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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised April 3, 2017

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

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company Benson-Montin-Greer Drilling Corp.	Contact Zach Stradling
Address 4900 College Blvd., Farmington, NM 87402	Telephone No. 505-325-8874
Facility Name EPCMU Battery #2	Facility Type Tank Battery

Surface Owner Jicarilla Apache	Mineral Owner Jicarilla Apache, Federal, Fee	API No. N/A

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
NWSW	25	27N	1E					Rio Arriba

Latitude W36.522113 **Longitude** N106.855458 NAD83

NATURE OF RELEASE

Type of Release Crude Oil	Volume of Release Unknown	Volume Recovered 1 bbl
Source of Release Hole in separator dump line	Date and Hour of Occurrence 2/28/18 (early morning)	Date and Hour of Discovery 2/28/18 (10:30 am)
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Bryce Hammond (Jicarilla BLM), Vanessa Fields (NMOCD)	
By Whom? Zach Stradling	Date and Hour Bryce Hammond 2/28/18 5:00 pm, Vanessa Fields 3/1/18 8:30 am	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

NMOCD
APR 2 2018
DISTRICT III

Describe Cause of Problem and Remedial Action Taken.*
Break in dump line between separator and tank battery in the early hours of the moring. Lease operator discovered crude oil on the surface inside the tank berm and notified superintendent. Superintendent notified BMG office. BMG used spec truck to vacuum up any free standing oil (~1 bbl). Backhoe was used to determine source of leak and depth of affected soil. Contaminated soil was excavated and disposed of at Envirotech. Walls and floor of excavation were sampled and tested per Jicarilla Apache Nation closure standard. Excavation was backfilled with fill material approved by Jicarilla Apache Nation.

Describe Area Affected and Cleanup Action Taken.*
Affected area is oil saturated soil inside tank berm. Affected soil was excavated and disposed of at Envirotech. See accompanying final remediation report for details.

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

Signature:	OIL CONSERVATION DIVISION
Printed Name: Zach Stradling	Approved by Environmental Specialist:
Title: Vice President	Approval Date: 4/3/18 Expiration Date:
E-mail Address: zstradling@bmgdrilling.com	Conditions of Approval: — Attached ☐
Date: 3/29/18 Phone: 505-325-8874	

* Attach Additional Sheets If Necessary

NVF1807230692

Remediation of a Hydrocarbon Release

East Puerto Chiquito Tank Battery #2
SW/4 Sec 29 – T27N – R1E
Jicarilla Apache Nation
Rio Arriba County, New Mexico

Prepared for:
Benson-Montin-Greer Drilling Corp.
Farmington, New Mexico

Prepared by:
Blagg Engineering, Inc.
P.O. Box 87
Bloomfield, New Mexico 87413
(505)632-1199

March 13, 2018

REMEDIATION
OF A
HYDROCARBON RELEASE
East Puerto Chiquito Tank Battery #2

TABLE OF CONTENTS

APPENDICES

REMEDIATION
OF A
HYDROCARBON RELEASE
East Puerto Chiquito Tank Battery #2

INTRODUCTION

Blagg Engineering Inc. (BEI) has been retained by Benson-Montin-Greer Drilling Corp. (BMG) to monitor, sample and document environmental remediation of hydrocarbon impacts at the East Puerto Chiquito Tank Battery #2, a centralized oil holding facility located on the Jicarilla Apache Nation in Rio Arriba County, New Mexico at SW/4 Sec. 29 – T27N – R1E (Figure 1). The origin of the hydrocarbon release was from corrosion of an oil transfer line adjacent to the central tank battery. Upon discovery on February 28, 2018 BMG immediately shut-in the facility and began remediation of impacts by using an oilfield vacuum truck to recover free liquids inside the tank containment berm. Excavation and removal of impacted soils began on March 5, 2018 and was completed on March 8, 2018.

The closure standard for the site as determined by the Jicarilla Apache Nation and New Mexico Oil Conservation Division (NMOCD) Spill and Release Guidelines was based on the potential risk to ground and surface water from hydrocarbon impacts. At this site the closure standard was established as follows:

- Depth to groundwater, based on search of registered water wells on New Mexico State Engineers data base (as of March 7, 2018), with radius of 15,000 Meters (9.3 miles): Nearest well with water data, POD RG 58564 (13,225 meters away), depth to water = 230'

Jicarilla/NMOCD Site Ranking on Closure Standard: 0 Points

- Nearest water well to release site (no depth to water data on file), POD RG 80825 at 9,612 meters away

Jicarilla/NMOCD Site Ranking on Closure Standard: 0 Points

- Review of nearest surface water, dry wash blue line on USGS Topo Sheet (Pounds Mesa), at 585 feet away

Jicarilla/NMOCD Site Ranking on Closure Standard: 10 Points

Total Site Ranking: 10 Points

Total Petroleum Hydrocarbons (TPH) = 1,000 mg/Kg (parts per million)
Benzene = 10 mg/Kg
Benzene, Toluene, Ethyl-Benzene and Total Xylenes (BTEX) combined = 50 mg/Kg
Total Chlorides = 600 mg/Kg

REMEDIATION VIA EXCAVATION

Site remediation consisted of excavation of impacted soils along and below the buried pipeline in all directions until observable (odor and/or stain) impacts had been removed. The soil removal was conducted using a trackhoe excavator with a long reach bucket. The final excavation was approximately 35' long, east to west, parallel to the original pipeline trench with a maximum width of approximately 25', north to south (see Figure 2). The upper 10' of the excavation was benched to minimize the risk of collapse. The main impact area was limited to a narrow channel, approximately 18' long, 7' wide and 17' deep.

Closure sampling was conducted on March 8, 2018 with observation by a Jicarilla Apache Nation representative. Due to the long, narrow trench excavated to remove hydrocarbon impacts it was determined to isolate 5 separate areas for composite sampling: north and south sidewalls, 10' – 16' depths, north and south sidewalls, 2' – 8' depths, and base at 17' depth. Representative 5-point composite portions of each sample zone was placed into a gallon sized Ziploc® baggie for thorough mixing, then a representative sample from the baggie was placed into a 4-ounce laboratory supplied jar with Teflon® lid, labeled and placed on ice in an ice chest for laboratory testing. The jarred samples were hand delivered to a representative of Hall Environmental Analytical Laboratories for analysis via U.S. EPA Method 8021B (volatile organics limited to benzene, toluene, ethyl benzene and total xylenes), U.S. EPA Method 8015 (gasoline range (GRO), diesel range (DRO) and motor oil range (MRO) organics), and chlorides via U.S. EPA Method 300. A chain-of-custody followed the samples.

Rush laboratory results were received on March 9, 2018. Summary data was reported as follows:

Sample ID	Date/Time	Total TPH (mg/Kg) (ppm)	Total BTEX (mg/Kg) (ppm)	Benzene (mg/Kg) ppm	Chloride (mg/Kg) (ppm)
Base @ 17'	3/8/18 @ 11:04	97.0	0.147	ND	ND
North Wall (10'–16')	3/8/18 @ 11:02	70.7	ND	ND	ND
South Wall (10'–16')	3/8/18 @ 11:07	ND	ND	ND	ND
North Wall (2'–8')	3/8/18 @ 11:10	181	ND	ND	ND
South Wall (2'–8')	3/8/18 @ 11:13	ND	ND	ND	31
Site Closure Standard:		1,000	50	10	600

Note: All Samples 5-Point Composites
ND = Not Detected

All laboratory analytical test results were within site closure standards.

CONCLUSIONS AND RECOMMENDATIONS

1) A sudden hydrocarbon release from corrosion failure of a 2-inch oil line resulted in impacting soil at the East Puerto Chiquito Tank Battery #2. The release was discovered early and contained at the tank battery. Remediation consisted of vacuuming surface liquids and excavating subsurface impacted soils. Soil sampling analytical testing determined that the residual soils in the remedial excavation were within site closure standards. No additional site remediation is indicated. Regulatory closure of remedial activities is recommended.

CLOSURE AND LIMITATIONS

This report has been prepared for the exclusive use of Benson-Montin-Greer Drilling Corp. as it pertains to hydrocarbon impact remediation at the East Puerto Chiquito Tank Battery #2 located on the Jicarilla Apache Nation, Rio Arriba County, New Mexico. The data presented herein is based on visual observations, subsurface soil conditions encountered at sampling locations and on information reported by analytical laboratory testing of soils. This report does not reflect variations which may exist between sampling locations.

I certify that the work performed by Blagg Engineering, Inc. as described in this report was directed by my supervision, and that I am personally familiar with the remedial actions and the contents of this report.

Submitted by:
Blagg Engineering, Inc.

Jeffrey C Blagg, PE

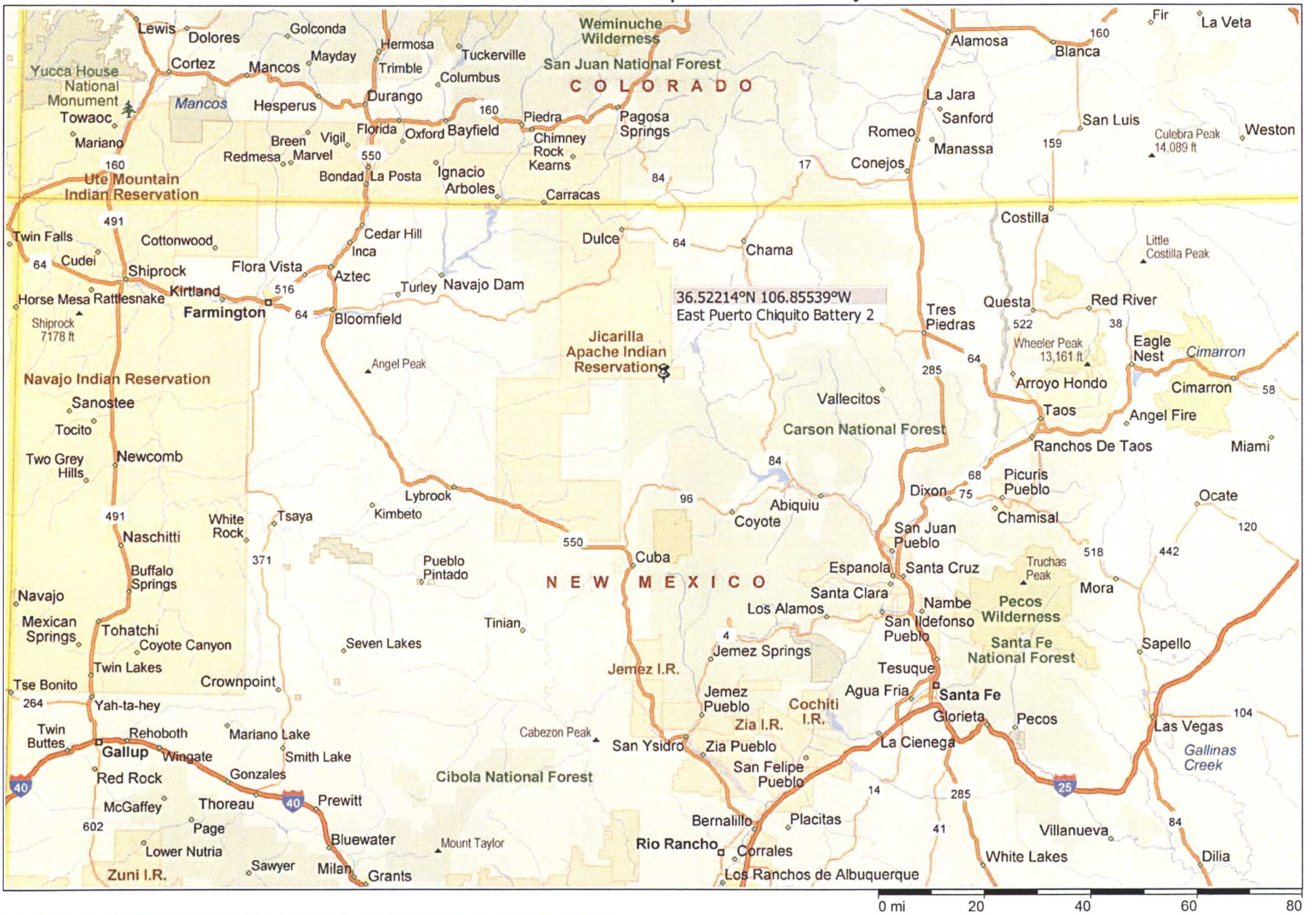
Digitally signed by Jeffrey C Blagg, PE
DN: cn=Jeffrey C Blagg, PE, o, ou, email=jeffcblagg@aol.com, c=US
Date: 2018.03.14 06:17:38 -06'00'

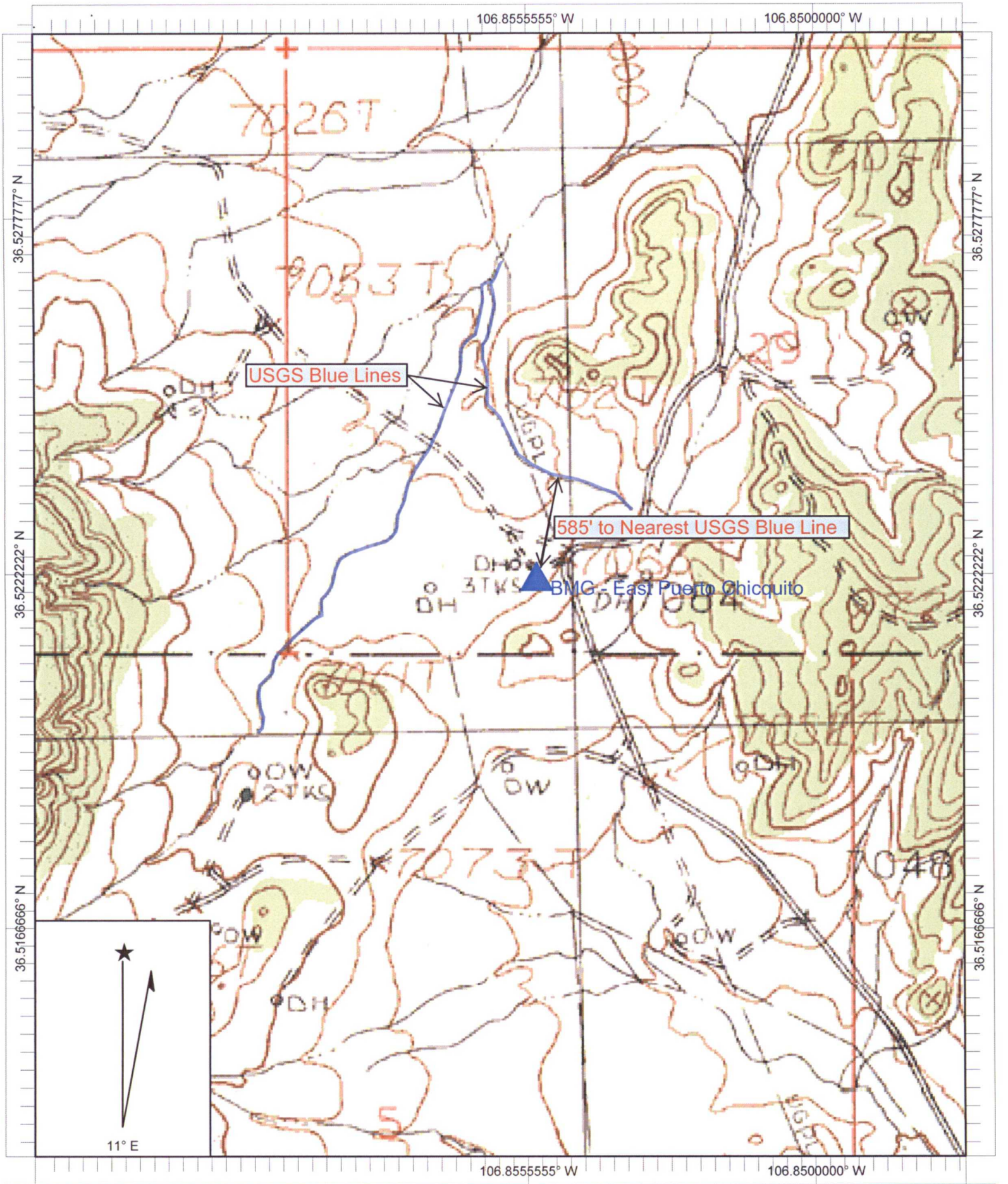
Jeffrey C. Blagg, PE
NMPE 11607

Appendix A
Figures

Figure 1

BMG - East Puerto Chiquito Tank Battery #2



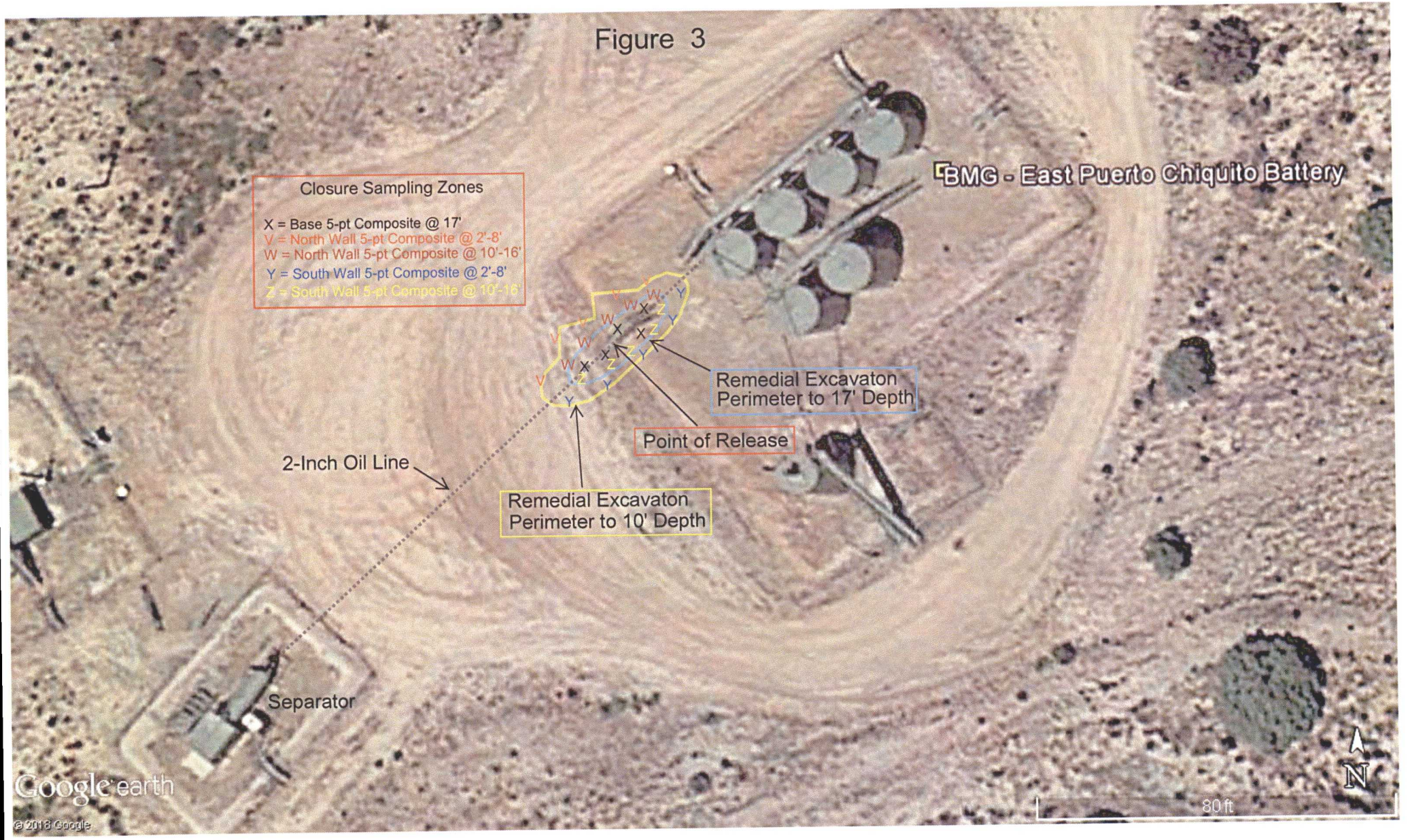


Name: POUNDS MESA
Date: 3/9/2018
Scale: 1 inch equals 666 feet

Figure 2

Location: 036.5218987° N 106.8561003° W
Caption: East Puerto Chiquito TB #2

Figure 3


BMG - East Puerto Chiquito Battery
Closure Sampling Zones
X = Base 5-pt Composite @ 17'
V = North Wall 5-pt Composite @ 2'-8'
W = North Wall 5-pt Composite @ 10'-16'
Y = South Wall 5-pt Composite @ 2'-8'
Z = South Wall 5-pt Composite @ 10'-16'
Remedial Excavaton Perimeter to 17' Depth
Point of Release
2-Inch Oil Line
Remedial Excavaton Perimeter to 10' Depth
Separator
Google earth
© 2018 Google
N
80 ft

Appendix B

Laboratory Analytical Data Reports

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

March 12, 2018

Jeff Blagg
Blagg Engineering
P. O. Box 87
Bloomfield, NM 87413
TEL: (505) 632-1199
FAX (505) 632-3903

RE: EPCTB 2 OrderNo.: 1803517

Dear Jeff Blagg:

Hall Environmental Analysis Laboratory received 5 sample(s) on 3/9/2018 for the analyses presented in the following report.

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

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1803517**
Date Reported: **3/12/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Project: EPCTB 2
Lab ID: 1803517-001 **Matrix:** SOIL

Client Sample ID: BASE @ 17
Collection Date: 3/8/2018 11:04:00 AM
Received Date: 3/9/2018 7:35:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	ND	30		mg/Kg	20	3/9/2018 10:58:26 AM	36930
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	86	10		mg/Kg	1	3/9/2018 9:55:03 AM	36928
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	3/9/2018 9:55:03 AM	36928
Surr: DNOP	91.8	70-130		%Rec	1	3/9/2018 9:55:03 AM	36928
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	11	4.0		mg/Kg	1	3/9/2018 9:40:26 AM	36920
Surr: BFB	182	15-316		%Rec	1	3/9/2018 9:40:26 AM	36920
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.020		mg/Kg	1	3/9/2018 9:40:26 AM	36920
Toluene	ND	0.040		mg/Kg	1	3/9/2018 9:40:26 AM	36920
Ethylbenzene	0.064	0.040		mg/Kg	1	3/9/2018 9:40:26 AM	36920
Xylenes, Total	0.083	0.081		mg/Kg	1	3/9/2018 9:40:26 AM	36920
Surr: 4-Bromofluorobenzene	102	80-120		%Rec	1	3/9/2018 9:40:26 AM	36920

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Project: EPCTB 2
Lab ID: 1803517-002 **Matrix:** SOIL

Client Sample ID: North Wall 10-16
Collection Date: 3/8/2018 11:02:00 AM
Received Date: 3/9/2018 7:35:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	ND	30		mg/Kg	20	3/9/2018 11:10:51 AM	36930
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	65	9.6		mg/Kg	1	3/9/2018 10:17:10 AM	36928
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	3/9/2018 10:17:10 AM	36928
Surr: DNOP	93.6	70-130		%Rec	1	3/9/2018 10:17:10 AM	36928
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	5.7	4.9		mg/Kg	1	3/9/2018 10:03:45 AM	36920
Surr: BFB	135	15-316		%Rec	1	3/9/2018 10:03:45 AM	36920
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	3/9/2018 10:03:45 AM	36920
Toluene	ND	0.049		mg/Kg	1	3/9/2018 10:03:45 AM	36920
Ethylbenzene	ND	0.049		mg/Kg	1	3/9/2018 10:03:45 AM	36920
Xylenes, Total	ND	0.097		mg/Kg	1	3/9/2018 10:03:45 AM	36920
Surr: 4-Bromofluorobenzene	100	80-120		%Rec	1	3/9/2018 10:03:45 AM	36920

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Project: EPCTB 2
Lab ID: 1803517-003 **Matrix:** SOIL

Client Sample ID: South Wall 10-16
Collection Date: 3/8/2018 11:07:00 AM
Received Date: 3/9/2018 7:35:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	ND	30		mg/Kg	20	3/9/2018 11:23:15 AM	36930
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	3/9/2018 10:39:02 AM	36928
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	3/9/2018 10:39:02 AM	36928
Surr: DNOP	93.0	70-130		%Rec	1	3/9/2018 10:39:02 AM	36928
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	3.8		mg/Kg	1	3/9/2018 10:27:16 AM	36920
Surr: BFB	113	15-316		%Rec	1	3/9/2018 10:27:16 AM	36920
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.019		mg/Kg	1	3/9/2018 10:27:16 AM	36920
Toluene	ND	0.038		mg/Kg	1	3/9/2018 10:27:16 AM	36920
Ethylbenzene	ND	0.038		mg/Kg	1	3/9/2018 10:27:16 AM	36920
Xylenes, Total	ND	0.077		mg/Kg	1	3/9/2018 10:27:16 AM	36920
Surr: 4-Bromofluorobenzene	99.7	80-120		%Rec	1	3/9/2018 10:27:16 AM	36920

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Project: EPCTB 2
Lab ID: 1803517-004 **Matrix:** SOIL

Client Sample ID: North Wall 2-8
Collection Date: 3/8/2018 11:10:00 AM
Received Date: 3/9/2018 7:35:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	ND	30		mg/Kg	20	3/9/2018 11:35:40 AM	36930
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	90	9.3		mg/Kg	1	3/9/2018 11:01:19 AM	36928
Motor Oil Range Organics (MRO)	91	47		mg/Kg	1	3/9/2018 11:01:19 AM	36928
Surr: DNOP	94.9	70-130		%Rec	1	3/9/2018 11:01:19 AM	36928
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	3.9		mg/Kg	1	3/9/2018 10:50:46 AM	36920
Surr: BFB	105	15-316		%Rec	1	3/9/2018 10:50:46 AM	36920
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.020		mg/Kg	1	3/9/2018 10:50:46 AM	36920
Toluene	ND	0.039		mg/Kg	1	3/9/2018 10:50:46 AM	36920
Ethylbenzene	ND	0.039		mg/Kg	1	3/9/2018 10:50:46 AM	36920
Xylenes, Total	ND	0.079		mg/Kg	1	3/9/2018 10:50:46 AM	36920
Surr: 4-Bromofluorobenzene	95.0	80-120		%Rec	1	3/9/2018 10:50:46 AM	36920

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Project: EPCTB 2
Lab ID: 1803517-005 **Matrix:** SOIL

Client Sample ID: South Wall 2-8
Collection Date: 3/8/2018 11:13:00 AM
Received Date: 3/9/2018 7:35:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	31	30		mg/Kg	20	3/9/2018 12:12:54 PM	36930
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	3/9/2018 11:45:28 AM	36928
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	3/9/2018 11:45:28 AM	36928
Surr: DNOP	93.6	70-130		%Rec	1	3/9/2018 11:45:28 AM	36928
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	3.8		mg/Kg	1	3/9/2018 11:14:18 AM	36920
Surr: BFB	97.4	15-316		%Rec	1	3/9/2018 11:14:18 AM	36920
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.019		mg/Kg	1	3/9/2018 11:14:18 AM	36920
Toluene	ND	0.038		mg/Kg	1	3/9/2018 11:14:18 AM	36920
Ethylbenzene	ND	0.038		mg/Kg	1	3/9/2018 11:14:18 AM	36920
Xylenes, Total	ND	0.077		mg/Kg	1	3/9/2018 11:14:18 AM	36920
Surr: 4-Bromofluorobenzene	93.7	80-120		%Rec	1	3/9/2018 11:14:18 AM	36920

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1803517**

12-Mar-18

Client: Blagg Engineering
Project: EPCTB 2

Sample ID	**MB-36930**	SampType:	**mblk**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBS**	Batch ID:	**36930**	RunNo:	**49678**					
Prep Date:	**3/9/2018**	Analysis Date:	**3/9/2018**	SeqNo:	**1606654**	Units:	**mg/Kg**			

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

Sample ID	**LCS-36930**	SampType:	**lcs**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSS**	Batch ID:	**36930**	RunNo:	**49678**					
Prep Date:	**3/9/2018**	Analysis Date:	**3/9/2018**	SeqNo:	**1606655**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	0	96.8	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 Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1803517**

12-Mar-18

Client: Blagg Engineering
Project: EPCTB 2

Sample ID **LCS-36928**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **36928**	RunNo: **49663**
Prep Date: **3/9/2018**	Analysis Date: **3/9/2018**	SeqNo: **1605981** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	10	50.00	0	91.8	70	130			
Surr: DNOP	3.8		5.000		77.0	70	130			

Sample ID **MB-36928**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **36928**	RunNo: **49663**
Prep Date: **3/9/2018**	Analysis Date: **3/9/2018**	SeqNo: **1605982** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.7		10.00		86.8	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1803517**

12-Mar-18

Client: Blagg Engineering
Project: EPCTB 2

Sample ID **MB-36920**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **36920**	RunNo: **49674**
Prep Date: **3/8/2018**	Analysis Date: **3/9/2018**	SeqNo: **1606889** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1000		1000		99.9	15	316			

Sample ID **LCS-36920**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **36920**	RunNo: **49674**
Prep Date: **3/8/2018**	Analysis Date: **3/9/2018**	SeqNo: **1606890** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	28	5.0	25.00	0	113	75.9	131			
Surr: BFB	1100		1000		114	15	316			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1803517**

12-Mar-18

Client: Blagg Engineering

Project: EPCTB 2

Sample ID **MB-36920**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **36920**	RunNo: **49674**
Prep Date: **3/8/2018**	Analysis Date: **3/9/2018**	SeqNo: **1606958** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.96		1.000		96.1	80	120			

Sample ID **LCS-36920**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **36920**	RunNo: **49674**
Prep Date: **3/8/2018**	Analysis Date: **3/9/2018**	SeqNo: **1606959** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	1.000	0	102	77.3	128			
Toluene	1.0	0.050	1.000	0	101	79.2	125			
Ethylbenzene	0.99	0.050	1.000	0	98.6	80.7	127			
Xylenes, Total	3.0	0.10	3.000	0	101	81.6	129			
Surr: 4-Bromofluorobenzene	0.96		1.000		96.5	80	120			

Qualifiers:

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: BLAGG Work Order Number: 1803517 RcptNo: 1

Received By: Anne Thorne 3/9/2018 7:35:00 AM Anne Thorne

Completed By: Anne Thorne 3/9/2018 7:59:31 AM Anne Thorne

Reviewed By: SRL 03/09/18
LB:ENM

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: _____

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	1.0	Good	Yes			

Chain-of-Custody Record

Client: BENSON-MONTIN-GREER BLAGG ENGINEERING, INC.

Mailing Address:

Phone #: (505) 320-1183

email or Fax#:

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

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☐ Standard ☒ Rush SAME DAY

Project Name: EPCTB #2

Project #:

Project Manager: JEFF BLAGG

Sampler: JEFF BLAGG

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.0

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1803517	BTEX + ~~MTBE + TMB's~~ (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	CHLORIDE				Air Bubbles (Y or N)
3/8/2018	1104	SOIL	BASE @ 17	4oz x1	COOL	-201	X		X									X				
	1102		NORTH WALL 10-16			-202																
	1107		SOUTH WALL 10-16			-203																
	1110		NORTH WALL 2-8			-204																
	1113		SOUTH WALL 2-8			-205																

Date	Time	Relinquished by	Received by	Date	Time
3/8/2018	1515	Jeff Blagg		3/8/2018	1515
3/8/18	1827			03/09/18	0735

Remarks: BILL BMG
CONTACT: ZACH STRADLING

ALL 5-POINT COMPOSITES

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.

Appendix C

NM State Engineer
Water Well Search

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	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Twn	Rng	X	Y	Meters Distance	Feet Well Depth	Feet Water	Feet Water Column
RG 80825			RA	4	2	1	27	26N	01W	326940	4036812	9612	150		
RG 58564			RA							344839	4050867	13225	280	230	50
RG 72796		CH	RA							345613	4050224	13541	220	190	130
RG 91685 POD1		CH	RA	1	3	3	26	27N	02E	347391	4045282	13633	385	264	121
RG 52653			RA							345083	4051663	13883	100	45	55
RG 76206			RA							343416	4053605	13921	1020	540	480
RG 83314			RA							345042	4051805	13934	430	250	180
RG 34345			RA	3	2	2	09	25N	01W	325867	4031951*	14027		304	
SJ 02889			RA		3	3	12	26N	02W	320108	4040621*	14061	7658		
SJ 03489			RA	2	2	2	14	26N	02W	319798	4040328*	14426	600		
RG 83589			RA							345445	4052163	14472	600	150	450
RG 83113			RA	1	1	4	05	25N	01W	323879	4033000*	14474	186	68	118
RG 54117 EXP			RA							344647	4053284	14573	365	160	205
RG 86745			RA	4	2	3	05	25N	01W	323678	4032808*	14752	50		
RG 82672			RA				23	26N	02E	347216	4037096	14779	70		
RG 94854 POD1		CH	RA							333573	4028598	14869	100	60	40
RG 91699 POD1		CH	RA	4	2	2	19	25N	01E	332497	4028532	14995	104	39	65

Average Depth to Water: **183 feet**
Minimum Depth: **39 feet**
Maximum Depth: **540 feet**

Record Count: 17

Basin/County Search:

County: Rio Arriba

UTMNAD83 Radius Search (in meters):

Easting (X): 333878.9 Northing (Y): 4043464.9 Radius: 15000

***UTM location was derived from PLSS - see Help**