# Bratcher, Mike, EMNRD

From:

Bob Allen <ballen@sesi-nm.com> Monday, August 27, 2012 3:49 PM

Sent: To:

Bratcher, Mike, EMNRD

Cc:

Green, Bill

Subject:

FW: RE Nav Apache Release

Attachments:

Nav-Apache HOL-11-017 Delineation report wkpln 8 20 12.pdf; Appendix A Analytical

Results H200457.pdf; Appendix A Analyticals Results H200335.pdf

Categories:

Red Category

Mike:

I attached the delineation report/workplan for the Navajo Apache release. We are anxious to start this project, please forward your approval/stipulations.

Thank you,

Bob Allen C5P, CHMM Cell # 575.390.7063 Office # 575.397.0510 Fax # 575.393.4388

### Isaiah 40:31

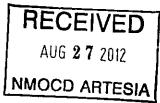
They that wait upon the Lord shall renew their strength; they shall mount up with wings as eagles; they shall run, and not be weary; and they shall walk, and not faint.

From: Susana Rodriguez [mailto:office2@sesi-nm.com]

Sent: Monday, August 27, 2012 3:34 PM

To: Bob Allen

Subject: RE Nav Apache Release



# Holly Energy Partners Navaho Apache DAD Lateral Delineation Report/Workplan

Section 30, T17S, R29E Eddy County, New Mexico

August 20, 2012



Prepared for:

Holly Energy Partners P.O. Box 1260 Artesia, New Mexico 88211

By:

Safety & Environmental Solutions, Inc. 703 East Clinton Hobbs, New Mexico 88240 (575) 397-0510

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# I. Company Contacts

Representative 5	Company	📇 Telephone 🕾	E-mail Land Street
Bill Green	Holly Energy Partners	575-748-8968	bill.green@hollyenergy.com
Bob Allen	SESI	575-397-0510	ballen@sesi-nm.com

# II. Background

Safety and Environmental Solutions, Inc. (SESI) was engaged by Holly Energy Partners (HEP) to perform site assessment of a release area at the Navaho Apache DAD Lateral located in Section 30 of Township 17 South, Range 29 East, Eddy County, New Mexico.

According to the C-141 on October 22, 2011, the cause of the release was to due to internal corrosion on a 3" steel pipe tie-in from Concho Resources Navaho Federal #8. The leak is located below ground at the tie-in of the Apache DAD lateral. Clean-up crews were dispatched and free product was removed. Approximately 100 barrels of crude oil was released with an unknown amount recovered.

New Mexico Oil Conservation Division (NMOCD) representative Mr. Randy Dade was contacted by HEP on that same day.

# III. Surface and Ground Water

There is no surface water within a mile of the release site.

The nearest groundwater of record is approximately 2.8 miles northwest of the site. The United States Geological Survey (USGS) record is in Section 22 Range 28 East and Township 17 South. The reported depth was 79 feet below ground surface (BGS) in February 1999.

Records from the New Mexico Office of the State Engineer indicate a groundwater point of diversion (POD) for the Bogle Farm (POD Number RA08234) in Section 32 to the southeast, but this record is incomplete, with no indication of depth to water, date of installation, or detailed location.

### IV. Characterization

The target cleanup levels are determined using the *Guidelines for Remediation of Leaks*, *Spills and Releases* published by the NMOCD (August 13, 1993). Based on the ranking criteria presented below, the applicable Recommended Remediation Action Levels (RRAL) are 10 parts per million (ppm) Benzene, 50 ppm combined benzene, toluene, ethylbenzene, and total xylenes (BTEX), and 1,000 ppm Total Petroleum Hydrocarbons (TPH).

Depth to Ground Water: (1997)	n Jack Marthes	ra siborione	r n
(Vertical distance from contaminants to	Less than 50 feet	20 points	
seasonal high water elevation of	50 feet to 99 feet	10 points	Х
groundwater)	>100 feet	0 points	
Wellhead Protection Area:			
(Less than 200 feet from a private domestic	Yes	20 points	
water source; or less than 1000 feet from all	No	0 points	Χ
other water sources)			
Distance to Surface Water: 编版 点面 第二十二十二十二十二十二十二十二十二十二十二十二十二十二十二十二十二十二十二十	种的特別學學的特別		
(Horizontal distance to perennial lakes,	Less than 200 feet	20 points	
ponds, rivers, streams, creeks, irrigation	200 feet to 1000 feet	10 points	
canals and ditches)	>1000 feet	0 points	X
	RANKING SCORE (T	OTAL POINTS)	10

# V. Work Performed

On February 8, 2012, SESI installed test trenches to determine vertical extent of contamination. Samples were retrieved and transported under chain of custody to Cardinal Laboratories in Hobbs, New Mexico to be analyzed for Chlorides (EPA Method 300.0), TPH (EPA Method 418.1), and BTEX (EPA Method 8021B). The results of the analysis are as follows:

Sample -	TPH 418.1	, Benzene⊸	v to 1941		ੁੱ∷ Total ੈਂੂ
I and I Division	(mg/kg)	(mg/kg)	a   j   T   T   a	Benzene	Xylenes
· 是多为品,为一个的"生"的		1 / 61		🧓 (mg/kg) 🦂	👾 (mg/kg) 🐺
Analysis Date:	2/22/12	2/22/12	<b>€ 2/22/12</b> €	· 1 2/22/12	2/22/12 🔻
TT-1, 11' BGS	6,790	8.24	101	82.4	132
TT-2, 10' BGS	5,180	<1.00	19.9	23.7	41.7
TT-3, 07' BGS	340	<0.050	<0.050	<0.050	<0.150
TT-4, 05' BGS	113	<0.050	<0.050	<0.050	<0.150

The first attempt at the delineation of this site only achieved the vertical extent in Test Trenches 3 & 4at a depth less than 5' BGS. Test Trenches 1 & 2 still exceeded RRAL standards at approximately 11-12' BGS.

On February 20, 2012, SESI was onsite with Atkins Drilling to install two boreholes utilizing an auger rig with split spoon sampling. Samples were retrieved at 10 ft. intervals. Field tests were run on the samples to determine the depth where the value was below 1,000 ppm TPH. Samples were transported under chain of custody to Cardinal Laboratories. The results of the analysis are as follows:

	418.1 (mg/kg)	🧃 (mg/kg) 🛬	Toluene (mg/kg)	Ethyl Benzene (mg/kg)	Total Xylenes (mg/kg)
Analysis Date:	2/22/12	2/22/12	2/22/12	2/22/12	2/22/12
BH-1, 19' to 21' BGS	118	<0.050	<0.050	<0.050	<0.150
BH-1,29' to 31' BGS	<100	<0.050	<0.050	<0.050	<0.150
BH-2, 19' to 21' BGS	106	<0.050	<0.050	<0.050	<0.150
BH-2, 25' BGS	166	<0.050	<0.050	<0.050	<0.150

# VI. Action Plan

Vertical delineation was achieved between the 12' and 19' BGS in both BH # 1 and BH # 2, and less than 7'BGS in TT- 3 and TT- 4.

This release may be divided into three (3) areas. The area nearest to the release site on the west end, which ran along the salt water disposal line owned by Concho, is where the crude oil penetrated to a depth of approximately 19' BGS. The middle part of the spill is adjacent the lease road. The third area is on the east end, where the spill left the road and followed a runoff path.

# COG Right-of-Way remediation

Holly Energy Partners proposes that the contaminated soil be excavated to the 1,000 ppm guideline target concentration and transported to an NMOCD approved facility for disposal. Confirmation samples will be retrieved from the sides and bottom of the excavation. Upon completion, the area will be backfilled with clean fill soils and contoured to grade.

## Area 2 and 3: Vertical extent of contamination of less than 7' BGS.

Holly Energy Partners proposes to back-drag the surface of the lease road to improve the appearance of the road, treating the impacted soils with microbes to hasten residual hydrocarbon degradation.

The third area will undergo bioremediation using a bio-surfactant applied to tilled soil. The soil will be field tested for TPH on a monthly basis to monitor the progress of the bioremediation. After completion of the bioremediation process, when the TPH concentration in the soil is less than 1,000 ppm, the soil will be contoured back to original grade. Laboratory confirmation samples will be collected for completion verification. The time required for the bioremediation is estimated to be about 60 days.

# VII. Figures & Appendices

Figure 1 – Vicinity Map

Figure 2 - Site Plan

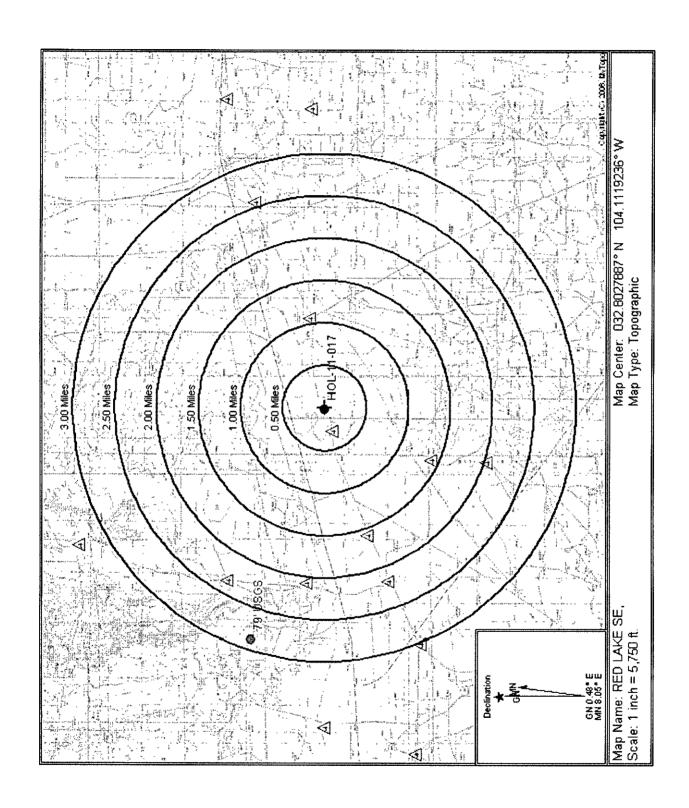
Figure 3- Logs of Boring

Appendix A - Analytical Results

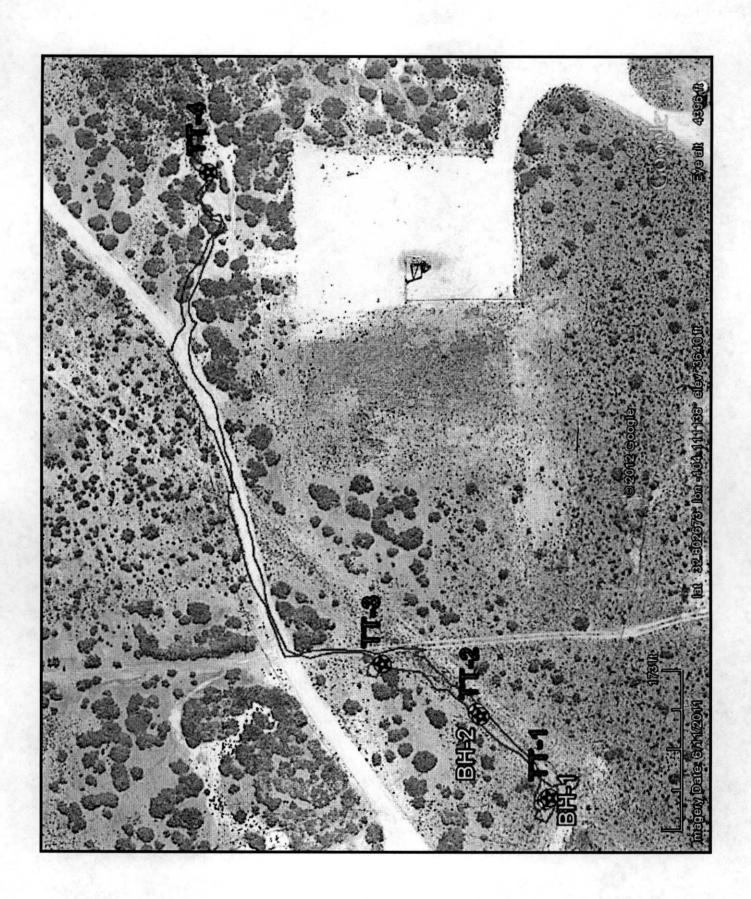
Appendix B - Site Photographs

Appendix C - C-141

# Figure 1 Vicinity Map



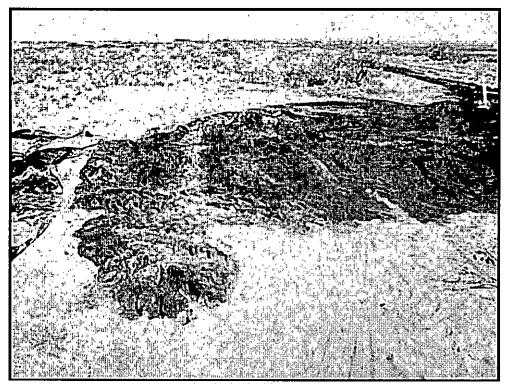
# Figure 2 Site Plan



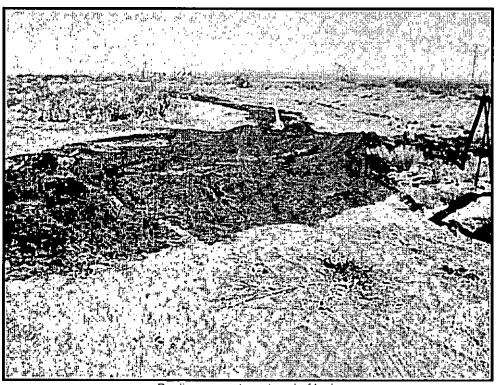
# Figure 3 Logs of Boring

# Appendix A Analytical Results

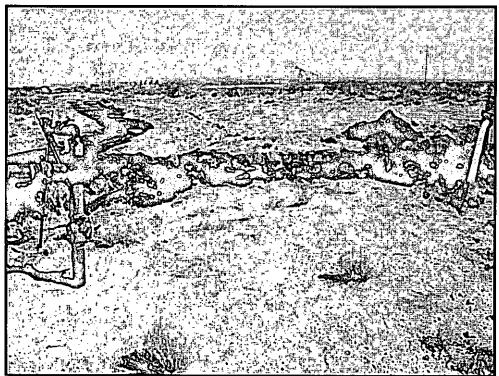
# Appendix B Site Photographs



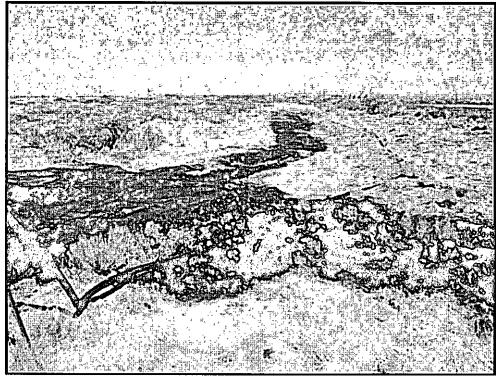
Leak site looking east



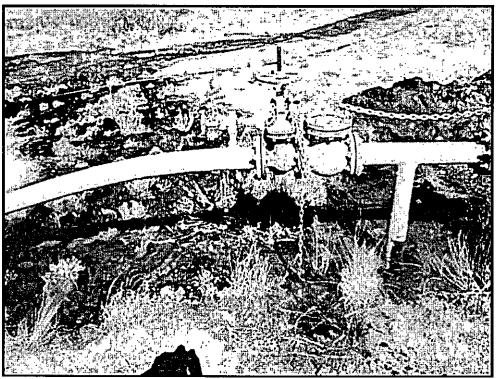
Pooling area at west end of leak



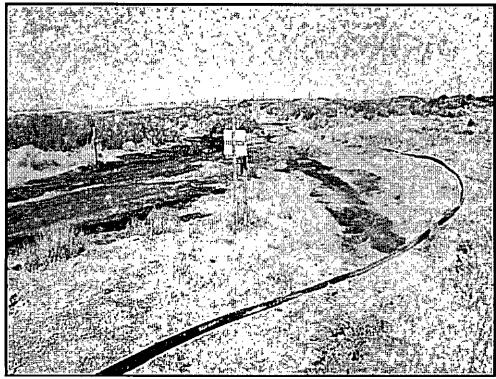
West end of leak source



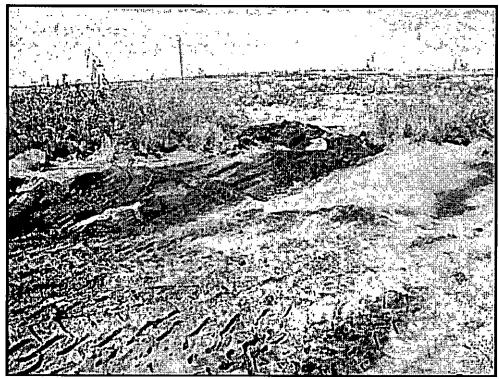
West pooling area and right of way run



Leak source area



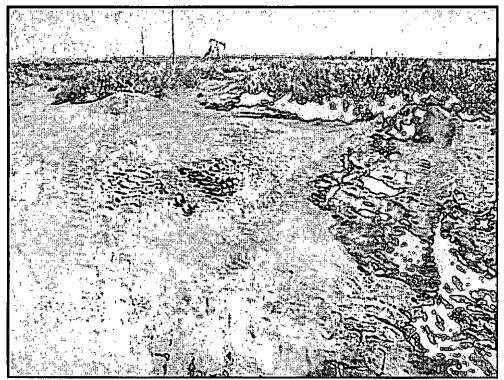
West end of leak



Run area before lease road



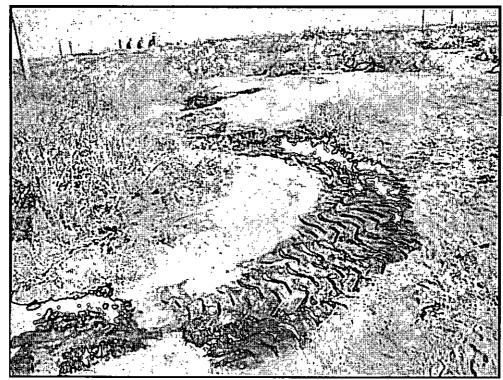
Run area on lease road



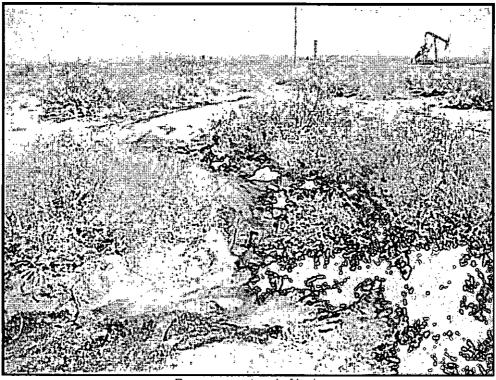
Run area leaving lease road on east end of leak



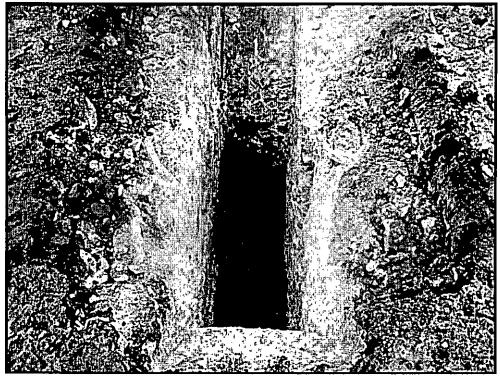
Run area east end of leak



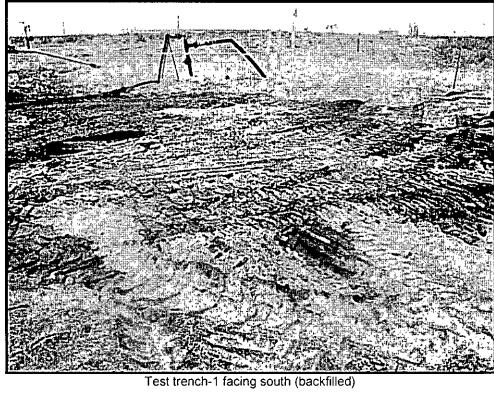
Run area east end of leak

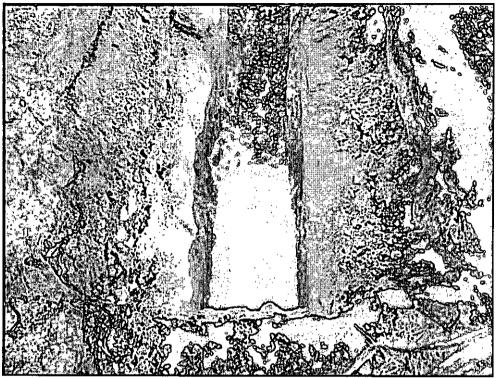


Run area east end of leak

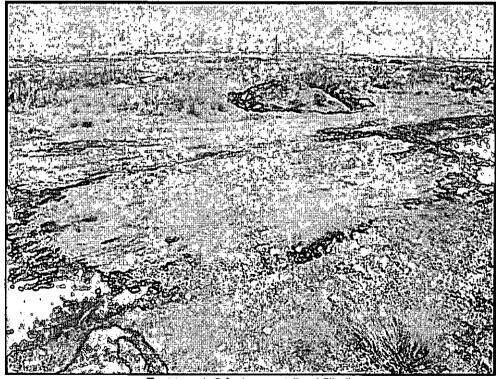


Test trench-1 facing south





Test trench-2 facing west



Test trench-2 facing west (backfilled)



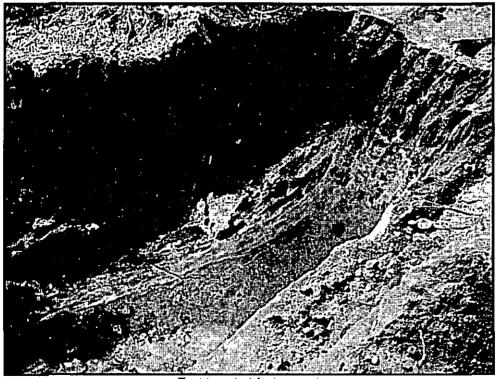
Test trench-3 facing west



Test trench-3 facing west



Test trench-3 facing west (backfilled)



Test trench-4 facing west



Test trench-4 facing west (backfilled)

# Appendix C C-141

District 1 1625 N. Franch Dr., Hobbs, NM 88240 1623 N. Franch Dr., Hobbe, NM 83240
Dimirt II
1331 W. Gernd Avenue, Artscia, NM 83210
Dimirt III
1000 Rio Brazos Road, Artsc., NM 87410
Dimirt IV
1220 S. St. Francis Dr., Santa Fa. NM 87502

## State of New Mexico Energy Minerals and Natural Resources

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe. NM 87505 Form C-141 Ravised October 10, 2003

Submir 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

	Salita Tel 1411 01505														
			Rela	ase Notific	catio	n and Co	rrective A	ction .							
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		n Street Art		88210		Telephone No. 972-322-5782									
Facility Nat				OAD Lateral		Facility Type Gathering Line									
			11pecar 1		!										
Surface Ow	Dist	BLM		Mineral C	N DEL	er Lesse No.									
				LOCA	ATIO	ON OF RELEASE									
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								ar acceptable level							
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I hereby certi	fy that the i	nimmarien e	veo above	is true and comp	dete to i	the best of my	knowledge and u	वर्षन समाव क्षेत्र केन	ant to NM	OCD n	ല്ടാഹി				
regulations al	l operators	are required t	o report at	id or file certain r	elease :	ostifications a	ud perform correc	tive actions for rele	ases which	may er	danger				
public bealth	or the envir	rooment. The	acceptant	e of a C-141 repo	on by d	ie NMOCD m	arked as "Final R	escri" does not relia	era the ober	ator of	liability				
should their o	perations b	ave failed to :	adequate v	investigate and r	emedia	te contaminati	on that pose a thr	eat to excurnd water.	SULTACE WA	ter, hw	man health				
or the environ	men. In a	ddition, NMC	XXX accep	tance of a C-141	nocer	ioes not reliev	e the operator of:	responsibility for co	ampliance v	rith any	other				
		ws and/or reg.													
						OIL CONSERVATION DIVISION									
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Signature:															
L						Approved by	District Supervis	or;							
Printed Name	: Lan Con	pland													
Tiela:Ne T	omilia	Campliana				A		r_== -	_						
Tule:Mgr - F	SERMINAL C	-ompliance				Approval Da	E	Expiration I	JASE:						
E-mail Add	ae: lani a—	mland@holly	oras estados			Conditions of	F Americant:								
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Date:	10/22	2011 Pt	nome: 575.	748.4076											

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



February 24, 2012

Bob Allen

Safety & Environmental Solutions

703 East Clinton

Hobbs, NM 88240

RE: HOL-11-017

Enclosed are the results of analyses for samples received by the laboratory on 02/20/12 13:00.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-11-3. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at <a href="https://www.tceq.texas.gov/field/qa/lab\_accred\_certif.html">www.tceq.texas.gov/field/qa/lab\_accred\_certif.html</a>.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2 Haloacetic Acids (HAA-5)
Method EPA 524.2 Total Trihalomethanes (TTHM)
Method EPA 524.4 Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

Celey D. Keine

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Lab Director/Quality Manager



# Analytical Results For:

Safety & Environmental Solutions Bob Allen 703 East Clinton Hobbs NM, 88240

Fax To: (575) 393-4388

Received:

02/20/2012

Sampling Date:

02/20/2012

Reported:

02/24/2012

Sampling Type:

Soil

Cool & Intact

Project Name:

HOL-11-017

Sampling Condition: Sample Received By:

Jodi Henson

Project Number: Project Location: NAVAJO APACHE DAD LATERAL LOCO HILLS, NM

Sample ID: BH-1 19" TO 21" BGS (H200457-01)

BTEX 8021B	mg/	kg	Analyze	d By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifie	
Benzene*	<0.050	0.050	02/22/2012	ND	1.76	87.9	2.00	5.15		
Toluene*	<0.050	0.050	02/22/2012	ND	1.91	95.6	2.00	4.87 3.43		
Ethylbenzene*	< 0.050	0.050	02/22/2012	ND	1.97	98.6	2.00			
Total Xylenes*	<0.150	0.150	02/22/2012	ND	6.17	103	6.00	3.45		
Surrogate: 4-Bromofluorobenzene (PIL	112 9	% 64.4-13	1							
TPH 418.1	mg/	kg	Analyze	d By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TPH 418.1	118	100	02/24/2012	ND	2470	98.7	2500	0.0810		
C										
Sample ID: BH-1 29" TO 31" B 8TEX 8021B	GS (H20 mg/	-	Analyze	d By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/22/2012	ND	1.76	87.9	2.00	5.15		
Toluene*	<0.050	0.050	02/22/2012	ND	1.91	95.6	2.00	4.87		
Ethylbenzene*	< 0.050	0.050	02/22/2012	ND	1.97	98.6	2.00	3.43		
Total Xylenes*	<0.150	0.150	02/22/2012	ND	6.17	103	6.00	3.45		
Surrogate: 4-Bromofluorobenzene (PIL	1119	% 64.4-13								
TPH 418.1	mg/	kg	Analyze	d By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	

### Cardinal Laboratories

TPH 418.1

\*=Accredited Analyte

0.0810

PLEASE NOTE: Uability and Damages. Cardinal's labelity and client's exclusive remedy for any clean arising, whether based in contract or tort, shall be kinited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardina be liable for moderation or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiances, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claims is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laborationes.

ND

2470

98.7

2500

02/24/2012

Celey & Keena

Celey D. Keene, Lab Director/Quality Manager

<100

100



# Analytical Results For:

Safety & Environmental Solutions

Analyzed By: AP

Method Blank

Bob Allen 703 East Clinton Hobbs NM, 88240

Fax To: (575) 393-4388

Analyzed

Received:

02/20/2012

Sampling Date:

02/20/2012

Reported:

02/24/2012

Sampling Type:

Soil

True Value QC

BTEX 8021B

Project Name:

HOL-11-017

Result

Sampling Condition:

Cool & Intact

Project Number:

NAVAJO APACHE DAD LATERAL

Reporting Limit

Sample Received By:

% Recovery

Jodi Henson

RPD

Qualifier

Project Location:

Analyte

LOCO HILLS, NM

### Sample ID: BH-2 19" TO 21" BGS (H200457-03)

Analyte  Benzene* Toluene* Ethylbenzene* Total Xylenes*  Surrogate: 4-Bromofluorobenzene (PIL TPH 418.1	Result <0.050 <0.050 <0.050 <0.150  /// Result			Method Blank  ND  ND  ND  ND  ND  MD  MD  MD  MD  MD	BS 1.76 1.91 1.97 6.17	% Recovery 87.9 95.6 98.6 103	True Value QC 2.00 2.00 2.00 6.00	RPD 5.15 4.87 3.43 3.45	Qualifier
Benzene* Toluene* Ethylbenzene* Total Xylenes* Surrogate: 4-Bromofluorobenzene (PIL	<0.050 <0.050 <0.050 <0.150	0.050 0.050 0.050 0.150	02/22/2012 02/22/2012 02/22/2012 02/22/2012	ND ND	1.76 1.91 1.97	87.9 95.6 98.6	2.00 2.00 2.00	5.15 4.87 3.43	Qualifier
Benzene* Toluene* Ethylbenzene*	<0.050 <0.050 <0.050	0.050 0.050 0.050	02/22/2012 02/22/2012 02/22/2012	ND ND ND	1.76 1.91 1.97	87.9 95.6 98.6	2.00 2.00 2.00	5.15 4.87 3.43	Qualifier
Benzene* Toluene*	<0.050 <0.050	0.050 0.050	02/22/2012	ND	1.76 1.91	87.9 95.6	2.00	5.15 4.87	Qualifier
Benzene*	<0.050	0.050	02/22/2012	ND	1.76	87.9	2.00	5.15	Qualifier
·		, -	•		•				Qualifier
Analyte	Result	Reporting Limit	Analyzed	Method Blank	B\$	% Recovery	True Value QC	RPD	Qualifier
Sample ID: BH-2 25" BGS (H20 BTEX 8021B	00457-04 mg/	•	Analyze	d By: AP					
TPH 418.1	106	100	02/24/2012	ND	2470	98.7	2500	0.0810	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TPH 418.1	mg/	kg	Analyze	Analyzed By: CK					
Surrogate: 4-Bromofluorobenzene (PIL	1119	% 64.4-13	4						
Total Xylenes*	<0.150	0.150	02/22/2012	ND	6.17	103	6.00	3.45	
curyioenzene :	<0.050	0.050	02/22/2012	ND	1.97	98.6	2.00	3.43	
Ethylbenzene*		0.000	02/22/2012	ND	1.91	95.6	2.00	4.87	
Toluene*	<0.050	0.050	00/00/00/0						

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Celey & Keene

Celey D. Keene, Lab Director/Quality Manager

\*=Accredited Analyte



### **Notes and Definitions**

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

\*\* Samples not received at proper temperature of 6°C or below.

\*\*\* Insufficient time to reach temperature.

Chloride by SM4500Cl-B does not require samples be received at or below 6°C

Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories \*=Accredited Analyte

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# CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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or East Mariand, Hobbs, NM 88240	26 Fax
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ANALYSIS REQUEST													The state of the s	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				Terms and Conditions; filtered will be changed on all executationed than 20 days passible at Markenska of 24% paramental farm in engines done of invoice, and all control professors to their via antennet see.
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718	#101d	Company:	Attr:	Address:	city:	• •	Phone #:	Fax#:	RRESERV.	THER: CENOBASE: CENCOOL SHITCE:	×	×	×	5,7				received by Cardinal will
dutions, Inc.		-	zip: 88240	3-4388				-	MATRIX	CONTRINERS CONTRINERS ACUDDWATER COLL COLL COLL COLL COLL COLL COLL COL	×.	У.  -	X	,> <u>/</u>				the division whether to need to contract or test, shall be toused up the streamst paid by the chert for the as washed unless made in while grant residence by Condrabableh to Gride and in completion of the applicable in Enrichment Assistance in while grant for the action of the second the consideration of the applicable and the applicable and the applicable and the applicable and the second contract to the se
Company Name: Safety & Environmental Solu	Bob Allen	703 East Clinton	State: NM	397-0510 Fax#: 575-393	-11-017 Project Owner: 14e (14		Project Location: Coch (ALL) 2.80	シューナー ころめん		I.D. Sample I.D. C;OMP. C;A73 OF (C;OMP. C) CONTAINERS	1,6 . 6 24" BU	1 24' ce 31' BGS C	2 it is 21' 848 2	2 25- 1365 6		And the state of t		THE SET TOTE. (LATER WILD DRIVEN SENT SENT SENT SENT SENT SENT SENT SE
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CHECKED BY: Sample Condition
Cool.: Infact.

Wyes IF Yes
Lulo | No emp. Seminal of the semina Time: Sampler - UPS - Bus - Other: Delivered By: (Circle One)

† Cardinal cannot accept verbal changes. Please fax written changes to 575-393-2476.



February 16, 2012

Bob Allen

Safety & Environmental Solutions

703 East Clinton

Hobbs, NM 88240

RE: HOL-11-017

Enclosed are the results of analyses for samples received by the laboratory on 02/09/12 14:40.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-11-3. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at <a href="https://www.tceq.texas.gov/field/ga/lab">www.tceq.texas.gov/field/ga/lab</a> accredited certif.html.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2 Haloacetic Acids (HAA-5)
Method EPA 524.2 Total Trihalomethanes (TTHM)
Method EPA 524.4 Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

Celeg & Keine

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Lab Director/Quality Manager



# Analytical Results For:

Safety & Environmental Solutions Bob Allen 703 East Clinton Hobbs NM, 88240

Fax To: (575) 393-4388

Received:

02/09/2012

Sampling Date:

02/08/2012

Reported:

BTEX 8021B

02/16/2012

Sampling Type:

Soil

True Value QC

2500

RPD

2.28

Qualifier

Cool & Intact

Project Name:

HOL-11-017

Sampling Condition: Sample Received By:

Jodi Henson

Project Number:

NAVAJO APACHE DAD LATERAL

mg/kg

Result

340

Reporting Limit

100

Analyzed By: AP

Project Location: LOCO HILLS, NM

	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	< 0.050	0.050	02/16/2012	ND	1.93	96.5	2.00	16.0	
Toluene*	<0.050	0.050	02/16/2012	ND	2.09	105	2.00	15.8	
Ethylbenzene*	<0.050	0.050	02/16/2012	ND	2.15	107	2.00	15.0	
Total Xylenes*	<0.150	0.150	02/16/2012	ND	6.65	111	6.00	15.5	
Surrogate: 4-Bromofluorobenzene (PIL	110 9	% 64.4-13	4	-					
TPH 418.1	mg/	kg	Analyze	d By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TPH 418.1	113	100	02/10/2012	ND	2570	103	2500	2.28	
Sample ID: TT - 3 7' BGS (H20 BTEX 8021B	0335-02 <u>)</u> mg/		Analyze	d By: AP					
·			Analyze Analyzed	d By: AP  Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
BTEX 8021B	mg/	kg	<u> </u>	<del>-</del>	BS 1.93	% Recovery 96.5	True Value QC 2.00	RPD 16.0	Qualifier
Analyte	mg/ Result	Reporting Limit	Analyzed	Method Blank		•	•		Qualifier
Analyte Benzene*	mg/ Result <0.050	Reporting Limit	Analyzed 02/16/2012	Method Blank	1.93	96.5	2.00	16.0	Qualifier
Analyte Benzene* Toluene*	mg/ Result <0.050 <0.050	Reporting Limit 0.050 0.050	Analyzed 02/16/2012 02/16/2012	Method Blank ND ND	1.93 2.09	96.5 105	2.00 2.00	16.0 15.8	Qualifier
Analyte Benzene* Toluene* Ethylbenzene*	mg/ Result <0.050 <0.050 <0.050	Reporting Limit 0.050 0.050 0.050 0.150	Analyzed 02/16/2012 02/16/2012 02/16/2012 02/16/2012	Method Blank ND ND ND	1.93 2.09 2.15	96.5 105 107	2.00 2.00 2.00	16.0 15.8 15.0	Qualifier

Cardinal Laboratories \*=Accredited Analyte

Method Blank

ND

BS

2570

% Recovery

103

Analyzed

02/10/2012

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Celeg & Keine

Analyte

**TPH 418.1** 

Celey D. Keene, Lab Director/Quality Manager



# Analytical Results For:

Safety & Environmental Solutions Bob Allen 703 East Clinton Hobbs NM, 88240

Analyzed By: AP

Fax To: (575) 393-4388

Received:

02/09/2012

Sampling Date:

02/09/2012

Reported:

02/16/2012

Sampling Type:

Soil

Project Name:

BTEX 8021B

Sampling Condition:

Cool & Intact

Project Number:

HOL-11-017

Sample Received By:

Jodi Henson

Project Location:

LOCO HILLS, NM

NAVAJO APACHE DAD LATERAL

# Sample ID: TT - 2 10' BGS (H200335-03)

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<1.00	1.00	02/16/2012	ND	1.93	96.5	2.00	16.0	
Toluene*	19.9	1.00	02/16/2012	ND	2.09	105	2.00	15.8	
Ethylbenzene*	23.7	1.00	02/16/2012	ND	2.15	107	2.00	15.0	
Total Xylenes*	41.7	3.00	02/16/2012	ND	6.65	111	6.00	15.5	
Surrogate: 4-Bromofluorobenzene (PIL	124	% 64.4-13	4					-	
TPH 418.1	mg,	/kg	Analyze	d By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TPH 418.1	5180	100	02/10/2012	ND	2570	103	2500	2.28	
Sample ID: TT - 1 11' BGS (H20	0335-0	4)							
· · · · · · · · · · · · · · · · · · ·		•							
BTEX 8021B	mg	/kg		d By: AP					S-04
Analyte	<b>mg</b> , Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	<b>S-04</b> Qualifier
BTEX 8021B	mg	/kg		-	8S 1.93	% Recovery 96.5	True Value QC 2.00	RPD 16.0	
Analyte	<b>mg</b> , Result	Reporting Limit	Analyzed	Method Blank		•	•		
Analyte  Benzene*	Result	Reporting Limit	Analyzed 02/16/2012	Method Blank	1.93	96.5	2.00	16.0	
Analyte  Benzene*  Toluene*	mg, Result 8.24 101	Reporting Limit 1.00 1.00	Analyzed 02/16/2012 02/16/2012	Method Blank ND ND	1.93 2.09	96.5 105	2.00	16.0 15.8	
Analyte  Benzene*  Toluene*  Ethylbenzene*	Result 8.24 101 82.4	Reporting Limit 1.00 1.00 1.00 3.00	Analyzed 02/16/2012 02/16/2012 02/16/2012 02/16/2012	Method Blank  ND  ND  ND	1.93 2.09 2.15	96.5 105 107	2.00 2.00 2.00	16.0 15.8 15.0	
Analyte  Benzene*  Toluene*  Ethylbenzene*  Total Xylenes*	Result 8.24 101 82.4 132	Reporting Limit  1.00  1.00  1.00  3.00  64.4-13	Analyzed  02/16/2012  02/16/2012  02/16/2012  02/16/2012	Method Blank  ND  ND  ND	1.93 2.09 2.15	96.5 105 107	2.00 2.00 2.00	16.0 15.8 15.0	
BTEX 8021B  Analyte  Benzene*  Toluene*  Ethylbenzene*  Total Xylenes*  Surrogate: 4-Bromafluorobenzene (PIL	mg, Result 8.24 101 82.4 132	Reporting Limit  1.00  1.00  1.00  3.00  64.4-13	Analyzed  02/16/2012  02/16/2012  02/16/2012  02/16/2012	Method Blank ND ND ND ND ND	1.93 2.09 2.15	96.5 105 107	2.00 2.00 2.00	16.0 15.8 15.0	

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Celey & Kune

Celey D. Keene, Lab Director/Quality Manager



### **Notes and Definitions**

S-04 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

\*\* Samples not received at proper temperature of 6°C or below.

••• Insufficient time to reach temperature.

Chloride by SM4500Cl-B does not require samples be received at or below 6°C

Samples reported on an as received basis (wet) unless otherwise noted on report

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Celey D. Kune

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

# CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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Project Manage	m Hiler Bow	The state of the s	P.O. #:	
Address: 7	03 (J. (C. (127.70))		Сощрану:	
City: (Acc ks)	C > State of Clive	Zip: 88240	Atin: ,,	
Phone #: 57	5-317. CSTO Fax#:		Address: (1) iv	
Project #: CFC	L-11-C-7 Project Owner:	Hc//4		
Project Name:	City Spacific Day	L. 1772-24.7-1	State: Zip:	
Project Locatio	Project Location: because (A-11) D. W. SA	K.	Phone #:	2 ? 3 / J
Sampler Name:	Just 5000		Fax#:	8
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□ No 'Add'l Phone #: Phone Result: U Yes
Fax Result: C Yes
REMARKS: Cool Intact, (Intigls) Time: Delivered By: (Circle One) Sampler - UPS - Bus - Other:

† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476

Page 5 of 5