



October 16, 2017

Reference No. 088210-38

Mr. Zane Kurtz
Sr. Safety and Environmental Representative
5509 Champions Dr.
Midland, TX 79706
VIA E-Mail: zane_kurtz@eogresources.com

APPROVED

By Olivia Yu at 1:14 pm, Dec 22, 2017

Dear Mr. Kurtz:

**Re: Assessment Summary Report
Presidente BPD State Com #1H
1RP-2822 (API-30-025-39660)
EOG Resources, Inc.
Site Location: Unit D, Sec. 32, T 25-S, R 32-E
(Lat 32.0931°, Long -103.7033°)
Lea County, New Mexico**

**NMOCD approves of the
delineation and proposed
remediation for 1RP-2822.**

GHD Services, Inc. (GHD) is pleased to present this report for the above referenced site. Assessment activities were performed at the Presidente BPD State Com #1H (hereafter referred to as the "Site"), on June 28 and 29, 2017 by GHD. The Site is located within Unit D, Section 32, Township 25 South, Range 32 East, in Lea County, New Mexico (Figure 1). The property owner is the New Mexico State Land Office (NMSLO).

The Site is an active well site located approximately 24 miles east, southeast of Malaga, New Mexico. According to EOG supplied Site information, a release of approximately 250 barrels (bbls) of produced water occurred when an 8-inch water line ruptured. Approximately 220 bbls of produced water were recovered utilizing vacuum trucks. The release was discovered on June 5, 2012. A C-141 Form was submitted to the New Mexico Oil Conservation Division (NMOCD) on June 11, 2012 and remediation permit (RP) number 1RP-2822 was assigned.

Initial delineation samples were collected on June 11, 2012 in six sections within the release area (green shaded area on Figure 2) by Yates Petroleum Corporation (Yates). One soil sample was collected in each section at a depth of 6 inches below ground surface and submitted for laboratory analysis. The samples were submitted to Cardinal Laboratories (Cardinal) in Hobbs, New Mexico for benzene, toluene, ethylbenzene, and xylenes (BTEX) by EPA Method 8021B, total petroleum hydrocarbons (TPH) gasoline and diesel range organics by EPA Method 8015M, and chlorides by Method SM4500CL-B analysis.

None of the samples contained BTEX or TPH constituents above the laboratory reporting limits. Chloride concentrations ranged from 5,920 to 17,800 milligrams per kilogram (mg/kg).

Additional vertical delineation samples were collected on June 28, 2012 by Yates. Fifteen samples were collected from depths ranging from 1 to 3 feet below ground surface (ft. bgs) within each of the six sections. The samples were submitted to Cardinal for chloride analysis by Method SM4500CL-B. Chloride



concentrations ranged from 96 to 14,700 mg/kg. Chloride concentrations from samples collected at 3 ft. bgs ranged from 944 to 8,800 mg/kg. The top loose soil was excavated to depths ranging from 1 to 3 ft. bgs.

1. Recommended Remediation Action Levels

There are relatively few groundwater wells in the area of the Site with which to obtain a depth to groundwater. Based on information available from the New Mexico Office of the State Engineer (NMOSE) New Mexico Water Rights Reporting System website, the closest well is approximately 1.75 miles from the site. The depth to groundwater measured in this well was 350 feet below ground surface (ft. bgs). A copy of the NMOSE well report is included in Appendix A.

There do not appear to be any wellhead protection areas and no surface water bodies within 200 to 1000 ft. of the Site. Therefore, the preliminary total ranking score for the Site is 0 (see table below).

Based on this score, the applicable NMOCD Site-specific Recommended Remediation Action Limits (RRALs) are 10 mg/kg for benzene, 50 mg/kg for total BTEX, 5,000 mg/kg for TPH, and 600 mg/kg for chlorides.

In an August 28, 2017 telephone conversation between Bernard Bockisch of GHD and Jim Griswold, NMOCD Environmental Bureau Chief, GHD was informed that the NMOCD is accepting chloride concentrations of 600 mg/kg for assessment clean up levels.

New Mexico Oil Conservation Division Site Assessment	
Ranking Criteria	Score
Depth to Ground Water (> 100 ft. bgs)	0
Wellhead Protection Area (> 1000 ft. from water source, > 200 ft. from domestic source)	0
Distance to Surface Body Water (200-1000 ft.)	0
Ranking Criteria Total Score	0*
*Because the ranking criteria total score is 0, NMOCD established RRALs are 10 mg/kg for benzene, 50 mg/kg for total BTEX, 5,000 mg/kg for TPH ¹ , and 600 mg/kg for chlorides.	

1. NMOCD Guidelines for Remediation of Leaks, Spills and Releases, August 13, 1993

2. Assessment Activities

GHD and SDR Enterprises, LLC (SDR) performed additional delineation on June 28 and 29, 2017 that included the collection of 20 soil samples from six test pits. Soil samples were collected from depths ranging from 4 to 18 ft. bgs and they were submitted to Hall Environmental Analysis Laboratory (HEAL) located in Albuquerque, New Mexico. All of the samples were submitted for chloride analysis by EPA 300.



Chloride was detected above the NMOCD Recommended Remedial Action Levels (RRALs) in four of the samples, all from depths ranging from 4 to 16 ft. bgs. Chloride concentrations ranged from 610 to 6,500 mg/kg. The sample collected from test pit TP-2 at 12 ft. bgs contained a chloride concentration of 1,200 mg/kg concentration and the sample collected at 16 ft. bgs contained a concentration of 490.

The sample collected from test pit TP-4 at 4 ft. bgs contained the 6,500 mg/kg concentration, however, the samples collected from 16 and 18 feet from this test pit contained chloride concentrations of 76 and 110 mg/kg, respectively.

The sample collected from test pit TP-5 at a depth of 4 ft. bgs contained a chloride concentration of 4,500 mg/kg and the sample collected at 16 ft. bgs contained a chloride concentration of 670 mg/kg that is slightly above the RRAL.

The sample collected from test pit TP-6 at a depth of 4 ft. bgs contained a chloride concentration of 920 mg/kg and the sample collected at 16 ft. bgs contained a chloride concentration of 270 mg/kg. The analytical data is summarized on Table 1 and the laboratory report is included in Appendix B. Based on the collected assessment data, it appears that the vertical and horizontal extent of chloride-impacted soil has been fully assessed to within the RRALs with the exception of TP-5.

3. Summary and Recommendations

Based on the assessment of the chloride concentrations, GHD recommends the following:

- Excavation of the release area to 4 ft. bgs and the placement of a 20-mil polyethylene liner in the bottom of the excavation (see Figure 2 for the spill and excavation area).
- Backfilling of the excavation with clean fill material and wheel compacting to grade.
- Fertilizing and reseeding of the disturbed area with a BLM-approved seed mix.
- Site Closure

Following completion of the backfilling, revegetation of the site will be performed. Disturbed areas associated with the remediation efforts will be re-seeded. If after one growing season the vegetation has not taken hold, seeding may need to be repeated until revegetation is successful, as determined by the NMSLO. The seed will be planted utilizing a drill. The proposed seed mix will consist of Bureau of Land Management mix #2 without love grass.

The site will be visited on a quarterly basis to assess the establishment of vegetative growth. Staff personnel performing the site visit will also look for the presence of noxious weeds at the site as indicated on the New Mexico Noxious Weeds List specified on the United States Department of Agriculture website. If a noxious weed is observed at the site, the New Mexico State Land Office will be contacted to determine the most effective manner to eradicate it. Once vegetative growth has been established, to the satisfaction of all Site stakeholders, GHD will petition for No Further Action status/Site closure from the NMOCD.



Should you have any questions or require additional information regarding this submittal please feel free to contact myself, or Bernie Bockisch at (505) 884-0672 or Bernard.Bockisch@ghd.com.

Sincerely,

GHD

A handwritten signature in dark ink that reads "Alan Brandon". The signature is fluid and cursive, with the first and last names being more prominent.

Alan Brandon
Senior Project Manager

BB/mc/30

A handwritten signature in blue ink that reads "Bernard Bockisch". The signature is cursive and somewhat stylized, with the first and last names being more prominent.

Bernard Bockisch
Albuquerque Operations Manager

Figures



Source: USGS 7.5 Minute Quad "Paduca Breaks West, New Mexico"

Lat/Long: 32.093120° North, 103.704075° West

0 1000 2000ft

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



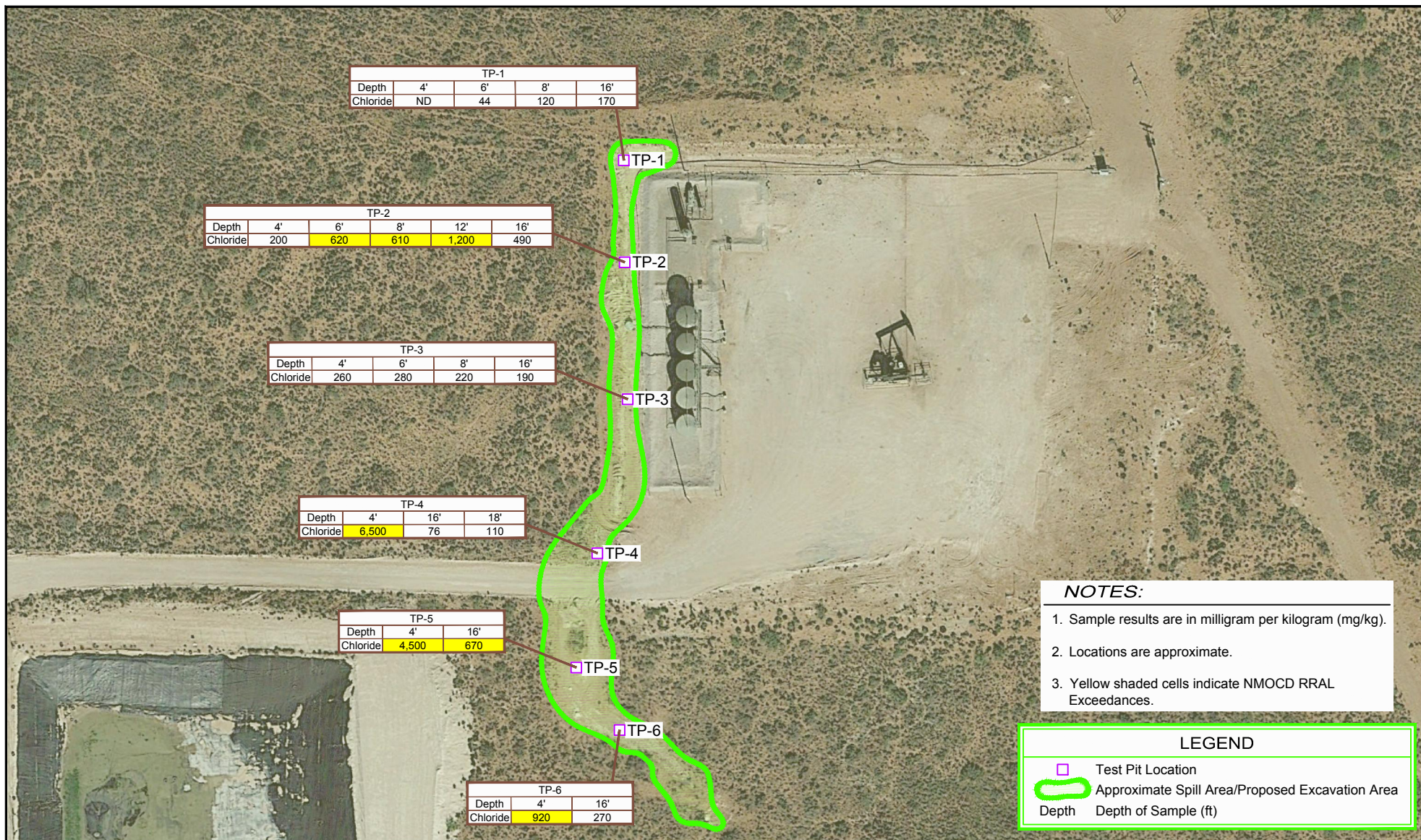
EOG RESOURCES
LEA COUNTY, NEW MEXICO
PRESIDENTE BPD STATE COM No. 1H

088210-38

Jul 26, 2017

SITE LOCATION MAP

FIGURE 1



Source: Image © 2017 Google - Imagery Date: September 20, 2015

Lat/Long: 32.093120° North, 103.704075° West

0 50 100ft

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



EOG RESOURCES
LEA COUNTY, NEW MEXICO
PRESIDENTE BPD STATE COM No. 1H

SAMPLE LOCATION MAP

088210-38

Oct 11, 2017

FIGURE 2

Tables

Table 1

Presidente BPD State Com #1H - Summary of Soil Analytical Data

Sample ID	Depth (feet)	Date	Benzene	Toluene	Ethylbenzene	Xylenes	BTEX	TPH (GRO)	TPH (DRO)	TPH (MRO)	Total TPH	Chloride
088210-38-062817-MG-TP-1-4	4	06/28/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-38-062817-MG-TP-1-6	6	06/28/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	44
088210-38-062817-MG-TP-1-8	8	06/28/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	120
088210-38-062817-MG-TP-1-16	16	06/28/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	170
088210-38-062917-MG-TP-2-4	4	06/29/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	200
088210-38-062917-MG-TP-2-6	6	06/29/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	620
088210-38-062917-MG-TP-2-8	8	06/29/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	610
088210-38-062917-MG-TP-2-12	12	06/29/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	1200
088210-38-062917-MG-TP-2-16	16	06/29/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	490
088210-38-062817-MG-TP-3-4	4	06/28/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	260
088210-38-062817-MG-TP-3-6	6	06/28/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	280
088210-38-062817-MG-TP-3-8	8	06/28/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	220
088210-38-062817-MG-TP-3-16	16	06/28/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	190
088210-38-062917-MG-TP-4-4	4	06/29/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	6500
088210-38-062917-MG-TP-4-16	16	06/29/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	76
088210-38-062917-MG-TP-4-18	18	06/29/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	110
088210-38-062917-MG-TP-5-4	4	06/29/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	4500
088210-38-062917-MG-TP-5-16	16	06/29/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	670
088210-38-062917-MG-TP-6-4	4	06/29/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	920
088210-38-062917-MG-TP-6-16	16	06/29/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	270
NMOCD RRALs (Total Ranking Score = 0)			10		50				Total TPH: 5,000			600

Notes:

All sample results are in milligrams per kilogram

NA = Not Analyzed

NMOCD = New Mexico Oil Conservation Division

RRALs = Recommended Remediation Action Limits

Highlighted = Exceeds NMOCD RRAL

Appendices

Appendix A

Water Well Report

Presidente BPD State Com #141



New Mexico Office of the State Engineer Water Column/Average Depth to Water

(A CLW#### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced,
O=orphaned,

C=the file is closed)

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

(NAD83 UTM in meters)

(In feet)

POD Number	Code	Sub-basin	County	Q	Q	Q	Q	Sec	Tws	Rng	X	Y	Distance	DepthWell	DepthWater	Water Column
C 03829 POD1		CUB	LE	3	3	1	06	26S	32E		620628	3549186	2851	646	350	296
C 03554 POD1		CUB	ED	2	1	4	01	26S	31E		620547	3549148	2930	630	300	330

Average Depth to Water: **325 feet**

Minimum Depth: **300 feet**

Maximum Depth: **350 feet**

Record Count: 2

UTM NAD83 Radius Search (in meters):

Easting (X): 622297.63

Northing (Y): 3551498.78

Radius: 3000

The data is furnished by the NMOS/ISC and is accepted by the recipient with the expressed understanding that the OS/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

8/24/17 7:55 AM

WATER COLUMN/ AVERAGE DEPTH TO
WATER

Appendix B

Laboratory Analytical Reports



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

July 17, 2017

Bernie Bockish

GHD

6121 Indian School Road, NE #200

Albuquerque, NM 87110

TEL: (505) 884-0672

FAX

RE: Presidente

OrderNo.: 1707015

Dear Bernie Bockish:

Hall Environmental Analysis Laboratory received 20 sample(s) on 7/1/2017 for the analyses presented in the following report.

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

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

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

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

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1707015

Date Reported: 7/17/2017

CLIENT: GHD
Project: Presidente

Lab Order: 1707015

Lab ID: 1707015-001 **Collection Date:** 6/29/2017 10:30:00 AM
Client Sample ID: 088210-38-062917-MGTP-2-16' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS Analyst: MRA							
Chloride	490	30		mg/Kg	20	7/7/2017 1:22:16 PM	32680

Lab ID: 1707015-002 **Collection Date:** 6/29/2017 10:50:00 AM
Client Sample ID: 088210-38-062917-MGTP-4-4' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS Analyst: MRA							
Chloride	6500	300		mg/Kg	200	7/10/2017 8:55:27 PM	32680

Lab ID: 1707015-003 **Collection Date:** 6/29/2017 11:40:00 AM
Client Sample ID: 088210-38-062917-MGTP-4-16' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS Analyst: MRA							
Chloride	76	30		mg/Kg	20	7/7/2017 2:11:55 PM	32680

Lab ID: 1707015-004 **Collection Date:** 6/29/2017 12:40:00 PM
Client Sample ID: 088210-38-062917-MGTP-4-18' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS Analyst: MRA							
Chloride	110	30		mg/Kg	20	7/10/2017 4:10:00 PM	32712

Lab ID: 1707015-005 **Collection Date:** 6/29/2017 1:10:00 PM
Client Sample ID: 088210-38-062917-MGTP-5-4' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS Analyst: MRA							
Chloride	4500	150		mg/Kg	100	7/12/2017 5:20:07 PM	32712

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	Page 1 of 5
	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 Quantitative Limit	RL	Reporting Detection Limit	
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1707015

Date Reported: 7/17/2017

CLIENT: GHD
Project: Presidente

Lab Order: 1707015

Lab ID: 1707015-006 **Collection Date:** 6/29/2017 1:50:00 PM

Client Sample ID: 088210-38-062917-MGTP-5-16' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS Analyst: MRA							
Chloride	670	30		mg/Kg	20	7/10/2017 4:59:39 PM	32712

Lab ID: 1707015-007 **Collection Date:** 6/29/2017 2:20:00 PM

Client Sample ID: 088210-38-062917-MGTP-6-4' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS Analyst: MRA							
Chloride	920	30		mg/Kg	20	7/10/2017 5:12:04 PM	32712

Lab ID: 1707015-008 **Collection Date:** 6/29/2017 2:55:00 PM

Client Sample ID: 088210-38-062917-MGTP-6-16' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS Analyst: MRA							
Chloride	270	30		mg/Kg	20	7/10/2017 5:24:28 PM	32712

Lab ID: 1707015-009 **Collection Date:** 6/28/2017 11:45:00 AM

Client Sample ID: 088210-38-062817-MGTP-1-4' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS Analyst: MRA							
Chloride	ND	30		mg/Kg	20	7/10/2017 5:36:53 PM	32712

Lab ID: 1707015-010 **Collection Date:** 6/28/2017 11:55:00 AM

Client Sample ID: 088210-38-062817-MGTP-1-6' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS Analyst: MRA							
Chloride	44	30		mg/Kg	20	7/10/2017 6:14:07 PM	32712

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 Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report

Lab Order: 1707015

Date Reported: 7/17/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD
Project: Presidente

Lab Order: 1707015

Lab ID: 1707015-011 **Collection Date:** 6/28/2017 12:05:00 AM
Client Sample ID: 088210-38-062817-MGTP-1-8' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS Analyst: MRA							
Chloride	120	30		mg/Kg	20	7/10/2017 6:26:31 PM	32712

Lab ID: 1707015-012 **Collection Date:** 6/28/2017 12:55:00 PM
Client Sample ID: 088210-38-062817-MGTP-1-16' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS Analyst: MRA							
Chloride	170	30		mg/Kg	20	7/10/2017 6:38:55 PM	32712

Lab ID: 1707015-013 **Collection Date:** 6/28/2017 1:30:00 PM
Client Sample ID: 088210-38-062817-MGTP-3-4' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS Analyst: MRA							
Chloride	260	30		mg/Kg	20	7/10/2017 6:51:20 PM	32712

Lab ID: 1707015-014 **Collection Date:** 6/28/2017 1:35:00 PM
Client Sample ID: 088210-38-062817-MGTP-3-6' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS Analyst: MRA							
Chloride	280	30		mg/Kg	20	7/10/2017 7:03:44 PM	32712

Lab ID: 1707015-015 **Collection Date:** 6/28/2017 1:40:00 PM
Client Sample ID: 088210-38-062817-MGTP-3-8' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS Analyst: MRA							
Chloride	220	30		mg/Kg	20	7/10/2017 7:16:09 PM	32712

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 Quantitative Limit	RL	Reporting Detection Limit	
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified	

Analytical Report

Lab Order: 1707015

Date Reported: 7/17/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD
Project: Presidente

Lab Order: 1707015

Lab ID: 1707015-016 **Collection Date:** 6/28/2017 2:00:00 PM

Client Sample ID: 088210-38-062817-MGTP-3-16' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS Analyst: MRA							
Chloride	190	30		mg/Kg	20	7/10/2017 7:28:34 PM	32712

Lab ID: 1707015-017 **Collection Date:** 6/29/2017 9:00:00 AM

Client Sample ID: 088210-38-062917-MGTP-2-4' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS Analyst: MRA							
Chloride	200	30		mg/Kg	20	7/10/2017 7:40:58 PM	32712

Lab ID: 1707015-018 **Collection Date:** 6/29/2017 9:10:00 AM

Client Sample ID: 088210-38-062917-MGTP-2-6' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS Analyst: MRA							
Chloride	620	30		mg/Kg	20	7/10/2017 7:53:23 PM	32712

Lab ID: 1707015-019 **Collection Date:** 6/29/2017 9:20:00 AM

Client Sample ID: 088210-38-062917-MGTP-2-8' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS Analyst: MRA							
Chloride	610	30		mg/Kg	20	7/10/2017 8:05:48 PM	32712

Lab ID: 1707015-020 **Collection Date:** 6/29/2017 9:55:00 AM

Client Sample ID: 088210-38-062917-MGTP-2-12' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS Analyst: MRA							
Chloride	1200	30		mg/Kg	20	7/10/2017 8:43:02 PM	32712

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 Quantitative Limit	RL	Reporting Detection Limit	
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified	

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1707015

17-Jul-17

Client: GHD
Project: Presidente

Sample ID	MB-32680		SampType: mblk		TestCode: EPA Method 300.0: Anions					
Client ID:	PBS		Batch ID: 32680		RunNo: 44062					
Prep Date:	7/7/2017		Analysis Date: 7/7/2017		SeqNo: 1390454		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	LCS-32680		SampType: lcs		TestCode: EPA Method 300.0: Anions					
Client ID:	LCSS		Batch ID: 32680		RunNo: 44062					
Prep Date:	7/7/2017		Analysis Date: 7/7/2017		SeqNo: 1390455		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	91.7	90	110			

Sample ID	MB-32712		SampType:	mblk		TestCode:	EPA Method 300.0: Anions				
Client ID:	PBS		Batch ID:	32712		RunNo:	44096				
Prep Date:	7/10/2017		Analysis Date:	7/10/2017		SeqNo:	1391957		Units:	mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Chloride	ND	1.5									

Sample ID	LCS-32712		SampType: lcs		TestCode: EPA Method 300.0: Anions					
Client ID:	LCSS		Batch ID: 32712		RunNo: 44096					
Prep Date:	7/10/2017		Analysis Date: 7/10/2017		SeqNo: 1391958		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.8	90	110			

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 Quantitative Limit	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified



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

Sample Log-In Check List

Client Name: GHD

Work Order Number: 1707015

RcptNo: 1

Received By: Andy Freeman 7/1/2017 10:30:00 AM

Completed By: Erin Melendrez 7/1/2017 12:41:52 PM

Reviewed By: [Signature] 7/3/17

[Signature]

Chain of Custody

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

Log In

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

of preserved
bottles checked
for pH: _____
(<2 or >12 unless noted)
Adjusted? _____
Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:	_____	Date	_____
By Whom:	_____	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	_____		
Client Instructions:	_____		

17. Additional remarks:

18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	4.9	Good	Yes			

