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 Larry Bruce Baker
Address PO Box 1849, Eunice, NM 88231	Telephone No. (432) 631-6982
Facility Name NEDU Satellite #4	Facility Type Satellite

Surface Owner Apache Corporation	Mineral Owner	API No. 3002509916

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
L	15	21S	37E	1858	FSL	1233	FWL	Lea

Latitude_____ **Longitude**_____

NATURE OF RELEASE

Type of Release Oil tank	Volume of Release 85 bbls	Volume Recovered 70 bbls
Source of Release Oil tank ran over	Date and Hour of Occurrence Unknown	Date and Hour of Discovery 6/15/13 5:28 pm
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.* DTW = 43'

Describe Cause of Problem and Remedial Action Taken.*
The oil tank at the site ran over when the comm. system failed. A total of 85 barrels of oil was released and a total of 70 bbls of oil was recovered. The transfer pumps were run to get the levels down at the site.

Describe Area Affected and Cleanup Action Taken.* A total of 2,606 sq ft of facility pad and pasture was affected. On June 17th, 2013, RECS personnel were on site to begin initial sampling. Surface samples were taken throughout the site and field tested for chlorides and hydrocarbons. The samples were then taken to a commercial laboratory for analysis. The results of this testing showed chloride levels below 250 mg/kg and elevated hydrocarbon levels. The release area was scraped down 1 – 1.5 feet and a total of 105 yards of excavated soil was taken to a NMOCD approved facility for disposal. A bottom composite sample of the excavation was taken to a commercial laboratory for analysis. Laboratory GRO reading returned a result of non-detect and the DRO reading returned a result of 290 mg/kg. Based on an Apache meeting with NMOCD – District 1, a decision was made to install a 6 inch clay barrier throughout the release in the lease pad and then backfill the site with clean, imported caliche to bring the excavation back to ground surface. On October 7th, 2013, RECS personnel were on site to begin the liner installation. A total of 48 yards of clay and 84 yards of clean caliche was imported to site to install the clay barrier and backfill the site. At the base of the excavation a 6 inch clay barrier was installed throughout the release area in the facility. On October 8th, 2013, Pettigrew & Associates were on site to conduct a clay compaction test at two points over the clay barrier. The results of the compaction test showed a Dry Density % Max of 97.1% at SG 1 and 95.6% at SG-2. Caliche was then backfilled over the clay barrier to bring the excavation up to ground surface. A sample of the caliche was taken to a commercial laboratory for analysis and returned a chloride result of 32 mg/kg.

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: Larry Bruce Baker

Printed Name: Larry Bruce Baker

Title: Environmental Tech

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

Date: 10-31-13 Phone: (432) 631-6982

OIL CONSERVATION DIVISION

Approved by Environmental Specialist: Environmental Specialist

Approval Date: 10/31/13 Expiration Date: —

Conditions of Approval: — Attached ☐ IRP-9-15-2950

Attach Additional Sheets If Necessary

JUN 10 2014

Apache

EXPLORING WHAT'S POSSIBLE

APACHE CORPORATION

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

NEDU Satellite #4 (1RP-9-13-2950)

Termination Request

approved

Jeffrey Lekins

Environmental Specialist
NMOCD - DIST I
10/31/13

API No. 3002509916

Release Date: June 15th, 2013

Unit Letter L, Section 15, Township 21S, Range 37E

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

October 17th, 2013

Geoffrey Leking
New Mexico Energy, Minerals, & Natural Resources
Oil Conservation Division, Environmental Bureau – District 1
1625 N. French Dr.
Hobbs, NM 88240-9273

RE: **Termination Request**
Apache Corporation – NEDU Satellite #4 (1RP-9-13-2950)
UL/L sec. 15 T21S R37E
API No. 3002509916

Mr. Leking:

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 2.5 miles north of Eunice, New Mexico at UL/L sec. 15 T21S R37E. NMOCD – District 1 records indicate that groundwater will likely be encountered at a depth of approximately 43 +/- feet.

On June 15th, 2013, Apache discovered that when the communication system failed at the NEDU Satellite #4, an oil tank ran over releasing 85 barrels of oil. 70 barrels of oil was recovered. The transfer pumps were run to get the levels down at the site. A total of 2,606 sq ft of facility pad and pasture was affected. An initial C-141 was submitted to NMOCD on September 9th, 2013 (Appendix A).

On June 17th, 2013, RECS personnel were on site to begin initial sampling. Surface samples were taken throughout the site and field tested for chlorides and hydrocarbons (Figure 1). The samples were then taken to a commercial laboratory for analysis. The results of this testing showed chloride levels below 250 mg/kg and elevated hydrocarbon levels (Appendix B). The release area was scraped down 1 – 1.5 feet and a total of 105 yards of excavated soil was taken to a NMOCD approved facility for disposal. A bottom composite sample of the excavation was taken to a commercial laboratory for analysis (Figure 2). Laboratory GRO reading returned a result of non-detect and the DRO reading returned a result of 290 mg/kg (Appendix C).

Based on an Apache meeting with NMOCD – District 1, a decision was made to install a 6 inch clay barrier throughout the release in the lease pad and then backfill the site with clean, imported caliche to bring the excavation back to ground surface. The clay barrier would serve as an infiltration barrier for the site that will inhibit the downward migration of residual constituents in the vadose zone to groundwater.

On October 7th, 2013, RECS personnel were on site to begin the liner installation. A total of 48 yards of clay and 84 yards of clean caliche was imported to site to install the clay barrier and backfill the site. At the base of the excavation a 6 inch clay barrier was installed throughout the release area in the facility (Figure 2). On October 8th, 2013, Pettigrew & Associates were on site to conduct a clay compaction test at two points over the clay barrier. The results of the compaction test showed a Dry Density % Max of 97.1% at SG 1 and 95.6% at SG-2. Caliche was then backfilled over the clay barrier to bring the excavation up to ground surface. A sample of the caliche was taken to a commercial laboratory for analysis and returned a chloride result of 32 mg/kg. The clay compaction test results and the imported caliche laboratory can be found in Appendix D.

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

Given that the majority of contaminated soil was removed from the site and a clay barrier was install at the site to prevent the migration of residual contaminates to groundwater, RECS on behalf of Apache respectfully requests 'remediation termination' or similar site closure for this site. A final C-141 can be found in Appendix F.

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

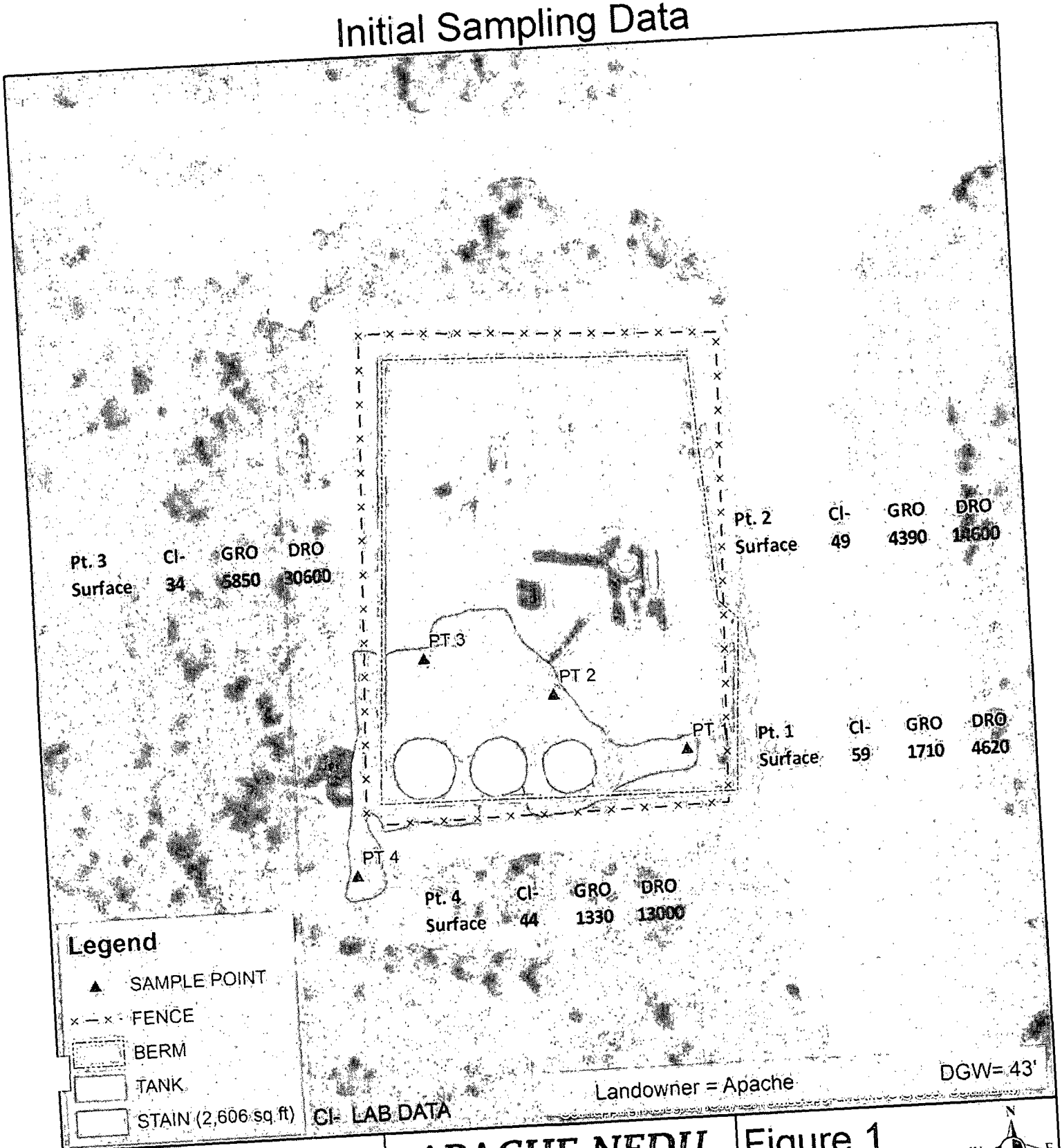
Attachments:

- Figure 1 – Initial Sampling Data
- Figure 2 – Excavation Data
- Appendix A – Initial C-141
- Appendix B – Initial Sampling Lab
- Appendix C – 5 Point Bottom Composite Lab
- Appendix D – Clay Compaction Test and Imported Caliche Lab
- Appendix E – Photo Documentation
- Appendix F – 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

RECS

APACHE NEDU SATELLITE #4 (1RP-9-13-2950)

LEGALS: UL/ L Sec. 15
T21S - R37E
LEA COUNTY, NM

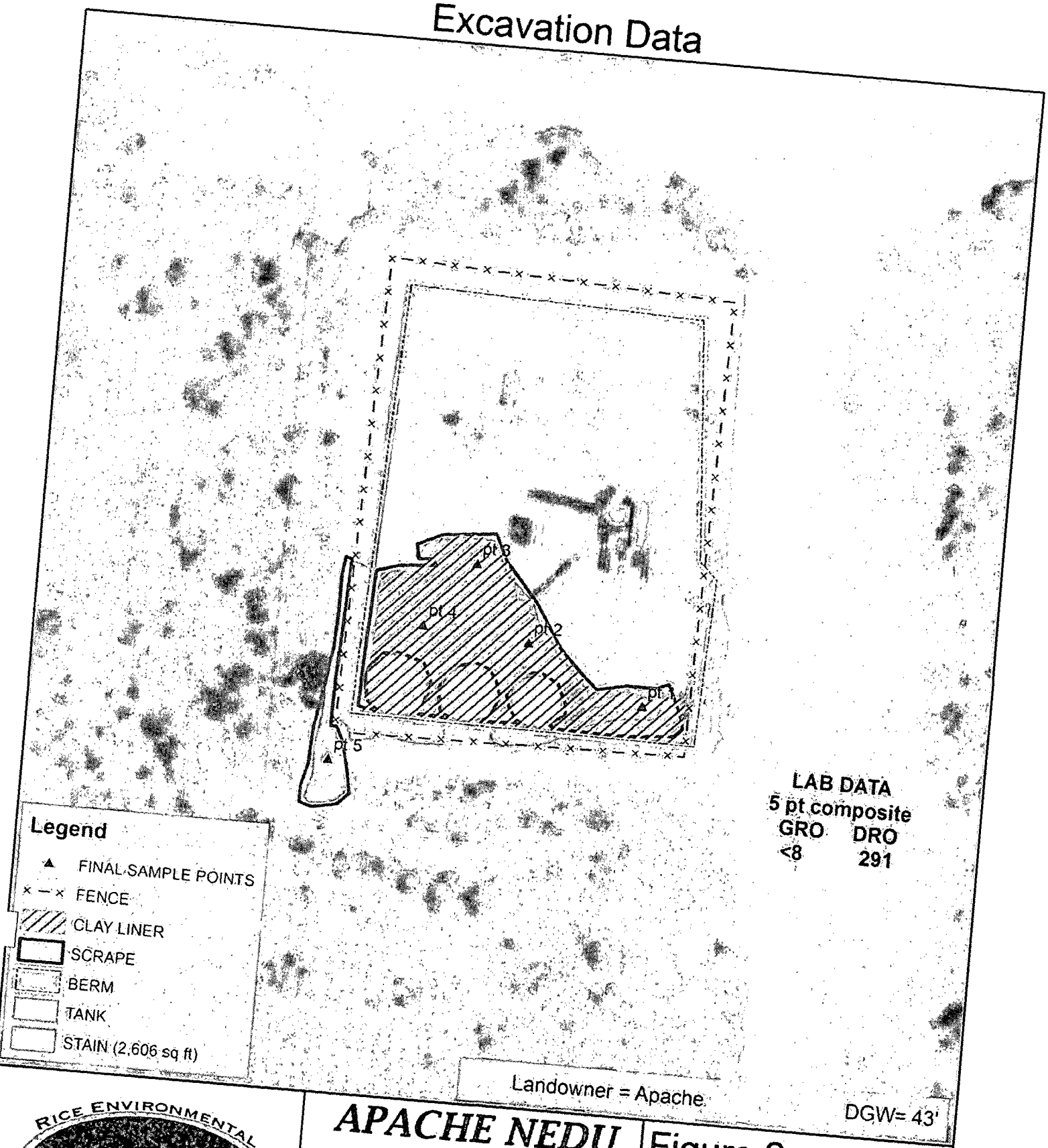
Figure 1

N W E S

0 25 50 Feet

GPS date: 6/17/2013 JK
Drawing date: 6/18/2013
Drafted by: L. Weinheimer

Excavation Data



RICE ENVIRONMENTAL CONSULTING & SAFETY, LLC

APACHE NEDU SATELLITE #4
1RP-9-13-2950

LEGALS: UL/ L Sec. 15
T21S - R37E
LEA COUNTY, NM

Figure 2

N W E S

0 25 50 Feet

GPS date: 10/9/13 ED
Drawing date: 10/11/13
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
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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

HOBBS OCD
SEP 09 2013
RECEIVED

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 Larry Bruce Baker
Address PO Box 1849, Eunice, NM 88231	Telephone No. (432) 631-6982
Facility Name NEDU Satellite #4 (NEAREST WELL NEDU 701)	Facility Type Satellite

Surface Owner Apache Corporation	Mineral Owner	API No. 3002509916

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
L	15	21S	37E	1858	FSL	1233	FWL	Lea

Latitude_____ Longitude_____

NATURE OF RELEASE

DTW=43'

Type of Release Oil tank	Volume of Release 85 bbls	Volume Recovered 70 bbls
Source of Release Oil tank ran over	Date and Hour of Occurrence Unknown	Date and Hour of Discovery 6/15/13 5:28 pm
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 oil tank at the site ran over when the comm. system failed. A total of 85 barrels of oil was released and a total of 70 bbls of oil was recovered. The transfer pumps were run to get the levels down at the site.

Describe Area Affected and Cleanup Action Taken.*
A total of 2,606 sq ft of facility pad and pasture was affected. The release was sampled and then scraped down 1 ft by hand. Composite samples were taken to a commercial laboratory for analysis. The site will be assessed 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 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: Larry Bruce Baker	OIL CONSERVATION DIVISION
Printed Name: Larry Bruce Baker	Approved by Environmental Specialist: Geoffrey LeBlanc Environmental Specialist
Title: Environmental Tech	Approval Date: 6/15/13 Expiration Date: 8/15/13
E-mail Address: larry.baker@apachecorp.com	Conditions of Approval: SUBMIT FINAL C-141 BY 8/15/13 Attached ☐ IRP-9-13-2950
Date: 8-28-13 Phone: (432) 631-6982	

* Attach Additional Sheets If Necessary

Appendix B

Initial Sampling 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

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

Report Date: July 2, 2013

Work Order: 13062108

Project Location: Apache NEDU Sat. #4 AD, NM
Project Number: Apache NEDU Sat. #4 AD

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
332871	PT 1 Surface	soil	2013-06-17	10:00	2013-06-21
332872	PT 2 Surface	soil	2013-06-17	10:05	2013-06-21
332873	PT 3 Surface	soil	2013-06-17	10:10	2013-06-21
332874	PT 4 Surface	soil	2013-06-17	10:15	2013-06-21

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 were received by TraceAnalysis, Inc. on 2013-06-21 and assigned to work order 13062108. Samples for work order 13062108 were received intact at a temperature of 5.5 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	87058	2013-07-02 at 08:30	102767	2013-07-02 at 11:00
TPH DRO - NEW	S 8015 D	86903	2013-06-25 at 11:45	102589	2013-06-25 at 12:09
TPH GRO	S 8015 D	86891	2013-06-24 at 09:48	102572	2013-06-24 at 09:48

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 13062108 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: 332871 - PT 1 Surface

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	102767	Date Analyzed:	2013-07-02	Analyzed By:	GS
Prep Batch:	87058	Sample Preparation:	2013-07-02	Prepared By:	GS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**59.0**	mg/Kg	1	5.00

Sample: 332871 - PT 1 Surface

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	102589	Date Analyzed:	2013-06-25	Analyzed By:	DS
Prep Batch:	86903	Sample Preparation:	2013-06-25	Prepared By:	DS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	**4620**	mg/Kg	20	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		312	mg/Kg	20	100	312	35.2 - 240

Sample: 332871 - PT 1 Surface

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	102572	Date Analyzed:	2013-06-24	Analyzed By:	MT
Prep Batch:	86891	Sample Preparation:	2013-06-24	Prepared By:	MT

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Qs	1	**1710**	mg/Kg	20	4.00

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr		0.752	mg/Kg	20	2.00	38	69.6 - 124

continued ...

sample continued ...

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	35.7	mg/Kg	20	2.00	1785	77.7 - 120

Sample: 332872 - PT 2 Surface

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	102767	Date Analyzed:	2013-07-02	Analyzed By:	GS
Prep Batch:	87058	Sample Preparation:	2013-07-02	Prepared By:	GS

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

Sample: 332872 - PT 2 Surface

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	102589	Date Analyzed:	2013-06-25	Analyzed By:	DS
Prep Batch:	86903	Sample Preparation:	2013-06-25	Prepared By:	DS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	**14600**	mg/Kg	20	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr	545	mg/Kg	20	100	545	35.2 - 240

Sample: 332872 - PT 2 Surface

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	102572	Date Analyzed:	2013-06-24	Analyzed By:	MT
Prep Batch:	86891	Sample Preparation:	2013-06-24	Prepared By:	MT

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Qs	1	**4390**	mg/Kg	100	4.00

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr		2.91	mg/Kg	100	2.00	146	69.6 - 124
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		162	mg/Kg	100	2.00	8100	77.7 - 120

Sample: 332873 - PT 3 Surface

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	102767	Date Analyzed:	2013-07-02	Analyzed By:	GS
Prep Batch:	87058	Sample Preparation:	2013-07-02	Prepared By:	GS

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

Sample: 332873 - PT 3 Surface

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	102589	Date Analyzed:	2013-06-25	Analyzed By:	DS
Prep Batch:	86903	Sample Preparation:	2013-06-25	Prepared By:	DS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	**30600**	mg/Kg	40	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		1020	mg/Kg	40	100	1020	35.2 - 240

Sample: 332873 - PT 3 Surface

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	102572	Date Analyzed:	2013-06-24	Analyzed By:	MT
Prep Batch:	86891	Sample Preparation:	2013-06-24	Prepared By:	MT

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Qs	1	**5850**	mg/Kg	50	4.00

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr		0.643	mg/Kg	50	2.00	32	69.6 - 124
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		132	mg/Kg	50	2.00	6600	77.7 - 120

Sample: 332874 - PT 4 Surface

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	102767	Date Analyzed:	2013-07-02	Analyzed By:	GS
Prep Batch:	87058	Sample Preparation:	2013-07-02	Prepared By:	GS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**44.0**	mg/Kg	1	5.00

Sample: 332874 - PT 4 Surface

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	102589	Date Analyzed:	2013-06-25	Analyzed By:	DS
Prep Batch:	86903	Sample Preparation:	2013-06-25	Prepared By:	DS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO		1	**13000**	mg/Kg	20	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		551	mg/Kg	20	100	551	35.2 - 240

Sample: 332874 - PT 4 Surface

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	102572	Date Analyzed:	2013-06-24	Analyzed By:	MT
Prep Batch:	86891	Sample Preparation:	2013-06-24	Prepared By:	MT

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO	Qs	1	**1330**	mg/Kg	20	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.55	mg/Kg	20	2.00	78	69.6 - 124
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	51.7	mg/Kg	20	2.00	2585	77.7 - 120

Method Blanks

Method Blank (1) QC Batch: 102572

QC Batch: 102572 Date Analyzed: 2013-06-24 Analyzed By: MT
Prep Batch: 86891 QC Preparation: 2013-06-24 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)			2.06	mg/Kg	1	2.00	103	69.6 - 124
4-Bromofluorobenzene (4-BFB)			2.14	mg/Kg	1	2.00	107	77.7 - 120

Method Blank (1) QC Batch: 102589

QC Batch: 102589 Date Analyzed: 2013-06-25 Analyzed By: DS
Prep Batch: 86903 QC Preparation: 2013-06-25 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			98.8	mg/Kg	1	100	99	35.2 - 240

Method Blank (1) QC Batch: 102767

QC Batch: 102767 Date Analyzed: 2013-07-02 Analyzed By: GS
Prep Batch: 87058 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: 102572
Prep Batch: 86891

Date Analyzed: 2013-06-24
QC Preparation: 2013-06-24

Analyzed By: MT
Prepared By: MT

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	17.6	mg/Kg	1	20.0	<0.230	88	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	17.9	mg/Kg	1	20.0	<0.230	90	66.9 - 120	2	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)	1.72	2.05	mg/Kg	1	2.00	86	102	69.6 - 124
4-Bromofluorobenzene (4-BFB)	2.26	2.25	mg/Kg	1	2.00	113	112	77.7 - 120

Laboratory Control Spike (LCS-1)

QC Batch: 102589
Prep Batch: 86903

Date Analyzed: 2013-06-25
QC Preparation: 2013-06-25

Analyzed By: DS
Prepared By: DS

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	228	mg/Kg	1	250	<15.3	91	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	232	mg/Kg	1	250	<15.3	93	64.8 - 138	2	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	96.8	95.8	mg/Kg	1	100	97	96	35.2 - 240

Laboratory Control Spike (LCS-1)

QC Batch: 102767 | Date Analyzed: 2013-07-02 | Analyzed By: GS
Prep Batch: 87058 | QC Preparation: 2013-07-02 | Prepared By: GS

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			101	mg/Kg	1	100	<3.05	101	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			102	mg/Kg	1	100	<3.05	102	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: 332872

QC Batch: 102572 | Date Analyzed: 2013-06-24 | Analyzed By: MT
Prep Batch: 86891 | QC Preparation: 2013-06-24 | Prepared By: MT

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	Qs	Qs	1	3920	mg/Kg	100	20.0	4390	-2350	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	Qs	Qs	1	3890	mg/Kg	100	20.0	4390	-2500	38.8 - 120	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
Trifluorotoluene (TFT)	Qsr	Qsr	2.97	2.97	mg/Kg	100	2	148	148	69.6 - 124
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	162	145	mg/Kg	100	2	8100	7250	77.7 - 120

Matrix Spike (MS-1) Spiked Sample: 333112

QC Batch: 102589 | Date Analyzed: 2013-06-25 | Analyzed By: DS
Prep Batch: 86903 | QC Preparation: 2013-06-25 | Prepared By: DS

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	214	mg/Kg	1	250	<15.3	86	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	254	mg/Kg	1	250	<15.3	102	15.5 - 174	17	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	99.4	115	mg/Kg	1	100	99	115	35.2 - 240

Matrix Spike (MS-1) Spiked Sample: 333762

QC Batch: 102767 Date Analyzed: 2013-07-02 Analyzed By: GS
Prep Batch: 87058 QC Preparation: 2013-07-02 Prepared By: GS

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			1620	mg/Kg	1	500	1201	84	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			1590	mg/Kg	1	500	1201	78	63.6 - 131	2	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: 102572 Date Analyzed: 2013-06-24 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	1.07	107	80 - 120	2013-06-24

Standard (CCV-2)

QC Batch: 102572 Date Analyzed: 2013-06-24 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	1.04	104	80 - 120	2013-06-24

Standard (CCV-1)

QC Batch: 102589 Date Analyzed: 2013-06-25 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	228	91	80 - 120	2013-06-25

Standard (CCV-2)

QC Batch: 102589 Date Analyzed: 2013-06-25 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	240	96	80 - 120	2013-06-25

Standard (ICV-1)

QC Batch: 102767 | 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	100	100	85 - 115	2013-07-02

Standard (CCV-1)

QC Batch: 102767 | 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	100	100	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

Attachments

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

LAB Order ID # 1306 2108

Page _____ of _____

TraceAnalysis, Inc.

email: lab@traceanalysis.com

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1 (800) 378-1296

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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: S. Flemings — E-mail:

Invoice to: (If different from above)

Project #: NEDU Sat #4 AD — Project Name:

Project Location (including state): NEDU Sat #4 AD NM — Sampler Signature:

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
332871	PT 1 Surface	1			✓							✓		6-17-13	10:00				✓														✓								
872	PT 2 Surface	1			✓							✓		6-17-13	10:05				✓														✓								
873	PT 3 Surface	1			✓							✓		6-17-13	10:10				✓														✓								
874	PT 4 Surface	1			✓							✓		6-17-13	10:15				✓														✓								

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	
					RFCS	6-19-13		INST OBS 4.2 °C COR °C
					TA	6/21/13	8:05	INST 4.2 OBS 5.2 COR 5.5
						6/19/2013		INST OBS 4.2 °C COR °C

LAB USE ONLY: Intact Y / N; Headspace Y / N / NA; Log-In-Review

REMARKS:
BBaker@rice-ecs.com
JKamplain@rice-ecs.com
LWalsche@rice-ecs.com
HCondor@riceusa.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 # 38: ZQ004974

ORIGINAL COPY

Appendix C

5 Point Bottom Composite 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

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

Report Date: July 1, 2013

Work Order: 13062720

Project Location: Apache NEDU Sat. #4 AD, NM
Project Number: Apache NEDU Sat. #4 AD

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
333521	NEDU Satellite #4 Battery 5 pt. Composite	soil	2013-06-25	13:30	2013-06-27

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 were received by TraceAnalysis, Inc. on 2013-06-27 and assigned to work order 13062720. Samples for work order 13062720 were received intact at a temperature of 1.8 C.

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

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
TPH DRO - NEW	S 8015 D	86961	2013-06-27 at 14:00	102661	2013-06-27 at 14:09
TPH GRO	S 8015 D	87002	2013-06-28 at 16:07	102705	2013-06-28 at 16:07

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 13062720 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: 333521 - NEDU Satellite #4 Battery 5 pt. Composite

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	102661	Date Analyzed:	2013-06-27	Analyzed By:	DS
Prep Batch:	86961	Sample Preparation:	2013-06-27	Prepared By:	DS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	**291**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			120	mg/Kg	1	100	120	35.2 - 240

Sample: 333521 - NEDU Satellite #4 Battery 5 pt. Composite

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	102705	Date Analyzed:	2013-06-28	Analyzed By:	JS
Prep Batch:	87002	Sample Preparation:	2013-06-28	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	1	1	<8.00	mg/Kg	2	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.73	mg/Kg	2	2.00	86	69.6 - 124
4-Bromofluorobenzene (4-BFB)			1.92	mg/Kg	2	2.00	96	77.7 - 120

Method Blanks

Method Blank (1) QC Batch: 102661

QC Batch: 102661 Date Analyzed: 2013-06-27 Analyzed By: DS
Prep Batch: 86961 QC Preparation: 2013-06-27 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			99.4	mg/Kg	1	100	99	35.2 - 240

Method Blank (1) QC Batch: 102705

QC Batch: 102705 Date Analyzed: 2013-06-28 Analyzed By: JS
Prep Batch: 87002 QC Preparation: 2013-06-28 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)			1.71	mg/Kg	1	2.00	86	69.6 - 124
4-Bromofluorobenzene (4-BFB)			1.77	mg/Kg	1	2.00	88	77.7 - 120

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 102661 | Date Analyzed: 2013-06-27 | Analyzed By: DS
Prep Batch: 86961 | QC Preparation: 2013-06-27 | Prepared By: DS

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	208	mg/Kg	1	250	<15.3	83	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	249	mg/Kg	1	250	<15.3	100	64.8 - 138	18	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	92.0	115	mg/Kg	1	100	92	115	35.2 - 240

Laboratory Control Spike (LCS-1)

QC Batch: 102705 | Date Analyzed: 2013-06-28 | Analyzed By: JS
Prep Batch: 87002 | QC Preparation: 2013-06-28 | Prepared By: JS

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	15.0	mg/Kg	1	20.0	<0.230	75	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	<0.230	mg/Kg	1	20.0	<0.230		66.9 - 120		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)	1.72	0.00	mg/Kg	1	2.00	86		69.6 - 124
4-Bromofluorobenzene (4-BFB)	1.95	0.00	mg/Kg	1	2.00	98		77.7 - 120

Matrix Spike (MS-1) Spiked Sample: 333496

QC Batch: 102661 | Date Analyzed: 2013-06-27 | Analyzed By: DS
Prep Batch: 86961 | QC Preparation: 2013-06-27 | Prepared By: DS

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	2930	mg/Kg	1	250	2730	80	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	2920	mg/Kg	1	250	2730	76	15.5 - 174	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
n-Tricosane	102	104	mg/Kg	1	100	102	104	35.2 - 240

Matrix Spike (MS-1) Spiked Sample: 333008

QC Batch: 102705 | Date Analyzed: 2013-06-28 | Analyzed By: JS
Prep Batch: 87002 | QC Preparation: 2013-06-28 | Prepared By: JS

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	12.2	mg/Kg	1	20.0	<0.230	61	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	12.3	mg/Kg	1	20.0	<0.230	62	38.8 - 120	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
Trifluorotoluene (TFT)	1.86	1.77	mg/Kg	1	2	93	88	69.6 - 124
4-Bromofluorobenzene (4-BFB)	2.08	2.06	mg/Kg	1	2	104	103	77.7 - 120

Calibration Standards

Standard (CCV-1)

QC Batch: 102661 | Date Analyzed: 2013-06-27 | 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	216	86	80 - 120	2013-06-27

Standard (CCV-2)

QC Batch: 102661 | Date Analyzed: 2013-06-27 | 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	211	84	80 - 120	2013-06-27

Standard (CCV-1)

QC Batch: 102705 | Date Analyzed: 2013-06-28 | 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	0.899	90	80 - 120	2013-06-28

Standard (CCV-2)

QC Batch: 102705 | Date Analyzed: 2013-06-28 | 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	0.848	85	80 - 120	2013-06-28

Standard (CCV-3)

QC Batch: 102705 Date Analyzed: 2013-06-28 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	0.820	82	80 - 120	2013-06-28

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 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 #: 1306720

Page: _____ of _____

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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: STEVE FLEMMINGS
E-mail:
Invoice to: (If different from above)
Project #:
Project Name:
Project Location (including state): NEDU SATELLITE #4 BATTERY N.M.
Sampler Signature: Edward Edwards

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
	NEDU SATELLITE #4 BATTERY																																							
333521	S.P.T. COMPOSITE	1			1									6-25-13	1:30				✓																							

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	
	RECS	6-25-13	3:50					INST ____ °C
								OBS ____ °C
								COR ____ °C
Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	
								INST ____ °C
								OBS 6.1 °C
								COR 12.3 °C
Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	
								INST 12.3 °C
								OBS 1.3 °C
								COR 1.8 °C

LAB USE ONLY

Intact Y / N
Headspace Y / N / NA
Log-In-Review

REMARKS:
hconder@rice-ecs.com
DDaller@rice-ecs.com
Lweinheimer@rice-ecs.com

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

Carrier #: RS: 2000477

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

ORIGINAL COPY

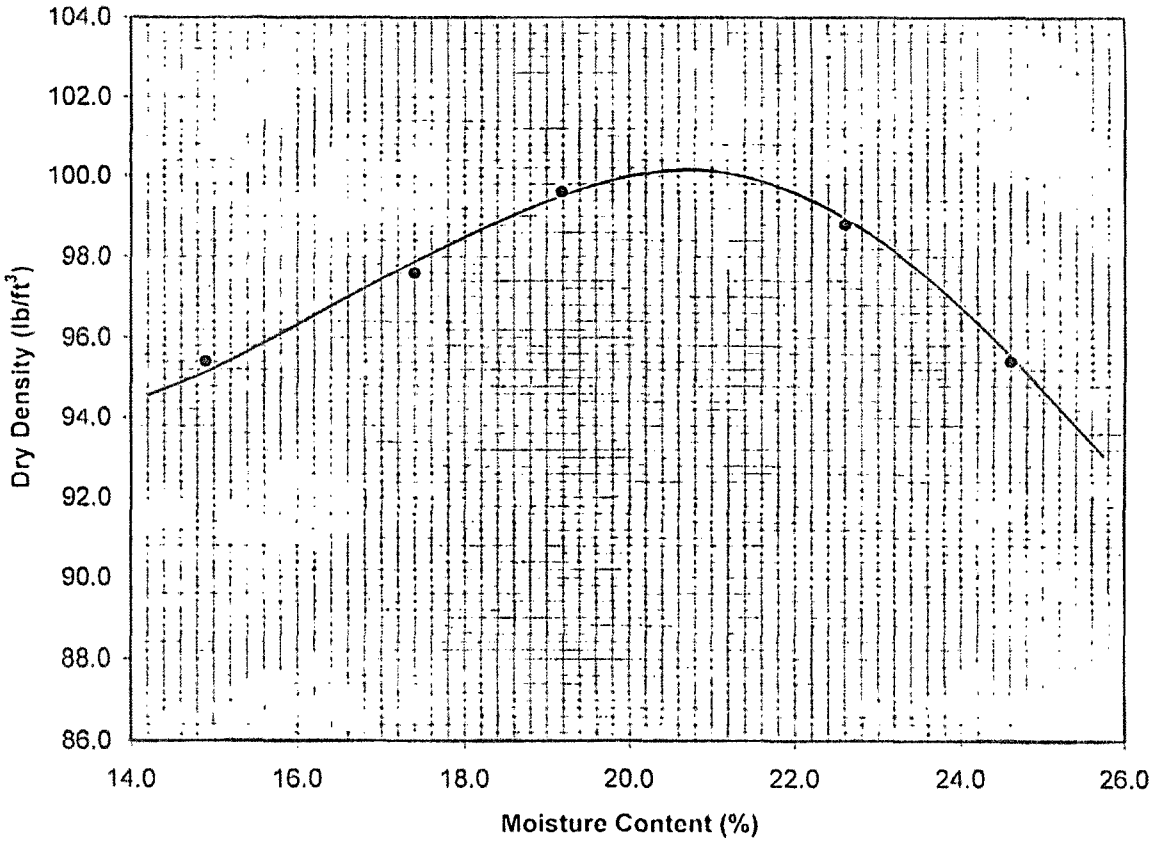
Appendix D

Clay Compaction Test and Imported Caliche Lab

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

PETTIGREW & ASSOCIATES, P.A.
100 E. Navajo, Suite 100
Hobbs, NM 88240
(575) 393-9827

AASHTO R18



CLIENT: Rice Environmental Consulting PROJECT: Apache Nedu Satellite #4 Project No. 2013.1287

SAMPLE LOCATION: On Site Nedu Satellite #4

SOIL DESCRIPTION: Wallach Red Clay

SOIL CLASSIFICATION: _____ TEST METHOD: ASTM : D 698

ATTERBERG: LL _____ PI _____ Sampled & Delivered: 10/8/13

REQUIRED:

DATE: 10/9/13 LAB NO. 13.7048.7050

DRY WEIGHT LB/CU. FT. 100.2 MOISTURE CONTENT % 20.8

SIEVE ANALYSIS - % PASSING										
3"	2"	1"	¾"	½"	⅜"	#4	#10	#40	#80	#200

PETTIGREW & ASSOCIATES

COPIES: Kyle Norman

BY: _____ CET III

BY: _____ P.E.

LABORATORY TEST REPORT

PETTIGREW & ASSOCIATES, P.A.

100 E. Navajo, Suite 100
Hobbs, NM 88240
(575) 393-9827

AASHTO R18

DEBRA P. HICKS, P.E./L.S.I.
WILLIAM M. HICKS, III, P.E./P.S.

To:	Rice Environmental Consulting & Safety, LLC 419 W. Cain Hobbs, NM 88240	**Material:**	
		Test Method:	ASTM: D 6938
Project:	Apache Nedu Satellite #4 Project No. 2013.1287		
Date of Test:	October 8, 2013	**Depth:**	See Below
		Depth of Probe:	8"

Test No.	Location	Dry Density % Max	% Moisture	Depth
SG 1	Nedu Sat. #4 10' W. & 2' S. of NE Corner	97.1	11.4	FSG
SG 2	Nedu Sat. #4 20' E. & 5' S. of NW Corner	95.6	7.8	FSG

Control Density:	100.2 ASTM: D 698	**Optimum Moisture:**	20.8% STD/STAT 2590/483
Required Compaction:	90%	**Densometer ID:**	5071

PETTIGREW & ASSOCIATES

BY: _____ CET III

Lab No.: 13 6015 6017

Copies To: Kyle Norman

BY: _____ P.E.

CARDINAL Laboratories

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

October 15, 2013

BRUCE BAKER

APACHE - EUNICE

P. O. BOX 1849

EUNICE, NM 88231

RE: NEDU SATELLITE #4

Enclosed are the results of analyses for samples received by the laboratory on 10/14/13 16:30.

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:	10/14/2013	Sampling Date:	10/08/2013
Reported:	10/15/2013	Sampling Type:	Soil
Project Name:	NEDU SATELLITE #4	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: IMPORTED CALICHE (H302484-01)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**32.0**	16.0	10/15/2013	ND	416	104	400	0.00	

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: ~~RICE Operating~~ Apache	BILL TO
Project Manager: ~~Kyle Norman~~ Bruce Baker	P.O. #:
Address: 112 W. Taylor	Company:
City: Hobbs State: NM Zip: 88240	Attn:
Phone #: Fax #:	Address:
Project #: Project Owner:	City:
Project Name:	State: Zip:
Project Location: Nedu Sat. #4	Phone #:
Sampler Name: Dyllan Yarbrough	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				
H3022484																								
1	Imported Caliche	C	1			1					1		10/9/13	10:00	✓									

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:	Date: 10/14/13	Received By:	Phone Result: ☐ Yes ☑ No Add'l Phone #:
	Time: 4:30		Fax Result: ☐ Yes ☑ No Add'l Fax #:
Relinquished By:	Date:	Received By:	REMARKS: email results knorman@rice-ecs.com;hconder@rice-ecs.com; Lweinheimer@rice-ecs.com; kjones@riceswd.com; Lpena@riceswd.com;dyarbrough@rice-ecs.com
	Time:		
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Sample Condition Cool: ☐ Yes ☑ No Intact: ☑ Yes ☐ No	CHECKED BY: (Initials)	

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

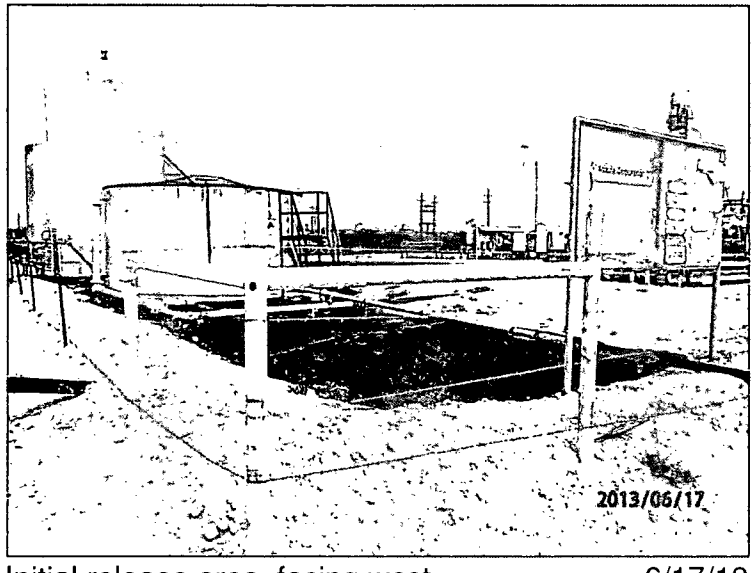
#54

Appendix E
Photo Documentation

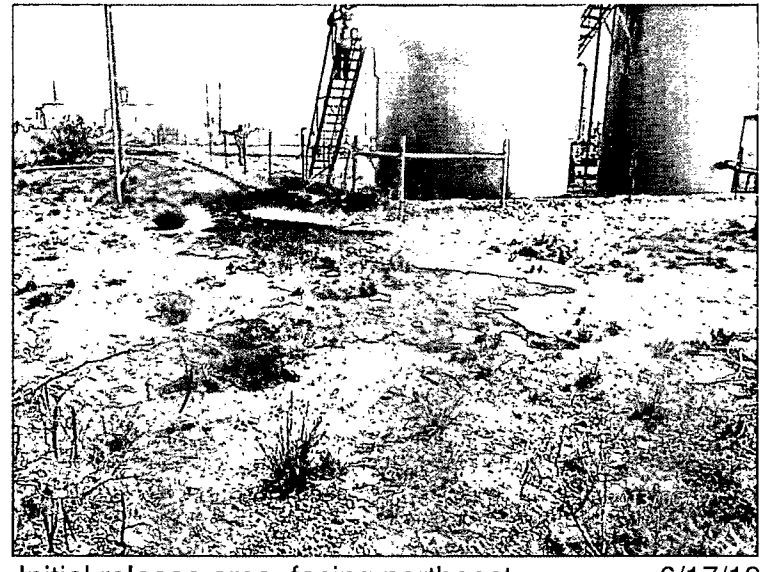
RICE Environmental Consulting and Safety (RECS)
P.O. Box 2948 Hobbs, NM 88241
Phone 575.393.2967

Apache NEDU Satellite #4

Unit Letter L, Section 15, T21S, R37E

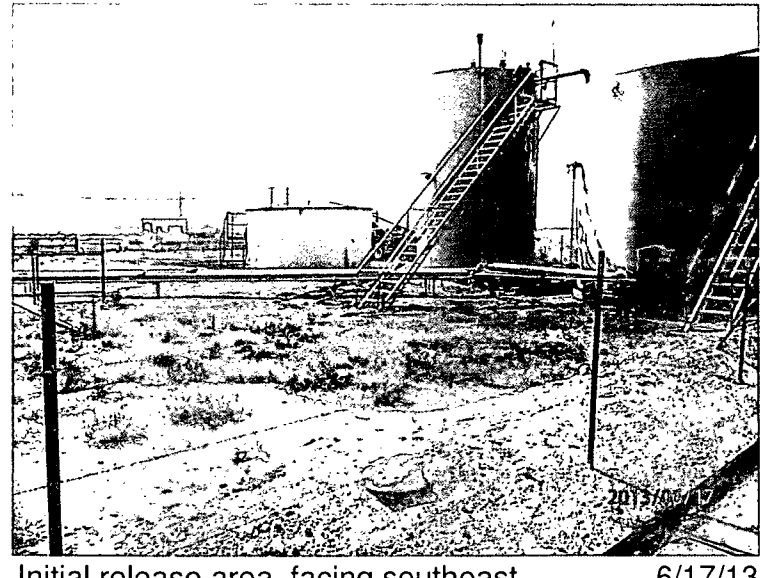


Initial release area, facing west 6/17/13

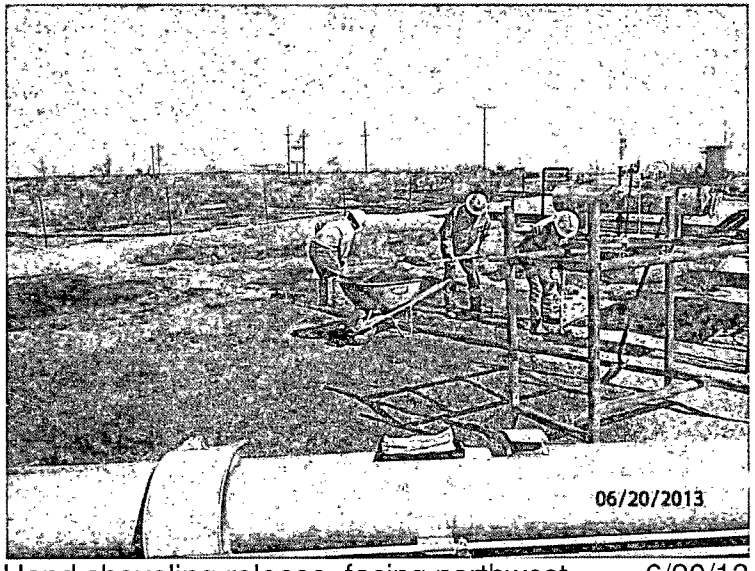


Initial release area, facing northeast 6/17/13

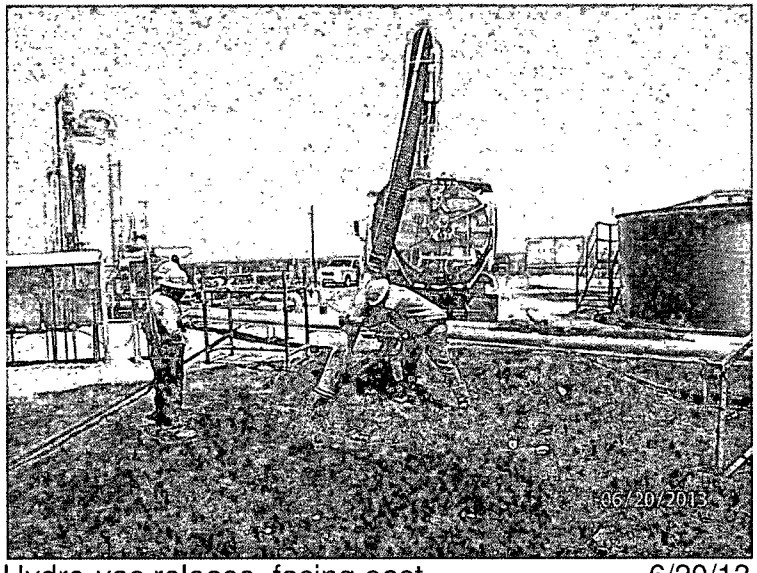
Initial release area, facing southeast 6/17/13



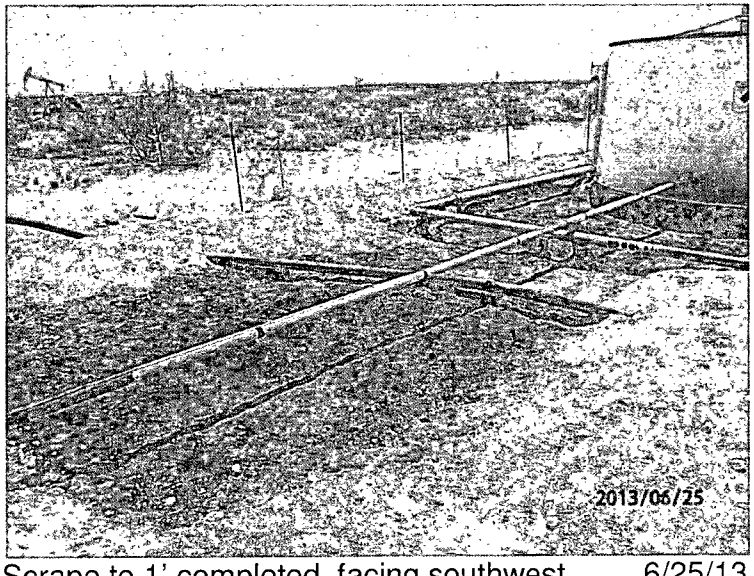
Initial release area, facing southeast 6/17/13



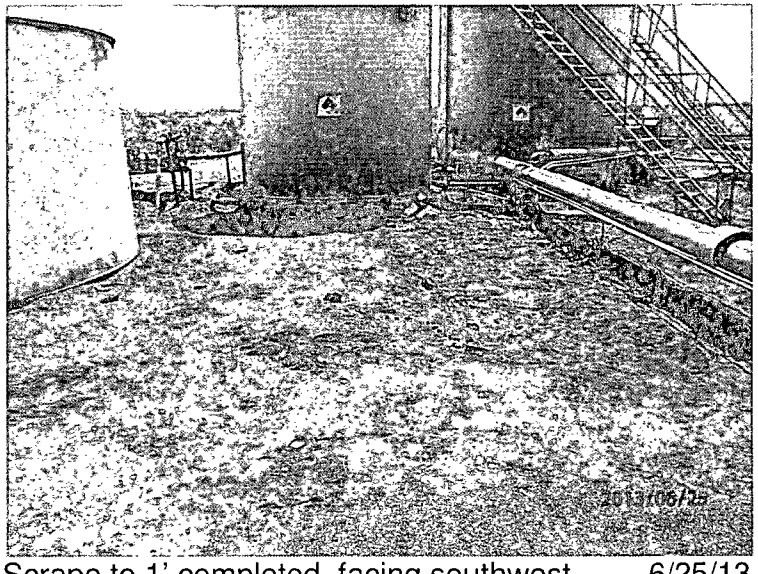
Hand shoveling release, facing northwest 6/20/13



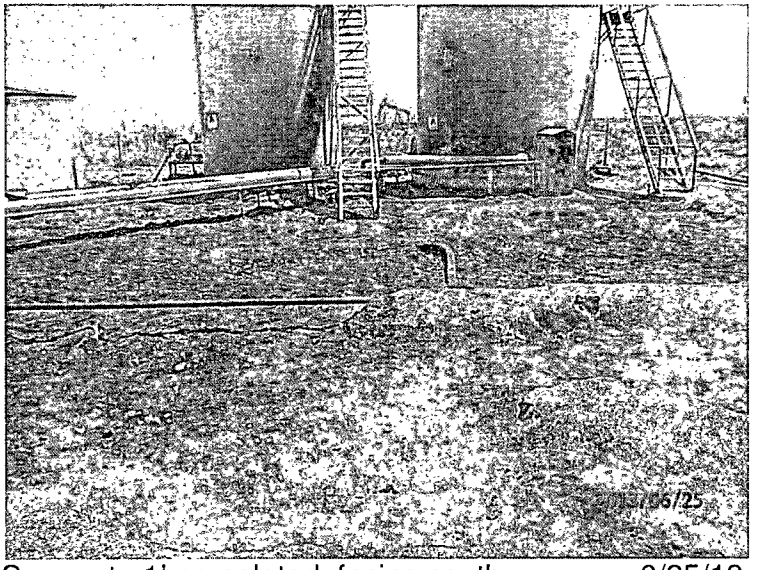
Hydro-vac release, facing east 6/20/13



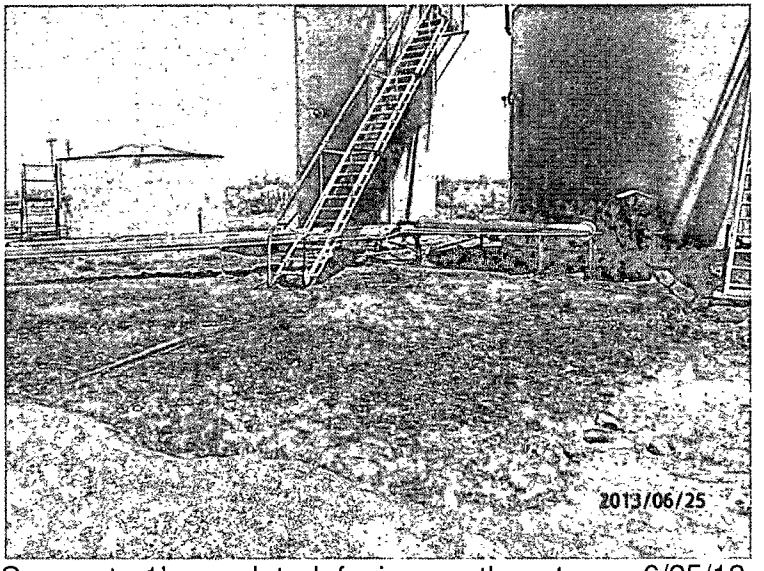
Scrape to 1' completed, facing southwest 6/25/13



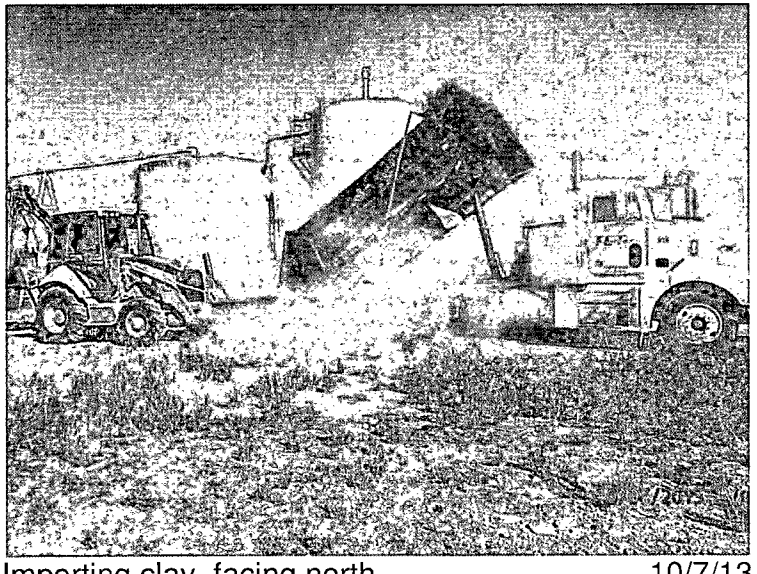
Scrape to 1' completed, facing southwest 6/25/13



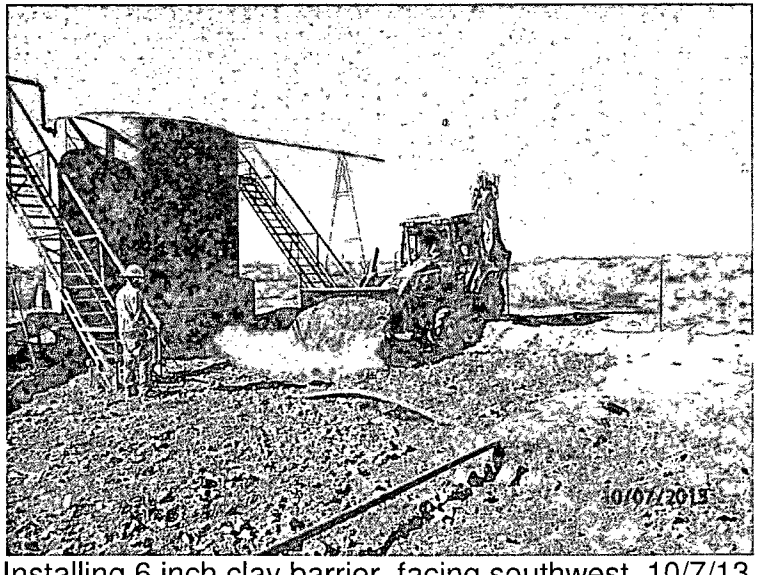
Scrape to 1' completed, facing south 6/25/13



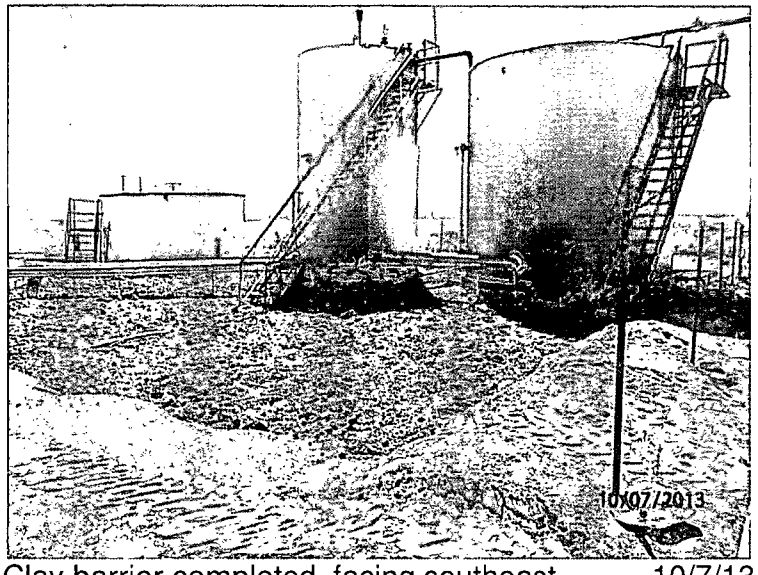
Scrape to 1' completed, facing southeast 6/25/13



Importing clay, facing north 10/7/13



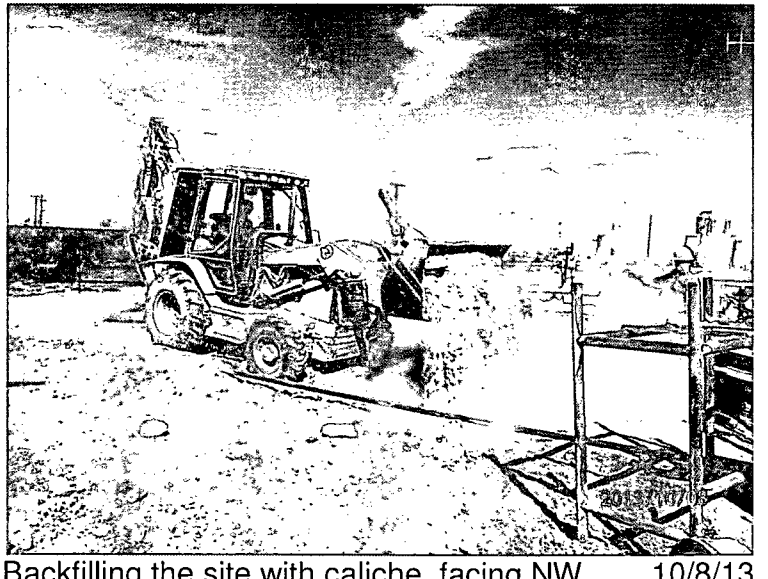
Installing 6 inch clay barrier, facing southwest 10/7/13

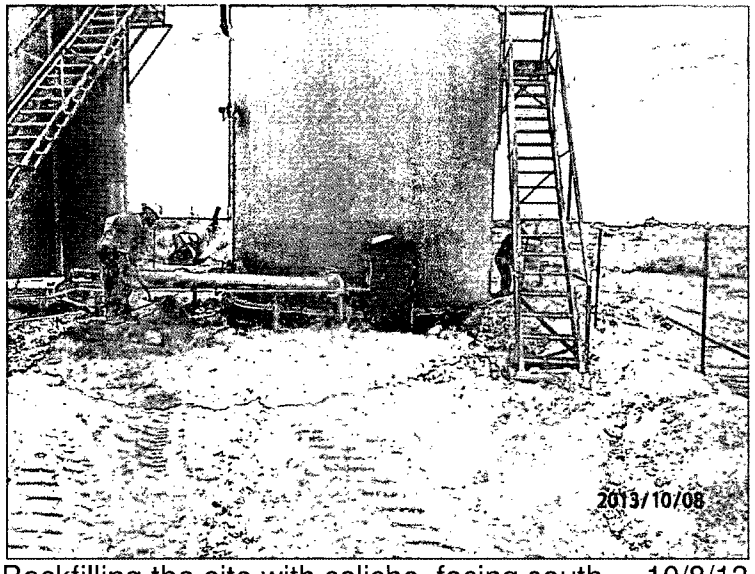


Clay barrier completed, facing southeast 10/7/13

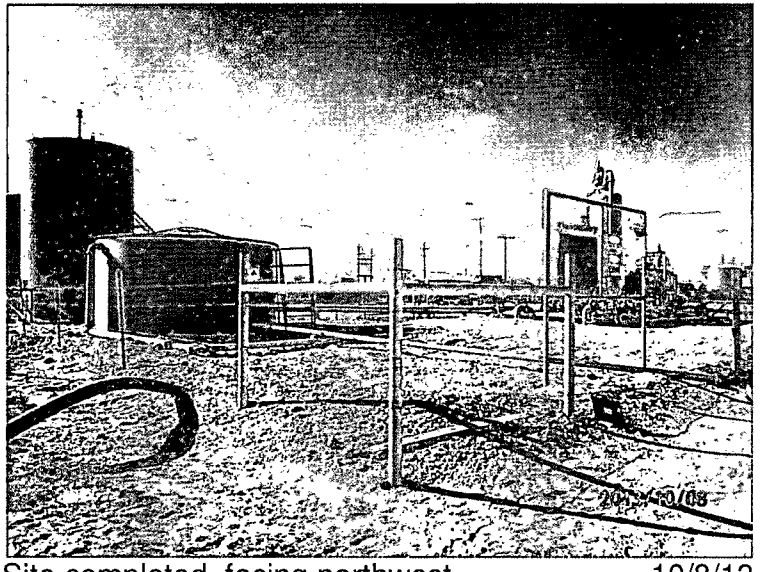
Clay compaction test, facing east 10/8/13

Importing caliche, facing southeast 10/8/13


Backfilling the site with caliche, facing NW 10/8/13



Backfilling the site with caliche, facing south 10/8/13



Site completed, facing northwest 10/8/13

Appendix F
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 Larry Bruce Baker
Address PO Box 1849, Eunice, NM 88231	Telephone No. (432) 631-6982
Facility Name NEDU Satellite #4	Facility Type Satellite

Surface Owner Apache Corporation	Mineral Owner	API No. 3002509916

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
L	15	21S	37E	1858	FSL	1233	FWL	Lea

Latitude_____ **Longitude**_____

NATURE OF RELEASE

Type of Release Oil tank	Volume of Release 85 bbls	Volume Recovered 70 bbls
Source of Release Oil tank ran over	Date and Hour of Occurrence Unknown	Date and Hour of Discovery 6/15/13 5:28 pm
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.* DTW = 43'

Describe Cause of Problem and Remedial Action Taken.*
The oil tank at the site ran over when the comm. system failed. A total of 85 barrels of oil was released and a total of 70 bbls of oil was recovered. The transfer pumps were run to get the levels down at the site.

Describe Area Affected and Cleanup Action Taken.* A total of 2,606 sq ft of facility pad and pasture was affected. On June 17th, 2013, RECS personnel were on site to begin initial sampling. Surface samples were taken throughout the site and field tested for chlorides and hydrocarbons. The samples were then taken to a commercial laboratory for analysis. The results of this testing showed chloride levels below 250 mg/kg and elevated hydrocarbon levels. The release area was scraped down 1 – 1.5 feet and a total of 105 yards of excavated soil was taken to a NMOCD approved facility for disposal. A bottom composite sample of the excavation was taken to a commercial laboratory for analysis. Laboratory GRO reading returned a result of non-detect and the DRO reading returned a result of 290 mg/kg. Based on an Apache meeting with NMOCD – District I, a decision was made to install a 6 inch clay barrier throughout the release in the lease pad and then backfill the site with clean, imported caliche to bring the excavation back to ground surface. On October 7th, 2013, RECS personnel were on site to begin the liner installation. A total of 48 yards of clay and 84 yards of clean caliche was imported to site to install the clay barrier and backfill the site. At the base of the excavation a 6 inch clay barrier was installed throughout the release area in the facility. On October 8th, 2013, Pettigrew & Associates were on site to conduct a clay compaction test at two points over the clay barrier. The results of the compaction test showed a Dry Density % Max of 97.1% at SG 1 and 95.6% at SG-2. Caliche was then backfilled over the clay barrier to bring the excavation up to ground surface. A sample of the caliche was taken to a commercial laboratory for analysis and returned a chloride result of 32 mg/kg.

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: Larry Bruce Baker	OIL CONSERVATION DIVISION	
Printed Name: Larry Bruce Baker	Approved by Environmental Specialist: Environmental Specialist	
Title: Environmental Tech	Approval Date: 10/31/13	Expiration Date: —
E-mail Address: larry.baker@apachecorp.com	Conditions of Approval: —	Attached ☐ IRP-9-15-2950
Date: 10-31-13 Phone: (432) 631-6982		

* Attach Additional Sheets If Necessary