Lab ID:** 1707A21-005
**Matrix:** MEOH (SOIL)
**Client Sample ID:** 11124687-071917-SPTSP-28
**Collection Date:** 7/19/2017 11:42:00 AM
**Received Date:** 7/20/2017 7:30:00 AM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **TOM** | |
| Diesel Range Organics (DRO) | 160 | 9.4 | | mg/Kg | 1 | 7/20/2017 11:05:51 AM | 32909 |
| Motor Oil Range Organics (MRO) | ND | 47 | | mg/Kg | 1 | 7/20/2017 11:05:51 AM | 32909 |
| Surr: DNOP | 103 | 70-130 | | %Rec | 1 | 7/20/2017 11:05:51 AM | 32909 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | 27 | 3.0 | | mg/Kg | 1 | 7/20/2017 11:40:16 AM | 32884 |
| Surr: BFB | 416 | 54-150 | S | %Rec | 1 | 7/20/2017 11:40:16 AM | 32884 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.015 | | mg/Kg | 1 | 7/20/2017 11:40:16 AM | 32884 |
| Toluene | ND | 0.030 | | mg/Kg | 1 | 7/20/2017 11:40:16 AM | 32884 |
| Ethylbenzene | ND | 0.030 | | mg/Kg | 1 | 7/20/2017 11:40:16 AM | 32884 |
| Xylenes, Total | ND | 0.061 | | mg/Kg | 1 | 7/20/2017 11:40:16 AM | 32884 |
| Surr: 4-Bromofluorobenzene | 119 | 66.6-132 | | %Rec | 1 | 7/20/2017 11:40:16 AM | 32884 |

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

**Qualifiers:**

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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: **1707A21**

*21-Jul-17*

**Client:** GHD

**Project:** San Juan 27 5 1

Sample ID **LCS-32909** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **LCSS** Batch ID: **32909** RunNo: **44338**

Prep Date: **7/20/2017** Analysis Date: **7/20/2017** SeqNo: **1401309** Units: **mg/Kg**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics (DRO) | 51 | 10 | 50.00 | 0 | 102 | 73.2 | 114 | | | |
| Surr: DNOP | 4.4 | | 5.000 | | 87.1 | 70 | 130 | | | |

Sample ID **MB-32909** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **PBS** Batch ID: **32909** RunNo: **44338**

Prep Date: **7/20/2017** Analysis Date: **7/20/2017** SeqNo: **1401310** 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 | 9.5 | | 10.00 | | 94.9 | 70 | 130 | | | |

Sample ID **1707A21-001AMS** SampType: **MS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **11124687-071917-S** Batch ID: **32909** RunNo: **44338**

Prep Date: **7/20/2017** Analysis Date: **7/20/2017** SeqNo: **1402472** Units: **mg/Kg**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics (DRO) | 170 | 9.3 | 46.73 | 151.1 | 40.6 | 55.8 | 122 | | | S |
| Surr: DNOP | 4.4 | | 4.673 | | 94.9 | 70 | 130 | | | |

Sample ID **1707A21-001AMSD** SampType: **MSD** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **11124687-071917-S** Batch ID: **32909** RunNo: **44338**

Prep Date: **7/20/2017** Analysis Date: **7/20/2017** SeqNo: **1402473** Units: **mg/Kg**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics (DRO) | 210 | 9.9 | 49.41 | 151.1 | 117 | 55.8 | 122 | 20.6 | 20 | R |
| Surr: DNOP | 5.0 | | 4.941 | | 101 | 70 | 130 | 0 | 0 | |

Sample ID **LCS-32876** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **LCSS** Batch ID: **32876** RunNo: **44338**

Prep Date: **7/19/2017** Analysis Date: **7/20/2017** SeqNo: **1402474** Units: **%Rec**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Surr: DNOP | 4.6 | | 5.000 | | 91.9 | 70 | 130 | | | |

Sample ID **MB-32876** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **PBS** Batch ID: **32876** RunNo: **44338**

Prep Date: **7/19/2017** Analysis Date: **7/20/2017** SeqNo: **1402475** Units: **%Rec**

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

**Qualifiers:**

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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: **1707A21**

*21-Jul-17*

**Client:** GHD

**Project:** San Juan 27 5 1

| Sample ID **MB-32876** | SampType: **MBLK** | TestCode: **EPA Method 8015M/D: Diesel Range Organics** |
|---|---|---|
| Client ID: **PBS** | Batch ID: **32876** | RunNo: **44338** |
| Prep Date: **7/19/2017** | Analysis Date: **7/20/2017** | SeqNo: **1402475** Units: **%Rec** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Surr: DNOP | 10 | | 10.00 | | 101 | 70 | 130 | | | |

**Qualifiers:**

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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: **1707A21**

*21-Jul-17*

**Client:** GHD

**Project:** San Juan 27 5 1

| Sample ID **MB-32884** | SampType: **MBLK** | TestCode: **EPA Method 8015D: Gasoline Range** |
|---|---|---|
| Client ID: **PBS** | Batch ID: **32884** | RunNo: **44359** |
| Prep Date: **7/19/2017** | Analysis Date: **7/20/2017** | SeqNo: **1402387** 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 | 840 | | 1000 | | 83.8 | 54 | 150 | | | |

| Sample ID **LCS-32884** | SampType: **LCS** | TestCode: **EPA Method 8015D: Gasoline Range** |
|---|---|---|
| Client ID: **LCSS** | Batch ID: **32884** | RunNo: **44359** |
| Prep Date: **7/19/2017** | Analysis Date: **7/20/2017** | SeqNo: **1402388** 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 | 91.4 | 76.4 | 125 | | | |
| Surr: BFB | 970 | | 1000 | | 96.8 | 54 | 150 | | | |

**Qualifiers:**

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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: **1707A21**

***21-Jul-17***

**Client:** GHD

**Project:** San Juan 27 5 1

| Sample ID **MB-32884** | SampType: **MBLK** | TestCode: **EPA Method 8021B: Volatiles** |
|---|---|---|
| Client ID: **PBS** | Batch ID: **32884** | RunNo: **44359** |
| Prep Date: **7/19/2017** | Analysis Date: **7/20/2017** | SeqNo: **1402402** 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 | | | | | | | | |
| Xylenes, Total | ND | 0.10 | | | | | | | | |
| Surr: 4-Bromofluorobenzene | 0.98 | | 1.000 | | 97.7 | 66.6 | 132 | | | |

| Sample ID **LCS-32884** | SampType: **LCS** | TestCode: **EPA Method 8021B: Volatiles** |
|---|---|---|
| Client ID: **LCSS** | Batch ID: **32884** | RunNo: **44359** |
| Prep Date: **7/19/2017** | Analysis Date: **7/20/2017** | SeqNo: **1402403** 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 | 95.4 | 80 | 120 | | | |
| Toluene | 0.95 | 0.050 | 1.000 | 0 | 95.3 | 80 | 120 | | | |
| Ethylbenzene | 0.95 | 0.050 | 1.000 | 0 | 95.1 | 80 | 120 | | | |
| Xylenes, Total | 2.9 | 0.10 | 3.000 | 0 | 96.8 | 80 | 120 | | | |
| Surr: 4-Bromofluorobenzene | 1.0 | | 1.000 | | 103 | 66.6 | 132 | | | |

**Qualifiers:**

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

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: GHD | Work Order Number: 1707A21 | RcptNo: 1

Received By: Ashley Gallegos 7/20/2017 7:30:00 AM

Completed By: Ashley Gallegos 7/20/2017 7:59:49 AM

Reviewed By: AG 7/20/17

## Chain of Custody

| | | | |
|---|---|---|---|
| 1. Custody seals intact on sample bottles? | Yes ☐ | No ☐ | Not Present ☑ |
| 2. Is Chain of Custody complete? | Yes ☑ | No ☐ | Not Present ☐ |
| 3. How was the sample delivered? | Courier | | |

## Log In

| | | | |
|---|---|---|---|
| 4. Was an attempt made to cool the samples? | Yes ☑ | No ☐ | NA ☐ |
| 5. Were all samples received at a temperature of >0° C to 6.0°C | Yes ☑ | No ☐ | NA ☐ |
| 6. Sample(s) in proper container(s)? | Yes ☑ | No ☐ | |
| 7. Sufficient sample volume for indicated test(s)? | Yes ☑ | No ☐ | |
| 8. Are samples (except VOA and ONG) properly preserved? | Yes ☑ | No ☐ | |
| 9. Was preservative added to bottles? | Yes ☐ | No ☑ | NA ☐ |
| 10. VOA vials have zero headspace? | Yes ☐ | No ☐ | No VOA Vials ☑ |
| 11. Were any sample containers received broken? | Yes ☐ | No ☑ | # of preserved bottles checked for pH: (<2 or >12 unless noted) |
| 12. Does paperwork match bottle labels? (Note discrepancies on chain of custody) | Yes ☑ | No ☐ | |
| 13. Are matrices correctly identified on Chain of Custody? | Yes ☑ | No ☐ | Adjusted? |
| 14. Is it clear what analyses were requested? | Yes ☑ | No ☐ | |
| 15. Were all holding times able to be met? (If no, notify customer for authorization.) | Yes ☑ | No ☐ | Checked by: |

## Special Handling (if applicable)

16. 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: _____

17. Additional remarks:

18. **Cooler Information**

| Cooler No | Temp °C | Condition | Seal Intact | Seal No | Seal Date | Signed By |
|---|---|---|---|---|---|---|
| 1 | 1.1 | Good | Yes | | | |

# Chain-of-Custody Record

Client: GHD - Albuquerque

Mailing Address: 6121 Indian School Rd NE
Ste 200, Albuquerque, NM, 87110

Phone #: 505-884-0672

email or Fax#: Jeff.Walker@ghd.com

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:
☐ Standard ☑ Rush SAME-DAY

Project Name: San Juan 27-5 #1

Project #: 11124687

Project Manager: Jeff Walker
505-377-3920

Sampler: Steve Perez

On Ice: ☑ Yes ☐ No

Sample Temperature: 1.1

**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. 1707A21 | 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) | BTEX 8021 | | | | Air Bubbles (Y or N) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7-19-17 | 1016 | Soil | S-11124687-071917-SP-TSP-24 | 4oz glass 1, 2 vials | 5 ice, MeOH | -001 | | | X | | | | | | | | | X | | | | |
| | 1036 | | S-11124687-071917-SP-TSP-25 | | | -002 | | | | | | | | | | | | | | | | |
| | 1100 | | S-11124687-071917-SP-TSP-26 | | | -003 | | | | | | | | | | | | | | | | |
| | 1122 | | S-11124687-071917-SP-TSP-27 | | | -004 | | | | | | | | | | | | | | | | |
| ↓ | 1142 | ↓ | S-11124687-071917-SP-TSP-28 | ↓ | ↓ | -005 | | | ↓ | | | | | | | | | ↓ | | | | |

| Date: | Time: | Relinquished by: | Received by: | Date | Time | Remarks: |
|---|---|---|---|---|---|---|
| 7-19-17 | 15:20 | Steve Perez | Christ Waet | 7/19/17 | 1520 | * 20% Discount as per Andy |
| 7/19/17 | 1821 | Christ Waet | | 07/20/17 | 0730 ~~0745~~ | ~~SAME~~ SP |

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*

July 26, 2017

Jeff Walker
GHD
6121 Indian School Road, NE #200
Albuquerque, NM 87110
TEL: (505) 884-0672
FAX

RE: San Juan 27-5 #1 OrderNo.: 1707C45

Dear Jeff Walker:

Hall Environmental Analysis Laboratory received 9 sample(s) on 7/25/2017 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 #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

**Analytical Report**
Lab Order **1707C45**
Date Reported: **7/26/2017**

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** GHD
**Project:** San Juan 27-5 #1
**Lab ID:** 1707C45-001 **Matrix:** SOIL

**Client Sample ID:** TSP-24-R
**Collection Date:** 7/24/2017 1:19:00 PM
**Received Date:** 7/25/2017 8:20:00 AM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **TOM** | |
| Diesel Range Organics (DRO) | 79 | 9.6 | | mg/Kg | 1 | 7/25/2017 11:15:15 AM | 32986 |
| Motor Oil Range Organics (MRO) | ND | 48 | | mg/Kg | 1 | 7/25/2017 11:15:15 AM | 32986 |
| Surr: DNOP | 96.2 | 70-130 | | %Rec | 1 | 7/25/2017 11:15:15 AM | 32986 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | 5.8 | 3.7 | | mg/Kg | 1 | 7/25/2017 10:19:03 AM | G44477 |
| Surr: BFB | 174 | 54-150 | S | %Rec | 1 | 7/25/2017 10:19:03 AM | G44477 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.018 | | mg/Kg | 1 | 7/25/2017 10:19:03 AM | B44477 |
| Toluene | ND | 0.037 | | mg/Kg | 1 | 7/25/2017 10:19:03 AM | B44477 |
| Ethylbenzene | ND | 0.037 | | mg/Kg | 1 | 7/25/2017 10:19:03 AM | B44477 |
| Xylenes, Total | ND | 0.074 | | mg/Kg | 1 | 7/25/2017 10:19:03 AM | B44477 |
| Surr: 4-Bromofluorobenzene | 110 | 66.6-132 | | %Rec | 1 | 7/25/2017 10:19:03 AM | B44477 |

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

**Qualifiers:**

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

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** GHD
**Client Sample ID:** TSP-25-R
**Project:** San Juan 27-5 #1
**Collection Date:** 7/24/2017 1:25:00 PM
**Lab ID:** 1707C45-002
**Matrix:** SOIL
**Received Date:** 7/25/2017 8:20:00 AM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **TOM** | |
| Diesel Range Organics (DRO) | 86 | 9.6 | | mg/Kg | 1 | 7/25/2017 11:43:18 AM | 32986 |
| Motor Oil Range Organics (MRO) | ND | 48 | | mg/Kg | 1 | 7/25/2017 11:43:18 AM | 32986 |
| Surr: DNOP | 96.1 | 70-130 | | %Rec | 1 | 7/25/2017 11:43:18 AM | 32986 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | 11 | 3.4 | | mg/Kg | 1 | 7/25/2017 10:42:53 AM | G44477 |
| Surr: BFB | 241 | 54-150 | S | %Rec | 1 | 7/25/2017 10:42:53 AM | G44477 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.017 | | mg/Kg | 1 | 7/25/2017 10:42:53 AM | B44477 |
| Toluene | ND | 0.034 | | mg/Kg | 1 | 7/25/2017 10:42:53 AM | B44477 |
| Ethylbenzene | ND | 0.034 | | mg/Kg | 1 | 7/25/2017 10:42:53 AM | B44477 |
| Xylenes, Total | ND | 0.068 | | mg/Kg | 1 | 7/25/2017 10:42:53 AM | B44477 |
| Surr: 4-Bromofluorobenzene | 113 | 66.6-132 | | %Rec | 1 | 7/25/2017 10:42:53 AM | B44477 |

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

**Qualifiers:**

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

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** GHD
**Project:** San Juan 27-5 #1
**Lab ID:** 1707C45-003 **Matrix:** SOIL

**Client Sample ID:** TSP-26-R
**Collection Date:** 7/24/2017 1:31:00 PM
**Received Date:** 7/25/2017 8:20:00 AM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **TOM** | |
| Diesel Range Organics (DRO) | 73 | 9.3 | | mg/Kg | 1 | 7/25/2017 12:11:22 PM | 32986 |
| Motor Oil Range Organics (MRO) | ND | 46 | | mg/Kg | 1 | 7/25/2017 12:11:22 PM | 32986 |
| Surr: DNOP | 89.1 | 70-130 | | %Rec | 1 | 7/25/2017 12:11:22 PM | 32986 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | 23 | 3.5 | | mg/Kg | 1 | 7/25/2017 11:06:44 AM | G44477 |
| Surr: BFB | 364 | 54-150 | S | %Rec | 1 | 7/25/2017 11:06:44 AM | G44477 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.018 | | mg/Kg | 1 | 7/25/2017 11:06:44 AM | B44477 |
| Toluene | ND | 0.035 | | mg/Kg | 1 | 7/25/2017 11:06:44 AM | B44477 |
| Ethylbenzene | ND | 0.035 | | mg/Kg | 1 | 7/25/2017 11:06:44 AM | B44477 |
| Xylenes, Total | ND | 0.071 | | mg/Kg | 1 | 7/25/2017 11:06:44 AM | B44477 |
| Surr: 4-Bromofluorobenzene | 119 | 66.6-132 | | %Rec | 1 | 7/25/2017 11:06:44 AM | B44477 |

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

**Qualifiers:**

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

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** GHD
**Project:** San Juan 27-5 #1
**Lab ID:** 1707C45-004 **Matrix:** SOIL

**Client Sample ID:** TSP-27-R
**Collection Date:** 7/24/2017 1:36:00 PM
**Received Date:** 7/25/2017 8:20:00 AM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **TOM** | |
| Diesel Range Organics (DRO) | 84 | 10 | | mg/Kg | 1 | 7/25/2017 1:16:15 PM | 32986 |
| Motor Oil Range Organics (MRO) | ND | 50 | | mg/Kg | 1 | 7/25/2017 1:16:15 PM | 32986 |
| Surr: DNOP | 88.1 | 70-130 | | %Rec | 1 | 7/25/2017 1:16:15 PM | 32986 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | 6.3 | 3.3 | | mg/Kg | 1 | 7/25/2017 11:30:33 AM | G44477 |
| Surr: BFB | 182 | 54-150 | S | %Rec | 1 | 7/25/2017 11:30:33 AM | G44477 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.016 | | mg/Kg | 1 | 7/25/2017 11:30:33 AM | B44477 |
| Toluene | ND | 0.033 | | mg/Kg | 1 | 7/25/2017 11:30:33 AM | B44477 |
| Ethylbenzene | ND | 0.033 | | mg/Kg | 1 | 7/25/2017 11:30:33 AM | B44477 |
| Xylenes, Total | ND | 0.066 | | mg/Kg | 1 | 7/25/2017 11:30:33 AM | B44477 |
| Surr: 4-Bromofluorobenzene | 112 | 66.6-132 | | %Rec | 1 | 7/25/2017 11:30:33 AM | B44477 |

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

**Qualifiers:**

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

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** GHD
**Project:** San Juan 27-5 #1
**Lab ID:** 1707C45-005 **Matrix:** SOIL

**Client Sample ID:** TSP-28-R
**Collection Date:** 7/24/2017 1:41:00 PM
**Received Date:** 7/25/2017 8:20:00 AM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **TOM** | |
| Diesel Range Organics (DRO) | 130 | 10 | | mg/Kg | 1 | 7/25/2017 12:53:47 PM | 32986 |
| Motor Oil Range Organics (MRO) | ND | 50 | | mg/Kg | 1 | 7/25/2017 12:53:47 PM | 32986 |
| Surr: DNOP | 90.1 | 70-130 | | %Rec | 1 | 7/25/2017 12:53:47 PM | 32986 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | 8.4 | 3.3 | | mg/Kg | 1 | 7/25/2017 11:54:26 AM | G44477 |
| Surr: BFB | 220 | 54-150 | S | %Rec | 1 | 7/25/2017 11:54:26 AM | G44477 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.016 | | mg/Kg | 1 | 7/25/2017 11:54:26 AM | B44477 |
| Toluene | ND | 0.033 | | mg/Kg | 1 | 7/25/2017 11:54:26 AM | B44477 |
| Ethylbenzene | ND | 0.033 | | mg/Kg | 1 | 7/25/2017 11:54:26 AM | B44477 |
| Xylenes, Total | ND | 0.066 | | mg/Kg | 1 | 7/25/2017 11:54:26 AM | B44477 |
| Surr: 4-Bromofluorobenzene | 114 | 66.6-132 | | %Rec | 1 | 7/25/2017 11:54:26 AM | B44477 |

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

**Qualifiers:**

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

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** GHD
**Project:** San Juan 27-5 #1
**Lab ID:** 1707C45-006 **Matrix:** SOIL

**Client Sample ID:** TSP-29
**Collection Date:** 7/24/2017 1:48:00 PM
**Received Date:** 7/25/2017 8:20:00 AM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **TOM** | |
| Diesel Range Organics (DRO) | 110 | 9.6 | | mg/Kg | 1 | 7/25/2017 12:31:37 PM | 32986 |
| Motor Oil Range Organics (MRO) | ND | 48 | | mg/Kg | 1 | 7/25/2017 12:31:37 PM | 32986 |
| Surr: DNOP | 90.9 | 70-130 | | %Rec | 1 | 7/25/2017 12:31:37 PM | 32986 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | 11 | 3.0 | | mg/Kg | 1 | 7/25/2017 12:18:12 PM | G44477 |
| Surr: BFB | 256 | 54-150 | S | %Rec | 1 | 7/25/2017 12:18:12 PM | G44477 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.015 | | mg/Kg | 1 | 7/25/2017 12:18:12 PM | B44477 |
| Toluene | ND | 0.030 | | mg/Kg | 1 | 7/25/2017 12:18:12 PM | B44477 |
| Ethylbenzene | ND | 0.030 | | mg/Kg | 1 | 7/25/2017 12:18:12 PM | B44477 |
| Xylenes, Total | ND | 0.061 | | mg/Kg | 1 | 7/25/2017 12:18:12 PM | B44477 |
| Surr: 4-Bromofluorobenzene | 117 | 66.6-132 | | %Rec | 1 | 7/25/2017 12:18:12 PM | B44477 |

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

**Qualifiers:**

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

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** GHD
**Client Sample ID:** TSP-30
**Project:** San Juan 27-5 #1
**Collection Date:** 7/24/2017 1:54:00 PM
**Lab ID:** 1707C45-007
**Matrix:** SOIL
**Received Date:** 7/25/2017 8:20:00 AM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **TOM** | |
| Diesel Range Organics (DRO) | 120 | 9.4 | | mg/Kg | 1 | 7/25/2017 12:09:25 PM | 32986 |
| Motor Oil Range Organics (MRO) | ND | 47 | | mg/Kg | 1 | 7/25/2017 12:09:25 PM | 32986 |
| Surr: DNOP | 92.4 | 70-130 | | %Rec | 1 | 7/25/2017 12:09:25 PM | 32986 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | 42 | 3.4 | | mg/Kg | 1 | 7/25/2017 11:50:52 AM | 32967 |
| Surr: BFB | 525 | 54-150 | S | %Rec | 1 | 7/25/2017 11:50:52 AM | 32967 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.017 | | mg/Kg | 1 | 7/25/2017 11:50:52 AM | 32967 |
| Toluene | ND | 0.034 | | mg/Kg | 1 | 7/25/2017 11:50:52 AM | 32967 |
| Ethylbenzene | ND | 0.034 | | mg/Kg | 1 | 7/25/2017 11:50:52 AM | 32967 |
| Xylenes, Total | ND | 0.068 | | mg/Kg | 1 | 7/25/2017 11:50:52 AM | 32967 |
| Surr: 4-Bromofluorobenzene | 129 | 66.6-132 | | %Rec | 1 | 7/25/2017 11:50:52 AM | 32967 |

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

**Qualifiers:**

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

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** GHD
**Client Sample ID:** TSP-31
**Project:** San Juan 27-5 #1
**Collection Date:** 7/24/2017 2:00:00 PM
**Lab ID:** 1707C45-008
**Matrix:** SOIL
**Received Date:** 7/25/2017 8:20:00 AM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **TOM** | |
| Diesel Range Organics (DRO) | 89 | 9.5 | | mg/Kg | 1 | 7/25/2017 11:47:15 AM | 32986 |
| Motor Oil Range Organics (MRO) | ND | 47 | | mg/Kg | 1 | 7/25/2017 11:47:15 AM | 32986 |
| Surr: DNOP | 89.8 | 70-130 | | %Rec | 1 | 7/25/2017 11:47:15 AM | 32986 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | 6.2 | 3.6 | | mg/Kg | 1 | 7/25/2017 12:14:59 PM | 32967 |
| Surr: BFB | 138 | 54-150 | | %Rec | 1 | 7/25/2017 12:14:59 PM | 32967 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.018 | | mg/Kg | 1 | 7/25/2017 12:14:59 PM | 32967 |
| Toluene | ND | 0.036 | | mg/Kg | 1 | 7/25/2017 12:14:59 PM | 32967 |
| Ethylbenzene | ND | 0.036 | | mg/Kg | 1 | 7/25/2017 12:14:59 PM | 32967 |
| Xylenes, Total | ND | 0.072 | | mg/Kg | 1 | 7/25/2017 12:14:59 PM | 32967 |
| Surr: 4-Bromofluorobenzene | 107 | 66.6-132 | | %Rec | 1 | 7/25/2017 12:14:59 PM | 32967 |

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

**Qualifiers:**

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

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** GHD
**Client Sample ID:** TSP-32
**Project:** San Juan 27-5 #1
**Collection Date:** 7/24/2017 2:07:00 PM
**Lab ID:** 1707C45-009
**Matrix:** SOIL
**Received Date:** 7/25/2017 8:20:00 AM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **TOM** | |
| Diesel Range Organics (DRO) | 100 | 9.5 | | mg/Kg | 1 | 7/25/2017 11:24:51 AM | 32986 |
| Motor Oil Range Organics (MRO) | ND | 48 | | mg/Kg | 1 | 7/25/2017 11:24:51 AM | 32986 |
| Surr: DNOP | 87.8 | 70-130 | | %Rec | 1 | 7/25/2017 11:24:51 AM | 32986 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | 18 | 3.3 | | mg/Kg | 1 | 7/25/2017 12:39:11 PM | 32967 |
| Surr: BFB | 364 | 54-150 | S | %Rec | 1 | 7/25/2017 12:39:11 PM | 32967 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.017 | | mg/Kg | 1 | 7/25/2017 12:39:11 PM | 32967 |
| Toluene | ND | 0.033 | | mg/Kg | 1 | 7/25/2017 12:39:11 PM | 32967 |
| Ethylbenzene | ND | 0.033 | | mg/Kg | 1 | 7/25/2017 12:39:11 PM | 32967 |
| Xylenes, Total | ND | 0.067 | | mg/Kg | 1 | 7/25/2017 12:39:11 PM | 32967 |
| Surr: 4-Bromofluorobenzene | 113 | 66.6-132 | | %Rec | 1 | 7/25/2017 12:39:11 PM | 32967 |

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

**Qualifiers:**

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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: **1707C45**

*26-Jul-17*

**Client:** GHD

**Project:** San Juan 27-5 #1

| Sample ID **LCS-32986** | SampType: **LCS** | TestCode: **EPA Method 8015M/D: Diesel Range Organics** |
|---|---|---|
| Client ID: **LCSS** | Batch ID: **32986** | RunNo: **44467** |
| Prep Date: **7/25/2017** | Analysis Date: **7/25/2017** | SeqNo: **1405810** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics (DRO) | 53 | 10 | 50.00 | 0 | 105 | 73.2 | 114 | | | |
| Surr: DNOP | 4.8 | | 5.000 | | 95.0 | 70 | 130 | | | |

| Sample ID **MB-32986** | SampType: **MBLK** | TestCode: **EPA Method 8015M/D: Diesel Range Organics** |
|---|---|---|
| Client ID: **PBS** | Batch ID: **32986** | RunNo: **44467** |
| Prep Date: **7/25/2017** | Analysis Date: **7/25/2017** | SeqNo: **1405811** 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 | 9.1 | | 10.00 | | 90.8 | 70 | 130 | | | |

| Sample ID **1707C45-001AMS** | SampType: **MS** | TestCode: **EPA Method 8015M/D: Diesel Range Organics** |
|---|---|---|
| Client ID: **TSP-24-R** | Batch ID: **32986** | RunNo: **44467** |
| Prep Date: **7/25/2017** | Analysis Date: **7/25/2017** | SeqNo: **1406284** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics (DRO) | 140 | 9.3 | 46.25 | 78.71 | 125 | 55.8 | 122 | | | S |
| Surr: DNOP | 4.8 | | 4.625 | | 104 | 70 | 130 | | | |

| Sample ID **1707C45-001AMSD** | SampType: **MSD** | TestCode: **EPA Method 8015M/D: Diesel Range Organics** |
|---|---|---|
| Client ID: **TSP-24-R** | Batch ID: **32986** | RunNo: **44467** |
| Prep Date: **7/25/2017** | Analysis Date: **7/25/2017** | SeqNo: **1406285** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics (DRO) | 140 | 9.8 | 49.12 | 78.71 | 115 | 55.8 | 122 | 0.830 | 20 | |
| Surr: DNOP | 5.1 | | 4.912 | | 103 | 70 | 130 | 0 | 0 | |

| Sample ID **MB-32977** | SampType: **MBLK** | TestCode: **EPA Method 8015M/D: Diesel Range Organics** |
|---|---|---|
| Client ID: **PBS** | Batch ID: **32977** | RunNo: **44468** |
| Prep Date: **7/24/2017** | Analysis Date: **7/25/2017** | SeqNo: **1406389** Units: **%Rec** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Surr: DNOP | 9.8 | | 10.00 | | 98.3 | 70 | 130 | | | |

| Sample ID **LCS-32977** | SampType: **LCS** | TestCode: **EPA Method 8015M/D: Diesel Range Organics** |
|---|---|---|
| Client ID: **LCSS** | Batch ID: **32977** | RunNo: **44468** |
| Prep Date: **7/24/2017** | Analysis Date: **7/25/2017** | SeqNo: **1406394** Units: **%Rec** |

| 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 Detection Limit
- W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: **1707C45**

***26-Jul-17***

**Client:** GHD

**Project:** San Juan 27-5 #1

| Sample ID **LCS-32977** | SampType: **LCS** | TestCode: **EPA Method 8015M/D: Diesel Range Organics** |
|---|---|---|
| Client ID: **LCSS** | Batch ID: **32977** | RunNo: **44468** |
| Prep Date: **7/24/2017** | Analysis Date: **7/25/2017** | SeqNo: **1406394** Units: **%Rec** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Surr: DNOP | 4.2 | | 5.000 | | 83.9 | 70 | 130 | | | |

**Qualifiers:**

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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: **1707C45**

*26-Jul-17*

**Client:** GHD

**Project:** San Juan 27-5 #1

| Sample ID **MB-32967** | SampType: **MBLK** | TestCode: **EPA Method 8015D: Gasoline Range** |
|---|---|---|
| Client ID: **PBS** | Batch ID: **32967** | RunNo: **44476** |
| Prep Date: **7/24/2017** | Analysis Date: **7/25/2017** | SeqNo: **1406616** 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 | 860 | | 1000 | | 86.4 | 54 | 150 | | | |

| Sample ID **LCS-32967** | SampType: **LCS** | TestCode: **EPA Method 8015D: Gasoline Range** |
|---|---|---|
| Client ID: **LCSS** | Batch ID: **32967** | RunNo: **44476** |
| Prep Date: **7/24/2017** | Analysis Date: **7/25/2017** | SeqNo: **1406617** 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 | 102 | 76.4 | 125 | | | |
| Surr: BFB | 970 | | 1000 | | 97.2 | 54 | 150 | | | |

| Sample ID **RB** | SampType: **MBLK** | TestCode: **EPA Method 8015D: Gasoline Range** |
|---|---|---|
| Client ID: **PBS** | Batch ID: **G44477** | RunNo: **44477** |
| Prep Date: | Analysis Date: **7/25/2017** | SeqNo: **1406642** 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 | 960 | | 1000 | | 96.3 | 54 | 150 | | | |

| Sample ID **2.5UG GRO LCSB** | SampType: **LCS** | TestCode: **EPA Method 8015D: Gasoline Range** |
|---|---|---|
| Client ID: **LCSS** | Batch ID: **G44477** | RunNo: **44477** |
| Prep Date: | Analysis Date: **7/25/2017** | SeqNo: **1406643** 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 | 90.0 | 76.4 | 125 | | | |
| Surr: BFB | 1000 | | 1000 | | 104 | 54 | 150 | | | |

| Sample ID **1707C45-001AMS** | SampType: **MS** | TestCode: **EPA Method 8015D: Gasoline Range** |
|---|---|---|
| Client ID: **TSP-24-R** | Batch ID: **G44477** | RunNo: **44477** |
| Prep Date: | Analysis Date: **7/25/2017** | SeqNo: **1406644** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO) | 30 | 5.0 | 25.00 | 5.846 | 97.7 | 77.8 | 128 | | | |
| Surr: BFB | 1600 | | 1000 | | 159 | 54 | 150 | | | S |

| Sample ID **1707C45-001AMSD** | SampType: **MSD** | TestCode: **EPA Method 8015D: Gasoline Range** |
|---|---|---|
| Client ID: **TSP-24-R** | Batch ID: **G44477** | RunNo: **44477** |
| Prep Date: | Analysis Date: **7/25/2017** | SeqNo: **1406645** Units: **mg/Kg** |

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

**Qualifiers:**

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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: **1707C45**

*26-Jul-17*

**Client:** GHD

**Project:** San Juan 27-5 #1

| Sample ID **1707C45-001AMSD** | SampType: **MSD** | TestCode: **EPA Method 8015D: Gasoline Range** |
|---|---|---|
| Client ID: **TSP-24-R** | Batch ID: **G44477** | RunNo: **44477** |
| Prep Date: | Analysis Date: **7/25/2017** | SeqNo: **1406645** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO) | 32 | 5.0 | 25.00 | 5.846 | 103 | 77.8 | 128 | 4.68 | 20 | |
| Surr: BFB | 1700 | | 1000 | | 173 | 54 | 150 | 0 | 0 | S |

**Qualifiers:**

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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: **1707C45**

*26-Jul-17*

**Client:** GHD

**Project:** San Juan 27-5 #1

| Sample ID **MB-32967** | SampType: **MBLK** | TestCode: **EPA Method 8021B: Volatiles** |
|---|---|---|
| Client ID: **PBS** | Batch ID: **32967** | RunNo: **44476** |
| Prep Date: **7/24/2017** | Analysis Date: **7/25/2017** | SeqNo: **1406632** 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 | | | | | | | | |
| Xylenes, Total | ND | 0.10 | | | | | | | | |
| Surr: 4-Bromofluorobenzene | 1.0 | | 1.000 | | 103 | 66.6 | 132 | | | |

| Sample ID **LCS-32967** | SampType: **LCS** | TestCode: **EPA Method 8021B: Volatiles** |
|---|---|---|
| Client ID: **LCSS** | Batch ID: **32967** | RunNo: **44476** |
| Prep Date: **7/24/2017** | Analysis Date: **7/25/2017** | SeqNo: **1406633** 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 | 95.5 | 80 | 120 | | | |
| Toluene | 0.97 | 0.050 | 1.000 | 0 | 96.7 | 80 | 120 | | | |
| Ethylbenzene | 0.97 | 0.050 | 1.000 | 0 | 96.7 | 80 | 120 | | | |
| Xylenes, Total | 3.0 | 0.10 | 3.000 | 0 | 99.1 | 80 | 120 | | | |
| Surr: 4-Bromofluorobenzene | 1.1 | | 1.000 | | 107 | 66.6 | 132 | | | |

| Sample ID **RB** | SampType: **MBLK** | TestCode: **EPA Method 8021B: Volatiles** |
|---|---|---|
| Client ID: **PBS** | Batch ID: **B44477** | RunNo: **44477** |
| Prep Date: | Analysis Date: **7/25/2017** | SeqNo: **1406650** 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 | | | | | | | | |
| Xylenes, Total | ND | 0.10 | | | | | | | | |
| Surr: 4-Bromofluorobenzene | 1.1 | | 1.000 | | 109 | 66.6 | 132 | | | |

| Sample ID **100NG BTEX LCS** | SampType: **LCS** | TestCode: **EPA Method 8021B: Volatiles** |
|---|---|---|
| Client ID: **LCSS** | Batch ID: **B44477** | RunNo: **44477** |
| Prep Date: | Analysis Date: **7/25/2017** | SeqNo: **1406651** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.87 | 0.025 | 1.000 | 0 | 86.7 | 80 | 120 | | | |
| Toluene | 0.88 | 0.050 | 1.000 | 0 | 87.9 | 80 | 120 | | | |
| Ethylbenzene | 0.90 | 0.050 | 1.000 | 0 | 89.6 | 80 | 120 | | | |
| Xylenes, Total | 2.7 | 0.10 | 3.000 | 0 | 89.9 | 80 | 120 | | | |
| Surr: 4-Bromofluorobenzene | 1.1 | | 1.000 | | 112 | 66.6 | 132 | | | |

**Qualifiers:**

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

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: GHD | Work Order Number: 1707C45 | RcptNo: 1

Received By: Erin Melendrez 7/25/2017 8:20:00 AM

Completed By: Anne Thorne 7/25/2017 8:33:05 AM

Reviewed By: 7/25/17

## Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☑
2. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
3. How was the sample delivered? Courier

## Log In

4. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☑ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
9. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
10. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☑
11. Were any sample containers received broken? Yes ☐ No ☑
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
14. Is it clear what analyses were requested? Yes ☑ No ☐
15. 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: ____

## Special Handling (if applicable)

16. 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: ____

17. Additional remarks:

18. Cooler Information

| Cooler No | Temp °C | Condition | Seal Intact | Seal No | Seal Date | Signed By |
|---|---|---|---|---|---|---|
| 1 | 3.8 | Good | Yes | | | |

# Chain-of-Custody Record

Client: GHO Services

Mailing Address: 6121 Indian school Rd NE #200 Albuquerque, NM, 87110

Phone #: 505 884 0672

email or Fax#: Jeff.walker@ghd.com

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:
☐ Standard ☑ Rush Same Day!!

Project Name: San Juan 27-5 #1

Project #: 11124687

Project Manager: Jeff Walker

Sampler: Charles Nelish

On Ice: ☑ Yes ☐ No

Sample Temperature: 4.8-1.0(cf)=3.8


**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. 1707C45 | 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) | Air Bubbles (Y or N) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7/24/17 | 1319 | Soil | TSP-24-R | 1402 2-Acid | 2-Acid | -001 | X | | X | | | | | | | | | |
| | 1325 | | TSP-25-R | | | -002 | X | | X | | | | | | | | | |
| | 1331 | | TSP-26-R | | | -003 | X | | X | | | | | | | | | |
| | 1336 | | TSP-27-R | | | -004 | X | | X | | | | | | | | | |
| | 1341 | | TSP-28-R | | | -005 | X | | X | | | | | | | | | |
| | 1348 | | TSP-29 | | | -006 | X | | X | | | | | | | | | |
| | 1354 | | TSP-30 | | | -007 | X | | X | | | | | | | | | |
| | 1400 | | TSP-31 | | | -008 | X | | X | | | | | | | | | |
| ↓ | 1407 | ↓ | TSP-32 | ↓ | ↓ | -009 | X | | X | | | | | | | | | |

| Date: | Time: | Relinquished by: | Received by: | Date | Time | Remarks: |
|---|---|---|---|---|---|---|
| 7-24-17 | 1622 | | | 7/24/17 | 1622 | "20% Discount as per Andy" |
| 7/24/17 | 1752 | | | 7/25/17 | 0820 | |

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*

August 01, 2017

Jeff Walker
GHD
6121 Indian School Road, NE #200
Albuquerque, NM 87110
TEL: (505) 884-0672
FAX

RE: San Juan 27-5 1 OrderNo.: 1707E85

Dear Jeff Walker:

Hall Environmental Analysis Laboratory received 11 sample(s) on 7/28/2017 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 #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** GHD
**Project:** San Juan 27-5 1
**Lab ID:** 1707E85-001 **Matrix:** SOIL

**Client Sample ID:** TSP-33
**Collection Date:** 7/28/2017 9:51:00 AM
**Received Date:** 7/28/2017 2:26:00 PM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **TOM** | |
| Diesel Range Organics (DRO) | 88 | 9.6 | | mg/Kg | 1 | 7/31/2017 10:47:36 AM | 33085 |
| Motor Oil Range Organics (MRO) | ND | 48 | | mg/Kg | 1 | 7/31/2017 10:47:36 AM | 33085 |
| Surr: DNOP | 79.7 | 70-130 | | %Rec | 1 | 7/31/2017 10:47:36 AM | 33085 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | 21 | 3.1 | | mg/Kg | 1 | 7/31/2017 10:15:44 AM | G44613 |
| Surr: BFB | 295 | 54-150 | S | %Rec | 1 | 7/31/2017 10:15:44 AM | G44613 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.016 | | mg/Kg | 1 | 7/31/2017 10:15:44 AM | B44613 |
| Toluene | ND | 0.031 | | mg/Kg | 1 | 7/31/2017 10:15:44 AM | B44613 |
| Ethylbenzene | ND | 0.031 | | mg/Kg | 1 | 7/31/2017 10:15:44 AM | B44613 |
| Xylenes, Total | ND | 0.062 | | mg/Kg | 1 | 7/31/2017 10:15:44 AM | B44613 |
| Surr: 4-Bromofluorobenzene | 122 | 66.6-132 | | %Rec | 1 | 7/31/2017 10:15:44 AM | B44613 |

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

**Qualifiers:**

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

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** GHD
**Client Sample ID:** TSP-34
**Project:** San Juan 27-5 1
**Collection Date:** 7/28/2017 10:00:00 AM
**Lab ID:** 1707E85-002
**Matrix:** SOIL
**Received Date:** 7/28/2017 2:26:00 PM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **TOM** | |
| Diesel Range Organics (DRO) | 77 | 9.4 | | mg/Kg | 1 | 7/31/2017 11:12:19 AM | 33085 |
| Motor Oil Range Organics (MRO) | ND | 47 | | mg/Kg | 1 | 7/31/2017 11:12:19 AM | 33085 |
| Surr: DNOP | 89.8 | 70-130 | | %Rec | 1 | 7/31/2017 11:12:19 AM | 33085 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | 29 | 3.4 | | mg/Kg | 1 | 7/31/2017 10:39:43 AM | G44613 |
| Surr: BFB | 458 | 54-150 | S | %Rec | 1 | 7/31/2017 10:39:43 AM | G44613 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.017 | | mg/Kg | 1 | 7/31/2017 10:39:43 AM | B44613 |
| Toluene | ND | 0.034 | | mg/Kg | 1 | 7/31/2017 10:39:43 AM | B44613 |
| Ethylbenzene | ND | 0.034 | | mg/Kg | 1 | 7/31/2017 10:39:43 AM | B44613 |
| Xylenes, Total | ND | 0.068 | | mg/Kg | 1 | 7/31/2017 10:39:43 AM | B44613 |
| Surr: 4-Bromofluorobenzene | 120 | 66.6-132 | | %Rec | 1 | 7/31/2017 10:39:43 AM | B44613 |

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

**Qualifiers:**

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

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** GHD
**Client Sample ID:** TSP-35
**Project:** San Juan 27-5 1
**Collection Date:** 7/28/2017 10:07:00 AM
**Lab ID:** 1707E85-003
**Matrix:** SOIL
**Received Date:** 7/28/2017 2:26:00 PM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **TOM** | |
| Diesel Range Organics (DRO) | 100 | 9.2 | | mg/Kg | 1 | 7/31/2017 11:37:12 AM | 33085 |
| Motor Oil Range Organics (MRO) | ND | 46 | | mg/Kg | 1 | 7/31/2017 11:37:12 AM | 33085 |
| Surr: DNOP | 81.3 | 70-130 | | %Rec | 1 | 7/31/2017 11:37:12 AM | 33085 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | 15 | 3.3 | | mg/Kg | 1 | 7/31/2017 11:03:47 AM | G44613 |
| Surr: BFB | 306 | 54-150 | S | %Rec | 1 | 7/31/2017 11:03:47 AM | G44613 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.016 | | mg/Kg | 1 | 7/31/2017 11:03:47 AM | B44613 |
| Toluene | ND | 0.033 | | mg/Kg | 1 | 7/31/2017 11:03:47 AM | B44613 |
| Ethylbenzene | ND | 0.033 | | mg/Kg | 1 | 7/31/2017 11:03:47 AM | B44613 |
| Xylenes, Total | ND | 0.066 | | mg/Kg | 1 | 7/31/2017 11:03:47 AM | B44613 |
| Surr: 4-Bromofluorobenzene | 113 | 66.6-132 | | %Rec | 1 | 7/31/2017 11:03:47 AM | B44613 |

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

**Qualifiers:**

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

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** GHD
**Project:** San Juan 27-5 1
**Lab ID:** 1707E85-004 **Matrix:** SOIL

**Client Sample ID:** TSP-36
**Collection Date:** 7/28/2017 10:13:00 AM
**Received Date:** 7/28/2017 2:26:00 PM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **TOM** | |
| Diesel Range Organics (DRO) | 63 | 9.9 | | mg/Kg | 1 | 7/31/2017 12:01:58 PM | 33085 |
| Motor Oil Range Organics (MRO) | ND | 50 | | mg/Kg | 1 | 7/31/2017 12:01:58 PM | 33085 |
| Surr: DNOP | 77.8 | 70-130 | | %Rec | 1 | 7/31/2017 12:01:58 PM | 33085 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | 12 | 3.2 | | mg/Kg | 1 | 7/31/2017 11:27:53 AM | G44613 |
| Surr: BFB | 204 | 54-150 | S | %Rec | 1 | 7/31/2017 11:27:53 AM | G44613 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.016 | | mg/Kg | 1 | 7/31/2017 11:27:53 AM | B44613 |
| Toluene | ND | 0.032 | | mg/Kg | 1 | 7/31/2017 11:27:53 AM | B44613 |
| Ethylbenzene | ND | 0.032 | | mg/Kg | 1 | 7/31/2017 11:27:53 AM | B44613 |
| Xylenes, Total | ND | 0.064 | | mg/Kg | 1 | 7/31/2017 11:27:53 AM | B44613 |
| Surr: 4-Bromofluorobenzene | 111 | 66.6-132 | | %Rec | 1 | 7/31/2017 11:27:53 AM | B44613 |

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

**Qualifiers:**

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

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** GHD
**Project:** San Juan 27-5 1
**Lab ID:** 1707E85-005 **Matrix:** SOIL

**Client Sample ID:** TSP-37
**Collection Date:** 7/28/2017 10:20:00 AM
**Received Date:** 7/28/2017 2:26:00 PM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **TOM** | |
| Diesel Range Organics (DRO) | 17 | 9.0 | | mg/Kg | 1 | 7/31/2017 12:26:54 PM | 33085 |
| Motor Oil Range Organics (MRO) | ND | 45 | | mg/Kg | 1 | 7/31/2017 12:26:54 PM | 33085 |
| Surr: DNOP | 91.0 | 70-130 | | %Rec | 1 | 7/31/2017 12:26:54 PM | 33085 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | 4.5 | 3.5 | | mg/Kg | 1 | 7/31/2017 11:51:56 AM | G44613 |
| Surr: BFB | 157 | 54-150 | S | %Rec | 1 | 7/31/2017 11:51:56 AM | G44613 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.018 | | mg/Kg | 1 | 7/31/2017 11:51:56 AM | B44613 |
| Toluene | ND | 0.035 | | mg/Kg | 1 | 7/31/2017 11:51:56 AM | B44613 |
| Ethylbenzene | ND | 0.035 | | mg/Kg | 1 | 7/31/2017 11:51:56 AM | B44613 |
| Xylenes, Total | ND | 0.070 | | mg/Kg | 1 | 7/31/2017 11:51:56 AM | B44613 |
| Surr: 4-Bromofluorobenzene | 110 | 66.6-132 | | %Rec | 1 | 7/31/2017 11:51:56 AM | B44613 |

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

**Qualifiers:**

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

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** GHD
**Client Sample ID:** TSP-38
**Project:** San Juan 27-5 1
**Collection Date:** 7/28/2017 10:28:00 AM
**Lab ID:** 1707E85-006
**Matrix:** SOIL
**Received Date:** 7/28/2017 2:26:00 PM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **TOM** | |
| Diesel Range Organics (DRO) | 62 | 9.4 | | mg/Kg | 1 | 7/31/2017 12:51:45 PM | 33085 |
| Motor Oil Range Organics (MRO) | ND | 47 | | mg/Kg | 1 | 7/31/2017 12:51:45 PM | 33085 |
| Surr: DNOP | 85.5 | 70-130 | | %Rec | 1 | 7/31/2017 12:51:45 PM | 33085 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | 9.6 | 3.1 | | mg/Kg | 1 | 7/31/2017 12:16:08 PM | G44613 |
| Surr: BFB | 253 | 54-150 | S | %Rec | 1 | 7/31/2017 12:16:08 PM | G44613 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.015 | | mg/Kg | 1 | 7/31/2017 12:16:08 PM | B44613 |
| Toluene | ND | 0.031 | | mg/Kg | 1 | 7/31/2017 12:16:08 PM | B44613 |
| Ethylbenzene | ND | 0.031 | | mg/Kg | 1 | 7/31/2017 12:16:08 PM | B44613 |
| Xylenes, Total | ND | 0.062 | | mg/Kg | 1 | 7/31/2017 12:16:08 PM | B44613 |
| Surr: 4-Bromofluorobenzene | 110 | 66.6-132 | | %Rec | 1 | 7/31/2017 12:16:08 PM | B44613 |

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

**Qualifiers:**

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

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** GHD
**Client Sample ID:** TSP-39
**Project:** San Juan 27-5 1
**Collection Date:** 7/28/2017 10:33:00 AM
**Lab ID:** 1707E85-007
**Matrix:** SOIL
**Received Date:** 7/28/2017 2:26:00 PM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **TOM** | |
| Diesel Range Organics (DRO) | 98 | 10 | | mg/Kg | 1 | 7/31/2017 1:16:43 PM | 33085 |
| Motor Oil Range Organics (MRO) | ND | 50 | | mg/Kg | 1 | 7/31/2017 1:16:43 PM | 33085 |
| Surr: DNOP | 86.0 | 70-130 | | %Rec | 1 | 7/31/2017 1:16:43 PM | 33085 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | 6.8 | 3.3 | | mg/Kg | 1 | 7/31/2017 12:40:11 PM | G44613 |
| Surr: BFB | 163 | 54-150 | S | %Rec | 1 | 7/31/2017 12:40:11 PM | G44613 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.017 | | mg/Kg | 1 | 7/31/2017 12:40:11 PM | B44613 |
| Toluene | ND | 0.033 | | mg/Kg | 1 | 7/31/2017 12:40:11 PM | B44613 |
| Ethylbenzene | ND | 0.033 | | mg/Kg | 1 | 7/31/2017 12:40:11 PM | B44613 |
| Xylenes, Total | ND | 0.066 | | mg/Kg | 1 | 7/31/2017 12:40:11 PM | B44613 |
| Surr: 4-Bromofluorobenzene | 114 | 66.6-132 | | %Rec | 1 | 7/31/2017 12:40:11 PM | B44613 |

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

**Qualifiers:**

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

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** GHD
**Client Sample ID:** TSP-40
**Project:** San Juan 27-5 1
**Collection Date:** 7/28/2017 10:41:00 AM
**Lab ID:** 1707E85-008
**Matrix:** SOIL
**Received Date:** 7/28/2017 2:26:00 PM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **TOM** | |
| Diesel Range Organics (DRO) | 150 | 9.6 | | mg/Kg | 1 | 7/31/2017 1:41:38 PM | 33085 |
| Motor Oil Range Organics (MRO) | ND | 48 | | mg/Kg | 1 | 7/31/2017 1:41:38 PM | 33085 |
| Surr: DNOP | 90.9 | 70-130 | | %Rec | 1 | 7/31/2017 1:41:38 PM | 33085 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | 13 | 3.1 | | mg/Kg | 1 | 7/31/2017 1:04:18 PM | G44613 |
| Surr: BFB | 310 | 54-150 | S | %Rec | 1 | 7/31/2017 1:04:18 PM | G44613 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.016 | | mg/Kg | 1 | 7/31/2017 1:04:18 PM | B44613 |
| Toluene | ND | 0.031 | | mg/Kg | 1 | 7/31/2017 1:04:18 PM | B44613 |
| Ethylbenzene | ND | 0.031 | | mg/Kg | 1 | 7/31/2017 1:04:18 PM | B44613 |
| Xylenes, Total | ND | 0.062 | | mg/Kg | 1 | 7/31/2017 1:04:18 PM | B44613 |
| Surr: 4-Bromofluorobenzene | 121 | 66.6-132 | | %Rec | 1 | 7/31/2017 1:04:18 PM | B44613 |

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

**Qualifiers:**

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

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** GHD
**Project:** San Juan 27-5 1
**Lab ID:** 1707E85-009 **Matrix:** SOIL

**Client Sample ID:** TSP-41
**Collection Date:** 7/28/2017 10:47:00 AM
**Received Date:** 7/28/2017 2:26:00 PM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **TOM** | |
| Diesel Range Organics (DRO) | 130 | 9.4 | | mg/Kg | 1 | 7/31/2017 1:29:14 PM | 33085 |
| Motor Oil Range Organics (MRO) | ND | 47 | | mg/Kg | 1 | 7/31/2017 1:29:14 PM | 33085 |
| Surr: DNOP | 87.3 | 70-130 | | %Rec | 1 | 7/31/2017 1:29:14 PM | 33085 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | 34 | 3.2 | | mg/Kg | 1 | 7/31/2017 12:21:00 PM | G44614 |
| Surr: BFB | 510 | 54-150 | S | %Rec | 1 | 7/31/2017 12:21:00 PM | G44614 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.016 | | mg/Kg | 1 | 7/31/2017 12:21:00 PM | B44614 |
| Toluene | ND | 0.032 | | mg/Kg | 1 | 7/31/2017 12:21:00 PM | B44614 |
| Ethylbenzene | ND | 0.032 | | mg/Kg | 1 | 7/31/2017 12:21:00 PM | B44614 |
| Xylenes, Total | ND | 0.064 | | mg/Kg | 1 | 7/31/2017 12:21:00 PM | B44614 |
| Surr: 4-Bromofluorobenzene | 126 | 66.6-132 | | %Rec | 1 | 7/31/2017 12:21:00 PM | B44614 |

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

**Qualifiers:**

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

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** GHD
**Project:** San Juan 27-5 1
**Lab ID:** 1707E85-010 **Matrix:** SOIL

**Client Sample ID:** TSP-28-RR
**Collection Date:** 7/28/2017 10:56:00 AM
**Received Date:** 7/28/2017 2:26:00 PM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **TOM** | |
| Diesel Range Organics (DRO) | 17 | 9.8 | | mg/Kg | 1 | 7/31/2017 1:00:59 PM | 33085 |
| Motor Oil Range Organics (MRO) | ND | 49 | | mg/Kg | 1 | 7/31/2017 1:00:59 PM | 33085 |
| Surr: DNOP | 90.7 | 70-130 | | %Rec | 1 | 7/31/2017 1:00:59 PM | 33085 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | 5.4 | 3.6 | | mg/Kg | 1 | 7/31/2017 12:44:50 PM | G44614 |
| Surr: BFB | 174 | 54-150 | S | %Rec | 1 | 7/31/2017 12:44:50 PM | G44614 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.018 | | mg/Kg | 1 | 7/31/2017 12:44:50 PM | B44614 |
| Toluene | ND | 0.036 | | mg/Kg | 1 | 7/31/2017 12:44:50 PM | B44614 |
| Ethylbenzene | ND | 0.036 | | mg/Kg | 1 | 7/31/2017 12:44:50 PM | B44614 |
| Xylenes, Total | ND | 0.072 | | mg/Kg | 1 | 7/31/2017 12:44:50 PM | B44614 |
| Surr: 4-Bromofluorobenzene | 118 | 66.6-132 | | %Rec | 1 | 7/31/2017 12:44:50 PM | B44614 |

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

**Qualifiers:**

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

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** GHD
**Project:** San Juan 27-5 1
**Lab ID:** 1707E85-011 **Matrix:** SOIL

**Client Sample ID:** TSP-30-RR
**Collection Date:** 7/28/2017 11:00:00 AM
**Received Date:** 7/28/2017 2:26:00 PM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **TOM** | |
| Diesel Range Organics (DRO) | 62 | 9.8 | | mg/Kg | 1 | 7/31/2017 12:32:54 PM | 33085 |
| Motor Oil Range Organics (MRO) | ND | 49 | | mg/Kg | 1 | 7/31/2017 12:32:54 PM | 33085 |
| Surr: DNOP | 92.8 | 70-130 | | %Rec | 1 | 7/31/2017 12:32:54 PM | 33085 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | 19 | 4.2 | | mg/Kg | 1 | 7/31/2017 1:08:41 PM | G44614 |
| Surr: BFB | 267 | 54-150 | S | %Rec | 1 | 7/31/2017 1:08:41 PM | G44614 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.021 | | mg/Kg | 1 | 7/31/2017 1:08:41 PM | B44614 |
| Toluene | ND | 0.042 | | mg/Kg | 1 | 7/31/2017 1:08:41 PM | B44614 |
| Ethylbenzene | ND | 0.042 | | mg/Kg | 1 | 7/31/2017 1:08:41 PM | B44614 |
| Xylenes, Total | ND | 0.084 | | mg/Kg | 1 | 7/31/2017 1:08:41 PM | B44614 |
| Surr: 4-Bromofluorobenzene | 123 | 66.6-132 | | %Rec | 1 | 7/31/2017 1:08:41 PM | B44614 |

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

**Qualifiers:**

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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: **1707E85**

***01-Aug-17***

**Client:** GHD

**Project:** San Juan 27-5 1

| Sample ID **LCS-33085** | SampType: **LCS** | TestCode: **EPA Method 8015M/D: Diesel Range Organics** |
|---|---|---|
| Client ID: **LCSS** | Batch ID: **33085** | RunNo: **44603** |
| Prep Date: **7/31/2017** | Analysis Date: **7/31/2017** | SeqNo: **1409986** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics (DRO) | 39 | 10 | 50.00 | 0 | 78.5 | 73.2 | 114 | | | |
| Surr: DNOP | 3.6 | | 5.000 | | 73.0 | 70 | 130 | | | |

| Sample ID **MB-33085** | SampType: **MBLK** | TestCode: **EPA Method 8015M/D: Diesel Range Organics** |
|---|---|---|
| Client ID: **PBS** | Batch ID: **33085** | RunNo: **44603** |
| Prep Date: **7/31/2017** | Analysis Date: **7/31/2017** | SeqNo: **1409987** 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 | 7.6 | | 10.00 | | 76.4 | 70 | 130 | | | |

| Sample ID **1707E85-001AMS** | SampType: **MS** | TestCode: **EPA Method 8015M/D: Diesel Range Organics** |
|---|---|---|
| Client ID: **TSP-33** | Batch ID: **33085** | RunNo: **44603** |
| Prep Date: **7/31/2017** | Analysis Date: **7/31/2017** | SeqNo: **1410357** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics (DRO) | 140 | 9.7 | 48.31 | 87.83 | 98.0 | 55.8 | 122 | | | |
| Surr: DNOP | 4.1 | | 4.831 | | 84.9 | 70 | 130 | | | |

| Sample ID **1707E85-001AMSD** | SampType: **MSD** | TestCode: **EPA Method 8015M/D: Diesel Range Organics** |
|---|---|---|
| Client ID: **TSP-33** | Batch ID: **33085** | RunNo: **44603** |
| Prep Date: **7/31/2017** | Analysis Date: **7/31/2017** | SeqNo: **1410358** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics (DRO) | 110 | 9.6 | 48.12 | 87.83 | 47.2 | 55.8 | 122 | 20.0 | 20 | RS |
| Surr: DNOP | 4.0 | | 4.812 | | 83.8 | 70 | 130 | 0 | 0 | |

| Sample ID **LCS-33075** | SampType: **LCS** | TestCode: **EPA Method 8015M/D: Diesel Range Organics** |
|---|---|---|
| Client ID: **LCSS** | Batch ID: **33075** | RunNo: **44604** |
| Prep Date: **7/28/2017** | Analysis Date: **7/31/2017** | SeqNo: **1410830** Units: **%Rec** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Surr: DNOP | 4.4 | | 5.000 | | 87.2 | 70 | 130 | | | |

| Sample ID **MB-33075** | SampType: **MBLK** | TestCode: **EPA Method 8015M/D: Diesel Range Organics** |
|---|---|---|
| Client ID: **PBS** | Batch ID: **33075** | RunNo: **44604** |
| Prep Date: **7/28/2017** | Analysis Date: **7/31/2017** | SeqNo: **1410831** Units: **%Rec** |

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

**Qualifiers:**

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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: **1707E85**

***01-Aug-17***

**Client:** GHD

**Project:** San Juan 27-5 1

| Sample ID **MB-33075** | SampType: **MBLK** | TestCode: **EPA Method 8015M/D: Diesel Range Organics** |
|---|---|---|
| Client ID: **PBS** | Batch ID: **33075** | RunNo: **44604** |
| Prep Date: **7/28/2017** | Analysis Date: **7/31/2017** | SeqNo: **1410831** Units: **%Rec** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Surr: DNOP | 8.5 | | 10.00 | | 85.3 | 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 Detection Limit |
| S | % Recovery outside of range due to dilution or matrix | W | Sample container temperature is out of limit as specified |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: **1707E85**

***01-Aug-17***

**Client:** GHD

**Project:** San Juan 27-5 1

| Sample ID **RB** | SampType: **MBLK** | TestCode: **EPA Method 8015D: Gasoline Range** |
|---|---|---|
| Client ID: **PBS** | Batch ID: **G44614** | RunNo: **44614** |
| Prep Date: | Analysis Date: **7/31/2017** | SeqNo: **1410728** 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 | 1000 | | 1000 | | 104 | 54 | 150 | | | |

| Sample ID **2.5UG GRO LCS** | SampType: **LCS** | TestCode: **EPA Method 8015D: Gasoline Range** |
|---|---|---|
| Client ID: **LCSS** | Batch ID: **G44614** | RunNo: **44614** |
| Prep Date: | Analysis Date: **7/31/2017** | SeqNo: **1410729** 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 | 95.2 | 76.4 | 125 | | | |
| Surr: BFB | 1100 | | 1000 | | 113 | 54 | 150 | | | |

| Sample ID **RB** | SampType: **MBLK** | TestCode: **EPA Method 8015D: Gasoline Range** |
|---|---|---|
| Client ID: **PBS** | Batch ID: **G44613** | RunNo: **44613** |
| Prep Date: | Analysis Date: **7/31/2017** | SeqNo: **1410767** 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 | 890 | | 1000 | | 89.3 | 54 | 150 | | | |

| Sample ID **2.5UG GRO LCS** | SampType: **LCS** | TestCode: **EPA Method 8015D: Gasoline Range** |
|---|---|---|
| Client ID: **LCSS** | Batch ID: **G44613** | RunNo: **44613** |
| Prep Date: | Analysis Date: **7/31/2017** | SeqNo: **1410768** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO) | 26 | 5.0 | 25.00 | 0 | 103 | 76.4 | 125 | | | |
| Surr: BFB | 1000 | | 1000 | | 103 | 54 | 150 | | | |

| Sample ID **1707E85-001AMS** | SampType: **MS** | TestCode: **EPA Method 8015D: Gasoline Range** |
|---|---|---|
| Client ID: **TSP-33** | Batch ID: **G44613** | RunNo: **44613** |
| Prep Date: | Analysis Date: **7/31/2017** | SeqNo: **1410769** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO) | 35 | 3.1 | 15.58 | 21.48 | 87.8 | 77.8 | 128 | | | |
| Surr: BFB | 2600 | | 623.1 | | 412 | 54 | 150 | | | S |

| Sample ID **1707E85-001AMSD** | SampType: **MSD** | TestCode: **EPA Method 8015D: Gasoline Range** |
|---|---|---|
| Client ID: **TSP-33** | Batch ID: **G44613** | RunNo: **44613** |
| Prep Date: | Analysis Date: **7/31/2017** | SeqNo: **1410770** Units: **mg/Kg** |

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

**Qualifiers:**

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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: **1707E85**

***01-Aug-17***

**Client:** GHD

**Project:** San Juan 27-5 1

| Sample ID **1707E85-001AMSD** | SampType: **MSD** | TestCode: **EPA Method 8015D: Gasoline Range** |
|---|---|---|
| Client ID: **TSP-33** | Batch ID: **G44613** | RunNo: **44613** |
| Prep Date: | Analysis Date: **7/31/2017** | SeqNo: **1410770** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO) | 41 | 3.1 | 15.58 | 21.48 | 124 | 77.8 | 128 | 14.9 | 20 | |
| Surr: BFB | 1800 | | 623.1 | | 285 | 54 | 150 | 0 | 0 | S |

**Qualifiers:**

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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: **1707E85**

***01-Aug-17***

**Client:** GHD

**Project:** San Juan 27-5 1

| Sample ID **RB** | SampType: **MBLK** | TestCode: **EPA Method 8021B: Volatiles** |
|---|---|---|
| Client ID: **PBS** | Batch ID: **B44614** | RunNo: **44614** |
| Prep Date: | Analysis Date: **7/31/2017** | SeqNo: **1410736** 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 | | | | | | | | |
| Xylenes, Total | ND | 0.10 | | | | | | | | |
| Surr: 4-Bromofluorobenzene | 1.2 | | 1.000 | | 115 | 66.6 | 132 | | | |

| Sample ID **100NG BTEX LCS** | SampType: **LCS** | TestCode: **EPA Method 8021B: Volatiles** |
|---|---|---|
| Client ID: **LCSS** | Batch ID: **B44614** | RunNo: **44614** |
| Prep Date: | Analysis Date: **7/31/2017** | SeqNo: **1410737** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.90 | 0.025 | 1.000 | 0 | 90.3 | 80 | 120 | | | |
| Toluene | 0.90 | 0.050 | 1.000 | 0 | 90.0 | 80 | 120 | | | |
| Ethylbenzene | 0.93 | 0.050 | 1.000 | 0 | 93.0 | 80 | 120 | | | |
| Xylenes, Total | 2.8 | 0.10 | 3.000 | 0 | 93.6 | 80 | 120 | | | |
| Surr: 4-Bromofluorobenzene | 1.2 | | 1.000 | | 120 | 66.6 | 132 | | | |

| Sample ID **RB** | SampType: **MBLK** | TestCode: **EPA Method 8021B: Volatiles** |
|---|---|---|
| Client ID: **PBS** | Batch ID: **B44613** | RunNo: **44613** |
| Prep Date: | Analysis Date: **7/31/2017** | SeqNo: **1410775** 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 | | | | | | | | |
| Xylenes, Total | ND | 0.10 | | | | | | | | |
| Surr: 4-Bromofluorobenzene | 1.1 | | 1.000 | | 105 | 66.6 | 132 | | | |

| Sample ID **100NG BTEX LCS** | SampType: **LCS** | TestCode: **EPA Method 8021B: Volatiles** |
|---|---|---|
| Client ID: **LCSS** | Batch ID: **B44613** | RunNo: **44613** |
| Prep Date: | Analysis Date: **7/31/2017** | SeqNo: **1410776** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.97 | 0.025 | 1.000 | 0 | 96.6 | 80 | 120 | | | |
| Toluene | 0.96 | 0.050 | 1.000 | 0 | 96.2 | 80 | 120 | | | |
| Ethylbenzene | 0.96 | 0.050 | 1.000 | 0 | 95.7 | 80 | 120 | | | |
| Xylenes, Total | 2.9 | 0.10 | 3.000 | 0 | 97.6 | 80 | 120 | | | |
| Surr: 4-Bromofluorobenzene | 1.0 | | 1.000 | | 103 | 66.6 | 132 | | | |

**Qualifiers:**

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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: **1707E85**

***01-Aug-17***

**Client:** GHD

**Project:** San Juan 27-5 1

| Sample ID **1707E85-002AMS** | SampType: **MS** | TestCode: **EPA Method 8021B: Volatiles** |
|---|---|---|
| Client ID: **TSP-34** | Batch ID: **B44613** | RunNo: **44613** |
| Prep Date: | Analysis Date: **7/31/2017** | SeqNo: **1410777** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.67 | 0.017 | 0.6821 | 0 | 98.7 | 80.9 | 132 | | | |
| Toluene | 0.68 | 0.034 | 0.6821 | 0 | 99.3 | 79.8 | 136 | | | |
| Ethylbenzene | 0.73 | 0.034 | 0.6821 | 0 | 107 | 79.4 | 140 | | | |
| Xylenes, Total | 2.0 | 0.068 | 2.046 | 0.03431 | 98.5 | 78.5 | 142 | | | |
| Surr: 4-Bromofluorobenzene | 0.85 | | 0.6821 | | 124 | 66.6 | 132 | | | |

| Sample ID **1707E85-002AMSD** | SampType: **MSD** | TestCode: **EPA Method 8021B: Volatiles** |
|---|---|---|
| Client ID: **TSP-34** | Batch ID: **B44613** | RunNo: **44613** |
| Prep Date: | Analysis Date: **7/31/2017** | SeqNo: **1410778** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.66 | 0.017 | 0.6821 | 0 | 97.0 | 80.9 | 132 | 1.78 | 20 | |
| Toluene | 0.66 | 0.034 | 0.6821 | 0 | 97.1 | 79.8 | 136 | 2.23 | 20 | |
| Ethylbenzene | 0.73 | 0.034 | 0.6821 | 0 | 106 | 79.4 | 140 | 0.674 | 20 | |
| Xylenes, Total | 2.0 | 0.068 | 2.046 | 0.03431 | 97.4 | 78.5 | 142 | 1.10 | 20 | |
| Surr: 4-Bromofluorobenzene | 0.83 | | 0.6821 | | 122 | 66.6 | 132 | 0 | 0 | |

**Qualifiers:**

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

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: GHD Work Order Number: 1707E85 RcptNo: 1

Received By: Sophia Campuzano 7/28/2017 2:26:00 PM

Completed By: Erin Melendrez 7/30/2017 2:00:10 PM

Reviewed By: JO 7/31/17

## Chain of Custody

| | | | |
|---|---|---|---|
| 1. Custody seals intact on sample bottles? | Yes ☐ | No ☐ | Not Present ☑ |
| 2. Is Chain of Custody complete? | Yes ☑ | No ☐ | Not Present ☐ |
| 3. How was the sample delivered? | Client | | |

## Log In

| | | | |
|---|---|---|---|
| 4. Was an attempt made to cool the samples? | Yes ☑ | No ☐ | NA ☐ |
| 5. Were all samples received at a temperature of >0° C to 6.0°C | Yes ☑ | No ☐ | NA ☐ |
| 6. Sample(s) in proper container(s)? | Yes ☑ | No ☐ | |
| 7. Sufficient sample volume for indicated test(s)? | Yes ☑ | No ☐ | |
| 8. Are samples (except VOA and ONG) properly preserved? | Yes ☑ | No ☐ | |
| 9. Was preservative added to bottles? | Yes ☐ | No ☑ | NA ☐ |
| 10. VOA vials have zero headspace? | Yes ☐ | No ☐ | No VOA Vials ☑ |
| 11. Were any sample containers received broken? | Yes ☐ | No ☑ | # of preserved bottles checked for pH: _____ (<2 or >12 unless noted) |
| 12. Does paperwork match bottle labels? (Note discrepancies on chain of custody) | Yes ☑ | No ☐ | |
| 13. Are matrices correctly identified on Chain of Custody? | Yes ☑ | No ☐ | Adjusted? _____ |
| 14. Is it clear what analyses were requested? | Yes ☑ | No ☐ | |
| 15. Were all holding times able to be met? (If no, notify customer for authorization.) | Yes ☑ | No ☐ | Checked by: _____ |

## Special Handling (if applicable)

16. 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: _____

17. Additional remarks:

18. Cooler Information

| Cooler No | Temp °C | Condition | Seal Intact | Seal No | Seal Date | Signed By |
|---|---|---|---|---|---|---|
| 1 | 1.7 | Good | Not Present | | | |

# Chain-of-Custody Record

Client: GHD Services

Mailing Address: 6121 Indian school Rd NE #200

Albq NM 87110

Phone #: 505 884 0672

email or Fax#: Charles.Neligh@ghd.com

QA/QC Package: Jeff.Walker@ghd.com

☐ Standard ☐ Level 4 (Full Validation)

Accreditation

☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:

☐ Standard ☑ Rush Same day

Project Name: San Juan 27-5 #1

Project #: 1124687

Project Manager: Jeff Walker

Sampler: Charles Neligh

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.7


**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. 1707E85 | 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) | | | | | Air Bubbles (Y or N) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7-28-17 | 0951 | Soil | TSP-33 | | | -001 | | | | | | | | | | | | | | | | |
| | 1000 | | TSP-34 | | | -002 | | | | | | | | | | | | | | | | |
| | 1007 | | TSP-35 | | | -003 | | | | | | | | | | | | | | | | |
| | 103 | | TSP-36 | | | -004 | | | | | | | | | | | | | | | | |
| | 1020 | | TSP-37 | | | -005 | | | | | | | | | | | | | | | | |
| | 1028 | | TSP-38 | | | -006 | | | | | | | | | | | | | | | | |
| | 1033 | | TSP-39 | | | -007 | | | | | | | | | | | | | | | | |
| | 1041 | | TSP-40 | | | -008 | | | | | | | | | | | | | | | | |
| | 1047 | | TSP-41 | | | -009 | | | | | | | | | | | | | | | | |
| | 1056 | | TSP-28-RR | | | -010 | | | | | | | | | | | | | | | | |
| | 1100 | | TSP-30-RR | | | -011 | | | | | | | | | | | | | | | | |

| Date: | Time: | Relinquished by: | Received by: | Date | Time |
|---|---|---|---|---|---|
| 7-28-17 | 1425 | Charles Neligh | Sophia Cox | 07/28/17 | 1426 |
| 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.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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*Website: www.hallenvironmental.com*

July 11, 2017

Jeff Walker
GHD
6121 Indian School Road, NE #200
Albuquerque, NM 87110
TEL: (505) 884-0672
FAX

RE: San Juan 27 5 1 OrderNo.: 1707327

Dear Jeff Walker:

Hall Environmental Analysis Laboratory received 7 sample(s) on 7/7/2017 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 #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

**Analytical Report**
Lab Order **1707327**
Date Reported: **7/11/2017**

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** GHD
**Project:** San Juan 27 5 1
**Lab ID:** 1707327-001

**Client Sample ID:** Floor @ 15'
**Collection Date:** 7/7/2017 12:09:00 PM
**Matrix:** MEOH (SOIL) **Received Date:** 7/7/2017 4:25:00 PM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **TOM** | |
| Diesel Range Organics (DRO) | 920 | 9.5 | | mg/Kg | 1 | 7/10/2017 10:13:43 AM | 32699 |
| Motor Oil Range Organics (MRO) | ND | 47 | | mg/Kg | 1 | 7/10/2017 10:13:43 AM | 32699 |
| Surr: DNOP | 95.6 | 70-130 | | %Rec | 1 | 7/10/2017 10:13:43 AM | 32699 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | 390 | 18 | | mg/Kg | 5 | 7/10/2017 10:09:18 AM | G44091 |
| Surr: BFB | 797 | 54-150 | S | %Rec | 5 | 7/10/2017 10:09:18 AM | G44091 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.092 | | mg/Kg | 5 | 7/10/2017 10:09:18 AM | B44091 |
| Toluene | 1.1 | 0.18 | | mg/Kg | 5 | 7/10/2017 10:09:18 AM | B44091 |
| Ethylbenzene | ND | 0.18 | | mg/Kg | 5 | 7/10/2017 10:09:18 AM | B44091 |
| Xylenes, Total | 10 | 0.37 | | mg/Kg | 5 | 7/10/2017 10:09:18 AM | B44091 |
| Surr: 4-Bromofluorobenzene | 133 | 66.6-132 | S | %Rec | 5 | 7/10/2017 10:09:18 AM | B44091 |

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

**Qualifiers:**

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

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** GHD
**Client Sample ID:** North Wall-West
**Project:** San Juan 27 5 1
**Collection Date:** 7/7/2017 12:13:00 PM
**Lab ID:** 1707327-002
**Matrix:** MEOH (SOIL)
**Received Date:** 7/7/2017 4:25:00 PM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **TOM** | |
| Diesel Range Organics (DRO) | 40 | 9.4 | | mg/Kg | 1 | 7/10/2017 10:41:50 AM | 32699 |
| Motor Oil Range Organics (MRO) | ND | 47 | | mg/Kg | 1 | 7/10/2017 10:41:50 AM | 32699 |
| Surr: DNOP | 94.8 | 70-130 | | %Rec | 1 | 7/10/2017 10:41:50 AM | 32699 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | ND | 3.9 | | mg/Kg | 1 | 7/10/2017 10:56:42 AM | G44091 |
| Surr: BFB | 139 | 54-150 | | %Rec | 1 | 7/10/2017 10:56:42 AM | G44091 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.019 | | mg/Kg | 1 | 7/10/2017 10:56:42 AM | B44091 |
| Toluene | ND | 0.039 | | mg/Kg | 1 | 7/10/2017 10:56:42 AM | B44091 |
| Ethylbenzene | ND | 0.039 | | mg/Kg | 1 | 7/10/2017 10:56:42 AM | B44091 |
| Xylenes, Total | ND | 0.077 | | mg/Kg | 1 | 7/10/2017 10:56:42 AM | B44091 |
| Surr: 4-Bromofluorobenzene | 107 | 66.6-132 | | %Rec | 1 | 7/10/2017 10:56:42 AM | B44091 |

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

**Qualifiers:**

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

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** GHD
**Client Sample ID:** TSP-6
**Project:** San Juan 27 5 1
**Collection Date:** 7/7/2017 12:17:00 PM
**Lab ID:** 1707327-003
**Matrix:** MEOH (SOIL)
**Received Date:** 7/7/2017 4:25:00 PM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **TOM** | |
| Diesel Range Organics (DRO) | 520 | 9.7 | | mg/Kg | 1 | 7/10/2017 11:09:57 AM | 32699 |
| Motor Oil Range Organics (MRO) | ND | 48 | | mg/Kg | 1 | 7/10/2017 11:09:57 AM | 32699 |
| Surr: DNOP | 88.7 | 70-130 | | %Rec | 1 | 7/10/2017 11:09:57 AM | 32699 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | 170 | 3.2 | | mg/Kg | 1 | 7/10/2017 11:20:27 AM | G44091 |
| Surr: BFB | 2050 | 54-150 | S | %Rec | 1 | 7/10/2017 11:20:27 AM | G44091 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.016 | | mg/Kg | 1 | 7/10/2017 11:20:27 AM | B44091 |
| Toluene | ND | 0.032 | | mg/Kg | 1 | 7/10/2017 11:20:27 AM | B44091 |
| Ethylbenzene | ND | 0.032 | | mg/Kg | 1 | 7/10/2017 11:20:27 AM | B44091 |
| Xylenes, Total | 1.8 | 0.063 | | mg/Kg | 1 | 7/10/2017 11:20:27 AM | B44091 |
| Surr: 4-Bromofluorobenzene | 239 | 66.6-132 | S | %Rec | 1 | 7/10/2017 11:20:27 AM | B44091 |

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

**Qualifiers:**

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

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** GHD
**Client Sample ID:** TSP-7
**Project:** San Juan 27 5 1
**Collection Date:** 7/7/2017 12:20:00 PM
**Lab ID:** 1707327-004
**Matrix:** MEOH (SOIL)
**Received Date:** 7/7/2017 4:25:00 PM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **TOM** | |
| Diesel Range Organics (DRO) | 460 | 9.7 | | mg/Kg | 1 | 7/10/2017 11:37:54 AM | 32699 |
| Motor Oil Range Organics (MRO) | ND | 48 | | mg/Kg | 1 | 7/10/2017 11:37:54 AM | 32699 |
| Surr: DNOP | 91.5 | 70-130 | | %Rec | 1 | 7/10/2017 11:37:54 AM | 32699 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | 170 | 4.0 | | mg/Kg | 1 | 7/10/2017 11:44:09 AM | G44091 |
| Surr: BFB | 1640 | 54-150 | S | %Rec | 1 | 7/10/2017 11:44:09 AM | G44091 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.020 | | mg/Kg | 1 | 7/10/2017 11:44:09 AM | B44091 |
| Toluene | ND | 0.040 | | mg/Kg | 1 | 7/10/2017 11:44:09 AM | B44091 |
| Ethylbenzene | ND | 0.040 | | mg/Kg | 1 | 7/10/2017 11:44:09 AM | B44091 |
| Xylenes, Total | 0.99 | 0.080 | | mg/Kg | 1 | 7/10/2017 11:44:09 AM | B44091 |
| Surr: 4-Bromofluorobenzene | 175 | 66.6-132 | S | %Rec | 1 | 7/10/2017 11:44:09 AM | B44091 |

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

**Qualifiers:**

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

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** GHD
**Project:** San Juan 27 5 1
**Lab ID:** 1707327-005

**Client Sample ID:** TSP-8
**Collection Date:** 7/7/2017 12:24:00 PM
**Matrix:** MEOH (SOIL) **Received Date:** 7/7/2017 4:25:00 PM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **TOM** | |
| Diesel Range Organics (DRO) | 430 | 9.6 | | mg/Kg | 1 | 7/10/2017 12:05:58 PM | 32699 |
| Motor Oil Range Organics (MRO) | ND | 48 | | mg/Kg | 1 | 7/10/2017 12:05:58 PM | 32699 |
| Surr: DNOP | 95.1 | 70-130 | | %Rec | 1 | 7/10/2017 12:05:58 PM | 32699 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | 130 | 3.4 | | mg/Kg | 1 | 7/10/2017 12:07:47 PM | G44091 |
| Surr: BFB | 1520 | 54-150 | S | %Rec | 1 | 7/10/2017 12:07:47 PM | G44091 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.017 | | mg/Kg | 1 | 7/10/2017 12:07:47 PM | B44091 |
| Toluene | ND | 0.034 | | mg/Kg | 1 | 7/10/2017 12:07:47 PM | B44091 |
| Ethylbenzene | ND | 0.034 | | mg/Kg | 1 | 7/10/2017 12:07:47 PM | B44091 |
| Xylenes, Total | 0.83 | 0.068 | | mg/Kg | 1 | 7/10/2017 12:07:47 PM | B44091 |
| Surr: 4-Bromofluorobenzene | 166 | 66.6-132 | S | %Rec | 1 | 7/10/2017 12:07:47 PM | B44091 |

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

**Qualifiers:**

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

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** GHD
**Client Sample ID:** TSP-9
**Project:** San Juan 27 5 1
**Collection Date:** 7/7/2017 12:30:00 PM
**Lab ID:** 1707327-006
**Matrix:** MEOH (SOIL)
**Received Date:** 7/7/2017 4:25:00 PM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **TOM** | |
| Diesel Range Organics (DRO) | 440 | 9.6 | | mg/Kg | 1 | 7/10/2017 12:34:08 PM | 32699 |
| Motor Oil Range Organics (MRO) | ND | 48 | | mg/Kg | 1 | 7/10/2017 12:34:08 PM | 32699 |
| Surr: DNOP | 93.1 | 70-130 | | %Rec | 1 | 7/10/2017 12:34:08 PM | 32699 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | 100 | 3.4 | | mg/Kg | 1 | 7/10/2017 12:31:34 PM | G44091 |
| Surr: BFB | 1310 | 54-150 | S | %Rec | 1 | 7/10/2017 12:31:34 PM | G44091 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.017 | | mg/Kg | 1 | 7/10/2017 12:31:34 PM | B44091 |
| Toluene | ND | 0.034 | | mg/Kg | 1 | 7/10/2017 12:31:34 PM | B44091 |
| Ethylbenzene | ND | 0.034 | | mg/Kg | 1 | 7/10/2017 12:31:34 PM | B44091 |
| Xylenes, Total | 0.65 | 0.068 | | mg/Kg | 1 | 7/10/2017 12:31:34 PM | B44091 |
| Surr: 4-Bromofluorobenzene | 160 | 66.6-132 | S | %Rec | 1 | 7/10/2017 12:31:34 PM | B44091 |

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

**Qualifiers:**

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

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** GHD
**Client Sample ID:** MeOH Blank
**Project:** San Juan 27 5 1
**Collection Date:**
**Lab ID:** 1707327-007
**Matrix:** MEOH BLAN
**Received Date:** 7/7/2017 4:25:00 PM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | ND | 5.0 | | mg/Kg | 1 | 7/10/2017 10:32:57 AM | G44091 |
| Surr: BFB | 119 | 54-150 | | %Rec | 1 | 7/10/2017 10:32:57 AM | G44091 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.025 | | mg/Kg | 1 | 7/10/2017 10:32:57 AM | B44091 |
| Toluene | ND | 0.050 | | mg/Kg | 1 | 7/10/2017 10:32:57 AM | B44091 |
| Ethylbenzene | ND | 0.050 | | mg/Kg | 1 | 7/10/2017 10:32:57 AM | B44091 |
| Xylenes, Total | ND | 0.10 | | mg/Kg | 1 | 7/10/2017 10:32:57 AM | B44091 |
| Surr: 4-Bromofluorobenzene | 106 | 66.6-132 | | %Rec | 1 | 7/10/2017 10:32:57 AM | B44091 |

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

**Qualifiers:**

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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: **1707327**

*11-Jul-17*

**Client:** GHD

**Project:** San Juan 27 5 1

| Sample ID **LCS-32699** | SampType: **LCS** | TestCode: **EPA Method 8015M/D: Diesel Range Organics** |
|---|---|---|
| Client ID: **LCSS** | Batch ID: **32699** | RunNo: **44080** |
| Prep Date: **7/10/2017** | Analysis Date: **7/10/2017** | SeqNo: **1391037** 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 | 96.3 | 73.2 | 114 | | | |
| Surr: DNOP | 4.3 | | 5.000 | | 85.8 | 70 | 130 | | | |

| Sample ID **MB-32699** | SampType: **MBLK** | TestCode: **EPA Method 8015M/D: Diesel Range Organics** |
|---|---|---|
| Client ID: **PBS** | Batch ID: **32699** | RunNo: **44080** |
| Prep Date: **7/10/2017** | Analysis Date: **7/10/2017** | SeqNo: **1391038** 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 | 8.7 | | 10.00 | | 87.2 | 70 | 130 | | | |

| Sample ID **LCS-32681** | SampType: **LCS** | TestCode: **EPA Method 8015M/D: Diesel Range Organics** |
|---|---|---|
| Client ID: **LCSS** | Batch ID: **32681** | RunNo: **44081** |
| Prep Date: **7/7/2017** | Analysis Date: **7/10/2017** | SeqNo: **1391339** Units: **%Rec** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Surr: DNOP | 5.0 | | 5.000 | | 99.3 | 70 | 130 | | | |

| Sample ID **MB-32681** | SampType: **MBLK** | TestCode: **EPA Method 8015M/D: Diesel Range Organics** |
|---|---|---|
| Client ID: **PBS** | Batch ID: **32681** | RunNo: **44081** |
| Prep Date: **7/7/2017** | Analysis Date: **7/10/2017** | SeqNo: **1391340** Units: **%Rec** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Surr: DNOP | 9.2 | | 10.00 | | 91.6 | 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 Detection Limit |
| S | % Recovery outside of range due to dilution or matrix | W | Sample container temperature is out of limit as specified |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: **1707327**

***11-Jul-17***

**Client:** GHD

**Project:** San Juan 27 5 1

| Sample ID **RB** | SampType: **MBLK** | TestCode: **EPA Method 8015D: Gasoline Range** |
|---|---|---|
| Client ID: **PBS** | Batch ID: **G44091** | RunNo: **44091** |
| Prep Date: | Analysis Date: **7/10/2017** | SeqNo: **1391573** 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 | 1100 | | 1000 | | 114 | 54 | 150 | | | |

| Sample ID **2.5UG GRO LCS** | SampType: **LCS** | TestCode: **EPA Method 8015D: Gasoline Range** |
|---|---|---|
| Client ID: **LCSS** | Batch ID: **G44091** | RunNo: **44091** |
| Prep Date: | Analysis Date: **7/10/2017** | SeqNo: **1391574** 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 | 95.7 | 76.4 | 125 | | | |
| Surr: BFB | 1300 | | 1000 | | 125 | 54 | 150 | | | |

**Qualifiers:**

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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: **1707327**

*11-Jul-17*

**Client:** GHD

**Project:** San Juan 27 5 1

| Sample ID **RB** | SampType: **MBLK** | TestCode: **EPA Method 8021B: Volatiles** |
|---|---|---|
| Client ID: **PBS** | Batch ID: **B44091** | RunNo: **44091** |
| Prep Date: | Analysis Date: **7/10/2017** | SeqNo: **1391583** 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 | | | | | | | | |
| Xylenes, Total | ND | 0.10 | | | | | | | | |
| Surr: 4-Bromofluorobenzene | 1.1 | | 1.000 | | 106 | 66.6 | 132 | | | |

| Sample ID **100NG BTEX LCS** | SampType: **LCS** | TestCode: **EPA Method 8021B: Volatiles** |
|---|---|---|
| Client ID: **LCSS** | Batch ID: **B44091** | RunNo: **44091** |
| Prep Date: | Analysis Date: **7/10/2017** | SeqNo: **1391584** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.86 | 0.025 | 1.000 | 0 | 86.1 | 80 | 120 | | | |
| Toluene | 0.86 | 0.050 | 1.000 | 0 | 85.8 | 80 | 120 | | | |
| Ethylbenzene | 0.85 | 0.050 | 1.000 | 0 | 84.6 | 80 | 120 | | | |
| Xylenes, Total | 2.5 | 0.10 | 3.000 | 0 | 84.9 | 80 | 120 | | | |
| Surr: 4-Bromofluorobenzene | 1.1 | | 1.000 | | 107 | 66.6 | 132 | | | |

| Sample ID **1707327-002AMS** | SampType: **MS** | TestCode: **EPA Method 8021B: Volatiles** |
|---|---|---|
| Client ID: **North Wall-West** | Batch ID: **B44091** | RunNo: **44091** |
| Prep Date: | Analysis Date: **7/10/2017** | SeqNo: **1391585** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.73 | 0.019 | 0.7722 | 0 | 94.5 | 80.9 | 132 | | | |
| Toluene | 0.73 | 0.039 | 0.7722 | 0.01038 | 93.1 | 79.8 | 136 | | | |
| Ethylbenzene | 0.73 | 0.039 | 0.7722 | 0.01407 | 92.5 | 79.4 | 140 | | | |
| Xylenes, Total | 2.2 | 0.077 | 2.317 | 0.03578 | 93.4 | 78.5 | 142 | | | |
| Surr: 4-Bromofluorobenzene | 0.86 | | 0.7722 | | 111 | 66.6 | 132 | | | |

| Sample ID **1707327-002AMSD** | SampType: **MSD** | TestCode: **EPA Method 8021B: Volatiles** |
|---|---|---|
| Client ID: **North Wall-West** | Batch ID: **B44091** | RunNo: **44091** |
| Prep Date: | Analysis Date: **7/10/2017** | SeqNo: **1391586** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.71 | 0.019 | 0.7722 | 0 | 92.1 | 80.9 | 132 | 2.59 | 20 | |
| Toluene | 0.72 | 0.039 | 0.7722 | 0.01038 | 91.3 | 79.8 | 136 | 1.88 | 20 | |
| Ethylbenzene | 0.72 | 0.039 | 0.7722 | 0.01407 | 91.4 | 79.4 | 140 | 1.19 | 20 | |
| Xylenes, Total | 2.2 | 0.077 | 2.317 | 0.03578 | 92.1 | 78.5 | 142 | 1.41 | 20 | |
| Surr: 4-Bromofluorobenzene | 0.85 | | 0.7722 | | 111 | 66.6 | 132 | 0 | 0 | |

**Qualifiers:**

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

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: GHD | Work Order Number: 1707327 | RcptNo: 1

Received By: Sophia Campuzano 7/7/2017 4:25:00 PM

Completed By: Ashley Gallegos 7/9/2017 1:12:30 PM

Reviewed By: SRe 07/10/17

## Chain of Custody

| | | | |
|---|---|---|---|
| 1. Custody seals intact on sample bottles? | Yes ☐ | No ☐ | Not Present ☑ |
| 2. Is Chain of Custody complete? | Yes ☑ | No ☐ | Not Present ☐ |
| 3. How was the sample delivered? | Client | | |

## Log In

| | | | |
|---|---|---|---|
| 4. Was an attempt made to cool the samples? | Yes ☑ | No ☐ | NA ☐ |
| 5. Were all samples received at a temperature of >0° C to 6.0°C | Yes ☐ | No ☑ | NA ☐ |
| Samples were collected the same day and chilled. | | | |
| 6. Sample(s) in proper container(s)? | Yes ☑ | No ☐ | |
| 7. Sufficient sample volume for indicated test(s)? | Yes ☑ | No ☐ | |
| 8. Are samples (except VOA and ONG) properly preserved? | Yes ☑ | No ☐ | |
| 9. Was preservative added to bottles? | Yes ☐ | No ☑ | NA ☐ |
| 10. VOA vials have zero headspace? | Yes ☐ | No ☐ | No VOA Vials ☑ |
| 11. Were any sample containers received broken? | Yes ☐ | No ☑ | |
| 12. Does paperwork match bottle labels? (Note discrepancies on chain of custody) | Yes ☑ | No ☐ | |
| 13. Are matrices correctly identified on Chain of Custody? | Yes ☑ | No ☐ | |
| 14. Is it clear what analyses were requested? | Yes ☑ | No ☐ | |
| 15. 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: _____

## Special Handling (if applicable)

16. 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: _____

17. Additional remarks:

18. Cooler Information

| Cooler No | Temp °C | Condition | Seal Intact | Seal No | Seal Date | Signed By |
|---|---|---|---|---|---|---|
| 1 | 6.9 | Good | Not Present | | | |

# Chain-of-Custody Record

**HALL ENVIRONMENTAL ANALYSIS LABORATORY**

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

| | |
|---|---|
| Client: GHD Services, Inc. | Turn-Around Time: ☐ Standard ☐ Rush SAME DAY |
| | Project Name: San Juan 27-5 # 1 |
| Mailing Address: 6121 Indian Sch. Rd Albuq., NM 87110 | Project #: 11124687 |
| Phone #: 505-884-0672 | |
| email or Fax#: jeff.walker@ghd.com | Project Manager: Jeff Walker |
| QA/QC Package: ☒ Standard ☐ Level 4 (Full Validation) | |
| Accreditation ☐ NELAP ☐ Other | Sampler: Charles Neligh |
| ☐ EDD (Type) | On Ice: ☒ Yes ☐ No |
| | Sample Temperature: 6.9 |

Analysis Request

| Date | Time | Matrix | Sample Request ID | Container Type and # | Preservative Type | HEAL No. 1707327 | 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) | Air Bubbles (Y or N) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7-7-17 | 1209 | SOIL | Floor @ 15' | 4oz Glass | MeOH | -001 | X | | X | | | | | | | | | |
| | 1213 | | North Wall - West | | | -002 | X | | X | | | | | | | | | |
| | 1217 | | TSP-6 | | | -003 | X | | X | | | | | | | | | |
| | 1220 | | TSP-7 | | | -004 | X | | X | | | | | | | | | |
| | 1224 | | TSP-8 | | | -005 | X | | X | | | | | | | | | |
| | 1230 | | TSP-9 | | | -006 | X | | X | | | | | | | | | |
| | | | MeOH Blank | | | -007 | | | | | | | | | | | | |

| Date: | Time: | Relinquished by: | Received by: | Date | Time |
|---|---|---|---|---|---|
| 7-7-17 | 1625 | Charles Neligh | Sophia Cross | 07/07/17 | 1625 |
| 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.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

July 17, 2017

Jeffrey Walker
GHD Services, Inc
6121 Indian School Rd NE
Ste 200
Albuquerque, NM 87110

RE: Project: 11124687 San Juan 27-5 #1
Pace Project No.: 60248746

Dear Jeffrey Walker:
Enclosed are the analytical results for sample(s) received by the laboratory on July 14, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Alice Spiller

Alice Spiller
alice.spiller@pacelabs.com
(913)563-1409
Project Manager

Enclosures

cc: Angela Bown, GHD Services, Inc,

**REPORT OF LABORATORY ANALYSIS**

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

## CERTIFICATIONS

Project: 11124687 San Juan 27-5 #1
Pace Project No.: 60248746

**Kansas Certification IDs**

9608 Loiret Boulevard, Lenexa, KS 66219
WY STR Certification #: 2456.01
Arkansas Certification #: 15-016-0
Illinois Certification #: 003097
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407
Utah Certification #: KS00021
Kansas Field Laboratory Accreditation: # E-92587
Missouri Certification: 10070

## REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

## SAMPLE SUMMARY

Project: 11124687 San Juan 27-5 #1
Pace Project No.: 60248746

| Lab ID | Sample ID | Matrix | Date Collected | Date Received |
|---|---|---|---|---|
| 60248746001 | TSP-15 | Solid | 07/13/17 12:24 | 07/14/17 16:00 |
| 60248746002 | TSP-16 | Solid | 07/13/17 12:16 | 07/14/17 16:00 |
| 60248746003 | TSP-17 | Solid | 07/13/17 12:09 | 07/14/17 16:00 |
| 60248746004 | TSP-18 | Solid | 07/13/17 12:02 | 07/14/17 16:00 |
| 60248746005 | TSP-19 | Solid | 07/13/17 11:52 | 07/14/17 16:00 |
| 60248746006 | TSP-20 | Solid | 07/13/17 11:47 | 07/14/17 16:00 |
| 60248746007 | TSP-21 | Solid | 07/13/17 11:39 | 07/14/17 16:00 |
| 60248746008 | TSP-22 | Solid | 07/13/17 11:31 | 07/14/17 16:00 |
| 60248746009 | TSP-23 | Solid | 07/13/17 11:26 | 07/14/17 16:00 |

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## SAMPLE ANALYTE COUNT

Project: 11124687 San Juan 27-5 #1
Pace Project No.: 60248746

| Lab ID | Sample ID | Method | Analysts | Analytes Reported | Laboratory |
|---|---|---|---|---|---|
| 60248746001 | TSP-15 | EPA 8015B | AJM | 4 | PASI-K |
| | | EPA 5035A/8260 | JKL | 8 | PASI-K |
| | | ASTM D2974 | DWC | 1 | PASI-K |
| 60248746002 | TSP-16 | EPA 8015B | AJM | 4 | PASI-K |
| | | EPA 5035A/8260 | JKL | 8 | PASI-K |
| | | ASTM D2974 | DWC | 1 | PASI-K |
| 60248746003 | TSP-17 | EPA 8015B | AJM | 4 | PASI-K |
| | | EPA 5035A/8260 | JKL | 8 | PASI-K |
| | | ASTM D2974 | DWC | 1 | PASI-K |
| 60248746004 | TSP-18 | EPA 8015B | AJM | 4 | PASI-K |
| | | EPA 5035A/8260 | JKL | 8 | PASI-K |
| | | ASTM D2974 | DWC | 1 | PASI-K |
| 60248746005 | TSP-19 | EPA 8015B | AJM | 4 | PASI-K |
| | | EPA 5035A/8260 | JKL | 8 | PASI-K |
| | | ASTM D2974 | DWC | 1 | PASI-K |
| 60248746006 | TSP-20 | EPA 8015B | AJM | 4 | PASI-K |
| | | EPA 5035A/8260 | JKL | 8 | PASI-K |
| | | ASTM D2974 | DWC | 1 | PASI-K |
| 60248746007 | TSP-21 | EPA 8015B | AJM | 4 | PASI-K |
| | | EPA 5035A/8260 | JKL | 8 | PASI-K |
| | | ASTM D2974 | DWC | 1 | PASI-K |
| 60248746008 | TSP-22 | EPA 8015B | AJM | 4 | PASI-K |
| | | EPA 5035A/8260 | JKL | 8 | PASI-K |
| | | ASTM D2974 | DWC | 1 | PASI-K |
| 60248746009 | TSP-23 | EPA 8015B | AJM | 4 | PASI-K |
| | | EPA 5035A/8260 | JKL | 8 | PASI-K |
| | | ASTM D2974 | DWC | 1 | PASI-K |

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## PROJECT NARRATIVE

Project: 11124687 San Juan 27-5 #1
Pace Project No.: 60248746

**Method:** **EPA 8015B**
**Description:** 8015B Diesel Range Organics
**Client:** GHD Services_COP NM
**Date:** July 17, 2017

**General Information:**
9 samples were analyzed for EPA 8015B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

**Hold Time:**
The samples were analyzed within the method required hold times with any exceptions noted below.

**Sample Preparation:**
The samples were prepared in accordance with EPA 3546 with any exceptions noted below.

**Initial Calibrations (including MS Tune as applicable):**
All criteria were within method requirements with any exceptions noted below.

**Continuing Calibration:**
All criteria were within method requirements with any exceptions noted below.

**Surrogates:**
All surrogates were within QC limits with any exceptions noted below.

QC Batch: 485601

S4: Surrogate recovery not evaluated against control limits due to sample dilution.

- MS (Lab ID: 1988798)
  - n-Tetracosane (S)
  - p-Terphenyl (S)
- MSD (Lab ID: 1988799)
  - n-Tetracosane (S)
  - p-Terphenyl (S)
- TSP-15 (Lab ID: 60248746001)
  - n-Tetracosane (S)
  - p-Terphenyl (S)
- TSP-16 (Lab ID: 60248746002)
  - n-Tetracosane (S)
  - p-Terphenyl (S)
- TSP-18 (Lab ID: 60248746004)
  - n-Tetracosane (S)
  - p-Terphenyl (S)
- TSP-19 (Lab ID: 60248746005)
  - n-Tetracosane (S)
  - p-Terphenyl (S)
- TSP-20 (Lab ID: 60248746006)
  - n-Tetracosane (S)
  - p-Terphenyl (S)
- TSP-21 (Lab ID: 60248746007)
  - n-Tetracosane (S)
  - p-Terphenyl (S)

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## PROJECT NARRATIVE

Project: 11124687 San Juan 27-5 #1
Pace Project No.: 60248746

**Method:** **EPA 8015B**
**Description:** 8015B Diesel Range Organics
**Client:** GHD Services_COP NM
**Date:** July 17, 2017

QC Batch: 485601

S4: Surrogate recovery not evaluated against control limits due to sample dilution.

- TSP-22 (Lab ID: 60248746008)
  - n-Tetracosane (S)
  - p-Terphenyl (S)
- TSP-23 (Lab ID: 60248746009)
  - n-Tetracosane (S)
  - p-Terphenyl (S)

**Method Blank:**
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

**Laboratory Control Spike:**
All laboratory control spike compounds were within QC limits with any exceptions noted below.

**Matrix Spikes:**
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 485601

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60248746001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MSD (Lab ID: 1988799)
  - TPH-DRO (C10-C28)

**Additional Comments:**

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

## PROJECT NARRATIVE

Project: 11124687 San Juan 27-5 #1
Pace Project No.: 60248746

**Method:** **EPA 5035A/8260**
**Description:** 8260 MSV GRO and Oxygenates
**Client:** GHD Services_COP NM
**Date:** July 17, 2017

**General Information:**
9 samples were analyzed for EPA 5035A/8260. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

**Hold Time:**
The samples were analyzed within the method required hold times with any exceptions noted below.

**Initial Calibrations (including MS Tune as applicable):**
All criteria were within method requirements with any exceptions noted below.

**Continuing Calibration:**
All criteria were within method requirements with any exceptions noted below.

**Internal Standards:**
All internal standards were within QC limits with any exceptions noted below.

**Surrogates:**
All surrogates were within QC limits with any exceptions noted below.

**Method Blank:**
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

**Laboratory Control Spike:**
All laboratory control spike compounds were within QC limits with any exceptions noted below.

**Matrix Spikes:**
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

**Additional Comments:**

This data package has been reviewed for quality and completeness and is approved for release.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

## ANALYTICAL RESULTS

Project: 11124687 San Juan 27-5 #1
Pace Project No.: 60248746

**Sample: TSP-15** **Lab ID: 60248746001** Collected: 07/13/17 12:24 Received: 07/14/17 16:00 Matrix: Solid

***Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.***

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **8015B Diesel Range Organics** | Analytical Method: EPA 8015B Preparation Method: EPA 3546 | | | | | | | |
| TPH-DRO (C10-C28) | **1030** | mg/kg | 109 | 10 | 07/15/17 00:00 | 07/17/17 09:51 | | M1 |
| TPH-ORO (C28-C35) | ND | mg/kg | 109 | 10 | 07/15/17 00:00 | 07/17/17 09:51 | | |
| ***Surrogates*** | | | | | | | | |
| n-Tetracosane (S) | 0 | % | 65-119 | 10 | 07/15/17 00:00 | 07/17/17 09:51 | 646-31-1 | S4 |
| p-Terphenyl (S) | 0 | % | 41-131 | 10 | 07/15/17 00:00 | 07/17/17 09:51 | 92-94-4 | S4 |
| **8260 MSV GRO and Oxygenates** | Analytical Method: EPA 5035A/8260 | | | | | | | |
| Benzene | ND | ug/kg | 5.7 | 1 | | 07/17/17 12:36 | 71-43-2 | |
| Ethylbenzene | ND | ug/kg | 5.7 | 1 | | 07/17/17 12:36 | 100-41-4 | |
| Toluene | ND | ug/kg | 5.7 | 1 | | 07/17/17 12:36 | 108-88-3 | |
| TPH-GRO | **4.3** | mg/kg | 0.57 | 1 | | 07/17/17 12:36 | | |
| Xylene (Total) | ND | ug/kg | 11.5 | 1 | | 07/17/17 12:36 | 1330-20-7 | |
| ***Surrogates*** | | | | | | | | |
| Toluene-d8 (S) | 100 | % | 77-120 | 1 | | 07/17/17 12:36 | 2037-26-5 | |
| 4-Bromofluorobenzene (S) | 104 | % | 81-119 | 1 | | 07/17/17 12:36 | 460-00-4 | |
| 1,2-Dichloroethane-d4 (S) | 103 | % | 79-126 | 1 | | 07/17/17 12:36 | 17060-07-0 | |
| **Percent Moisture** | Analytical Method: ASTM D2974 | | | | | | | |
| Percent Moisture | **12.0** | % | 0.50 | 1 | | 07/17/17 00:00 | | |

## REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

## ANALYTICAL RESULTS

Project: 11124687 San Juan 27-5 #1
Pace Project No.: 60248746

**Sample: TSP-16** **Lab ID: 60248746002** Collected: 07/13/17 12:16 Received: 07/14/17 16:00 Matrix: Solid

***Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.***

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **8015B Diesel Range Organics** | Analytical Method: EPA 8015B Preparation Method: EPA 3546 | | | | | | | |
| TPH-DRO (C10-C28) | **1460** | mg/kg | 108 | 10 | 07/15/17 00:00 | 07/17/17 10:19 | | |
| TPH-ORO (C28-C35) | **114** | mg/kg | 108 | 10 | 07/15/17 00:00 | 07/17/17 10:19 | | |
| ***Surrogates*** | | | | | | | | |
| n-Tetracosane (S) | 0 | % | 65-119 | 10 | 07/15/17 00:00 | 07/17/17 10:19 | 646-31-1 | S4 |
| p-Terphenyl (S) | 0 | % | 41-131 | 10 | 07/15/17 00:00 | 07/17/17 10:19 | 92-94-4 | S4 |
| **8260 MSV GRO and Oxygenates** | Analytical Method: EPA 5035A/8260 | | | | | | | |
| Benzene | ND | ug/kg | 5.6 | 1 | | 07/17/17 13:24 | 71-43-2 | |
| Ethylbenzene | ND | ug/kg | 5.6 | 1 | | 07/17/17 13:24 | 100-41-4 | |
| Toluene | ND | ug/kg | 5.6 | 1 | | 07/17/17 13:24 | 108-88-3 | |
| TPH-GRO | **2.4** | mg/kg | 0.56 | 1 | | 07/17/17 13:24 | | |
| Xylene (Total) | ND | ug/kg | 11.3 | 1 | | 07/17/17 13:24 | 1330-20-7 | |
| ***Surrogates*** | | | | | | | | |
| Toluene-d8 (S) | 100 | % | 77-120 | 1 | | 07/17/17 13:24 | 2037-26-5 | |
| 4-Bromofluorobenzene (S) | 104 | % | 81-119 | 1 | | 07/17/17 13:24 | 460-00-4 | |
| 1,2-Dichloroethane-d4 (S) | 108 | % | 79-126 | 1 | | 07/17/17 13:24 | 17060-07-0 | |
| **Percent Moisture** | Analytical Method: ASTM D2974 | | | | | | | |
| Percent Moisture | **11.9** | % | 0.50 | 1 | | 07/17/17 00:00 | | |

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: 11124687 San Juan 27-5 #1
Pace Project No.: 60248746

**Sample: TSP-17** **Lab ID: 60248746003** Collected: 07/13/17 12:09 Received: 07/14/17 16:00 Matrix: Solid

***Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.***

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **8015B Diesel Range Organics** | Analytical Method: EPA 8015B Preparation Method: EPA 3546 | | | | | | | |
| TPH-DRO (C10-C28) | **810** | mg/kg | 11.3 | 1 | 07/15/17 00:00 | 07/16/17 02:05 | | |
| TPH-ORO (C28-C35) | **67.2** | mg/kg | 11.3 | 1 | 07/15/17 00:00 | 07/16/17 02:05 | | |
| ***Surrogates*** | | | | | | | | |
| n-Tetracosane (S) | 114 | % | 65-119 | 1 | 07/15/17 00:00 | 07/16/17 02:05 | 646-31-1 | |
| p-Terphenyl (S) | 102 | % | 41-131 | 1 | 07/15/17 00:00 | 07/16/17 02:05 | 92-94-4 | |
| **8260 MSV GRO and Oxygenates** | Analytical Method: EPA 5035A/8260 | | | | | | | |
| Benzene | ND | ug/kg | 5.8 | 1 | | 07/17/17 13:40 | 71-43-2 | |
| Ethylbenzene | ND | ug/kg | 5.8 | 1 | | 07/17/17 13:40 | 100-41-4 | |
| Toluene | ND | ug/kg | 5.8 | 1 | | 07/17/17 13:40 | 108-88-3 | |
| TPH-GRO | **1.6** | mg/kg | 0.58 | 1 | | 07/17/17 13:40 | | |
| Xylene (Total) | ND | ug/kg | 11.5 | 1 | | 07/17/17 13:40 | 1330-20-7 | |
| ***Surrogates*** | | | | | | | | |
| Toluene-d8 (S) | 99 | % | 77-120 | 1 | | 07/17/17 13:40 | 2037-26-5 | |
| 4-Bromofluorobenzene (S) | 103 | % | 81-119 | 1 | | 07/17/17 13:40 | 460-00-4 | |
| 1,2-Dichloroethane-d4 (S) | 107 | % | 79-126 | 1 | | 07/17/17 13:40 | 17060-07-0 | |
| **Percent Moisture** | Analytical Method: ASTM D2974 | | | | | | | |
| Percent Moisture | **12.4** | % | 0.50 | 1 | | 07/17/17 00:00 | | |

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: 11124687 San Juan 27-5 #1
Pace Project No.: 60248746

**Sample: TSP-18** **Lab ID: 60248746004** Collected: 07/13/17 12:02 Received: 07/14/17 16:00 Matrix: Solid

***Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.***

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **8015B Diesel Range Organics** | Analytical Method: EPA 8015B Preparation Method: EPA 3546 | | | | | | | |
| TPH-DRO (C10-C28) | **1210** | mg/kg | 107 | 10 | 07/15/17 00:00 | 07/17/17 10:28 | | |
| TPH-ORO (C28-C35) | ND | mg/kg | 107 | 10 | 07/15/17 00:00 | 07/17/17 10:28 | | |
| ***Surrogates*** | | | | | | | | |
| n-Tetracosane (S) | 0 | % | 65-119 | 10 | 07/15/17 00:00 | 07/17/17 10:28 | 646-31-1 | S4 |
| p-Terphenyl (S) | 0 | % | 41-131 | 10 | 07/15/17 00:00 | 07/17/17 10:28 | 92-94-4 | S4 |
| **8260 MSV GRO and Oxygenates** | Analytical Method: EPA 5035A/8260 | | | | | | | |
| Benzene | ND | ug/kg | 5.6 | 1 | | 07/17/17 13:56 | 71-43-2 | |
| Ethylbenzene | ND | ug/kg | 5.6 | 1 | | 07/17/17 13:56 | 100-41-4 | |
| Toluene | ND | ug/kg | 5.6 | 1 | | 07/17/17 13:56 | 108-88-3 | |
| TPH-GRO | **5.7** | mg/kg | 0.56 | 1 | | 07/17/17 13:56 | | |
| Xylene (Total) | **26.9** | ug/kg | 11.1 | 1 | | 07/17/17 13:56 | 1330-20-7 | |
| ***Surrogates*** | | | | | | | | |
| Toluene-d8 (S) | 99 | % | 77-120 | 1 | | 07/17/17 13:56 | 2037-26-5 | |
| 4-Bromofluorobenzene (S) | 103 | % | 81-119 | 1 | | 07/17/17 13:56 | 460-00-4 | |
| 1,2-Dichloroethane-d4 (S) | 107 | % | 79-126 | 1 | | 07/17/17 13:56 | 17060-07-0 | |
| **Percent Moisture** | Analytical Method: ASTM D2974 | | | | | | | |
| Percent Moisture | **11.3** | % | 0.50 | 1 | | 07/17/17 00:00 | | |

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## ANALYTICAL RESULTS

Project: 11124687 San Juan 27-5 #1
Pace Project No.: 60248746

**Sample: TSP-19** **Lab ID: 60248746005** Collected: 07/13/17 11:52 Received: 07/14/17 16:00 Matrix: Solid

***Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.***

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **8015B Diesel Range Organics** | Analytical Method: EPA 8015B Preparation Method: EPA 3546 | | | | | | | |
| TPH-DRO (C10-C28) | **1750** | mg/kg | 109 | 10 | 07/15/17 00:00 | 07/17/17 10:38 | | |
| TPH-ORO (C28-C35) | **111** | mg/kg | 109 | 10 | 07/15/17 00:00 | 07/17/17 10:38 | | |
| ***Surrogates*** | | | | | | | | |
| n-Tetracosane (S) | 0 | % | 65-119 | 10 | 07/15/17 00:00 | 07/17/17 10:38 | 646-31-1 | S4 |
| p-Terphenyl (S) | 0 | % | 41-131 | 10 | 07/15/17 00:00 | 07/17/17 10:38 | 92-94-4 | S4 |
| **8260 MSV GRO and Oxygenates** | Analytical Method: EPA 5035A/8260 | | | | | | | |
| Benzene | ND | ug/kg | 5.7 | 1 | | 07/17/17 14:12 | 71-43-2 | |
| Ethylbenzene | ND | ug/kg | 5.7 | 1 | | 07/17/17 14:12 | 100-41-4 | |
| Toluene | ND | ug/kg | 5.7 | 1 | | 07/17/17 14:12 | 108-88-3 | |
| TPH-GRO | **2.4** | mg/kg | 0.57 | 1 | | 07/17/17 14:12 | | |
| Xylene (Total) | ND | ug/kg | 11.3 | 1 | | 07/17/17 14:12 | 1330-20-7 | |
| ***Surrogates*** | | | | | | | | |
| Toluene-d8 (S) | 101 | % | 77-120 | 1 | | 07/17/17 14:12 | 2037-26-5 | |
| 4-Bromofluorobenzene (S) | 104 | % | 81-119 | 1 | | 07/17/17 14:12 | 460-00-4 | |
| 1,2-Dichloroethane-d4 (S) | 106 | % | 79-126 | 1 | | 07/17/17 14:12 | 17060-07-0 | |
| **Percent Moisture** | Analytical Method: ASTM D2974 | | | | | | | |
| Percent Moisture | **11.1** | % | 0.50 | 1 | | 07/17/17 00:00 | | |

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## ANALYTICAL RESULTS

Project: 11124687 San Juan 27-5 #1
Pace Project No.: 60248746

**Sample: TSP-20** **Lab ID: 60248746006** Collected: 07/13/17 11:47 Received: 07/14/17 16:00 Matrix: Solid

***Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.***

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **8015B Diesel Range Organics** | Analytical Method: EPA 8015B Preparation Method: EPA 3546 | | | | | | | |
| TPH-DRO (C10-C28) | **1430** | mg/kg | 112 | 10 | 07/15/17 00:00 | 07/17/17 10:47 | | |
| TPH-ORO (C28-C35) | ND | mg/kg | 112 | 10 | 07/15/17 00:00 | 07/17/17 10:47 | | |
| ***Surrogates*** | | | | | | | | |
| n-Tetracosane (S) | 0 | % | 65-119 | 10 | 07/15/17 00:00 | 07/17/17 10:47 | 646-31-1 | S4 |
| p-Terphenyl (S) | 0 | % | 41-131 | 10 | 07/15/17 00:00 | 07/17/17 10:47 | 92-94-4 | S4 |
| **8260 MSV GRO and Oxygenates** | Analytical Method: EPA 5035A/8260 | | | | | | | |
| Benzene | ND | ug/kg | 5.6 | 1 | | 07/17/17 14:28 | 71-43-2 | |
| Ethylbenzene | ND | ug/kg | 5.6 | 1 | | 07/17/17 14:28 | 100-41-4 | |
| Toluene | ND | ug/kg | 5.6 | 1 | | 07/17/17 14:28 | 108-88-3 | |
| TPH-GRO | **4.4** | mg/kg | 0.56 | 1 | | 07/17/17 14:28 | | |
| Xylene (Total) | ND | ug/kg | 11.2 | 1 | | 07/17/17 14:28 | 1330-20-7 | |
| ***Surrogates*** | | | | | | | | |
| Toluene-d8 (S) | 99 | % | 77-120 | 1 | | 07/17/17 14:28 | 2037-26-5 | |
| 4-Bromofluorobenzene (S) | 106 | % | 81-119 | 1 | | 07/17/17 14:28 | 460-00-4 | |
| 1,2-Dichloroethane-d4 (S) | 111 | % | 79-126 | 1 | | 07/17/17 14:28 | 17060-07-0 | |
| **Percent Moisture** | Analytical Method: ASTM D2974 | | | | | | | |
| Percent Moisture | **11.1** | % | 0.50 | 1 | | 07/17/17 00:00 | | |

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## ANALYTICAL RESULTS

Project: 11124687 San Juan 27-5 #1
Pace Project No.: 60248746

**Sample: TSP-21** **Lab ID: 60248746007** Collected: 07/13/17 11:39 Received: 07/14/17 16:00 Matrix: Solid

***Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.***

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **8015B Diesel Range Organics** | Analytical Method: EPA 8015B Preparation Method: EPA 3546 | | | | | | | |
| TPH-DRO (C10-C28) | **1160** | mg/kg | 108 | 10 | 07/15/17 00:00 | 07/17/17 11:16 | | |
| TPH-ORO (C28-C35) | ND | mg/kg | 108 | 10 | 07/15/17 00:00 | 07/17/17 11:16 | | |
| ***Surrogates*** | | | | | | | | |
| n-Tetracosane (S) | 0 | % | 65-119 | 10 | 07/15/17 00:00 | 07/17/17 11:16 | 646-31-1 | S4 |
| p-Terphenyl (S) | 0 | % | 41-131 | 10 | 07/15/17 00:00 | 07/17/17 11:16 | 92-94-4 | S4 |
| **8260 MSV GRO and Oxygenates** | Analytical Method: EPA 5035A/8260 | | | | | | | |
| Benzene | ND | ug/kg | 5.6 | 1 | | 07/17/17 14:44 | 71-43-2 | |
| Ethylbenzene | ND | ug/kg | 5.6 | 1 | | 07/17/17 14:44 | 100-41-4 | |
| Toluene | ND | ug/kg | 5.6 | 1 | | 07/17/17 14:44 | 108-88-3 | |
| TPH-GRO | **5.2** | mg/kg | 0.56 | 1 | | 07/17/17 14:44 | | |
| Xylene (Total) | **22.8** | ug/kg | 11.1 | 1 | | 07/17/17 14:44 | 1330-20-7 | |
| ***Surrogates*** | | | | | | | | |
| Toluene-d8 (S) | 100 | % | 77-120 | 1 | | 07/17/17 14:44 | 2037-26-5 | |
| 4-Bromofluorobenzene (S) | 105 | % | 81-119 | 1 | | 07/17/17 14:44 | 460-00-4 | |
| 1,2-Dichloroethane-d4 (S) | 107 | % | 79-126 | 1 | | 07/17/17 14:44 | 17060-07-0 | |
| **Percent Moisture** | Analytical Method: ASTM D2974 | | | | | | | |
| Percent Moisture | **11.4** | % | 0.50 | 1 | | 07/17/17 00:00 | | |

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: 11124687 San Juan 27-5 #1
Pace Project No.: 60248746

**Sample: TSP-22** **Lab ID: 60248746008** Collected: 07/13/17 11:31 Received: 07/14/17 16:00 Matrix: Solid

***Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.***

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **8015B Diesel Range Organics** | Analytical Method: EPA 8015B Preparation Method: EPA 3546 | | | | | | | |
| TPH-DRO (C10-C28) | **1070** | mg/kg | 111 | 10 | 07/15/17 00:00 | 07/17/17 11:25 | | |
| TPH-ORO (C28-C35) | **151** | mg/kg | 111 | 10 | 07/15/17 00:00 | 07/17/17 11:25 | | |
| ***Surrogates*** | | | | | | | | |
| n-Tetracosane (S) | 0 | % | 65-119 | 10 | 07/15/17 00:00 | 07/17/17 11:25 | 646-31-1 | S4 |
| p-Terphenyl (S) | 0 | % | 41-131 | 10 | 07/15/17 00:00 | 07/17/17 11:25 | 92-94-4 | S4 |
| **8260 MSV GRO and Oxygenates** | Analytical Method: EPA 5035A/8260 | | | | | | | |
| Benzene | ND | ug/kg | 5.6 | 1 | | 07/17/17 15:00 | 71-43-2 | |
| Ethylbenzene | ND | ug/kg | 5.6 | 1 | | 07/17/17 15:00 | 100-41-4 | |
| Toluene | ND | ug/kg | 5.6 | 1 | | 07/17/17 15:00 | 108-88-3 | |
| TPH-GRO | **2.8** | mg/kg | 0.56 | 1 | | 07/17/17 15:00 | | |
| Xylene (Total) | **16.5** | ug/kg | 11.2 | 1 | | 07/17/17 15:00 | 1330-20-7 | |
| ***Surrogates*** | | | | | | | | |
| Toluene-d8 (S) | 99 | % | 77-120 | 1 | | 07/17/17 15:00 | 2037-26-5 | |
| 4-Bromofluorobenzene (S) | 102 | % | 81-119 | 1 | | 07/17/17 15:00 | 460-00-4 | |
| 1,2-Dichloroethane-d4 (S) | 107 | % | 79-126 | 1 | | 07/17/17 15:00 | 17060-07-0 | |
| **Percent Moisture** | Analytical Method: ASTM D2974 | | | | | | | |
| Percent Moisture | **11.0** | % | 0.50 | 1 | | 07/17/17 00:00 | | |

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: 11124687 San Juan 27-5 #1
Pace Project No.: 60248746

**Sample: TSP-23** **Lab ID: 60248746009** Collected: 07/13/17 11:26 Received: 07/14/17 16:00 Matrix: Solid

***Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.***

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **8015B Diesel Range Organics** | Analytical Method: EPA 8015B Preparation Method: EPA 3546 | | | | | | | |
| TPH-DRO (C10-C28) | **1080** | mg/kg | 109 | 10 | 07/15/17 00:00 | 07/17/17 11:34 | | |
| TPH-ORO (C28-C35) | **115** | mg/kg | 109 | 10 | 07/15/17 00:00 | 07/17/17 11:34 | | |
| ***Surrogates*** | | | | | | | | |
| n-Tetracosane (S) | 0 | % | 65-119 | 10 | 07/15/17 00:00 | 07/17/17 11:34 | 646-31-1 | S4 |
| p-Terphenyl (S) | 0 | % | 41-131 | 10 | 07/15/17 00:00 | 07/17/17 11:34 | 92-94-4 | S4 |
| **8260 MSV GRO and Oxygenates** | Analytical Method: EPA 5035A/8260 | | | | | | | |
| Benzene | ND | ug/kg | 5.6 | 1 | | 07/17/17 15:16 | 71-43-2 | |
| Ethylbenzene | ND | ug/kg | 5.6 | 1 | | 07/17/17 15:16 | 100-41-4 | |
| Toluene | ND | ug/kg | 5.6 | 1 | | 07/17/17 15:16 | 108-88-3 | |
| TPH-GRO | **3.0** | mg/kg | 0.56 | 1 | | 07/17/17 15:16 | | |
| Xylene (Total) | **12.6** | ug/kg | 11.3 | 1 | | 07/17/17 15:16 | 1330-20-7 | |
| ***Surrogates*** | | | | | | | | |
| Toluene-d8 (S) | 99 | % | 77-120 | 1 | | 07/17/17 15:16 | 2037-26-5 | |
| 4-Bromofluorobenzene (S) | 101 | % | 81-119 | 1 | | 07/17/17 15:16 | 460-00-4 | |
| 1,2-Dichloroethane-d4 (S) | 108 | % | 79-126 | 1 | | 07/17/17 15:16 | 17060-07-0 | |
| **Percent Moisture** | Analytical Method: ASTM D2974 | | | | | | | |
| Percent Moisture | **11.4** | % | 0.50 | 1 | | 07/17/17 00:00 | | |

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL DATA

Project: 11124687 San Juan 27-5 #1
Pace Project No.: 60248746

QC Batch: 485705 Analysis Method: EPA 5035A/8260
QC Batch Method: EPA 5035A/8260 Analysis Description: 8260 MSV GRO and Oxygenates
Associated Lab Samples: 60248746001, 60248746002, 60248746003, 60248746004, 60248746005, 60248746006, 60248746007, 60248746008, 60248746009

METHOD BLANK: 1989394 Matrix: Solid
Associated Lab Samples: 60248746001, 60248746002, 60248746003, 60248746004, 60248746005, 60248746006, 60248746007, 60248746008, 60248746009

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| Benzene | ug/kg | ND | 5.0 | 07/17/17 12:20 | |
| Ethylbenzene | ug/kg | ND | 5.0 | 07/17/17 12:20 | |
| Toluene | ug/kg | ND | 5.0 | 07/17/17 12:20 | |
| TPH-GRO | mg/kg | ND | 0.50 | 07/17/17 12:20 | |
| Xylene (Total) | ug/kg | ND | 10.0 | 07/17/17 12:20 | |
| 1,2-Dichloroethane-d4 (S) | % | 103 | 79-126 | 07/17/17 12:20 | |
| 4-Bromofluorobenzene (S) | % | 102 | 81-119 | 07/17/17 12:20 | |
| Toluene-d8 (S) | % | 99 | 77-120 | 07/17/17 12:20 | |

LABORATORY CONTROL SAMPLE: 1989395

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| Benzene | ug/kg | 100 | 109 | 109 | 81-115 | |
| Ethylbenzene | ug/kg | 100 | 113 | 113 | 74-120 | |
| Toluene | ug/kg | 100 | 110 | 110 | 77-115 | |
| TPH-GRO | mg/kg | 4 | 4.2 | 104 | 72-142 | |
| Xylene (Total) | ug/kg | 300 | 329 | 110 | 74-120 | |
| 1,2-Dichloroethane-d4 (S) | % | | | 102 | 79-126 | |
| 4-Bromofluorobenzene (S) | % | | | 103 | 81-119 | |
| Toluene-d8 (S) | % | | | 99 | 77-120 | |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1989396 1989397

| Parameter | Units | 60248746001 Result | MS Spike Conc. | MSD Spike Conc. | MS Result | MSD Result | MS % Rec | MSD % Rec | % Rec Limits | RPD | Max RPD | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | ug/kg | ND | 112 | 115 | 76.3 | 77.0 | 68 | 67 | 34-137 | 1 | 28 | |
| Ethylbenzene | ug/kg | ND | 112 | 115 | 70.4 | 66.8 | 63 | 58 | 11-150 | 5 | 32 | |
| Toluene | ug/kg | ND | 112 | 115 | 74.4 | 72.1 | 66 | 63 | 20-142 | 3 | 39 | |
| Xylene (Total) | ug/kg | ND | 337 | 344 | 215 | 200 | 62 | 56 | 10-155 | 7 | 35 | |
| 1,2-Dichloroethane-d4 (S) | % | | | | | | 107 | 107 | 79-126 | | | |
| 4-Bromofluorobenzene (S) | % | | | | | | 106 | 105 | 81-119 | | | |
| Toluene-d8 (S) | % | | | | | | 103 | 99 | 77-120 | | | |

**Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.**

## REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

## QUALITY CONTROL DATA

Project: 11124687 San Juan 27-5 #1
Pace Project No.: 60248746

QC Batch: 485601 Analysis Method: EPA 8015B
QC Batch Method: EPA 3546 Analysis Description: EPA 8015B
Associated Lab Samples: 60248746001, 60248746002, 60248746003, 60248746004, 60248746005, 60248746006, 60248746007, 60248746008, 60248746009

METHOD BLANK: 1988796 Matrix: Solid
Associated Lab Samples: 60248746001, 60248746002, 60248746003, 60248746004, 60248746005, 60248746006, 60248746007, 60248746008, 60248746009

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| TPH-DRO (C10-C28) | mg/kg | ND | 9.8 | 07/16/17 00:49 | |
| TPH-ORO (C28-C35) | mg/kg | ND | 9.8 | 07/16/17 00:49 | |
| n-Tetracosane (S) | % | 102 | 65-119 | 07/16/17 00:49 | |
| p-Terphenyl (S) | % | 102 | 41-131 | 07/16/17 00:49 | |

LABORATORY CONTROL SAMPLE: 1988797

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| TPH-DRO (C10-C28) | mg/kg | 81.5 | 88.6 | 109 | 80-112 | |
| n-Tetracosane (S) | % | | | 105 | 65-119 | |
| p-Terphenyl (S) | % | | | 105 | 41-131 | |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1988798 1988799

| Parameter | Units | 60248746001 Result | MS Spike Conc. | MSD Spike Conc. | MS Result | MSD Result | MS % Rec | MSD % Rec | % Rec Limits | RPD | Max RPD | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TPH-DRO (C10-C28) | mg/kg | 1030 | 93 | 92.3 | 1190 | 1000 | 177 | -27 | 10-180 | 17 | 39 | M1 |
| n-Tetracosane (S) | % | | | | | | 0 | 0 | 65-119 | | 58 | S4 |
| p-Terphenyl (S) | % | | | | | | 0 | 0 | 41-131 | | 56 | S4 |

**Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.**

## REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

## QUALITY CONTROL DATA

Project: 11124687 San Juan 27-5 #1
Pace Project No.: 60248746

QC Batch: 485664 Analysis Method: ASTM D2974
QC Batch Method: ASTM D2974 Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 60248746001, 60248746002, 60248746003, 60248746004, 60248746005, 60248746006, 60248746007, 60248746008, 60248746009

METHOD BLANK: 1989349 Matrix: Solid
Associated Lab Samples: 60248746001, 60248746002, 60248746003, 60248746004, 60248746005, 60248746006, 60248746007, 60248746008, 60248746009

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| Percent Moisture | % | ND | 0.50 | 07/17/17 00:00 | |

SAMPLE DUPLICATE: 1989350

| Parameter | Units | 60248746001 Result | Dup Result | RPD | Max RPD | Qualifiers |
|---|---|---|---|---|---|---|
| Percent Moisture | % | 12.0 | 12.4 | 3 | 20 | |

**Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.**

## REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

# QUALIFIERS

Project: 11124687 San Juan 27-5 #1
Pace Project No.: 60248746

## DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

## LABORATORIES

| | |
|---|---|
| PASI-K | Pace Analytical Services - Kansas City |

## ANALYTE QUALIFIERS

| | |
|---|---|
| M1 | Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery. |
| S4 | Surrogate recovery not evaluated against control limits due to sample dilution. |

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

## QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 11124687 San Juan 27-5 #1
Pace Project No.: 60248746

| Lab ID | Sample ID | QC Batch Method | QC Batch | Analytical Method | Analytical Batch |
|---|---|---|---|---|---|
| 60248746001 | TSP-15 | EPA 3546 | 485601 | EPA 8015B | 485610 |
| 60248746002 | TSP-16 | EPA 3546 | 485601 | EPA 8015B | 485610 |
| 60248746003 | TSP-17 | EPA 3546 | 485601 | EPA 8015B | 485610 |
| 60248746004 | TSP-18 | EPA 3546 | 485601 | EPA 8015B | 485610 |
| 60248746005 | TSP-19 | EPA 3546 | 485601 | EPA 8015B | 485610 |
| 60248746006 | TSP-20 | EPA 3546 | 485601 | EPA 8015B | 485610 |
| 60248746007 | TSP-21 | EPA 3546 | 485601 | EPA 8015B | 485610 |
| 60248746008 | TSP-22 | EPA 3546 | 485601 | EPA 8015B | 485610 |
| 60248746009 | TSP-23 | EPA 3546 | 485601 | EPA 8015B | 485610 |
| 60248746001 | TSP-15 | EPA 5035A/8260 | 485705 | | |
| 60248746002 | TSP-16 | EPA 5035A/8260 | 485705 | | |
| 60248746003 | TSP-17 | EPA 5035A/8260 | 485705 | | |
| 60248746004 | TSP-18 | EPA 5035A/8260 | 485705 | | |
| 60248746005 | TSP-19 | EPA 5035A/8260 | 485705 | | |
| 60248746006 | TSP-20 | EPA 5035A/8260 | 485705 | | |
| 60248746007 | TSP-21 | EPA 5035A/8260 | 485705 | | |
| 60248746008 | TSP-22 | EPA 5035A/8260 | 485705 | | |
| 60248746009 | TSP-23 | EPA 5035A/8260 | 485705 | | |
| 60248746001 | TSP-15 | ASTM D2974 | 485664 | | |
| 60248746002 | TSP-16 | ASTM D2974 | 485664 | | |
| 60248746003 | TSP-17 | ASTM D2974 | 485664 | | |
| 60248746004 | TSP-18 | ASTM D2974 | 485664 | | |
| 60248746005 | TSP-19 | ASTM D2974 | 485664 | | |
| 60248746006 | TSP-20 | ASTM D2974 | 485664 | | |
| 60248746007 | TSP-21 | ASTM D2974 | 485664 | | |
| 60248746008 | TSP-22 | ASTM D2974 | 485664 | | |
| 60248746009 | TSP-23 | ASTM D2974 | 485664 | | |

Pace Analytical
www.pacelabs.com

**Sample Condition Upon Receipt**

**WO# : 60248746**

60248746

Client Name: GHD

**Courier:** FedEx ☒ UPS ☐ VIA ☐ Clay ☐ PEX ☐ ECI ☐ Pace ☐ Xroads ☐ Client ☐ Other ☐

**Tracking #:** 8105 8105 0015 Pace Shipping Label Used? Yes ☐ No ☐

**Custody Seal on Cooler/Box Present:** Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

**Packing Material:** Bubble Wrap ☐ Bubble Bags ☒ Foam ☐ None ☐ Other ☐

**Thermometer Used:** CF +2.9 T-266 / CF +0.2 T-239 **Type of Ice:** Wet Blue None

**Cooler Temperature (°C):** **As-read** 3.2 **Corr. Factor** CF +2.9 CF +0.2 **Corrected** 3.4

**Date and initials of person examining contents:** JB 7/14/17

Temperature should be above freezing to 6°C

| | | |
|---|---|---|
| Chain of Custody present: | ☒Yes ☐No ☐N/A | |
| Chain of Custody relinquished: | ☒Yes ☐No ☐N/A | |
| Samples arrived within holding time: | ☒Yes ☐No ☐N/A | |
| **Short Hold Time analyses (<72hr):** | ☐Yes ☒No ☐N/A | |
| **Rush Turn Around Time requested:** | ☒Yes ☐No ☐N/A | RUSH - Same Day |
| Sufficient volume: | ☒Yes ☐No ☐N/A | |
| Correct containers used: | ☒Yes ☐No ☐N/A | |
| Pace containers used: | ☒Yes ☐No ☐N/A | |
| Containers intact: | ☒Yes ☐No ☐N/A | |
| Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs? | ☐Yes ☐No ☒N/A | |
| Filtered volume received for dissolved tests? | ☐Yes ☐No ☒N/A | |
| Sample labels match COC: Date / time / ID / analyses | ☒Yes ☐No ☐N/A | |
| Samples contain multiple phases? Matrix: SL | ☐Yes ☒No ☐N/A | |
| Containers requiring pH preservation in compliance? (HNO3, H2SO4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) | ☐Yes ☐No ☒N/A | |
| Cyanide water sample checks: ☒N/A<br>Lead acetate strip turns dark? (Record only)<br>Potassium iodide test strip turns blue/purple? (Preserve) | ☐Yes ☐No<br>☐Yes ☐No | |
| Trip Blank present: | ☐Yes ☐No ☒N/A | |
| Headspace in VOA vials ( >6mm): | ☐Yes ☐No ☒N/A | |
| Samples from USDA Regulated Area: State: N/M | ☐Yes ☒No ☐N/A | |
| Additional labels attached to 5035A / TX1005 vials in the field? | ☐Yes ☐No ☒N/A | |

**Client Notification/ Resolution:** Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: Alice Date: 7/14/17

# CHAIN OF CUSTODY RECORD

COC NO.: 55542

Address: 6121 Indian School Rd NE #200 Albuquerque NM 87110 PAGE 1 OF 1
Phone: 505-884-0672 Jeff.walker@ghd.com Fax:



| | | | |
|---|---|---|---|
| Project No/ Phase/Task Code: 11124657 | Laboratory Name: Pace | Lab Location: | SSOW ID: |
| Project Name: San Juan 27-5 #1 | Lab Contact: Alice Spiller 6024876 | | Cooler No: |
| Project Location: | | | Carrier: |
| GHD Chemistry Contact: | | | Airbill No: |
| Sampler(s): C. Neligh | | | Total # of Containers: 18 4oz jar |

| Item | Sample Identification (Containers for each sample may be combined on one line) | Date (mm/dd/yy) | Time (hh:mm) | Matrix Code (see back of COC) | Grab (G) or Comp (C) | Filtered (Y/N) | BTEX/ERO + 8260 | DRO/MRO + 8015B | Total Containers/sample | MS/MSD Request | Comments/ Special Instructions: |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | PRESERVATION - (SEE BACK OF COC FOR ABBREVIATIONS) | | | | | | | | | | |
| 1 | TSP-15 | 7-13-17 | ~~1156~~ | SO | C | N | X | X | 2 | | (2) WGFU 001 |
| 2 | TSP-16 | | 1216 | SO | | | X | X | | | 002 |
| 3 | TSP-17 | | 1209 | | | | X | X | | | 003 |
| 4 | TSP-18 | | 1202 | | | | X | X | | | 004 |
| 5 | TSP-19 | | 1152 | | | | X | X | | | 005 |
| 6 | ~~TSP-20~~ | | 1147 | | | | X | X | | | 006 |
| 7 | TSP-21 | | 1139 | | | | X | X | | | 007 |
| 8 | TSP-22 | | 1131 | | | | X | X | | | 008 |
| 9 | TSP-23 | | 1126 | | | | X | X | | | 009 |
| 10 | | | | | | | | | | | |
| 11 | | | | | | | | | | | |
| 12 | | | | | | | | | | | |

TAT Required in business days (use separate COCs for different TATs):
☐ 1 Day ☐ 2 Days ☐ 3 Days ☐ 1 Week ☐ 2 Week ☒ Other: Same Day

Notes/ Special Requirements:
Rush! ASAP! Jeff.walker@ghd.com 505 884 0672

| Relinquished By | Company | Date | Time | Received By | Company | Date | Time |
|---|---|---|---|---|---|---|---|
| 1. Charles Neligh | GHD | 7-13-17 | 1530 | 1. | | 7/14/17 | 1600 |
| 2. | | | | 2. | | | |
| 3. | | | | 3. | | | |

THE CHAIN OF CUSTODY IS A LEGAL DOCUMENT – ALL FIELDS MUST BE COMPLETED ACCURATELY

Distribution: WHITE – Fully Executed Copy (CRA) . YELLOW – Receiving Laboratory Copy PINK – Shipper GOLDENROD – Sampling Crew

GHD Form: COC-10B (20110804)

# Attachment 2
# NMOCD email variance requests and approvals

**From:** Smith, Cory, EMNRD
**To:** Frost, Gwendolynne; Thomas, Leigh
**Cc:** Walker, Jeffrey; dustin d mace; Neligh, Charles; Powell, Brandon, EMNRD; Fields, Vanessa, EMNRD
**Subject:** RE: [EXTERNAL] RE: San Juan 27-5 Unit 1
**Date:** Wednesday, July 12, 2017 11:33:39 AM

---

Gwen,

OCD approves COPC request for alternative closure for the base of the excavation as COPC has delineated the remaining portion of the release.

OCD Approval for alternative closure standards does not relieve COPC of any requirements imposed by other regulatory agencies.

Thanks,

Cory Smith
Environmental Specialist
Oil Conservation Division
Energy, Minerals, & Natural Resources
1000 Rio Brazos, Aztec, NM 87410
(505)334-6178 ext 115
cory.smith@state.nm.us

---

**From:** Frost, Gwendolynne [mailto:Gwendolynne.Frost@conocophillips.com]
**Sent:** Tuesday, July 11, 2017 10:21 AM
**To:** Smith, Cory, EMNRD <Cory.Smith@state.nm.us>; Thomas, Leigh <l1thomas@blm.gov>
**Cc:** Walker, Jeffrey (Jeff.Walker@ghd.com) <Jeff.Walker@ghd.com>; dustin d mace <dustin@unlimitedconstructionus.com>; Charles.Neligh@ghd.com; Powell, Brandon, EMNRD <Brandon.Powell@state.nm.us>; Fields, Vanessa, EMNRD <Vanessa.Fields@state.nm.us>
**Subject:** RE: [EXTERNAL] RE: San Juan 27-5 Unit 1

Cory & Whitney
In follow up to the path forward noted below, ConocoPhillips would like to request risk based closure for the Floor of the excavation at the SJ 27-5 #1 (API# 30-039-07154) based on details below, the additional excavation that occurred, and the attached analytical results (attached).

ConocoPhillips considers the walls of the excavation to be closed, as the walls have been granted Risk Based closure by NMOCD (granted July 6, 2017 below), or are below the NMOCD Recommended Remediation Action Levels (RRALs) for the site, based on analytical results. Additional excavation occurred on the North Wall (West) to further remove impacted soil, as confirmation sampling indicates analytical results below 100 mg/kg Total TPH, and below Total BTEX & Benzene levels (attached).

Therefore, due to the walls being closed, ConocoPhillips requests that the floor of the excavation be

granted Risk Based Closure. The shallow impacted soil has been removed and although the Total TPH (1, 310 mg/kg – DRO 920 mg/kg & GRO 390 mg/kg) are above RRALs for the site, the Benzene level is below detection limit (<0.092 mg/kg), and the total BTEX level (11.1 mg/kg) indicate that the soils left in place are no longer a threat to human health and the environment, and the maximum extent of walls of the excavation has been reached.

ConocoPhillips & GHD will work with Unlimited Construction to attain treated soil standards acceptable to NMOCD and BLM; as COP will then request approval to backfill with treated soil. COP will continue to provide notification of further confirmation sampling of the treated soil piles (TSPs).

*Thank you,*
*Gwen Frost*
**Environmental Coordinator**
**San Juan Asset – RBU**
**T: 505.326.9549 | M: 505.215.3121**



---

**From:** Smith, Cory, EMNRD [mailto:Cory.Smith@state.nm.us]
**Sent:** Thursday, July 06, 2017 10:47 AM
**To:** Frost, Gwendolynne <Gwendolynne.Frost@conocophillips.com>; Thomas, Leigh <l1thomas@blm.gov>
**Cc:** Walker, Jeffrey (Jeff.Walker@ghd.com) <Jeff.Walker@ghd.com>; dustin d mace <dustin@unlimitedconstructionus.com>; Charles.Neligh@ghd.com; Powell, Brandon, EMNRD <Brandon.Powell@state.nm.us>; Fields, Vanessa, EMNRD <Vanessa.Fields@state.nm.us>
**Subject:** [EXTERNAL] RE: San Juan 27-5 Unit 1

Gwen,

OCD approves COPC request for a risk based closure due to existing infrastructure blocking further remediation by excavation on the South West Wall, and the East Wall. The OCD also approves COPC proposed path forward for additional excavation and sampling.

Please keep us informed of COPC decision on the TSP and sampling schedule.

OCD Approval does not relieve COPC of any requirements imposed by other regulatory agencies.

Cory Smith
Environmental Specialist
Oil Conservation Division
Energy, Minerals, & Natural Resources
1000 Rio Brazos, Aztec, NM 87410
(505)334-6178 ext 115

cory.smith@state.nm.us

**From:** Frost, Gwendolynne [mailto:Gwendolynne.Frost@conocophillips.com]
**Sent:** Wednesday, July 5, 2017 9:20 AM
**To:** Smith, Cory, EMNRD <Cory.Smith@state.nm.us>; Thomas, Leigh <l1thomas@blm.gov>
**Cc:** Walker, Jeffrey (Jeff.Walker@ghd.com) <Jeff.Walker@ghd.com>; dustin d mace <dustin@unlimitedconstructionus.com>; Charles.Neligh@ghd.com
**Subject:** San Juan 27-5 Unit 1

Cory & Whitney
ConocoPhillips (COP) would like to request closure on the following walls of the excavation at the SJ 27-5 #1 (API# 30-039-07154) based on the analytical results & table attached. The excavation is approximately 50'x40'x10 feet deep.

West Wall – analytical results are below the Recommended Remediation Action Levels (RRALs) for the site; below 100 mg/kg Total TPH, and below Total BTEX & Benzene levels, as noted on Table 1 (attached).

South Wall (West) - Total TPH (654 mg/kg) are above RRALs for the site, although the Benzene level is below detection limit (<0.089 mg/kg), and the total BTEX level (1.549 mg/kg) indicate that the soils left in place are no longer a threat to human health and the environment, and the maximum extent of the wall has been reached with the meter run in place.

South Wall (East) - analytical results are below RRALs for the site, below the 100 mg/kg Total TPH, and below Total BTEX & Benzene levels, as noted on Table 1 (attached).

East Wall - Total TPH (273 ppm) are above the RRALs for the site, although the Benzene level is below detection limit (<0.093 mg/kg), and the total BTEX level (1.033 mg/kg) indicate that the soils left in place are no longer a threat to human health and the environment, and the maximum extent of the wall has been reached with the production tank & BGT in place.

North Wall (East) - analytical results are below the RRALs for the site, below the 100 mg/kg Total TPH, and below Total BTEX & Benzene levels, as indicated on Table 1 (attached).

**Path forward:**
North Wall (West) – additional excavation will be completed after consultation with Unlimited Construction to ensure OSHA standards of excavation are met.

Floor – additional excavation of an estimated 5 feet will be completed with additional confirmation sampling.

TSP-1 through TSP-5 will be reviewed by Unlimited Construction with GHD & COP for a path forward.

Please let me know of your approval or recommendations.

*Thank you,*
*Gwen Frost*
Environmental Coordinator
San Juan Asset – RBU
T: 505.326.9549 | M: 505.215.3121


please consider the environment before printing this email.

**From:** Smith, Cory, EMNRD
**To:** Walker, Jeffrey; Thomas, Leigh
**Cc:** Frost, Gwendolynne
**Subject:** RE: San Juan 27-5 #1
**Date:** Wednesday, July 26, 2017 7:56:43 AM

---

Good morning Jeff,

At soil shredding sites you do not have to get individual approval for piles that have passed to backfill.

So your request is approved for passing piles.

Thanks.

Cory Smith
Environmental Specialist
Oil Conservation Division
Energy, Minerals, & Natural Resources
1000 Rio Brazos, Aztec, NM 87410
(505)334-6178 ext 115
cory.smith@state.nm.us

---

**From:** Walker, Jeffrey [mailto:Jeff.Walker@ghd.com]
**Sent:** Wednesday, July 26, 2017 7:50 AM
**To:** Smith, Cory, EMNRD <Cory.Smith@state.nm.us>; Thomas, Leigh <l1thomas@blm.gov>
**Cc:** Frost, Gwendolynne <Gwendolynne.Frost@conocophillips.com>
**Subject:** Fw: San Juan 27-5 #1

Please see latest rush results attached. Note five 100cy stockpiles have passed 100ppm threshold. Please provide approval to begin backfill of excavation with these clean soils.
Thank you.
Sent from my Verizon 4G LTE Smartphone

------ Original message------
**From:** John Caldwell
**Date:** Tue, Jul 25, 2017 2:35 PM
**To:** Walker, Jeffrey;
**Cc:** Neligh, Charles;
**Subject:**San Juan 27-5 #1

Hi Jeff,

Attached is the rush data for San Juan 27-5 #1. Have a good day.

John

This e-mail has been scanned for viruses

**From:** Smith, Cory, EMNRD
**To:** Frost, Gwendolynne; Thomas, Leigh
**Cc:** Jeffrey Walker; Charles Neligh; dustin@unlimitedconstructionus.com; Matt Henderson; ccardoza@hilcorp.com
**Subject:** RE: San Juan 27-5 #1 TSP"s variance request for use as backfill material
**Date:** Tuesday, August 01, 2017 7:37:54 AM

---

Gwen,

OCD Approves COPC variance request. Please mix/aerating piles 40-41 first with the passing piles and use them as backfill in the deeper portions of the excavation. Please also include this approval in your final report.

Thank you,

Cory Smith
Environmental Specialist
Oil Conservation Division
Energy, Minerals, & Natural Resources
1000 Rio Brazos, Aztec, NM 87410
(505)334-6178 ext 115
cory.smith@state.nm.us

---

**From:** Frost, Gwendolynne [mailto:Gwendolynne.Frost@conocophillips.com]
**Sent:** Monday, July 31, 2017 4:08 PM
**To:** Smith, Cory, EMNRD <Cory.Smith@state.nm.us>; Thomas, Leigh <l1thomas@blm.gov>
**Cc:** Walker, Jeffrey (Jeff.Walker@ghd.com) <Jeff.Walker@ghd.com>; Neligh, Charles <Charles.Neligh@ghd.com>; dustin@unlimitedconstructionus.com; Matt Henderson <mhenderson@hilcorp.com>; ccardoza@hilcorp.com
**Subject:** RE: San Juan 27-5 #1 TSP's variance request for use as backfill material

Cory
Good afternoon, in follow up to recent variance request below and in addition to the analytical results attached, ConocoPhillips would like to request a variance for the following TSP piles to be utilized as backfilled based on reasoning below and the analytical results attached.

All treated TSP piles have been remediated to a constituent level that are no longer a threat to human health and the environment.

**TSP-28RR** – below RRALs for the site, Total TPH 22.4 mg/kg
**TSP-30RR** – below RRALs for the site, Total TPH 81 mg/kg

**TSP-33** – although the Total TPH 109 mg/kg (88 mg/kg DRO & 21 mg/kg GRO) is above RRALs for the site, the Benzene level is below detection limit (<0.016 mg/kg), and the total BTEX level (0.14 mg/kg)

indicate that this TSP pile if utilized as backfill will not be a threat to human health & the environment.

**TSP-34** – although the Total TPH 106 mg/kg (77 mg/kg DRO & 29 mg/kg GRO) is above RRALs for the site, the Benzene level is below detection limit (<0.017 mg/kg), and the total BTEX level (0.153 mg/kg) indicate that this TSP pile if utilized as backfill will not be a threat to human health & the environment.

**TSP-35** – although the Total TPH 115 mg/kg (100 mg/kg DRO & 15 mg/kg GRO) is above RRALs for the site, the Benzene level is below detection limit (<0.016 mg/kg), and the total BTEX level (0.148 mg/kg) indicate that this TSP pile if utilized as backfill will not be a threat to human health & the environment.

**TSP-36, TSP-37, and TSP-38** are below RRALs for the site

**TSP-39** – although the Total TPH 105 mg/kg (98 mg/kg DRO & 6.8 mg/kg GRO) is above RRALs for the site, the Benzene level is below detection limit (<0.017 mg/kg), and the total BTEX level (0.149 mg/kg) indicate that this TSP pile if utilized as backfill will not be a threat to human health & the environment.

Also, based on the recent reduced analytical results of TSP-28RR & TSP-30RR, ConocoPhillips believes that the additional hold time and aerating/turning of **TSP-40 & TSP-41** would sufficiently degrade/reduce the hydrocarbon concentrations of TSP-40 & TSP-41 to meet the RRALs of the site and requests that TSP-40 & TSP-41 be mixed in with the lower concentration TSP piles and granted a variance for use as backfill at the site.

Hence, based on the analytical results attached and variances requested above that the site be approved for all remediated soil to be utilized as backfill.

Thank you,
Gwen Frost

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**From:** Frost, Gwendolynne
**Sent:** Thursday, July 27, 2017 8:46 AM
**To:** 'Smith, Cory, EMNRD' <Cory.Smith@state.nm.us>; 'Thomas, Leigh' <l1thomas@blm.gov>
**Cc:** Walker, Jeffrey (Jeff.Walker@ghd.com) <Jeff.Walker@ghd.com>; 'Neligh, Charles' <Charles.Neligh@ghd.com>; 'dustin@unlimitedconstructionus.com' <dustin@unlimitedconstructionus.com>; Bockisch, Bernie (Bernard.Bockisch@ghd.com) <Bernard.Bockisch@ghd.com>
**Subject:** San Juan 27-5 #1 TSP's variance request for use as backfill material

Cory
Good morning, ConocoPhillips would like to request a variance for the following TSP piles to be utilized as backfilled based on reasoning below and the analytical results attached.

ConocoPhillips requests that the following TSP piles be granted a variance to utilize as backfill in the closed excavation. The treated TSP piles have been remediated to a constituent level that are no longer a threat to human health and the environment.

**TSP-28R** – although the Total TPH 138.4 mg/kg (130 mg/kg DRO & 8.4 mg/kg GRO) is above RRALs for the site, the Benzene level is below detection limit (<0.016 mg/kg), and the total BTEX level (0.148 mg/kg) indicate that this TSP pile if utilized as backfill will not be a threat to human health & the environment.

**TSP-29** – although the Total TPH 121 mg/kg (110 mg/kg DRO & 11 mg/kg GRO) is above RRALs for the site, the Benzene level is below detection limit (<0.015 mg/kg), and the total BTEX level (0.136 mg/kg) indicate that this TSP pile if utilized as backfill will not be a threat to human health & the environment.

**TSP-30** – although the Total TPH 162 mg/kg (120 mg/kg DRO & 42 mg/kg GRO) is above RRALs for the site, the Benzene level is below detection limit (<0.017 mg/kg), and the total BTEX level (0.153 mg/kg) indicate that this TSP pile if utilized as backfill will not be a threat to human health & the environment. Please also know that this TSP pile will be turned to further remediate prior to use as backfill.

**TSP-32 -** although the Total TPH 118 mg/kg (100 mg/kg DRO & 18 mg/kg GRO) is above RRALs for the site, the Benzene level is below detection limit (<0.017 mg/kg), and the total BTEX level (0.150 mg/kg) indicate that this TSP pile if utilized as backfill will not be a threat to human health & the environment.

Please know that I am moving offices today in Farmington and can be reached on my cell at **505-215-3121** if needed.

*Thank you,*
*Gwen Frost*
**Environmental Coordinator**
**San Juan Asset – RBU**
**T: 505.326.9549 | M: 505.215.3121**

**From:** Smith, Cory, EMNRD
**To:** Frost, Gwendolynne; Thomas, Leigh
**Cc:** Walker, Jeffrey; dustin d mace; Neligh, Charles; Powell, Brandon, EMNRD; Fields, Vanessa, EMNRD
**Subject:** RE: San Juan 27-5 Unit 1
**Date:** Thursday, July 06, 2017 10:47:36 AM

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Gwen,

OCD approves COPC request for a risk based closure due to existing infrastructure blocking further remediation by excavation on the South West Wall, and the East Wall. The OCD also approves COPC proposed path forward for additional excavation and sampling.

Please keep us informed of COPC decision on the TSP and sampling schedule.

OCD Approval does not relieve COPC of any requirements imposed by other regulatory agencies.

Cory Smith
Environmental Specialist
Oil Conservation Division
Energy, Minerals, & Natural Resources
1000 Rio Brazos, Aztec, NM 87410
(505)334-6178 ext 115
cory.smith@state.nm.us

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**From:** Frost, Gwendolynne [mailto:Gwendolynne.Frost@conocophillips.com]
**Sent:** Wednesday, July 5, 2017 9:20 AM
**To:** Smith, Cory, EMNRD <Cory.Smith@state.nm.us>; Thomas, Leigh <l1thomas@blm.gov>
**Cc:** Walker, Jeffrey (Jeff.Walker@ghd.com) <Jeff.Walker@ghd.com>; dustin d mace <dustin@unlimitedconstructionus.com>; Charles.Neligh@ghd.com
**Subject:** San Juan 27-5 Unit 1

Cory & Whitney
ConocoPhillips (COP) would like to request closure on the following walls of the excavation at the SJ 27-5 #1 (API# 30-039-07154) based on the analytical results & table attached. The excavation is approximately 50'x40'x10 feet deep.

West Wall – analytical results are below the Recommended Remediation Action Levels (RRALs) for the site; below 100 mg/kg Total TPH, and below Total BTEX & Benzene levels, as noted on Table 1 (attached).

South Wall (West) - Total TPH (654 mg/kg) are above RRALs for the site, although the Benzene level is below detection limit (<0.089 mg/kg), and the total BTEX level (1.549 mg/kg) indicate that the soils left in place are no longer a threat to human health and the environment, and the maximum extent of the wall has been reached with the meter run in place.

South Wall (East) - analytical results are below RRALs for the site, below the 100 mg/kg Total TPH, and below Total BTEX & Benzene levels, as noted on Table 1 (attached).

East Wall - Total TPH (273 ppm) are above the RRALs for the site, although the Benzene level is below detection limit (<0.093 mg/kg), and the total BTEX level (1.033 mg/kg) indicate that the soils left in place are no longer a threat to human health and the environment, and the maximum extent of the wall has been reached with the production tank & BGT in place.

North Wall (East) - analytical results are below the RRALs for the site, below the 100 mg/kg Total TPH, and below Total BTEX & Benzene levels, as indicated on Table 1 (attached).

**Path forward:**

North Wall (West) – additional excavation will be completed after consultation with Unlimited Construction to ensure OSHA standards of excavation are met.

Floor – additional excavation of an estimated 5 feet will be completed with additional confirmation sampling.

TSP-1 through TSP-5 will be reviewed by Unlimited Construction with GHD & COP for a path forward.

Please let me know of your approval or recommendations.

*Thank you,*

*Gwen Frost*
Environmental Coordinator
San Juan Asset – RBU
T: 505.326.9549 | M: 505.215.3121