Apache

EXPLORING WHAT'S POSSIBLE

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

Red Lake 29-I State #1

2RP-1875

Termination Request

API No. 3001533579

Release Date: June 11th, 2013

Unit Letter I, Section 29, Township 17S, Range 28E

Rice Environmental Consulting & Safety
P.O. Box 2948, Hobbs, NM 88241
Phone 575.393.2967

February 4th, 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 – Red Lake 29-I State #1 (2RP-1875)
UL/I sec. 29 T17S R28E
API No. 3001533579

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 12.5 miles east-southeast of Artesia, New Mexico at UL/I sec. 29 T17S R28E. USGS records indicate that groundwater will likely be encountered at a depth of approximately 78.5 +/- feet.

On June 11th, 2013, Apache discovered that the fire tube from a production heater failed releasing 22 barrels of oil over 7,113 sq ft of lease pad and pasture land. The power was turned off to the well heads and a vacuum truck was called to the site. The vacuum truck recovered 20 barrels of oil. The fire tube was pulled and the gasket replaced. An initial C-141 was submitted to NMOCD and was approved on August 27th, 2013 (Appendix A).

RECS personnel were on site beginning June 12th, 2013. Soil samples were taken at the surface at six points throughout the release (Figure 1). The samples were taken to a commercial laboratory for analysis (Appendix B). The surface samples from all six points showed elevated laboratory chloride, Gasoline Range Organics (GRO) and Diesel Range Organics (DRO) readings.

On August 22nd, 2013, three points in the overspray area were sampled at the surface and at six inches to determine the extent of contamination in this area (Figure 2). All the samples were taken to a commercial laboratory for analysis and returned chloride, GRO and DRO values below regulatory standards (Appendix C).

Based on the laboratory analyses and presence of healthy vegetation, the overspray area was not scraped. The remainder of the release area was scraped down 3 to 6 inches and a 5 point composite sample from the base of the scrape was taken to a commercial laboratory for analysis on August 26th, 2013 (Figure 2). All constituents returned results

below regulatory standards except for DRO, which had a reading of 1,060 mg/kg (Appendix D). The site then was scraped down to 6 to 9 inches and another 5 point composite sample from the base of the scrape was taken to a commercial laboratory for analysis on September 18th, 2013. The 5 point composite returned a GRO result of non-detect and a DRO result of 221 mg/kg (Appendix E). A total of 108 yards of contaminated soil was taken to a NMOCD approved facility for disposal.

On October 10th, 2013, NMOCD approved the site to be backfilled (Appendix F). A total of 120 yards of clean soil was imported to the site to serve as backfill. A sample of the imported soil was taken to a commercial laboratory and returned a chloride value of non-detect (Appendix G). The site was backfilled with the clean, imported soil and contoured to the surrounding location.

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

Given that the contaminated soil was removed from the site and replaced with clean, imported soil, Apache respectfully requests 'remediation termination' and site closure. A final C-141 can be found in Appendix I.

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,

Lara Weinheimer
Project Scientist
RECS
(575) 441-0431

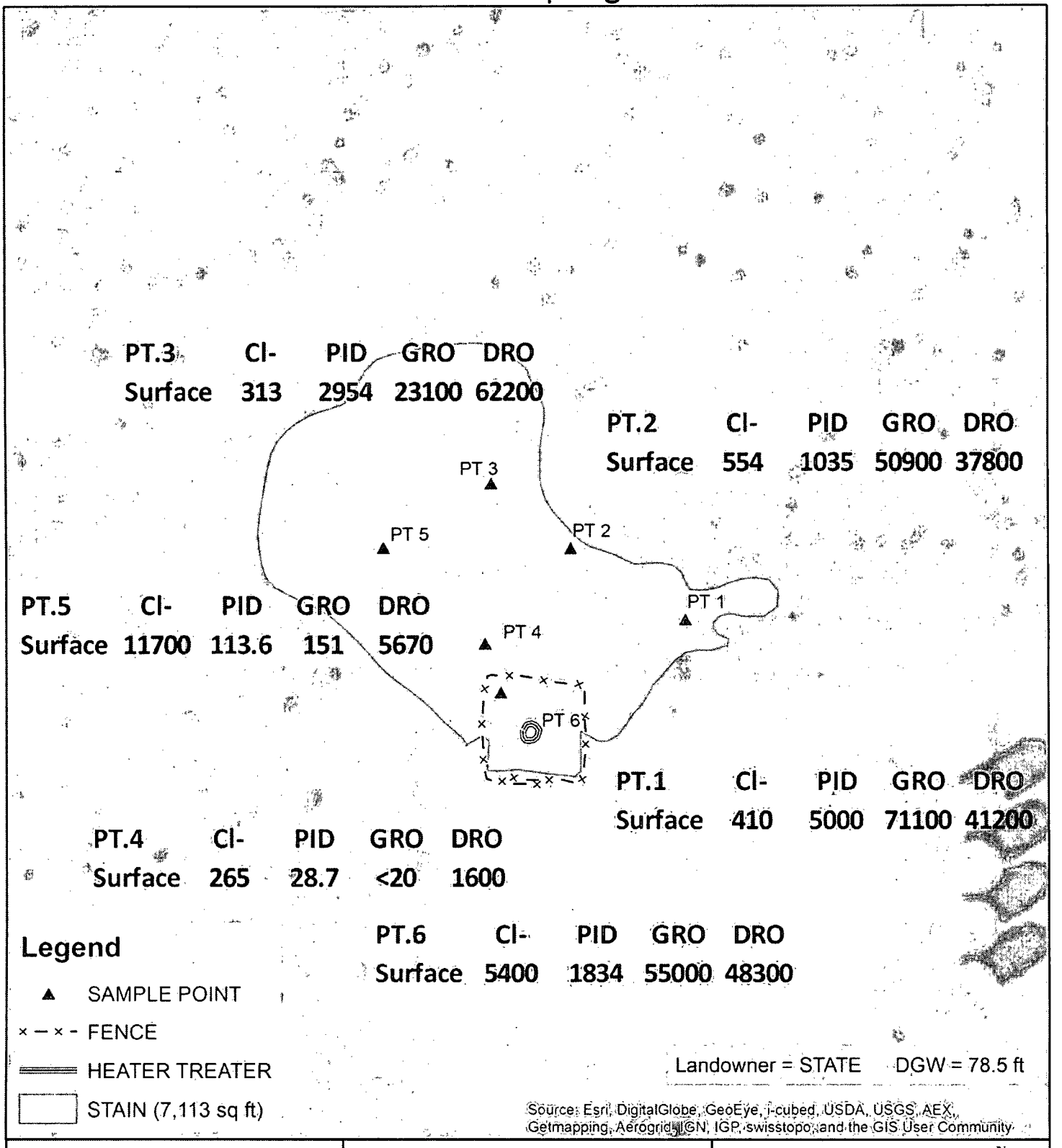
Attachments:

- Figure 1 – Initial Sampling Data
- Figure 2 – Excavation Data
- Appendix A – Initial C-141
- Appendix B – Initial Sampling Labs
- Appendix C – Overspray Lab
- Appendix D – 5 Point Composite Sample Lab 8/27/13
- Appendix E – 5 Point Composite Sample Lab 9/18/13
- Appendix F – NMOCD Approval to Backfill Site
- Appendix G – Imported Soil Lab
- Appendix H – Photo Documentation
- Appendix I – Final C-141

Figures

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

Initial Sampling Data



RICE ENVIRONMENTAL CONSULTING & SAFETY, LLC

APACHE RED LAKE 29 I STATE #1 2RP-1875

LEGALS: UL/I Sec.29
T17S - R28E
EDDY COUNTY, NM

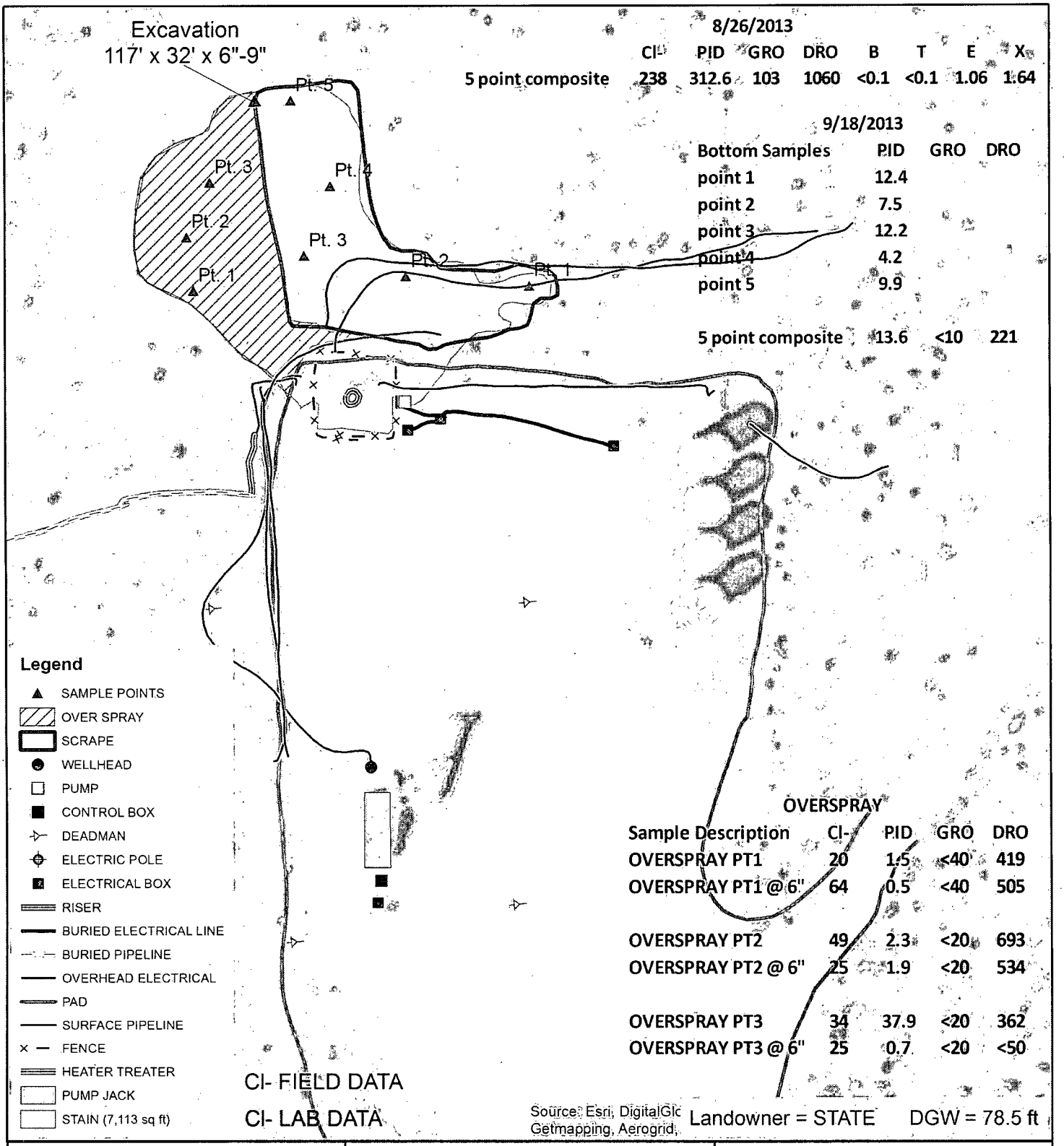
Figure 1

N W E S

0 25 50 Feet

GPS date: 6/12/2013 EC
Drawing date: 6/13/13
Drafted by: L. Weinheimer

Excavation Data



RICE ENVIRONMENTAL CONSULTING & SAFETY, LLC

APACHE RED LAKE 29 I STATE #1 2RP-1875

LEGALS: UL/I Sec.29
T17S - R28E
EDDY COUNTY, NM

Figure 2

N W E S

0 30 60
Feet

GPS date: 9/8/13 KS
Drawing date: 9/25/13
Drafted by: L. Weinheimer

Appendix A

Initial C-141

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

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

RECEIVED
AUG 26 2013
NMOCD ARTESIA

Form C-141
Revised August 8, 2011

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

nJMW 1323953381

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: Apache Corporation 873	Contact: Larry Bruce Baker
Address: PO Box 1849; Eunice, NM 88231	Telephone No.: (432) 631-6982
Facility Name: Red Lake 29-1 State #1	Facility Type: Production Heater

Surface Owner: State	Mineral Owner:	API No.: 3001533579

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
I	29	17S	28E	1636	FSL	995	FEL	Eddy

Latitude 32.802362 N Longitude 104.192650 W

NATURE OF RELEASE

Type of Release: Oil	Volume of Release: 22 bbls	Volume Recovered: 20 bbls
Source of Release: Production Heater	Date and Hour of Occurrence: Unknown	Date and Hour of Discovery: 6/11/13 1240 hrs
Was Immediate Notice Given? ☐ Yes ☒ No ☐ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse:	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*
The gasket on the production heater fire tube failed releasing 22 bbls of oil. The power was turned off to the wellheads and a vacuum truck was called. The vacuum truck recovered 20 bbls of oil. The fire tube was pulled to replace the gasket.

Describe Area Affected and Cleanup Action Taken.*
A total of 7,113 sq ft of pad and pasture was affected. The site will be delineated for further action.

I hereby certify that the information given above is true and complete 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 notifications and perform corrective actions for releases which may endanger public health of the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: Larry Bruce Baker

Printed Name: Larry Bruce Baker

Title: Environmental Tech

E-mail Address: larry.baker@apachecorp.com

Date: 8-26-13 Phone: (432) 631-6982

OIL CONSERVATION DIVISION

Approved by Environmental Specialist: Signed By

Approval Date: AUG 27 2013 Expiration Date:

Conditions of Approval:
Remediation per OCD Rule & Guidelines. SUBMIT REMEDIATION PROPOSAL NO LATER THAN: September 27 2013

Attached ☐

2RP-1875

* Attach Additional Sheets If Necessary

Appendix B

Initial Sampling Labs

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

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 | Lubbock, Texas 79424 | 800-378-1296 | 806-794-1296 | FAX 806-794-1298
200 East Sunset Road, Suite E | El Paso, Texas 79922 | 915-585-3443 | FAX 915-585-4944
5002 Basin Street, Suite A1 | Midland, Texas 79703 | 432-689-6301 | FAX 432-689-6313
(BioAquatic) 2501 Mayes Rd., Suite 100, Carrollton, Texas 75006 | 972-242-7750

E-Mail: lab@traceanalysis.com WEB: www.traceanalysis.com

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

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

Report Date: July 2, 2013

Work Order: 13061822

Project Location: Red Lake 29-I Battery, NM
Project Name: Apache Red Lake I Battery
Project Number: Apache Red Lake 29-I Battery

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

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
332544	Pt. 1	soil	2013-06-14	11:20	2013-06-17
332545	Pt. 2	soil	2013-06-14	11:25	2013-06-17
332546	Pt. 3	soil	2013-06-14	11:30	2013-06-17
332547	Pt. 4	soil	2013-06-14	11:35	2013-06-17
332548	Pt. 5	soil	2013-06-14	11:40	2013-06-17
332549	Pt. 6	soil	2013-06-14	11:45	2013-06-17

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.

Michael Abel

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

Report Contents

Case Narrative

Samples for project Apache Red Lake I Battery were received by TraceAnalysis, Inc. on 2013-06-17 and assigned to work order 13061822. Samples for work order 13061822 were received intact at a temperature of 3.4 C.

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

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
Chloride (Titration)	SM 4500-Cl B	87056	2013-07-02 at 08:30	102764	2013-07-02 at 11:00
TPH DRO - NEW	S 8015 D	86753	2013-06-18 at 15:00	102416	2013-06-18 at 16:34
TPH GRO	S 8015 D	86771	2013-06-18 at 16:25	102434	2013-06-18 at 16:25

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 13061822 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.

Analytical Report

Sample: 332544 - Pt. 1

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	102764	Date Analyzed:	2013-07-02	Analyzed By:	GS
Prep Batch:	87056	Sample Preparation:	2013-07-02	Prepared By:	GS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Qs		**410**	mg/Kg	1	5.00

Sample: 332544 - Pt. 1

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	102416	Date Analyzed:	2013-06-18	Analyzed By:	DS
Prep Batch:	86753	Sample Preparation:	2013-06-18	Prepared By:	DS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	Qs	1	**41200**	mg/Kg	40	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		1660	mg/Kg	40	400	415	35.2 - 240

Sample: 332544 - Pt. 1

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	102434	Date Analyzed:	2013-06-18	Analyzed By:	JS
Prep Batch:	86771	Sample Preparation:	2013-06-18	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	**71100**	mg/Kg	2000	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr	8.70	mg/Kg	2000	2.00	435	69.6 - 124

continued ...

sample continued ...

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
4-Bromofluorobenzene (4-BFB) Qsr	Qsr		2750	mg/Kg	2000	2.00	137500	77.7 - 120

Sample: 332545 - Pt. 2

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	102764	Date Analyzed:	2013-07-02	Analyzed By:	GS
Prep Batch:	87056	Sample Preparation:	2013-07-02	Prepared By:	GS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride	Qs		**554**	mg/Kg	1	5.00

Sample: 332545 - Pt. 2

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	102416	Date Analyzed:	2013-06-18	Analyzed By:	DS
Prep Batch:	86753	Sample Preparation:	2013-06-18	Prepared By:	DS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO	Qs	1	**37800**	mg/Kg	40	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane Qsr	Qsr		1540	mg/Kg	40	400	385	35.2 - 240

Sample: 332545 - Pt. 2

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	102434	Date Analyzed:	2013-06-18	Analyzed By:	JS
Prep Batch:	86771	Sample Preparation:	2013-06-18	Prepared By:	JS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO		1	**50900**	mg/Kg	2000	4.00

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr		8.71	mg/Kg	2000	2.00	436	69.6 - 124
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		2040	mg/Kg	2000	2.00	102000	77.7 - 120

Sample: 332546 - Pt. 3

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	102764	Date Analyzed:	2013-07-02	Analyzed By:	GS
Prep Batch:	87056	Sample Preparation:	2013-07-02	Prepared By:	GS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride	Qs		**313**	mg/Kg	1	5.00

Sample: 332546 - Pt. 3

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	102416	Date Analyzed:	2013-06-18	Analyzed By:	DS
Prep Batch:	86753	Sample Preparation:	2013-06-18	Prepared By:	DS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO	Qs	1	**62200**	mg/Kg	80	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		2120	mg/Kg	80	400	530	35.2 - 240

Sample: 332546 - Pt. 3

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	102434	Date Analyzed:	2013-06-18	Analyzed By:	JS
Prep Batch:	86771	Sample Preparation:	2013-06-18	Prepared By:	JS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO		1	**23100**	mg/Kg	5000	4.00

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr		5.33	mg/Kg	5000	2.00	266	69.6 - 124
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		1050	mg/Kg	5000	2.00	52500	77.7 - 120

Sample: 332547 - Pt. 4

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	102764	Date Analyzed:	2013-07-02	Analyzed By:	GS
Prep Batch:	87056	Sample Preparation:	2013-07-02	Prepared By:	GS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Qs		**265**	mg/Kg	1	5.00

Sample: 332547 - Pt. 4

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	102416	Date Analyzed:	2013-06-18	Analyzed By:	DS
Prep Batch:	86753	Sample Preparation:	2013-06-18	Prepared By:	DS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	Qs	1	**1600**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			189	mg/Kg	1	100	189	35.2 - 240

Sample: 332547 - Pt. 4

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	102434	Date Analyzed:	2013-06-18	Analyzed By:	JS
Prep Batch:	86771	Sample Preparation:	2013-06-18	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	<20.0	mg/Kg	5	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.04	mg/Kg	5	2.00	102	69.6 - 124
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	2.52	mg/Kg	5	2.00	126	77.7 - 120

Sample: 332548 - Pt. 5

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	102764	Date Analyzed:	2013-07-02	Analyzed By:	GS
Prep Batch:	87056	Sample Preparation:	2013-07-02	Prepared By:	GS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Qs		**11700**	mg/Kg	1	5.00

Sample: 332548 - Pt. 5

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	102416	Date Analyzed:	2013-06-18	Analyzed By:	DS
Prep Batch:	86753	Sample Preparation:	2013-06-18	Prepared By:	DS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	Qs	1	**5670**	mg/Kg	10	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr	315	mg/Kg	10	100	315	35.2 - 240

Sample: 332548 - Pt. 5

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	102434	Date Analyzed:	2013-06-18	Analyzed By:	JS
Prep Batch:	86771	Sample Preparation:	2013-06-18	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	**151**	mg/Kg	20	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.72	mg/Kg	20	2.00	86	69.6 - 124
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	6.61	mg/Kg	20	2.00	330	77.7 - 120

Sample: 332549 - Pt. 6

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	102764	Date Analyzed:	2013-07-02	Analyzed By:	GS
Prep Batch:	87056	Sample Preparation:	2013-07-02	Prepared By:	GS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride	Qs		**5400**	mg/Kg	1	5.00

Sample: 332549 - Pt. 6

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	102416	Date Analyzed:	2013-06-18	Analyzed By:	DS
Prep Batch:	86753	Sample Preparation:	2013-06-18	Prepared By:	DS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO	Qs	1	**48300**	mg/Kg	40	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr	2000	mg/Kg	40	200	1000	35.2 - 240

Sample: 332549 - Pt. 6

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	102434	Date Analyzed:	2013-06-18	Analyzed By:	JS
Prep Batch:	86771	Sample Preparation:	2013-06-18	Prepared By:	JS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO		1	**55000**	mg/Kg	2000	4.00

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr		5.53	mg/Kg	2000	2.00	276	69.6 - 124
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		1440	mg/Kg	2000	2.00	72000	77.7 - 120

Method Blanks

Method Blank (1) QC Batch: 102416

QC Batch: 102416 | Date Analyzed: 2013-06-18 | Analyzed By: DS
Prep Batch: 86753 | QC Preparation: 2013-06-18 | Prepared By: DS

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1	<15.3	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			94.0	mg/Kg	1	100	94	35.2 - 240

Method Blank (1) QC Batch: 102434

QC Batch: 102434 | Date Analyzed: 2013-06-18 | Analyzed By: JS
Prep Batch: 86771 | QC Preparation: 2013-06-18 | Prepared By: JS

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1	<0.230	mg/Kg	4

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.16	mg/Kg	1	2.00	108	69.6 - 124
4-Bromofluorobenzene (4-BFB)			2.17	mg/Kg	1	2.00	108	77.7 - 120

Method Blank (1) QC Batch: 102764

QC Batch: 102764 | Date Analyzed: 2013-07-02 | Analyzed By: GS
Prep Batch: 87056 | QC Preparation: 2013-07-02 | Prepared By: GS

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride			<3.05	mg/Kg	5

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 102416 | Date Analyzed: 2013-06-18 | Analyzed By: DS
Prep Batch: 86753 | QC Preparation: 2013-06-18 | Prepared By: DS

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	250	mg/Kg	1	250	<15.3	100	64.8 - 138

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	243	mg/Kg	1	250	<15.3	97	64.8 - 138	3	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	86.8	87.6	mg/Kg	1	100	87	88	35.2 - 240

Laboratory Control Spike (LCS-1)

QC Batch: 102434 | Date Analyzed: 2013-06-18 | Analyzed By: JS
Prep Batch: 86771 | QC Preparation: 2013-06-18 | Prepared By: JS

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	15.1	mg/Kg	1	20.0	<0.230	76	66.9 - 120

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	16.2	mg/Kg	1	20.0	<0.230	81	66.9 - 120	7	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.84	1.87	mg/Kg	1	2.00	92	94	69.6 - 124
4-Bromofluorobenzene (4-BFB)	2.01	2.10	mg/Kg	1	2.00	100	105	77.7 - 120

Laboratory Control Spike (LCS-1)

QC Batch: 102764 | Date Analyzed: 2013-07-02 | Analyzed By: GS
Prep Batch: 87056 | QC Preparation: 2013-07-02 | Prepared By: GS

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			100	mg/Kg	1	100	<3.05	100	85 - 115

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			101	mg/Kg	1	100	<3.05	101	85 - 115	1	20

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

Matrix Spike (MS-1) Spiked Sample: 332585

QC Batch: 102416 | Date Analyzed: 2013-06-18 | Analyzed By: DS
Prep Batch: 86753 | QC Preparation: 2013-06-18 | Prepared By: DS

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	Qs	Qs 1	1110	mg/Kg	1	250	634	190	15.5 - 174

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	983	mg/Kg	1	250	634	140	15.5 - 174	12	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	132	125	mg/Kg	1	100	132	125	35.2 - 240

Matrix Spike (MS-1) Spiked Sample: 332582

QC Batch: 102434 | Date Analyzed: 2013-06-18 | Analyzed By: JS
Prep Batch: 86771 | QC Preparation: 2013-06-18 | Prepared By: JS

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	18.3	mg/Kg	5	20.0	1.89	82	38.8 - 120

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	19.0	mg/Kg	5	20.0	1.89	86	38.8 - 120	4	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.79	1.80	mg/Kg	5	2	90	90	69.6 - 124
4-Bromofluorobenzene (4-BFB)	2.12	2.13	mg/Kg	5	2	106	106	77.7 - 120

Matrix Spike (MS-1) Spiked Sample: 332552

QC Batch: 102764 | Date Analyzed: 2013-07-02 | Analyzed By: GS
Prep Batch: 87056 | QC Preparation: 2013-07-02 | Prepared By: GS

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	Qs	Qs	28400	mg/Kg	1	500	27470	186	63.6 - 131

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			28000	mg/Kg	1	500	27470	106	63.6 - 131	1	20

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

Calibration Standards

Standard (CCV-1)

QC Batch: 102416 Date Analyzed: 2013-06-18 Analyzed By: DS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	249	100	80 - 120	2013-06-18

Standard (CCV-2)

QC Batch: 102416 Date Analyzed: 2013-06-18 Analyzed By: DS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	247	99	80 - 120	2013-06-18

Standard (CCV-3)

QC Batch: 102416 Date Analyzed: 2013-06-18 Analyzed By: DS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	222	89	80 - 120	2013-06-18

Standard (CCV-1)

QC Batch: 102434 Date Analyzed: 2013-06-18 Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.982	98	80 - 120	2013-06-18

Standard (CCV-2)

QC Batch: 102434 Date Analyzed: 2013-06-18 Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.937	94	80 - 120	2013-06-18

Standard (CCV-3)

QC Batch: 102434 Date Analyzed: 2013-06-18 Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.947	95	80 - 120	2013-06-18

Standard (ICV-1)

QC Batch: 102764 Date Analyzed: 2013-07-02 Analyzed By: GS

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	98.0	98	85 - 115	2013-07-02

Standard (CCV-1)

QC Batch: 102764 Date Analyzed: 2013-07-02 Analyzed By: GS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	102	102	85 - 115	2013-07-02

Appendix

Report Definitions

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

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory 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

1 Sample dilution due to turbidity.

Attachments

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

LAB Order ID #: 1304922

Page _____ of _____

TraceAnalysis, Inc.

email: lab@traceanalysis.com

6701 Aberdeen Avenue, Suite 9
Lubbock, Texas 79424
Tel (806) 794-1296
Fax (806) 794-1298
1 (800) 378-1296

5002 Basin Street, Suite A1
Midland, Texas 79703
Tel (432) 689-6301
Fax (432) 689-6313

200 East Sunset Rd., Suite E
El Paso, Texas 79922
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

BioAquatic Testing
2501 Mayes Rd., Ste 100
Carrollton, Texas 75006
Tel (972) 242-7750

Company Name: APACHE — Phone #:

Address: (Street, City, Zip) STEVE FLEMMINGS — Fax #:

Contact Person: — E-mail:

Invoice to: (If different from above)

Project #: RED LAKE 29-I BATTERY — Project Name:

Project Location (including state): N.M. — Sampler Signature: Edward Cisneros

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume / Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME	MTBE 8021 / 602 / 8260 / 624	BTEX 8021 / 602 / 8260 / 624	TPH 418.1 / TX1005 / TX1005 Ext(C35)	TPH 8015 GRO / DRO / TVHC	PAH 8270 / 625	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260 / 624	GC/MS Semi. Vol. 8270 / 625	PCB's 8082 / 608	Pesticides 8081 / 608	BOD, TSS, pH	Moisture Content	Cl, F, SO_4, NO_3-N, NO_2-N, PO_4-P, Alkalinity	Na, Ca, Mg, K, TDS, EC			Turn Around Time if different from standard	Hold
	Surface Sample																																					
332544	Pt 1	1			✓									6-14-13	11:20				✓														✓					
345546	Pt 2	1			✓										11:25				✓														✓					
340547	Pt 3	1			✓										11:30				✓														✓					
341548	Pt 4	1			✓										11:35				✓														✓					
341549 BR	Pt 5	1			✓										11:40				✓														✓					
341550	Pt 6	1			✓										11:45				✓														✓					

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	
Edward Cisneros	RECS	6-17-13			RECS	6/17/13		INST ____ °C OBS ____ °C COR ____ °C
Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	
				HCJ	BTC	6-17-13	9:30	INST ____ °C OBS ____ °C COR ____ °C
Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	
				Brenda Ward	TA Lubbock	6/18/13	9:35	INST IR 3 °C OBS 3.1 °C COR 3.4 °C

LAB USE ONLY

Int Cool (Y) N

Headspace Y / N (NA)

Log-in-Review

REMARKS:

bbaker@rice-ecs.com
hconder@rice-ecs.com
JKamplain@rice-ecs.com

- Dry Weight Basis Required
- TRRP Report Required
- Check If Special Reporting Limits Are Needed

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C.

Carrier # US ZQ004981

ORIGINAL COPY

Appendix C

Overspray Lab

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

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 | Lubbock, Texas 79424 | 800-378-1296 | 806-794-1296 | FAX 806-794-1298
200 East Sunset Road, Suite E | El Paso, Texas 79922 | 915-585-3443 | FAX 915-585-4944
5002 Basin Street, Suite A1 | Midland, Texas 79703 | 432-689-6301 | FAX 432-689-6313
(BioAquatic) 2501 Mayes Rd., Suite 100 | Carrollton, Texas 75006 | 972-242-7750

E-Mail: lab@traceanalysis.com WEB: www.traceanalysis.com

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

Bruce Baker
Apache Corp.-Midland
303 Veterans Airpark Lane
Suite #3000
Midland, TX, 79705

Report Date: September 13, 2013

Work Order: 13082913

Project Location: Red Lake 29-I Battery, NM
Project Name: Apache Red Lake I Battery
Project Number: Apache Red Lake 29-I Battery

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

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
340451	Overspray Pt. 1	soil	2013-08-22	13:22	2013-08-28
340452	Overspray Pt. 2	soil	2013-08-22	13:24	2013-08-28
340453	Overspray Pt. 3	soil	2013-08-22	13:25	2013-08-28
340454	Overspray @ 6" Pt. 1	soil	2013-08-22	14:17	2013-08-28
340455	Overspray @ 6" Pt. 2	soil	2013-08-22	14:18	2013-08-28
340456	Overspray @ 6" Pt. 3	soil	2013-08-22	14:20	2013-08-28

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.

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

Report Contents

Case Narrative

Samples for project Apache Red Lake I Battery were received by TraceAnalysis, Inc. on 2013-08-28 and assigned to work order 13082913. Samples for work order 13082913 were received intact at a temperature of 3.3 C.

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

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
Chloride (Titration)	SM 4500-Cl B	89008	2013-09-13 at 11:00	105053	2013-09-13 at 12:00
TPH DRO - NEW	S 8015 D	88598	2013-08-29 at 13:00	104577	2013-08-30 at 09:18
TPH GRO	S 8015 D	88624	2013-08-30 at 16:54	104610	2013-08-30 at 16:54

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 13082913 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.

Analytical Report

Sample: 340451 - Overspray Pt. 1

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	105053	Date Analyzed:	2013-09-13	Analyzed By:	GS
Prep Batch:	89008	Sample Preparation:	2013-09-13	Prepared By:	GS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**20.0**	mg/Kg	1	5.00

Sample: 340451 - Overspray Pt. 1

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	104577	Date Analyzed:	2013-08-30	Analyzed By:	CM
Prep Batch:	88598	Sample Preparation:	2013-08-29	Prepared By:	CM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	**419**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr	167	mg/Kg	1	100	167	70 - 130

Sample: 340451 - Overspray Pt. 1

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	104610	Date Analyzed:	2013-08-30	Analyzed By:	MT
Prep Batch:	88624	Sample Preparation:	2013-08-30	Prepared By:	MT

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO [1]	U	1	<40.0	mg/Kg	10	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.81	mg/Kg	10	2.00	90	73 - 122

continued ...

sample continued ...

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
4-Bromofluorobenzene (4-BFB)			2.28	mg/Kg	10	2.00	114	74.6 - 120

Sample: 340452 - Overspray Pt. 2

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	105053	Date Analyzed:	2013-09-13	Analyzed By:	GS
Prep Batch:	89008	Sample Preparation:	2013-09-13	Prepared By:	GS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**49.0**	mg/Kg	1	5.00

Sample: 340452 - Overspray Pt. 2

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	104577	Date Analyzed:	2013-08-30	Analyzed By:	CM
Prep Batch:	88598	Sample Preparation:	2013-08-29	Prepared By:	CM

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO		1	**693**	mg/Kg	5	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		69.3	mg/Kg	5	100	69	70 - 130

Sample: 340452 - Overspray Pt. 2

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	104610	Date Analyzed:	2013-08-30	Analyzed By:	MT
Prep Batch:	88624	Sample Preparation:	2013-08-30	Prepared By:	MT

Parameter		Flag	Cert	Result	RL Units	Dilution	RL
GRO	2	U	1	<20.0	mg/Kg	5	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.86	mg/Kg	5	2.00	93	73 - 122
4-Bromofluorobenzene (4-BFB)			2.21	mg/Kg	5	2.00	110	74.6 - 120

Sample: 340453 - Overspray Pt. 3

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	105053	Date Analyzed:	2013-09-13	Analyzed By:	GS
Prep Batch:	89008	Sample Preparation:	2013-09-13	Prepared By:	GS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**34.0**	mg/Kg	1	5.00

Sample: 340453 - Overspray Pt. 3

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	104577	Date Analyzed:	2013-08-30	Analyzed By:	CM
Prep Batch:	88598	Sample Preparation:	2013-08-29	Prepared By:	CM

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO		1	**362**	mg/Kg	1	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		184	mg/Kg	1	100	184	70 - 130

Sample: 340453 - Overspray Pt. 3

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	104610	Date Analyzed:	2013-08-30	Analyzed By:	MT
Prep Batch:	88624	Sample Preparation:	2013-08-30	Prepared By:	MT

Parameter		Flag	Cert	Result	RL Units	Dilution	RL
GRO	3	U	1	<20.0	mg/Kg	5	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.84	mg/Kg	5	2.00	92	73 - 122
4-Bromofluorobenzene (4-BFB)			2.28	mg/Kg	5	2.00	114	74.6 - 120

Sample: 340454 - Overspray @ 6" Pt. 1

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	105053	Date Analyzed:	2013-09-13	Analyzed By:	GS
Prep Batch:	89008	Sample Preparation:	2013-09-13	Prepared By:	GS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**64.0**	mg/Kg	1	5.00

Sample: 340454 - Overspray @ 6" Pt. 1

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	104577	Date Analyzed:	2013-08-30	Analyzed By:	CM
Prep Batch:	88598	Sample Preparation:	2013-08-29	Prepared By:	CM

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO		1	**505**	mg/Kg	5	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		214	mg/Kg	5	100	214	70 - 130

Sample: 340454 - Overspray @ 6" Pt. 1

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	104610	Date Analyzed:	2013-08-30	Analyzed By:	MT
Prep Batch:	88624	Sample Preparation:	2013-08-30	Prepared By:	MT

Parameter		Flag	Cert	Result	RL Units	Dilution	RL
GRO	4	U	1	<40.0	mg/Kg	10	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.94	mg/Kg	10	2.00	97	73 - 122
4-Bromofluorobenzene (4-BFB)			2.17	mg/Kg	10	2.00	108	74.6 - 120

Sample: 340455 - Overspray @ 6" Pt. 2

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	105053	Date Analyzed:	2013-09-13	Analyzed By:	GS
Prep Batch:	89008	Sample Preparation:	2013-09-13	Prepared By:	GS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**25.0**	mg/Kg	1	5.00

Sample: 340455 - Overspray @ 6" Pt. 2

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	104577	Date Analyzed:	2013-08-30	Analyzed By:	CM
Prep Batch:	88598	Sample Preparation:	2013-08-29	Prepared By:	CM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	**534**	mg/Kg	1	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		268	mg/Kg	1	100	268	70 - 130

Sample: 340455 - Overspray @ 6" Pt. 2

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	104610	Date Analyzed:	2013-08-30	Analyzed By:	MT
Prep Batch:	88624	Sample Preparation:	2013-08-30	Prepared By:	MT

Parameter		Flag	Cert	RL Result	Units	Dilution	RL
GRO	5	U	1	<20.0	mg/Kg	5	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.30	mg/Kg	5	2.00	115	73 - 122
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	2.48	mg/Kg	5	2.00	124	74.6 - 120

Sample: 340456 - Overspray @ 6" Pt. 3

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	105053	Date Analyzed:	2013-09-13	Analyzed By:	GS
Prep Batch:	89008	Sample Preparation:	2013-09-13	Prepared By:	GS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**25.0**	mg/Kg	1	5.00

Sample: 340456 - Overspray @ 6" Pt. 3

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	104577	Date Analyzed:	2013-08-30	Analyzed By:	CM
Prep Batch:	88598	Sample Preparation:	2013-08-29	Prepared By:	CM

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO		1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			112	mg/Kg	1	100	112	70 - 130

Sample: 340456 - Overspray @ 6" Pt. 3

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	104610	Date Analyzed:	2013-08-30	Analyzed By:	MT
Prep Batch:	88624	Sample Preparation:	2013-08-30	Prepared By:	MT

Parameter		Flag	Cert	Result	RL Units	Dilution	RL
GRO	6	U	1	<20.0	mg/Kg	5	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.79	mg/Kg	5	2.00	90	73 - 122
4-Bromofluorobenzene (4-BFB)			2.10	mg/Kg	5	2.00	105	74.6 - 120

Method Blanks

Method Blank (1) QC Batch: 104577

QC Batch: 104577 | Date Analyzed: 2013-08-30 | Analyzed By: CM
Prep Batch: 88598 | QC Preparation: 2013-08-29 | Prepared By: CM

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1	<5.22	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr	141	mg/Kg	1	100	141	70 - 130

Method Blank (1) QC Batch: 104610

QC Batch: 104610 | Date Analyzed: 2013-08-30 | Analyzed By: MT
Prep Batch: 88624 | QC Preparation: 2013-08-30 | Prepared By: MT

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1	<0.230	mg/Kg	4

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.40	mg/Kg	1	2.00	120	73 - 122
4-Bromofluorobenzene (4-BFB)			2.23	mg/Kg	1	2.00	112	74.6 - 120

Method Blank (1) QC Batch: 105053

QC Batch: 105053 | Date Analyzed: 2013-09-13 | Analyzed By: GS
Prep Batch: 89008 | QC Preparation: 2013-09-13 | Prepared By: GS

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride			<3.05	mg/Kg	5

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 104577 | Date Analyzed: 2013-08-30 | Analyzed By: CM
Prep Batch: 88598 | QC Preparation: 2013-08-29 | Prepared By: CM

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	220	mg/Kg	1	250	<5.22	88	70 - 130

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	214	mg/Kg	1	250	<5.22	86	70 - 130	3	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	100	98.7	mg/Kg	1	100	100	99	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 104610 | Date Analyzed: 2013-08-30 | Analyzed By: MT
Prep Batch: 88624 | QC Preparation: 2013-08-30 | Prepared By: MT

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	14.3	mg/Kg	1	20.0	<0.230	72	60.1 - 120

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	15.4	mg/Kg	1	20.0	<0.230	77	60.1 - 120	7	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.89	2.09	mg/Kg	1	2.00	94	104	73 - 122
4-Bromofluorobenzene (4-BFB)	2.00	2.19	mg/Kg	1	2.00	100	110	74.6 - 120

Laboratory Control Spike (LCS-1)

QC Batch: 105053 | Date Analyzed: 2013-09-13 | Analyzed By: GS
Prep Batch: 89008 | QC Preparation: 2013-09-13 | Prepared By: GS

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			100	mg/Kg	1	100	<3.05	100	85 - 115

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			100	mg/Kg	1	100	<3.05	100	85 - 115	0	20

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

Matrix Spike (xMS-1) Spiked Sample: 340444

QC Batch: 104577 | Date Analyzed: 2013-08-30 | Analyzed By: CM
Prep Batch: 88598 | QC Preparation: 2013-08-29 | Prepared By: CM

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	286	mg/Kg	1	250	32	102	70 - 130

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	290	mg/Kg	1	250	32	103	70 - 130	1	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	111	112	mg/Kg	1	100	111	112	70 - 130

Matrix Spike (MS-1) Spiked Sample: 339800

QC Batch: 104610 | Date Analyzed: 2013-08-30 | Analyzed By: MT
Prep Batch: 88624 | QC Preparation: 2013-08-30 | Prepared By: MT

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	15.2	mg/Kg	1	20.0	<0.230	76	40.3 - 120

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	17.4	mg/Kg	1	20.0	<0.230	87	40.3 - 120	13	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.97	2.21	mg/Kg	1	2	98	111	73 - 122
4-Bromofluorobenzene (4-BFB)	2.31	2.42	mg/Kg	1	2	116	121	74.6 - 120

Matrix Spike (MS-1) Spiked Sample: 340456

QC Batch: 105053 | Date Analyzed: 2013-09-13 | Analyzed By: GS
Prep Batch: 89008 | QC Preparation: 2013-09-13 | Prepared By: GS

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			515	mg/Kg	1	500	25	98	80 - 120

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			510	mg/Kg	1	500	25	97	80 - 120	1	20

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

Calibration Standards

Standard (CCV-1)

QC Batch: 104577 Date Analyzed: 2013-08-30 Analyzed By: CM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	218	87	80 - 120	2013-08-30

Standard (CCV-2)

QC Batch: 104577 Date Analyzed: 2013-08-30 Analyzed By: CM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	228	91	80 - 120	2013-08-30

Standard (CCV-3)

QC Batch: 104577 Date Analyzed: 2013-08-30 Analyzed By: CM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	226	90	80 - 120	2013-08-30

Standard (CCV-1)

QC Batch: 104610 Date Analyzed: 2013-08-30 Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.08	108	80 - 120	2013-08-30

Standard (CCV-2)

QC Batch: 104610 Date Analyzed: 2013-08-30 Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.875	88	80 - 120	2013-08-30

Standard (CCV-3)

QC Batch: 104610 Date Analyzed: 2013-08-30 Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.926	93	80 - 120	2013-08-30

Standard (ICV-1)

QC Batch: 105053 Date Analyzed: 2013-09-13 Analyzed By: GS

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	100	100	85 - 115	2013-09-13

Standard (CCV-1)

QC Batch: 105053 Date Analyzed: 2013-09-13 Analyzed By: GS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	100	100	85 - 115	2013-09-13

Appendix

Report Definitions

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

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory 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

1 Sample dilution due to surfactants.
2 Sample dilution due to surfactants.
3 Sample dilution due to surfactants.
4 Sample dilution due to surfactants.
5 Sample dilution due to surfactants.
6 Sample dilution due to surfactants.

Attachments

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

LAB Order ID # 1308293

Page _____ of _____

TraceAnalysis, Inc.

email: lab@traceanalysis.com

6701 Aberdeen Avenue, Suite 9
Lubbock, Texas 79424
Tel (806) 794-1296
Fax (806) 794-1298
1 (800) 378-1296

5002 Basin Street, Suite A1
Midland, Texas 79703
Tel (432) 689-6301
Fax (432) 689-6313

200 East Sunset Rd., Suite E
El Paso, Texas 79922
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

BioAquatic Testing
2501 Mayes Rd., Ste 100
Carrollton, Texas 75006
Tel (972) 242-7750

Company Name: Apache — Phone #:

Address: (Street, City, Zip) — Fax #:

Contact Person: Bruce Baker — E-mail: larry.baker@apachecorp.com

Invoice to: (if different from above)

Project #: — Project Name:

Project Location (including state): Red Lake I-29 #1 Battery — Sampler Signature: Karanja Lewis

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume / Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME	MTBE 8021 / 602 / 8260 / 624	BTEX 8021 / 602 / 8260 / 624	TPH 418.1 / TX1005 / TX1005 Ext(C35)	TPH 8015 GRO / DRO / TVHC	PAH 8270 / 625	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260 / 624	GC/MS Semi. Vol. 8270 / 625	PCB's 8082 / 608	Pesticides 8081 / 608	BOD, TSS, pH	Moisture Content	Cl, F, SO_4, NO_3-N, NO_2-N, PO_4-P, Alkalinity	Na, Ca, Mg, K, TDS, EC						Turn Around Time if different from standard	Hold
340451	Overspray Pt 1	1	4oz		✓							✓		8-22-13	1:22				✓														✓							
452	Overspray Pt 2	1	4oz		✓							✓		8-22-13	1:24				✓														✓							
453	Overspray Pt 3	1	4oz		✓							✓		8-22-13	1:25				✓														✓							
454	Overspray @ 6" Pt 1	1	4oz		✓							✓		8-22-13	2:17				✓														✓							
455	Overspray @ 6" Pt 2	1	4oz		✓							✓		8-22-13	2:18				✓														✓							
456	Overspray @ 6" Pt 3	1	4oz		✓							✓		8-22-13	2:20				✓														✓							

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	
Karanja Lewis	RECS	8-22-13		Robert Green	RECS	8-23-13		INST ___ OBS ___ °C COR ___ °C
				RC	BHC	8/23/13	4:00	INST ___ OBS ___ °C COR ___ °C
				ASE	TA	8/24/13	9:00	INST IR3 OBS 3.4 °C COR 3.3 °C

LAB USE ONLY: Intact (Y) N — Headspace Y / N (NA) — Log-In-Review (KS)

REMARKS: send results to
hcrowder@riceswd.com
knorman@rice-ecs.com
klewis@rice-ecs.com
lpena@riceswd.com
lweinheimer@rice-ecs.com

- Dry Weight Basis Required
- TRRP Report Required
- Check If Special Reporting Limits Are Needed

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C. O. C.

Carrier # LS: EQ197622

ORIGINAL COPY

Appendix D

5 Point Composite Sample Lab 8/26/13

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

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 | Lubbock, Texas 79424 | 800-378-1296 | 806-794-1296 | FAX 806-794-1298
200 East Sunset Road, Suite E | El Paso, Texas 79922 | 915-585-3443 | FAX 915-585-4944
5002 Basin Street, Suite A1 | Midland, Texas 79703 | 432-689-6301 | FAX 432-689-6313
(BioAquatic) 2501 Mayes Rd., Suite 100 | Carrollton, Texas 75006 | 972-242-7750

E-Mail: lab@traceanalysis.com WEB: www.traceanalysis.com

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

Bruce Baker
Apache Corp.-Midland
303 Veterans Airpark Lane
Suite #3000
Midland, TX, 79705

Report Date: September 12, 2013

Work Order: 13082825

Project Location: Red Lake 29-I Battery, NM
Project Name: Red Lake
Project Number: Red Lake

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

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
340345	5 Point Composite	soil	2013-08-26	13:55	2013-08-27

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.

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

Report Contents

Case Narrative

Samples for project Red Lake were received by TraceAnalysis, Inc. on 2013-08-27 and assigned to work order 13082825. Samples for work order 13082825 were received intact at a temperature of 8.0 C.

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

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
BTEX	S 8021B	88734	2013-09-04 at 15:31	104729	2013-09-04 at 15:31
Chloride (Titration)	SM 4500-Cl B	88954	2013-09-11 at 20:00	104980	2013-09-12 at 10:00
TPH DRO - NEW	S 8015 D	88598	2013-08-29 at 13:00	104577	2013-08-30 at 09:18
TPH GRO	S 8015 D	88734	2013-09-04 at 15:31	104730	2013-09-04 at 15:31

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 13082825 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.

Analytical Report

Sample: 340345 - 5 Point Composite

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	104729	Date Analyzed:	2013-09-04	Analyzed By:	MT
Prep Batch:	88734	Sample Preparation:	2013-09-04	Prepared By:	MT

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	1	<0.100	mg/Kg	5	0.0200
Toluene	U	1	<0.100	mg/Kg	5	0.0200
Ethylbenzene		1	**1.06**	mg/Kg	5	0.0200
Xylene		1	**1.64**	mg/Kg	5	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.97	mg/Kg	5	2.00	98	66.2 - 120
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	2.48	mg/Kg	5	2.00	124	59.5 - 120

Sample: 340345 - 5 Point Composite

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104980	Date Analyzed:	2013-09-12	Analyzed By:	GS
Prep Batch:	88954	Sample Preparation:	2013-09-11	Prepared By:	GS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**238**	mg/Kg	1	5.00

Sample: 340345 - 5 Point Composite

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	104577	Date Analyzed:	2013-08-30	Analyzed By:	CM
Prep Batch:	88598	Sample Preparation:	2013-08-29	Prepared By:	CM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	**1060**	mg/Kg	1	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		208	mg/Kg	1	100	208	70 - 130

Sample: 340345 - 5 Point Composite

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	104730	Date Analyzed:	2013-09-04	Analyzed By:	MT
Prep Batch:	88734	Sample Preparation:	2013-09-04	Prepared By:	MT

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Qs	1	**103**	mg/Kg	5	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.09	mg/Kg	5	2.00	104	73 - 122
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	3.91	mg/Kg	5	2.00	196	74.6 - 120

Method Blanks

Method Blank (1) QC Batch: 104577

QC Batch: 104577 | Date Analyzed: 2013-08-30 | Analyzed By: CM
Prep Batch: 88598 | QC Preparation: 2013-08-29 | Prepared By: CM

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1	<5.22	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr	141	mg/Kg	1	100	141	70 - 130

Method Blank (1) QC Batch: 104729

QC Batch: 104729 | Date Analyzed: 2013-09-04 | Analyzed By: MT
Prep Batch: 88734 | QC Preparation: 2013-09-04 | Prepared By: MT

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.00473	mg/Kg	0.02
Toluene		1	<0.00416	mg/Kg	0.02
Ethylbenzene		1	<0.00511	mg/Kg	0.02
Xylene		1	<0.00430	mg/Kg	0.02

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0932	mg/Kg	1	2.00	5	66.2 - 120
4-Bromofluorobenzene (4-BFB)			0.0926	mg/Kg	1	2.00	5	59.5 - 120

Method Blank (1) QC Batch: 104730

QC Batch: 104730 | Date Analyzed: 2013-09-04 | Analyzed By: MT
Prep Batch: 88734 | QC Preparation: 2013-09-04 | Prepared By: MT

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1	<0.230	mg/Kg	4

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.18	mg/Kg	1	2.00	109	73 - 122
4-Bromofluorobenzene (4-BFB)			2.06	mg/Kg	1	2.00	103	74.6 - 120

Method Blank (1) QC Batch: 104980

QC Batch: 104980 | Date Analyzed: 2013-09-12 | Analyzed By: GS
Prep Batch: 88954 | QC Preparation: 2013-09-11 | Prepared By: GS

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride			<3.05	mg/Kg	5

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 104577 | Date Analyzed: 2013-08-30 | Analyzed By: CM
Prep Batch: 88598 | QC Preparation: 2013-08-29 | Prepared By: CM

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	220	mg/Kg	1	250	<5.22	88	70 - 130

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	214	mg/Kg	1	250	<5.22	86	70 - 130	3	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	100	98.7	mg/Kg	1	100	100	99	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 104729 | Date Analyzed: 2013-09-04 | Analyzed By: MT
Prep Batch: 88734 | QC Preparation: 2013-09-04 | Prepared By: MT

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.76	mg/Kg	1	2.00	<0.00473	88	69.3 - 120
Toluene		1	1.86	mg/Kg	1	2.00	<0.00416	93	70.5 - 120
Ethylbenzene		1	1.94	mg/Kg	1	2.00	<0.00511	97	70.6 - 120
Xylene		1	5.88	mg/Kg	1	6.00	<0.00430	98	70.7 - 120

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	1.68	mg/Kg	1	2.00	<0.00473	84	69.3 - 120	5	20
Toluene		1	1.77	mg/Kg	1	2.00	<0.00416	88	70.5 - 120	5	20
Ethylbenzene		1	1.84	mg/Kg	1	2.00	<0.00511	92	70.6 - 120	5	20
Xylene		1	5.60	mg/Kg	1	6.00	<0.00430	93	70.7 - 120	5	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.86	1.78	mg/Kg	1	2.00	93	89	66.2 - 120
4-Bromofluorobenzene (4-BFB)	1.93	1.84	mg/Kg	1	2.00	96	92	59.5 - 120

Laboratory Control Spike (LCS-1)

QC Batch: 104730 | Date Analyzed: 2013-09-04 | Analyzed By: MT
Prep Batch: 88734 | QC Preparation: 2013-09-04 | Prepared By: MT

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	16.9	mg/Kg	1	20.0	<0.230	84	60.1 - 120

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	17.1	mg/Kg	1	20.0	<0.230	86	60.1 - 120	1	20

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

Surrogate			LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)			2.35	2.37	mg/Kg	1	2.00	118	118	73 - 122
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	2.43	2.43	mg/Kg	1	2.00	122	122	74.6 - 120

Laboratory Control Spike (LCS-1)

QC Batch: 104980 | Date Analyzed: 2013-09-12 | Analyzed By: GS
Prep Batch: 88954 | QC Preparation: 2013-09-11 | Prepared By: GS

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			99.0	mg/Kg	1	100	<3.05	99	85 - 115

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			99.0	mg/Kg	1	100	<3.05	99	85 - 115	0	20

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

Matrix Spike (xMS-1) Spiked Sample: 340444

QC Batch: 104577 | Date Analyzed: 2013-08-30 | Analyzed By: CM
Prep Batch: 88598 | QC Preparation: 2013-08-29 | Prepared By: CM

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	286	mg/Kg	1	250	32	102	70 - 130

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	290	mg/Kg	1	250	32	103	70 - 130	1	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	111	112	mg/Kg	1	100	111	112	70 - 130

Matrix Spike (MS-1) Spiked Sample: 340345

QC Batch: 104729 | Date Analyzed: 2013-09-04 | Analyzed By: MT
Prep Batch: 88734 | QC Preparation: 2013-09-04 | Prepared By: MT

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	2.05	mg/Kg	5	2.00	<0.0236	102	63.6 - 120
Toluene		1	2.24	mg/Kg	5	2.00	<0.0208	112	67.8 - 128
Ethylbenzene		1	3.06	mg/Kg	5	2.00	1.06	100	69.5 - 136
Xylene		1	8.40	mg/Kg	5	6.00	1.64	113	69.3 - 139

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	1.99	mg/Kg	5	2.00	<0.0236	100	63.6 - 120	3	20
Toluene		1	2.17	mg/Kg	5	2.00	<0.0208	108	67.8 - 128	3	20
Ethylbenzene		1	2.96	mg/Kg	5	2.00	1.06	95	69.5 - 136	3	20
Xylene		1	8.39	mg/Kg	5	6.00	1.64	112	69.3 - 139	0	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.99	1.96	mg/Kg	5	2	100	98	66.2 - 120

continued ...

matrix spikes continued ...

Surrogate			MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	2.42	2.59	mg/Kg	5	2	121	130	59.5 - 120

Matrix Spike (MS-1) Spiked Sample: 340345

QC Batch: 104730 | Date Analyzed: 2013-09-04 | Analyzed By: MT
Prep Batch: 88734 | QC Preparation: 2013-09-04 | Prepared By: MT

Param		F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	Qs	Qs	1	140	mg/Kg	5	20.0	103	185	40.3 - 120

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	116	mg/Kg	5	20.0	103	65	40.3 - 120	19	20

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

Surrogate			MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)			2.12	2.00	mg/Kg	5	2	106	100	73 - 122
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	14.8	12.2	mg/Kg	5	2	740	610	74.6 - 120

Matrix Spike (MS-1) Spiked Sample: 341102

QC Batch: 104980 | Date Analyzed: 2013-09-12 | Analyzed By: GS
Prep Batch: 88954 | QC Preparation: 2013-09-11 | Prepared By: GS

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			566	mg/Kg	1	500	10	111	80 - 120

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			561	mg/Kg	1	500	10	110	80 - 120	1	20

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

Calibration Standards

Standard (CCV-1)

QC Batch: 104577 Date Analyzed: 2013-08-30 Analyzed By: CM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	218	87	80 - 120	2013-08-30

Standard (CCV-2)

QC Batch: 104577 Date Analyzed: 2013-08-30 Analyzed By: CM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	228	91	80 - 120	2013-08-30

Standard (CCV-3)

QC Batch: 104577 Date Analyzed: 2013-08-30 Analyzed By: CM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	226	90	80 - 120	2013-08-30

Standard (CCV-1)

QC Batch: 104729 Date Analyzed: 2013-09-04 Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0966	97	80 - 120	2013-09-04
Toluene		1	mg/kg	0.100	0.0938	94	80 - 120	2013-09-04

continued ...

standard continued ...

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Ethylbenzene		1	mg/kg	0.100	0.0935	94	80 - 120	2013-09-04
Xylene		1	mg/kg	0.300	0.283	94	80 - 120	2013-09-04

Standard (CCV-2)

QC Batch: 104729 Date Analyzed: 2013-09-04 Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0937	94	80 - 120	2013-09-04
Toluene		1	mg/kg	0.100	0.0923	92	80 - 120	2013-09-04
Ethylbenzene		1	mg/kg	0.100	0.0919	92	80 - 120	2013-09-04
Xylene		1	mg/kg	0.300	0.276	92	80 - 120	2013-09-04

Standard (CCV-1)

QC Batch: 104730 Date Analyzed: 2013-09-04 Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.969	97	80 - 120	2013-09-04

Standard (CCV-2)

QC Batch: 104730 Date Analyzed: 2013-09-04 Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.02	102	80 - 120	2013-09-04

Standard (ICV-1)

QC Batch: 104980 Date Analyzed: 2013-09-12 Analyzed By: GS

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	100	100	85 - 115	2013-09-12

Standard (CCV-1)

QC Batch: 104980 Date Analyzed: 2013-09-12 Analyzed By: GS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	100	100	85 - 115	2013-09-12

Appendix

Report Definitions

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

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory 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

1 Sample dilution due to hydrocarbons.

Attachments

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

LAB Order ID #: 13082825

Page 1 of 1

TraceAnalysis, Inc.

email: lab@traceanalysis.com

6701 Aberdeen Avenue, Suite 9
Lubbock, Texas 79424
Tel (806) 794-1296
Fax (806) 794-1298
1 (800) 378-1296

5002 Basin Street, Suite A1
Midland, Texas 79703
Tel (432) 689-6301
Fax (432) 689-6313

200 East Sunset Rd., Suite E
El Paso, Texas 79922
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

BioAquatic Testing
2501 Mayes Rd., Ste 100
Carrollton, Texas 75006
Tel (972) 242-7750

Company Name: Apache

Phone #:

Address: (Street, City, Zip)

Fax #:

Contact Person: Bruce Baker

E-mail: henry.baker@apachecorp.com

Invoice to: (if different from above)

Project #:

Project Name:

Project Location (including state): Red Lake 29T state #1

Sampler Signature: Kyle Schmidt

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume / Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME	MTBE 8021 / 602 / 8260 / 624	BTEX 8021 / 602 / 8260 / 624	TPH 418.1 / TX1005 / TX1005 Ext(C35)	TPH 8015 GRO / DRO / TVHC	PAH 8270 / 625	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260 / 624	GC/MS Semi. Vol. 8270 / 625	PCB's 8082 / 608	Pesticides 8081 / 608	BOD, TSS, pH	Moisture Content	Cl, F, SO_4, NO_3-N, NO_2-N, PO_4-P, Alkalinity	Na, Ca, Mg, K, TDS, EC						Turn Around Time if different from standard	Hold
340345	5-point composite	1			X							X		8-26-13	1:55		X	X	X														X								

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	
Kyle Schmidt	RECS			Robert Garcia	RECS	8-27-13		INST ___ °C OBS ___ °C COR ___ °C
Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	
				John Garcia	Brandon Clark	8-28-13	8:35 AM	INST ___ °C OBS 8 °C COR ___ °C
Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	
					TA	8/28/13	9:20	INST 18.0 °C OBS 4.9 °C COR 4.1 °C

LAB USE ONLY

Intact Y / N

Headspace Y / N / NA

Log-In-Review MM

REMARKS:

- ☐ Dry Weight Basis Required
- ☐ TRRP Report Required
- ☐ Check If Special Reporting Limits Are Needed

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C. O. C.

Carrier # 20 19762-7

ORIGINAL COPY

Appendix E

5 Point Composite Sample Lab 9/18/13

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

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

September 25, 2013

BRUCE BAKER

APACHE - EUNICE

P. O. BOX 1849

EUNICE, NM 88231

RE: RED LAKE 29 I STATE #1

Enclosed are the results of analyses for samples received by the laboratory on 09/18/13 15:00.

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 www.tceq.texas.gov/field/qa/lab_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,

Celey D. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

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

Received:	09/18/2013	Sampling Date:	09/18/2013
Reported:	09/25/2013	Sampling Type:	Soil
Project Name:	RED LAKE 29 I STATE #1	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: 5 PT. COMP (H302277-01)

TPH 8015M **mg/kg** **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	09/20/2013	ND	180	89.8	200	5.90	
DRO >C10-C28	**221**	10.0	09/20/2013	ND	167	83.3	200	9.08	

Surrogate: 1-Chlorooctane	*100 %*	*65.2-140*
Surrogate: 1-Chlorooctadecane	*107 %*	*63.6-154*

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

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

Celey D. Keene, Lab Director/Quality Manager

CARDINAL LABORATORIES

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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: Apache		BILL TO	
Project Manager: Jacob Kamplain		P.O. #:	
Address:		Company:	
City: Hobbs	State: NM Zip: 88240	Attn:	
Phone #:	Fax #:	Address:	
Project #:	Project Owner:	City:	
Project Name:		State: Zip:	
Project Location: Red Lake 29I state #1		Phone #:	
Sampler Name: Kyle Schnaidt		Fax #:	

FOR LAB USE ONLY				MATRIX						PRESERV.			SAMPLING		ANALYSIS REQUEST										
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME	Chlorides	TPH 8015 M	BTEX	Texas TPH	Complete Cations/Anions	TDS					
H302277																									
1	5 point composite	C	1			X					X		9-18-13	11:30		X									

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 the client for the 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 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 services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By: Kyle Schnaidt	Date: 9-18-13 Time: 5:00	Received By: Jodi Henson	Phone Result: ☐ Yes ☑ No Add'l Phone #:
Relinquished By:	Date: Time:	Received By:	Fax Result: ☐ Yes ☑ No Add'l Fax #:
Delivered By: (Circle One) Sampler - UPS - Bus - Other: 12°C	Sample Condition Cool: ☐ Yes ☑ No Intact: ☑ Yes ☐ No	CHECKED BY: (Initials) JH	REMARKS: kschnaidt@rice-ecs.com Knorman@rice-ecs.com Kjones@riceswd.com; jkamplain@rice-ecs.com hconder@rice-ecs.com; Lweinheimer@rice-ecs.com larry.baker@apachecorp.com

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

#54

Sample taken & brought directly to lab. JH

Appendix F

NMOCD Approval to Backfill Site

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

From: Bratcher, Mike, EMNRD
To: Lara Weinheimer; Warren, JeanMarie, EMNRD
Cc: "Hack Conder"; "Baker, Larry"; "Jacob Kamplain"
Subject: RE: Apache Red Lake 29-I State #1 Battery (2RP-1875)
Date: Thursday, October 10, 2013 10:37:15 AM

Lara,

As discussed in our meeting yesterday, 10/9/13, RECS is approved to commence backfill operations at this site.

Mike Bratcher
NMOCD District 2
811 S. First Street
Artesia, NM 88210
O: 575-748-1283 X108
C: 575-626-0857
F: 575-748-9720

From: Lara Weinheimer [mailto:lweinheimer@rice-ecs.com]
Sent: Wednesday, September 25, 2013 2:18 PM
To: Bratcher, Mike, EMNRD; Warren, JeanMarie, EMNRD
Cc: 'Hack Conder'; 'Baker, Larry'; 'Jacob Kamplain'
Subject: Apache Red Lake 29-I State #1 Battery (2RP-1875)

Mike attached is the sampling data for the 6-9 inch scrape and overspray area for the above-referenced site. The bottom samples are from the 6-9 inch scrape on the release. The overspray samples are from the surface and at a depth of 6 inches. Based on the data, Apache would like your permission to backfill the site with clean, imported soil. If you have any questions or concerns, please let us know. Otherwise, we await your approval.

Thanks!

Lara Weinheimer
Rice Environmental Consulting & Safety
Project Scientist
419 West Cain
Hobbs, NM 88240
(575) 441-0431

Appendix G

Imported Soil Lab

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

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

November 11, 2013

BRUCE BAKER

APACHE - EUNICE

P. O. BOX 1849

EUNICE, NM 88231

RE: RED LAKE 29 I STATE #1

Enclosed are the results of analyses for samples received by the laboratory on 11/07/13 16:23.

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 www.tceq.texas.gov/field/qa/lab_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,

Celey D. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

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

Received:	11/07/2013	Sampling Date:	11/06/2013
Reported:	11/11/2013	Sampling Type:	Soil
Project Name:	RED LAKE 29 I STATE #1	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: TOP SOIL 7 PT. COMPOSITE (H302727-01)

Chloride, SM4500Cl-B **mg/kg** **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	11/08/2013	ND	416	104	400	3.92	

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

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

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

Company Name:	APACHE	BILL TO	
Project Manager:	LARRY BRUCE BAKER	P.O. #:	
Address:		Company:	
City:	State: Zip:	Attn:	
Phone #:	Fax #:	Address:	
Project #:	Project Owner:	City:	
Project Name:		State: Zip:	
Project Location:	RED LAKE 29-I STATE #1	Phone #:	
Sampler Name:	EDWARD CESARED	Fax #:	

ANALYSIS REQUEST: CHLORIDES

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	PRESERV.: ACID/BASE:	ICE / COOL	OTHER:	SAMPLING: DATE	TIME	CHLORIDES
H302727 1	TOP SOIL 7 pt. Composite	C	1			/					/		11-6-13	3:00	/

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 the client for the 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 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 services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By: Edward Cesareo	Date: 11-6-13 Time: 4:23	Received By: Addi Henson	Phone Result: ☐ Yes ☐ No Add'l Phone #:
Relinquished By:	Date: Time:	Received By:	Fax Result: ☐ Yes ☐ No Add'l Fax #:
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Sample Condition: Cool ☑ Yes ☐ No; Intact ☑ Yes ☐ No	CHECKED BY: (Initials)	REMARKS: lweinheimer@rice-ecs.com Larry Baker@apachecorp.com JKamplain@rice-ecs.com

† Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2326

#54

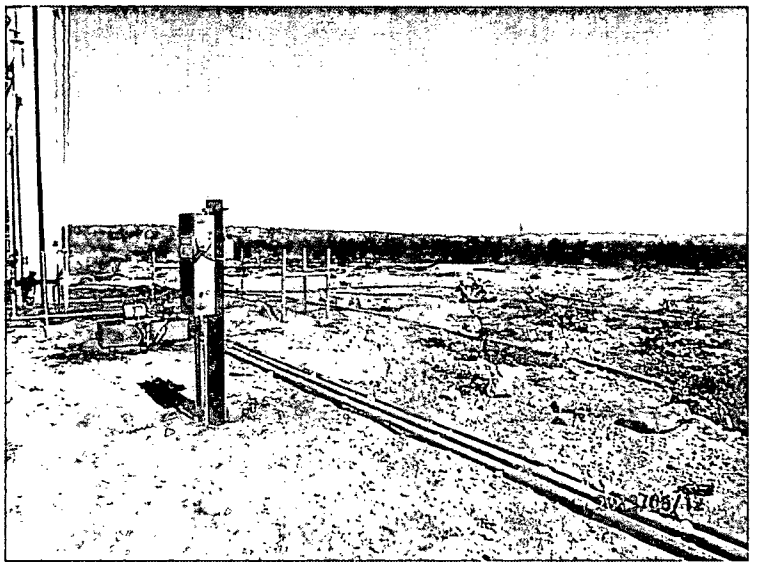
Appendix H

Photo Documentation

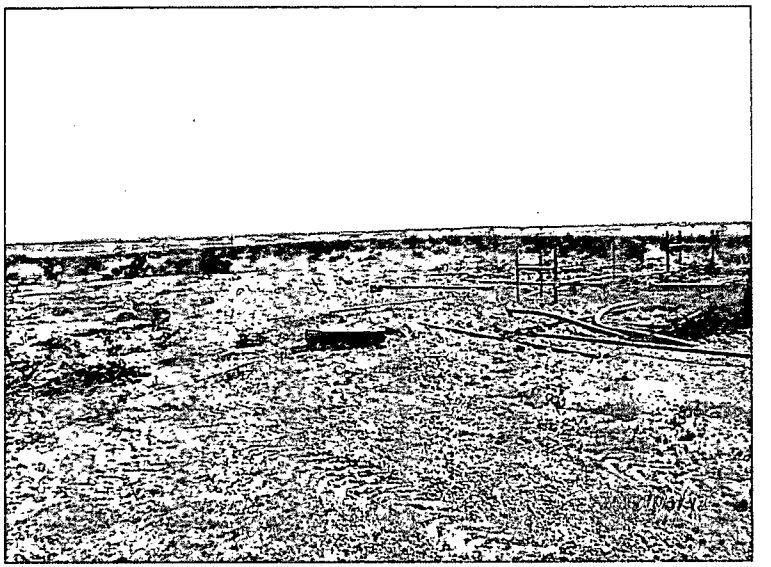
RICE Environmental Consulting and Safety (RECS)
P.O. Box 2948 Hobbs, NM 88241
Phone 575.393.2967

Apache Red Lake 29 I State #1

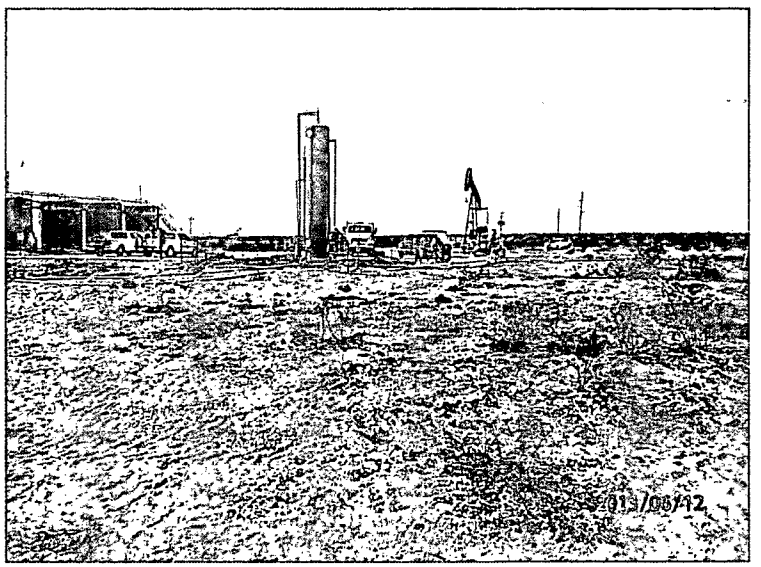
Unit Letter I, Section 29, T17S, R28E



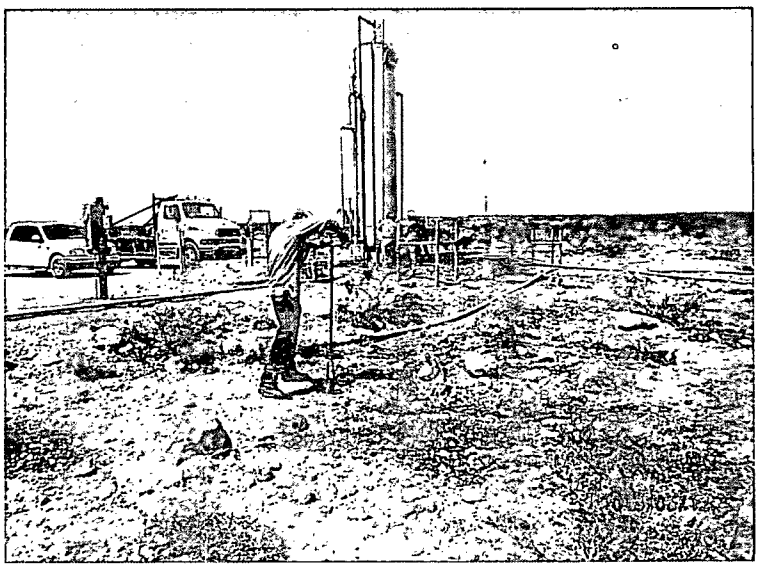
Initial release area, facing east 6/12/13



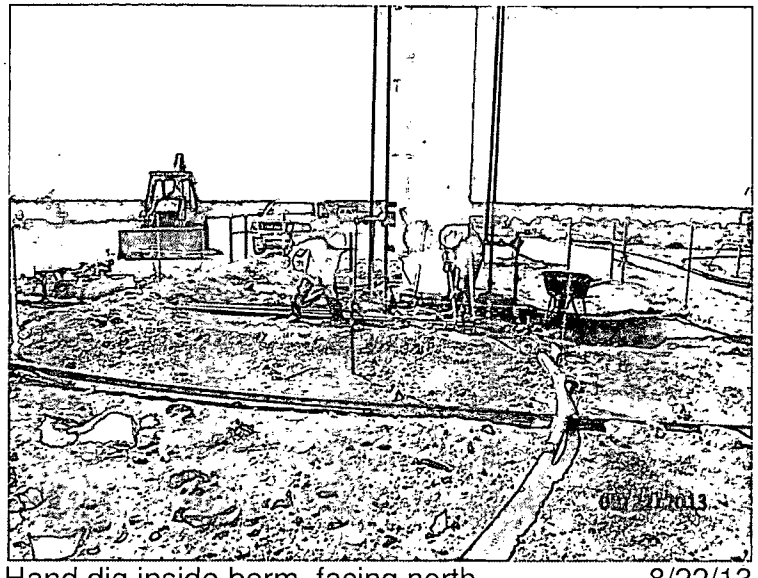
Initial release area, facing west 6/12/13



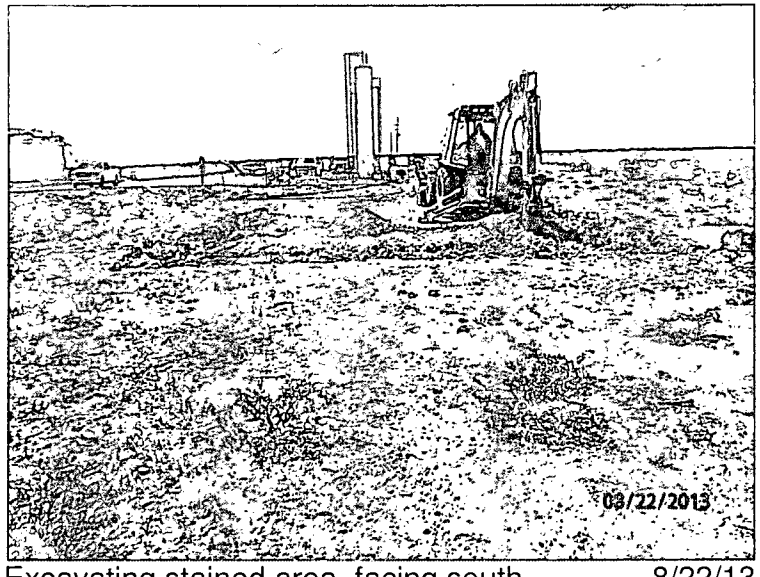
Initial release area, facing north 6/12/13



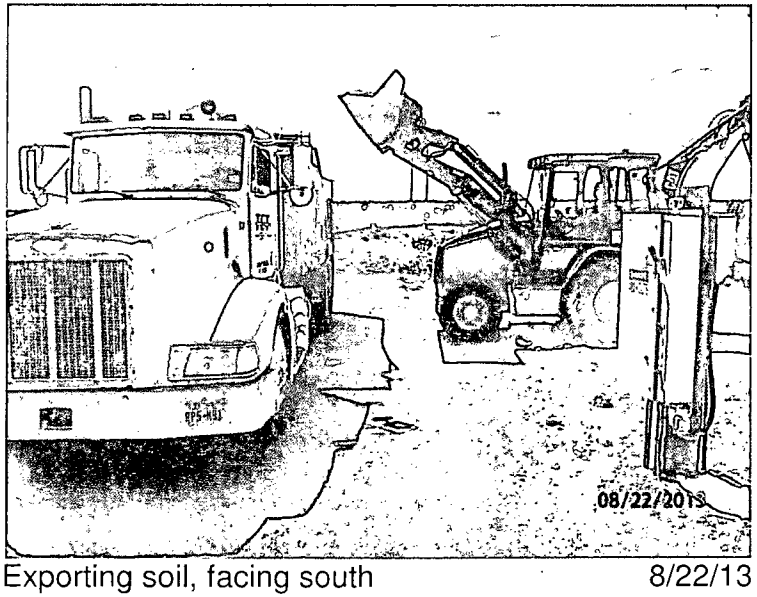
Hand auguring vertical Pt. 1, facing west 6/12/13



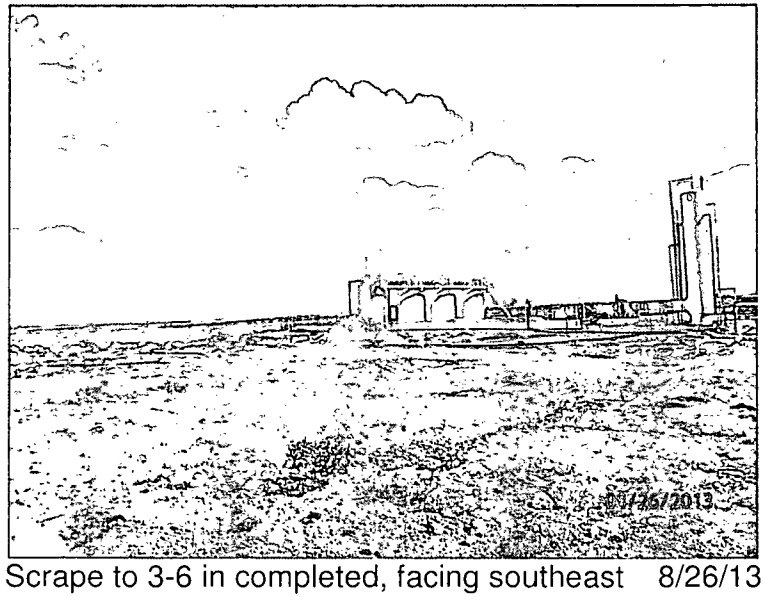
Hand dig inside berm, facing north 8/22/13



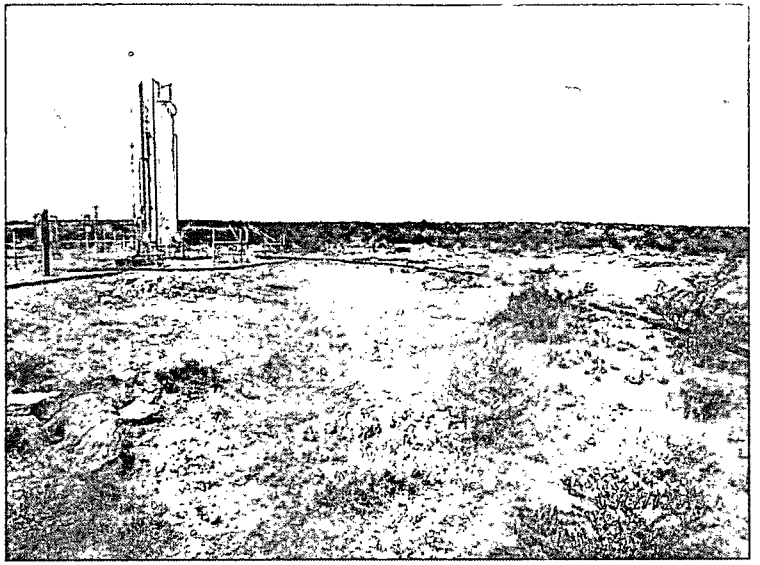
Excavating stained area, facing south 8/22/13



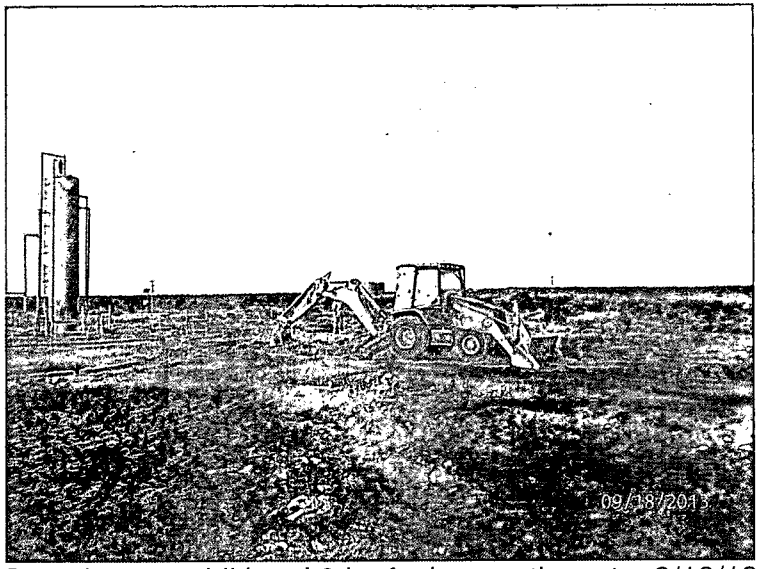
Exporting soil, facing south 8/22/13



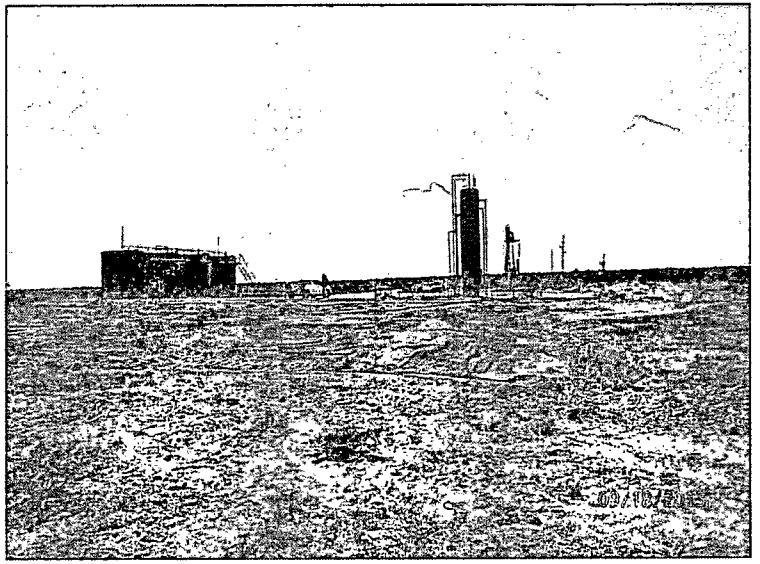
Scrape to 3-6 in completed, facing southeast 8/26/13



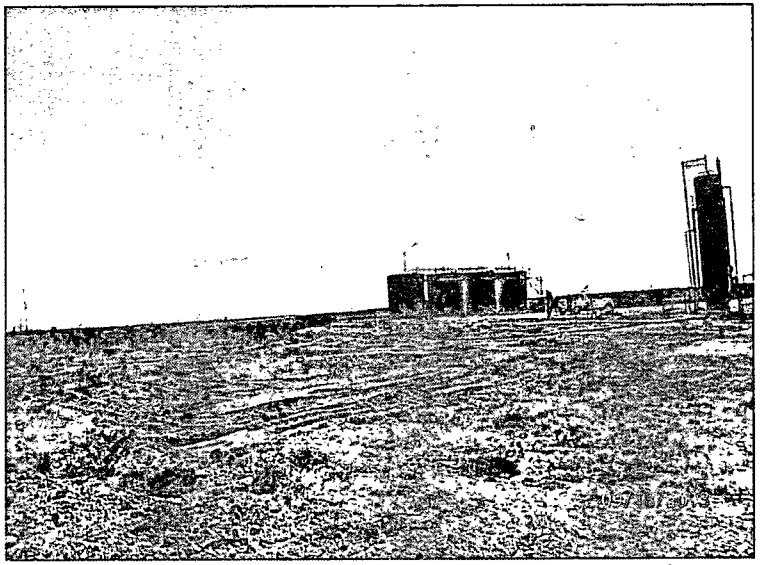
Scrape to 3-6 in completed, facing west 8/27/13



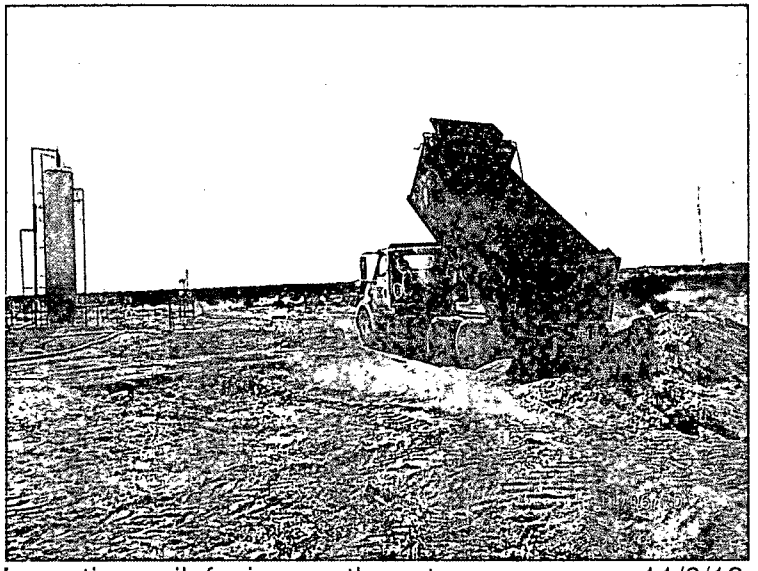
Scraping an additional 3 in, facing southwest 9/18/13



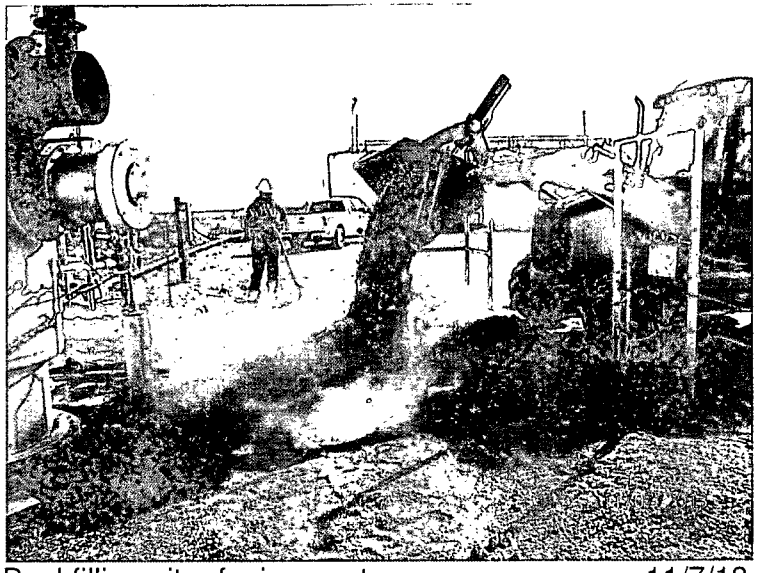
Scrape an additional 3 in completed, facing southeast
9/18/13



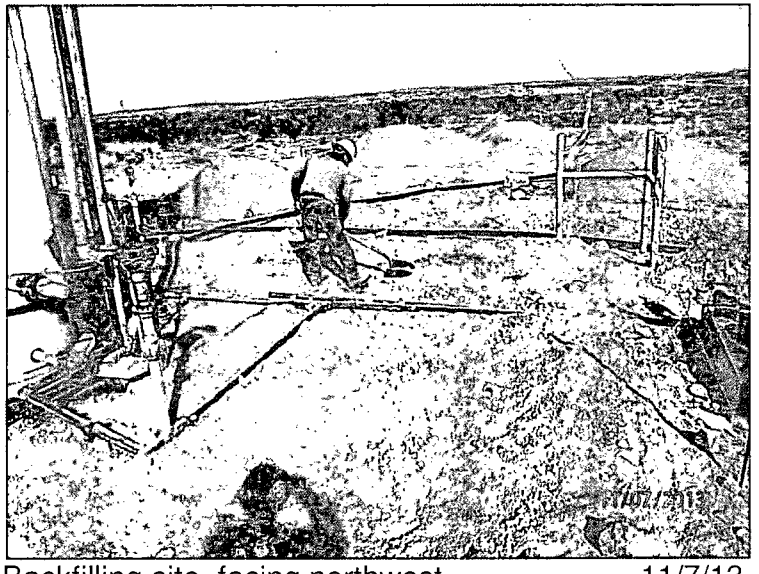
Scrape an additional 3 in completed, facing southeast
9/18/13



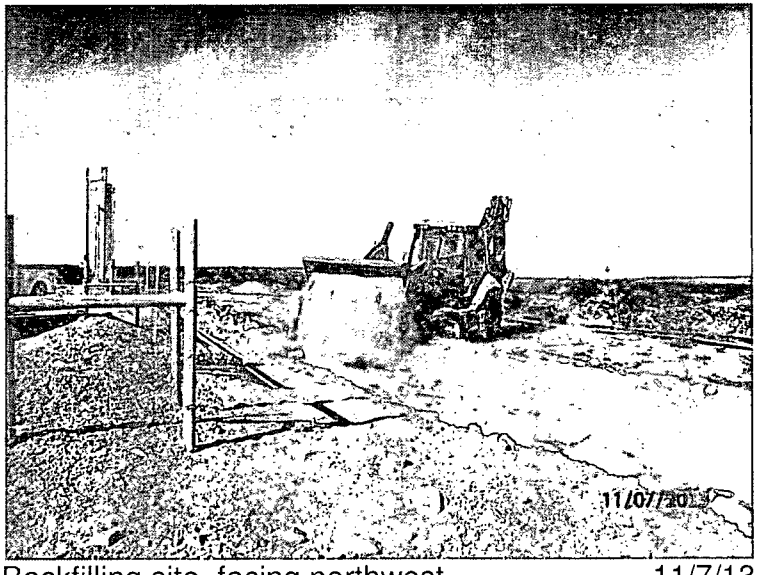
Importing soil, facing southwest 11/6/13



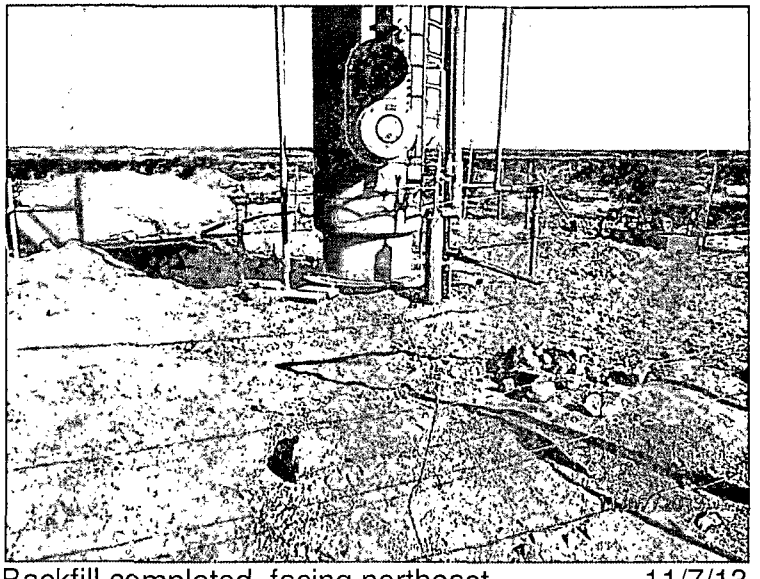
Backfilling site, facing east 11/7/13



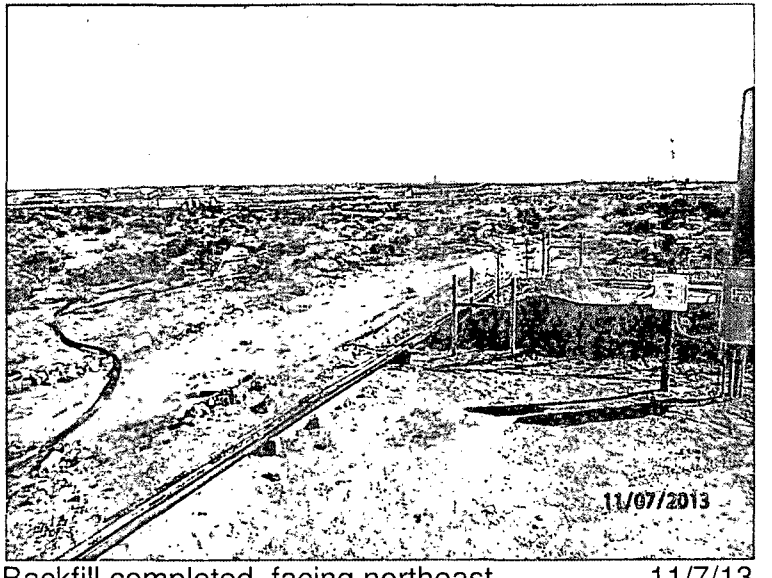
Backfilling site, facing northwest 11/7/13



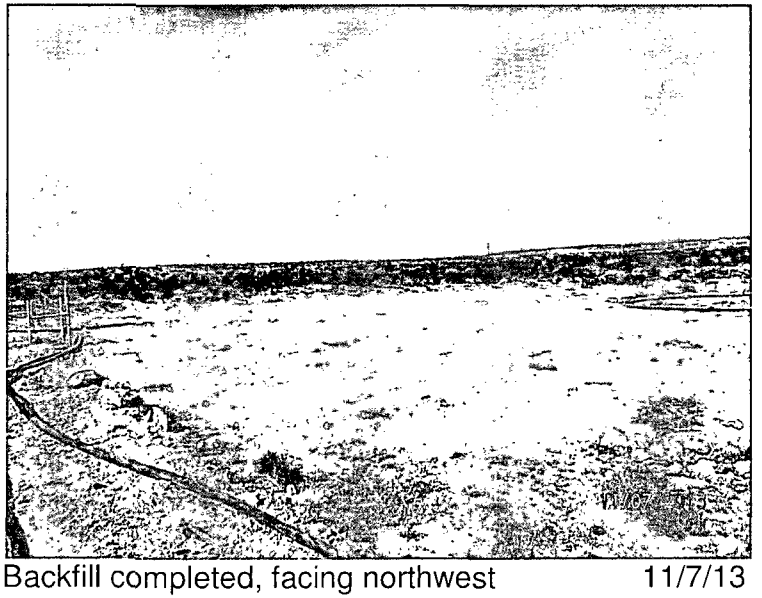
Backfilling site, facing northwest 11/7/13



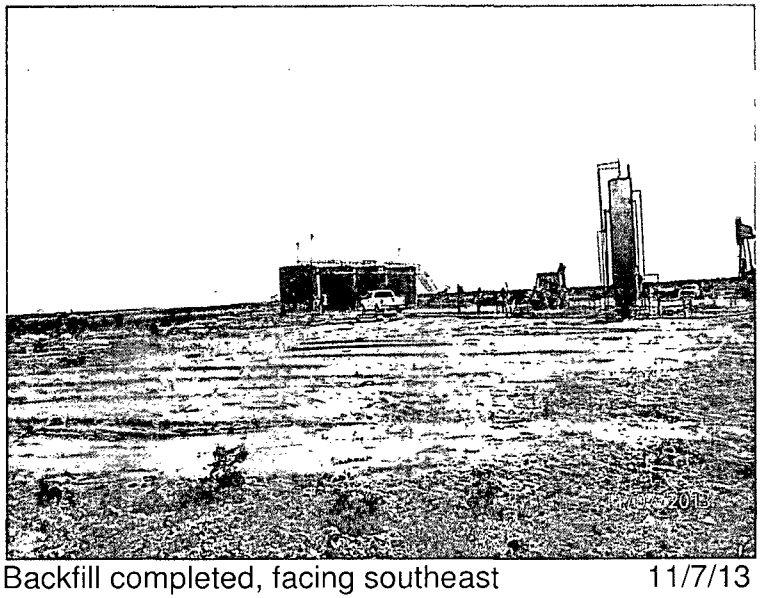
Backfill completed, facing northeast 11/7/13



Backfill completed, facing northeast 11/7/13



Backfill completed, facing northwest 11/7/13



Backfill completed, facing southeast 11/7/13

Appendix I
Final C-141

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

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 8, 2011

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

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company Apache Corporation	Contact Bruce Baker
Address P.O. Box 1849, Eunice, NM 88231	Telephone No. (432) 631-6982
Facility Name Red Lake 29-I State #1	Facility Type Production Heater

Surface Owner State	Mineral Owner	API No. 3001533579

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
I	29	17S	28E	1636	FSL	995	FEL	Eddy

Latitude 32.802562 N **Longitude** -104.19265 W

NATURE OF RELEASE

Type of Release Oil	Volume of Release 22 bbls	Volume Recovered 20 bbls
Source of Release Production Heater	Date and Hour of Occurrence Unknown	Date and Hour of Discovery 6/11/13 1240 hrs
Was Immediate Notice Given? ☐ Yes ☒ No ☐ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.* The gasket on the production heater fire tube failed releasing 22 bbls of oil. The power was turned off to the well heads and a vacuum truck was called. The vacuum truck recovered 20 bbls of oil. The fire tube was pulled to replace the gasket.

Describe Area Affected and Cleanup Action Taken.*
A total of 7,113 sq ft of lease pad and pasture land was affected by the release. RECS personnel were on site beginning June 12th, 2013. Soil samples were taken at the surface at six points throughout the release. The samples were taken to a commercial laboratory for analysis. The surface samples from all six points showed elevated laboratory chloride, Gasoline Range Organics (GRO) and Diesel Range Organics (DRO) readings. On August 22nd, 2013, three points in the overspray area were sampled at the surface and at six inches to determine the extent of contamination in this area. All the samples were taken to a commercial laboratory for analysis and returned chloride, GRO and DRO values below regulatory standards. Based on the laboratory analyses and presence of healthy vegetation, the overspray area was not scraped. The remainder of the release area was scraped down 3 to 6 inches and a 5 point composite sample from the base of the scrape was taken to a commercial laboratory for analysis on August 27th, 2013. All constituents returned results below regulatory standards except for DRO, which had a reading of 1,060 mg/kg. The site then was scraped down to 6 to 9 inches and another 5 point composite sample from the base of the scrape was taken to a commercial laboratory for analysis on September 18th, 2013. The 5 point composite returned a GRO result of non-detect and a DRO result of 221 mg/kg. A total of 108 yards of contaminated soil was taken to a NMOCD approved facility for disposal. On October 10th, 2013, NMOCD approved the site to be backfilled. A total of 120 yards of clean soil was imported to the site to serve as backfill. A sample of the imported soil was taken to a commercial laboratory and returned a chloride value of non-detect. The site was backfilled with the clean, imported soil and contoured to the surrounding location.

I hereby certify that the information given above is true and complete 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 notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: Bruce Baker	OIL CONSERVATION DIVISION	
Printed Name: Bruce Baker	Approved by Environmental Specialist:	
Title: Environmental Technician	Approval Date:	Expiration Date:
E-mail Address: larry.baker@apachecorp.com	Conditions of Approval:	Attached ☐
Date: 3-25-14 Phone: (432) 631-6982		

* Attach Additional Sheets If Necessary