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

State of New Mexico Energy Minerals and Natural Resources Department

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	
District RP	
Facility ID	
Application ID	

### **Release Notification**

#### **Responsible Party**

			1100	ponsible	
Responsible Party: SIMCOE LLC OGR		GRID: <b>329736</b>			
Contact Name: Steve Moskal		Со	Contact Telephone: (505) 330-9179		
Contact email: smoskal@ikavenergy.com		Inc	ncident # (assigned by OCD): NCS1628649823 Final		
Contact mai	ling address	: 1199 Main Ste.,	Suite 101, Dura	ngo, CO 813	301
			Location		ease Source
Latitude: <u><b>36.8</b></u>	79347°		(NAD 83 in c		ngitude: -107.966223° s to 5 decimal places)
Site Name: N	Audge LS 0	07		Site	te Type: Natural Gas Production Wellpad
		PI# (if applicable): <b>30-045-10431</b>			
Unit Letter	Section	Township	Range	County	
M	23	31N	11W	San Juai	an
Surface Owne		Federal T	Nature an	nd Volum	ne of Release or specific justification for the volumes provided below)
Crude Oi		Volume Releas			Volume Recovered (bbls)
Non-	l Water	Volume Releas	ed (bbls) Unknov	wn - Historic	ic Volume Recovered (bbls) 0
Is the concentration of dissolved chloride in produced water >10,000 mg/l?		chloride in the	the Yes No		
☐ Condensate Volume Released (bbls) Unknown - Historic		Volume Recovered (bbls) 0			
☐ Natural Gas Volume Released (Mcf)			Volume Recovered (Mcf)		
Other (describe) Volume/Weight Released (provide units)		Volume/Weight Recovered (provide units)			
_	ching for th		. •	-	pacted soils were encountered. Impacts are suspected to be The area was excavated to approximately 20 feet deep. Soil

vapor extraction points were installed to further remediate due to the close proximity of pipelines and the depth of impacts exceeding 35 feet deep. A soil vapor extraction unit has been in operation since February of 2015. Closure Sampling was

performed via drilling on February 12, 13 and 14, 2018. Attached is the documentation of remedial activities at

this site. This submittal was originally submitted via hard copy to the NMOCD In August of 2018.

Received by OCD: 3/26/2021 9:35:52 AM Form C-141 State of New Mexico Page 2 Oil Conservation Division

	Page 2	of 2	1.
			Ì

Incident ID	
District RP	
Facility ID	
Application ID	

Was this a major release as defined by	If YES, for what reason(s) does the respo	nsible party consider this a major release?
19.15.29.7(A) NMAC?		
☐ Yes ☐ No		
TOTAL TOTAL		
If YES, was immediate no	otice given to the OCD? By whom? To w.	nom? When and by what means (phone, email, etc)?
	Initial R	esponse
The responsible p	party must undertake the following actions immediate	ly unless they could create a safety hazard that would result in injury
☐ The source of the rele	ease has been stopped.	
☐ The impacted area ha	as been secured to protect human health and	the environment.
Released materials ha	ave been contained via the use of berms or	likes, absorbent pads, or other containment devices.
All free liquids and re	ecoverable materials have been removed an	d managed appropriately.
If all the actions described	d above have <u>not</u> been undertaken, explain	why:
has begun, please attach a	a narrative of actions to date. If remedial	emediation immediately after discovery of a release. If remediation efforts have been successfully completed or if the release occurred please attach all information needed for closure evaluation.
		best of my knowledge and understand that pursuant to OCD rules and
public health or the environm	ment. The acceptance of a C-141 report by the G	fications and perform corrective actions for releases which may endanger DCD does not relieve the operator of liability should their operations have
failed to adequately investigated addition, OCD acceptance of	ate and remediate contamination that pose a thref a C-141 report does not relieve the operator of	eat to groundwater, surface water, human health or the environment. In responsibility for compliance with any other federal, state, or local laws
and/or regulations.		
Printed Name: Steve M	<u>Ioskal</u>	Title: Environmental Coordinator
Signature:		Date:
email: <u>smoskal@ikaven</u>	nergy.com_	Telephone: _ <u>505-330-9179</u>
OCD Only		
Received by:		Date:

Received by OCD: 3/26/2021 9:35:52 AM Form C-141 State of New Mexico
Page 3 Oil Conservation Division

	Page 3 of 215
Incident ID	
District RP	
Facility ID	
Application ID	

### Site Assessment/Characterization

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

What is the shallowest depth to groundwater beneath the area affected by the release?	<100 (ft bgs)	
Did this release impact groundwater or surface water?	☐ Yes ☐ No	
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☐ No	
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☐ No	
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☐ No	
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☐ No	
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☐ No	
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☐ No	
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☐ No	
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☐ No	
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☐ No	
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☐ No	
Did the release impact areas <b>not</b> on an exploration, development, production, or storage site?	☐ Yes ☐ No	
Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.		
Characterization Report Checklist: Each of the following items must be included in the report.		
Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.  Field data  Data table of soil contaminant concentration data  Depth to water determination  Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release  Boring or excavation logs  Photographs including date and GIS information  Topographic/Aerial maps  Laboratory data including chain of custody		

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

Received by OCD: 3/26/2021 9:35:52 AM Form C-141 State of New Mexico Page 4 Oil Conservation Division

Page 4 of 215

Incident ID	
District RP	
Facility ID	
Application ID	

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.		
Printed Name: Steve Moskal	Title: Environmental Coordinator	
Signature:	Date:	
email: <u>smoskal@ikavenergy.com</u>	Telephone: <u>505-330-9179</u>	
OCD Only		
Received by:	Date:	

Received by OCD: 3/26/2021 9:35:52 AM State of New Mexico
Page 5 Oil Conservation Division

State of New Mexico Oil Conservation Division		Page 5 of 2
	Incident ID	
	District RP	
	Facility ID	

Application ID

### **Remediation Plan**

Remediation Plan Checklist: Each of the following items must b	e included in the plan.
□ Detailed description of proposed remediation technique □ Scaled sitemap with GPS coordinates showing delineation points □ Estimated volume of material to be remediated □ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC □ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)	
Deferral Requests Only: Each of the following items must be con-	nfirmed as part of any request for deferral of remediation.
Contamination must be in areas immediately under or around p deconstruction.	roduction equipment where remediation could cause a major facility
Extents of contamination must be fully delineated.	
Contamination does not cause an imminent risk to human healt	n, the environment, or groundwater.
	e and remediate contamination that pose a threat to groundwater, acceptance of a C-141 report does not relieve the operator of
Printed Name:	Title:
Signature:	Date:
email:	Telephone:
OCD Only	
Received by:	Date:
Approved	Approval
Signature:	<u>Date:</u>

Page 6 of 215

Incident ID	
District RP	
Facility ID	
Application ID	

### Closure

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

Closure Report Attachment Checklist: Each of the following	g items must be included in the closure report.							
□ A scaled site and sampling diagram as described in 19.15.29.11 NMAC								
Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)								
☐ Laboratory analyses of final sampling (Note: appropriate Ol	DC District office must be notified 2 days prior to final sampling)							
☐ Description of remediation activities								
and regulations all operators are required to report and/or file cert may endanger public health or the environment. The acceptance should their operations have failed to adequately investigate and a human health or the environment. In addition, OCD acceptance compliance with any other federal, state, or local laws and/or regu	Title: Environmental Coordinator							
email: <u>smoskal@ikavenergy.com</u>	Telephone: <u>505-330-9179</u>							
OCD Only								
Received by:	Date:							
	ty of liability should their operations have failed to adequately investigate and be water, human health, or the environment nor does not relieve the responsible d/or regulations.							
Closure Approved by:	Date:							
Printed Name:	Title:							

Form C-141

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

Revised August 8, 2011

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

Release Notification and Corrective Action												
					PER		TOR		☐ Su	ıbsequent	Report	Final Report
		P America P				Contact: Steve Moskal						
	ı							No.: 505-330-91 e: Natural gas v				
racility Na	me: Muage	e LS 007				Г	часину тур	e: Naturai gas v	ven			
Surface Ow	ner: Fee			Mineral (	Owner:	: F	ee			API No	. 30-045	-10431
				LOCA	ATIO	N	OF REI	LEASE				
Unit Letter M	Section 23	Township 31N	Range 11W	Feet from the 798	North South		South Line	Feet from the 980	East/V West	Vest Line	County	San Juan
	1		le 36.	l.			Longitud	e107.966223	•		I	
		Latitud	<u> </u>		TIRE	₹. (	OF RELI		<u>,                                     </u>		_	
Type of Rele	ase: Hydro	carbon – Suspe	ected Hist	orical drilling pit		1		Release: unknow	'n	Volume F	Recovered	l: none
Source of Re				<u> </u>				lour of Occurrence		Date and 17, 2013	Hour of I	Discovery: November
Was Immedi	ate Notice (		Yes 🗵	No □ Not R	equired	1	If YES, To	Whom?				
By Whom?			105	a no 🗀 norn	equiree	•	Date and H	lour.				
Was a Water	course Read	ched?						lume Impacting t	he Wate	ercourse.		
If a Waterco	urse was Im	pacted, Descri	be Fully.	*								
During trenc contents app remediate du	hing for the ear to resem e to the clos	nble drilling m se proximity o	a flowlin ud. The a f pipeline	e, hydrocarbon in rea was excavated s and the depth of	l to app f impac	oro:	exceeding 35	feet deep. Soil van feet deep. A soi	apor ext l vapor	raction poi extraction t	nts were i ınit has bo	rical drilling pit as nstalled to further een in operation since remedial activities at
The vertical system becar Attached is a	and lateral ene operation detailed re	nal in Novemb port document	mpacted so er 2015. ing all rea	soil were identifie The SVE system nedial activities a	has den	mo te.	onstrated effe BP requests	ective via monitor s no further action	ring and n and sit	field samp te closure.	ling of the	e vacuum exhaust.
regulations a public health should their or the enviro	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.											
								OIL CON	SERV	ATION	DIVIS	ION
Signature:	Mus	Mu										
Printed Name: Steve Moskal					Approved by Environmental Specialist:							
Title: Field I	Environmen	tal Coordinato	r			Α	Approval Dat	e:		Expiration	Date:	
E-mail Addr	ess: steven.	moskal@bp.co	om			C	Conditions of Approval:				Attach	ed $\square$
Date: August 9, 2018 Phone: 505-330-9179											_	

<sup>\*</sup> Attach Additional Sheets If Necessary

#### BLAGG ENGINEERING, INC.

P.O. Box 87, Bloomfield, New Mexico 87413 Phone: (505)632-1199 Fax: (505)632-3903

August 11, 2018

Mr. Steve Moskal BP America Production Company 380 Airport Road Durango, Colorado

Re: Transmittal of Closure Documentation

Mudge LS 7

(M) Sec 23 – T31N – R11W San Juan County, New Mexico

Dear Mr. Moskal:

At your request, Blagg Engineering, Inc. (BEI) has prepared documentation for closure of remedial activities at the BP operated Mudge LS 7. This site is located on private property approximately 5 miles north of Aztec, New Mexico. Hydrocarbon impacts to soil were discovered on June 26, 2014 while trenching for a pipeline installation. Remediation included excavation of accessible soils in July, 2014. Two high pressure pipelines, operated by third parties, restricted removal of all impacts via excavation. Therefore a soil vapor extraction (SVE) system was installed in October – November, 2014 and placed into full operation in February, 2015 in order to address soil impacts that could not be excavated.

Two interim phases of soil sampling were conducted to evaluate the effectiveness of the SVE system. The first sampling was conducted in July, 2015 by geoprobing two borings within the known impact area. The results of this sampling indicated that the SVE system was effectively remediating the soils but additional operation was necessary. A second geoprobe sample event was conducted in October, 2016 by boring four additional test holes. The results of this sampling showed that the SVE system was continuing to remediate impacts but that additional operation was still required.

In February, 2018 a comprehensive soil sampling program was conducted using a hollow stem auger drill rig to collect samples throughout and surrounding the prior impacted area. This sampling confirmed that the entire site was within NMOCD closure standards for total petroleum hydrocarbons (TPH), benzene-toluene-ethylbenzene-xylenes (BTEX) and for chlorides. Based on these results, BEI recommends closure of the site with no further action.

All remedial activities were overseen by the New Mexico Oil Conservation Division (NMOCD). Sampling and corrective actions were performed pursuant to NMOCD approved methods.

Questions or comments with respect to this transmittal may be directed to myself at (505)320-1183. BEI appreciates the opportunity to provide services to BP.

Respectfully, *Blagg Engineering, Inc.* 

Jeffrey C. Blagg, P.E. President

Attachment: Closure Documentation

# BP America Mudge LS 7

(M) Sec 23 – T31N – R11W San Juan County, New Mexico API: 30-045-10431

#### **Summary Record of Impact Remediation**

<u>June 26, 2014</u> Soils impacted with hydrocarbons were encountered while trenching for pipeline installation. No point source was evident but historical pipeline leaks were the suspected cause.

Site closure standard determined at 100 ppm TPH based on:

Horizontal Distance to Water Course < 1,000 feet (10 points) Distance to Nearest Water Well < 1,000 feet (10 points) Depth to Groundwater < 100 feet (10 points)

Site location shown on Figure 1

July 9, 2014 Initiate remediation via excavation.

July 11, 2014 Conduct closure sampling on remedial excavation (Figure 2 & Table 1)

July 14, 2014 Conduct closure sampling on remedial excavation (Figure 2 & Table 1)

July 15, 2014 Conduct closure sampling on remedial excavation (Figure 3 & Table 1)

July 29, 2014 Conduct closure sampling on remedial excavation (Figure 4 & Table 1)

August 1, 2014 Complete backfilling of remedial excavation.

October 28 – November 10, 2014 Install SVE soil borings (Figure 5 & Table 2)

February 11, 2015 Initial start-up of SVE System on Completed Extraction Points (Figure 6)

July 14, 2015 Conduct geoprobe soil sampling to evaluate SVE performance (Figure 7 & Table 3)

October 13, 2016 Conduct geoprobe soil sampling to evaluate SVE performance (Figure 8 & Table 4)

January 4, 2018 Take SVE System out of service

<u>February 12 – 14, 2018</u> Conduct final soil boring investigation to confirm site closure (Figure 9 & Table 5)

 $\begin{array}{c} \text{Table 1} \\ \text{Remedial Excavation Closure Sampling Test Results} \\ \text{July } 11-29, \, 2014 \end{array}$ 

Sample ID	Date	Field OVM (ppm)	TPH Method 8015B (mg/Kg)	BTEX Method 8021 (mg/Kg)	Benzene Method 8021 (mg/Kg)	Chloride Method 300 (mg/Kg)
SW Base 3-pt @ 16'	07/11/2014	1.9	ND	ND	ND	150
SW Sidewall 3-pt @ (8'-14')	07/11/2014	2.7	81	ND	ND	490
32' N24W @ 14'	07/11/2014	76	110	ND	ND	99
55' N10W @ 36'	07/14/2014	49.5	ND	ND	ND	170
Base 5-pt @ 14'	07/14/2014		20	ND	ND	110
West Wall 3-pt @ 6'-12'	07/14/2014		52	ND	ND	200
South Wall 3-pt @ 6'-12'	07/14/2014		13	ND	ND	120
East Wall 3-pt @ 6'-12'	07/14/2014		17	ND	ND	290
North Wall 3-pt @ 6'-12'	07/14/2014		ND	ND	ND	240
TH-A @ 25'	07/15/2014		118	0.73	ND	93
TH-B @ 30'	07/15/2014		ND			
TH-C @ 30'	07/15/2014		ND			
West Wall 3-pt @ 8'-14'	07/15/2014		17	ND	ND	390
East Wall 3-pt @ 8'-14'	07/15/2014		ND	ND	ND	160
NE Sidewall 5-pt @ 8'-19'	07/29/2014	0.2	ND	ND	ND	640
NW Corner @ 19'	07/29/2014	0.2	ND	ND	ND	95
West Sidewall 4-pt @ 9'-19'	07/29/2014	0.0	15	ND	ND	340
Site	Closure	Standard:	100	50	10	600

Table 2 SVE Boring Soil Sampling Test Results October 28 – November 10, 2014

Sample ID	Date	Field OVM (ppm)	TPH Method 8015B (mg/Kg)	BTEX Method 8021 (mg/Kg)	Benzene Method 8021 (mg/Kg)	Chloride Method 300 (mg/Kg)
BH-1 @ 15'	10/28/2014	17.4	53.5	ND	ND	39.1
BH-1 @ 20'	10/28/2014	421	1,746	234	ND	251
BH-1 @ 25'	10/28/2014	30.0	101.5	2.0	ND	170
BH-1 @ 30'	10/28/2014	5.2	ND	ND	ND	257
BH-1 @ 35'	10/28/2014	1.5	ND	ND	ND	113
BH-2 @ 20'	10/28/2014	1.2	51.2	ND	ND	1,140
BH-2 @ 25'	10/28/2014	3.8	ND	ND	ND	432
BH-2 @ 35'	10/28/2014	0.2	ND	ND	ND	110
BH-3 @ 35'	10/28/2014	0.0	ND	ND	ND	272
BH-4 @ 15'	10/29/2014	1.2	45.7	ND	ND	ND
BH-4 @ 20'	10/29/2014	83	419	5.88	ND	645
BH-4 @ 25'	10/29/2014	60	316	ND	ND	303
BH-4 @ 30'	10/29/2014	1.0	39.1	ND	ND	54.1
BH-5 @ 20'	10/29/2014	0.0	13.7	ND	ND	672
BH-5 @ 35'	10/29/2014	0.0	42.0	0.35	ND	34.7
BH-6 @ 20'	10/30/2014	447	166.7	5.55	ND	20.5
BH-6 @ 25'	10/30/2014	389	2,820	180	0.10	115
BH-6 @ 30'	10/30/2014	410	101.9	1.77	N	153
Site	Closure	Standard:	100	50	10	600

Table 2 SVE Boring Soil Sampling Test Results October 28 – November 10, 2014

Sample ID	Date	Field OVM (ppm)	TPH Method 8015B (mg/Kg)	BTEX Method 8021 (mg/Kg)	Benzene Method 8021 (mg/Kg)	Chloride Method 300 (mg/Kg)
BH-6 @ 35'	10/30/2014	196	33.4	0.23	ND	108
BH-6 @ 40'	10/30/2014	1.1	53.9	ND	ND	35.2
BH-7 @ 25'	10/30/2014	0.9	ND	ND	ND	56.8
BH-7 @ 30'	10/30/2014	0.2	ND	ND	ND	83
BH-7 @ 35'	10/30/2014	0.0	ND	ND	ND	ND
BH-7 @ 40'	10/30/2014	0.0	ND	ND	ND	40.6
BH-8 @ 25'	10/30/2014	312	89.1	1.86	ND	97.5
BH-8 @ 30'	10/30/2014	67	35.4	ND	ND	163
BH-8 @ 35'	10/30/2014	4.4	14.8	0.49	ND	157
BH-8 @ 40'	10/30/2014	0.0	35.8	ND	ND	80.4
BH-9 @ 20'	10/31/2014	0.3	16.1	ND	ND	115
BH-9 @ 25'	10/31/2014	142	486.1	1.96	ND	95.1
BH-9 @ 30'	10/31/2014	10.0	109.6	ND	ND	292
BH-9 @ 35'	10/31/2014	15.4	51.9	0.15	ND	404
BH-9 @ 40'	10/31/2014	3.1	ND	ND	ND	ND
BH-10 @ 25'	10/31/2014	169	165.5	ND	ND	149
BH-10 @ 30'	10/31/2014	121	30.1	ND	ND	181
BH-10 @ 35'	10/31/2014	3.6	ND	ND	ND	149
Site	Closure	Standard:	100	50	10	600

Table 2 SVE Boring Soil Sampling Test Results October 28 – November 10, 2014

Sample ID	Date	Field OVM (ppm)	TPH Method 8015B (mg/Kg)	BTEX Method 8021 (mg/Kg)	Benzene Method 8021 (mg/Kg)	Chloride Method 300 (mg/Kg)
BH-10 @ 40'	10/31/2014	1.6	ND	ND	ND	32.4
BH-11 @ 20'	10/31/2014	101	13.7	0.78	ND	75
BH-11 @ 25'	10/31/2014	389	914	36.7	ND	245
BH-11 @ 30'	10/31/2014	322	403	11.1	ND	273
BH-11 @ 35'	10/31/2014	351	277.5	3.39	ND	124
BH-11 @ 40'	10/31/2014	5.1	ND	ND	ND	ND
BH-12 @ 20'	11/4/2014	0.0	ND	ND	ND	275
BH-12 @ 25'	11/4/2014	0.0	ND	ND	ND	263
BH-12 @ 30'	11/4/2014	0.0	ND	ND	ND	258
BH-12 @ 35'	11/4/2014	0.0	ND	ND	ND	117
BH-12 @ 40'	11/4/2014	0.0	10.5	ND	ND	176
BH-13 @ 10'	11/4/2014	0.0	ND	ND	ND	264
BH-13 @ 15'	11/4/2014	0.0	ND	ND	ND	133
BH-13 @ 20'	11/4/2014	0.0	ND	ND	ND	173
BH-13 @ 25'	11/4/2014	0.0	22.2	ND	ND	167
BH-13 @ 35'	11/4/2014	0.0	15.5	ND	ND	73.9
BH-14 @ 20'	11/4/2014	5.4	10.6	ND	ND	58.3
BH-14 @ 25'	11/4/2014	162	544	6.1	ND	216
Site	Closure	Standard:	100	50	10	600

Table 2 SVE Boring Soil Sampling Test Results October 28 – November 10, 2014

Sample ID	Date	Field OVM (ppm)	TPH Method 8015B (mg/Kg)	BTEX Method 8021 (mg/Kg)	Benzene Method 8021 (mg/Kg)	Chloride Method 300 (mg/Kg)
BH-14 @ 30'	11/4/2014	33	92.8	ND	ND	188
BH-14 @ 35'	11/4/2014	2.5	ND	ND	ND	208
BH-14 @ 40'	11/4/2014	0.0	ND	ND	ND	34
BH-15 @ 10'	11/6/2014	0.0	13.5	ND	ND	306
BH-15 @ 20'	11/6/2014	0.0	ND	ND	ND	592
BH-15 @ 25'	11/6/2014	0.0	ND	ND	ND	93.1
BH-15 @ 30'	11/6/2014	0.0	ND	ND	ND	130
BH-15 @ 35'	11/6/2014	0.0	ND	ND	ND	226
BH-16 @ 15'	11/10/2014	0.0	12.9	ND	ND	ND
BH-16 @ 20'	11/10/2014	0.0	ND	ND	ND	10.9
BH-16 @ 25'	11/10/2014	0.0	ND	ND	ND	293
BH-16 @ 30'	11/10/2014	0.0	ND	ND	ND	173
BH-16 @ 35'	11/10/2014	0.0	ND	ND	ND	61
BH-16 @ 40'	11/10/2014	0.0	ND	ND	ND	20.6
Site	Closure	Standard:	100	50	10	600

Table 3 Geoprobe Boring Soil Sampling Test Results July 14, 2015

Sample ID	Date	Field OVM (ppm)	TPH Method 8015B (mg/Kg)	BTEX Method 8021 (mg/Kg)	Benzene Method 8021 (mg/Kg)	Chloride Method 300 (mg/Kg)
GP-1 (23'-24')	7/14/2015	25.9	140	ND	ND	
GP-1 (27'-28')	7/14/2015	11.9	131	ND	ND	
GP-1 (31'-32')	7/14/2015	22.4	27	ND	ND	
GP-1 (35'-36')	7/14/2015	39.3	81	ND	ND	
GP-1A (19'-20')	7/14/2015	27.3	ND	ND	ND	
GP-2 (19'-20')	7/14/2015	27.3	ND	ND	ND	
GP-2 (23'-24')	7/14/2015	27.2	27	ND	ND	
GP-2 (27'-28')	7/14/2015	31.4	97	ND	ND	
GP-2 (31'-32')	7/14/2015	33.5	56	ND	ND	
GP-2 (35-36')	7/14/2015	36.5	14	ND	ND	
Site	Closure	Standard:	100	50	10	600

Table 4 Geoprobe Boring Soil Sampling Test Results October 13, 2016

Sample ID	Date	Field OVM (ppm)	TPH Method 8015B (mg/Kg)	BTEX Method 8021 (mg/Kg)	Benzene Method 8021 (mg/Kg)	Chloride Method 300 (mg/Kg)
GP-3 (23'-24')	10/13/2016	162	31			
GP-3 (27'-28')	10/13/2016	136	54			
GP-4 (19'-20')	10/13/2016	311	ND	ND	ND	57
GP-4 (23'-24')	10/13/2016	518	220	ND	ND	500
GP-4 (31'-32')	10/13/2016	1.1	ND	ND	ND	230
GP-5 (19'-20')	10/13/2016	0.0	ND	ND	ND	180
GP-5 (35'-36')	10/13/2016	0.0	ND	ND	ND	ND
GP-6 (23'-24')	10/13/2016	0.0	ND	ND	ND	500
GP-6 (31'-32')	10/13/2016	0.0	ND	ND	ND	260
Site	Closure	Standard:	100	50	10	600

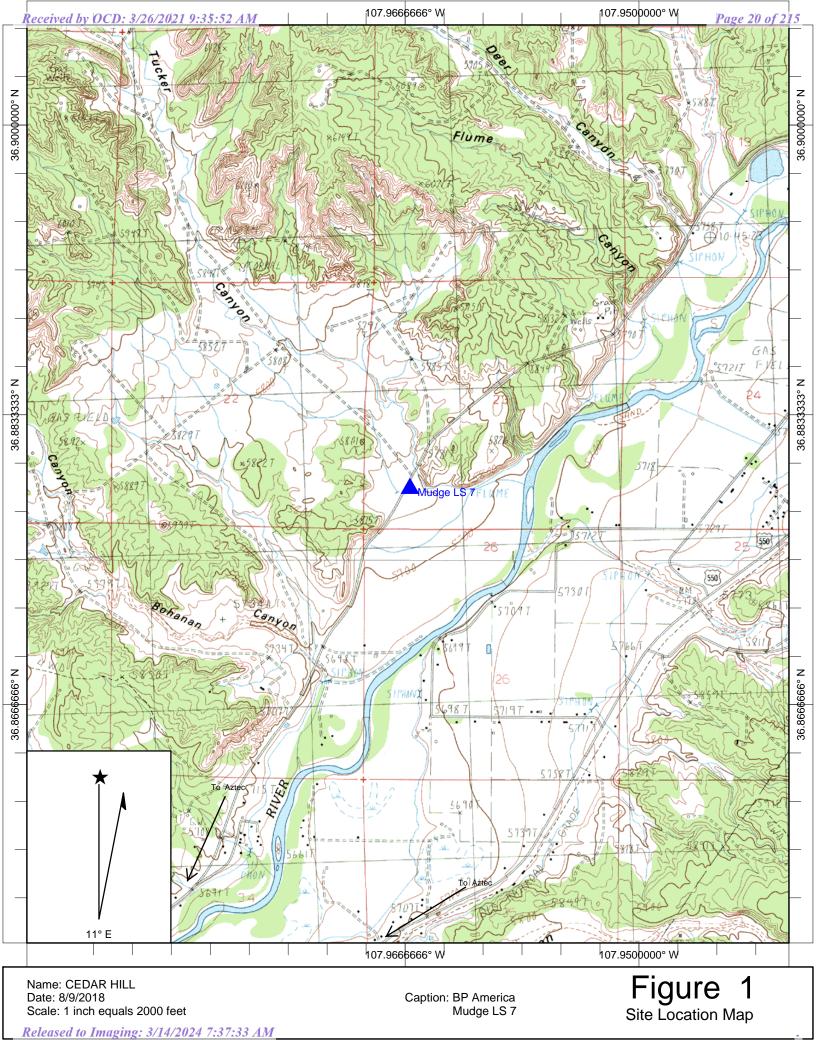
Table 5 Hollow Stem Auger Boring Soil Sampling Test Results February 12 - 14, 2018

Sample ID	Date	Field OVM (ppm)	TPH Method 8015B (mg/Kg)	BTEX Method 8021 (mg/Kg)	Benzene Method 8021 (mg/Kg)	Chloride Method 300 (mg/Kg)
SB-1 (3-pt) 20'-30'	2/13/2018	0.1	ND	ND	ND	170
SB-1 (40'-41')	2/13/2018	0.1	ND	ND	ND	48
SB-2 (3-pt) 20'-30'	2/13/2018	0.3	ND	ND	ND	72
SB-2 (40'-41')	2/13/2018	0.1	ND	ND	ND	31
SB-3 (3-pt) 20'-30'	2/13/2018	0.3	ND	ND	ND	38
SB-3 (40'-41')	2/13/2018	0.3	ND	ND	ND	48
SB-4 (3-pt) 20'-30'	2/13/2018	0.2	ND	ND	ND	310
SB-4 (40'-41')	2/13/2018	0.2	ND	ND	ND	37
SB-5 (3-pt) 20'-30'	2/12/2018	0.4	ND	ND	ND	300
SB-5 (40'-41')	2/12/2018	0.0	ND	ND	ND	130
SB-6 (3-pt) 20'-30'	2/14/2018	1.1	9.4	ND	ND	210
SB-6 (40'-41')	2/14/2018	0.1	ND	ND	ND	80
SB-7 (3-pt) 20'-30'	2/12/2018	0.0	14	ND	ND	140
SB-7 (40'-41')	2/12/2018	0.0	ND	ND	ND	32
SB-8 (3-pt) 20'-30'	2/14/2018	1.2	ND	ND	ND	120
SB-8 (40'-41')	2/14/2018	0.4	ND	ND	ND	33
SB-9 (3-pt) 20'-30'	2/14/2018	11.1	ND	ND	ND	57
SB-9 (40'-41')	2/14/2018	0.0	ND	ND	ND	40
Site	Closure	Standard:	100	50	10	600

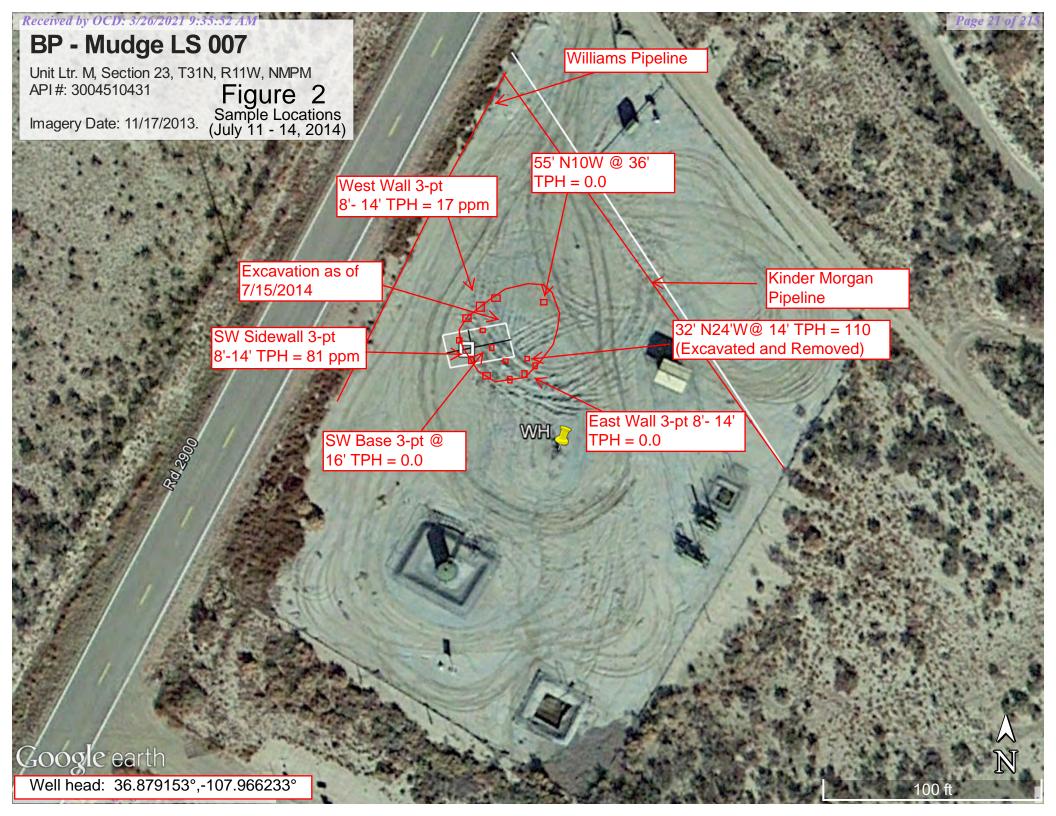
Table 5 Hollow Stem Auger Boring Soil Sampling Test Results February 12 - 14, 2018

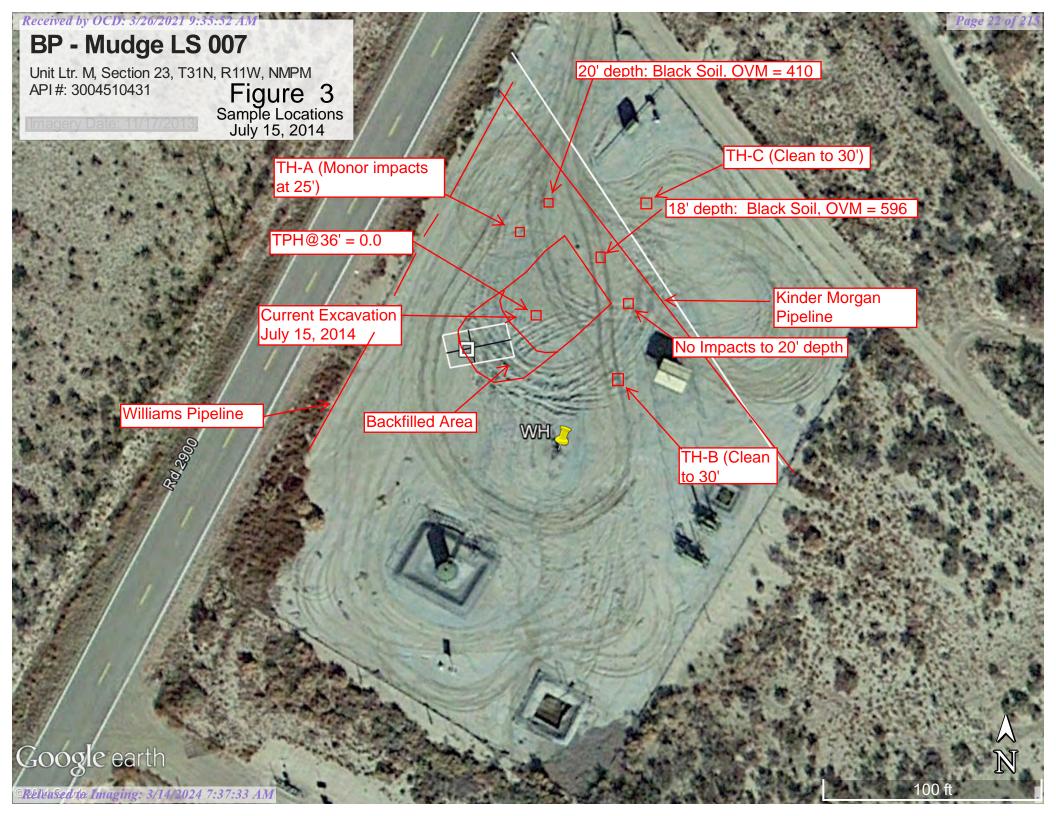
Sample ID	Date	Field OVM (ppm)	TPH Method 8015B (mg/Kg)	BTEX Method 8021 (mg/Kg)	Benzene Method 8021 (mg/Kg)	Chloride Method 300 (mg/Kg)
SB-10 (3-pt) 20'-30'	2/13/2018	0.2	ND	ND	ND	180
SB-10 (40'-41')	2/13/2018	0.0	ND	ND	ND	32
SB-11 (3-pt) 25'-35'	2/13/2018	11.2	68	ND	ND	120
SB-11 (40'-41')	2/13/2018	0.3	ND	ND	ND	64
SB-12 (3-pt) 20'-30'	2/13/2018	0.4	ND	ND	ND	270
SB-12 (40'-41')	2/13/2018	0.0	ND	ND	ND	43
SB-13 (3-pt) 20'-30'	2/13/2018	17.7	37	ND	ND	220
SB-13 (40'-41')	2/13/2018	0.4	ND	ND	ND	33
SB-14 (3-pt) 20'-30'	2/13/2018	1.2	ND	ND	ND	210
SB-14 (40'-41')	2/13/2018	0.2	ND	ND	ND	ND
SB-15 (3-pt) 20'-30'	2/12/2018	0.0	ND	ND	ND	210
SB-15 (40'-41')	2/12/2018	0.0	ND	ND	ND	33
Site	Closure	Standard:	100	50	10	600

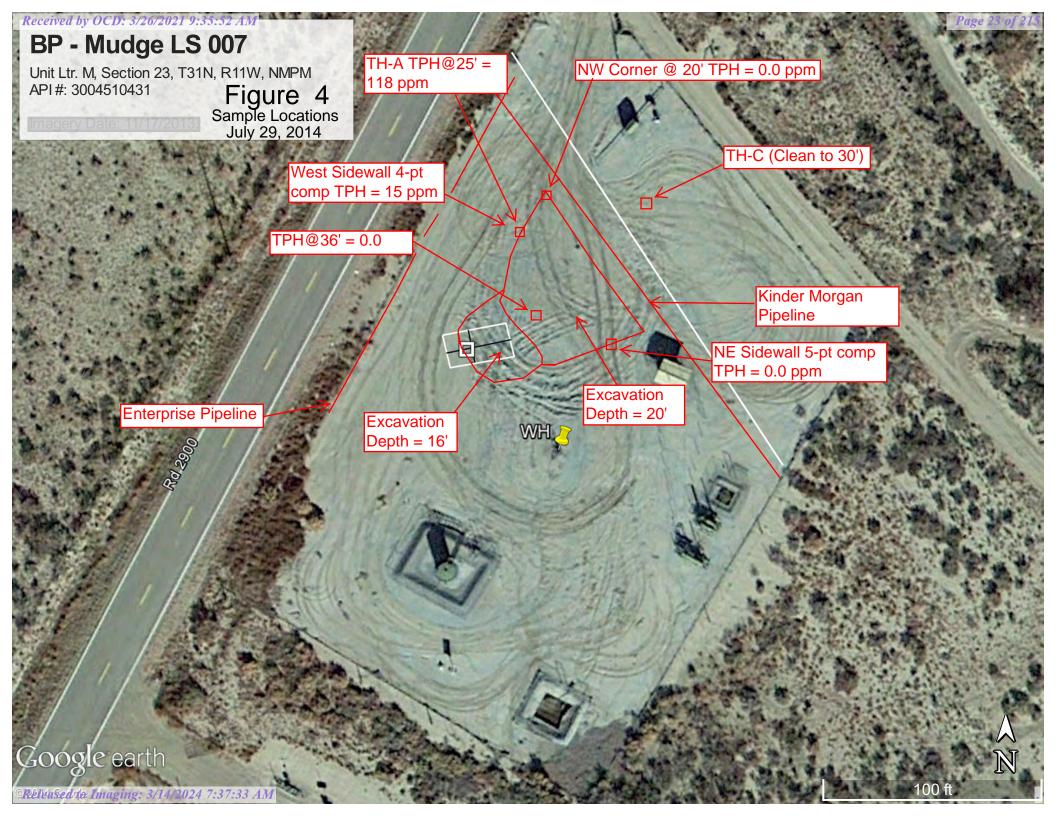
## **Figures**

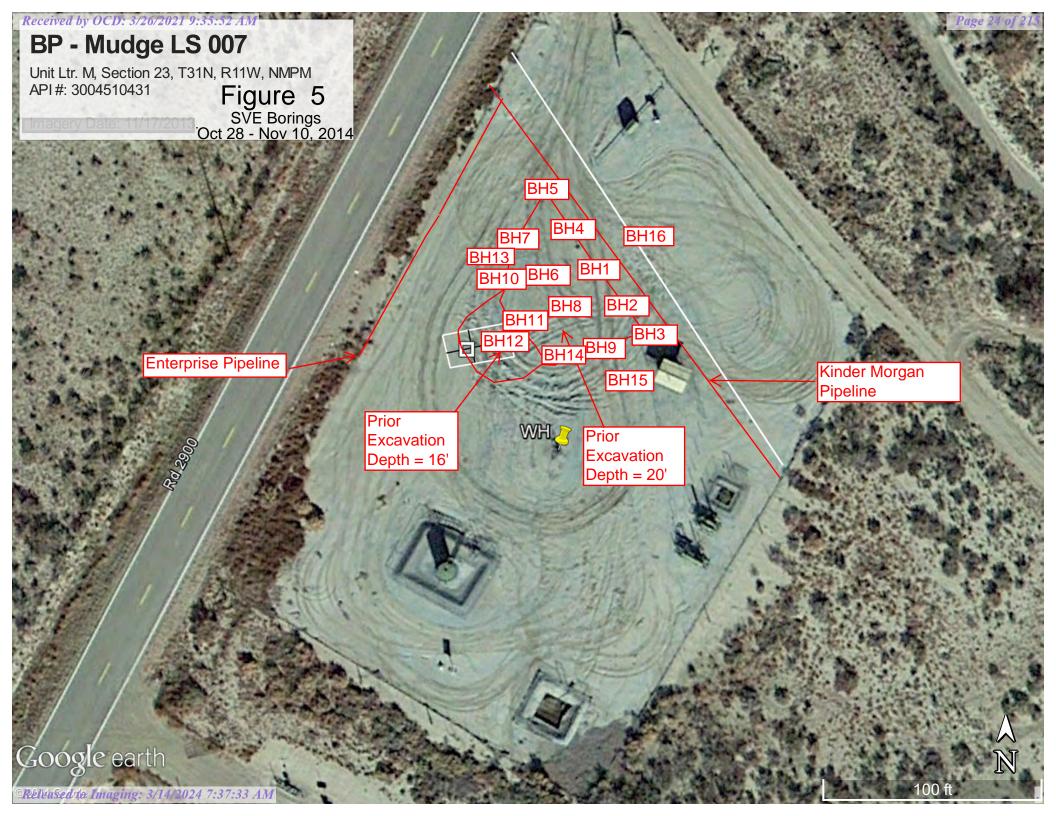


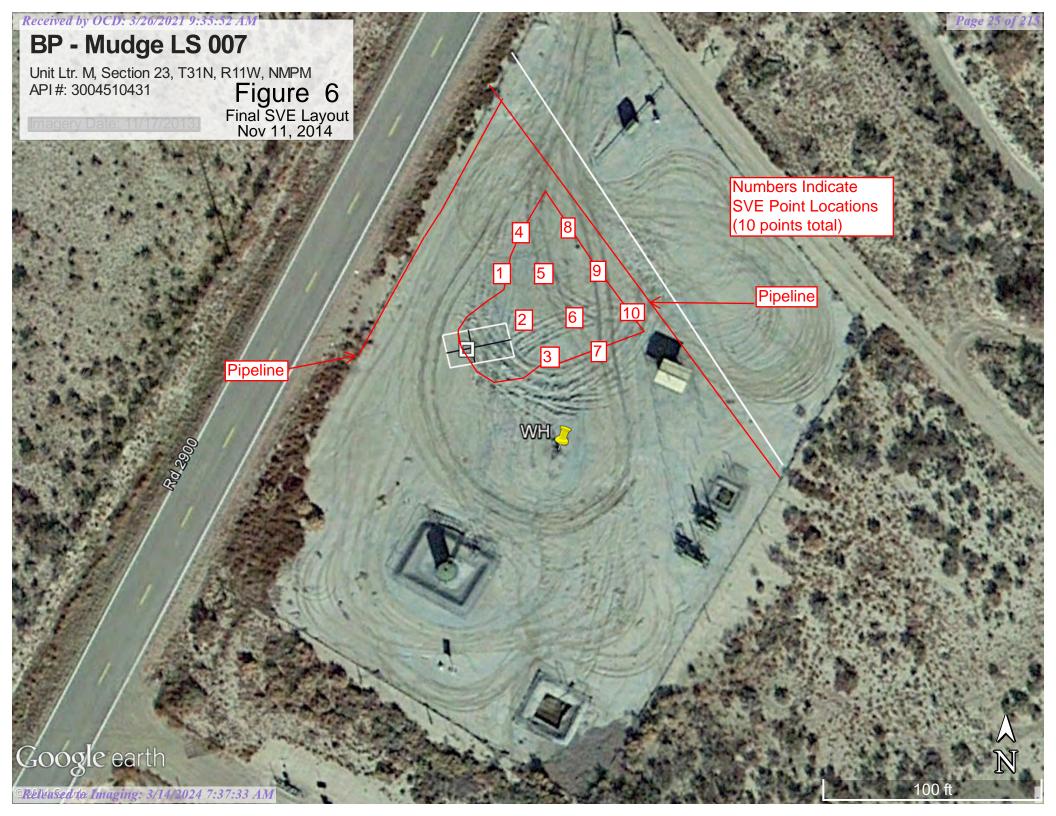
Copyright (C) 1997, Maptech, Inc.





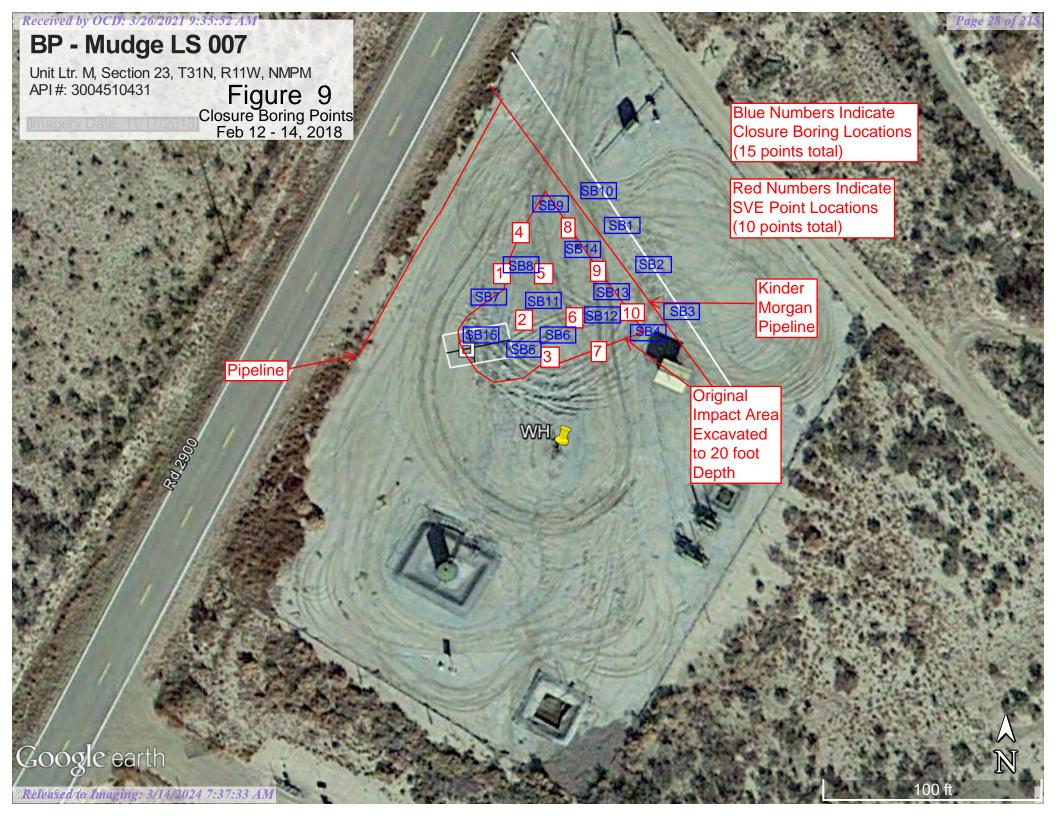












# **Boring Logs**

Boring Logs (SVE Installation)

			INEERI		
	. BOX 6 5) 632-		OOMFIELD	, 1 <i>N</i> 1V1	87413 842 NII°E
			G LOG		BORING ID: BH-1
CLIEN	IT: BP Ar	nerica P	MUDGE or coduction C	L\$ 7	
EQUIP	MENT US	ED:	R: Kyvek CME-95		
DATE :	DEPTH:	128/14	_ DATE FINI CASING	SH: TYPE 8	DRILLER: KP LOGGED BY: JCS SIZE: SLOT SIZE:
			ng Completed		,
DEPTH FEET	SAMPLE: TIME	SAMPLE TYPE	BLOW COUNTS	FIELD	SAMPLE DESCRIPTION
					Stone .
	As-		9		
	0930	55	1.5	0.0	SILY SAND, MED TAN, NO ODDR
					4.
-10 -	0933	55	12	0.2	MEDIUM SAND, TAN, NO UDOR.
					•
			B1		
	9941	55		17.4	MED, SAN, TAN, V. Minor Obe.
			GRO=0		
-20-	0946	ss	13	421	Silty SALD, Gray Black, Strong HC ODDR.
			GRO=847 DRO=899		,
	0954	SS	11	30	Silty Saus, TAN MINN HC ODON.
			GRO=51.6 DRO=49.9	9-5	
					ই)
30	1000	55	13	5.2	SAA, Very minur HC ODOR.
			GRO=0 DRO=0	,	
35	1014	<b>\$</b> \$	15 GRO=0	1.5	Silty Sand, Gray, VV Minon HC
			DRO=0		

			INEERI					
	)5) 632-		OOMFIELD	, NM	76' N22°E			
			LOG		BORING ID: BH-2			
CLIEN DRILL	IT: <u>BP Ar</u> ING CON	nerica P TRACTO	MUDUE L roduction C R: Kyvek	0				
DATE START: 10/28/14 DATE FINISH: DRILLER: KP LOGGED BY: JCB TOTAL DEPTH: CASING TYPE & SIZE: SLOT SIZE:  COMMENTS: Note: Boring Completed as SVE-10								
DEPTH FEET	SAMPLE TIME	SAMPLE TYPE	BLOW COUNTS	FIELD OVM	CAMDLE DESCRIPTION			
	1030							
	1059	<b>6</b> 5	10	0.0	DARK TAN Silty Sand - NO HC ODOR			
	•				·			
10:	1103	55	·B	2 2	SAA			
-10 -		کرچ			-5-HA			
	1107	SS	10	0.0	MEDIUM SAND, TAN, V. LIYE HC ODOR.			
					4			
-20-	(113	55	[ <i>0</i> GRO=0 DRO=51.2	1.2	Silty SAND, TAN, V. LITE HC ODOR.			
			DRU=51.2	, ,				
	1150	\$	9 GRO=0	3.8	MEDIUM SAND, TAN, 11 11 11			
			DRO=0		>>-			
30	1128	SS	12_	1.4	SAA			

35' 1140 SS 15 0.2 SILTY SAND, DONK TAN, NO HE ODOR.

GRO=0
DRO=0

BLAGG ENGINEERING, INC.  P.O. BOX 87, BLOOMFIELD, NM 87413  (505) 632-1199  Page _l_ of _l_  70' N32½ E										
FIE	FIELD BORING LOG BORING ID: BH-3									
PROJE CLIEN	PROJECT: BP: MUDGE LS 7  CLIENT: BP America Production Co.									
EQUIP	MENT US	ED:	R: Kyvek CME-95	*						
DATE :	START: 10) DEPTH: _	125/14	_ DATE FINI CASING	SH: TYPE 8	DRILLER: KP LOGGED BY: JCB SIZE: SLOT SIZE:					
			g Abandoned	T						
DEPTH FEET	SAMPLE TIME	SAMPLE TYPE	BLDW CDUNTS	FIELD	SAMPLE DESCRIPTION					
	1210				SIAJO!					
					,					
	1219	55	<u>!\</u>	0.0	TAN Silty SAND, NO HC ODOR					
					The second secon					
10	1224	50	9	0.0	MEDIUM SAND, TAN, NO HC OBOX					
-10 -			·							
					×					
	1220		10	20						
	1229	\$5.	10	0.0	SAA					
					4					
20 -	1234	<u>\$\$</u>	( }	0.0	DARK TAN SILLY SAND, NO HC ODOR					
	1241	ક્ક	12_	0.0	SAA					
					in the second					
30	1249	55	14	ပ.၁	SAA					
35′	1300	55		0.0	SAA					
		90	GRO=0 DRO=0		Proceedings of					

BLAGG ENGINEERING, INC.  P.O. BOX 87, BLOOMFIELD, NM 87413  (505) 632-1199  Page _L_ of _L_  96 N 7°E								
FIELD BORING LOG BORING ID: BH-4								
PROJECT: BP: MVDGE LS 7  CLIENT: BP America Production Co.  DRILLING CONTRACTOR: Kyvek  EQUIPMENT USED: CME-95  DATE START: 10/29/14 DATE FINISH: DRILLER: KP LOGGED BY: JCR  TOTAL DEPTH: CASING TYPE & SIZE: SLOT SIZE:  COMMENTS: Note: Boring Completed as SVE-8								
DEPTH FEET	SAMPLE TIME	SAMPLE TYPE	BLOW COUNTS	FIELD OVM	SAMPLE DESCRIPTION			
	1245		<i>!</i> {	0.0	START  Lite tan silty SAUD, NO HC ODER			
-10 -	1304	5.5	10		Lite tan Medium Sand, NO HC ODOR.			
i O	1309	55	9		SAA			
20	1314	55	GR0=0.0 DRO=45.7	83	TAN SILY SAND, VENY FAINT HE ODOR			
-20 -			GRO=221 DRO=198					
	1319	<u> </u>	(Z GRO=26.4 DRO=290	60	SAA			
30	1326	<u>55</u>	12_ GRO=0.0	1.0	TAN Modium SAND, NO HC OBOR.			
35′	1337	55	DRO=39.1	0.1	SAA			

			INEER) OOMFIELD			OF CO.				
	)5) 632-					106 DUE NORTH				
	FIELD BORING LOG BORING ID: BH-5									
CLIEN DRILL EQUIF DATE TOTAL COMME	PROJECT: BP: MUDGE LS 7  CLIENT: BP America Production Co.  DRILLING CONTRACTOR: Kyvek  EQUIPMENT USED: CME-95  DATE START: 10/29/14 DATE FINISH: DRILLER: KP LOGGED BY: JCB  TOTAL DEPTH: CASING TYPE & SIZE: SLOT SIZE:  COMMENTS: Note: Boring Abandoned with Bentonite									
DEPTH FEET	SAMPLE TIME	SAMPLE TYPE	BLOW COUNTS	FIELD	START	SAMPLE DESCRIPTION				
	1419				START					
	1425	55	6	0,0	Lite	TAN SILTY SAND, NO HC ODOR.				
	1430	55	7							
-10	1900	22		0.0	SAA.					
	1435	\$5	<u>l</u> 3	0.0	Lite T	TAN MEDIUM SAND, NO HC ODOR				
						The state of the s				
-20-	ામન	55	GRO=13.7 DRO=0.0		SAA					
	1447	<b>5</b> S	14	0,0	SAA					
					ā	<b>&gt;.</b>				
30	1501	<u> 55</u>	20	0.0	SAA					

35' 1515 SS 14 0.0 SAA GRO=12.7 DRO=30.2

BLAGG ENGINEERING, INC.  P.O. BOX 87, BLOOMFIELD, NM 87413 (505) 632-1199  81'N1'E									
FIELD	ВО	RINC	LOG		BORING ID: 34-6				
	PROJECT: BP: MUDGE LS 7  CLIENT: BP America Production Co.								
DRILLINI EQUIPME									
	ART: 10/	30/14	DATE FINI	SH:	DRILLER: KP LOGGED BY: JCB SIZE: SLOT SIZE:				
COMMENTS			e: Boring Co						
FEET	TIME	SAMPLE TYPE	BLOW COUNTS	FIEL D	SAMPLE DESCRIPTION				
	1850				STACT				
	2906	55	20	0.0	Silty SAND, V. Dense, BACKFILL				
	0.02		2.7						
-10 -c	1916	55	22	0.0	SAA				
			ì						
	2919	35	7	3.8	SAA				
20	924	55		447	BLACK Silty SAND, STRONG HC ODOR.				
			DRO=73.0		·				
					,				
C	930	SS	14	389	Dark Gray Medium Sound, Strong HC ODOR				
			GRO=1800 DRO=1020	·					
30 0	938	ς ς.	12	410	Mediculary Silty Soud, Strong HC ODOR.				
35′ 1			7.2 DRO=54. DRO=33.4		Lite Gray Silty Sond, Moderate HE ODOR.				
40' 1	031	SS	1.5 .0 DRO=53.	9   0	SAA, NO HC ODOR				

BLAGG ENGINEERING, INC.  P.O. BOX 87, BLOOMFIELD, NM 87413  (505) 632-1199  Page L of L  93'N5W									
(50	05) 632- ———	-1199			93'N5W				
FIE	LD BC	RINC	G LOG		BORING ID: BH-7				
PROJ	ECT:	BP:	MVDGE LE	7					
DRILL	ING CON	TRACTE	]R: Kyvek	,0,					
DATE	START: 10	130/20	CME- 95	ISH:	DRILLER: KP LOGGED BY: JCB				
TOTAL COMME	DEPTH: _		CASING  Boring Comple	TYPE !	& SIZE: SLOT SIZE:				
DEPTH	SAMPLE .	SAMPLE	BLOW	FIELD	SAMDLE DESCRIPTION				
FEET	TIME	TYPE	COUNTS	OVM	STALT				
			*						
					·				
	1126	55	22	200	Silty SAND, Dense, Bockfill MATERIAL.				
				2,0	Sary Shoot, Devar, Seathing of Beat.				
-10	1132	55	26	0.0	SAA				
			:						
	1137	55	7	0.0	SAA				
		2							
					1				
		//	/	_					
- 20 -	1144	55	6	0.0	SAA				
			500						
	1150	55	10	0.9	MEDICIN SAND, V. life Gray, V.V. Milnor XC OBOR				
			GRO=0.0		respond say, v.				
			DRO=0.0						
30	1157	55	. 12	0.2	MEDIUM SAND, TAN, NO HC ODOR				
35	1207		GR0≠0.0 DI GR0=0.0 DI	₭₯₽₯₢ ₽О₽∩	JSAA				
40'	1219	55	GRQ=0.0 DR	O=0.0	PAZ				

P.C	BOX 8	87, BL	INEERI oomfield		G, INC.  Page 1 of  M 87413						
<u> </u>	05) 632-				70'N9°E						
	FIELD BORING LOG BORING ID: BH-8  PROJECT: BP: MUDGE LS 7										
CLIENT: BP America Production Co.  DRILLING CONTRACTOR: Kyvek											
DATE	START: 10	130/201	CME-95	[SH:	DRILLER: KP LOGGED BY: JCB						
TOTAL DEPTH: CASING TYPE & SIZE: SLOT SIZE: COMMENTS: Note: Boring Completed as SVE-6											
DEPTH FEET	SAMPLE TIME	SAMPLE TYPE	BLOW COUNTS	FIELD							
	1500				SIAK						
	1304	SS	30	0.0	) Tau Silty SAND - BACKFILL						
-10 =	1310	.55	26	0.0	) SAA						
			je.								
				20							
	[315	<b>5</b> S	14	0,0	O SAA						
	1320	55	9	12	SAA						
-20-	(9.7.7.		·	(							
					·						
	1325	55	10	312	DARK Grey Medium Sanh, Strong HC OBOR.						
			GRO=47.8 DRO=41.3								
30	1330	ss	$\frac{7}{2}$ GRC	67	DRO=35.4 Medium Gray Medium Sand, Liter HCODOR						
35° 46′	1340	SS SS	GRO=14.8	4.4 DRO-	4 LHE Gray Solty SAND, LHE HC ODOR. 0=0.0 O BROWN Clay with Minar Gray Strats, No HC ODOR						
ja -	, ,		_[8 GRO=0.0	DRO=							

BLAGG ENGINEERING, INC.  P.O. BOX 87, BLOOMFIELD, NM 87413  (505) 632-1199  Page _1_ of  60 N20E									
FIELD BORING LOG  PROJECT: BP: MUDGE 45 7  CLIENT: BP America Production Co.  DRILLING CONTRACTOR: Kyvek EQUIPMENT USED: CME-95									
DATE START: 10/31/2014 DATE FINISH: DRILLER: KP LOGGED BY: JCB TOTAL DEPTH: CASING TYPE & SIZE: SLOT SIZE:  COMMENTS: Note: Boring Completed as SVE-7									
DEPTH FEET	SAMPLE . TIME	SAMPLE TYPE	BLOW COUNTS	FIELD	SAMPLE DESCRIPTION				
	57ART 0845								
	0850	55	33	0.0	SILTY SAUN- BACKFILL				
-10	0855	55	20	0,0	5AA				
			£						
	0906	<i>55</i>	5	0,0	5AA:				
-20 -	0905	\$5	I D GRO=16.1 DRO=0.0	0,3	Silly SAND, TAN, NO HC ODOR				
	0910	<u> </u>	lЗ GRO=75.1 DRO=411	142_	Yellow Medium Saus, Litetic obor				
30	0919	55	GRO=21.6	DRO 10.0	=88.0 Medium SAND, V. life HC Obor				
35′ 40′	0933	55 55	GRO=19.7  2  GRO=0.0	15.4 DRO 3.1	Brown Silty/clayer said, V life HC abore.				

			INEERI		•					
	. BOX 6 5) 632-		OOMFIELD	, NM	81' N 12W					
FIEI	FIELD BORING LOG BORING ID: BH-10									
PROJE CLIEN	PROJECT: BP: MUNGE US 7 CLIENT: BP America Production Co.									
DRILL	DRILLING CONTRACTOR: Kyvek EQUIPMENT USED: CME-95									
DATE START: 10/31/14 DATE FINISH: DRILLER: KP LOGGED BY: JC/S TOTAL DEPTH: CASING TYPE & SIZE: SLOT SIZE:										
COMME	NT.S:	No	ote: Boring Co	omplete	ed as SVE-1					
DEPTH FEET	SAMPLE /	SAMPLE TYPE	BLOW COUNTS	FIELD	SAMPLE DESCRIPTION					
	010									
	,									
	1024	SS	27	0.0	silty Saus, Brown, Backfill					
			,							
					× ×					
	(0 <b>29</b>	75	25	0.2	<^^					
-10 -	(O a.q.	>>		0.0						
			Ē							
	1035	55	1.0	0.0	SAA					
20	1041	55	5	0.0	SAA					
				7						
	1047	2.5	11	169	LHETAN MADLIM SOND, V. lite HC ODOR					
			GRO=26.5 DRO=139							
		an an								
30	1054	5 S.	14		SAA GRO=0.0 DRO=30.1					
35	1105	55	12 GR(	3.6 0.0=C	Lite Gray Silty Sand, Minor He ODOR DRO=0.0					
40'	1115	55	9	1.6	SAA					
			GRO	0.0=כ	DRO=0.0					

P.C		37, BL	INEERI oomfield,						
FIELD BORING LOG  PROJECT: BP: MVDGE LS 7  CLIENT: BP America Production Co.  DRILLING CONTRACTOR: Kyvek  EQUIPMENT USED: CME 95  DATE START: 10/31/14 DATE FINISH: DRILLER: KP LOGGED BY: JCB  TOTAL DEPTH: CASING TYPE & SIZE: SLOT SIZE:  COMMENTS: Note: Boring Completed as SVE-2									
DEPTH FEET	SAMPLE TIME 1217	SAMPLE TYPE		FIELD	· · · · · · · · · · · · · · · · · · ·				
	1226	55	28	0.0	SILTY SAND - BACKFILL				
-10 <del>-</del>	1231	SS	29	0.0	SAA				
	1236	SS	17	0,1	SAA				
-20-	1245	\$5	GRO=13.7 DRO=0.0	101	Lite Brown W/Minor Gray Streets, Sifty SAND, HC ODOA				
	1252	. \$ <b>\$</b>	GRO=456 DRO=458	389	MEDIUM SAND, Gray, Moderate HC Obok				
30 35' 40'	1257 1306 1316	55 55 55	9 16 22	351	SAA GRO=194 DRO=209  SILY SAND, GAGY, MONOR HC ODORGRO=96.5 DRO SILY SAND, GAGY, MINOR HC ODOR.  GRO=0.0 DRO=0.0				

					, INC. Page _L_ of _L_				
	). BOX 8 )5) 632-		OOMFIE	LD, NM	63' N 19°W				
FIE	LD BC	RINÇ	i LOG	ı T	BORING ID: BH-12				
PROJECT: BP: Mudge LS 7  CLIENT: BP America Production Co.  DRILLING CONTRACTOR: Kyvek  EQUIPMENT USED: CME-95  DATE START: 115/2014 DATE FINISH: DRILLER: KP LOGGED BY: JCB  TOTAL DEPTH: CASING TYPE & SIZE: SLOT SIZE:  COMMENTS: Note: Boring Abandoned with Bentonite									
DEPTH FEET	SAMPLE TIME	SAMPLE TYPE	BLOW COUNTS	FIELD OVM	SAMPLE DESCRIPTION				
	0837				START				
	0846	55	31	0.0	SILTY SAMO-BACK FILL				
				-					
-10 -	0853	\$5	1.7	0,0	SAA				
	0858	55	5	0.0	5 A A				
	0904	55		n (2)	SULTY COURT TOUR NO HIS ONE OF CHARLES				
-20 -		22	GRO=ND DRO=ND	OaQ	SILTY SAND, TAN, NO HC ODOR OR STAIN				
	0012		1.3	<b>A</b> -					
	0912	. 55	RO=ND DRO=ND	0.0	SAA				
30	0920	<del>5</del> 5	GRO=ND DRO=ND	0,0	SAA				
			טאט=אט						
	0934	<u> </u>	12. RO=ND	0.0	MEDIUM SAND, TAN, NO HC ODOR OR STAIN				
			DRO=ND						
. 40	0943	55	(   RO=10.5	0.0	SAA				
		L	<u> </u>						

					f, INC. Page of						
	). BOX ( )5) 632.		OOMFIE	LD, NM	1 87413 86' N 21 W						
			~ ~ ~ ~								
FIELD BORING LOG BORING ID: BH-13											
	PROJECT: BP: Mudge LS 7 CLIENT: BP America Production Co.										
DRILLING CONTRACTOR: Kyvek EQUIPMENT USED:,											
DATE START: 11/5/2014 DATE FINISH: DRILLER: KP LOGGED BY: JCB											
	. DEPTH: INTS: <b>Not</b> e				& SIZE: SLOT SIZE:						
DEPTH FEET	SAMPLE	SAMPLE TYPE	BLOW COUNTS	FIELD	SAMPLE DESCRIPTION						
	TIME 1013	ITE	CD0141.2	U V M	START						
	1020	55	12	0.0	Sulty SAND, DARK TAN, NO HC GOR OF Staly,						
	100/			~ ~							
-10 -	1026	SS	GRO=ND DRO=ND	0.0	SAA						
			DIO-ND								
	1031	SS	9	0.0	MEDIUM Grained SAND, lite TAN, NO KC abon or Stain						
			GRO=ND DRO=ND								
-20	1037		12	0.0	SAA						
			GRO=ND DRO=ND								
	1044	55	17 GRO=22.2	0.0	SAA						
			GRO=22.2 DRO=ND								
	1052		15	<b>2</b> 2	ash as Isla Terran Marine						
30	1052	55	(2	<u> </u>	silty saub, lite TAN, No HC Obor or Staly,						
	1104	55	16	0.0	MEDIUM Grand sout like TAU, NO HC OSON/Staling						
			GRO=15.5 DRO=ND								
	]										
. 40	1116	.55	14	0.0	SAA						
		L	<u> </u>	<del> </del>							

					G, INC. Page 1 of 1				
	). BOX 8 )5) 632-			LD, NM	1 87413 52' N2E				
FIE	LD BC	)RIN(	G LOC	ч л	BORING ID: BH-14				
CLIEN DRILL EQUIP DATE TOTAL	PROJECT: BP: Mudge LS 7  CLIENT: BP America Production Co.  DRILLING CONTRACTOR: Kyvek  EQUIPMENT USED: CME 95  DATE START: 11 5 2014 DATE FINISH: DRILLER: KP LOGGED BY: JCB  TOTAL DEPTH: CASING TYPE & SIZE: SLOT SIZE:  COMMENTS: Note: Boring Completed as SVE-3								
DEPTH FEET	SAMPLE TIME	SAMPLE TYPE	BLOW COUNTS	FIELD OVM	SAMPLE DESCRIPTION				
	1232				START				
	1239	ss	32_	0.0	Silty Sand - BACKFILL				
	17/1/2		75	2					
-10 -	1447	25	25	0.0	SAA				
	12.54		26	0.0	SAA				
- 20 -	1304	<i>s</i> s	8	5.4	Dark TAN Sily Sans, MINER HC ODOR.				
-			GRO=10.6 DRO=ND	)	SUMMER SUMMER ASSESSED FOR THE SECOND SECTION OF THE SECOND SECON				
	1313	1	GRO=129 DRO=415		SAA, Moberate AC ODOR				
30	1320		14 GRO=30. DRO=62.	33 7 1	MEDIUM SAND, Tan W Gray Street HC ODOR				
	1328	55	L6 GRO=ND DRO=ND	2.5	SAA, Lite HC Oper.				
.40	1340	ςs	12	0.0	clayer Silt, Dork Brown, No HC ODOR or Stains				

PROJECT: BP: Mudge LS 7 CLIENT: BP America Production Co.									
DRILLING CONTRACTOR: Kyvek  EQUIPMENT USED: CME-95									
DATE START: 1/6/2014 DATE FINISH: DRILLER: KP LOGGED BY: JCB TOTAL DEPTH: CASING TYPE & SIZE: SLOT SIZE: SLOT SIZE:									
ALN									
9									
)									
141									

BLAGG ENGINEERING, INC.  Page of P.O. BOX 87, BLOOMFIELD, NM 87413											
	). BOX 8 )5) 632-		OOMFIE	LD, NM	98' NZZE						
FIE	FIELD BORING LOG BORING ID: BH-16										
	PROJECT: BP: Mudge LS 7 CLIENT: BP America Production Co.										
DRILLING CONTRACTOR: Kyvek EQUIPMENT USED: CME- 95											
DATE	START:	10/201	DATE F	INISH: _	DRILLER: KP LOGGED BY: JCB						
СПММЕ	TOTAL DEPTH: CASING TYPE & SIZE: SLOT SIZE: COMMENTS: Note: Boring Abandoned with Bentonite										
DEPTH FEET	SAMPLE TIME	SAMPLE TYPE	BLOW COUNTS	FIELD OVM	SAMPLE DESCRIPTION						
	1009				START						
			1.1	_	all a la man also the comes doses						
	1017	55	14	0.0	Silty Sans, lite Ton, No MC Obor /stain						
	,										
-10 -	1022	<i>5</i> 5	11	0.0	SAA						
	1027	55	9	00	MEDIUM SAND, ME TAN, NO MC ODOR/Stain.						
			GRO=12.9 DRO=ND	)							
	1023		a								
-20-	1032	SS	GRO=ND	0.0	SILTY SAND, DONK TAN, NO HC ODOR/STAW						
			DRO=ND								
	1037	55	6	00	SAA						
			GRO=ND DRO=ND								
30	1042	SS	12 GRO=ND	0.0	SAA						
			DRO=ND								
	1050	55		0.0	SAA						
			GRO=ND DRO=ND	-							
	11/2 )	55									
40	1101		GRO=ND	0.0	SAA						
			DRO=ND								

Boring Logs (July 2015 Geoprobing)

P.O. BOX 87 BLOOMFIELD, NM 87413 (505) 632-1199

**GP-1** 

BORE/TEST HOLE REPORT

CLIENT:

LOCATION NAME: CONTRACTOR: **EQUIPMENT USED:**  BP AMERICA PRODUCTION CO.

MUDGE LS # 7 API#: 3004510431 UNIT M. SEC. 23. T31N. R11W

BLAGG ENGINEERING, INC. / KYVEK ENERGY SERVICES, INC.

**GEOPROBE 200** 

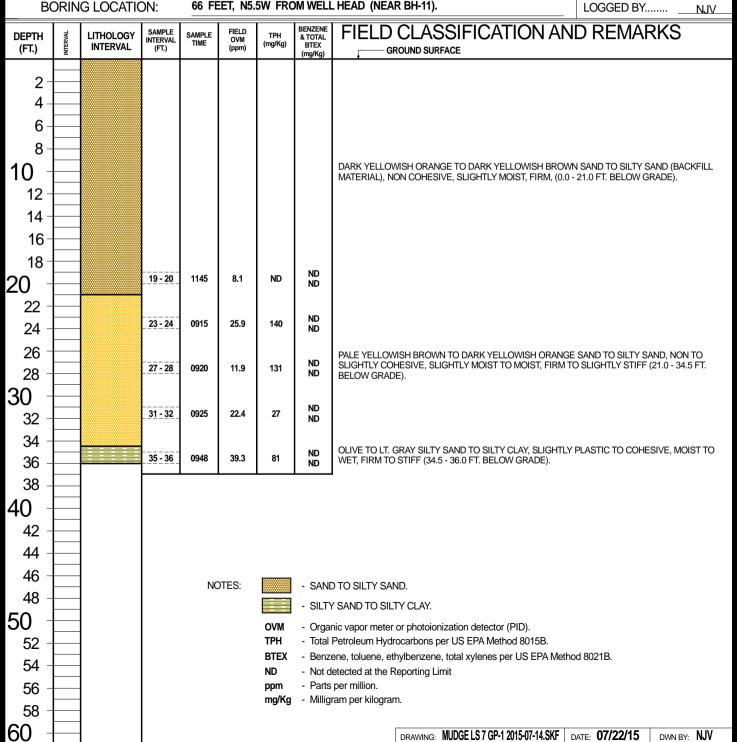
66 FEET, N5.5W FROM WELL HEAD (NEAR BH-11).

BORING #..... MW #..... \_\_\_ NA PAGE #.....

DATE STARTED 07/14/15

DATE FINISHED 07/14/15 OPERATOR.....

LOGGED BY.....



P.O. BOX 87 BLOOMFIELD, NM 87413 (505) 632-1199

**GP-2** 

BORE / TEST HOLE

CLIENT:

LOCATION NAME: CONTRACTOR:

BP AMERICA PRODUCTION CO

MUDGE LS # 7 API#: 3004510431 UNIT M. SEC. 23. T31N. R11W

BLAGG ENGINEERING, INC. / KYVEK ENERGY SERVICES, INC.

**EQUIPMENT USED: GEOPROBE 200** 

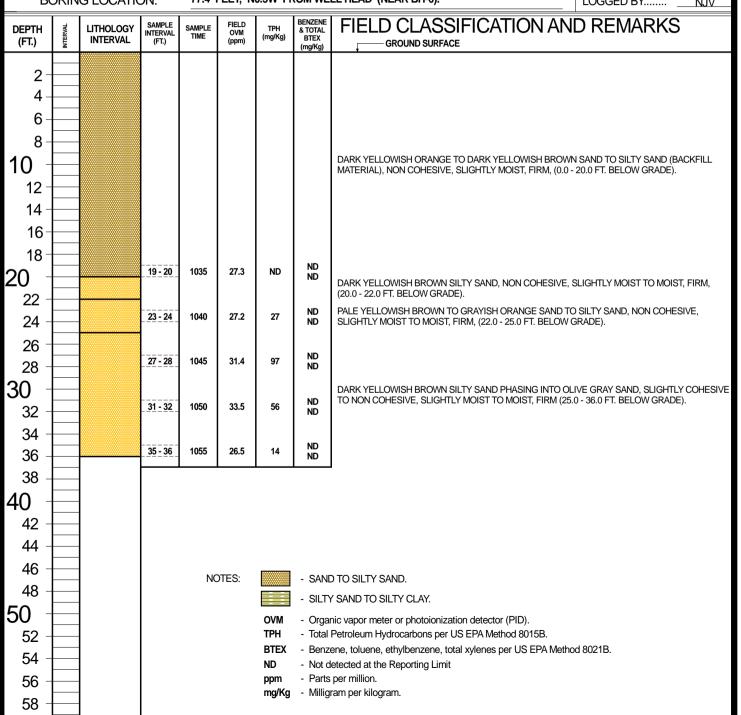
BORING LOCATION: 77.4 FEET, N0.5W FROM WELL HEAD (NEAR BH-6). BORING #..... MW #..... \_\_\_ NA

PAGE #..... \_

DATE STARTED 07/14/15

DATE FINISHED 07/14/15 OPERATOR..... \_\_

LOGGED BY.....



60

Boring Logs (October 2016 Geoprobing)

P.0	LAGG ENGINEERING, INC.  Page <u>1</u> of <u>2</u> D. Box 87, Bloomfield, NM 87413  D5) 632-1199							
FIEI	LD BO	RING	LOC	BORING ID: <u>GP-3</u>				
	PROJECT: MUXGE LS 7							
DRILL	IENT: BP America Production Co. RILLING CONTRACTOR: Earth Worx							
DATE S	START: 10	13/2016	DATE	Probe 6620DT  FINISH: 10/13/2016 DRILLER: LT LOGGED BY: JCB				
TOTAL	TOTAL DEPTH: 36 CASING TYPE & SIZE: SLOT SIZE:							
DEPTH	SAMPLE	SAMPLE	Field	SAMPLE DESCRIPTION				
FEET 1'	0845	PVC SLEEVIZ	oun	Silty SAND - BACKFILL				
2'		SLEEVE		No.				
3′	- 0.44		200					
4' 5'	0848		0.0	SAA				
6′								
7'								
8′ 9′	0852		0.0	SAA				
-10 -								
11' 12'	0901	,	0.0	SAA				
13′	0401							
14′								
15′ 16′	0907		0.0	SAA				
17′	0 (0 (							
18′ 19′								
	0911		0.0	SAA				
- 20 -								
23'								
24′ 25′	0915		162	DARK BROWN 5: (44 SAND, cohesive, lite Most-e TPH = 31 ppm				
26′								
27′								
28' 29'	0919		136	$\leq AA$ TPH = 54 ppm				
30 29'								

P.0	BLAGG ENGINEERING, INC.  Page 2 of 2  P.O. BOX 87, BLOOMFIELD, NM 87413 (505) 632-1199							
FIELD BORING LOG  PROJECT: MUSGE LS 7  CLIENT: BP America Production Co.  DRILLING CONTRACTOR: Earth Worx  EQUIPMENT USED: Geoprobe 6620DT  DATE START: 10/13/16 DATE FINISH: 10/13/16 DRILLER: LT LOGGED BY: JCB  TOTAL DEPTH: 36 CASING TYPE & SIZE: SLOT SIZE:  COMMENTS:								
DEPTH FEET	SAMPLE TIME	SAMPLE TYPE	FIELD	SAMPLE DESCRIPTION				
1' 32' 3' 4' 5'	0925		34	SAA				
36' 7' 8' 9' -10 -	0930		41	OLIVE Sity clay, V. Firm, life Mastre				
11' 12' 13' 14' 15'								
16' 17' 18' 19'								
22' 23' 24' 25'								
26' 27' 28' 29' 30								

P.0	BLAGG ENGINEERING, INC.  Page <u>1</u> of <u>1</u> P.O. BOX 87, BLOOMFIELD, NM 87413 (505) 632-1199												
PROJE CLIEN DRILL EQUIP DATE S	FIELD BORING LOG  PROJECT: MANGE 45 7  CLIENT: BP America Production Co.  DRILLING CONTRACTOR: Earth Worx  EQUIPMENT USED: Geoprobe 6620DT  DATE START: 10/3/16 DATE FINISH: 19/3/16 DRILLER: LT LOGGED BY: JCB  TOTAL DEPTH: 32 CASING TYPE & SIZE: SLOT SIZE: COMMENTS:												
DEPTH FEET  1' 2'	SAMPLE TIME 0950	SAMPLE TYPE PVC SIEVE	FIN	SAMPLE DESCRIPTION  STALT SILTY SAND, TAN, COLESIA, like MOSTAR									
3' 4' 5'	10:00		0.0	5A1									
6' 7' 8' 9'	10:04		0.2	SAA									
-10 - 11' 12' 13' 14'	10:12		12.6	SAA									
15′ 16′ 17′ 18′	10:16		27.5	SAL- Minor HC OBOR									
19' - 20 - 21'	10:20.		311	SAA- lite Gray Stain, moderate odor TPH = ND									
23' 24' 25'	10:25		518	SAA- Incread afor TPH = 220 ppm									
26' 27' 28' 29' 30	10:28		26.1	Sity SAND, TAN, COLOSINE, V. MINUS ODOS									
3( <sup>′</sup> 32 <sup>′</sup>	10:31	•	1-1	SAX - No odor. TPH = ND									

P.0		37, BL		ERING, INC. Page <u>1</u> of <u>1</u> ELD, NM 87413
PROJE CLIEN DRILL EQUIP DATE	START: 107 DEPTH: _	Monerica P TRACTO ED: 13/16	noduction R: Ear Geo DATE	<b>5 7</b> on Co.
DEPTH FEET	SAMPLE TIME	SAMPLE TYPE	Field	SAMPLE DESCRIPTION
1′	1205	PVC Stepue		TAN SIHY SAND, lite Maistre, NO HC ador
2' 3' 4' 5'	1210		0.0	<u>54A</u>
6' 7' 8' 9'	12:13		0.0	
-10 - 11' 12' 13' 14'	12:17		0.0	SAA
15' 16' 17' 18' 19'	12:22		0.0	SAA
55, - 50 -	12:27		0.0	SAA TPH = ND
23′ 24′ 25′	13:05		0.0	SAA
26' 27' 28' 29'	13:21		0.0	SAA

P.0		7, BL		ERING, INC. Page <u>1</u> of <u>1</u> ELD, NM 87413											
FIE	FIELD BORING LOG BORING ID: GP-5														
PROJE	CT: Mu	idge LS	7												
	THE CON			on Co. rth Worx											
EQUIP	MENT US	ED:	Geo	oprobe 6620DT											
DATE	START: 10	/13/2016	DATE	pprobe 6620DT FINISH: <mark>10/13/2016</mark> DRILLER: <u>LT</u> LOGGED BY: <b>JB</b>											
COMME		30	CASI	ING TYPE & SIZE: SLOT SIZE:											
DEPTH		SAMPLE	Fall												
FEET	SAMPLE TIME	TYPE	Fell	SAMPLE DESCRIPTION											
<b>3</b> 1'															
<b>3</b> 2′	13:40		0.0	SAA											
<b>3</b> 3′															
34'															
<b>3</b> 5′	17 . (17)		0.0	Olive silty day, cousin, life Most & TPH = ND											
36' 7'	13:47		0.0	Onve sity cary, coupsing											
8'															
9'															
-10 -															
11'															
12′															
13′															
14'															
15′															
16'															
17′	-														
18' 19'															
20															
- CU -															
55'															
23'															
24'	-														
25′															
26′	-														
27′	-														
28′	-														
30															

P.0		37, BL		RING, INC. Page <u>1</u> of <u>1</u> LD, NM 87413
	LD BC			
CLIEN	CT: BP Ar	nerica P	roductio	on Co.
EQUIP		ED:	Geo	probe 6620DT
		32	CASI	FINISH: 10/13/10/16 DRILLER:   T LOGGED BY: JB
COMME! DEPTH	NTS: SAMPLE	SAMPLE	Field	
FEET	TIME 14:02	TYPE	OVM	SAMPLE DESCRIPTION
1' 2'	•	Soul		START SAID, TAN, NOTIC ODDR OF SYAM, Lite MOSTINE, COURSINE
3′			3	54-A
4′ 5′	14:05			Sar
6′				
7′ 8′	14.07		7	
9′	11.01			SAX
$-10_{11'}$				
12′	14:11		1	511/1
13′				
15′			·編	
16' 17'	1418			SM
18'				
19'	1/17 1		ð	SAX
- 20 - 21′	1424			
23′				
24'	14:28		j	SM TPH = ND
25′				
26' 27'				
28′			9	SAA
29'				
31 32	14:35			SAA TPH = ND

Boring Logs Closure Sampling (February 12 - 14, 2018)

P.O. BOX 87 BLOOMFIELD, NM 87413 (505) 632-1199

**SB - 1** 

# BORE / TEST HOLE REPORT

FEET.

**FIELD** 

(ppm)

CLIENT: LOCATION NAME: CONTRACTOR: **EQUIPMENT USED:**  BP AMERICA PRODUCTION CO

UNIT M, SEC. 23, T31N, R11W MUDGE LS # 7 API #: 3004510431

**BLAGG ENGINEERING, INC. / GEOMAT** 

TPH (mg/Kg)

BTFX

**CME-55** 

SAMPLE TIME

SAMPLE INTERVAL

(FT.)

**BORING LOCATION:** 

**DEPTH** 

(FT.)

2

LITHOLOGY

INTERVAL

FROM WELL HEAD

GROUND SURFACE

BORING #..... \_ SB-1 NA PAGE #..... DATE STARTED 02/13/18 DATE FINISHED 02/13/18 OPERATOR..... \_ ΚP

LOGGED BY..... **JCB** FIELD CLASSIFICATION AND REMARKS

4 6 8 DARK YELLOWISH ORANGE TO DARK YELLOWISH BROWN SILTY SAND, NON COHESIVE. DARK TELLOWISH DRAWING TO DARK TELLOWISH BROWN SILTY SAND, NON CORESIVE, SLIGHTLY MOIST, FIRM, NO APPARENT HYDROCARBON STAINING OBSERVED OR ODOR DETECTED PHYSICALLY [0.0 - 26.0 FT. BELOW GRADE (B.G.)]. 10 12 14 16 18 20 SAME AS ABOVE (SAA); SAMPLE COLLECTED VIA 24 INCH SPLIT SPOON (S.S.) - RECOVERED 20 - 22 1439 0.0 9 INCHES. 22 24 B-1 3-pt. (20'-30' SAA EXCEPT DARK YELLOWISH ORANGE MEDIUM GRAINED SAND, [26.0 - 40.0 FT. B.G.]; ND 25 - 27 0.1 26 ND S.S. RECOVERED 20 INCHES. 28 30 30 - 32 1451 0.3 SAA; S.S. RECOVERED 20 INCHES 32 34 35 - 37 1458 0.0 SAA; S.S. RECOVERED 20 INCHES 36 38 SB-1 @ 40'-41' 40 40 - 42 1505 0.1 ND SAA EXCEPT MOISTURE INCREASED; S.S. RECOVERED 16 INCHES. **BORING** 42 ACKFILLED WITH 44 **CUTTINGS** 46 NOTES: - SILTY SAND. 48 - SAND. 50 OVM - Organic vapor meter or photoionization detector (PID). - Total Petroleum Hydrocarbons per US EPA Method 8015B. 52 TPH - Benzene, toluene, ethylbenzene, total xylenes per US EPA Method 8021B. 54 ND - Not detected at the Reporting Limit - Parts per million. ppm 56 mg/Kg - Milligram per kilogram. 58 DRAWING: MUDGE LS 7 SB-01 2018-02-13.SKF DATE: 07/24/18 DWN BY: NJV

#### BLAGG ENGINEERING, INC.

P.O. BOX 87 BLOOMFIELD, NM 87413

**SB-2** 

(505) 632-1199

# BORE / TEST HOLE REPORT

FEET.

CLIENT: LOCATION NAME: CONTRACTOR: BP AMERICA PRODUCTION CO

MUDGE LS # 7 API #: 3004510431 UNIT M, SEC. 23, T31N, R11W

BLAGG ENGINEERING, INC. / GEOMAT

EQUIPMENT USED: CME-55

BORING LOCATION:

FROM WELL HEAD

 BORING #......
 SB-2

 MW #.....
 NA

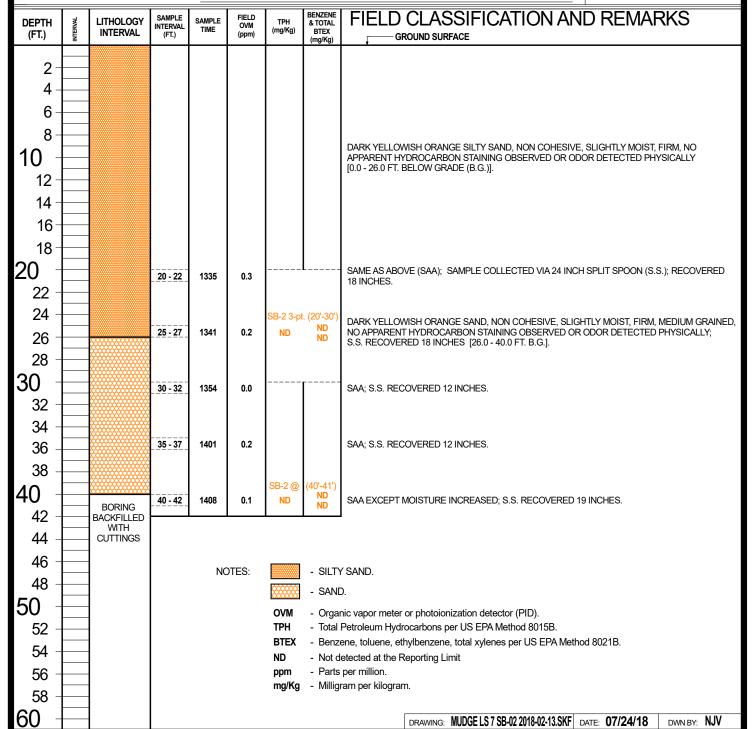
 PAGE #.....
 2

 DATE STARTED
 02/13/18

 DATE FINISHED
 02/13/18

 OPERATOR......
 KP

LOGGED BY.....



P.O. BOX 87 BLOOMFIELD, NM 87413 (505) 632-1199

**SB** - 3

BORE / TEST HOLE REPORT

FEET,

CLIENT: LOCATION NAME: CONTRACTOR: EQUIPMENT USED: BP AMERICA PRODUCTION CO.

MUDGE LS # 7 API #: 3004510431 UNIT M, SEC. 23, T31N, R11W

BLAGG ENGINEERING, INC. / GEOMAT

CME-55

BORING LOCATION:

FROM WELL HEAD

 BORING #......
 SB-3

 MW #.....
 NA

 PAGE #.....
 3

 DATE STARTED
 02/13/18

 DATE FINISHED
 02/13/18

OPERATOR...... <u>KP</u>
LOGGED BY...... <u>JCB</u>

	) (III V	G LOCATIC	JI N.		1 LL1	,		WI VVLLE I ILAD	LOGGED BY JCB
DEPTH (FT.)	INTERVAL	LITHOLOGY INTERVAL	SAMPLE INTERVAL (FT.)	SAMPLE TIME	FIELD OVM (ppm)	TPH (mg/Kg)	BENZENE & TOTAL BTEX (mg/Kg)	FIELD CLASSIFICATION ANI GROUND SURFACE	O REMARKS
2									
4 -									
6 –									
8-									
10								DARK YELLOWISH ORANGE SAND TO SILTY SAND, NON CO NO APPARENT HYDROCARBON STAINING OBSERVED OR O	
12 -								[0.0 - 40.0 FT. BELOW GRADE].	
14 -									
•									
16									
18									
20 +			20 - 22	1242	0.2		L	SAME AS ABOVE (SAA) EXCEPT MEDIUM GRAINED SAND, S SPLIT SPOON (S.S.) RECOVERED 11 INCHES.	SAMPLE COLLECTED VIA 24 INCH
22 -									
24 -						SB-3 3-pt	t. (20'-30')		
26			25 - 27	1247	0.3	ND	ND ND	SAA; S.S. RECOVERED 11 INCHES.	
28									
30				4054			r	OAA EVOEDT OUTVOAND OO DECOVEDED 40 INCLES	
32			30 - 32	1254	0.0			SAA EXCEPT SILTY SAND; S.S. RECOVERED 18 INCHES.	
34									
36 -			35 - 37	1301	0.2			SAA EXCEPT MEDIUM GRAINED SAND; S.S. RECOVERED 1	3 INCHES.
38 -									
						SB-3 @	(40'-41')		
40		BORING	40 - 42	1308	0.3	ND	ND ND	SAA EXCEPT MOISTURE INCREASED; S.S. RECOVERED 20	INCHES.
42 -		BACKFILLED WITH				ı			
44 -		CUTTINGS							
46 -									
48 -				NC	OTES:		- SANF	O &/OR SILTY SAND.	
50				140		OVM		nic vapor meter or photoionization detector (PID).	
52						TPH	•	Petroleum Hydrocarbons per US EPA Method 8015B.	
54 -						BTEX		ene, toluene, ethylbenzene, total xylenes per US EPA Metho	d 8021B.
56 -						ND ppm		etected at the Reporting Limit. per million.	
58 –						mg/Kg		ram per kilogram.	
60 +								DRAWING: MUDGE LS 7 SB-03 2018-02-13.SKF D.	ATE: 07/28/18 DWN BY: NJV

#### BLAGG ENGINEERING, INC.

P.O. BOX 87 BLOOMFIELD, NM 87413 (505) 632-1199

**SB - 4** 

BORE / TEST HOLE REPORT

FEET.

CLIENT: LOCATION NAME: CONTRACTOR: EQUIPMENT USED: BP AMERICA PRODUCTION CO

MUDGE LS # 7 API #: 3004510431 UNIT M, SEC. 23, T31N, R11W

BLAGG ENGINEERING, INC. / GEOMAT

CME-55

BORING LOCATION:

FROM WELL HEAD

 BORING #......
 SB-4

 MW #.....
 NA

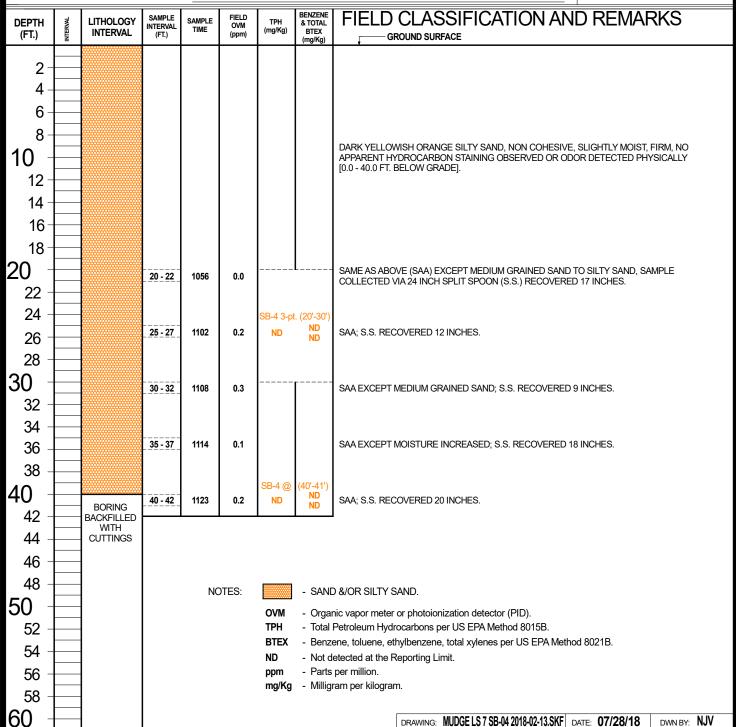
 PAGE #.....
 4

 DATE STARTED
 02/13/18

 DATE FINISHED
 02/13/18

 OPERATOR......
 KP

LOGGED BY.....



P.O. BOX 87 BLOOMFIELD, NM 87413 (505) 632-1199

**SB-5** 

BORE / TEST HOLE REPORT

CLIENT: LOCATION NAME: CONTRACTOR: EQUIPMENT USED: BP AMERICA PRODUCTION CO MUDGE LS # 7 API #: 300451043

MUDGE LS # 7 API #: 3004510431 UNIT M, SEC. 23, T31N, R11W BLAGG ENGINEERING, INC. / GEOMAT

CME-55

FEET,

BORING LOCATION:

FROM WELL HEAD

LOGGED BY...... JCB

DEPTH (FT.)	INTERVAL	LITHOLOGY INTERVAL	SAMPLE INTERVAL (FT.)	SAMPLE TIME	FIELD OVM (ppm)	TPH (mg/Kg)	BENZENE & TOTAL BTEX (mg/Kg)	FIELD CLASSIFICATION AND REMARKS ——GROUND SURFACE
2								•
4								
6								
8								
10 🕂								DARK YELLOWISH ORANGE SILTY SAND, NON COHESIVE, SLIGHTLY MOIST, FIRM, NO APPARENT HYDROCARBON STAINING OBSERVED OR ODOR DETECTED PHYSICALLY
12								[0.0 - 40.0 FT. BELOW GRADE].
14 -								
16								
18								
20 +			20 - 22	1445	0.0		L	SAME AS ABOVE (SAA); SAMPLE COLLECTED VIA 24 INCH SPLIT SPOON (S.S.) - RECOVERED 16 INCHES.
22 +								
24 +			OF 07	4450	0.4	SB-5 3-pt	. (20'-30') <b>ND</b>	CAALO O DECOVEDED 40 INCLIES
26 +			25 - 27	1453	0.1	ND	ND	SAA; S.S. RECOVERED 10 INCHES.
28 +								
30 +			30 - 32	1500	0.4			SAA; S.S. RECOVERED 12 INCHES.
32 +								
34 + 36 +			35 - 37	1506	0.1			SAA; S.S. RECOVERED 18 INCHES.
38 +								
40						SB-5 @	(40'-41') ND	
42		BORING BACKFILLED	40 - 42	1515	0.0	ND	ND	SAA EXCEPT MOISTURE INCREASED; S.S. RECOVERED 20 INCHES.
44		WITH CUTTINGS						
46								
48				NC	OTES:			/ SAND.
50						OVM TPH	U	nic vapor meter or photoionization detector (PID). Petroleum Hydrocarbons per US EPA Method 8015B.
52						BTEX ND		ene, toluene, ethylbenzene, total xylenes per US EPA Method 8021B. etected at the Reporting Limit
54						ppm	- Parts	per million.
56						mg/Kg	- Millig	ram per kilogram.
58 –								
60 +								DRAWING: MUDGE LS 7 SB-05 2018-02-12.SKF DATE: 07/28/18 DWN BY: NJV

P.O. BOX 87 **BLOOMFIELD, NM 87413** (505) 632-1199

**SB-6** 

BORE / TEST HOLE REPORT

CLIENT:

BP AMERICA PRODUCTION CO.

LOCATION NAME: CONTRACTOR:

UNIT M, SEC. 23, T31N, R11W MUDGE LS #7 API #: 3004510431

**BLAGG ENGINEERING, INC. / GEOMAT** 

CME-55 **EQUIPMENT USED:** 

BORING #..... \_\_\_\_ SB-6 MW #..... \_\_\_ PAGE #..... \_\_\_

DATE STARTED 02/14/18

DATE FINISHED 02/14/18 OPERATOR...... KP

ВС	BORING LOCATION:				FEET	,	FROM	/I WELL HEAD	LOGGED BY JCB			
DEPTH (FT.)	INTERVAL	LITHOLOGY INTERVAL	SAMPLE INTERVAL (FT.)	SAMPLE TIME	FIELD OVM (ppm)	TPH (mg/Kg)	BENZENE & TOTAL BTEX (mg/Kg)	FIELD CLASSIFICATION AN GROUND SURFACE	D REMARKS			
2-												
4 –												
6 –												
8 -												
10 -								DARK YELLOWISH ORANGE SAND TO SILTY SAND, NON C NO APPARENT HYDROCARBON STAINING OBSERVED OR				
12 -								0.0 - 40.0 FT. BELOW GRADE].				
14 -												
16-												
18 -												
20 -			20 - 22	0845	1.1		L	SAME AS ABOVE (SAA) EXCEPT MEDIUM GRAINED SAND,	SAMPLE COLLECTED VIA 24 INCH			
22 -								SPLIT SPOON (S.S.) RÉCOVERED 10 INCHES.				
24 -						SB-6 3-pt	. (20'-30')					
26 -			25 - 27	0851	1.0	9.4	ND ND	SAA; S.S. RECOVERED 12 INCHES.				
28 -												
30 -			30 - 32	0857	0.6			SAA; S.S. RECOVERED 9 INCHES.				
32 -												
34 -												
36 –			35 - 37	0902	0.4			SAA EXCEPT SILTY SAND; S.S. RECOVERED 20 INCHES.				
38 -						SB-6 @	(40'-41')					
40 -		BORING	40 - 42	0910	0.1	ND	ND ND	SAA EXCEPT MOISTURE INCREASED; S.S. RECOVERED 22	2 INCHES.			
42 -		BACKFILLED WITH						l				
44 –		CUTTINGS										
46 -												
48 -				NC	TES:		- SANE	0 &/OR SILTY SAND.				
50 -				<ul> <li>OVM - Organic vapor meter or photoionization detector (PID).</li> <li>TPH - Total Petroleum Hydrocarbons per US EPA Method 8015B.</li> <li>BTEX - Benzene, toluene, ethylbenzene, total xylenes per US EPA Method 8021B.</li> </ul>								
52 -												
54 -				ND - Not detected at the Reporting Limit.  ppm - Parts per million.								
56 -						mg/Kg		ram per kilogram.				
58 -												
60 -								DRAWING: MUDGE LS 7 SB-06 2018-02-14.SKF	DATE: <b>07/28/18</b> DWN BY: <b>NJV</b>			

P.O. BOX 87 BLOOMFIELD, NM 87413 (505) 632-1199

**SB-7** 

BORE / TEST HOLE REPORT

FEET,

CLIENT: LOCATION NAME: CONTRACTOR: EQUIPMENT USED: BP AMERICA PRODUCTION CO.

MUDGE LS # 7 API #: 3004510431 UNIT M, SEC. 23, T31N, R11W

BLAGG ENGINEERING, INC. / GEOMAT

CME-55

**BORING LOCATION:** 

FROM WELL HEAD

BORING #...... SB-7

MW #..... NA

PAGE #.... 7

DATE STARTED 02/12/18

DATE FINISHED 02/12/18

OPERATOR.... KP

LOGGED BY...... JCB

DEPTH (FT.)	NTERVAL	LITHOLOGY INTERVAL	SAMPLE INTERVAL (FT.)	SAMPLE TIME	FIELD OVM (ppm)	TPH (mg/Kg)	BENZENE & TOTAL BTEX (mg/Kg)	FIELD CLASSIFICATION AND REMARKS GROUND SURFACE
							(mg/Kg)	•
2 – 4 –								
6 –								
8-								
10 -								DARK YELLOWISH ORANGE SILTY SAND, NON COHESIVE, SLIGHTLY MOIST, FIRM, NO APPARENT HYDROCARBON STAINING OBSERVED OR ODOR DETECTED PHYSICALLY
12 -								[0.0 - 40.0 FT. BELOW GRADE].
14 -								
16-								
18-								
20 -			20 - 22	1337	0.0		L	SAME AS ABOVE (SAA); SAMPLE COLLECTED VIA 24 INCH SPLIT SPOON (S.S.) - RECOVERED 12 INCHES.
22 - 24 -						00 70 4	(001,001)	
24 - 26 -			25 - 27	1343	0.0	SB-7 3-pt	(20'-30') ND ND	SAA; S.S. RECOVERED 10 INCHES.
28 -							ND	
30 -			30 - 32	1350	0.0		г	SAA; S.S. RECOVERED 18 INCHES.
32 -				1000	0.0			S, V., S.S. NEGOVERED TO INCHES.
34 -								
36 -			35 - 37	1358	0.0			SAA; S.S. RECOVERED 14 INCHES.
38 -						SB-7 @	(40'-41')	
40 -		BORING	40 - 42	1405	0.0	ND	ND ND	SAA EXCEPT MOISTURE INCREASED; S.S. RECOVERED 18 INCHES.
42 - 44 -		BACKFILLED WITH CUTTINGS						
44 – 46 –		COTTINGS						
48 -					·		c=	(0)15
50 -				NC	OTES:	OVM		/ SAND. nic vapor meter or photoionization detector (PID).
52 -						TPH	- Total	Petroleum Hydrocarbons per US EPA Method 8015B.
54 -						BTEX ND		ene, toluene, ethylbenzene, total xylenes per US EPA Method 8021B. etected at the Reporting Limit
56 -						ppm mg/Kg	- Parts	per million. ram per kilogram.
58 -						mg/ng	- iviiiigi	ian por mogran.
60 -								DRAWING: MUDGE LS 7 SB-07 2018-02-12.SKF DATE: 07/28/18 DWN BY: NJV

P.O. BOX 87 **BLOOMFIELD, NM 87413** (505) 632-1199

**SB-8** 

BORE / TEST HOLE REPORT

CLIENT:

BP AMERICA PRODUCTION CO.

LOCATION NAME: CONTRACTOR: **EQUIPMENT USED:** 

UNIT M, SEC. 23, T31N, R11W MUDGE LS # 7 API #: 3004510431 **BLAGG ENGINEERING, INC. / GEOMAT** 

CME-55

BORING #..... \_\_\_\_ SB-8 MW #..... \_\_\_ NA PAGE #..... \_\_ 8 DATE STARTED 02/14/18 DATE FINISHED 02/14/18

OPERATOR..... LOGGED BY

В	ORIN	G LOCATIO	DN:		FEET	Γ,	FROM	M WELL HEAD LOGGED BY JCB
DEPTH (FT.)	INTERVAL	LITHOLOGY INTERVAL	SAMPLE INTERVAL (FT.)	SAMPLE TIME	FIELD OVM (ppm)	TPH (mg/Kg)	BENZENE & TOTAL BTEX (mg/Kg)	FIELD CLASSIFICATION AND REMARKS GROUND SURFACE
2-								
4 -								
6-								
8 -								
10 -								DARK YELLOWISH ORANGE SILTY SAND, NON COHESIVE, SLIGHTLY MOIST, FIRM, NO APPARENT HYDROCARBON STAINING OBSERVED OR ODOR DETECTED PHYSICALLY
12 -								[0.0 - 26.0 FT. BELOW GRADE (B.G.)].
14 -								
16-								
18 -								
20 -			20 - 22	1032	0.2		L	SAME AS ABOVE (SAA); SAMPLE COLLECTED VIA 24 INCH SPLIT SPOON (S.S.); RECOVERED
22 -				1002	0.2			7 INCHES.
24 -						SB-8 3-pt		DARK YELLOWISH ORANGE SAND, NON COHESIVE, SLIGHTLY MOIST, FIRM, MEDIUM GRAINED,
26 -			25 - 27	1037	1.2	ND	ND ND	NO APPARENT HYDROCARBON STAINING OBSERVED OR ODOR DETECTED PHYSICALLY; S.S. RECOVERED 20 INCHES [26.0 - 40.0 FT. B.G.].
28 -								·
30 -			30 - 32	1043	1.1		Γ	SAA; S.S. RECOVERED 12 INCHES.
32 -								
34 -								
36 -			35 - 37	1051	0.4			SAA; S.S. RECOVERED 20 INCHES.
38 -						SB-8 @	(40' 44')	
40 -		BORING	40 - 42	1058	0.4	ND	ND ND	SAA EXCEPT MOISTURE INCREASED; S.S. RECOVERED 18 INCHES.
42 -		BACKFILLED WITH			1	<u> </u>		J
44 -		CUTTINGS						
46 -				NC	OTES:		- SILTY	Y SAND.
48 -							- SANE	
50 -						OVM		nic vapor meter or photoionization detector (PID).
52 -						TPH BTEX		Petroleum Hydrocarbons per US EPA Method 8015B. tene, toluene, ethylbenzene, total xylenes per US EPA Method 8021B.
54 -						ND	- Not d	detected at the Reporting Limit
56 -						ppm mg/Kg		s per million. yram per kilogram.
58 -								
60 -								DRAWING: MUDGE LS 7 SB-08 2018-02-14.SKF DATE: 07/29/18 DWN BY: NJV

P.O. BOX 87 BLOOMFIELD, NM 87413 (505) 632-1199

**SB-9** 

BORE / TEST HOLE REPORT

CLIENT: LOCATION NAME: BP AMERICA PRODUCTION CO. MUDGE LS #7 API #: 3004510431

UNIT M, SEC. 23, T31N, R11W

CONTRACTOR: **EQUIPMENT USED:**  **BLAGG ENGINEERING, INC. / GEOMAT** 

FEET,

CME-55

**BORING LOCATION:** 

FROM WELL HEAD

BORING #..... \_\_\_\_ SB-9 MW #..... \_\_\_ NA PAGE #..... \_\_\_\_ 9 DATE STARTED 02/14/18 DATE FINISHED 02/14/18

OPERATOR...... KP LOGGED BY..... JCB

						<u> </u>	DENIZEVIE	FIELD OF A COLETON AND DELAND.
DEPTH (FT.)	INTERVAL	LITHOLOGY INTERVAL	SAMPLE INTERVAL (FT.)	SAMPLE TIME	FIELD OVM (ppm)	TPH (mg/Kg)	BENZENE & TOTAL BTEX (mg/Kg)	FIELD CLASSIFICATION AND REMARKS GROUND SURFACE
2-								
4 –								
6 -								
8-								
10 -								DARK YELLOWISH ORANGE SILTY SAND, NON COHESIVE, SLIGHTLY MOIST, FIRM, NO APPARENT HYDROCARBON STAINING OBSERVED OR ODOR DETECTED PHYSICALLY
12 -								[0.0 - 26.0 FT. BELOW GRADE (B.G.)].
14 -								
16-								
18 -								
20 -			20 - 22	1140	11.1		L	SAME AS ABOVE (SAA) EXCEPT MINOR HYDROCARBON ODOR DETECTED; SAMPLE COLLECTED VIA 24 INCH SPLIT SPOON (S.S.); RECOVERED 18 INCHES.
22 -								COLLECTED VIA 24 INCH SPLIT SPOON (S.S.), RECOVERED TO INCHES.
24 -						SB-9 3-pt	. (20'-30') ND	DARK YELLOWISH ORANGE SAND, NON COHESIVE, SLIGHTLY MOIST, FIRM, MEDIUM GRAINED,
26 -			25 - 27	1147	0.7	ND	ND	NO APPARENT HYDROCARBON STAINING OBSERVED OR ODOR DETECTED PHYSICALLY; S.S. RECOVERED 20 INCHES [26.0 - 40.0 FT. B.G.].
28 -								
30 -			30 - 32	1153	0.4			SAA; S.S. RECOVERED 18 INCHES.
32 -								
34 -			35 - 37	1159	0.2			SAA; S.S. RECOVERED 11 INCHES.
36 -			_ 33 - 31 _	1139	0.2			SAA, S.S. NECOVERED IT INCHES.
38 -						SB-9 @	(40'-41')	
40 -		BORING	40 - 42	1205	0.0	ND	ND ND	SAA EXCEPT MOISTURE INCREASED; S.S. RECOVERED 12 INCHES.
42 - 44 -		BACKFILLED WITH CUTTINGS						
44 - 46 -		COTTINGS						
46 - 48 -				NC	OTES:		- SILTY	SAND.
50 -							- SANE	
52 -						OVM TPH		nic vapor meter or photoionization detector (PID). Petroleum Hydrocarbons per US EPA Method 8015B.
54 -						BTEX	- Benze	ene, toluene, ethylbenzene, total xylenes per US EPA Method 8021B.
56 -						ND ppm		etected at the Reporting Limit per million.
58 -						mg/Kg	- Milligi	ram per kilogram.
60 -								DRAWING: MUDGE LS 7 SB-09 2018-02-14.SKF   DATE: 07/29/18   DWN BY: NJV
								Distance independent of the variety

#### BLAGG ENGINEERING, INC.

P.O. BOX 87 BLOOMFIELD, NM 87413 (505) 632-1199

SB - 10

BORE / TEST HOLE REPORT

FEET.

CLIENT: LOCATION NAME: CONTRACTOR: EQUIPMENT USED: BP AMERICA PRODUCTION CO MUDGE LS # 7 API #: 300451043

API #: 3004510431 UNIT M, SEC. 23, T31N, R11W

BLAGG ENGINEERING, INC. / GEOMAT

CME-55

BORING LOCATION:

FROM WELL HEAD

 BORING #......
 SB-10

 MW #.....
 NA

 PAGE #.....
 10

 DATE STARTED
 02/13/18

 DATE FINISHED
 02/13/18

 OPERATOR.....
 KP

LOGGED BY.....

FIELD CLASSIFICATION AND REMARKS SAMPLE INTERVAL **FIELD** SAMPLE TIME LITHOLOGY TPH (mg/Kg) **DEPTH** INTERVAL RTFX (FT.) GROUND SURFACE (FT.) (ppm) 2 4 6 8 DARK YELLOWISH ORANGE SILTY SAND, NON COHESIVE, SLIGHTLY MOIST, FIRM, NO APPARENT HYDROCARBON STAINING OBSERVED OR ODOR DETECTED PHYSICALLY 10 [0.0 - 20.0 FT. BELOW GRADE (B.G.)]. 12 14 16 18 DARK YELLOWISH ORANGE SAND, NON COHESIVE, SLIGHTLY MOIST, FIRM, MEDIUM GRAINED, 20 NO APPARENT HYDROCARBON STAINING OBSERVED OR ODOR DETECTED PHYSICALLY; 20 - 22 1531 0.0 S.S. RECOVERED 20 INCHES [20.0 - 40.0 FT. B.G.]. 22 24 SB-10 3-pt. (20'-30' ND SAA; S.S. RECOVERED 11 INCHES. 25 - 27 1535 0.2 ND 26 ND 28 30 30 - 32 1541 0.2 SAA; S.S. RECOVERED 13 INCHES 32 34 35 - 37 1547 SAA; S.S. RECOVERED 14 INCHES 36 38 SB-10@ (40'-41)40 ND 40 - 42 1554 ND SAA EXCEPT MOISTURE INCREASED; S.S. RECOVERED 16 INCHES. **BORING** 42 ACKFILLED WITH 44 **CUTTINGS** 46 NOTES: - SILTY SAND 48 - SAND. 50 OVM - Organic vapor meter or photoionization detector (PID). - Total Petroleum Hydrocarbons per US EPA Method 8015B. 52 TPH - Benzene, toluene, ethylbenzene, total xylenes per US EPA Method 8021B. 54 ND - Not detected at the Reporting Limit - Parts per million. ppm 56 mg/Kg - Milligram per kilogram. 58 DRAWING: MUDGE LS 7 SB-10 2018-02-13.SKF DATE: 07/29/18 DWN BY: NJV

P.O. BOX 87 BLOOMFIELD, NM 87413 (505) 632-1199

**SB - 11** 

## BORE / TEST HOLE REPORT

CLIENT: LOCATION NAME: CONTRACTOR:

BP AMERICA PRODUCTION CO. MUDGE LS # 7

UNIT M, SEC. 23, T31N, R11W API #: 3004510431

**BLAGG ENGINEERING, INC. / GEOMAT** 

CME-55

**EQUIPMENT USED: BORING LOCATION:**  BORING #..... SB-11 MW #..... <u>NA</u> PAGE #..... \_\_\_\_ 11 DATE STARTED 02/14/18 DATE FINISHED 02/14/18 OPERATOR...... KΡ

BORING LOCATION:				FEET	,	FROM	I WELL HEAD LOGGED BY				
DEPTH (FT.)	INTERVAL	LITHOLOGY INTERVAL	SAMPLE INTERVAL (FT.)	SAMPLE TIME	FIELD OVM (ppm)	TPH (mg/Kg)	BENZENE & TOTAL BTEX (mg/Kg)	FIELD CLASSIFICATION AN	D REMARKS		
2											
4											
6											
8											
10								DARK YELLOWISH ORANGE SILTY SAND, NON COHESIVE, APPARENT HYDROCARBON STAINING OBSERVED OR ODC			
12								[0.0 - 30.0 FT. BELOW GRADE (B.G.)].			
14											
16											
18											
20			20 - 22	0937	0.2			SAME AS ABOVE (SAA); SAMPLE COLLECTED VIA 24 INCH	SPLIT SPOON (S.S.); RECOVERED		
22 -								11 INCHES.			
24											
26			25 - 27	0943	8.7			SAA; S.S. RECOVERED 18 INCHES.			
28 -						SB-11 3-p	t (25'-35')				
30 +			30 - 32	0949	3.9	68	ND ND	DARK YELLOWISH ORANGE SAND, NON COHESIVE, SLIGH NO APPARENT HYDROCARBON STAINING OBSERVED OR (			
32 +								S.S. RECOVERED 12 INCHES [30.0 - 40.0 FT. B.G.].			
34			35 - 37	0955	11.2			SAA EXCEPT VERY SLIGHT HYDROCARBON ODOR DETEC			
36			_ 35 - 31 _	0900	11.2			SAMENCEFT VERT SLIGHT HTDNOCARBON ODOR DETEC	TED, 3.3. RECOVERED 20 INCHES.		
38 -						SB-11 @	(40'-41')				
40 +		BORING	40 - 42	1003	0.3	ND	ND ND	SAA EXCEPT NO HYDROCARBON ODOR DETECTED & INCI S.S. RECOVERED 20 INCHES.	REASED MOISTURE;		
42 <del> </del> 44 <del> </del>		BACKFILLED WITH CUTTINGS						•			
46		COTTINGS									
48				NC	OTES:		- SILTY				
50							- SANE				
52						OVM TPH		nic vapor meter or photoionization detector (PID). Petroleum Hydrocarbons per US EPA Method 8015B.			
54						BTEX	- Benze	ene, toluene, ethylbenzene, total xylenes per US EPA Metho	d 8021B.		
56					ND - Not detected at the Reporting Limit  ppm - Parts per million.						
58						mg/Kg	- Milligi	ram per kilogram.			
60								DRAWING: MUDGE LS 7 SB-11 2018-02-14.SKF D	ATE: <b>07/29/18</b> DWN BY: <b>NJV</b>		

P.O. BOX 87 BLOOMFIELD, NM 87413 (505) 632-1199

SB - 12

# BORE / TEST HOLE REPORT

CLIENT: LOCATION NAME: CONTRACTOR:

BP AMERICA PRODUCTION CO MUDGE LS #7

UNIT M, SEC. 23, T31N, R11W API #: 3004510431

**BLAGG ENGINEERING, INC. / GEOMAT EQUIPMENT USED:** 

BORING #..... SB-12 MW #.....\_\_\_\_ NA PAGE #..... 12 DATE STARTED 02/14/18 DATE FINISHED 02/14/18 OPERATOR......\_ ΚP

FEET. FROM WELL HEAD **BORING LOCATION:** LOGGED BY..... JCB FIELD CLASSIFICATION AND REMARKS SAMPLE INTERVAL FIFI D **DEPTH** LITHOLOGY SAMPLE TPH (mg/Kg) & TOTAL INTERVAL BTFX (FT.) (FT.) (ppm) **GROUND SURFACE** 2 4 6 8 DARK YELLOWISH ORANGE SILTY SAND, NON COHESIVE, SLIGHTLY MOIST, FIRM, NO APPARENT HYDROCARBON STAINING OBSERVED OR ODOR DETECTED PHYSICALLY 10 [0.0 - 26.0 FT. BELOW GRADE (B.G.)]. 12 14 16 18 20 SAME AS ABOVE (SAA); SAMPLE COLLECTED VIA 24 INCH SPLIT SPOON (S.S.); RECOVERED 20 - 22 1302 0.4 12 INCHES. 22 24 SB-12 3-pt. (20'-30 DARK YELLOWISH ORANGE SAND, NON COHESIVE, SLIGHTLY MOIST, FIRM, MEDIUM GRAINED, ND 25 - 27 NO APPARENT HYDROCARBON STAINING OBSERVED OR ODOR DETECTED PHYSICALLY; 1311 0.2 ND 26 ND S.S. RECOVERED 16 INCHES [26.0 - 35.0 FT. B.G.]. 28

35 - 37 1324 0.0 36 38 SB-12 @ 40 ND 40 - 42 1333 ND **BORING** 42 BACKFILLED WITH 44 **CUTTINGS** 

30 - 32

1317

SAA; S.S. RECOVERED 20 INCHES.

SAA; S.S. RECOVERED 16 INCHES

NOTES:

0.1

- SILTY SAND.

- SAND.

OVM - Organic vapor meter or photoionization detector (PID). - Total Petroleum Hydrocarbons per US EPA Method 8015B. TPH

- Benzene, toluene, ethylbenzene, total xylenes per US EPA Method 8021B.

ND - Not detected at the Reporting Limit

22 INCHES

- Parts per million. ppm mg/Kg - Milligram per kilogram.

DRAWING: MUDGE LS 7 SB-12 2018-02-14.SKF DATE: 07/29/18

SAA EXCEPT SILTY SAND & INCREASED MOISTURE [35.0 - 40 FT. B.G.]; S.S. RECOVERED

DWN BY: NJV

30

32 34

46

48

52

54

56

58

50

#### BLAGG ENGINEERING, INC.

P.O. BOX 87 BLOOMFIELD, NM 87413 (505) 632-1199

SB - 13

## BORE / TEST HOLE REPORT

FEET.

CLIENT: LOCATION NAME: CONTRACTOR: BP AMERICA PRODUCTION CO MUDGE LS # 7 API #: 300451043

MUDGE LS # 7 API #: 3004510431 UNIT M, SEC. 23, T31N, R11W BLAGG ENGINEERING, INC. / GEOMAT

EQUIPMENT USED: CME-55

BORING LOCATION:

FROM WELL HEAD

 BORING #......
 SB-13

 MW #.....
 NA

 PAGE #.....
 13

 DATE STARTED
 02/13/18

 DATE FINISHED
 02/13/18

 OPERATOR......
 KP

LOGGED BY.....

FIELD CLASSIFICATION AND REMARKS SAMPLE INTERVAL FIFI D **DEPTH** LITHOLOGY SAMPLE TPH (mg/Kg) & TOTAL INTERVAL BTFX (FT.) (FT.) (ppm) **GROUND SURFACE** 2 4 6 8 DARK YELLOWISH ORANGE SILTY SAND, NON COHESIVE, SLIGHTLY MOIST, FIRM, NO APPARENT HYDROCARBON STAINING OBSERVED OR ODOR DETECTED PHYSICALLY 10 [0.0 - 26.0 FT. BELOW GRADE (B.G.)]. 12 14 16 18 20 SAME AS ABOVE (SAA) EXCEPT 6 INCH ZONE WITH MINOR HYDROCARBON ODOR DETECTED; 20 - 22 0843 17.7 SAMPLE COLLECTED VIA 24 INCH SPLIT SPOON (S.S.); RECOVERED 20 INCHES. 22 24 SB-13 3-pt. (20'-30 DARK YELLOWISH ORANGE SAND, NON COHESIVE, SLIGHTLY MOIST, FIRM, MEDIUM GRAINED, ND 25 - 27 NO APPARENT HYDROCARBON STAINING OBSERVED OR ODOR DETECTED PHYSICALLY; 0849 0.8 26 ND S.S. RECOVERED 16 INCHES [26.0 - 36.0 FT. B.G.]. 28 30 30 - 32 0856 0.3 SAA; S.S. RECOVERED 18 INCHES 32 34 35 - 37 0905 SAA EXCEPT SILTY SAND [36.0 - 40 FT. B.G.]; S.S. RECOVERED 22 INCHES. 0.3 36 38 B-13 @ 40 ND 40 - 42 0912 0.4 ND SAA EXCEPT INCREASED MOISTURE; S.S. RECOVERED 18 INCHES. **BORING** 42 BACKFILLED WITH 44 **CUTTINGS** 46 NOTES: - SILTY SAND. 48 - SAND. 50 OVM - Organic vapor meter or photoionization detector (PID). - Total Petroleum Hydrocarbons per US EPA Method 8015B. 52 TPH - Benzene, toluene, ethylbenzene, total xylenes per US EPA Method 8021B. 54 ND - Not detected at the Reporting Limit - Parts per million. ppm 56 mg/Kg - Milligram per kilogram. 58 DRAWING: MUDGE LS 7 SB-13 2018-02-13.SKF DATE: 07/29/18 DWN BY: NJV

P.O. BOX 87 BLOOMFIELD, NM 87413 (505) 632-1199

SB - 14

## BORE / TEST HOLE REPORT

CLIENT: LOCATION NAME: CONTRACTOR:

BP AMERICA PRODUCTION CO MUDGE LS #7

UNIT M, SEC. 23, T31N, R11W API #: 3004510431

**BLAGG ENGINEERING, INC. / GEOMAT** 

**CME-55** 

**EQUIPMENT USED: BORING LOCATION:** 

BORING #..... SB-14 MW #.....\_\_\_\_ NA PAGE #..... 14 DATE STARTED 02/13/18 DATE FINISHED 02/13/18 OPERATOR......\_ ΚP

FEET. FROM WELL HEAD LOGGED BY..... JCB FIELD CLASSIFICATION AND REMARKS SAMPLE INTERVAL FIFI D **DEPTH** LITHOLOGY SAMPLE TPH (mg/Kg) & TOTAL INTERVAL BTFX (FT.) (FT.) (ppm) **GROUND SURFACE** 2 4 6 8 DARK YELLOWISH ORANGE SILTY SAND, NON COHESIVE, SLIGHTLY MOIST, FIRM, NO APPARENT HYDROCARBON STAINING OBSERVED OR ODOR DETECTED PHYSICALLY 10 [0.0 - 26.0 FT. BELOW GRADE (B.G.)]. 12 14 16 18 20 SAME AS ABOVE (SAA); SAMPLE COLLECTED VIA 24 INCH SPLIT SPOON (S.S.); RECOVERED 20 - 22 0955 1.2 17 INCHES. 22 24 SB-14 3-pt. (20'-30 DARK YELLOWISH ORANGE SAND, NON COHESIVE, SLIGHTLY MOIST, FIRM, MEDIUM GRAINED, ND 25 - 27 NO APPARENT HYDROCARBON STAINING OBSERVED OR ODOR DETECTED PHYSICALLY; 1003 1.0 ND 26 ND S.S. RECOVERED 14 INCHES [26.0 - 36.0 FT. B.G.]. 28 30 30 - 32 1009 0.8 SAA; S.S. RECOVERED 10 INCHES. 32 34 35 - 37 1016 SAA EXCEPT SAND TO SILTY SAND [36.0 - 40 FT. B.G.]; S.S. RECOVERED 16 INCHES. 0.4 36 38 B-14 @ 40 ND 40 - 42 1022 0.2 ND SAA EXCEPT INCREASED MOISTURE, VERY LIGHT GRAY COLOR; S.S. RECOVERED 17 INCHES. **BORING** 42 BACKFILLED WITH 44 **CUTTINGS** 

NOTES:

- SILTY SAND.

- SAND.

OVM

- Organic vapor meter or photoionization detector (PID). - Total Petroleum Hydrocarbons per US EPA Method 8015B.

TPH - Benzene, toluene, ethylbenzene, total xylenes per US EPA Method 8021B.

ND - Not detected at the Reporting Limit

- Parts per million. ppm

mg/Kg - Milligram per kilogram.

DRAWING: MUDGE LS 7 SB-14 2018-02-13.SKF DATE: 07/29/18

DWN BY: NJV

Released to Imaging: 3/14/2024 7:37:33 AM

46

48

52

54

56

58

50

P.O. BOX 87 BLOOMFIELD, NM 87413 (505) 632-1199

**SB - 15** 

## BORE / TEST HOLE REPORT

CLIENT: LOCATION NAME: CONTRACTOR:

BP AMERICA PRODUCTION CO.

MUDGE LS # 7 API #: 3004510431

**BLAGG ENGINEERING, INC. / GEOMAT** 

**EQUIPMENT USED:** CME-55

UNIT M, SEC. 23, T31N, R11W

BORING #..... \_\_\_\_ SB-15 MW #..... <u>NA</u> PAGE #..... DATE STARTED 02/12/18

DATE FINISHED 02/12/18

OPERATOR...... LOGGED BY

		G LOCATIC			FEET	-	FROM	/I WELL HEAD	LOGGED BY JCB
DEPTH (FT.)	INTERVAL	LITHOLOGY INTERVAL	SAMPLE INTERVAL (FT.)	SAMPLE TIME	FIELD OVM (ppm)	TPH (mg/Kg)	BENZENE & TOTAL BTEX (mg/Kg)	FIELD CLASSIFICATION AN	ND REMARKS
2 - 4 - 6 - 8 -									
10 - 12 - 14 - 16 -								DARK YELLOWISH ORANGE SILTY SAND, NON COHESIV APPARENT HYDROCARBON STAINING OBSERVED OR O [0.0 - 40.0 FT. BELOW GRADE].	
18 - <b>20</b> - 22 -			20 - 22	1224	0.0			SAME AS ABOVE (SAA); SAMPLE COLLECTED VIA 24 INC 12 INCHES.	H SPLIT SPOON (S.S.) - RECOVERED
24 - 26 - 28 -			25 - 27	1237	0.0	SB-5 3-pt	. (20'-30') ND ND	SAA; S.S. RECOVERED 12 INCHES.	
30 - 32 - 34 -			30 - 32	1243	0.0			SAA; S.S. RECOVERED 15 INCHES.	
36 - 38 -			35 - 37	1250	0.0	SB-5 @	(40'-41')	SAA; S.S. RECOVERED 15 INCHES.	
40 - 42 -		BORING BACKFILLED	40 - 42	1258	0.0	ND	ND ND	SAA EXCEPT MOISTURE INCREASED; S.S. RECOVERED	20 INCHES.
44 - 46 -		WITH CUTTINGS		NC	TEO.		CILT	/ CAND	
48 - <b>50</b> - 52 - 54 -				NC	ITES:	OVM TPH BTEX ND ppm	- Total - Benze - Not d	'SAND.  nic vapor meter or photoionization detector (PID).  Petroleum Hydrocarbons per US EPA Method 8015B.  ene, toluene, ethylbenzene, total xylenes per US EPA Metl  etected at the Reporting Limit  per million.	nod 8021B.
56 - 58 - <b>60</b> -						mg/Kg		ram per kilogram.  DRAWING: MUDGE LS 7 SB-15 2018-02-12.SKF	DATE: <b>07/29/18</b> DWN BY: <b>NJV</b>

Date	SVE Pt.	Exhaust	Exhaust	Exhaust	System	H <sub>2</sub> O	H <sub>2</sub> O Amt.	Commercial
		OVM	Vacuum	Rate (cfm)	-	Drained	Drained	Comments
		(ppm)	(in)		at Time of	from drum?	(Gal.)?	
					Arrival?			
02/11/2015	5	1,249	51	NA	-	-	-	Initial startup on #5 only.
02/12/2015	5 & 6	1,379	44	NA	YES	NO	-	Connected to #6 with pvc tee and additional hose
02/13/2015	5 & 6	1,345	44	NA	YES	NO		
02/16/2015	5 & 6	1,016	44	NA	YES	YES	15.00	
02/17/2015	5 & 6	887	44	NA	YES	YES	6.00	
02/18/2015	5 & 6	769	42	NA	YES	YES	4.00	
02/19/2015	5 & 6	867	42	NA	YES	YES	2.00	
02/23/2015	5 & 6	-	-	NA	NO	YES	24.00	Restarted after draining water from drum
02/24/2015	5 & 6	499	42	NA	YES	YES	8.00	
02/26/2015	5 & 6	419	41	NA	YES	YES	15.00	
02/27/2015	5 & 6	394	42	NA	YES	YES	4.00	
03/02/2015	5 & 6	308	42	NA	YES	YES	24.00	
03/03/2015	5 & 6	315	42	NA	YES	YES	3.00	
03/06/2015	5 & 6	225	42	NA	YES	YES	16.00	
03/09/2015	5 & 6	265	43	NA	YES	YES	10.00	
03/10/2015	5 & 6	258	42	NA	YES	YES	3.00	
03/11/2015	5 & 6	320	40	NA	YES	YES	3.00	
03/12/2015	5 & 6	290	40	NA	YES	YES	3.00	
03/13/2015	5 & 6	265	39	NA	YES	YES	2.00	
03/16/2015	5 & 6	184	40	NA	YES	YES	10.00	
03/18/2015	5 & 6	149	39	NA	YES	YES	5.00	
03/19/2015	5 & 6	237	39	NA	YES	YES	3.00	
03/23/2015	5 & 6	142	40	NA	YES	YES	15.00	
03/30/2015	5 & 6	276	40	NA	YES	YES	24.00	
04/01/2015 04/06/2015	5 & 6 5 & 6	198 96	40 38	NA NA	YES YES	YES YES	4.00 20.00	Switched to #2 & #9
04/09/2015	2 & 9	-	-	NA	NO NO	NO	20.00	Unit not operational, broken rotor
05/18/2015	2 & 9	-	-	NA	YES	NO		Replacement SVE unit
05/20/2015	2 & 9	92	42	NA	YES	YES	3.00	1,
05/26/2015	2 & 9	48	44	NA	YES	YES	8.00	Switched to #5 & #6
06/04/2015	5 & 6	55	42	NA	YES	YES	7.00	
06/08/2015	5 & 6	57	40	NA	YES	YES	4.00	
06/15/2015	5 & 6	47	40	NA	YES	YES	3.00	
06/22/2015 '2018	5 & 6	38	40	NA	YES	YES	0.50 ge 1 of 5	Copy of Mudge LS 7 - SVE Data.x

Commonts	H <sub>2</sub> O Amt.	H <sub>2</sub> O	System	Exhaust	Exhaust	Exhaust	SVE Pt.	Date
Comments	Drained	Drained	Operational	Rate (cfm)	Vacuum	OVM		
	(Gal.)?	from drum?	at Time of		(in)	(ppm)		
		<u> </u>	Arrival?	ļ				
Dry drum		NO	YES	NA	38	38	5 & 6	06/29/2015
Dry drum	_	NO	YES	NA	38	40	5 & 6	07/06/2015
Dry drum		NO	YES	NA	38	34	5 & 6	07/13/2015
Dry drum		NO	YES	NA	38	28	5 & 6	07/20/2015
Dry drum		NO	YES	NA	38	24	5 & 6	07/27/2015
Dry drum, switched to #2 & #9		NO	YES	NA	38	17	5 & 6	08/05/2015
Dry drum		NO	YES	NA	38	11	2 & 9	08/12/2015
Dry drum		NO	YES	NA	40	10	2 & 9	08/19/2015
Dry drum		NO	YES	NA	40	10	2 & 9	08/24/2015
Dry drum		NO	YES	NA	40	10	2 & 9	08/24/2015
Dry drum		NO	YES	NA	40	9	2 & 9	09/08/2015
Dry drum		NO	YES	NA	40	58	2 & 9	09/17/2015
Dry drum, switched to #1 & #4	2.00	YES	YES	NA	42	90	2 & 9	09/22/2015
Dry drum, switched to #8 & #10		NO	YES	NA	45	7	1 & 4	09/23/2015
Dry drum, switched to #3 & #7		NO	YES	NA	44	12	8 & 10	09/24/2015
Dry drum, switched to #5 & #6		NO	YES	NA	44	26	3 & 7	09/25/2015
Dry drum, switched to #2 & #9		NO	YES	NA	35	30	5 & 6	09/28/2015
Did not check water level in drum	0.00	NO	YES	NA	42	24	2 & 9	09/29/2015
Did not check water level in drum	0.00	NO	YES	NA	42	16	2 & 9	10/08/2015
	20.00	YES	YES	NA	42	14	2 & 9	10/15/2015
	14.00	YES	YES	NA	42	27	2 & 9	10/23/2015
Did not check water level in drum		NO	YES	NA	42	21	2 & 9	10/28/2015
Collected readings after restarting	29.00	YES	NO	NA	42	52	2 & 9	11/06/2015
Collected readings after restarting	29.00	YES	NO	NA	42	40	2 & 9	11/13/2015
	20.00	YES	YES	NA	-	-	-	11/17/2015
	14.00	YES	YES	NA	42	25	2 & 9	11/20/2015
	19.00	YES	YES	NA	-	-	-	11/24/2015
	11.50	YES	YES	NA	42	25	2 & 9	11/27/2015
	21.00	YES	YES	NA	-	-	-	12/01/2015
	15.50	YES	YES	NA	43	23	2 & 9	12/04/2015
	18.00	YES	YES	NA	-	-	-	12/08/2015
	13.00	YES	YES	NA	42	21	2 & 9	12/11/2015
 Vigually inapported water level in drum only	22.00	YES	YES	NA NA	-	-	-	12/15/2015
Visually inspected water level in drum only	0.00	NO YES	YES YES	NA NA	- 42	-	200	12/17/2015
	20.00	YES	YES	NA NA	43	23	2 & 9	12/18/2015
	14.00			NA NA	- 42	- 10	200	12/21/2015
	16.50	YES	YES	NA	43	10	2 & 9	12/24/2015

OVM (ppm)  - 20 - 12 - 16 - 12 - 8 - 18 - 10 - 8 - 5 - 8	Vacuum (in)  - 42 - 43 - 42 - 44 - 44 - 44 - 44 - 43 - 42 - 41	NA N	Operational at Time of Arrival?  YES YES YES YES YES YES YES YES YES YE	Prained from drum?  YES YES YES YES YES YES YES YES YES YE	14.00 16.50 24.00 16.50 26.00 22.00 10.50 15.00 23.00 20.50 17.00	Comments  Collected readings after restarting
- 20 - 12 - 16 - 12 - 8 - 18 - 10 8 5 5	- 42 - 43 - 42 - 43 - 44 - 44 - 44 - 44	NA N	YES	YES	14.00 16.50 24.00 16.50 26.00 22.00 10.50 15.00 23.00 20.50 17.00	Collected readings after restarting
- 12 - 16 - 12 - 8 - 18 - 10 8 5	- 43 - 42 - 43 - 44 - 44 - 44 - 44 - 44	NA N	YES YES YES YES YES NO YES	YES	16.50 24.00 16.50 26.00 22.00 10.50 15.00 23.00 20.50 17.00	Collected readings after restarting
- 12 - 16 - 12 - 8 - 18 - 10 8 5	- 43 - 42 - 43 - 44 - 44 - 44 - 44 - 44	NA N	YES YES YES YES NO YES	YES	16.50 24.00 16.50 26.00 22.00 10.50 15.00 23.00 20.50 17.00	Collected readings after restarting
- 12 - 16 - 12 - 8 - 18 - 10 8 5	- 43 - 42 - 43 - 44 - 44 - 44 - 44 - 44	NA N	YES YES YES NO YES	YES	24.00 16.50 26.00 22.00 10.50 15.00 23.00 20.50 17.00	Collected readings after restarting
- 16 - 12 - 8 - 18 - 10 8 5	- 42 - 43 - 44 - 44 - 44 - 44 - 42	NA N	YES YES NO YES YES YES YES YES YES YES YES YES	YES	16.50 26.00 22.00 10.50 15.00 23.00 20.50 17.00	Collected readings after restarting
- 16 - 12 - 8 - 18 - 10 8 5	- 42 - 43 - 44 - 44 - 44 - 44 - 42	NA	YES YES NO YES YES YES YES YES YES YES YES	YES	26.00 22.00 10.50 15.00 23.00 20.50 17.00	Collected readings after restarting
- 12 - 8 - 18 - 10 8 5 5	42 - 43 - 44 - 44 - 44 - 43 42	NA NA NA NA NA NA NA NA	YES NO YES YES YES YES YES YES YES YES	YES YES YES YES YES YES YES YES YES	22.00 10.50 15.00 23.00 20.50 17.00	Collected readings after restarting
- 12 - 8 - 18 - 10 8 5 5	- 43 - 44 - 44 - 44 - 43 42	NA NA NA NA NA NA NA	NO YES YES YES YES YES YES YES YES	YES YES YES YES YES YES YES	10.50 15.00 23.00 20.50 17.00	Collected readings after restarting
- 8 - 18 - 10 8 5 5	- 44 - 44 - 44 43 42	NA NA NA NA NA NA	YES YES YES YES YES YES YES	YES YES YES YES YES	15.00 23.00 20.50 17.00	Collected readings after restarting
- 8 - 18 - 10 8 5 5	- 44 - 44 - 44 43 42	NA NA NA NA NA	YES YES YES YES YES	YES YES YES YES	23.00 20.50 17.00	
- 18 - 10 8 5 5	44 - 44 - 44 43 42	NA NA NA NA	YES YES YES YES	YES YES YES	20.50 17.00	
- 18 - 10 8 5 5	- 44 - 44 43 42	NA NA NA NA	YES YES YES	YES YES	17.00	
- 10 8 5 5	- 44 43 42	NA NA NA	YES YES	YES		
- 10 8 5 5	- 44 43 42	NA NA	YES		19.00	
8 5 5	43 42	NA		YES	19.00	
8 5 5	42		I LO	YES	14.00	
5			YES	YES	5.00	
	41	NA	YES	YES	23.00	
8		NA	YES	YES	15.50	
	42	NA	YES	YES	12.00	
6	42	NA	YES	YES	15.50	
4	41	NA	YES	YES	15.50	
5	41	NA	YES	YES	17.00	
3	40	NA	YES	YES	14.00	
3	40	NA	YES	YES	6.50	
3	40	NA	YES	YES	11.50	
3	40	NA	YES	YES	6.50	
3	40	NA	YES	YES	6.50	
3	39	NA	YES	YES		Switched to #5 & #7
0						
3	<b>-</b>	+				Measured ~ 1.5" H <sub>2</sub> O in drum
						Measured ~ 0.5" H <sub>2</sub> O in drum
						Water in drum below drain port
						Dry drum
-	-	+				Unit not operational, could not restart
-	-					Unit status unchanged
	3 0 3 3 3 3	3 40 3 39 0 34 3 36 3 34 3 34 3 35 	3 40 NA 3 39 NA 0 34 NA 3 36 NA 3 34 NA 3 34 NA 3 35 NA - NA	3 40 NA YES 3 39 NA YES 0 34 NA YES 3 36 NA YES 3 36 NA YES 3 34 NA YES 3 34 NA YES 3 35 NA YES - NA NO	3       40       NA       YES       YES         3       39       NA       YES       YES         0       34       NA       YES       YES         3       36       NA       YES       NO         3       34       NA       YES       NO         3       34       NA       YES       NO         3       35       NA       YES       NO         -       -       NA       NO       NO         -       -       NA       NO       NO	3       40       NA       YES       YES       6.50         3       39       NA       YES       YES       5.00         0       34       NA       YES       YES       1.00         3       36       NA       YES       NO       0.00         3       34       NA       YES       NO       0.00         3       34       NA       YES       NO         3       35       NA       YES       NO         -       -       NA       NO       NO

O9/26/2016   5 & 6   -   -   NA	Date	SVE Pt.	Exhaust OVM	Exhaust Vacuum	Exhaust Rate (cfm)	System Operational	H <sub>2</sub> O Drained	H₂O Amt. Drained	Comments
					Nate (ciril)				Comments
01/19/2017   5 & 6   108   36			(1-1-7	,				(00).	
01/19/2017   5 & 6   108   36   NA   YES   NO   -   Unit repaired & restarted, did not check water level in drum   01/25/2017   5 & 6   30   38   NA   YES   YES   24,00   Could not restart   02/20/3/2017   5 & 6   -   NA   NO   NO   -   Unit not operational, could not restart   02/215/2017   5 & 6   -   NA   NO   NO   -   Unit not operational, could not restart   02/215/2017   5 & 6   -   NA   NO   NO   -   Unit not operational, could not restart   02/215/2017   5 & 6   -   NA   NO   NO   -   Unit not operational, could not restart   02/22/2017   5 & 6   -   NA   NO   NO   -   Unit not operational, could not restart   03/303/2017   5 & 6   -   NA   NO   NO   -   Unit not operational, could not restart   03/303/2017   5 & 6   -   NA   NO   NO   -   Unit not operational, could not restart   03/15/2017   5 & 6   42   36   NA   YES   NO   -   Unit not operational, could not restart   03/21/2017   5 & 6   -   NA   NO   NO   -   Unit not operational, could not restart   03/15/2017   5 & 6   -   NA   NO   NO   -   Unit not operational, could not restart   03/12/2017   5 & 6   -   NA   NO   NO   -   Unit not operational, could not restart   03/12/2017   5 & 6   31   34   NA   YES   YES   7   Drained H2O, water level not measured   04/13/2017   5 & 6   25   36   NA   YES   YES   27.00   Unit not operational, could not restart   05/12/2017   5 & 6   -   NA   NO   NO   -   Unit not operational, could not restart   05/12/2017   5 & 6   25   36   NA   YES   NO   NO   -   Unit not operational, could not restart   05/12/2017   5 & 6   20   36   NA   YES   NO   NO   -   Unit not operational, could not restart   05/12/2017   5 & 6   17   38   NA   YES   NO   NO   Dry drum   08/14/2017   5 & 6   14   35   NA   YES   NO   0.00   Dry drum   08/14/2017   5 & 6   16   37   NA   YES   YES   30.00   Auto shut-off float mechanism malfunction (water 2" above).   11/20/2017   5 & 6   16   37   NA   YES   YES   30.00   Auto shut-off float mechanism malfunction (water 2" above).   12/14/2017   5 & 6   10   39   NA   YES   YES   25.50	20/20/20/2		1	I		110			
01/25/2017         5 & 6         30         38         NA         YES         YES         24.00         Could not restart           02/03/2017         5 & 6         -         -         NA         NO         NO         -         Unit not operational, could not restart           02/15/2017         5 & 6         -         -         NA         NO         NO         -         Unit not operational, could not restart           02/15/2017         5 & 6         -         -         NA         NO         NO         -         Unit not operational, could not restart           02/22/2017         5 & 6         -         -         NA         NO         NO         -         Unit not operational, could not restart           03/09/2017         5 & 6         -         -         NA         NO         NO         -         Unit not operational, could not restart           03/15/2017         5 & 6         -         -         NA         NO         NO         -         Unit not operational, could not restart           03/15/2017         5 & 6         -         -         NA         YES         YES         ?         Drained H20, water level not measured           03/15/2017         5 & 6         -         -			-	-				-	·
02/03/2017   5 & 6   -   -   NA								-	·
02/07/2017   5 & 6   -   -   NA			30	38				24.00	
02/15/2017   5 & 6   -   -   NA			-	-				-	·
02/22/2017         5 & 6         -         -         NA         NO         NO         -         Unit not operational, could not restart           03/03/2017         5 & 6         -         -         NA         NO         NO         -         Unit not operational, could not restart           03/09/2017         5 & 6         -         -         NA         NO         NO         -         Unit repaired & restarted, did not check water level in drum           03/21/2017         5 & 6         -         -         NA         YES         NO         -         Unit repaired & restarted, did not check water level in drum           03/29/2017         5 & 6         -         -         NA         YES         YES         2 Drained H20, water level not measured           04/13/2017         5 & 6         31         34         NA         YES         YES         27.00           04/13/2017         5 & 6         25         36         NA         YES         YES         27.00           04/25/2017         5 & 6         -         -         NA         NO         NO         -         Unit not operational, could not restart           05/12/2017         5 & 6         -         -         NA         NO         NO			-	-				-	
03/03/2017         5 & 6         -         -         NA         NO         NO         -         Unit not operational, could not restart           03/09/2017         5 & 6         -         -         NA         NO         NO         -         Unit not operational, could not restart           03/15/2017         5 & 6         42         36         NA         YES         NO         -         Unit repaired & restarted, did not check water level in drum           03/29/2017         5 & 6         -         -         NA         YES         YES         ?         Drained H20, water level not measured           04/13/2017         5 & 6         31         34         NA         YES         YES         16.00           04/12/2017         5 & 6         25         36         NA         YES         YES         27.00           04/25/2017         5 & 6         -         -         NA         NO         NO         -         Unit not operational, could not restart           06/12/2017         5 & 6         -         -         NA         NO         NO         -         Unit not operational, could not restart           06/12/2017         5 & 6         20         36         NA         YES         NO			-	-				-	
03/09/2017         5 & 6         -         -         NA         NO         NO         -         Unit not operational, could not restart           03/15/2017         5 & 6         42         36         NA         YES         NO         -         Unit repaired & restarted, did not check water level in drum           03/29/2017         5 & 6         -         -         NA         YES         YES         ?         Drained H20, water level not measured           03/29/2017         5 & 6         -         -         NA         YES         YES         16.00           04/13/2017         5 & 6         25         36         NA         YES         YES         27.00           04/25/2017         5 & 6         25         36         NA         YES         YES         27.00           04/25/2017         5 & 6         -         -         NA         NO         NO         -         Unit not operational, could not restart           06/27/2017         5 & 6         20         36         NA         YES         NO         0.00         Water in drum below drain port           07/11/2017         5 & 6         17         38         NA         YES         NO         0.00         Dry drum			-	-				-	
03/15/2017         5 & 6         42         36         NA         YES         NO         -         Unit repaired & restarted, did not check water level in drum           03/21/2017         5 & 6         -         -         NA         YES         YES         ?         Drained H20, water level not measured           03/29/2017         5 & 6         31         34         NA         YES         YES         16.00           04/13/2017         5 & 6         25         36         NA         YES         YES         27.00           04/25/2017         5 & 6         -         -         NA         NO         NO         -         Unit not operational, could not restart           05/12/2017         5 & 6         -         -         NA         NO         NO         -         Unit not operational, could not restart           06/21/2017         5 & 6         -         -         NA         NO         NO         -         Unit not operational, could not restart           06/21/2017         5 & 6         20         36         NA         YES         NO         0.00         Water in drum below drain port           07/11/2017         5 & 6         14         35         NA         YES         NO			-	-				-	
03/21/2017         5 & 6         -         -         NA         YES         YES         ?         Drained H20, water level not measured           03/29/2017         5 & 6         31         34         NA         YES         YES         16.00           04/13/2017         5 & 6         25         36         NA         YES         YES         27.00           04/25/2017         5 & 6         -         -         NA         NO         NO         -         Unit not operational, could not restart           05/12/2017         5 & 6         -         -         NA         NO         NO         -         Unit not operational, could not restart           06/27/2017         5 & 6         -         -         NA         NO         NO         0.00         Water in drum below drain port           06/27/2017         5 & 6         20         36         NA         YES         NO         0.00         Dry drum           08/14/2017         5 & 6         17         38         NA         YES         NO         0.00         Dry drum           09/15/2017         5 & 6         14         35         NA         YES         NO         0.00         Water in drum below drain port      <			-	-	NA			-	
03/29/2017         5 & 6         31         34         NA         YES         YES         16.00           04/13/2017         5 & 6         25         36         NA         YES         YES         27.00           04/25/2017         5 & 6         -         -         NA         NO         NO         -         Unit not operational, could not restart           05/12/2017         5 & 6         -         -         NA         NO         NO         -         Unit not operational, could not restart           06/27/2017         5 & 6         -         -         NA         NO         NO         -         Unit not operational, could not restart           06/27/2017         5 & 6         20         36         NA         YES         NO         0.00         Water in drum below drain port           07/11/2017         5 & 6         17         38         NA         YES         NO         0.00         Dry drum           09/15/2017         5 & 6         14         35         NA         YES         NO         0.00         Water in drum below drain port           10/21/2017         5 & 6         11         36         NA         YES         YES         19.00           10/27	03/15/2017	5 & 6	42	36	NA	YES	NO		<u> </u>
04/13/2017         5 & 6         25         36         NA         YES         YES         27.00           04/25/2017         5 & 6         -         -         NA         NO         NO         -         Unit not operational, could not restart           05/12/2017         5 & 6         -         -         NA         NO         NO         -         Unit not operational, could not restart           06/27/2017         5 & 6         -         -         NA         NO         NO         -         Unit not operational, could not restart           06/27/2017         5 & 6         -         -         NA         NO         NO         0.00         Water in drum below drain port           07/11/2017         5 & 6         17         38         NA         YES         NO         0.00         Dry drum           08/14/2017         5 & 6         25         35         NA         YES         NO         0.00         Water in drum below drain port           10/13/2017         5 & 6         14         35         NA         YES         YES         19.00           10/27/2017         5 & 6         16         37         NA         YES         YES         25.50           11/20/20	03/21/2017	5 & 6	-	-	NA	YES	YES	?	Drained H20, water level not measured
04/25/2017         5 & 6         -         -         NA         NO         NO         -         Unit not operational, could not restart           05/12/2017         5 & 6         -         -         NA         NO         NO         -         Unit not operational, could not restart           06/27/2017         5 & 6         -         -         NA         NO         NO         0.00         Water in drum below drain port           07/11/2017         5 & 6         17         38         NA         YES         NO         0.00         Dry drum           08/14/2017         5 & 6         25         35         NA         YES         NO         0.00         Dry drum           09/15/2017         5 & 6         14         35         NA         YES         NO         0.00         Water in drum below drain port           10/13/2017         5 & 6         11         36         NA         YES         YES         19.00           11/10/2017         5 & 6         16         37         NA         YES         YES         25.50           11/20/2017         5 & 6         17         38         NA         YES         YES         30.00         Auto shut-off float mechanism malfunction (water 2"	03/29/2017	5 & 6	31	34	NA	YES	YES	16.00	
05/12/2017         5 & 6         -         NA         NO         NO         -         Unit not operational, could not restart           06/27/2017         5 & 6         20         36         NA         YES         NO         0.00         Water in drum below drain port           07/11/2017         5 & 6         17         38         NA         YES         NO         0.00         Dry drum           08/14/2017         5 & 6         25         35         NA         YES         NO         0.00         Dry drum           09/15/2017         5 & 6         14         35         NA         YES         NO         0.00         Water in drum below drain port           10/13/2017         5 & 6         14         35         NA         YES         NO         0.00         Water in drum below drain port           10/13/2017         5 & 6         11         36         NA         YES         YES         19.00           11/10/2017         5 & 6         16         37         NA         YES         YES         25.50           11/20/2017         5 & 6         35         34         NA         YES         YES         30.00         Auto shut-off float mechanism malfunction (water 2" above). </td <td>04/13/2017</td> <td>5 &amp; 6</td> <td>25</td> <td>36</td> <td>NA</td> <td>YES</td> <td>YES</td> <td>27.00</td> <td></td>	04/13/2017	5 & 6	25	36	NA	YES	YES	27.00	
06/27/2017         5 & 6         20         36         NA         YES         NO         0.00         Water in drum below drain port           07/11/2017         5 & 6         17         38         NA         YES         NO         0.00         Dry drum           08/14/2017         5 & 6         25         35         NA         YES         NO         0.00         Dry drum           09/15/2017         5 & 6         14         35         NA         YES         NO         0.00         Water in drum below drain port           10/13/2017         5 & 6         14         35         NA         YES         NO         0.00         Water in drum below drain port           10/27/2017         5 & 6         14         35         NA         YES         YES         19.00           10/27/2017         5 & 6         16         37         NA         YES         YES         25.50           11/20/2017         5 & 6         17         38         NA         YES         YES         30.00         Auto shut-off float mechanism malfunction (water 2" above).           11/27/2017         5 & 6         18         38         NA         YES         YES         20.50           12/14	04/25/2017	5 & 6	-	-	NA	NO	NO	-	Unit not operational, could not restart
07/11/2017         5 & 6         17         38         NA         YES         NO         0.00         Dry drum           08/14/2017         5 & 6         25         35         NA         YES         NO         0.00         Dry drum           09/15/2017         5 & 6         14         35         NA         YES         NO         0.00         Water in drum below drain port           10/13/2017         5 & 6         11         36         NA         YES         YES         19.00           10/27/2017         5 & 6         16         37         NA         YES         YES         25.50           11/10/2017         5 & 6         16         37         NA         YES         YES         30.00         Auto shut-off float mechanism malfunction (water 2" above).           11/20/2017         5 & 6         35         34         NA         YES         YES         24.00           11/27/2017         5 & 6         18         38         NA         YES         YES         20.50           12/04/2017         5 & 6         12         38         NA         YES         YES         30.00         Auto shut-off float mechanism malfunction (water 2" above).           12/14/2017	05/12/2017	5 & 6	-	-	NA	NO	NO	-	Unit not operational, could not restart
08/14/2017         5 & 6         25         35         NA         YES         NO         0.00         Dry drum           09/15/2017         5 & 6         14         35         NA         YES         NO         0.00         Water in drum below drain port           10/13/2017         5 & 6         11         36         NA         YES         YES         19.00           10/27/2017         5 & 6         16         37         NA         YES         YES         25.50           11/10/2017         5 & 6         17         38         NA         YES         YES         30.00         Auto shut-off float mechanism malfunction (water 2" above).           11/20/2017         5 & 6         35         34         NA         YES         YES         24.00           11/27/2017         5 & 6         18         38         NA         YES         YES         20.50           12/09/2017         5 & 6         2         38         NA         YES         YES         30.00         Auto shut-off float mechanism malfunction (water 2" above).           12/14/2017         5 & 6         12         38         NA         YES         YES         25.50           12/19/2017         5 & 6	06/27/2017	5 & 6	20	36	NA	YES	NO	0.00	Water in drum below drain port
09/15/2017         5 & 6         14         35         NA         YES         NO         0.00         Water in drum below drain port           10/13/2017         5 & 6         11         36         NA         YES         YES         19.00           10/27/2017         5 & 6         16         37         NA         YES         YES         25.50           11/10/2017         5 & 6         17         38         NA         YES         YES         30.00         Auto shut-off float mechanism malfunction (water 2" above).           11/20/2017         5 & 6         35         34         NA         YES         YES         24.00           11/27/2017         5 & 6         18         38         NA         YES         YES         24.00           12/04/2017         5 & 6         2         38         NA         YES         YES         20.50           12/09/2017         5 & 6         12         38         NA         YES         YES         30.00         Auto shut-off float mechanism malfunction (water 2" above).           12/14/2017         5 & 6         10         39         NA         YES         YES         25.50           12/19/2017         5 & 6         9 <td< td=""><td>07/11/2017</td><td>5 &amp; 6</td><td>17</td><td>38</td><td>NA</td><td>YES</td><td>NO</td><td>0.00</td><td>Dry drum</td></td<>	07/11/2017	5 & 6	17	38	NA	YES	NO	0.00	Dry drum
10/13/2017         5 & 6         11         36         NA         YES         19.00           10/27/2017         5 & 6         16         37         NA         YES         YES         25.50           11/10/2017         5 & 6         17         38         NA         YES         YES         30.00         Auto shut-off float mechanism malfunction (water 2" above).           11/20/2017         5 & 6         35         34         NA         YES         YES         30.00         Auto shut-off float mechanism malfunction (water 2" above).           11/27/2017         5 & 6         18         38         NA         YES         YES         24.00           12/09/2017         5 & 6         2         38         NA         YES         YES         20.50           12/19/2017         5 & 6         12         38         NA         YES         YES         30.00         Auto shut-off float mechanism malfunction (water 2" above).           12/14/2017         5 & 6         10         39         NA         YES         YES         25.50           12/19/2017         5 & 6         9         39         NA         YES         YES         25.50           12/26/2017         5 & 6         -	08/14/2017	5 & 6	25	35	NA	YES	NO	0.00	Dry drum
10/27/2017         5 & 6         16         37         NA         YES         YES         25.50           11/10/2017         5 & 6         17         38         NA         YES         YES         30.00         Auto shut-off float mechanism malfunction (water 2" above).           11/20/2017         5 & 6         35         34         NA         YES         YES         30.00         Auto shut-off float mechanism malfunction (water 2" above).           11/27/2017         5 & 6         18         38         NA         YES         YES         24.00           12/04/2017         5 & 6         2         38         NA         YES         YES         20.50           12/09/2017         5 & 6         12         38         NA         YES         YES         30.00         Auto shut-off float mechanism malfunction (water 2" above).           12/14/2017         5 & 6         10         39         NA         YES         YES         25.50           12/19/2017         5 & 6         9         39         NA         YES         YES         25.50           12/26/2017         5 & 6         -         36         NA         YES         YES         31.00         Auto shut-off float mechanism malfunction (water 2.5" above	09/15/2017	5 & 6	14	35	NA	YES	NO	0.00	Water in drum below drain port
11/10/2017         5 & 6         17         38         NA         YES         YES         30.00         Auto shut-off float mechanism malfunction (water 2" above).           11/20/2017         5 & 6         35         34         NA         YES         YES         30.00         Auto shut-off float mechanism malfunction (water 2" above).           11/27/2017         5 & 6         18         38         NA         YES         YES         24.00           12/04/2017         5 & 6         2         38         NA         YES         YES         20.50           12/09/2017         5 & 6         12         38         NA         YES         YES         30.00         Auto shut-off float mechanism malfunction (water 2" above).           12/14/2017         5 & 6         10         39         NA         YES         YES         25.50           12/19/2017         5 & 6         9         39         NA         YES         YES         25.50           12/26/2017         5 & 6         -         36         NA         YES         YES         31.00         Auto shut-off float mechanism malfunction (water 2.5" above).	10/13/2017	5 & 6	11	36	NA	YES	YES	19.00	
11/20/2017         5 & 6         35         34         NA         YES         YES         30.00         Auto shut-off float mechanism malfunction (water 2" above).           11/27/2017         5 & 6         18         38         NA         YES         YES         24.00           12/04/2017         5 & 6         2         38         NA         YES         YES         20.50           12/09/2017         5 & 6         12         38         NA         YES         YES         30.00         Auto shut-off float mechanism malfunction (water 2" above).           12/14/2017         5 & 6         10         39         NA         YES         YES         25.50           12/19/2017         5 & 6         9         39         NA         YES         YES         25.50           12/26/2017         5 & 6         -         36         NA         YES         YES         31.00         Auto shut-off float mechanism malfunction (water 2.5" above).	10/27/2017	5 & 6	16	37	NA	YES	YES	25.50	
11/27/2017         5 & 6         18         38         NA         YES         YES         24.00           12/04/2017         5 & 6         2         38         NA         YES         YES         20.50           12/09/2017         5 & 6         12         38         NA         YES         YES         30.00         Auto shut-off float mechanism malfunction (water 2" above).           12/14/2017         5 & 6         10         39         NA         YES         YES         25.50           12/19/2017         5 & 6         9         39         NA         YES         YES         25.50           12/26/2017         5 & 6         -         36         NA         YES         YES         31.00         Auto shut-off float mechanism malfunction (water 2.5" above).	11/10/2017	5 & 6	17	38	NA	YES	YES	30.00	Auto shut-off float mechanism malfunction (water 2" above).
12/04/2017         5 & 6         2         38         NA         YES         20.50           12/09/2017         5 & 6         12         38         NA         YES         YES         30.00         Auto shut-off float mechanism malfunction (water 2" above).           12/14/2017         5 & 6         10         39         NA         YES         YES         25.50           12/19/2017         5 & 6         9         39         NA         YES         YES         25.50           12/26/2017         5 & 6         -         36         NA         YES         YES         31.00         Auto shut-off float mechanism malfunction (water 2.5" above).	11/20/2017	5 & 6	35	34	NA	YES	YES	30.00	Auto shut-off float mechanism malfunction (water 2" above).
12/09/2017         5 & 6         12         38         NA         YES         30.00         Auto shut-off float mechanism malfunction (water 2" above).           12/14/2017         5 & 6         10         39         NA         YES         25.50           12/19/2017         5 & 6         9         39         NA         YES         YES         25.50           12/26/2017         5 & 6         -         36         NA         YES         YES         31.00         Auto shut-off float mechanism malfunction (water 2.5" above).	11/27/2017	5 & 6	18	38	NA	YES	YES	24.00	
12/14/2017         5 & 6         10         39         NA         YES         25.50           12/19/2017         5 & 6         9         39         NA         YES         YES         25.50           12/26/2017         5 & 6         -         36         NA         YES         YES         31.00         Auto shut-off float mechanism malfunction (water 2.5" above).	12/04/2017	5 & 6	2	38	NA	YES	YES	20.50	
12/19/2017         5 & 6         9         39         NA         YES         YES         25.50           12/26/2017         5 & 6         -         36         NA         YES         YES         31.00         Auto shut-off float mechanism malfunction (water 2.5" above).	12/09/2017	5 & 6	12	38	NA	YES	YES	30.00	Auto shut-off float mechanism malfunction (water 2" above).
12/19/2017         5 & 6         9         39         NA         YES         YES         25.50           12/26/2017         5 & 6         -         36         NA         YES         YES         31.00         Auto shut-off float mechanism malfunction (water 2.5" above).	12/14/2017	5 & 6	10	39	NA	YES	YES	25.50	
	12/19/2017	1	9	39	NA	YES	YES	25.50	
12/30/2017 5 8 6 37 39 NA VES VES 22 00	12/26/2017	5 & 6	-	36	NA	YES	YES	31.00	Auto shut-off float mechanism malfunction (water 2.5" above).
12/30/2011   3 0 0   31   33   14A   1EO   1EO   22.00	12/30/2017	5 & 6	37	39	NA	YES	YES	22.00	, , ,
01/04/2018 5 & 6 NA YES YES 24.00 Drained water drum only			-	-	NA	YES	YES		Drained water drum only

## Laboratory Reports

# Laboratory Reports Excavation Closure Sampling



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

July 16, 2014

Jeff Blagg

Blagg Engineering

P. O. Box 87

Bloomfield, NM 87413

TEL: (505) 320-1183 FAX (505) 632-3903

RE: MUDGE LS 7 OrderNo.: 1407565

#### Dear Jeff Blagg:

Hall Environmental Analysis Laboratory received 3 sample(s) on 7/12/2014 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 <a href="www.hallenvironmental.com">www.hallenvironmental.com</a> 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 Freeman

Laboratory Manager

andy

4901 Hawkins NE

Albuquerque, NM 87109

Date Reported: 7/16/2014

#### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Blagg Engineering **Project:** MUDGE LS 7

1407565-001

Lab ID:

Client Sample ID: SW BASE 3-pt @ 16'
Collection Date: 7/11/2014 8:50:00 AM
Received Date: 7/12/2014 10:40:00 AM

Analyses	Result	RL Qu	al Units	DF Da	ate Analyzed	Batch
EPA METHOD 8015D: DIESEL RANG	E ORGANICS				Analys	t: BCN
Diesel Range Organics (DRO)	ND	10	mg/Kg	1 7	/14/2014 11:20:37 AM	1 14199
Surr: DNOP	80.3	57.9-140	%REC	1 7	/14/2014 11:20:37 AM	1 14199
EPA METHOD 8015D: GASOLINE RA	NGE				Analys	t: NSB
Gasoline Range Organics (GRO)	ND	5.3	mg/Kg	1 7	/14/2014 11:20:32 AM	1 R19862
Surr: BFB	94.0	80-120	%REC	1 7	/14/2014 11:20:32 AM	1 R19862
EPA METHOD 8021B: VOLATILES					Analys	t: NSB
Benzene	ND	0.053	mg/Kg	1 7	/14/2014 11:20:32 AM	1 R19862
Toluene	ND	0.053	mg/Kg	1 7	/14/2014 11:20:32 AM	1 R19862
Ethylbenzene	ND	0.053	mg/Kg	1 7	/14/2014 11:20:32 AM	1 R19862
Xylenes, Total	ND	0.11	mg/Kg	1 7	/14/2014 11:20:32 AM	1 R19862
Surr: 4-Bromofluorobenzene	102	80-120	%REC	1 7	/14/2014 11:20:32 AM	1 R19862
EPA METHOD 300.0: ANIONS					Analys	t: <b>JRR</b>
Chloride	150	30	mg/Kg	20 7	/14/2014 12:47:36 PM	1 14207

Matrix: SOIL

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

#### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit Page 1 of 7
- P Sample pH greater than 2.
- RL Reporting Detection Limit

Date Reported: 7/16/2014

#### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Blagg Engineering **Project:** MUDGE LS 7

1407565-002

Lab ID:

Client Sample ID: SW Sidewall 3-pt @ 8'-14'
Collection Date: 7/11/2014 9:09:00 AM
Received Date: 7/12/2014 10:40:00 AM

Analyses	Result	RL Qu	ıal Units	DF Date Analyzed Batch	ch
EPA METHOD 8015D: DIESEL RANGE	ORGANICS			Analyst: BCN	N
Diesel Range Organics (DRO)	81	10	mg/Kg	1 7/14/2014 11:51:36 AM 1419	99
Surr: DNOP	82.1	57.9-140	%REC	1 7/14/2014 11:51:36 AM 1419	99
EPA METHOD 8015D: GASOLINE RAI	NGE			Analyst: <b>NSB</b>	В
Gasoline Range Organics (GRO)	ND	5.5	mg/Kg	1 7/14/2014 11:49:11 AM R198	9862
Surr: BFB	95.0	80-120	%REC	1 7/14/2014 11:49:11 AM R198	9862
EPA METHOD 8021B: VOLATILES				Analyst: <b>NSB</b>	В
Benzene	ND	0.055	mg/Kg	1 7/14/2014 11:49:11 AM R198	9862
Toluene	ND	0.055	mg/Kg	1 7/14/2014 11:49:11 AM R198	9862
Ethylbenzene	ND	0.055	mg/Kg	1 7/14/2014 11:49:11 AM R198	9862
Xylenes, Total	ND	0.11	mg/Kg	1 7/14/2014 11:49:11 AM R198	9862
Surr: 4-Bromofluorobenzene	102	80-120	%REC	1 7/14/2014 11:49:11 AM R198	9862
EPA METHOD 300.0: ANIONS				Analyst: JRR	R
Chloride	490	30	mg/Kg	20 7/14/2014 1:00:00 PM 1420	207

Matrix: SOIL

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

#### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Page 2 of 7

- P Sample pH greater than 2.
- RL Reporting Detection Limit

Date Reported: 7/16/2014

#### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Blagg Engineering **Project:** MUDGE LS 7

1407565-003

Lab ID:

Client Sample ID: 32' N 24 W @ 14'
Collection Date: 7/11/2014 9:15:00 AM
Received Date: 7/12/2014 10:40:00 AM

Analyses	Result	RL (	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANG	E ORGANICS					Analys	: BCN
Diesel Range Organics (DRO)	110	10		mg/Kg	1	7/14/2014 12:22:57 PM	1 14199
Surr: DNOP	83.4	57.9-140		%REC	1	7/14/2014 12:22:57 PM	1 14199
EPA METHOD 8015D: GASOLINE RA	ANGE					Analys	t: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/14/2014 12:17:49 PM	1 R19862
Surr: BFB	122	80-120	S	%REC	1	7/14/2014 12:17:49 PM	1 R19862
EPA METHOD 8021B: VOLATILES						Analys	t: NSB
Benzene	ND	0.049		mg/Kg	1	7/14/2014 12:17:49 PM	1 R19862
Toluene	ND	0.049		mg/Kg	1	7/14/2014 12:17:49 PM	1 R19862
Ethylbenzene	ND	0.049		mg/Kg	1	7/14/2014 12:17:49 PM	1 R19862
Xylenes, Total	ND	0.098		mg/Kg	1	7/14/2014 12:17:49 PM	1 R19862
Surr: 4-Bromofluorobenzene	107	80-120		%REC	1	7/14/2014 12:17:49 PM	1 R19862
EPA METHOD 300.0: ANIONS						Analys	: JRR
Chloride	99	30		mg/Kg	20	7/14/2014 1:12:24 PM	14207

Matrix: SOIL

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

#### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.

Page 3 of 7

RL Reporting Detection Limit

## Hall Environmental Analysis Laboratory, Inc.

WO#: **1407565** 

16-Jul-14

Client: Blagg Engineering
Project: MUDGE LS 7

Sample ID MB-14207 SampType: MBLK TestCode: EPA Method 300.0: Anions

Client ID: PBS Batch ID: 14207 RunNo: 19882

Prep Date: **7/14/2014** Analysis Date: **7/14/2014** SeqNo: **577869** Units: **mg/Kg** 

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

Chloride ND 1.5

Sample ID LCS-14207 SampType: LCS TestCode: EPA Method 300.0: Anions

Client ID: LCSS Batch ID: 14207 RunNo: 19882

Prep Date: 7/14/2014 Analysis Date: 7/14/2014 SeqNo: 577870 Units: mg/Kg

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

Chloride 14 1.5 15.00 0 94.3 90 110

#### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

Page 4 of 7

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1407565

16-Jul-14

**Client:** Blagg Engineering **Project:** MUDGE LS 7

Sample ID MB-14199 SampType: MBLK TestCode: EPA Method 8015D: Diesel Range Organics

Client ID: **PBS** Batch ID: 14199 RunNo: 19860

Prep Date: 7/14/2014 Analysis Date: 7/14/2014 SeqNo: 577270 Units: mg/Kg

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

Diesel Range Organics (DRO) 10 ND

Surr: DNOP 10.00 74.4 57.9 7.4 140

Sample ID LCS-14199 SampType: LCS TestCode: EPA Method 8015D: Diesel Range Organics

Client ID: LCSS Batch ID: 14199 RunNo: 19860

Prep Date: 7/14/2014 Analysis Date: 7/14/2014 SeqNo: 577271 Units: mg/Kg

Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Diesel Range Organics (DRO) 52 10 50.00 103 68.6 130 Surr: DNOP 3.8 5.000 75.1 57.9

140

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- Е Value above quantitation range
- Analyte detected below quantitation limits J
- 0 RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- Spike Recovery outside accepted recovery limits
- В Analyte detected in the associated Method Blank
- Η Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- Reporting Detection Limit RL

Page 5 of 7

## Hall Environmental Analysis Laboratory, Inc.

WO#: **1407565** 

16-Jul-14

Client: Blagg Engineering
Project: MUDGE LS 7

Sample ID MB-14192 MK SampType: MBLK TestCode: EPA Method 8015D: Gasoline Range
Client ID: PBS Batch ID: R19862 RunNo: 19862

Drop Doto: Applyois Doto: 7/4/2044 Cookley E77670 Unite, melli

Prep Date: Analysis Date: 7/14/2014 SeqNo: 577670 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 940 1000 93.5 80 120

Sample ID LCS-14192 MK SampType: LCS TestCode: EPA Method 8015D: Gasoline Range

Client ID: LCSS Batch ID: R19862 RunNo: 19862

1000

Prep Date: Analysis Date: 7/14/2014 SeqNo: 577671 Units: mg/Kg

1000

Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Gasoline Range Organics (GRO) 27 5.0 25.00 0 109 71.7 134

103

80

120

#### Qualifiers:

Surr: BFB

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

Page 6 of 7

## Hall Environmental Analysis Laboratory, Inc.

WO#: **1407565** 

16-Jul-14

Client: Blagg Engineering
Project: MUDGE LS 7

Sample ID MB-14192 MK SampType: MBLK TestCode: EPA Method 8021B: Volatiles **PBS** Client ID: Batch ID: R19862 RunNo: 19862 Prep Date: Analysis Date: 7/14/2014 SeqNo: 577684 Units: mg/Kg 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 1.000 106 80 120

Sample ID LCS-14192 MK	Samp <sup>-</sup>	SampType: LCS			TestCode: EPA Method 8021B: Volatiles						
Client ID: LCSS	Batc	h ID: <b>R1</b>	9862	F	RunNo: 19862						
Prep Date:	Analysis [	Date: 7/	14/2014	S	SeqNo: 5	77685	Units: mg/k	<b>(</b> g			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Benzene	1.1	0.050	1.000	0	108	80	120				
Toluene	1.0	0.050	1.000	0	105	80	120				
Ethylbenzene	1.1	0.050	1.000	0	105	80	120				
Xylenes, Total	3.2	0.10	3.000	0	106	80	120				
Surr: 4-Bromofluorobenzene	1.1		1.000		111	80	120				

#### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

Page 7 of 7



Hall Environmental Analysis Laboratory 4901 Hawkins NE

Website: www.hallenvironmental.com

Sample Log-In Check List

Albuquerque, NM 87109 TEL: 505-345-3975 FAX: 505-345-4107

Client Name:	BLAGG		Work Order Number	er: 14075	65			RcptNo	: 1
Received by/date	e:_/F	07/1	2/14			<del></del>	_		
Logged By:	Anne Thorn	е	7/12/2014 10:40:00 A	M		Anne L	H	_	
Completed By:	Anne Thorn	e	7/14/2014			Anne	A.	_	
Reviewed By:		<	07/14/14						
 Chain of Cus	tody			,					
1. Custody sea		nple bottles?		Yes		No		Not Present	
2. Is Chain of C	Custody comple	ete?		Yes	<b>✓</b>	No		Not Present	
3. How was the	sample delive	red?		Cour	<u>ier</u>				
<u>Log In</u>								_	_
4. Was an atte	empt made to c	ool the sample	es?	Yes	✓	No		NA 🗔	
5. Were all sar	mples received	at a temperat	ure of >0° C to 6.0°C	Yes	✓	No		NA 🗆	
6. Sample(s) i	n proper contai	ner(s)?		Yes	<b>✓</b>	No			· ·
7. Sufficient sa	mple volume fo	or indicated te	st(s)?	Yes	V	No			
8. Are samples	(except VOA	and ONG) pro	perly preserved?	Yes	<b>~</b>	No			
9. Was presen	vative added to	bottles?	,	Yes		No	✓	NA 🗆	
10.VOA vials h	ave zero heads	pace?		Yes		No		No VOA Vials 🗹	I
11. Were any s	ample containe	ers received bu	oken?	Yes		No		# of preserved bottles checked	
12. Does paper				Yes	<b>Y</b>	No		for pH:	2 or >12 unless noted)
13. Are matrices	pancies on cha s correctly iden			Yes	<b>✓</b>	No		Adjusted?	<u> </u>
14. Is it clear wh				Yes	$\checkmark$	No			
15. Were all hol	ding times able			Yes	✓	No		Checked by	:
				•					
<u>Special Hand</u>								NA 🗹	a
16. Was client r	notified of all dis	screpancies w	ith this order?	Yes		No		NA IX	J
Perso By W	n Notified: hom:		Date Via:	eM	ail 🔲	Phone	Fax	in Person	
Rega	rding:	. 25 a. 32 c. V. a. 182 a. 15 a. 15			an consideration			The state of the s	
Client	Instructions:	and the second second			<u> </u>				
17. Additional	remarks:								
18. Cooler Inf		1:12	r inggasan r	v <u>c</u> unzko	ال د این	1		I	
Cooler N	lo Temp °C	Condition Good	Seal Intact   Seal No   Yes	Seal D	ate	Signed	Ву		
<u>'</u>								l <del></del>	

	/N or V) selddud Jir	<del>                                     </del>	Page 88 of 215
HALL ENVIRONMENTAL ANALYSIS LABORATORY www.hallenvironmental.com 4901 Hawkins NE - Albuquerque, NM 87109 Tel. 505-345-3975 Fax 505-345-4107 Analysis Request	EDB (Method 504.1)  9 H's (8310 or 8270 SIMS)  9 CRA 8 Metals  Anions (F,Cl,NO <sub>3</sub> ,NO <sub>2</sub> ,PO <sub>4</sub> ,SO <sub>4</sub> )  9 S608 (Pesticides / 8082 PCB's  10 S608 (VOA)  10 S6mi-VOA)  10 CA ∪OCL	× x	Date Time Remarks: \$\frac{7}{1}\frac{1}{4}\frac{1}{6}\f
ANA ANALI ANALI ANALI ANALI AWW.h	ГРН 8015В (GRO / DRO <b>) мак</b> а)	××	S: FILL Contract
490 Tel	31EX + MIBE + TMB's (8021)	'××	Remarks:
ASAF SAME DAT	No.	202	
Time:  Krush  SE  CS	Rager:  Elage  L. Bagg  Hyeservative  Type  Type	3 =	Weller Indicatories.
Turn-Around Time:  ☐ Standard Project Name:  MUDGE	Project Manager:  \[ \int \int \int \int \int \int \int \int		Received by: Received by: Contracted to other a
Chain-of-Custody Record  Client: BACL Exhappy Dac  By Ameny Eq  Sui Mailing Address: P. U. Box 877  Slown Leeld NM 874(5)  Character AM 874(5)	Other San	11 0909 11 SW Sidewall 3-pt 8-14 11 0915 11 32 N24W @ 14	Date: Time: Relinquished by:    1000   Proceived by: Received by:   1047



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

July 18, 2014

Jeff Blagg

Blagg Engineering

P. O. Box 87

Bloomfield, NM 87413

TEL: (505) 320-1183 FAX (505) 632-3903

RE: Mudge LS 7 OrderNo.: 1407618

#### Dear Jeff Blagg:

Hall Environmental Analysis Laboratory received 1 sample(s) on 7/15/2014 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 <a href="www.hallenvironmental.com">www.hallenvironmental.com</a> 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 Freeman

Laboratory Manager

andy

4901 Hawkins NE

Albuquerque, NM 87109

Date Reported: 7/18/2014

#### Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering Client Sample ID: 55' N 10W @ 36'

 Project:
 Mudge LS 7
 Collection Date: 7/14/2014 10:20:00 AM

 Lab ID:
 1407618-001
 Matrix: MEOH (SOIL)
 Received Date: 7/15/2014 7:50:00 AM

Analyses	Result	RL Q	Qual Units	DF D	ate Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE	ORGANICS				Analyst	BCN
Diesel Range Organics (DRO)	ND	10	mg/Kg	1 7	7/15/2014 11:17:49 AM	14218
Surr: DNOP	80.9	57.9-140	%REC	1 7	7/15/2014 11:17:49 AM	14218
EPA METHOD 8015D: GASOLINE RANG	GE				Analyst	NSB
Gasoline Range Organics (GRO)	ND	3.4	mg/Kg	1 7	7/15/2014 12:54:27 PM	R19893
Surr: BFB	116	80-120	%REC	1 7	7/15/2014 12:54:27 PM	R19893
EPA METHOD 8021B: VOLATILES					Analyst	NSB
Benzene	ND	0.034	mg/Kg	1 7	7/15/2014 12:54:27 PM	R19893
Toluene	ND	0.034	mg/Kg	1 7	7/15/2014 12:54:27 PM	R19893
Ethylbenzene	ND	0.034	mg/Kg	1 7	7/15/2014 12:54:27 PM	R19893
Xylenes, Total	ND	0.069	mg/Kg	1 7	7/15/2014 12:54:27 PM	R19893
Surr: 4-Bromofluorobenzene	99.3	80-120	%REC	1 7	7/15/2014 12:54:27 PM	R19893
EPA METHOD 300.0: ANIONS					Analyst	JRR
Chloride	170	30	mg/Kg	20 7	7/15/2014 12:01:02 PM	14229

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

#### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

Page 1 of 5

## Hall Environmental Analysis Laboratory, Inc.

WO#: **1407618** *18-Jul-14* 

Client: Blagg Engineering
Project: Mudge LS 7

Sample ID MB-14229 SampType: MBLK TestCode: EPA Method 300.0: Anions

Client ID: PBS Batch ID: 14229 RunNo: 19915

Prep Date: 7/15/2014 Analysis Date: 7/15/2014 SeqNo: 578776 Units: mg/Kg

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

Chloride ND 1.5

Sample ID LCS-14229 SampType: LCS TestCode: EPA Method 300.0: Anions

Client ID: LCSS Batch ID: 14229 RunNo: 19915

Prep Date: 7/15/2014 Analysis Date: 7/15/2014 SeqNo: 578777 Units: mg/Kg

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

Chloride 14 1.5 15.00 0 92.5 90 110

#### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

Page 2 of 5

## Hall Environmental Analysis Laboratory, Inc.

WO#: **1407618** *18-Jul-14* 

Client: Blagg Engineering
Project: Mudge LS 7

Sample ID MB-14218 SampType: MBLK TestCode: EPA Method 8015D: Diesel Range Organics Client ID: **PBS** Batch ID: 14218 RunNo: 19870 Prep Date: 7/15/2014 Analysis Date: 7/15/2014 SeqNo: 577863 Units: mg/Kg Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual

Diesel Range Organics (DRO) ND 10

Surr: DNOP 7.7 10.00 77.0 57.9 140

Sample ID LCS-14218 SampType: LCS TestCode: EPA Method 8015D: Diesel Range Organics Client ID: LCSS Batch ID: 14218 RunNo: 19870 Prep Date: 7/15/2014 Analysis Date: 7/15/2014 SeqNo: 577864 Units: mg/Kg Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual

 Diesel Range Organics (DRO)
 49
 10
 50.00
 0
 97.3
 68.6
 130

 Surr: DNOP
 3.6
 5.000
 72.1
 57.9
 140

#### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

Page 3 of 5

## Hall Environmental Analysis Laboratory, Inc.

WO#: **1407618** 

18-Jul-14

Client: Blagg Engineering
Project: Mudge LS 7

Sample ID MB-14213 MK SampType: MBLK TestCode: EPA Method 8015D: Gasoline Range

Client ID: PBS Batch ID: R19893 RunNo: 19893

Prep Date: Analysis Date: 7/15/2014 SeqNo: 578416 Units: mg/Kg

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

Gasoline Range Organics (GRO) ND 5.0

Surr: BFB 1000 1000 101 80 120

Sample ID LCS-14213 MK SampType: LCS TestCode: EPA Method 8015D: Gasoline Range

Client ID: LCSS Batch ID: R19893 RunNo: 19893

Prep Date: Analysis Date: 7/15/2014 SeqNo: 578417 Units: mg/Kg

Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Gasoline Range Organics (GRO) 23 5.0 25.00 0 91.7 71.7 134 1100 Surr: BFB 1000 113 80 120

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

Page 4 of 5

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1407618

18-Jul-14

**Client:** Blagg Engineering **Project:** Mudge LS 7

Sample ID MB-14213 MK SampType: MBLK TestCode: EPA Method 8021B: Volatiles **PBS** Client ID: Batch ID: R19893 RunNo: 19893 Prep Date: Analysis Date: 7/15/2014 SeqNo: 578456 Units: mg/Kg 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 1.2 1.000

117 80 120

Sample ID LCS-14213 MK	Samp	Гуре: <b>LC</b>	s	TestCode: EPA Method 8021B: Volatiles						
Client ID: LCSS	Batc	9893	F	RunNo: 1						
Prep Date: Analysis Date: 7/15/2014			15/2014	5	78457	Units: mg/k	/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.88	0.050	1.000	0	87.8	80	120			
Toluene	0.86	0.050	1.000	0	86.2	80	120			
Ethylbenzene	0.88	0.050	1.000	0	87.6	80	120			
Xylenes, Total	2.8	0.10	3.000	0	91.9	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		105	80	120			

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- Ε Value above quantitation range
- Analyte detected below quantitation limits J
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- Spike Recovery outside accepted recovery limits
- В Analyte detected in the associated Method Blank
- Η Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- Reporting Detection Limit RL

Page 5 of 5



Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109 TEL: 505-345-3975 FAX: 505-345-4107

Sample Log-In Check List

LABORATORY Website: พพพ	.hallenvironmental	.com		· · ·
lient Name: BLAGG \ \(\frac{1}{2}\) Work Order Numb	er: 1407618		RcptNo	: 1
eceived by/date:				
Allound		Smeles Albert		
gged By: Lindsay Mangin 7/15/2014 7:50:00 A				
ompleted By: Lindsay Mangin 7/15/2014 8:12:44 A	AIVI	January Triangs		
eviewed By: MA 07/15/14			H I	
ain of Custody	11	1111	al i m	
Custody seals intact on sample bottles?	Yes	No :	Not Present ✓	
. Is Chain of Custody complete?	Yes 🗸	INO	Not Present	
How was the sample delivered?	Courier			
og In				
Was an attempt made to cool the samples?	Yes 🗸	No	NA	
. Were all samples received at a temperature of >0° C to 6.0°C	Yes 🗹	No l'il	NA :	
Sample(s) in proper container(s)?	Yes 🗸	No L		
Sufficient sample volume for indicated test(s)?	Yes 🗸	No		
Are samples (except VOA and ONG) properly preserved?	Yes 🗸	No 📗		
. Was preservative added to bottles?	Yes	No 🗸	NA .	
D.VOA vials have zero headspace?	Yes	No 🗀	No VOA Vials	
1. Were any sample containers received broken?	Yes	No 🗹	# of preserved	
2	ام ت	NJ 1	bottles checked for pH:	
Does paperwork match bottle labels?     (Note discrepancies on chain of custody)	Yes 🗸	No	•	or >12 unless not
Are matrices correctly identified on Chain of Custody?	Yes 🗸	No	Adjusted?	
1. 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)				
3. Was client notified of all discrepancies with this order?	Yes	No 🗔	NA 🗸	
Person Notified: Date	<b>)</b> :			
By Whom: Via:	eMail	Phone Fax	In Person	
Regarding:				
Client Instructions:				
7. Additional remarks:				
3. <u>Cooler Information</u>				
Cooler No Temp °C Condition Seal Intact Seal No	Seal Date	Signed By		
1 1.9 Good Yes				

Rece	<b>.</b>		.D	3/2/02	202	1 7	33.34 A	(N -	10 人	Air Bubbles (			 		+			rage 90	γj 21.
HALL ENVIRONMENTA!	ANALYSIS LABORATORY	www.hallenvironmental.com	4901 Hawkins NE - Albuquerque, NM 87109	505-345-3975 Fax 505-345-4107	Analysis Request		S. <sub>4</sub> O9,	(1.4) S 0753 S 000, 8	or 8 als NO: des /	EDB (Method PAH's (8310 RCRA 8 Met Anions (F,Cl. 8081 Pesticid 8270 (Semi-'	×						Bu. B. A.	BP Contact: It Asce	d data will be clearly notated o
	7		Haw	505-3		( <del>a)</del>	17 / O			) 83108 H9T portseM) H9T	×			_	+				λ sub-cα
			490,	Tel.						BTEX + MTE	-						 Remarks:		bility. Ar
						()	,208) s			31142+ X3T8	X						Rer		is possi
ASA SAME DAY		,	),							HEAL NO.	100-	•					Pate Time	Date Time	This serves
Time:	KRush		87 ZO		į	iger:	BLAGE	I BLAGE	Zerres Parature: / C	Preservative Type	Car						1/8/1		accredited laboratories.
Turn-Around Time:	☐ Standard	.≖	I NVDGE	Project #:		Project Manag	<b>1</b>	Sampler:	18	Container Type and #	1x20h						Received by:	Received by:	
Chain-of-Custody Record	SIM INC.		Mailing Address: P.O. Box 97	1 87413	Phone #: 505 - 320 - 1183	email or Fax#:	©AVQC Package:	Accreditation  M. Accreditation		Date Time Matrix Sample Request ID	1020 SOIL 55 NIOW @ 36"						Date: Time: Relinquished by:	7	necessary, samples submitted to Hai



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

July 18, 2014

Jeff Blagg Blagg Engineering P. O. Box 87 Bloomfield, NM 87413 TEL: (505) 320-1183

**FAX** 

RE: Mudge LS 7 OrderNo.: 1407619

#### Dear Jeff Blagg:

Hall Environmental Analysis Laboratory received 5 sample(s) on 7/15/2014 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 <a href="www.hallenvironmental.com">www.hallenvironmental.com</a> 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 Freeman

Laboratory Manager

Indest

4901 Hawkins NE

Albuquerque, NM 87109

Mudge LS 7

**Project:** 

#### **Analytical Report** Lab Order 1407619

**Collection Date:** 7/14/2014 3:25:00 PM

Date Reported: 7/18/2014

#### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Blagg Engineering Client Sample ID: Base 5-pt @ 14'

1407619-001 Lab ID: Matrix: MEOH (SOIL) Received Date: 7/15/2014 7:50:00 AM

Analyses	Result	RL Qu	al Units	DF Date A	nalyzed	Batch
EPA METHOD 8015D: DIESEL RAN	GE ORGANICS				Analyst	BCN
Diesel Range Organics (DRO)	20	10	mg/Kg	1 7/15/20	014 11:48:50 AM	14218
Surr: DNOP	81.6	57.9-140	%REC	1 7/15/20	014 11:48:50 AM	14218
EPA METHOD 8015D: GASOLINE R	ANGE				Analyst	NSB
Gasoline Range Organics (GRO)	ND	6.2	mg/Kg	1 7/15/20	014 12:39:53 PM	R19893
Surr: BFB	98.8	80-120	%REC	1 7/15/20	014 12:39:53 PM	R19893
EPA METHOD 8021B: VOLATILES					Analyst	NSB
Benzene	ND	0.062	mg/Kg	1 7/15/20	014 12:39:53 PM	R19893
Toluene	ND	0.062	mg/Kg	1 7/15/20	014 12:39:53 PM	R19893
Ethylbenzene	ND	0.062	mg/Kg	1 7/15/20	014 12:39:53 PM	R19893
Xylenes, Total	ND	0.12	mg/Kg	1 7/15/20	014 12:39:53 PM	R19893
Surr: 4-Bromofluorobenzene	110	80-120	%REC	1 7/15/20	014 12:39:53 PM	R19893
EPA METHOD 300.0: ANIONS					Analyst	JRR
Chloride	110	30	mg/Kg	20 7/15/20	014 12:38:16 PM	14229

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

#### **Qualifiers:**

- Value exceeds Maximum Contaminant Level.
- Ε Value above quantitation range
- Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- Spike Recovery outside accepted recovery limits
- Analyte detected in the associated Method Blank
- Η Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit Page 1 of 9
- P Sample pH greater than 2.
- RLReporting Detection Limit

Date Reported: 7/18/2014

#### Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering

Client Sample ID: West Wall 3-pt 6'-12'

Project: Mudge LS 7

Collection Date: 7/14/2014 3:27:00 PM

**Lab ID:** 1407619-002 **Matrix:** MEOH (SOIL) **Received Date:** 7/15/2014 7:50:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE	ORGANICS				Analyst	BCN
Diesel Range Organics (DRO)	52	10	mg/Kg	1	7/15/2014 12:19:38 PM	14218
Surr: DNOP	83.7	57.9-140	%REC	1	7/15/2014 12:19:38 PM	14218
EPA METHOD 8015D: GASOLINE RANG	GE				Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	7/15/2014 1:10:06 PM	R19893
Surr: BFB	90.2	80-120	%REC	1	7/15/2014 1:10:06 PM	R19893
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.047	mg/Kg	1	7/15/2014 1:10:06 PM	R19893
Toluene	ND	0.047	mg/Kg	1	7/15/2014 1:10:06 PM	R19893
Ethylbenzene	ND	0.047	mg/Kg	1	7/15/2014 1:10:06 PM	R19893
Xylenes, Total	ND	0.094	mg/Kg	1	7/15/2014 1:10:06 PM	R19893
Surr: 4-Bromofluorobenzene	99.5	80-120	%REC	1	7/15/2014 1:10:06 PM	R19893
EPA METHOD 300.0: ANIONS					Analyst	: JRR
Chloride	200	30	mg/Kg	20	7/15/2014 1:15:29 PM	14229

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

#### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Page 2 of 9

- P Sample pH greater than 2.
- RL Reporting Detection Limit

Date Reported: 7/18/2014

#### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Blagg Engineering Client Sample ID: South Wall 3-pt 6'-12' **Project:** Mudge LS 7 Collection Date: 7/14/2014 3:28:00 PM 1407619-003 Lab ID: Matrix: MEOH (SOIL) Received Date: 7/15/2014 7:50:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANG	GE ORGANICS				Analyst	:: BCN
Diesel Range Organics (DRO)	13	10	mg/Kg	1	7/15/2014 12:50:25 PM	I 14218
Surr: DNOP	85.4	57.9-140	%REC	1	7/15/2014 12:50:25 PM	l 14218
EPA METHOD 8015D: GASOLINE R	ANGE				Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.5	mg/Kg	1	7/15/2014 1:40:18 PM	R19893
Surr: BFB	102	80-120	%REC	1	7/15/2014 1:40:18 PM	R19893
EPA METHOD 8021B: VOLATILES					Analyst	:: NSB
Benzene	ND	0.045	mg/Kg	1	7/15/2014 1:40:18 PM	R19893
Toluene	ND	0.045	mg/Kg	1	7/15/2014 1:40:18 PM	R19893
Ethylbenzene	ND	0.045	mg/Kg	1	7/15/2014 1:40:18 PM	R19893
Xylenes, Total	ND	0.091	mg/Kg	1	7/15/2014 1:40:18 PM	R19893
Surr: 4-Bromofluorobenzene	115	80-120	%REC	1	7/15/2014 1:40:18 PM	R19893
EPA METHOD 300.0: ANIONS					Analyst	:: JRR
Chloride	120	30	mg/Kg	20	7/15/2014 1:27:53 PM	14229

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

#### **Qualifiers:**

- Value exceeds Maximum Contaminant Level.
- Ε Value above quantitation range
- Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- Spike Recovery outside accepted recovery limits
- Analyte detected in the associated Method Blank
- Η Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.

Page 3 of 9

- RLReporting Detection Limit

Date Reported: 7/18/2014

#### Hall Environmental Analysis Laboratory, Inc.

CLIENT:Blagg EngineeringClient Sample ID: East Wall 3-pt 6'-12'Project:Mudge LS 7Collection Date: 7/14/2014 3:29:00 PMLab ID:1407619-004Matrix: MEOH (SOIL)Received Date: 7/15/2014 7:50:00 AM

Analyses	Result	RL (	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE	ORGANICS					Analyst	BCN
Diesel Range Organics (DRO)	17	10		mg/Kg	1	7/15/2014 12:56:40 PM	14218
Surr: DNOP	90.7	57.9-140		%REC	1	7/15/2014 12:56:40 PM	14218
EPA METHOD 8015D: GASOLINE RANG	GE					Analyst	: NSB
Gasoline Range Organics (GRO)	ND	5.2		mg/Kg	1	7/15/2014 2:10:37 PM	R19893
Surr: BFB	106	80-120		%REC	1	7/15/2014 2:10:37 PM	R19893
EPA METHOD 8021B: VOLATILES						Analyst	: NSB
Benzene	ND	0.052		mg/Kg	1	7/15/2014 2:10:37 PM	R19893
Toluene	ND	0.052		mg/Kg	1	7/15/2014 2:10:37 PM	R19893
Ethylbenzene	ND	0.052		mg/Kg	1	7/15/2014 2:10:37 PM	R19893
Xylenes, Total	ND	0.10		mg/Kg	1	7/15/2014 2:10:37 PM	R19893
Surr: 4-Bromofluorobenzene	120	80-120	S	%REC	1	7/15/2014 2:10:37 PM	R19893
EPA METHOD 300.0: ANIONS						Analyst	: JRR
Chloride	290	30		mg/Kg	20	7/15/2014 1:40:17 PM	14229

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

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.

Page 4 of 9

RL Reporting Detection Limit

1407619-005

Lab ID:

Chloride

**Analytical Report**Lab Order **1407619** 

Received Date: 7/15/2014 7:50:00 AM

Date Reported: 7/18/2014

7/15/2014 1:52:42 PM

14229

#### Hall Environmental Analysis Laboratory, Inc.

CLIENT:Blagg EngineeringClient Sample ID: North Wall 3-pt 6'-12'Project:Mudge LS 7Collection Date: 7/14/2014 3:31:00 PM

240

Matrix: MEOH (SOIL)

Analyses Result **RL Qual Units DF** Date Analyzed Batch **EPA METHOD 8015D: DIESEL RANGE ORGANICS** Analyst: BCN Diesel Range Organics (DRO) 7/15/2014 12:13:55 PM 14218 9.9 mg/Kg Surr: DNOP 86.4 57.9-140 %REC 7/15/2014 12:13:55 PM 14218 **EPA METHOD 8015D: GASOLINE RANGE** Analyst: NSB mg/Kg Gasoline Range Organics (GRO) ND 5.1 1 7/15/2014 2:40:49 PM R19893 Surr: BFB 101 80-120 %REC 7/15/2014 2:40:49 PM R19893 **EPA METHOD 8021B: VOLATILES** Analyst: NSB Benzene ND 0.051 mg/Kg 1 7/15/2014 2:40:49 PM R19893 R19893 Toluene ND 0.051 mg/Kg 1 7/15/2014 2:40:49 PM Ethylbenzene ND 0.051 mg/Kg 7/15/2014 2:40:49 PM R19893 1 Xylenes, Total ND 0.10 mg/Kg 7/15/2014 2:40:49 PM R19893 Surr: 4-Bromofluorobenzene 115 80-120 %REC 7/15/2014 2:40:49 PM R19893 **EPA METHOD 300.0: ANIONS** Analyst: JRR

30

mg/Kg

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

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.

Page 5 of 9

RL Reporting Detection Limit

## Hall Environmental Analysis Laboratory, Inc.

WO#: **1407619** 

18-Jul-14

Client: Blagg Engineering
Project: Mudge LS 7

Sample ID MB-14229 SampType: MBLK TestCode: EPA Method 300.0: Anions

Client ID: PBS Batch ID: 14229 RunNo: 19915

Prep Date: 7/15/2014 Analysis Date: 7/15/2014 SeqNo: 578776 Units: mg/Kg

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

Chloride ND 1.5

Sample ID LCS-14229 SampType: LCS TestCode: EPA Method 300.0: Anions

Client ID: LCSS Batch ID: 14229 RunNo: 19915

Prep Date: 7/15/2014 Analysis Date: 7/15/2014 SeqNo: 578777 Units: mg/Kg

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

Chloride 14 1.5 15.00 0 92.5 90 110

#### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

Page 6 of 9

## Hall Environmental Analysis Laboratory, Inc.

WO#: **1407619** *18-Jul-14* 

Client: Blagg Engineering
Project: Mudge LS 7

Sample ID MB-14218 SampType: MBLK TestCode: EPA Method 8015D: Diesel Range Organics

Client ID: PBS Batch ID: 14218 RunNo: 19870

Prep Date: 7/15/2014 Analysis Date: 7/15/2014 SeqNo: 577863 Units: mg/Kg

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

Diesel Range Organics (DRO) ND 10

Surr: DNOP 7.7 10.00 77.0 57.9 140

Sample ID LCS-14218 SampType: LCS TestCode: EPA Method 8015D: Diesel Range Organics

Client ID: LCSS Batch ID: 14218 RunNo: 19870

Prep Date: 7/15/2014 Analysis Date: 7/15/2014 SeqNo: 577864 Units: mg/Kg

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

 Diesel Range Organics (DRO)
 49
 10
 50.00
 0
 97.3
 68.6
 130

 Surr: DNOP
 3.6
 5.000
 72.1
 57.9
 140

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

Page 7 of 9

## Hall Environmental Analysis Laboratory, Inc.

WO#: **1407619** *18-Jul-14* 

Client: Blagg Engineering
Project: Mudge LS 7

Sample ID MB-14213 MK SampType: MBLK TestCode: EPA Method 8015D: Gasoline Range

Client ID: PBS Batch ID: R19893 RunNo: 19893

Prep Date: Analysis Date: 7/15/2014 SeqNo: 578416 Units: mg/Kg

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

Gasoline Range Organics (GRO) ND 5.0

Surr: BFB 1000 1000 101 80 120

Sample ID LCS-14213 MK SampType: LCS TestCode: EPA Method 8015D: Gasoline Range

Client ID: LCSS Batch ID: R19893 RunNo: 19893

Prep Date: Analysis Date: 7/15/2014 SeqNo: 578417 Units: mg/Kg

Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Gasoline Range Organics (GRO) 23 5.0 25.00 0 91.7 71.7 134 1100 Surr: BFB 1000 113 80 120

#### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

Page 8 of 9

## Hall Environmental Analysis Laboratory, Inc.

WO#: **1407619** 

18-Jul-14

Client: Blagg Engineering
Project: Mudge LS 7

Sample ID MB-14213 MK SampType: MBLK TestCode: EPA Method 8021B: Volatiles

Client ID: PBS Batch ID: R19893 RunNo: 19893

Prep Date: Analysis Date: 7/15/2014 SeqNo: 578456 Units: mg/Kg

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 1.2 1.000 117 80 120

Sample ID LCS-14213 MK	Samp <sup>-</sup>	SampType: LCS TestCode: EPA Method 80						tiles		
Client ID: LCSS	Batc	h ID: <b>R1</b>	R19893 RunNo: 19893							
Prep Date:	Analysis [	Date: 7/	15/2014	5	SeqNo: 5	78457	7 Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.88	0.050	1.000	0	87.8	80	120			
Toluene	0.86	0.050	1.000	0	86.2	80	120			
Ethylbenzene	0.88	0.050	1.000	0	87.6	80	120			
Xylenes, Total	2.8	0.10	3.000	0	91.9	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		105	80	120			

#### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

Page 9 of 9



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	: 1407619		RcptNo:	1
Received by/date:	artistal				
· · · · · · · · · · · · · · · · · · ·	7/15/2014 7:50:00 AM		Smakes Hlopago		
Logged By: Lindsay Mangin					
Completed By: Lindsay Mangin	7/15/2014 8:17:27 AN 07   15   14		Comment Transport		
Reviewed By:	OHIM			•	
<u>Chain of Custody</u>					
1. Custody seals intact on sample bottles	s?	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 san	nples?	Yes 🔽	No .	NA <sup>1</sup>	
5. Were all samples received at a tempe	erature of >0° C to 6.0°C	Yes 🔽	No [ ]	NA ·	
6. Sample(s) in proper container(s)?		Yes 🗸	No		
7. Sufficient sample volume for indicated	i 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	d broken?	Yes	No 😾 📗	# of proposited	
			:	# of preserved bottles checked	
12. Does paperwork match bottle labels?	als: A	Yes 🗹	No	for pH: (<2 o	r >12 unless noted)
(Note discrepancies on chain of custo 13. Are matrices correctly identified on CI		Yes 🗸	No	Adjusted?	
14. Is it clear what analyses were request		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	s with this order?	Yes	No 🖂	NA 🗸	
Person Notified:	Date:	The second secon			
By Whom:	Via:	eMail	Phone Fax	In Person	
Regarding:					
Client Instructions:					•
17. Additional remarks:					
18. <u>Cooler Information</u>					
	. 1		ا منیه ا		
Cooler No Temp °C Conditio	n Seal Intact Seal No	Seal Date	Signed By		

Received by OCD: 3/26/20	اند Bappples (۸ or ۱ <mark>۷) 48:35:52 ا</mark>	Page 108 <sub>1</sub> 0j	f 215
HALL ENVIRONMENTAL ANALYSIS LABORATORY www.hallenvironmental.com 4901 Hawkins NE - Albuquerque, NM 87109 Tel. 505-345-3975 Fax 505-345-4107 Analysis Request	TPH (Method 418.1)  EDB (Method 504.1)  PAH's (8310 or 8270 SIMS)  Anions (F,Cl,NO <sub>3</sub> ,NO <sub>2</sub> ,PO <sub>4</sub> ,SO <sub>4</sub> )  S260B (VOA)  S270 (Semi-VOA)  CHLORIDE	TREY: HEVELOSSET	D-CONTRACIEU UAIA WIII DE GRAAIIY IIOUAREU DII IIIG AIIAYUUAI IEPDU.
4901 Hz	31EX + MTBE + TPH (Gas only)	THE TAX A A A A A A A A A A A A A A A A A A	ly. Ally su
	3TEX + MTRE + TMB's (8021)	Remarks:	mosemin
Turn-Around Time: Ashre bA/Shre bA/Shre bA/Shre bA/Shre ba/Broject Name: Muste しらて	Project Manager:  **TEFF BALL  Sampler: **TEFF BALL  On Ice: **ATFF BALL  Sample Temperature:   FALL  Container Preservative Type   LICTICAL	La L	accredited laboratories.
Chain-of-Custody Record  Client: Black Engineers I.c.,  BANERCA  Browners: P.O. Box 87  Rading Address: P.O. Box 87  Roomers P.O. Box 87  Proj. 194	Fax#:  Ickage:  In Carter  Type)  Time Matrix Sample Request ID	14/4 1525 Soil BARE 5-Pt @ 14 4 4 1527 1 Westwall 3-Pt 6-12 4 1528 1 Sort Wall 3-Pt 6-12 4 1529 1 Extwal 3-Pt 6-12 6 6-12	If necessary samples submitted to Hall Environmental may be subcontracted to other



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

July 21, 2014

Jeff Blagg

Blagg Engineering P. O. Box 87

Bloomfield, NM 87413 TEL: (505) 320-1183

FAX (505) 632-3903

RE: Mudge LS 7 OrderNo.: 1407706

#### Dear Jeff Blagg:

Hall Environmental Analysis Laboratory received 5 sample(s) on 7/16/2014 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 <a href="www.hallenvironmental.com">www.hallenvironmental.com</a> 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 Freeman

Laboratory Manager

andy

4901 Hawkins NE

Albuquerque, NM 87109

Date Reported: 7/21/2014

## Hall Environmental Analysis Laboratory, Inc.

 CLIENT:
 Blagg Engineering
 Client Sample ID: TH-A 101' N8W@25'

 Project:
 Mudge LS 7
 Collection Date: 7/15/2014 9:45:00 AM

 Lab ID:
 1407706-001
 Matrix: MEOH (SOIL)
 Received Date: 7/16/2014 8:10:00 AM

Analyses	Result	RL (	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE					Analyst	:: BCN	
Diesel Range Organics (DRO)	67	10		mg/Kg	1	7/16/2014 1:49:46 PM	14245
Surr: DNOP	86.4	57.9-140		%REC	1	7/16/2014 1:49:46 PM	14245
EPA METHOD 8015D: GASOLINE RAN	GE					Analyst	: NSB
Gasoline Range Organics (GRO)	51	21		mg/Kg	5	7/16/2014 2:08:42 PM	R19921
Surr: BFB	275	80-120	S	%REC	5	7/16/2014 2:08:42 PM	R19921
EPA METHOD 8021B: VOLATILES						Analyst	: NSB
Benzene	ND	0.10		mg/Kg	5	7/16/2014 2:08:42 PM	R19921
Toluene	ND	0.21		mg/Kg	5	7/16/2014 2:08:42 PM	R19921
Ethylbenzene	ND	0.21		mg/Kg	5	7/16/2014 2:08:42 PM	R19921
Xylenes, Total	0.73	0.41		mg/Kg	5	7/16/2014 2:08:42 PM	R19921
Surr: 4-Bromofluorobenzene	140	80-120	S	%REC	5	7/16/2014 2:08:42 PM	R19921
EPA METHOD 300.0: ANIONS						Analyst	:: JRR
Chloride	93	30		mg/Kg	20	7/16/2014 1:42:04 PM	14251

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

#### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit Page 1 of 9
- P Sample pH greater than 2.
- RL Reporting Detection Limit

Lab ID:

1407706-002

**Analytical Report**Lab Order **1407706** 

Date Reported: 7/21/2014

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering

Client Sample ID: TH-B 41' N45E@30'

Project: Mudge LS 7

Collection Date: 7/15/2014 11:17:00 A

**Collection Date:** 7/15/2014 11:17:00 AM **Matrix:** MEOH (SOIL) **Received Date:** 7/16/2014 8:10:00 AM

Analyses	Result	RL Qual Units		DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS					Analy	st: BCN
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	7/16/2014 2:20:44 PI	M 14245
Surr: DNOP	84.4	57.9-140	%REC	1	7/16/2014 2:20:44 PI	M 14245
EPA METHOD 8015D: GASOLINE R	RANGE				Analy	st: NSB
Gasoline Range Organics (GRO)	ND	4.0	mg/Kg	1	7/16/2014 11:37:38	AM R19921
Surr: BFB	102	80-120	%REC	1	7/16/2014 11:37:38	AM R19921

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

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded

Page 2 of 9

- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

Date Reported: 7/21/2014

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering

Client Sample ID: TH-C 114' N17E@30'

Project: Mudge LS 7

Collection Date: 7/15/2014 12:08:00 PM

**Lab ID:** 1407706-003 **Matrix:** MEOH (SOIL) **Received Date:** 7/16/2014 8:10:00 AM

Analyses	Result	RL Qu	al Units	DF Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANG	E ORGANICS			Analy	st: BCN
Diesel Range Organics (DRO)	ND	9.9	mg/Kg	1 7/16/2014 2:51:44 PM	A 14245
Surr: DNOP	88.5	57.9-140	%REC	1 7/16/2014 2:51:44 PN	<i>l</i> 14245
EPA METHOD 8015D: GASOLINE RA	NGE			Analy	st: NSB
Gasoline Range Organics (GRO)	ND	4.5	mg/Kg	1 7/16/2014 12:07:47 P	M R19921
Surr: BFB	107	80-120	%REC	1 7/16/2014 12:07:47 P	M R19921

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

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Page 3 of 9

- P Sample pH greater than 2.
- RL Reporting Detection Limit

Date Reported: 7/21/2014

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering

Client Sample ID: West Wall 3-pt 8'-14'

Project: Mudge LS 7

Collection Date: 7/15/2014 11:30:00 AM

Lab ID: 1407706-004

Matrix: MEOH (SOIL)

Received Date: 7/16/2014 8:10:00 AM

Analyses	Result	RL (	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANG	E ORGANICS					Analyst	BCN
Diesel Range Organics (DRO)	17	10		mg/Kg	1	7/16/2014 1:35:09 PM	14245
Surr: DNOP	103	57.9-140		%REC	1	7/16/2014 1:35:09 PM	14245
EPA METHOD 8015D: GASOLINE RA	NGE					Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/16/2014 1:08:19 PM	R19921
Surr: BFB	144	80-120	S	%REC	1	7/16/2014 1:08:19 PM	R19921
EPA METHOD 8021B: VOLATILES						Analyst	: NSB
Benzene	ND	0.049		mg/Kg	1	7/16/2014 1:08:19 PM	R19921
Toluene	ND	0.049		mg/Kg	1	7/16/2014 1:08:19 PM	R19921
Ethylbenzene	ND	0.049		mg/Kg	1	7/16/2014 1:08:19 PM	R19921
Xylenes, Total	ND	0.099		mg/Kg	1	7/16/2014 1:08:19 PM	R19921
Surr: 4-Bromofluorobenzene	130	80-120	S	%REC	1	7/16/2014 1:08:19 PM	R19921
EPA METHOD 300.0: ANIONS						Analyst	: JRR
Chloride	390	30		mg/Kg	20	7/16/2014 1:54:28 PM	14251

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

#### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit Detected at the Reporting Limit
- Page 4 of 9
- P Sample pH greater than 2.
- RL Reporting Detection Limit

Date Reported: 7/21/2014

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering

Client Sample ID: East Wall 3-pt 8'-14'

Project: Mudge LS 7

Collection Date: 7/15/2014 11:34:00 AM

Lab ID: 1407706-005

Matrix: MEOH (SOIL)

Received Date: 7/16/2014 8:10:00 AM

Analyses	Result	RL Q	ual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE			Analyst	BCN		
Diesel Range Organics (DRO)	ND	9.9	mg/Kg	1	7/16/2014 1:56:22 PM	14245
Surr: DNOP	107	57.9-140	%REC	1	7/16/2014 1:56:22 PM	14245
EPA METHOD 8015D: GASOLINE RANGE					Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.4	mg/Kg	1	7/16/2014 1:38:33 PM	R19921
Surr: BFB	95.2	80-120	%REC	1	7/16/2014 1:38:33 PM	R19921
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.044	mg/Kg	1	7/16/2014 1:38:33 PM	R19921
Toluene	ND	0.044	mg/Kg	1	7/16/2014 1:38:33 PM	R19921
Ethylbenzene	ND	0.044	mg/Kg	1	7/16/2014 1:38:33 PM	R19921
Xylenes, Total	ND	0.088	mg/Kg	1	7/16/2014 1:38:33 PM	R19921
Surr: 4-Bromofluorobenzene	101	80-120	%REC	1	7/16/2014 1:38:33 PM	R19921
EPA METHOD 300.0: ANIONS					Analyst	: JRR
Chloride	160	30	mg/Kg	20	7/16/2014 2:06:53 PM	14251

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

#### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Page 5 of 9

- P Sample pH greater than 2.
- RL Reporting Detection Limit

## Hall Environmental Analysis Laboratory, Inc.

WO#: **1407706** 

21-Jul-14

Client: Blagg Engineering
Project: Mudge LS 7

Sample ID MB-14251 SampType: MBLK TestCode: EPA Method 300.0: Anions

Client ID: PBS Batch ID: 14251 RunNo: 19944

Prep Date: 7/16/2014 Analysis Date: 7/16/2014 SeqNo: 579600 Units: mg/Kg

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

Chloride ND 1.5

Sample ID LCS-14251 SampType: LCS TestCode: EPA Method 300.0: Anions

Client ID: LCSS Batch ID: 14251 RunNo: 19944

Prep Date: 7/16/2014 Analysis Date: 7/16/2014 SeqNo: 579601 Units: mg/Kg

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

Chloride 14 1.5 15.00 0 91.3 90 110

#### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

Page 6 of 9

## Hall Environmental Analysis Laboratory, Inc.

WO#: **1407706** 

21-Jul-14

Client:	Blagg Engineering
Project:	Mudge LS 7

Project: Mudge	LS 7			
Sample ID MB-14245	SampType: MBLK	TestCode: EPA Method	8015D: Diesel Range O	rganics
Client ID: PBS	Batch ID: 14245	RunNo: 19918		
Prep Date: 7/16/2014	Analysis Date: 7/16/2014	SeqNo: <b>578836</b>	Units: mg/Kg	
Analyte	Result PQL SPK value SPK Ref	/al %REC LowLimit	HighLimit %RPD	RPDLimit Qual
Diesel Range Organics (DRO)	ND 10			
Surr: DNOP	9.2 10.00	91.5 57.9	140	
Sample ID LCS-14245	SampType: <b>LCS</b>	TestCode: <b>EPA Method</b>	8015D: Diesel Range O	rganics
Client ID: LCSS	Batch ID: 14245	RunNo: 19918		
Prep Date: 7/16/2014	Analysis Date: 7/16/2014	SeqNo: <b>578862</b>	Units: mg/Kg	
Analyte	Result PQL SPK value SPK Ref	/al %REC LowLimit	HighLimit %RPD	RPDLimit Qual
Diesel Range Organics (DRO)	54 10 50.00 0		130	
Surr: DNOP	4.1 5.000	82.6 57.9	140	
Sample ID MB-14220	SampType: <b>MBLK</b>	TestCode: EPA Method	8015D: Diesel Range O	rganics
Client ID: PBS	Batch ID: 14220	RunNo: 19942		
Prep Date: 7/15/2014	Analysis Date: 7/18/2014	SeqNo: <b>580642</b>	Units: %REC	
Analyte	Result PQL SPK value SPK Ref	/al %REC LowLimit	HighLimit %RPD	RPDLimit Qual
Surr: DNOP	9.0 10.00	90.2 57.9	140	
Sample ID LCS-14220	SampType: LCS	TestCode: EPA Method	8015D: Diesel Range O	rganics
Client ID: LCSS	Batch ID: 14220	RunNo: 19942		
Prep Date: 7/15/2014	Analysis Date: 7/18/2014	SeqNo: <b>580643</b>	Units: %REC	
Analyte	Result PQL SPK value SPK Ref	/al %REC LowLimit	HighLimit %RPD	RPDLimit Qual
Surr: DNOP	4.0 5.000	80.7 57.9	140	
Sample ID MB-14274	SampType: MBLK	TestCode: EPA Method	8015D: Diesel Range O	rganics
Client ID: PBS	Batch ID: 14274	RunNo: <b>19943</b>		
Prep Date: 7/17/2014	Analysis Date: 7/17/2014	SeqNo: <b>580659</b>	Units: %REC	
Analyte	Result PQL SPK value SPK Ref	/al %REC LowLimit	HighLimit %RPD	RPDLimit Qual
Surr: DNOP	7.7 10.00	76.8 57.9	140	
Sample ID LCS-14274	SampType: LCS	TestCode: <b>EPA Method</b>	8015D: Diesel Range O	rganics
Client ID: LCSS	Batch ID: 14274	RunNo: 19943		
Prep Date: 7/17/2014	Analysis Date: 7/17/2014	SeqNo: <b>580660</b>	Units: %REC	
Analyte	Result PQL SPK value SPK Ref	/al %REC LowLimit	HighLimit %RPD	RPDLimit Qual
Surr: DNOP	3.9 5.000	77.7 57.9	140	

#### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

Page 7 of 9

### Hall Environmental Analysis Laboratory, Inc.

1407706 21-Jul-14

WO#:

Client: Blagg Engineering
Project: Mudge LS 7

Sample ID MB-14230 MK SampType: MBLK TestCode: EPA Method 8015D: Gasoline Range

Client ID: PBS Batch ID: R19921 RunNo: 19921

Prep Date: Analysis Date: 7/16/2014 SeqNo: 579280 Units: mg/Kg

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

Gasoline Range Organics (GRO) ND 5.0

Surr: BFB 960 1000 95.7 80 120

Sample ID LCS-14230 MK SampType: LCS TestCode: EPA Method 8015D: Gasoline Range

Client ID: LCSS Batch ID: R19921 RunNo: 19921

Prep Date: Analysis Date: 7/16/2014 SeqNo: 579286 Units: mg/Kg

Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Gasoline Range Organics (GRO) 5.0 25.00 0 89.1 71.7 134

Surr: BFB 1000 1000 104 80 120

Sample ID MB-14250 MK SampType: MBLK TestCode: EPA Method 8015D: Gasoline Range

Client ID: PBS Batch ID: R19948 RunNo: 19948

Prep Date: Analysis Date: 7/17/2014 SeqNo: 580277 Units: %REC

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

Surr: BFB 900 1000 89.9 80 120

Sample ID LCS-14250 MK SampType: LCS TestCode: EPA Method 8015D: Gasoline Range

Client ID: LCSS Batch ID: R19948 RunNo: 19948

Prep Date: Analysis Date: 7/17/2014 SeqNo: 580278 Units: %REC

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

Surr: BFB 950 1000 95.1 80 120

Sample ID MB-14250 SampType: MBLK TestCode: EPA Method 8015D: Gasoline Range

Client ID: PBS Batch ID: 14250 RunNo: 19948

Prep Date: 7/16/2014 Analysis Date: 7/17/2014 SeqNo: 580281 Units: %REC

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

Surr: BFB 900 1000 89.9 80 120

Client ID: LCSS Batch ID: 14250 RunNo: 19948

SampType: LCS

Prep Date: 7/16/2014 Analysis Date: 7/17/2014 SeqNo: 580282 Units: %REC

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

Surr: BFB 950 1000 95.1 80 120

#### Qualifiers:

Value exceeds Maximum Contaminant Level.

E Value above quantitation range

Sample ID LCS-14250

J Analyte detected below quantitation limits

O RSD is greater than RSDlimit

R RPD outside accepted recovery limits

S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank

TestCode: EPA Method 8015D: Gasoline Range

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

P Sample pH greater than 2.

RL Reporting Detection Limit

Page 8 of 9

## Hall Environmental Analysis Laboratory, Inc.

WO#: **1407706** 

21-Jul-14

Client: Blagg Engineering
Project: Mudge LS 7

Sample ID MB-14230 MK SampType: MBLK TestCode: EPA Method 8021B: Volatiles Client ID: **PBS** Batch ID: R19921 RunNo: 19921 Prep Date: Analysis Date: 7/16/2014 SeqNo: 579349 Units: mg/Kg 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 1.000 109 80 120

Sample ID MB-14250 MK SampType: MBLK TestCode: EPA Method 8021B: Volatiles Client ID: **PBS** Batch ID: R19948 RunNo: 19948 Prep Date: Analysis Date: 7/17/2014 SeqNo: 580348 Units: %REC Analyte Result SPK value SPK Ref Val %REC HighLimit %RPD **RPDLimit** Qual LowLimit Surr: 4-Bromofluorobenzene 1.0 1.000 100 80 120

Sample ID LCS-14250 MK TestCode: EPA Method 8021B: Volatiles SampType: LCS Client ID: LCSS Batch ID: R19948 RunNo: 19948 Prep Date: Analysis Date: 7/17/2014 SeqNo: 580349 Units: %REC Analyte Result SPK value SPK Ref Val %REC %RPD **RPDLimit** PQL LowLimit HighLimit Qual Surr: 4-Bromofluorobenzene 1.0 1.000 103 80 120

TestCode: EPA Method 8021B: Volatiles Sample ID LCS-14230 MK SampType: LCS Client ID: LCSS Batch ID: R19921 RunNo: 19948 Prep Date: Analysis Date: 7/17/2014 SeqNo: 580359 Units: mg/Kg SPK value SPK Ref Val %REC LowLimit %RPD **RPDLimit** Analyte Result PQL HighLimit Qual Benzene 1.0 0.050 1.000 0 103 80 120 0.050 1.000 0 99.8 80 120 Toluene 1.0 Ethylbenzene 0.99 0.050 1.000 0 99.2 80 120 Xylenes, Total 3.0 0.10 3.000 0 101 80 120 Surr: 4-Bromofluorobenzene 1.1 1.000 107 80 120

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

Page 9 of 9



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:	1407706		RcptNo:	1
Received by/date:	07/16/14				
Logged By: Celina Sessa	7/16/2014 8:10:00 AM		Celin Si	ne	
Completed By: Celina Sessa	7/16/2014 8:27:31 AM		Celin So	1	i
Reviewed By: AT 07/16/17	7,70,201,70,2,700,7100		alum Jr	· sec	
Chain of Custody	<u> </u>				
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 sample	es?	Yes 🗹	No 🗆	NA 🗌	
5. Were all samples received at a temperat	ure of >0° C to 6.0°C	Yes 🗹	No 🗌	NA 🗆	
6. Sample(s) in proper container(s)?		Yes 🗹	No 🗆		
7. Sufficient sample volume for indicated te	st(s)?	Yes 🗹	No $\square$	•	
8. Are samples (except VOA and ONG) pro		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 by	roken?	Yes 🗀	No 🗹	# of preserved bottles checked	<u></u>
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	)	Yes 🔽	No 🗆	for pH:	r >12 unless noted)
13. Are matrices correctly identified on Chair		Yes 🗹	No 🗆	Adjusted?	
14. Is it clear what analyses were requested	?	Yes 🗹	No ☐	Chaokad by:	
15. Were all holding times able to be met? (If no, notify customer for authorization.)		Yes 🗹	No ∐ ॄ	Checked by:	<u>.                                      </u>
Special Handling (if applicable)					
16. Was client notified of all discrepancies w	vith this order?	Yes	No 🗆	NA 🗹	
Person Notified:	Date:	<del></del>		<u>-</u>	
By Whom:	Via:	eMail	Phone  Fax	In Person	
Regarding:			and the second		
Client Instructions:					
17. Additional remarks:					
18. Cooler Information  Cooler No Temp °C Condition  1 1.4 Good	Seal Intact   Seal No	Seal Date	Signed By	·	

Received by OCD: 3/26/2021 9:35:52 AM Page 120, of 215 Air Bubbles (Y or N) **ANALYSIS LABORATORY** HALL ENVIRONMENTAL 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 4901 Hawkins NE - Albuquerque, NM 87109 **ヨロとのとり** X X BP CONTACT: JEAR PRACE Fax 505-345-4107 (AOV-ima2) 0728 www.hallenvironmental.com Analysis Request (AOV) 808S8 8081 Pesticides / 8082 PCB's Anions (F,Cl,NO<sub>3</sub>,NO<sub>2</sub>,PO<sub>4</sub>,SO<sub>4</sub>) Bur Bingo RCRA 8 Metals Tel. 505-345-3975 (SMIS 07S8 to 01S8) a'HA9 EDB (Method 504.1) TPH (Method 418.1) X X TPH 8015B (GRO / DRO /<del>MRO</del>) X X Remarks: BTEX + MTBE + TPH (Gas only) 蚕 X × X BTEX + MTBE + TMB's (8021) Turn-Around Time: By THURSDAY 7/175014 0180 /1/9/10 1546 Time 907-101 1000 F00--003 HEAL No. 7007 1001 Ala Mark Date June Butter Preservative **K**Rush \$ **7** J. BLAGS CEST Sample Temperature: ZX Yes ۳ 2 Project Manager: Type and #. MUSGE Sampler: 🚣 Project Name: □ Standard Container 1 03×1 On Ice: Receixed by ceived by Project #: ۲ ゴ \$ ¥ ENST Wall 3-pt 8-14" Westlun( 3-pt 8-14" TR-B 41 NYSE@ 30 □ Level 4 (Full Validation) TH-A 101'NBW@ 25 TH-C IIT, NITE @ 30 Sample Request ID Chain-of-Custody Record BLASS ENGINEERING INC. BLOOMFIEW NM 87413 505-320-1183 Mailing Address: P.O. Box 87 Relinquished by BP AMERICA 2 4 Other Matrix Soil 3 ೱ OPHS 1,866 १५८। 1200 DA/QC Package: Time 1134 130 ☐ EDD (Type) email or Fax#: Time: Accreditation Standard □ NELAP Phone #: Released ls/2014 Date 



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

August 01, 2014

Jeff Blagg

Blagg Engineering

P. O. Box 87

Bloomfield, NM 87413

TEL: (505) 320-1183 FAX (505) 632-3903

RE: Mudge LS 7 OrderNo.: 1407D64

#### Dear Jeff Blagg:

Hall Environmental Analysis Laboratory received 3 sample(s) on 7/30/2014 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 <a href="www.hallenvironmental.com">www.hallenvironmental.com</a> 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 Freeman

Laboratory Manager

andyl

4901 Hawkins NE

Albuquerque, NM 87109

# **Analytical Report**Lab Order **1407D64**

Date Reported: 8/1/2014

## Hall Environmental Analysis Laboratory, Inc.

CLIENT:Blagg EngineeringClient Sample ID: NE Sidewall 5-pt 8'-19'Project:Mudge LS 7Collection Date: 7/29/2014 8:40:00 AM

**Lab ID:** 1407D64-001 **Matrix:** MEOH (SOIL) **Received Date:** 7/30/2014 6:45:00 AM

Analyses	Result	RL Qu	ıal Units	DF Date Analyzed Bate	ch
EPA METHOD 8015D: DIESEL RANGE	ORGANICS			Analyst: BCI	N
Diesel Range Organics (DRO)	ND	10	mg/Kg	1 7/30/2014 11:05:59 AM 1449	92
Surr: DNOP	85.1	57.9-140	%REC	1 7/30/2014 11:05:59 AM 144	92
EPA METHOD 8015D: GASOLINE RAI	NGE			Analyst: NSE	В
Gasoline Range Organics (GRO)	ND	4.3	mg/Kg	1 7/30/2014 11:07:06 AM R20	)250
Surr: BFB	82.8	80-120	%REC	1 7/30/2014 11:07:06 AM R20	)250
EPA METHOD 8021B: VOLATILES				Analyst: <b>NS</b>	В
Benzene	ND	0.043	mg/Kg	1 7/30/2014 11:07:06 AM R20	0250
Toluene	ND	0.043	mg/Kg	1 7/30/2014 11:07:06 AM R20	)250
Ethylbenzene	ND	0.043	mg/Kg	1 7/30/2014 11:07:06 AM R20	)250
Xylenes, Total	ND	0.086	mg/Kg	1 7/30/2014 11:07:06 AM R20	)250
Surr: 4-Bromofluorobenzene	97.4	80-120	%REC	1 7/30/2014 11:07:06 AM R20	)250
EPA METHOD 300.0: ANIONS				Analyst: JRF	R
Chloride	640	30	mg/Kg	20 7/30/2014 12:05:40 PM 1450	04

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

#### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

Page 1 of 7

# **Analytical Report**Lab Order **1407D64**

Date Reported: 8/1/2014

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering Client Sample ID: NW Corner @ 19'

 Project:
 Mudge LS 7
 Collection Date: 7/29/2014 12:47:00 PM

 Lab ID:
 1407D64-002
 Matrix: MEOH (SOIL)
 Received Date: 7/30/2014 6:45:00 AM

Analyses	Result	RL Qu	ıal Units	DF Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE	ORGANICS			Anal	/st: BCN
Diesel Range Organics (DRO)	ND	10	mg/Kg	1 7/30/2014 11:36:34	AM 14492
Surr: DNOP	97.3	57.9-140	%REC	1 7/30/2014 11:36:34	AM 14492
EPA METHOD 8015D: GASOLINE RAN	IGE			Anal	yst: NSB
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1 7/30/2014 11:37:17	AM R20250
Surr: BFB	80.8	80-120	%REC	1 7/30/2014 11:37:17	AM R20250
EPA METHOD 8021B: VOLATILES				Anal	yst: NSB
Benzene	ND	0.048	mg/Kg	1 7/30/2014 11:37:17	AM R20250
Toluene	ND	0.048	mg/Kg	1 7/30/2014 11:37:17	AM R20250
Ethylbenzene	ND	0.048	mg/Kg	1 7/30/2014 11:37:17	AM R20250
Xylenes, Total	ND	0.095	mg/Kg	1 7/30/2014 11:37:17	AM R20250
Surr: 4-Bromofluorobenzene	92.1	80-120	%REC	1 7/30/2014 11:37:17	AM R20250
EPA METHOD 300.0: ANIONS				Anal	/st: <b>JRR</b>
Chloride	95	30	mg/Kg	20 7/30/2014 12:18:05 I	PM 14504

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

#### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Page 2 of 7

- P Sample pH greater than 2.
- RL Reporting Detection Limit

Mudge LS 7

**Project:** 

**Analytical Report**Lab Order **1407D64** 

Date Reported: 8/1/2014

Collection Date: 7/29/2014 2:20:00 PM

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Blagg Engineering Client Sample ID: W Sidewall 4-pt 9'-19'

**Lab ID:** 1407D64-003 **Matrix:** MEOH (SOIL) **Received Date:** 7/30/2014 6:45:00 AM

Analyses	Result	RL Qu	ual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANG	GE ORGANICS				Analys	t: BCN
Diesel Range Organics (DRO)	15	9.9	mg/Kg	1	7/30/2014 12:07:06 PM	<i>l</i> 14492
Surr: DNOP	97.3	57.9-140	%REC	1	7/30/2014 12:07:06 PM	<i>l</i> 14492
EPA METHOD 8015D: GASOLINE R	ANGE				Analys	t: NSB
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	7/30/2014 12:07:22 PM	/ R20250
Surr: BFB	83.9	80-120	%REC	1	7/30/2014 12:07:22 PM	/ R20250
EPA METHOD 8021B: VOLATILES					Analys	t: NSB
Benzene	ND	0.049	mg/Kg	1	7/30/2014 12:07:22 PM	/ R20250
Toluene	ND	0.049	mg/Kg	1	7/30/2014 12:07:22 PM	/ R20250
Ethylbenzene	ND	0.049	mg/Kg	1	7/30/2014 12:07:22 PM	/ R20250
Xylenes, Total	ND	0.097	mg/Kg	1	7/30/2014 12:07:22 PM	/ R20250
Surr: 4-Bromofluorobenzene	97.0	80-120	%REC	1	7/30/2014 12:07:22 PM	/ R20250
EPA METHOD 300.0: ANIONS					Analys	t: <b>JRR</b>
Chloride	340	30	mg/Kg	20	7/30/2014 12:30:30 PM	/I 14504

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

#### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Page 3 of 7

- P Sample pH greater than 2.
- RL Reporting Detection Limit

## Hall Environmental Analysis Laboratory, Inc.

WO#: **1407D64** *01-Aug-14* 

Client: Blagg Engineering
Project: Mudge LS 7

Sample ID MB-14504 SampType: MBLK TestCode: EPA Method 300.0: Anions

Client ID: PBS Batch ID: 14504 RunNo: 20271

Prep Date: **7/30/2014** Analysis Date: **7/30/2014** SeqNo: **589099** Units: **mg/Kg** 

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

Chloride ND 1.5

Sample ID LCS-14504 SampType: LCS TestCode: EPA Method 300.0: Anions

Client ID: LCSS Batch ID: 14504 RunNo: 20271

Prep Date: 7/30/2014 Analysis Date: 7/30/2014 SeqNo: 589100 Units: mg/Kg

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

Chloride 14 1.5 15.00 0 92.4 90 110

#### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

Page 4 of 7

## Hall Environmental Analysis Laboratory, Inc.

WO#: **1407D64** *01-Aug-14* 

Client: Blagg Engineering
Project: Mudge LS 7

Sample ID MB-14492 SampType: MBLK TestCode: EPA Method 8015D: Diesel Range Organics

Client ID: PBS Batch ID: 14492 RunNo: 20232

Prep Date: **7/30/2014** Analysis Date: **7/30/2014** SeqNo: **588345** Units: **mg/Kg** 

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

Diesel Range Organics (DRO) ND 10

Surr: DNOP 10 10.00 102 57.9 140

Sample ID LCS-14492 SampType: LCS TestCode: EPA Method 8015D: Diesel Range Organics

Client ID: LCSS Batch ID: 14492 RunNo: 20232

Prep Date: **7/30/2014** Analysis Date: **7/30/2014** SeqNo: **588346** Units: **mg/Kg** 

Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Diesel Range Organics (DRO) 50 10 50.00 99.1 68.6 130 Surr: DNOP 4.7 5.000 57.9 94.8 140

### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

Page 5 of 7

## Hall Environmental Analysis Laboratory, Inc.

WO#: **1407D64** 

01-Aug-14

Client: Blagg Engineering
Project: Mudge LS 7

Sample ID MB-14473 MK SampType: MBLK TestCode: EPA Method 8015D: Gasoline Range

Client ID: PBS Batch ID: R20250 RunNo: 20250

Prep Date: Analysis Date: 7/30/2014 SeqNo: 588721 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 870 1000 87.0 80 120

Sample ID LCS-14473 MK SampType: LCS TestCode: EPA Method 8015D: Gasoline Range

Client ID: LCSS Batch ID: R20250 RunNo: 20250

Prep Date: Analysis Date: 7/30/2014 SeqNo: 588722 Units: mg/Kg

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

 Gasoline Range Organics (GRO)
 22
 5.0
 25.00
 0
 86.0
 71.7
 134

 Surr: BFB
 980
 1000
 97.8
 80
 120

#### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

Page 6 of 7

### Hall Environmental Analysis Laboratory, Inc.

WO#: **1407D64** *01-Aug-14* 

Client: Blagg Engineering
Project: Mudge LS 7

Sample ID MB-14473 MK SampType: MBLK TestCode: EPA Method 8021B: Volatiles

Client ID: PBS Batch ID: R20250 RunNo: 20250

Prep Date: Analysis Date: 7/30/2014 SeqNo: 588740 Units: mg/Kg

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 1.0 1.000 102 80 120

Sample ID LCS-14473 MK SampType: LCS TestCode: EPA Method 8021B: Volatiles Client ID: LCSS Batch ID: R20250 RunNo: 20250 Prep Date: Analysis Date: 7/30/2014 SeqNo: 588741 Units: mg/Kg Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual 80 0.87 0.050 1.000 0 120 Benzene 86.8 Toluene 0.86 0.050 1.000 0 86.1 80 120 Ethylbenzene 0.87 0.050 1.000 0 87.3 80 120 96.2 Xylenes, Total 2.9 0.10 3.000 0 80 120 106 120 Surr: 4-Bromofluorobenzene 1.1 1.000 80

Sample ID 1407D64-001AMSD SampType: MSD TestCode: EPA Method 8021B: Volatiles

Client ID: NE Sidewall 5-pt 8'- Batch ID: R20250 RunNo: 20250

Prep Date: Analysis Date: 7/30/2014 SeqNo: 588744 Units: mg/Kg

Prep Date:	Analysis Date:			0/2014 SeqNo: 388/44			Units: mg/kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.80	0.043	0.8636	0	93.0	77.4	142	8.83	20	
Toluene	0.79	0.043	0.8636	0.01770	89.2	77	132	10.1	20	
Ethylbenzene	0.80	0.043	0.8636	0	93.0	77.6	134	9.39	20	
Xylenes, Total	2.6	0.086	2.591	0.04793	97.8	77.4	132	8.04	20	
Surr: 4-Bromofluorobenzene	0.87		0.8636		101	80	120	0	0	

#### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

Page 7 of 7



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 O	der Number:	14070	64			Rcptl	No: 1
Received by/da	ate: 👠	Δ/	01/20/12	1						
	1 7	<u> </u>	7/20/2014	6:45:00 AM			Ameky 4	Homes D		
Logged By:	Lindsay Mai	_		6:45:00 AM				מפיישוי האנא		
Completed By:	Lindsay Ma	ngin	\	7:10:46 AM			Janesy 4	Harrys		
Reviewed By:	/h ).		07/	50/124						
Chain of Cu	stody	$\mathcal{N}$								
1. Custody se	eals intact on sar	nple bottles?			Yes		No		Not Present	✓
2. Is Chain of	f Custody comple	ete?			Yes	<b>Y</b>	No		Not Present	
3. How was t	he sample delive	ered?			Cour	<u>er</u>				
Log In										
4. Was an al	ttempt made to c	ool the sampl	es?		Yes	<b>V</b>	No		NA	
5. Were all s	amples received	at a temperat	ture of >0°C t	o 6.0°C	Yes	<b>V</b>	No		NA	·
6. Sample(s)	) in proper contai	ner(s)?			Yes	<b>Y</b>	No	:		
7 Sufficient	sample volume f	or indicated te	est(s)?		Yes	<b>V</b>	No			
•	es (except VOA			ed?	Yes	<b>/</b>	No	1.		
_	ervative added to				Yes	l"!	No	<b>V</b>	NA	
10.VOA vials	have zero heads	space?			Yes	1	No	i	No VOA Vials	✓
11. Were any	sample containe	ers received b	roken?		Yes	Ϊİ	No	<b>~</b>	# of preserved	
•						1.51			bottles checked	t
	erwork match bot repancies on cha		١		Yes	<b>iY</b> i	No		for pH:	(<2 or >12 unless noted)
	es correctly iden				Yes	<b> </b>	No		Adjusted	?
!	what analyses w				Yes		No	Li		
15. Were all h	olding times able ify customer for a	e to be met?			Yes	<b> </b>	No	!   '	Checked	by:
Special Har	ndling (if app	licable)								
1	t notified of all di		vith this order?		Yes	1.7	No		NA	· <b>V</b>
Pers	son Notified:			Date:						
Ву \	Nhom:	on errown error on errors, error administration on a	WATER THE PROPERTY OF THE PROP	Via:	eMa	ail []]	Phone	Fax	In Person	
Reg	arding:									
Clie	nt Instructions:									
17. Additiona	il remarks:		•							
18. Cooler Ir		1	1	1 !	<u>.</u> '		<u>.</u> .	_ '		
Cooler	r No Temp °C 2.4	Condition	Seal Intact	Seal No	Seal D	ate	Signed	Ву		
, h	4.4	Good	Yes	i		i				
Page 1	l of l	•	•		•		•			

Received by OCD: 3/26/20	(N vo Y) səldduð vir My Seidduð vir		T .		-   -		ı		Į.	I I	Page 130 of 215
HALL ENVIRONMENTAL ANALYSIS LABORATORY www.hallenvironmental.com kins NE - Albuquerque, NM 87109 345-3975 Fax 505-345-4107 Analysis Request	(M 10 V) selddug ii										eport.
	CHURINE	×	×	×			_	++		H	Co hytical n
ENVIRONME YSIS LABOR/ environmental.com Albuquerque, NM 87109 Fax 505-345-4107	(AOV-imeR) 07S							++	+	<del>     </del>	Pace
TRONNS LABOI Tental.com erque, NM 87 505-345-4107 Request	Seob (VOA)	3									all do like do
ILR S L ment erque 505-3	esticides / 8082 PCB's	3									ity nota
LYSIS LAE LYSIS LAE allenvironmental.co - Albuquerque, NN - Fax 505-345- Analysis Request	nions (F,Cl,NO <sub>3</sub> ,NO <sub>2</sub> ,PO <sub>4</sub> ,SO <sub>4</sub> )	+						$\sqcup$			be clear
LY LY iallen - Al	PAH's (8310 or 8270 SIMS) 3CRA 8 Metals						+	$\vdash$		Brake	ata will
HALL ENVIRON ANALYSIS LAB  www.hallenvironmental.com Hawkins NE - Albuquerque, NM 505-345-3975 Fax 505-345-41 Analysis Request	DB (Method 504.1)							+-+		1 1 .	Centect
A Miniministra	(1.814 bodieM) Hq					$\vdash$				<u>5</u>	S O Ub-contra
ANAL ANAL ANAL www.hall 4901 Hawkins NE - Tel. 505-345-3975	. РН 8015В (GRO / DRO / МВФ)	L ×	×	X		<del></del>					Any suk
4901 Tel.	JTEX + MTBE + TPH (Gas only)	3								Remarks:	bility.
	31EX + MIRE + 1MB <sup>7</sup> s (8021)	×	×	χ			_	$\perp \perp$		Rei	s books
ASAP DAIL	P No HEAL NO LINEAL NO LIN	137	18	-MB	)						Date Time  Date Time  Bries. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.
I Time:	ager:  Z. R. C. Blagg  Z. Pesservative  Type	Sec.	13	1(						-	Mac Liv.
Turn-Around Time:  ☐ Standard Project Name:  Mudge Project #:	Project Manager:  \[ \int \int \int \int \int \int \int \int	7 25 7	5	וָר						Received by:	Received by contracted to other
Chain-of-Custody Record  Exact Engineers Inc.  BP America  19 Address: P.O. Bx 97  Brown Field NM 87413	□ Level 4 (Full Validation) er Sample Request ID	NE SIDEWAU S-PE	~)	W sidewall 4-pt						2.	Time: Relinquished by:  Time: Relinquished by:  The contracted to other accredited laboratories.
Shain-of-Custon  Berke Engineers  BP America  Address: P.O. Bux  Brownfield NM	Matri.	0840 Solc	27	3						Relinquished by	Refinduis semples su
Chain BLA BLA BP 1 3 Address  Bloom				1420						Time:	# 1507 Time: 17724 If necessary, s
Chain-of-Custod  Chain-of-Custod  Brake Engineers   Accreditation EDD (T)  Date T	1/63/	=	1						Date	704 Date:	

Laboratory Reports (2015 and 2016 Geoprobing)



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

July 20, 2015

Jeff Blagg

Blagg Engineering P. O. Box 87

Bloomfield, NM 87413 TEL: (505) 320-1183

FAX (505) 632-3903

RE: Mudge LS #7 OrderNo.: 1507615

#### Dear Jeff Blagg:

Hall Environmental Analysis Laboratory received 10 sample(s) on 7/15/2015 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 <a href="www.hallenvironmental.com">www.hallenvironmental.com</a> 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 Freeman

Laboratory Manager

andy

4901 Hawkins NE

Albuquerque, NM 87109

Date Reported: 7/20/2015

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering Client Sample ID: GP-1 23'-24'

 Project:
 Mudge LS #7
 Collection Date: 7/14/2015 9:15:00 AM

 Lab ID:
 1507615-001
 Matrix: SOIL
 Received Date: 7/15/2015 7:00:00 AM

Analyses	Result	RL (	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANIC	S			Analyst	: KJH
Diesel Range Organics (DRO)	100	9.8	mg/K	g 1	7/16/2015 9:54:02 AM	20275
Surr: DNOP	130	57.9-140	%RE	C 1	7/16/2015 9:54:02 AM	20275
EPA METHOD 8015D: GASOLINE RAI	NGE				Analyst	: NSB
Gasoline Range Organics (GRO)	40	4.8	mg/K	g 1	7/17/2015 5:39:38 PM	20268
Surr: BFB	431	75.4-113	S %RE	C 1	7/17/2015 5:39:38 PM	20268
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.048	mg/K	g 1	7/16/2015 10:29:20 AM	20268
Toluene	ND	0.048	mg/K	g 1	7/16/2015 10:29:20 AM	20268
Ethylbenzene	ND	0.048	mg/K	g 1	7/16/2015 10:29:20 AM	20268
Xylenes, Total	ND	0.097	mg/K	g 1	7/16/2015 10:29:20 AM	20268
Surr: 4-Bromofluorobenzene	108	80-120	%RE	C 1	7/16/2015 10:29:20 AM	20268

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

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
  - Sample pH Not In Range

Page 1 of 13

RL Reporting Detection Limit

P

Date Reported: 7/20/2015

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering Client Sample ID: GP-1 27'-28'

 Project:
 Mudge LS #7
 Collection Date: 7/14/2015 9:20:00 AM

 Lab ID:
 1507615-002
 Matrix: SOIL
 Received Date: 7/15/2015 7:00:00 AM

Analyses	Result	RL (	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANIC	S			Analys	st: <b>KJH</b>
Diesel Range Organics (DRO)	83	9.9	mg/Kg	1	7/16/2015 10:58:06 Al	M 20275
Surr: DNOP	119	57.9-140	%REC	1	7/16/2015 10:58:06 Al	M 20275
EPA METHOD 8015D: GASOLINE RAI	NGE				Analys	st: NSB
Gasoline Range Organics (GRO)	48	5.0	mg/Kg	1	7/17/2015 6:08:22 PM	20268
Surr: BFB	485	75.4-113	S %REC	1	7/17/2015 6:08:22 PM	20268
EPA METHOD 8021B: VOLATILES					Analys	st: NSB
Benzene	ND	0.050	mg/Kg	1	7/16/2015 12:24:27 PI	M 20268
Toluene	ND	0.050	mg/Kg	1	7/16/2015 12:24:27 PI	M 20268
Ethylbenzene	ND	0.050	mg/Kg	1	7/16/2015 12:24:27 PI	M 20268
Xylenes, Total	ND	0.10	mg/Kg	1	7/16/2015 12:24:27 PI	M 20268
Surr: 4-Bromofluorobenzene	115	80-120	%REC	1	7/16/2015 12:24:27 PI	M 20268

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

#### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Page 2 of 13

- P Sample pH Not In Range
- RL Reporting Detection Limit

Date Reported: 7/20/2015

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Blagg Engineering Client Sample ID: GP-1 31'-32'

 Project:
 Mudge LS #7
 Collection Date: 7/14/2015 9:25:00 AM

 Lab ID:
 1507615-003
 Matrix: SOIL
 Received Date: 7/15/2015 7:00:00 AM

Analyses	Result	RL (	Qual Units	DF Dat	e Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANIC	S			Analyst	: KJH
Diesel Range Organics (DRO)	27	9.8	mg/Kg	1 7/1	6/2015 11:19:36 AM	20275
Surr: DNOP	125	57.9-140	%REC	1 7/1	6/2015 11:19:36 AM	20275
EPA METHOD 8015D: GASOLINE RAI	NGE				Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1 7/1	7/2015 10:55:38 PM	20268
Surr: BFB	116	75.4-113	S %REC	1 7/1	7/2015 10:55:38 PM	20268
EPA METHOD 8021B: VOLATILES					Analyst	:: NSB
Benzene	ND	0.049	mg/Kg	1 7/1	6/2015 2:19:32 PM	20268
Toluene	ND	0.049	mg/Kg	1 7/1	6/2015 2:19:32 PM	20268
Ethylbenzene	ND	0.049	mg/Kg	1 7/1	6/2015 2:19:32 PM	20268
Xylenes, Total	ND	0.098	mg/Kg	1 7/1	6/2015 2:19:32 PM	20268
Surr: 4-Bromofluorobenzene	98.1	80-120	%REC	1 7/1	6/2015 2:19:32 PM	20268

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

#### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Page 3 of 13

- P Sample pH Not In Range
- RL Reporting Detection Limit

Date Reported: 7/20/2015

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Blagg Engineering Client Sample ID: GP-1 35'-36'

 Project:
 Mudge LS #7
 Collection Date: 7/14/2015 9:48:00 AM

 Lab ID:
 1507615-004
 Matrix: SOIL
 Received Date: 7/15/2015 7:00:00 AM

Analyses	Result	RL (	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANIC	S			Analys	st: <b>KJH</b>
Diesel Range Organics (DRO)	66	9.7	mg/Kg	1	7/16/2015 11:41:01 Al	M 20275
Surr: DNOP	105	57.9-140	%REC	1	7/16/2015 11:41:01 A	M 20275
EPA METHOD 8015D: GASOLINE RAI	NGE				Analys	st: NSB
Gasoline Range Organics (GRO)	15	4.9	mg/Kg	1	7/17/2015 11:24:15 PM	M 20268
Surr: BFB	284	75.4-113	S %REC	1	7/17/2015 11:24:15 PI	M 20268
EPA METHOD 8021B: VOLATILES					Analys	st: NSB
Benzene	ND	0.049	mg/Kg	1	7/16/2015 2:48:16 PM	20268
Toluene	ND	0.049	mg/Kg	1	7/16/2015 2:48:16 PM	20268
Ethylbenzene	ND	0.049	mg/Kg	1	7/16/2015 2:48:16 PM	20268
Xylenes, Total	ND	0.098	mg/Kg	1	7/16/2015 2:48:16 PM	20268
Surr: 4-Bromofluorobenzene	108	80-120	%REC	1	7/16/2015 2:48:16 PM	20268

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

#### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Page 4 of 13

- P Sample pH Not In Range
- RL Reporting Detection Limit

Date Reported: 7/20/2015

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering Client Sample ID: GP-2 19'-20'

 Project:
 Mudge LS #7
 Collection Date: 7/14/2015 10:35:00 AM

 Lab ID:
 1507615-005
 Matrix: SOIL
 Received Date: 7/15/2015 7:00:00 AM

Analyses	Result	RL Q	ual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG	GE ORGANIC	S			Analyst	: KJH
Diesel Range Organics (DRO)	ND	9.7	mg/Kg	1	7/16/2015 12:02:28 PM	1 20275
Surr: DNOP	103	57.9-140	%REC	1	7/16/2015 12:02:28 PM	1 20275
EPA METHOD 8015D: GASOLINE RAN	IGE				Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	7/17/2015 11:53:00 PM	1 20268
Surr: BFB	102	75.4-113	%REC	1	7/17/2015 11:53:00 PM	1 20268
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.049	mg/Kg	1	7/16/2015 3:16:58 PM	20268
Toluene	ND	0.049	mg/Kg	1	7/16/2015 3:16:58 PM	20268
Ethylbenzene	ND	0.049	mg/Kg	1	7/16/2015 3:16:58 PM	20268
Xylenes, Total	ND	0.098	mg/Kg	1	7/16/2015 3:16:58 PM	20268
Surr: 4-Bromofluorobenzene	101	80-120	%REC	1	7/16/2015 3:16:58 PM	20268

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

#### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Page 5 of 13

- P Sample pH Not In Range
- RL Reporting Detection Limit

Date Reported: 7/20/2015

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering Client Sample ID: GP-2 23'-24'

 Project:
 Mudge LS #7
 Collection Date: 7/14/2015 10:40:00 AM

 Lab ID:
 1507615-006
 Matrix: SOIL
 Received Date: 7/15/2015 7:00:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG	SE ORGANIC	S			Analys	: KJH
Diesel Range Organics (DRO)	27	10	mg/Kg	1	7/16/2015 12:23:48 PM	20275
Surr: DNOP	112	57.9-140	%REC	1	7/16/2015 12:23:48 PM	20275
EPA METHOD 8015D: GASOLINE RAN	GE				Analys	: NSB
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	7/18/2015 12:21:45 AM	20268
Surr: BFB	93.9	75.4-113	%REC	1	7/18/2015 12:21:45 AM	20268
EPA METHOD 8021B: VOLATILES					Analys	: NSB
Benzene	ND	0.049	mg/Kg	1	7/16/2015 3:45:49 PM	20268
Toluene	ND	0.049	mg/Kg	1	7/16/2015 3:45:49 PM	20268
Ethylbenzene	ND	0.049	mg/Kg	1	7/16/2015 3:45:49 PM	20268
Xylenes, Total	ND	0.098	mg/Kg	1	7/16/2015 3:45:49 PM	20268
Surr: 4-Bromofluorobenzene	97.0	80-120	%REC	1	7/16/2015 3:45:49 PM	20268

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

#### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Page 6 of 13

- P Sample pH Not In Range
- RL Reporting Detection Limit

Date Reported: 7/20/2015

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering Client Sample ID: GP-2 27'-28'

 Project:
 Mudge LS #7
 Collection Date: 7/14/2015 10:45:00 AM

 Lab ID:
 1507615-007
 Matrix: SOIL
 Received Date: 7/15/2015 7:00:00 AM

Analyses	Result	RL Qu	al Units	DF I	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG	E ORGANIC	S			Analyst:	KJH
Diesel Range Organics (DRO)	97	9.5	mg/Kg	1	7/16/2015 12:45:17 PM	20275
Surr: DNOP	116	57.9-140	%REC	1	7/16/2015 12:45:17 PM	20275
EPA METHOD 8015D: GASOLINE RANG	GE				Analyst	NSB
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	7/18/2015 12:50:30 AM	20268
Surr: BFB	93.7	75.4-113	%REC	1	7/18/2015 12:50:30 AM	20268
EPA METHOD 8021B: VOLATILES					Analyst	NSB
Benzene	ND	0.047	mg/Kg	1	7/16/2015 4:14:35 PM	20268
Toluene	ND	0.047	mg/Kg	1	7/16/2015 4:14:35 PM	20268
Ethylbenzene	ND	0.047	mg/Kg	1	7/16/2015 4:14:35 PM	20268
Xylenes, Total	ND	0.095	mg/Kg	1	7/16/2015 4:14:35 PM	20268
Surr: 4-Bromofluorobenzene	95.9	80-120	%REC	1	7/16/2015 4:14:35 PM	20268

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

#### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Page 7 of 13

- P Sample pH Not In Range
- RL Reporting Detection Limit

Date Reported: 7/20/2015

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Blagg Engineering Client Sample ID: GP-2 31'-32'

**Project:** Mudge LS #7 Collection Date: 7/14/2015 10:50:00 AM 1507615-008 Lab ID: Matrix: SOIL Received Date: 7/15/2015 7:00:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG	GE ORGANIC	S			Analys	: KJH
Diesel Range Organics (DRO)	56	10	mg/Kg	1	7/16/2015 1:06:43 PM	20275
Surr: DNOP	121	57.9-140	%REC	1	7/16/2015 1:06:43 PM	20275
EPA METHOD 8015D: GASOLINE RAN	IGE				Analys	: NSB
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	7/18/2015 1:19:13 AM	20268
Surr: BFB	91.2	75.4-113	%REC	1	7/18/2015 1:19:13 AM	20268
<b>EPA METHOD 8021B: VOLATILES</b>					Analys	: NSB
Benzene	ND	0.049	mg/Kg	1	7/16/2015 4:43:26 PM	20268
Toluene	ND	0.049	mg/Kg	1	7/16/2015 4:43:26 PM	20268
Ethylbenzene	ND	0.049	mg/Kg	1	7/16/2015 4:43:26 PM	20268
Xylenes, Total	ND	0.097	mg/Kg	1	7/16/2015 4:43:26 PM	20268
Surr: 4-Bromofluorobenzene	95.4	80-120	%REC	1	7/16/2015 4:43:26 PM	20268

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

#### **Qualifiers:**

- Value exceeds Maximum Contaminant Level.
- Ε Value above quantitation range
- Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- Spike Recovery outside accepted recovery limits
- Analyte detected in the associated Method Blank
- Η Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P

RL

Sample pH Not In Range Reporting Detection Limit

Page 8 of 13

Date Reported: 7/20/2015

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Blagg Engineering Client Sample ID: GP-2 35'-36'

 Project:
 Mudge LS #7
 Collection Date: 7/14/2015 10:55:00 AM

 Lab ID:
 1507615-009
 Matrix: SOIL
 Received Date: 7/15/2015 7:00:00 AM

Analyses	Result	RL Qı	ıal Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG	E ORGANIC	S			Analyst	: KJH
Diesel Range Organics (DRO)	14	9.8	mg/Kg	1	7/16/2015 1:28:10 PM	20275
Surr: DNOP	105	57.9-140	%REC	1	7/16/2015 1:28:10 PM	20275
EPA METHOD 8015D: GASOLINE RAN	GE				Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	7/18/2015 1:47:54 AM	20268
Surr: BFB	94.2	75.4-113	%REC	1	7/18/2015 1:47:54 AM	20268
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.048	mg/Kg	1	7/16/2015 5:12:13 PM	20268
Toluene	ND	0.048	mg/Kg	1	7/16/2015 5:12:13 PM	20268
Ethylbenzene	ND	0.048	mg/Kg	1	7/16/2015 5:12:13 PM	20268
Xylenes, Total	ND	0.096	mg/Kg	1	7/16/2015 5:12:13 PM	20268
Surr: 4-Bromofluorobenzene	96.1	80-120	%REC	1	7/16/2015 5:12:13 PM	20268

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

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- RL Reporting Detection Limit

Page 9 of 13

Date Reported: 7/20/2015

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering Client Sample ID: GP-1A 19'-20'

 Project:
 Mudge LS #7
 Collection Date: 7/14/2015 11:45:00 AM

 Lab ID:
 1507615-010
 Matrix: SOIL
 Received Date: 7/15/2015 7:00:00 AM

Analyses	Result	RL Q	ual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG	E ORGANIC	S			Analyst	: KJH
Diesel Range Organics (DRO)	ND	9.9	mg/Kg	1	7/16/2015 1:49:28 PM	20275
Surr: DNOP	109	57.9-140	%REC	1	7/16/2015 1:49:28 PM	20275
EPA METHOD 8015D: GASOLINE RAN	GE				Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	7/18/2015 2:16:38 AM	20268
Surr: BFB	92.4	75.4-113	%REC	1	7/18/2015 2:16:38 AM	20268
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.049	mg/Kg	1	7/16/2015 5:40:58 PM	20268
Toluene	ND	0.049	mg/Kg	1	7/16/2015 5:40:58 PM	20268
Ethylbenzene	ND	0.049	mg/Kg	1	7/16/2015 5:40:58 PM	20268
Xylenes, Total	ND	0.099	mg/Kg	1	7/16/2015 5:40:58 PM	20268
Surr: 4-Bromofluorobenzene	98.4	80-120	%REC	1	7/16/2015 5:40:58 PM	20268

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

#### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit Page 10 of 13
- P Sample pH Not In Range
- RL Reporting Detection Limit

## Hall Environmental Analysis Laboratory, Inc.

WO#: **1507615 20-Jul-15** 

Client: Blagg Engineering
Project: Mudge LS #7

Sample ID MB-20275 SampType: MBLK TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: **PBS** Batch ID: 20275 RunNo: 27541 Prep Date: 7/15/2015 Analysis Date: 7/16/2015 SeqNo: 826968 Units: mg/Kg Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual

Diesel Range Organics (DRO) ND 10

Surr: DNOP 11 10.00 113 57.9 140

Sample ID LCS-20275 SampType: LCS TestCode: EPA Method 8015M/D: Diesel Range Organics
Client ID: LCSS Batch ID: 20275 RunNo: 27541

Olione 15. 20213 Relative. 21341

Prep Date: 7/15/2015 Analysis Date: 7/16/2015 SeqNo: 826969 Units: mg/Kg

Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Diesel Range Organics (DRO) 62 10 50.00 124 57.4 139 Surr: DNOP 5.6 5.000 57.9 140 113

### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- RL Reporting Detection Limit

Page 11 of 13

## Hall Environmental Analysis Laboratory, Inc.

WO#: **1507615** 

20-Jul-15

Client: Blagg Engineering
Project: Mudge LS #7

Sample ID MB-20268 SampType: MBLK TestCode: EPA Method 8015D: Gasoline Range

Client ID: PBS Batch ID: 20268 RunNo: 27583

Prep Date: 7/15/2015 Analysis Date: 7/17/2015 SeqNo: 828147 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 950 1000 94.8 75.4 113

Sample ID LCS-20268 SampType: LCS TestCode: EPA Method 8015D: Gasoline Range

Client ID: LCSS Batch ID: 20268 RunNo: 27583

Prep Date: 7/15/2015 Analysis Date: 7/17/2015 SeqNo: 828148 Units: mg/Kg

Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Gasoline Range Organics (GRO) 5.0 25.00 0 114 64 130 S

 Surr: BFB
 1100
 1000
 114
 75.4
 113

 Sample ID MB-20287
 SampType: MBLK
 TestCode: EPA Method 8015D: Gasoline Range

Client ID: PBS Batch ID: 20287 RunNo: 27583

Prep Date: 7/16/2015 Analysis Date: 7/18/2015 SeqNo: 828161 Units: %REC

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

Surr: BFB 910 1000 91.5 75.4 113

Sample ID LCS-20287 SampType: LCS TestCode: EPA Method 8015D: Gasoline Range

Client ID: LCSS Batch ID: 20287 RunNo: 27583

Prep Date: 7/16/2015 Analysis Date: 7/18/2015 SeqNo: 828162 Units: %REC

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

Surr: BFB 1000 1000 101 75.4 113

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- RL Reporting Detection Limit

Page 12 of 13

# Hall Environmental Analysis Laboratory, Inc.

WO#: **1507615** 

20-Jul-15

Client: Blagg Engineering
Project: Mudge LS #7

Sample ID MB-20268	SampT	уре: МЕ	BLK	Tes	tCode: E	PA Method	8021B: Volat	tiles		
Client ID: PBS	Batch	h ID: <b>20</b>	268	F	RunNo: 2	7554				
Prep Date: 7/15/2015	Analysis D	Date: 7/	16/2015	S	SeqNo: 8	27291	Units: mg/K	(g		
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	0.98		1.000		97.7	80	120			
Sample ID LCS-20268	SampT	vpe: LC	s	Tes	tCode: El	PA Method	8021B: Volat	iles		

Sample ID LC3-20206	Sampi	уре. с		restoue. EFA Method 6021B. Volatiles						
Client ID: LCSS	Batch	n ID: <b>20</b>	268	F	RunNo: 2	7554				
Prep Date: 7/15/2015	Analysis D	oate: 7/	16/2015	SeqNo: <b>827292</b>			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	103	76.6	128			
Toluene	1.0	0.050	1.000	0	99.7	75	124			
Ethylbenzene	1.0	0.050	1.000	0	103	79.5	126			
Xylenes, Total	3.1	0.10	3.000	0	104	78.8	124			
Surr: 4-Bromofluorobenzene	1.0		1.000		103	80	120			

Sample ID MB-20287	SampT	ype: ME	BLK	Tes	tCode: El	PA Method	8021B: Volat	iles		
Client ID: PBS	Batch	ID: <b>20</b>	287	R	RunNo: 2	7583				
Prep Date: 7/16/2015	Analysis D	ate: 7/	18/2015	S	SeqNo: 8	28197	Units: %RE	С		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.99		1 000		98.7	80	120			

Sample ID LCS-20287	SampT	SampType: LCS TestCode: EPA M				PA Method	8021B: Volat	iles		
Client ID: LCSS	Batch	ID: <b>20</b>	287	R	RunNo: 2	7583				
Prep Date: 7/16/2015	Analysis D	ate: 7/	18/2015	S	SeqNo: 8	28198	Units: %RE	С		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.0		1.000		105	80	120			

#### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- RL Reporting Detection Limit

Page 13 of 13



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

RcptNo: 1 Work Order Number: 1507615 BLAGG Client Name: Received by/date: 7/15/2015 7:00:00 AM Logged By: Lindsay Mangin 7/15/2015 B:37:41 AM Completed By: Lindsay Mangin Reviewed By: 01515 Chain of Custody Not Present V Yes No Custody seals intact on sample bottles? No Not Present Yes V 2. Is Chain of Custody complete? Courier 3. How was the sample delivered? Log In No NA \_ 4. Was an attempt made to cool the samples? NA 🗌 No 5. Were all samples received at a temperature of >0° C to 6.0°C Yes V Yes 🗸 No 🗌 Sample(s) in proper container(s)? No Sufficient sample volume for indicated test(s)? No \_ 8. Are samples (except VOA and ONG) properly preserved? NA No V Yes 9. Was preservative added to bottles? No VOA Vials ✓ Yes No \_ 10. VOA vials have zero headspace? Yes 🗌 No V 11. Were any sample containers received broken? # of preserved bottles checked No 🗌 for pH: Yes 🗸 12. Does paperwork match bottle labels? (<2 or >12 unless noted) (Note discrepancies on chain of custody) Adjusted? No 🗌 Yes V 13. Are matrices correctly identified on Chain of Custody? No 14 Is it clear what analyses were requested? No 🗆 Checked by: Yes V 15. Were all holding times able to be met? (If no, notify customer for authorization.) Special Handling (if applicable) Yes NA V No L 16. Was client notified of all discrepancies with this order? Date Person Notified: In Person Via: eMail Phone Fax By Whom: Regarding: Client Instructions: 17. Additional remarks: 18. Cooler Information Cooler No Temp °C Condition | Seal Intact | Seal No Seal Date Signed By 1.1 Good Yes

	LABORATORY				J, 2.11		.55	eldmes etis		isoc	Grab sam														47 of 2	
ENVIRONMENTAL	BORA	moo.	Albuqueraue, NM 87109		Fax 505-345-4107	it.				40000		N etsatiN												80128	BILL DIRECTLY TO BP: Left Deare, 200 Energy Court, Earmington, NM 87401	
8	3	ental	Jue.	( )	5-345	sanba		- 100	1.65	10000		Iron, Ferro	$\dashv$			$\dashv$	$\dashv$	-	+	+	$\dashv$	+	+	1	ingto	
Z	IS	www.hallenvironmental.com	guero		3x 50	Analysis Request	(*0				_	Anions (F,						1	1	+	1	$\exists$		126	Farm	
E	ANALYSIS	allenv	Albi			Analy	2.00			-		RCRA 8 M												3	Š	ME
HALL	¥	w.ha	I H	:	3975	1		(sv				) HA9							_	_	_	_	_	4 DRC	O BP:	OIRE
Ĭ	A	\$	wkins		-345-				_			TPH (Meth			-	$\vdash$		-	$\dashv$	+	$\dashv$	$\dashv$	+	980	TLY TO	ZEVH
厦			4901 Hawkins NF	1	Tel. 505-345-3975		5	<del>(000</del> /				82108 H9T	>	>	>	>	\	2	5	>	>	>			BILL DIRECTLY TO BP:	Paykey: ZEVHO1REME
			490	1	Tel		4-					3TM + X3T8												Remarks:	BILL	Payke
				_			(8	(80516	+	VI.	30.	BTEX + MT	>	1	>	>	>	>	>	>	>	>	+	Re		
			オン					de	W 2373	ON 🗆		HEAL NO.	100-	-02	-MB	hos-	B	all	-00±	98	93	010		Date Time	1×6700	Date Time
ime:	□ Rush		57				116	F Busse	NELSON VE		rature: / ,	Preservative Type	Cool	Cool	Cool	Cool	Cool	Cool	Cool	Car	Cool	Cool			- 07/15	
I urn-Around	X Standard	Project Name:	RESORT		Project #:		Project Manager:	甚	Sampler: NE	20,000	Sample Temperature:	Container Type and #	402-1	7-204	1-204	1-204	10-204	7-20/	T-20h	402-1	402-1	402-1		Received by	*	Received by:
					413			Level 4 (Full Validation)				Sample Request ID	, 42 -, 82	27-28	3(- 32	12,	107-101	13-24	187-12	31-32	32-38,	19-20				
Chain-of-Custody Record	BLAGG ENGR. / BP AMERICA		107	/8/	BLOOMFIELD, NM 87413	2-1199		Level 4 (Fu				Sample	GP-1	GP-1	GP-1	GP-1	8-30	6-9-2	86-95	4692	からん	GP-1A		ed by:	Int	ed by: C
f-Cus	S ENGR.		000	P.O. BOX 8/	BLOOM	(505) 632-1199				Other		Matrix	2017	7105	1/0>	7/05	70/1	7/05	7/05	7/05				Relinquished by:		Relinquished by:
ain-c	BLAG		92000	diess.			ax#:	kage:	.uu.		(hd)	Time	2180	0920	2280	8160	1035	0,001	5401	1050	1055	1145		Time:		Time:
Chain	lient:	Imo	LA Failie	ovidilling AC	2/11	/202	*mail or Fax#:	S: A/QC Package:	-coreditation	□ NELAP			2/14/15		X	1.		2/14/15	1/2	1/5	Shill	Shulls		Date:	2/14/12	Date:



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

October 19, 2016

Jeff Blagg Blagg Engineering P. O. Box 87 Bloomfield, NM 87413

TEL: (505) 632-1199 FAX (505) 632-3903

RE: Mudge LS 7 OrderNo.: 1610689

#### Dear Jeff Blagg:

Hall Environmental Analysis Laboratory received 2 sample(s) on 10/14/2016 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 <a href="www.hallenvironmental.com">www.hallenvironmental.com</a> 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 Freeman

Laboratory Manager

andy

4901 Hawkins NE

Albuquerque, NM 87109

Date Reported: 10/19/2016

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering Client Sample ID: GP3 @ 23'-24'

 Project:
 Mudge LS 7
 Collection Date: 10/13/2016 9:15:00 AM

 Lab ID:
 1610689-001
 Matrix: SOIL
 Received Date: 10/14/2016 7:15:00 AM

Analyses	Result	PQL (	Qual 1	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG	E ORGANIC	S				Analys	st: TOM
Diesel Range Organics (DRO)	31	10		mg/Kg	1	10/17/2016 7:27:11 P	M 28076
Surr: DNOP	94.6	70-130		%Rec	1	10/17/2016 7:27:11 P	M 28076
EPA METHOD 8015D: GASOLINE RANG	<b>GE</b>					Analys	st: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	10/18/2016 3:41:49 P	M 28072
Surr: BFB	153	68.3-144	S	%Rec	1	10/18/2016 3:41:49 P	M 28072

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

Qualifiers: \* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

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 Page 1 of 4

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

Sample container temperature is out of limit as specified

Date Reported: 10/19/2016

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering Client Sample ID: GP3 @ 27'-28'

 Project:
 Mudge LS 7
 Collection Date: 10/13/2016 9:19:00 AM

 Lab ID:
 1610689-002
 Matrix: SOIL
 Received Date: 10/14/2016 7:15:00 AM

Analyses	Result	PQL (	Qual	Units	DF Date Analyzed Bate	ch
EPA METHOD 8015M/D: DIESEL RANG	E ORGANIC	s			Analyst: TON	И
Diesel Range Organics (DRO)	45	9.4		mg/Kg	1 10/17/2016 7:48:43 PM 2807	76
Surr: DNOP	93.0	70-130		%Rec	1 10/17/2016 7:48:43 PM 2807	76
EPA METHOD 8015D: GASOLINE RANG	<b>GE</b>				Analyst: NSE	3
Gasoline Range Organics (GRO)	9.0	4.8		mg/Kg	1 10/18/2016 4:54:03 PM 2807	72
Surr: BFB	168	68.3-144	S	%Rec	1 10/18/2016 4:54:03 PM 2807	72

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

**Qualifiers:** Value exceeds Maximum Contaminant Level. Analyte detected in the associated Method Blank D Sample Diluted Due to Matrix Е Value above quantitation range Analyte detected below quantitation limits Page 2 of 4 Н Holding times for preparation or analysis exceeded J ND Not Detected at the Reporting Limit P Sample pH Not In Range R RPD outside accepted recovery limits RLReporting Detection Limit

% Recovery outside of range due to dilution or matrix

### Hall Environmental Analysis Laboratory, Inc.

WO#: **1610689 19-Oct-16** 

Qual

Client: Blagg Engineering
Project: Mudge LS 7

Sample ID LCS-28085 SampType: LCS TestCode: EPA Method 8015M/D: Diesel Range Organics

Client ID: LCSS Batch ID: 28085 RunNo: 37982

Prep Date: 10/17/2016 Analysis Date: 10/17/2016 SeqNo: 1183862 Units: %Rec

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

Surr: DNOP 4.7 5.000 94.5 70 130

Sample ID MB-28085 SampType: MBLK TestCode: EPA Method 8015M/D: Diesel Range Organics
Client ID: PBS Batch ID: 28085 RunNo: 37982
Prep Date: 10/17/2016 Analysis Date: 10/17/2016 SeqNo: 1183863 Units: %Rec

 Analyte
 Result
 PQL
 SPK value
 SPK Ref Val
 %REC
 LowLimit
 HighLimit

 Surr: DNOP
 8.9
 10.00
 89.5
 70
 130

Sample ID MB-28076 SampType: MBLK TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: **PBS** Batch ID: 28076 RunNo: 37981 Prep Date: Analysis Date: 10/17/2016 10/14/2016 SeqNo: 1184449 Units: mg/Kg Result SPK value SPK Ref Val %REC %RPD **RPDLimit** Analyte PQL LowLimit HighLimit Qual Diesel Range Organics (DRO) ND 10

Surr: DNOP 8.6 10.00 85.7 70 130

Sample ID LCS-28076 SampType: LCS TestCode: EPA Method 8015M/D: Diesel Range Organics

Client ID: LCSS Batch ID: 28076 RunNo: 38007

4.4

Prep Date: 10/14/2016 Analysis Date: 10/18/2016 SeqNo: 1184792 Units: mg/Kg

5.000

%REC %RPD Analyte Result **PQL** SPK value SPK Ref Val LowLimit HighLimit **RPDLimit** Qual Diesel Range Organics (DRO) 45 10 50.00 0 89.2 62.6 124

88.8

70

130

Qualifiers:

Surr: DNOP

\* 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

Page 3 of 4

%RPD

**RPDLimit** 

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.

WO#: **1610689 19-Oct-16** 

Client: Blagg Engineering
Project: Mudge LS 7

Sample ID MB-28072 SampType: MBLK TestCode: EPA Method 8015D: Gasoline Range

Client ID: PBS Batch ID: 28072 RunNo: 38021

Prep Date: 10/14/2016 Analysis Date: 10/18/2016 SeqNo: 1185981 Units: mg/Kg

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

Gasoline Range Organics (GRO) ND 5.0

Surr: BFB 840 1000 84.1 68.3 144

Sample ID LCS-28072 SampType: LCS TestCode: EPA Method 8015D: Gasoline Range

Client ID: LCSS Batch ID: 28072 RunNo: 38021

930

Prep Date: 10/14/2016 Analysis Date: 10/18/2016 SeqNo: 1185995 Units: mg/Kg

1000

Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Gasoline Range Organics (GRO) 27 5.0 25.00 0 106 74.6 123

92.8

68.3

144

#### Qualifiers:

Surr: BFB

- \* 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

minant Level. B Analyte detected in the associated Method Blank

Page 4 of 4



4901 Hawkins NE Albuquerque, NM 87109

# Sample Log-In Check List

TEL: 505-345-3975 FAX: 505-345-4107 Website: www.hallenvironmental.com

Clier	nt Name:	BLAGG	0	Work (	rder Num	per: 1610	689			RcptNo:	1
Rece	ived by/dat		1/1	10	114	HV				.,	
Logge	ed By:	Ashley Gal	legos	10/14/20	16 7:15:00	AM		A			
Comp	oleted By:	Ashley Gal	legos	10/14/20	16 9:13:14	AM		A			
Revie	wed By:	¥ 1	0/14/16					<b>,</b>			
<u>Chai</u>	n of Cus	tody									
1. C	ustody sea	ils intact on sa	mple bottles?			Yes		No		Not Present 🗹	
2. Is	Chain of C	Custody comp	lete?			Yes	✓	No		Not Present	
3. H	low was the	e sample deliv	ered?			Cou	<u>ier</u>				
<u>Log</u>	<u>In</u>										
4. v	Vas an atte	empt made to	cool the samp	les?		Yes	✓	No		NA 🗆	
5. v	Vere all sar	nples received	l at a tempera	ture of >0° C	to 6.0°C	Yes	<b>~</b>	No [		NA $\square$	
6. s	Sample(s) ir	n proper conta	iner(s)?			Yes	. 🗸	No			
7. S	ufficient sa	mple volume :	for indicated te	est(s)?		Yes	<b>✓</b>	No			
8. A	re samples	(except VOA	and ONG) pro	perly preserve	∍d?	Yes	<b>~</b>	No			
9. W	Vas preserv	ative added to	bottles?			Yes		No	✓	NA 🗆	
10.v	OA vials ha	ave zero head	space?			Yes		No		No VOA Vials	
11. V	Vere any sa	ample contain	ers received b	roken?		Yes		No	✓	# of preserved	
		work match bo pancies on ch		)		Yes	✓	No		bottles checked for pH: (<2 c	or >12 unless noted)
13. A	re matrices	correctly ider	ntified on Chai	n of Custody?		Yes		No		Adjusted? _	
		at analyses w		?		Yes		No			
		ding times able customer for a				Yes	<b>✓</b>	No		Checked by:	
Spec	ial Hand	lling (if app	olicable)								
16. v	Vas client n	otified of all di	screpancies w	ith this order?		Yes		No		NA 🗸	_
	Person	n Notified:			Date	,		· · · · · · · · · · · · · · · · · · ·			
	By Wh	nom:			Via:	☐ eM	ail 🗌	Phone _	Fax	☐ In Person	
	Regard	ding:	The state of the s							A CANDAGO TATE TO	
	Client	Instructions:									
17. /	Additional re	emarks:									
18. <u>g</u>	Cooler Info		1	1 -	1 - '	l _				1	
	Cooler N	-	Condition	Seal Intact	Seal No	Seal D	ate	Signed B	Ву		
	1'	2.0	Good	Yes	j	l	<u>.</u> İ				
								<del></del>		<u> </u>	

Received by OCD: 3/26/20	021 9:35:52 AM			Page 154 of
	Air Bubbles (Y or N)			~ 秀宗
HALL ENVIRONMENTAL ANALYSIS LABORATORY www.hallenvironmental.com kins NE - Albuquerque, NM 87109 345-3975 Fax 505-345-4107 Analysis Request	GRAB SAMPLE		7	CNOSKAL KITCHKI
<u> </u>			-	 eport.
				STEVE JOHN
<b>A</b> 3710	() (O V -IIII)O) O 120			
<b>B</b> Com NIM 8 NIM 8 5-41	(AOV) 803S8 (AOV-im98) 07S8			OJCY OJCY ARCY ated on the a
IALL ENVIRONMENT, NALYSIS LABORATO www.hallenvironmental.com ins NE - Albuquerque, NM 87109 15-3975 Fax 505-345-4107 Analysis Request	8081 Pesticides / 8082 PCB's			्रे द्वि
VII S   nme uerq				S P C C C C C C C C C C C C C C C C C C
ENVER SIN	RCRA 8 Metals Anions (F,Cl,NO <sub>3</sub> ,NO <sub>2</sub> ,PO <sub>4</sub> ,SO <sub>4</sub> )			
LYLaller	PAH's (8310 or 8270 SIMS)			1 2 2 3 1 w iw
ANAL ANAL ANAL www.hall 4901 Hawkins NE - Tel. 505-345-3975	EDB (Method 504.1)			ACGRO NORTHW VORTHW
M wykins				TPH C MECSUY : VOH : VOH : VOH
Hav	TPH 8015B (GRO / DRO <del>7 MRO)</del> S (1.814)			SS. TPH C  MRECTUY  VOL  SY: Ver
1901 Tel.	BLEX + MTBE + TPH (Gas only)			Remarks: 7  But UN  payKEY:  cossibility. Any s
	BTEX + MTBE + TMB's (8021)			Remark  BILL  DATE  Sessibility.
	(pood) 1dr12 3d27 (d22			This p
			$ \tilde{\omega} $	Time Time shortice of
	FZ HEAL NO.	Q	$ \beta $	Time Time
				Date Date Date
+	VELEZ VELEZ D No B No HE.			S. S. S. S. S. S. S. S. S. S. S. S. S. S
ج ا				trong A
Rush	Servati Type	C001		ALL IO I IO I IO I IO I IO I IO I IO I I
.:	ager: を存す & (人をよう) 人をようか 人をようか 内容 ves mperature: こ。 Type	3	Cost	l diffee
Turn-Around Time:  A Standard  Project Name:  MUDE		7		- B
Turn-Around T Standard Project Name: MuD (	roject Mana Sampler: / Sample Tem Sample Tem Container			Ived by:
Turn-Arou	Project M Sampler: Sample Contain	402	402.	Received by Received by Annual R
		<del>   </del>	7	 abconti
		~ ~	787	ns aq /
Record American	Level 4 (Full Validation	72-		ial may
M M M	Sequence of the sequence of th	23	2	mmenl
3y Rec 8P Am 87 874 (3	9e F	6)		
क क कि ति विक्रम	amp	3	[M]	E G
SS SS SS SS SS SS SS SS SS SS SS SS SS	<b>り</b>	GP3	683	Ished by:  Maked by:
F-Custody  ENSER.   BP  P.O. BOX 87  D. NM 87	'l   a   <del></del>	<b></b>		Tuishe Pulsh
1 - of - of - of - of - of - of - of - o	Othe	3016	2016	Relinquished by: Relinquished by:
Chain-of-Custody Record  t: BLAGG ENER.   BP AMERICE  ING Address: P.O. BOX 87  SLOOMFIELD, NM 87413  COX 220 - 1183			<del></del>	any, si
S S S	Fax#: ackage: lard ation (Type) Time	5160	6160	Time: Relinquished by: Time: Relinquished by: Time: Relinquished by:  Tout of Mark Walk  Tout of Mark Walk  The cossary, symples submitted to Hall Environmental may be subcontracted to other accredited
	And the first of t	3//6	13/18	
Released to Imaging: 3/14	72024 7:37:33 AM	K2) I	1~2~ I I	 [2] (E) (C)



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

October 28, 2016

Jeff Blagg Blagg Engineering P. O. Box 87 Bloomfield, NM 87413

TEL: (505) 632-1199 FAX (505) 632-3903

RE: Mudge LS 7 OrderNo.: 1610842

#### Dear Jeff Blagg:

Hall Environmental Analysis Laboratory received 7 sample(s) on 10/18/2016 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 <a href="www.hallenvironmental.com">www.hallenvironmental.com</a> 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 Freeman

Laboratory Manager

andy

4901 Hawkins NE

Albuquerque, NM 87109

Date Reported: 10/28/2016

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering Client Sample ID: GP-4 @ 19'-20'

 Project:
 Mudge LS 7
 Collection Date: 10/13/2016 10:20:00 AM

 Lab ID:
 1610842-001
 Matrix: SOIL
 Received Date: 10/18/2016 8:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed Batch
EPA METHOD 300.0: ANIONS					Analyst: <b>LGT</b>
Chloride	57	30	mg/Kg	20	10/26/2016 7:28:24 PM 28282
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANIC	S			Analyst: TOM
Diesel Range Organics (DRO)	ND	9.7	mg/Kg	1	10/20/2016 9:37:18 AM 28168
Surr: DNOP	85.2	70-130	%Rec	1	10/20/2016 9:37:18 AM 28168
EPA METHOD 8015D: GASOLINE RAM	NGE				Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	10/19/2016 11:14:39 AM 28132
Surr: BFB	84.5	68.3-144	%Rec	1	10/19/2016 11:14:39 AM 28132
EPA METHOD 8021B: VOLATILES					Analyst: NSB
Benzene	ND	0.025	mg/Kg	1	10/19/2016 11:14:39 AM 28132
Toluene	ND	0.049	mg/Kg	1	10/19/2016 11:14:39 AM 28132
Ethylbenzene	ND	0.049	mg/Kg	1	10/19/2016 11:14:39 AM 28132
Xylenes, Total	ND	0.098	mg/Kg	1	10/19/2016 11:14:39 AM 28132
Surr: 4-Bromofluorobenzene	98.0	80-120	%Rec	1	10/19/2016 11:14:39 AM 28132

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

- 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
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 1 of 11
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Sample container temperature is out of limit as specified

Date Reported: 10/28/2016

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering Client Sample ID: GP-4 @ 23'-24'

 Project:
 Mudge LS 7
 Collection Date: 10/13/2016 10:25:00 AM

 Lab ID:
 1610842-002
 Matrix: SOIL
 Received Date: 10/18/2016 8:00:00 AM

Analyses	Result	PQL (	Qual	Units	DF	<b>Date Analyzed</b>	Batch
EPA METHOD 300.0: ANIONS						Analyst:	LGT
Chloride	500	30		mg/Kg	20	10/26/2016 8:05:39 PM	28282
EPA METHOD 8015M/D: DIESEL RANG	E ORGANIC	S				Analyst:	TOM
Diesel Range Organics (DRO)	220	10		mg/Kg	1	10/20/2016 9:58:39 AM	28168
Surr: DNOP	86.2	70-130		%Rec	1	10/20/2016 9:58:39 AM	28168
EPA METHOD 8015D: GASOLINE RANG	GE					Analyst:	NSB
Gasoline Range Organics (GRO)	ND	23	D	mg/Kg	5	10/19/2016 12:27:42 PM	28132
Surr: BFB	97.7	68.3-144	D	%Rec	5	10/19/2016 12:27:42 PM	28132
EPA METHOD 8021B: VOLATILES						Analyst:	NSB
Benzene	ND	0.12	D	mg/Kg	5	10/19/2016 12:27:42 PM	28132
Toluene	ND	0.23	D	mg/Kg	5	10/19/2016 12:27:42 PM	28132
Ethylbenzene	ND	0.23	D	mg/Kg	5	10/19/2016 12:27:42 PM	28132
Xylenes, Total	ND	0.47	D	mg/Kg	5	10/19/2016 12:27:42 PM	28132
Surr: 4-Bromofluorobenzene	100	80-120	D	%Rec	5	10/19/2016 12:27:42 PM	28132

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

**Qualifiers:** Value exceeds Maximum Contaminant Level. Analyte detected in the associated Method Blank D Sample Diluted Due to Matrix Е Value above quantitation range Analyte detected below quantitation limits Page 2 of 11 Holding times for preparation or analysis exceeded Н J ND Not Detected at the Reporting Limit P Sample pH Not In Range R RPD outside accepted recovery limits RLReporting Detection Limit

% Recovery outside of range due to dilution or matrix

Date Reported: 10/28/2016

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering Client Sample ID: GP-4 @ 31'-32'

 Project:
 Mudge LS 7
 Collection Date: 10/13/2016 10:31:00 AM

 Lab ID:
 1610842-003
 Matrix: SOIL
 Received Date: 10/18/2016 8:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed Batch
EPA METHOD 300.0: ANIONS					Analyst: <b>LGT</b>
Chloride	230	30	mg/Kg	20	10/26/2016 8:18:03 PM 28282
EPA METHOD 8015M/D: DIESEL RANG	SE ORGANIC	S			Analyst: TOM
Diesel Range Organics (DRO)	ND	9.3	mg/Kg	1	10/20/2016 10:20:15 AM 28168
Surr: DNOP	88.9	70-130	%Rec	1	10/20/2016 10:20:15 AM 28168
EPA METHOD 8015D: GASOLINE RAN	GE				Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	10/19/2016 1:40:18 PM 28132
Surr: BFB	87.8	68.3-144	%Rec	1	10/19/2016 1:40:18 PM 28132
EPA METHOD 8021B: VOLATILES					Analyst: NSB
Benzene	ND	0.024	mg/Kg	1	10/19/2016 1:40:18 PM 28132
Toluene	ND	0.049	mg/Kg	1	10/19/2016 1:40:18 PM 28132
Ethylbenzene	ND	0.049	mg/Kg	1	10/19/2016 1:40:18 PM 28132
Xylenes, Total	ND	0.098	mg/Kg	1	10/19/2016 1:40:18 PM 28132
Surr: 4-Bromofluorobenzene	103	80-120	%Rec	1	10/19/2016 1:40:18 PM 28132

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

- 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
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 3 of 11
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Date Reported: 10/28/2016

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering Client Sample ID: GP-5 @ 19'-20'

 Project:
 Mudge LS 7
 Collection Date: 10/13/2016 12:27:00 PM

 Lab ID:
 1610842-004
 Matrix: SOIL
 Received Date: 10/18/2016 8:00:00 AM

Analyses	Result	PQL Qua	al Units	DF	Date Analyzed Batch
EPA METHOD 300.0: ANIONS					Analyst: <b>LGT</b>
Chloride	180	30	mg/Kg	20	10/26/2016 8:30:28 PM 28282
EPA METHOD 8015M/D: DIESEL RANGI	E ORGANIC	S			Analyst: TOM
Diesel Range Organics (DRO)	ND	9.6	mg/Kg	1	10/20/2016 10:41:50 AM 28168
Surr: DNOP	87.2	70-130	%Rec	1	10/20/2016 10:41:50 AM 28168
EPA METHOD 8015D: GASOLINE RANG	iΕ				Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	10/19/2016 2:04:29 PM 28132
Surr: BFB	89.5	68.3-144	%Rec	1	10/19/2016 2:04:29 PM 28132
EPA METHOD 8021B: VOLATILES					Analyst: <b>NSB</b>
Benzene	ND	0.024	mg/Kg	1	10/19/2016 2:04:29 PM 28132
Toluene	ND	0.047	mg/Kg	1	10/19/2016 2:04:29 PM 28132
Ethylbenzene	ND	0.047	mg/Kg	1	10/19/2016 2:04:29 PM 28132
Xylenes, Total	ND	0.095	mg/Kg	1	10/19/2016 2:04:29 PM 28132
Surr: 4-Bromofluorobenzene	106	80-120	%Rec	1	10/19/2016 2:04:29 PM 28132

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

- \* 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 Page 4 of 11
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Date Reported: 10/28/2016

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering Client Sample ID: GP-5 @ 35'-36'

 Project:
 Mudge LS 7
 Collection Date: 10/13/2016 1:47:00 PM

 Lab ID:
 1610842-005
 Matrix: SOIL
 Received Date: 10/18/2016 8:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS					Analy	st: <b>LGT</b>
Chloride	ND	30	mg/Kg	20	10/26/2016 9:07:43 P	M 28282
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANIC	S			Analy	st: TOM
Diesel Range Organics (DRO)	ND	9.8	mg/Kg	1	10/20/2016 1:56:07 P	M 28168
Surr: DNOP	84.1	70-130	%Rec	1	10/20/2016 1:56:07 P	M 28168
EPA METHOD 8015D: GASOLINE RAI	NGE				Analy	st: NSB
Gasoline Range Organics (GRO)	ND	4.6	mg/Kg	1	10/19/2016 2:28:39 P	M 28132
Surr: BFB	85.2	68.3-144	%Rec	1	10/19/2016 2:28:39 P	M 28132
EPA METHOD 8021B: VOLATILES					Analy	st: NSB
Benzene	ND	0.023	mg/Kg	1	10/19/2016 2:28:39 P	M 28132
Toluene	ND	0.046	mg/Kg	1	10/19/2016 2:28:39 P	M 28132
Ethylbenzene	ND	0.046	mg/Kg	1	10/19/2016 2:28:39 P	M 28132
Xylenes, Total	ND	0.092	mg/Kg	1	10/19/2016 2:28:39 P	M 28132
Surr: 4-Bromofluorobenzene	98.6	80-120	%Rec	1	10/19/2016 2:28:39 P	M 28132

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

- \* 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 Page 5 of 11
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Date Reported: 10/28/2016

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering Client Sample ID: GP-6 @ 23'-24'

 Project:
 Mudge LS 7
 Collection Date: 10/13/2016 2:28:00 PM

 Lab ID:
 1610842-006
 Matrix: SOIL
 Received Date: 10/18/2016 8:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS					Analy	st: <b>LGT</b>
Chloride	500	30	mg/Kg	20	10/26/2016 9:20:07 P	M 28282
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANIC	S			Analy	st: TOM
Diesel Range Organics (DRO)	ND	9.7	mg/Kg	1	10/20/2016 2:17:58 P	M 28168
Surr: DNOP	83.9	70-130	%Rec	1	10/20/2016 2:17:58 P	M 28168
EPA METHOD 8015D: GASOLINE RAI	NGE				Analy	st: NSB
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	10/19/2016 2:53:06 P	M 28132
Surr: BFB	84.9	68.3-144	%Rec	1	10/19/2016 2:53:06 P	M 28132
EPA METHOD 8021B: VOLATILES					Analy	st: NSB
Benzene	ND	0.024	mg/Kg	1	10/19/2016 2:53:06 P	M 28132
Toluene	ND	0.048	mg/Kg	1	10/19/2016 2:53:06 P	M 28132
Ethylbenzene	ND	0.048	mg/Kg	1	10/19/2016 2:53:06 P	M 28132
Xylenes, Total	ND	0.095	mg/Kg	1	10/19/2016 2:53:06 P	M 28132
Surr: 4-Bromofluorobenzene	98.3	80-120	%Rec	1	10/19/2016 2:53:06 P	M 28132

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

- 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
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 6 of 11
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Date Reported: 10/28/2016

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering Client Sample ID: GP-6 @ 31'-32'

 Project:
 Mudge LS 7
 Collection Date: 10/13/2016 2:35:00 PM

 Lab ID:
 1610842-007
 Matrix: SOIL
 Received Date: 10/18/2016 8:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS					Analy	st: <b>LGT</b>
Chloride	260	30	mg/Kg	20	10/26/2016 9:32:32 P	M 28282
EPA METHOD 8015M/D: DIESEL RAM	IGE ORGANIC	S			Analys	st: TOM
Diesel Range Organics (DRO)	ND	9.6	mg/Kg	1	10/20/2016 2:39:34 P	M 28168
Surr: DNOP	80.6	70-130	%Rec	1	10/20/2016 2:39:34 P	M 28168
EPA METHOD 8015D: GASOLINE RA	NGE				Analys	st: NSB
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	10/19/2016 3:17:36 P	M 28132
Surr: BFB	87.9	68.3-144	%Rec	1	10/19/2016 3:17:36 P	M 28132
EPA METHOD 8021B: VOLATILES					Analys	st: NSB
Benzene	ND	0.024	mg/Kg	1	10/19/2016 3:17:36 P	M 28132
Toluene	ND	0.048	mg/Kg	1	10/19/2016 3:17:36 P	M 28132
Ethylbenzene	ND	0.048	mg/Kg	1	10/19/2016 3:17:36 P	M 28132
Xylenes, Total	ND	0.096	mg/Kg	1	10/19/2016 3:17:36 P	M 28132
Surr: 4-Bromofluorobenzene	103	80-120	%Rec	1	10/19/2016 3:17:36 P	M 28132

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

- \* 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 Page 7 of 11
- 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.

WO#: **1610842** 

28-Oct-16

Client: Blagg Engineering
Project: Mudge LS 7

Sample ID MB-28282 SampType: MBLK TestCode: EPA Method 300.0: Anions

Client ID: PBS Batch ID: 28282 RunNo: 38270

Prep Date: 10/25/2016 Analysis Date: 10/26/2016 SeqNo: 1194409 Units: mg/Kg

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

Chloride ND 1.5

Sample ID LCS-28282 SampType: LCS TestCode: EPA Method 300.0: Anions

Client ID: LCSS Batch ID: 28282 RunNo: 38270

Prep Date: 10/25/2016 Analysis Date: 10/26/2016 SeqNo: 1194410 Units: mg/Kg

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

Chloride 15 1.5 15.00 0 97.7 90 110

#### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- 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

Reporting Detection Limit

- J Analyte detected below quantitation limits
- P Sample pH Not In Range

RL

W Sample container temperature is out of limit as specified

Page 8 of 11

### Hall Environmental Analysis Laboratory, Inc.

WO#: 1610842 28-Oct-16

**Client:** Blagg Engineering **Project:** Mudge LS 7

Sample ID MB-28168 SampType: MBLK TestCode: EPA Method 8015M/D: Diesel Range Organics

Client ID: **PBS** Batch ID: 28168 RunNo: 38067

Prep Date: 10/19/2016 Analysis Date: 10/20/2016 SeqNo: 1187499 Units: mg/Kg

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

Diesel Range Organics (DRO) ND 10

Surr: DNOP 10.00 86.6 70 8.7 130

Sample ID LCS-28168 SampType: LCS TestCode: EPA Method 8015M/D: Diesel Range Organics

Client ID: LCSS Batch ID: 28168 RunNo: 38067

Prep Date: Analysis Date: 10/20/2016 SeqNo: 1188812 10/19/2016 Units: mg/Kg

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

Diesel Range Organics (DRO) 48 10 50.00 96.7 62.6 124 Surr: DNOP 5.000 86.8 4.3 70 130

#### Qualifiers:

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

Page 9 of 11

Released to Imaging: 3/14/2024 7:37:33 AM

# Hall Environmental Analysis Laboratory, Inc.

WO#: **1610842** 

28-Oct-16

Client: Blagg Engineering
Project: Mudge LS 7

Sample ID MB-28132 SampType: MBLK TestCode: EPA Method 8015D: Gasoline Range

Client ID: PBS Batch ID: 28132 RunNo: 38052

Prep Date: 10/18/2016 Analysis Date: 10/19/2016 SeqNo: 1186959 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 910 1000 91.1 68.3 144

Sample ID LCS-28132 SampType: LCS TestCode: EPA Method 8015D: Gasoline Range

Client ID: LCSS Batch ID: 28132 RunNo: 38052

950

Prep Date: 10/18/2016 Analysis Date: 10/19/2016 SeqNo: 1186960 Units: mg/Kg

1000

Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Gasoline Range Organics (GRO) 27 5.0 25.00 0 107 74.6 123

68.3

94.9

144

#### Qualifiers:

Surr: BFB

- \* 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 10 of 11

7.22 434

# Hall Environmental Analysis Laboratory, Inc.

1.1

WO#: **1610842** 

28-Oct-16

Client: Blagg Engineering
Project: Mudge LS 7

Surr: 4-Bromofluorobenzene

Sample ID MB-28132 SampType: MBLK TestCode: EPA Method 8021B: Volatiles Client ID: **PBS** Batch ID: 28132 RunNo: 38052 Prep Date: 10/18/2016 Analysis Date: 10/19/2016 SeqNo: 1187007 Units: mg/Kg Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Benzene ND 0.025 ND 0.050 Toluene ND 0.050 Ethylbenzene Xylenes, Total ND 0.10

106

80

120

1.000

Sample ID LCS-28132	Samp	Type: <b>LC</b>	s	Tes	tCode: E	PA Method	8021B: Vola	tiles		
Client ID: LCSS	Batc	h ID: 28	132	F	RunNo: 3	8052				
Prep Date: 10/18/2016	Analysis [	Date: 10	0/19/2016	S	SeqNo: 1	187008	Units: mg/k	ίg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.90	0.025	1.000	0	90.1	75.2	115			
Toluene	0.85	0.050	1.000	0	85.1	80.7	112			
Ethylbenzene	0.86	0.050	1.000	0	85.8	78.9	117			
Xylenes, Total	2.7	0.10	3.000	0	90.1	79.2	115			
Surr: 4-Bromofluorobenzene	0.96		1.000		95.9	80	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

Released to Imaging: 3/14/2024 7:37:33 AM



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 N	Number: 16108	342		RcptNo:	1
Received by/d	late: AT /	0/18/16		-		····	
Logged By:	Anne Thorne	10/18/2016 8:0	0:00 AM		anne Am	· ·	
Completed By	: Anne Thorne	10/18/2016			Anne Stra Anne Stra		
Reviewed By:	FC 10/1	8/16				_	
Chain of Cu							
1. Custody se	eals intact on samp	ole bottles?	Yes		No 🗌	Not Present 🗹	
2. Is Chain of	f Custody complete	?	Yes	<b>✓</b>	No $\square$	Not Present	
3. How was t	he sample delivere	d?	Cour	<u>ier</u>		•	
<u>Log In</u>		•					
4. Was an at	ttempt made to coo	I the samples?	Yes	V	No 🗆	NA $\square$	
5. Were all s	amples received at	a temperature of >0° C to 6.0°	C Yes	<b>✓</b>	No 🗌	NA	
6. Sample(s)	) in proper containe	r(s)?	Yes	<b>~</b>	No 🗌		
7. Sufficient s	sample volume for	indicated test(s)?	Yes	<b>✓</b>	No 🗌		
8. Are sample	es (except VOA and	d ONG) properly preserved?	Yes	V	No 🗆		
9. Was prese	ervative added to bo	ottles?	Yes		No 🗹	NA 🗆	
10.VOA vials	have zero headspa	ce?	Yes		No 🗌	No VOA Vials	
11. Were any	sample containers	received broken?	Yes		No 🗹	# of preserved	
	erwork match bottle repancies on chain		Yes	<b>✓</b>	No 🗆	bottles checked for pH:	r >12 unless noted)
		ed on Chain of Custody?	Yes	<b>Y</b>	No 🗌	Adjusted?	·
14. Is it clear w	vhat analyses were	requested?	Yes	✓	No 🗆		
	olding times able to fy customer for auth		Yes	<b>✓</b>	No 🗆	Checked by:	
Special Han	dling (if applic	rable)					
16. Was client	notified of all discre	epancies with this order?	Yes		No 🗀	NA 🗹	
Pers	on Notified:	-	Date				]
By W	Vhom:		√ia: ☐ eMa	il 🔲 F	Phone  Fax	☐ In Person	
Rega	arding:	NAMES AND ADDRESS OF THE PARTY	W CONTRACTOR AND CONTRACTOR				
Clien	nt Instructions:					\$	
17. Additional	remarks:				<u></u>		_
18. <u>Cooler Int</u>		al er er l					
Cooler 1	+	Condition Seal Intact Seal	No Seal Da	te	Signed By	-	
<u>'</u>		165				J	
Page 1	of 1					<del></del>	

Colorative   Date   Colorative   Colorativ	ਹ	hain-of-(	Susto	Chain-of-Custody Record	Turn-Around Time:	Time:					
Project Name:   Project Name:   Project Name:   Project Name:   Project Name:   Project Name;   Project Name		Blagg Engine	ering, Inc		X Standard	□ Rush			Z ANA	LYSIS LABC	MENIAL SRATORY
Froject #:		BP America	į		Project Name					w.hallenvironmenta	al.com
Bioomfield, NM 87413   Project #:   (505)320-1183   Project Manager: Jeff Blagg   Project Mana	Mailing Addr	ess:	P.O. Box	x 87		Mudge LS 7		490	1 Hawkins	NE - Albuquerque	, NM 87109
Cob)320-1183   Project Manager:   Jeff Blegg   Jeff   Project Manager:   Jeff Blegg   Jeff			Bloomfie		Project #:			<b>e</b>	l. 505-345-	3975 Fax 505-3	345-4107
Time   Matrix   Sample Request ID   Type and #   Time   Matrix   Soli   GP-6 @ 31'-32'   Good   GC-5   CC-5   CC	Phone #:		(505)32(	0-1183						ysis	
Time   Matrix   Sample Request ID   Type and #   Type	email or Fax	#.			Project Mana	ger:					
Time   Martix   Sample Request ID   Sample Temperature   Cool	QA/QC Pack	age:		(		Jeff Blagg			(O)(		
Time   Matrix   Sample Request ID   Container   Time   Matrix   Sample Request ID   Container   Time   Matrix   Sample Request ID   Type and #   Type   Ty	M Standard			Level 4 (ruli validation)					]/		
Time   Matrix   Sample Request ID   Container   Preservative   HEAL No.   Cool   CC2   X   X   X   X   X   X   X   X   X	□ Other				Sampler:	Jeff Blagg			ВО		
Time   Matrix   Sample Request ID   Type and # Type   Ty	🗆 EDD (Tyl	(ec			On Ice: Sample Tem	X Yes perature.	, No. 7.0	(12	ව) <b>ප</b>		
10.20   Soil   GP-4 @ 19 - 20'   40z x 1   Cool   CC2   x   x   x	Date	Time	Matrix		Container Type and #	Preservative Type	HEAL NO. /////.842_	08) X3T8	FPH 801		Chloride
10:25   Soil   GP-4@23'-24'   40z x 1   Cool   CC2   x   x   x	10/13/2016	10:20	Soil	@ 19'	4oz x 1	Cool	1922	×	×		×
10:31   Soil   GP-6 @ 31 · 32   40z x 1   Cool   CCC   x   x   x	10/13/2016	10:25	Soil	GP-4 @ 23' - 24'	4oz x 1	Cool	2002	×	×		×
12:27   Soil GP-5 @ 19'-20'   40z x 1   Cool   COS   X   X   X   X   X   X   X   X   X	10/13/2016	10:31	Soil	GP-4-@ 31' - 32'	4oz x 1	Cool	E92	×	×		×
13:47   Soil GP-5 @ 35' - 36'   40z x 1   Cool   -2c5 x   x   x	10/13/2016	12:27	Soil	GP-5 @ 19' - 20'	4oz x 1	Cool	h02	×	×		×
14:28   Soil   GP-6 @ 23'-24'   40z x 1   Cool   766 x   x   x	10/13/2016	13:47	Soil	GP-5 @ 35' - 36'	4oz x 1	Cool	5002	×	×		×
14:35   Soil   GP-6 @ 31 - 32'   40z x 1   Cool   -207   x   x	10/13/2016	14:28	Soil	GP-6 @ 23' - 24'	40z x 1	Cool	902	×	×		×
Time: Relinquished by: Received by: Date Time 136 1840.	10/13/2016	14:35	Soil	GP-6 @ 31' - 32'	4oz x 1	Cool	102	×	×		×
Time: Relinquished by: Bate Time 134 Second by: Received by: Cold bate Time 134 Second by: Received by: Recei											
Time: Relinquished by: Bate Time 136 1840 By: Received by											
Time: Relinquished by:											
Time: Relinquished by:    136											
E. Time: Refinduished by: Received by: Time Time Time Time Time Time Time Time	Date: 19/17/2019	Time:	Relinquist	Seg y	Received by:	byledan	ر ا	Remarks Contact:	١	chie	
	Date:	Time: 1840	Refinduist	ned by:	Received by:	1 m	Date Time	WBS Ele	VDRINK ment: L1-	.wJA1 20136-E:MUDGELS	25

# Laboratory Reports Final Closure Boring Sampling



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

February 27, 2018

Steve Moskal

Blagg Engineering

P. O. Box 87

Bloomfield, NM 87413

TEL: (505) 632-1199 FAX (505) 632-3903

RE: Mudge LS 7 OrderNo.: 1802805

#### Dear Steve Moskal:

Hall Environmental Analysis Laboratory received 20 sample(s) on 2/14/2018 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 <a href="www.hallenvironmental.com">www.hallenvironmental.com</a> 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

andy

4901 Hawkins NE

Albuquerque, NM 87109

Date Reported: 2/27/2018

# Hall Environmental Analysis Laboratory, Inc.

 CLIENT:
 Blagg Engineering
 Client Sample ID: SB-15 3-pt (20'-30')

 Project:
 Mudge LS 7
 Collection Date: 2/12/2018 12:43:00 PM

 Lab ID:
 1802805-001
 Matrix:
 SOIL
 Received Date: 2/14/2018 7:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS					Analyst	: CJS
Chloride	210	30	mg/Kg	20	2/20/2018 1:24:51 PM	36615
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS	}			Analyst	: TOM
Diesel Range Organics (DRO)	ND	9.9	mg/Kg	1	2/16/2018 1:09:52 PM	36549
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	2/16/2018 1:09:52 PM	36549
Surr: DNOP	116	70-130	%Rec	1	2/16/2018 1:09:52 PM	36549
EPA METHOD 8015D: GASOLINE RANG	E				Analyst	:: NSB
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	2/15/2018 7:26:57 PM	36533
Surr: BFB	83.7	15-316	%Rec	1	2/15/2018 7:26:57 PM	36533
EPA METHOD 8021B: VOLATILES					Analyst	:: NSB
Benzene	ND	0.024	mg/Kg	1	2/15/2018 7:26:57 PM	36533
Toluene	ND	0.049	mg/Kg	1	2/15/2018 7:26:57 PM	36533
Ethylbenzene	ND	0.049	mg/Kg	1	2/15/2018 7:26:57 PM	36533
Xylenes, Total	ND	0.097	mg/Kg	1	2/15/2018 7:26:57 PM	36533
Surr: 4-Bromofluorobenzene	90.0	80-120	%Rec	1	2/15/2018 7:26:57 PM	36533

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

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 1 of 24
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Date Reported: 2/27/2018

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Project: Mudge LS 7

**Collection Date:** 2/12/2018 12:58:00 PM

**Client Sample ID:** SB-15 @ (40'-41')

**Lab ID:** 1802805-002 **Matrix:** SOIL **Received Date:** 2/14/2018 7:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS					Analyst	: CJS
Chloride	33	30	mg/Kg	20	2/20/2018 1:37:15 PM	36615
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANICS	3			Analyst	: TOM
Diesel Range Organics (DRO)	ND	9.8	mg/Kg	1	2/16/2018 2:15:40 PM	36549
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	2/16/2018 2:15:40 PM	36549
Surr: DNOP	103	70-130	%Rec	1	2/16/2018 2:15:40 PM	36549
EPA METHOD 8015D: GASOLINE RA	NGE				Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	2/15/2018 7:50:25 PM	36533
Surr: BFB	92.1	15-316	%Rec	1	2/15/2018 7:50:25 PM	36533
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.024	mg/Kg	1	2/15/2018 7:50:25 PM	36533
Toluene	ND	0.047	mg/Kg	1	2/15/2018 7:50:25 PM	36533
Ethylbenzene	ND	0.047	mg/Kg	1	2/15/2018 7:50:25 PM	36533
Xylenes, Total	ND	0.095	mg/Kg	1	2/15/2018 7:50:25 PM	36533
Surr: 4-Bromofluorobenzene	91.1	80-120	%Rec	1	2/15/2018 7:50:25 PM	36533

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

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 2 of 24
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Date Reported: 2/27/2018

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Project: Mudge LS 7
Lab ID: 1802805-003

Client Sample ID: SB-5 3-pt (20'-30')
Collection Date: 2/12/2018 3:00:00 PM
Received Date: 2/14/2018 7:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS					Analys	t: CJS
Chloride	300	30	mg/Kg	20	2/20/2018 1:49:40 PM	36615
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANICS				Analys	t: <b>TOM</b>
Diesel Range Organics (DRO)	ND	9.8	mg/Kg	1	2/16/2018 2:37:45 PM	36549
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	2/16/2018 2:37:45 PM	36549
Surr: DNOP	108	70-130	%Rec	1	2/16/2018 2:37:45 PM	36549
EPA METHOD 8015D: GASOLINE RAI	NGE				Analys	t: NSB
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	2/15/2018 8:13:46 PM	36533
Surr: BFB	87.6	15-316	%Rec	1	2/15/2018 8:13:46 PM	36533
EPA METHOD 8021B: VOLATILES					Analys	t: NSB
Benzene	ND	0.024	mg/Kg	1	2/15/2018 8:13:46 PM	36533
Toluene	ND	0.048	mg/Kg	1	2/15/2018 8:13:46 PM	36533
Ethylbenzene	ND	0.048	mg/Kg	1	2/15/2018 8:13:46 PM	36533
Xylenes, Total	ND	0.096	mg/Kg	1	2/15/2018 8:13:46 PM	36533
Surr: 4-Bromofluorobenzene	87.5	80-120	%Rec	1	2/15/2018 8:13:46 PM	36533

Matrix: SOIL

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

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 3 of 24
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Date Reported: 2/27/2018

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering Client Sample ID: SB-5 @ (40'-41')

 Project:
 Mudge LS 7
 Collection Date: 2/12/2018 3:15:00 PM

 Lab ID:
 1802805-004
 Matrix: SOIL
 Received Date: 2/14/2018 7:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS					Analyst	:: CJS
Chloride	130	30	mg/Kg	20	2/20/2018 2:02:04 PM	36615
EPA METHOD 8015M/D: DIESEL RANG	SE ORGANICS	;			Analyst	: TOM
Diesel Range Organics (DRO)	ND	9.7	mg/Kg	1	2/16/2018 2:59:50 PM	36549
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	2/16/2018 2:59:50 PM	36549
Surr: DNOP	104	70-130	%Rec	1	2/16/2018 2:59:50 PM	36549
EPA METHOD 8015D: GASOLINE RAN	GE				Analyst	: NSB
Gasoline Range Organics (GRO)	ND	5.0	mg/Kg	1	2/15/2018 8:37:15 PM	36533
Surr: BFB	91.1	15-316	%Rec	1	2/15/2018 8:37:15 PM	36533
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.025	mg/Kg	1	2/15/2018 8:37:15 PM	36533
Toluene	ND	0.050	mg/Kg	1	2/15/2018 8:37:15 PM	36533
Ethylbenzene	ND	0.050	mg/Kg	1	2/15/2018 8:37:15 PM	36533
Xylenes, Total	ND	0.10	mg/Kg	1	2/15/2018 8:37:15 PM	36533
Surr: 4-Bromofluorobenzene	91.2	80-120	%Rec	1	2/15/2018 8:37:15 PM	36533

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

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 4 of 24
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Date Reported: 2/27/2018

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Blagg Engineering **Project:** Mudge LS 7

1802805-005

Lab ID:

Client Sample ID: SB-7 3-pt (20'-30')
Collection Date: 2/12/2018 1:50:00 PM
Received Date: 2/14/2018 7:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS					Analys	t: CJS
Chloride	140	30	mg/Kg	20	2/20/2018 2:14:29 PM	36615
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANICS				Analys	t: <b>TOM</b>
Diesel Range Organics (DRO)	14	9.3	mg/Kg	1	2/16/2018 3:21:46 PM	36549
Motor Oil Range Organics (MRO)	ND	46	mg/Kg	1	2/16/2018 3:21:46 PM	36549
Surr: DNOP	117	70-130	%Rec	1	2/16/2018 3:21:46 PM	36549
EPA METHOD 8015D: GASOLINE RAI	NGE				Analys	t: NSB
Gasoline Range Organics (GRO)	ND	5.0	mg/Kg	1	2/15/2018 9:00:33 PM	36533
Surr: BFB	91.1	15-316	%Rec	1	2/15/2018 9:00:33 PM	36533
EPA METHOD 8021B: VOLATILES					Analys	t: NSB
Benzene	ND	0.025	mg/Kg	1	2/15/2018 9:00:33 PM	36533
Toluene	ND	0.050	mg/Kg	1	2/15/2018 9:00:33 PM	36533
Ethylbenzene	ND	0.050	mg/Kg	1	2/15/2018 9:00:33 PM	36533
Xylenes, Total	ND	0.099	mg/Kg	1	2/15/2018 9:00:33 PM	36533
Surr: 4-Bromofluorobenzene	89.5	80-120	%Rec	1	2/15/2018 9:00:33 PM	36533

Matrix: SOIL

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

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 5 of 24
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Date Reported: 2/27/2018

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering Client Sample ID: SB-7 @ (40'-41')

 Project:
 Mudge LS 7
 Collection Date: 2/12/2018 2:05:00 PM

 Lab ID:
 1802805-006
 Matrix: SOIL
 Received Date: 2/14/2018 7:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS					Analyst	:: CJS
Chloride	32	30	mg/Kg	20	2/20/2018 2:26:53 PM	36615
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS					Analyst	: TOM
Diesel Range Organics (DRO)	ND	9.7	mg/Kg	1	2/16/2018 3:43:41 PM	36549
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	2/16/2018 3:43:41 PM	36549
Surr: DNOP	104	70-130	%Rec	1	2/16/2018 3:43:41 PM	36549
EPA METHOD 8015D: GASOLINE RAM	NGE				Analyst	:: NSB
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	2/15/2018 9:23:57 PM	36533
Surr: BFB	88.6	15-316	%Rec	1	2/15/2018 9:23:57 PM	36533
EPA METHOD 8021B: VOLATILES					Analyst	:: NSB
Benzene	ND	0.024	mg/Kg	1	2/15/2018 9:23:57 PM	36533
Toluene	ND	0.047	mg/Kg	1	2/15/2018 9:23:57 PM	36533
Ethylbenzene	ND	0.047	mg/Kg	1	2/15/2018 9:23:57 PM	36533
Xylenes, Total	ND	0.095	mg/Kg	1	2/15/2018 9:23:57 PM	36533
Surr: 4-Bromofluorobenzene	92.1	80-120	%Rec	1	2/15/2018 9:23:57 PM	36533

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

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 6 of 24
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Date Reported: 2/27/2018

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Project: Mudge LS 7
Lab ID: 1802805-007

Client Sample ID: SB-13 3-pt (20'-30')
Collection Date: 2/13/2018 8:56:00 AM
Received Date: 2/14/2018 7:00:00 AM

Analyses	Result	PQL (	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analys	t: CJS
Chloride	220	30		mg/Kg	20	2/20/2018 2:39:18 PM	36615
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analys	t: <b>TOM</b>
Diesel Range Organics (DRO)	37	9.8		mg/Kg	1	2/16/2018 4:05:48 PM	36549
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	2/16/2018 4:05:48 PM	36549
Surr: DNOP	105	70-130		%Rec	1	2/16/2018 4:05:48 PM	36549
EPA METHOD 8015D: GASOLINE RAI	NGE					Analys	t: NSB
Gasoline Range Organics (GRO)	ND	23	D	mg/Kg	5	2/15/2018 9:47:12 PM	36533
Surr: BFB	102	15-316	D	%Rec	5	2/15/2018 9:47:12 PM	36533
EPA METHOD 8021B: VOLATILES						Analys	t: NSB
Benzene	ND	0.12	D	mg/Kg	5	2/15/2018 9:47:12 PM	36533
Toluene	ND	0.23	D	mg/Kg	5	2/15/2018 9:47:12 PM	36533
Ethylbenzene	ND	0.23	D	mg/Kg	5	2/15/2018 9:47:12 PM	36533
Xylenes, Total	ND	0.46	D	mg/Kg	5	2/15/2018 9:47:12 PM	36533
Surr: 4-Bromofluorobenzene	92.4	80-120	D	%Rec	5	2/15/2018 9:47:12 PM	36533

Matrix: SOIL

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

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 7 of 24
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Date Reported: 2/27/2018

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Blagg Engineering **Project:** Mudge LS 7

Client Sample ID: SB-13 @ (40'-41') Collection Date: 2/13/2018 9:12:00 AM

**Lab ID:** 1802805-008 **Matrix:** SOIL **Received Date:** 2/14/2018 7:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	<b>Date Analyzed</b>	Batch
EPA METHOD 300.0: ANIONS					Analys	t: CJS
Chloride	33	30	mg/Kg	20	2/20/2018 2:51:43 PM	36615
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS					Analys	t: <b>TOM</b>
Diesel Range Organics (DRO)	ND	9.2	mg/Kg	1	2/16/2018 4:27:44 PM	36549
Motor Oil Range Organics (MRO)	ND	46	mg/Kg	1	2/16/2018 4:27:44 PM	36549
Surr: DNOP	98.1	70-130	%Rec	1	2/16/2018 4:27:44 PM	36549
EPA METHOD 8015D: GASOLINE RA	NGE				Analys	t: NSB
Gasoline Range Organics (GRO)	ND	4.6	mg/Kg	1	2/15/2018 10:10:35 PN	A 36533
Surr: BFB	91.6	15-316	%Rec	1	2/15/2018 10:10:35 PM	A 36533
EPA METHOD 8021B: VOLATILES					Analys	t: NSB
Benzene	ND	0.023	mg/Kg	1	2/15/2018 10:10:35 PN	A 36533
Toluene	ND	0.046	mg/Kg	1	2/15/2018 10:10:35 PM	A 36533
Ethylbenzene	ND	0.046	mg/Kg	1	2/15/2018 10:10:35 PM	A 36533
Xylenes, Total	ND	0.093	mg/Kg	1	2/15/2018 10:10:35 PM	A 36533
Surr: 4-Bromofluorobenzene	91.4	80-120	%Rec	1	2/15/2018 10:10:35 PN	A 36533

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

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 8 of 24
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Date Reported: 2/27/2018

# Hall Environmental Analysis Laboratory, Inc.

 CLIENT:
 Blagg Engineering
 Client Sample ID: SB-14 3-pt (20'-30')

 Project:
 Mudge LS 7
 Collection Date: 2/13/2018 10:09:00 AM

 Lab ID:
 1802805-009
 Matrix:
 SOIL
 Received Date: 2/14/2018 7:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS					Analyst	: CJS
Chloride	210	30	mg/Kg	20	2/20/2018 3:28:58 PM	36615
EPA METHOD 8015M/D: DIESEL RAM	NGE ORGANICS				Analyst	: TOM
Diesel Range Organics (DRO)	ND	9.3	mg/Kg	1	2/16/2018 4:49:58 PM	36549
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1	2/16/2018 4:49:58 PM	36549
Surr: DNOP	118	70-130	%Rec	1	2/16/2018 4:49:58 PM	36549
EPA METHOD 8015D: GASOLINE RA	NGE				Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	2/15/2018 10:33:56 PM	36533
Surr: BFB	90.7	15-316	%Rec	1	2/15/2018 10:33:56 PM	36533
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.023	mg/Kg	1	2/15/2018 10:33:56 PM	36533
Toluene	ND	0.047	mg/Kg	1	2/15/2018 10:33:56 PM	36533
Ethylbenzene	ND	0.047	mg/Kg	1	2/15/2018 10:33:56 PM	36533
Xylenes, Total	ND	0.093	mg/Kg	1	2/15/2018 10:33:56 PM	36533
Surr: 4-Bromofluorobenzene	89.0	80-120	%Rec	1	2/15/2018 10:33:56 PM	36533

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

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 9 of 24
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Date Reported: 2/27/2018

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering Client Sample ID: SB-14 @ (40'-41')

 Project:
 Mudge LS 7
 Collection Date: 2/13/2018 10:22:00 AM

 Lab ID:
 1802805-010
 Matrix: SOIL
 Received Date: 2/14/2018 7:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS					Analyst	: CJS
Chloride	ND	30	mg/Kg	20	2/20/2018 3:41:22 PM	36615
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS					Analyst	: ТОМ
Diesel Range Organics (DRO)	ND	9.8	mg/Kg	1	2/16/2018 5:11:52 PM	36549
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	2/16/2018 5:11:52 PM	36549
Surr: DNOP	103	70-130	%Rec	1	2/16/2018 5:11:52 PM	36549
EPA METHOD 8015D: GASOLINE RAI	NGE				Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	2/15/2018 10:57:20 PM	36533
Surr: BFB	89.9	15-316	%Rec	1	2/15/2018 10:57:20 PM	36533
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.024	mg/Kg	1	2/15/2018 10:57:20 PM	36533
Toluene	ND	0.047	mg/Kg	1	2/15/2018 10:57:20 PM	36533
Ethylbenzene	ND	0.047	mg/Kg	1	2/15/2018 10:57:20 PM	36533
Xylenes, Total	ND	0.095	mg/Kg	1	2/15/2018 10:57:20 PM	36533
Surr: 4-Bromofluorobenzene	88.8	80-120	%Rec	1	2/15/2018 10:57:20 PM	36533

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

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 10 of 24
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Date Reported: 2/27/2018

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Blagg Engineering **Project:** Mudge LS 7

**Client Sample ID:** SB-4 3-pt (20'-30') Collection Date: 2/13/2018 11:08:00 AM

Lab ID: 1802805-011 Matrix: SOIL Received Date: 2/14/2018 7:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS					Analys	at: CJS
Chloride	310	30	mg/Kg	20	2/20/2018 3:53:47 PM	36615
EPA METHOD 8015M/D: DIESEL RAN	IGE ORGANICS				Analys	st: TOM
Diesel Range Organics (DRO)	ND	9.9	mg/Kg	1	2/16/2018 5:33:50 PM	36549
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	2/16/2018 5:33:50 PM	36549
Surr: DNOP	94.7	70-130	%Rec	1	2/16/2018 5:33:50 PM	36549
EPA METHOD 8015D: GASOLINE RA	NGE				Analys	t: NSB
Gasoline Range Organics (GRO)	ND	5.0	mg/Kg	1	2/16/2018 12:30:40 AM	M 36533
Surr: BFB	90.2	15-316	%Rec	1	2/16/2018 12:30:40 AM	M 36533
EPA METHOD 8021B: VOLATILES					Analys	t: NSB
Benzene	ND	0.025	mg/Kg	1	2/16/2018 12:30:40 AM	√ 36533
Toluene	ND	0.050	mg/Kg	1	2/16/2018 12:30:40 AM	M 36533
Ethylbenzene	ND	0.050	mg/Kg	1	2/16/2018 12:30:40 AM	M 36533
Xylenes, Total	ND	0.10	mg/Kg	1	2/16/2018 12:30:40 AM	M 36533
Surr: 4-Bromofluorobenzene	92.4	80-120	%Rec	1	2/16/2018 12:30:40 AM	M 36533

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

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix
- Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limits Page 11 of 24 J
- P Sample pH Not In Range
- RLReporting Detection Limit
- Sample container temperature is out of limit as specified

Date Reported: 2/27/2018

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Blagg Engineering **Client Sample ID:** SB-4 @ (40'-41')

**Project:** Mudge LS 7 Collection Date: 2/13/2018 11:23:00 AM Lab ID: 1802805-012 Matrix: SOIL Received Date: 2/14/2018 7:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS					Analys	:: CJS
Chloride	37	30	mg/Kg	20	2/20/2018 4:06:12 PM	36615
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANICS				Analys	: TOM
Diesel Range Organics (DRO)	ND	9.4	mg/Kg	1	2/16/2018 5:55:42 PM	36549
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1	2/16/2018 5:55:42 PM	36549
Surr: DNOP	98.9	70-130	%Rec	1	2/16/2018 5:55:42 PM	36549
EPA METHOD 8015D: GASOLINE RAN	IGE				Analys	:: NSB
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	2/16/2018 12:53:59 AM	1 36533
Surr: BFB	88.0	15-316	%Rec	1	2/16/2018 12:53:59 AM	36533
EPA METHOD 8021B: VOLATILES					Analys	: NSB
Benzene	ND	0.024	mg/Kg	1	2/16/2018 12:53:59 AM	1 36533
Toluene	ND	0.048	mg/Kg	1	2/16/2018 12:53:59 AM	1 36533
Ethylbenzene	ND	0.048	mg/Kg	1	2/16/2018 12:53:59 AM	36533
Xylenes, Total	ND	0.096	mg/Kg	1	2/16/2018 12:53:59 AM	36533
Surr: 4-Bromofluorobenzene	90.1	80-120	%Rec	1	2/16/2018 12:53:59 AM	36533

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

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix
- Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limits Page 12 of 24 J
- P Sample pH Not In Range
- RLReporting Detection Limit
- Sample container temperature is out of limit as specified

Date Reported: 2/27/2018

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Blagg Engineering **Project:** Mudge LS 7

**Client Sample ID:** SB-3 3-pt (20'-30') Collection Date: 2/13/2018 12:54:00 PM

Lab ID: 1802805-013 Matrix: SOIL Received Date: 2/14/2018 7:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS					Analyst	:: CJS
Chloride	38	30	mg/Kg	20	2/20/2018 4:18:36 PM	36615
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANICS				Analyst	: TOM
Diesel Range Organics (DRO)	ND	9.4	mg/Kg	1	2/16/2018 6:17:39 PM	36549
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1	2/16/2018 6:17:39 PM	36549
Surr: DNOP	95.9	70-130	%Rec	1	2/16/2018 6:17:39 PM	36549
EPA METHOD 8015D: GASOLINE RAN	IGE				Analyst	:: NSB
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	2/16/2018 1:17:19 AM	36533
Surr: BFB	92.2	15-316	%Rec	1	2/16/2018 1:17:19 AM	36533
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.024	mg/Kg	1	2/16/2018 1:17:19 AM	36533
Toluene	ND	0.048	mg/Kg	1	2/16/2018 1:17:19 AM	36533
Ethylbenzene	ND	0.048	mg/Kg	1	2/16/2018 1:17:19 AM	36533
Xylenes, Total	ND	0.096	mg/Kg	1	2/16/2018 1:17:19 AM	36533
Surr: 4-Bromofluorobenzene	91.9	80-120	%Rec	1	2/16/2018 1:17:19 AM	36533

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

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix
- Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limits Page 13 of 24 J
- P Sample pH Not In Range
- RLReporting Detection Limit
- Sample container temperature is out of limit as specified

Date Reported: 2/27/2018

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering Client Sample ID: SB-3 @ (40'-41')

 Project:
 Mudge LS 7
 Collection Date: 2/13/2018 1:08:00 PM

 Lab ID:
 1802805-014
 Matrix: SOIL
 Received Date: 2/14/2018 7:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS					Analys	t: CJS
Chloride	48	30	mg/Kg	20	2/20/2018 4:31:01 PM	36615
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANICS				Analys	t: TOM
Diesel Range Organics (DRO)	ND	9.1	mg/Kg	1	2/16/2018 6:39:37 PM	36549
Motor Oil Range Organics (MRO)	ND	46	mg/Kg	1	2/16/2018 6:39:37 PM	36549
Surr: DNOP	98.9	70-130	%Rec	1	2/16/2018 6:39:37 PM	36549
EPA METHOD 8015D: GASOLINE RAM	IGE				Analys	t: NSB
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	2/16/2018 1:40:41 AM	36533
Surr: BFB	89.0	15-316	%Rec	1	2/16/2018 1:40:41 AM	36533
EPA METHOD 8021B: VOLATILES					Analys	t: NSB
Benzene	ND	0.024	mg/Kg	1	2/16/2018 1:40:41 AM	36533
Toluene	ND	0.048	mg/Kg	1	2/16/2018 1:40:41 AM	36533
Ethylbenzene	ND	0.048	mg/Kg	1	2/16/2018 1:40:41 AM	36533
Xylenes, Total	ND	0.096	mg/Kg	1	2/16/2018 1:40:41 AM	36533
Surr: 4-Bromofluorobenzene	92.5	80-120	%Rec	1	2/16/2018 1:40:41 AM	36533

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

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 14 of 24
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Date Reported: 2/27/2018

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Blagg Engineering **Project:** Mudge LS 7

1802805-015

Lab ID:

**Client Sample ID:** SB-2 3-pt (20'-30') Collection Date: 2/13/2018 1:54:00 PM Received Date: 2/14/2018 7:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS					Analys	: MRA
Chloride	72	30	mg/Kg	20	2/21/2018 10:55:07 AM	1 36641
EPA METHOD 8015M/D: DIESEL RANG	SE ORGANICS				Analys	: TOM
Diesel Range Organics (DRO)	ND	9.6	mg/Kg	1	2/16/2018 7:01:38 PM	36549
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	2/16/2018 7:01:38 PM	36549
Surr: DNOP	106	70-130	%Rec	1	2/16/2018 7:01:38 PM	36549
EPA METHOD 8015D: GASOLINE RAN	GE				Analys	: NSB
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	2/16/2018 2:03:58 AM	36533
Surr: BFB	90.6	15-316	%Rec	1	2/16/2018 2:03:58 AM	36533
EPA METHOD 8021B: VOLATILES					Analys	: NSB
Benzene	ND	0.024	mg/Kg	1	2/16/2018 2:03:58 AM	36533
Toluene	ND	0.048	mg/Kg	1	2/16/2018 2:03:58 AM	36533
Ethylbenzene	ND	0.048	mg/Kg	1	2/16/2018 2:03:58 AM	36533
Xylenes, Total	ND	0.096	mg/Kg	1	2/16/2018 2:03:58 AM	36533
Surr: 4-Bromofluorobenzene	92.5	80-120	%Rec	1	2/16/2018 2:03:58 AM	36533

Matrix: SOIL

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

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix
- Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limits Page 15 of 24 J
- P Sample pH Not In Range
- RLReporting Detection Limit
- Sample container temperature is out of limit as specified

Date Reported: 2/27/2018

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Blagg Engineering **Client Sample ID:** SB-2 @ (40'-41')

**Project:** Mudge LS 7 **Collection Date:** 2/13/2018 2:08:00 PM Lab ID: 1802805-016 Matrix: SOIL Received Date: 2/14/2018 7:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS					Analys	t: MRA
Chloride	31	30	mg/Kg	20	2/21/2018 11:32:21 AM	1 36641
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANICS				Analys	t: <b>TOM</b>
Diesel Range Organics (DRO)	ND	9.8	mg/Kg	1	2/16/2018 7:23:23 PM	36549
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	2/16/2018 7:23:23 PM	36549
Surr: DNOP	99.5	70-130	%Rec	1	2/16/2018 7:23:23 PM	36549
EPA METHOD 8015D: GASOLINE RAI	NGE				Analys	t: NSB
Gasoline Range Organics (GRO)	ND	4.6	mg/Kg	1	2/16/2018 2:27:19 AM	36533
Surr: BFB	91.7	15-316	%Rec	1	2/16/2018 2:27:19 AM	36533
EPA METHOD 8021B: VOLATILES					Analys	t: NSB
Benzene	ND	0.023	mg/Kg	1	2/16/2018 2:27:19 AM	36533
Toluene	ND	0.046	mg/Kg	1	2/16/2018 2:27:19 AM	36533
Ethylbenzene	ND	0.046	mg/Kg	1	2/16/2018 2:27:19 AM	36533
Xylenes, Total	ND	0.092	mg/Kg	1	2/16/2018 2:27:19 AM	36533
Surr: 4-Bromofluorobenzene	93.6	80-120	%Rec	1	2/16/2018 2:27:19 AM	36533

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

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix
- Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limits Page 16 of 24 J
- P Sample pH Not In Range
- RLReporting Detection Limit
- Sample container temperature is out of limit as specified

Date Reported: 2/27/2018

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Blagg Engineering **Project:** Mudge LS 7

1802805-017

Lab ID:

Client Sample ID: SB-1 3-pt (20'-30')
Collection Date: 2/13/2018 2:51:00 PM
Received Date: 2/14/2018 7:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS					Analys	: MRA
Chloride	170	30	mg/Kg	20	2/21/2018 11:44:45 AM	1 36641
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANICS				Analys	: TOM
Diesel Range Organics (DRO)	ND	9.5	mg/Kg	1	2/16/2018 7:45:11 PM	36549
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	2/16/2018 7:45:11 PM	36549
Surr: DNOP	110	70-130	%Rec	1	2/16/2018 7:45:11 PM	36549
EPA METHOD 8015D: GASOLINE RAM	NGE				Analys	:: NSB
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	2/16/2018 2:50:41 AM	36533
Surr: BFB	90.8	15-316	%Rec	1	2/16/2018 2:50:41 AM	36533
EPA METHOD 8021B: VOLATILES					Analys	:: NSB
Benzene	ND	0.024	mg/Kg	1	2/16/2018 2:50:41 AM	36533
Toluene	ND	0.048	mg/Kg	1	2/16/2018 2:50:41 AM	36533
Ethylbenzene	ND	0.048	mg/Kg	1	2/16/2018 2:50:41 AM	36533
Xylenes, Total	ND	0.095	mg/Kg	1	2/16/2018 2:50:41 AM	36533
Surr: 4-Bromofluorobenzene	91.9	80-120	%Rec	1	2/16/2018 2:50:41 AM	36533

Matrix: SOIL

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

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 17 of 24
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Date Reported: 2/27/2018

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Blagg Engineering **Client Sample ID:** SB-1 @ (40'-41') **Project:** Mudge LS 7 **Collection Date:** 2/13/2018 3:05:00 PM

Lab ID: 1802805-018 Matrix: SOIL Received Date: 2/14/2018 7:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS					Analyst	: MRA
Chloride	48	30	mg/Kg	20	2/21/2018 11:57:10 AM	36641
EPA METHOD 8015M/D: DIESEL RANG	SE ORGANICS	;			Analyst	: TOM
Diesel Range Organics (DRO)	ND	9.8	mg/Kg	1	2/16/2018 8:06:51 PM	36549
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	2/16/2018 8:06:51 PM	36549
Surr: DNOP	100	70-130	%Rec	1	2/16/2018 8:06:51 PM	36549
EPA METHOD 8015D: GASOLINE RAN	GE				Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	2/16/2018 3:14:03 AM	36533
Surr: BFB	91.2	15-316	%Rec	1	2/16/2018 3:14:03 AM	36533
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.024	mg/Kg	1	2/16/2018 3:14:03 AM	36533
Toluene	ND	0.048	mg/Kg	1	2/16/2018 3:14:03 AM	36533
Ethylbenzene	ND	0.048	mg/Kg	1	2/16/2018 3:14:03 AM	36533
Xylenes, Total	ND	0.095	mg/Kg	1	2/16/2018 3:14:03 AM	36533
Surr: 4-Bromofluorobenzene	91.6	80-120	%Rec	1	2/16/2018 3:14:03 AM	36533

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

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix
- Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limits Page 18 of 24 J
- P Sample pH Not In Range
- RLReporting Detection Limit
- Sample container temperature is out of limit as specified

Date Reported: 2/27/2018

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Blagg Engineering **Project:** Mudge LS 7

1802805-019

Lab ID:

Client Sample ID: SB-10 3-pt (20'-30')
Collection Date: 2/13/2018 3:41:00 PM
Received Date: 2/14/2018 7:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	<b>Date Analyzed</b>	Batch
EPA METHOD 300.0: ANIONS					Analyst	: MRA
Chloride	180	30	mg/Kg	20	2/21/2018 12:09:35 PM	1 36641
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANICS	;			Analyst	: TOM
Diesel Range Organics (DRO)	ND	9.4	mg/Kg	1	2/16/2018 8:28:48 PM	36549
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1	2/16/2018 8:28:48 PM	36549
Surr: DNOP	103	70-130	%Rec	1	2/16/2018 8:28:48 PM	36549
EPA METHOD 8015D: GASOLINE RAI	NGE				Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	2/16/2018 3:37:23 AM	36533
Surr: BFB	88.9	15-316	%Rec	1	2/16/2018 3:37:23 AM	36533
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.025	mg/Kg	1	2/16/2018 3:37:23 AM	36533
Toluene	ND	0.049	mg/Kg	1	2/16/2018 3:37:23 AM	36533
Ethylbenzene	ND	0.049	mg/Kg	1	2/16/2018 3:37:23 AM	36533
Xylenes, Total	ND	0.098	mg/Kg	1	2/16/2018 3:37:23 AM	36533
Surr: 4-Bromofluorobenzene	91.2	80-120	%Rec	1	2/16/2018 3:37:23 AM	36533

Matrix: SOIL

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

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 19 of 24
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Date Reported: 2/27/2018

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Blagg Engineering **Project:** Mudge LS 7

1802805-020

Lab ID:

**Client Sample ID:** SB-10 @ (40'-41')

**Collection Date:** 2/13/2018 3:54:00 PM **Received Date:** 2/14/2018 7:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS					Analys	t: MRA
Chloride	32	30	mg/Kg	20	2/21/2018 12:46:50 PM	1 36641
EPA METHOD 8015M/D: DIESEL RAN	IGE ORGANICS				Analys	t: <b>TOM</b>
Diesel Range Organics (DRO)	ND	9.2	mg/Kg	1	2/16/2018 8:50:23 PM	36549
Motor Oil Range Organics (MRO)	ND	46	mg/Kg	1	2/16/2018 8:50:23 PM	36549
Surr: DNOP	103	70-130	%Rec	1	2/16/2018 8:50:23 PM	36549
EPA METHOD 8015D: GASOLINE RA	NGE				Analys	t: NSB
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	2/16/2018 4:00:44 AM	36533
Surr: BFB	88.0	15-316	%Rec	1	2/16/2018 4:00:44 AM	36533
EPA METHOD 8021B: VOLATILES					Analys	t: NSB
Benzene	ND	0.024	mg/Kg	1	2/16/2018 4:00:44 AM	36533
Toluene	ND	0.049	mg/Kg	1	2/16/2018 4:00:44 AM	36533
Ethylbenzene	ND	0.049	mg/Kg	1	2/16/2018 4:00:44 AM	36533
Xylenes, Total	ND	0.098	mg/Kg	1	2/16/2018 4:00:44 AM	36533
Surr: 4-Bromofluorobenzene	91.2	80-120	%Rec	1	2/16/2018 4:00:44 AM	36533

Matrix: SOIL

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

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 20 of 24
- 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.

WO#: **1802805** 

27-Feb-18

Client: Blagg Engineering
Project: Mudge LS 7

Sample ID MB-36615 SampType: mblk TestCode: EPA Method 300.0: Anions

Client ID: PBS Batch ID: 36615 RunNo: 49244

Prep Date: 2/20/2018 Analysis Date: 2/20/2018 SeqNo: 1589864 Units: mg/Kg

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

Chloride ND 1.5

Sample ID LCS-36615 SampType: Ics TestCode: EPA Method 300.0: Anions

Client ID: LCSS Batch ID: 36615 RunNo: 49244

Prep Date: 2/20/2018 Analysis Date: 2/20/2018 SeqNo: 1589865 Units: mg/Kg

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

Chloride 14 1.5 15.00 0 95.2 90 110

Sample ID MB-36641 SampType: mblk TestCode: EPA Method 300.0: Anions

Client ID: PBS Batch ID: 36641 RunNo: 49283

Prep Date: 2/21/2018 Analysis Date: 2/21/2018 SeqNo: 1591746 Units: mg/Kg

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

Chloride ND 1.5

Sample ID LCS-36641 SampType: Ics TestCode: EPA Method 300.0: Anions

Client ID: LCSS Batch ID: 36641 RunNo: 49283

Prep Date: 2/21/2018 Analysis Date: 2/21/2018 SeqNo: 1591747 Units: mg/Kg

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

Chloride 14 1.5 15.00 0 95.6 90 110

#### Qualifiers:

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

Page 21 of 24

### Hall Environmental Analysis Laboratory, Inc.

WO#: **1802805** 

27-Feb-18

Client: Blagg Engineering
Project: Mudge LS 7

Sample ID 1802805-001AMS SampType: MS TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: SB-15 3-pt (20'-30') Batch ID: 36549 RunNo: 49187 Prep Date: 2/15/2018 Analysis Date: 2/16/2018 SeqNo: 1586496 Units: mg/Kg Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Diesel Range Organics (DRO) 9.7 2.934 55.8 53 48.50 102 125 Surr: DNOP 5.2 4.850 108 70 130

Sample ID 1802805-001AMSD SampType: MSD TestCode: EPA Method 8015M/D: Diesel Range Organics SB-15 3-pt (20'-30') Batch ID: 36549 RunNo: 49187 Prep Date: 2/15/2018 Analysis Date: 2/16/2018 SeqNo: 1586497 Units: mg/Kg SPK Ref Val Analyte Result **PQL** SPK value %REC LowLimit HighLimit %RPD **RPDLimit** Qual Diesel Range Organics (DRO) 48 9.8 49.21 2.934 91.8 55.8 125 8.86 20 Surr: DNOP 4.8 4.921 96.9 70 130 0

Sample ID LCS-36549 SampType: LCS TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: LCSS Batch ID: 36549 RunNo: 49187 Prep Date: 2/15/2018 Analysis Date: 2/16/2018 SeqNo: 1586500 Units: mg/Kg PQL LowLimit %RPD **RPDLimit** Analyte Result SPK value SPK Ref Val %REC HighLimit Qual Diesel Range Organics (DRO) 47 10 50.00 94.6 70 130 Surr: DNOP 4.7 93.4 70 5.000 130

SampType: MBLK Sample ID MB-36549 TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: PBS Batch ID: 36549 RunNo: 49187 Prep Date: 2/15/2018 Analysis Date: 2/16/2018 SeqNo: 1586501 Units: mg/Kg Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Diesel Range Organics (DRO) ND 10 Motor Oil Range Organics (MRO) ND 50 Surr: DNOP 9.9 10.00 99.3 70 130

#### Qualifiers:

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

Page 22 of 24

### Hall Environmental Analysis Laboratory, Inc.

WO#: **1802805** 

27-Feb-18

Client: Blagg Engineering
Project: Mudge LS 7

Sample ID MB-36533 SampType: MBLK TestCode: EPA Method 8015D: Gasoline Range

Client ID: PBS Batch ID: 36533 RunNo: 49154

Prep Date: 2/14/2018 Analysis Date: 2/15/2018 SeqNo: 1585384 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 920 1000 92.2 15 316

Sample ID LCS-36533 SampType: LCS TestCode: EPA Method 8015D: Gasoline Range

Client ID: LCSS Batch ID: 36533 RunNo: 49154

Prep Date: 2/14/2018 Analysis Date: 2/15/2018 SeqNo: 1585385 Units: mg/Kg

Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Gasoline Range Organics (GRO) 5.0 25.00 0 119 75.9 131

96.7

316

15

Sample ID 1802805-001AMS SampType: MS TestCode: EPA Method 8015D: Gasoline Range

1000

Client ID: SB-15 3-pt (20'-30') Batch ID: 36533 RunNo: 49154

970

Prep Date: 2/14/2018 Analysis Date: 2/15/2018 SeqNo: 1585387 Units: mg/Kg

%REC %RPD **RPDLimit** Analyte Result **PQL** SPK value SPK Ref Val LowLimit HighLimit Qual Gasoline Range Organics (GRO) 30 23.52 127 77.8 128 Surr: BFB 980 316 940.7 105 15

Sample ID 1802805-001AMSD SampType: MSD TestCode: EPA Method 8015D: Gasoline Range

Client ID: SB-15 3-pt (20'-30') Batch ID: 36533 RunNo: 49154

Prep Date: 2/14/2018 Analysis Date: 2/15/2018 SeqNo: 1585388 Units: mg/Kg

Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Gasoline Range Organics (GRO) 30 4.9 24.39 124 77.8 128 1.79 20 Λ Surr: BFB 1000 975.6 104 15 316 0 0

#### Qualifiers:

Surr: BFB

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

Page 23 of 24

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.

WO#: 1802805

27-Feb-18

**Client:** Blagg Engineering **Project:** Mudge LS 7

Sample ID MB-36533 SampType: MBLK TestCode: EPA Method 8021B: Volatiles

Client ID: **PBS** Batch ID: 36533 RunNo: 49154

Prep Date: 2/14/2018 Analysis Date: 2/15/2018 SeqNo: 1585416 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 0.92 1.000 91.6 80 120

Sample ID LCS-36533 SampType: LCS TestCode: EPA Method 8021B: Volatiles Client ID: **LCSS** Batch ID: 36533 RunNo: 49154 Prep Date: 2/14/2018 Analysis Date: 2/15/2018 SeqNo: 1585417 Units: mg/Kg Analyte **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual 0.025 1.000 0 105 77.3 128 Benzene 1.1 Toluene 1.0 0.050 1.000 0 104 79.2 125 Ethylbenzene 0.050 0 102 80.7 1.0 1.000 127 104 Xylenes, Total 3.1 0.10 3.000 0 81.6 129 Surr: 4-Bromofluorobenzene 0.93 1.000 93.1 80 120

Sample ID 1802805-002AMS SampType: MS TestCode: EPA Method 8021B: Volatiles

Client ID: SB-15 @ (40'-41') Batch ID: 36533 RunNo: 49154

Prep Date: 2/14/2018	Date: <b>2/14/2018</b> Analysis Da			<b>2/15/2018</b> S			Units: mg/k	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.024	0.9416	0	117	80.9	132			
Toluene	1.1	0.047	0.9416	0	117	79.8	136			
Ethylbenzene	1.1	0.047	0.9416	0	117	79.4	140			
Xylenes, Total	3.4	0.094	2.825	0	119	78.5	142			
Surr: 4-Bromofluorobenzene	0.86		0.9416		91.1	80	120			

Sample ID 1802805-002AMSD SampType: MSD TestCode: EPA Method 8021B: Volatiles

Client ID: SB-15 @ (40'-41') Batch ID: 36533 RunNo: 49154

	,									
Prep Date: 2/14/2018	Analysis D	Analysis Date: 2/15/2018			SeqNo: <b>1585421</b>			(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.023	0.9285	0	109	80.9	132	8.31	20	
Toluene	1.0	0.046	0.9285	0	109	79.8	136	8.68	20	
Ethylbenzene	1.0	0.046	0.9285	0	108	79.4	140	9.40	20	
Xylenes, Total	3.1	0.093	2.786	0	111	78.5	142	8.91	20	
Surr: 4-Bromofluorobenzene	0.85		0.9285		91.1	80	120	0	0	

#### Qualifiers:

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

Η Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

POL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix

- В Analyte detected in the associated Method Blank
- Е Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

Sample container temperature is out of limit as specified

Page 24 of 24



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 Num	ber: 1802805		RcptNo: 1
Received By:	Anne Thorne	2/14/2018 7:00:00	AM	am In	~
Completed By:	Dennis Suazo	2/14/2018 8:58:55	AM	Danian	~>***
Reviewed By:	SMO	2/14/18			U
i whale el	By MWZ	112/18			
Chain of Cus	1 1 1 1 2 2 2	10111			
1. Is Chain of C	custody complete?		Yes 🗹	No 🗌	Not Present
2. How was the	sample delivered?		Client		
<u>Log In</u>					
3. Was an atten	npt made to cool the sam	nples?	Yes 🗹	No 🗌	NA 🗔
4. Were all sam	ples received at a tempe	rature of >0° C to 6.0°C	Yes 🗹	No 🗆	na 🗆
5. Sample(s) in	proper container(s)?		Yes 🗹	No 🗀	
6. Sufficient sam	nple volume for indicated	test(s)?	Yes 🗸	No 🗌	
	(except VOA and ONG) p		Yes 🗹	No 🗆	
	tive added to bottles?	, p	Yes 🗌	No 🗹	NA 🗆
9. VOA vials hav	e zero headspace?		Yes 🗌	No 🗆	No VOA Vials <b>☑</b>
10, Were any san	nple containers received	broken?	Yes	No 🗹	
					# of preserved bottles checked
	ork match bottle labels? ancies on chain of custod	hz)	Yes 🗹	No 🗌	for pH:
	correctly identified on Cha		Yes 🗹	No 🔲 i	<pre>(&lt;2 or &gt;12 unless not Adjusted?</pre>
	t analyses were requeste	-	Yes 🗹	No 🗌	
14. Were all holdir	ng times able to be met? ustomer for authorization		Yes 🗹	No 🗆	Checked by:
Special Handl	ing (if applicable)				
15. Was client no	tified of all discrepancies	with this order?	Yes 🗌	No 🗌	NA 🗹
Person	Notified:	Date:		Called and construction of the last	
By Who	m:	Via:	, □ eMail □ b	hone Fax	In Person
Regardi	ng:				
Client In	structions:	and the second section of the second section of the second section of the second section of the second section of the second section s	<u> Allendario de la constanció de la cons</u>	enterior (A.C.) And the large and the state of the Co. V. V.	Milledning to the property of the Control of the American State of the Control of
16. Additional rer	narks:				
17. <u>Cooler Inforr</u>	mation				
Cooler No	1 1	Seal Intact   Seal No	Seal Date	Signed By	
1	1.0 Good	Not Present			
				·	
		<del></del>			
Page 1 of	1				

	### ANALYSTS LABORATORY  #### (8021)  ##### (8021)  ##### (8021)  ##### (8021)  ##### (8021)  ##### (8021)  ##### (8021)  ##### (8021)  ####### (8021)  ########## (8021)  ###################################
Project Name:   Project Name:   Project Name:   Project Name:   Project Name:   Project Hanger:   S20 - (183   Sampler:	(1508) s'3MT * 38TM + X3T8 X (1508) s'3MT * 38TM + X3T8 X (1508) HTT + 38TM + X3T8 X
Ining Address:	### ### ### ### ### ### ### ### ### ##
Project #:   Social Container   Project #	X BTEX + MT8E + TMB's (8021)
Sanderd	Analysis (8021)  A BTEX + MTBE + TPH (Gas only)  TPH (Method 418.1)  TPH (Method 418.1)  EDB (Method 504.1)  RCRA 8 Metals  RCRA 8 Metals  Anions (F,CI,NO <sub>3</sub> ,NO <sub>2</sub> ,PO <sub>4</sub> ,SO <sub>4</sub> )  8081 Pesticides / 8082 PCB's  Anions (F,CI,NO <sub>3</sub> ,NO <sub>2</sub> ,PO <sub>4</sub> ,SO <sub>4</sub> )  S260B (VOA)  Analysis Request  Anal
Standard   Corporation   Sample   Container   Type and #   Type   Cold	
OC Package:         Standard         Standard         Standard           Standard         I Level 4 (Full Validation)         Sampler:         JEFF BUM           Standard         On Ice:         X Yes         INO           EDD (Type)         Sample Temperature:         1.0           EDD (Type)         Sample Request ID         Container Type         HEAL No.           Items         Time         Matrix         Sample Request ID         Type and # Type           Incomplete:         SB-15; 3-Pt (20-30)         4 ot x 1         Cold           Incomplete:         SB-15; 3-Pt (20-30)         4 ot x 1         Cold           Incomplete:         SB-15; 2-41)         1         0012           Incomplete:         SB-15; 2-41)         1         0012	X BTEX + MTBE + TMB's (602)  BTEX + MTBE + TPH (Gas of TPH (Gas of TPH (Gas of TPH (Gas of TPH (Gas of TPH (Method 418.1))  TPH (Method 418.1)  TPH (Method 418.1)  EDB (Method 504.1)  RCRA 8 Metals  RCRA 8 Metals  Anions (F,CI,NO <sub>3</sub> ,NO <sub>2</sub> ,PO <sub>4</sub> ,SO  8081 Pesticides / 8082 PCB's  8270 (Semi-VOA)  X CH40%1)€
Sampler:         ZEGF BLAKE           Net LaP         On Ice:         X Yes         In No           Sempler:         ZEGF BLAKE         In No         In No         In No           Sempler:         Zegr BLAKE         In No         In No         In No         In No           Sempler:         Zegr Segration         Container Type         In No	X BTEX + MTBE + TMB's  BTEX + MTBE + TPH (  X TPH 8015B (GRO \ DRO  TPH (Method 418.1)  EDB (Method 504.1)  RCRA 8 Metals  RCRA 8 Metals  Anions (F,CI,NO <sub>3</sub> ,NO <sub>2</sub> ,P  8081 Pesticides \ 8082 I  8081 Pesticides \ 8082 I  8270 (Semi-VOA)  X CHCA\ID
VELAP         Other         On Ibe:         X Yes         No.           EDD (Type)         Sample Temperature:         /.0           Sample Request ID         Container Type         HEAL No.           Type and #         Type         1802805           1258         \$6-15, 3-PE(20-30)         \$4 op x 1         \$601           1258         \$6-15 & 2-pt (20-20)         \$601	X BTEX + MTBE + TH BTEX + MTBE + TH X TPH 8015B (GRO A TPH (Method 418.1 EDB (Method 504.1 PAH's (8310 or 827 RCRA 8 Metals Anions (F,CI,NO <sub>3</sub> ,N 8081 Pesticides \ 80 8270 (Semi-VOA) 8270 (Semi-VOA) X CH40A1 €
EDD (Type)         Sample Temperature:         /.0           ate         Time         Matrix         Sample Request ID         Container Type         HEAL No.           1258         1258         1 58-15, 3-Pt (20-30)         4 02 x 1         001           1258         1 58-15 @ (40-41)         001           1258         1 58-15 @ (40-41)         001	X BTEX + MT8E  BTEX + MT8E  Y TPH 80158 (GF  TPH (Method 4  TPH (Method 5  BAPH's (8310 or  RCRA 8 Metals  Anions (F,CI,NC)  8081 Pesticides  8270 (Semi-VO)  X CHCANI)€
Time Matrix Sample Request ID Type and # Type   HEAL No. Type and # Type   1802.805   1245   5010   56-15, 3-pc (20-30)   405 x 1   C000   (001)   1258   50-15 @ (40'-41')   0002   0002   1258   50-15 @ (40'-41')   0002	X BTEX + MT  BTEX + MT  BTEX + MT  ATPH 8015B  TPH (Methorses)  EDB (Methorses)  RCRA 8 Methorses  Anions (F,C  8081 Pestion  8081 Pestion  8180 (VO)  8270 (Semi
1258 ( 5B-15, 3-PE(20-30) 400×1 COOL (0) (0) (0) (0) (0) (0) (0) (0) (0) (0)	×
( SB-15 @(40-41)   (SB-15 @(40-41))	
(2-5 2-3+ (20-20')	002
125-3.3 / 5 (50 50)	003
1515   53-5 @ (40-41)	500
58-7.3-pt(20-30 <sup>-</sup> )	0.05
1 1405   58-7, @ (40-41)	900
7/3/2018 0356   58-13, 3-pt(20-30)	007
51-88 1 2150	008
	009
1022   58-14 @ (40-41,)	010
SB-4, 3-pt(20-20)	0.1
1123   58-4	02
Relinquished by: Chocky Chocky Chocks Time 73/2018 1623	1623 Remarks: 5 & BP
Time: Relinguished by:	1

Container   Fever   Four   Validation   Sampler   Jeps Burds   Sampler   Jeps Burds   Sampler   Jeps Burds   Sampler   Jeps Burds   Sample   Samp
--



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

February 22, 2018

Steve Moskal

Blagg Engineering

P. O. Box 87

Bloomfield, NM 87413

TEL: (505) 632-1199 FAX (505) 632-3903

RE: MUDGE LS 7 OrderNo.: 1802866

#### Dear Steve Moskal:

Hall Environmental Analysis Laboratory received 10 sample(s) on 2/15/2018 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 <a href="www.hallenvironmental.com">www.hallenvironmental.com</a> 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

andy

4901 Hawkins NE

Albuquerque, NM 87109

Date Reported: 2/22/2018

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Blagg Engineering **Project:** MUDGE LS 7

1802866-001

Lab ID:

Client Sample ID: SB-6, 3-pt (20'-30')
Collection Date: 2/14/2018 8:57:00 AM
Received Date: 2/15/2018 7:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS					Analyst	: MRA
Chloride	210	30	mg/Kg	20	2/21/2018 12:59:15 PM	36641
EPA METHOD 8015M/D: DIESEL RAN	IGE ORGANICS	;			Analyst	: TOM
Diesel Range Organics (DRO)	9.4	9.4	mg/Kg	1	2/16/2018 5:02:22 PM	36556
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1	2/16/2018 5:02:22 PM	36556
Surr: DNOP	99.6	70-130	%Rec	1	2/16/2018 5:02:22 PM	36556
EPA METHOD 8015D: GASOLINE RAI	NGE				Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	2/16/2018 3:52:54 PM	36546
Surr: BFB	96.8	15-316	%Rec	1	2/16/2018 3:52:54 PM	36546
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.023	mg/Kg	1	2/16/2018 3:52:54 PM	36546
Toluene	ND	0.047	mg/Kg	1	2/16/2018 3:52:54 PM	36546
Ethylbenzene	ND	0.047	mg/Kg	1	2/16/2018 3:52:54 PM	36546
Xylenes, Total	ND	0.094	mg/Kg	1	2/16/2018 3:52:54 PM	36546
Surr: 4-Bromofluorobenzene	85.2	80-120	%Rec	1	2/16/2018 3:52:54 PM	36546

Matrix: SOIL

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

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 1 of 14
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Date Reported: 2/22/2018

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Blagg Engineering Client Sample ID: SB-6 (40'-41')

 Project:
 MUDGE LS 7
 Collection Date: 2/14/2018 9:10:00 AM

 Lab ID:
 1802866-002
 Matrix: SOIL
 Received Date: 2/15/2018 7:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS					Analys	t: MRA
Chloride	80	30	mg/Kg	20	2/21/2018 1:11:40 PM	36641
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANICS				Analys	t: <b>TOM</b>
Diesel Range Organics (DRO)	ND	9.8	mg/Kg	1	2/16/2018 5:26:35 PM	36556
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	2/16/2018 5:26:35 PM	36556
Surr: DNOP	97.3	70-130	%Rec	1	2/16/2018 5:26:35 PM	36556
EPA METHOD 8015D: GASOLINE RAI	NGE				Analys	t: NSB
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	2/16/2018 5:49:39 PM	36546
Surr: BFB	79.6	15-316	%Rec	1	2/16/2018 5:49:39 PM	36546
EPA METHOD 8021B: VOLATILES					Analys	t: NSB
Benzene	ND	0.023	mg/Kg	1	2/16/2018 5:49:39 PM	36546
Toluene	ND	0.047	mg/Kg	1	2/16/2018 5:49:39 PM	36546
Ethylbenzene	ND	0.047	mg/Kg	1	2/16/2018 5:49:39 PM	36546
Xylenes, Total	ND	0.093	mg/Kg	1	2/16/2018 5:49:39 PM	36546
Surr: 4-Bromofluorobenzene	81.8	80-120	%Rec	1	2/16/2018 5:49:39 PM	36546

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

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 2 of 14
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Date Reported: 2/22/2018

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Blagg Engineering **Project:** MUDGE LS 7

1802866-003

Lab ID:

Client Sample ID: SB-11 (25'-35') 3-pt Collection Date: 2/14/2018 9:55:00 AM Received Date: 2/15/2018 7:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	<b>Date Analyzed</b>	Batch
EPA METHOD 300.0: ANIONS					Analyst	: MRA
Chloride	120	30	mg/Kg	20	2/21/2018 1:24:04 PM	36641
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANICS				Analyst	: TOM
Diesel Range Organics (DRO)	68	9.6	mg/Kg	1	2/16/2018 5:50:47 PM	36556
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	2/16/2018 5:50:47 PM	36556
Surr: DNOP	92.6	70-130	%Rec	1	2/16/2018 5:50:47 PM	36556
EPA METHOD 8015D: GASOLINE RAI	NGE				Analyst	:: NSB
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	2/16/2018 6:13:01 PM	36546
Surr: BFB	88.0	15-316	%Rec	1	2/16/2018 6:13:01 PM	36546
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.024	mg/Kg	1	2/16/2018 6:13:01 PM	36546
Toluene	ND	0.047	mg/Kg	1	2/16/2018 6:13:01 PM	36546
Ethylbenzene	ND	0.047	mg/Kg	1	2/16/2018 6:13:01 PM	36546
Xylenes, Total	ND	0.095	mg/Kg	1	2/16/2018 6:13:01 PM	36546
Surr: 4-Bromofluorobenzene	85.2	80-120	%Rec	1	2/16/2018 6:13:01 PM	36546

Matrix: SOIL

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

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 3 of 14
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Date Reported: 2/22/2018

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Blagg Engineering Client Sample ID: SB-11 (40'-41')

 Project:
 MUDGE LS 7
 Collection Date: 2/14/2018 10:03:00 AM

 Lab ID:
 1802866-004
 Matrix: SOIL
 Received Date: 2/15/2018 7:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS					Analyst	: MRA
Chloride	64	30	mg/Kg	20	2/21/2018 1:36:28 PM	36641
EPA METHOD 8015M/D: DIESEL RANG	GE ORGANICS	;			Analyst	: ТОМ
Diesel Range Organics (DRO)	ND	9.8	mg/Kg	1	2/16/2018 6:14:53 PM	36556
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	2/16/2018 6:14:53 PM	36556
Surr: DNOP	96.5	70-130	%Rec	1	2/16/2018 6:14:53 PM	36556
EPA METHOD 8015D: GASOLINE RAN	IGE				Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	2/16/2018 6:36:26 PM	36546
Surr: BFB	80.8	15-316	%Rec	1	2/16/2018 6:36:26 PM	36546
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.024	mg/Kg	1	2/16/2018 6:36:26 PM	36546
Toluene	ND	0.047	mg/Kg	1	2/16/2018 6:36:26 PM	36546
Ethylbenzene	ND	0.047	mg/Kg	1	2/16/2018 6:36:26 PM	36546
Xylenes, Total	ND	0.095	mg/Kg	1	2/16/2018 6:36:26 PM	36546
Surr: 4-Bromofluorobenzene	84.0	80-120	%Rec	1	2/16/2018 6:36:26 PM	36546

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

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 4 of 14
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Date Reported: 2/22/2018

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Blagg Engineering **Project:** MUDGE LS 7

1802866-005

Lab ID:

Client Sample ID: SB-8, 3-PT (20'-30') Collection Date: 2/14/2018 10:43:00 AM Received Date: 2/15/2018 7:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	<b>Date Analyzed</b>	Batch
EPA METHOD 300.0: ANIONS					Analyst	: MRA
Chloride	120	30	mg/Kg	20	2/21/2018 1:48:52 PM	36641
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANICS	;			Analyst	: ТОМ
Diesel Range Organics (DRO)	ND	9.1	mg/Kg	1	2/16/2018 6:39:03 PM	36556
Motor Oil Range Organics (MRO)	ND	46	mg/Kg	1	2/16/2018 6:39:03 PM	36556
Surr: DNOP	99.6	70-130	%Rec	1	2/16/2018 6:39:03 PM	36556
EPA METHOD 8015D: GASOLINE RAI	NGE				Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	2/16/2018 6:59:44 PM	36546
Surr: BFB	84.8	15-316	%Rec	1	2/16/2018 6:59:44 PM	36546
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.023	mg/Kg	1	2/16/2018 6:59:44 PM	36546
Toluene	ND	0.047	mg/Kg	1	2/16/2018 6:59:44 PM	36546
Ethylbenzene	ND	0.047	mg/Kg	1	2/16/2018 6:59:44 PM	36546
Xylenes, Total	ND	0.094	mg/Kg	1	2/16/2018 6:59:44 PM	36546
Surr: 4-Bromofluorobenzene	84.8	80-120	%Rec	1	2/16/2018 6:59:44 PM	36546

Matrix: SOIL

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

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 5 of 14
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Date Reported: 2/22/2018

### Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering Client Sample ID: SB-8 (40'-41')

 Project:
 MUDGE LS 7
 Collection Date: 2/14/2018 10:58:00 AM

 Lab ID:
 1802866-006
 Matrix: SOIL
 Received Date: 2/15/2018 7:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS					Analyst	MRA
Chloride	33	30	mg/Kg	20	2/21/2018 2:01:16 PM	36641
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANICS				Analyst	: TOM
Diesel Range Organics (DRO)	ND	9.4	mg/Kg	1	2/16/2018 7:03:01 PM	36556
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1	2/16/2018 7:03:01 PM	36556
Surr: DNOP	99.5	70-130	%Rec	1	2/16/2018 7:03:01 PM	36556
EPA METHOD 8015D: GASOLINE RAM	IGE				Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	2/16/2018 7:23:08 PM	36546
Surr: BFB	82.4	15-316	%Rec	1	2/16/2018 7:23:08 PM	36546
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.025	mg/Kg	1	2/16/2018 7:23:08 PM	36546
Toluene	ND	0.049	mg/Kg	1	2/16/2018 7:23:08 PM	36546
Ethylbenzene	ND	0.049	mg/Kg	1	2/16/2018 7:23:08 PM	36546
Xylenes, Total	ND	0.099	mg/Kg	1	2/16/2018 7:23:08 PM	36546
Surr: 4-Bromofluorobenzene	83.7	80-120	%Rec	1	2/16/2018 7:23:08 PM	36546

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

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 6 of 14
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Date Reported: 2/22/2018

### Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Project: MUDGE LS 7
Lab ID: 1802866-007

Client Sample ID: SB-9, 3-pt (20'-30')
Collection Date: 2/14/2018 11:53:00 AM
Received Date: 2/15/2018 7:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	<b>Date Analyzed</b>	Batch
EPA METHOD 300.0: ANIONS					Analyst	: MRA
Chloride	57	30	mg/Kg	20	2/21/2018 2:38:29 PM	36641
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANICS				Analyst	: TOM
Diesel Range Organics (DRO)	ND	9.8	mg/Kg	1	2/16/2018 7:27:02 PM	36556
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	2/16/2018 7:27:02 PM	36556
Surr: DNOP	96.4	70-130	%Rec	1	2/16/2018 7:27:02 PM	36556
EPA METHOD 8015D: GASOLINE RAI	NGE				Analyst	:: NSB
Gasoline Range Organics (GRO)	ND	4.6	mg/Kg	1	2/16/2018 7:46:30 PM	36546
Surr: BFB	83.6	15-316	%Rec	1	2/16/2018 7:46:30 PM	36546
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.023	mg/Kg	1	2/16/2018 7:46:30 PM	36546
Toluene	ND	0.046	mg/Kg	1	2/16/2018 7:46:30 PM	36546
Ethylbenzene	ND	0.046	mg/Kg	1	2/16/2018 7:46:30 PM	36546
Xylenes, Total	ND	0.092	mg/Kg	1	2/16/2018 7:46:30 PM	36546
Surr: 4-Bromofluorobenzene	82.9	80-120	%Rec	1	2/16/2018 7:46:30 PM	36546

Matrix: SOIL

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

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 7 of 14
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Date Reported: 2/22/2018

### Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering Client Sample ID: SB-9 (40'-41')

 Project:
 MUDGE LS 7
 Collection Date: 2/14/2018 12:05:00 PM

 Lab ID:
 1802866-008
 Matrix: SOIL
 Received Date: 2/15/2018 7:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS					Analyst	MRA
Chloride	40	30	mg/Kg	20	2/21/2018 3:15:42 PM	36641
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANICS				Analyst	: TOM
Diesel Range Organics (DRO)	ND	9.3	mg/Kg	1	2/16/2018 7:51:01 PM	36556
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1	2/16/2018 7:51:01 PM	36556
Surr: DNOP	98.2	70-130	%Rec	1	2/16/2018 7:51:01 PM	36556
EPA METHOD 8015D: GASOLINE RAM	IGE				Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	2/16/2018 8:09:53 PM	36546
Surr: BFB	85.4	15-316	%Rec	1	2/16/2018 8:09:53 PM	36546
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.024	mg/Kg	1	2/16/2018 8:09:53 PM	36546
Toluene	ND	0.048	mg/Kg	1	2/16/2018 8:09:53 PM	36546
Ethylbenzene	ND	0.048	mg/Kg	1	2/16/2018 8:09:53 PM	36546
Xylenes, Total	ND	0.097	mg/Kg	1	2/16/2018 8:09:53 PM	36546
Surr: 4-Bromofluorobenzene	84.5	80-120	%Rec	1	2/16/2018 8:09:53 PM	36546

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

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 8 of 14
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Date Reported: 2/22/2018

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Blagg Engineering **Project:** MUDGE LS 7

1802866-009

Lab ID:

Client Sample ID: SB-12, 3-pt (20'-30') Collection Date: 2/14/2018 1:17:00 PM Received Date: 2/15/2018 7:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS					Analyst	: MRA
Chloride	270	30	mg/Kg	20	2/21/2018 3:28:06 PM	36641
EPA METHOD 8015M/D: DIESEL RAN	IGE ORGANICS				Analyst	: TOM
Diesel Range Organics (DRO)	ND	9.5	mg/Kg	1	2/16/2018 8:15:09 PM	36556
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	2/16/2018 8:15:09 PM	36556
Surr: DNOP	106	70-130	%Rec	1	2/16/2018 8:15:09 PM	36556
EPA METHOD 8015D: GASOLINE RAI	NGE				Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	2/16/2018 8:33:15 PM	36546
Surr: BFB	82.3	15-316	%Rec	1	2/16/2018 8:33:15 PM	36546
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.024	mg/Kg	1	2/16/2018 8:33:15 PM	36546
Toluene	ND	0.047	mg/Kg	1	2/16/2018 8:33:15 PM	36546
Ethylbenzene	ND	0.047	mg/Kg	1	2/16/2018 8:33:15 PM	36546
Xylenes, Total	ND	0.094	mg/Kg	1	2/16/2018 8:33:15 PM	36546
Surr: 4-Bromofluorobenzene	84.1	80-120	%Rec	1	2/16/2018 8:33:15 PM	36546

Matrix: SOIL

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

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 9 of 14
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Date Reported: 2/22/2018

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Blagg Engineering **Client Sample ID:** SB-12 (40'-41')

**Project:** MUDGE LS 7 **Collection Date:** 2/14/2018 1:33:00 PM Lab ID: 1802866-010 Matrix: SOIL Received Date: 2/15/2018 7:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	<b>Date Analyzed</b>	Batch
EPA METHOD 300.0: ANIONS					Analyst	: MRA
Chloride	43	30	mg/Kg	20	2/21/2018 3:40:30 PM	36641
EPA METHOD 8015M/D: DIESEL RAN	IGE ORGANICS	;			Analyst	: ТОМ
Diesel Range Organics (DRO)	ND	9.7	mg/Kg	1	2/16/2018 8:39:08 PM	36556
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	2/16/2018 8:39:08 PM	36556
Surr: DNOP	98.5	70-130	%Rec	1	2/16/2018 8:39:08 PM	36556
EPA METHOD 8015D: GASOLINE RAI	NGE				Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	2/16/2018 8:56:34 PM	36546
Surr: BFB	81.7	15-316	%Rec	1	2/16/2018 8:56:34 PM	36546
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.024	mg/Kg	1	2/16/2018 8:56:34 PM	36546
Toluene	ND	0.048	mg/Kg	1	2/16/2018 8:56:34 PM	36546
Ethylbenzene	ND	0.048	mg/Kg	1	2/16/2018 8:56:34 PM	36546
Xylenes, Total	ND	0.096	mg/Kg	1	2/16/2018 8:56:34 PM	36546
Surr: 4-Bromofluorobenzene	85.0	80-120	%Rec	1	2/16/2018 8:56:34 PM	36546

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

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix
- Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limits Page 10 of 14 J
- P Sample pH Not In Range
- RLReporting Detection Limit
- Sample container temperature is out of limit as specified

### Hall Environmental Analysis Laboratory, Inc.

WO#: **1802866** 

22-Feb-18

Client: Blagg Engineering
Project: MUDGE LS 7

Sample ID MB-36641 SampType: mblk TestCode: EPA Method 300.0: Anions

Client ID: PBS Batch ID: 36641 RunNo: 49283

Prep Date: 2/21/2018 Analysis Date: 2/21/2018 SeqNo: 1591746 Units: mg/Kg

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

Chloride ND 1.5

Sample ID LCS-36641 SampType: Ics TestCode: EPA Method 300.0: Anions

Client ID: LCSS Batch ID: 36641 RunNo: 49283

Prep Date: 2/21/2018 Analysis Date: 2/21/2018 SeqNo: 1591747 Units: mg/Kg

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

Chloride 14 1.5 15.00 0 95.6 90 110

#### Qualifiers:

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

Page 11 of 14

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.

WO#: **1802866** 

22-Feb-18

Client: Blagg Engineering
Project: MUDGE LS 7

Sample ID LCS-36556 SampType: LCS TestCode: EPA Method 8015M/D: Diesel Range Organics

Client ID: LCSS Batch ID: 36556 RunNo: 49188

Prep Date: 2/15/2018 Analysis Date: 2/16/2018 SeqNo: 1586400 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 91.6 70 130

 Surr: DNOP
 4.6
 5.000
 91.9
 70
 130

Sample ID MB-36556 SampType: MBLK TestCode: EPA Method 8015M/D: Diesel Range Organics

Client ID: PBS Batch ID: 36556 RunNo: 49188

Prep Date: 2/15/2018 Analysis Date: 2/16/2018 SeqNo: 1586401 Units: mg/Kg

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

Diesel Range Organics (DRO) ND 10
Motor Oil Range Organics (MRO) ND 50

Surr: DNOP 9.4 10.00 93.8 70 130

#### Qualifiers:

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

Page 12 of 14

### Hall Environmental Analysis Laboratory, Inc.

WO#: 1802866

22-Feb-18

**Client:** Blagg Engineering **Project:** MUDGE LS 7

Sample ID MB-36546 SampType: MBLK TestCode: EPA Method 8015D: Gasoline Range

Client ID: **PBS** Batch ID: 36546 RunNo: 49180

Prep Date: 2/15/2018 Analysis Date: 2/16/2018 SeqNo: 1586854 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 870 1000 87.0 15 316

Sample ID LCS-36546 SampType: LCS TestCode: EPA Method 8015D: Gasoline Range

Client ID: LCSS Batch ID: 36546 RunNo: 49180

Analysis Date: 2/16/2018 SeqNo: 1586855 Prep Date: 2/15/2018 Units: mg/Kg

1000

Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Gasoline Range Organics (GRO) 28 5.0 25.00 0 111 75.9 131 980 98.3

15

316

#### Qualifiers:

Surr: BFB

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

Page 13 of 14

### Hall Environmental Analysis Laboratory, Inc.

WO#: **1802866** 

22-Feb-18

Client: Blagg Engineering
Project: MUDGE LS 7

Sample ID MB-36546 SampType: MBLK TestCode: EPA Method 8021B: Volatiles Client ID: **PBS** Batch ID: 36546 RunNo: 49180 Prep Date: 2/15/2018 Analysis Date: 2/16/2018 SeqNo: 1586876 Units: mg/Kg Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Benzene ND 0.025 ND 0.050 Toluene ND 0.050 Ethylbenzene Xylenes, Total ND 0.10 Surr: 4-Bromofluorobenzene 0.91 1.000 90.7 80 120

Sample ID LCS-36546	Samp	Type: <b>LC</b>	s	Tes	tCode: E	PA Method	8021B: Vola	tiles		
Client ID: LCSS	Batc	h ID: 36	546	F	RunNo: 4	9180				
Prep Date: 2/15/2018	Analysis [	Date: 2/	16/2018	S	SeqNo: <b>1586877</b>			Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	1.000	0	107	77.3	128			
Toluene	1.1	0.050	1.000	0	106	79.2	125			
Ethylbenzene	1.0	0.050	1.000	0	103	80.7	127			
Xylenes, Total	3.2	0.10	3.000	0	107	81.6	129			
Surr: 4-Bromofluorobenzene	0.90		1.000		90.0	80	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
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Page 14 of 14



Hali 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 Num	ber: 180	2866		RcptNo:	1
Received By: Anne Thorne	2/15/2018 7:00:00	АМ		am H. Am H.	~	
Completed By: Anne Thorne	2/15/2018 9:06:34	AM		1.11		
Reviewed By: 8/20 02/15/1	8			ana si		
Lakeled By DDS						
Chain of Custody						
Is Chain of Custody complete?		Yes	~	No 🗆	Not Present	
2. How was the sample delivered?		Cou	rier		3.3.5.3.9 (3.90 <del>0.0)                                  </del>	
Log In						
Was an attempt made to cool the sample	s?	Yes	~	No 🗌	NA 🗆	
4. Were all samples received at a temperatu	are of >0° C to 6.0°C	Yes	V	No 🗆	NA 🗆	
5. Sample(s) in proper container(s)?		Yes	~	No 🗌		
6. Sufficient sample volume for indicated tes	t(s)?	Yes	<b>v</b>	No 🗌		
7. Are samples (except VOA and ONG) prop	erly preserved?	Yes	<b>v</b>	No 🗌		
8, Was preservative added to bottles?		Yes		No 🔽	NA 🗆	
9. VOA vials have zero headspace?		Yes		No 🗆	No VOA Vials 🗹	
0. Were any sample containers received bro	oken?	Yes		No 🗹	# of preserved	
Does paperwork match bottle labels?		Yes	<b>Y</b>	No 🗆	bottles checked for pH:	
(Note discrepancies on chain of custody)						<ul><li>12 unless noted)</li></ul>
2. Are matrices correctly identified on Chain	of Custody?	2000	~	No 🗆	Adjusted?	-
3. Is it clear what analyses were requested?			~	No 🗆	01-1-11	
<ol><li>Were all holding times able to be met? (If no, notify customer for authorization.)</li></ol>		Yes	<b>Y</b>	No 🗆	Checked by:	
pecial Handling (if applicable)						
5. Was client notified of all discrepancies wi	th this order?	Yes		No 🗌	NA 🗹	
Person Notified:	Date		-			
By Whom:	Via:	eMa	ail 🔲	Phone L Fax	_ In Person	
Regarding:			+			
Client Instructions:						
16. Additional remarks:						
7. Cooler Information						
Cooler No Temp °C Condition	Seal Intact   Seal No	Seal Da	ate	Signed By	ĺ	
1 1.0 Good					I	

,	2	ט-וס	Chain-or-Custody Record	200			L	1		4 .				(		1	
Client: .	BP A	AMERICA		XStandard	□ Rush				7.0	Z Z	F L	Z	N C	2 8	AMP ODD	HALL ENVIKONMENTAL ANALYSTS LABORATORY	7 6
	BLAGE	h	ENGUIERAM INC.	Project Name:		1				W	v.halle	inviro	www.hallenvironmental.com	noo.le		;	2
6	Malling Address.			2011		)		4901	Haw	kins l	E H	Albuq	nerque	NN.	4901 Hawkins NE - Albuquerque, NM 87109		
				Project #:				Ţ <u>e</u>	505-3	505-345-3975	975	Fax	Fax 505-345-4107	345-4	107		
ne #:	Phone #: (505)	5) 320	.0 - (193								An	alysis	Analysis Request	iest			
i or	email or Fax#:			Project Manager:	iger:		(		(0)			(*C	17	_			
OA/OC Packa	OA/OC Package: X Standard		□ Level 4 (Full Validation)	S.	EVE MOSKAL	240	1S08) s		AIM / OX		(SMIS	DS. QQ					
Accreditation	ntion			Sampler:	JEFF BLAGE	7.	MB.			_	S 02	01		_			
O NELAP	<b>a</b> .	□ Other		REGIO	Z Yes	ON O	L		_			_			(A		W 2.
) qq	□ EDD (Type)			Sample Temperature:	perature: //		36					-	səp	- W	- 22		- //
Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	TM+ X3TE	STEX + MT	TPH 8015B	orteM) 803	01:8) s'HA9	SCRA 8 Mei O,T) snoin/	1808 Pestici	AOV) 809S8	-ima8) 07S8 3(IAWH)		Air Bubbles
Sing	7580	Sout	55-6,3-pt (20-30')	4 08 x 1	COOL	100	×		-	-		-	3		×		
U	0410	_	58-6 (40-41)	_	1	202									-		
J	0955		58-11(25-35)3-00	-		203	_										
	1003		58-11(40-41)	_		h02						- 1					
-	1043		58-8,3-pt(20-30)			30				Į,							
	1058	_	58-8 (40 -41)			260	_										
	1153		58-9.3-pe(20-30)	_		202	_										
į	1205		58-9 (40-41-)			7008									_		
	1317		53-12,3-0=(20-30)	-		52	-										
	1333		2	_	_	90	_								_		
- 1	Tme:	Relinquished by	Phy Bless	Received by	3	Date Time	1,000	Remarks:	- 38 88	34. 38 6×1247.0	STE	- N	STEVE MOSICAL				
2	Time:	Relinquish	y d pe	Reveived by:		Dete STEME			3	W25:	-	900	4300901769	ing S	_1-001CV-E;MUDGELS7 4300901769	1.87	

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

District II 811 S. First St., Artesia, NM 88210 Phone:(575) 748-1283 Fax:(575) 748-9720

District III 1000 Rio Brazos Rd., Aztec, NM 87410 Phone:(505) 334-6178 Fax:(505) 334-6170

1220 S. St Francis Dr., Santa Fe, NM 87505 Phone:(505) 476-3470 Fax:(505) 476-3462

**State of New Mexico Energy, Minerals and Natural Resources Oil Conservation Division** 1220 S. St Francis Dr. **Santa Fe, NM 87505** 

CONDITIONS

Action 22115

#### **CONDITIONS**

Operator:	OGRID:
SIMCOE LLC	329736
1199 Main Ave., Suite 101	Action Number:
Durango, CO 81301	22115
	Action Type:
	[C-141] Release Corrective Action (C-141)

#### CONDITIONS

Created	Condition	Condition
Ву		Date
nvelez	Remediation closure report via SVE is approved. Release resolved.	3/14/2024