NM2 - ___3___

MONITORING REPORTS YEAR(S):

_2013 - 2014____

State of New Mexico Energy, Minerals and Natural Resources Department

Susana Martinez Governor

David Martin Cabinet Secretary

Brett F. Woods, Ph.D. Deputy Cabinet Secretary David R. Catanach, Division Director Oil Conservation Division



May 21, 2015

Jeff Peace BP America Production Company 200 Energy Court Farmington, New Mexico 87401

RE: 2014 Annual Vadose Zone Monitoring Report Reviews

BP America Production Company

Permit NM-2-003 Crouch Mesa Waste Management Facility

Location: Unit O of Section 2, Township 29 North, Range 12 West, NMPM

San Juan County, New Mexico

Dear Mr. Peace:

The Oil Conservation Division (OCD) has completed the review of BP America Production Company's (BP) 2014 Annual Vadose Zone Monitoring Report which includes the results from the following sampling events: 1st Quarter March 31, 2014; 2nd Quarter June 30, 2014; August 29, 2014 3rd Quarter; and November 7, 2014 4th Quarter. The review of the 2014 vadose zone (native soils beneath the biopiles) monitoring data has resulted in the discovery of some issues that must be addressed in order for BP to remain compliant with Permit NM2-003 and 19.15.36 NMAC (Part 36).

OCD has reviewed the administrative files for the facility and has been unable to locate the semiannual treatment zone (soils to be remediated) monitoring required of 19.15.36.15.D NMAC. Pursuant to the transitional provisions of Part 36 (19.15.36.20.A NMAC), "Existing surface waste management facilities shall comply with the operational, waste acceptance and closure requirements provided in 19.15.36 NMAC, except as otherwise specifically provided in the applicable permit or order, or in a specific waiver, exception or agreement that the division has granted in writing to the particular surface waste management facility." In accordance with 19.15.36.15.D NMAC, "The operator shall collect and analyze at least one composite soil sample, consisting of four discrete samples, from the treatment zone at least semi-annually using the methods specified below for TPH and chlorides." As underlined in the above reference of Subsection D of 19.15.36.15 NMAC, the "methods specified below for TPH and chlorides" are those identified in Subsection F of 19.15.36.15 NMAC: such as "TPH, as determined by EPA method 418.1 or other EPA method approved by the division..." OCD is willing to accept an equivalent method to EPA Method 418.1 that is capable of demonstrating a carbon range from C₆ to C₃₆. Please review OCD's letter dated June 30, 2011 and titled "Compliance with the Transitional Provisions of the Surface Waste Management Facilities rule (Rule 36) and Treatment and Vadose Monitoring Requirements at Existing Landfarms" for expectation of

BP America Production Company Crouch Mesa Waste Management Facility Permit NM-2-003 March 21, 2015 Page 2 of 5

compliance. If the sampling has occurred, please provide OCD copies of the laboratory results to demonstrate compliance. If not, please initiate the required sampling and submit the results.

In accordance with Paragraph (1) of 19.15.36.15.E NMAC, "The operator shall monitor the vadose zone beneath the treatment zone in each landfarm cell." Pursuant to Paragraph (3) of 19.15.36.15.E NMAC, "The operator shall collect and analyze a minimum of four randomly selected, independent samples from the vadose zone, using the methods specified below for the constituents listed in Subsections A and B of 20.6.2.3103 NMAC at least every five years and shall compare each result to the higher of the PQL or the background soil concentrations to determine whether a release has occurred." OCD has reviewed the administrative file and has been unable to locate the five year vadose zone monitoring program demonstration. Part 36 became effective February 14, 2007. The five year sampling event has been due since March 2012, please complete the demonstration. As underlined in the above reference of Paragraph (3) of 19.15.36.15.E NMAC, the "methods specified below for the constituents listed in Subsections A and B of 20.6.2.3103 NMAC" are those identified in Subsection F of 19.15.36.15 NMAC: such as "determined by EPA SW-846 methods 6010B or 6020 or other EPA method approved by the division..." Please perform the five year vadose zone monitoring program demonstration on all of the active landfarm cells and submit the sampling results and comparison to background and/or POLs demonstrating compliance of Paragraph (3) of 19.15.36.15.E NMAC by EPA SW-846 methods 6010B or 6020.

In regards to utilizing the proper TPH test method for vadose zone monitoring, in accordance with Paragraph (2) of 19.15.36.15.E NMAC the operator shall analyze the samples from the vadose zone "using the methods specified below for TPH, BTEX and chlorides and shall compare each result to the higher of the PQL or the background soil concentrations to determine whether a release has occurred." The "methods specified below for TPH, BTEX and chlorides" are those identified in Subsection F of 19.15.36.15 NMAC: such as "TPH, as determined by EPA method 418.1 or other EPA method approved by the division..." Pursuant to the Transitional Provisions of Subsection A of 19.15.36.20.NMAC, "Existing surface waste management facilities shall comply with the operational, waste acceptance and closure requirements provided in 19.15.36 NMAC, except as otherwise specifically provided in the applicable permit or order, or in a specific waiver, exception or agreement that the division has granted in writing to the particular surface waste management facility." The most common vadose zone monitoring (commonly referred to, but incorrectly as "Treatment Zone Monitoring" within existing landfarm permits) condition in an existing landfarm permit is as follows: "The soil samples must be analyzed using EPA-approved methods for total petroleum hydrocarbons (TPH) and volatile aromatic organics (BTEX) quarterly and for major cations/anions and heavy metals annually." The permit condition only identified the constituent and does not specify the test method. Part 36 specifies EPA Method 418.1 as the required vadose zone analyses for TPH. OCD is willing to accept an equivalent method to EPA Method 418.1 that is capable of demonstrating a carbon range from C₆ to C₃₆ (e.g. Method 8015 for GRO/DRO/MRO or ORO). Please submit all future vadose zone sampling results demonstrating TPH by EPA Method 418.1 or an equivalent method. Please review OCD's letter dated June 30, 2011 and titled "Compliance with the Transitional Provisions of the Surface Waste Management Facilities rule (Rule 36) and Treatment and Vadose Monitoring Requirements at Existing Landfarms" for expectation of compliance.

BP America Production Company Crouch Mesa Waste Management Facility Permit NM-2-003 March 21, 2015 Page 3 of 5

Pursuant to 19.15.36.15.E NMAC, the operator is required to compare the vadose results "to the higher of the PQL [Practical Quantitative Limit] or the background soil concentrations to determine whether a release has occurred." OCD's review of the administrative files for the facility resulted in the discovery of the initial facility background data set from January 1999, based upon the activation of Cell 5. The January 18, 1999 background data set provided results for the following 34 parameters: pH, conductivity, total dissolved solids, sodium absorption ratio, total alkalinity, total hardness, bicarbonate, carbonate, hydroxide, nitrates, nitrites, chloride, fluoride, phosphate, sulfate, iron, calcium, magnesium, potassium, sodium, arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver, gasoline range organics (GRO), diesel range organics (DRO), benzene, toluene, ethyl benzene, and total xylene. The facility background data set is missing parameters to complete the current quarterly vadose zone monitoring assessment and the 5 year vadose zone monitoring assessment. The January 18, 1999 background data set is missing results for THP by EPA method 418.1 or an equivalent method capable of demonstrating a carbon range from C₆ to C₃₆ to complete the current quarterly vadose zone monitoring assessment and results for copper, iron, manganese, and zinc for the five year vadose zone monitoring assessment. Please establish background for TPH by 418.1 or an equivalent method capable of demonstrating a carbon range from C₆ to C₃₆ and for the additional metals "determined by EPA SW-846 methods 6010B or 6020 or other EPA method approved by the division..." Please provide OCD a demonstration to establish the facility background and/or PQLs. If statistics are used in the demonstration, please provide references from EPA statistical guidance documents to support proposed statistical methods.

OCD compared the January 1999 background data set to the 1^{st} , 2^{nd} , and 3^{rd} quarter vadose zone monitoring results for DRO, GRO, BTEX, and chlorides. OCD determined that chloride was analyzed with a reporting limit of 30 mg/kg. The January 1999 background data set has an established chloride background of 1.6 mg/L, based upon detection. Please ensure that the laboratory's reporting limit does not exceed the established background and/or PQLs for all future vadose zone sampling events. Also, please submit all future vadose zone sampling results demonstrating TPH by EPA Method 418.1 or an equivalent method capable of demonstrating a carbon range from C_6 to C_{36} .

OCD compared the January 1999 background data set to the 4th quarter vadose zone monitoring results for DRO, GRO, BTEX, major cations/anions and RCRA 8 metals. OCD determined common exceedances to all cells for fluoride, sulfate, calcium, magnesium, potassium, and chromium. None of these exceedances were recognized in the assessment nor was a response action plan proposed or included with the submittal, as required of 19.15.36.15.E.(5) NMAC. The assessment provided in the report's cover letter stated "Analytical test results indicate the facility met standards with each sample event." If a different facility background data set was utilized for the assessment, please provide OCD a copy of the laboratory data set in order to establish an updated and revised facility background with OCD. If not, please demonstrate compliance to 19.15.36.15.E.(5) NMAC. Please ensure that the laboratory's reporting limit does not exceed the established background and/or PQLs for all future vadose zone sampling events. Also, please submit all future vadose zone sampling results demonstrating TPH by EPA Method 418.1 or an equivalent method capable of demonstrating a carbon range from C₆ to C₃₆.

In the last sentence of the second paragraph of the 2014 Annual Vadose Zone Monitoring Report cover letter, dated November 24, 2014, it states "Cell 5 is used for storage of remediated soils

BP America Production Company Crouch Mesa Waste Management Facility Permit NM-2-003 March 21, 2015 Page 4 of 5

from composting/landfarming operations." OCD has searched the administrative file (OCD Online) and has been unable to locate any requests from BP for the closure of any biopiles or approvals from OCD for a closure plan and/or closure of any biopiles. Please provide an explanation for the soils BP describes as "remediated." Also, please explain why the soils are stored in Cell 5 and what happens to the remediated soils when they are removed from Cell 5. Also, please provide copies of BP's requests and OCD approvals associated with the storage of "remediated" soils within Cell 5.

The first sentence of the third paragraph of the 2014 Annual Vadose Zone Monitoring Report cover letter, dated November 24, 2014, it states "Sampling protocol specifies collection of subsurface samples in each cell from the native ground surface below the treatment zone during the quarterly monitoring." The "sampling protocol" was provided in the submittal. Pursuant to the November 25, 1998 permit, the vadose zone "sample will be taken between two (2) to three (3) feet below the native ground surface. Please identify the depth in which sample are obtained on the laboratory chain of custody for all future vadose zone sampling events.

Please note that submittal of treatment zone monitoring results alone does not constitute a request for a successive/additional lift. Furthermore, the permit condition specifies "Authorization from the OCD must be obtained prior to application of successive lifts and/or removal of remediated soils." OCD requires such request to be made under a separate cover from other reporting and include the supporting analytical results and an updated facility map that illustrates and identifies the individual landfarm cells within the facility boundary and indicate the approximate location within the landfarm cells in which the samples were obtained.

Please provide OCD copies of the treatment zone (soils to be remediated) laboratory results to demonstrate compliance of the semi-annual sampling required of 19.15.36.15.D NMAC within 45 days of the date of this letter and/or initiate the required sampling and submit the results. Please ensure that THP is assessed by EPA method 418.1 or an equivalent method capable of demonstrating a carbon range from C_6 to C_{36} for future demonstrations. Also, please submit all future vadose zone (native soils) sampling results demonstrating TPH by EPA Method 418.1 or an equivalent method capable of demonstrating a carbon range from C₆ to C₃₆. Please ensure that the laboratory's reporting limit does not exceed the established background and/or PQLs for all future vadose zone sampling events. Please establish background for TPH by 418.1 or an equivalent method capable of demonstrating a carbon range from C₆ to C₃₆ and for the additional metals "determined by EPA SW-846 methods 6010B or 6020 or other EPA method approved by the division..." within 60 days of the date of this letter. Please provide OCD a demonstration to establish the facility background within 60 days of the date of this letter. If statistics are used in the demonstration, please provide references from EPA statistical guidance documents to support proposed statistical methods. If the January 1999 background data set is the only background data for the comparison to determine whether a release has occurred in the vadose zone, please demonstrate compliance to 19.15.36.15.E.(5) NMAC by initiated the additional sampling for the landfarm cells that demonstrate exceedances in the November 7, 2014 4th Quarter vadose zone monitoring results and submit a response action plan within 90 days of the date of this letter. If a different facility background data set was utilized for the assessment, please provide OCD a copy of the laboratory data set in order to establish an updated and revised facility background with OCD. Please provide an explanation for the soils BP describes as "remediated" in Cell 5 within 30 days of the date of this letter. Also, please explain why the soils are stored in Cell 5 and what

BP America Production Company Crouch Mesa Waste Management Facility Permit NM-2-003 March 21, 2015 Page 5 of 5

happens to the remediated soils when they are removed from Cell 5 and provide OCD copies of BP's requests and OCD approvals associated with the storage of "remediated" soils within Cell 5 within 30 days of the date of this letter. Please identify the depth in which sample are obtained on the laboratory chain of custody for all future vadose zone sampling events.

OCD has implemented some new policies for submittals. For future submittals, please include a cover letter from the owner/operator, on the owner's/operator's company letterhead, that recognizes the owner/operator has reviewed the submittal, signed by the owner/operator. Also, please provide an updated facility map, for each individual sampling event, that identifies the individual landfarm cells within the facility boundary and indicate the approximate location within the landfarm cells in which the samples were obtained. If there are any questions regarding this matter, please do not hesitate to contact me at (505) 476-3487 or brad.a.jones@state.nm.us.

Sincerely,

Brad A. Jones

Environmental Engineer

BAJ/baj

cc: OCD District III Office, Aztec

Roxana Herrera, BP America Production Company, Houston, TX 77079 Jeffrey C. Blagg, Blagg Engineering, Inc. PO Box 87, Bloomfield, NM 87413

BLAGG ENGINEERING, INC.

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

> SENT VIA CERTIFIED MAIL 7012 1010 0002 1168 7432

raceu (O)

November 24, 2014

2014 107 76 P 3: 32

Mr. Brad Jones New Mexico Oil Conservation Division 1220 South St. Francis Drive Santa Fe, New Mexico 87505

Re: BP America Production Company

Crouch Mesa Waste Management Facility, Permit NM-02-003

Annual Report on Treatment Zone Monitoring

Dear Mr. Jones:

On behalf of BP America Production Company, Blagg Engineering, Inc. (BEI) is submitting the 2014 annual treatment zone monitoring test results for the Crouch Mesa Waste Management Facility pursuant to Permit NM-02-003, dated November 25, 1998. This report is for the December 1, 2013 through November 30, 2014 reporting period. Analytical test results (attached) indicate the facility met standards with each sample event.

The landfarm is presently configured into three (3) active cells, identified as Cell 1, Cell 2 and Cell 5 (Figure 1). The northeast portion of the facility (identified as 'unused cell') is used for equipment, materials and unused compost media storage only. Cell 5 is used for storage of remediated soils from composting/landfarming operations.

Sampling protocol specifies collection of subsurface samples in each cell from the native ground surface below the treatment zone during quarterly monitoring. Quarterly test procedures include total petroleum hydrocarbons (TPH), chloride and benzene, toluene, ethyl-benzene and xylenes (BTEX). Heavy metals and major cations/anions are to be collected for at least one quarterly sample event. During this reporting period, metals and cations/anions were tested on the November 7, 2014 sample event.

Questions or comments concerning the this transmittal may be directed to myself at (505)632-1199 or to Jeff Peace with BP at (505)326-9200.

Respectfully submitted:

Blagg Engineering, Inc.

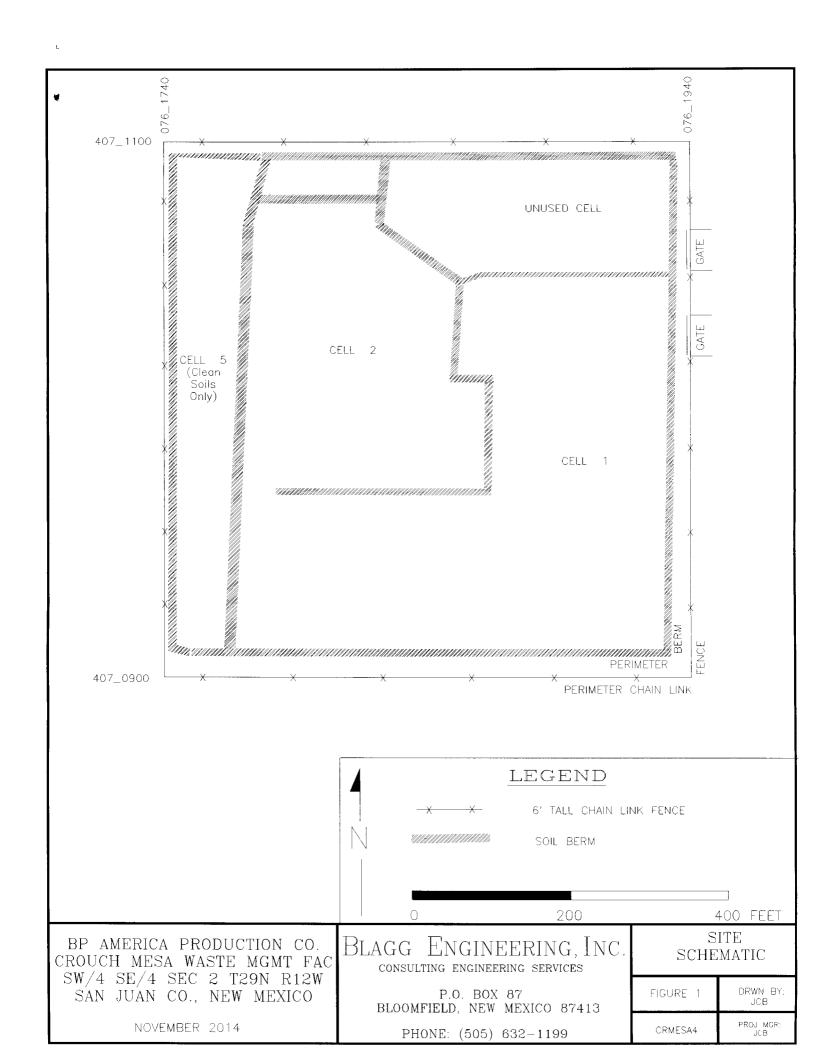
Jeffrey C. Blagg, P.E.

President

Attachments: Site Diagram

Soil Treatment Zone Monitoring Reports

cc: Brandon Powell, NMOCD Aztec District Office Jeff Peace, BP San Juan Operations Center





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

OrderNo.: 1404169

April 09, 2014

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

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

RE: Crouch Mesa LF

Dear Jeff Blagg:

Hall Environmental Analysis Laboratory received 3 sample(s) on 4/3/2014 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 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 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

4901 Hawkins NE

Albuquerque, NM 87109

Lab Order 1404169

Date Reported: 4/9/2014

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering

Project:

Lab ID:

Crouch Mesa LF

1404169-001 Matrix: SOIL

Client Sample ID: Cell 1

Collection Date: 3/31/2014 10:30:00 AM

Received Date: 4/3/2014 10:30:00 AM

Analyses	Result	RL Qı	ıal Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANG	GE ORGANICS		-		Analys	t: BCN
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	4/7/2014 5:38:00 PM	12535
Surr: DNOP	77.5	66-131	%REC	1	4/7/2014 5:38:00 PM	12535
EPA METHOD 8015D: GASOLINE R	ANGE				Analys	t: NSB
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	4/4/2014 1:53:48 PM	12530
Surr: BFB	85.6	74.5-129	%REC	1	4/4/2014 1:53:48 PM	12530
EPA METHOD 8021B: VOLATILES					Analys	t: NSB
Benzene	ND	0.047	mg/Kg	1	4/4/2014 1:53:48 PM	12530
Toluene	ND	0.047	mg/Kg	1	4/4/2014 1:53:48 PM	12530
Ethylbenzene	ND	0.047	mg/Kg	1	4/4/2014 1:53:48 PM	12530
Xylenes, Total	ND	0.095	mg/Kg	1	4/4/2014 1:53:48 PM	12530
Surr: 4-Bromofluorobenzene	100	80-120	%REC	1	4/4/2014 1:53:48 PM	12530
EPA METHOD 300.0: ANIONS					Analys	t: JRR
Chloride	ND	30	mg/Kg	20	4/7/2014 3:52:55 PM	12566

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 8

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

Lab Order 1404169

Date Reported: 4/9/2014

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering

Client Sample ID: Cell 2

Project: Crouch Mesa LF

Collection Date: 3/31/2014 10:45:00 AM

Lab ID: 1404169-002

Matrix: SOIL

Received Date: 4/3/2014 10:30:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANG	GE ORGANICS				Analys	BCN
Diesel Range Organics (DRO)	ND	9.9	mg/Kg	1	4/7/2014 6:00:09 PM	12535
Surr: DNOP	74.0	66-131	%REC	1	4/7/2014 6:00:09 PM	12535
EPA METHOD 8015D: GASOLINE R	ANGE				Analys	: NSB
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	4/4/2014 3:19:43 PM	12530
Surr: BFB	85.4	74.5-129	%REC	1	4/4/2014 3:19:43 PM	12530
EPA METHOD 8021B: VOLATILES					Analys	: NSB
Benzene	ND	0.049	mg/Kg	1	4/4/2014 3:19:43 PM	12530
Toluene	ND	0.049	mg/Kg	1	4/4/2014 3:19:43 PM	12530
Ethylbenzene	ND	0.049	mg/Kg	1	4/4/2014 3:19:43 PM	12530
Xylenes, Total	ND	0.097	mg/Kg	1	4/4/2014 3:19:43 PM	12530
Surr: 4-Bromofluorobenzene	99.6	80-120	%REC	1	4/4/2014 3:19:43 PM	12530
EPA METHOD 300.0: ANIONS					Analys	t: JRR
Chloride	ND	30	mg/Kg	20	4/7/2014 4:05:20 PM	12566

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 LimitP Sample pH greater than 2.

Page 2 of 8

RL Reporting Detection Limit

Lab Order 1404169

Date Reported: 4/9/2014

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering

ngineering Client Sample ID: Cell 5

Project: Crouch Mesa LF

Collection Date: 3/31/2014 11:00:00 AM

Lab ID: 1404169-003

Matrix: SOIL

Received Date: 4/3/2014 10:30:00 AM

Analyses	Result	RL Qu	ıal Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANG	GE ORGANICS				Analys	t: BCN
Diesel Range Organics (DRO)	ND	9.9	mg/Kg	1	4/7/2014 6:22:15 PM	12535
Surr: DNOP	73.7	66-131	%REC	1	4/7/2014 6:22:15 PM	12535
EPA METHOD 8015D: GASOLINE R	ANGE				Analys	t: NSB
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	4/4/2014 3:48:21 PM	12530
Surr: BFB	87.0	74.5-129	%REC	1	4/4/2014 3:48:21 PM	12530
EPA METHOD 8021B: VOLATILES					Analys	t: NSB
Benzene	ND	0.047	mg/Kg	1	4/4/2014 3:48:21 PM	12530
Toluene	ND	0.047	mg/Kg	1	4/4/2014 3:48:21 PM	12530
Ethylbenzene	ND	0.047	mg/Kg	1	4/4/2014 3:48:21 PM	12530
Xylenes, Total	ND	0.095	mg/Kg	1	4/4/2014 3:48:21 PM	12530
Surr: 4-Bromofluorobenzene	103	80-120	%REC	1	4/4/2014 3:48:21 PM	12530
EPA METHOD 300.0: ANIONS					Analys	t: JRR
Chloride	ND	30	mg/Kg	20	4/7/2014 4:17:44 PM	12566

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 8

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

Hall Environmental Analysis Laboratory, Inc.

WO#:

1404169

09-Apr-14

Client:

Blagg Engineering

Project:

Crouch Mesa LF

Sample ID MB-12566

SampType: MBLK

TestCode: EPA Method 300.0: Anions

Client ID:

PBS

Batch ID: 12566

RunNo: 17852

Prep Date: 4/7/2014

Analysis Date: 4/7/2014

SeqNo: 514796

Units: mg/Kg

Client ID:

Result

PQL SPK value SPK Ref Val %REC LowLimit

%RPD

RPDLimit

Qual

Analyte Chloride

ND 1.5

Sample ID LCS-12566 LCSS

SampType: LCS

Batch ID: 12566

PQL

1.5

TestCode: EPA Method 300.0: Anions

RunNo: 17852

HighLimit

Prep Date: 4/7/2014

Analysis Date: 4/7/2014

SeqNo: 514797

Units: mg/Kg

HighLimit LowLimit

Analyte

Result

15.00

SPK value SPK Ref Val %REC 0

92.4

90

%RPD **RPDLimit** Qual

Chloride

14

110

Qualifiers:

Value exceeds Maximum Contaminant Level.

E 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

В Analyte detected in the associated Method Blank

Holding times for preparation or analysis exceeded Η

ND Not Detected at the Reporting Limit

Reporting Detection Limit

Sample pH greater than 2.

Page 4 of 8

Hall Environmental Analysis Laboratory, Inc.

WO#:

1404169

09-Apr-14

Client:

Blagg Engineering

Project:

Crouch Mesa LF

Sample ID MB-12535	SampT	ype: ME	BLK	Test	Code: El	PA Method	8015D: Dies	el Range C	Organics	
Client ID: PBS	Batch	ID: 12	535	R	RunNo: 1	7817				
Prep Date: 4/3/2014	Analysis D	ate: 4/	7/2014	S	SeqNo: 5	14212	Units: mg/F	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Sum: DNOP	7.3		10.00		72.6	66	131			

Sample ID LCS-12535	SampT	ype: LC	S	Test	Code: El	PA Method	8015D: Diese	el Range C	Organics	
Client ID: LCSS	Batch	ID: 12	535	R	RunNo: 1	7817				
Prep Date: 4/3/2014	Analysis D	ate: 4/	7/2014	S	eqNo: 5	14213	Units: mg/k	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	10	50.00	0	87.9	60.8	145			
Surr: DNOP	3.6		5.000		73.0	66	131			

Qualifiers:

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

Reporting Detection Limit

- Sample pH greater than 2.

Page 5 of 8

Hall Environmental Analysis Laboratory, Inc.

WO#:

1404169

09-Apr-14

Client: Project: Blagg Engineering Crouch Mesa LF

Sample ID 5ML RB

SampType: MBLK

TestCode: EPA Method 8015D: Gasoline Range

Client ID: PBS

Batch ID: R17799

RunNo: 17799

99.2

Prep Date:

Analysis Date: 4/4/2014

SeqNo: 513541

Units: %REC

Analyte

Result

SPK value SPK Ref Val

%REC LowLimit HighLimit

%RPD **RPDLimit**

Qual

Surr: BFB

990

1000

TestCode: EPA Method 8015D: Gasoline Range

Client ID:

Sample ID 2.5UG GRO LCS **LCSS**

Batch ID: R17799

RunNo: 17799

Prep Date:

SampType: LCS

Analysis Date: 4/4/2014

SeqNo: 513542

109

74.5

74.5

Units: %REC

129

%RPD **RPDLimit**

Analyte Surr: BFB Result 1100 SPK value SPK Ref Val 1000

%REC LowLimit

HighLimit

Qual

Sample ID MB-12530

SampType: MBLK

Batch ID: 12530

TestCode: EPA Method 8015D: Gasoline Range

SPK value SPK Ref Val %REC

RunNo: 17816

HighLimit

129

Prep Date:

4/3/2014 Analysis Date: 4/4/2014

SeqNo: 513588

Units: mg/Kg

%RPD

Analyte Gasoline Range Organics (GRO)

Client ID: PBS

Result ND

5.0 1000 85.7

74.5

LowLimit

RPDLimit

Qual

Sample ID LCS-12530

Prep Date: 4/3/2014

SampType: LCS

PQL

TestCode: EPA Method 8015D: Gasoline Range

Surr: BFB

Client ID: LCSS

Batch ID: 12530

860

Result

27

930

RunNo: 17816 SeqNo: 513589

Units: mg/Kg

Qual

Analyte Gasoline Range Organics (GRO) Surr: BFB

Analysis Date: 4/4/2014 **PQL**

SPK value SPK Ref Val

1000

%REC

LowLimit 71.7

HighLimit

5.0 25.00

109 93.2

74.5

134 129 %RPD

RPDLimit

Qualifiers:

E

- Value exceeds Maximum Contaminant Level
- Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

Value above quantitation range

- O RSD is greater than RSDlimit
- S Spike Recovery outside accepted recovery limits
- Analyte detected in the associated Method Blank В
- Holding times for preparation or analysis exceeded Н
- Not Detected at the Reporting Limit ND

Reporting Detection Limit

RL

Sample pH greater than 2.

Page 6 of 8

Hall Environmental Analysis Laboratory, Inc.

WO#:

1404169

09-Apr-14

Client:

Blagg Engineering

Project:

Crouch Mesa LF

Sample ID 5ML RB

SampType: MBLK

TestCode: EPA Method 8021B: Volatiles

TestCode: EPA Method 8021B: Volatiles

Client ID: PBS

Batch ID: R17799

RunNo: 17799

Prep Date:

Analysis Date: 4/4/2014

SegNo: 513564

Units: %REC

Analyte

Result

%RPD

Qual

Surr: 4-Bromofluorobenzene

0.98

SPK value SPK Ref Val %REC LowLimit 1.000

98.1

120

HighLimit

RPDLimit

Sample ID 100NG BTEX LCS LCSS

SampType: LCS Batch ID: R17799

RunNo: 17799

Client ID: Prep Date:

Analysis Date: 4/4/2014

SeqNo: 513565

Units: %REC

%RPD SPK value SPK Ref Val %REC LowLimit HighLimit Result Analyte 0.71 1.000 71.0 80 120 Surr: 4-Bromofluorobenzene

Sample ID MB-12530

SampType: MBLK

TestCode: EPA Method 8021B: Volatiles

RPDLimit Qual S

Client ID:

Batch ID: 12530

RunNo: 17816

Units: ma/Ka

Prep Date: 4/3/2014

Analysis Date: 4/4/2014

SeqNo: 513622 SPK value SPK Ref Val %REC LowLimit

HighLimit

RPDLimit %RPD

RPDLimit

Page 7 of 8

Qual

Qual

Result **PQL** Analyte 0.050 ND Benzene ND 0.050 Toluene 0.050 ND Ethylbenzene Xylenes, Total ND 0.10 1.0

Surr: 4-Bromofluorobenzene

102

80

120

Sample ID LCS-12530 LCSS Client ID:

Batch ID: 12530

SampType: LCS

RunNo: 17816

TestCode: EPA Method 8021B: Volatiles

Prep Date: 4/3/2014

Units: mg/Kg

SeqNo: 513623 Analysis Date: 4/4/2014 HighLimit %RPD Result **PQL** SPK value SPK Ref Val %REC LowLimit Analyte 120 0.050 1.000 0 109 80 1.1 Benzene 120 99.4 80 0.99 0.050 1.000 0 Toluene 99.8 80 120 0.050 1.000 0 Ethylbenzene 1.0 120 n 99.1 80 3.0 0.10 3.000 Xvlenes, Total 120 1.000 109 80 Surr: 4-Bromofluorobenzene 1.1

1.000

Sample ID 1404169-001AMS

SampType: MS

TestCode: EPA Method 8021B: Volatiles

RunNo: 17816 Client ID: Cell 1 Batch ID: 12530 Units: mg/Kg SeqNo: 513628 Prep Date: 4/3/2014 Analysis Date: 4/4/2014 HighLimit %RPD **RPDLimit** Qual SPK value SPK Ref Val %REC LowLimit **PQL** Analyte Result 135 125 67.4 1.2 0.047 0.9470 0 Benzene 1.1 0.9470 0.01053 117 72.6 135 0.047 Toluene 143 69.4 119 Ethylbenzene 1.1 0.047 0.9470 118 70.8 144 3.4 0.095 2.841 0.01356 Xylenes, Total

Qualifiers:

Value exceeds Maximum Contaminant Level

Value above quantitation range E

Analyte detected below quantitation limits

RSD is greater than RSDlimit 0

R RPD outside accepted recovery limits

Analyte detected in the associated Method Blank В

Holding times for preparation or analysis exceeded Н

Not Detected at the Reporting Limit ND

Sample pH greater than 2.

Reporting Detection Limit RL

S Spike Recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

WO#:

1404169

09-Apr-14

Client:

Blagg Engineering

Project:

Crouch Mesa LF

Sample ID 1404169-001AMS

SampType: MS

TestCode: EPA Method 8021B: Volatiles

Client ID: Cell 1

Batch ID: 12530

RunNo: 17816

Prep Date: 4/3/2014

Analysis Date: 4/4/2014

SeqNo: 513628

Units: mg/Kg

Analyte

Result

SPK value SPK Ref Val

%REC LowLimit

HighLimit

RPDLimit

Qual

Surr: 4-Bromofluorobenzene

1.0

0.9470

109

120

%RPD

Sample ID 1404169-001AM	SD SampT	ype: MS	SD .	Tes	Code: El	PA Method	8021B: Volat	iles		
Client ID: Cell 1	Batch	ID: 12	530	F	RunNo: 1	7816				
Prep Date: 4/3/2014	Analysis D	ate: 4/	4/2014	8	SeqNo: 5	13629	Units: mg/K	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.047	0.9497	0	116	67.4	135	6.85	20	
Toluene	1.1	0.047	0.9497	0.01053	112	72.6	135	3.75	20	
Ethylbenzene	1.1	0.047	0.9497	0	115	69.4	143	3.10	20	
Xylenes, Total	3.2	0.095	2.849	0.01356	114	70.8	144	3.74	20	
Surr: 4-Bromofluorobenzene	1.0		0.9497		108	80	120	0	0	

Qualifiers:

Value exceeds Maximum Contaminant Level.

Value above quantitation range Е

Analyte detected below quantitation limits

RSD is greater than RSDlimit \mathbf{o}

R RPD outside accepted recovery limits

 \mathbf{S} Spike Recovery outside accepted recovery limits

Analyte detected in the associated Method Blank В

Holding times for preparation or analysis exceeded Н

Not Detected at the Reporting Limit ND

Reporting Detection Limit

Sample pH greater than 2.

Page 8 of 8



Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87105

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

Sample Log-In Check List

Client Name: BLAGG	Work Order Number: 14	04169		RcptNo:	1
Received by/date:	04/03/14		•		
Logged By: Michelle Garcia	4/3/2014 10:30:00 AM		Michelle Com	nie)	
Completed By: Michelle Garcia	4/3/2014 11:59(17 AM		Michaelo Gon Michaelo Gon		
Reviewed By:	04/03/14		•		
Chain of Custody					
1. Custody seals intact on sample bottles?	· Y	es 🗌	No 🗆	Not Present ✓	
2. Is Chain of Custody complete?	Y	es 🗹	No 🗌	Not Present	
3. How was the sample delivered?	C	ourier			
Log In					
4. Was an attempt made to cool the sample	5? Y	es 🗹	No 🗌	na 🗆	
5. Were all samples received at a temperatu	re of >0° C to 6.0°C Ye	es 🗹	No 🗆	NA 🗆	
6. Sample(s) in proper container(s)?	Y	es 🗸	No 🗌		
7. Sufficient sample volume for indicated tes	t(s)? Y	es 🗹	No 🗆	•	
8. Are samples (except VOA and ONG) prop	erty preserved?	es 🗹	No 🗌		
9. Was preservative added to bottles?	Y	es 🗌	No 🗹	NA 🗆	
10.VOA vials have zero headspace?	Y	es 🗌	No 🗆	No VOA Vials 🗹	
11 Were any sample containers received bro	ken? Y	es 🗆	No 🗹		
				# of preserved bottles checked	
12.Does paperwork match bottle labels?	Y	es 🔽	No 🗆	for pH:	>12 unless noted)
(Note discrepancies on chain of custody)	of Cuetody? V	es 🗹	No 🗌	Adjusted?	- 12 unioss noted)
13. Are matrices correctly identified on Chain14. Is it clear what analyses were requested?	•	es 🗹	No 🗆		
15. Were all holding times able to be met?		es 🗸	No 🗆	Checked by:	
(If no, notify customer for authorization.)			٠		
Special Handling (If applicable)		_		_	
16. Was client notified of all discrepancies wit	h this order? Y	es 🗌	No 🗀	NA 🗹	1
Person Notified:	Date:				
By Whom:	Via: ☐ €	Mail 🔲	Phone 🗌 Fax	☐ In Person	
Regarding:			tankan ataba Maran dibut matabasa ana ant		•
Client instructions:	aranimana and a second		Sand and Advantage of the Control of		
17. Additional remarks:					
	Seal Intact Seal No Sea 'es	Date	Signed By		

P.O. Box 87 Bloomfield, NM 87413 (505)320-1183 (505)32		Blagg Engineenng, Inc.	leering, iii		X Standard	Rush		6	ANAL	YSIS I	ANALYSIS LABORATORY	ORY
Bicomfield, NM 87413 Project #: Crouch Mesa LF Adot Herwins NE - Albuquerque, NM 87107		BP America			Project Nam	ö			MAMA .	hallenviror	mental.com	
Elecomfeet, NM 87413 Project #: Tel. 505-345-4107	lailing Addr	.688:	P.O. Box	κ87		Crouch Mes	aLF	490	1 Hawkins N	E - Albuqi	uerque, NM 87	109
Companies Comp			Bloomfie	ld, NM 87413	Project #:			Te	. 505-345-39		505-345-410	7
Time Matrix Sample Request D Type and # Type	hone #:		(505)320	7-1183					A	nalysis Re	quest	
Complex Comp	mail or Fax	#			Project Mana	iger:						
Sample: Jaff Blagg Dec A Full Validation Sample: Jaff Blagg Dec Time Matrix Sample Preservative HEAL No. Container Preservative HEAL No. Container Preservative HEAL No. Container Preservative HEAL No. Container Type Time	A/QC Packs	ige:				Jeff Blagg						
Time Matrix Sample Request D Container Preservative Regingle Time Matrix Sample Request D Container Preservative Regingle Time Matrix Sample Request D Container Preservative Regingle Time T	□ Standard			☐ Level 4 (Full Validation)					(ОЯ			
DD (Type) Sample Request ID Sample Temberature Time Matrix Sample Request ID Type and # Type HD UILL P D UILL	Other				Sampler:	Jeff Blagg			a /			
Time Matrix Sample Request D Container Preservative HEAL No. Co. 1/2014 10:30 Soil Cell 1 40zx1 cool -c. C. x x x 1/2014 11:00 Soil Cell 2 40zx1 cool -c. C. x x x 1/2014 11:00 Soil Cell 5 40zx1 cool -c. C. x x x 1/2014 11:00 Soil Cell 5 40zx1 cool -c. C. x x x 1/2014 11:00 Soil Cell 5 40zx1 cool -c. C. x x x 1/2014 11:00 Soil Cell 5 40zx1 cool -c. C. x x x 1/2014 11:00 Soil Cell 5 40zx1 cool -c. C. x x x 1/2014 11:00 Soil Cell 6 40zx1 cool -c. C. x x x 1/2014 11:00 Soil Cell 7 Cell 7 Cell 7 C. x x x 1/2014 11:00 Soil Cell 7 Cell		(e)			On Joe:	Ø Yes	□ }		оно			
1/2014 10:30 Soil Cell 1	Date	Time	Matrix		Container Type and #	Preservative Type		(1508) X3T8) 83108 HAT	-		
1/2014 10:45 Soil Cell 2	3/31/2014	10:30	Soil	Cell 1	402 x 1	000	181	×	×			×
11:2014 11:00 Soil Cell 5	33/31/2014	10:45	Soil	Cell 2	40z x 1	1000	700-	×	×			×
Time: Relinquished by: 1437 1437 Received by: Received by:	03/31/2014	11:00	Soil	Cell 5	402 x 1	cool	- 003	×	×	-		×
Time: Relinquished by. 1437 1437 Peace Peace												
Time: Relinquished by: Received by:				·								
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Time: Refilinguished by: Reserved by: Date Time 114 9 CHITA	4/2014	37	1.1.		1-hriste	healer	1437	peace.iet	ici. Jeni rea Trey@bp.com		se copy resum	<u>;</u>
	rate: 7/5	5	Refilinquish		Received by:	7	HOZ/L/ (2%)		· }			



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

OrderNo.: 1407157

July 18, 2014

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

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

RE: Crouch Mesa LF

Dear Jeff Blagg:

Hall Environmental Analysis Laboratory received 3 sample(s) on 7/3/2014 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 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 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

4901 Hawkins NE

Albuquerque, NM 87109

Lab Order 1407157

Date Reported: 7/18/2014

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering

Client Sample ID: Cell 1

Project: Crouch Mesa LF

Collection Date: 6/30/2014 11:30:00 AM

Lab ID: 1407157-001 **Matrix:** SOIL

Received Date: 7/3/2014 7:06:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANG	SE ORGANICS				Analys	BCN
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	7/8/2014 3:49:10 PM	14085
Surr: DNOP	86.0	57.9-140	%REC	1	7/8/2014 3:49:10 PM	14085
EPA METHOD 8015D: GASOLINE RA	ANGE				Analys	: NSB
Gasoline Range Organics (GRO)	ND	5.0	mg/Kg	1	7/7/2014 11:24:59 PM	14058
Surr: BFB	93.9	80-120	%REC	1	7/7/2014 11:24:59 PM	14058
EPA METHOD 8021B: VOLATILES					Analys	: NSB
Benzene	ND	0.050	mg/Kg	1	7/7/2014 11:24:59 PM	14058
Toluene	ND	0.050	mg/Kg	1	7/7/2014 11:24:59 PM	14058
Ethylbenzene	ND	0.050	mg/Kg	1	7/7/2014 11:24:59 PM	14058
Xylenes, Total	ND	0.099	mg/Kg	1	7/7/2014 11:24:59 PM	14058
Surr: 4-Bromofluorobenzene	102	80-120	%REC	1	7/7/2014 11:24:59 PM	14058
EPA METHOD 300.0: ANIONS					Analys	: SRM
Chloride	ND	30	mg/Kg	20	7/8/2014 1:15:37 PM	14106

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

Lab Order 1407157

Date Reported: 7/18/2014

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering

ngineering Client Sample ID: Cell 2

Project: Crouch Mesa LF **Lab ID:** 1407157-002

Matrix: SOIL Received Date: 7/3/2014 7:06:00 AM

Collection Date: 6/30/2014 11:50:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANG	E ORGANICS				Analyst	BCN
Diesel Range Organics (DRO)	ND	9.9	mg/Kg	1	7/8/2014 4:20:21 PM	14085
Sur: DNOP	96.9	57.9-140	%REC	1	7/8/2014 4:20:21 PM	14085
EPA METHOD 8015D: GASOLINE RA	NGE				Analyst	NSB
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	7/7/2014 11:53:34 PM	14058
Surr: BFB	93.5	80-120	%REC	1	7/7/2014 11:53:34 PM	14058
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.047	mg/Kg	1	7/7/2014 11:53:34 PM	14058
Toluene	ND	0.047	mg/Kg	1	7/7/2014 11:53:34 PM	14058
Ethylbenzene	ND	0.047	mg/Kg	1	7/7/2014 11:53:34 PM	14058
Xylenes, Total	ND	0.094	mg/Kg	1	7/7/2014 11:53:34 PM	14058
Surr: 4-Bromofluorobenzene	101	80-120	%REC	1	7/7/2014 11:53:34 PM	14058
EPA METHOD 300.0: ANIONS					Analyst	SRM
Chloride	ND	30	mg/Kg	20	7/8/2014 1:52:50 PM	14106

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

Lab Order 1407157

Date Reported: 7/18/2014

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering

1407157-003

Project: Crouch Mesa LF

Lab ID:

Client Sample ID: Cell 5

Collection Date: 6/30/2014 12:15:00 PM

Matrix: SOIL Received Date: 7/3/2014 7:06:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANG	SE ORGANICS				Analysi	: BCN
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	7/8/2014 4:51:42 PM	14085
Surr: DNOP	89.8	57.9-140	%REC	1	7/8/2014 4:51:42 PM	14085
EPA METHOD 8015D: GASOLINE RA	ANGE				Analys	: NSB
Gasoline Range Organics (GRO)	N D	4.9	mg/Kg	1	7/8/2014 12:22:07 AM	14058
Surr: BFB	93.5	80-120	%REC	1	7/8/2014 12:22:07 AM	14058
EPA METHOD 8021B: VOLATILES					Analys	: NSB
Benzene	ND	0.049	mg/Kg	1	7/8/2014 12:22:07 AM	14058
Toluene	ND	0.049	mg/Kg	1	7/8/2014 12:22:07 AM	14058
Ethylbenzene	ND	0.049	mg/Kg	1	7/8/2014 12:22:07 AM	14058
Xylenes, Total	ND	0.097	mg/Kg	1	7/8/2014 12:22:07 AM	14058
Surr: 4-Bromofluorobenzene	100	80-120	%REC	1	7/8/2014 12:22:07 AM	14058
EPA METHOD 300.0: ANIONS					Analys	: SRM
Chloride	ND	30	mg/Kg	20	7/8/2014 4:09:19 PM	14106

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#:

1407157

18-Jul-14

Client:

Blagg Engineering

Project:

Crouch Mesa LF

Sample ID MB-14106

SampType: MBLK

TestCode: EPA Method 300.0: Anions

Client ID:

PBS Batch ID: 14106 RunNo: 19753

Prep Date: 7/8/2014 Analysis Date: 7/8/2014 SeqNo: 573864

Units: mg/Kg

%RPD

RPDLimit Qual

Analyte Chloride

1.5

Sample ID LCS-14106

SampType: LCS

TestCode: EPA Method 300.0: Anions

Client ID: LCSS

Batch ID: 14106

PQL

RunNo: 19753

HighLimit

Prep Date: 7/8/2014

Analysis Date: 7/8/2014

SeqNo: 573865

Units: mg/Kg

Analyte

Result

15.00

93.9

HighLimit

RPDLimit

Qual

14

SPK value SPK Ref Val

Chloride

Result

SPK value SPK Ref Val %REC LowLimit

%RPD

1.5

%REC LowLimit

Qualifiers:

Value exceeds Maximum Contaminant Level.

Value above quantitation range Е

Analyte detected below quantitation limits

RPD outside accepted recovery limits R

RSD is greater than RSDlimit o

Spike Recovery outside accepted recovery limits

 \mathbf{B} Analyte detected in the associated Method Blank

Holding times for preparation or analysis exceeded Н

Not Detected at the Reporting Limit P Sample pH greater than 2.

RLReporting Detection Limit Page 4 of 7

Hall Environmental Analysis Laboratory, Inc.

4.3

WO#:

1407157

18-Jul-14

Client:

Blagg Engineering

Project:

Surr: DNOP

Crouch Mesa LF

Sample ID MB-14085 SampType: MBLK TestCode: EPA Method 8015D: Diesel Range Organics Client ID: PBS Batch ID: 14085 RunNo: 19699 SeqNo: 572210 Prep Date: 7/7/2014 Analysis Date: 7/7/2014 Units: mg/Kg %RPD **RPDLimit** Qual PQL SPK value SPK Ref Val %REC LowLimit HighLimit Result Analyte Diesel Range Organics (DRO) ND 10

Surr: DNOP 10.00 87.6 57.9 140 8.8

5.000

Sample ID LCS-14085 SampType: LCS TestCode: EPA Method 8015D: Diesel Range Organics Client ID: LCSS Batch ID: 14085 RunNo: 19699 Prep Date: 7/7/2014 Analysis Date: 7/7/2014 SeqNo: 572211 Units: mg/Kg %RPD **RPDLimit** Qual Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit Analyte 105 68.6 Diesel Range Organics (DRO) 53 10 50.00 130

86.4

57.9

140

Qualifiers:

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

Page 5 of 7

Hall Environmental Analysis Laboratory, Inc.

WO#:

1407157

18-Jul-14

Client: Project: Blagg Engineering Crouch Mesa LF

Sample ID MB-14058

SampType: MBLK

TestCode: EPA Method 8015D: Gasoline Range

80

Client ID: PBS

Batch ID: 14058

PQL

RunNo: 19711

Prep Date: 7/3/2014

Analysis Date: 7/7/2014

Result

SeqNo: 572606

Units: mg/Kg

120

HighLimit

Qual

Analyte Gasoline Range Organics (GRO)

Sur: BFB

ND 920

5.0 1000

92.2

SPK value SPK Ref Val %REC LowLimit

%RPD

RPDLimit

Qual

Sample ID LCS-14058

SampType: LCS

TestCode: EPA Method 8015D: Gasoline Range

Client ID: LCSS

Batch ID: 14058

RunNo: 19711

Prep Date: 7/3/2014

SeqNo: 572607

Units: mg/Kg

Analyte

Analysis Date: 7/7/2014 SPK value SPK Ref Val Result **PQL**

5.0

%REC LowLimit

%RPD **RPDLimit** HighLimit

Gasoline Range Organics (GRO) Sun: BFB

28 1200 25.00 1000 111 120 71.7 80

134 120 S

Qualifiers:

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

Page 6 of 7

Hall Environmental Analysis Laboratory, Inc.

WO#:

1407157

18-Jul-14

Client:

Blagg Engineering

Project:

Crouch Mesa LF

Sample ID MB-14058	Samp	ype: ME	BLK	Tes	tCode: El	PA Method	8021B: Volat	iles		
Client ID: PBS	Batch	h ID: 14	058	F	RunNo: 1	9711				
Prep Date: 7/3/2014	Analysis [Date: 7/	7/2014	8	SeqNo: 5	72630	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	1.0		1.000		102	80	120			

Sample ID LCS-14058 SampType: LCS				TestCode: EPA Method 8021B: Volatiles							
Client ID: LCSS	Batc	h ID: 14 0	058	F	RunNo: 1						
Prep Date: 7/3/2014	Analysis Date: 7/7/2014			5	SeqNo: 572631			ζg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Benzene	1.1	0.050	1.000	0	105	80	120				
Toluene	0.99	0.050	1.000	0	99.0	80	120				
Ethylbenzene	1.0	0.050	1.000	0	102	80	120				
Xylenes, Total	3.1	0.10	3.000	0	104	80	120				
Surr: 4-Bromofluorobenzene	1.1		1.000		110	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



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: 1407157		RcptNo:	1
Received by/dat	te: A	- 07/05	3/14			144	
Logged By:	Anne Thor	ne	7/3/2014 7:06:00 A	M	an Ilm	_	
Completed By:	Anne Thor	ne	7/3/2014		Ame Som		
Reviewed By:	0	5	07/03/14		Come Jim		
Chain of Cus			<u> </u>				
1. Custody see	als intact on sa	ample bottles?		Yes 🗆	No 🗆	Not Present	
2. Is Chain of C	Custody comp	elete?		Yes 🗹	No 🗆	Not Present	
3. How was the	e sample deliv	vered?		Client			
<u>Log In</u>							
4. Was an atte	empt made to	cool the sample	6 ?	Yes 🗹	No 🗌	NA 🗆	
5. Were all sar	mples receive	d at a temperatu	re of >0° C to 6.0°C	Yes 🗹	No 🗆	NA 🗆	
6. Sample(s) i	in proper conta	ainer(s)?		Yes 🗹	No 🗆		
7. Sufficient sa	ample volume	for indicated tes	t(s)?	Yes 🗹	No 🗆		
8. Are samples	s (except VOA	and ONG) prop	erly preserved?	Yes 🗹	No 🗆		
9. Was presen	vative added t	o bottles?		Yes	No 🗹	NA 🗆	
10.VOA vials h	ave zero head	ispace?		Yes 🗌	No 🗌	No VOA Vials	
11. Were any s	ample contain	ners received bro	ken?	Yes	No 🗹	# of preserved	
12.Does paper	work match be	ottle labels?		Yes 🗹	No 🗆	bottles checked for pH:	416
•	•	nain of custody)		🗖		(<2 (Adjusted?	or >12 unless noted)
13. Are matrices			of Custody?	Yes ☑ Yes ☑	No □ No □		
14. Is it clear what 15. Were all hold	lding times ab			Yes 🗹	No 🗆	Checked by:	
(ii tio, tiodiy		addio(£adoii.)					
Special Hand	dling (if app	plicable)					
16. Was client r	notified of all d	liscrepancies wit	h this order?	Yes 🗌	No 🗆	NA 🗹	_
Perso	n Notified:	15.7 (0.00)	Dat	te	No. 1 to the contract of the c		
By Wi	hom:		Via	: eMail	Phone 🗌 Fax	n Person	
Regar	rding:	ent a describbing subsectively and analysishers of	the control of the second seco	and the second s	and the second section of the Section Section 1	reconstruction of the second	
Client	Instructions:	the state of the state of	****			- 1110 12 1	
17. Additional r	remarks:						
18. <u>Cooler Info</u>							
Cooler N			Seal Intact Seal No	Seal Date	Signed By		
1	1.3	Good Y	es				

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ANALYSIS LABORATORY		9								Chloride	×	×	×		 _			-		贫	
4	Ē	4901 Hawkins NE - Albuquerque, NM 87109	Fax 505-345-4107																	Please copy results to:	
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□ Rush		Crouch Mesa LF			.	Jeff Blagg		Jeff Blagg	200	Preservative Type	looo	1000	logo							il	
X Standard	Project Name:)	Project #:		Project Manager.	•		Sampler:	On Ice: XYes	Container Type and #	40z x 1	40z x 1	4oz x 1						1	Received by:	Received by:
		87	87413	-1183			☐ Level 4 (Full Validation)			Sample Request ID	Cell 1	Cell 2	Cell 5							[Heg]	
ering, Inc		P.O. Box 87	Bloomfield, NM	(505)320-1183						Matrix	Soll	Soil	Soil							Relinquished by	Relinduished by:
Blagg Engineering, Inc.	BP America	38S.			المقد ا	Je:			(e	Time	11:30	11:50	12:15							Time: 650	Time:
Client: [_	Mailing Address:		Phone #:	email or Fax#:	QA/QC Package:	□ Standard	□ Other	□ EDD (Type)	Date	06/30/2014	06/30/2014	06/30/2014							12/2014	Date:

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



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

September 12, 2014

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

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

RE: Crouch Mesa LF OrderNo.: 1409191

Dear Jeff Blagg:

Hall Environmental Analysis Laboratory received 3 sample(s) on 9/4/2014 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 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 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

4901 Hawkins NE

Albuquerque, NM 87109

Lab Order 1409191

Date Reported: 9/12/2014

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering

Project:

Lab ID:

Crouch Mesa LF

1409191-001

Client Sample ID: Cell 1

Collection Date: 8/29/2014 2:05:00 PM

Received Date: 9/4/2014 7:00:00 AM

Analyses	Result	RL Q	ıal Units	DF	Date Analyzed	Batch				
EPA METHOD 8015D: DIESEL RANG	EPA METHOD 8015D: DIESEL RANGE ORGANICS Analyst:									
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	9/5/2014 4:07:12 PM	15106				
Surr: DNOP	100	57.9-140	%REC	1	9/5/2014 4:07:12 PM	15106				
EPA METHOD 8015D: GASOLINE R	ANGE				Analys	t: NSB				
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	9/5/2014 4:53:27 PM	15122				
Surr: BFB	94.1	80-120	%REC	1	9/5/2014 4:53:27 PM	15122				
EPA METHOD 8021B: VOLATILES					Analys	t: NSB				
Benzene	ND	0.049	mg/Kg	1	9/5/2014 4:53:27 PM	15122				
Toluene	ND	0.049	mg/Kg	1	9/5/2014 4:53:27 PM	15122				
Ethylbenzene	ND	0.049	mg/Kg	1	9/5/2014 4:53:27 PM	15122				
Xylenes, Total	ND	0.098	mg/Kg	1	9/5/2014 4:53:27 PM	15122				
Surr: 4-Bromofluorobenzene	110	80-120	%REC	1	9/5/2014 4:53:27 PM	15122				
EPA METHOD 300.0: ANIONS					Analys	t: LGP				
Chloride	ND	30	mg/Kg	20	9/9/2014 8:39:48 PM	15167				

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.
- Е Value above quantitation range
- Analyte detected below quantitation limits
- o RSD is greater than RSDlimit
- RPD outside accepted recovery limits
- Spike Recovery outside accepted recovery limits
- Analyte detected in the associated Method Blank
- Holding times for preparation or analysis exceeded Н
- ND Not Detected at the Reporting Limit

Page 1 of 7

- Sample pH greater than 2.
- Reporting Detection Limit

Lab Order 1409191

Date Reported: 9/12/2014

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering

Client Sample ID: Cell 2

Project: Crouch Mesa LF

Collection Date: 8/29/2014 2:20:00 PM

Lab ID: 1409191-002 Matrix: SOIL Received Date: 9/4/2014 7:00:00 AM

Analyses	Result	RL Q	ual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANG	GE ORGANICS		40 61		Analys	t: BCN
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	9/5/2014 4:28:30 PM	15106
Surr: DNOP	97.4	57.9-140	%REC	1	9/5/2014 4:28:30 PM	15106
EPA METHOD 8015D: GASOLINE R	ANGE				Analys	t: NSB
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	9/5/2014 5:23:42 PM	15122
Surr: BFB	90.1	80-120	%REC	1	9/5/2014 5:23:42 PM	15122
EPA METHOD 8021B: VOLATILES					Analys	t: NSB
Benzene	ND	0.049	mg/Kg	1	9/5/2014 5:23:42 PM	15122
Toluene	0.12	0.049	mg/Kg	1	9/5/2014 5:23:42 PM	15122
Ethylbenzene	0.085	0.049	mg/Kg	1	9/5/2014 5:23:42 PM	15122
Xylenes, Total	0.16	0.097	mg/Kg	1	9/5/2014 5:23:42 PM	15122
Surr: 4-Bromofluorobenzene	100	80-120	%REC	1	9/5/2014 5:23:42 PM	15122
EPA METHOD 300.0: ANIONS					Analys	t: LGP
Chloride	ND	30	mg/Kg	20	9/8/2014 3:03:43 PM	15172

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

Lab Order 1409191

Date Reported: 9/12/2014

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering

Project: Crouch Mesa LF

Lab ID: 1409191-003

Client Sample ID: Cell 5

Collection Date: 8/29/2014 2:40:00 PM

Received Date: 9/4/2014 7:00:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANG	E ORGANICS				Analys	t: BCN
Diesel Range Organics (DRO)	ND	9.9	mg/Kg	1	9/5/2014 4:50:01 PM	15106
Surr: DNOP	59.8	57.9-140	%REC	1	9/5/2014 4:50:01 PM	15106
EPA METHOD 8015D: GASOLINE RA	NGE				Analys	t: NSB
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	9/5/2014 5:53:58 PM	15122
Surr: BFB	96.3	80-120	%REC	1	9/5/2014 5:53:58 PM	15122
EPA METHOD 8021B: VOLATILES					Analys	t: NSB
Benzene	ND	0.049	mg/Kg	1	9/5/2014 5:53:58 PM	15122
Toluene	ND	0.049	mg/Kg	1	9/5/2014 5:53:58 PM	15122
Ethylbenzene	ND	0.049	mg/Kg	1	9/5/2014 5:53:58 PM	15122
Xylenes, Total	ND	0.098	mg/Kg	1	9/5/2014 5:53:58 PM	15122
Surr: 4-Bromofluorobenzene	111	80-120	%REC	1	9/5/2014 5:53:58 PM	15122
EPA METHOD 300.0: ANIONS					Analys	t: LGP
Chloride	ND	30	mg/Kg	20	9/8/2014 3:16:07 PM	15172

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 3 of 7

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

Hall Environmental Analysis Laboratory, Inc.

WO#:

1409191 12-Sep-14

Client:

Blagg Engineering

Project:

Crouch Mesa LF

Sample ID MB-15172

SampType: MBLK

TestCode: EPA Method 300.0: Anions

TestCode: EPA Method 300.0: Anions

Client ID: PBS

Batch ID: 15172

Batch ID: 15172

RunNo: 21073

Prep Date: 9/8/2014

Analysis Date: 9/8/2014

SeqNo: 613131

Units: mg/Kg

Analyte Chloride

Result ND PQL

1.5

SPK value SPK Ref Val %REC LowLimit

HighLimit

%RPD

RPDLimit

Qual

Sample ID LCS-15172

SampType: LCS

RunNo: 21073

Client ID: LCSS Prep Date: 9/8/2014

Analysis Date: 9/8/2014

SeqNo: 613132

Units: mg/Kg

Qual

Analyte

Result

SPK value SPK Ref Val **PQL**

15.00

0

92.3

%REC LowLimit HighLimit

RPDLimit

1.5

%RPD

Chloride

14

90

110

Qualifiers:

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

Page 4 of 7

Hall Environmental Analysis Laboratory, Inc.

WO#:

1409191 12-Sep-14

Client:

Blagg Engineering

Project:

Crouch Mesa LF

Sample ID MB-15106 SampType: MBLK TestCode: EPA Method 8015D: Diesel Range Organics Client ID: PBS Batch ID: 15106 RunNo: 20982 Prep Date: 9/4/2014 Analysis Date: 9/4/2014 SeqNo: 610877 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 8.4 10.00 83.8 57.9 140

Sample ID LCS-15106 SampType: LCS TestCode: EPA Method 8015D: Diesel Range Organics Client ID: LCSS Batch ID: 15106 RunNo: 20982 Prep Date: 9/4/2014 Analysis Date: 9/4/2014 SeqNo: 610878 Units: mg/Kg %RPD **RPDLimit** Result **PQL** SPK value SPK Ref Val %REC HighLimit Qual Analyte LowLimit Diesel Range Organics (DRO) 50 10 50.00 100 68.6 130 Sur: DNOP 4.1 5.000 82.5 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 5 of 7

Hall Environmental Analysis Laboratory, Inc.

WO#:

1409191

12-Sep-14

Client:

Blagg Engineering

Project:

Crouch Mesa LF

Sample ID MB-15122 SampType: MBLK TestCode: EPA Method 8015D: Gasoline Range Client ID: Batch ID: 15122 RunNo: 21019 Prep Date: 9/4/2014 Analysis Date: 9/5/2014 SeqNo: 612342 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 80 120

Sample ID LCS-15122 SampType: LCS TestCode: EPA Method 8015D: Gasoline Range Client ID: LCSS Batch ID: 15122 RunNo: 21019 Prep Date: 9/4/2014 Analysis Date: 9/5/2014 SeqNo: 612343 Units: mg/Kg Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Gasoline Range Organics (GRO) 24 5.0 25.00 97.7 65.8 139 Surr: BFB 1000 1000 102 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#: 14

Qual

1409191 12-Sep-14

Client:

Blagg Engineering

Project:

Crouch Mesa LF

Sample ID MB-15122 SampType: MBLK TestCode: EPA Method 8021B: Volatiles Client ID: PBS Batch ID: 15122 RunNo: 21019 Prep Date: 9/4/2014 Analysis Date: 9/5/2014 SeqNo: 612375 Units: mg/Kg Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit**

Sur: 4-Bromofluorobenzene 1.1 1.000 110 80 120

Sample ID LCS-15122 SampType: LCS TestCode: EPA Method 8021B: Volatiles Client ID: LCSS RunNo: 21019 Batch ID: 15122 Prep Date: 9/4/2014 Analysis Date: 9/5/2014 SeqNo: 612376 Units: mg/Kg SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Analyte Result **PQL** 0.85 0.050 1.000 85.0 80 120 Benzene 0 0.050 1.000 0 85.9 80 120 Toluene 0.86 80 1.000 0 90.5 120 Ethylbenzene 0.91 0.050 Xylenes, Total 2.8 0.10 3.000 0 94.8 80 120 Surr: 4-Bromofluorobenzene 1.0 1.000 100 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
- No Detected at the Reporting E

Page 7 of 7

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



tiau Environmeniai Anatysis 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 Numb	er: 1409191		ReptNo:	1 .
Received by/d	ate:	AT 091	04/14				
Logged By:	Anne Thom	ne	9/4/2014 7:00:00 AM	4	ame In		
Completed By	: Anne Thor	ne	9/4/2014		an I-	_	
Reviewed By:	(25	09/04/14				
Chain of Cu	stody						
1. Custody s	eals intact on sa	mple bottles?		Yes 🗌	No 🗌	Not Present	
2. Is Chain o	f Custody comp	lete?	·	Yes 🗹	No 🗌	Not Present	
3. How was t	the sample deliv	ered?		Courier			
<u>Log In</u>						•	
	ttempt made to	cool the sample	98?	Yes 🗹	No 🗌	na 🗆	
5. Were all s	amples received	d at a temperat	ure of >0° C to 6.0°C	Yes 🗹	No 🗌	na 🗆	,
6. Sample(s) in proper conta	ainer(s)?		Yes 🗹	No 🗌		
7. Sufficient	sample volume	for indicated te	st(s)?	Yes 🗹	No 🗌		•
8. Are samp	les (except VOA	and ONG) pro	perly preserved?	Yes 🗹	No 🗆		
9. Was pres	ervative added t	o bottles?		Yes 🗌	No 🗹	NA 🗆	
10. VOA vials	have zero head	space?		Yes 🗌	No 🗆	No VOA Viais 🗹	
11, Were any	sample contain	ers received br	roken?	Yes	No 🗹	# of preserved	
					🗖	bottles checked	
	erwork match be prepancies on ch			Yes 🗹	No L	for pH:	or >12 unless noted)
	ces correctly ide			Yes 🗹	No 🗆	Adjusted?	
14. Is it clear	what analyses v	vere requested	7	Yes 🗹	No 🗆		
	nolding times abi			Yes 🗹	No 🗆	Checked by:	
Special Ha	ndling (if ap	plicable)	•				
	t notified of all d		th this order?	Yes 🗌	No 🗆	NA 🗹	
Per	son Notified:		Date				
By	Whom:		Via:	□ eMail [Phone Fax	In Person	
Reg	garding:						
Clie	nt Instructions:						
17. Additions	al remarks:						
18. <u>Çooler l</u>						7	
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S	Client:		Mailing Address: P.O. Bux 87		Phone #:	email or Fax#:	QA/QC Package:	X Standard	Accreditation	NELAP	□ EDD (Type)	Date	\$19/2M	5	=										三	\ \>	1
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Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109 TEL: 505-345-3975 FAX: 505-345-4107 Website: www.hallenvironmental.com

November 14, 2014

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

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

RE: Crouch Mesa Landfarm OrderNo.: 1411368

Dear Jeff Blagg:

Hall Environmental Analysis Laboratory received 3 sample(s) on 11/11/2014 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 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 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

4901 Hawkins NE

Albuquerque, NM 87109

Lab Order 1411368

Date Reported: 11/14/2014

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering Client Sample ID: Cell 1

 Project:
 Crouch Mesa Landfarm
 Collection Date: 11/7/2014 2:10:00 PM

 Lab ID:
 1411368-001
 Matrix: SOIL
 Received Date: 11/11/2014 7:00:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE	ORGANICS				Analy	st: BCN
Diesel Range Organics (DRO)	ND	9.9	mg/Kg	1	11/12/2014 3:19:07 P	M 16334
Surr: DNOP	97.5	63.5-128	%REC	1	11/12/2014 3:19:07 P	M 16334
EPA METHOD 8015D: GASOLINE RAI	NGE				Analy	st: NSB
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	11/12/2014 12:33:46	PM 16343
Surr: BFB	94.3	80-120	%REC	1	11/12/2014 12:33:46	PM 16343
EPA METHOD 8021B: VOLATILES					Analy	st: NSB
Benzene	ND	0.048	mg/Kg	1	11/12/2014 12:33:46	PM 16343
Toluene	ND	0.048	mg/Kg	1	11/12/2014 12:33:46	PM 16343
Ethylbenzene	ND	0.048	mg/Kg	1	11/12/2014 12:33:46	PM 16343
Xylenes, Total	ND	0.096	mg/Kg	1	11/12/2014 12:33:46	PM 16343
Surr: 4-Bromofluorobenzene	98.6	80-120	%REC	1	11/12/2014 12:33:46	PM 16343
EPA METHOD 300.0: ANIONS					Analy	st: LGP
Fluoride	0.46	0.30	mg/Kg	1	11/13/2014 1:30:11 A	M 16341
Chloride	ND	1.5	mg/Kg	1	11/13/2014 1:30:11 A	M 16341
Nitrogen, Nitrite (As N)	ND	0.30	mg/Kg	1	11/13/2014 1:30:11 A	M 16341
Bromide	ND	0.30	mg/Kg	1	11/13/2014 1:30:11 A	M 16341
Nitrogen, Nitrate (As N)	ND	0.30	mg/Kg	1	11/13/2014 1:30:11 A	M 16341
Phosphorus, Orthophosphate (As P)	ND	1.5	mg/Kg	1	11/13/2014 1:30:11 A	M 16341
Sulfate	3400	75	mg/Kg	50	11/13/2014 1:42:36 A	M 16341
EPA METHOD 7471: MERCURY					Analy	st: MMD
Mercury	ND	0.030	mg/Kg	1	11/12/2014 1:40:50 F	M 16346
EPA METHOD 6010B: SOIL METALS					Analy	st: ELS
Arsenic	ND	2.6	mg/Kg	1	11/13/2014 10:32:57	AM 16364
Barium	22	0.10	mg/Kg	1	11/13/2014 10:32:57	AM 16364
Cadmium	ND	0.10	mg/Kg	1	11/13/2014 10:32:57	AM 16364
Calcium	3700	26	mg/Kg	1	11/13/2014 10:32:57	AM 16364
Chromium	1.8	0.31	mg/Kg	1	11/13/2014 10:32:57	AM 16364
Lead	2.1	0.26	mg/Kg	1	11/13/2014 10:32:57	AM 16364
Magnesium	820	26	mg/Kg	1	11/13/2014 10:32:57	AM 16364
Potassium	370	51	mg/Kg	1	11/13/2014 10:32:57	
Selenium	ND	2.6	mg/Kg	1	11/13/2014 10:32:57	
Silver	ND	0.26	mg/Kg	1	11/13/2014 10:32:57	
Sodium	ND	26	mg/Kg	1	11/13/2014 10:32:57	AM 16364

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

Analytical Report Lab Order 1411368

Date Reported: 11/14/2014

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering Client Sample ID: Cell 2

Project: Crouch Mesa Landfarm Collection Date: 11/7/2014 2:30:00 PM

Lab ID: 1411368-002 Matrix: SOIL Received Date: 11/11/2014 7:00:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANG	E ORGANICS				Analys	t: BCN
Diesel Range Organics (DRO)	ND	9.9	mg/Kg	1	11/12/2014 4:48:47 PM	A 16334
Surr: DNOP	97.0	63.5-128	%REC	1	11/12/2014 4:48:47 PM	A 16334
EPA METHOD 8015D: GASOLINE RA	NGE				Analys	t: NSB
Gasoline Range Organics (GRO)	ND	5.0	mg/Kg	1	11/12/2014 1:59:50 PM	A 16343
Surr: BFB	95.0	80-120	%REC	1	11/12/2014 1:59:50 PM	A 16343
EPA METHOD 8021B: VOLATILES					Analys	t: NSB
Benzene	ND	0.050	mg/Kg	1	11/12/2014 1:59:50 PM	A 16343
Toluene	ND	0.050	mg/Kg	1	11/12/2014 1:59:50 PM	A 16343
Ethylbenzene	ND	0.050	mg/Kg	1	11/12/2014 1:59:50 PM	16343
Xylenes, Total	ND	0.099	mg/Kg	1	11/12/2014 1:59:50 PM	16343
Surr: 4-Bromofluorobenzene	101	80-120	%REC	1	11/12/2014 1:59:50 PM	16343
EPA METHOD 300.0: ANIONS					Analys	t: LGP
Fluoride	0.84	0.30	mg/Kg	1	11/13/2014 1:55:00 AM	A 16341
Chloride	ND	1.5	mg/Kg	1	11/13/2014 1:55:00 AM	16341
Nitrogen, Nitrite (As N)	ND	0.30	mg/Kg	1	11/13/2014 1:55:00 AM	/ 16341
Bromide	ND	0.30	mg/Kg	1	11/13/2014 1:55:00 AM	16341
Nitrogen, Nitrate (As N)	ND	0.30	mg/Kg	1	11/13/2014 1:55:00 AN	16341
Phosphorus, Orthophosphate (As P)	ND	30	mg/Kg	20	11/11/2014 1:46:07 PM	16341
Sulfate	4800	75	mg/Kg	50	11/13/2014 2:07:25 AM	16341
EPA METHOD 7471: MERCURY					Analys	t: MMD
Mercury	ND	0.035	mg/Kg	1	11/12/2014 1:46:14 PM	A 16346
EPA METHOD 6010B: SOIL METALS					Analys	t: ELS
Arsenic	ND	2.5	mg/Kg	1	11/13/2014 10:46:36 A	M 16364
Barium	4.4	0.10	mg/Kg	1	11/13/2014 10:46:36 A	M 16364
Cadmium	ND	0.10	mg/Kg	1	11/13/2014 10:46:36 A	M 16364
Calcium	31000	250	mg/Kg	10	11/13/2014 10:53:36 A	M 16364
Chromium	0.98	0.30	mg/Kg	1	11/13/2014 10:46:36 A	M 16364
Lead	1.0	0.25	mg/Kg	1	11/13/2014 10:46:36 A	M 16364
Magnesium	700	25	mg/Kg	1	11/13/2014 10:46:36 A	M 16364
Potassium	240	51	mg/Kg	1	11/13/2014 10:46:36 A	M 16364
Selenium	ND	2.5	mg/Kg	1	11/13/2014 10:46:36 A	M 16364
Silver	ND	0.25	mg/Kg	1	11/13/2014 10:46:36 A	
Sodium	ND	25	mg/Kg	1	11/13/2014 10:46:36 A	M 16364

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

Analytical Report Lab Order 1411368

Date Reported: 11/14/2014

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering Client Sample ID: Cell 5

 Project:
 Crouch Mesa Landfarm
 Collection Date: 11/7/2014 3:00:00 PM

 Lab ID:
 1411368-003
 Matrix: SOIL
 Received Date: 11/11/2014 7:00:00 AM

Analyses	Result	RL Q	ual Units	DF	Date Analyzed Batch	
EPA METHOD 8015D: DIESEL RANGE (ORGANICS				Analyst: BCN	_
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	11/12/2014 5:18:37 PM 16334	
Surr: DNOP	101	63.5-128	%REC	1	11/12/2014 5:18:37 PM 16334	
EPA METHOD 8015D: GASOLINE RANG	SE .				Analyst: NSB	
Gasoline Range Organics (GRO)	ND	4.6	mg/Kg	1	11/12/2014 3:25:38 PM 16343	
Surr: BFB	94.5	80-120	%REC	1	11/12/2014 3:25:38 PM 16343	
EPA METHOD 8021B: VOLATILES					Analyst: NSB	
Benzene	ND	0.046	mg/Kg	1	11/12/2014 3:25:38 PM 16343	
Toluene	ND	0.046	mg/Kg	1	11/12/2014 3:25:38 PM 16343	
Ethylbenzene	ND	0.046	mg/Kg	1	11/12/2014 3:25:38 PM 16343	
Xylenes, Total	ND	0.093	mg/Kg	1	11/12/2014 3:25:38 PM 16343	
Surr: 4-Bromofluorobenzene	99.2	80-120	%REC	1	11/12/2014 3:25:38 PM 16343	
EPA METHOD 300.0: ANIONS					Analyst: LGP	
Fluoride	1.2	0.30	mg/Kg	1	11/13/2014 2:19:50 AM 16341	
Chloride	ND	1.5	mg/Kg	1	11/13/2014 2:19:50 AM 16341	
Nitrogen, Nitrite (As N)	ND	0.30	mg/Kg	1	11/13/2014 2:19:50 AM 16341	
Bromide	ND	0.30	mg/Kg	1	11/13/2014 2:19:50 AM 16341	
Nitrogen, Nitrate (As N)	ND	0.30	mg/Kg	1	11/13/2014 2:19:50 AM 16341	
Phosphorus, Orthophosphate (As P)	ND	30	mg/Kg	20	11/11/2014 1:58:32 PM 16341	
Sulfate	3300	75	mg/Kg	50	11/13/2014 2:32:15 AM 16341	
EPA METHOD 7471: MERCURY					Analyst: MMD	
Mercury	ND	0.032	mg/Kg	1	11/12/2014 1:48:03 PM 16346	
EPA METHOD 6010B: SOIL METALS					Analyst: ELS	
Arsenic	ND	2.5	mg/Kg	1	11/13/2014 10:49:32 AM 16364	
Barium	5.2	0.10	mg/Kg	1	11/13/2014 10:49:32 AM 16364	
Cadmium	ND	0.10	mg/Kg	1	11/13/2014 10:49:32 AM 16364	
Calcium	4600	25	mg/Kg	1	11/13/2014 10:49:32 AM 16364	
Chromium	2.2	0.30	mg/Kg	1	11/13/2014 10:49:32 AM 16364	
Lead	1.9	0.25	mg/Kg	1	11/13/2014 10:49:32 AM 16364	
Magnesium	970	25	mg/Kg	1	11/13/2014 10:49:32 AM 16364	
Potassium	330	50	mg/Kg	1	11/13/2014 10:49:32 AM 16364	
Selenium	ND	2.5	mg/Kg	1	11/13/2014 10:49:32 AM 16364	
Silver	ND	0.25	mg/Kg	1	11/13/2014 10:49:32 AM 16364	
Sodium	ND	25	mg/Kg	1	11/13/2014 10:49:32 AM 16364	

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

Hall Environmental Analysis Laboratory, Inc.

WO#:

1411368

14-Nov-14

Client:

Blagg Engineering

Project:

Crouch Mesa Landfarm

Sample ID MB-16341	SampT	уре: МЕ	BLK	Tes	S					
Client ID: PBS	Batch	1D: 16	341	F	RunNo: 2	2478				
Prep Date: 11/11/2014	Analysis D	ate: 11	//11/2014	5	SeqNo: 6	62481	Units: mg/K	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.30								
Chloride	ND	1.5								
Nitrogen, Nitrite (As N)	ND	0.30								
Bromide	ND	0.30								
Nitrogen, Nitrate (As N)	ND	0.30								
Phosphorus, Orthophosphate (As P	ND	1.5								
Sulfate	ND	1.5								

Sample ID LCS-16341	SampT	ype: LC	S	Tes	tCode: El	S				
Client ID: LCSS	Batch	ID: 16	341	F	RunNo: 2	2478				
Prep Date: 11/11/2014	Analysis D	ate: 11	I/11/201 4	8	SeqNo: 6	62482	Units: mg/k	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	1.5	0.30	1.500	0	97.9	90	110			
Chloride	14	1.5	15.00	0	91.1	90	110			
Nitrogen, Nitrite (As N)	2.9	0.30	3.000	0	96.2	90	110			
Bromide	7.0	0.30	7.500	0	93.8	90	110			
Nitrogen, Nitrate (As N)	7.2	0.30	7.500	0	95.4	90	110			
Phosphorus, Orthophosphate (As P	14	1.5	15.00	0	93.6	90	110			
Sulfate	28	1.5	30.00	0	94.1	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 9

Hall Environmental Analysis Laboratory, Inc.

WO#:

1411368

14-Nov-14

Client:

Blagg Engineering

Project:

Crouch Mesa Landfarm

Sample ID MB-16334	SampT	ype: ME	BLK	Tes	tCode: El	PA Method	8015D: Dies	el Range C	Organics	
Client ID: PBS	Batch	ID: 16	334	R	RunNo: 2	2488				
Prep Date: 11/11/2014	Analysis D	ate: 11	1/12/2014	S	SeqNo: 6	63176	Units: mg/F	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Surr: DNOP	9.6		10.00		96.2	63.5	128			

Sample ID LCS-16334	Sampi	ype: LC	S	ies	Code: E	PA Method	8015D: Diese	ei Kange C	rganics	
Client ID: LCSS	Batch	ID: 16	334	F	RunNo: 2	2488				
Prep Date: 11/11/2014	Analysis Da	ate: 11	1/12/2014	8	SeqNo: 6	63181	Units: mg/K	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	43	10	50.00	0	86.6	68.6	130			
Surr: DNOP	4.7		5.000		93.2	63.5	128			

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 9

Hall Environmental Analysis Laboratory, Inc.

WO#:

1411368 14-Nov-14

Client:

Blagg Engineering

Project:

Crouch Mesa Landfarm

Sample ID MB-16343

SampType: MBLK

Analysis Date: 11/12/2014

TestCode: EPA Method 8015D: Gasoline Range

Client ID: PBS

Prep Date: 11/11/2014

Batch ID: 16343

RunNo: 22500

SeqNo: 663428

Units: mg/Kg

RPDLimit Qual

Analyte

PQL 5.0

SPK value SPK Ref Val %REC LowLimit

HighLimit 120 %RPD

Gasoline Range Organics (GRO) Sum: BFB

960

Result

Result

Result

ND

1000

95.6

Sample ID LCS-16343

SampType: LCS

TestCode: EPA Method 8015D: Gasoline Range

Client ID: LCSS

Batch ID: 16343

RunNo: 22500

SeqNo: 663429

Units: mg/Kg

%RPD

Gasoline Range Organics (GRO)

Prep Date: 11/11/2014

PQL

SPK value SPK Ref Val

%REC LowLimit 113

65.8

HighLimit

RPDLimit Qual

RPDLimit

28 5.0 1000

Analysis Date: 11/12/2014

25.00 1000

104

80

139 120

Sum: BFB

Sample ID MB-16343 MK

SampType: MBLK

Analysis Date: 11/12/2014

POL

TestCode: EPA Method 8015D: Gasoline Range Batch ID: R22500

SPK value SPK Ref Val

1000

RunNo: 22500 SeqNo: 663435

Units: %REC

HighLimit

%RPD

Qual

Analyte Sum: BFB

Client ID:

Prep Date:

960

TestCode: EPA Method 8015D: Gasoline Range

95.6

%REC

RunNo: 22500

Prep Date:

Sample ID LCS-16343 MK Client ID: LCSS

SampType: LCS Batch ID: R22500 Analysis Date: 11/12/2014

SeqNo: 663436

LowLimit

80

Units: %REC

120

120

%RPD

Analyte Surr: BFB Result 1000 **PQL** SPK value SPK Ref Val 1000

%REC 104

LowLimit HighLimit 80

RPDLimit Qual

Qualifiers:

E

- Value exceeds Maximum Contaminant Level.
- Analyte detected below quantitation limits
- 0 RSD is greater than RSDlimit

Value above quantitation range

- R RPD outside accepted recovery limits S Spike Recovery outside accepted recovery limits
- В Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- Not Detected at the Reporting Limit Sample pH greater than 2.

ND

RLReporting Detection Limit Page 6 of 9

Hall Environmental Analysis Laboratory, Inc.

WO#:

1411368

14-Nov-14

Client:

Blagg Engineering

Project:

Crouch Mesa Landfarm

Sample ID MB-16343	SampT	ype: ME	BLK	Test						
Client ID: PBS	Batch	1D: 16	343	F	RunNo: 2	2500				
Prep Date: 11/11/2014	Analysis D	ate: 11	1/12/2014	S	SeqNo: 6	63449	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	1.0		1.000		101	80	120			

Sample ID LCS-16343	Samp	ype: LC	s	Tes	TestCode: EPA Method 8021B: Volatiles						
Client ID: LCSS	Batc	n ID: 16	343	F	RunNo: 2	2500					
Prep Date: 11/11/2014	Analysis [Date: 11	1/12/2014	8	SeqNo: 6	63450	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	80	120				
Toluene	1.0	0.050	1.000	0	101	80	120				
Ethylbenzene	1.0	0.050	1.000	0	104	80	120				
Xylenes, Total	3.1	0.10	3.000	0	103	80	120				
Surr: 4-Bromofluorobenzene	1.1		1.000		108	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
- The Proceed at the Reporting Emil
- P Sample pH greater than 2. RL Reporting Detection Limit

Page 7 of 9

Hall Environmental Analysis Laboratory, Inc.

WO#:

1411368

14-Nov-14

Client:

Blagg Engineering

Project:

Crouch Mesa Landfarm

Sample ID MB-16346

SampType: MBLK

TestCode: EPA Method 7471: Mercury

Client ID: PBS

Batch ID: 16346

RunNo: 22494

Prep Date: 11/11/2014

Analysis Date: 11/12/2014

SeqNo: 663311

Units: mg/Kg

%RPD

RPDLimit Qual

Analyte Mercury

Result **PQL** ND 0.033

Sample ID LCS-16346

SampType: LCS

TestCode: EPA Method 7471: Mercury RunNo: 22494

HighLimit

Prep Date: 11/11/2014

Client ID: LCSS

Batch ID: 16346 Analysis Date: 11/12/2014

SeqNo: 663312

Units: mg/Kg

Qual

Result

SPK value SPK Ref Val **PQL**

0.1667

%REC LowLimit 103

Analyte

HighLimit

%RPD **RPDLimit**

Mercury

0.17

0.033

SPK value SPK Ref Val %REC LowLimit

Oualifiers:

Value exceeds Maximum Contaminant Level.

E Value above quantitation range

Analyte detected below quantitation limits

0 RSD is greater than RSDlimit

RPD outside accepted recovery limits R

Spike Recovery outside accepted recovery limits

В Analyte detected in the associated Method Blank

Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

Sample pH greater than 2.

RLReporting Detection Limit Page 8 of 9

Hall Environmental Analysis Laboratory, Inc.

WO#: 1411368

14-Nov-14

Client:

Client ID:

Arsenic

PBS

Blagg Engineering

Project: Crouch Mesa Landfarm

Sample ID MB-16364 SampType: MBLK

Prep Date: 11/12/2014 Analysis Date: 11/13/2014 Second Analyte Result PQL SPK value SPK Ref Val

ND

Batch ID: 16364

2.5

/13/2014 SeqNo: 663982 Units: mg/Kg
SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

TestCode: EPA Method 6010B: Soil Metals

RunNo: 22513

Barium	ND	0.10
Cadmium	ND	0.10
Calcium	ND	25
Chromium	ND	0.30
Lead	ND	0.25
Magnesium	ND	25
Potassium	ND	50
Selenium	ND	2.5
Silver	ND	0.25
Sodium	ND	25

Sample ID LCS-16364 SampType: LCS TestCode: EPA Method 6010B: Soil Metals Client ID: LCSS Batch ID: 16364 RunNo: 22513 Prep Date: 11/12/2014 Analysis Date: 11/13/2014 SeqNo: 663983 Units: mg/Kg Result SPK value SPK Ref Val %REC %RPD **RPDLimit PQL** LowLimit HighLimit Qual 26 2.5 102 80 Arsenic 25.00 120 Banum 25 0.10 25.00 0 99.9 80 120 Cadmium 25 0.10 25.00 0 100 80 120 2600 25 2500 0 103 80 120 Calcium Chromium 25 0.30 25.00 0 101 80 120 0.25 80 120 Lead 24 25.00 n 96.4 Magnesium 2600 25 2500 0 103 80 120 2500 50 98.4 80 120 Potassium 2500 n Selenium 24 2.5 25.00 0 97.4 80 120 Silver 5.0 0.25 5.000 O 80 120 100 Sodium 2500 25 2500 99.8 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
- Not bettetted at the Reporting E
- 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:	1411368			RcptNo:	1
Received by/date: ///	1114					
Logged By: Anne Thome	11/11/2014 7:00:00 AM		ame 2	N		
Completed By: Anne Thome	11/11/2014		Am 2	1.	_	
Reviewed By:	ll		Cana J	,,		
Chain of Custody	titudis.					
1. Custody seals intact on sample bottles?		Yes 🗌	No (Not Present	
2. Is Chain of Custody complete?		Yes 🗹	No (Not Present	
3. How was the sample delivered?		Courier				
<u>Log In</u>						
4. Was an attempt made to cool the samples	?	Yes 🗹	No		NA 🗆	
5. Were all samples received at a temperature	e 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) prope	orly 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 brok	en?	Yes	No	7		
				_	# of preserved bottles checked	
12. Does paperwork match bottle labels?		Yes 🗹	No	┙╽	for pH:	or >12 unless noted)
(Note discrepancies on chain of custody) 13. Are matrices correctly Identified on Chain of	f Custody?	Yes 🗹	No	o l	Adjusted?	
14. Is it clear what analyses were requested?	. 000.00	Yes 🗹	No			
15. Were all holding times able to be met?		Yes 🗹	No		Checked by:	
(If no, notify customer for authorization.)				,		
Special Handling (if applicable)						
16. Was client notified of all discrepancies with	this order?	Yes 🗌	No		na 🗹	
Person Notified:	Date		Vinj			
By Whom:	VIa:	eMail [] Phone [Fax	In Person	
Regarding:			Timeth I Add Far at A			
Client Instructions:	nii Parsangahina e Ermebini ii Eri Allanie aran 1840 ii ba					
17. Additional remarks:						
18. Cooler information						
Cooler No Temp °C Condition	Seal Intact Seal No 5	Seal Date	Signed B	By .		
1 2.8 Good Ye	98					

INTERNATED	ANALYSIS LABORATORY	www.hallenvironmental.com	: - Albuquerque, NM 87109	5 Fax 505-345-4107	Analysis Request		bCB₁8	,, S00, e, (S808 \ ,	Slate OV,II (A)	PAH's (831) RCRA 8 Me Anions (F,C 8081 Pestic 8250 (Semi 8270 (Semi	×	×	×						ISP		samples submitted to Half 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.
	ANA	www.	4901 Hawkins NE	Tel. 505-345-3 <u>9</u> 75		(60)		(1.81 (1.40	5 pc	HPH 8015B HPH (Metho	×	*	×						ガル		y sub-contracted o
			4901	Ţej.		(Vln	ල පපට) HGT +	38	87EX + MT		×						.	кетагкs:		selbility. Any
By Marsal	4102/1/		LANDEARM					- No.		HEAL NG.	x 102	x 202	x 82						1/0/2014 1129 KG	Date Time	ss. This serves as notice of this pos
Time:	X Rush		H MESA			ger:	BLAGE	7 80 A 6	erature:	Preservative Type	Cool	B	И						Lh este	h	credited laboratorie
Turn-Around Time:	□ Standard	Project Name:	CRRC	Project #:		Project Manager:	7	Sampler:	Sample Tempe	Container Type and #	408 x 2	H	11						Mutlar	Received by	ontracted to other ac
Chain-of-Custody Record	AMERICA	BLAGG ENGWERDIG INC.	Mailing Address: P.O. Box 87	BLOOMFIELD, NM 87413	- 320-1183		☐ Level 4 (Full Validation)	□ Other		Matrix Sample Request ID	Soil CEU 1	" CELL Z	' Ceu S						Relinquished by:	Now In I Do Le	ales submitted to Hall Environmental may be subc
ain-of		-Alsie	dress:	LOOME	505-	1X#:	kage: d	5	(pd/	Тіте М	1410 5	1430	1 500		-				/=		If necessary, samp
CP	Client: BP	હ્યુ	Mailing Ad	120	Phone #:	email or Fax#:	QA/QC Package: XStandard	Accreditation DELAP	☐ EDD (Type)	Date T	1/2011		11						Time:	Date: Time: 1/10/14 1/130	If nec

BLAGG ENGINEERING, INC.

P.O. Box 87, Bloomfield, New Mexico 87413

Phone: (505)632-1199 Fax: (505)632-3903



7011 1570 000 2 2817 3469 000 15 P 20 12

November 14, 2013

Mr. Brad Jones New Mexico Oil Conservation Division 1220 South St. Francis Drive Santa Fe, New Mexico 87505

Re: BP America Production Company

Crouch Mesa Waste Management Facility, Permit NM-02-003

Annual Report on Treatment Zone Monitoring

Dear Mr. Jones:

On behalf of BP America Production Company, Blagg Engineering, Inc. (BEI) is submitting the 2013 annual treatment zone monitoring test results for the Crouch Mesa Waste Management Facility pursuant to Permit NM-02-003, dated November 25, 1998. This report is for the December 1, 2012 through November 30, 2013 reporting period. Analytical test results (attached) indicate the facility met standards with each sample event.

The landfarm is presently configured into three (3) active cells, identified as Cell 1, Cell 2 and Cell 5 (Figure 1). The northeast portion of the facility (identified as 'unused cell') is used for equipment, materials and unused compost media storage only. Cell 5 is used for storage of remediated soils from composting/landfarming operations.

Sampling protocol specifies collection of subsurface samples in each cell from the native ground surface below the treatment zone during quarterly monitoring. Quarterly test procedures include total petroleum hydrocarbons (TPH), chloride and benzene, toluene, ethyl-benzene and xylenes (BTEX). Heavy metals and major cations/anions are to be collected for at least one quarterly sample event. During this reporting period, metals and cations/anions were tested on the September 25, 2013 sample event.

Questions or comments concerning the this transmittal may be directed to myself at (505)632-1199 or to Jeff Peace with BP at (505)326-9200.

Respectfully submitted:

Blagg Engineering, Inc.

Jeffrey C. Blagg, P.E.

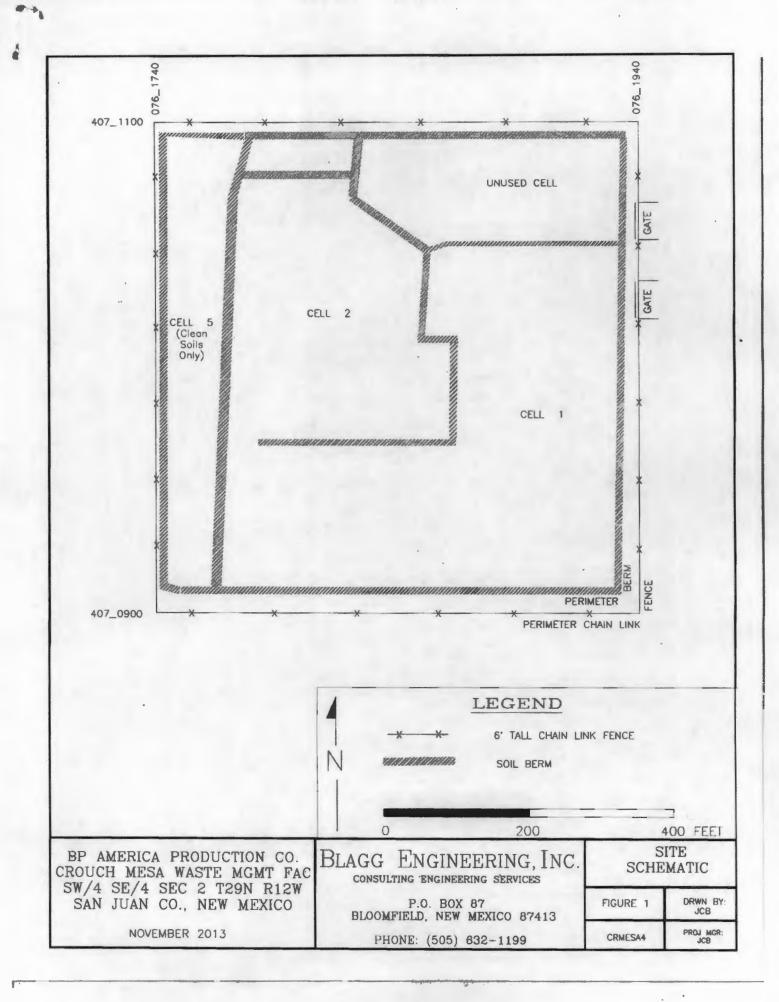
President

Attachments: Site Diagram

Soil Treatment Zone Monitoring Reports

cc: Brandon Powell, NMOCD Aztec District Office Jeff Peace, BP San Juan Operations Center

Blagg Engineering, Inc. Consulting Engineers





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

April 01, 2013

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

FAX (505) 632-3903

RE: Crouch Mesa L.F.

OrderNo.: 1303A03

Dear Jeff Blagg:

Hall Environmental Analysis Laboratory received 3 sample(s) on 3/26/2013 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. 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. 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.

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Lab Order 1303A03

Date Reported: 4/1/2013

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering

Client Sample ID: CELL 1

Project: Crouch Mesa L.F.

Collection Date: 3/20/2013 1:30:00 PM

Lab ID: 1303A03-001

Matrix: SOIL

Received Date: 3/26/2013 9:55:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANG	E ORGANICS				Analyst: MMD
Diesel Range Organics (DRO)	38	9.9	mg/Kg	1	3/28/2013 9:11:44 PM
Surr: DNOP	113	72.4-120	%REC	1	3/28/2013 9:11:44 PM
EPA METHOD 8015B: GASOLINE RA	NGE				Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	3/27/2013 11:37:40 PM
Surr: BFB	92.8	84-116	%REC	1	3/27/2013 11:37:40 PM
EPA METHOD 8021B: VOLATILES					Analyst: NSB
Benzene	ND	0.048	mg/Kg	1	3/27/2013 11:37:40 PM
Toluene	ND	0.048	mg/Kg	1	3/27/2013 11:37:40 PM
Ethylbenzene	ND	0.048	mg/Kg	1	3/27/2013 11:37:40 PM
Xylenes, Total	ND	0.095	mg/Kg	1	3/27/2013 11:37:40 PM
Surr: 4-Bromofluorobenzene	97.4	80-120	%REC	1	3/27/2013 11:37:40 PM
EPA METHOD 300.0: ANIONS					Analyst: JRR
Chloride	35	7.5	mg/Kg	5	3/27/2013 12:58:15 PM

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
 - R RPD outside accepted recovery limits
 - S Spike Recovery outside accepted recovery limits 1 of 7

Lab Order 1303A03 Date Reported: 4/1/2013

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering

Project:

Lab ID:

Crouch Mesa L.F.

1303A03-002

Client Sample ID: CELL 2

Collection Date: 3/20/2013 1:50:00 PM

Received Date: 3/26/2013 9:55:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANG	E ORGANICS				Analyst: MMD
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	3/28/2013 9:38:46 PM
Surr: DNOP	114	72.4-120	%REC	1	3/28/2013 9:38:46 PM
EPA METHOD 8015B: GASOLINE RA	NGE				Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	3/28/2013 12:07:38 AM
Surr: BFB	93.4	84-116	%REC	1	3/28/2013 12:07:38 AM
EPA METHOD 8021B: VOLATILES					Analyst: NSB
Benzene	ND	0.048	mg/Kg	1	3/28/2013 12:07:38 AM
Toluene	ND	0.048	mg/Kg	1	3/28/2013 12:07:38 AM
Ethylbenzene	ND	0.048	mg/Kg	1	3/28/2013 12:07:38 AM
Xylenes, Total	ND	0.096	mg/Kg	1	3/28/2013 12:07:38 AM
Surr: 4-Bromofluorobenzene	95.1	80-120	%REC	1	3/28/2013 12:07:38 AM
EPA METHOD 300.0: ANIONS					Analyst: JRR
Chloride	ND	7.5	mg/Kg	5	3/27/2013 1:23:05 PM

Matrix: SOIL

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- Analyte detected below quantitation limits
- Sample pH greater than 2
- Reporting Detection Limit

- В Analyte detected in the associated Method Blank
- Holding times for preparation or analysis exceeded Η
- ND Not Detected at the Reporting Limit
- RPD outside accepted recovery limits R
- Spike Recovery outside accepted recovery limits

Lab Order 1303A03

Date Reported: 4/1/2013

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering

Project: Crouch Mesa L.F.

Lab ID: 1303A03-003

Client Sample ID: CELL 5

Collection Date: 3/20/2013 2:08:00 PM

Received Date: 3/26/2013 9:55:00 AM

Analyses	Result	RL Qu	nal Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RAN	GE ORGANICS				Analyst: MMD
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	3/28/2013 10:06:15 PM
Surr: DNOP	104	72.4-120	%REC	1	3/28/2013 10:06:15 PM
EPA METHOD 8015B: GASOLINE R	ANGE				Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	3/28/2013 12:37:29 AM
Surr: BFB	93.9	84-116	%REC	1	3/28/2013 12:37:29 AM
EPA METHOD 8021B: VOLATILES					Analyst: NSB
Benzene	ND	0.048	mg/Kg	1	3/28/2013 12:37:29 AM
Toluene	ND	0.048	mg/Kg	1	3/28/2013 12:37:29 AM
Ethylbenzene	ND	0.048	mg/Kg	1	3/28/2013 12:37:29 AM
Xylenes, Total	ND	0.095	mg/Kg	1	3/28/2013 12:37:29 AM
Surr: 4-Bromofluorobenzene	95.3	80-120	%REC	1	3/28/2013 12:37:29 AM
EPA METHOD 300.0: ANIONS					Analyst: JRR
Chloride	ND	1.5	mg/Kg	1	3/27/2013 1:47:53 PM

Matrix: SOIL

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits 3 of 7

Hall Environmental Analysis Laboratory, Inc.

WO#:

1303A03

01-Apr-13

Client:

Blagg Engineering

Project:

Crouch Mesa L.F.

Sample ID MB-6687

SampType: MBLK

TestCode: EPA Method 300.0: Anions

Client ID: PBS Batch ID: 6687

RunNo: 9467

HighLimit

Units: mg/Kg

Prep Date: 3/27/2013

Analysis Date: 3/27/2013 SPK value SPK Ref Val %REC LowLimit PQL

SeqNo: 270247

%RPD

%RPD

Qual

Analyte Chloride

ND 1.5

SampType: LCS

TestCode: EPA Method 300.0: Anions

Sample ID LCS-6687 Client ID: LCSS

Batch ID: 6687

RunNo: 9467

Prep Date: 3/27/2013 Analysis Date: 3/27/2013

SeqNo: 270248

Units: mg/Kg

Analyte

%REC LowLimit HighLimit

RPDLimit

RPDLimit

Qual

Chloride

90

110

SPK value SPK Ref Val 15.00 0 104

Qualifiers:

Value exceeds Maximum Contaminant Level.

E Value above quantitation range

Analyte detected below quantitation limits J

P Sample pH greater than 2

Reporting Detection Limit

В Analyte detected in the associated Method Blank

Η Holding times for preparation or analysis exceeded

Spike Recovery outside accepted recovery limits

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits Page 4 of 7

Hall Environmental Analysis Laboratory, Inc.

WO#: 1303A03

01-Apr-13

Client:

Blagg Engineering

Project:

Crouch Mesa L.F.

Sample ID MB-6684	Samp	Гуре: МІ	BLK	Tes	tCode: El	PA Method	8015B: Diese	l Range (Organics	
Client ID: PBS	Bato	h ID: 66	84	F	RunNo: 9	447			-	
Prep Date: 3/27/2013	Analysis [Date: 3/	27/2013	S	SeqNo: 20	69797	Units: mg/K	9		
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		107	72.4	120			
Sample ID LCS-6684	Samp	Гуре: LC	:s	Tes	tCode: El	PA Method	8015B: Diese	l Range (Organics	
Client ID: LCSS	Batc	h ID: 66	84	R	RunNo: 94	447				
Prep Date: 3/27/2013	Analysis [Date: 3/	27/2013	s	SeqNo: 20	59798	Units: mg/K	3		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	49	10	50.00	0	98.0	47.4	122			

Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- Analyte detected below quantitation limits
- P Sample pH greater than 2
- Reporting Detection Limit

- Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded

Spike Recovery outside accepted recovery limits

- ND Not Detected at the Reporting Limit
- RPD outside accepted recovery limits
- R

Page 5 of 7

Hall Environmental Analysis Laboratory, Inc.

27

970

5.0

25.00

1000

WO#: 1303A03

01-Apr-13

Client:

Blagg Engineering

Project:

Gasoline Range Organics (GRO)

Sur: BFB

Crouch Mesa L.F.

Sample ID MB-6664	SampType: MBLK	TestCode: EPA Method	8015B: Gasoline Rang	j o
Client ID: PBS	Batch ID: 6664	RunNo: 9453		
Prep Date: 3/26/2013	Analysis Date: 3/27/2013	SeqNo: 270328	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	900 1000	90.1 84	116	
Sample ID LCS-6664	SampType: LCS	TestCode: EPA Method	8015B: Gasoline Rang	10
Client ID: LCSS	Batch ID: 6664	RunNo: 9453	•	
Prep Date: 3/26/2013	Analysis Date: 3/27/2013	SeqNo: 270340	Units: mg/Kg	
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD	RPDLimit Qual

106

97.3

62.6

84

136

116

Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

Page 6 of 7

Hall Environmental Analysis Laboratory, Inc.

WO#: 1303A03

01-Apr-13

Client:

Blagg Engineering

Project:

Crouch Mesa L.F.

Sample ID MB-6664	Samp1	ype: ME	BLK	Tes	tCode: E	PA Method	8021B: Vola	tiles		
Client ID: PBS	Batch	1D: 66	64	F	RunNo: 9	453				
Prep Date: 3/26/2013	Analysis D	ate: 3/	27/2013	S	SeqNo: 2	70399	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	1.0		1.000		100	80	120			

Sample ID LCS-6664	SampT	ype: LC	s	Tes	tCode: El	PA Method	8021B: Vola	til es			
Client ID: LCSS	Batch	n ID: 66	64	F	RunNo: 9	453					
Prep Date: 3/26/2013	Analysis D	ate: 3/	27/2013	S	SeqNo: 2	70406	Units: mg/h	(g			i
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Benzene	0.95	0.050	1.000	0	95.0	80	120				
Toluene	0.98	0.050	1.000	0	98.4	80	120				
Ethylbenzene	1.0	0.050	1.000	0	99.9	80	120				
Xylenes, Total	3.1	0.10	3.000	0	105	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
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

Page 7 of 7



riau Environmeniai Anaiysis Laboraior) 4901 Hawkins NE Albuquerque, NM 87105

TEL: 505-345-3975 FAX: 505-345-410; Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name:	BLAGG		Work Order Number	: 1303	A03			RcptNo:	1
Received by/date	# AG	03,04	/13		•				
Logged By:	Michelle G	iarcia	3/26/2013 9:55:00 AM						
Completed By:	Micheile G	iarcia	3/26/2013 11:13:59 A	A					
Reviewed By:	14		mhila						
Chain of Cus	tody	\	Charles						
1. Custody seal	ls intact on s	ample bottles?		Yes		No		Not Present	
2. Is Chain of C	ustody comp	ete?		Yes	\checkmark	No		Not Present	
3. How was the	sample deliv	vered?		Cou	rier				
Log In									
4. Was an atter	mpt made to	cool the samples?	?	Yes	✓	No	-	na 🗆	
5. Were all sam	nples receive	d at a temperature	of >0° C to 6.0°C	Yes	✓	No		na 🗆	
6. Sample(s) in	proper conta	ainer(s)?		Yes	✓	No	• 🗆		
7. Sufficient san	mple volume	for indicated test(s	s)?	Yes	\checkmark	No			
8, Are samples	(except VOA	and ONG) proper	rly preserved?	Yes	\checkmark	No			
9. Was preserve	ative added t	o bottles?		Yes		No	\checkmark	NA 🗆	
10.VOA vials ha	ve zero head	space?		Yes		No		No VOA Vials 🗹	
11. Were any sa	mple contain	ers received broke	en?	Yes		No	V	# of preserved	
40 5				.,		•1-	П	bottles checked	
12. Does paperw (Note discrep		ottle labels? lain of custody)		Yes	Y	NO		for pH: (<2 o	r >12 unless noted)
		ntified on Chain of	Custody?	Yes	V	No		Adjusted?	
14. Is it clear who	at analyses w	ere requested?		Yes	¥	No			
15. Were all hold (if no, notify o	•	e to be met? authorization.)		Yes	\checkmark	No		Checked by:	
Special Handi	ing (if app	olicable)							
16. Was client no	otified of all di	iscrepancies with	this order?	Yes		No		NA 🗹	
Person	Notified:		Date:			, 25 gr y 2 (6.15, -1; marin			
By Who	om:		Via: [_ eMa	ail [] Phone [Fax	In Person	
Regard	ing:		er van der Andre Andre auch der Andre der Bereitstelle auch der Andre auch der An	MALITY MALITA		or was a second second			
Client In	nstructions:					thates of Weatherstone			
17. Additional res	marks:								
18. Cooler Infor Cooler No		Condition Se		Seal D	ete :	Signed	Ву		

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}	SI	www.hallenvironmental.com	Albuquerque, NM 87109	Fax 5		(70	S ^{'†} C)d'²	ON	' ^E O	N'I	O,ㅋ) snoinA													Workorver Parker: Reace	e clear
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Tum-Around Time:	X Standard	Project Name:	CROUCH	Project #:		Project Manager:	4.殴		Sampler: J	90,100	Sample remen	Container Type and #	402 X	74	<u>.</u>										Received by: Received by:	contracted to other ac
Chain-of-Custody Record	who Inc.		287	A BTHIS	~			□ Level 4 (Full Validation)				Sample Request ID	CEU 1	CEU 2] '										By Golden	If necessary, samples submitted to Hall Environmental may be subcontracted to other accretized laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.
ust	S. S. S.	4	2 2	X	632-					ē			3	10	\ <u>\</u>	<u> </u>	├-	╁	-	+	+	-	-	+-	inquished by:	rbmitte
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ပ	Clent:		Mailing		Phone #	email or Fax#:	QA/QC F	X Standard	Accreditation	□ NELAP	□ EDD (Type)	Date	3/20/2012	z	-										355/3 0934 Date: Time: 325/3 1741	- -



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

July 09, 2013

Jeff Blagg

Blagg Engineering

P. O. Box 87

Bloomfield, NM 87413

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

RE: Crouch Mesa L.F.

OrderNo.: 1307093

Dear Jeff Blagg:

Hall Environmental Analysis Laboratory received 3 sample(s) on 7/2/2013 for the analyses presented in the following report.

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

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

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

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Lab Order 1307093

Date Reported: 7/9/2013

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering

Project: Crouch Mesa L.F.

Lab ID: 1307093-001

Client Sample ID: Cell 1

Collection Date: 6/27/2013 3:20:00 PM

Received Date: 7/2/2013 10:00:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANG	SE ORGANICS				Analys	t: JME
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	7/5/2013 4:02:23 PM	8196
Surr. DNOP	77.4	63-147	%REC	1	7/5/2013 4:02:23 PM	8196
EPA METHOD 8015D: GASOLINE RA	ANGE				Analys	t: NSB
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	7/3/2013 6:31:22 PM	8205
Surr: BFB	90.0	80-120	%REC	1	7/3/2013 6:31:22 PM	8205
EPA METHOD 8021B: VOLATILES					Analys	t: NSB
Benzene	ND	0.048	mg/Kg	1	7/3/2013 6:31:22 PM	8205
Toluene	ND	0.048	mg/Kg	1	7/3/2013 6:31:22 PM	8205
Ethylbenzene	ND	0.048	mg/Kg	1	7/3/2013 6:31:22 PM	8205
Xylenes, Total	ND	0.096	mg/Kg	1	7/3/2013 6:31:22 PM	8205
Surr: 4-Bromofluorobenzene	97.5	80-120	%REC	1	7/3/2013 6:31:22 PM	8205
EPA METHOD 300.0: ANIONS					Analys	t: JRR
Chloride	ND	1.5	mg/Kg	1	7/5/2013 2:58:26 PM	8239

Matrix: SOIL

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

- * 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

- 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
 Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

Lab Order 1307093

Date Reported: 7/9/2013

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering

Project: Crouch Mesa L.F.

Lab ID: 1307093-002

Client Sample ID: Cell 2

Collection Date: 6/27/2013 3:45:00 PM

Received Date: 7/2/2013 10:00:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANG	GE ORGANICS				Analys	t: JME
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	7/5/2013 4:32:31 PM	8196
Surr: DNOP	84.9	63-147	%REC	1	7/5/2013 4:32:31 PM	8196
EPA METHOD 8015D: GASOLINE R	ANGE				Analys	t: NSB
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	7/3/2013 7:01:35 PM	8205
Surr: BFB	90.6	80-120	%REC	1	7/3/2013 7:01:35 PM	8205
EPA METHOD 8021B: VOLATILES					Analys	t: NSB
Benzene	ND	0.048	mg/Kg	1	7/3/2013 7:01:35 PM	8205
Toluene	ND	0.048	mg/Kg	1	7/3/2013 7:01:35 PM	8205
Ethylbenzene	ND	0.048	mg/Kg	1	7/3/2013 7:01:35 PM	8205
Xylenes, Total	ND	0.097	mg/Kg	1	7/3/2013 7:01:35 PM	8205
Surr: 4-Bromofluorobenzene	99.3	80-120	%REC	1	7/3/2013 7:01:35 PM	8205
EPA METHOD 300.0: ANIONS					Analys	t: JRR
Chloride	ND	1.5	mg/Kg	1	7/5/2013 3:48:05 PM	8239

Matrix: SOIL

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

- 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

- 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 for VOA and TOC only.
- RL Reporting Detection Limit

Lab Order 1307093

Date Reported: 7/9/2013

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering

gineering Client Sample ID: Cell 5

Project: Crouch Mesa L.F.

Collection Date: 6/27/2013 4:10:00 PM Received Date: 7/2/2013 10:00:00 AM

Lab ID: 1307093-003 Matrix: SOIL

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RAN	GE ORGANICS			Analysi	JME	
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	7/3/2013 8:14:14 PM	8196
Surr: DNOP	104	63-147	%REC	1	7/3/2013 8:14:14 PM	8196
EPA METHOD 8015D: GASOLINE R	ANGE				Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	7/3/2013 7:31:47 PM	8205
Surr: BFB	91.2	80-120	%REC	1	7/3/2013 7:31:47 PM	8205
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.047	mg/Kg	1	7/3/2013 7:31:47 PM	8205
Toluene	ND	0.047	mg/Kg	1	7/3/2013 7:31:47 PM	8205
Ethylbenzene	ND	0.047	mg/Kg	1	7/3/2013 7:31:47 PM	8205
Xylenes, Total	ND	0.093	mg/Kg	1	7/3/2013 7:31:47 PM	8205
Surr: 4-Bromofluorobenzene	99.8	80-120	%REC	1	7/3/2013 7:31:47 PM	8205
EPA METHOD 300.0: ANIONS					Analyst	: JRR
Chloride	ND	1.5	mg/Kg	1	7/5/2013 4:12:55 PM	8239

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

- 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

- 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
 - Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

WO#: 1307093

09-Jul-13

Client:

Blagg Engineering

Project:

Crouch Mesa L.F.

Sample ID: MB-8239

Prep Date: 7/5/2013

SampType: MBLK

TestCode: EPA Method 300.0: Anions

Client ID: PBS

Batch ID: 8239 Analysis Date: 7/5/2013

1.5

RunNo: 11782

SeqNo: 334766

Units: mg/Kg

Analyte

Chloride

PQL

ND

%REC SPK value SPK Ref Val

HighLimit

Qual

Sample ID: LCS-8239

SampType: LCS

TestCode: EPA Method 300.0: Anions

Client ID: LCSS Prep Date: 7/5/2013 Batch ID: 8239

RunNo: 11782

SeqNo: 334767

Units: mg/Kg

RPDLimit

Analyte

Analysis Date: 7/5/2013

SPK value SPK Ref Val %REC

LowLimit

TestCode: EPA Method 300.0: Anions

HighLimit

1.5

110

%RPD

Qual

Chloride

Result PQL

15.00

15.00

15.00

94.8

%RPD

RPDLimit

Sample ID: 1307090-001AMS

Client ID: BatchQC

SampType: MS Batch ID: 8239

RunNo: 11782

Units: mg/Kg

109

Qual

Analyte Chloride

Prep Date: 7/5/2013

Analysis Date: 7/5/2013

Result

Result

SeqNo: 334769

9.793

9.793

%REC LowLimit

HighLimit %RPD

RPDLimit Qual

Sample ID: 1307090-001AMSD

SampType: MSD

TestCode: EPA Method 300.0: Anions

93.5

95.7

Client ID:

BatchQC

Batch ID: 8239

PQL

RunNo: 11782

Analyte

Prep Date: 7/5/2013

Analysis Date: 7/5/2013

SeaNo: 334770

Units: mg/Kg

Chloride

PQL

1.5

SPK value SPK Ref Val

SPK value SPK Ref Val

%REC

LowLimit 58.8 HighLimit

%RPD 1.38

RPDLimit

20

Page 4 of 7

R

Value exceeds Maximum Contaminant Level.

J Analyte detected below quantitation limits

RPD outside accepted recovery limits

Holding times for preparation or analysis exceeded Η

ND

P Sample pH greater than 2 for VOA and TOC only.

Reporting Detection Limit

Qualifiers:

Ε Value above quantitation range

RSD is greater than RSDlimit O

Analyte detected in the associated Method Blank

Not Detected at the Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

WO#: 1307093 09-Jul-13

Client:

Blagg Engineering

•	h Mesa L.F.									
Sample ID: MB-8196	SampT	ype: ME	BLK	Tes	tCode: E	PA Method	8015D: Dies	el Range (Organics	
Client ID: PBS	Batch	ID: 81	96	F	RunNo: 1	1717				
Prep Date: 7/2/2013	Analysis D	ate: 7/	3/2013	;	SeqNo: 3	32961	Units: mg/F	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Surr: DNOP	14		10.00		143	63	147			
Sample ID: LCS-8196	SampT	ype: LC	S	Tes	tCode: E	PA Method	8015D: Dies	el Range (Organics	
Client ID: LCSS	Batch	ID: 81	96	F	RunNo: 1	1717				
Prep Date: 7/2/2013	Analysis D	ate: 7/	3/2013	\$	SeqNo: 3	32962	Units: mg/K	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	47	10	50.00	0	93.7	77.1	128			
Surr: DNOP	5.3		5.000		106	63	147			
Sample ID: 1307016-001AN	AS SampT	ype: MS	3	Tes	tCode: El	PA Method	8015D: Dies	el Range (Organics	
Client ID: BatchQC	Batch	ID: 81 9	96	RunNo: 11717						
Prep Date: 7/2/2013	Analysis D	ate: 7/	3/2013	SeqNo: 333152			Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	10	49.85	9.735	69.6	61.3	138			
Surr: DNOP	5.3		4.985		106	63	147			
Sample ID: 1307016-001AN	ISD SampT	ype: MS	BD	Tes	tCode: El	PA Method	8015D: Diese	el Range (Organics	
Client ID: BatchQC	Batch	ID: 81 9	96	F	RunNo: 1	1717				
Prep Date: 7/2/2013	Analysis D	ate: 7/3	3/2013		SeqNo: 3	33164	Units: mg/K	ζg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	57	9.9	49.65	9.735	96.0	61.3	138	25.5	20	R
Surr: DNOP	5.4		4.965		108	63	147	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSD limit
- R RPD 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 for VOA and TOC only.
- RL Reporting Detection Limit

Page 5 of 7

Hall Environmental Analysis Laboratory, Inc.

WO#: 1307093

09-Jul-13

Client:

Blagg Engineering

Project:

Crouch Mesa L.F.

Sample ID: MB-8205

SampType: MBLK

TestCode: EPA Method 8015D: Gasoline Range

Client ID: PBS

Batch ID: 8205

RunNo: 11743

Prep Date: 7/2/2013

Analysis Date: 7/3/2013

SeqNo: 333662

Units: mg/Kg

Analyte

Result PQL

ND

SPK value SPK Ref Val %REC LowLimit

HighLimit

Qual

Gasoline Range Organics (GRO) Sun: BFB

5.0 930

1000

92.6

80 120

Sample ID: LCS-8205

SampType: LCS

TestCode: EPA Method 8015D: Gasoline Range

%RPD

%RPD

Client ID: LCSS

Batch ID: 8205

RunNo: 11743

Prep Date: 7/2/2013

Analysis Date: 7/3/2013

SeqNo: 333663

Units: mg/Kg

Analyte Gasoline Range Organics (GRO) Result **PQL**

SPK value SPK Ref Val

%REC

HighLimit

RPDLimit Qual

Surr: BFB

24 5.0 25.00 990 1000

95.8 99.0

136 120

RPDLimit

Sample ID: 1307031-001AMS

SampType: MS

TestCode: EPA Method 8015D: Gasoline Range

Client ID: BatchQC Prep Date: 7/2/2013 Batch ID: 8205

Result

26

960

RunNo: 11743

110

102

Units: mg/Kg

Analyte Gasoline Range Organics (GRO)

Analysis Date: 7/3/2013 **PQL**

SeqNo: 333665

%REC LowLimit

LowLimit

62.6

80

76

80

HighLimit %RPD

RPDLimit

Qual

Surr: BFB

SampType: MSD

TestCode: EPA Method 8015D: Gasoline Range

156

120

Client ID: BatchQC

Sample ID: 1307031-001AMSD

Batch ID: 8205

RunNo: 11743

Analysis Date: 7/3/2013

SeqNo: 333666

Units: mg/Kg

HighLimit

RPDLimit Qual 17.7

0

Analyte Gasoline Range Organics (GRO) Surr: BFB

Prep Date: 7/2/2013

26 940

Result

PQL SPK value SPK Ref Val 4.7 23.61

944.3

SPK value SPK Ref Val

23.63

945.2

%REC 112 100

76 80 156 120

%RPD

1.96 0

Qualifiers:

Value exceeds Maximum Contaminant Level.

E Value above quantitation range

J Analyte detected below quantitation limits

0 RSD is greater than RSDlimit В Analyte detected in the associated Method Blank

Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

Page 6 of 7

Sample pH greater than 2 for VOA and TOC only.

RPD outside accepted recovery limits

Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

WO#: 1307093

09-Jul-13

Client:

Blagg Engineering

Project:

Crouch Mesa L.F.

Sample ID: MB-8205	SampType: MBLK			Tes						
Client ID: PBS	Batch ID: 8205			F	RunNo: 1					
Prep Date: 7/2/2013	Analysis Date: 7/3/2013			5	SeqNo: 3	33690	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		107	80	120			
Sample ID: LCS-8205	Samp	Type: LC	S	Tes	TestCode: EPA Method 8021B: Volatiles					
Client ID: LCSS	Batc	Batch ID: 8205			RunNo: 11743					

Sample ID: LCS-8205	Sampi	ype: LC	S	Tes	TestCode: EPA Method 8021B: Volatiles					
Client ID: LCSS	Batcl	1D: 82 0	05	F	RunNo: 1					
Prep Date: 7/2/2013	Analysis D	ate: 7/3	3/2013	8	SeqNo: 3	33691	g			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.95	0.050	1.000	D	95.2	80	120			
Toluene	0.93	0.050	1.000	þ	93.2	80	120			
Ethylbenzene	0.94	0.050	1.000	þ	93.8	80	120			
Xylenes, Total	2.9	0.10	3.000	o	95.8	80	120			
Surr: 4-Bromofluorobenzene	1,1		1.000		109	80	120			

Sample ID: 1307082-001AMS	Samp ⁻	Type: MS	3	Tes	TestCode: EPA Method 8021B: Volatiles						
Client ID: BatchQC	Batc	h ID: 82	05	RunNo: 11743							
Prep Date: 7/2/2013	Analysis [Date: 7/	3/2013	SeqNo: 333693			Units: mg/K				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Benzene	0.87	0.048	0.9615	0.01757	88.7	67.3	145				
Toluene	0.88	0.048	0.9615	0.01709	90.0	66.8	144				
Ethylbenzene	0.91	0.048	0.9615	0	94.4	61.9	153				
Xylenes, Total	2.9	0.096	2.885	0.02460	98.2	65.8	149				
Surr: 4-Bromofluorobenzene	1.0		0.9615		106	80	120				

Sample ID: 1307082-001AMS	D Samp1	ype: MS	SD .	TestCode: EPA Method 8021B; Volatiles						
Client ID: BatchQC	BatchQC Batch ID: 8205				RunNo: 11743					
Prep Date: 7/2/2013	Analysis D	Date: 7/	3/2013	SeqNo: 333694			Units: mg/K	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.97	0.048	0.9615	0.01757	98.8	67.3	145	10.5	20	
Toluene	0.98	0.048	0.9615	0.01709	99.8	66.8	144	10.2	20	
Ethylbenzene	0.99	0.048	0.9615	0	103	61.9	153	8.56	20	
Xylenes, Total	3.1	0.096	2.885	0.02460	106	65.8	149	7.73	20	
Surr: 4-Bromofluorobenzene	1.0		0.9615		107	80	120	0	0	

Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- Analyte detected below quantitation limits
- RSD is greater than RSDlimit 0
- RPD outside accepted recovery limits

- В Analyte detected in the associated Method Blank
- Holding times for preparation or analysis exceeded
- Not Detected at the Reporting Limit ND
 - Sample pH greater than 2 for VOA and TOC only.
- Reporting Detection Limit

Page 7 of 7



Hall Environmental Analysis Laborators 4901 Hawkins NE Albuquerque, NM 87105

TEL: 505-345-3975 FAX: 505-345-4107

Sample Log-In Check List

Website: www.hallenvironmental.com RcptNo: 1 Client Name: BLAGG Work Order Number: 1307093 Received by/date Logged By: Ashley Gallego 7/2/2013 10:00:00 AM 7/2/2013 \0:50:09 AM Completed By: **Ashley Gallegos** 0213 Reviewed By: Chain of Custody Not Present No 🗆 Yes 🗌 1. Custody seals intact on sample bottles? No 🗌 Not Present Yes 🗹 2. Is Chain of Custody complete? 3. How was the sample delivered? Courier Log in NA 🗌 No 🗌 Yes 🗸 4. Was an attempt made to cool the samples? NA 🗆 Yes 🗹 No 🗌 5. Were all samples received at a temperature of >0° C to 6.0°C No 🗌 Yes 🗹 6. Sample(s) in proper container(s)? No 🗌 Yes 🔽 7. Sufficient sample volume for indicated test(s)? No 🗀 8. Are samples (except VOA and ONG) properly preserved? NA 🗌 No 🗹 Yes 9. Was preservative added to bottles? No VOA Vials No 🗌 Yes 10.VOA vials have zero headspace? Yes No 🗹 11. Were any sample containers received broken? # of preserved bottles checked for pH: No 🗌 Yes 🗹 12. Does paperwork match bottle labels? (<2 or >12 unless noted) (Note discrepancies on chain of custody) Adjusted? No 🗌 Yes 🗹 13. Are matrices correctly identified on Chain of Custody? No 🗌 Yes V 14. Is it clear what analyses were requested? No 🗌 Checked by: Yes 🔽 15. Were all holding times able to be met? (If no, notify customer for authorization.) Special Handling (If applicable) Yes No 🗌 NA 🗹 16. Was client notified of all discrepancies with this order? Person Notified: Date: By Whom: eMail Phone Fax In Person Regarding: Client instructions: 17. Additional remarks: 18. Cooler Information

Condition | Seal Intact | Seal No | Seal Date

Cooler No Temp °C

HALL ENVIRONMENTAL	<i>YSIS LABORATORY</i>	www.halienvironmental.com	Albuquerque, NM 87109	Fax 505-345-4107	Analysis Request				ON, _E C 808 \ ₂ (Ac	Sobic Sobic	RCRA 8 MG Anions (F,C) 8081 Pestic 8260B (VO) 8260B (VO) 6260B (VO) Anions	×	×	¥						2)3 (DOD) BP CONTACT : JEFF PENE
	ANALYSIS	www.hali	4901 Hawkins NE -	Tel. 505-345-3975		(ƙļu	147 7 C) I (c	+ TPH 3O / D (1.81)	9 PO (GI (BE	BTEX + MT BTEX + MT TPH 8015B TPH (Metho EDB (Metho	×	×	X					Remarks: Bul Bial	BP CONTACT ?
Tum-Around Time:	ndard 🗆 Rush		CROCH MESA L.F.	#		Project Manager:	J. Bucc		J. Buc.		Preservative Type	x cax -00 x		-003					Date Time 7/201 2/2012 1057 Date Time	
Chain-of-Custody Record Tum-An				Project #	1 '			☐ Level 4 (Full Validation)	Sampler:		Sample Request ID C	. CEU 1 400×1	-						Relinquished by: Received by: Received by: Received by:) selsolic
Chain-of-C	Client BLAGE ENGINEERING INC.	RP Austre	Malling Address: P.O. R. 97	RINHER	Phone #: 505 - (ax#:	QA/QC Package:	X Standard	Accreditation	(age)	Date Time Matrix	1520 Soil	1547	1					Time: 1057	Date: Time: Relind



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

October 15, 2013

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

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

RE: Crouch Mesa LF

OrderNo.: 1309D83

Dear Jeff Blagg:

Hall Environmental Analysis Laboratory received 3 sample(s) on 9/27/2013 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 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

Andiel

4901 Hawkins NE

Albuquerque, NM 87109

Lab Order 1309D83

Date Reported: 10/15/2013

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering

Client Sample ID: CELL 1

Project:

Crouch Mesa LF

Collection Date: 9/25/2013 4:00:00 PM

Lab ID: 1309D83-001

Matrix: SOIL

Received Date: 9/27/2013 10:00:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGI	E ORGANICS				Analys	: BCN
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	10/1/2013 10:45:21 AM	9551
Surr: DNOP	65.6	63-147	%REC	1	10/1/2013 10:45:21 AM	9551
EPA METHOD 8015D: GASOLINE RAI	NGE				Analysi	t: NSB
Gasoline Range Organics (GRO)	ND	5.0	mg/Kg	1	10/1/2013 12:51:43 PM	9556
Surr: BFB	95 .5	80-120	%REC	1	10/1/2013 12:51:43 PM	9556
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.050	mg/Kg	1	10/1/2013 12:51:43 PM	9556
Toluene	ND	0.050	mg/Kg	1	10/1/2013 12:51:43 PM	9556
Ethylbenzene	ND	0.050	mg/Kg	1	10/1/2013 12:51:43 PM	9556
Xylenes, Total	ND	0.10	mg/Kg	1	10/1/2013 12:51:43 PM	9556
Surr: 4-Bromofluorobenzene	107	80-120	%REC	1	10/1/2013 12:51:43 PM	9556
EPA METHOD 300.0: ANIONS					Analyst	: JRR
Fluoride	7.1	0.30	mg/Kg	1	10/8/2013 4:50:06 PM	9704
Chloride	ND	1.5	mg/Kg	1	10/8/2013 4:50:06 PM	9704
Nitrogen, Nitrite (As N)	ND	0.30	mg/Kg	1	10/8/2013 4:50:06 PM	9704
Bromide	ND	0.30	mg/Kg	1	10/8/2013 4:50:06 PM	9704
Nitrogen, Nitrate (As N)	ND	0.30	mg/Kg	1	10/8/2013 4:50:06 PM	9704
Phosphorus, Orthophosphate (As P)	ND	1.5	mg/Kg	1	10/8/2013 4:50:06 PM	9704
Sulfate	1100	30	mg/Kg	20	10/8/2013 5:02:30 PM	9704
EPA METHOD 7471: MERCURY					Analyst	: IDC
Mercury	ND	0.033	mg/kg	1	9/30/2013 4:28:42 PM	9559
EPA METHOD 6010B: SOIL METALS					Analyst	:: ELS
Arsenic	ND	2.5	mg/Kg	1	10/9/2013 10:52:37 AM	9698
Barium	4.9	0.10	mg/Kg	1	10/9/2013 10:52:37 AM	9698
Cadmium	ND	0.10	mg/Kg	1	10/9/2013 10:52:37 AM	9698
Calcium	1700	25	mg/Kg	1	10/9/2013 10:52:37 AM	9698
Chromium	2.5	0.30	mg/Kg	1	10/9/2013 10:52:37 AM	9698
Lead	1.7	0.25	mg/Kg	1	10/9/2013 10:52:37 AM	9698
Magnesium	1400	25	mg/Kg	1	10/9/2013 10:52:37 AM	9698
Potassium	280	50	mg/Kg	1	10/9/2013 10:52:37 AM	9698
Selenium	ND	2.5	mg/Kg	1	10/9/2013 10:52:37 AM	
Silver	ND	0.25	mg/Kg	1	10/9/2013 10:52:37 AM	
Sodium	4 6	25	mg/Kg	1	10/9/2013 10:52:37 AM	9698

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

- 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 for VOA and TOC only.
- RL Reporting Detection Limit

Lab Order 1309D83

Date Reported: 10/15/2013

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering

Project: Crouch Mesa LF

Lab ID: 1309D83-002

Client Sample ID: CELL 2

Collection Date: 9/25/2013 4:15:00 PM

Received Date: 9/27/2013 10:00:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANG	E ORGANICS				Analyst	JME
Diesel Range Organics (DRO)	19	10	mg/Kg	1	10/1/2013 1:42:20 PM	9551
Surr: DNOP	73.4	63-147	%REC	1	10/1/2013 1:42:20 PM	9551
EPA METHOD 8015D: GASOLINE RA	NGE				Analyst:	NSB
Gasoline Range Organics (GRO)	ND	5.0	mg/Kg	1	10/1/2013 2:19:00 PM	9556
Surr: BFB	95.2	80-120	%REC	1	10/1/2013 2:19:00 PM	9556
EPA METHOD 8021B: VOLATILES					Analyst:	NSB
Benzene	ND	0.050	mg/Kg	1	10/1/2013 2:19:00 PM	9556
Toluene	ND	0.050	mg/Kg	1	10/1/2013 2:19:00 PM	9556
Ethylbenzene	ND	0.050	mg/Kg	1	10/1/2013 2:19:00 PM	9556
Xylenes, Total	ND	0.10	mg/Kg	1	10/1/2013 2:19:00 PM	9556
Surr: 4-Bromofluorobenzene	105	80-120	%REC	1	10/1/2013 2:19:00 PM	9556
EPA METHOD 300.0: ANIONS					Analyst:	JRR
Fluoride	ND	0.30	mg/Kg	1	10/8/2013 5:14:55 PM	9704
Chloride	ND	1.5	mg/Kg	1	10/8/2013 5:14:55 PM	9704
Nitrogen, Nitrite (As N)	ND	0.30	mg/Kg	1	10/8/2013 5:14:55 PM	9704
Bromide	ND	0.30	mg/Kg	1	10/8/2013 5:14:55 PM	9704
Nitrogen, Nitrate (As N)	ND	0.30	mg/Kg	1	10/8/2013 5:14:55 PM	9704
Phosphorus, Orthophosphate (As P)	ND	30	mg/Kg	20	10/8/2013 5:27:21 PM	9704
Sulfate	3900	300	mg/Kg	200	10/10/2013 1:26:47 PM	9704
EPA METHOD 7471: MERCURY					Analyst:	IDC
Mercury	ND	0.033	mg/kg	1	9/30/2013 4:30:28 PM	9559
EPA METHOD 6010B: SOIL METALS					Analyst:	ELS
Arsenic	ND	2.5	mg/Kg	1	10/9/2013 10:57:47 AM	9698
Barium	5.5	0.10	mg/Kg	1	10/9/2013 10:57:47 AM	9698
Cadmium	ND	0.10	mg/Kg	1	10/9/2013 10:57:47 AM	9698
Calcium	30000	250	mg/Kg	10	10/9/2013 3:52:46 PM	9698
Chromium	2.3	0.30	mg/Kg	1	10/9/2013 10:57:47 AM	9698
Lead	1.6	0.25	mg/Kg	1	10/9/2013 10:57:47 AM	9698
Magnesium	870	25	mg/Kg	1	10/9/2013 10:57:47 AM	9698
Potassium	320	50	mg/Kg	1	10/9/2013 10:57:47 AM	9698
Selenium	ND	2.5	mg/Kg	1	10/9/2013 10:57:47 AM	9698
Silver	ND	0.25	mg/Kg	1	10/9/2013 10:57:47 AM	
Sodium	ND	25	mg/Kg	1	10/9/2013 10:57:47 AM	9698

Matrix: SOIL

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

- 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 for VOA and TOC only.
- RL Reporting Detection Limit

Lab Order 1309D83

Date Reported: 10/15/2013

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering

Client Sample ID: CELL 5

Project:

Crouch Mesa LF

Collection Date: 9/25/2013 4:35:00 PM

Lab ID: 1309D83-003 Matrix: SOIL

Received Date: 9/27/2013 10:00:00 AM

Diesel Range Organics (DRO)	Batc	Date Analyzed	DF	Units	Qual	RL	Result	Analyses
Surr. DNOP	yst: BCN	Analyst:					RGANICS	EPA METHOD 8015D: DIESEL RANGE OF
Casoline Range Organics (GRO) ND 5.0 mg/Kg 1 10/1/2013 3:44:59	M 9551	10/1/2013 2:43:35 PM	1	mg/Kg)	9.9	11	Diesel Range Organics (DRO)
Gasoline Range Organics (GRO) ND 5.0 mg/Kg 1 10/1/2013 3:44:59 Surr. BFB 91.2 80-120 %REC 1 10/1/2013 3:44:59 EPA METHOD 8021B: VOLATILES Benzene ND 0.050 mg/Kg 1 10/1/2013 3:44:59 Toluene ND 0.050 mg/Kg 1 10/1/2013 3:44:59 Ethylbenzene ND 0.050 mg/Kg 1 10/1/2013 3:44:59 Xylenes, Total ND 0.10 mg/Kg 1 10/1/2013 3:44:59 Surr. 4-Bromofluorobenzene 102 80-120 %REC 1 10/1/2013 3:44:59 EPA METHOD 300.0: ANIONS T T MREC 1 10/1/2013 3:44:59 EPA METHOD 300.0: ANIONS T T mg/Kg 1 10/1/2013 3:44:59 Chloride ND 1.5 mg/Kg 1 10/8/2013 5:39:45 Nitrogen, Nitrite (As N) ND 0.30 mg/Kg 1 10/8/2013 5:39:45 Phosphorus, Orthophosphate (As P) <td< td=""><td>M 9551</td><td>10/1/2013 2:43:35 PM</td><td>1</td><td>%REC</td><td>•</td><td>63-147</td><td>77.3</td><td>Surr: DNOP</td></td<>	M 9551	10/1/2013 2:43:35 PM	1	%REC	•	63-147	77.3	Surr: DNOP
Surr. BFB 91.2 80-120 %REC 1 10/1/2013 3:44:59	yst: NSB	Analyst:					.	EPA METHOD 8015D: GASOLINE RANGE
Benzene	M 9556	10/1/2013 3:44:59 PM	1	mg/Kg		5.0	ND	Gasoline Range Organics (GRO)
Benzene ND 0.050 mg/Kg 1 10/1/2013 3:44:59 Toluene ND 0.050 mg/Kg 1 10/1/2013 3:44:59 Ethylbenzene ND 0.050 mg/Kg 1 10/1/2013 3:44:59 Xylenes, Total ND 0.10 mg/Kg 1 10/1/2013 3:44:59 Surr. 4-Bromofluorobenzene 102 80-120 %REC 1 10/1/2013 3:44:59 EPA METHOD 300.0: ANIONS EPA METHOD 300.0: ANIONS Fluoride 1.4 0.30 mg/Kg 1 10/8/2013 5:39:45 Chloride ND 1.5 mg/Kg 1 10/8/2013 5:39:45 Nitrogen, Nitrite (As N) ND 0.30 mg/Kg 1 10/8/2013 5:39:45 Bromide ND 0.30 mg/Kg 1 10/8/2013 5:39:45 Nitrogen, Nitrate (As N) ND 0.30 mg/Kg 1 10/8/2013 5:39:45 Phosphorus, Orthophosphate (As P) ND 30 mg/Kg 1 10/8/2013 5:52:10 EPA METHOD 7471: ME	M 9556	10/1/2013 3:44:59 PM	1	%REC)	80-120	91.2	Surr: BFB
Toluene ND 0.050 mg/Kg 1 10/1/2013 3:44:59 Ethylbenzene ND 0.050 mg/Kg 1 10/1/2013 3:44:59 Xylenes, Total ND 0.10 mg/Kg 1 10/1/2013 3:44:59 Surr: 4-Bromofluorobenzene 102 80-120 %REC 1 10/1/2013 3:44:59 Surr: 4-Bromofluorobenzene 102 80-120 %REC 1 10/1/2013 3:44:59 EPA METHOD 300.0: ANIONS Fluoride 1.4 0.30 mg/Kg 1 10/8/2013 5:39:45 Chloride ND 1.5 mg/Kg 1 10/8/2013 5:39:45 Nitrogen, Nitrite (As N) ND 0.30 mg/Kg 1 10/8/2013 5:39:45 Bromide ND 0.30 mg/Kg 1 10/8/2013 5:39:45 Nitrogen, Nitrate (As N) ND 0.30 mg/Kg 1 10/8/2013 5:39:45 Nitrogen, Nitrate (As N) ND 0.30 mg/Kg 1 10/8/2013 5:39:45 Nitrogen, Nitrate (As N) ND 0.30 mg/Kg 20 10/8/2013 5:32:15 EPA METHOD 7471: MERCURY Mercury ND 0.033 mg/Kg 20 10/8/2013 5:52:10 EPA METHOD 6010B: SOIL METALS Arsenic ND 2.5 mg/Kg 1 10/9/2013 11:03:11 Calcium 2300 25 mg/Kg 1 10/9/2013 11:03:11 Calcium 2300 25 mg/Kg 1 10/9/2013 11:03:11 Chromium 1.7 0.30 mg/Kg 1 10/9/2013 11:03:11 Lead 2.7 0.25 mg/Kg 1 10/9/2013 11:03:11 Magnesium 610 25 mg/Kg 1 10/9/2013 11:03:11	yst: NSB	Analyst:						EPA METHOD 8021B: VOLATILES
Ethylbenzene ND 0.050 mg/Kg 1 10/1/2013 3:44:59 Xylenes, Total ND 0.10 mg/Kg 1 10/1/2013 3:44:59 Surr: 4-Bromofluorobenzene 102 80-120 %REC 1 10/1/2013 3:44:59 EPA METHOD 300.0: ANIONS Fluoride 1.4 0.30 mg/Kg 1 10/8/2013 5:39:45 Chloride ND 1.5 mg/Kg 1 10/8/2013 5:39:45 Nitrogen, Nitrite (As N) ND 0.30 mg/Kg 1 10/8/2013 5:39:45 Bromide ND 0.30 mg/Kg 1 10/8/2013 5:39:45 Nitrogen, Nitrate (As N) ND 0.30 mg/Kg 1 10/8/2013 5:39:45 Nitrogen, Nitrate (As N) ND 0.30 mg/Kg 1 10/8/2013 5:39:45 Nitrogen, Nitrate (As N) ND 0.30 mg/Kg 1 10/8/2013 5:39:45 Phosphorus, Orthophosphate (As P) ND 30 mg/Kg 20 10/8/2013 5:52:10 Sulfate 2000 30 mg/Kg 20 10/8/2013 5:52:10 EPA METHOD 7471: MERCURY Mercury ND 0.033 mg/Kg 1 9/30/2013 4:32:15 EPA METHOD 6010B: SOIL METALS Arsenic ND 2.5 mg/Kg 1 10/9/2013 11:03:1 Banium 5.5 0.10 mg/Kg 1 10/9/2013 11:03:1 Cadmium ND 0.10 mg/Kg 1 10/9/2013 11:03:1 Cadmium ND 0.10 mg/Kg 1 10/9/2013 11:03:1 Calcium 2300 25 mg/Kg 1 10/9/2013 11:03:1 Chromium 1.7 0.30 mg/Kg 1 10/9/2013 11:03:1 Lead 2.7 0.25 mg/Kg 1 10/9/2013 11:03:1 Magnesium 610 25 mg/Kg 1 10/9/2013 11:03:1	M 9556	10/1/2013 3:44:59 PM	1	mg/Kg		0.050	ND	Benzene
Xylenes, Total ND 0.10 mg/kg 1 10/1/2013 3:44:59 Surr: 4-Bromofluorobenzene 102 80-120 %REC 1 10/1/2013 3:44:59 EPA METHOD 300.0: ANIONS An Fluoride 1.4 0.30 mg/kg 1 10/8/2013 5:39:45 Chloride ND 1.5 mg/kg 1 10/8/2013 5:39:45 Nitrogen, Nitrite (As N) ND 0.30 mg/kg 1 10/8/2013 5:39:45 Nitrogen, Nitrate (As N) ND 0.30 mg/kg 1 10/8/2013 5:39:45 Nitrogen, Nitrate (As N) ND 0.30 mg/kg 1 10/8/2013 5:39:45 Nitrogen, Nitrate (As N) ND 0.30 mg/kg 1 10/8/2013 5:39:45 Nitrogen, Nitrate (As N) ND 0.30 mg/kg 1 10/8/2013 5:39:45 Phosphorus, Orthophosphate (As P) ND 30 mg/kg 2 10/8/2013 5:52:10 Mercury ND 0.033 mg/kg 1 9/30/2013 4:32:15 <	M 9556	10/1/2013 3:44:59 PM	1	mg/Kg		0.050	ND	Toluene
Surr: 4-Bromofluorobenzene 102 80-120 %REC 1 10/1/2013 3:44:59 EPA METHOD 300.0: ANIONS Fluoride 1.4 0.30 mg/Kg 1 10/8/2013 5:39:45 Chloride ND 1.5 mg/Kg 1 10/8/2013 5:39:45 Nitrogen, Nitrite (As N) ND 0.30 mg/Kg 1 10/8/2013 5:39:45 Bromide ND 0.30 mg/Kg 1 10/8/2013 5:39:45 Nitrogen, Nitrate (As N) ND 0.30 mg/Kg 1 10/8/2013 5:39:45 Phosphorus, Orthophosphate (As P) ND 0.30 mg/Kg 1 10/8/2013 5:39:45 Phosphorus, Orthophosphate (As P) ND 30 mg/Kg 20 10/8/2013 5:39:45 Phosphorus, Orthophosphate (As P) ND 30 mg/Kg 20 10/8/2013 5:52:10 Sulfate 2000 30 mg/Kg 20 10/8/2013 5:52:10 EPA METHOD 7471: MERCURY ND 0.033 mg/Kg 1 10/9/2013 11:03:1 Bariu	M 9556	10/1/2013 3:44:59 PM	1	mg/Kg		0.050	ND	Ethylbenzene
Fluoride	M 9556	10/1/2013 3:44:59 PM	1	mg/Kg		0.10	ND	Xylenes, Total
Fluoride 1.4 0.30 mg/Kg 1 10/8/2013 5:39:45 Chloride ND 1.5 mg/Kg 1 10/8/2013 5:39:45 Nitrogen, Nitrate (As N) ND 0.30 mg/Kg 1 10/8/2013 5:39:45 Bromide ND 0.30 mg/Kg 1 10/8/2013 5:39:45 Nitrogen, Nitrate (As N) ND 0.30 mg/Kg 1 10/8/2013 5:39:45 Phosphorus, Orthophosphate (As P) ND 30 mg/Kg 20 10/8/2013 5:32:10 EPA METHOD 7471: MERCURY ND 30 mg/Kg 1 9/30/2013 5:52:10 EPA METHOD 6010B: SOIL METALS ND 0.033 mg/Kg 1 9/30/2013 4:32:15 EPA METHOD 6010B: SOIL METALS ND 2.5 mg/Kg 1 10/9/2013 11:03:1 Barium 5.5 0.10 mg/Kg 1 10/9/2013 11:03:1 Cadmium ND 0.10 mg/Kg 1 10/9/2013 11:03:1 Calcium 2300 25 mg/Kg 1 1	M 9556	10/1/2013 3:44:59 PM	1	%REC		80-120	102	Surr: 4-Bromofluorobenzene
Chloride ND 1.5 mg/Kg 1 10/8/2013 5:39:45 Nitrogen, Nitrite (As N) ND 0.30 mg/Kg 1 10/8/2013 5:39:45 Bromide ND 0.30 mg/Kg 1 10/8/2013 5:39:45 Nitrogen, Nitrate (As N) ND 0.30 mg/Kg 1 10/8/2013 5:39:45 Nitrogen, Nitrate (As N) ND 0.30 mg/Kg 1 10/8/2013 5:39:45 Phosphorus, Orthophosphate (As P) ND 30 mg/Kg 20 10/8/2013 5:52:10 Sulfate 2000 30 mg/Kg 20 10/8/2013 5:52:10 EPA METHOD 7471: MERCURY ND 0.033 mg/kg 1 9/30/2013 4:32:15 EPA METHOD 6010B: SOIL METALS Arsenic ND 2.5 mg/Kg 1 10/9/2013 11:03:11 Barium 5.5 0.10 mg/Kg 1 10/9/2013 11:03:11 Cadmium ND 0.10 mg/Kg 1 10/9/2013 11:03:11 Calcium 2300 25 mg/Kg 1 10/9/2013 11:03:11 Chromium 1.7 0.30 mg/Kg 1 10/9/2013 11:03:11 Chromium 1.7 0.30 mg/Kg 1 10/9/2013 11:03:11 Lead 2.7 0.25 mg/Kg 1 10/9/2013 11:03:11 Magnesium 610 25 mg/Kg 1 10/9/2013 11:03:11	/st: JRR	Analyst:						EPA METHOD 300.0: ANIONS
Chloride ND 1.5 mg/Kg 1 10/8/2013 5:39:45 Nitrogen, Nitrite (As N) ND 0.30 mg/Kg 1 10/8/2013 5:39:45 Bromide ND 0.30 mg/Kg 1 10/8/2013 5:39:45 Nitrogen, Nitrate (As N) ND 0.30 mg/Kg 1 10/8/2013 5:39:45 Phosphorus, Orthophosphate (As P) ND 30 mg/Kg 20 10/8/2013 5:52:10 Sulfate 2000 30 mg/Kg 20 10/8/2013 5:52:10 EPA METHOD 7471: MERCURY An Mercury ND 0.033 mg/Kg 1 9/30/2013 4:32:15 EPA METHOD 6010B: SOIL METALS An Arsenic ND 2.5 mg/Kg 1 10/9/2013 11:03:1 Barium 5.5 0.10 mg/Kg 1 10/9/2013 11:03:1 Cadmium ND 0.10 mg/Kg 1 10/9/2013 11:03:1 Calcium 2300 25 mg/Kg 1 10/9/2013 11:03:1 <td>M 9704</td> <td>10/8/2013 5:39:45 PM</td> <td>1</td> <td>mg/Kg</td> <td></td> <td>0.30</td> <td>1.4</td> <td>Fluoride</td>	M 9704	10/8/2013 5:39:45 PM	1	mg/Kg		0.30	1.4	Fluoride
Bromide ND 0.30 mg/Kg 1 10/8/2013 5:39:45 Nitrogen, Nitrate (As N) ND 0.30 mg/Kg 1 10/8/2013 5:39:45 Phosphorus, Orthophosphate (As P) ND 30 mg/Kg 20 10/8/2013 5:52:10 Sulfate 2000 30 mg/Kg 20 10/8/2013 5:52:10 EPA METHOD 7471: MERCURY An Mercury ND 0.033 mg/kg 1 9/30/2013 4:32:15 EPA METHOD 6010B: SOIL METALS An Arsenic ND 2.5 mg/Kg 1 10/9/2013 11:03:1 Barium 5.5 0.10 mg/Kg 1 10/9/2013 11:03:1 Cadmium ND 0.10 mg/Kg 1 10/9/2013 11:03:1 Calcium 2300 25 mg/Kg 1 10/9/2013 11:03:1 Chromium 1.7 0.30 mg/Kg 1 10/9/2013 11:03:1 Lead 2.7 0.25 mg/Kg 1 10/9/2013 11:03:1	M 9704	10/8/2013 5:39:45 PM	1			1.5	ND	Chloride
Nitrogen, Nitrate (As N) ND 0.30 mg/Kg 1 10/8/2013 5:39:45 Phosphorus, Orthophosphate (As P) ND 30 mg/Kg 20 10/8/2013 5:52:10 Sulfate 2000 30 mg/Kg 20 10/8/2013 5:52:10 EPA METHOD 7471: MERCURY Mercury ND 0.033 mg/kg 1 9/30/2013 4:32:15 EPA METHOD 6010B: SOIL METALS Arsenic ND 2.5 mg/Kg 1 10/9/2013 11:03:16 Barium 5.5 0.10 mg/Kg 1 10/9/2013 11:03:16 Cadmium ND 0.10 mg/Kg 1 10/9/2013 11:03:16 Calcium 2300 25 mg/Kg 1 10/9/2013 11:03:16 Chromium 1.7 0.30 mg/Kg 1 10/9/2013 11:03:16 Chromium 2.7 0.25 mg/Kg 1 10/9/2013 11:03:16 Magnesium 610 25 mg/Kg 1 10/9/2013 11:03:16	M 9704	10/8/2013 5:39:45 PM	1	mg/Kg		0.30	ND	Nitrogen, Nitrite (As N)
Phosphorus, Orthophosphate (As P) ND 30 mg/Kg 20 10/8/2013 5:52:10 Sulfate 2000 30 mg/Kg 20 10/8/2013 5:52:10 EPA METHOD 7471: MERCURY Mercury ND 0.033 mg/kg 1 9/30/2013 4:32:15 EPA METHOD 6010B: SOIL METALS Arsenic ND 2.5 mg/Kg 1 10/9/2013 11:03:16 Barium 5.5 0.10 mg/Kg 1 10/9/2013 11:03:16 Cadmium ND 0.10 mg/Kg 1 10/9/2013 11:03:16 Calcium 2300 25 mg/Kg 1 10/9/2013 11:03:16 Chromium 1.7 0.30 mg/Kg 1 10/9/2013 11:03:16 Lead 2.7 0.25 mg/Kg 1 10/9/2013 11:03:16 Magnesium 610 25 mg/Kg 1 10/9/2013 11:03:16	M 9704	10/8/2013 5:39:45 PM	1	mg/Kg		0.30	ND	Bromide
Sulfate 2000 30 mg/Kg 20 10/8/2013 5:52:10 EPA METHOD 7471: MERCURY Mercury ND 0.033 mg/kg 1 9/30/2013 4:32:15 EPA METHOD 6010B: SOIL METALS Arsenic ND 2.5 mg/Kg 1 10/9/2013 11:03:13 Barium 5.5 0.10 mg/Kg 1 10/9/2013 11:03:13 Cadmium ND 0.10 mg/Kg 1 10/9/2013 11:03:13 Calcium 2300 25 mg/Kg 1 10/9/2013 11:03:13 Chromium 1.7 0.30 mg/Kg 1 10/9/2013 11:03:13 Lead 2.7 0.25 mg/Kg 1 10/9/2013 11:03:13 Magnesium 610 25 mg/Kg 1 10/9/2013 11:03:13	M 9704	10/8/2013 5:39:45 PM	1	mg/Kg		0.30	ND	Nitrogen, Nitrate (As N)
EPA METHOD 7471: MERCURY And	M 9704	10/8/2013 5:52:10 PM	20	mg/Kg		30	ND	Phosphorus, Orthophosphate (As P)
Mercury ND 0.033 mg/kg 1 9/30/2013 4:32:15 EPA METHOD 6010B: SOIL METALS Arsenic ND 2.5 mg/Kg 1 10/9/2013 11:03:12 Barium 5.5 0.10 mg/Kg 1 10/9/2013 11:03:12 Cadmium ND 0.10 mg/Kg 1 10/9/2013 11:03:13 Calcium 2300 25 mg/Kg 1 10/9/2013 11:03:13 Chromium 1.7 0.30 mg/Kg 1 10/9/2013 11:03:13 Lead 2.7 0.25 mg/Kg 1 10/9/2013 11:03:13 Magnesium 610 25 mg/Kg 1 10/9/2013 11:03:13	M 9704	10/8/2013 5:52:10 PM	20	mg/Kg		30	2000	Sulfate
EPA METHOD 6010B: SOIL METALS Arsenic ND 2.5 mg/Kg 1 10/9/2013 11:03:13 Barium 5.5 0.10 mg/Kg 1 10/9/2013 11:03:13 Cadmium ND 0.10 mg/Kg 1 10/9/2013 11:03:13 Calcium 2300 25 mg/Kg 1 10/9/2013 11:03:13 Chromium 1.7 0.30 mg/Kg 1 10/9/2013 11:03:13 Lead 2.7 0.25 mg/Kg 1 10/9/2013 11:03:13 Magnesium 610 25 mg/Kg 1 10/9/2013 11:03:13	/st: IDC	Analyst:						EPA METHOD 7471: MERCURY
Arsenic ND 2.5 mg/Kg 1 10/9/2013 11:03:13 Barium 5.5 0.10 mg/Kg 1 10/9/2013 11:03:13 Cadmium ND 0.10 mg/Kg 1 10/9/2013 11:03:13 Calcium 2300 25 mg/Kg 1 10/9/2013 11:03:13 Chromium 1.7 0.30 mg/Kg 1 10/9/2013 11:03:13 Lead 2.7 0.25 mg/Kg 1 10/9/2013 11:03:13 Magnesium 610 25 mg/Kg 1 10/9/2013 11:03:13	M 9559	9/30/2013 4:32:15 PM	1	mg/kg		0.033	ND	Mercury
Barium 5.5 0.10 mg/Kg 1 10/9/2013 11:03:11 Cadmium ND 0.10 mg/Kg 1 10/9/2013 11:03:13 Calcium 2300 25 mg/Kg 1 10/9/2013 11:03:13 Chromium 1.7 0.30 mg/Kg 1 10/9/2013 11:03:13 Lead 2.7 0.25 mg/Kg 1 10/9/2013 11:03:13 Magnesium 610 25 mg/Kg 1 10/9/2013 11:03:13	st: ELS	Analyst:						EPA METHOD 6010B: SOIL METALS
Barium 5.5 0.10 mg/Kg 1 10/9/2013 11:03:11 Cadmium ND 0.10 mg/Kg 1 10/9/2013 11:03:13 Calcium 2300 25 mg/Kg 1 10/9/2013 11:03:13 Chromium 1.7 0.30 mg/Kg 1 10/9/2013 11:03:13 Lead 2.7 0.25 mg/Kg 1 10/9/2013 11:03:13 Magnesium 610 25 mg/Kg 1 10/9/2013 11:03:13	AM 9698	10/9/2013 11:03:18 AM	1	mg/Kg		2.5	ND	Arsenic
Calcium 2300 25 mg/Kg 1 10/9/2013 11:03:13 Chromium 1.7 0.30 mg/Kg 1 10/9/2013 11:03:13 Lead 2.7 0.25 mg/Kg 1 10/9/2013 11:03:13 Magnesium 610 25 mg/Kg 1 10/9/2013 11:03:13	M 9698	10/9/2013 11:03:18 AM	1	-		0.10	5.5	Barium
Chromium 1.7 0.30 mg/Kg 1 10/9/2013 11:03:10 Lead 2.7 0.25 mg/Kg 1 10/9/2013 11:03:10 Magnesium 610 25 mg/Kg 1 10/9/2013 11:03:10	M 9698	10/9/2013 11:03:18 AM	1	mg/Kg		0.10	ND	Cadmium
Lead 2.7 0.25 mg/Kg 1 10/9/2013 11:03:10 Magnesium 610 25 mg/Kg 1 10/9/2013 11:03:10	M 9698	10/9/2013 11:03:18 AM	1	mg/Kg		25	2300	Calcium
Magnesium 610 25 mg/Kg 1 10/9/2013 11:03:16	M 9698	10/9/2013 11:03:18 AM	1	mg/Kg		0.30	1.7	Chromium
	M 9698	10/9/2013 11:03:18 AM	1	mg/Kg		0.25	2.7	Lead
Potassium 340 50 mg/Kg 1 10/9/2013 11:03:16	M 9698	10/9/2013 11:03:18 AM	1	mg/Kg		25	610	Magnesium
	M 9698	10/9/2013 11:03:18 AM	1	mg/Kg		50	340	Potassium
	M 9698	10/9/2013 11:03:18 AM	1	mg/Kg			ND	Selenium
Silver ND 0.25 mg/Kg 1 10/9/2013 11:03:10	M 9698	10/9/2013 11:03:18 AM	1	mg/Kg		0.25	ND	Silver
Sodium 63 25 mg/Kg 1 10/9/2013 11:03:10	M 9698	10/9/2013 11:03:18 AM	1	mg/Kg		25	63	Sodium

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

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

Hall Environmental Analysis Laboratory, Inc.

WO#:

1309D83

15-Oct-13

Client:

Blagg Engineering

Project:

Crouch Mesa LF

Sample ID MB-9704	SampT	ype: ME	BLK	TestCode: EPA Method 300.0: Anions						
Client ID: PBS	Batch	Batch ID: 9704			RunNo: 1	3944				
Prep Date: 10/8/2013	Analysis D	Analysis Date: 10/8/2013 Result POL SPK value Si			SeqNo: 3	98377	Units: mg/K	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.30								
Chloride	ND	1.5								
Nitrogen, Nitrite (As N)	ND	0.30								
Bromide	ND	0.30								
Nitrogen, Nitrate (As N)	ND	0.30								
Phosphorus, Orthophosphate (As P	ND	1.5								
Sulfate	ND	1.5								

Sample ID LCS-9704	SampT	ype: LC	s	Tes	tCode: El	PA Method	300.0: Anion	9		
Client ID: LCSS	Batch	1D: 97	04	F	RunNo: 1	3944				
Prep Date: 10/8/2013	Analysis D	ate: 10	0/8/2013	8	SeqNo: 3	98378	Units: mg/F	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	1.4	0.30	1.500	0	95.2	90	110			
Chloride	14	1.5	15.00	0	96.1	90	110			
Nitrogen, Nitrite (As N)	2.9	0.30	3.000	0	96.4	90	110			
Bromide	7.3	0.30	7.500	0	97.7	90	110			
Nitrogen, Nitrate (As N)	7.4	0.30	7.500	0	98.6	90	110			
Phosphorus, Orthophosphate (As P	14	1.5	15.00	0	96.4	90	110			
Sulfate	29	1.5	30.00	0	96.6	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 for VOA and TOC only.
- RL Reporting Detection Limit

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Hall Environmental Analysis Laboratory, Inc.

WO#:

1309D83

15-Oct-13

Client:

Blagg Engineering

Project:	Crouch N	Aesa LF									
Sample ID	LCS-9551	SampT	ype: Lo	CS	Tes	tCode: E	PA Method	8015D: Dies	el Range	Organics	
Client ID:	LCSS	Batch	ID: 9	551	F	RunNo: 1	13697				
Prep Date:	9/30/2013	Analysis Da	ate: 9	/30/2013	5	SeqNo: 3	90356	Units: mg/l	Kg		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
-	Organics (DRO)	45	10		0	90.3	77.1	128			
Sur: DNOP		3.8		5.000		75.6	63	147			
Sample ID	MB-9551	SampTy	ype: M	BLK	Tes	tCode: E	PA Method	8015D: Dies	el Range (Organics	
Client ID:	PBS	Batch	ID: 95	551	F	RunNo: 1	3697				
Prep Date:	9/30/2013	Analysis Da	ate: 9	/30/2013	8	SeqNo: 3	90358	Units: mg/l	K g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
-	Organics (DRO)	ND	10								
Surr: DNOP		7.0		10.00		70.4	63	147			
Sample ID	1309D83-001AMS	SampTy	ype: M	S	Tes	tCode: E	PA Method	8015D: Dies	el Range (Organics	
Client ID:	CELL 1	Batch	ID: 95	551	F	RunNo: 1	3729				
Prep Date:	9/30/2013	Analysis Da	ate: 1	0/1/2013	8	SeqNo: 3	91579	Units: mg/l	⟨ g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
•	Organics (DRO)	44	10		0	88.9	61.3	138			
Surr: DNOP	5 N N	3.3		5.000		65.1	63	147	·		
Sample ID	1309D83-001AMS	D SampTy	/pe: M :	SD	Tes	Code: E	PA Method	8015D: Dies	el Range (Organics	
Client ID:	CELL 1	Batch	ID: 95	551	R	RunNo: 1	3729				
Prep Date:	9/30/2013	Analysis Da	ate: 1	0/1/2013	S	SeqNo: 3	91757	Units: mg/F	(g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
-	Organics (DRO)	47	10		0	95.2	61.3	138	6.40	20	
Surr: DNOP		3.3		4.980		66.4	63	147	0	0	
Sample ID	MB-9576	SampTy	pe: Mi	BLK	Test	Code: El	PA Method	8015D: Dies	el Range C	Organics	
Client ID:	PBS	Batch	ID: 95	76	R	tunNo: 1	3723				
Prep Date:	10/1/2013	Analysis Da	ite: 1	0/1/2013	S	eqNo: 3	91935	Units: %RE	С		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP		9.7		10.00		96.8	63	147			
Sample ID	LCS-9576	SampTy	pe: LC	s	Test	Code: El	PA Method	8015D: Dies	el Range C	Organics	
Client ID:	LCSS	Batch	ID: 95	76	R	unNo: 1	3723		_		
Prep Date:	10/1/2013	Analysis Da	ite: 10	0/1/2013	s	eqNo: 3	91959	Units: %RE	С		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
			ı QL								

Qualifiers:

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

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Hall Environmental Analysis Laboratory, Inc.

SampType: LCS

WO#:

1309D83 15-Oct-13

Client:

Blagg Engineering

Project:

Sample ID LCS-9556

Crouch Mesa LF

Sample ID MB-9556	SampT	ype: ME	BLK	Test	Code: El	PA Method	8015D: Gaso	line Rang	0	
Client ID: PBS	Batch	1D: 95	56	R	tunNo: 1	3760				
Prep Date: 9/30/2013	Analysis D	ate: 10)/1/2013	S	eqNo: 3	92566	Units: mg/K	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasofine Range Organics (GRO)	ND	5.0								
Surr. BFB	930		1000		92.8	80	120			

TestCode: EPA Method 8015D: Gasoline Range

Client ID: LCSS	Batch	ID: 95	56	R	RunNo: 1	3760				
Prep Date: 9/30/2013	Analysis Da	ite: 10	/1/2013	S	SeqNo: 3	92567	Units: mg/K	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	28	5.0	25.00	0	113	74.5	126			
Surr: BFB	1000		1000		100	80	120			

Sample ID 1309D83-001AMS	SampT	ype: MS	6	Tes	tCode: E	PA Method	8015D: Gaso	oline Rang	е	
Client ID: CELL 1	Batch	ID: 95	56	F	RunNo: 1	3760				
Prep Date: 9/30/2013	p Date: 9/30/2013 Analysis Date: 10/1/2013 SeqNo: 392570 Units: mg/Kg									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	32	5.0	24.95	0	130	76	156			
Surr. BFB	1000		998.0		105	80	120			

Sample ID 1309D83-001AMS	D SampT	ype: MS	SD	Tes	Code: El	PA Method	8015D: Gaso	line Rang	е	
Client ID: CELL 1	Batch	ID: 95	56	F	RunNo: 1	3760				
Prep Date: 9/30/2013	Analysis D	ate: 10	0/1/2013	8	SeqNo: 3	92571	Units: mg/K	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	32	5.0	24.93	0	129	76	156	1.31	17.7	
Surr: BFB	1000		997.0		104	80	120	0	0	

Qualifiers:

Value exceeds Maximum Contaminant Level.

- E Value above quantitation range
- J Analyte detected below quantitation limits
- RSD is greater than RSDlimit o
- RPD outside accepted recovery limits R
- 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
- Sample pH greater than 2 for VOA and TOC only.
- RLReporting Detection Limit

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Hall Environmental Analysis Laboratory, Inc.

WO#: 13

1309D83 15-Oct-13

Client:

Blagg Engineering

Project:

Crouch Mesa LF

Sample ID MB-9556	Samp1	SampType: MBLK Batch ID: 9556		Tes	tCode: E	PA Method	8021B: Volat	iles		
Client ID: PB\$	Batch	n ID: 95	56	F	RunNo: 1	3760				
Prep Date: 9/30/2013	,		S	SeqNo: 392635			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	urr: 4-Bromofluorobenzene 1.0 1.000			105	80	120				

Sample ID LCS-9556	Samp1	ype: LC	s	Tes	tCode: El	tiles				
Client ID: LCSS	Batch	n ID: 95	56	F	RunNo: 1	3760				
Prep Date: 9/30/2013	Analysis D)ate: 10	/1/2013	8	SeqNo: 3	92641	Units: mg/K	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	%RPD	RPDLimit	Qual		
Benzene	0.96	0.050	1.000	0	95.9	80	120			
Toluene	0.98	0.050	1.000	0 98.3 80			120			
Ethylbenzene	1.0	0.050	1.000	0 100 80			120			
Xylenes, Total	3.0	0.10	3.000	0 101 80			120			
Surr: 4-Bromofluorobenzene	1.0		1.000	103 80			120			

Sample ID 1309D83-002AMS	Samp1	ype: MS	3	Tes	tCode: El	tiles				
Client ID: CELL 2	Batch	ID: 95	56	F	RunNo: 1	3760				
Prep Date: 9/30/2013	Analysis D	ate: 10)/1/2013	8	SeqNo: 3	92653	Units: mg/k	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	Val %REC LowLimit HighLimit			%RPD	RPDLimit	Qual
Benzene	1.1	0.050	0.9980	0	108	67.3	145			
Toluene	1.1	0.050	0.9980	0.01092	109	66.8	144			
Ethylbenzene	1.1	0.050	0.9980	0	113	61.9	153			
Xylenes, Total	3.4	0.10	2.994	0.01225	114	65.8	149			
Surr: 4-Bromofluorobenzene	1.1		0.9980		111	80	120			

Sample ID 1309D83-002AM	SD SampT	ype: MS	SD	Tes	tCode: E	PA Method	8021B: Volat	tiles		
Client ID: CELL 2	Batch	1D: 95	56	F	RunNo: 1	3760				
Prep Date: 9/30/2013	Analysis D	ate: 10)/1/2013	8	SeqNo: 3	92654	Units: mg/F	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.050	0.9980	0	103	67.3	145	4.86	20	
Toluene	1.1	0.050	0.9980	0.01092	106	66.8	144	2.62	20	
Ethylbenzene	1.1	0.050	0.9980	0	111	61.9	153	1.77	20	
Xylenes, Total	3.3	0.10	2.994	0.01225	110	65.8	149	3.46	20	
Surr: 4-Bromofluorobenzene	1.0		0.9980		105	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 for VOA and TOC only.
- RL Reporting Detection Limit

Page 7 of 9

Hall Environmental Analysis Laboratory, Inc.

WO#: 1309D83 15-Oct-13

Client:

Blagg Engineering

Project:

Crouch Mesa LF

Sample ID MB-9559

SampType: MBLK

TestCode: EPA Method 7471: Mercury

LowLimit

Client ID:

PBS Batch ID: 9559 RunNo: 13710

%REC

Units: mg/kg HighLimit

Prep Date: 9/30/2013 Analysis Date: 9/30/2013 SeqNo: 390623

%RPD

%RPD

%RPD

RPDLimit Qual

Analyte Mercury

Resuit PQL SPK value SPK Ref Val ND 0.033

Sample ID LCS-9559

SampType: LCS

TestCode: EPA Method 7471: Mercury

Client ID: LCSS

Batch ID: 9559

RunNo: 13710

9/30/2013 Analysis Date: 9/30/2013

Units: mg/kg

Prep Date:

SeqNo: 390624

RPDLimit Qual

SPK value SPK Ref Val %REC LowLimit HighLimit Analyte Result POL 0.16 0.033 0.1667 0 96.9 80 120 Mercury

Sample ID 1309D83-003AMS

SampType: ms

TestCode: EPA Method 7471: Mercury

Client ID: CELL 5

Batch ID: 9559

RunNo: 13710

Prep Date: 9/30/2013

Analysis Date: 9/30/2013

SeqNo: 390629

Units: mg/kg

Analyte

Result POL SPK value SPK Ref Val %REC LowLimit HighLimit 0.17 0.033 0.1663 100 125

0.1642

Mercury

Sample ID 1309D83-003AMSD

0.16

SampType: msd

TestCode: EPA Method 7471: Mercury

Client ID: CELL 5 Prep Date: 9/30/2013 Batch ID: 9559

0.033

RunNo: 13710

Units: mg/kg

125

Analyte

Analysis Date: 9/30/2013 SeqNo: 390630

Mercury

Result SPK value SPK Ref Val PQL

%REC LowLimit 98.0

HighLimit 75

%RPD

3.64

RPDLimit

20

RPDLimit

Qual

Qual

Qualifiers:

Value exceeds Maximum Contaminant Level.

E Value above quantitation range

Analyte detected below quantitation limits

RSD is greater than RSDlimit 0

R RPD outside accepted recovery limits

S Spike Recovery outside accepted recovery limits В Analyte detected in the associated Method Blank

Н Holding times for preparation or analysis exceeded

Not Detected at the Reporting Limit ND

Sample pH greater than 2 for VOA and TOC only.

RLReporting Detection Limit Page 8 of 9

Hall Environmental Analysis Laboratory, Inc.

WO#:

1309D83

15-Oct-13

Client:

Blagg Engineering

Project:

Crouch Mesa LF

Sample ID MB-9698	Samp	уре: МЕ	BLK	Tes	Code: E	PA Method	6010B: Soil	Metals		
Client ID: PBS	Batcl	h ID: 96	98	F	RunNo: 1	3936				
Prep Date: 10/8/2013	Analysis D	Date: 10	0/9/2013	8	SeqNo: 3	98246	Units: mg/k	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	2.5								
Barium	ND	0.10								
Cadmium	ND	0.10								
Calcium	ND	25								
Chromium	ND	0.30								
Lead	ND	0.25								
Magnesium	ND	25								
Potassium	ND	50								
Selenium	ND	2.5								
Silver	ND	0.25								
Sodium	ND	25								

Sample ID	LCS-9698	Samp	ype: LC	S	les	tCode: El	PA Method	6010B: Soil	Metais			
Client ID:	LCSS	Batcl	h ID: 96	98	F	RunNo: 1	3936					
Prep Date:	10/8/2013	Analysis D	Date: 10	0/9/2013	8	SeqNo: 3	98247	Units: mg/k	(g			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Arsenic		24	2.5	25.00	0	95.0	80	120				
Barium		24	0.10	25.00	0	97.5	80	120				
Cadmium		24	0.10	25.00	0	95.8	80	120				
Calcium		2600	25	2500	0	102	80	120				
Chromium		24	0.30	25.00	0	96.7	80	120				
Lead		24	0.25	25.00	0	95.6	80	120				
Magnesium		2500	25	2500	0	98.7	80	120				
Potassium		2500	50	2500	0	98.6	80	120				
Selenium		22	2.5	25.00	0	89.9	80	120				
Silver		4.4	0.25	5.000	0	87.2	80	120				
Sodium		2500	25	2500	0	98.1	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 for VOA and TOC only.
- RL Reporting Detection Limit

Page 9 of 9



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

Website; www.hallenvironmental.com

Sample Log-In Check List

BLAGG Work Order Number: 1309D83 RoptNo: 1 Client Name: Received by/date: Michallo Garria Michallo Garria Logged By: Michelle Garcia 9/27/2013 10:00:00 AM Michelle Garcia Completed By: 9/27/2013 4:34:35 PM AT1913013 Reviewed By: Chain of Custody Not Present ♥ 1. Custody seals intact on sample bottles? Yes No Not Present No 2. Is Chain of Custody complete? 3. How was the sample delivered? Courier Log In NA No 4. Was an attempt made to cool the samples? Yes 5. Were all samples received at a temperature of >0° C to 6.0°C NA No 6. Sample(s) in proper container(s)? No No 7. Sufficient sample volume for indicated test(s)? ·8. Are samples (except VOA and ONG) properly preserved? No 9. Was preservative added to bottles? No ♥ NA Yes No VOA Vials ¥ No 10.VOA vials have zero headspace? Yes No 11. Were any sample containers received broken? Yes # of preserved bottles checked for pH: No 12. Does paperwork match bottle labels? Yes (<2 or >12 unless noted) (Note discrepancies on chain of custody) Adjusted? No 13. Are matrices correctly identified on Chain of Custody? 14. Is it clear what analyses were requested? Nο Checked by: 15. Were all holding times able to be met? No (If no, notify customer for authorization.) Special Handling (if applicable) NA V 16. Was client notified of all discrepancies with this order? Yes No Person Notified: Date: By Whom: Via: in Person eMail Phone Fax Regarding: Client Instructions: 17. Additional remarks: 18. Cooler Information Cooler No Temp C Condition Seal Intact Seal No Seal Date Good

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Tum-Around Time:	X Standard	Nam	CROCCH	#		Project Manag	H	1 1	E 4 E	Container Type and #	X												Received by:	A P	amples submitted to Hall Environmental may be subcontracted to other act
Ą-Ę	X Sta	roject	J	Project #:		rojeci	')	Sampler:		Cont	402×1	11	11										Received by:	Received by	tracted
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Chain-of-Custody Record	Client: BLAGG ENGINGERIM	₹ o	7 2	B. WALTELD.	Š	ax#:	QA/QC Package:	tion	Type)	Time	200	1615	1635										Time: 1640	Time: 1806	if necessary, s
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Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

OrderNo.: 1311122

November 11, 2013

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

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

RE: Crouch Mesa LF-Quarterly

Dear Jeff Blagg:

Hall Environmental Analysis Laboratory received 3 sample(s) on 11/5/2013 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 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

andel

4901 Hawkins NE

Albuquerque, NM 87109

Lab Order 1311122

Date Reported: 11/11/2013

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering

Crouch Mesa LF-Quarterly

Lab ID: 1311122-001

Project:

Client Sample ID: Cell 1

Collection Date: 11/1/2013 11:30:00 AM

Received Date: 11/5/2013 10:00:00 AM

Analyses	Result	RL Q	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANG	GE ORGANICS		-		Analys	: JME
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	11/7/2013 10:51:59 AM	1 10209
Surr. DNOP	98.0	66-131	%REC	1	11/7/2013 10:51:59 AM	1 10209
EPA METHOD 8015D: GASOLINE R	ANGE				Analys	: NSB
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	11/7/2013 11:29:30 AM	1 10207
Surr. BFB	93.3	74.5-129	%REC	1	11/7/2013 11:29:30 AN	1 10207
EPA METHOD 8021B: VOLATILES					Analys	: NSB
Benzene	ND	0.048	mg/Kg	1	11/7/2013 11:29:30 AM	10207
Toluene	ND	0.048	mg/Kg	1	11/7/2013 11:29:30 AM	10207
Ethylbenzene	ND	0.048	mg/Kg	1	11/7/2013 11:29:30 AM	10207
Xylenes, Total	ND	0.097	mg/Kg	1	11/7/2013 11:29:30 AM	10207
Surr: 4-Bromofluorobenzene	111	80-120	%REC	1	11/7/2013 11:29:30 AM	l 10207
EPA METHOD 300.0: ANIONS					Analys	: JRR
Chloride	ND	1.5	mg/Kg	1	11/7/2013 4:24:02 PM	10229

Matrix: SOIL

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

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

Lab Order 1311122

Date Reported: 11/11/2013

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering

Client Sample ID: Cell 2

Project: C

Crouch Mesa LF-Quarterly

Collection Date: 11/1/2013 12:05:00 PM

Lab ID:

1311122-002

Matrix: SOIL

Received Date: 11/5/2013 10:00:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RAN	GE ORGANICS				Analy	st: JME
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	11/7/2013 12:25:07 F	M 10209
Surr. DNOP	100	66-131	%REC	1	11/7/2013 12:25:07 F	M 10209
EPA METHOD 8015D: GASOLINE R	ANGE				Analy	st: NSB
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	11/7/2013 12:55:06 F	M 10207
Surr: BFB	92.0	74.5-129	%REC	1	11/7/2013 12:55:06 F	M 10207
EPA METHOD 8021B: VOLATILES					Analy	st: NSB
Benzene	ND	0.048	mg/Kg	1	11/7/2013 12:55:06 P	M 10207
Toluene	ND	0.048	mg/Kg	1	11/7/2013 12:55:06 F	M 10207
Ethylbenzene	ND	0.048	mg/Kg	1	11/7/2013 12:55:06 F	M 10207
Xylenes, Total	ND	0.095	mg/Kg	1	11/7/2013 12:55:06 P	M 10207
Surr: 4-Bromofluorobenzene	110	80-120	%REC	1	11/7/2013 12:55:06 P	M 10207
EPA METHOD 300.0: ANIONS					Analy	st: JRR
Chloride	ND	1.5	mg/Kg	1	11/7/2013 4:48:51 PM	10229

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

- 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
- 11 Holding times for preparation of analysis exce
- ND Not Detected at the Reporting Limit Page 2 of 7
 P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

Lab Order 1311122

Date Reported: 11/11/2013

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering

Client Sample ID: Cell 3

Project:

Crouch Mesa LF-Quarterly

Collection Date: 11/1/2013 12:30:00 PM

Lab ID: 1311122-003

Matrix: SOIL

Received Date: 11/5/2013 10:00:00 AM

Analyses	Result	RL Q	ual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RAN	GE ORGANICS				Analyst	: JME
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	11/7/2013 12:56:18 PM	10209
Surr: DNOP	103	66-131	%REC	1	11/7/2013 12:56:18 PM	10209
EPA METHOD 8015D: GASOLINE R	ANGE				Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.6	mg/Kg	1	11/7/2013 2:20:52 PM	10207
Surr: BFB	92.5	74.5-129	%REC	1	11/7/2013 2:20:52 PM	10207
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.046	mg/Kg	1	11/7/2013 2:20:52 PM	10207
Toluene	ND	0.046	mg/Kg	1	11/7/2013 2:20:52 PM	10207
Ethylbenzene	ND	0.046	mg/Kg	1	11/7/2013 2:20:52 PM	10207
Xylenes, Total	ND	0.093	mg/Kg	1	11/7/2013 2:20:52 PM	10207
Surr: 4-Bromofluorobenzene	112	80-120	%REC	1	11/7/2013 2:20:52 PM	10207
EPA METHOD 300.0: ANIONS					Analyst	: JRR
Chloride	ND	1.5	mg/Kg	1	11/7/2013 5:13:42 PM	10229

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

- 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
- n molding times for preparation of analysis exceed
- ND Not Detected at the Reporting Limit Page 3 of 7
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

WO#: 1311122

11-Nov-13

Client:

Blagg Engineering

Project:

Chloride

Crouch Mesa LF-Quarterly

Sample ID MB-10229 SampType: MBLK TestCode: EPA Method 300.0: Anions Client ID: PB\$ Batch ID: 10229 RunNo: 14657 Prep Date: 11/7/2013 Analysis Date: 11/7/2013 SeqNo: 421708 Units: mg/Kg %RPD **RPDLimit** Analyte SPK value SPK Ref Val %REC HighLimit Qual

Chloride ND 1.5

Sample ID LCS-10229 SampType: LCS TestCode: EPA Method 300.0: Anions Client ID: LCSS Batch ID: 10229 RunNo: 14657 Prep Date: 11/7/2013 Analysis Date: 11/7/2013 SeqNo: 421709 Units: mg/Kg SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Analyte

95.9

110

15.00

1.5

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 for VOA and TOC only.

RL Reporting Detection Limit

Page 4 of 7

Hall Environmental Analysis Laboratory, Inc.

11-Nov-13

1311122

WO#:

Client:

Blagg Engineering

Project:

Crouch Mesa LF-Quarterly

Sample ID MB-10209	SampT	ype: ME	BLK	Tes	Organics					
Client ID: PBS	Batch	1D: 10 :	209	F	RunNo: 1	4632				
Prep Date: 11/6/2013	Analysis D	ate: 11	I <i>[</i> 7/2013	5	SeqNo: 4	20889	Units: mg/F	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10						·		. ——
Surr: DNOP	9.7		10.00		96.9	66	131			
Sample ID LCS-10209	Camal	imo: LC	•	Too	tCodo: El	DA Method	8015D: Dies	ol Pango ()ioo	•
Sample ID LC3-10209	SampT	ype. LC	· ɔ	169	Code. E	PA MUUIOU	00 13D. DIGS	ei Kalige (rganics	
•	•	ype. LC 1 ID: 10:			RunNo: 1		OU IOD. DIES	ei valiĝe (organics .	
Client ID: LCSS	•	n ID: 10:	209	F		4632	Units: mg/k		organics	
Client ID: LCSS Prep Date: 11/6/2013	Batch	n ID: 10:	209 1 <i>1</i> 7/2013	F	RunNo: 1	4632			RPDLimit	Qual
Client ID: LCSS	Batch Analysis D	n ID: 10: Pate: 11	209 1 <i>1</i> 7/2013	F S	RunNo: 1 SeqNo: 4	4632 20892	Units: mg/F	(g		Qual

Sample ID 1311122-001AMS	SampT	ype: MS	3	Tes	tCode: E	PA Method	8015D: Dies	el Range (Organics	
Client ID: Cell 1	Batch	ID: 10	209	F	RunNo: 1	4632				
Prep Date: 11/6/2013	Analysis D	ate: 11	I <i>l</i> 7/2013	S	SeqNo: 4	20980	Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	82	10	50.30	7.228	149	47.4	148			S
Surr: DNOP	5.0		5.030		98.9	66	131			

Sample ID 1311122-001AMS	SD SampT	ype: MS	SD	Tes	tCode: E	PA Method	8015D: Dies	el Range C	Organics	
Client ID: Cell 1	Batch	1D: 10	209	F	RunNo: 1	4632				
Prep Date: 11/6/2013	Analysis D	ate: 1	1/7/2013	8	SeqNo: 4	20981	Units: mg/h	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	65	9.9	49.50	7.228	118	47.4	148	22.6	22.7	
Surr: DNOP	4.8		4.950		98.0	66	131	0	0	

Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSD limit
- 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 for VOA and TOC only.
- RL Reporting Detection Limit

Page 5 of 7

Hall Environmental Analysis Laboratory, Inc.

11-Nov-13

1311122

WO#:

Client:

Blagg Engineering

Project: Crouch	Mesa LF-Q	uarterly	1													
Sample ID MB-10207	Samp	Type: M	BLK	TestCode: EPA Method 8015D: Gasoline Range												
Client ID: PB\$	Batc	h ID: 10	207	F	RunNo: 1											
Prep Date: 11/6/2013	Analysis D	Date: 1	1/7/2013	\$	SeqNo: 4	21489	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		92.3	74.5	129									
Sample ID LCS-10207	Samp	Type: L.C	s	TestCode: EPA Method 8015D: Gasoline Range												
Client ID: LCSS	Batc	h ID: 10	207	RunNo: 14650												
Prep Date: 11/6/2013	Analysis D	Date: 1	1/7/2013	5	SeqNo: 4	21490	Units: mg/Kg									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual						
Gasoline Range Organics (GRO)	26	5.0	25.00	0	105	74.5	126									
Surr: BFB	990		1000		99.4	74.5	129									
Sample ID 1311122-002AMS	Samp1	Гуре: М	3	Tes	tCode: El	PA Method	8015D: Gaso	oline Rang	0							
Client ID: Cell 2	Batcl	h ID: 10	207	RunNo: 14650												
Prep Date: 11/6/2013	Analysis E	Date: 1	1/7/2013	5	SeqNo: 4	21493	Units: mg/f									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual						
Gasoline Range Organics (GRO)	30	4.8	24.22	0	124	76	156									
Surr: BFB	990		969.0		102	74.5	129									
Sample ID 1311122-002AMS	D SampT	Гуре: М	SD	Tes	tCode: El	PA Method	8015D: Gaso	oline Rang	е							
Client ID: Cell 2	Batcl	h ID: 10	207	F	RunNo: 1	4650										
Prep Date: 11/6/2013	Analysis D	Date: 1	1/7/2013	\$	SeqNo: 4	21494	Units: mg/h	(g								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual						
Gasoline Range Organics (GRO)	32	4.8	24.25	0	130	76	156	5.14	17.7							
Surr: BFB	990		969.9		102	74.5	129	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 for VOA and TOC only.
- RL Reporting Detection Limit

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Hall Environmental Analysis Laboratory, Inc.

WO#: 1311122

11-Nov-13

Client:

Blagg Engineering

Project:

Crouch Mesa LF-Quarterly

Sample ID MB-10207	Samp	ype: ME	BLK	TestCode: EPA Method 8021B: Volatiles												
Client ID: PB\$	Batch	n ID: 10	207	F	RunNo: 1	4650										
Prep Date: 11/6/2013	Analysis D	ate: 11	1/7/2013	8	SeqNo: 4	21547	Units: mg/H	(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-Bromoffuorobenzene	1.1		1.000		110	80	120									

Sample ID LCS-10207	SampT	ype: LC	S	TestCode: EPA Method 8021B: Volatiles											
Client ID: LCSS	Batch	1D: 10 :	207	F	RunNo: 1										
Prep Date: 11/6/2013	Analysis D	Date: 11	1/7/2013	8	SeqNo: 4	21548	Units: mg/k	(g							
Analyte	Result	Result PQL		SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual					
Benzene	1.0	0.050	1.000	0	100	80	120								
Toluene	1.0	0.050	1.000	0	102	80	120								
Ethylbenzene	1.0	0.050	1.000	0	103	80	120								
Xylenes, Total	3.1	0.10	3.000	0	104	80	120								
Surr: 4-Bromofluorobenzene	1.2		1.000		116	80	120								

Sample ID 1311122-001AMS	SampT	ype: MS	3	TestCode: EPA Method 8021B: Volatiles											
Client ID: Cell 1	Batch	n ID: 10	207	F											
Prep Date: 11/6/2013	Analysis D	Date: 11	1/7/2013	8	SeqNo: 4	21551	Units: mg/k	(g							
Analyte	Result	PQL	SPK value	SPK Ref Vai	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual					
Benzene	1.1	0.049	0.9794	0	115	67.3	145								
Toluene	1.2	0.049	0.9794	0.006363	118	66.8	144								
Ethylbenzene	1.2	0.049	0.9794	0	121	61.9	153								
Xylenes, Total	3.6	0.098	2.938	0	122	65.8	149								
Surr: 4-Bromoffuorobenzene	1.1 0.9794				117	80	120								

Sample ID 1311122-001AM	SD SampT	ype: MS	BD	TestCode: EPA Method 8021B: Volatiles										
Client ID: Cell 1	Batch	1D: 10	207	F	RunNo: 1									
Prep Date: 11/6/2013	Analysis D	ate: 11	/7/2013	8	SeqNo: 4	21552	Units: mg/k	(g						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual				
Benzene	1.1	0.049	0.97 7 5	0	115	67.3	145	0.196	20					
Toluene	1.2	0.049	0.9775	0.006363	118	66.8	144	0.137	20					
Ethylbenzene	1.2	0.049	0.9775	0	122	61.9	153	0.529	20					
Xylenes, Total	3.6	0.098	2.933	0	124	65.8	149	1.02	20					
Surr: 4-Bromofluorobenzene	1.1	1.1 0.9775			115	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 RSDImit
- 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 for VOA and TOC only.
- RL Reporting Detection Limit

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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

Clier	nt Name:	BLAGG		Work (Order Numb	per: 1311			RcptNo	lo: 1				
Rece	ived by/date	e:	m.	11(051	/3_					·····				
Logge	ed By:	Anne Thor	TIE	11/5/201	3 10:00:00	AM		ame	Am	_				
Com	pleted By:	Anne Thor	TI C	11/5/201	3			Ame , Ame	A.	_				
Revis	ewed By:	K.	1/06/12					_						
<u>Chai</u>	n of Cus	tody .												
1. 0	custody sea	ls intact on s	ample bottles?	,		Yes		No		Not Present 🗹				
2. is	Chain of C	Custody comp	lete?			Yes	\mathbf{Z}	No		Not Present				
3. H	low was the	sampie deliv	ered?			Cour	<u>ier</u>							
<u>Log</u>	<u>In</u>													
4. v	Was an atte	mpt made to	cool the samp	oles?		Yes	V	No		na 🗆				
5. v	Vere all san	nples receive	d at a tempera	ature of >0° C	to 6.0°C	Yes	¥	No		NA 🗆				
6. s	Sample(s) ir	n proper contu	ainer(s)?			Yes	V	No						
7. S	ufficient sa	mple volume	for indicated t	est(s)?		Yes	\checkmark	No						
8. A	re samples	(except VOA	and ONG) pr	operly preserv	ed?	Yes	V	No						
9. v	Vas preserv	rative added t	o bottles?			Yes		No	Y	na 🗆				
10.v	'OA vials ha	ave zero head	Ispace?			Yes		No		No VOA Vials				
11. V	Vere any sa	ample contain	ers received t	oroken?		Yes		No	V	# of preserved				
12.D	loes paperv	vork match bo	ottle labels?			Yes	Z	No		bottles checked for pH:				
(1	Note discre	pancies on ch	ain of custody	<i>i</i>)					_		or >12 unless noted)			
				in of Custody?			M			Adjusted?	· · · · · · · · · · · · · · · · · · ·			
			vere requested	17				No		Checked by:				
		ling times abl customer for	e to be met? authorization.))		Yes	Y	No		Checked by.				
Spec	ial Hand	iing (if apı	olicabie)											
16. W	Vas client n	otified of all d	iscrepancies v	vith this order?	•	Yes		No		NA 🗹				
	Person	Notified:			Date	ſ								
1	By Wh	om:			Via:	eMa	ii [Phone	Fax	☐ In Person				
	Regard	ling:												
L	Client I	Instructions:												
17. A	Additional re	emarks:												
18. <u>c</u>	Cooler Info		Condition Good	Seal Intact	Seal No	Seal Da	ite	Signed E	Зу					
	<u> </u>	11.9	3000	1.00	L			<u> </u>						

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