

INFORMATION ONLY

#5B24624 BG4

June 10, 2016

Catherine Green Regulatory Analyst Matador Resources Company PO Box 1933, Roswell, NM 88202

SUBJECT: SUMMARY OF WORK PERFORMED AT THE Young Deep Unit 23 SURFACE LOCATION, LEA COUNTY, NEW MEXICO

Dear Mrs. Green,

Souder, Miller & Associates (SMA) is pleased to submit this summary of work and laboratory analytical results for the baseline environmental site assessment, related to the surface location of the Young Deep Unit 23. SMA staff based in the Carlsbad, New Mexico office, within 25 miles of the project site performed the field sampling survey staked location located at UL(J) Section 9 Township 18 South Range 32 East. All samples collected were sent under chain of custody to Hall Environmental Analysis Laboratory in Albuquerque, New Mexico for laboratory analytical confirmation. Senior support and QAQC review on this project was provided by our Farmington office.

For questions or comments pertaining to the assessment, please feel free to contact me.

Submitted by:

SOUDER, MILLER & ASSOCIATES

ustr Merant

J. Austin Weyant Project Scientist

Reviewed by:

Cynthia Gray, CHMM Senior Scientist



SITE ASSESSMENT AND SAMPLE RESULTS

Young Deep Unit 23 API # 30-025-29896

UNIT J, SECTION 9, T18S R32E, NMPM EDDY COUNTY, NM



Prepared for: Matador Resources Company PO Box 1933, Roswell, NM 88202 Prepared by: Souder, Miller & Associates 201 S. Halagueno Carlsbad, NM 88221 575-689-7040

June 9, 2016 SMA Reference 5B24270 BG4

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Table 1: Release information and Site Ranking						
Name		You	ng Deep Ur	nit 23		
	Incident Number	n, Township	, Range			
Location	1RP-4157	30-025- 29896	SW/NE (Unit J)	Section 9	T18 S, R 32E NMPM	
Estimated Date of Release	February 6	, 2016				
Date Reported to NMOCD	February 7	, 2016				
Reported by	Catherone	Green- Ma	tador Reso	urces		
Land Owner	Bureau of I	Land Mana	gement			
Reported To	NM Oil Cor	nservation [Division (NN	MOCD)		
Source of Release	Equipment Error					
Released Material	Hydrocarb	on				
Released Volume	35 bbls Cru	ıde Oil				
Recovered Volume	8bbls Crude Oil					
Net Release	27 bbls Cru	ıde Oil				
Nearest Waterway	11 miles V	Vest of the	location			
Depth to Groundwater	Estimated [•]	to be 65 bg	S			
Nearest Domestic Water Source	Greater th	an 1,000 fe	et			
NMOCD Ranking	10					
SMA Response Dates	Initial: 5/19	9/16 Mitiga	ation Activi	ties: TBA		
Subcontractors	N/A					
Disposal Facility	N/A					
Estimated Yd ³ Contaminated Soil Excavated and Disposed	N/A					

1.0 Introduction

At the request of Matador Resources Company, Souder, Miller & Associates (SMA) has prepared this summary of soil sample results related to the Young Deep Unit 23 API 30-025-29896 which is located in Lea County, New Mexico, on land owned by Bureau of Land Management.

2.0 Site Assessment

On April 27, 2016, SMA Carlsbad Office personnel requested, on behalf of Matador Resources Company, that SMA should collect soil samples on the Young Deep Unit 23 in Lea County, New Mexico. The purpose of the sample event was to document current soil conditions of the property.

3.0 Summary of Work Performed

On May 20, 2016, after receiving clearance from Matador Resources CO, SMA field personnel went to the proposed location and assessed the soils with a Photo Ionization Detector RAE 2000 NMOCD Headspace method and a field (EC) Electro conductivity meter NRCS method 1:1. Samples were taken to depths of 1 foot below ground surface (bgs). Specific sample locations for all samples are depicted on Figure 2 (Sample Location Map) along with sampling details. All samples were collected and processed according to NMOCD, NRCS and SMA soil sampling procedures.

Each sample container was labeled, placed on ice in an insulated cooler, and chilled to a temperature of approximately 40°F (4°C). The cooler was then sealed for shipment to the laboratory. The soil samples were delivered to Hall Environmental Analysis Laboratory, in Albuquerque, New Mexico for TPH (GRO/ DRO) analysis by EPA Method 8015 (modified), BTEX analyses by EPA Method\8021B and Chlorides Anions EPA Method 300. Proper chain-of-custody documentation accompanied the samples to the laboratory.

4.0 Conclusions and Recommendations

Four samples locations were collected on Young Deep Unit 23 location. Sample depths were taken at .5 feet bgs and 1 foot bgs.

Each sample was analyzed by a Laboratory for baseline of Benzene, BTEX, TPH and Chlorides. Sample results (Table 3) exhibit below the NMOCD Recommend Remediation Action Levels (Guideline for Remediation of Leaks, Spills and Releases, 1993)

Soil sample locations are illustrated in Figure 2. A summary of laboratory analytical results is included in Table 2. Laboratory reports are included in Appendix A.

If there are any questions regarding this report, please contact either Austin Weyant at 575-689-7040 or Cindy Gray at 505-325-7535.

Submitted by:

SOUDER, MILLER & ASSOCIATES

Austin Weyant Project Scientist

Reviewed by:

Cynthia Gray, CHMM Senior Scientist

Figures:

Figure 1: Vicinity Map Figure 2: Detailed Site and Sample Map

Tables:

Table 1: Summary of Field Screening Table 2: Summary of Lab Results

Appendix:

Appendix A: Laboratory Analytical Results Appendix B: Photos and Field Notes

FIGURE 1 VICINITY MAP

FIGURE 2 DETAILED SITE AND SAMPLE MAP



TABLE 1 SUMMARY OF FIELD RESULTS

FIELD SCREENING RESULTS SUMMARY								
Time	Field Screening Reference	Sample Depth (Feet BGS)	Chlorides Results	Lab Sample Collected Y/N				
2:00	L1	0.5'	198	Y				
2:00	L-1	1'	105	Y				
2:00	L2	0.5'	167	Y				
2:00	L2-1	1'	85	Y				
2:00	L3	0.5'	99	Y				
2:00	L3-1	1'	109	Y				
2:00	L4	.05'	162	Y				
2:00	L4-1	1'	122	Y				
	2:00 2:00 2:00 2:00 2:00 2:00 2:00	Time Field Screening Reference 2:00 L1 2:00 L-1 2:00 L2 2:00 L2-1 2:00 L3 2:00 L3-1 2:00 L4	TimeField Screening ReferenceSample Depth (Feet BGS)2:00L10.5'2:00L-11'2:00L20.5'2:00L2-11'2:00L30.5'2:00L3-11'2:00L3-15'	TimeField Screening ReferenceSample Depth (Feet BGS)Chlorides Results2:00L10.5'1982:00L-11'1052:00L20.5'1672:00L2-11'852:00L30.5'992:00L3-11'1092:00L4.05'162				



TABLE 2 SUMMARY OF LABORATORY ANALYSES

Analytical Report- 1605A76	Sample Number on Figure 2 Map	Sample Date	Depth	BTEX ppm	Benzene mg/Kg	GRO mg/Kg	DRO mg/Kg	Cl- mg/Kg
1605A76- 001	L1	5/19/2016	0.5'	BDL	BDL	BDL	197	BDL
1605A76- 002	L-1	5/19/2016	1'	BDL	BDL	BDL	BDL	BDL
1605A76- 003	L2	5/19/2016	0.5'	N/A	N/A	N/A	N/A	BDL
1605A76- 004	L2-1	5/19/2016	1'	N/A	N/A	N/A	N/A	BDL
1605A76- 005	L3	5/19/2016	0.5'	BDL	BDL	BDL	BDL	36
1605A76- 006	L3-1	5/19/2016	1'	BDL	BDL	BDL	BDL	64
1605A76- 007	L4	5/19/2016	.05'	N/A	N/A	N/A	N/A	BDL
1605A76- 008	L4-1	5/19/2016	1'	N/A	N/A	N/A	N/A	BDL

Table 3: Summary of Laboratory Analyses

APPENDIX A LABORATORY REPORT



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

June 01, 2016

Austin Weyant Souder, Miller & Associates 201 S Halagueno Carlsbad, NM 88221 TEL: (575) 689-7040 FAX

OrderNo.: 1605A76

RE: Young Deep 11

Dear Austin Weyant:

Hall Environmental Analysis Laboratory received 8 sample(s) on 5/24/2016 for the analyses presented in the following report.

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

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

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

Sincerely,

andy

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Analytical Report
Lab Order 1605A76

Hall Environmental Analysis Laboratory, Inc.

Lab Order **1605A76** Date Reported: **6/1/2016**

CLIENT: Souder, Miller & Associates		Client Sample ID: L1-05 Collection Date: 5/19/2016 1:00:00 PM						
Project: Young Deep 11								
Lab ID: 1605A76-001	Matrix:	SOIL	Received	4/2016 9:40:00 AM				
Analyses	Result	PQL Qual	Units	DF	Date Analyzed	Batch		
EPA METHOD 300.0: ANIONS					Analyst	LGT		
Chloride	ND	30	mg/Kg	20	5/31/2016 8:49:56 PM	25584		
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANICS	6			Analyst	: KJH		
Diesel Range Organics (DRO)	27	9.9	mg/Kg	1	5/31/2016 9:25:16 AM	25495		
Motor Oil Range Organics (MRO)	180	49	mg/Kg	1	5/31/2016 9:25:16 AM	25495		
Surr: DNOP	102	70-130	%Rec	1	5/31/2016 9:25:16 AM	25495		
EPA METHOD 8015D: GASOLINE RAM	NGE				Analyst	: NSB		
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	5/25/2016 6:58:47 PM	25461		
Surr: BFB	111	80-120	%Rec	1	5/25/2016 6:58:47 PM	25461		
EPA METHOD 8021B: VOLATILES					Analyst	: NSB		
Methyl tert-butyl ether (MTBE)	ND	0.095	mg/Kg	1	5/25/2016 6:58:47 PM	25461		
Benzene	ND	0.024	mg/Kg	1	5/25/2016 6:58:47 PM	25461		
Toluene	ND	0.048	mg/Kg	1	5/25/2016 6:58:47 PM	25461		
Ethylbenzene	ND	0.048	mg/Kg	1	5/25/2016 6:58:47 PM	25461		
Xylenes, Total	ND	0.095	mg/Kg	1	5/25/2016 6:58:47 PM	25461		
Surr: 4-Bromofluorobenzene	110	80-120	%Rec	1	5/25/2016 6:58:47 PM	25461		

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

- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 1 of 12
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Analytical Report Lab Order 1605A76

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 6/1/2016

CLIENT: Souder, Miller & AssociatesProject: Young Deep 11Lab ID: 1605A76-002	Client Sample ID: L1-1 Collection Date: 5/19/2016 1:00:00 PM Matrix: SOIL Received Date: 5/24/2016 9:40:00 AM					
Analyses	Result	PQL Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS					Analyst	LGT
Chloride	ND	30	mg/Kg	20	5/31/2016 9:51:59 PM	25584
EPA METHOD 8015M/D: DIESEL RANGE		6			Analyst	: KJH
Diesel Range Organics (DRO)	ND	9.4	mg/Kg	1	5/28/2016 3:29:34 AM	25495
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1	5/28/2016 3:29:34 AM	25495
Surr: DNOP	94.4	70-130	%Rec	1	5/28/2016 3:29:34 AM	25495
EPA METHOD 8015D: GASOLINE RANG	E				Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	5/25/2016 7:22:17 PM	25461
Surr: BFB	109	80-120	%Rec	1	5/25/2016 7:22:17 PM	25461
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Methyl tert-butyl ether (MTBE)	ND	0.098	mg/Kg	1	5/25/2016 7:22:17 PM	25461
Benzene	ND	0.025	mg/Kg	1	5/25/2016 7:22:17 PM	25461
Toluene	ND	0.049	mg/Kg	1	5/25/2016 7:22:17 PM	25461
Ethylbenzene	ND	0.049	mg/Kg	1	5/25/2016 7:22:17 PM	25461
Xylenes, Total	ND	0.098	mg/Kg	1	5/25/2016 7:22:17 PM	25461
Surr: 4-Bromofluorobenzene	109	80-120	%Rec	1	5/25/2016 7:22:17 PM	25461

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.
	D	Sample Diluted Due to Matrix
	Н	Holding times for preparation or analysis exceeded
	ND	Not Detected at the Reporting Limit
	R	RPD outside accepted recovery limits
	S	% Recovery outside of range due to dilution or matrix

- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limits Page 2 of 12 J
- Р Sample pH Not In Range
- Reporting Detection Limit RL
- W Sample container temperature is out of limit as specified

Hall Environmental Analysi	Lab Order 1605A76 Date Reported: 6/1/2016			
CLIENT: Souder, Miller & Associates			Client Sampl	le ID: L2-0.5
Project: Young Deep 11			Collection 1	Date: 5/19/2016 1:00:00 PM
Lab ID: 1605A76-003	Matrix: S	SOIL	Received	Date: 5/24/2016 9:40:00 AM
Analyses	Result	PQL Qua	l Units	DF Date Analyzed Batch
EPA METHOD 300.0: ANIONS				Analyst: LGT
Chloride	ND	30	mg/Kg	20 5/31/2016 10:04:23 PM 25584

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Ana
	D	Sample Diluted Due to Matrix	Е	Valı
	Н	Holding times for preparation or analysis exceeded	J	Ana
	ND	Not Detected at the Reporting Limit	Р	Sam
	R	RPD outside accepted recovery limits	RL	Rep
	S	% Recovery outside of range due to dilution or matrix	W	Sam

- alyte detected in the associated Method Blank
- lue above quantitation range
- halyte detected below quantitation limits Page 3 of 12

Analytical Report

- mple pH Not In Range
- porting Detection Limit
- mple container temperature is out of limit as specified

Hall Environmental Analys		Lab Order 1605A76 Date Reported: 6/1/2)16			
CLIENT: Souder, Miller & Associates			Client Samp	e ID: L2-1		
Project: Young Deep 11			Collection	Date: 5/19/2016 1:00:00 PM		
Lab ID: 1605A76-004	Matrix: S	OIL	Received Date: 5/24/2016 9:40:00 AM			
Analyses	Result	PQL Qu	al Units	DF Date Analyzed	Batch	
EPA METHOD 300.0: ANIONS				Analy	rst: LGT	
Chloride	ND	30	mg/Kg	20 5/31/2016 10:16:48 F	PM 25584	

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	A
	D	Sample Diluted Due to Matrix	Е	V
	Н	Holding times for preparation or analysis exceeded	J	A
	ND	Not Detected at the Reporting Limit	Р	Sa
	R	RPD outside accepted recovery limits	RL	R
	S	% Recovery outside of range due to dilution or matrix	W	Sa

- Analyte detected in the associated Method Blank
- Value above quantitation range
- Analyte detected below quantitation limits Page 4 of 12

Analytical Report

- Sample pH Not In Range
- Reporting Detection Limit
- Sample container temperature is out of limit as specified

Analytical Report
Lab Order 1605A76

Hall Environmental Analysis Laboratory, Inc.

Lab Order **1605A76** Date Reported: **6/1/2016**

CLIENT: Souder, Miller & Associates		(Client Sampl	e ID: L3	-0.5	
Project: Young Deep 11			Collection 1	Date: 5/1	9/2016 1:00:00 PM	
Lab ID: 1605A76-005	Matrix: S	SOIL	Received	Date: 5/2	4/2016 9:40:00 AM	
Analyses	Result	PQL Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS					Analys	t: LGT
Chloride	36	30	mg/Kg	20	5/31/2016 10:29:13 PM	1 25584
EPA METHOD 8015M/D: DIESEL RANG	GE ORGANICS	5			Analys	t: KJH
Diesel Range Organics (DRO)	ND	9.7	mg/Kg	1	5/28/2016 3:51:05 AM	25495
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	5/28/2016 3:51:05 AM	25495
Surr: DNOP	96.0	70-130	%Rec	1	5/28/2016 3:51:05 AM	25495
EPA METHOD 8015D: GASOLINE RAN	IGE				Analys	t: NSB
Gasoline Range Organics (GRO)	ND	4.6	mg/Kg	1	5/25/2016 7:45:46 PM	25461
Surr: BFB	108	80-120	%Rec	1	5/25/2016 7:45:46 PM	25461
EPA METHOD 8021B: VOLATILES					Analys	t: NSB
Methyl tert-butyl ether (MTBE)	ND	0.092	mg/Kg	1	5/25/2016 7:45:46 PM	25461
Benzene	ND	0.023	mg/Kg	1	5/25/2016 7:45:46 PM	25461
Toluene	ND	0.046	mg/Kg	1	5/25/2016 7:45:46 PM	25461
Ethylbenzene	ND	0.046	mg/Kg	1	5/25/2016 7:45:46 PM	25461
Xylenes, Total	ND	0.092	mg/Kg	1	5/25/2016 7:45:46 PM	25461
Surr: 4-Bromofluorobenzene	107	80-120	%Rec	1	5/25/2016 7:45:46 PM	25461

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.
	D	Sample Diluted Due to Matrix

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 5 of 12
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Analytical Report
Lab Order 1605A76

Hall Environmental Analysis Laboratory, Inc.

Lab Order **1605A76** Date Reported: **6/1/2016**

CLIENT: Souder, Miller & Associates Project: Young Deep 11 Lab ID: 1605 A76 006	Matrice			Date: 5/19	0/2016 1:00:00 PM	
Lab ID: 1605A76-006	Matrix:	SOIL	Received	Date: 5/24	/2016 9:40:00 AM	
Analyses	Result	PQL Qual	Units	DF 1	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS					Analyst:	LGT
Chloride	64	30	mg/Kg	20	5/31/2016 10:41:37 PM	25584
EPA METHOD 8015M/D: DIESEL RANG	E ORGANICS	5			Analyst:	KJH
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	5/28/2016 4:12:41 AM	25495
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	5/28/2016 4:12:41 AM	25495
Surr: DNOP	98.2	70-130	%Rec	1	5/28/2016 4:12:41 AM	25495
EPA METHOD 8015D: GASOLINE RANG	θE				Analyst:	NSB
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	5/25/2016 8:09:18 PM	25461
Surr: BFB	109	80-120	%Rec	1	5/25/2016 8:09:18 PM	25461
EPA METHOD 8021B: VOLATILES					Analyst:	NSB
Methyl tert-butyl ether (MTBE)	ND	0.094	mg/Kg	1	5/25/2016 8:09:18 PM	25461
Benzene	ND	0.023	mg/Kg	1	5/25/2016 8:09:18 PM	25461
Toluene	ND	0.047	mg/Kg	1	5/25/2016 8:09:18 PM	25461
Ethylbenzene	ND	0.047	mg/Kg	1	5/25/2016 8:09:18 PM	25461
Xylenes, Total	ND	0.094	mg/Kg	1	5/25/2016 8:09:18 PM	25461
Surr: 4-Bromofluorobenzene	109	80-120	%Rec	1	5/25/2016 8:09:18 PM	25461

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

Refer to the QC Summary report and sample rogin checking for hagged QC data and preservation

Qualifiers:	*	Value exceeds Maximum Contaminant Level.
	_	

- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 6 of 12
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Hall Environmental Analysi	s Laborat	tory, Inc.		Lab Order 1605A76 Date Reported: 6/1/2016
CLIENT: Souder, Miller & Associates			Client Sampl	le ID: L4-0.5
Project: Young Deep 11			Collection 2	Date: 5/19/2016 1:00:00 PM
Lab ID: 1605A76-007	Matrix:	SOIL	Received	Date: 5/24/2016 9:40:00 AM
Analyses	Result	PQL Qua	l Units	DF Date Analyzed Bat
EPA METHOD 300.0: ANIONS				Analyst: LG
Chloride	ND	30	mg/Kg	20 5/31/2016 10:54:02 PM 255

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	А
	D	Sample Diluted Due to Matrix	Е	V
	Н	Holding times for preparation or analysis exceeded	J	А
	ND	Not Detected at the Reporting Limit	Р	Sa
	R	RPD outside accepted recovery limits	RL	R
	S	% Recovery outside of range due to dilution or matrix	W	Sa

- Analyte detected in the associated Method Blank
- Value above quantitation range
- Analyte detected below quantitation limits Page 7 of 12

Analytical Report

- Sample pH Not In Range
- Reporting Detection Limit
- Sample container temperature is out of limit as specified

Analytical Report	
Lab Order 1605A76	

Hall Environmental Analysi	is Laborat	tory, Inc.		Date Reported: 6/1/2016
CLIENT: Souder, Miller & Associates			Client Samp	le ID: L4-1
Project: Young Deep 11			Collection	Date: 5/19/2016 1:00:00 PM
Lab ID: 1605A76-008	Matrix:	SOIL	Received	Date: 5/24/2016 9:40:00 AM
Analyses	Result	PQL Qu	al Units	DF Date Analyzed Batch
EPA METHOD 300.0: ANIONS				Analyst: LGT
Chloride	ND	30	mg/Kg	20 5/31/2016 11:06:26 PM 25584

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.
	D	Sample Diluted Due to Matrix
	Н	Holding times for preparation or analysis exceeded
	ND	Not Detected at the Reporting Limit
	R	RPD outside accepted recovery limits
	S	% Recovery outside of range due to dilution or matrix

- Analyte detected in the associated Method Blank В
- Е Value above quantitation range
- Analyte detected below quantitation limits Page 8 of 12 J
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- Sample container temperature is out of limit as specified W

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

Client: Project:		er, Miller & Assoc g Deep 11	iates							
Sample ID	MB-25584	SampType:	mblk	Tes	tCode: EP	PA Method	300.0: Anion	s		
Client ID:	PBS	Batch ID:	25584	F	RunNo: 34	1591				
Prep Date:	5/31/2016	Analysis Date:	5/31/2016	S	GeqNo: 10	066763	Units: mg/k	(g		
Analyte		Result PC	L SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		ND ²	1.5							
Sample ID	LCS-25584	SampType:	lcs	Tes	tCode: EP	PA Method	300.0: Anion	s		
Client ID:	LCSS	Batch ID:	25584	F	RunNo: 34	4591				
Prep Date:	5/31/2016	Analysis Date:	5/31/2016	5	SeqNo: 10	066764	Units: mg/k	íg		
Analyte		Result PC	L SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		14 [~]	1.5 15.00	0	92.6	90	110			

Qualifiers:

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

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WO#: 1605A76

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

WO#:	1605A76
	02-Jun-16

,	Miller & Ass Deep 11	ociates								
Sample ID LCS-25495	SampTyp	De: LCS		Test	tCode: El	PA Method	8015M/D: Die	esel Range	e Organics	
Client ID: LCSS	Batch II	D: 25495		R	unNo: 3	4525				
Prep Date: 5/25/2016	Analysis Dat	te: 5/27/2	2016	S	eqNo: 1	065528	Units: mg/K	g		
Analyte	Result	PQL SF	^o K value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	47	10	50.00	0	94.8	62.6	124			
Surr: DNOP	4.4		5.000		87.4	70	130			
Sample ID MB-25495	SomeTur	be: MBLK		Test	tCode: El	PA Method	8015M/D: Die	esel Rang	Organics	
	Sampiy			100		/ mounda	COTOM/D. DI	Joon nang	e organica	
Client ID: PBS		D: 25495			unNo: 3		oorom, D. Di		organics	
•		D: 25495		R		4525	Units: mg/K	Ū	e organics	
Client ID: PBS	Batch II Analysis Dat	D: 25495 te: 5/27/2	2016	R	unNo: 3	4525		Ū	RPDLimit	Qual
Client ID: PBS Prep Date: 5/25/2016	Batch II Analysis Dat	D: 25495 te: 5/27/2	2016	R	tunNo: 3 GeqNo: 1	4525 065529	Units: mg/K	íg	-	Qual
Client ID: PBS Prep Date: 5/25/2016 Analyte	Batch II Analysis Dat Result	D: 25495 ie: 5/27/2 PQL SF	2016	R	tunNo: 3 GeqNo: 1	4525 065529	Units: mg/K	íg	-	Qual

Qualifiers:

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

Page 10 of 12

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

WO#:	1605A76

Client: Souder, Project: Young I	Miller & A Deep 11	ssociate	S							
Sample ID MB-25461	SampT	ype: ME	BLK	Tes	tCode: El	PA Method	8015D: Gaso	line Rang	e	
Client ID: PBS	Batch	n ID: 25	461	F	RunNo: 3	4464				
Prep Date: 5/24/2016	Analysis D	Date: 5/	25/2016	S	SeqNo: 1	063427	Units: mg/k	٢g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1100		1000		110	80	120			
Sample ID LCS-25461	SampT	ype: LC	S	Tes	tCode: El	PA Method	8015D: Gasc	line Rang	e	
Client ID: LCSS	Batch	n ID: 25	461	F	RunNo: 3	4464				
Prep Date: 5/24/2016	Analysis D	Date: 5/	25/2016	S	SeqNo: 1	064053	Units: mg/ #	ζg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	93.9	80	120			
Surr: BFB	1200		1000		121	80	120			S

Qualifiers:

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

Page 11 of 12

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

Souder, Miller & Associates

	02-Jun-16

Project: Young	Deep 11									
Sample ID MB-25461	SampT	Гуре: МЕ	BLK	Test	tCode: El	PA Method	8021B: Volat	tiles		
Client ID: PBS	Batc	h ID: 25	461	R	unNo: 3	4464				
Prep Date: 5/24/2016	Analysis E	Date: 5/	25/2016	S	eqNo: 1	063448	Units: mg/K	íg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	ND	0.10								
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.1		1.000		114	80	120			
Sample ID LCS-25461	Samp	Гуре: LC	S	Test	tCode: El	PA Method	8021B: Volat	tiles		
Client ID: LCSS	Batc	h ID: 25	461	R	unNo: 3	4464				
Prep Date: 5/24/2016	Analysis E	Date: 5/	25/2016	S	eqNo: 1	063449	Units: mg/K	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	1.1	0.10	1.000	0	111	61	143			
Benzene	1.1	0.025	1.000	0	106	75.3	123			
, , ,	1.1 1.1	0.025 0.050	1.000 1.000	0 0	106 106	75.3 80	123 124			
Benzene				-			-			
Benzene Toluene	1.1	0.050	1.000	0	106	80	124			

Qualifiers:

Client:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified
- Page 12 of 12

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

Sample Log-In Check List

Client Name: SMA-CARLSBAD	Work Order Numbe	er: 1605/	76	····		RcptNo: 1
Received by/date:						
TU U.	$2 \rho q \mu \psi$			A		
Logged By: Ashley Gallegos	5/24/2016 9:40:00 AI			A g		
Completed By: Ashley Gallegos	5/24/2016 11:56:02 A / /			Stif		
Reviewed By:	05/24/16					
Chain of Custody	,					
1. Custody seals intact on sample bottles?		Yes	[_]	No	Not Pres	
2. Is Chain of Custody complete?		Yes		No L.	Not Pres	ent
3. How was the sample delivered?		Cour	ier			
Log In						
4. Was an attempt made to cool the sample	les?	Yes		No		NA []
5. Were all samples received at a tempera	ture of >0° C to 6.0°C	Yes		No]	na LÜ
6. Sample(s) in proper container(s)?		Yes		No []		
7. Sufficient sample volume for indicated te	est(s)?	Yes		No []		
8. Are samples (except VOA and ONG) pro	perly preserved?	Yes	(No []	.]	
9. Was preservative added to bottles?		Yes	[]	No 🛃		NA []]
10.VOA vials have zero headspace?		Yes	[]	No [_		ials 🖈
11. Were any sample containers received b	roken?	Yes	[]	No 🖢	# of prese	nved
			1.51	r	bottles che	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes		No	∫ for pH:	(<2 or >12 unless noted)
13. Are matrices correctly identified on Chai		Yes		No [j Adju	isted?
14. Is it clear what analyses were requested		Yes		No []	
15. Were all holding times able to be met? (If no, notify customer for authorization.)		Yes		No	Chec	ked by:
Special Handling (if applicable)						
16. Was client notified of all discrepancies w	vith this order?	Yes	[_]	No []]	NA 🛃
Person Notified:	Date	19-15 with the second states of	1985 - A SEC -	i din kanan kasal melanan di kalata merdaki (a wa € 119	
By Whom:	Via:	[_] eM	ail (] Phone [] F	ax []] In Perso	n
Regarding:	<mark>n 24 de la desente de la desente de la desente de la constitución de la desente de la desente de la des</mark> ente de la La desente de la desente de	dadan kerada sang ang ang ang ang ang ang ang ang ang	1967-1974 Annaldan, daga	e of some num register, and the second of the second second second second second second second second second s	adastriad Addabayandayiyina minakasi	eoluain noi - rèmber.
Client Instructions:	nad kani mini kaka dika bikanan kan di kada kani na kati mini kaka di kanan kan di kana kanan kanan kanan kana		iyyaan a garran ya	alla mena analis na sara ka	negalije na mata doba doba odo z na plipova na na doba na na doba na na doba na na na doba na na na doba na na	anan-anan-anan-a
17. Additional remarks:						
18. Cooler Information						
Cooler NoTemp °CCondition12.6Good	Seal Intact Seal No Yes	Seal D	ate	Signed By	<u>, </u>	

Client Client And State Client Client And State Mailing Address. Ld. Ed. A Polect Hame: Vurture Mailing Mathematican Protect Hame: Vurture Mailing Address. Protect Hame: Vurture Mailing Mathematican Protect Hame: Vurture Mailing Mathematican Protect Hame: Vurture Mailing Mathematican Protect Hame: Vurture Mailing Mathematican Protect Hame: Vurture Mailing Mathematican Protect Hame: Vurture Mailing Mathematican Protect Hame: Vurture Hame: Vurture Hame Protect Hame: Vurture Hame: Variable (Client Manage: Client Man	د	-uneu	n10	Unain-or-Custody Record	I urrit-Around Lime:			1		A LON		-					
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APPENDIX B PHOTOS AND FIELD NOTES



SOUDER, MILLER & ASSOCIATES Serving - New Mexico • Colorado • Arizona • Utah • Texas