



November 18, 2015

NMOCD District II
 Attn. Heather Patterson
 1301 W Grand Ave
 Artesia, NM 88210

SUBJECT: SOIL REMEDIATION WORK PLAN FOR INCIDENT 2RP-3356 BRUTUS 12 FEDERAL COM #002H, EDDY COUNTY, NEW MEXICO

Dear Ms. Patterson:

On behalf of COG Operating (COG), Souder Miller & Associates (SMA) is pleased to submit the attached Work Plan summarizing the planned soil remediation for the release at the Brutus 12 Federal COM #002H in Eddy County, New Mexico. The purpose of the work plan is to obtain approval from the New Mexico Oil Conservation Division for remediation of the release discovered on October 2, 2015.

At the request of COG, SMA assessed and delineated the oil release associated with the Brutus 12 Federal COM #002H well location. The release was initially reported to NMOCD by COG Operating on October 16, 2015 and was the result of a steel flowline leak. The table below summarizes information regarding the release. Results of the assessment and delineation follow in the attached report.

Table 1: Release information and Site Ranking					
Name	Brutus 12 Federal COM 2H				
Location	Incident Number	API Number	Section, Township, Range		
		2RP-3356	30-015-40823	SW/NE (Unit O)	Section 12
Estimated Date of Release	Discovered October 2, 2015				
Date Reported to NMOCD	October 16, 2015				
Reported by	Amanda Trujillo, COG Operating LLC				
Land Owner	Federal				
Reported To	NM Oil Conservation Division (NMOCD)				
Source of Release	Steel Flowline Leak				
Released Material	Produced Oil				
Released Volume	0 bbls Produced Water and 85 bbls Produced Oil				
Recovered Volume	0 bbls Produced Water and 59 bbls Produced Oil				
Net Release	0 bbls Produced Water and 26 bbls Produced Oil				
Nearest Waterway	Pecos River is over 1 mile east of the location				

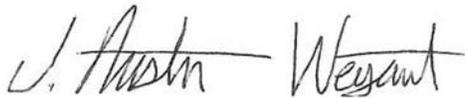


Depth to Groundwater	Estimated to be 76 feet
Nearest Domestic Water Source	Greater than 1,000 feet
NMOCD Ranking	10
SMA Response Dates	Initial: November 2, 2015 Mitigation Activities: Unknown
Subcontractors	TCS
Disposal Facility	Lea Land, LLC
Estimated Yd ³ Contaminated Soil Excavated and Disposed	330

A copy of the C-141 Initial is located in Appendix B. For questions or comments pertaining to the release or the attached Work Plan, please feel free to contact either of us.

Submitted by:

SOUDER, MILLER & ASSOCIATES



Austin Weyant
Project Scientist

Reviewed by:



Cynthia Gray, CHMM
Senior Scientist



SOIL REMEDIATION WORK PLAN FOR INCIDENT 2RP-3356

COG OPERATING LLC

BRUTUS 12 FEDERAL COM 2H

API# 30-015-40823

UL O SECTION 12, T26S R28E, NMPM

EDDY COUNTY, NM



Prepared for:
COG Operating LLC
2407 Pecos Ave
Artesia, NM 88210

Prepared by:
Souder, Miller & Associates
201 S. Halagueno
Carlsbad, NM 88221
575-689-7040

November 18, 2015
SMA Reference
5B23978 BG8



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Table 1: Release Information and Site Ranking

Table 2: Summary of Laboratory Analyses

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1.0 Introduction

On behalf of COG Operating LLC (COG), SMA has prepared this report describing the assessment and initial delineation of the release associated with the Brutus 12 Federal COM #002H well site. The site is located in UL O, Section 12, T 26S, R 28 E NMPM, Eddy County, New Mexico, on federal land administered by the Bureau of Land Management (BLM). Figure 1 illustrates the vicinity and location of the site.

2.0 Site Ranking and Land Jurisdiction

The release site is located approximately 1.4 miles (> 1,000 feet) west of Pecos River, in an area managed by BLM with an elevation of approximately 2,950 feet above sea level. After evaluation of the site using aerial photography and topographic maps, depth to groundwater is estimated to be less than 100 feet but greater than 50 feet below ground surface (bgs). Figure 1 depicts the site vicinity and Figure 2 depicts the site details and sample locations.

SMA searched the New Mexico State Engineer's Office online water well database for water wells in the vicinity of the release. No well is located within a 1000 foot radius of the site. Figure 1 depicts the site vicinity and Figure 2 shows the site itself. The physical location of this release is within the jurisdiction of NMOCD.

This release location has been assigned a NMOCD ranking of 10 which requires a soil remediation standard of 10 parts per million (ppm) benzene, 50 ppm combined benzene, toluene, ethyl-benzene, and total xylenes (BTEX), and 1000 ppm total petroleum hydrocarbons (TPH). Table 1 illustrates site ranking rationale.

3.0 Assessment and Initial Results

On November 2nd, 2015, after receiving 811 clearance, SMA field personnel assessed the release site with hand tools, a Photo Ionization Detector (PID), and a mobile chlorides titration kit. The affected area was found to be 200 feet long and 12 feet wide. Four composite samples (C1-4) and two location specific samples were taken to depths of 2 feet bgs. Using field screening, samples were found to exhibit only background levels of chloride contaminant. Sample locations are noted on Figure 2 "Site Details and Sample Location Map". All samples were collected and processed according to NMOCD soil sampling procedures. The samples were sent under chain-of-custody protocols to Hall Environmental Analysis Laboratory for analysis for Benzene and Total BTEX using EPA Method 8021B, DRO and GRO by EPA Method 8015D.

4.0 Soil Remediation Work Plan

SMA will begin the excavation of affected soils, with approval from area utilities owners via 811 and NMOCD. The composite sample locations C3 and C4 are within a crude oil pipeline right of way (ROW). SMA will continuously guide the excavation activities by collecting composite soil samples for field screening with a mobile titration unit (EPA 4500) and a calibrated PID. Delineation will occur to depths to sufficient to delineate the plume by NMOCD Division 1 standards. Excavation will be done to affectively remove hydrocarbon contaminated soil. Closure samples will be collected at final depth of excavation and on sidewalls to show that contaminated soil was removed on a vertical and horizontal extent. Approximately 330 cubic yards of contaminated soil will be removed and replaced with clean backfill material to bring the

contours to surface grade. The contaminated soil will be transported for proper disposal at Lea Land, near Carlsbad, NM an NMOCD permitted facility.

5.0 Conclusions and Recommendations

NMOCD Guidelines for Remediation of Leaks, Spills, and Releases have established the following action levels for contaminants of concern with a site ranking of 10: 10 ppm (mg/kg) Benzene, 50 ppm total BTEX, and 1000 ppm TPH. The release consisted of produced and associated petroleum found during the initial assessment and delineation.

After the soil remediation work plan is approved by NMOCD, SMA will begin soil remediation activities on site.

Soil contaminant concentrations found during the initial delineation are illustrated in Figure 2. A summary of the laboratory analyses is included in Table 2. Laboratory reports are included in Appendix A.

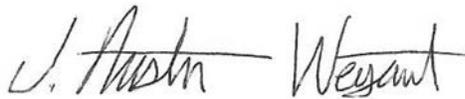
6.0 Closure and Limitations

The scope of our services consisted of the performance of a preliminary spill assessment, verification of release stabilization, regulatory liaison, and preparation of this Remediation Work Plan. All work has been performed in accordance with generally accepted professional environmental consulting practices for oil and gas releases in the Permian Basin in New Mexico.

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: Site Details and Sample Locations Map

Tables:

Table 1: Release Information and Site Ranking

Table 2: Summary of Laboratory Analyses

Appendices:

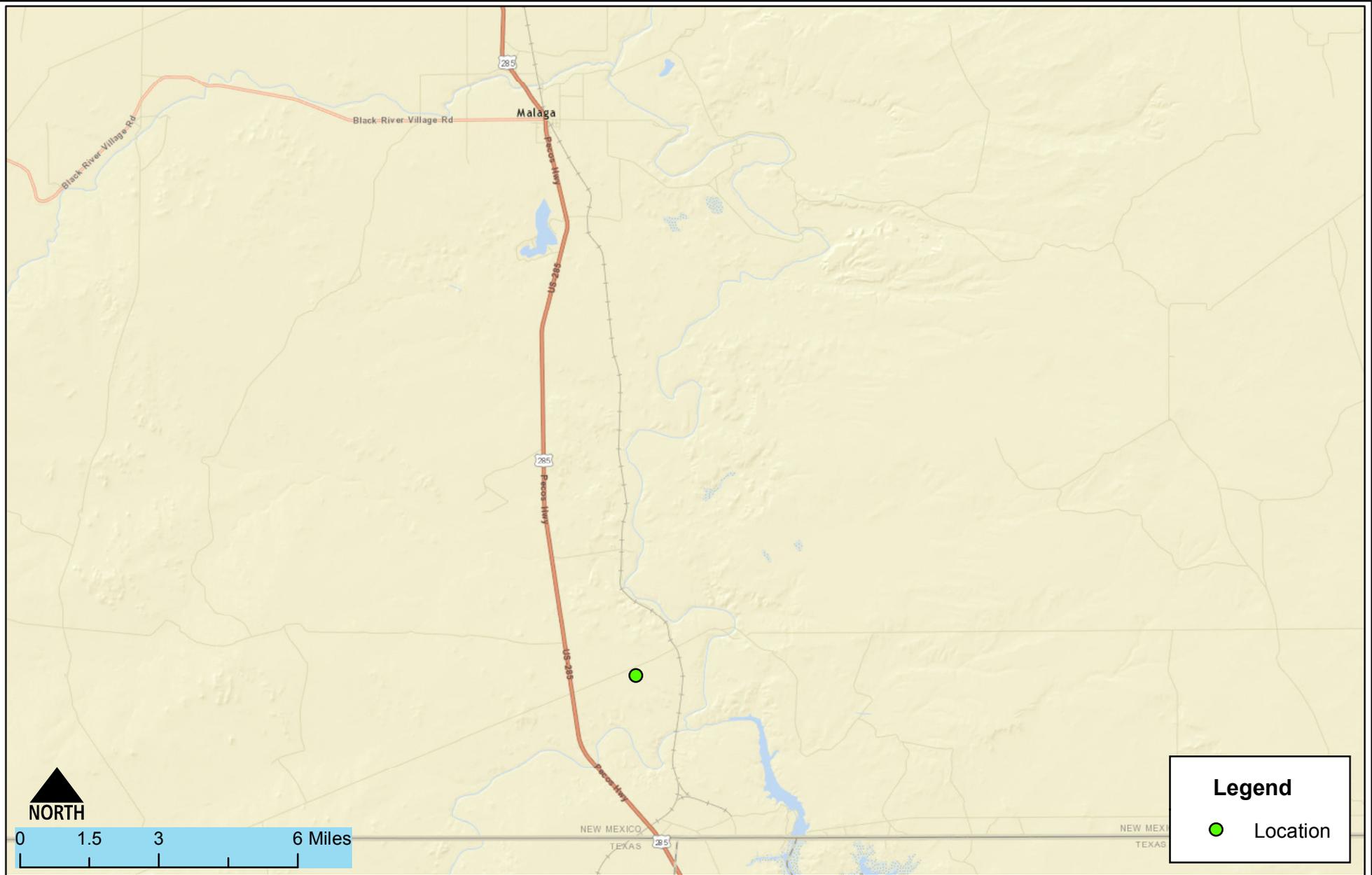
Appendix A: Laboratory Analytical Reports

Appendix B: Form C141 Initial

Appendix C: Field Notes

FIGURE 1

VICINITY MAP



Legend

- Location

Vicinity Map
 COG- Brutus 12 Federal Com 2H
 Malaga, New Mexico

Figure 1

Date Saved: 11/17/2015	By: _____	Date: _____	Revisions	Descr: _____
	By: _____	Date: _____		Descr: _____
Copyright 2015 Souder, Miller & Associates - All Rights Reserved				

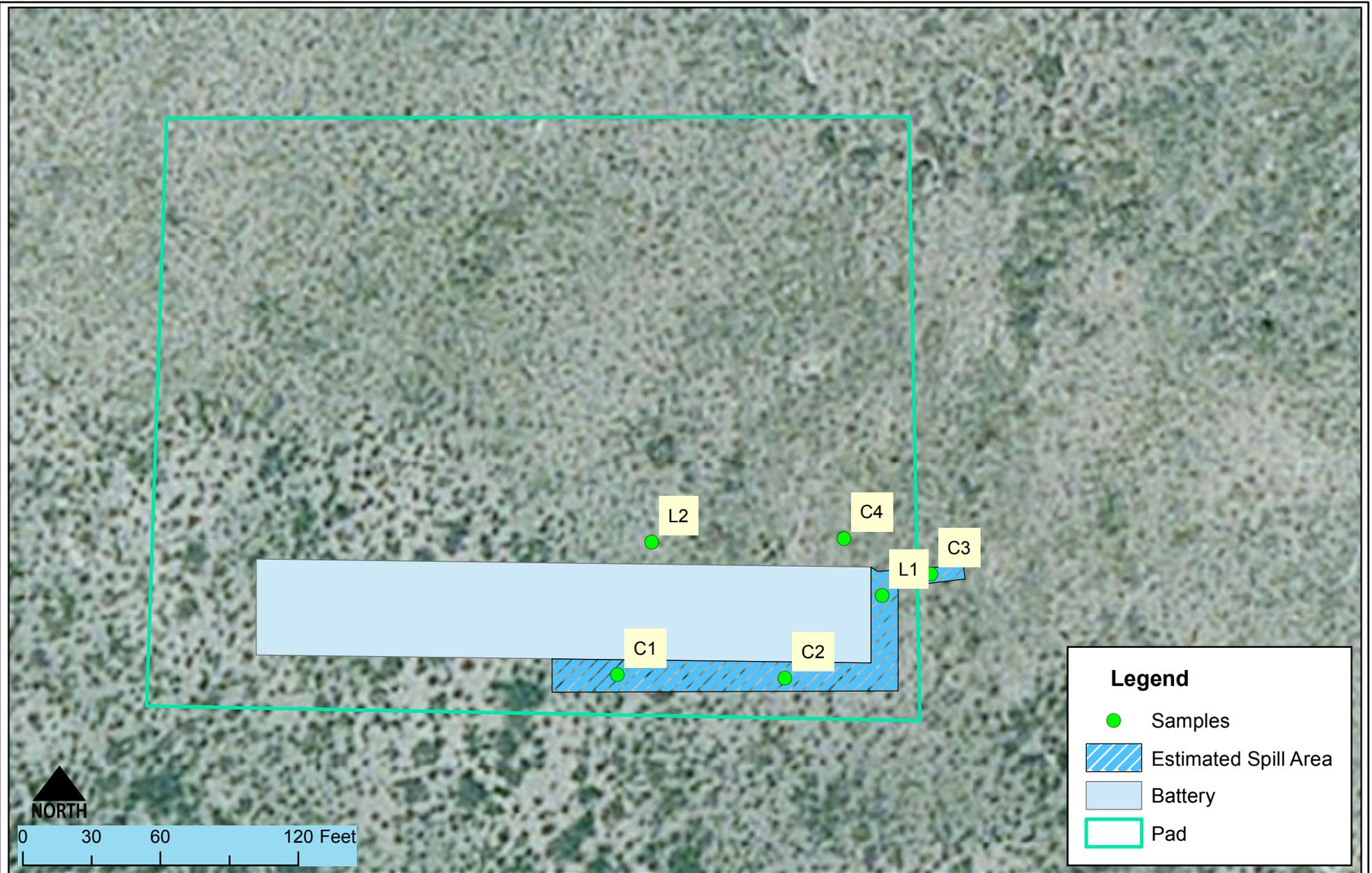
Drawn	<u>Lucas Middleton</u>
Checked	_____
Approved	_____



201 South Halaguena Street
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FIGURE 2

SITE DETAILS AND SAMPLE LOCATIONS MAP



Legend

- Samples
- Estimated Spill Area
- Battery
- Pad

Site Detail and Sample Locations
 COG- Brutus 12 Federal Com 2H
 Malaga, New Mexico

Figure 2

Date Saved: 11/18/2015	By: _____	Date: _____	Revisions	Descr: _____
	By: _____	Date: _____		Descr: _____
Copyright 2015 Souder, Miller & Associates - All Rights Reserved				

Drawn	<u>Lucas Middleton</u>
Checked	_____
Approved	_____



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TABLE 1

RELEASE INFORMATION AND SITE RANKING

Table 2: Site Ranking

Depth to Groundwater	NMOCD Numeric Rank for this Site	Source for Ranking	Notes
< 50 BGS = 20		USGS Topo Maps; Google Earth Elevation Difference from the site and the bobcat draw wash to the west	Bobcat Draw is 0.28 miles to the north of the location. ; Site elevation is approximately 7 feet below Bobcat Draw
50' to 99' = 10	10		
>100' = 0			
Ranking Criteria for Horizontal Distance to Nearest Surface Water	NMOCD Numeric Rank for this Site	Source for Ranking	Notes
< 200' = 20		USGS Topo Maps; Google Earth ; PRCC Mapping Tool	Pecos River is located approximately 1.4 miles to the east release
200' - 1000' = 10			
>1000' = 0	0		
Ranking Criteria for Horizontal Distance to a Water Well or Water Source	NMOCD Numeric Rank for this Site	Source for Ranking	Notes
<1000' from a water source? <200' from a private domestic water source? YES OR NO to BOTH. YES = 20, NO = 0	0	NM State Engineer Water Well Database	nearest well 2,000ft north of - Easting 627552.22, Northing 3549364.79
Total Site Ranking			
		10	
Soil Remediation Standards	0 to 9	10 to 19	>19
Benzene	10 PPM	10 PPM	10 PPM
BTEX	50 PPM	50 PPM	50 PPM
TPH	5000 PPM	1000 PPM	100 PPM



TABLE 2

SUMMARY OF LABORATORY ANALYSES

Table 2: Summary of Laboratory Analyses

Analytical Report-1506542	Sample Number on Figure 2 Map	Sample Date	Depth	BTEX ppm	Benzene mg/Kg	GRO mg/Kg	DRO mg/Kg	Cl- mg/Kg
1511206-001	C1	11/2/2015	Surface	25.2	BDL	870	26,000	N/A
1511206-002	C2	11/2/2015	Surface	6.6	BDL	310	23,000	N/A
1511206-003	C3	11/2/2015	Surface	BDL	BDL	BDL	28	N/A
1511206-004	C4	11/2/2015	Surface	BDL	BDL	BDL	13	N/A
1511206-005	L1	11/2/2015	2'	324	4.7	3,400	14,000	N/A
1511206-006	L2	11/2/2015	2'	BDL	BDL	BDL	1,700	N/A

APPENDIX A

LABORATORY ANALYTICAL REPORTS



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

November 11, 2015

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

RE: Brutus 12 Fed Com 2H

OrderNo.: 1511206

Dear Austin Weyant:

Hall Environmental Analysis Laboratory received 6 sample(s) on 11/4/2015 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to 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,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written in a cursive style.

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1511206

Date Reported: 11/11/2015

CLIENT: Souder, Miller & Associates

Client Sample ID: C1

Project: Brutus 12 Fed Com 2H

Collection Date: 11/2/2015 3:13:00 PM

Lab ID: 1511206-001

Matrix: SOIL

Received Date: 11/4/2015 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH
Diesel Range Organics (DRO)	26000	980		mg/Kg	100	11/9/2015 2:47:55 PM	22209
Surr: DNOP	0	70-130	S	%REC	100	11/9/2015 2:47:55 PM	22209
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	870	50		mg/Kg	10	11/6/2015 11:40:23 AM	22214
Surr: BFB	270	75.4-113	S	%REC	10	11/6/2015 11:40:23 AM	22214
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.25		mg/Kg	10	11/6/2015 11:40:23 AM	22214
Toluene	1.2	0.50		mg/Kg	10	11/6/2015 11:40:23 AM	22214
Ethylbenzene	ND	0.50		mg/Kg	10	11/6/2015 11:40:23 AM	22214
Xylenes, Total	24	1.0		mg/Kg	10	11/6/2015 11:40:23 AM	22214
Surr: 4-Bromofluorobenzene	137	80-120	S	%REC	10	11/6/2015 11:40:23 AM	22214

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

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

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1511206

Date Reported: 11/11/2015

CLIENT: Souder, Miller & Associates

Client Sample ID: C2

Project: Brutus 12 Fed Com 2H

Collection Date: 11/2/2015 3:15:00 PM

Lab ID: 1511206-002

Matrix: SOIL

Received Date: 11/4/2015 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH
Diesel Range Organics (DRO)	23000	930		mg/Kg	100	11/9/2015 3:51:55 PM	22209
Surr: DNOP	0	70-130	S	%REC	100	11/9/2015 3:51:55 PM	22209
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	310	4.9		mg/Kg	1	11/6/2015 12:03:36 PM	22214
Surr: BFB	852	75.4-113	S	%REC	1	11/6/2015 12:03:36 PM	22214
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.049		mg/Kg	1	11/6/2015 12:03:36 PM	22214
Toluene	0.086	0.049		mg/Kg	1	11/6/2015 12:03:36 PM	22214
Ethylbenzene	ND	0.049		mg/Kg	1	11/6/2015 12:03:36 PM	22214
Xylenes, Total	6.6	0.098		mg/Kg	1	11/6/2015 12:03:36 PM	22214
Surr: 4-Bromofluorobenzene	266	80-120	S	%REC	1	11/6/2015 12:03:36 PM	22214

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

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

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1511206

Date Reported: 11/11/2015

CLIENT: Souder, Miller & Associates

Client Sample ID: C3

Project: Brutus 12 Fed Com 2H

Collection Date: 11/2/2015 3:17:00 PM

Lab ID: 1511206-003

Matrix: SOIL

Received Date: 11/4/2015 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH
Diesel Range Organics (DRO)	28	9.6		mg/Kg	1	11/9/2015 4:55:50 PM	22209
Surr: DNOP	102	70-130		%REC	1	11/9/2015 4:55:50 PM	22209
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/6/2015 1:19:09 PM	22214
Surr: BFB	97.3	75.4-113		%REC	1	11/6/2015 1:19:09 PM	22214
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.047		mg/Kg	1	11/6/2015 1:19:09 PM	22214
Toluene	ND	0.047		mg/Kg	1	11/6/2015 1:19:09 PM	22214
Ethylbenzene	ND	0.047		mg/Kg	1	11/6/2015 1:19:09 PM	22214
Xylenes, Total	ND	0.094		mg/Kg	1	11/6/2015 1:19:09 PM	22214
Surr: 4-Bromofluorobenzene	113	80-120		%REC	1	11/6/2015 1:19:09 PM	22214

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

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

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1511206

Date Reported: 11/11/2015

CLIENT: Souder, Miller & Associates

Client Sample ID: C4

Project: Brutus 12 Fed Com 2H

Collection Date: 11/2/2015 3:19:00 PM

Lab ID: 1511206-004

Matrix: SOIL

Received Date: 11/4/2015 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH
Diesel Range Organics (DRO)	13	9.9		mg/Kg	1	11/9/2015 5:59:37 PM	22209
Surr: DNOP	92.7	70-130		%REC	1	11/9/2015 5:59:37 PM	22209
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/6/2015 1:42:28 PM	22214
Surr: BFB	90.2	75.4-113		%REC	1	11/6/2015 1:42:28 PM	22214
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.049		mg/Kg	1	11/6/2015 1:42:28 PM	22214
Toluene	ND	0.049		mg/Kg	1	11/6/2015 1:42:28 PM	22214
Ethylbenzene	ND	0.049		mg/Kg	1	11/6/2015 1:42:28 PM	22214
Xylenes, Total	ND	0.098		mg/Kg	1	11/6/2015 1:42:28 PM	22214
Surr: 4-Bromofluorobenzene	115	80-120		%REC	1	11/6/2015 1:42:28 PM	22214

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

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	
	D Sample Diluted Due to Matrix	E Value above quantitation range	
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits	Page 4 of 9
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range	
	R RPD outside accepted recovery limits	RL Reporting Detection Limit	
	S % Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1511206

Date Reported: 11/11/2015

CLIENT: Souder, Miller & Associates

Client Sample ID: L1

Project: Brutus 12 Fed Com 2H

Collection Date: 11/2/2015 3:21:00 PM

Lab ID: 1511206-005

Matrix: SOIL

Received Date: 11/4/2015 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH
Diesel Range Organics (DRO)	14000	960		mg/Kg	100	11/10/2015 2:39:48 PM	22209
Surr: DNOP	0	70-130	S	%REC	100	11/10/2015 2:39:48 PM	22209
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	3400	250		mg/Kg	50	11/6/2015 11:16:55 AM	22214
Surr: BFB	218	75.4-113	S	%REC	50	11/6/2015 11:16:55 AM	22214
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	4.7	2.5		mg/Kg	50	11/6/2015 11:16:55 AM	22214
Toluene	94	2.5		mg/Kg	50	11/6/2015 11:16:55 AM	22214
Ethylbenzene	26	2.5		mg/Kg	50	11/6/2015 11:16:55 AM	22214
Xylenes, Total	200	5.0		mg/Kg	50	11/6/2015 11:16:55 AM	22214
Surr: 4-Bromofluorobenzene	137	80-120	S	%REC	50	11/6/2015 11:16:55 AM	22214

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

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

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1511206

Date Reported: 11/11/2015

CLIENT: Souder, Miller & Associates

Client Sample ID: L2

Project: Brutus 12 Fed Com 2H

Collection Date: 11/2/2015 3:23:00 PM

Lab ID: 1511206-006

Matrix: SOIL

Received Date: 11/4/2015 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH
Diesel Range Organics (DRO)	1700	97		mg/Kg	10	11/10/2015 3:22:25 PM	22209
Surr: DNOP	0	70-130	S	%REC	10	11/10/2015 3:22:25 PM	22209
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/6/2015 2:05:43 PM	22214
Surr: BFB	89.2	75.4-113		%REC	1	11/6/2015 2:05:43 PM	22214
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.047		mg/Kg	1	11/6/2015 2:05:43 PM	22214
Toluene	ND	0.047		mg/Kg	1	11/6/2015 2:05:43 PM	22214
Ethylbenzene	ND	0.047		mg/Kg	1	11/6/2015 2:05:43 PM	22214
Xylenes, Total	ND	0.093		mg/Kg	1	11/6/2015 2:05:43 PM	22214
Surr: 4-Bromofluorobenzene	113	80-120		%REC	1	11/6/2015 2:05:43 PM	22214

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1511206

11-Nov-15

Client: Souder, Miller & Associates

Project: Brutus 12 Fed Com 2H

Sample ID MB-22209	SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range Organics							
Client ID: PBS	Batch ID: 22209		RunNo: 30094							
Prep Date: 11/5/2015	Analysis Date: 11/9/2015		SeqNo: 916768		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	10		10.00		99.6	70	130			

Sample ID LCS-22209	SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics							
Client ID: LCSS	Batch ID: 22209		RunNo: 30094							
Prep Date: 11/5/2015	Analysis Date: 11/9/2015		SeqNo: 917044		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	47	10	50.00	0	93.7	57.4	139			
Surr: DNOP	5.2		5.000		104	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1511206

11-Nov-15

Client: Souder, Miller & Associates

Project: Brutus 12 Fed Com 2H

Sample ID MB-22214	SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: PBS	Batch ID: 22214		RunNo: 30084							
Prep Date: 11/5/2015	Analysis Date: 11/6/2015		SeqNo: 916449		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	850		1000		85.1	75.4	113			

Sample ID LCS-22214	SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: LCSS	Batch ID: 22214		RunNo: 30084							
Prep Date: 11/5/2015	Analysis Date: 11/6/2015		SeqNo: 916450		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	96.6	79.6	122			
Surr: BFB	930		1000		92.6	75.4	113			

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1511206

11-Nov-15

Client: Souder, Miller & Associates

Project: Brutus 12 Fed Com 2H

Sample ID MB-22214	SampType: MBLK		TestCode: EPA Method 8021B: Volatiles							
Client ID: PBS	Batch ID: 22214		RunNo: 30084							
Prep Date: 11/5/2015	Analysis Date: 11/6/2015		SeqNo: 916463		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		108	80	120			

Sample ID LCS-22214	SampType: LCS		TestCode: EPA Method 8021B: Volatiles							
Client ID: LCSS	Batch ID: 22214		RunNo: 30084							
Prep Date: 11/5/2015	Analysis Date: 11/6/2015		SeqNo: 916464		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.99	0.050	1.000	0	99.1	80	120			
Toluene	0.96	0.050	1.000	0	96.2	80	120			
Ethylbenzene	0.98	0.050	1.000	0	98.1	80	120			
Xylenes, Total	3.0	0.10	3.000	0	99.8	80	120			
Surr: 4-Bromofluorobenzene	1.2		1.000		115	80	120			

Sample ID 1511206-002AMS	SampType: MS		TestCode: EPA Method 8021B: Volatiles							
Client ID: C2	Batch ID: 22214		RunNo: 30084							
Prep Date: 11/5/2015	Analysis Date: 11/6/2015		SeqNo: 916468		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.049	0.9794	0.04442	99.5	69.6	136			
Toluene	1.1	0.049	0.9794	0.08588	99.1	76.2	134			
Ethylbenzene	1.1	0.049	0.9794	0	117	75.8	137			
Xylenes, Total	9.3	0.098	2.938	6.601	92.6	78.9	133			
Surr: 4-Bromofluorobenzene	2.2		0.9794		228	80	120			S

Sample ID 1511206-002AMSD	SampType: MSD		TestCode: EPA Method 8021B: Volatiles							
Client ID: C2	Batch ID: 22214		RunNo: 30084							
Prep Date: 11/5/2015	Analysis Date: 11/6/2015		SeqNo: 916469		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.049	0.9775	0.04442	105	69.6	136	5.08	20	
Toluene	1.1	0.049	0.9775	0.08588	106	76.2	134	6.15	20	
Ethylbenzene	1.2	0.049	0.9775	0	124	75.8	137	5.53	20	
Xylenes, Total	9.7	0.098	2.933	6.601	104	78.9	133	3.63	20	
Surr: 4-Bromofluorobenzene	2.7		0.9775		273	80	120	0	0	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

Sample Log-In Check List

Client Name: SMA-CARLSBAD

Work Order Number: 1511206

RcptNo: 1

Received by/date: *AT* *11/04/15*
 Logged By: Lindsay Mangin 11/4/2015 12:15:00 PM *[Signature]*
 Completed By: Lindsay Mangin 11/5/2015 9:31:31 AM *[Signature]*
 Reviewed By: *AT* *11/04/15*

Chain of Custody

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

Log In

- 4. Was an attempt made to cool the samples? Yes No NA
 - 5. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA
 - 6. Sample(s) in proper container(s)? Yes No
 - 7. Sufficient sample volume for indicated test(s)? Yes No
 - 8. Are samples (except VOA and ONG) properly preserved? Yes No
 - 9. Was preservative added to bottles? Yes No NA
 - 10. VOA vials have zero headspace? Yes No No VOA Vials
 - 11. Were any sample containers received broken? Yes No
 - 12. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes No
 - 13. Are matrices correctly identified on Chain of Custody? Yes No
 - 14. Is it clear what analyses were requested? Yes No
 - 15. Were all holding times able to be met? (If no, notify customer for authorization.) Yes No
- # of preserved bottles checked for pH: _____
 (<2 or >12 unless noted)
 Adjusted? _____
 Checked by: _____

Special Handling (if applicable)

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

Person Notified:	<input type="text"/>	Date:	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.4	Good	Yes			

Chain-of-Custody Record

Client: SMA

Mailing Address: Carlsbad

Phone #:

Mail or Fax#:

A/QC Package:

Standard Level 4 (Full Validation)

Accreditation:

NELAP Other

EDD (Type)

Turn-Around Time:

Standard Rush

Project Name:

Brutus 12 FED Cam 2H

Project #:

Project Manager:

Austin Weyant

Sampler:

L132

On Ice:

Yes No

Sample Temperature:

5.4

Date Time Matrix Sample Request ID

12/15 1513 Soil C1

1515 C2

1517 C3

1519 C4

1521 L1

1523 L2

Container Type and #

4oz soil

None

None

None

None

None

HEAL No.

1511206

-001

-002

-003

-004

-005

-006

Date:

12/15

Relinquished by:

[Signature]

Date:

12/15

Relinquished by:

[Signature]

Received by:

[Signature]

Date:

11/11/04

Received by:

[Signature]

Date:

12/15

Remarks:

Send MRO via email only. Do not include in report.
Send a copy of results to Lisa.gaston@sevidermillen.com

Analysis Request

<input checked="" type="checkbox"/> BTEX + MTBE + TMBs (8021)	<input checked="" type="checkbox"/> TPH 8015B (GRO / DRO / MRO)	<input type="checkbox"/> TPH (Method 418.1)	<input type="checkbox"/> EDB (Method 504.1)	<input type="checkbox"/> PAH's (8310 or 8270 SIMS)	<input type="checkbox"/> RCRA 8 Metals	<input type="checkbox"/> Anions (F, Cl, NO ₃ , NO ₂ , PO ₄ , SO ₄)	<input type="checkbox"/> 8081 Pesticides / 8082 PCB's	<input type="checkbox"/> 8260B (VOA)	<input type="checkbox"/> 8270 (Semi-VOA)	<input type="checkbox"/> Air Bubbles (Y or N)
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If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

APPENDIX B

FORM C141 INITIAL

APPENDIX C

FIELD NOTES



Location is burned
Burn intact - no holes
Battery is lined

EC RAN AT. CASE
FOUND NO SALT 0.07mS

