EXPLORING WHAT'S POSSIBLE



### **APACHE CORPORATION**

P.O.Box 1849 Eunice, NM 88231 Phone 575.394.3159

# Loco Federal #001 2RP-1661

# **Termination Request**

API 30-015-30144

Release Date: March 11<sup>th</sup>, 2013

Unit Letter B, Section 21, Township 17S, Range 30E

### Rice Environmental Consulting & Safety

P.O. Box 2948, Hobbs, NM 88241 Phone 575.393.2967

### January 7<sup>th</sup>, 2014

### Mike Bratcher

New Mexico Energy, Minerals, & Natural Resources Oil Conservation Division, Environmental Bureau – District 2 811 S. First St. Artesia, NM 88210

### RE: Termination Request Apache Corporation – Loco Federal #001 (2RP-1661) UL/B sec. 21 T17S R30E API No. 30-015-30144

Mr. Bratcher:

Apache Corporation (Apache) has retained Rice Environmental Consulting and Safety (RECS) to address potential environmental concerns at the above-referenced site.

### **Background and Previous Work**

The site is located approximately 0.4 miles northeast of Loco Hills, New Mexico at UL/B sec. 21 T17S R30E. This site is in an area of no known groundwater.

On March 11<sup>th</sup>, 2013, Apache discovered a hole in the main production tank at the Loco Federal #001. A total of 95 barrels of oil was released, which covered 3,470 square feet inside the bermed tank battery. A vacuum truck was called to the site and removed the remaining oil from the tank. Approximately 90 barrels of oil were placed into the secondary production tank and re-circulated. The damaged tank was repaired. A hydrovac was called to the site to remove the wet soil from the battery. NMOCD was notified of the release on March 11<sup>th</sup>, 2013 and the initial C-141 was approved on May 28<sup>th</sup>, 2013 (Appendix A).

RECS personnel were on site beginning on March 11<sup>th</sup>, 2013 to assess the release. The release was sampled at the surface in three locations and the samples were taken to a commercial laboratory for analysis (Figure 1). Laboratory chloride readings returned results below regulatory standards at Pt. 1 and Pt. 2 and a result of 5,400 mg/kg at Pt. 3. Gasoline Range Organics (GRO) readings and Diesel Range Organics (DRO) readings were elevated at all three points (Appendix B).

The release area was scraped down to 1 ft bgs by hand. On April 2<sup>nd</sup>, 2013, a 5 point composite sample was taken at the base of the 1 ft scrape and sent to a commercial laboratory for analysis. The laboratory analyses returned a chloride result of 448 mg/kg, a GRO result of 3,050 mg/kg and a DRO result of 12,300 mg/kg (Appendix C). Apache met with NMOCD on May 21<sup>st</sup>, 2013 and NMOCD requested that individual samples from the base of the 1 ft scrape be taken to determine if the entire area showed elevated

constituent readings or if the elevated readings were from only one location. On May 28<sup>th</sup>, 2013, individual samples throughout the bottom of the release were taken to a commercial laboratory for analysis (Figure 2). Laboratory analysis of the individual points returned relatively low GRO readings but elevated DRO readings (Appendix C).

On November 18<sup>th</sup>, 2013, the site was delineated vertically at Pt. 1, Pt. 2 and Pt. 5. These three points showed the highest concentrations from the previous sampling event (Figure 3). Pt. 1 and Pt. 2 were hand augured to a depth of 2 ft bgs and Pt. 5 was hand augured to a depth of 3 ft bgs. All samples were taken to a commercial laboratory for analysis of GRO and DRO. All three sample points returned GRO and DRO results below regulatory standards at 2 ft bgs (Appendix C).

Based on the vertical laboratory data, Apache asked NMOCD and BLM for approval to backfill the site. On December 10<sup>th</sup>, 2013, NMOCD approved the site to be backfilled and on December 11<sup>th</sup>, 2013, BLM approved the site to be backfilled. A total of 144 yards of caliche was imported to the site to serve as backfill. A sample of the caliche was taken to a commercial laboratory for analysis and returned a chloride reading of 128 mg/kg (Appendix C). The site was backfilled with the clean, imported caliche and contoured to the surrounding location.

Photo documentation of these activities can be found in Appendix D.

Given that the majority of the contamination has been removed from the site, and the remaining constituents pose no threat to groundwater, Apache respectfully requests 'remediation termination' and site closure. A final C-141 can be found in Appendix E.

RECS appreciates the opportunity to work with you on this project. Please call Hack Conder at (575) 393-2967 or me if you have any questions or wish to discuss the site.

Sincerely,

JC.W

Lara Weinheimer Project Scientist RECS (575) 441-0431

Attachments:

Figure 1 – Initial Sampling Data

Figure 2 – Individual Sampling Data

Figure 3 – Individual Sampling Data

Appendix A – Initial C-141

Appendix B – Initial Sampling Lab

Appendix C – Scrape Sampling Labs

Appendix D – Photo Documentation

Appendix E – Final C-141



Figures

RICE Environmental Consulting and Safety (RECS) P.O. Box 2948, Hobbs, NM 88241 Phone 575.393.2967

### **Initial Sampling Data**



### Individual Sampling Data

á.



### Individual Sampling Data



# Appendix A Initial C-141

RICE Environmental Consulting and Safety (RECS) P.O. Box 2948 Hobbs, NM 88241 Phone 575.393.2967

District L State of	Those Maying
I625 N. French Dr., Hobbs, NM 88240 District II Energy Minerals	Is and Natural Resources MAY 17 2013 Revised October 10, 2003
1301 W. Grand Avenue, Artesia, NM 88210 District III	ervation Division
1000 Rio Brazos Road, Aztec, NM 87410 District IV	ith St. Francis Dr.
1220 S. St. Francis Dr., Santa Fe, NM 87505 Santa H	Fe, NM 87505 side of form
Release Notification	on and Corrective Action
NTMW 1314848582	OPERATOR 🛛 Initial Report 🗍 Final Report
Name of Company Apache Corporation 873	Contact Craig Maxwell
Address 2350 W. Marland Blvd. Facility Name Loco Federal #1	Facility Type Tank Battery
Surface Owner BLM Mineral Owner	
	APT: 30-015-30/44
LOCATIC	UN OF RELEASE
B 21 17S 30E 987'	FNL 2424' FEL Lea
Latitude 32°49'29.093"N	Longitude103°58'34.842"W
NATURI	E OF RELEASE
Type of Release Oil Source of Release, Hole in a tank	Volume of Release         95 barrels         Volume Recovered         90 barrels           Date and Hour of Occurrence         Date and Hour of Discovery
	3/11/13 3/11/13 12:15 pm
Was Immediate Notice Given?	ed Mike Bratcher
By Whom? Natalic Gladden, Apache Corp.	Date and Hour 3/11/13 3:35 pm
Was a Watercourse Reached?	If YES, Volume Impacting the Watercourse.
Les Wetenseurse uns lemmeted Describe Fully *	
It a watercourse was impacted, Describe Funy.	
Describe Cause of Problem and Remedial Action Taken *	
The pumper arrived on site to find that the main production tank was lea	eaking through a hole in the bottom of the tank. The remaining liquid in the tank
was removed by vacuum truck and approximately 90 barrels of oil was remained inside the battery's containment walls of the unlined facility.	The corroded tank was repaired.
· · · · ·	
Describe Area Affected and Cleanup Action Taken.*	hydrovac was called to the site to remove the wet soil. Starting on March 11 <sup>th</sup>
2013, the site was excavated down one foot. A 5 pt composite sample	e of the bottom of the excavation was taken to a commercial laboratory for analysis.
I hereby certify that the information given above is true and complete to	to the best of my knowledge and understand that pursuant to NMOCD rules and
regulations all operators are required to report and/or file certain release	se notifications and perform corrective actions for releases which may endanger
should their operations have failed to adequately investigate and remed	diate contamination that pose a threat to ground water, surface water, human health
or the environment. In addition, NMOCD acceptance of a C-141 report federal, state, or local laws and/or regulations.	rt does not relieve the operator of responsibility for compliance with any other
1	OIL CONSERVATION DIVISION
Signature: ( Loig Madwell	<i>A</i> .1 ,
Drinted Name: Craig Maxwell	Approved by District Supervisor: Signed By Mily Deservice
	MAY 2 8 2013
Title: Production Foreman	Approval Date: Expiration Date:
E-mail Address: Craig.maxwell@apachecorp.com	Conditions of Approval:
Date: 5-17-13 Phone: (575) 441-2568	Remediation per OCD Rule &
* Attach Additional Sheets If Necessary	PROPOSAL NO LATER THAN 2RP-1/2/21
	June 28, 2013

# Appendix B Initial Sampling Lab

RICE Environmental Consulting and Safety (RECS) P.O. Box 2948 Hobbs, NM 88241 Phone 575.393.2967



March 14, 2013

NATALIE GLADDEN

APACHE - EUNICE

P. O. BOX 1849

EUNICE, NM 88231

RE: LOCO FEDERAL #1 CENTRAL BATTERY

Enclosed are the results of analyses for samples received by the laboratory on 03/12/13 16:25.

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.

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,

Celeg D. Keine

Celey D. Keene Lab Director/Quality Manager



APACHE - EUNICE NATALIE GLADDEN P. O. BOX 1849 EUNICE NM, 88231 Fax To: 394-2425

Received:	03/12/2013	Sampling Date:	03/11/2013
Reported:	03/14/2013	Sampling Type:	Soil
Project Name:	LOCO FEDERAL #1 CENTRAL BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

### Sample ID: PT 1 (H300620-01)

Chloride, SM4500Cl-B	mg/	'kg	Analyze	d By: DW						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	oride <b>176</b> 16.0		.6.0 03/13/2013 ND			112	400	3.64		
TPH 8015M	mg/	'kg	Analyzed By: MS						S-06	
Analyte	alyte Result Reporting Lin		Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	28000	50.0	03/13/2013	ND	209	105	200	2.42		
DRO >C10-C28	<b>C28 36800</b> 50.0		03/13/2013	ND	208	104	200	3.91		
Surrogate: 1-Chlorooctane	359 9	% 65.2-14	0							
Surrogate: 1-Chlorooctadecane	1160	% 63.6-15	4							

### Sample ID: PT 2 (H300620-02)

Chloride, SM4500CI-B	mg/	/kg	Analyze	d By: DW					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	⊤rue Value QC	RPD	Qualifier
Chloride	<16.0	16.0	03/13/2013	ND	448	112	400	3.64	
TPH 8015M	mg/kg		Analyze	d By: MS					S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	31900	50.0	03/13/2013	ND	209	105	200	2.42	
DRO >C10-C28	37200	50.0	03/13/2013	ND	208	104	200	3.91	
Surrogate: 1-Chlorooctane	364 9	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	1120	% 63.6-15	4			7			

#### **Cardinal Laboratories**

#### \*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whistoever 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 Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incured by subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such damin is based upon any of the above stated reasons or otherwise. Results related only to the samples identified above. This report shall not be reprodued except in full with writer approval of Cardinal Loratorates.

Celey D. Keine

Celey D. Keene, Lab Director/Quality Manager



APACHE - EUNICE NATALIE GLADDEN P. O. BOX 1849 EUNICE NM, 88231 Fax To: 394-2425

Received:	03/12/2013	Sampling Date:	03/11/2013
Reported:	03/14/2013	Sampling Type:	Soil
Project Name:	LOCO FEDERAL #1 CENTRAL BATTERY	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

### Sample ID: PT 3 (H300620-03)

Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: DW					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<b>5400</b> 16.0		03/13/2013 ND		448	112	400	3.64	
TPH 8015M mg/kg		kg	Analyze	d By: MS					S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	15600	50.0	03/13/2013	ND	209	105	200	2.42	
DRO >C10-C28	<b>28600</b> 50.0		03/13/2013	ND	208	104	200	3.91	
Surrogate: 1-Chlorooctane	288 9	65.2-14	0	<u> </u>					
Surrogate: 1-Chlorooctadecane	869 9	63.6-15	4						

#### Cardinal Laboratories

#### \*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited 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 Cardinal be lable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be lable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim 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 writen approval of Cardinal Liaboratories.

Celey D. Keine

Celey D. Keene, Lab Director/Quality Manager



### **Notes and Definitions**

S-06	The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
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

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by clent 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 Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above states reasons or otherwise. Results relate only to the sample identified above. This report shall not be reproduced except in full with writen approval of Cardinal laboratories.

Celey D. Keine

Celey D. Keene, Lab Director/Quality Manager

Page 4 of 5



### CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

S

Page 5 of !

Company Name	e: AVATHE	2						e#	- 20		11 A S	510		2	1			ΔΝΛ	IVe			ST			
Project Manage	er: 1/D+TA1 16	E CIIDI	15	$\overline{V}$	·			P.(	0. #					<u> </u>			1					<u></u>	T		1
Address:		<u> </u>	<u>.</u>	<b>د</b> _	·			C.	mp	anv:	··· <u>-</u>	<u> </u>		1	ł.							} ·			
City		State:	Zin			·	•		tn:		<u> </u>			t.	Į.		[					ŀ	{ .		
Phone #:	······································	Fax #:	<u> </u>					Ad	ldre	ss:				1	8		ŀ								
Proiect #:		Project Owne	er:					Cit	v:					1											
Project Name:								Sta	ate:		Zip:			1 1	N				1	ļ			4		
Project Locatio	n: LOCO FE	DERAL	Æ,	1	•.			Ph	one	#:				1 Å	8								ŀ .		
Sampler Name:	RODER	KK WIL	2/1	gph.	3			Fa	x #:	·		:		1 Q			<b>.</b>	ľ					Ľ		·
FOR LAB USE ONLY					- T	MAT	RIX		PR	SER	v. s	AMPL	ING	K	£						1	( ·			. 
			NO NO	σ	<u>ж</u>  "		·							2			ŀ.				1 :			. ·	
l ah I D	Sample	תו	10	NER	ATEI				Ш.	-			· .	δ I	K			ł	·		·. ·			:	
	Campio		AB O	NTA					/BAS	8	н. Н						. ·	1		· ·			ŀ	· ·	
4300625			G)R/		NAS	SOIL		DIH	ACID		H D	ATE	TIME					<u> </u> .							
(	PTI	<b>/</b>	G			1				1	3-1	1-13		1	~	,	1	1	1	1	<u>†</u>		1.	<u> </u>	
2	PT2		3	1		/				1.	3-11	1-13		1	$\overline{\mathbf{X}}$									·	
3	FT3		G					_		1	3./	1-13		12	1.		· .	· ·		<u> </u>			ļ		
· · · · · · · · · · · · · · · · · · ·	· · ·		<u> </u>			┞╌╟					1			ļ		· · ·	ļ	ļ		<u> </u>		<b> </b>	ļ	<u> </u>	<u> </u>
				-		╆╌╁			·					<u> </u>			-		ļ	İ		·			<u> </u>
·····		-		┝┼	+	$\left\{ \cdot \cdot \right\}$				_		· · ·							<u> </u>					<b> </b>	<u></u> :
· .		· · ·	-		+	<u></u> +		+-		-+		•		<u> </u>			· ·								<u> </u>
· · · ·					÷.	╏─┤		<u> </u>								_				<u> </u>					
			1			$\mathbf{f}$					- T -			1				<u> </u>	· ·	<u> </u>	<u>†                                    </u>				1
LEASE NOTE: Liability a nalyses, All claims includi	ind Damages. Cardinal's fability and ing those for negligence and any oth	client's exclusive remedy for er cause whatsoever shall be	any clair deeme	m arising d waived	whether unless m	based i ade in v	n contra Artiting a	ect or tor Ind recei	t, shall ived by	be limit Cardin	led to the a al within 30	mount pai days afte	id by the client fo er completion of t	r the he applica	ble					· · · ·					
ervice. In no event shall C ffillates or successors aris	Cardinal be liable for incidental or cor ling out of or related to the performan	nsequental damages, includin ice of services hereunder by	ng withou Cardinal	n limitatio , regardia	in, busin iss of wh	ess inte nether si	ruption Ich clai	s, loss o m is bas	fuse, ed.upo	or loss o n any of	of profits inc f the above	etated re	client, its subsidi asons or otherwi	aries, se						وراري الم					
Relinquished B	¥:	Date: 3-12-19		ceive	d By	•	N		Å			•	Phone Re Fax Resu	sult: it:	□ Ye □ Ye	s 🗆 s 🗆	No No	Add'l Add'l	Phone Fax #:	#:					<u></u>
15_1	Ln	- 14:25	U	Û	U	~	КЦ	M	A	Ø			REMARK	S:											
Relinquished B	y:	Date:	De	ceive	d By	:	•													۰.					÷.
	· · · · · · · · · · · · · · · · · · ·	Time:	-							•															۰ ۱
Delivered By	: (Circle One)				San	nple (	Cond	ition		CHEC	CKED E	BY:								• -					
Sampler - UPS	- Bus - Other:	-	20		Co	Yes	ntact	es	:		新					•									
-	· · ·	·	<u>v (</u>			No		lo'	Ŀ	ĽX	<u>/``</u>		1												-

## Appendix C Scrape Sampling Labs

RICE Environmental Consulting and Safety (RECS) P.O. Box 2948 Hobbs, NM 88241 Phone 575.393.2967



April 05, 2013

NATALIE GLADDEN

APACHE - EUNICE

P. O. BOX 1849

EUNICE, NM 88231

RE: LOCO FEDERAL BATTERY #1

Enclosed are the results of analyses for samples received by the laboratory on 04/03/13 8:50.

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.

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,

Celeg D. Keen

Celey D. Keene Lab Director/Quality Manager



APACHE - EUNICE NATALIE GLADDEN P. O. BOX 1849 EUNICE NM, 88231 Fax To: 394-2425

Received:	04/03/2013	Sampling Date:	04/02/2013
Reported:	04/05/2013	Sampling Type:	Soil
Project Name:	LOCO FEDERAL BATTERY #1	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

### Sample ID: 5 PT. COMP @ 1' (H300783-01)

Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: DW					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	448	16.0	04/03/2013	ND	432	108	400	0.00	
ТРН 8015М	kg	Analyzed By: MS						S-06	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	3050	50.0	04/04/2013	ND	189	94.6	200	0.711	
DRO >C10-C28	12300	50.0	04/04/2013	ND	188	93.9	200	0.621	
Surrogate: 1-Chlorooctane	300 9	65.2-14	0						
Surrogate: 1-Chlorooctadecane	400 \$	63.6-15	4						

#### Cardinal Laboratories

#### \*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including these for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) cays after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claims bedues table reasons or obmerike. Results relate only to the sample identitied above. This report shall not be reproduced except in full with writen approval of Cardinal Linetation.

Celug D. Kune

Celey D. Keene, Lab Director/Quality Manager

Page 2 of 4



### **Notes and Definitions**

S-06	The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
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 $6^{\circ}$ C
	Samples reported on an as received basis (wet) unless otherwise noted on report

### **Cardinal Laboratories**

### \*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any daim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whetscever shall be detened waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including whother this subsidiaries, affiliates or successors anism 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 Laboratories.

Celez D. Kune

Celey D. Keene, Lab Director/Quality Manager

Page 3 of 4

### CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

5

ARDINAL LABORATORIES

· · ·	101 East Marland, H (505) 393-2326 FA	lobbs, NM 88 \X (505) 393-2	240 476	21 (3	11日 25)6	leec   73-7	hwc 7001	od IF/	, Al AX	bile (32	ne, 5)67	ТХ 73-7	79603 7020			-		-		,		·	•			
Company Nam	e: Apache Corp.				·····					Mill	1	ŝĨ.	1.10		1				ANA	LYSI	S. RE	QUE	ST			
Project Manag	er: Natalie Gladden			•••					Ρ.(	0. #						· ·	1			· ·		T	T	·· ·	·	<u> </u>
Address:		•							Ċo	mpa	any:			. *	]				S	· ·	]		ļ	·		
City:		State:	Zip	):					At	tn:									U N	ĺ			1			
Phone #:	· ·	Fax #:							Ad	dres	ss:				ľ			•	i		<b>.</b>	1			ľ '	
Project #:		Project Owne	r:	٠.	·····				City:				IΣ		-	45	•	1	[							
Project Name:	Low Fed A	SHAN I	1 %	20				State: Zip:			es es	2		Ē	Ë			1	Į.							
Project Locatio	on:								Phone #:			12	δ	<b>ω</b>	l s	ji ji	N N			1			· ·			
Sampler Name	: JKAMPLAIN								Fa	x #:					1은		E E	ğ	Ö			1	1		1	
FOR LAB USE ONLY	1		Ι.			MA	TRI	ζ		PRI	SER	X۷.	SAMPL	ING	10	百		6	e							
Lab I.D. H <i>300</i> 74	Sample I.	D.	(G)RAB OR (C)OMF	# CONTAINERS	GROUNDWATER	WAS I EWAI EK SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME					Comple							
	5 pt conple		<u>c</u>	1			1				1		4.2.13	11:30	2	1	t						<u> </u>			ļ
		<u></u>	<u> </u>			<u> </u>								, 		<u> </u>							· .		ļ	<u> </u>
	· · · · · · · · · · · · · · · · · · ·	·	ļ			4	<b> </b>			ŀ		_	<u> </u>	· · · · · · · · · · · · · · · · · · ·	<u> </u>	ļ	· ·						<b> </b>		·	
					·	-	_					+		· 						· ·						
<u>L</u>		· · · · · · · ·	-		┝╌┼╴		╂──			┝─┼		╉			· .	· · ·										
· · · · · · · · · · · · · · · · · · ·				1		+	+					╉														<u> </u>
					<u>-</u>											<u> </u>										<u> </u>
	· · · · · ·	· <u></u>				-											1						1			
PLEASE NOTE: Liability a analyses: All claims includ service. In no event shall affiliates or successors aris	and Damages. Cardinal's liability and clie fing those for negligence and any other of Cardinal be liable for incidental or consec sing out of or related to the performance	nt's exclusive remedy for a ause whatsoever shall be puental damages, including of services hereunder by C	any clai deeme 3 withou Cardinal	m arish d waive rt limita I, regan	ng wheth ed unless tion, bus dless of	ier base s made i siness in whether	d in co n writin terrupt such o	ntract ng and lions, li claim li	or tori receit oss al s base	t, shall ved by i use, o ed upor	be limit Cardin or loss o n any o	ted to al with of prof f the z	the amount pa hin 30 days aft fits incurred by above stated re	id by the client for er completion of th client, its subsidia asons or otherwis	the ne applica ries :e	ble			-							
Relinquished	ly:	E#3/13 ™5:50	Re	ceiv Q	ved B	y: 	1	Ø	e	п	\$	Ø	m	Phone Rea Fax Result REMARKS	sult: t: S:		s ⊠ s ⊠	No No	Add'l Add'l	Phone Fax #:	#:					
Relinquished B	ly:	Date: Time:	Rg	ceiv	ved B	y:								email r natalie	esul .glad	lts dden	@ap	ache	ecorp	.con	) Drica			•		
Delivered By Sampler - UPS	: (Circle One) - Bus - Other:	•	·	10	Sa C	ample ool gree No	Cor Inta s 1	nditi ct Yes No	on	(	СНЕС		D BY: (s)	hconde JKAMI	er@i PLAI	rice- N@	ecs. ecs.c RICE	om; om; -EC	ьра Lwei S.CC	nhei M	yrice mer(	ecs @rice	e-ecs	.con	I;	

† Cardinal cannot accept verbal changes. Please fax written changes to 505-393 (476 # 26

4



### Analytical and Quality Control Report

Steven Fleming Apache Corp. - Midland 303 Veterans Airpark Lane Suite #3000 Midland, TX, 79705

Report Date: June 4, 2013

### Work Order: 13053007

Project Name: Loco Federal #1 NM Project Number: Loco Federal #1 NM

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
330406	Sample Pt. 1 @ 1'	soil	2013-05-28	10:00	2013-05-28
330407	Sample Pt. 2 @ 1'	soil	2013 - 05 - 28	10:05	2013-05-28
330408	Sample Pt. 3 @ 1'	. soil	2013 - 05 - 28	10:10	2013-05-28
330409	Sample Pt. 4 @ 1'	soil	2013-05-28	10:15	2013-05-28
330410	Sample Pt. 5 @ 1'	soil	2013 - 05 - 28	10:20	2013-05-28

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 15 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Michael Ala

Dr. Blair Leftwich, Director Dr. Michael Abel, Project Manager

### **Report Contents**

### Case Narrative

Analytical Report	<b>5</b>
Sample 330406 (Sample Pt. 1 @1')	5
Sample 330407 (Sample Pt. 2 @1')	5
Sample 330408 (Sample Pt. 3 @1')	6
Sample 330409 (Sample Pt. 4 @1')	7
Sample 330410 (Sample Pt. 5 @1')	8
Method Blanks	9
QC Batch 101923 - Method Blank (1)	9
QC Batch 101968 - Method Blank (1)	9
Laboratory Control Spikes	10
OC Batch 101923 - LCS (1)	10
OC Batch 101968 - LCS (1)	10
OC Batch 101903 - MS (1)	11
QC Batch 101925 - MS (1)	11
Calibration Standards	12
QC Batch 101923 - CCV (1)	12
QC Batch $101923 - CCV(2)$	12
QC Batch 101923 - CCV (3)	12
QC Batch 101968 - CCV $(1)$	12
QC Batch 101968 - CCV (2)	12
Appendix	<b>14</b>
Report Definitions	14
Laboratory Certifications	14
Standard Flags	14
Result Comments	14
Attachments	15

 $\mathbf{4}$ 

Page 3 of 15

### Case Narrative

Samples for project Loco Federal #1 NM were received by TraceAnalysis, Inc. on 2013-05-28 and assigned to work order 13053007. Samples for work order 13053007 were received intact at a temperature of 10.0 C.

Samples were analyzed for the following tests using their respective methods.

		Prep	Prep	$\rm QC$	Analysis
Test	Method	$\operatorname{Batch}$	Date	Batch	Date
TPH DRO - NEW	S 8015 D	86354	2013-06-02 at 12:00	101923	2013-06-03 at 09:24
TPH GRO	S 8015 D	86391	2013-06-03 at 15:36	101968	2013-06-03 at 15:36

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 13053007 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Report Date: June 4, 2013 Loco Federal #1 NM Work Order: 13053007 Loco Federal #1 NM Page Number: 5 of 15

### **Analytical Report**

### Sample: 330406 - Sample Pt. 1 @ 1'

Laboratory: Analysis: QC Batch: Prep Batch:	Lubboc TPH D 101923 86354	k RO - NEV	W	Ana Date Sam	ytical Metho Analyzed: ple Preparat	od: S 8015 2013-06 ion: 2013-06	D 03 02	Prep Me Analyzec Preparec	thod: N/A l By: CM l By: CM
					1	RL			
Parameter			Flag	$\operatorname{Cert}$	Res	ult	Units	Dilution	$\operatorname{RL}$
DRO				1	96	30	mg/Kg	5	50.0
0		101			<b>TT T</b>		Spike	Percent	Recovery
Surrogate		Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
n-Tricosane	Qsr	Qsr		456	mg/Kg	5	100	456	70 - 130

### Sample: 330406 - Sample Pt. 1 @ 1'

Laboratory: Analysis: QC Batch: Prep Batch:	Lubbock TPH GRO 101968 86391		A L S	Analytica Date Ana ample F	al Method alyzed: Preparation	: S 8015 2013-0 n: 2013-0	D 6-03 6-03		Prep Metho Analyzed B Prepared B	od: S 5035 y: MT y: MT
						$\operatorname{RL}$				
Parameter		Flag		Cert	Ι	Result	Uni	ts	Dilution	$\operatorname{RL}$
GRO				1		544	mg/K	g	20	4.00
Surrogate			Flag	$\operatorname{Cert}$	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotolue	ene (TFT)				1.65	mg/Kg	20	2.00	82	69.6 - 124
4-Bromofluor	obenzene (4-BFB)	Qsr	$\mathbf{Qsr}$		23.0	mg/Kg	20	2.00	1150	77.7 - 120

### Sample: 330407 - Sample Pt. 2 @ 1'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	101923	Date Analyzed:	2013-06-03	Analyzed By:	ĊM
Prep Batch:	86354	Sample Preparation:	2013-06-02	Prepared By:	CM

Report Date Loco Federal	: June 4, 2 l #1 NM	013		Work Order: 13053007 Loco Federal #1 NMPage Number Loco Federal #1 NMRL CertRE ResultUnitsDilutionPoilution $i$ 7380mg/Kg5ResultUnitsDilutionAmountRecovery450mg/Kg5100450450mg/Kg51004501'Analytical Method:S 8015 D 2013-06-03Prep Method Analyzed By: 					ber: 6		
							$\operatorname{RL}$				
Parameter			Flag		Cert	I	Result	Un	its	Dilution	
DRO					1		7380	mg/I	Кg	5	
									с ·1	D (	
Cumoruto		Flor	Cont		Docult	Unita	D:1.,	tion A	эріке .	Percent	Keco Lin
n Tricorano		riag	Cert		<u>450</u>	mg/Kg			100	450	70
n-mcosane	Qsr	Qsr		•	400	mg/ Rg	, t	)	100	450	10 -
Sample: 33	0407 Sa	mplo Di	• <b>າ</b> @	1,							
Sample: 55	0407 - 58	inple F	. 2 @	T							
Laboratory:	Lubbock										
Analysis:	TPH GR	0			Analytica	al Method	: S 8015	D		Prep Meth	od: S
QC Batch:	101968				Date Ana	alyzed:	2013-0	6-03		Analyzed I	By: M
Prep Batch:	86391				Sample P	reparation	n: 2013-0	6-03		Prepared E	By: M
Ð			171		0	T	RL		•		
Parameter			Flag		Cert	l	lesult	Un	its	Dilution	
GRO					1		238	.mg/l	Хg	20	
									Spike	Porcont	Reco
Surrogate				Flag	Cert	Result	Units	Dilution	Amount	Becovery	Lin
Triffuorotolu	ene (TFT)			1108	OCIU	1 77	mg/Kg	20	2.00	88	69.6
4-Bromofluor	obenzene (	4-BFB)	Osr	Ost		12.3	mg/Kg	20 20	2.00 2.00	615	77 7
	0.000.0000	( 2.2)				12.0			2.00		
		•									
Sample: 33	0408 - Sa	mple Pt	. 3 @	1'							
Sample: 33	0408 - Sa	mple Pt	. 3 @	1'							
Sample: 33	0408 - Sa Lubbock	mple Pt	. 3 @	1'	A	1. 4 <b>:</b> . 1 N 4	the d	0015 D			1.1
Sample: 33 Laboratory: Analysis:	0408 - Sa Lubbock TPH DR(	mple P( O - NEW	7. 3 @	1'	Ana	lytical Me	thod: S	8015 D		Prep Me	thod:
Sample: 33 Laboratory: Analysis: QC Batch:	0408 - Sa Lubbock TPH DR( 101923	mple Pt 0 - NEW	2.30	1'	Ana Date	lytical Me e Analyzeo ala Para	thod: S 1: 20	8015 D 013-06-03		Prep Me Analyzec	thod: I By:
Sample: 33 Laboratory: Analysis: QC Batch: Prep Batch:	0408 - Sa Lubbock TPH DR 101923 86354	mple Pt	2.3@	1'	Ana Date Sam	lytical Me e Analyzec ple Prepa	thod: S 1: 20 ration: 20	8015 D 013-06-03 013-06-02		Prep Me Analyzec Prepared	thod: l By:   By:
Sample: 33 Laboratory: Analysis: QC Batch: Prep Batch:	0408 - Sa Lubbock TPH DR 101923 86354	mple P( O - NEW	7. 3 @	1'	Ana Date Sam	lytical Me e Analyzeo ple Prepa	thod: S 1: 20 ration: 20 RL	8015 D 013-06-03 013-06-02		Prep Me Analyzec Prepared	thod: l By:   By:
Sample: 33 Laboratory: Analysis: QC Batch: Prep Batch: Parameter	0408 - Sa Lubbock TPH DR/ 101923 86354	mple P( O - NEW	7 <b>3</b> @	1'	Ana Date Sam Cert	lytical Me e Analyzec ple Prepa I	thod: S d: 20 ration: 20 RL Result	8015 D 013-06-03 013-06-02 Un	its	Prep Me Analyzec Prepared Dilution	thod: I By: I By:
Sample: 33 Laboratory: Analysis: QC Batch: Prep Batch: Parameter DRO	0408 - Sa Lubbock TPH DR 101923 86354	mple P(	7 Flag	1'	Ana Dato Sam Cert	lytical Me e Analyzeo ple Prepa I	thod: S d: 24 ration: 26 RL Result <b>2610</b>	8015 D 013-06-03 013-06-02 Un Un	its	Prep Me Analyzec Prepared Dilution 5	thod: l By:   By:
Sample: 33 Laboratory: Analysis: QC Batch: Prep Batch: Parameter DRO	0408 - Sa Lubbock TPH DR 101923 86354	mple Pf	7 Flag	1'	Ana Date Sam Cert	lytical Me e Analyzeo ple Prepa I	thod: S 1: 20 ration: 20 RL Result <b>2610</b>	8015 D 013-06-03 013-06-02 Un Un	its (g	Prep Me Analyzed Prepared Dilution 5	thod: l By: l By:
Sample: 33 Laboratory: Analysis: QC Batch: Prep Batch: Parameter DRO	0408 - Sa Lubbock TPH DR 101923 86354	mple Pt	7 <b>3 @</b>	1'	Ana Date Sam Cert	lytical Me 2 Analyzeo ple Prepa I	thod: S 1: 20 ration: 20 RL Result <b>2610</b>	8015 D 013-06-03 013-06-02 Un 	its Ág Spike	Prep Me Analyzed Prepared Dilution 5 Percent	thod:   By:   By: 
Sample: 33 Laboratory: Analysis: QC Batch: Prep Batch: Parameter DRO Surrogate	0408 - Sa Lubbock TPH DR 101923 86354	mple Pt	7 <b>3 @</b> 7 Flag Cert	1'	Ana Date Sam <u>Cert</u> 1 Result	lytical Me 2 Analyzeo ple Prepa I Units	thod: S 1: 20 ration: 20 RL Result <b>2610</b> Dilu	8015 D 013-06-03 013-06-02 Un mg/J tion A	its Ág Spike amount	Prep Me Analyzed Prepared Dilution 5 Percent Recovery	thod: l By: By: Reco Lin

· .

Report Date: June 4, 2013 Loco Federal #1 NM		W L	ork Orden oco Feder	r: 13053007 al #1 NM		Page Number: 7 of 15			
Sample: 330408 - Sample P	t. 3 @	1'						·	
Laboratory: Lubbock Analysis: TPH GRO QC Batch: 101968 Prep Batch: 86391		A L S	Analytica Date Ana Sample F	al Method alyzed: Preparatio	: S 8015 2013-0 n: 2013-0	D 6-03 6-03		Prep Metho Analyzed E Prepared B	od: S 5035 3y: MT 3y: MT
					$\operatorname{RL}$				
Parameter	Flag		$\operatorname{Cert}$		Result	Uni	ts	Dilution	$\operatorname{RL}$
GRO	•		1		<80.0	mg/ŀ	(g	20	4.00
Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)				1.99	mg/Kg	20	2.00	100	69.6 - 124
4-Bromofluorobenzene (4-BFB)	Qsr		3.07	mg/Kg	20	2.00	154	77.7 - 120	

### Sample: 330409 - Sample Pt. 4 @ 1'

Laboratory: Analysis: QC Batch: Prep Batch:	Lubbock TPH DR 101923 86354	O - NEV	W	Anal Date Sam	lytical Metho Analyzed: ple Preparati	d: S 8015 2013-06 on: 2013-06	D i-03 i-02	Prep Met Analyzed Prepared	hod: N/A By: CM By: CM
					F	RL			
Parameter			Flag	Cert	Resu	ılt	Units	Dilution	$\operatorname{RL}$
DRO				1	428	80	mg/Kg	5	50.0
Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		272	mg/Kg	5	100	272	70 - 130

### Sample: 330409 - Sample Pt. 4 @ 1'

Laboratory: Analysis: QC Batch: Prep Batch:	Lubbock TPH GRO 101968 86391		Analytical M Date Analyze Sample Prepa	ethod: S 8015 cd: 2013-0 aration: 2013-0	5 D 6-03 6-03	Prep Method: Analyzed By: Prepared By:	S 5035 MT MT
				$\operatorname{RL}$			
Parameter		Flag	Cert	$\operatorname{Result}$	Units	Dilution	RL
GRO			1	- 365	mg/Kg	20	4.00

Report Date: June 4, 2013 Loco Federal #1 NM			W L	Page Num	Page Number: 8 of 15				
Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)				1.49	mg/Kg	20	2.00	74	69.6 - 124
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	•	16.3	mg/Kg	20	2.00	815	77.7 - 120

### Sample: 330410 - Sample Pt. 5 @ 1'

.

Laboratory: Lubbock Analysis: TPH DRO - NEW QC Batch: 101923 Prep Batch: 86354			Anal Date Sam	lytical Method Analyzed: ple Preparatio	l: S 8015 2013-06 on: 2013-06	D -03 -02	Prep Me Analyzec Preparec	thod: N/A l By: CM l By: CM	
					R	L			
Parameter			Flag	Cert	Resu	lt	Units	Dilution	$\operatorname{RL}$
DRO				1	543	0	mg/Kg	5	50.0
							Spike	Percent	Recovery
Surrogate		Flag	Cert	$\operatorname{Result}$	Units	Dilution	Amount	Recovery	Limits
n-Tricosane	Qsr	Qsr		386	mg/Kg	5	100	386	70 - 130

### Sample: 330410 - Sample Pt. 5 @ 1'

Laboratory: Analysis: QC Batch: Prep Batch:		Analytical Method:S 8015 DDate Analyzed:2013-06-03Sample Preparation:2013-06-03						Prep Metho Analyzed B Prepared B	od: S 5035 y: MT y: MT	
						RL				
Parameter		Flag		Cert	R	esult	Uni	ts	Dilution	$\operatorname{RL}$
GRO				1		326	mg/K	g	50	4.00
Surrogate			Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotolue	ene (TFT)				1.97	mg/Kg	50	2.00	98	69.6 - 124
4-Bromofluor	obenzene (4-BFB)	Qsr	Qsr		17.3	mg/Kg	50	2.00	865	77.7 - 120

Report Date: June 4, 2013 Loco Federal #1 NM Work Order: 13053007 Loco Federal #1 NM

### Method Blanks

Method Blank (	1) QC Ba	atch: 101923								
QC Batch: 1019 Prep Batch: 8635	)23 54		Date Ar QC Pre	nalyzed: paration:	2013-06-03 2013-06-02			Analyze Prepare	ed By: ed By:	CM CM
Parameter DRO		Flag		Cert		MDL Result 9.65		Units mg/Kg		RL 50
Surrogate	Flag	Cert	Result	Units	Dilutio	S on Ar	pike nount	Percent Recovery	Rec Li	covery mits
n-Tricosane Q	sr Qar		133	mg/Kg	1		100	133	70	- 130
Method Blank (	1) QC B	atch: 101968	3		·		-			
QC Batch: 1019 Prep Batch: 8639	968 91		Date A QC Pre	nalyzed: paration:	2013-06-03 2013-06-03			Analyze Prepare	ed By: ed By:	MT MT
Parameter GRO		Flag		Cert		MDL Result <0.230		Units mg/Kg		RL 4

							0, 0	
Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.04	mg/Kg	1	2.00	102	69.6 - 124
4-Bromofluorobenzene (4-BFB)			2.14	mg/Kg	1	2.00	107	77.7 - 120

Report Date: June 4, 2013 Loco Federal #1 NM Work Order: 13053007 Loco Federal #1 NM Page Number: 10 of 15

### Laboratory Control Spikes

### Laboratory Control Spike (LCS-1)

QC Batch: 101923 Prep Batch: 86354			Date QC	e Analyze Preparat	ed: 201 ion: 201	3-06-03 13-06-02			Analy Prepa	zed By .red By	: CM : CM
_		_		LCS			Spike	Ma	atrix		Rec.
Param		F	C	Result	Units	Dil.	Amount	Re	sult Re	ec.	Limit
DRO			1	227	. mg/Kg	1	250	9	.65 8	7	70 - 130
Percent recovery is based on the s	pike	resu	lt. RPD	is based	on the s	pike and sj	oike duplic	ate resu	ılt.		
			LCSD			Snike	Matrix		Bec		RPD
Param	F	$\mathbf{C}$	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
DRO		1	227	mg/K	g 1	250	9.65	87	70 - 130	0	20
Percent recovery is based on the s	pike	resu	lt BPD	is based	on the s	nike and si	nike duplic	ate resi	ılt		
	pino	1050		is based		pino ana si	onio aupiio				
	LO	CS	LCS	D			Spike	LC	S LCS	D	Rec.
Surrogate	Res	sult	Rest	ilt U	Jnits	Dil.	Amount	Rec	e. Rec	•	Limit
n-Tricosane	89	9.1	88.	6 n	ıg/Kg	1	100	89	89		70 - 130
Laboratory Control Spike (LO	CS-1	)									
QC Batch: 101968			Date	e Analyze	ed: 201	3-06-03			Analy	zed By	·: MT
Prep Batch: 86391			OC	Preparat	ion: 201	3-06-03			Prepa	red By	: MT
			Ū	T CS			Spiko	Mot	-r -		Bog
Param		F	C F	Result	Units	Dil	Amount	Res	ult Rec		Limit
GRO		<u> </u>	1	17.4	mg/Kg	1	20.0	<0.2	$\frac{110}{230}$ 87	66	$\frac{1}{5.9} - 120$
Percent recovery is based on the s	pike	resu	lt. RPD	is based	on the s	pike and s	oike duplic	ate resi	ılt.		
			LCSD			Spike	Matrix		Rec		RPD
Param	F	С	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
GRO		1	17.3	mg/Kg	1	20.0	< 0.230	86	66.9 - 120	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCS	LCSD			Spike	LCS	LCSD	Rec.
Surrogate	Result	Result	Units	Dil.	$\operatorname{Amount}$	Rec.	Rec.	Limit
Trifluorotoluene (TFT)	1.94	1.88	mg/Kg	1	2.00	97	94	69.6 - 124
4-Bromofluorobenzene (4-BFB)	2.16	2.14	mg/Kg	1	2.00	108	107	77.7 - 120

Report Date: June 4, 2013     Work Order: 13053007     Page Number: 11 of 15       Loco Federal #1 NM     Loco Federal #1 NM											
Matrix Spike (MS-1) Spi	ked Samp	ole: 330595	,								
QC Batch: 101923 Prep Batch: 86354		Dat QC	e Analyz Preparat	ed: 20 tion: 20	13-06-03 13-06-02			A P	nalyze repare	ed By: ed By:	CM CM
	تا تا	C	MS	Unite	L):I	Spike	Ma	atrix	Bog	] T	Rec.
Param	r		388	mg/Ke	л. т. 1	250	<u>1</u>	agunt 199	76	. <u>1</u> . 70	- 130
Parcent recovery is bused on th	o spiko re	n It RPF	$\frac{1}{1000}$	$\frac{110}{100}$	niko and si	pike duplic	ato rosi	ult			100
rencent recovery is based on th	ie spike ie	Sun. Iti L	15 Dasec	i on the s	spike and sp	pike dupite	ate rest				
		MSD	TT •,	DU	Spike	Matrix	р	Rec	•. т	מתר	RPD
Param	F (	C Result	Units	s Dil.	Amount	Kesult 100	Rec.	70 1	1t _1	$\frac{RPD}{11}$	Limit
		1 433	mg/K	<u>g</u> I	<u>200</u>	199	94	10 - 1	.50	11	20
Percent recovery is based on th	ie spike re	esult. RPI	) is based	I on the s	spike and sj	pike duplic	ate resi	ult.			
	MS	M	SD			Spike	М	S	MSD	]	Rec.
7	Rosu	lt Res	ault	Units	Dil.	Amount	Re	ec.	Rec.	Ι	limit
Surrogate	rusu	10 1000	, ciro	011100							
n-Tricosane	109		)9	mg/Kg	1	. 100	10	9	109	70	- 130
Matrix Spike (MS-1) Spi QC Batch: 101968 Prep Batch: 86391	109	Dele: 330416	)9 e Analyz Prepara	mg/Kg red: 20 tion: 20	1 13-06-03 13-06-03	. 100	10	9 A P	109 .nalyze repare	70 ed By: ed By:	- 130 MT MT
Matrix Spike (MS-1) Spi QC Batch: 101968 Prep Batch: 86391 Param	ked Samp	Dele: 330416 Dat QC	99 e Analyz Prepara MS Result	mg/Kg ed: 20 tion: 20 Units	1 13-06-03 13-06-03 Dil.	Spike Amount	10 Mat Res	9 A P srix sult	109 .nalyze repare Rec.	70 ed By: ed By: R Li	- 130 MT MT tec. mit
Matrix Spike (MS-1) Spi QC Batch: 101968 Prep Batch: 86391 Param GRO	ked Samp	Dat C	99 e Analyz Prepara MS Result 22.8	mg/Kg zed: 20 tion: 20 Units mg/Kg	1 13-06-03 13-06-03 Dil. 5	Spike Amount 20.0	10 Mat Res 5.	9 A P trix ault 6	109 .nalyze repare Rec. 86	70 ed By: ed By: R Li 38.8	- 130 MT MT tec. mit - 120
Matrix Spike (MS-1) Spi QC Batch: 101968 Prep Batch: 86391 Param GRO Percent recovery is based on th	ked Samp F	$\frac{10}{10}$	e Analyz Prepara MS Result 22.8 D is based	mg/Kg zed: 20 tion: 20 Units mg/Kg d on the s	1 13-06-03 13-06-03 Dil. 5 spike and spike and	Spike Amount 20.0 pike duplic	Mat Res 5. ate rese	9 A P srix sult 6 ult.	109 .nalyze repare Rec. 86	70 ed By: ed By: R Li 38.8	- 130 MT MT eec. mit - 120
Matrix Spike (MS-1) Spi QC Batch: 101968 Prep Batch: 86391 Param GRO Percent recovery is based on th	ked Samp F	$\frac{10}{10} \frac{10}{10}$	e Analyz Prepara MS Result 22.8 D is based	mg/Kg ed: 20 tion: 20 Units mg/Kg d on the s	1 13-06-03 13-06-03 Dil. 5 spike and spike	Spike Amount 20.0 pike duplic Matrix	Mat Res 5. ate res	A P trix sult 6 ult. Rec	109 .nalyze repare Rec. 86	70 ed By: ed By: R Li 38.8	- 130 MT MT tec. mit - 120
Matrix Spike (MS-1) Spi QC Batch: 101968 Prep Batch: 86391 Param GRO Percent recovery is based on th Param	ked Samp F ne spike re	$\frac{10}{10}$ $\frac{10}{10}$ $\frac{10}{10}$ $\frac{1}{10}$ $\frac{1}{1$	09 e Analyz Prepara MS Result 22.8 ) is based Units	mg/Kg ed: 20 tion: 20 <u>Units</u> mg/Kg d on the s Dil.	1 13-06-03 13-06-03 Dil. 5 spike and spike Amount	Spike Amount 20.0 pike duplic Matrix Result	Mat Res 5. ate resu	9 A P srix ault 6 ult. Rec. Limi	109 .nalyze repare Rec. 86	70 ed By: ed By: Iti 38.8 RPD	- 130 MT MT tec. mit - 120 RPD Limit
Matrix Spike (MS-1) Spi QC Batch: 101968 Prep Batch: 86391 Param GRO Percent recovery is based on th Param GRO	ked Samp F ne spike re	$\frac{10}{10}$ $\frac{10}{10}$ $\frac{10}{10}$ $\frac{1}{10}$ $\frac{1}{1$	e Analyz Prepara MS Result 22.8 ) is based Units mg/Kg	mg/Kg tion: 20 Units mg/Kg d on the s Dil. g 5	1 13-06-03 13-06-03 Dil. 5 spike and spike Amount 20.0	Spike Amount 20.0 pike duplic Matrix Result 5.6	Mat Res 5. ate resu Rec. 83	A P ault <u>6</u> ult. Limi 38.8 - 1	109 nalyze repare Rec. 86 t 120	ed By: ed By: Ed By: In 38.8 RPD 3	- 130 MT MT Eec. mit - 120 RPD Limit 20
Matrix Spike (MS-1) Spi QC Batch: 101968 Prep Batch: 86391 Param GRO Percent recovery is based on th Param GRO Percent recovery is based on th	ricesu 109 ked Samp F ne spike re F C ne spike re	$\frac{10}{10}$ $\frac{10}{10}$ $\frac{10}{10}$ $\frac{10}{10}$ $\frac{10}{10}$ $\frac{1}{10}$ $\frac{1}$	e Analyz Prepara MS Result 22.8 ) is based Units mg/Kg ) is based	$\frac{\text{mg/Kg}}{\text{mg/Kg}}$ $\frac{\text{Units}}{\text{mg/Kg}}$ $\frac{\text{Order}}{\text{order}}$ $\frac{\text{Dil.}}{\text{g}}$ $\frac{5}{\text{order}}$	1 13-06-03 13-06-03 Dil. 5 spike and spike Amount 20.0 spike and spike	Spike Amount 20.0 pike duplic Matrix Result 5.6 pike duplic	Mat Res 5. ate rest <u>Rec.</u> 83 ate rest	9 A P trix ault 6 ult. Limi 38.8 - 1 ult.	109 nalyze repare Rec. 86 t	70 ed By: ed By: It 38.8 RPD 3	- 130 MT MT tec. mit - 120 RPD Limit 20
Matrix Spike (MS-1) Spi QC Batch: 101968 Prep Batch: 86391 Param GRO Percent recovery is based on th Param GRO Percent recovery is based on th	ked Samp F e spike re F C	$\frac{10}{10}$ $\frac{10}{10}$ $\frac{10}{10}$ $\frac{10}{10}$ $\frac{1}{10}$ $\frac{1}{$	MS Result 22.8 ) is based Units mg/Kg ) is based	$\frac{\text{mg/Kg}}{\text{mg/Kg}}$ $\frac{\text{Units}}{\text{mg/Kg}}$ $\frac{\text{Order}}{\text{order}}$ $\frac{\text{Order}}{\text{order}}$ $\frac{\text{Order}}{\text{order}}$ $\frac{\text{Order}}{\text{order}}$	1 13-06-03 13-06-03 Dil. 5 spike and s Spike Amount 20.0 spike and s	Spike Amount 20.0 pike duplic Matrix Result 5.6 pike duplic	Mat Res 5. ate resu Rec. 83 ate resu	A P srix ault 6 ult. Limi 38.8 - 1 ult.	109 .nalyze repare Rec. 86 t 120	ed By: ed By: ed By: Ii 38.8 <u>RPD</u> 3	- 130 MT MT tec. mit - 120 RPD Limit 20
Matrix Spike (MS-1) Spi QC Batch: 101968 Prep Batch: 86391 Param GRO Percent recovery is based on th Param GRO Percent recovery is based on th Surrogate	ked Samp F ne spike re F C	$\frac{10}{10}$ $\frac{10}{10}$ $\frac{10}{10}$ $\frac{10}{10}$ $\frac{1}{10}$ $\frac{1}{$	e Analyz Prepara MS Result 22.8 ) is based Units mg/Kg ) is based IS M sult R	$\frac{\text{mg/Kg}}{\text{mg/Kg}}$ $\frac{\text{Units}}{\text{mg/Kg}}$ $\frac{\text{Units}}{\text{mg/Kg}}$ $\frac{\text{Dil.}}{\text{g}}$ $\frac{\text{5}}{\text{l}}$ $\frac{\text{l}}{\text{on the s}}$	1 13-06-03 13-06-03 Dil. 5 spike and spike Amount 20.0 spike and spike Spike and spike Spike and spike Spike and spike spik	Spike Amount 20.0 pike duplic Matrix Result 5.6 pike duplic Spi	Mat Res 5. ate resu Rec. 83 ate resu ke unt	A P ault 6 ult. <u>Limi</u> 38.8 - 1 ult. MS Bec	109 nalyze repare Rec. 86 t 120 MSD	ed By: ed By: ed By: In 38.8 RPD 3 Fi	MT MT MT ecc. mit - 120 RPD Limit 20 Rec. mit
Matrix Spike (MS-1) Spi QC Batch: 101968 Prep Batch: 86391 Param GRO Percent recovery is based on th Param GRO Percent recovery is based on th Surrogate Trifluorotoluene (TFT)	ked Samp F e spike re F C	$\frac{10}{10}$	e Analyz Prepara MS Result 22.8 D is based Units mg/Kg D is based IS M sult R 50	$\frac{\text{mg/Kg}}{\text{mg/Kg}}$ $\frac{\text{Units}}{\text{mg/Kg}}$ $\frac{\text{Units}}{\text{mg/Kg}}$ $\frac{\text{Dil.}}{\text{g}}$ $\frac{\text{Dil.}}{\text{s}}$ $\frac{\text{Dil.}}{\text{s}}$ $\frac{\text{SD}}{\text{sult}}$ $\frac{100}{100} \text{ m}$	1           13-06-03           13-06-03           Dil.           5           spike and spike           Amount           20.0           spike and spike           Units         D           Units         D	Spike Amount 20.0 pike duplic Matrix Result 5.6 pike duplic Spi Dil. Amo 5 2	Mat Res 5. ate rest Rec. 83 ate rest ke unt	9 57 57 57 57 50 50 50 50 50 50 50 50 50 50 50 50 50	109 nalyze repare 86 t 120 MSD Rec. 55	70 ed By: ed By: Li <u>38.8</u> <u>R.PD</u> <u>3</u> F Li <u>69.6</u>	- 130 MT MT tec. imit - 120 RPD Limit 20 tec. imit - 124

•

Report Date: June 4, 2013 Loco Federal #1 NM Work Order: 13053007 Loco Federal #1 NM Page Number: 12 of 15

### **Calibration Standards**

Standard (CCV-1)

QC Batch:	101923		Date	Analyzed:	2013-06-03		Analyzed By: CM		
				CCVs	CCVs	CCVs	Percent	Data	
				Irue	Found	Percent	Recovery	Date	
Param	Flag	$\operatorname{Cert}$	Units	Conc.	Conc.	Recovery	Limits	Analyzed	
DRO		1	mg/Kg	250	214	86	80 - 120	2013-06-03	

### Standard (CCV-2)

QC Batch:	101923		Date	Analyzed:	2013-06-03		Analyzed By: CM		
				CCVs True	CCVs Found	CCVs Percent	Percent Recovery	Date	
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed	
DRO		1	mg/Kg	250	245	98	80 - 120	2013-06-03	

### Standard (CCV-3)

QC Batch:	101923		Date	Analyzed:	2013-06-03		Analy	Analyzed By: CM		
				CCVs	CCVs	CCVs	Percent	5		
				True	Found	Percent	Recovery	Date		
Param	$\operatorname{Flag}$	$\operatorname{Cert}$	Units	Conc.	Conc.	Recovery	Limits	Analyzed		
DRO		1	mg/Kg	250	219	88	80 - 120	2013-06-03		

### Standard (CCV-1)

QC Batch:	101968		Date	Analyzed:	2013-06-03		Analyzed By: MT		
				CCVs True	CCVs Found	CCVs Percent	Percent	Date	
_				inte	round		recovery	Date	
Param	Flag	$\operatorname{Cert}$	Units	Conc.	Conc.	Recovery	Limits	Analyzed	
GRO		1	mg/Kg	1.00	0.936	94	80 - 120	2013-06-03	

Report Dat Loco Feder	al #1 NM			Work Orde Loco Fede	r: 13053007 ral #1 NM		Page Nu	mber: 13 of 15
Standard	(CCV-2)							
QC Batch:	101968		Date	Analyzed:	2013-06-03		Analy	zed By: MT
				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
GRO		1	mg/Kg	1.00	0.923	92	80 - 120	2013-06-03

Report Date: June 4, 2013 Loco Federal #1 NM Work Order: 13053007 Loco Federal #1 NM Page Number: 14 of 15

### Appendix

### **Report Definitions**

Name	Definition
MDL	Method Detection Limit
MQL	Minimum Quantitation Limit
SDL	Sample Detection Limit

### Laboratory Certifications

	Certifying	Certification	Laboratory
С	Authority	Number	Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	NELAP	T104704219-13-9	Lubbock

### **Standard Flags**

- F Description
- B Analyte detected in the corresponding method blank above the method detection limit
- H Analyzed out of hold time
- J Estimated concentration
- Jb The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less then ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
- Je Estimated concentration exceeding calibration range.
- MI1 Split peak or shoulder peak
- MI2 Instrument software did not integrate
- MI3 Instrument software misidentified the peak
- MI4 Instrument software integrated improperly
- MI5 Baseline correction
- Qc Calibration check outside of laboratory limits.
- Qr RPD outside of laboratory limits
- Qs Spike recovery outside of laboratory limits.
- Qsr Surrogate recovery outside of laboratory limits.
- U The analyte is not detected above the SDL

### **Result Comments**

Report Date: June 4, 2013 Loco Federal #1 NM Work Order: 13053007 Loco Federal #1 NM Page Number: 15 of 15

1 Sample dilution due to surfactants.

### Attachments

The scanned attachments will follow this page. Please note, each attachment may consist of more than one page.

Submittal of		Relinquish	Relinquish	32	Relinquish						N)0	AOG	80N	407	PHORE				Project Loc	Project #	(If different	Contact Per		Address:	Company N		L'AB Ord
samples.co		əd by:	sd by	COMMAND.	∍ợ by:		5.		44 - 14 17 - 41		5.40	PT. 4	PT . 3	ですい	1.10		S S		ation (inclu	FENE	from above	son:		(Street	ame: A	Ê	er ID #
institutes agreen		Company:	Company:	PRYS.	Company:							1100	2	8	ort.	<b>σμ</b>	FIELD CODE		Jing state):	RAL #1	<b>.</b>	NE FL		City, Zip)		raceA email: lab(	1305
nent to Term		Date:	Date:	5-28-13	Date:			-		-						· ·			. 4	N.M.		MMIN				IN A IV Dtraceana	3007
is and Co		Time:	Time:	E	Ţime:										3		# CONTAINE	RS ount				in the second			1	alysis;co	
onditio	9	Re	72	100	Re		<u> </u>	,				<u>}</u>	1				WATER	1								m m	1
ns listed on	NAMAN	ceived by:	ęceived by:	S	ceived by:					,	< >		\$	<u>ر</u>	1	•	SOIL	MATRIX		~			1			Û.	•
reverse si	1 Ann	Com	Cộm	いく	Com	•	· .					}		- ,			HCI HNO3		Sampler Si	Project Na	7 -   -   -   -   -   -   -   -   -   -	E-mail:	:	Fax #:	Phone #:	67	
dè of (	Usd	pany:	pany:	5	pany:					÷							H₂SO₄	RESE	gnatu	me:						01 Abê Lubb Tel Fax 1 (	
0.0	M			3	. 0								 					HOD	re:	5	,	2			-	rdeen / ock; Te (806) (806) (806) (800) 3	
		ate:	ate:	1-4-				<u>.</u>				•					NONE	) ME	·	20						venue xas 79 94-12 794-12 78-129	
•	19	Time:	Time:	R.H.C	Time:						5-28-6	5-28-13	1-29	5-28-13	5-28-0		DÁTE	ŞAMF	•	Carv			1			5, Suite.9 9424 96	
	C OBS	TSNI.	OBS	COR	DBS INST				1		10:20	10:15	10:10	50:01	10:00		TIME		3							5002 Ba Midla Tel I Fax	
Carri				5	va. Si												MTBE 802	1.602	/ 826	50 / 62	24		- <b>-</b> ;			iŝin Str nd, Te (432) 6 (432) (	
er#	<b>c</b>	للأ		ا <u>و</u> ا م ر	201					- 			,				TPH 418.1 /	TX100	5 / T>	(1005	Exť(C	235)				eet, S xas 7 89-63	
kr	Cg-in-1		feadsp	ົາດ	5						5	× \	5	K	×. 		TPH 8015 GI	RO / D	RO]	TVHC	;	<u>.</u>	<u> </u>			uite A 9703 913	
	Review	*	ace-y	Ž	C C		·			ج 1 م		ь.					Total Metals Ag	As Ba	Cd Cr	Pb Se	Hg.60	)10/200	7	6		·`	
10	D	ſ	EN 1	~	N N N			,	<u>.                                    </u>						ļ;		TCLP Metals	Ag;As	Ba C	d Cr.	Pb Se	Hg		irc		200 E	
			$\mathbb{Y}_{\mathbb{F}}$	(D). ["													TCLP Semi V	/olatile	S'					6	Þ	Past S Tel (9 Tel (9 1 (88	
S	Cheo	DIV	Con		REN			·				<b> </b>		i			TCLP Pestici	des	•				<sup>.</sup>		NA	unset ), Tex 15) 58 (15) 58	
R	s Are	Neigh	de l	in in	IARK					•				<u> </u>			GC/MS Vol. 8	3260 /	624					So i	×s N	Rd.; as 79 85-344 8-344	
E	Need	Basi	9. 9	a Š	ŝ	! 	<del></del>		•			·			<u> </u>		GC/MS Semi	Vol. (	3270	/ 625				či	2	922: 922: 44	,
Y	Repo	s Red	Ų.	C m	•	•								1			PCB s 8082 / Pesticides 80	81 / 6	08.							т,	-mi
	buîng	luired	<u></u>	28								ļ	ļ				BOD, TSS, p	H	•					Net			age
			R	h Z		: ;			. <u>.</u>			1					CI, F, SO <sub>4</sub> N	itent. O3 -N,	NO <sub>2</sub>	-N, P	0 <sub>4</sub> -P,	Alkalir	nity.		4	Cari	
			A 0	n ;	÷ .	1								ļ		,	Na, Ca, Mg, I	K, TDS	6, EC					Z D		BioAqu 1 May el (97	
			ι۸ .	N 0 0 0	ŕ	¦					'	ľ <u>.</u>		.		<u> </u>							s	0		uátic es Ro n, Tex 2) 24;	of
			Ň.			, ,							<u> </u>						•							Testin 1., Ste 2-775	
			мс	33		;	ļ					[ 	<u> </u>	<u> </u>		ľ .	and the second s						,			g 100 0 0	
						, ,						1					Turn Around	.fime i	diffe	rentfi	o <u>m</u> .s	landaro					
L	ļ						<u> </u>				[	<u> :</u>			<u> </u>		Hold										



November 21, 2013

BRUCE BAKER

APACHE - EUNICE

P. O. BOX 1849

EUNICE, NM 88231

RE: LOCO FEDERAL #1

Enclosed are the results of analyses for samples received by the laboratory on 11/18/13 14:20.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. 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.

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,

Celez D. Keine

Celey D. Keene Lab Director/Quality Manager



APACHE - EUNICE BRUCE BAKER P. O. BOX 1849 EUNICE NM, 88231 Fax To: 394-2425

Received:	11/18/2013	Sampling Date:	11/18/2013
Reported:	11/21/2013	Sampling Type:	Soil
Project Name:	LOCO FEDERAL #1	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

### Sample ID: PT. 1 @ 1' (H302814-01)

TPH 8015M	mg/kg		Analyze	d By: MS				S-06		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<50.0	50.0	11/20/2013	ND	193	96.4	200	5.24		
DRO >C10-C28	4950	50.0	11/20/2013	ND	189	94.5	200	5.46		
Surrogate: 1-Chlorooctane	77.4	% 65.2-14	0.							
Surrogate: 1-Chlorooctadecane	227	% 63.6-15	4				,			

### Sample ID: PT. 1 @ 2' (H302814-02)

TPH 8015M	mg/kg		Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	11/20/2013	ND	193	96.4	200	5.24	
DRO >C10-C28	69.8	10.0	11/20/2013	ND	189	94.5	200	5.46	
Surrogate: 1-Chlorooctane	95.9	% 65.2-14	0						

Surrogate: 1-Chlorooctadecane

108 %

63.6-154

-

Cardinal Laboratories

### \*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited 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 thinty (30) days after completion of the applicable service. In no event shall Cardinal be lable for incidental or consequential damages, including, without limitation, business, interruptions, loss of use, or loss of profits incurred by Cardinal within the subsidiaries, affiliates or successors ansing out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claims based upon any of the above stated researces or or otherse. Results relate only to the samples identified above. This report shall not be reproduced except in full with writen approval of Cardinal Liboratories.

Ciley D. Kune

Celey D. Keene, Lab Director/Quality Manager

.



APACHE - EUNICE BRUCE BAKER P. O. BOX 1849 EUNICE NM, 88231 Fax To: 394-2425

·	Received:	11/18/2013	Sampling Date:	11/18/2013
	Reported:	11/21/2013	Sampling Type:	Soil
	Project Name:	LOCO FEDERAL #1	Sampling Condition:	Cool & Intact
	Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
	Project Location:	NOT GIVEN		

### Sample ID: PT. 2 @ 1' (H302814-03)

TPH 8015M	mg/kg		Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
'GRO C6-C10	<10.0	10.0	11/20/2013	ND	193	96.4	200	5.24	
DRO >C10-C28	263	10.0	11/20/2013	ND	189	94.5	200	5.46	
Surrogate: 1-Chlorooctane	83.5	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	107 9	63.6-15	4						

### Sample ID: PT. 2 @ 2' (H302814-04)

TPH 8015M	mg/kg		Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	11/20/2013	ND	193	96.4	200	5.24	
DRO >C10-C28	<10.0	10.0	11/20/2013	ND	189	94.5	200	5.46	
Surrogate: 1-Chlorooctane	88.1	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	92.5	% 63.6-15	4						

### **Cardinal Laboratories**

#### \*=Accredited Analyte

PLEASE NOTE: Uability and Damages. Cardinal's lability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatscever 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 Cardinal be lable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates, or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claims based upon any of the above stated researces. For successions, related to the service stated researces.

Celey D. Kune

Celey D. Keene, Lab Director/Quality Manager



APACHE - EUNICE BRUCE BAKER P. O. BOX 1849 EUNICE NM, 88231 Fax To: 394-2425

Received:	11/18/2013	Sampling Date:	11/18/2013
Reported:	11/21/2013	Sampling Type:	Soil
Project Name:	LOCO FEDERAL #1	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

### Sample ID: PT. 5 @ 1' (H302814-05)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<1.00	1.00	11/20/2013	ND	2.13	107	2.00	4.28	
Toluene*	<1.00	1.00	11/20/2013	ND	2.14	107	2.00	5.97	
Ethylbenzene*	4.34	1.00	11/20/2013	ND	2.15	107	2.00	5.77	
Total Xylenes*	7.24	3.00	11/20/2013	ND	6.50	108	6.00	8.38	
Total BTEX	11.6	6.00	11/20/2013	ND					

Surrogate: 4-Bromofluorobenzene (PIL	126 %	89.4-126
--------------------------------------	-------	----------

238 %

63.6-154

ТРН 8015М	mg	/kg	Analyze	d By: MS					S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	160	50.0	11/20/2013	ND	193	96.4	200	5.24	
DRO >C10-C28	5040	50.0	11/20/2013	ND	189	94.5	200	5.46	
Surrogate: 1-Chlorooctane	89.0	% 65.2-14	0						•

Surrogate: 1-Chlorooctadecane

### **Cardinal Laboratories**

### \*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatseever 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 Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by Cardinal within there are subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such dam is based upon any of the above stated reasons or otherwise. Results relate only to the sample identified above. This report shall not be reproduced except in full with writen approxatories.

Celey D. Keine

Celey D. Keene, Lab Director/Quality Manager



APACHE - EUNICE BRUCE BAKER P. O. BOX 1849 EUNICE NM, 88231 Fax To: 394-2425

Received:	11/18/2013	Sampling Date:	11/18/2013
Reported:	11/21/2013	Sampling Type:	Soil
Project Name:	LOCO FEDERAL #1	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

### Sample ID: PT. 5 @ 2' (H302814-06)

ТРН 8015М	mg/l	kg	Analyze	d By: MS		· · · · · · · · · · · · · · · · · · ·			
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	• True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	11/20/2013	ND	190	95.0	200	13.1	
DRO >C10-C28	<10.0	10.0	11/20/2013	ND	180	89.8	200	4.80	
Surrogate: 1-Chlorooctane	89.8 %	65.2-14	0			<u> </u>			
Surrogate: 1-Chlorooctadecane	96.1 %	63.6-15	4						

### Sample ID: PT. 5 @ 3' (H302814-07)

TPH 8015M	mg/	kg	Analyze	d By: MS			-		•
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	11/20/2013	ND	190	95.0	200	13.1	
DRO >C10-C28	<10.0	10.0	11/20/2013	ND	180	89.8	200	4.80	
Surrogate: 1-Chlorooctane	95.7	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	103 9	63.6-15	4						

### Cardinal Laboratories

### \*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and clent's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited 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 Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim 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 Laboratories.

Celeg Di Keene

Celey D. Keene, Lab Director/Quality Manager

### **CARDINAL** Laboratories

### **Notes and Definitions**

S-06	The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
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 SM4500CI-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

PLEASE NOTE: Liability and Damages. Cardinal's hability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited 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 Cardinal be lable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claims based upon any of the above stated reasons or otherwise. Results relate only to the sample identified above. This report shall not be reproduced except in full with written approval of Cardinal Libroratones.

Celey D. Kune

Celey D. Keene, Lab Director/Quality Manager

Page 6 of 7

### CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

ď

age

E.

ARDINAL LABORATORIES

101 East Marland, Hobbs, NM 88240 2111 Beechwood, Abilene, TX 79603 (505) 393-2326 FAX (505) 393-2476 (325) 673-7001 FAX (325)673-7020

Company Name	Company Name: Apechae						BILL TO					ANALYSIS REQUEST													
Project Manage	r: Blure Bake	٢							P.C	). #:				ľ		T	I	Γ			T	· .			1
Address:		÷							Coi	mpa	ny:	· · · · ·	· · · ·	]				S	. ·	· · ·			ŀ		1.
City: Hobbs		State: NM	Zip	o: 88	8240	0			Att	n:		· .						6	·						
Phone #:		Fax #:	•					•	Address:				· ·			ic				· ·			}		
Project #:		Project Owne	r:						City:				Σ		II	S/F									
Project Name:	· · · · · · · · · · · · · · · · · · ·	· · · .							Sta	te:		Zip:		<u>j</u>	5	×	ā	l Ö							
Project Location: Loco Federal #1					Pho	one #	<b>#:</b>			1 E	ò	<b>Ш</b>	5	ați	ဂုိ										
Sampler Name: Zeally Confer				Fax	c#:				] <u>은</u>	17		X X	Ŭ,							. 5					
FOR LAB USE ONLY Lab I.D. H3D2614 2 3 4 5 4 5	Sample I.I P4.1 @ 1' P4.1 @ 2' P4.2 @ 1' P4.2 @ 1' P4.5 @ 2' P4.5 @ 2' P4.5 @ 3'	D.	N P O C O C COMP.		GROUNDWATER	WASTEWATER		X STUDGE	OTHER:			DATE 1118-13 	TIME		TPI			Complete							
		· · · · · · · · · · · · · · · · · · ·	Ŀ						_	·		· · ·		<u> </u>	<b> </b>	<u> </u>	<u> </u>								
PLEASE NOTE: Liability an analyses. All caime includin service. In no event shall Cr affiliates or successors arisis Relinquished By Relinquished By Delivered By:	d Damages. Cardinal's liability and clien og those for negligence and any other ca ardinal be liable for inddertal or consequ og out of or related to the performance o 	I's exclusive remedy for r use whatsoever shall be ental damages, including f services hereunder by C Date: <u>III-18-13</u> Time3:200 Date: Time:	any clai deerne g witho Cardina Re Re	im aris ad waiv nut firmit al, rega accer age i	ing what red unkt ation, t rdkess ved ved ved	ether bask ass made rusiness i of whethe By: By: By: Sample	ed in cc in writti nterrup r such	nditio	or tort, receiv ss of base	shall b red by C use, or d upon	e fimiteo ardinal loss of j any of th DD	to the amount p within 30 days at profits incurred by he above stated r	aid by the cleant for ter completion of cleant, is subskill easons or otherwite Phone Re Fax Resu REMARK email	r the the applications arises. Ise. SSUIT: S: TESU	I □ Ye □ Ye JIts ァ~	s ≥s Brc We	No No	Add'l Add'l Bake	Phone Fax #:	#: Ja Z	iob ech	K. Co.	sn p	la,'/	ـــــــــــــــــــــــــــــــــــــ
Sampler - UPS - Bus - Other:			Yes No		•	4		Hack Cender			·	· .													
† Cardinal	cannot accept verbal c	hanges. Please	e fax	( Wr	itten	char	iges	to 5	05-	393-	2476	; /													



December 23, 2013

BRUCE BAKER

APACHE - EUNICE

P. O. BOX 1849

EUNICE, NM 88231

RE: LOCO FEDERAL BATTERY #1

Enclosed are the results of analyses for samples received by the laboratory on 12/17/13 16:15.

**CARDINAL** Laboratories

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. 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">www.tceq.texas.gov/field/qa/lab</a> accred 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.

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,

Celeg D. Kun

Celey D. Keene Lab Director/Quality Manager



APACHE - EUNICE BRUCE BAKER P. O. BOX 1849 EUNICE NM, 88231 Fax To: 394-2425

12/17/2013	Sampling Date:	12/17/2013
12/23/2013	Sampling Type:	Soil
LOCO FEDERAL BATTERY #1	Sampling Condition:	Cool & Intact
NONE GIVEN	Sample Received By:	Celey D. Keene
NOT GIVEN		
	12/17/2013 12/23/2013 LOCO FEDERAL BATTERY #1 NONE GIVEN NOT GIVEN	12/17/2013Sampling Date:12/23/2013Sampling Type:LOCO FEDERAL BATTERY #1Sampling Condition:NONE GIVENSample Received By:NOT GIVENSample Received By:

### Sample ID: CALICHE BACKFILL (H303055-01)

Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AP					
Analyte	Result Reporting Li		Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	128	16.0	12/21/2013	ND	400	100	400	7.69	

#### Cardinal Laboratories

#### \*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and clent's exclusive remedy for any claim ansing, whether based in contract or tort, shall be limited 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 thirry (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the anview. Here the above stated reasons or otherwise. Results relate only to the sample identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Kune

Celey D. Keene, Lab Director/Quality Manager



### **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 SM4500CI-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

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited 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 Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by claim, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claims based into theres produced except in full with written approval of Cardinal babratores.

Celey D.Kune

Celey D. Keene, Lab Director/Quality Manager

Page 3 of 4

### CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

ARDINAL LABORATORIES 101 East Marland, Hobbs, NM 88240 2111 Beechwood, Ablienc, TX 79603

· · · · · · · · · · · · · · · · · · ·	(505) 393-2325 FAX (505) 393-2	476 (325) 673-700	H F	AX.	325)9	7.3-	7020													
Company Name	Hoache			152	0.7500	₿Î i	<b>[</b> [70]	10 X10				)	NAL	YSIS	RE	QUE	ST	<u></u>		
Project Manager	Jacob Kaniplain_	•		Р.С	). <i>≓</i> :						•				]				1	
Address: Lay	ry paper @ apachecos	p.com		Company:							Ś					Ì				
cliv: Hobbs	Stato: NN	Zip: 88240		Alla:							6									
Phone ≢:	hone #: Fax #:												ic,				7			
Project #: Project Owner:								-		Σ		T	s//							
Project Nonie: LOO Federal 11 Ballenz					to:		Zlp:		ä	15	$\times$	ā	U0							
Project Location: TIDS R 304.					one #:				i i i	Ď.	μ	່ວ	ati	0						
Sampler Name: Amber Groves					( <b>#</b> t				Ĕ	Ĩ	6	N X	Ö	F						
Lab I.D.	Šample I.D.	(G)RAB OR (C)OMP, # CONTAINERS GROUNDWATER MASTEVATER SOIL		OTHER:	ACID/BASE: A	OTHER: A	DATE	NG TUME		TP		Te	Complete		×					
0	Cariche Backfill	<u>G1   V</u>	_	-		┞	1277-13	8:30	~	<u> </u>	 									
		╺┟╼┦╾╽╼╂╴╂╼╉	1	Ť		┢				<u> </u>					<u>.</u>				1	
				T		Ĺ							<b>.</b>							
				Ļ		-											<u> </u>			
		╺╢╌┈╎╼╍╿╼┱╋╍┥┥╸┥		<u>.</u>		ļ				<u> </u>					<u> </u>	ļ	<b> </b>	<u> </u>		
·		╶╽╾┦╼╽╼╁╴┟╶┼		-		╞						£		<u> </u>	<u> .</u>					
		┼╾┨╌╎╾╂╼╀╼╆	$\neg$	1		┢					}			i		<u> </u>				
·			1	1-		$\uparrow$					[					ļ.	1			
PLEASE HDTEC, LED BY ON Aprilyses, Allester apoly Euroce: In no meet abate officier of concession with	वर्ष विश्वास्त्रांत्रा, दिवर्षांत्रात्रातः दिश्वविषु क्राव त्येत्वात्रं इवर्तात्रात्रे व त्यात्वयु कि गुतु क्रियतः क्रेम तामुनिद्वत्वताः वर्त्त्रां व्युत्तुं द्वीत्वतां त्यात्रात्रं क्रोत्तात्रे व त्यात्रियों यह निर्देशे के क्रिस्टेर्ड्स्सार्थ्वते व व्यात्राव्युप्रकार्ध्व वेत्याकृत्वे, क्रिसेस्ट्री त्यु वर्त्यं वर्धे वर्ध्व वर्ध्वात्रय के क्रिय क्रान्सेव्याक्रस्य वर्ध्व व्यात्राव्य क्रियत्वार्थेक क्रियत्वार्थ	בשיק לבדס הרבוש איניינים כשיבו ה ה לב כובס הרבוש איניינים כשיבו ה הי מקורנים אומינים על הרבוש הייניים הי לאונים אומינים איניים איניים איניים היינים איניים איניים איניים איניים היינים איניים איניים איניים איניים היינים איניים איניים איניים איניים איניים היינים איניים איניים איניים איניים איניים היינים איניים איניים איניים איניים איניים איניים היינים איניים איניים איניים איניים איניים איניים איניים איניים היינים איניים br>היינים איניים	ASE MOTE: Listing and Canages. Government Califies entropy and and a second and and a second a second and a second a second and a second a																	

Revinaulshed By:	1900-17-13 Rocalingta By:	Phone Result: D Yes 2 No Add'I Phone s: Fax Result: D Yes 2 No Add'I Fax #;
HIVILXV FNDV(C)	The: 4:15 (1/1, 1/00M)	REMARKS:
Relinguished By:	Dete: Received By:	eniail results
		knörman@rice-ecs.com hconder@rice-ecs.com;
· · · · · · · · · · · · · · · · · · ·		Lweinheimer@rice-ecs.com: kiones@riceswd.com;
Delivered By: (Circle One)	Sample Condition CHECKED BY:	Lpena@riceswd.com: sedwards@rice-ecs.com
Sampler - UPS: - Bus - Other:	440 Exes Vyes CON	ägroves@rice-ecs.com

\* Cardinal cannot accept verbal changes, Plense lax written changes to 505-393:2476

Page 4 of 4

# $\underset{\text{Photo Documentation}}{\text{Appendix } \mathbb{D}}$

RICE Environmental Consulting and Safety (RECS) P.O. Box 2948 Hobbs, NM 88241 Phone 575.393.2967

# Apache Loco Federal #001 AD Unit Letter B, Section 21, T17S, R30E



Initial release area, facing north

3/11/13





Initial release area, facing east



Excavating, facing south

3/21/13





4/15/13



Final excavation, facing north



Final excavation, facing north









Site completed, facing southwest

12/20/13



Site completed, facing south

12/20/13



Site completed, facing south

12/20/13



Site completed, facing northwest

12/20/13

# Appendix E Final C-141

RICE Environmental Consulting and Safety (RECS) P.O. Box 2948 Hobbs, NM 88241 Phone 575.393.2967

Form C-141 Revised August 8, 2011

Oil Conservation Division 1220 South St. Francis Dr.

Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

District IV 1220 S. St. Fran	cis Dr., Santa	a Fe, NM 87505	5	1220 Sa	onta Fe	St. Franc	is Dr. 05						
·····		an a	Role	ase Notific	otion	and Co	rrective A	ction	and and and and				
Nome of Co	manany A	nacha Corne	ration			OPERA	UCA Baker		Report	<u> </u>	Final Report		
Name of Company Apache Corporation						Celephone N	$\frac{1}{10}$ (432) 631-6	082					
Address P.O. Box 1849, Eunice, NM 88251					·	Facility Type Tank Battery							
racinty rune Locor educar #1													
Surface Ow	ner BLM	[		Mineral C	)wner	API No. 30-015-30144							
LOCATION OF RELEASE													
Unit Letter	Section	Township	Range	Feet from the	North/	South Line	Feet from the	East/West Line	County				
В	21	175	30E	987'	F	NL	2424'	FEL	Eddy				
Latitude 32°49'29.093" Longitude 103°58'34.842"													
NATURE OF DELEASE													
INATUKE OF KELEASE           Type of Release         O5 barrels         Volume Recovered         00 barrels											els		
Source of Re	lease Hole	e in tank				Date and F	Iour of Occurrence	be Date and H	lour of Dis	our of Discovery 3/11/13			
						3/11/13	An analysis of the second s	12:15 pm					
Was Immediate Notice Given?						If YES, To Whom? Mike Bratcher							
By Whom?	Natalie Gla	adden, Apache	e Corp.		•	Date and Hour 3/11/13 3:35 pm							
Was a Water	course Read	ched?	l Van N	7 No		If YES, Volume Impacting the Watercourse.							
				<u> </u>									
If a Watercou	arse was Im	pacted, Descr	ibe Fully.	*									
Describe Cause of Problem and Remedial Action Taken.* The pumper arrived on site to find that the main production tank was leaking through a hole in the bottom of the tank. The remaining liquid in the tank was removed by vacuum truck and approximately 90 barrels of oil was put into the secondary production tank and re-circulated. All the released fluid remained inside the battery's containment walls of the unlined facility. The corroled tank was repaired. Describe Area Affected and Cleanup Action Taken.*A total of 3,470 sq ft of the facility's containment area was affected. RECS personnel were on site beginning on March 11 <sup>th</sup> , 2013 to assess the release. The release was sampled at the surface in three locations and the samples were taken to a commercial laboratory for analysis. Laboratory chloride readings returned results below regulatory standards at Pt. 1 and Pt. 2 and a result of 5,400 mg/kg at Pt. 3. Gasoline Range Organics (GRO) readings and Diesel Range Organics (DRO) readings were televated at all three points. The release area was scraped down to 1 ft bgs by hand. On April 2 <sup>ud</sup> , 2013, a 5 point composite sample was taken at the base of the 1 ft scrape and sent to a commercial laboratory for analysis. Apache met with NMOCD on May 21 <sup>st</sup> , 2013 and NMOCD requested that individual samples throughout the bottom of the release were taken to a commercial laboratory for analysis. Laboratory analysis of the location. On May 28 <sup>th</sup> , 2013, individual samples throughout the bottom of the release were taken to a commercial laboratory for analysis. Laboratory analysis of the points showed the highest concentrations from the previous sampling event. Pt. 1 and Pt. 2 were hand augured to a depth of 2 ft bgs and Pt. 5 was hand augured to a commercial laboratory data, Apache asked NMOCD and BLM for approval to backfill the site. On December 10 <sup>th</sup> , 2013, NMOCD approved the site to be backfilled and on December 10 <sup>th</sup> , 2013, NMOCD approved the site to be backfilled and on December 10 <sup>th</sup> , 2013, NMOCD approved the site t													
OIL CONSERVATION DIVISION													
Signature:	Bruce	Baher											
Printed Name: Bruce Baker						Approved by Environmental Specialist:							
Title: Environmental Technician						Approval Da	te:	Expiration I	Expiration Date:				
E-mail Address: larry.baker@apachecorp.com						Conditions o	f Approval:	oroval: Attached					

1-9-14 Phone: (432) 631-6982 Date: \* Attach Additional Sheets If Necessary