District I			Sta	te of N	ew Me	xico				Form C-141	
1625 N French Dr	1625 N French Dr., Hobbs, NM 88240 Energy Minerals a				nd Natu	ral Resource	s	Revised June 10, 2003			
District II		DEREN									
1301 W Grand Av	enue, Artesia, NM 8	RECEN	WEL								
Distric III		AUG 17		nserva	ation D	ivision			Submit 2 C	opies to appropriate	
1000 Rio Brazos Road, Aztec, NM 87410 1220 South				outh S	t. Frai	ıcis Dr.			District (	Office in accordance	
District IV HOBBSOCD Santa Fe				ta Fe,	NM 81	7505		with Rule 116 on back			
1220 S. St. Francis Dr., Santa Fe, NM 87505										side of form	
Release Notification and Corrective Action											
	OI	PERATOR						🗌 Initia	Report 🗹 Fina	al Report	
Name of Comp	any	Apache Co	rporation		Contac	t	Natalie	Gladder	1		
Address	P.O. Box 1		Eunice, NM 8823	1	Teleph	one No.	575-390	)-4186			
Facility Name		NEDU	J 141		Facility	Туре	Produc	iction Well			
Surface Owner	State of	( NM	Minera	l Owner	r	State of	NM	A	API No. 30	-025-35469	
			LOCAT	<b>TION</b>	OF RE	LEASE					
Unit Letter	Section	Township	Range	Feet	from	Feet from	Longi	tude-W	Latitude-N	County	
D	2	21S	37E		h Line <b>30</b>	West Line 1200	103	.1385	32.5213	Lea	
	· · · · · · · · · · · · · · · · · · ·	•••••	NATU	RE O	F REL	EASE					
Type of Releas	e				Volume	e of Release		Volume	Recovered		
Crude Oil w/ associated Produced Water					orox 9	bbl	bbl 0 bbl				
Source of Relea	ase				Date ar	d Hour of Occ	Occurrence Date and Hour of Discovery				
Stuffing Box					ļ	02/10/08			02/10/0	8	
Was Immediate	e Notice Given?				If YES.	To Whom?					

Date and Hour

NA

If YES, Volume Impacting the Watercourse

Describe Area Affected and Cleanup Action Taken. \*

Describe Cause of Problem and Remedial Action Taken. \*

YES

✓ Not Required

⊡ NO

Was a Watercourse Reached?

By Whom?

contaminated soil.

YES

If a Watercourse was Impacted, Describe Fully\*

Release affected flowpath (~1300-ft<sup>2</sup>) was excavated to achieve sidewall and bottom concentrations less than the regulatory limits. Contaminated soil was blended with clean soil obtained from lateral extension of the excavation. Blended concentrations were less than regulatory limits. Remediation and restoration was completed by ELKE Environmental, Hobbs, NM.

Back-pressure valve plugged up causing stuffing box to leak. Repairs facilitated to stop leakage. Preliminary excavation and disposal of grossly

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, of local laws and/or regulations

Signature:	Jablie (- ladden	OIL CONSERVATION DIVISION
Printed Name:	Natalie Gladden	Approved by District Supervisor: Sectoral Laling
Title:	Environmental Tech - Permian Basin	Approval Date: 09/28/09 Expiration Date:
E-Mail Address:	Natalie.Gladden@usa.apachecorp.com	Conditions of Approval: 1RP# <u>1784</u>
Date:	8/6/2009 Phone: 575-390-4186	Attached



RECEIVED

# **NEDU #141**

AUG 17 2009 HOBBSOCD

# **C141 CLOSURE REPORT**

# API 30-025-35469

# UL-D (NW¼ OF THE NW¼) OF SECTION 2 T21S R37E LATITUDE: N 32° 31.277' LONGITUDE: W 103° 8.309' ~5.84 MILES NNE (BEARING 10.9°) OF EUNICE LEA COUNTY, NEW MEXICO

# NMOCD 1RP #1784

August 6, 2009

PREPARED FOR APACHE CORPORATION BY:

JOHN GOOD, PROJECT MANAGER/CONSULTANT (575) 631-3277; JCGOOD4614@AOL.COM

# **Table of Contents**

,

1.0 Project Summary	3
2.0 Site Description	4
2.1 Geological Description	4
2.2 Ecological Description	4
2.3 Area Ground Water	4
2.4 Area Water Wells	4
2.5 Area Surface Water Features	4
3.0 Contaminant and Size of Area	4
4.0 NMOCD Site Ranking	4
5.0 Remediation Process	5

ATTACHMENTS	6-21
Laboratory Analytical Results Summary Table	6
Plate 1: Site Location Map	7
Plate 2: Site Topography Map	8
Plate 3: Site Aerial Photograph	9
Plate 4: Ground Water Elevation Contour Map	10
Plate 5: Site Detail Drawing	11
Plate 6: Soil Sample Location Drawing	12
Cardinal Laboratory Analytical Reports	13-16
Photographs	17-18
Initial NMOCD C-141 Form (02/14/08 1RP-1784)	19
Site Metrics Information	20
Final NMOCD C-141 Form	21

I

## **1.0 Project Summary**

Release Site Name:NEDU #141Operating Company:Apache CorporationCompany Representative:Natalie Gladden, Environmental TechPhone: 575-390-4186Address: PO Box 1849, Eunice, NM 88231Email: Natalie.Gladden@usa.apachecorp.comRemediation Company:ELKE Environmental - HobbsPhone: 575-738-0138

#### SITE SPECIFIC DATA:

Legal Description:	Lea County, New Mexico		UL-J Section 2 T21S R37E			
General Location:	5.84 miles NN	unice, NM.				
Latitude: N32° 31.277'	Longitude: W	Longitude: W103° 8.309' Elevation: 3,506-ft a				
Land Ownership:	State of NM					
Ground Water Elevation:	round Water Elevation: 70-ft bgs (Contour map)					
Water Wells within 1000-ft:	none	Surface Water	r within 1000-ft:	none		
<b>RELEASE SPECIFIC DATA:</b>						
Data and Time of $\mathbf{P}$ algorate(s): $02/10/08$ AM						

Date and Time of Release(s): 02/10/08 – AM

Material Released:	Crude oil and a	ssociated produced water
Volume Released:	9-bbl	Volume Recovered: 0-bbl
Cause of Release:	clogged valve r	esulting in stuffing box overflow
Release Affected Area:	~1300-ft <sup>2</sup>	
Depth of Contamination:	10-ft bgs	
NMOCD Site Ranking:	10 (ground wat	er 50-ft below lowest contamination)
<b>Remediation Action Levels</b>	: TPH: 1000-ppn	n; Benzene: 10-ppm; BTEX: 50-ppm; Cl – 250-ppm

#### **REMEDIATION SUMMARY:**

Subsequent to the initial excavation/disposal of  $\sim 100$ -yd<sup>3</sup> of saturated soil from the southwest extending flow path, the bottom and sides of the excavation were field analyzed for total chlorides. Remaining chloride concentrations were low enough to enable blending to mitigate the remaining chloride contaminated soil. Contaminated soil was excavated and stockpiled on the pad surface. Clean blending soil was obtained by extending the excavation laterally beyond the clean limits. The excavation was backfilled with the blended soil and finished with 100-yd<sup>3</sup> of clean caliche obtained from another Apache location that was being reduced in size.

# 2.0 Detailed Site Description

### 2.1 Geological Description

The United States Geological Survey (USGS) Ground-Water Report 6, "Geology and Ground-Water Conditions in Southern Lea County, New Mexico," A. Nicholson and A. Clebsch, 1961, describes the near surface geology of southern Lea County as "an intergrade of the Quaternary Alluvium (QA) sediments, i.e., fine to medium sand, with the mostly eroded Cenozoic Ogallala (CO) formation. Typically, the QA and CO formations in the area are capped by a thick inter-bed of caliche and generally overlain by sandy soil." The release site is located in the Eunice Plain physiographic subdivision, described by Nicholson & Clebsch as "covered almost entirely by reddish-brown dune sand. In some places the underlying surface consists of alluvial sediments – most commonly calcareous silt in buried valleys or Quaternary lake basins. It has a general southeast slope toward Monument Draw." The sand cover is generally.2 to 5-ft thick, but can be 20 – 30-ft thick in localized drift areas."

## 2.2 Ecological Description

The area is typical of the Upper Chihuahuan Desert Biome consisting primarily of hummocky sand hills covered with Harvard Shin Oak (*Querqus harvardi*) interspersed with Honey Mesquite (*Prosopis glandulosa*) along with typical desert grasses, flowering annuals and flowering perennials. Mammals represented, include Orrd's and Merriam's Kangaroo Rat, Deer Mouse, White Throated Wood Rat, Cottontail Rabbit, Black Tailed Jackrabbit, Mule Deer, Bobcat, Red Fox and Coyote. Reptiles, Amphibians, and Birds are numerous and typical of the area. A survey of Listed, Threatened, or Endangered species was not conducted.

## 2.3 Area Ground Water

Extrapolation of the Chevron-Texaco water contour map (*Plate 4 of Attachments*) indicates that water in this area is 70' bgs.

## 2.4 Area Water Wells

There are no recorded or observed water wells within 1000 horizontal feet of the site.

### 2.5 Area Surface Water Features

No permanent surface water bodies exist within 1000 horizontal feet of the site.

## 3.0 Contaminant and Size of Area

The primary Contaminants of Concern (CoCs) were crude oil and total chlorides. The approximate areal extent of the release was  $\sim 1300$ -ft<sup>2</sup>.

## 4.0 NMOCD Site Ranking

Contaminant delineation and site evaluation work done at this site indicate that the chemical parameters of the soil and the physical parameters of the ground water were characterized consistent with the characterization and remediation/abatement goals and objectives set forth in the following New Mexico Oil Conservation Division (NMOCD) publications:

- Guidelines for Remediation of Leaks, Spills and Releases (August 13, 1993)
- > Unlined Surface Impoundment Closure Guidelines (February 1993)

Acceptable thresholds for contaminants/constituents of concern (CoCs), i.e., TPH<sup>8015m</sup>, Benzene, and the mass sum of Benzene, Toluene, Ethyl Benzene, and total Xylenes (BTEX<sup>8260</sup>), was determined based on the NMOCD Ranking Criteria as follows:

- Depth to Ground water, i.e., distance from the lower most acceptable concentration to the ground water.
- Wellhead Protection Area, i.e., distance from fresh water supply wells.
- Distance to Surface Water Body, i.e., horizontal distance to all down gradient surface water bodies.

Based on the proximity of the site to area water wells, surface water bodies, and depth to ground water from the lower most contamination, the NMOCD ranking score for the site is 10 points with the soil remedial goals highlighted in the Site Ranking Table.

1. GROUND WATER		2. WELLHEAD PROTECTION	3. DISTANCE TO SURFACE WATER		
DEPTH TO GW <50 FEET: 20 POINTS		IF <1000' FROM WATER SOURCE, OR; <200' FROM PRIVATE DOMESTIC	<200 HORIZONTAL FEET: 20 POINTS		
	V 50 TO 99 FEET: POINTS	WATER SOURCE: 20 POINTS	200-1000 HORIZONTAL FEET: 10 POINTS >1000 HORIZONTAL FEET: 0 POINTS		
	W >100 FEET: OINTS	IF >1000' FROM WATER SOURCE, OR; >200' FROM PRIVATE DOMESTIC WATER SOURCE: 0 POINTS			
GROUND WATER SCORE = 10		WELLHEAD PROTECTION SCORE= 0	SURFACE WATER SCORE= 0		
		SITE RANK (1+2+3) = 10 + 0 + 0 = 20 POINTS	• * * * <sup>*</sup> * * * <sup>*</sup> ** * *** ** ** ** *** *		
	TOTAL SITE RANKI	NG SCORE AND ACCEPTABLE REMEDIAL GOAL	CONCENTRATIONS		
PARAMETER	20+	10			
BENZENE	10 ррм	10 ррм			
BTEX	50 ррм	50 PPM	30 1934 in 1934		
TPH	100 PPM	1000 PPM	\$D(30 6 PM		

#### SITE RANKING TABLE

## **5.0 Remediation Process**

Subsequent to the initial excavation/disposal of  $\sim 100$ -yd<sup>3</sup> of saturated soil from the southwest extending flow path, the bottom and sides of the excavation were field analyzed for total chlorides. Remaining chloride concentrations were low enough to enable blending to mitigate the remaining chloride contaminated soil. Contaminated soil was excavated and stockpiled on the pad surface. Clean blending soil was obtained by extending the excavation laterally beyond the clean limits. The excavation was backfilled with the blended soil and finished with 100-yd<sup>3</sup> of clean caliche obtained from another Apache location that was being reduced in size.

Based on the contents and data contained herein, Apache Corporation requests that NMOCD require "no further action" as regards the soil contamination resulting from the 02/10/08 release at the NEDU #141 well location.

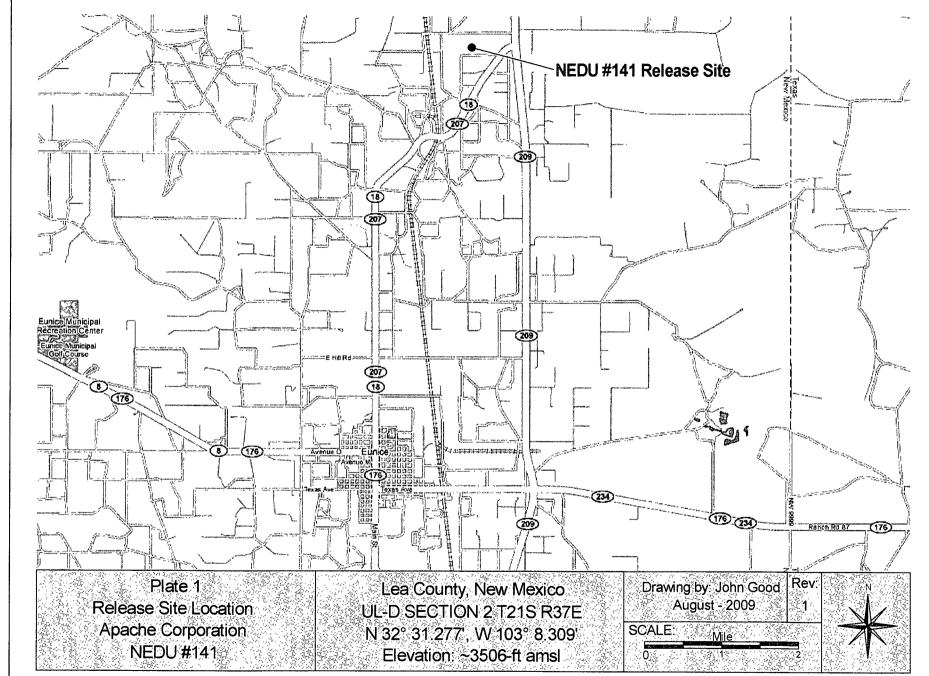
APACHE CORPORATION

#### ATTACHMENTS

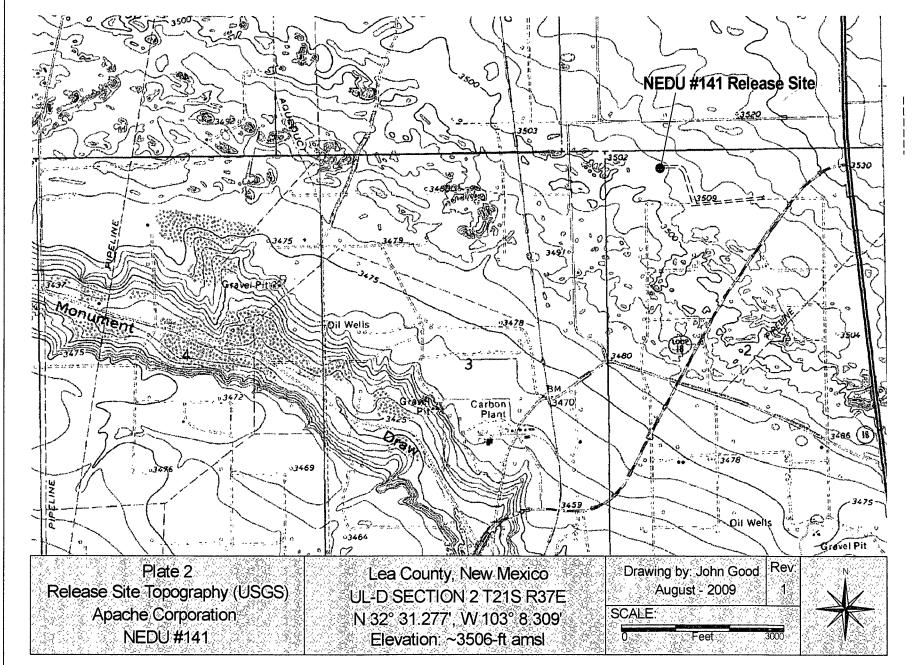
Laboratory Analytical Results Summary Table	6
Plate 1: Site Location Map	7
Plate 2: Site Topography Map	8
Plate 3: Site Aerial Photograph	9
Plate 4: Ground Water Elevation Contour Map	10
Plate 5: Site Detail Drawing	11
Plate 6: Soil Sample Location Drawing	12
Cardinal Laboratory Analytical Reports	13-16
Photographs	17-18
Initial NMOCD C-141 Form (09/12/08 1RP-1950)	19
Site Metrics Information	20
Final NMOCD C-141 Form	21

NEDU	J#141: LA	NBORATO	RY ANALY	IICAL RES	ULTS SUI	MMARÝ T	ABLE .
Sample	Sample	Sample	Chlorides	Sample	Sample	Sample	Chlorides
Number	Depth	Location	mg/Kg	Number	Depth	Location	mg/Kg
SP-1	10-ft	NEast	64	SP-9	7-ft	NWest	48
55-1	10-11	Bottom	04	58-9	7-11	Sidewall	40
SP-2	10-ft	Center	<16	SP-10	7-ft	NWest	48
56-2	10-11	Bottom	~10	SF-10	7-11	Sidewall	40
SP-3	10-ft	SWest	64	SP-11	7-ft	NWest	80
55-3	10-11	Bottom	04	SF-11	7-11	Sidewall	00
SP-4	7-ft	SEast	80	SP-12	NIA	Pland	144
56-4	7-11	Sidewall	00	JP-12	NA	Blend	144
SP-5	7-ft	SEast	112	SP-13	NA	Blend	128
01-5	7-11	Sidewall	112	01-13		Dielia	120
SP-6	7-ft	SEast	112	SP-14	NA	Blend	64
3F-0	7 <b>-</b> 10	Sidewall	112	56-14	INA	Dienu	04
SP-7	7-ft	NEest	80	SP-15	ΝΙΑ	Pland	40
55-1	7-11	Sidewall	ου	07-10	NA	Blend	48
0.0.0	7.4	SWest	110				
SP-8	7-ft	Sidewall	112				
					and the second		

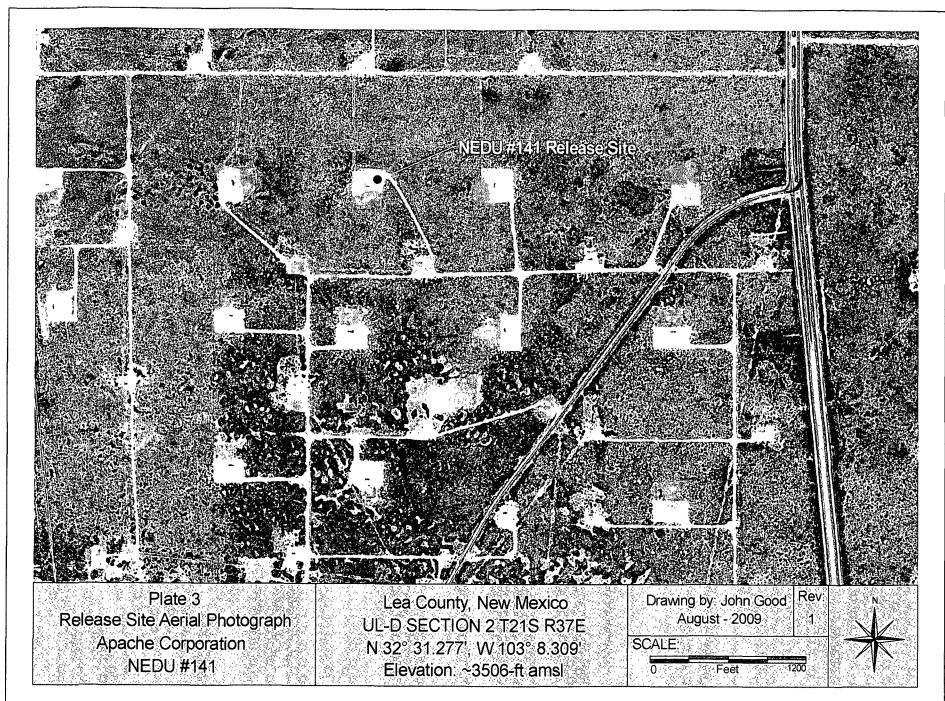
.



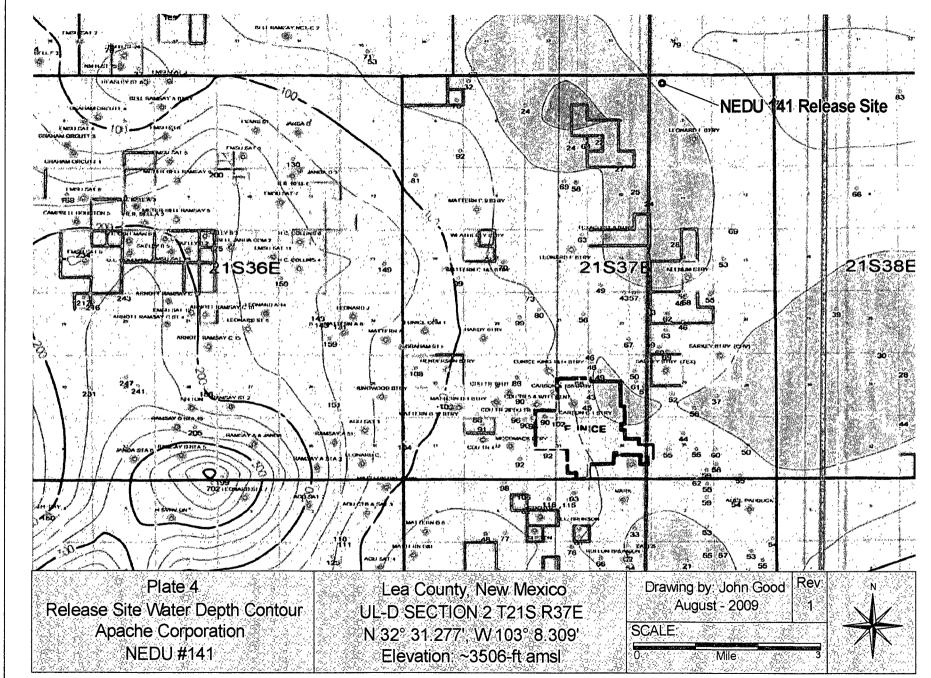
7



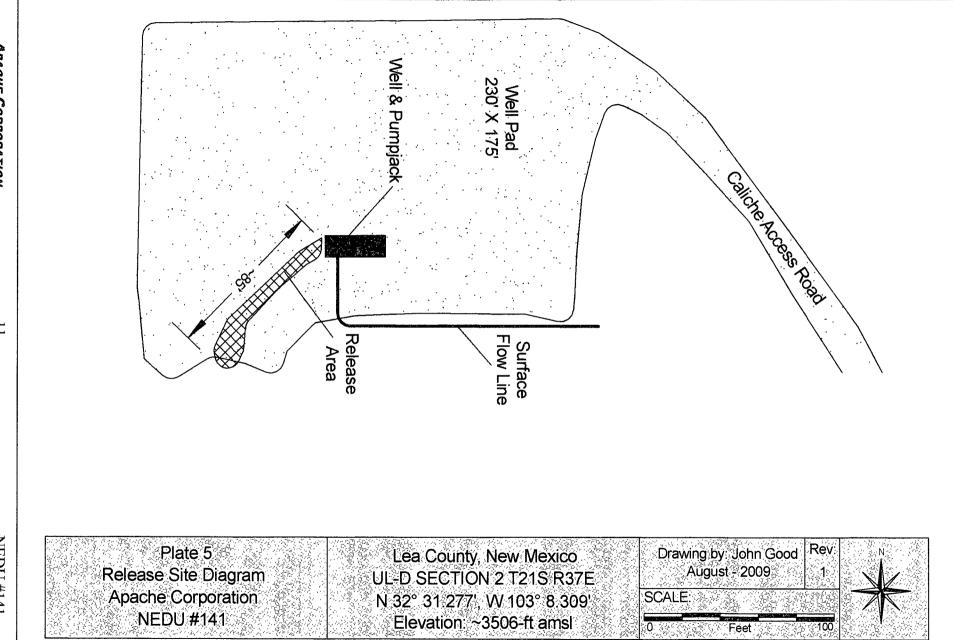
 $\infty$ 



9



10



Blended Backfill Samples SP-12 144-ppm SP-13 128-ppm SP-13 48-ppm	48-ppm	SE-7 80-ppm 64-ppm 80-ppm
80-ppm	SE2 (112-ppm (112-ppm (112-ppm (112-ppm (112-ppm)	om REFA
SP-8 112-ppm	64-ppm	
Plate 6 Sampling Diagram w/Cl Results Apache Corporation NEDU #141	Lea County, New Mexico UL-D SECTION 2 T21S R37E N 32° 31.277', VV 103° 8.309' Elevation: ~3506-ft amsl	Drawing by: John Good August - 2009 1 SCALE:



ANALYTICAL RESULTS FOR ELKE ENVIRONMENTAL, INC. ATTN: JOHN GOOD P.O. BOX 1830 HOBBS, NM 88241 FAX TO: (575) 738-0140 Receiving Date: 03/07/08 Sampling Date: 03/05/08 Reporting Date: 03/11/08 Sample Type: SOIL Project Owner: APACHE CORPORATION Sample Condition COOL & INTACT Project Name: NEDU #141 Sample Received By: ML Project Location: UL-D S2 T21S R37E Analyzed By: CK/HM GRO DRO (>C<sub>10</sub>-C<sub>28</sub>) CI\*  $(C_6 - C_{10})$ LAB NUMBER SAMPLE ID (mg/kg) (mg/kg) (mg/kg) ANALYSIS DATE 03/07/08 03/07/08 03/09/08 <10.0 H14402-1 BTM-E <10.0 64 H14402-2 BTM-C <10.0 <10.0 <16 <10.0 <10.0 H14402-3 BTM-W 64 <10.0 <10.0 H14402-4 SWS-E 80 H14402-5 SWS-C <10.0 <10.0 112 Quality Control 414 534 490 True Value QC 500 500 500 82.8 % Recovery 107 98.0 **Relative Percent Difference** <0.1 < 0.1 4.7

METHODS: TPH GRO & DRO: EPA SW-846 8015 M; Std. Methods 4500-CFB \*Analyses performed on 1:4 w:v aqueous extracts.

Steine As Chemist/

03/11/02

H14402TCL ELKE

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any dam ansing, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable cence in no event shall Cardinal be lable for inclential or uncequential camages, including, without limitation, business interruptions, loss of use, or loss of profils incurred by client, its subsidianes, affiliates or successors ansing out of or incleated to the performance of services hereunder by Cardinal, regarderess of whether such claim is based upon any of the above-stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with writen approval of Cardinal Laborationes.

**APACHE CORPORATION** 



ANALYTICAL RESULTS FOR ELKE ENVIRONMENTAL, INC. ATTN: JOHN GOOD P.O. BOX 1830 HOBBS, NM 88241 FAX TO: (575) 738-0140

Receiving Date: 03/07/08 Reporting Date: 03/11/08 Project Owner: APACHE CORPORATION Project Name: NEDU #141 Project Location: UL-D S2 T21S R37E

Sampling Date: 03/05/08 Sample Type: SOIL Sample Condition: COOL & INTACT Sample Received By: ML Analyzed By: CK/HM DRO

GRO

(C <sub>6</sub> -C <sub>10</sub> ) (mg/kg) 03/08/08 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0	(>C <sub>10</sub> -C <sub>28</sub> ) (mg/kg) 03/08/08 <10 0 <10.0 <10.0 <10.0 <10.0	Cl* (mg/kg) 03/09/08 112 80 112 48
03/08/08 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0	03/08/08 <10 0 <10.0 <10 0 <10.0	03/09/08 112 80 112
<10.0 <10.0 <10.0 <10.0 <10.0 <10.0	<10 0 <10.0 <10 0 <10.0	03/09/08 112 80 112
<10.0 <10.0 <10.0 <10.0	<10.0 <10 0 <10.0	80 112
<10.0 <10.0 <10.0	<10 0 <10.0	112
<10.0 <10.0	<10.0	· · · · · · · · · · · · · · · · · · ·
<10.0		48
	<10.0	
10.0	×10.0	48
<10.0	<10.0	80
<10.0	<10.0	144
<10.0	<10.0	128
<10.0	<10.0	64
<10.0	<10.0	48
426	478	490
500	500	500
85.2	95.6	98.0
1.0	2.4	<0.1
	<10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0 <10.0	<10.0

METHODS: TPH GRO & DRO: EPA SW-846 8015 M; Std. Methods 4500-CI'B "Analyses performed on 1.4 w:v aqueous extracts.

Keene Chemist

03/1,108

H14402TCLA ELKE

PLEASE NOTE Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim ansing, whether basec in contract or tort, shall be limited to the amount paid by client for analyses. All cleams, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (39) deve after completion of the applicable service. In no event shall Cardinal be hable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profils incurred by client its subsidiates, affliates or successors airbing 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. Results elate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



ANALYTICAL RESULTS FOR ELKE ENVIRONMENTAL, INC ATTN: JOHN GOOD P.O. BOX 1830 HOBBS, NM 88241 FAX TO: (575) 738-0140

Receiving Date: 03/07/08 Reporting Date: 03/10/08 Project Owner: APACHE CORPORATION Project Name: NEDU #141 Project Location: UL-D S2 T21S R37E Sampling Date: 03/05/08 Sample Type: SOIL Sample Condition: COOL & INTACT Sample Received By: ML Analyzed By: BC

LAB NUMBER	SAMPLE ID	BENZENE (mg/kg)	TOLUENE (mg/kg)	ETHYL BENZENE (mg/kg)	TOTAL XYLENES (mg/kg)
ANALYSIS DA	TE	03/08/08	03/08/08	03/08/08	03/08/08
H14402-1	BTM-E	<0.002	< 0.002	< 0.002	<0.006
H14402-2	BTM-C	<0.002	<0.002	< 0.002	<0.006
H14402-3	BTM-W	<0.002	< 0.002	< 0.002	< 0.006
H14402-4	SWS-E	<0.002	< 0.002	< 0.002	<0.006
H14402-5	SWS-C	<0.002	<0.002	<0.002	< 0.006
H14402-6	SWS-W	<0.002	< 0.002	< 0.002	<0.006
H14402-7	SWE-C	<0.002	< 0.002	< 0.002	< 0.006
H14402-8	SWW-C	<0.002	<0.002	< 0.002	<0.006
H14402-9	SWN-E	<0.002	< 0.002	<0.002	<0.006
H14402-10	SWN-C	<0.002	<0.002	<0.002	< 0.006
H14402-11	SWN-W	<0.002	<0.002	<0.002	< 0.006
H14402-12	BLEND-1	<0.002	<0.002	<0.002	< 0.006
H14402-13	BLEND-2	<0.002	<0.002	<0.002	< 0.006
H14402-14	BLEND-3	<0.002	<0.002	<0.002	<0.006
H14402-15	BLEND-4	<0.002	<0.002	<0.002	<0.006
Quality Control		0.085	0.093	0.090	0.259
True Value QC		0.100	0.100	0.100	0.300
% Recovery		84.7	93.3	89.6	86.3
<b>Relative Percer</b>	nt Difference	0.5	1.4	2.4	0.2

METHOD: EPA SW-846 8260

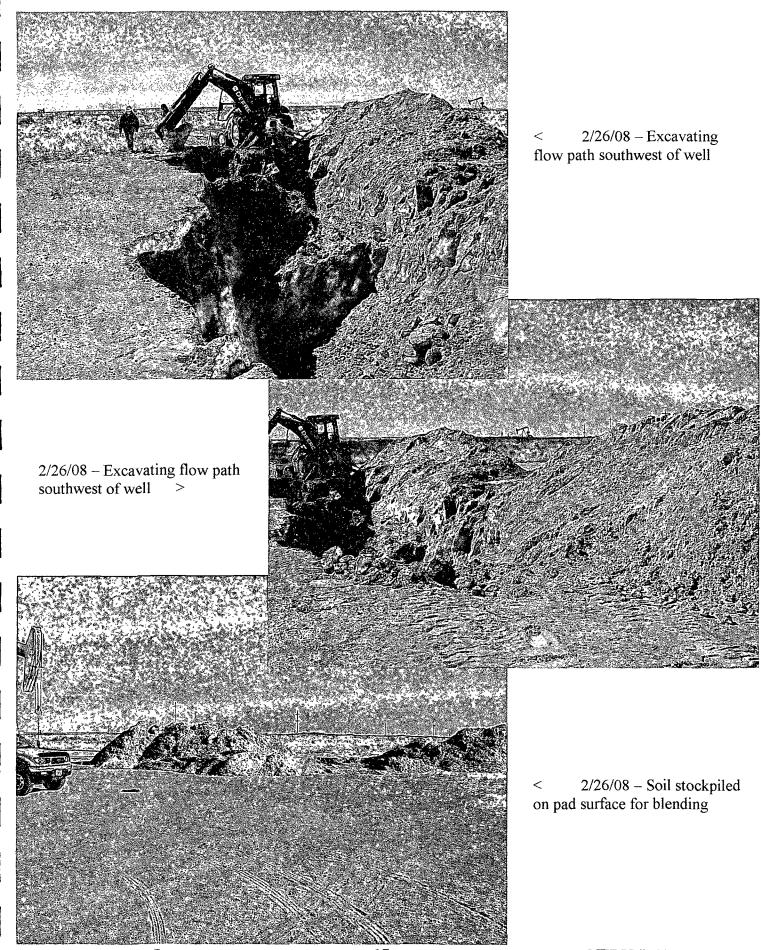
Keine

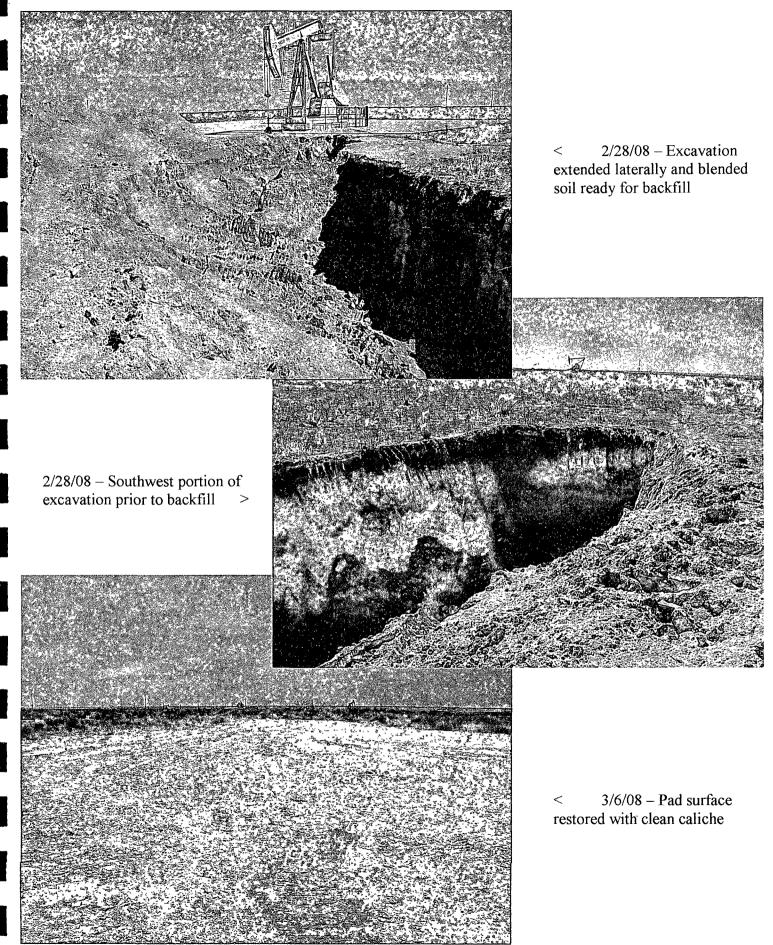
11/08

PLEASE NOTE Lincidity and Damages Cardinal's liability and diant's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses All claims, including those for vegligence and any other cause whetsoever shall be deemed waived unless made in writing and received by Cardinal writin thirty (30) days after completion of the eppticable service in no event shall Cardinal be liable for incidental or consequential damages, including wrinout 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. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

	- LA	<b>RDINAL</b> ABORATORIES	=			1	HOP	4E 15	05) 3	93-23	326 -	101 E MARLA	NO · HOBB	, NM 882	10										
Company		ELKE ENVIRON	MENTAL		IC.			<u> </u>				BILL TO		,				AN	ALYSIS	REQU	EST				
Project N	fanager:	JOHN GOOD		<u> </u>				P.C	. #:						T	1	T	1		[	1	1	T	<b></b>	Т
Address		3506 WEST CO										che Corp		1			1	1							
lity:		HOBBS State: N		'ip:		241						ladden		1									1	ł	
hone #:		575-738-0138	Fax#:		75-738							x 1849		4			]	1			1	1	1		
roject # roject N		Project Owner:	NEDU #1		CHEC	ORF		Sla	r: EL	Inic N		Źłp:	88231	4								1			
Project L			S2 T21		376				ne i		193	575-39		1	(	1		1			f	1	1	1	1
Sampler			OHN GO					Fa		<i>r</i> .		010-00		1								1		1	
	1		ाइ	Ĩ	1	MATR	İX.		PR	ESE	RV	SAMF	LING	1					1				1		1
Lab	I.D.	Sample I.D.	(G)RAB OR (C)OMF	# CONTAINERS	GROUND WATER	SOIL	SLUDGE	OTHER	ACID/BASE	ICE/COOL	OTHER:	DATE	TIME	TPH <sup>8015</sup>	BTEX	Chlorides									
1 := fe	1021	BTM-E	G	1		X	1	Ē		X	Ť	5-Mar	9:30	X	X	X						1	1		T
н	-2	BTM-C	G	1		X				X	1	5-Mar		X	X	X		1			<u> </u>		<u> </u>		
	-3	BTM-W	G	1		X	ł			X		5-Mar		X	X	X	L		l		1				
4	-4	SWS-E	G	1		X				X		5-Mar		X	X	X								1	
1	-5	SWS-C	G	1		X	Γ	Γ		X	Γ	5-Mar		X	X	X	1					T	1		Т
4	-6	SWS-W	G	1		X	T			X		5-Mar		X	X	X	T	T		T	T	T	T	1	Т
4	-7	SWE-C	G	1		X	$\top$	1	$\square$	X		5-Mar		X	X	X		1		1	1	1	1	1	T
	-8	SWW-C	G	1		X	$\mathbf{t}$	+	t	X		5-Mar		X	X	X	1	1		1	1	1	1	1	t
1	-9	SWN-E	G	1		X	$\mathbf{t}$	$\mathbf{t}$		X		5-Mar		X	X	X	1	1		1		1	1	1	T
1	-10	SWN-C	G	1		TX	+	1	$\mathbf{t}$	X		5-Mar		X	X	X	1	+	1	1	1	+	1	<u>†                                    </u>	$^{+}$
<u>.</u> 1	-11	SWN-W	G	1		X	t	$\square$		X		5-Mar	10:15	T X	X	X	1	+	t	Í –	+	+	1	<u>†</u>	t
1	-12	BLEND-1	G	1	$\vdash$	Ťx	t	+	<u> </u>	X	+	5-Mar	10:30	T X	X	X	1	1	<u>†</u>	1	1	+	+	<b>†</b>	$\dagger$
<u>.</u>	-13	BLEND-2	Ğ	1	$\vdash$	T	+-	+	┢──	Î	+	5-Mar		T <del>x</del>	$\frac{\pi}{x}$	X	†	+	<u> </u>	t	+	+	+	+	$^{\dagger}$
<u>.</u>	-14	BLEND-3	G	4	- + -	† <del>x</del>	t	+	<b>†</b>	Î	+	5-Mar	┝━━━╧	tî	$\frac{1}{x}$	X	+	+	<u>+</u>	t		+		+	+
<u>.</u>	-15	BLEND-4	G	+		tî	+	+	┣	Î	+	5-Mar	4:00	tŵ	tŵ	$\frac{1}{x}$	+	+	+	<del> </del>	+	+		+	╉

Relinguished by Phone Result: 🖸 Yes 🗌 No Fax Result: 🖸 Yes 🛄 No Date: Received By Add' Phone#: 631-3277 (J. Good) Add1 Fax #: 3/7/08 1-121 Remarks: Time: E:W TPH soil x 15= 1350 BTEX soil x 15= 900  $C1^{-}$  soil x 15= <u>375</u>  $$2625^{00}$ Relinquished by: Date Received By: Time: CHECKED BY: Delivered By (Circle One) Sample Condition Cool Intact (Initials) Sampler - UPS - Bus - Other ☑ Yes □ No ☑ Yes 3 5 Note: Cardinal cannot accept verbal changes. Please fax written changes to 575-393-2476.





18

#### State of New Mexico Energy Minerals and Natural Resources

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

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

### **Release Notification and Corrective Action**

	OPERATOR	Initial Report	Final Report
Name of Company Apache Corporation	Contact Natalie Gladden		
Address P.O. Box 1849, Eunice NM 88231	Telephone No. 505-390-4186		
Facility Name NEDU #141	Facility Type		

Surface	Owner

Mineral Owner

Lease No. 30-025-35469

					LOCA	ATION OF REI	LEASE		
	Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
Į	D	2	215	37E	330	North Line	1200	West Line	Lea

Latitude

Longitude

#### NATURE OF RELEASE

Type of Release Oil/Wtr	Volume of Release 9	Volume Recovered 0							
Source of Release Stuffing Box	2/10/08	2/10/08							
Was Immediate Notice Given?	If YES, To Whom? uired								
By Whom?	Date and Hour								
Was a Watercourse Reached?	If YES, Volume Impacting the	If YES, Volume Impacting the Watercourse.							
If a Watercourse was Impacted, Describe Fully.*									
Describe Cause of Problem and Remedial Action Taken.* Back pressure valve plugged up causing stuffing box to leak. Cont	ractor called out dug up contaminated so	RECEIVED							
Describe Area Affected and Cleanup Action Taken * Apache will clean contaminated area and follow NMOCD guideling	es for remediation.	FEB 1 4 2008							
		OBBS OCD							
I hereby certify that the information given above is true and complet regulations all operators are required to report and/or file certain rel public health or the environment. The acceptance of a C-141 report should their operations have failed to adequately investigate and ren or the environment. In addition, NMOCD acceptance of a C-141 re- federal, state, or local laws and/or regulations.	lease notifications and perform corrective t by the NMOCD marked as "Final Report mediate contamination that pose a threat	e actions for releases which may endanger ort" does not relieve the operator of liability to ground water, surface water, human health							
Signature: Acture Gladden	<u>OIL CONSE</u>	OIL CONSERVATION DIVISION							
Printed Name. Natalie Gladden	Approved by District ENVIRON	MENTAL ENGINEER							
Title: EH&S Environmental Tech	Approval Date: 2. 14.08	Expiration Date: 4 . 14.08							
E-mail Address. Natalie.gladden@apachecorp com	Conditions of Approval:								

Phone: 505-390-4186 Attach Additional Sheets If Necessary

Date: 02/14/08

Attached

1 RP 1880 1784

		<u></u>				·					
	2000ho	Incident I	Date: 2/10/08	NMOC	CD Notified:	2/10/08					
SITE:	NEDU 141			A	PI No. 3	30-025-35469					
Company:	Apac	ne Corporation	· · · · · · · · · · · · · · · · · · ·								
Street Addr		Eunice Loop, Hwy	207			······································					
Mailing Add		Box 1849				,					
City, State,		e, NM 88231									
Representa		e Gladden									
	Representative Telephone: 575-390-4186										
Telephone:											
		Volume Reco	vered (bbl):		) Net Rele	ease: > 9					
		MOCD verbally within 24									
	5-25 bbl: Submit Form C-141	•				as).					
Leak Spill	or Pit (LSP) Name:		EDU 141			· · · · · · · · · · · · · · · · · · ·					
	Contamination:		tuffing Box								
	r, i.e. BLM, ST, Fee, Other:		tate of NM	<u></u>							
LSP Dimen			5' X 85' (maximur	n dimen	isions)						
LSP Area			1275 -ft <sup>2</sup>	in annion							
	Poforonco Point (PD):		12/ J -11								
	Reference Point (RP): stance and direction from RP:		·····								
Latitude: No			32 31.277			· · · · · · · · · · · · · · · · · · ·					
Longitude:			103 8.309	· · · · · · · · · · · · · · · · · · ·							
					~						
	Elevation above mean sea level (amsl): 3506 feet 1069 meters   Distance from North Section Line (feet): 330										
the second s	om West Section Line (feet):		330 1200			·····					
	Jnit Letter and 1/4 1/4:	UL-	D NW 1/4 of		1/4	······································					
Location - S		UL-	2		1/4						
				·							
Location - T			37E								
Location - F			Lea			······································					
	ter body within 1000' radius of		· · · · · · · · · · · · · · · · · · ·			· · · · · · · · · · · · · · · · · · ·					
	ter body within 1000 radius of		0			· · · · · · · · · · · · · · · · · · ·					
	vater wells within 1000' radius		0								
	vater wells within 1000' radius		0								
			0								
	water wells within 1000' radiu										
	water wells within 1000' radiu r supply wells within 1000' radiu		0	<i>n</i>							
	r supply wells within 1000' rad		0		· · · · · · · · · · · · · · · · · · ·						
	) from land surface to Ground										
	) of lowest contamination (DC	the second s									
	) to Ground Water (DG - DC =		<u>    10                                </u>								
Deptil (leet)	1. Ground Water		ad Protection A		2 Dictores	to Surface Mater					
			water source, or		J. Distance	to Surface Water					
If Depth to	GW <50-feet: 20 points		lomestic water so		<200 horizonta	al feet: 20 points					
		20 points	iomestic water so	uice.							
If Depth to	GW 50 to 100-feet: 10 points		water source, or	>200'	200-1000 horiz	zontal feet: 10 points					
	······································					· · · · · · · · · · · · · · · · · · ·					
If Depth to	GW >100-feet: 0 points		lomestic water so	urce: U	>1000 horizon	tal feet: 0 points					
Cround Min	tor Score: 10	points	tootion Contra								
	Ground Water Score: 10 Wellhead Protection Score: 0 Surface Water Score: 0   Site Ranking (1 + 2 + 3): 10										
		Ranking Score and	Accontable Co-	loontro	tione						
Baramatar		anning score and		icentra							
Parameter	20 or >		10			0					
Benzene <sup>1</sup>	10-ppm		10-ppm			0-ppm					
BTEX <sup>1</sup>	50-ppm		50-ppm		the second s	60-ppm					
TPH	100-ppm		1000-ppm		50	00-ppm					

I

District I 1625 N. French Dr.,	Hobbs NM 88740		State of N Energy Minerals a			•6				orm C-141 June 10, 2003
District II	110005, 1910 88240		EIVED		ii ai ixesoui ce	.9			Revised	<i>June 10</i> , 2003
1301 W. Grand Ave	nue, Artesia, NM 8	8210								
Distric III			7 2009 Oil Conserv					Submit	2 Copies	to appropriate
1000 R10 Brazos Ro	ad, Aztec, NM 874	10HOBBS	SOCD 1220 South S	St. Fra	ncis Dr.			Distr	ict Office	in accordance
District IV			Santa Fe,	NM 8	7505				with Rul	e 116 on back
1220 S. St Francis I	Dr , Santa Fe, NM 8									side of form
		PERATOR	Release Notification						Final Rep	ort
Name of Compa			Corporation	Contac	and the second		Gladde	n		· · • •
Address Facility Name	P.O. Box 1		Eunice, NM 88231 CDU 141	Facility	one No.	575-390 Produc	<u>-4180</u> tion We	11		<u></u>
Surface Owner	State of	· · · · · · · · · · · · · · · · · · ·	Mineral Owne		State of I			API No	30-025	35469
Surface Owner	State 01						· · · · ·		30-023	-33405
Unit Letter	Section	Township		t from	Feet from	Longi	tude-W	Latitude-	NT	County
			Nort	h Line	West Line					2
D	2	21S	37E	30	1200	103.	1385	32.5213		Lea
	·····		NATURE C							
Type of Release					e of Release		Volume	Recovered		
Crude Oil w/ as Source of Releas		uced Water			orox 9 Id Hour of Occi	bbl	Data an	0 d Hour of D	bbl	
Stuffing Box	se			Date al	02/10/08	lifence	Date an	02/1	,	
Was Immediate	Notice Given?	· · · · · · · · · · · · · · · · · · ·		If YES	To Whom?		L	02/1	000	
-	YES	NO	✓ Not Required							
By Whom?					nd Hour					
Was a Watercou	rse Reached?	TYES	NO	1	, Volume Impac	ting the	Watercon	urse		-
If a Watercourse	was Impacted			NA	······					
	, mus impueted,	Deserieerd	*y							
Describe Cause	of Problem and	Remedial Ac	tion Taken *							<u> </u>
			g box to leak. Repairs facili	tated to s	top leakage. Pre	liminary o	excavatio	n and dispos	d of gros	ssly
contaminated soil	l.									
		·	·							
Describe Area A	affected and Cle	anup Action	Taken. *							
Release affected f	llowpath (~1300-	·ft²) was excav	ated to achieve sidewall and	l bottom	concentrations l	ess than t	he regula	tory limits. C	ontamin	ated soil
was blended with	clean soil obtain	ned from later	al extension of the excavation							
and restoration w	vas completed by	ELKE Envir	onmental, Hobbs, NM.							
	-		complete to the best of my knowle corrective actions for releases wh	-	•			•	•	•
			erator of liability should their oper	-						• •
ground water, surface other federal, state, o			ment. In addition, NMOCD accep	tance of a	C-141 report does n	iot relieve th	ne operator	of responsibility	for comp	lance with an
	and and and of the	<u></u>	- <u></u>	1	OIL	CONSEI	RVATIC	ON DIVISIC	N	
Signature:				1						
Printed Name:		Natalie G	ladden	Approv	ed by District S	Superviso	r			
Tıtle:	Enviroi	nmental Tech	n - Permian Basin		al Date			on Date		
E-Mail Address:	<u>Natal</u>	ie.Gladden@	ousa.apachecorp.com	Condit	ons of Approva	1:	1 <b>RP</b> #	<u>1784</u>		Attached
Date:	8/6/2009	Phone:	575-390-4186							