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 87503

.

State of New Mexico Energy Minerals and Natural Resources

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

OIL CONS. DIV DIST. 3

MAR 0 4 2016 Form C-141 Revised August 8, 2011

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

			15	5	Santa Fe	e, NM 875	505				
			Rel	ease Notifi	ication	n and Co	orrective A	Action	1		
						OPERA	TOR		🗌 Initi	al Report	Final Rep
Name of C	ompany: B	P		0		Contact: Ste	eve Moskal				
Address: 2	00 Energy	Court, Farm	ington, N	M 87401		Telephone 1	No.: 505-326-9	497			
Facility Na	me: Ludwi	ick LS 017				Facility Typ	be: Natural gas	well		la la com	
Surface Ov	vner: Feder	ral		Mineral	Owner:	Federal			API No	. 300450924	46
	1.00			LOC	ATIO	N OF RE	FASE				
Unit Letter B	Section 29	Township 30N	Range 10W	Feet from the 790		South Line	Feet from the 1,650	East/W East	Vest Line	County: Sar	n Juan
		Latitu	de <u>36.7</u>	87893°		Longitude	e -107.903769	90			
				NA	TIRE	OF REL	FASE				
ype of Rele	ease: conden	sate/oil		1111	TURE		Release: 16 bbl		Volume H	Recovered: no	one
							; 10 bbl prod. wa				
Source of Re	elease: Susp	ect corrosion	400 bbl pro	oduction tank		Date and H Unknown	Iour of Occurrent	ce:	Date and 2016; 1:3		overy: January 14
Was Immedi	ate Notice (Given?				If YES, To	Whom?		2010; 1:5	0 PM	
rus miniou	ale nonce c		Yes	No 🗌 Not R	Required		all to Vanessa Fie	elds			
By Whom?	Steve Mosk	al of BP				Date and H	Iour: 1/15/2016	at 9:05 A	M		
Was a Water		ched?	Yes 🛛	No			lume Impacting				1.
Describe Cau	ise of Proble	em and Reme	dial Action	n Taken.* During	g tank gau	iging, tech fo	und a drop of ap	proximate	ely 11.5" f	rom condensa	ate tank from
previous mor	nthly gaugin lumes of los	g event. Rem	oved conte	n Taken.* During ents of tank and f	filled with	fresh, warm	und a drop of ap water to confirm spected. Replace	leak. H	ole found	near the botto	
revious mor stimated vo f the well pr Describe Are excavation ar amples colle riteria, a fiel hereby certi egulations al ublic health nould their or r the environ	a Affected a rea Affected a rea measured ected for lab d report and fy that the in ll operators a or the envir operations ha ment. In ad	g event. Rem ss based on re te. and Cleanup A d 25' x 22' x 3 oratory analys l laboratory re nformation gi are required to onment. The ave failed to a ddition, NMO	Action Tak 30' deep w sis demons esults are a ven above o report and acceptance idequately 0CD accept	n Taken.* During ents of tank and f ng data. The tan en.* The area wa vith a total of 430 strates contamina ttached. is true and comp d/or file certain n e of a C-141 rep investigate and r	filled with ak was rer as excava) cubic ya ant levels plete to th release no ort by the remediate	ted with cont rds of soil ex below the spi e best of my otifications an NMOCD ma contaminatio	water to confirm spected. Replace aminated soils ex-	n leak. H ement of contractions clean soil idelines b idelines b idelines to crive action eport" do eat to gro	ole found it the tank w ff site for l l was impo pased on a d that pursions for rele bes not relia ound water,	near the botto ill be determined andfarm treat orted and used site ranking of uant to NMOO cases which meve the operator , surface wate	m of the tank. ned upon analysi ment. The final for backfill. So f 10. Siting CD rules and ay endanger for of liability r, human health
revious mor estimated vo f the well pr Describe Are excavation ar amples colle riteria, a fiel hereby certi egulations al ublic health hould their of r the environ ederal, state,	a Affected a rea Affected a rea measured ected for lab d report and fy that the in ll operators a or the envir operations ha ment. In ad	g event. Rem ss based on re te. and Cleanup A d 25' x 22' x 3 oratory analys l laboratory re nformation gi are required to onment. The ave failed to a	Action Tak 30' deep w sis demons esults are a ven above o report and acceptance idequately 0CD accept	n Taken.* During ents of tank and f ng data. The tan en.* The area wa vith a total of 430 strates contamina ttached. is true and comp d/or file certain n e of a C-141 rep investigate and r	filled with ak was rer as excava) cubic ya ant levels plete to th release no ort by the remediate	ted with cont rds of soil ex below the spi e best of my otifications an NMOCD ma contaminatio	water to confirm spected. Replace aminated soils ex- ported off site. (ill and release gu knowledge and u d perform correc urked as "Final R on that pose a thr	n leak. H ement of clean soil idelines b nderstand tive actic eport" do eat to gro responsib	ole found a the tank w ff site for l l was impo based on a d that purst bas for rele bes not relia bund water, oility for co	near the botto ill be determined andfarm treat orted and used site ranking of uant to NMOO cases which meve the operate , surface wate compliance wite	m of the tank. ned upon analysi ment. The final for backfill. So f 10. Siting CD rules and ay endanger for of liability r, human health h any other
revious mor estimated vo f the well pr Describe Are xcavation ar amples colle riteria, a fiel hereby certi egulations al ublic health nould their of r the environ ederal, state,	Affected a rea measured exted for labor of the environment. In ador to react the environment. In ador to react the environment. In ador to react the environment.	g event. Rem ss based on re te. and Cleanup A d 25' x 22' x 3 oratory analys l laboratory re information gi are required to onment. The ave failed to a ddition, NMO ws and/or regu	Action Tak 30' deep w sis demons esults are a ven above o report and acceptance idequately 0CD accept	n Taken.* During ents of tank and f ng data. The tan en.* The area wa vith a total of 430 strates contamina ttached. is true and comp d/or file certain n e of a C-141 rep investigate and r	filled with the was rem as excava) cubic yas ant levels olete to the release no ort by the remediate report do	ted with cont rds of soil ex below the spi e best of my nMOCD ma contamination	water to confirm spected. Replace aminated soils ex- ported off site. O ill and release gu knowledge and u d perform correc- urked as "Final R on that pose a thre e the operator of the	n leak. H ement of the control of the Clean soil idelines the clean soil ideli	ole found a the tank w ff site for l l was impo based on a d that purst bas for rele bes not relia bund water, oility for co	near the botto ill be determined andfarm treat orted and used site ranking of uant to NMOO cases which meve the operate , surface wate compliance wite	m of the tank. ned upon analysi ment. The final for backfill. So f 10. Siting CD rules and ay endanger for of liability r, human health h any other
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BP America: Ludwick LS 17 (B) Sec 29 – T30N – R10W San Juan County, New Mexico API: 30-045-09246

Summary Record of Impact Remediation

<u>January 14, 2016</u> A loss of approximately 16 barrels condensate and 10 barrels produced water from the 300 barrel stock tank was discovered during scheduled tank gauging. The source was determined to be a small corrosion hole discovered near the bottom of the tank.

Site NMOCD/BLM closure standard determined at 1,000 ppm TPH based on:

Horizontal Distance to Dry Wash > 200 feet (10 points) Nearest Water Well (SJ 02782) = 4,081 feet (0 points) Depth to Groundwater based on SJ 01116 >100 feet (0 points)

<u>February 8, 2016</u> Begin investigation of impact area using trackhoe. Testholes dug to 20' depth determined impacts travelled vertically to at least 20' sub-grade, but did not traverse laterally more than approximately 13' from the original release point (see TH-2 on site overhead view and lab report).

February 9, 2016 Excavate source area to approximately 25' x 22' x 12' deep. Soil type silty sand.

<u>February 10, 2016</u> Excavate source area to approximately 25' x 22' x 20' deep. Conduct sidewall and base closure sampling. Witnessed by NMOCD.

Sample ID	Date/Time	Field OVM	TPH 8015B (DRO+GRO)	BTEX 8021	Chloride	Comments
Base 5-pt @ 20'	2/10/2016 @ 10:10	3,758 ppm	586 mg/Kg	72 mg/Kg	ND	Failed on BTEX
East Wall 3-pt (6'-12'-18')	2/10/2016 @ 10:13	67 ppm	ND	0.07 mg/Kg	ND	Passed
North Wall 3-pt (6'-12'-18')	2/10/2016 @ 10:16	66 ppm	ND	ND	ND	Passed
South Wall 3-pt (6'-12'-18')	2/10/2016 @ 10:20	27 ppm	ND	ND	ND	Passed
West Wall 3-pt (6'-12'-18')	2/10/2016 @ 10:23	16 ppm	ND	ND	32 ppm	Passed
NMOCD/BLM	Closure Standard:	NA	1,000 mg/Kg	50 mg/Kg	1,000 mg/Kg	

February 11, 2016 Receive rush lab results from prior days sampling:

<u>February 12, 2016</u> Extend source area excavation to approximately 25' x 22' x 23' deep. Conduct base closure sampling for BTEX. Witnessed by NMOCD.

February 13, 2016 Receive rush lab results from prior days sampling. BTEX tested at 67 mg/Kg (Failed)

February 19, 2016 Extend source area excavation to approximately 25' x 22' x 30' deep. Conduct base closure sampling for BTEX. Witnessed by NMOCD and BLM.

February 22, 2016 Receive rush lab results from prior days sampling. BTEX tested at 39 mg/Kg (Passed).

<u>February 25, 2016</u> Complete backfilling operations. Total volume transported to JFJ Crouch Mesa Landfarm = 430 cubic yards (Form C-138 Attached).

Feb 8, 2016: TH-2 20' OVM = 17.1 20' TPH = 0.0

Feb 10, 2016: North Sidewall 3-pt Composite (6'-12'-18') OVM = 66 ppm Lab TPH: ND Lab BTEX: ND

> Feb 10, 2016: West Sidewall 3-pt Composite (6'-12'-18') OVM = 16 ppm Lab TPH: ND Lab BTEX: ND

Google earth

Feb 10, 2016:

Base 5-pt Composite @ 21' OVM = 3,758 ppm: Lab TPH: 586 ppm Lab BTEX: 72 ppm

Ludwick LS 17 Remedial Excavation Closure

Feb 12, 2016: Base 5-pt Composite @ 24' OVM = 4,688 ppm: Lab BTEX: 67 ppm

Feb 19, 2016: Base 5-pt Composite @ 31' OVM = 5,235 ppm: Lab BTEX: 39 ppm

Feb 10, 2016: East Sidewall 3-pt Composite (6'-12'-18') OVM = 67 ppm Lab TPH: ND Lab BTEX: 0.07 ppm

> Feb 19, 2016: Excavation at time of closure sampling: 25' x 22' x 30' Deep

Feb 10, 2016: South Sidewall 3-pt Composite (6'-12'-18') OVM = 27 ppm Lab TPH: ND Lab BTEX: ND



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

February 11, 2016

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

RE: Ludwick LS 17

OrderNo.: 1602288

Dear Jeff Blagg:

Hall Environmental Analysis Laboratory received 3 sample(s) on 2/9/2016 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 <u>www.hallenvironmental.com</u> 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 qualifers 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,

andig

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering

Client Sample ID: TH-2 @ 20' Collection Date: 2/8/2016 1:51:00 PM

Project: Ludwick LS 17 Lab ID: 1602288-003	Matrix:	SOIL			8/2016 1:51:00 PM 9/2016 7:15:00 AM	
Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS					Analyst	LGT
Chloride	30	30	mg/Kg	20	2/9/2016 12:17:37 PM	23636
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANIC	s			Analyst	JME
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	2/9/2016 11:28:58 AM	23629
Surr: DNOP	112	70-130	%Rec	1	2/9/2016 11:28:58 AM	23629
EPA METHOD 8015D: GASOLINE RAI	NGE				Analyst	NSB
Gasoline Range Organics (GRO)	ND	4.2	mg/Kg	1	2/9/2016 11:01:03 AM	23618
Surr: BFB	94.4	66.2-112	%Rec	1	2/9/2016 11:01:03 AM	23618
EPA METHOD 8021B: VOLATILES					Analyst	NSB
Benzene	ND	0.042	mg/Kg	1	2/9/2016 11:01:03 AM	23618
Toluene	ND	0.042	mg/Kg	1	2/9/2016 11:01:03 AM	23618
Ethylbenzene	ND	0.042	mg/Kg	1	2/9/2016 11:01:03 AM	23618
Xylenes, Total	ND	0.084	mg/Kg	1	2/9/2016 11:01:03 AM	23618
Surr: 4-Bromofluorobenzene	113	80-120	%Rec	1	2/9/2016 11:01:03 AM	23618

Qualifiers:		Value exceeds Maximum Contaminant Level.	в	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 3 of 3
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Client:

Project:

Hall	Environmental	Ana	lysis	La	bora	tory,	Inc.
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Blagg Engineering		
Ludwick LS 17		

Sample ID MB-23636	SampType: MBLK	TestCode: EPA Method 300.0: Anions	
Client ID: PBS	Batch ID: 23636	RunNo: 32042	
Prep Date: 2/9/2016	Analysis Date: 2/9/2016	SeqNo: 979848 Units: mg/Kg	
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit HighLimit %RPD	RPDLimit Qual
Chloride	ND 1.5		
Sample ID LCS-23636	SampType: LCS	TestCode: EPA Method 300.0: Anions	
Client ID: LCSS	Batch ID: 23636	RunNo: 32042	
Prep Date: 2/9/2016	Analysis Date: 2/9/2016	SeqNo: 979849 Units: mg/Kg	
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit HighLimit %RPD	RPDLimit Qual
Chloride	15 1.5 15.00	0 97.2 90 110	

Qualifiers:

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

Page 4 of 3

WO#: 1602288

11-Feb-16

Hall Environ	mental An	alysis L	aborat	tory, l	nc.
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WO#: 1602288

11-Feb-16

	z Engineering vick LS 17	
Sample ID MB-23622	SampType: MBLK TestCode: EPA Method 8015M/D: Diesel Range Organics	
Client ID: PBS	Batch ID: 23622 RunNo: 32003	
Prep Date: 2/8/2016	Analysis Date: 2/9/2016 SeqNo: 978603 Units: %Rec	
Analyte	Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Q	ual
Surr: DNOP	<u>11 10.00 109 70 130</u>	
Sample ID MB-23629	SampType: MBLK TestCode: EPA Method 8015M/D: Diesel Range Organics	
Client ID: PBS	Batch ID: 23629 RunNo: 32003	
Prep Date: 2/9/2016	Analysis Date: 2/9/2016 SeqNo: 978604 Units: mg/Kg	
Analyte	Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Q	ual
Diesel Range Organics (DRO)	ND 10	
Surr: DNOP	11 10.00 108 70 130	
Sample ID LCS-23622	SampType: LCS TestCode: EPA Method 8015M/D: Diesel Range Organics	
Client ID: LCSS	Batch ID: 23622 RunNo: 32003	
Prep Date: 2/8/2016	Analysis Date: 2/9/2016 SeqNo: 978605 Units: %Rec	
Analyte	Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Q	ual
Surr: DNOP	4.9 5.000 98.5 70 130	
Sample ID LCS-23629	SampType: LCS TestCode: EPA Method 8015M/D: Diesel Range Organics	
Client ID: LCSS	Batch ID: 23629 RunNo: 32003	
Prep Date: 2/9/2016	Analysis Date: 2/9/2016 SeqNo: 978606 Units: mg/Kg	
Analyte	Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Q	ual
Diesel Range Organics (DRO)	45 10 50.00 0 89.7 65.8 136	
Surr: DNOP	4.8 5.000 96.0 70 130	

Qualifiers:

Value exceeds Maximum Contaminant Level. *

D Sample Diluted Due to Matrix

- Holding times for preparation or analysis exceeded H
- ND Not Detected at the Reporting Limit
- RPD outside accepted recovery limits R
- S % Recovery outside of range due to dilution or matrix
- Analyte detected in the associated Method Blank В
- Value above quantitation range Е
- Analyte detected below quantitation limits J
- P Sample pH Not In Range
- RL **Reporting Detection Limit**
- Sample container temperature is out of limit as specified W

Page 5 of 3

Hall Environmenta	l Analysis	Laboratory,	Inc.
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WO#:	1602288
	11_Feb_16

Page 6 of 3

Blagg Engineering		
Ludwick LS 17		

Sample ID MB-23618	Samp	Гуре: МІ	BLK	Tes	tCode: El	PA Method	8015D: Gaso	oline Rang	е	
Client ID: PBS	Batc	h ID: 23	618	F	RunNo: 3	2007				
Prep Date: 2/8/2016	Analysis I	Date: 2/	9/2016	5	SeqNo: 9	79137	Units: mg/k	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO) Surr: BFB	ND 920	5.0	1000		91.7	66.2	112			
Sample ID LCS-23618	Samp	Type: LC	s	Tes	tCode: El	PA Method	8015D: Gaso	line Rang	e	
Client ID: LCSS	Batc	h ID: 23	618	F	RunNo: 3	2007				
Prep Date: 2/8/2016	Analysis D	Date: 2/	9/2016	S	eqNo: 9	79138	Units: mg/M	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	5.0	25.00	0	89.9	79.6	122		-	
	990		1000		99.3	66.2	112			

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
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Hall Environmental	Analysis	Laboratory,	Inc.
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or	ato	ry,	Inc.	
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Blagg Engineering

Client:	Blagg Engineeri
Project:	Ludwick LS 17

Sample ID MB-23618 Client ID: PBS		Type: MI h ID: 23			tCode: El RunNo: 3		8021B: Vola	tiles		
Prep Date: 2/8/2016	Analysis [Date: 2/	9/2016	S	SeqNo: 9	79144	Units: mg/k	٢g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.1		1.000		108	80	120			
Sample ID LCS-23618	Samp	Type: LC	s	Tes	tCode: El	PA Method	8021B: Vola	tiles		
Client ID: LCSS	Batc	h ID: 23	618	F	RunNo: 3	2007				
Prep Date: 2/8/2016	Analysis [Date: 2/	9/2016	S	SeqNo: 9	79145	Units: mg/k	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.92	0.050	1.000	0	91.9	80	120			
Foluene	0.97	0.050	1.000	0	96.6	80	120			
Ethylbenzene	0.98	0.050	1.000	0	97.7	80	120			
Adaman Tabal	3.0	0.10	3.000	0	99.7	80	120			
(ylenes, Total	5.0	0.10	0.000	0	00.1	00	120			

Qualifiers:

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

Page 7 of 3

WO#: 1602288

11-Feb-16

ENVIRONMENTAL ANALYSIS LABORATORY TEL: 505-345-35	ntal Analysis Labor 4901 Hawkin Albuquerque, NM 8 975 FAX: 505-345- 9.hallenvironmenta	15 NE 17109 Sam	iple Log-In Ch	ieck List
Client Name: BLAGG Work Order Numb	per: 1602288		RcptNo:	1
Received by/date: A-02/09/16				
Logged By: Anne Thorne 2/9/2016 7:15:00 Al	M	anne Sha	_	
Completed By: Anne Thorne 2/9/2016		anne Am	_	
Reviewed By: (11) 2/9/14				
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			
<u>Log In</u>				
4. Was an attempt made to cool the samples?	Yes 🗹	No 🗌		
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes 🗹	No 🗌		
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?	Yes 🗹	No 🗌	# of preserved bottles checked for pH:	12
(Note discrepancies on chain of custody)	Yes 🗹	No 🗆	(<2 or : Adjusted?	>12 unless noted
13. Are matrices correctly identified on Chain of Custody? 14. Is it clear what analyses were requested?	Yes ⊻ Yes ✓			1
15. Were all holding times able to be met?	Yes 🗹	No 🗆	Checked by:	
(If no, notify customer for authorization.)				
Special Handling (if applicable)				
16. Was client notified of all discrepancies with this order?	Yes	No 🗌	NA 🗹	
Person Notified: Date	1			
By Whom: Via:	eMail F	Phone 🗌 Fax	In Person	
Regarding:				
Client Instructions:				
17. Additional remarks:				
8. <u>Cooler Information</u> Cooler No Temp °C Condition Seal Intact Seal No	Seal Date	Signed By		
1 1.4 Good Yes	a por series and a			
Page 1 of 1				

lient:	BP A	MERICA	ANEERING		Rush	ASAP SAME DAY			49	01 H	A	www	AL v.hal		SIS vironi	5 L	AI tal.co	BO	R/	NT		
		- 73		Project #:				1	Te	el. 50	5-34	5-3		And in case of the local division of the loc	ax	-	-	the second second	7		-INC.	-
	#: 509 r Fax#:	5-34	.D-1183	Project Mana	ider:		_		y)	8		1.000	A	naly	ysis	Req	uest					
A/QC I	Package: dard		Level 4 (Full Validation)	J. B				MIBLE - HARS (8021)	+ TPH (Gas only)	OXHAT / OX			SIMS)		PO4,SO	PCB's						
NEL	AP	□ Othe	er	Sampler: J-	X Yes	⊡ No		-HAR	HdT +	RO / DRO	18.1)	04.1)	8270 S		03,NO2,	8/8082		(A)				or N)
EDD Date	(Type)	Matrix	Sample Request ID	Sample Tem Container Type and #	Preservative Type			BTEX + MTBE	BTEX + MTBE	TPH 8015B (GRO	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270	RCRA 8 Metals	Anions (F,CI,NO ₃ ,NO ₂ ,PO ₄ ,SO ₄)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	CHLORIDE			Air Bubbles (Y or N)
hous	1301	SOIL	SOURCE @ 15'	402×1	COOL	-00	2/	X		x	F	-		-	4	0	8	8	x	-		4
21	1304	EX	SOURCE @ 17'	1(Li	-00.	-	X		X				-					×	-		
11	1351	ų	TH-2 C 20'	И	V	-00		×	_	×	_								×		+	-
								-														
ate:	Time: 1657 Time: 1832 necessary	Relinquish Relinquish Relinquish Samples sub	Bhagy	Received by:	uliket	Date Time 3/3/4 165 Date Time 02/08/16 07/5	7			R	ILL ID EF	: 1 : 1		191 57	EVA	EN	NDS	KA				



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

February 12, 2016

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

RE: Ludwick LS 17

OrderNo.: 1602475

Dear Jeff Blagg:

Hall Environmental Analysis Laboratory received 5 sample(s) on 2/11/2016 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 <u>www.hallenvironmental.com</u> 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 qualifers 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

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering

Project: Ludwick LS 17

Client Sample ID: BASE 5-pt @ 21' Collection Date: 2/10/2016 10:10:00 AM

Lab ID: 1602475-001	Matrix:	SOIL		Received	Date: 2/1	1/2016 8:00:00 AM	
Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst	LGT
Chloride	ND	30		mg/Kg	20	2/11/2016 11:26:03 AM	23693
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANIC	S				Analyst	TOM
Diesel Range Organics (DRO)	76	10		mg/Kg	1	2/11/2016 10:42:38 AM	23678
Surr: DNOP	85.9	70-130		%Rec	1	2/11/2016 10:42:38 AM	23678
EPA METHOD 8015D: GASOLINE RAI	NGE					Analyst	NSB
Gasoline Range Organics (GRO)	510	77		mg/Kg	20	2/11/2016 12:03:32 PM	A32073
Surr: BFB	147	66.2-112	S	%Rec	20	2/11/2016 12:03:32 PM	A32073
EPA METHOD 8021B: VOLATILES						Analyst	NSB
Benzene	0.49	0.39		mg/Kg	20	2/11/2016 12:03:32 PM	B32073
Toluene	16	0.77		mg/Kg	20	2/11/2016 12:03:32 PM	B32073
Ethylbenzene	3.7	0.77		mg/Kg	20	2/11/2016 12:03:32 PM	B32073
Xylenes, Total	52	1.5		mg/Kg	20	2/11/2016 12:03:32 PM	B32073
Surr: 4-Bromofluorobenzene	131	80-120	S	%Rec	20	2/11/2016 12:03:32 PM	B32073

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	в	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 1 of 9
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	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: Ludwick LS 17 Client Sample ID: EAST 3-pt (6'-12'-18') Collection Date: 2/10/2016 10:13:00 AM Received Date: 2/11/2016 8:00:00 AM

	SOIL		ALCOUTTOU I	Jate. 2/1	1/2016 8:00:00 AM	
esult	PQL	Qual	Units	DF	Date Analyzed	Batch
					Analyst	LGT
ND	30		mg/Kg	20	2/11/2016 11:38:27 AM	23693
RGANIC	S				Analyst	TOM
ND	9.8		mg/Kg	1	2/11/2016 11:04:23 AM	23678
85.8	70-130		%Rec	1	2/11/2016 11:04:23 AM	23678
					Analyst	NSB
ND	3.6		mg/Kg	1	2/11/2016 10:29:30 AM	A32073
99.9	66.2-112		%Rec	1	2/11/2016 10:29:30 AM	A32073
					Analyst	NSB
ND	0.036		mg/Kg	1	2/11/2016 10:29:30 AM	B32073
0.069	0.036		mg/Kg	1	2/11/2016 10:29:30 AM	B32073
ND	0.036		mg/Kg	1	2/11/2016 10:29:30 AM	B32073
ND	0.073		mg/Kg	1	2/11/2016 10:29:30 AM	B32073
122	80-120	S	%Rec	1	2/11/2016 10:29:30 AM	B32073
	ND RGANIC ND 85.8 ND 99.9 ND 0.069 ND ND	ND 30 RGANICS ND 9.8 85.8 70-130 ND 3.6 99.9 66.2-112 ND 0.036 0.069 0.036 ND 0.036 ND 0.036 ND 0.073	ND 30 RGANICS 9.8 ND 9.8 85.8 70-130 ND 3.6 99.9 66.2-112 ND 0.036 0.069 0.036 ND 0.036 ND 0.036 ND 0.036 ND 0.036	ND 30 mg/Kg RGANICS	ND 30 mg/Kg 20 RGANICS ND 9.8 mg/Kg 1 85.8 70-130 %Rec 1 ND 3.6 mg/Kg 1 99.9 66.2-112 %Rec 1 ND 0.036 mg/Kg 1 ND 0.0373 mg/Kg 1	Analyst: ND 30 mg/Kg 20 2/11/2016 11:38:27 AM RGANICS Analyst: ND 9.8 mg/Kg 1 2/11/2016 11:04:23 AM 85.8 70-130 %Rec 1 2/11/2016 11:04:23 AM Analyst: ND 3.6 mg/Kg 1 2/11/2016 10:29:30 AM 99.9 66.2-112 %Rec 1 2/11/2016 10:29:30 AM Analyst: ND 0.036 mg/Kg 1 2/11/2016 10:29:30 AM 0.069 0.036 mg/Kg 1 2/11/2016 10:29:30 AM ND 0.036 mg/Kg 1 2/11/2016 10:29:30 AM ND 0.036 mg/Kg 1 2/11/2016 10:29:30 AM

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method I	Blank
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range	
	н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	Page 2 of 9
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range	rage 2 01 9
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limi	t as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg EngineeringClient Sample ID: NORTH 3-pt (6'-12'-18')Project: Ludwick LS 17Collection Date: 2/10/2016 10:16:00 AMLab ID: 1602475-003Matrix: SOILReceived Date: 2/11/2016 8:00:00 AM

Analyses	Result	PQL Qua	al Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS					Analyst	LGT
Chloride	ND	30	mg/Kg	20	2/11/2016 11:50:52 AM	23693
EPA METHOD 8015M/D: DIESEL RA	NGE ORGANIC	S			Analyst	: TOM
Diesel Range Organics (DRO)	ND	9.9	mg/Kg	1	2/11/2016 11:26:17 AM	23678
Surr: DNOP	86.8	70-130	%Rec	1	2/11/2016 11:26:17 AM	23678
EPA METHOD 8015D: GASOLINE RA	ANGE				Analyst	NSB
Gasoline Range Organics (GRO)	ND	4.0	mg/Kg	1	2/11/2016 10:52:57 AM	A32073
Surr: BFB	95.6	66.2-112	%Rec	1	2/11/2016 10:52:57 AM	A32073
EPA METHOD 8021B: VOLATILES					Analyst	NSB
Benzene	ND	0.040	mg/Kg	1	2/11/2016 10:52:57 AM	B32073
Toluene	ND	0.040	mg/Kg	1	2/11/2016 10:52:57 AM	B32073
Ethylbenzene	ND	0.040	mg/Kg	1	2/11/2016 10:52:57 AM	B32073
Xylenes, Total	ND	0.080	mg/Kg	1	2/11/2016 10:52:57 AM	B32073
Surr: 4-Bromofluorobenzene	114	80-120	%Rec	1	2/11/2016 10:52:57 AM	B32073

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 3 of
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	R	RPD outside accepted recovery limits	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: Ludwick LS 17

Client Sample ID: SOUTH 3-pt (6'-12'-18') Collection Date: 2/10/2016 10:20:00 AM

Lab ID: 1602475-004	Matrix:	SOIL	Received Date: 2/11/2016 8:00:00 AM					
Analyses	Result	PQL (Qual Units	DF	Date Analyzed	Batch		
EPA METHOD 300.0: ANIONS					Analys	t: LGT		
Chloride	ND	30	mg/Kg	20	2/11/2016 12:03:17 PM	1 23693		
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANIC	S			Analys	TOM		
Diesel Range Organics (DRO)	ND	9.9	mg/Kg	1	2/11/2016 11:47:56 AN	23678		
Surr: DNOP	86.4	70-130	%Rec	1	2/11/2016 11:47:56 AN	23678		
EPA METHOD 8015D: GASOLINE RA	NGE				Analyst	NSB		
Gasoline Range Organics (GRO)	ND	3.8	mg/Kg	1	2/11/2016 11:16:34 AM	A32073		
Surr: BFB	98.9	66.2-112	%Rec	1	2/11/2016 11:16:34 AM	A32073		
EPA METHOD 8021B: VOLATILES					Analyst	NSB		
Benzene	ND	0.038	mg/Kg	1	2/11/2016 11:16:34 AM	B32073		
Toluene	ND	0.038	mg/Kg	1	2/11/2016 11:16:34 AM	B32073		
Ethylbenzene	ND	0.038	mg/Kg	1	2/11/2016 11:16:34 AM	B32073		
Xylenes, Total	ND	0.077	mg/Kg	1	2/11/2016 11:16:34 AM	B32073		
Surr: 4-Bromofluorobenzene	118	80-120	%Rec	1	2/11/2016 11:16:34 AM	B32073		

Qualifiers:		Value exceeds Maximum Contaminant Level.	В	Analyte dete
	D	Sample Diluted Due to Matrix	E	Value above
	H	Holding times for preparation or analysis exceeded	1	Analyte dete
	ND	Not Detected at the Reporting Limit	Р	Sample pH 1
	R	RPD outside accepted recovery limits	RL	Reporting D
	S	% Recovery outside of range due to dilution or matrix	W	Sample cont

- tected in the associated Method Blank
- ve quantitation range
- tected below quantitation limits Page 4 of 9
- Not In Range
- Detection Limit
- ntainer temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Lab ID:

Analyses

Client Sample ID: WEST 3-pt (6'-12'-18') **CLIENT:** Blagg Engineering Project: Ludwick LS 17 Collection Date: 2/10/2016 10:23:00 AM 1602475-005 Matrix: SOIL Received Date: 2/11/2016 8:00:00 AM PQL Qual Units Result **DF** Date Analyzed Batch

renaryses	ALCOLLIC	* 4~ 4a	ar chito	21	Date I kilai j zed	Duten
EPA METHOD 300.0: ANIONS					Analyst	LGT
Chloride	32	30	mg/Kg	20	2/11/2016 12:15:42 PM	23693
EPA METHOD 8015M/D: DIESEL RANGI	E ORGANIC	S			Analyst	TOM
Diesel Range Organics (DRO)	ND	9.9	mg/Kg	1	2/11/2016 12:09:41 PM	23678
Surr: DNOP	88.5	70-130	%Rec	1	2/11/2016 12:09:41 PM	23678
EPA METHOD 8015D: GASOLINE RANG	E				Analyst	NSB
Gasoline Range Organics (GRO)	ND	3.7	mg/Kg	1	2/11/2016 11:40:05 AM	A32073
Surr: BFB	98.2	66.2-112	%Rec	1	2/11/2016 11:40:05 AM	A32073
EPA METHOD 8021B: VOLATILES					Analyst	NSB
Benzene	ND	0.037	mg/Kg	1	2/11/2016 11:40:05 AM	B32073
Toluene	ND	0.037	mg/Kg	1	2/11/2016 11:40:05 AM	B32073
Ethylbenzene	ND	0.037	mg/Kg	1	2/11/2016 11:40:05 AM	B32073
Xylenes, Total	ND	0.074	mg/Kg	1	2/11/2016 11:40:05 AM	B32073
Surr: 4-Bromofluorobenzene	115	80-120	%Rec	1	2/11/2016 11:40:05 AM	B32073

Qualifiers:		Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 5 of 9
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	R	RPD outside accepted recovery limits	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.

PQL

1.5

15.00

Result

15

Client: Project:	00	, Engineering ick LS 17		
	MB-23693	SampType: MBLK	TestCode: EPA Method	300.0: Anions
Client ID:		Batch ID: 23693	RunNo: 32092	
Prep Date:	2/11/2016	Analysis Date: 2/11/2016	SeqNo: 981104	Units: mg/Kg
Analyte		Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD RPDLimit Qua
Chloride		ND 1.5		
Sample ID	LCS-23693	SampType: LCS	TestCode: EPA Method	300.0: Anions
Client ID:	LCSS	Batch ID: 23693	RunNo: 32092	
Prep Date:	2/11/2016	Analysis Date: 2/11/2016	SeaNo: 981105	Units: mg/Kg

SPK value SPK Ref Val %REC LowLimit

97.3

0

Qualifiers:

Analyte

Chloride

- * 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
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Page 6 of 9

WO#: 1602475

%RPD

HighLimit

110

90

RPDLimit

Qual

12-Feb-16

Hall	Environmental	Analysis	Laboratory,	Inc.
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WO#:	1602475
	12-Feb-16

	agg Engineering dwick LS 17	
Sample ID MB-23678 Client ID: PBS Prep Date: 2/11/2016	SampType: MBLK TestCode: EPA Method 8015M/D: Diesel Range Organic Batch ID: 23678 RunNo: 32069 Analysis Date: 2/11/2016 SeqNo: 980364 Units: mg/Kg	S
Analyte	Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLim	nit Qual
Diesel Range Organics (DRO) Surr: DNOP	ND 10 9.2 10.00 91.8 70 130	
Sample ID LCS-23678 Client ID: LCSS	Batch ID: 23678 RunNo: 32069	:5
Prep Date: 2/11/2016 Analyte	Analysis Date: 2/11/2016 SeqNo: 980365 Units: mg/Kg Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLim	nit Qual
Diesel Range Organics (DRO) Surr: DNOP	43 10 50.00 0 86.2 65.8 136 4.1 5.000 82.1 70 130	

Qualifiers:

. Value exceeds Maximum Contaminant Level.

Sample Diluted Due to Matrix D

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- % Recovery outside of range due to dilution or matrix S
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- Analyte detected below quantitation limits J
- P Sample pH Not In Range
- RL **Reporting Detection Limit**
- W Sample container temperature is out of limit as specified

Page 7 of 9

Hall Environmental Analysis Laboratory, Inc.

Client: Blagg E Project: Ludwick	ngineering CLS 17									
Sample ID 5ML RB	SampT	ype: MI	BLK	Tes	tCode: E	PA Method	8015D: Gaso	line Rang	0	
Client ID: PBS	Batch	DID: A3	32073	F	RunNo: 32073					
Prep Date:	Analysis Date: 2/11/2016			SeqNo: 980782			Units: mg/M	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0							1.00	
Surr: BFB	940		1000	1	93.6	66.2	112			
Sample ID 2.5UG GRO LCS	SampT	ype: LC	s	Tes	tCode: E	PA Method	8015D: Gaso	line Rang	e	
01-110-1000										

Client ID: LCSS Batch ID: A32073 RunNo: 32073 Prep Date: Analysis Date: 2/11/2016 SeqNo: 980783 Units: mg/Kg Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Gasoline Range Organics (GRO) 26 104 79.6 5.0 25.00 0 122 Surr: BFB 1000 1000 104 66.2 112

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
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Page 8 of 9

WO#: 1602475

12-Feb-16

Hall Environmental	Analysis	Laborator	y, Inc.
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Client: Blagg Engineering

Project: Ludwick LS 17

Sample ID 5ML RB	SampType: MBLK			TestCode: EPA Method 8021B: Volatiles						
Client ID: PBS	Batc	Batch ID: B32073			RunNo: 3	2073				
Prep Date:	Analysis I	Date: 2	/11/2016	5	SeqNo: 9	80788	Units: mg/h	۲g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.1		1.000		111	80	120			
Sample ID 100NG BTEX LCS	S Samp	Type: LC	s	Tes	tCode: E	PA Method	8021B: Vola	tiles		
Client ID: LCSS	Batc	h ID: B3	2073	F	RunNo: 3	2073				
Prep Date:	Analysis [Date: 2/	11/2016	SeqNo: 980789			Units: mg/k	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.050	1.000	0	101	80	120			
Toluene	1.0	0.050	1.000	0	101	80	120			
Ethylbenzene	1.0	0.050	1.000	0	101	80	120			
		0.40	0.000	0	101	80	120			
Xylenes, Total	3.0	0.10	3.000	0	101	00	120			

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
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Page 9 of 9

12-Feb-16

WO#: 1602475

ENVIRONMENTAL ANALYSIS LABORATORY TEL: 505-345-3;	ntal Analysis Labor 4901 Hawkir Albuquerque, NM 8 975 FAX: 505-345- v.hallenvironmental	17109 Sam	nple Log-In Check List
Client Name: BLAGG Work Order Num	ber: 1602475		RcptNo: 1
Received by/date: JA 02/11/16			
Logged By: Anne Thome 2/11/2016 8:00:00 /	AM	anne Ha	~
Completed By: Anne Thorne 2/11/2016 Reviewed By:		ann An	-
Chain of Custody		1.15	
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 🗌	
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes 🗹	No 🗌	
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 🗆
0.VOA vials have zero headspace?	Yes 🗆	No 🗌	No VOA Vials
1. Were any sample containers received broken?	Yes	No 🗹	# of preserved
2. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes 🗹	No 🗌	bottles checked for pH: (<2 or >12 unless note
3. Are matrices correctly identified on Chain of Custody?	Yes 🗹	No 🗌	Adjusted?
4. Is it clear what analyses were requested?	Yes 🗹	No 🗆	
5. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes 🗹	No 🗌	Checked by:
pecial Handling (if applicable)			
6. Was client notified of all discrepancies with this order?	Yes 🗌	No 🗆	NA 🗹
Person Notified: Date By Whom: Via: Regarding: Client Instructions:		Phone Fax	In Person
7. Additional remarks:			<u></u>
Additional remarks:	Seal Date	Signed By	

lient:	BP A	MERIC/	A DEERWG INC.		Rush	ASAP SAME DAY		HALL ENVIRONME ANALYSIS LABOR www.hallenvironmental.com 4901 Hawkins NE - Albuquerque, NM 87109						RA											
	. (FO	-1220	N 11 10 100	Project #:										5-345-4107 equest											
	r Fax#:	3) 320	>- 1183	Decio et Mana			-		6		-	A	naly		Req	ues									
	Package:		Level 4 (Full Validation)	J. BLAGG				Project Manager: J. BLAG				TPH (Gas only)	DRO / MRO		The second	SIMS)		PO4, SO4	PCB's.						
CCredi		□ Othe		Sampler: J.		E:No State		HdT +	-	18.1)	04.1)	8270		3,NO2,	/ 8082		(A)				or N).				
I EDD	(Type)			Sample Tem	perature: /,	O all the second second		BE	(GF	d 4	od 5(lor	tals	I'NC	ides	2	NO/-	ul	-		S				
Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type		BTEX + MITBI	BTEX + MTBE	TPH 8015B (GRO	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or	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)				
2/2016	1010	SOIL	BASE 5-Pt @ 21'	402 × 1	COOL	-710	IX		×				1					×							
_	1013	и	EAST 3-Pt (6-12-18)	17	h	-202	×		×									×							
11	1016	11	NORTH 3- Pt (6-12-18')	к	9	-203			×									×							
ч	1020	4	SOUTH 3- pt (6-12-18)	. 4	ų	204			x									×		+					
11	1023	11	WEST 3-pt (6-12-18)	h	1)	200			x									×							
						12	-								-				-	+					
_														-											
100				1999																					
ate: 2/16 ate:	Time:	Relinquish	Blogg ,	Received by: Received by:	Jalt	Date Time	Re	mark	s:		VI	D:	s s	HI	XD	VEN	KAL VR.	M							
.0/16	1821	14100	the Watter	gar.a	Gul .	oz/11/16 0800					KE	EF	: 7	- L	191				114						

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



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

February 23, 2016

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

RE: Ludwick LS 17

OrderNo.: 1602863

Dear Jeff Blagg:

Hall Environmental Analysis Laboratory received 1 sample(s) on 2/20/2016 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 <u>www.hallenvironmental.com</u> 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 qualifers 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,

Andial

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering Project: Ludwick LS 17 Lab ID: 1602863-001	Client Sample ID: 5 pt @ 31' Collection Date: 2/19/2016 1:20:00 PM Matrix: Received Date: 2/20/2016 11:15:00 AM										
Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch				
EPA METHOD 8021B: VOLATILES						Analyst	NSB				
Benzene	ND	0.26		mg/Kg	20	2/22/2016 12:02:51 PM	23846				
Toluene	5.9	0.51		mg/Kg	20	2/22/2016 12:02:51 PM	23846				
Ethylbenzene	2.1	0.51		mg/Kg	20	2/22/2016 12:02:51 PM	23846				
Xylenes, Total	31	1.0		mg/Kg	20	2/22/2016 12:02:51 PM	23846				
Surr: 4-Bromofluorobenzene	fluorobenzene 127 80-120 S %Rec 20 2/22/2016 12:0						23846				

Qualifiers	: *	Value exceeds Maximum Contaminant Level.	в	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 1 of 2
	ND	Not Detected at the Reporting Limit		Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	w	Sample container temperature is out of limit as specified

Client:

Blagg Engineering

Hall Environmenta	l Analysis	Laboratory,	Inc.
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WO#: 1602863 23-Feb-16

Page 2 of 2

Sample ID MB-23846	Samp	Type: MI	BLK	Tes	tCode: E	PA Method	8021B: Vola	tiles		
Client ID: PBS	Batc	h ID: 23	846	F	RunNo: 3	2301				
Prep Date: 2/19/2016	Analysis [Date: 2/	/22/2016	\$	SeqNo: 9	87873	Units: mg/h	٢g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Kylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.1		1.000		114	80	120			
Sample ID LCS-23846	Samp	Гуре: LC	s	Tes	tCode: E	PA Method	8021B: Vola	tiles		
Client ID: LCSS	Batc	h ID: 23	846	F	RunNo: 3	2301				
Prep Date: 2/19/2016	Analysis [Date: 2/	22/2016	5	SeqNo: 9	87880	Units: mg/k	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.050	1.000	0	101	80	120			
Foluene	1.0	0.050	1.000	0	104	80	120			
Ethylbenzene	1.0	0.050	1.000	0	103	80	120			
	24	0.40	3.000	0	104	80	120			
Xylenes, Total	3.1	0.10	3.000	0	104	00	120			

Qualifiers:

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

A ABORATORY	Albuquerque, NM 87 5-3975 FAX: 505-345-4 ww.hallenvironmental.	\$107	ple Log-In Che	ck List
Client Name: BLAGG Work Order Nu	mber: 1602863		RcptNo: 1	
Received by/date: CM 02/20116				
Logged By: Anne Thome 2/20/2016 11:15:	00 AM	anne Am	_	1.57
Completed By: Anne Thorne 2/22/2016		am Im	_	
Reviewed By: OR 02/22/16				
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 🗆		
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes 🗹	No 🗆		
6. Sample(s) in proper container(s)?	Yes 🗹	No 🗌		
7. Sufficient sample volume for indicated test(s)?	Yes 🗹	No 🗌		
8. Are samples (except VOA and ONG) properly preserved?	Yes 🗹	No 🗔		
9. Was preservative added to bottles?	Yes 🗆	No 🗹	NA 🗆	
10.VOA vials have zero headspace?	Yes	No 🗆	No VOA Vials	
11. Were any sample containers received broken?	Yes	No 🗹	# of preserved	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes 🗹	No 🗆	bottles checked for pH:	2 unless noted
13. Are matrices correctly identified on Chain of Custody?	Yes 🗹	No 🗌	Adjusted?	
14. Is it clear what analyses were requested?	Yes 🗹	No 🗌		
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes 🗹	No 🗌	Checked by:	
Special Handling (if applicable)				
16. Was client notified of all discrepancies with this order?	Yes	No 🗌	NA 🗹	
Contraction of the second seco	-			
Person Notified: Da By Whom: Via Regarding: Client Instructions:	ate a: eMail F	Phone 🗌 Fax	In Person	
 17. Additional remarks: 18. <u>Cooler Information</u> Cooler No Temp °C Condition Seal Intact Seal No 	Seal Date	Signed By		
1 1.6 Good Yes				

lient:	Chain-of-Custody Record Turn-Around Time: BP AMERICA I Standard ASAP BLACK ENGWEERING INC Project Name: Address: LVDWICK LS 17 #: (505) 32D-1183 Project #:								HALL ENVIRONMENTAL ANALYSIS LABORATORY www.hallenvironmental.com 4901 Hawkins NE - Albuquerque, NM 87109 Tel. 505-345-3975 Fax 505-345-4107 Analysis Request													
-			Level 4 (Full Validation)	4 (Full Validation) Project Manager: J- BLAGG Sampler: J. BLAGG				MB'8 (8021)	H (Gas only)	DRO / MRO)			(SIMS)		D2, PO4, SO4)	82 PCB's						
Date	AP (Type)_ Time	□ Othe Matrix	Sample Request ID	On Ice	the sub-state of the sub-	D-No		BTEX + MIBE - IM	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270	RCRA 8 Metals	Anions (F,CI,NO ₃ ,NO ₂ ,PO ₄ ,SO ₄)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)				Air Bubbles (Y or N)
Thors	1320	SOIL	5-pt @ 31'	403×1	COOL	1602.	201	X BTI	BTI	TPI	14T	EDI	PA	RC	Ani	808	826	827	_		+	Air
			* *						•													
									~													
Date: 18/2016 Date:	Time: 142.5 Time:	Relinquish Relinquish	1 Blagg	Received by: Received by:	te	ZO 1(0 Date	Time 1115 Time	Ren	narks	V	1Z	·· F	VA P-	40	SG			EC				

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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.

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

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 *Surface Waste Management Facility Operator and Generator shall maintain and make this documentation available for Division inspection.

REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE
1. Generator Name and Address: BP America Production Co. 200 Energy Ct. Farmington, NM 87401
2. Originating Site: Ludwick LS 017 Paykey: VHIXONEVRM
3. Location of Material (Street Address, City, State or ULSTR): QRT/QRT: NW/NE Unit: B Section: 29 T30N R10W
4. Source and Description of Waste: Hydrocarbon Impacted Soils
5 GENERATOR CERTIFICATION STATEMENT OF WASTE STATUS
I, Steve Moskal Steve Moskal BP America Production Company do hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency 988 regulatory determination, the above described waste is: (Check the appropriate classification) 9
RCRA Exempt: Oil field wastes generated from oil and gas exploration and production operations and are not mix in on- exempt waste. Operator Use Only: Waste Acceptance Frequency Monthly I Weekly I Per Load
RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for was characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined in 40 CF 61, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous the appropriate items)
☐ MSDS Information ☐ RCRA Hazardous Waste Analysis ⊠ Process Knowledge ☐ Other (Provide description 6 4)
GENERATOR 19.15.36.15 WASTE TESTING CERTIFICATION STATEMENT FOR LANDFARMS
,
I, <u>h</u> , representative for <u>the constrainty of the specific requirements applicable to landfarms pursuant to Section 15 of 19.15.36 NMAC. The results of the representative samples are attached to demonstrate the above-described waste conform to the requirements of Section 15 of 19.15.36 NMAC.</u>
5. Transporter: Crossfire
DCD Permitted Surface Waste Management Facility Name and Facility Permit #: Industrial Ecosystems Inc., JFJ Waste Management Facility (JFJ), Permit NM-01-0010B
Address of Facility: #49 CR 3150 Aztec, NM
Method of Treatment and/or Disposal:
Waste Acceptance Status:
APPROVED DENIED (Must Be Maintained As Permanent Record)
PRINT NAME: DEPART TITLE: CLORE DATE: 2916
SIGNATURE: Surface Waste Management Facility Authorized Agent