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

State of New Mexico
Energy Minerals and Natural Resources Department

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

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

Incident ID	
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party Hilcorp Energy	OGRID 372171
Contact Name Clara Cardoza	Contact Telephone 505.564.0733
Contact email ccardoza@hilcorp.com	Incident # *(assigned by OCD)*NCS1910830387
Contact mailing address 382 CR 3100, Aztec NM 87410	

Location of Release Source

Latitude 36.7527313 Longitude -107.6158371
(NAD 83 in decimal degrees to 5 decimal places)

Site Name San Juan 29-7 583	Site Type Gas Well
Date Release Discovered 4/17/2019	API# *(if applicable)* 30-039-25260

Unit Letter	Section	Township	Range	County
K	06	29N	07W	Rio Arriba

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

Nature and Volume of Release

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

☒ Crude Oil	Volume Released (bbls) 30	Volume Recovered (bbls) 0
☐ Produced Water	Volume Released (bbls)	Volume Recovered (bbls) 0
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release
Release due to corrosion at the bottom of the tank.

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? ☒ Yes ☐ No	If YES, for what reason(s) does the responsible party consider this a major release? An unauthorized release of a volume, excluding gases, of 25 barrels or more
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? 4/18/19 to Cory Smith at 8:22 a.m. and 4/18/2019 to Emmanuel Adeloye at 8:19 a.m. by Clara Cardoza via phone to both. Email follow-up to Cory Smith, Emmanuel Adeloye and Jim Griswold 4/18/19 @ 8:58 a.m.	

Initial Response

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

☒ The source of the release has been stopped.

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

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

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

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

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

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

Printed Name: Clara Cardoza Title: Environmental Specialist

Signature: Clara Cardoza Date: 5/6/2019

email: ccardoza@hilcorp.com Telephone: 505.564.0733

OCD Only

Received by: _____ Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

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

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

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

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

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

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

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

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

Printed Name: Clara Cardoza Title: Environmental Specialist

Signature: Clara D. Cardoza Date: 7/26/2019

email: ccardoza@hilcorp.com Telephone: 505.564.0733

OCD Only

Received by: _____ Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

Closure Report Attachment Checklist: ***Each of the following items must be included in the closure report.***

☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC

☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)

☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)

☒ Description of remediation activities

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Clara Cardoza Title: Environmental Specialist

Signature: Clara Cardoza Date: 5/6/2019

email: ccardoza@hilcorp.com Telephone: 505.564.0733

OCD Only

Received by: OCD Date: 7/26/19

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: Cory Date: 8/5/19

Printed Name: Cory Title: Environmental Specalist

Clara Cardoza

From: Smith, Cory, EMNRD <Cory.Smith@state.nm.us>
Sent: Thursday, April 18, 2019 9:22 AM
To: Clara Cardoza; Abiodun Adeloye; Griswold, Jim, EMNRD
Cc: whitney thomas (l1thomas@blm.gov)
Subject: [EXTERNAL] RE: Notification Follow-up SJ 29-7 583

Clara,

Thank you for the notification as mentioned on the phone below is the incident #

NCS1910830387 SAN JUAN 29 7 UNIT #583 @ 30-039-25260

General Incident Information

Site Name:	SAN JUAN 29 7 UNIT #583
Well:	[30-039-25260] SAN JUAN 29 7 UNIT #583
Facility:	
Operator:	[372171] HILCORP ENERGY COMPANY
Status:	Closure Not Approved
Type:	Oil Release
District:	Aztec
Incident Location:	K-06-29N-07W Lot: 0 FNL 0 FEL
Lat/Long:	36.75267,-107.61525 NAD83

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: Clara Cardoza <ccardoza@hilcorp.com>
Sent: Thursday, April 18, 2019 8:58 AM
To: Smith, Cory, EMNRD <Cory.Smith@state.nm.us>; Abiodun Adeloye <aadeloye@blm.gov>; Griswold, Jim, EMNRD <Jim.Griswold@state.nm.us>
Cc: whitney thomas (l1thomas@blm.gov) <l1thomas@blm.gov>
Subject: [EXT] Notification Follow-up SJ 29-7 583

Please let this serve as a follow-up notification to the 30 bbl oil release Hilcorp Energy had at the San Juan 29-7 583 API 30-039-25260. The release was discovered yesterday 4/17 at 11:55 a.m. The release was due to corrosion at the bottom of the tank. All oil remain on site most of it in the earthen berm, some traveled to the BGT cribbing. Site location: Lat 36.75267, Long -107.61525 Section 6, Township 29N, Range 7W in Rio Arriba county. All standing liquid was removed along with 51 bbls of oil that remained in the tank.

Let me know if you have any questions.

Thank you,

Clara M Cardoza
Environmental Specialist
505-564-0733 (O)
505-793-2784 (C)

Clara Cardoza

From:	Clara Cardoza
Sent:	Tuesday, April 23, 2019 12:27 PM
To:	cory.smith@state.nm.us; Abiodun Adeloye
Cc:	whitney thomas (l1thomas@blm.gov)
Subject:	NCS1910830387 Confirmation Sampling SJ 29-7 583

Please let this serve as notification for confirmation sampling at the Hilcorp Energy San Juan 29-7 583 for Thursday April 25th at 1:30 p.m. Please let me know if you have any questions or concerns.

Thank you,

Clara M Cardoza
Environmental Specialist
505-564-0733 (O)
505-793-2784 (C)

Clara Cardoza

From: Clara Cardoza
Sent: Monday, May 6, 2019 8:15 AM
To: 'Adeloye, Abiodun'
Cc: Smith, Cory, EMNRD; whitney thomas (l1thomas@blm.gov)
Subject: RE: [EXT] Re: [EXTERNAL] NCS1910830387 Confirmation Sampling SJ 29-7 583

Emmanuel/Cory, Can we push the SJ 29-7 583 to Wednesday morning at 9 a.m.?

Leave the Huerfano for tomorrow morning at 8:30 a.m.

Thank you,
Clara

From: Adeloye, Abiodun [mailto:aadeloye@blm.gov]
Sent: Friday, May 3, 2019 1:47 PM
To: Clara Cardoza <ccardoza@hilcorp.com>
Cc: Smith, Cory, EMNRD <cory.smith@state.nm.us>; whitney thomas (l1thomas@blm.gov) <l1thomas@blm.gov>; Nation EPA Navajo (NNEPA) (nnepawq@frontiernet.net) <nnepawq@frontiernet.net>
Subject: Re: [EXT] Re: [EXTERNAL] NCS1910830387 Confirmation Sampling SJ 29-7 583

The time will work for me.
Thank you.

On Fri, May 3, 2019 at 12:01 PM Clara Cardoza <ccardoza@hilcorp.com> wrote:

> At the Huerfano of the 3 samples only the south wall passed. At the 583 the base failed (2 samples), north wall of west half and east wall of east half.
>
> Get Outlook for iOS<https://aka.ms/o0ukef>
>
> On Fri, May 3, 2019 at 11:44 AM -0600, "Smith, Cory, EMNRD" <Cory.Smith@state.nm.us<mailto:Cory.Smith@state.nm.us>> wrote:
>
> Clara,
>
> Which ones failed?
>
> 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

-----Original Message-----
From: Clara Cardoza
Sent: Friday, May 3, 2019 10:38 AM
To: Adeloye, Abiodun
Cc: Smith, Cory, EMNRD ; whitney thomas (l1thomas@blm.gov) ; Nation EPA Navajo (NNEPA) (nnepawq@frontiernet.net)
Subject: Re: [EXT] Re: [EXTERNAL] NCS1910830387 Confirmation Sampling SJ 29-7 583

Good morning. Not all of our samples came back clean so we had to do more work on both the Huerfano 142 and SJ 29-7 583. Can we do confirmation samples on Tuesday morning May 7th like we did last time?? Start at Huerfano at 830 and then go to the 583. Let me know if this will work.

Thank you,
Clara

Get Outlook for iOS

On Wed, Apr 24, 2019 at 10:46 AM -0600, "Adeloye, Abiodun" > wrote:

Thank you Clara. This will work out well for me.
I really appreciate your flexibility.

On Wed, Apr 24, 2019 at 10:41 AM Clara Cardoza > wrote:
Huerfano 142 @ 830
SJ 29-7 583 @ 130 – we could just drive directly over to the 583 when we are done at the Huerfano if you have BP sampling at 1. We are flexible.

From: Smith, Cory, EMNRD [mailto:Cory.Smith@state.nm.us]
Sent: Wednesday, April 24, 2019 8:27 AM
To: Adeloye, Abiodun >; Clara Cardoza >
Cc: whitney thomas (l1thomas@blm.gov) >; Nation EPA Navajo (NNEPA) (nnepawq@frontiernet.net) >
Subject: RE: [EXT] Re: [EXTERNAL] NCS1910830387 Confirmation Sampling SJ 29-7 583

Just so I got this right.

Sample at

Huerfano 142 @ 8:30 instead of 9;AM

SJ-29-7 #583 at what time?

BP Hardies LS 1A @ 1:30PM

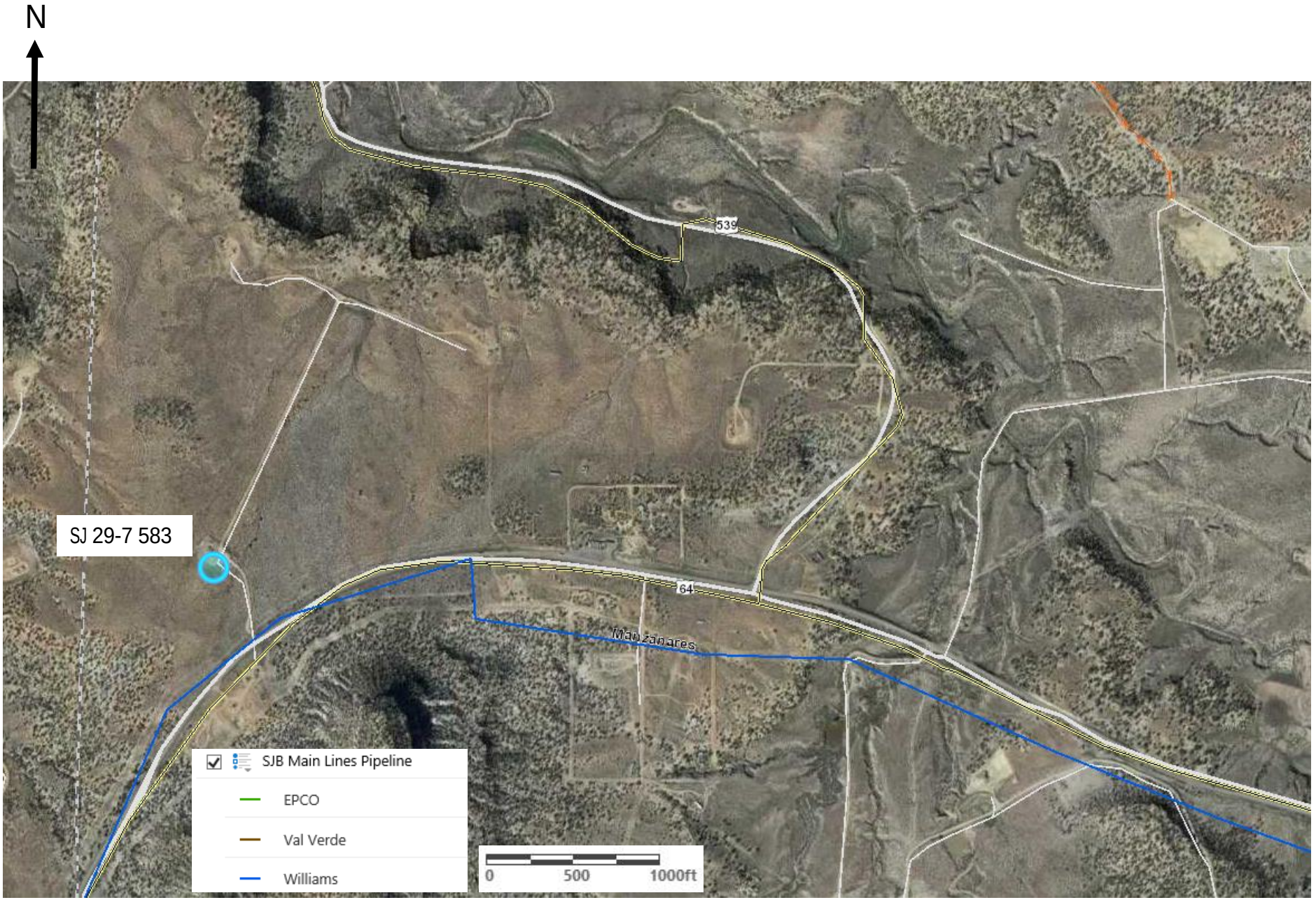
Cory Smith

Executive Summary

On April 17, 2019 Hilcorp Energy had a release of 30 bbls of oil at the San Juan 29-7 583. The release was due to corrosion at the bottom of the tank. The liquids were contained in the berm and impacted soil below the tank. Impacted soil was removed and taken to landfarm.

Confirmation sampling was conducted on April 25, 2019 with Emmanuel Adeloye of BLM-FFO in accordance with NMAC 19.15.29.12.D. This site is ranked >100 ft per NMAC 19.15.29.12.E. Four of the eight samples came back above NMOCD clean up standards (entire base, west half of north wall and east wall). Additional impacted soil was remove and samples were retaken on May 8th with Emmanuel present. Samples all came back in compliance with clean up action levels.

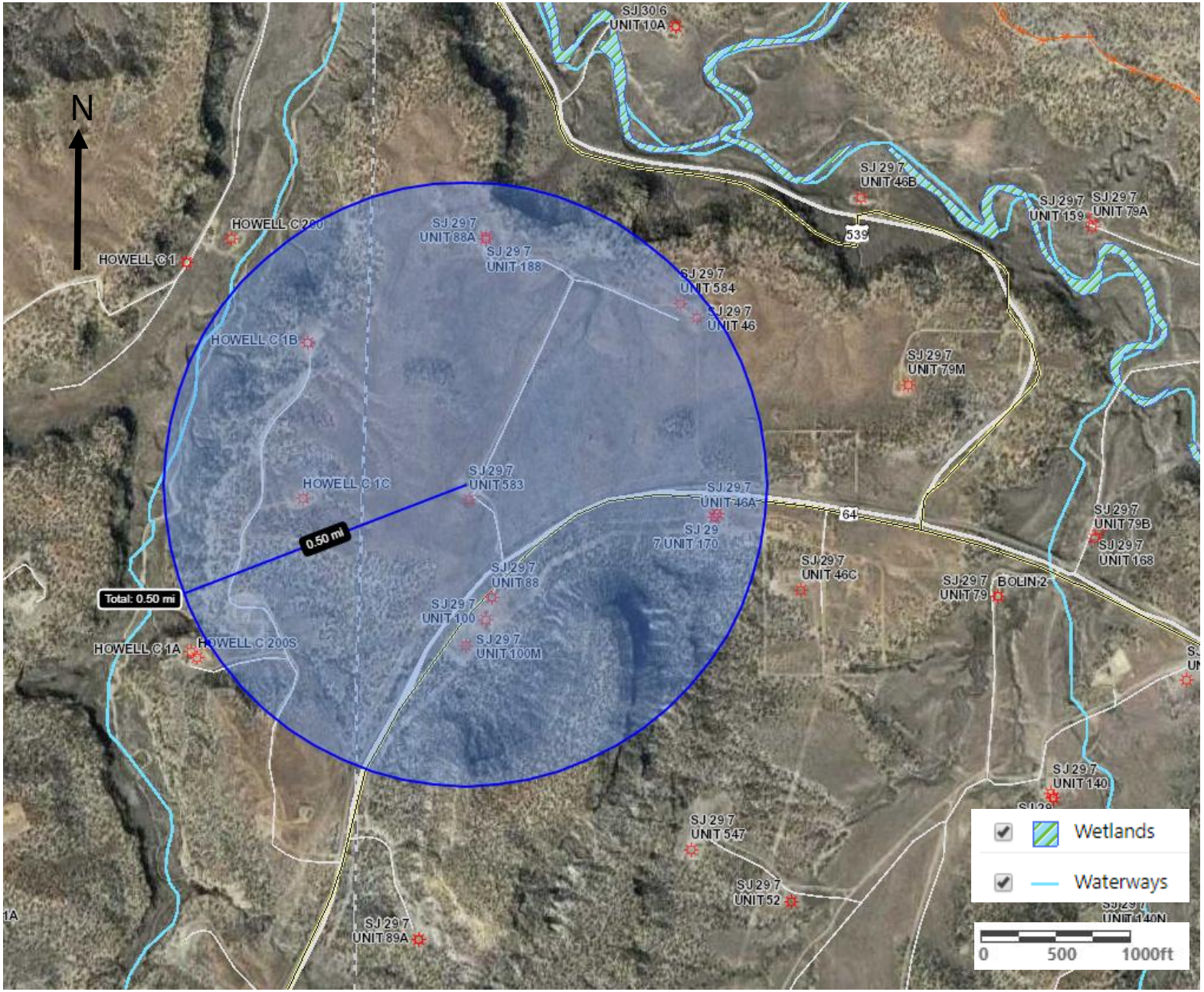

N
SJ 29 7
UNIT 583
0
15
30ft
Remediation Area


N
SJ 29-7 583
539
64
Manzanares
SJB Main Lines Pipeline
EPCO
Val Verde
Williams
0
500
1000ft

Distance to watercourse

Distance to watercourse approximately 2,523 ft

Water sources or courses within ½ mile



Depth to groundwater

Depth to groundwater

#583 30-039-25260

DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS
NORTHWESTERN NEW MEXICO

Operator Meridian Oil Location: Unit K Sec. 6 Twp 29 Rng 7

Name of Well/Wells or Pipeline Serviced San Juan 29-7 # 583

Elevation ____ Completion Date 6-25-93 Total Depth 390 Land Type ____

Casing Strings, Sizes, Types & Depths Set 99' of 8" sch 40 PVC Casing.

If Casing Strings are cemented, show amounts & types used

Cemented with 20 sacks.

If Cement or Bentonite Plugs have been placed, show depths & amounts used

No

Depths & thickness of water zones with description of water: Fresh, Clear, Salty, Sulphur, Etc. Water 170'

Depths gas encountered: No

Ground bed depth with type & amount of coke breeze used: 390'

94 bags of Asbury coke breeze, 50 lb.

Depths anodes placed: 365, 355, 340, 305, 292, 275, 260, 250, 240, 230, 220, 210, 200, 190, 150

Depths vent pipes placed: 390'

Vent pipe perforations: Bottom 260'.

Remarks:

RECEIVED
JAN 31 1994
OIL CON. DIV.
DIST. 3

If any of the above data is unavailable, please indicate so. Copies of all logs, including Drillers Log, Water Analyses & Well Bore Schematics should be submitted when available. Unplugged abandoned wells are to be included.

Land Type may be shown: F-Federal; I-Indian; S-State; P-Fee.
If Federal or Indian, add Lease Number.

Cathodic information shows groundwater at 170' for SJ 29-7 583

TIERRA CORROSION CONTROL, INC.
DRILLING LOG

COMPANY: Conoco Phillips
LOCATION: Howell C 1C
STATE: NM
BIT SIZE: 7 7/8"
LBS COKE BACKFILL: 2,600#
ANODE TYPE: 2" X 60" Duriron

DATE: June 3, 2008
LEGALS: S17 T29N R8W
DRILLER: Gilbert Peck
CASING SIZE/TYPE: 8" X 20' PVC
VENT PIPE: 300'
ANODE AMOUNT: 10

COUNTY: San Juan
DEPTH: 300'
COKE TYPE: Asbury
PERF PIPE: 140'
BOULDER DRILLING: None

DEPTH	DRILLER'S LOG	AMPS	DEPTH	DRILLER'S LOG	AMPS
20	Casing		310		
25	Sandstone		315		
30			320		
35		.2	325		
40		.2	330		
45		.2	335		
50		.1	340		
55		.1	345		
60		.3	350		
65		.3	355		
70		.3	360		
75		.7	365		
80		.6	370		
85		.4	375		
90		.3	380		
95		.2	385		
100		.3	390		
105		.3	395		
110		.3	400		
115		.3	405		
120		.3	410		
125		.3	415		
130	Gray Shale	1.6	420		
135		2.3	425		
140		2.4	430		
145		2.5	435		
150		2.0	440		
155		2.1	445		
160		2.5	450		
165		2.5	455		
170		1.7	460		
175		1.8	465		
180		2.1	470		
185		1.3	475		
190		1.0	480		
195		1.4	485		
200		2.1	490		
205		2.3	495		
210		2.3	500		
215		2.4			
220		2.3			
225		2.1			
230		2.1			
235		2.2			
240		2.4			
245		2.6			
250		2.6			
255		2.6			
260		1.9			
265		1.8			
270		1.9			
275		2.2			
280		1.9			
285		1.8			
290		1.4			
295		1.2			
300					
305					

ANODE #	DEPTH	NO COKE	COKE
1	295	1.2	3.0
2	285	1.8	4.1
3	275	2.2	5.3
4	265	1.6	5.0
5	255	2.6	5.7
6	245	2.6	6.2
7	235	2.2	6.2
8	225	2.1	5.8
9	215	2.4	5.4
10	205	2.3	4.6
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			

WATER DEPTH: 140'
ISOLATION PLUGS:
LOGING VOLTS: 12.2
VOLT SOURCE: AUTO BATTERY
TOTAL AMPS: 12.0
TOTAL GB RESISTANCE: 1.01
REMARKS:

Cathodic information shows groundwater at 140' at Howell C 1C*

*map on previous page shows proximity of approximately 1,254 ft to SJ 29-7 583

Depth to groundwater

New Mexico Office of the State Engineer

Point of Diversion Summary

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters)

Well Tag	POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y
	SJ 00028	4	1	2	01	29N	08W	265759	4071283*

Driller License: **Driller Company:**
Driller Name: CONLEY COX

Drill Start Date:	11/06/1952	**Drill Finish Date:**	11/06/1952	**Plug Date:**	
Log File Date:	12/10/1953	**PCW Rcv Date:**		**Source:**	Shallow
Pump Type:		**Pipe Discharge Size:**		**Estimated Yield:**	
Casing Size:	6.63	**Depth Well:**	606 feet	**Depth Water:**	300 feet

Water Bearing Stratifications:	Top	Bottom	Description
	354	370	Sandstone/Gravel/Conglomerate
	580	590	Sandstone/Gravel/Conglomerate

Casing Perforations:	Top	Bottom
	350	370
	580	590

*UTM location was derived from PLSS - see Help

New Mexico Office of the State Engineer

Point of Diversion Summary

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters)

Well Tag	POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y
	SJ 00541	4	4	1	06	29N	07W	266691	4070968*

Driller License: 724 **Driller Company:** HARGIS, JOHN C.
Driller Name: HARGIS, JOHN C.

Drill Start Date:	12/20/1977	**Drill Finish Date:**	03/29/1978	**Plug Date:**	
Log File Date:	04/04/1978	**PCW Rcv Date:**		**Source:**	Artesian
Pump Type:		**Pipe Discharge Size:**		**Estimated Yield:**	5 GPM
Casing Size:	5.00	**Depth Well:**	360 feet	**Depth Water:**	360 feet

Water Bearing Stratifications:	Top	Bottom	Description
	260	300	Sandstone/Gravel/Conglomerate
	340	360	Sandstone/Gravel/Conglomerate

Casing Perforations:	Top	Bottom
	240	360

*UTM location was derived from PLSS - see Help

New Mexico Office of the State Engineer

Point of Diversion Summary

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters)

Well Tag	POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y
	SJ 00807	4	2		06	29N	07W	267398	4071055*

Driller License: 799 **Driller Company:** HARGIS,BILL L., SR. DRLG., CO.
Driller Name: HARGIS, WILLIAM L.

Drill Start Date:	10/15/1978	**Drill Finish Date:**	04/04/1979	**Plug Date:**	
Log File Date:	04/17/1979	**PCW Rcv Date:**		**Source:**	Shallow
Pump Type:		**Pipe Discharge Size:**		**Estimated Yield:**	2 GPM
Casing Size:	5.00	**Depth Well:**	290 feet	**Depth Water:**	255 feet

Water Bearing Stratifications:	Top	Bottom	Description
	260	290	Sandstone/Gravel/Conglomerate

Casing Perforations:	Top	Bottom
	250	290

*UTM location was derived from PLSS - see Help

Sample locations/field notes

Initial sample location for entire site

1st sampling event – samples that passed

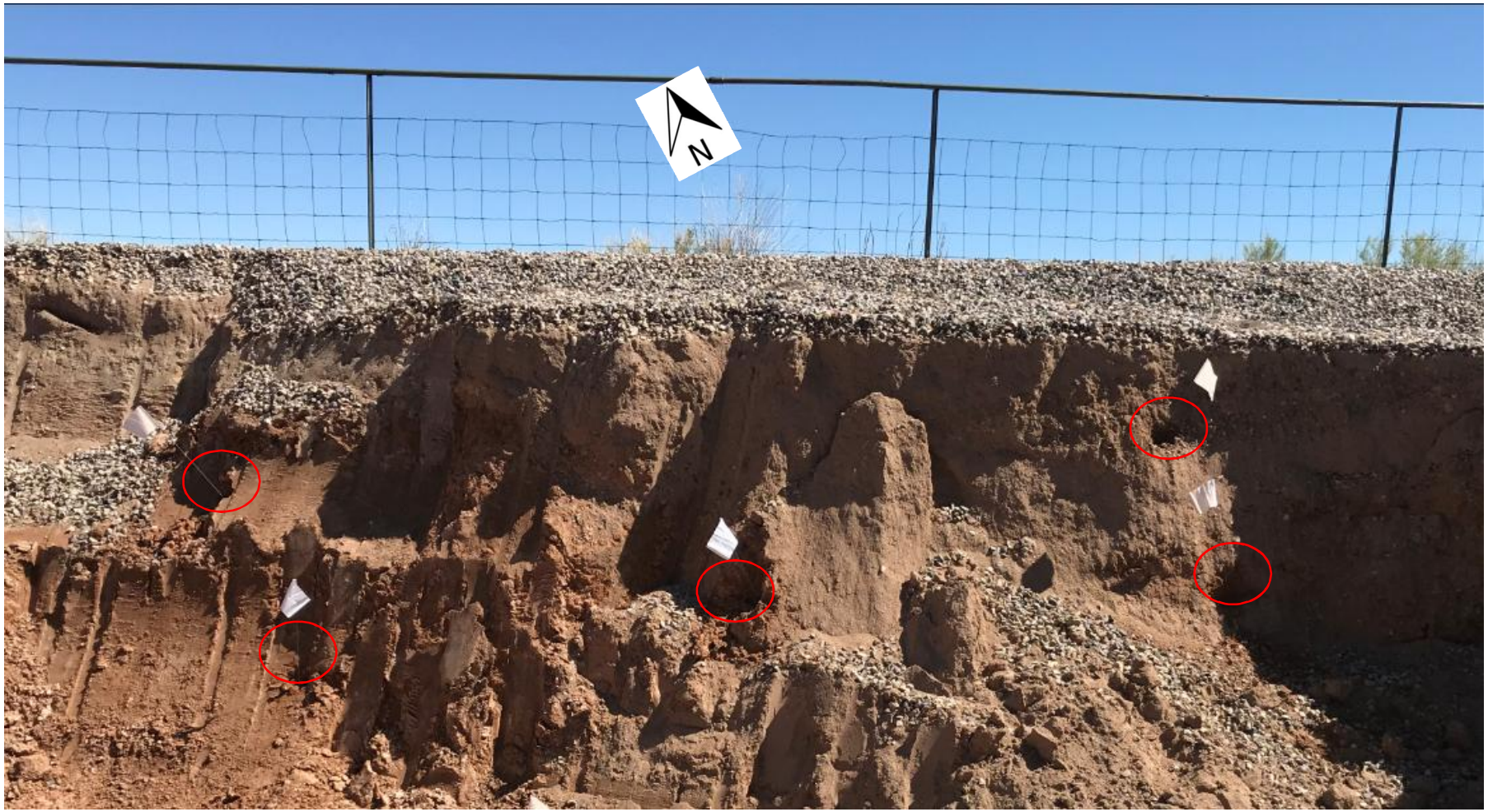
West wall of excavation

(samples were labeled W Wall W/2 but there was only one W wall sample)

1st sampling event – samples that passed

South wall west half of excavation

1st sampling event – samples that passed



North wall east half of excavation

1st sampling event – samples that passed

South wall east half of excavation

2nd sampling event

2nd sampling event

East wall of excavation

2nd sampling event

East base of excavation sample locations

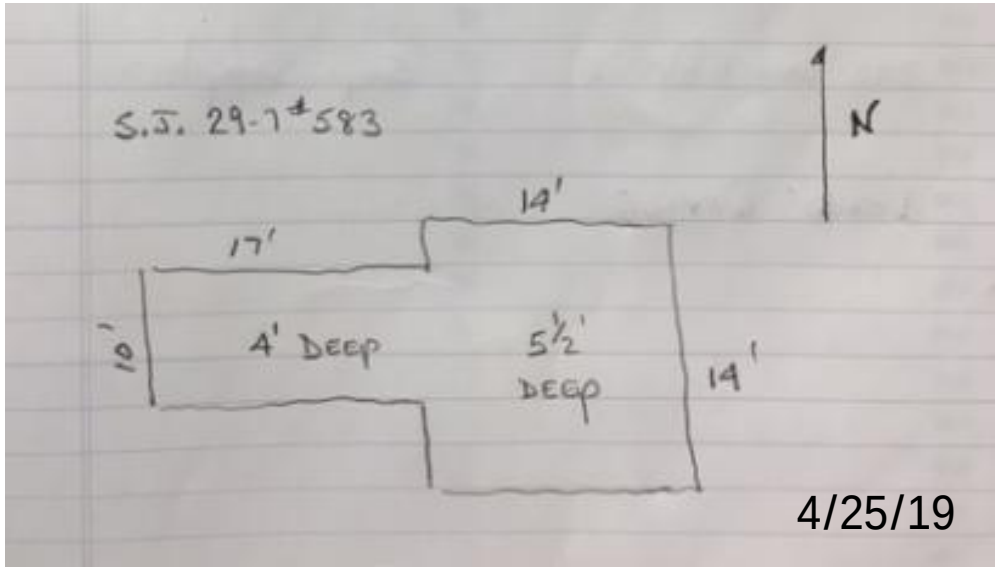
2nd sampling event

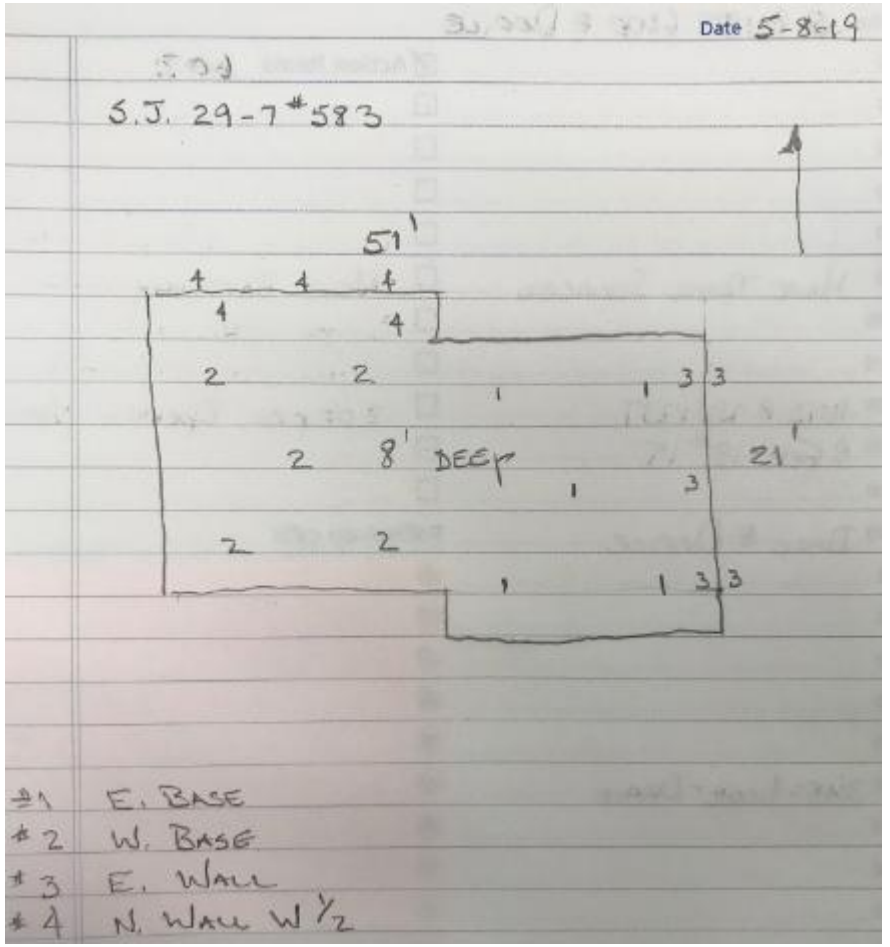
West base of excavation

2nd sampling event

North wall west half of excavation

Sample locations/field notes





Data table of soil contaminant concentration data

Sample Name	Date	Field VOCs by PID (ppm)	Laboratory Results										
			Chloride (mg/kg)	TPH as DRO (mg/kg)	TPH as GRO (mg/kg)	TPH as MRO (mg/kg)	Total TPH (mg/kg)	TPH as GRO + DRO (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylene (mg/kg)	Total BTEX (mg/kg)
NMOCD Action Level		-	20,000	-	-	-	2,500	1,000	10				50
W Wall W/2	04/25/19	n/a	ND	270	ND	ND	270	270	ND	ND	ND	ND	0
N Wall W/2	04/25/19	n/a	ND	11000	330	1100	12430	11330	ND	1.6	1.7	26	29.3
S Wall W/2	04/25/19	n/a	ND	75	ND	ND	75	75	ND	ND	ND	ND	0
W Base 4'	04/25/19	n/a	ND	1700	51	140	1891	1751	ND	ND	ND	2	2
E Base 5.5'	04/25/19	n/a	ND	13000	420	ND	13420	13420	ND	2.1	2	30	34.1
N Wall E/2	04/25/19	n/a	ND	ND	ND	ND	0	0	ND	ND	ND	ND	0
E Wall E/2	04/25/19	n/a	ND	4600	230	ND	4830	4830	ND	0.58	0.85	14	15.43
S Wall E/2	04/25/19	n/a	ND	ND	ND	ND	0	0	ND	ND	ND	ND	0
E Base	05/08/19	n/a	ND	7.03	ND	ND	7.03	7.03	ND	ND	ND	ND	0
W Base	05/08/19	n/a	ND	ND	ND	ND	0	0	ND	ND	ND	ND	0
E Wall	05/08/19	n/a	ND	ND	ND	ND	0	0	ND	ND	ND	ND	0
N Wall W/2	05/08/19	n/a	ND	39	ND	9.43	48.43	39	ND	ND	ND	ND	0
Samples Requested by BLM													
Grab Sample*	05/17/19	n/a	112	1830	0.288	859	2689.29	1830.29	ND	ND	ND	0.00211	0.00211
Grab Sample**	06/04/19	n/a	36.4	ND	ND	6.9	6.9	0	ND	ND	ND	ND	0

Initial confirmation samples taken on 4/25/2019 and witnessed by Emmanuel Adeloye, BLM. Four of the samples did not pass on TPH (highlighted in yellow) in accordance with Table 1 of NMAC 19.15.29.12. Note the sample names of the east and west wall included E/2 and W/2, respectively, which was in error. There was only one sample for each. Resampling occurred on 5/8/2019. This sampling event was witnessed by Emmanuel Adeloye, BLM and resample came back below action levels.

While BLM was present during the May 8th sampling event they requested that a sample be taken where the tank, origin of the release, had been set during the remediation and repair. Two sampling events occurred for this and the results are listed in the table and passing lab results are included in this report.

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

May 01, 2019

Clara Cardoza

Hilcorp Energy
PO Box 61529
Houston, TX 77208-1529
TEL: (337) 276-7676
FAX

RE: San Juan 29 7 583 OrderNo.: 1904C87

Dear Clara Cardoza:

Hall Environmental Analysis Laboratory received 8 sample(s) on 4/26/2019 for the analyses presented in the following report.

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

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Hilcorp Energy
Client Sample ID: W Wall W/2
Project: San Juan 29 7 583
Collection Date: 4/25/2019 10:30:00 AM
Lab ID: 1904C87-001 **Matrix:** SOIL **Received Date:** 4/26/2019 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**MRA**
Chloride	ND	60		mg/Kg	20	4/26/2019 7:29:33 PM	44579
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**JME**
Diesel Range Organics (DRO)	270	9.8		mg/Kg	1	4/29/2019 5:43:54 PM	44575
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	4/29/2019 5:43:54 PM	44575
Surr: DNOP	90.1	70-130		%Rec	1	4/29/2019 5:43:54 PM	44575
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**NSB**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	4/28/2019 7:16:16 AM	44568
Surr: BFB	93.0	73.8-119		%Rec	1	4/28/2019 7:16:16 AM	44568
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst:	**RAA**
Benzene	ND	0.025		mg/Kg	1	4/29/2019 4:43:26 PM	44568
Toluene	ND	0.050		mg/Kg	1	4/29/2019 4:43:26 PM	44568
Ethylbenzene	ND	0.050		mg/Kg	1	4/29/2019 4:43:26 PM	44568
Xylenes, Total	ND	0.10		mg/Kg	1	4/29/2019 4:43:26 PM	44568
Surr: 1,2-Dichloroethane-d4	99.7	70-130		%Rec	1	4/29/2019 4:43:26 PM	44568
Surr: 4-Bromofluorobenzene	92.0	70-130		%Rec	1	4/29/2019 4:43:26 PM	44568
Surr: Dibromofluoromethane	112	70-130		%Rec	1	4/29/2019 4:43:26 PM	44568
Surr: Toluene-d8	93.1	70-130		%Rec	1	4/29/2019 4:43:26 PM	44568

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Hilcorp Energy
Client Sample ID: N Wall W/2
Project: San Juan 29 7 583
Collection Date: 4/25/2019 10:32:00 AM
Lab ID: 1904C87-002 **Matrix:** SOIL **Received Date:** 4/26/2019 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**MRA**
Chloride	ND	60		mg/Kg	20	4/26/2019 7:41:57 PM	44579
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**JME**
Diesel Range Organics (DRO)	11000	200		mg/Kg	20	4/30/2019 8:52:31 AM	44575
Motor Oil Range Organics (MRO)	1100	980		mg/Kg	20	4/30/2019 8:52:31 AM	44575
Surr: DNOP	0	70-130	S	%Rec	20	4/30/2019 8:52:31 AM	44575
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**NSB**
Gasoline Range Organics (GRO)	330	98		mg/Kg	20	4/28/2019 7:39:02 AM	44568
Surr: BFB	181	73.8-119	S	%Rec	20	4/28/2019 7:39:02 AM	44568
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst:	**RAA**
Benzene	ND	0.25	D	mg/Kg	10	4/29/2019 6:09:19 PM	44568
Toluene	1.6	0.49	D	mg/Kg	10	4/29/2019 6:09:19 PM	44568
Ethylbenzene	1.7	0.49	D	mg/Kg	10	4/29/2019 6:09:19 PM	44568
Xylenes, Total	26	0.98	D	mg/Kg	10	4/29/2019 6:09:19 PM	44568
Surr: 1,2-Dichloroethane-d4	106	70-130	D	%Rec	10	4/29/2019 6:09:19 PM	44568
Surr: 4-Bromofluorobenzene	118	70-130	D	%Rec	10	4/29/2019 6:09:19 PM	44568
Surr: Dibromofluoromethane	115	70-130	D	%Rec	10	4/29/2019 6:09:19 PM	44568
Surr: Toluene-d8	92.6	70-130	D	%Rec	10	4/29/2019 6:09:19 PM	44568

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Hilcorp Energy
Client Sample ID: S Wall W/2
Project: San Juan 29 7 583
Collection Date: 4/25/2019 10:35:00 AM
Lab ID: 1904C87-003 **Matrix:** SOIL **Received Date:** 4/26/2019 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	60		mg/Kg	20	4/26/2019 7:54:22 PM	44579
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **JME**	
Diesel Range Organics (DRO)	75	9.5		mg/Kg	1	4/29/2019 6:08:28 PM	44575
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	4/29/2019 6:08:28 PM	44575
Surr: DNOP	95.6	70-130		%Rec	1	4/29/2019 6:08:28 PM	44575
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	4/28/2019 8:01:50 AM	44568
Surr: BFB	91.8	73.8-119		%Rec	1	4/28/2019 8:01:50 AM	44568
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **RAA**	
Benzene	ND	0.025		mg/Kg	1	4/29/2019 6:37:52 PM	44568
Toluene	ND	0.050		mg/Kg	1	4/29/2019 6:37:52 PM	44568
Ethylbenzene	ND	0.050		mg/Kg	1	4/29/2019 6:37:52 PM	44568
Xylenes, Total	ND	0.099		mg/Kg	1	4/29/2019 6:37:52 PM	44568
Surr: 1,2-Dichloroethane-d4	103	70-130		%Rec	1	4/29/2019 6:37:52 PM	44568
Surr: 4-Bromofluorobenzene	92.6	70-130		%Rec	1	4/29/2019 6:37:52 PM	44568
Surr: Dibromofluoromethane	113	70-130		%Rec	1	4/29/2019 6:37:52 PM	44568
Surr: Toluene-d8	94.9	70-130		%Rec	1	4/29/2019 6:37:52 PM	44568

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Hilcorp Energy
Client Sample ID: W Base 4'
Project: San Juan 29 7 583
Collection Date: 4/25/2019 10:37:00 AM
Lab ID: 1904C87-004 **Matrix:** SOIL **Received Date:** 4/26/2019 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**MRA**
Chloride	ND	60		mg/Kg	20	4/26/2019 8:06:47 PM	44579
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**JME**
Diesel Range Organics (DRO)	1700	20		mg/Kg	2	4/30/2019 9:16:44 AM	44575
Motor Oil Range Organics (MRO)	140	100		mg/Kg	2	4/30/2019 9:16:44 AM	44575
Surr: DNOP	103	70-130		%Rec	2	4/30/2019 9:16:44 AM	44575
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**NSB**
Gasoline Range Organics (GRO)	51	25		mg/Kg	5	4/28/2019 8:24:38 AM	44568
Surr: BFB	161	73.8-119	S	%Rec	5	4/28/2019 8:24:38 AM	44568
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst:	**RAA**
Benzene	ND	0.12	D	mg/Kg	5	4/29/2019 7:06:20 PM	44568
Toluene	ND	0.25	D	mg/Kg	5	4/29/2019 7:06:20 PM	44568
Ethylbenzene	ND	0.25	D	mg/Kg	5	4/29/2019 7:06:20 PM	44568
Xylenes, Total	2.0	0.50	D	mg/Kg	5	4/29/2019 7:06:20 PM	44568
Surr: 1,2-Dichloroethane-d4	105	70-130	D	%Rec	5	4/29/2019 7:06:20 PM	44568
Surr: 4-Bromofluorobenzene	98.4	70-130	D	%Rec	5	4/29/2019 7:06:20 PM	44568
Surr: Dibromofluoromethane	116	70-130	D	%Rec	5	4/29/2019 7:06:20 PM	44568
Surr: Toluene-d8	92.2	70-130	D	%Rec	5	4/29/2019 7:06:20 PM	44568

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Hilcorp Energy
Client Sample ID: E Base 5.5'
Project: San Juan 29 7 583
Collection Date: 4/25/2019 10:40:00 AM
Lab ID: 1904C87-005 **Matrix:** SOIL **Received Date:** 4/26/2019 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**MRA**
Chloride	ND	60		mg/Kg	20	4/26/2019 8:43:59 PM	44579
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**JME**
Diesel Range Organics (DRO)	13000	190	D	mg/Kg	20	4/30/2019 9:41:12 AM	44575
Motor Oil Range Organics (MRO)	ND	960	D	mg/Kg	20	4/30/2019 9:41:12 AM	44575
Surr: DNOP	0	70-130	SD	%Rec	20	4/30/2019 9:41:12 AM	44575
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**NSB**
Gasoline Range Organics (GRO)	420	99		mg/Kg	20	4/28/2019 9:10:21 AM	44568
Surr: BFB	199	73.8-119	S	%Rec	20	4/28/2019 9:10:21 AM	44568
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst:	**RAA**
Benzene	ND	0.25	D	mg/Kg	10	4/29/2019 7:34:49 PM	44568
Toluene	2.1	0.49	D	mg/Kg	10	4/29/2019 7:34:49 PM	44568
Ethylbenzene	2.0	0.49	D	mg/Kg	10	4/29/2019 7:34:49 PM	44568
Xylenes, Total	30	0.99	D	mg/Kg	10	4/29/2019 7:34:49 PM	44568
Surr: 1,2-Dichloroethane-d4	106	70-130	D	%Rec	10	4/29/2019 7:34:49 PM	44568
Surr: 4-Bromofluorobenzene	133	70-130	SD	%Rec	10	4/29/2019 7:34:49 PM	44568
Surr: Dibromofluoromethane	120	70-130	D	%Rec	10	4/29/2019 7:34:49 PM	44568
Surr: Toluene-d8	92.4	70-130	D	%Rec	10	4/29/2019 7:34:49 PM	44568

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Hilcorp Energy
Client Sample ID: N Wall E/2
Project: San Juan 29 7 583
Collection Date: 4/25/2019 10:43:00 AM
Lab ID: 1904C87-006 **Matrix:** SOIL
Received Date: 4/26/2019 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	60		mg/Kg	20	4/26/2019 8:56:24 PM	44579
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **JME**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	4/29/2019 6:57:32 PM	44575
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	4/29/2019 6:57:32 PM	44575
Surr: DNOP	96.4	70-130		%Rec	1	4/29/2019 6:57:32 PM	44575
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/28/2019 9:33:17 AM	44568
Surr: BFB	88.6	73.8-119		%Rec	1	4/28/2019 9:33:17 AM	44568
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **RAA**	
Benzene	ND	0.024		mg/Kg	1	4/29/2019 8:03:31 PM	44568
Toluene	ND	0.048		mg/Kg	1	4/29/2019 8:03:31 PM	44568
Ethylbenzene	ND	0.048		mg/Kg	1	4/29/2019 8:03:31 PM	44568
Xylenes, Total	ND	0.097		mg/Kg	1	4/29/2019 8:03:31 PM	44568
Surr: 1,2-Dichloroethane-d4	99.0	70-130		%Rec	1	4/29/2019 8:03:31 PM	44568
Surr: 4-Bromofluorobenzene	98.0	70-130		%Rec	1	4/29/2019 8:03:31 PM	44568
Surr: Dibromofluoromethane	112	70-130		%Rec	1	4/29/2019 8:03:31 PM	44568
Surr: Toluene-d8	91.5	70-130		%Rec	1	4/29/2019 8:03:31 PM	44568

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Hilcorp Energy
Client Sample ID: E Wall E/2
Project: San Juan 29 7 583
Collection Date: 4/25/2019 10:45:00 AM
Lab ID: 1904C87-007 **Matrix:** SOIL **Received Date:** 4/26/2019 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**MRA**
Chloride	ND	60		mg/Kg	20	4/26/2019 9:08:48 PM	44579
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**JME**
Diesel Range Organics (DRO)	4600	96	D	mg/Kg	10	4/29/2019 1:54:52 PM	44575
Motor Oil Range Organics (MRO)	ND	480	D	mg/Kg	10	4/29/2019 1:54:52 PM	44575
Surr: DNOP	0	70-130	SD	%Rec	10	4/29/2019 1:54:52 PM	44575
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**NSB**
Gasoline Range Organics (GRO)	230	50		mg/Kg	10	4/28/2019 9:56:12 AM	44568
Surr: BFB	225	73.8-119	S	%Rec	10	4/28/2019 9:56:12 AM	44568
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst:	**RAA**
Benzene	ND	0.25	D	mg/Kg	10	4/29/2019 8:32:13 PM	44568
Toluene	0.58	0.50	D	mg/Kg	10	4/29/2019 8:32:13 PM	44568
Ethylbenzene	0.85	0.50	D	mg/Kg	10	4/29/2019 8:32:13 PM	44568
Xylenes, Total	14	0.99	D	mg/Kg	10	4/29/2019 8:32:13 PM	44568
Surr: 1,2-Dichloroethane-d4	105	70-130	D	%Rec	10	4/29/2019 8:32:13 PM	44568
Surr: 4-Bromofluorobenzene	109	70-130	D	%Rec	10	4/29/2019 8:32:13 PM	44568
Surr: Dibromofluoromethane	114	70-130	D	%Rec	10	4/29/2019 8:32:13 PM	44568
Surr: Toluene-d8	94.9	70-130	D	%Rec	10	4/29/2019 8:32:13 PM	44568

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Hilcorp Energy
Client Sample ID: S Wall E/2
Project: San Juan 29 7 583
Collection Date: 4/25/2019 10:47:00 AM
Lab ID: 1904C87-008 **Matrix:** SOIL **Received Date:** 4/26/2019 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	59		mg/Kg	20	4/26/2019 9:21:12 PM	44579
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **JME**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	4/29/2019 7:22:13 PM	44575
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	4/29/2019 7:22:13 PM	44575
Surr: DNOP	95.0	70-130		%Rec	1	4/29/2019 7:22:13 PM	44575
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	4/28/2019 10:41:59 AM	44568
Surr: BFB	87.0	73.8-119		%Rec	1	4/28/2019 10:41:59 AM	44568
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **RAA**	
Benzene	ND	0.025		mg/Kg	1	4/29/2019 9:00:52 PM	44568
Toluene	ND	0.050		mg/Kg	1	4/29/2019 9:00:52 PM	44568
Ethylbenzene	ND	0.050		mg/Kg	1	4/29/2019 9:00:52 PM	44568
Xylenes, Total	ND	0.099		mg/Kg	1	4/29/2019 9:00:52 PM	44568
Surr: 1,2-Dichloroethane-d4	103	70-130		%Rec	1	4/29/2019 9:00:52 PM	44568
Surr: 4-Bromofluorobenzene	97.7	70-130		%Rec	1	4/29/2019 9:00:52 PM	44568
Surr: Dibromofluoromethane	116	70-130		%Rec	1	4/29/2019 9:00:52 PM	44568
Surr: Toluene-d8	93.9	70-130		%Rec	1	4/29/2019 9:00:52 PM	44568

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

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1904C87**
01-May-19

Client: Hilcorp Energy
Project: San Juan 29 7 583

Sample ID: **MB-44579**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **44579**	RunNo: **59463**
Prep Date: **4/26/2019**	Analysis Date: **4/26/2019**	SeqNo: **2003545** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-44579**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **44579**	RunNo: **59463**
Prep Date: **4/26/2019**	Analysis Date: **4/26/2019**	SeqNo: **2003546** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	95.2	90	110			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1904C87**
01-May-19

Client: Hilcorp Energy
Project: San Juan 29 7 583

Sample ID: **MB-44575**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **44575**	RunNo: **59485**
Prep Date: **4/26/2019**	Analysis Date: **4/29/2019**	SeqNo: **2004544** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.9		10.00		88.7	70	130			

Sample ID: **LCS-44575**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **44575**	RunNo: **59485**
Prep Date: **4/26/2019**	Analysis Date: **4/29/2019**	SeqNo: **2004545** 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	101	63.9	124			
Surr: DNOP	4.9		5.000		98.0	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1904C87**

01-May-19

Client: Hilcorp Energy

Project: San Juan 29 7 583

Sample ID: **MB-44568**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **44568**	RunNo: **59480**
Prep Date: **4/26/2019**	Analysis Date: **4/28/2019**	SeqNo: **2003986** 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	900		1000		90.0	73.8	119			

Sample ID: **LCS-44568**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **44568**	RunNo: **59480**
Prep Date: **4/26/2019**	Analysis Date: **4/28/2019**	SeqNo: **2003987** 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	95.5	80.1	123			
Surr: BFB	1000		1000		101	73.8	119			

Sample ID: **MB-44576**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **44576**	RunNo: **59480**
Prep Date: **4/26/2019**	Analysis Date: **4/28/2019**	SeqNo: **2004012** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	920		1000		92.1	73.8	119			

Sample ID: **LCS-44576**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **44576**	RunNo: **59480**
Prep Date: **4/26/2019**	Analysis Date: **4/28/2019**	SeqNo: **2004013** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1000		1000		103	73.8	119			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1904C87**

01-May-19

Client: Hilcorp Energy

Project: San Juan 29 7 583

Sample ID: **1904c87-001ams**	SampType: **MS**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **W Wall W/2**	Batch ID: **44568**	RunNo: **59520**
Prep Date: **4/26/2019**	Analysis Date: **4/29/2019**	SeqNo: **2005407** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	0.9950	0	101	68.9	131			
Toluene	0.95	0.050	0.9950	0	95.1	64.3	137			
Surr: 1,2-Dichloroethane-d4	0.49		0.4975		98.3	70	130			
Surr: 4-Bromofluorobenzene	0.47		0.4975		93.8	70	130			
Surr: Dibromofluoromethane	0.55		0.4975		111	70	130			
Surr: Toluene-d8	0.47		0.4975		93.8	70	130			

Sample ID: **1904c87-001amsd**	SampType: **MSD**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **W Wall W/2**	Batch ID: **44568**	RunNo: **59520**
Prep Date: **4/26/2019**	Analysis Date: **4/29/2019**	SeqNo: **2005408** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.98	0.024	0.9643	0	102	68.9	131	2.42	20	
Toluene	0.93	0.048	0.9643	0	95.9	64.3	137	2.28	20	
Surr: 1,2-Dichloroethane-d4	0.48		0.4822		99.7	70	130	0	0	
Surr: 4-Bromofluorobenzene	0.46		0.4822		95.7	70	130	0	0	
Surr: Dibromofluoromethane	0.55		0.4822		115	70	130	0	0	
Surr: Toluene-d8	0.46		0.4822		96.3	70	130	0	0	

Sample ID: **lcs-44568**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **LCSS**	Batch ID: **44568**	RunNo: **59520**
Prep Date: **4/26/2019**	Analysis Date: **4/29/2019**	SeqNo: **2005416** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	1.000	0	101	70	130			
Toluene	0.95	0.050	1.000	0	95.3	70	130			
Surr: 1,2-Dichloroethane-d4	0.49		0.5000		97.7	70	130			
Surr: 4-Bromofluorobenzene	0.49		0.5000		98.6	70	130			
Surr: Dibromofluoromethane	0.54		0.5000		108	70	130			
Surr: Toluene-d8	0.47		0.5000		93.3	70	130			

Sample ID: **mb-44568**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **PBS**	Batch ID: **44568**	RunNo: **59520**
Prep Date: **4/26/2019**	Analysis Date: **4/29/2019**	SeqNo: **2005417** 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								

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1904C87**
01-May-19

Client: Hilcorp Energy
Project: San Juan 29 7 583

Sample ID: **mb-44568** SampType: **MBLK** TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **PBS** Batch ID: **44568** RunNo: **59520**
Prep Date: **4/26/2019** Analysis Date: **4/29/2019** SeqNo: **2005417** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	0.49		0.5000		98.1	70	130			
Surr: 4-Bromofluorobenzene	0.49		0.5000		97.6	70	130			
Surr: Dibromofluoromethane	0.55		0.5000		110	70	130			
Surr: Toluene-d8	0.48		0.5000		97.0	70	130			

Qualifiers:

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

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: **HILCORP ENERGY** Work Order Number: **1904C87** RcptNo: **1**

Received By: **Anne Thorne** **4/26/2019 8:15:00 AM**

Completed By: **Erin Melendrez** **4/26/2019 8:35:15 AM** 4/26/19

Reviewed By: ENM
LB. DAD 4/26/19

Chain of Custody

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

Log In

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

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: DAD 4/26/19

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.9	Good	Yes			
2	3.9	Good	Yes			

Chain-of-Custody Record

Client:	Hilcorp Energy
Mailing Address:	382 CR 3100 Aztec NM 87410
Phone #:	505.564.0733
email or Fax#:	ccardoza@hilcorp.com
QA/QC Package:	☐ Standard ☐ Level 4 (Full Validation)
Accreditation:	☐ Az Compliance ☐ NELAC ☐ Other
☐ EDD (Type)	

Turn-Around Time: ☐ Standard X Rush_ 3 Day

Project Name: San Juan 29-7 583

Project #:

Project Manager: Clara Cardoza

Sampler: K Hoekstra

On Ice: X Yes ☐ No

# of Coolers: 2

Cooler Temp(including CF): 1.9°c, 3.9°c

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 1904C87	8015 DRO/GRO/MRO	300 Chlorides	8260B BTEX
4/25/2019	10:30 AM	soil	W Wall W/2	4oz - 1	None	-001	X	X	X
4/25/2019	10:32 AM	soil	N Wall W/2	4 oz - 1	None	-002	X	X	X
4/25/2019	10:35 AM	soil	S Wall W/2	4 oz - 1	None	-003	X	X	X
4/25/2019	10:37 AM	soil	W Base 4'	4 oz - 1	None	-004	X	X	X
4/25/2019	10:40 AM	soil	E Base 5.5'	4 oz - 1	None	-005	X	X	X
4/25/2019	10:43 AM	soil	N Wall E/2	4 oz - 1	None	-006	X	X	X
4/25/2019	10:45 AM	soil	E Wall E/2	4 oz - 1	None	-007	X	X	X
4/25/2019	10:47 AM	soil	S Wall E/2	4 oz - 1	None	-008	X	X	X

Analysis Request

Date	Time	Relinquished by:	Received by:	Via:	Date Time
4/25/19	2:40pm				
4/25/19	1840				4/26/19 0815

Remarks: Billing ATTN: Clara Cardoza

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®
National Center for Testing & Innovation

ANALYTICAL REPORT

May 17, 2019

HilCorp-Farmington, NM

Sample Delivery Group:	L1097807
Samples Received:	05/10/2019
Project Number:	SJ 29-7 #583
Description:	SJ 29-7 #583
Site:	SJ 29-7 #583
Report To:	Clara Cardoza 382 Road 3100 Aztec, NM 87401

Entire Report Reviewed By:

Daphne R Richards

Daphne Richards
Project Manager

TABLE OF CONTENTS

E. BASE L1097807-01 Solid

Collected by: Kurt | Collected date/time: 05/08/19 09:05 | Received date/time: 05/10/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1279120	1	05/11/19 08:10	05/11/19 11:17	ST	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1281175	1	05/13/19 15:47	05/14/19 23:17	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1281659	1	05/15/19 22:42	05/16/19 14:19	DMW	Mt. Juliet, TN

W. BASE L1097807-02 Solid

Collected by: Kurt | Collected date/time: 05/08/19 09:11 | Received date/time: 05/10/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1279120	1	05/11/19 08:10	05/11/19 11:26	ST	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1281175	1	05/13/19 15:47	05/14/19 23:41	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1281659	1	05/15/19 22:42	05/16/19 14:32	DMW	Mt. Juliet, TN

E. WALL L1097807-03 Solid

Collected by: Kurt | Collected date/time: 05/08/19 09:14 | Received date/time: 05/10/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1279120	1	05/11/19 08:10	05/11/19 11:34	ST	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1281175	1	05/13/19 15:47	05/15/19 00:05	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1281659	1	05/15/19 22:42	05/16/19 14:45	DMW	Mt. Juliet, TN

N. WALL W 1/2 L1097807-04 Solid

Collected by: Kurt | Collected date/time: 05/08/19 09:18 | Received date/time: 05/10/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1279120	1	05/11/19 08:10	05/11/19 11:43	ST	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1281175	1	05/13/19 15:47	05/15/19 00:29	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1281659	1	05/15/19 22:42	05/16/19 14:58	DMW	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Daphne R Richards

Daphne Richards
Project Manager

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Chloride	ND		10.0	1	05/11/2019 11:17	WG1279120

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Benzene	ND		0.000500	1	05/14/2019 23:17	WG1281175
Toluene	ND		0.00500	1	05/14/2019 23:17	WG1281175
Ethylbenzene	ND		0.000500	1	05/14/2019 23:17	WG1281175
Total Xylene	ND		0.00150	1	05/14/2019 23:17	WG1281175
TPH (GC/FID) Low Fraction	ND		0.100	1	05/14/2019 23:17	WG1281175
(S) a,a,a-Trifluorotoluene(FID)	*96.7*		*77.0-120*		*05/14/2019 23:17*	WG1281175
(S) a,a,a-Trifluorotoluene(PID)	*101*		*72.0-128*		*05/14/2019 23:17*	WG1281175

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
C10-C28 Diesel Range	7.03		4.00	1	05/16/2019 14:19	WG1281659
C28-C40 Oil Range	ND		4.00	1	05/16/2019 14:19	WG1281659
(S) o-Terphenyl	*54.8*		*18.0-148*		*05/16/2019 14:19*	WG1281659

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Chloride	ND		10.0	1	05/11/2019 11:26	WG1279120

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Benzene	ND		0.000500	1	05/14/2019 23:41	WG1281175
Toluene	ND		0.00500	1	05/14/2019 23:41	WG1281175
Ethylbenzene	ND		0.000500	1	05/14/2019 23:41	WG1281175
Total Xylene	ND		0.00150	1	05/14/2019 23:41	WG1281175
TPH (GC/FID) Low Fraction	ND		0.100	1	05/14/2019 23:41	WG1281175
(S) a,a,a-Trifluorotoluene(FID)	*97.3*		*77.0-120*		*05/14/2019 23:41*	WG1281175
(S) a,a,a-Trifluorotoluene(PID)	*102*		*72.0-128*		*05/14/2019 23:41*	WG1281175

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
C10-C28 Diesel Range	ND		4.00	1	05/16/2019 14:32	WG1281659
C28-C40 Oil Range	ND		4.00	1	05/16/2019 14:32	WG1281659
(S) o-Terphenyl	*52.9*		*18.0-148*		*05/16/2019 14:32*	WG1281659

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Chloride	ND		10.0	1	05/11/2019 11:34	WG1279120

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Benzene	ND		0.000500	1	05/15/2019 00:05	WG1281175
Toluene	ND		0.00500	1	05/15/2019 00:05	WG1281175
Ethylbenzene	ND		0.000500	1	05/15/2019 00:05	WG1281175
Total Xylene	ND		0.00150	1	05/15/2019 00:05	WG1281175
TPH (GC/FID) Low Fraction	ND		0.100	1	05/15/2019 00:05	WG1281175
(S) a,a,a-Trifluorotoluene(FID)	*96.9*		*77.0-120*		*05/15/2019 00:05*	WG1281175
(S) a,a,a-Trifluorotoluene(PID)	*101*		*72.0-128*		*05/15/2019 00:05*	WG1281175

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
C10-C28 Diesel Range	ND		4.00	1	05/16/2019 14:45	WG1281659
C28-C40 Oil Range	ND		4.00	1	05/16/2019 14:45	WG1281659
(S) o-Terphenyl	*59.5*		*18.0-148*		*05/16/2019 14:45*	WG1281659

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

Wet Chemistry by Method 9056A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chloride	ND		10.0	1	05/11/2019 11:43	WG1279120

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.000500	1	05/15/2019 00:29	WG1281175
Toluene	ND		0.00500	1	05/15/2019 00:29	WG1281175
Ethylbenzene	ND		0.000500	1	05/15/2019 00:29	WG1281175
Total Xylene	ND		0.00150	1	05/15/2019 00:29	WG1281175
TPH (GC/FID) Low Fraction	ND		0.100	1	05/15/2019 00:29	WG1281175
(S) a,a,a-Trifluorotoluene(FID)	*97.0*		*77.0-120*		*05/15/2019 00:29*	WG1281175
(S) a,a,a-Trifluorotoluene(PID)	*101*		*72.0-128*		*05/15/2019 00:29*	WG1281175

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	39.0		4.00	1	05/16/2019 14:58	WG1281659
C28-C40 Oil Range	9.43		4.00	1	05/16/2019 14:58	WG1281659
(S) o-Terphenyl	*49.1*		*18.0-148*		*05/16/2019 14:58*	WG1281659

Method Blank (MB)

(MB) R3410418-1 05/11/19 09:15

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Chloride	3.40	J	0.795	10.0

L1097007-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1097007-02 05/11/19 10:09 • (DUP) R3410418-5 05/11/19 10:17

Analyte	Original Result (dry) mg/kg	DUP Result (dry) mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	693	763	1	9.67		15

L1097865-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1097865-01 05/11/19 12:25 • (DUP) R3410418-6 05/11/19 12:51

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	3.39	3.21	1	5.64	J	15

Laboratory Control Sample (LCS)

(LCS) R3410418-2 05/11/19 09:23

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	200	203	101	80.0-120	

L1097007-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1097007-01 05/11/19 09:43 • (MS) R3410418-3 05/11/19 09:52 • (MSD) R3410418-4 05/11/19 10:00

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	656	95.1	714	696	94.3	91.6	1	80.0-120			2.52	15

Method Blank (MB)

(MB) R3411546-4 05/14/19 19:28

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	0.000163	J	0.000120	0.000500
Toluene	0.000278	J	0.000150	0.00500
Ethylbenzene	U		0.000110	0.000500
Total Xylene	U		0.000460	0.00150
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	*98.3*			*77.0-120*
(S) a,a,a-Trifluorotoluene(PID)	*102*			*72.0-128*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3411546-1 05/14/19 17:29 • (LCSD) R3411546-2 05/14/19 17:53

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.0500	0.0525	0.0453	105	90.6	76.0-121			14.6	20
Toluene	0.0500	0.0531	0.0459	106	91.8	80.0-120			14.4	20
Ethylbenzene	0.0500	0.0545	0.0470	109	94.0	80.0-124			14.7	20
Total Xylene	0.150	0.160	0.138	107	92.0	37.0-160			15.0	20
(S) a,a,a-Trifluorotoluene(FID)				*98.6*	*98.3*	*77.0-120*				
(S) a,a,a-Trifluorotoluene(PID)				*101*	*101*	*72.0-128*				

Laboratory Control Sample (LCS)

(LCS) R3411546-3 05/14/19 18:41

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	5.31	96.6	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			*104*	*77.0-120*	
(S) a,a,a-Trifluorotoluene(PID)			*107*	*72.0-128*	

L1098004-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1098004-03 05/15/19 02:53 • (MS) R3411546-5 05/15/19 03:17 • (MSD) R3411546-6 05/15/19 03:41

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	0.0500	0.125	1.81	2.06	33.8	38.7	100	10.0-155			12.6	32
Toluene	0.0500	ND	1.93	2.18	38.6	43.7	100	10.0-160			12.4	34
Ethylbenzene	0.0500	0.406	2.27	2.60	37.3	44.0	100	10.0-160			13.6	32
Total Xylene	0.150	1.22	6.56	7.63	35.6	42.8	100	10.0-160	J6	J6	15.1	32
(S) a,a,a-Trifluorotoluene(FID)					*98.7*	*99.0*		*77.0-120*				
(S) a,a,a-Trifluorotoluene(PID)					*103*	*104*		*72.0-128*				

L1098004-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1098004-03 05/15/19 02:53 • (MS) R3411546-7 05/15/19 04:05 • (MSD) R3411546-8 05/15/19 04:29

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.50	19.5	206	201	33.9	33.0	100	10.0-151			2.39	28
(S) a,a,a-Trifluorotoluene(FID)					*106*	*105*		*77.0-120*				
(S) a,a,a-Trifluorotoluene(PID)					*110*	*109*		*72.0-128*				

Method Blank (MB)

(MB) R3411864-1 05/16/19 10:37

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C40 Oil Range	U		0.274	4.00
(S) o-Terphenyl	*58.9*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3411864-2 05/16/19 10:50

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	39.9	79.8	50.0-150	
(S) o-Terphenyl			*76.7*	*18.0-148*	

L1098778-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1098778-01 05/16/19 13:27 • (MS) R3411864-3 05/16/19 13:40 • (MSD) R3411864-4 05/16/19 13:53

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
C10-C28 Diesel Range	50.0	ND	22.1	28.0	44.2	56.0	1	50.0-150	J6	J3	23.6	20
(S) o-Terphenyl					*43.2*	*57.7*		*18.0-148*				

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

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

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

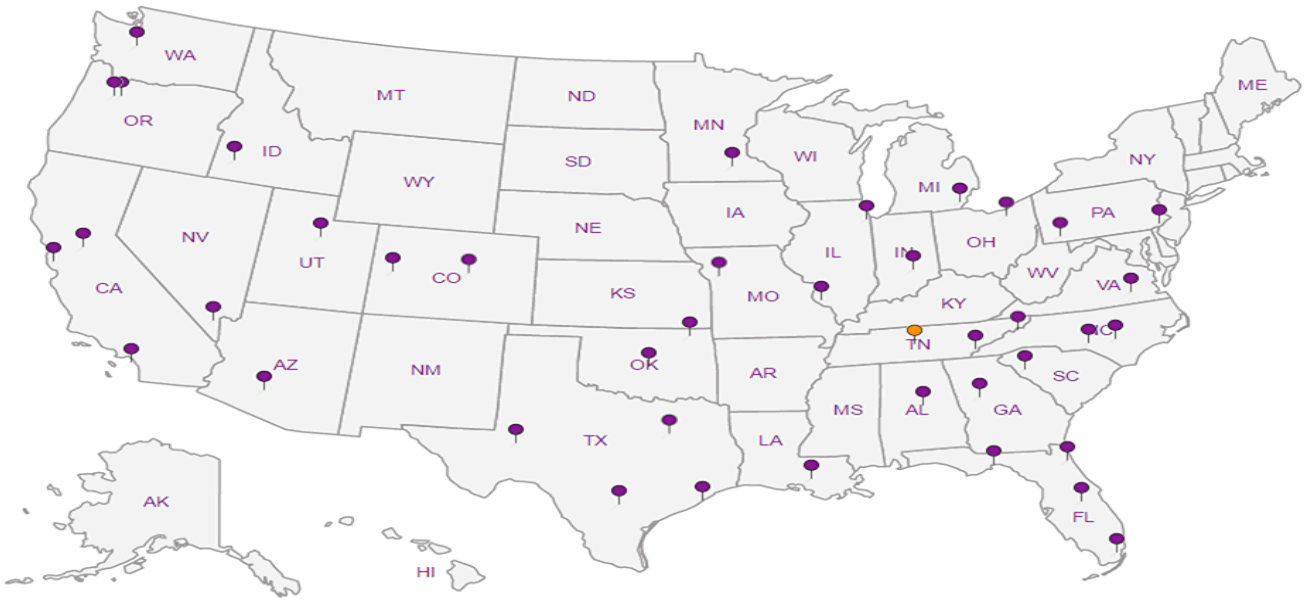
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



HilCorp-Farmington, NM
382 Road 3100
Aztec, NM 87401

Billing Information:

Pres Chk

khoekstra@hilcorp.com

Report to: CLARA CARDOZA

Email To: ccardoza@hilcorp.com

Project Description:

City/State Collected:

Phone: 505-486-9543
Fax:

Client Project #

Lab Project #

Collected by (print): KURT

Site/Facility ID # SJ 29-7 #583

P.O. #

Collected by (signature): Kurt Hoekstra

Immediately Packed on Ice N ___ Y X

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

Quote #

Date Results Needed

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	TPH 8015 - DRO, GRO, MRO	BTEX 8021	CHLORIDE	Remarks	Sample # (lab only)
E. BASE	Comp	Soil		5-8	9:05	1	X	X	X		-01
W. BASE	"	"		"	9:11	1	X	X	X		-02
E. WALL	"	"		"	9:14	1	X	X	X		-03
N. WALL W 1/2	"	"		"	9:18	1	X	X	X		-04

Chain of Custody Page ___ of ___

Pace Analytical® National Center for Testing & Innovation

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

L# 1097807

Table # F73

Acctnum: HILCORANM

Template:

Prelogin:

TSR:

PB:

Shipped Via:

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

Remarks:

pH ___ Temp ___

Flow ___ Other ___

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

Tracking # 4882 8602 6 3526

Sample Receipt Checklist
COC Seal Present/Intact: NP Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N
RAD SCREEN: <0.5 mR/hr

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)
Kurt Hoekstra	5-9-19	7:30	
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature) KWillis

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

Temp: A3BF °C 4.6+.1=4.7

Bottles Received: 4

Date: 5/10/19 Time: 830

If preservation required by Login: Date/Time

Hold:

Condition: NCF / (OK)

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

June 13, 2019

HilCorp-Farmington, NM

Sample Delivery Group:	L1105501
Samples Received:	06/05/2019
Project Number:	
Description:	San Juan 29-7 583
Site:	SAN JUAN 29-7 583
Report To:	Clara Cardoza 382 Road 3100 Aztec, NM 87401

Entire Report Reviewed By:

Daphne R Richards

Daphne Richards
Project Manager

TABLE OF CONTENTS

5 POINT TANK L1105501-01 Solid

Collected by	Collected date/time	Received date/time
Clara Cardoza	06/04/19 13:04	06/05/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 300.0	WG1294021	1	06/12/19 23:40	06/13/19 04:42	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1294201	1	06/05/19 21:57	06/11/19 19:19	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1292389	1	06/05/19 21:57	06/07/19 00:54	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1293845	1	06/10/19 12:18	06/11/19 16:12	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1293424	1	06/10/19 13:48	06/12/19 08:34	KME	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Daphne R Richards

Daphne Richards
Project Manager

Wet Chemistry by Method 300.0

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chloride	36.4		10.0	1	06/13/2019 04:42	WG1294021

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	ND		0.100	1	06/11/2019 19:19	WG1294201
(S) a,a,a-Trifluorotoluene(FID)	*101*		*77.0-120*		*06/11/2019 19:19*	WG1294201

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	06/07/2019 00:54	WG1292389
Toluene	ND		0.00500	1	06/07/2019 00:54	WG1292389
Ethylbenzene	ND		0.00250	1	06/11/2019 16:12	WG1293845
Total Xylenes	ND		0.00650	1	06/11/2019 16:12	WG1293845
(S) Toluene-d8	*100*		*75.0-131*		*06/07/2019 00:54*	WG1292389
(S) Toluene-d8	*107*		*75.0-131*		*06/11/2019 16:12*	WG1293845
(S) 4-Bromofluorobenzene	*104*		*67.0-138*		*06/07/2019 00:54*	WG1292389
(S) 4-Bromofluorobenzene	*98.4*		*67.0-138*		*06/11/2019 16:12*	WG1293845
(S) 1,2-Dichloroethane-d4	*96.2*		*70.0-130*		*06/07/2019 00:54*	WG1292389
(S) 1,2-Dichloroethane-d4	*78.5*		*70.0-130*		*06/11/2019 16:12*	WG1293845

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	ND		4.00	1	06/12/2019 08:34	WG1293424
C28-C40 Oil Range	6.90		4.00	1	06/12/2019 08:34	WG1293424
(S) o-Terphenyl	*62.8*		*18.0-148*		*06/12/2019 08:34*	WG1293424

Method Blank (MB)

(MB) R3420541-1 06/13/19 00:54

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Chloride	2.68	J	0.795	10.0

L1101799-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1101799-05 06/13/19 03:09 • (DUP) R3420541-5 06/13/19 03:17

Analyte	Original Result (dry) mg/kg	DUP Result (dry) mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	4670	4940	10	5.49		20

L1106632-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1106632-03 06/13/19 06:25 • (DUP) R3420541-6 06/13/19 06:33

Analyte	Original Result (dry) mg/kg	DUP Result (dry) mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	1310	1180	5	10.1		20

Laboratory Control Sample (LCS)

(LCS) R3420541-2 06/13/19 01:02

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	200	206	103	90.0-110	

L1101799-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1101799-04 06/13/19 02:35 • (MS) R3420541-3 06/13/19 02:43 • (MSD) R3420541-4 06/13/19 02:52

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	571	6990	7590	7560	105	100	1	80.0-120	E	E	0.311	20

Method Blank (MB)

(MB) R3420073-3 06/11/19 12:55

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	*104*			*77.0-120*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3420073-1 06/11/19 11:48 • (LCSD) R3420073-2 06/11/19 12:10

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.50	6.51	5.84	118	106	72.0-127			10.7	20
(S) a,a,a-Trifluorotoluene(FID)				*103*	*100*	*77.0-120*				

Method Blank (MB)

(MB) R3419605-3 06/06/19 22:53

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000400	0.00100
Toluene	U		0.00125	0.00500
(S) Toluene-d8	*100*			*75.0-131*
(S) 4-Bromofluorobenzene	*101*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*96.5*			*70.0-130*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3419605-1 06/06/19 21:31 • (LCSD) R3419605-2 06/06/19 21:52

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.125	0.121	0.117	96.8	93.2	70.0-123			3.76	20
Toluene	0.125	0.121	0.119	96.6	95.3	75.0-121			1.40	20
(S) Toluene-d8				*97.7*	*95.2*	*75.0-131*				
(S) 4-Bromofluorobenzene				*110*	*107*	*67.0-138*				
(S) 1,2-Dichloroethane-d4				*105*	*99.8*	*70.0-130*				

L1105374-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1105374-03 06/07/19 04:36 • (MS) R3419605-4 06/07/19 05:57 • (MSD) R3419605-5 06/07/19 06:17

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	0.135	0.0267	3.53	3.58	64.8	65.8	40	10.0-149			1.45	37
Toluene	0.135	U	3.59	3.71	66.4	68.5	40	10.0-156			3.16	38
(S) Toluene-d8					*95.7*	*96.3*		*75.0-131*				
(S) 4-Bromofluorobenzene					*113*	*106*		*67.0-138*				
(S) 1,2-Dichloroethane-d4					*103*	*102*		*70.0-130*				

Method Blank (MB)

(MB) R3419982-2 06/11/19 09:41

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Ethylbenzene	U		0.000530	0.00250
Xylenes, Total	U		0.00478	0.00650
(S) Toluene-d8	*105*			*75.0-131*
(S) 4-Bromofluorobenzene	*99.0*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*95.7*			*70.0-130*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3419982-1 06/11/19 08:41 • (LCSD) R3419982-3 06/11/19 10:37

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Ethylbenzene	0.125	0.122	0.113	97.4	90.1	74.0-126			7.78	20
Xylenes, Total	0.375	0.356	0.318	94.9	84.8	72.0-127			11.3	20
(S) Toluene-d8				*104*	*102*	*75.0-131*				
(S) 4-Bromofluorobenzene				*101*	*101*	*67.0-138*				
(S) 1,2-Dichloroethane-d4				*100*	*103*	*70.0-130*				

Method Blank (MB)

(MB) R3420100-1 06/11/19 18:04

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C40 Oil Range	U		0.274	4.00
(S) o-Terphenyl	*65.2*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3420100-2 06/11/19 18:17

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	37.8	75.6	50.0-150	
(S) o-Terphenyl			*66.4*	*18.0-148*	

L1105501-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1105501-01 06/12/19 08:34 • (MS) R3420100-3 06/12/19 08:47 • (MSD) R3420100-4 06/12/19 09:00

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
C10-C28 Diesel Range	50.0	ND	42.8	38.5	85.6	77.0	1	50.0-150			10.6	20
(S) o-Terphenyl					*51.2*	*47.7*		*18.0-148*				

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

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

Qualifier	Description
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

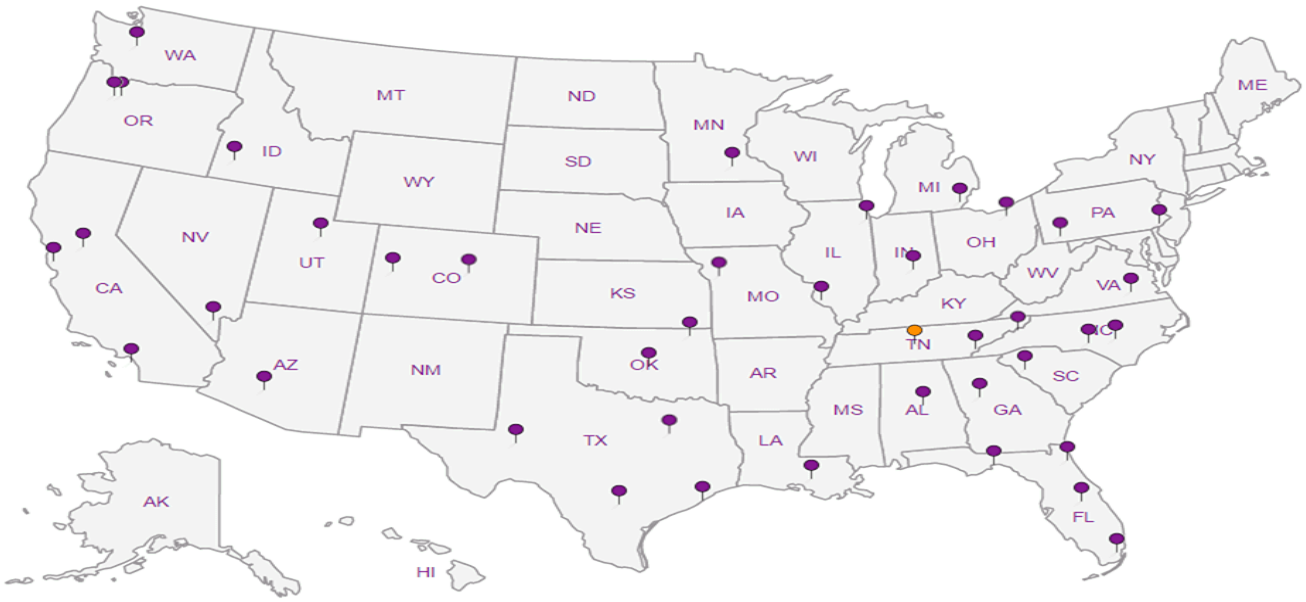
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



Billing Information:
ATTN: Clara Cardoza

Pres Chk

Analysis / Container / Preservative

Chain of Custody Page ___ of ___

Pace Analytical®
National Center for Testing & Innovation

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

L # L1105501
C152

Report to: Clara Cardoza

Email To: ccardoza@hilcorp.com;

Project Description: San Juan 29-7 583

City/State Collected: Aztec, NM

Phone: 5055640733
Fax:

Client Project #

Lab Project #

Collected by (print): Clara Cardoza

Site/Facility ID # San Juan 29-7 583

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y X

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

Quote #

Date Results Needed

Acctnum: HILCORANM
Template:
Prelogin:
TSR:
PB:
Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	TPH - MRO/GRO/DRO 8015	BTEX 8260B	Chlorides 300	Remarks	Sample # (lab only)
5 Point Tank	Comp	SS		6/4/19	1:04 pm	1	X	X	X		-01

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

Remarks:

pH _____ Temp _____

Flow _____ Other _____

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

Tracking # FedEx 4882 8626 3240

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

RAD SCREEN: <0.5 mR/

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	If preservation required by Login: Date/Time
Clara Cardoza	6/4/19	2:30pm		0	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C 1.7-1.6 Bottles Received: 1	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 6/5/19 Time: 8:45	Hold: Condition: NCF / OK