



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

December 15, 2016

Jack Rose
Beach Exploration, Inc.
800 North Marienfeld Suite 200
Midland, TX 79701
TEL: (432) 683-6226
FAX

RE: Eastland Queen Unit Central Battery

OrderNo.: 1612316

Dear Jack Rose:

Hall Environmental Analysis Laboratory received 3 sample(s) on 12/7/2016 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 www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

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

Sincerely,

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

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1612316

Date Reported: 12/15/2016

CLIENT: Beach Exploration, Inc.

Client Sample ID: Central Battery @ 1' BLS

Project: Eastland Queen Unit Central Battery

Collection Date: 12/1/2016 1:16:00 PM

Lab ID: 1612316-001

Matrix: SOIL

Received Date: 12/7/2016 9:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	2800	150		mg/Kg	100	12/13/2016 6:58:22 PM	29153
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	12/9/2016 2:11:12 PM	29082
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/9/2016 2:11:12 PM	29082
Surr: DNOP	93.0	70-130		%Rec	1	12/9/2016 2:11:12 PM	29082
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/9/2016 2:00:00 AM	29059
Surr: BFB	91.4	68.3-144		%Rec	1	12/9/2016 2:00:00 AM	29059
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	12/9/2016 2:00:00 AM	29059
Toluene	ND	0.049		mg/Kg	1	12/9/2016 2:00:00 AM	29059
Ethylbenzene	ND	0.049		mg/Kg	1	12/9/2016 2:00:00 AM	29059
Xylenes, Total	ND	0.098		mg/Kg	1	12/9/2016 2:00:00 AM	29059
Surr: 4-Bromofluorobenzene	94.2	80-120		%Rec	1	12/9/2016 2:00:00 AM	29059

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

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

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1612316

Date Reported: 12/15/2016

CLIENT: Beach Exploration, Inc.

Client Sample ID: Central Battery @ 2' BGS

Project: Eastland Queen Unit Central Battery

Collection Date: 12/1/2016 1:31:00 PM

Lab ID: 1612316-002

Matrix: SOIL

Received Date: 12/7/2016 9:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	48	30		mg/Kg	20	12/13/2016 4:17:01 PM	29153
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	17	9.5		mg/Kg	1	12/9/2016 2:32:43 PM	29082
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	12/9/2016 2:32:43 PM	29082
Surr: DNOP	96.9	70-130		%Rec	1	12/9/2016 2:32:43 PM	29082
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	12/9/2016 2:23:16 AM	29059
Surr: BFB	90.0	68.3-144		%Rec	1	12/9/2016 2:23:16 AM	29059
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.023		mg/Kg	1	12/9/2016 2:23:16 AM	29059
Toluene	ND	0.046		mg/Kg	1	12/9/2016 2:23:16 AM	29059
Ethylbenzene	ND	0.046		mg/Kg	1	12/9/2016 2:23:16 AM	29059
Xylenes, Total	ND	0.091		mg/Kg	1	12/9/2016 2:23:16 AM	29059
Surr: 4-Bromofluorobenzene	94.1	80-120		%Rec	1	12/9/2016 2:23:16 AM	29059

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

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

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1612316

Date Reported: 12/15/2016

CLIENT: Beach Exploration, Inc.

Client Sample ID: Central Battery @ 4' BGS

Project: Eastland Queen Unit Central Battery

Collection Date: 12/1/2016 1:35:00 PM

Lab ID: 1612316-003

Matrix: SOIL

Received Date: 12/7/2016 9:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	190	30		mg/Kg	20	12/13/2016 4:29:25 PM	29153
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	1500	99		mg/Kg	10	12/9/2016 2:54:08 PM	29082
Motor Oil Range Organics (MRO)	870	500		mg/Kg	10	12/9/2016 2:54:08 PM	29082
Surr: DNOP	0	70-130	S	%Rec	10	12/9/2016 2:54:08 PM	29082
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	19	4.8		mg/Kg	1	12/9/2016 2:46:42 AM	29059
Surr: BFB	230	68.3-144	S	%Rec	1	12/9/2016 2:46:42 AM	29059
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	12/9/2016 2:46:42 AM	29059
Toluene	ND	0.048		mg/Kg	1	12/9/2016 2:46:42 AM	29059
Ethylbenzene	ND	0.048		mg/Kg	1	12/9/2016 2:46:42 AM	29059
Xylenes, Total	ND	0.097		mg/Kg	1	12/9/2016 2:46:42 AM	29059
Surr: 4-Bromofluorobenzene	108	80-120		%Rec	1	12/9/2016 2:46:42 AM	29059

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1612316

15-Dec-16

Client: Beach Exploration, Inc.

Project: Eastland Queen Unit Central Battery

Sample ID	MB-29153	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBS	Batch ID:	29153	RunNo:	39371					
Prep Date:	12/13/2016	Analysis Date:	12/13/2016	SeqNo:	1232526	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	LCS-29153	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSS	Batch ID:	29153	RunNo:	39371					
Prep Date:	12/13/2016	Analysis Date:	12/13/2016	SeqNo:	1232527	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.4	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
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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1612316

15-Dec-16

Client: Beach Exploration, Inc.
Project: Eastland Queen Unit Central Battery

Sample ID	LCS-29082		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS		Batch ID: 29082		RunNo: 39269					
Prep Date:	12/8/2016		Analysis Date: 12/9/2016		SeqNo: 1230208		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	47	10	50.00	0	93.1	62.6	124			
Surr: DNOP	4.7		5.000		93.7	70	130			

Sample ID	MB-29082		SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS		Batch ID: 29082		RunNo: 39269					
Prep Date:	12/8/2016		Analysis Date: 12/9/2016		SeqNo: 1230209		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	10		10.00		100	70	130			

Sample ID	LCS-29117		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS		Batch ID: 29117		RunNo: 39305					
Prep Date:	12/12/2016		Analysis Date: 12/12/2016		SeqNo: 1230437		Units: %Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	3.9		5.000		77.4	70	130			

Sample ID	MB-29117		SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS		Batch ID: 29117		RunNo: 39305					
Prep Date:	12/12/2016		Analysis Date: 12/12/2016		SeqNo: 1230438		Units: %Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	8.0		10.00		80.4	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1612316

15-Dec-16

Client: Beach Exploration, Inc.
Project: Eastland Queen Unit Central Battery

Sample ID	MB-29059		SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	PBS		Batch ID: 29059		RunNo: 39251					
Prep Date:	12/7/2016		Analysis Date: 12/8/2016		SeqNo: 1228697		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		83.7	68.3	144			

Sample ID	LCS-29059		SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	LCSS		Batch ID: 29059		RunNo: 39251					
Prep Date:	12/7/2016		Analysis Date: 12/8/2016		SeqNo: 1228698		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	101	74.6	123			
Surr: BFB	920		1000		92.4	68.3	144			

Sample ID	1612316-001AMS		SampType: MS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	Central Battery @ 1'		Batch ID: 29059		RunNo: 39251					
Prep Date:	12/7/2016		Analysis Date: 12/8/2016		SeqNo: 1228711		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	30	4.9	24.70	0	120	61.3	150			
Surr: BFB	1100		988.1		107	68.3	144			

Sample ID	1612316-001AMSD		SampType:	MSD		TestCode:	EPA Method 8015D: Gasoline Range				
Client ID:	Central Battery @ 1'		Batch ID:	29059		RunNo:	39251				
Prep Date:	12/7/2016		Analysis Date:	12/8/2016		SeqNo:	1228728		Units:	mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Gasoline Range Organics (GRO)	29	4.9	24.73	0	116	61.3	150	3.33	20		
Surr: BFB	990		989.1		100	68.3	144	0	0		

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1612316

15-Dec-16

Client: Beach Exploration, Inc.
Project: Eastland Queen Unit Central Battery

Sample ID	MB-29059		SampType:	MBLK		TestCode:	EPA Method 8021B: Volatiles			
Client ID:	PBS		Batch ID:	29059		RunNo:	39251			
Prep Date:	12/7/2016		Analysis Date:	12/8/2016		SeqNo:	1228772		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		92.4	80	120			

Sample ID	LCS-29059		SampType:	LCS		TestCode:	EPA Method 8021B: Volatiles			
Client ID:	LCSS		Batch ID:	29059		RunNo:	39251			
Prep Date:	12/7/2016		Analysis Date:	12/8/2016		SeqNo:	1228773		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	108	75.2	115			
Toluene	1.0	0.050	1.000	0	102	80.7	112			
Ethylbenzene	0.99	0.050	1.000	0	98.7	78.9	117			
Xylenes, Total	3.0	0.10	3.000	0	99.6	79.2	115			
Surr: 4-Bromofluorobenzene	1.0		1.000		102	80	120			

Sample ID	1612316-002AMS		SampType:	MS		TestCode:	EPA Method 8021B: Volatiles			
Client ID:	Central Battery @ 2'		Batch ID:	29059		RunNo:	39251			
Prep Date:	12/7/2016		Analysis Date:	12/8/2016		SeqNo:	1228777		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.023	0.9390	0	121	61.5	138			
Toluene	1.1	0.047	0.9390	0	118	71.4	127			
Ethylbenzene	1.1	0.047	0.9390	0	120	70.9	132			
Xylenes, Total	3.4	0.094	2.817	0.03675	119	76.2	123			
Surr: 4-Bromofluorobenzene	0.96		0.9390		102	80	120			

Sample ID	1612316-002AMSD		SampType:	MSD		TestCode:	EPA Method 8021B: Volatiles			
Client ID:	Central Battery @ 2'		Batch ID:	29059		RunNo:	39251			
Prep Date:	12/7/2016		Analysis Date:	12/8/2016		SeqNo:	1228778		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.92	0.024	0.9542	0	96.3	61.5	138	20.9	20	R
Toluene	1.0	0.048	0.9542	0	107	71.4	127	8.91	20	
Ethylbenzene	1.1	0.048	0.9542	0	112	70.9	132	5.15	20	
Xylenes, Total	3.2	0.095	2.863	0.03675	112	76.2	123	4.82	20	
Surr: 4-Bromofluorobenzene	0.97		0.9542		101	80	120	0	0	

Qualifiers:

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



Hall Environmental Analysis Laboratory
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: Beach Exploration, Inc.

Work Order Number: 1612316

RcptNo: 1

Received by/date:

LM 12/6/16

Logged By: Anne Thorne

12/7/2016 9:50:00 AM

Anne Thorne

Completed By: Anne Thorne

12/7/2016 10:41:21 AM

Anne Thorne

Reviewed By:

[Signature]

12/6/16

Chain of Custody

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

Log In

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

of preserved
bottles checked
for pH:

(<2 or >12 unless noted)

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

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

Person Notified:

Date:

By Whom:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.5	Good	Yes			

