Apache

DAVID FEATHER
ENVIRONMENTAL SUPERVISOR
DIRECT: (432) 818-1615
E-MAIL: DAVID.FEATHER@APACHECORP.COM

October 30, 2019

Mr. Bradford Billings
State of New Mexico Oil Conservation Division
1220 South St Francis Drive
Santa Fe, NM 87505

RE: 1RP-1357 NEDU 627

Mr. Billings,

In compliance with 19.15.29.15(B) NMAC and the agreement submitted by Apache Corporation on November 8, 2018, Apache Corporation is submitting information related to pit closure. Apache is respectfully submitting the closure report based on studies occurring in 2019 that demonstrate the site meeting the requirements of the agency. Unless further information is requested by NMOCD, Apache Corporation considers this release closed.

If there are any questions, please feel free to contact me by telephone at 432-818-1615 or by e-mail at David.Feather@ApacheCorp.com.

Sincerely,

David Feather
Environmental Supervisor
Apache Corporation - Permian Basin Region

Attachment: Closure Report Dated October 25, 2019

Apache

EXPLORING WHAT'S POSSIBLE

Bruce Baker

Northeast Drinkard Unit #627

Closure Report

API NO. 30-025-37029

RP-1357

Pit Closure

U/L E, Section 14, Township 21S, Range 37E

Lea County, NM

10/25/19

Prepared By:
Hungry Horse, LLC
4024 Plains Hwy
Lovington, NM 88260

October 25, 2019

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

RE: TERMINATION REQUEST
Apache Corporation – Northeast Drinkard Unit #627 (NEDU #627)
U/L E, Section 14, Township 21S, Range 37E
API No. 30-025-37029

To Whom it May Concern,

Apache Corporation has retained Hungry Horse, LLC to address the potential pit concerns at the site referenced above. Hungry Horse, LLC has prepared this Closure Report that demonstrates the drilling pit associated with the NEDU #627.

Background and Previous Work

Apache Corporation has submitted the initial C-144 for the proposed Pit Closure Plan for the NEDU #627 on November 30th, 2005. The plan was stated as follows:

- Pit will be closed using the trench bury procedure
- Excavate a trench adjacent to the drilling pit, line with a 12mil liner and place the contents of the drilling pit in the trench
- Cover the trenched area with a 20mil liner and 3' of clean soil
- Contour, level and seed
- Notify the OCD before starting and file sundry notice after closing of the pit.

The NMOCD approved the Pit Closure Plan on November 30th, 2005. On or before October 14th, 2005 Environmental Plus, Inc. began the transfer of the pit materials.

A total of six bottom hole and ten sidewalls samples were obtained. Below are the samples obtained for delineation purposes (Table I Sampling) on or before February of 2006.

Sample ID	Depth	Soil	Sample Date	Field Chloride	Lab BTEX	Lab TPH	Lab Chl
ENSW-5	5'	IN-SITU	2/14/2006	640	0	0	192
ESSW-5	5'	IN-SITU	2/14/2006	400	0	0	16
EESW-5	5'	IN-SITU	2/14/2006	4000	0	0	17195
SWSW-4	4'	IN-SITU	2/14/2006	4000	0	0	19594
WSSW-4	4'	IN-SITU	2/14/2006	640	0	0	272
WNSW-4	4'	IN-SITU	2/14/2006	960	0	<20	480
NWBH	14'	EXCVATED	2/14/2006	4000	0	<20	13996
NEBH	14'	EXCVATED	2/14/2006	4000	0	<20	2175

SEBH	14'	EXCVATED	2/14/2006	1600	0	<20	9757
SWBH	14'	EXCVATED	2/14/2006	4000	0	<20	688
WEST TRENCH-14	14'	EXCVATED	2/14/2006	4000	0	0	21993
WEST TRENCH-19	19'	IN-SITU	2/14/2006	4000	0	<20	8157
WEST TRENCH-24	24'	IN-SITU	2/14/2006	380	0	0	96
WEST TRENCH-29	29'	IN-SITU	2/14/2006	380	0	<20	144
EAST TRENCH-14	14'	EXCVATED	2/14/2006	2800	0	0	1727
EAST TRENCH-19	19'	IN-SITU	2/14/2006	1280	0	<20	912

On or before November 7th, of 2006 EPI obtained four sample of the fluid in the pit area and below you will find the data provided:

Sample ID	Date	NA	CA	Mg	K	Cond	TTL-Alk	Cl	SO	CO	HCO	pH (s.u)	TDS
W-18'	11/7/2006	40975	3206	972	465	183200	110	69978	2895	0	134	6.48	212000
C-22'	11/7/2006	41183	2806	729	305	126200	110	68979	2563	0	134	6.93	117360
SE-22'	11/7/2006	15233	1603	729	93	62700	130	27591	1201	0	159	6.94	51550
Chaparral Brine	11/7/2006	124790	1202	2430	1135	278400	110	195939	9273	0	134	6.61	333420

On or before November 22nd of 2006, EPI continued to delineate the pit area, data is found below and in the Table 2 form attached herein:

Sample ID	Depth	Soil	Sample Date	Field Chloride	Lab BTEX	Lab TPH	Lab Chl
NSW11-12'	12'	IN-SITU	11/22/2006	400	0	0	160
NSW12-12	12'	IN-SITU	11/22/2006	240	0	0	48
NSW13-6'	6'	IN-SITU	11/22/2006	560	0	0	800
WSW14-7'	7'	IN-SITU	11/22/2006	400	0	0	240
WSW15-6'	6'	IN-SITU	11/22/2006	480	0	0	640
WSW16-12'	12'	IN-SITU	11/22/2006	240	0	0	48
WSW17-11'	11'	IN-SITU	11/22/2006	240	0	0	64
WSW18-12'	12'	IN-SITU	11/22/2006	160	0	0	48
SSW19-6'	6'	IN-SITU	11/22/2006	400	0	0	240
SSW20-7'	7'	IN-SITU	11/22/2006	240	0	0	48
SSW21-6'	6'	IN-SITU	11/22/2006	240	0	0	32
SSW22-12'	12'	IN-SITU	11/22/2006	240	0	0	336
SSW23-6'	6'	IN-SITU	11/22/2006	240	0	0	64
SSW24-12'	12'	IN-SITU	11/22/2006	160	0	0	224
BH25-19'	19'	IN-SITU	11/22/2006	0	0	0	8317
BH26-19'	19'	IN-SITU	11/22/2006	0	0	0	2607
BH27-19'	19'	IN-SITU	11/22/2006	0	0	0	11676
BH28-19'	19'	IN-SITU	11/22/2006	0	0	0	13356
BH29-19'	19'	IN-SITU	11/22/2006	0	0	0	160

In February of 2007 Hungry Horse obtained a water sample from the pit area. Comparison of the November of 2006 to February of 2007 sample data shows a drastic decline in the minerals, salts, metals, cations or anions better known as TDS (Total Dissolved Solids). The confirmed lab analysis is below:

Sample ID	Date	NA	CA	Mg	K	Cond	TTL-Alk	Cl	SO	CO	HCO	pH (s.u)	TDS
Pit Water	2/27/2007	8373	2428	1755	67.5	53300	96	21393	1299	0	117	6.98	40592

In March of 2007 another sampling event occurred comparing the injection well fluid and fluid from the wellhead. The confirmed lab analysis for TDS is below.

Sample ID	Date	NA	CA	Mg	K	Cond	TTL-Alk	Cl	SO	CO	HCO	pH (s.u)	TDS
Inj. Well	3/16/2007	7276	2295	222	199	39000	372	13696	2939	0	454	7.94	29764
Wellhead	3/16/2007	9344	2462	484	220	48600	280	17794	3262	0	342	8.07	36048

On April 17th of 2007, continued sampling occurred comparing the East Trench at 22'bgs and on the SE Corner of the Pit. The lab confirmed the following analysis below:

Sample ID	Date	NA	CA	Mg	K	Cond	TTL-Alk	Cl	SO	CO	HCO	pH (s.u)	TDS
E. Trench 22'bgs	4/17/2007	7223	2794	1230	122	47200	98	18794	1286	0	117	7.04	36336
SE Corner of Pit	4/17/2007	1782	938	456	31.5	15210	60	5338	536	0	73	7.47	11210

Please also see the attached documentation that has been uploaded into the NMOCD Database, this information is attached accordingly.

Groundwater Information

According to the New Mexico Office of the State Engineer, the ground water closest to the site is 57'bgs. Below you will find the two wells showing ground water information for the site listed herein:

CP-01574-POD1: 547' from the site at 57'DGW
CP-01574-POD2: 563' from the site at 57'DGW

Hungry Horse used the depth of ground water found above as the basis of the Closure Criteria for Soils impacted by a release and is listed below for the new rule dated August 14th, 2018. No soil remediation will be taking place for this site, unless found required by the NMOCD. Please see the groundwater information provided below:

Closure for Soils Impacted by a Release			
Depth	**Constituent**	**Method**	**Limit**
51' to 100'	Chloride	EPA 300.00 or SM4500 CL B	10,000 mg/kg
	TPH (GRO, DRO, MRO)	EPA SW-846 Method 8015M	2,500 mg/kg
	GRO+DRO	EPA SW-846 Method 8015M	1,000 mg/kg
	BTEX	EPA SW-846 Method 8021B or 8260B	50 mg/kg
	Benzene	EPA SW-846 Method 8021B or 8260B	10 mg/kg

Soil Boring

Hungry Horse, LLC went back out to the site on June 24th of 2019 to begin the subsurface investigation to determine depth to ground water at this site. Six boreholes were drilled, which includes SB1 thru SB6 (see attached map). The depths for the above-mentioned boreholes ranged from 28' to 198'bgs. Each borehole contained an impervious clay barrier which was first encountered at depth from 12' to 22'bgs (see attached Soil Boring Logs). Below you will find the Soil Boring Data:

Soil Boring ID	Depth Bored	Soil/AVG	Boring Date	Clay Depths
SB#1	198'	Clay	7/8/2019	20-198'
SB#2	34'	Clay	7/8/2019	22-34'
SB#3	34'	Clay	7/9/2019	16-34'
SB#4	28'	Clay	7/12/2019	17-28'
SB#5	30'	Clay	8/8/2019	12-30'
SB#6	104'	Clay	8/8/2019	16-104'

SB #1 was drilled up-gradient northwest of the pit to a total depth of 198'bgs, containing 93' of an impervious clay barrier and was dry, no groundwater encountered. SB #6 was also drilled up-gradient E/NE of the pit to a total depth of 104'bgs, containing 84' of an impervious clay barrier and was dry, no groundwater encountered.

SB #2, SB #3, SB #4 and SB #5 were drilled downgradient in a south easterly direction (see attached Site Map for details). SB#2 (18'bgs) thru SB#5 (22'bgs) contained perched drilling fluids (see attached Soil Boring Logs).

On August 8th of 2019, Hungry Horse took a subsurface soil sample at the center of the pit known as SB #5 (Sample ID: MW5-32'bgs on lab analysis). No monitoring well was installed, COC (Chain of Custody was mislabeled). This sample was obtained at 32'bgs and was sent to Cardinal Laboratories (H902797) for confirmation. The confirmed lab analysis for SB #5 is as follows:

Sample ID	Depth	Soil	Sample Date	Lab BTEX	Lab Chl	Lab TPH
MW5 (SB#5)	32'	Clay	8/8/2019	<0.300	3400	<10

Natural phytoremediation is taking place at this site. Dense, healthy mesquite bushes populate the old pit area. These mesquites are 2' to 3' taller than the mesquites on the undisturbed surrounding pasture (see site photos).

Conclusion

Hungry Horse, LLC would like to request closure for the drilling pit associated with the NEDU #627 for Apache Corporation. The historical and current information which is detailed herein, indicates that groundwater is not present upgradient on the West, Northwest or Northeast area surrounding the drilling pit. This data confirms that the NEDU #627 location is an exception to the recorded groundwater data in this area based on the New Mexico Office of the State Engineer Database. (Please also see the Site Maps at the end of this report, which shows the Open Pit, Closed Pit and Current site views).

Hungry Horse along with Apache Corporation believes that the recent soil boring activity indicates that there is no groundwater present at this site. The Lab Analysis dated August 19th of 2019 (Cardinal Lab Report H902797) indicates that the fluids obtained from the center of the pit which was encountered on August 8th of 2019 is definitely non-potable perched drilling fluids. SB #1 thru #6 all exhibit a uniform depositional sequence of impervious clay that ranges from a minimum of 12' to 105' in thickness.

Apache Corporation appreciates the opportunity to work with you on this project. Please contact Bruce Baker at 432-631-6982 if you have any questions or concerns.

Sincerely,

Kathy Rivera

Kathy Rivera
Environmental Office Manager
Hungry Horse, LLC.
4024 Plains Highway
Lovington, NM 88260
Cell (575) 441-4374
krivera@hungry-horse.com

Attachments:

- Pit Registration C-144 (1-03-2005)
- Initial C-144 (11-30-2005)
- NMOCD Historical Report
- Historical Sample Data
- Groundwater Information
- Soil Boring Map
- Soil Boring Data
- Current Pit Sampling Data
- Current Pit Lab Analysis
- Site Photos
- Open Pit Site Map
- Closed Pit Site Map
- Current View Site Map

District I
1625 N French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, 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-144
July 29, 2004

For drilling and production facilities, submit to appropriate NMOCD District Office.
For downstream facilities, submit to Santa Fe office

Pit or Below-Grade Tank Registration or Closure

Is pit or below-grade tank covered by a "general plan"? Yes ☐ No ☒
Type of action: Registration of a pit or below-grade tank ☒ Closure of a pit or below-grade tank ☐

Operator: Apache Corporation Telephone: (918) 491 - 4900 e-mail address: glenn.bone@apachecorp.com
Address: Two Warren Place, Suite 1500, 6120 S. Yale Tulsa Oklahoma 74136-4224
Facility or well name: NEDU #627 API #: 30-025-37029 U/L or Qtr/Qtr E Sec 14 T 21S R 37E
County: Lea Latitude 32°28'47.01"N Longitude 103°08'28.28"W NAD: 1927 ☒ 1983 ☐ Surface Owner Federal ☐ State ☒ Private ☐ Indian ☐

Pit	Below-grade tank	
Type: Drilling ☒ Production ☐ Disposal ☐ Workover ☐ Emergency ☐ Lined ☒ Unlined ☐ Liner type: Synthetic ☒ Thickness 12 mil Clay ☐ Volume 7105 bbl	Volume: ____bbl Type of fluid: ____ Construction material: ____ Double-walled, with leak detection? Yes ☐ If not, explain why not.	
Depth to ground water (vertical distance from bottom of pit to seasonal high water elevation of ground water.)	Less than 50 feet 50 feet or more, but less than 100 feet – 70 ft 100 feet or more	(20 points) (10 points) 10 Pts (0 points)
Wellhead protection area: (Less than 200 feet from a private domestic water source, or less than 1000 feet from all other water sources.)	Yes No	(20 points) (0 points)
Distance to surface water: (horizontal distance to all wetlands, playas, irrigation canals, ditches, and perennial and ephemeral watercourses.)	Less than 200 feet 200 feet or more, but less than 1000 feet 1000 feet or more	(20 points) (10 points) (0 points)
	Ranking Score (Total Points)	10 Points

If this is a pit closure: (1) attach a diagram of the facility showing the pit's relationship to other equipment and tanks. (2) Indicate disposal location: onsite ☐ offsite ☐ If offsite, name of facility____. (3) Attach a general description of remedial action taken including remediation start date and end date. (4) Groundwater encountered: No ☐ Yes ☐ If yes, show depth below ground surface____ft. and attach sample results. (5) Attach soil sample results and a diagram of sample locations and excavations.

I hereby certify that the information above is true and complete to the best of my knowledge and belief. I further certify that the above-described pit or below-grade tank has been/will be constructed or closed according to NMOCD guidelines ☒, a general permit ☐, or an (attached) alternative OCD-approved plan ☐.
Date: 12/30/2004
Printed Name/Title Glenn Bone – Drilling Engineer Signature ____

Your certification and NMOCD approval of this application/closure does not relieve the operator of liability should the contents of the pit or tank contaminate ground water or otherwise endanger public health or the environment. Nor does it relieve the operator of its responsibility for compliance with any other federal, state, or local laws and/or regulations.

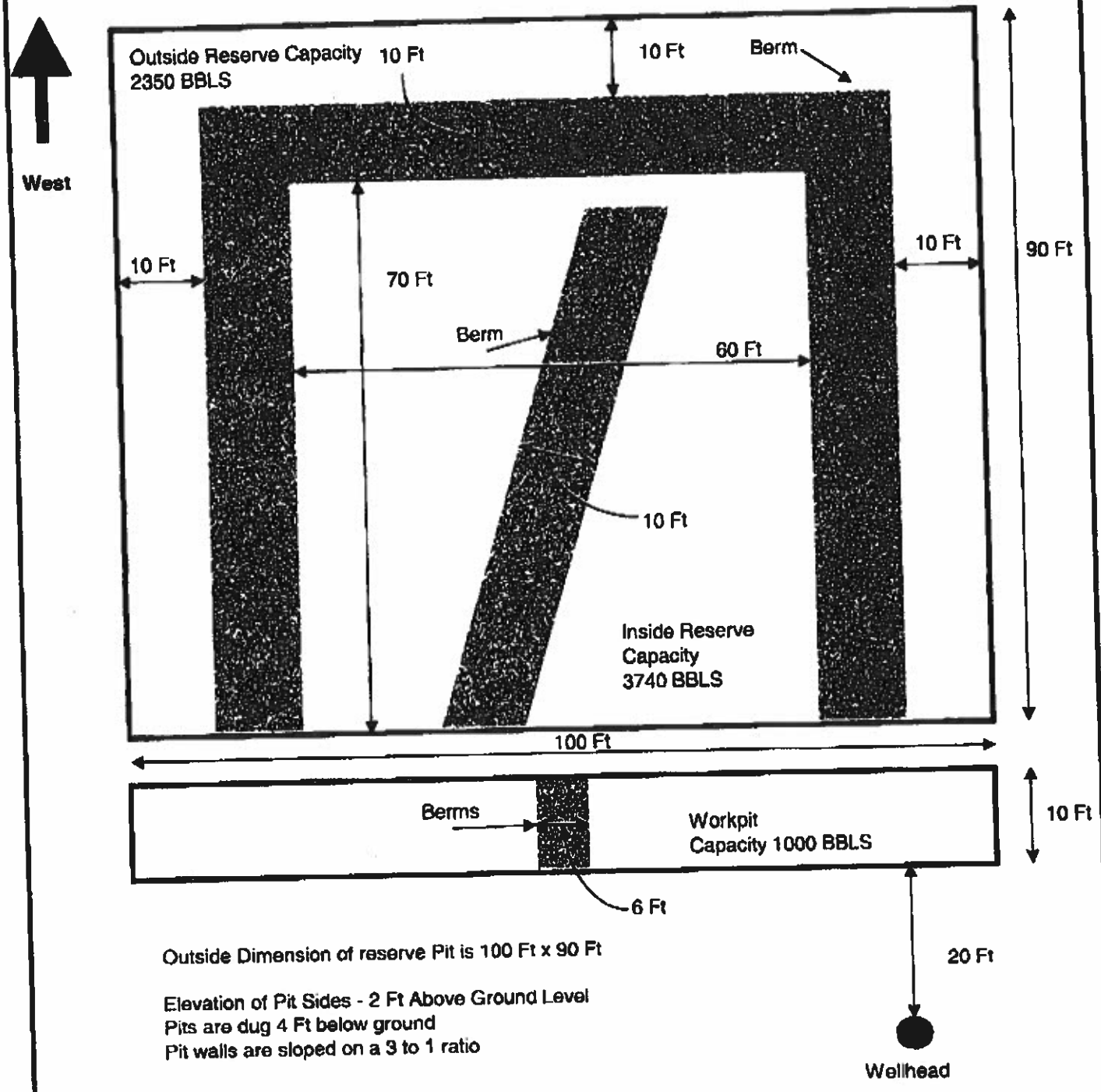
Approval:
Date: JAN 03 2005
Printed Name/Title PETROLEUM ENGINEER Signature

NEDU #627 - Mud Pits

Sec. 14, T 21S, R 37 E
Lea County, NM

Apache CORPORATION
CENTRAL REGION

Top Soil pushed back off of Reserve pit prior to digging pits



Outside Dimension of reserve Pit is 100 Ft x 90 Ft

Elevation of Pit Sides - 2 Ft Above Ground Level
Pits are dug 4 Ft below ground
Pit walls are sloped on a 3 to 1 ratio

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, 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-144
June 1, 2004

For drilling and production facilities, submit to appropriate NMOCD District Office.
For downstream facilities, submit to Santa Fe office

Pit or Below-Grade Tank Registration or Closure

Is pit or below-grade tank covered by a "general plan"? Yes ☒ No ☐
Type of action: Registration of a pit or below-grade tank ☐ Closure of a pit or below-grade tank ☒

Operator: Apache Corp. Telephone: 918-491-4900 e-mail address: seay04@leaco.net
Address: 6120 S. Yale Suite 1500 Tulsa OK 74136-4224
Facility or well name: NEDU #627 API #: 30-025-37029 U/L or Qtr/Qtr E Sec 14 T 21 R 37
County: Lea Latitude 30° 28' 47" Longitude 103° 09' 28" NAD: 1927 ☐ 1983 ☐
Surface Owner: Federal ☐ State ☐ Private ☐ Indian ☒

Pit	Below-grade tank	
Type: Drilling ☒ Production ☐ Disposal ☐ Workover ☐ Emergency ☐ Lined ☒ Unlined ☐ Liner type: Synthetic ☐ Thickness 12 mil Clay ☐ Pit Volume 7100 bbl	Volume: ____ bbl Type of fluid: _____ Construction material: _____ Double-walled, with leak detection? Yes ☐ If not, explain why not.	
Depth to ground water (vertical distance from bottom of pit to seasonal high water elevation of ground water.) 70 ft.	Less than 50 feet 50 feet or more, but less than 100 feet 100 feet or more	(20 points) (10 points) (0 points)
Wellhead protection area: (Less than 200 feet from a private domestic water source, or less than 1000 feet from all other water sources.)	Yes No	(20 points) (0 points)
Distance to surface water: (horizontal distance to all wetlands, playas, irrigation canals, ditches, and perennial and ephemeral watercourses.)	Less than 200 feet 200 feet or more, but less than 1000 feet 1000 feet or more	(20 points) (10 points) (0 points)
	Ranking Score (Total Points)	10

If this is a pit closure: (1) Attach a diagram of the facility showing the pit's relationship to other equipment and tanks. (2) Indicate disposal location: (check the onsite box if your are burying in place) onsite ☒ offsite ☐ If offsite, name of facility_____. (3) Attach a general description of remedial action taken including remediation start date and end date. (4) Groundwater encountered: No ☐ Yes ☐ If yes, show depth below ground surface_____ft. and attach sample results.
(5) Attach soil sample results and a diagram of sample locations and excavations.

Additional Comments: Plan to trench bury onsite. Excavate trench adjacent to drilling pit, line with 12 mil plastic, put contents of drilling pit in trench, cover with 20 mil plastic and 3 ft of clean soil. Contour, level and seed.
Notify the OCD before starting and file sundry notice after closing.
Will begin soon after approval

I hereby certify that the information above is true and complete to the best of my knowledge and belief. I further certify that the above-described pit or below-grade tank has been/will be constructed or closed according to NMOCD guidelines ☒, a general permit ☐, or an (attached) alternative OCD-approved plan ☒.

Date: 11/30/05
Printed Name/Title Ellie W Seay Agent Signature _____

Your certification and NMOCD approval of this application/closure does not relieve the operator of liability should the contents of the pit or tank contaminate ground water or otherwise endanger public health or the environment. Nor does it relieve the operator of its responsibility for compliance with any other federal, state, or local laws and/or regulations.

Approval:
Printed Name/Title GARY W. WINK / STAFF MGR Signature Gary W. Wink Date: 11/30/05

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

Form C-144
Revised April 3, 2017

For temporary pits, below-grade tanks, and multi-well fluid management pits, submit to the appropriate NMOCD District Office.
For permanent pits submit to the Santa Fe Environmental Bureau office and provide a copy to the appropriate NMOCD District Office.

Pit, Below-Grade Tank, or Proposed Alternative Method Permit or Closure Plan Application

Pit #1 Closure Report

Type of action:
- ☐ Below grade tank registration
- ☐ Permit of a pit or proposed alternative method
- ☒ Closure of a pit, below-grade tank, or proposed alternative method
- ☐ Modification to an existing permit/or registration
- ☐ Closure plan only submitted for an existing permitted or non-permitted pit, below-grade tank, or proposed alternative method

Instructions: Please submit one application (Form C-144) per individual pit, below-grade tank or alternative request

Please be advised that approval of this request does not relieve the operator of liability should operations result in pollution of surface water, ground water or the environment. Nor does approval relieve the operator of its responsibility to comply with any other applicable governmental authority's rules, regulations or ordinances.

1.
Operator: Apache Corporation OGRID #: 873
Address: 800 East Broadway Hobbs, NM 88240
Facility or well name: NEDU #627 (Northeast Drinkard Unit #627)
API Number: 30-025-37029 OCD Permit Number:
U/L or Qtr/Qtr E Section 14 Township 21S Range 37E County: Lea County
Center of Proposed Design: Latitude 32.47980 Longitude -103.14160 NAD83
Surface Owner: ☐ Federal ☐ State ☒ Private ☐ Tribal Trust or Indian Allotment

2.
☒ **Pit:** Subsection F, G or J of 19.15.17.11 NMAC
Temporary: ☒ Drilling ☐ Workover
☐ Permanent ☐ Emergency ☐ Cavitation ☐ P&A ☐ Multi-Well Fluid Management Low Chloride Drilling Fluid ☒ yes ☐ no
☒ Lined ☐ Unlined Liner type: Thickness 12 mil ☐ LLDPE ☐ HDPE ☐ PVC ☐ Other
☐ String-Reinforced
Liner Seams: ☒ Welded ☐ Factory ☐ Other Volume: 7105 bbl Dimensions: L x W x D

3.
☐ **Below-grade tank:** Subsection I of 19.15.17.11 NMAC
Volume: bbl Type of fluid:
Tank Construction material:
☐ Secondary containment with leak detection ☐ Visible sidewalls, liner, 6-inch lift and automatic overflow shut-off
☐ Visible sidewalls and liner ☐ Visible sidewalls only ☐ Other
Liner type: Thickness mil ☐ HDPE ☐ PVC ☐ Other

4.
☐ **Alternative Method:**
Submittal of an exception request is required. Exceptions must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

5.
Fencing: Subsection D of 19.15.17.11 NMAC *(Applies to permanent pits, temporary pits, and below-grade tanks)*
☐ Chain link, six feet in height, two strands of barbed wire at top *(Required if located within 1000 feet of a permanent residence, school, hospital, institution or church)*
☐ Four foot height, four strands of barbed wire evenly spaced between one and four feet
☐ Alternate. Please specify

6.
Netting: Subsection E of 19.15.17.11 NMAC *(Applies to permanent pits and permanent open top tanks)*

☐ Screen ☐ Netting ☐ Other_____

☐ Monthly inspections (If netting or screening is not physically feasible)

7.
Signs: Subsection C of 19.15.17.11 NMAC

☐ 12"x 24", 2" lettering, providing Operator's name, site location, and emergency telephone numbers

☐ Signed in compliance with 19.15.16.8 NMAC

8.
Variances and Exceptions:
Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17 NMAC for guidance.

Please check a box if one or more of the following is requested, if not leave blank:

☐ Variance(s): Requests must be submitted to the appropriate division district for consideration of approval.

☐ Exception(s): Requests must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

9.
Siting Criteria (regarding permitting): 19.15.17.10 NMAC

Instructions: The applicant must demonstrate compliance for each siting criteria below in the application. Recommendations of acceptable source material are provided below. **Siting criteria does not apply to drying pads or above-grade tanks.**

General siting

Ground water is less than 25 feet below the bottom of a low chloride temporary pit or below-grade tank. ☐ Yes ☐ No ☐ NA
- ☐ NM Office of the State Engineer - iWATERS database search; ☐ USGS; ☐ Data obtained from nearby wells

Ground water is less than 50 feet below the bottom of a Temporary pit, permanent pit, or Multi-Well Fluid Management pit . ☐ Yes ☐ No ☐ NA
NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells

Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended. **(Does not apply to below grade tanks)** ☐ Yes ☐ No
- Written confirmation or verification from the municipality; Written approval obtained from the municipality

Within the area overlying a subsurface mine. **(Does not apply to below grade tanks)** ☐ Yes ☐ No
- Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division

Within an unstable area. **(Does not apply to below grade tanks)** ☐ Yes ☐ No
- Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map

Within a 100-year floodplain. **(Does not apply to below grade tanks)** ☐ Yes ☐ No
- FEMA map

Below Grade Tanks

Within 100 feet of a continuously flowing watercourse, significant watercourse, lake bed, sinkhole, wetland or playa lake (measured from the ordinary high-water mark). ☐ Yes ☐ No
- Topographic map; Visual inspection (certification) of the proposed site

Within 200 horizontal feet of a spring or a fresh water well used for public or livestock consumption;. ☐ Yes ☐ No
- NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site

Temporary Pit using Low Chloride Drilling Fluid (maximum chloride content 15,000 mg/liter)

Within 100 feet of a continuously flowing watercourse, or any other significant watercourse or within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). (Applies to low chloride temporary pits.) ☐ Yes ☐ No
- Topographic map; Visual inspection (certification) of the proposed site

Within 300 feet from a occupied permanent residence, school, hospital, institution, or church in existence at the time of initial application. ☐ Yes ☐ No
- Visual inspection (certification) of the proposed site; Aerial photo; Satellite image

Within 200 horizontal feet of a spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes, or 300feet of any other fresh water well or spring, in existence at the time of the initial application. ☐ Yes ☐ No
NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site

Within 100 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☒ No
Temporary Pit Non-low chloride drilling fluid	
Within 300 feet of a continuously flowing watercourse, or any other significant watercourse, or within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). - Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	☐ Yes ☐ No
Within 500 horizontal feet of a spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes, or 1000 feet of any other fresh water well or spring, in the existence at the time of the initial application; - NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Within 300 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Permanent Pit or Multi-Well Fluid Management Pit	
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse, or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). - Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☒ No
Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	☐ Yes ☒ No
Within 500 horizontal feet of a spring or a fresh water well used for domestic or stock watering purposes, in existence at the time of initial application. - NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site	☐ Yes ☒ No
Within 500 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☒ No

10.

Temporary Pits, Emergency Pits, and Below-grade Tanks Permit Application Attachment Checklist: Subsection B of 19.15.17.9 NMAC

Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

☐ Hydrogeologic Report (Below-grade Tanks) - based upon the requirements of Paragraph (4) of Subsection B of 19.15.17.9 NMAC
☐ Hydrogeologic Data (Temporary and Emergency Pits) - based upon the requirements of Paragraph (2) of Subsection B of 19.15.17.9 NMAC
☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
☐ Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
☐ Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
☐ Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC

☐ Previously Approved Design (attach copy of design) API Number: _____ or Permit Number: _____

11.

Multi-Well Fluid Management Pit Checklist: Subsection B of 19.15.17.9 NMAC

Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

☐ Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
☐ Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
☐ A List of wells with approved application for permit to drill associated with the pit.
☐ Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC
☐ Hydrogeologic Data - based upon the requirements of Paragraph (4) of Subsection B of 19.15.17.9 NMAC
☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC

☐ Previously Approved Design (attach copy of design) API Number: _____ or Permit Number: _____

12.
Permanent Pits Permit Application Checklist: Subsection B of 19.15.17.9 NMAC
Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

- ☐ Hydrogeologic Report - based upon the requirements of Paragraph (1) of Subsection B of 19.15.17.9 NMAC
- ☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
- ☐ Climatological Factors Assessment
- ☐ Certified Engineering Design Plans - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Dike Protection and Structural Integrity Design - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Leak Detection Design - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Liner Specifications and Compatibility Assessment - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Quality Control/Quality Assurance Construction and Installation Plan
- ☐ Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
- ☐ Freeboard and Overtopping Prevention Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Nuisance or Hazardous Odors, including H_2S, Prevention Plan
- ☐ Emergency Response Plan
- ☐ Oil Field Waste Stream Characterization
- ☐ Monitoring and Inspection Plan
- ☐ Erosion Control Plan
- ☐ Closure Plan - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC

13.
Proposed Closure: 19.15.17.13 NMAC
Instructions: Please complete the applicable boxes, Boxes 14 through 18, in regards to the proposed closure plan.

Type: ☒ Drilling ☐ Workover ☐ Emergency ☐ Cavitation ☐ P&A ☐ Permanent Pit ☐ Below-grade Tank ☐ Multi-well Fluid Management Pit ☐ Alternative

Proposed Closure Method:
- ☐ Waste Excavation and Removal
- ☐ Waste Removal (Closed-loop systems only)
- ☐ On-site Closure Method (Only for temporary pits and closed-loop systems)
  - ☐ In-place Burial ☐ On-site Trench Burial
- ☒ Alternative Closure Method

14.
Waste Excavation and Removal Closure Plan Checklist: (19.15.17.13 NMAC) ***Instructions: Each of the following items must be attached to the closure plan. Please indicate, by a check mark in the box, that the documents are attached.***

- ☒ Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC
- ☒ Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.13 NMAC
- ☐ Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings)
- ☐ Soil Backfill and Cover Design Specifications - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
- ☐ Re-vegetation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
- ☐ Site Reclamation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC

15.
Siting Criteria (regarding on-site closure methods only): 19.15.17.10 NMAC
Instructions: Each siting criteria requires a demonstration of compliance in the closure plan. Recommendations of acceptable source material are provided below. Requests regarding changes to certain siting criteria require justifications and/or demonstrations of equivalency. Please refer to 19.15.17.10 NMAC for guidance.

Ground water is less than 25 feet below the bottom of the buried waste. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☒ No ☐ NA
Ground water is between 25-50 feet below the bottom of the buried waste - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☒ No ☐ NA
Ground water is more than 100 feet below the bottom of the buried waste. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☒ Yes ☐ No ☐ NA
Within 100 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse, lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). - Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☒ No
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	☐ Yes ☒ No
Within 300 horizontal feet of a private, domestic fresh water well or spring used for domestic or stock watering purposes, in existence at the time of initial application. - NM Office of the State Engineer - iWATERS database; Visual inspection (certification) of the proposed site	☐ Yes ☒ No
Written confirmation or verification from the municipality; Written approval obtained from the municipality	☐ Yes ☒ No
Within 300 feet of a wetland. US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☒ No
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance	

adopted pursuant to NMSA 1978, Section 3-27-3, as amended. - Written confirmation or verification from the municipality; Written approval obtained from the municipality	☐ Yes ☒ No
Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	☐ Yes ☒ No
Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map	☐ Yes ☒ No
Within a 100-year floodplain. - FEMA map	☐ Yes ☒ No

16.
On-Site Closure Plan Checklist: (19.15.17.13 NMAC) ***Instructions: Each of the following items must be attached to the closure plan. Please indicate, by a check mark in the box, that the documents are attached.***

- ☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
- ☐ Proof of Surface Owner Notice - based upon the appropriate requirements of Subsection E of 19.15.17.13 NMAC
- ☐ Construction/Design Plan of Burial Trench (if applicable) based upon the appropriate requirements of Subsection K of 19.15.17.11 NMAC
- ☐ Construction/Design Plan of Temporary Pit (for in-place burial of a drying pad) - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC
- ☐ Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of 19.15.17.13 NMAC
- ☐ Waste Material Sampling Plan - based upon the appropriate requirements of 19.15.17.13 NMAC
- ☐ Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings or in case on-site closure standards cannot be achieved)
- ☐ Soil Cover Design - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
- ☐ Re-vegetation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
- ☐ Site Reclamation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC

17.
Operator Application Certification:

I hereby certify that the information submitted with this application is true, accurate and complete to the best of my knowledge and belief.

Name (Print): Larry (Bruce) Baker Title: Sr. Environmental Tech

Signature: Larry Bruce Baker Date: 10-30-19

e-mail address: larry.baker@apachecorp.com Telephone: 432-631-6982

18.
OCD Approval: ☐ Permit Application (including closure plan) ☒ Closure ~~Plan~~ Report (only) ☐ OCD Conditions (see attachment)

OCD Representative Signature: Jaclyn Burdine **Approval Date:** 07/06/2022

Title: Environmental Specialist-A **OCD Permit Number:** #1

19.
Closure Report (required within 60 days of closure completion): 19.15.17.13 NMAC

Instructions: Operators are required to obtain an approved closure plan prior to implementing any closure activities and submitting the closure report. The closure report is required to be submitted to the division within 60 days of the completion of the closure activities. Please do not complete this section of the form until an approved closure plan has been obtained and the closure activities have been completed.

☐ **Closure Completion Date:**

20.
Closure Method:

☐ Waste Excavation and Removal ☐ On-Site Closure Method ☐ Alternative Closure Method ☐ Waste Removal (Closed-loop systems only)

☒ If different from approved plan, please explain. Pit was closed in 2007

21.
Closure Report Attachment Checklist: ***Instructions: Each of the following items must be attached to the closure report. Please indicate, by a check mark in the box, that the documents are attached.***

- ☐ Proof of Closure Notice (surface owner and division)
- ☐ Proof of Deed Notice (required for on-site closure for private land only)
- ☐ Plot Plan (for on-site closures and temporary pits)
- ☐ Confirmation Sampling Analytical Results (if applicable)
- ☐ Waste Material Sampling Analytical Results (required for on-site closure)
- ☐ Disposal Facility Name and Permit Number
- ☐ Soil Backfilling and Cover Installation
- ☐ Re-vegetation Application Rates and Seeding Technique
- ☐ Site Reclamation (Photo Documentation)

On-site Closure Location: Latitude _____ Longitude _____ NAD: ☐ 1927 ☐ 1983

12.

Operator Closure Certification:

I hereby certify that the information and attachments submitted with this closure report is true, accurate and complete to the best of my knowledge and belief. I also certify that the closure complies with all applicable closure requirements and conditions specified in the approved closure plan.

Name (Print): Larry (Bruce) Baker Title: Sr. Environmental Tech

Signature: Larry Bruce Baker Date: 10-30-19

e-mail address: larry.baker@apachecorp.com Telephone: 432-631-6982

New Mexico Office of the State Engineer
Well Reports and Downloads

Township: 21S Range: 37E Sections:

NAD27 X: Y: Zone: Search Radius:

County: Basin: Number: Suffix:

Owner Name: (First) (Last) ○ Non-Domestic ○ Domestic ◉ All

Well / Surface Data Report | Avg Depth to Water Report | Water Column Report

Clear Form | WATERS Menu | Help

AVERAGE DEPTH OF WATER REPORT 10/14/2005

							(Depth Water in Feet)		
Bsn	Tws	Rng	Sec	Zone	X	Y	Wells	Min	Max	Avg
CP	21S	37E	04				2	75	75	75
CP	21S	37E	06				1	73	73	73
CP	21S	37E	16				1	70	70	70
CP	21S	37E	22				1	53	53	53
CP	21S	37E	23				1	65	65	65
CP	21S	37E	23		924000	6600000	1	65	65	65
CP	21S	37E	27				1	76	76	76
CP	21S	37E	28				3	65	75	71
CP	21S	37E	33				1	100	100	100

Record Count: 12

jerry brian

From: "Swain, Harold" <Harold.Swain@usa.apachecorp.com>
To: <jrbrian@verizon.net>
Sent: Tuesday, March 13, 2007 6:29 AM
Attach: Figure #4.pdf; Figure #5.pdf; Figure #6.pdf; Table 2 - Analytical Data (soil).xls; Table 3 - Analytical Data (water).xls
Subject: FW: Apache Corporation - NEDU 627 Pit (EPI Ref. #24002)

-----Original Message-----
From: David Duncan [mailto:dduncan@envplus.net]
Sent: Monday, March 12, 2007 2:31 PM
To: Swain, Harold
Cc: cmiller@envplus.net; jstegemoller@envplus.net
Subject: Apache Corporation - NEDU 627 Pit (EPI Ref. #24002)

Mr. Swain:

On 3/9/06 (Friday) EPI received a phone call from Mr. Larry Johnson (NMOCD – Hobbs) concerning Field Analyses and Laboratory Analytical Data for the above referenced project. Although EPI is no longer in charge of the project, the information Mr. Johnson requested was put into tabular form and is being directed to your attention. Included for your review and information are Table #2 (Soil Field and Laboratory Analytical Data), Table #3 (Water Laboratory Analytical Data) and Figures #4-#6 (Soil Sampling Figures - hand drawn). Please give EPI directions as to whether Apache Corporation or EPI will relay this information to Mr. Johnson.

If you have any questions, concerns or need additional information, please contact me at (505) 394-3481 or via e-mail at dduncan@envplus.net.

NEDU No. 627
APT
~~30-025-34887~~
30-025-37029000

Sincerely,

ENVIRONMENTAL PLUS, INC.

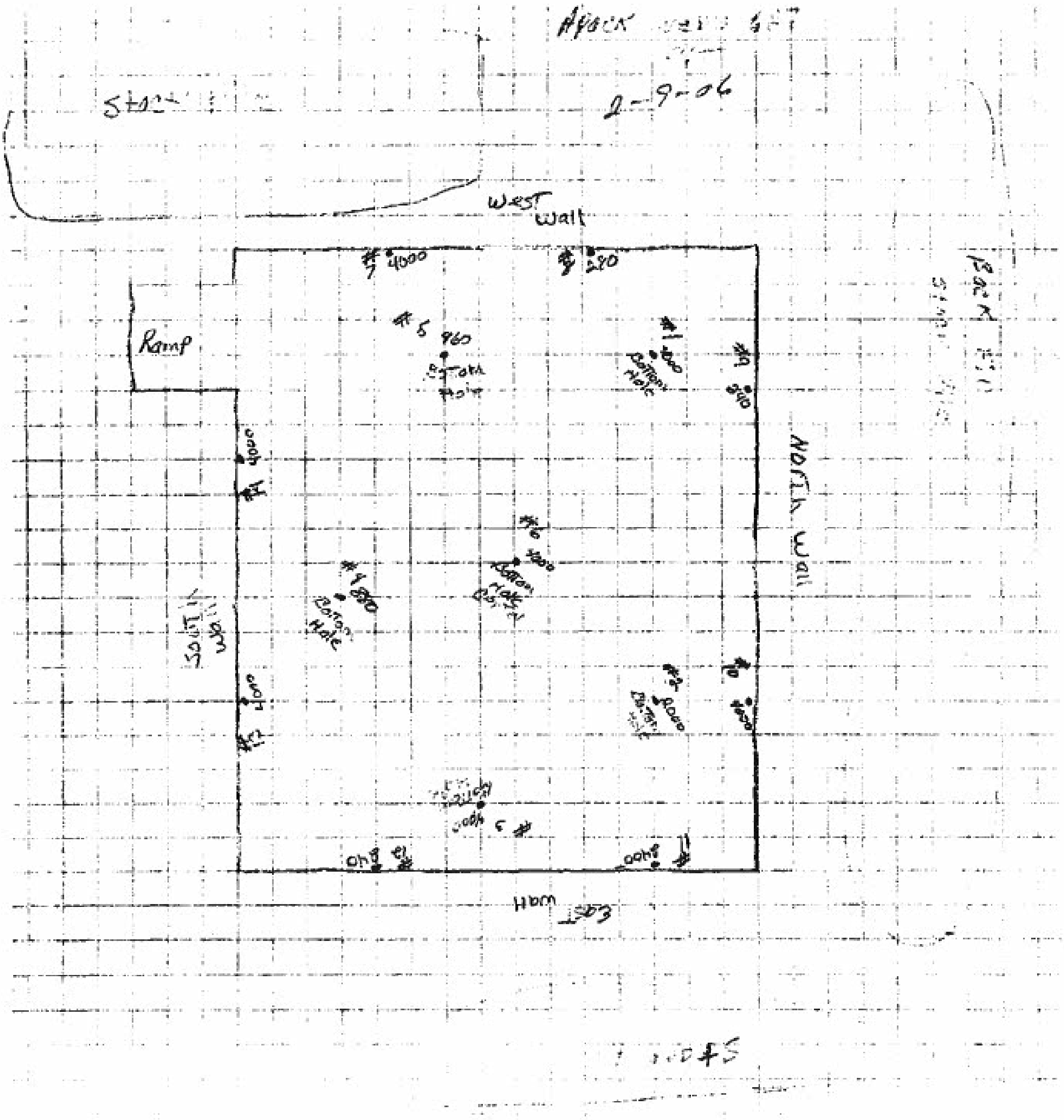
David P. Duncan
Civil Engineer

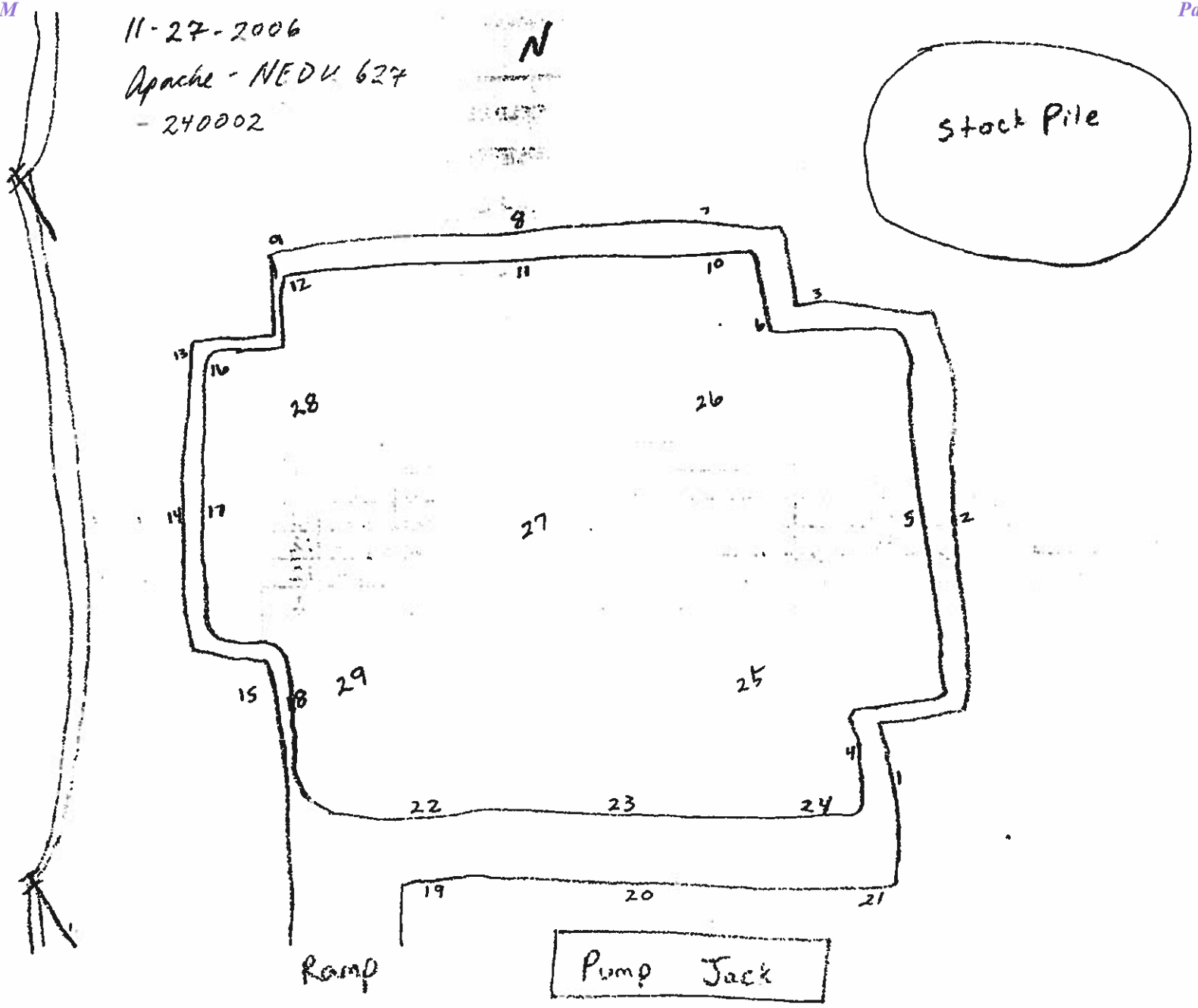
Environmental Plus, Inc.
P.O. Box 1558
2100 Avenue 'O'
Eunice, New Mexico 88231

(505) 394-3481
(505) 394-2601 (facsimile)

RP# 1357

ENVIRONMENTAL PLUS, INC.
STATE APPROVED LAND FARM AND ENVIRONMENTAL SERVICES
P.O. Box 1558 ••• 2100 Ave. O ••• Eunice, New Mexico 88231
Telephone 505•394•3481 ••• Fax 505•394•2601




11-27-2006
Apache - NEDU 627
- 240002
N
Stock Pile
Ramp
Pump Jack

ENVIRONMENTAL PLUS, INC. ~~Micro-Blaze~~

STATE APPROVED LAND FARM AND ENVIRONMENTAL SERVICES

P.O. BOX 1558 ••• 1324 NORTH MAIN ••• EUNICE, NEW MEXICO 88231

TELEPHONE 505-394-3481 ••• FAX 505-394-2601

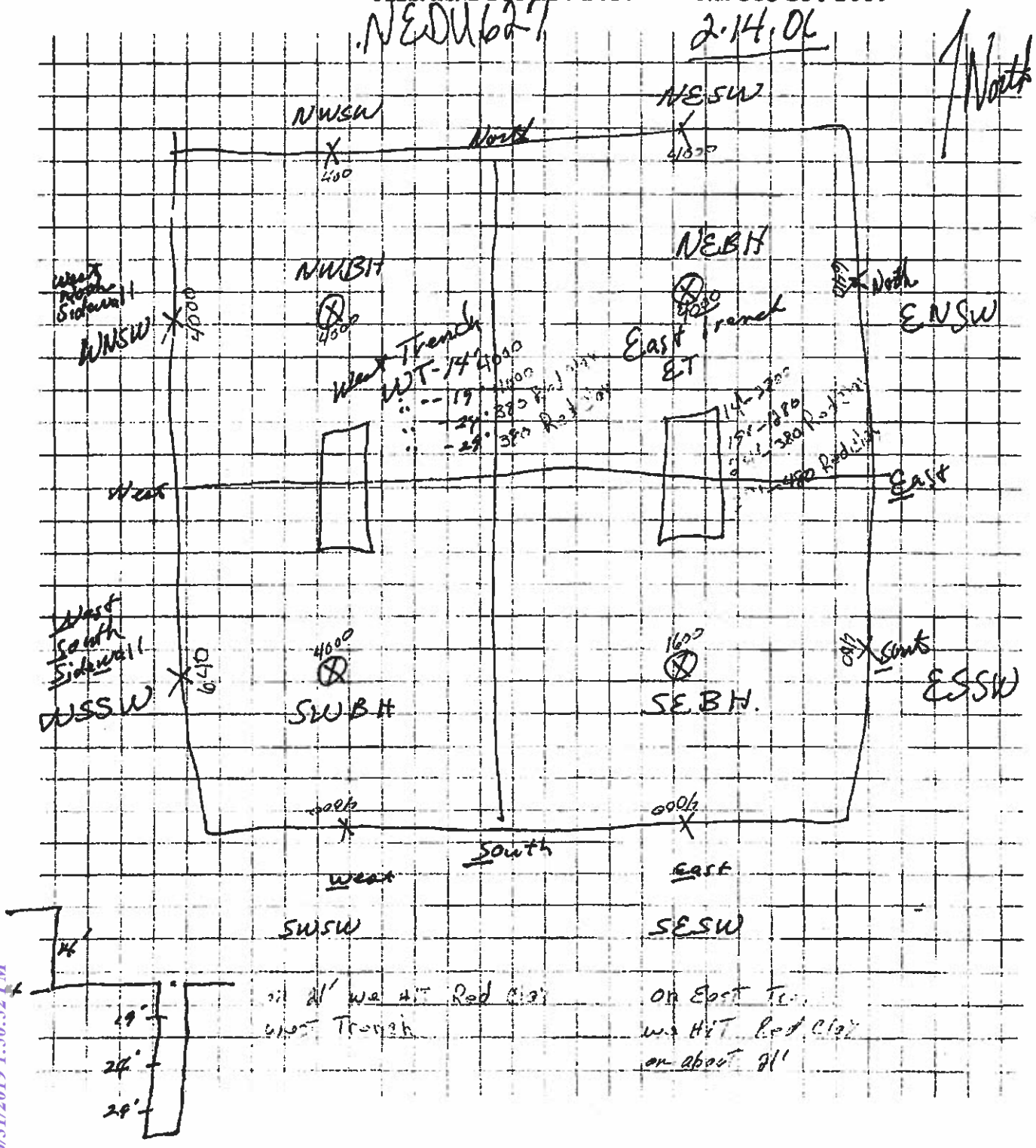


TABLE 2
Summary of Water Sample Laboratory Analytical Results
Apache Corporation
NEDU 627 Pit (EPI Ref.# 240002)

Sample I.D.	Date	Na (mg/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Conductivity (µ S/cm)	T-Alkalinity ($mgCaCO_3/L$)	Cl (mg/L)	SO_4 (mg/L)	CO_3 (mg/L)	HCO_3 (mg/L)	pH (s.u.)	TDS (mg/L)
W-18'	07-Nov-06	40,975	3,206	972	465	183,200	110	69,978	2,895	0	134	6.48	212,090
C-22'	07-Nov-06	41,183	2,806	729	305	126,200	110	68,979	2,563	0	134	6.93	117,360
SE-22'	07-Nov-06	15,233	1,603	729	93	62,700	130	27,591	1,201	0	159	6.94	51,550
Chapparral Brine	07-Nov-06	124,790	1,202	2,430	1,135	278,400	110	195,939	9,273	0.0	134.0	6.61	333,420
NMWQCC Remedial Thresholds		100		10				50			100		250

Bolded values are in excess of NMOCD Remediation Threshold Goals
-- = Not Analyzed
BH = Soil samples collected from the bottom of the excavation, SW = Soil samples collected from the side walls of the excavation (E=East, W=West, N=North and S=South)

TABLE 1

Summary of Soil Sample Field Analyses and Laboratory Analytical Results

Apache Corporation

NEDU 627 Pit (EPI Ref.# 240002)

Sample I.D.	Depth (feet)	Soil Status	Sample Date	PID Field Analysis (ppm)	Field Chloride Analysis (mg/Kg)	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Total Xylenes (mg/Kg)	Total BTEX (mg/Kg)	GRO (C6-C10) (mg/Kg)	DRO (>C10-C28) (mg/Kg)	Total Hydrocarbons nC6-nC28 (mg/Kg)	Chloride (mg/Kg)
BH-1	--	Excavated	9-Feb-06	--	4,000	--	--	--	--	--	--	--	--	--
BH-2	--	Excavated	9-Feb-06	--	2,000	--	--	--	--	--	--	--	--	--
BH-3	--	Excavated	9-Feb-06	--	4,000	--	--	--	--	--	--	--	--	--
BH-4	--	Excavated	9-Feb-06	--	880	--	--	--	--	--	--	--	--	--
BH-5	--	Excavated	9-Feb-06	--	960	--	--	--	--	--	--	--	--	--
BH-6 (center)	--	Excavated	9-Feb-06	--	4,000	--	--	--	--	--	--	--	--	--
WSW-7	--	Excavated	9-Feb-06	--	4,000	--	--	--	--	--	--	--	--	--
WSW-8	--	Excavated	9-Feb-06	--	320	--	--	--	--	--	--	--	--	--
NSW-9	--	Excavated	9-Feb-06	--	240	--	--	--	--	--	--	--	--	--
NSW-10	--	Excavated	9-Feb-06	--	4,000	--	--	--	--	--	--	--	--	--
ESW-11	--	Excavated	9-Feb-06	--	2,400	--	--	--	--	--	--	--	--	--
ESW-12	--	Excavated	9-Feb-06	--	240	--	--	--	--	--	--	--	--	--
SSW-13	--	Excavated	9-Feb-06	--	4,000	--	--	--	--	--	--	--	--	--
SSW-14	--	Excavated	9-Feb-06	--	4,000	--	--	--	--	--	--	--	--	--
NWSW-5	5	In situ	14-Feb-06	--	400	--	--	--	--	--	<10.0	<10.0	<20.0	64
NESW-5	5	In situ	14-Feb-06	--	4,000	--	--	--	--	--	<10.0	<10.0	<20.0	7,678

TABLE 2

Summary of Soil Sample Field Analyses and Laboratory Analytical Results

Apache Corporation

NEDU 627 Pit (EPI Ref.# 240002)

Sample I.D.	Depth (feet)	Soil Status	Sample Date	PID Field Analysis (ppm)	Field Chloride Analysis (mg/Kg)	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Total Xylenes (mg/Kg)	Total BTEX (mg/Kg)	GRO (C6-C10) (mg/Kg)	DRO (>C10-C28) (mg/Kg)	Total Hydrocarbons nC6-nC28 (mg/Kg)	Chloride (mg/Kg)
ENSW-5	5	In situ	14-Feb-06	--	640	--	--	--	--	--	--	--	--	192
ESSW-5	5	in-situ	14-Feb-06	--	400	--	--	--	--	--	--	--	--	16
SESW-5	5	In situ	14-Feb-06	--	4,000	--	--	--	--	--	--	--	--	17,195
SWSW-4	4	In situ	14-Feb-06	--	4,000	--	--	--	--	--	--	--	--	19,594
WSSW-4	4	in-situ	14-Feb-06	--	640	--	--	--	--	--	--	--	--	272
WNSW-4	4	In situ	14-Feb-06	--	960	--	--	--	--	--	<10.0	<10.0	<20.0	480
NWBH	14	Excavated	14-Feb-06	--	4,000	--	--	--	--	--	<10.0	<10.0	<20.0	13,996
NEBH	14	Excavated	14-Feb-06	--	4000	--	--	--	--	--	<10.0	<10.0	<20.0	2,175
SEBH	14	Excavated	14-Feb-06	--	1600	--	--	--	--	--	<10.0	<10.0	<20.0	9,757
SWBH	14	Excavated	14-Feb-06	--	4000	--	--	--	--	--	<10.0	<10.0	<20.0	688
West Trench-14	14	Excavated	14-Feb-06	--	4000	--	--	--	--	--	--	--	--	21,993
West Trench-19	19	In situ	14-Feb-06	--	4000	--	--	--	--	--	<10.0	<10.0	<20.0	8,157
West Trench-24	24	In situ	14-Feb-06	--	320	--	--	--	--	--	--	--	--	96
West Trench-29	29	In situ	14-Feb-06	--	320	--	--	--	--	--	<10.0	<10.0	<20.0	144
East Trench-14	14	Excavated	14-Feb-06	--	2800	--	--	--	--	--	--	--	--	1,727
East Trench-19	19	In situ	14-Feb-06	--	1280	--	--	--	--	--	<10.0	<10.0	<20.0	912

TABLE 2

Summary of Soil Sample Field Analyses and Laboratory Analytical Results

Apache Corporation

NEDU 627 Pit (EPI Ref.# 240002)

Sample I.D.	Depth (feet)	Soil Status	Sample Date	PID Field Analysis (ppm)	Field Chloride Analyses (mg/Kg)	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Total Xylenes (mg/Kg)	Total BTEX (mg/Kg)	GRO (C6-C10) (mg/Kg)	DRO (>C10-C28) (mg/Kg)	Total Hydrocarbons nC6-nC28 (mg/Kg)	Chloride (mg/Kg)
East Trench-24	24	In situ	14-Feb-06	--	380	--	--	--	--	--	--	--	--	96
East Trench-29	29	In situ	14-Feb-06	--	480	--	--	--	--	--	<10.0	<10.0	<20.0	288
NESW-5'	5	In situ	27-Feb-06	--	--	--	--	--	--	--	<50.0	<50.0	<100	48
NWSW-5'	5	In situ	27-Feb-06	--	--	--	--	--	--	--	<50.0	<50.0	<100	32
SWSW-6'	6	In situ	27-Feb-06	--	--	--	--	--	--	--	<50.0	<50.0	<100	96
SESW-6'	6	In situ	27-Feb-06	--	--	--	--	--	--	--	<50.0	<50.0	<100	32
ESW1-6'	6	In situ	22-Nov-06	--	240	--	--	--	--	--	--	--	--	80
ESW2-7'	7	In situ	11/220/06	--	320	--	--	--	--	--	--	--	--	160
ESW3-6'	6	In situ	22-Nov-06	--	160	--	--	--	--	--	--	--	--	48
ESW4-12'	12	In situ	22-Nov-06	--	320	--	--	--	--	--	--	--	--	160
ESW5-12'	12	In situ	22-Nov-06	--	640	--	--	--	--	--	--	--	--	736
ESW6-13'	13	In situ	22-Nov-06	--	240	--	--	--	--	--	--	--	--	32
NSW7-6'	6	In situ	22-Nov-06	--	240	--	--	--	--	--	--	--	--	32
NSW8-6'	6	In situ	22-Nov-06	--	240	--	--	--	--	--	--	--	--	16
NSW9-6'	6	In situ	22-Nov-06	--	240	--	--	--	--	--	--	--	--	32
NSW10-12'	12	In situ	22-Nov-06	--	320	--	--	--	--	--	--	--	--	96

TABLE 2

Summary of Soil Sample Field Analyses and Laboratory Analytical Results

Apache Corporation

NEDU 627 Pit (EPI Ref.# 240002)

Sample I.D.	Depth (feet)	Soil Status	Sample Date	PID Field Analysis (ppm)	Field Chloride Analysis (mg/Kg)	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Total Xylenes (mg/Kg)	Total BTEX (mg/Kg)	GRO (C6-C10) (mg/Kg)	DRO (>C10-C28) (mg/Kg)	Total Hydrocarbons nC6-nC28 (mg/Kg)	Chloride (mg/Kg)
NSW11-12'	12	In situ	22-Nov-06	--	400	--	--	--	--	--	--	--	--	160
NSW12-12'	12	In situ	22-Nov-06	--	240	--	--	--	--	--	--	--	--	48
NSW13-6'	6	In situ	22-Nov-06	--	560	--	--	--	--	--	--	--	--	800
WSW14-7'	7	In situ	22-Nov-06	--	400	--	--	--	--	--	--	--	--	240
WSW15-6'	6	In situ	22-Nov-06	--	480	--	--	--	--	--	--	--	--	640
WSW16-12'	12	In situ	22-Nov-06	--	240	--	--	--	--	--	--	--	--	48
WSW17-11'		In situ	22-Nov-06	--	240	--	--	--	--	--	--	--	--	64
WSW18-12'	12	In situ	22-Nov-06	--	160	--	--	--	--	--	--	--	--	48
SSW19-6'	6	In situ	22-Nov-06	--	400	--	--	--	--	--	--	--	--	240
SSW20-7'	7	In situ	22-Nov-06	--	240	--	--	--	--	--	--	--	--	48
SSW21-6'	6	In situ	22-Nov-06	--	240	--	--	--	--	--	--	--	--	32
SSW22-12'	12	In situ	22-Nov-06	--	240	--	--	--	--	--	--	--	--	336
SSW23-6'	6	In situ	22-Nov-06	--	240	--	--	--	--	--	--	--	--	64
SSW24-12'	12	In situ	22-Nov-06	--	160	--	--	--	--	--	--	--	--	224
BH25-19'	19	In situ	22-Nov-06	--	--	--	--	--	--	--	--	--	--	8,317
BH26-19'	19	In situ	22-Nov-06	--	--	--	--	--	--	--	--	--	--	2,607

TABLE 2

Summary of Soil Sample Field Analyses and Laboratory Analytical Results

Apache Corporation

NEDU 627 Pit (EPI Ref.# 240002)

Sample I.D.	Depth (feet)	Soil Status	Sample Date	PID Field Analysis (ppm)	Field Chloride Analyses (mg/Kg)	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Total Xylenes (mg/Kg)	Total BTEX (mg/Kg)	GRO (C6-C10) (mg/Kg)	DRO (>C10-C28) (mg/Kg)	Total Hydrocarbons nC6-nC28 (mg/Kg)	Chloride (mg/Kg)
BH27-19'	19	In situ	22-Nov-06	--	--	--	--	--	--	--	--	--	--	11,676
BH28-19'	19	In situ	22-Nov-06	--	--	--	--	--	--	--	--	--	--	13,356
BH29-19'	19	In situ	22-Nov-06	--	--	--	--	--	--	--	--	--	--	160
NMOCD Remedial Thresholds				100		10				50			100	250

Bolded values are in excess of NMOCD Remediation Threshold Goals
-- = Not Analyzed
BH = Soil samples collected from the bottom of the excavation, SW = Soil samples collected from the side walls of the excavation (E=East, W=West, N=North and S=South)

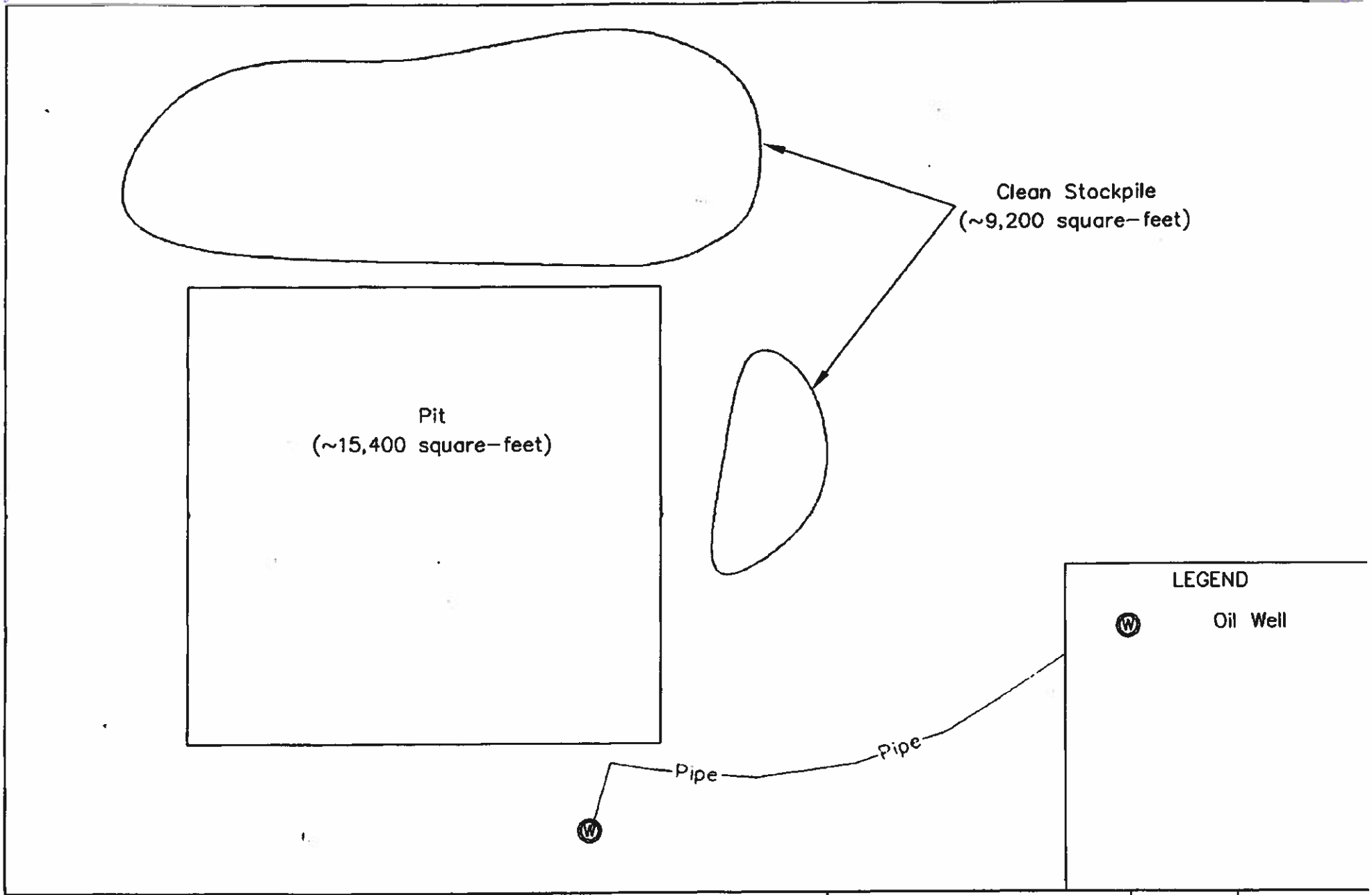


Figure 3 Site Map Apache Corporation N.E.D.U. Pit #627	Lea County, New Mexico SW 1/4 of the NW 1/4, Sec. 14, T21S, R37E N 32° 28' 48.21" W 103° 08' 30.28" Elevation: 3,416 feet amsl	DWG By: Daniel Dominguez February 2006	REVISED:	N
			SHEET 1 of 1	

CARDINAL LABORATORIES

PHONE (325) 673-7001 · 2111 BEECHWOOD · ABILENE, TX 79603
PHONE (505) 393-2326 · 101 E. MARLAND · HOBBS, NM 88240

ANALYTICAL RESULTS FOR
HUNGRY HORSE ENVIRONMENTAL
ATTN: JERRY BRIAN
P.O. BOX 1058
HOBBS, NM 88241
FAX TO: (505) 391-4585

Receiving Date: 04/117/07
Reporting Date: 04/20/07
Project Owner: APACHE
Project Name: NEDU 627
Project Location: LEA CTY., NM

Sampling Date: 04/17/07
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: NF
Analyzed By: HM/AB

LAB NUMBER	SAMPLE ID	Na (mg/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Conductivity (uS/cm)	T-Alkalinity (mgCaCO3/L)
ANALYSIS DATE:		04/19/07	04/19/07	04/19/07	04/19/07	04/18/07	04/19/07
H12474-1	E. TRENCH 22' BGS	7223	2794	1230	122	47200	98
H12474-2	SE CORNER/PIT	1782	938	456	31.5	15210	60
Quality Control		NR	45.2	54.1	1.93	1381	NR
True Value QC		NR	50.0	50.0	2.00	1413	NR
% Recovery		NR	90.4	108	96.5	97.7	NR
Relative Percent Difference		NR	5.8	3.6	3.7	1.1	NR
METHODS:			SM3500-Ca-D	3500-Mg E	8049	120.1	310.1

LAB NUMBER	SAMPLE ID	Cl- (mg/L)	SO4 (mg/L)	CO3 (mg/L)	HCO3 (mg/L)	pH (s.u.)	TDS (mg/L)
ANALYSIS DATE:		04/18/07	04/19/07	04/19/07	04/19/07	04/18/07	04/18/07
H12474-1	E. TRENCH 22' BGS	18794	1286	0	117	7.04	36336
H12474-2	SE CORNER/PIT	5338	536	0	73.2	7.47	11210
Quality Control		490	23.9	NR	964	6.96	NR
True Value QC		500	25.0	NR	1000	7.00	NR
% Recovery		98	95.7	NR	96.4	99.4	NR
Relative Percent Difference		2.0	14	NR	12.0	0.3	NR
METHODS:		SM4500-Cl-B	375.4	310.1	310.1	150.1	160.1

Chemist

04-20-07
Date

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:	HLE	BILL TO	
Project Manager:	Jerry Brian	P.O. #:	
Address:	Box 1058	Company:	
City:	Hobbs State: NM Zip: 88240	Attn:	
Phone #:	393-3386 Fax #:	Address:	
Project #:	Project Owner: Apache	City:	
Project Name:	Nixon 627	State: Zip:	
Project Location:	Lea Cty	Phone #:	
Sampler Name:	K. Baird	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	BTEX 8021 Tons
H12474-1	E. Trench 22'36S	X	2	X									4-17-07	2:00	X
-2	SE Corner / Pit	X	2	X									↓	2:30	↓

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 analysis. 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: 4-17-07	Received By:	
Relinquished By:	Time: 3:30 Date:	Received By:	
	Time:		

Delivered By: (Circle One)
Sampler - UPS - Bus - Other:

Sample Condition		CHECKED BY:
Cool	Intact	(Initials)
☐ Yes ☐ No	☒ Yes ☐ No	

Phone Result: ☐ Yes ☐ No Add'l Phone #:
Fax Result: ☐ Yes ☐ No Add'l Fax #:
REMARKS:

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

CARDINAL LABORATORIES

PHONE (325) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
HUNGRY HORSE
ATTN: JERRY BRIAN
P.O. BOX 1058
HOBBS, NM 88241
FAX TO: (505) 391-4585

Receiving Date: 03/16/07
Reporting Date: 03/23/07
Project Owner: APACHE
Project Name: NEDU 627
Project Location: LEA COUNTY, NM

Sampling Date: 03/16/07
Sample Type: WATER
Sample Condition: COOL & INTACT
Sample Received By: NF
Analyzed By: HM

LAB NUMBER	SAMPLE ID	Na (mg/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Conductivity (uS/cm)	T-Alkalinity ($mgCaCO_3/L$)
ANALYSIS DATE:		03/23/07	03/23/07	03/23/07	03/23/07	03/20/07	03/23/07
H12345-1	INJECTION WELL	7276	2295	222	199	39000	372
H12345-2	WELL-HEAD	9344	2462	484	220	48600	280
Quality Control		NR	50.6	52.4	1.97	1378	NR
True Value QC		NR	50.0	50.0	2.00	1413	NR
% Recovery		NR	101	105	98.5	99.1	NR
Relative Percent Difference		NR	2.8	0.0	3.6	0.3	NR
METHODS:			SM3500-Ca-D	3500-Mg E	8049	120.1	310.1

LAB NUMBER	SAMPLE ID	Cl^- (mg/L)	SO_4 (mg/L)	CO_3 (mg/L)	HCO_3 (mg/L)	pH (s.u.)	TDS (mg/L)
ANALYSIS DATE:		03/21/07	03/21/07	03/23/07	03/23/07	03/20/07	03/21/07
H12345-1	INJECTION WELL	13696	2939	0.0	454	7.94	29764
H12345-2	WELL-HEAD	17794	3262	0	342	8.07	36048
Quality Control		500	25.0	NR	854	6.94	NR
True Value QC		500	25.0	NR	1000	7.00	NR
% Recovery		100	100	NR	85.4	99.1	NR
Relative Percent Difference		0.0	4.9	NR	9.5	0.3	NR
METHODS:		SM4500-Cl-B	375.4	310.1	310.1	150.1	160.1

Chemist

03-23-07
Date

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name:	HHS	**BILL TO**	
Project Manager:	Jerry Brian	P.O. #:	
Address:	Box 1058	Company:	
City:	Hobbs	State: NM Zip: 88240	Attn:
Phone #:	393-3386	Fax #:	Address:
Project #:		Project Owner: Apache	City:
Project Name:	NEDU 627		State: Zip:
Project Location:	Lea County		Phone #:
Sampler Name:	K. Reed		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	TPH 418.1
H12345-1	Injection Well	X	1			X			X				3-16-07	10:00	X
-2	Well-Head	↓	↓						↓				↓	↓	↓

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: 3-16-07 Time: 10:25	Received By:	Phone Result: ☐ Yes ☐ No Add'l Phone #:
Relinquished By:	Date: 3-16-07 Time: 10:25	Received By:	Fax Result: ☐ Yes ☐ No Add'l Fax #:
Delivered By: (Circle One) Sampler UPS - Bus - Other:		Sample Condition Cool ☑ Yes ☐ No Intact ☑ Yes ☐ No	CHECKED BY: (Initials)

REMARKS:

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

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
HUNGRY HORSE
ATTN: JERRY BRIAN
P.O. BOX 1058
HOBBS, NM 88241
FAX TO: (505) 391-4585

Receiving Date: 02/27/07
Reporting Date: 02/28/07
Project Owner: APACHE
Project Name: NEDU #627
Project Location: LEA CTY., NM

Sampling Date: 02/27/07
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: NF
Analyzed By: AB

LAB NUMBER SAMPLE ID	Na (mg/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Conductivity (uS/cm)	T-Alkalinity ($mgCaCO_3/L$)
ANALYSIS DATE:	02/27/07	02/27/07	02/27/07	02/27/07	02/27/07	02/27/07
H12252-1 PIT WATER	8373	2428	1755	67.5	53300	96
Quality Control	NR	53.2	49.2	1.75	1380	NR
True Value QC	NR	50.0	50.0	2.00	1413	NR
% Recovery	NR	106	98.4	87.5	97.7	NR
Relative Percent Difference	NR	0.0	4.8	11.0	0.2	NR
METHODS:		SM3500-Ca-D	3500-Mg E	8049	120.1	310.1

LAB NUMBER SAMPLE ID	Cl^- (mg/L)	SO_4 (mg/L)	CO_3 (mg/L)	HCO_3 (mg/L)	pH (s.u.)	TDS (mg/L)
ANALYSIS DATE:	02/27/07	02/27/07	02/27/07	02/27/07	02/27/07	02/28/07
H12252-1 PIT WATER	21393	1299	0	117	6.98	40592
Quality Control	490	28.2	NR	903	6.91	NR
True Value QC	500	25.0	NR	1000	7.00	NR
% Recovery	98	113	NR	90.3	98.7	NR
Relative Percent Difference	0.0	18	NR	1.3	0.0	NR
METHODS:	SM4500-Cl-B	375.4	310.1	310.1	150.1	160.1

Chemist

02-28-07
Date

H12252

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:	HHS	**BILL TO**	
Project Manager:	Jerry Boland	P.O. #:	
Address:	Box 1059	Company:	
City:	Hobbs State: NM Zip: 88240	Attn:	
Phone #:	393-3386 Fax #:	Address:	
Project #:	Project Owner: Apache	City:	
Project Name:	NEDU #627	State: Zip:	
Project Location:	Lea Cty.	Phone #:	
Sampler Name:	K. Beaird	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	TDS	CI										
H12252-1	Pit Water	X	2	X									2-27-07	8:00	X	X										

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By:	Date: 2.27.07 Time: 9:10	Received By:	Phone Result: ☐ Yes ☐ No	Add'l Phone #:
Relinquished By:	Date: Time:	Received By:	Fax Result: ☐ Yes ☐ No	Add'l Fax #:
			REMARKS:	

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

CARDINAL LABORATORIES

PHONE (325) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
HUNGRY HORSE
ATTN: JERRY BRIAN
P.O. BOX 1058
HOBBS, NM 88241
FAX TO: (505)-391-4585

Source

Receiving Date: 11/28/06
Reporting Date: 12/07/06
Project Owner: APACHE
Project Name: NM STATE "S" #42
Project Location: UNIT 0, SEC. 34 T21S-R37E

Sampling Date: 11/28/06
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: HM
Analyzed By: HM/AB

LAB NUMBER SAMPLE ID	Na (mg/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Conductivity (μS/cm)	T-Alkalinity ($mgCaCO_3/L$)
ANALYSIS DATE:	12/06/06	12/06/06	12/06/06	12/06/06	11/29/06	11/30/06
H11850-1 P&S BRINE SALES	124714	2400	2570	1120	74200	288
Quality Control	NR	48.1	48.6	2.77	1304	NR
True Value QC	NR	50.0	50.0	3.00	1413	NR
% Recovery	NR	96	97	92.0	92	NR
Relative Percent Difference	NR	0.0	0.0	8.3	1.0	NR
METHODS:		SM3500-Ca-D	3500-Mg E	8049	120.1	310.1

	Cl^- (mg/L)	SO_4 (mg/L)	CO_3 (mg/L)	HCO_3 (mg/L)	pH (s.u.)	TDS (mg/L)
ANALYSIS DATE:	12/04/06	12/05/06	11/30/06	11/30/06	11/29/06	11/29/2006
H11850-1 P&S BRINE SALES	201000	5510	0	351	6.62	325588
Quality Control	510	17.9	NR	952	7.00	NR
True Value QC	500	20.0	NR	1000	7.00	NR
% Recovery	102.0	90	NR	95.2	100	NR
Relative Percent Difference	6.1	12	NR	3.1	0	NR
METHODS:	SM4500-Cl-B	375.4	310.1	310.1	150.1	160.1

Chemist

12-07-06
Date

H11850

CARDINAL LABORATORIES, INC.

2111 Beechwood, Abilene, TX 79603 (915) 673-7001 Fax (915) 673-7020
101 East Marland, Hobbs, NM 88240 (505) 393-2326 Fax (505) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page____ of ____

Company Name:	Hungry Horse	BILL TO	
Project Manager:	J Brim	P.O. #:	
Address:	P.O. Box 1058	Company:	
City:	Hobbs State: NM Zip: 88241	Attn:	
Phone #:	393-3386 Fax #: 391-4585	Address:	
Project #:	Project Owner: Apache	City:	
Project Name:	NM State "S" #42	State: Zip:	
Project Location:	Unit O, Sec. 34 T21S-R37E	Phone #:	
Sampler Name:	J Brim	Fax #:	

ANALYSIS REQUEST: Total Chlorides

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	CRUDE OIL	SLUDGE	OTHER:	PRESERV.: ACID/BASE:	ICE / COOL	OTHER:	SAMPLING: DATE	TIME	Total Chlorides
#11850-1	P&S Brine Sales	G							X				11/28/06	10:35AM	X

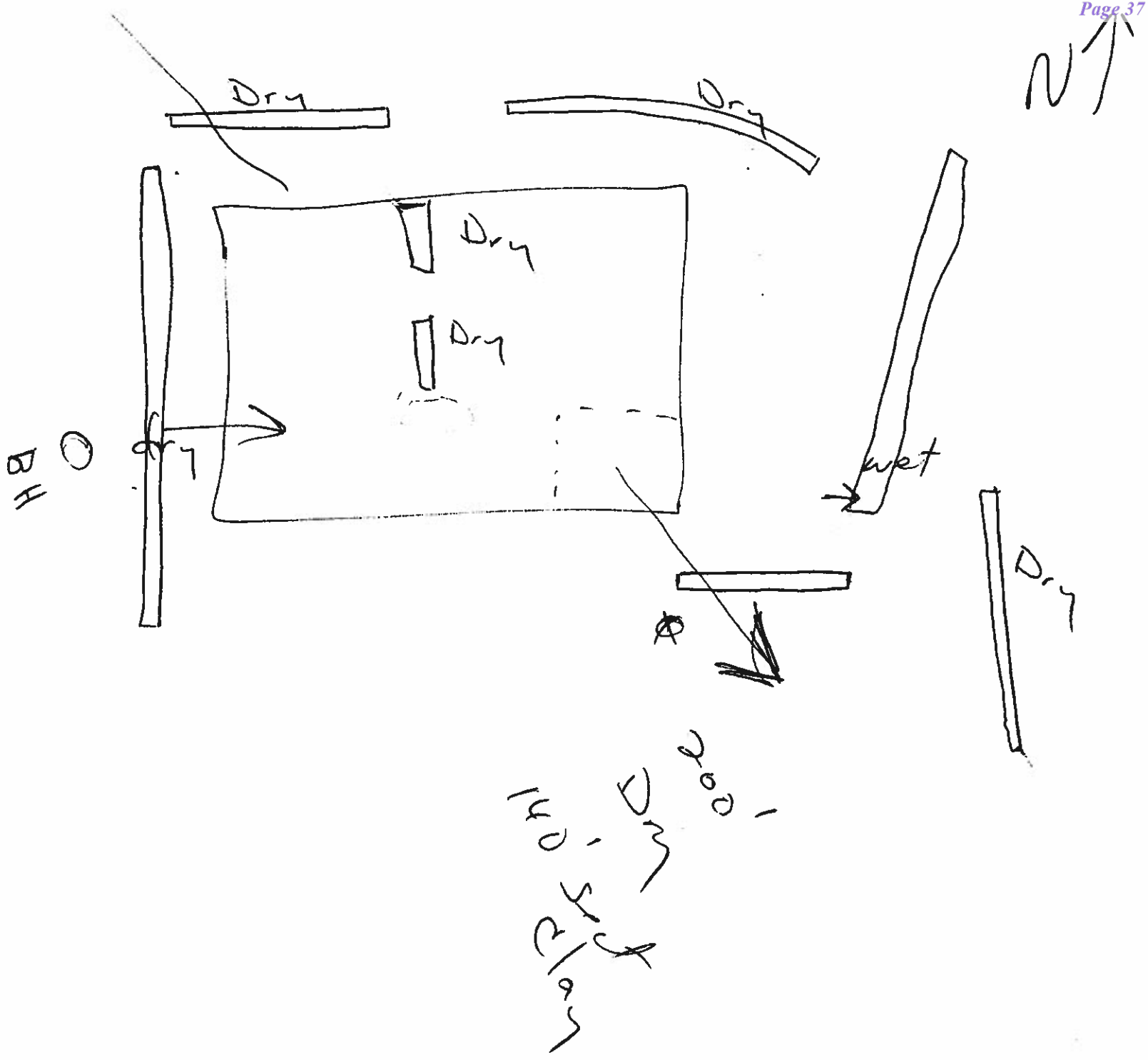
PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Terms and Conditions: Interest will be charged on all accounts more than 30 days past due at the rate of 24% per annum from the original date of invoice, and all costs of collections, including attorney's fees.

Sampler Relinquished: J Brim	Date: 11/28/06 Time: 3:00pm	Received By:	
Relinquished By:	Date: Time:	Received By: (Lab Staff) Hope L. Mcdaniel	
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Sample Condition: Cool ☑ Yes ☐ No; Intact ☑ Yes ☐ No	CHECKED BY: (Initials)	

Phone Result: ☐ Yes ☐ No Add'l Phone #:
Fax Result: ☐ Yes ☐ No Add'l Fax #:
REMARKS:

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


N
Dry
Dry
Dry
Dry
Dry
wet
Dry

Apache Corporation
NEDU #627
Delineation Sampling of Pit 2-2006

Sample ID	Depth	Soil	Sample Date	Field Chlor	Lab BTEX	Lab TPH	Lab Chl
ENSW-5	5'	IN-SITU	2/14/2006	640	0	0	192
ESSW-5	5'	IN-SITU	2/14/2006	400	0	0	16
EESW-5	5'	IN-SITU	2/14/2006	4000	0	0	17195
SWSW-4	4'	IN-SITU	2/14/2006	4000	0	0	19594
WSSW-4	4'	IN-SITU	2/14/2006	640	0	0	272
WNSW-4	4'	IN-SITU	2/14/2006	960	0	<20	480
NWBH	14'	EXCVATED	2/14/2006	4000	0	<20	13996
NEBH	14'	EXCVATED	2/14/2006	4000	0	<20	2175
SEBH	14'	EXCVATED	2/14/2006	1600	0	<20	9757
SWBH	14'	EXCVATED	2/14/2006	4000	0	<20	688
WEST TRENCH-14	14'	EXCVATED	2/14/2006	4000	0	0	21993
WEST TRENCH-19	19'	IN-SITU	2/14/2006	4000	0	<20	8157
WEST TRENCH-24	24'	IN-SITU	2/14/2006	380	0	0	96
WEST TRENCH-29	29'	IN-SITU	2/14/2006	380	0	<20	144
EAST TRENCH-14	14'	EXCVATED	2/14/2006	2800	0	0	1727
EAST TRENCH-19	19'	IN-SITU	2/14/2006	1280	0	<20	912

Apache Corporation: NEDU #627
Pit Water Sampling 11-7-2006
MG/L

Sample ID	Date	NA	CA	Mg	K	Cond	TTL-Alk	Cl	SO	CO	HCO	pH (s.u)	TDS
W-18'	11/7/2006	40975	3206	972	465	183200	110	69978	2895	0	134	6.48	212000
C-22'	11/7/2006	41183	2806	729	305	126200	110	68979	2563	0	134	6.93	117360
SE-22'	11/7/2006	15233	1603	729	93	62700	130	27591	1201	0	159	6.94	51550
Chapparral Brine	11/7/2006	124790	1202	2430	1135	278400	110	195939	9273	0	134	6.61	333420

Apache Corporation
NEDU #627
Pit Sampling 11/22/2006

Sample ID	Depth	Soil	Sample Date	Field Chlor	Lab BTEX	Lab TPH	Lab Chl
NSW11-12'	12'	IN-SITU	11/22/2006	400	0	0	160
NSW12-12	12'	IN-SITU	11/22/2006	240	0	0	48
NSW13-6'	6'	IN-SITU	11/22/2006	560	0	0	800
WSW14-7'	7'	IN-SITU	11/22/2006	400	0	0	240
WSW15-6'	6'	IN-SITU	11/22/2006	480	0	0	640
WSW16-12'	12'	IN-SITU	11/22/2006	240	0	0	48
WSW17-11'	11'	IN-SITU	11/22/2006	240	0	0	64
WSW18-12'	12'	IN-SITU	11/22/2006	160	0	0	48
SSW19-6'	6'	IN-SITU	11/22/2006	400	0	0	240
SSW20-7'	7'	IN-SITU	11/22/2006	240	0	0	48
SSW21-6'	6'	IN-SITU	11/22/2006	240	0	0	32
SSW22-12'	12'	IN-SITU	11/22/2006	240	0	0	336
SSW23-6'	6'	IN-SITU	11/22/2006	240	0	0	64
SSW24-12'	12'	IN-SITU	11/22/2006	160	0	0	224
BH25-19'	19'	IN-SITU	11/22/2006	0	0	0	8317
BH26-19'	19'	IN-SITU	11/22/2006	0	0	0	2607
BH27-19'	19'	IN-SITU	11/22/2006	0	0	0	11676
BH28-19'	19'	IN-SITU	11/22/2006	0	0	0	13356
BH29-19'	19'	IN-SITU	11/22/2006	0	0	0	160

Apache Corporation: NEDU #627

Pit Closure Sampling

MG/L

Sample ID	Date	NA	CA	Mg	K	Cond	TTL-Alk	Cl	SO	CO	HCO	pH (s.u)	TDS
Pit Water	2/27/2007	8373	2428	1755	67.5	53300	96	21393	1299	0	117	6.98	40592

Apache Corporation: NEDU #627
Wellhead and Injection Well TDS Comparison
MG/L

Sample ID	Date	NA	CA	Mg	K	Cond	TTL-Alk	Cl	SO	CO	HCO	pH (s.u)	TDS
Inj. Well	3/16/2007	7276	2295	222	199	39000	372	13696	2939	0	454	7.94	29764
Wellhead	3/16/2007	9344	2462	484	220	48600	280	17794	3262	0	342	8.07	36048

Apache Corporation: NEDU #627
Pit Sampling 4/17/07
MG/L

Sample ID	Date	NA	CA	Mg	K	Cond	TTL-Alk	Cl	SO	CO	HCO	pH (s.u)	TDS
E. Trench 22'bgs	4/17/2007	7223	2794	1230	122	47200	98	18794	1286	0	117	7.04	36336
SE Corner of Pit	4/17/2007	1782	938	456	31.5	15210	60	5338	536	0	73.2	7.47	11210

New Mexico Office of the State Engineer

Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced, O=orphaned, C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Twn	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
CP 01185 POD1		CP	LE		1	3	14	21S	37E	674598	3594689	452	70		
CP 01185 POD2		CP	LE		1	3	14	21S	37E	674623	3594674	466	70		
CP 01110 POD1		CP	LE		1	3	14	21S	37E	674586	3594648	494	70		
CP 01110 POD2		CP	LE		1	3	14	21S	37E	674586	3594648	494	70		
CP 01110 POD3		CP	LE		1	3	14	21S	37E	674586	3594648	494	70		
CP 01110 POD4		CP	LE		1	3	14	21S	37E	674586	3594648	494	20		
CP 01110 POD5		CP	LE		1	3	14	21S	37E	674586	3594648	494	20		
CP 01185 POD3		CP	LE		1	3	14	21S	37E	674592	3594620	522	70		
CP 01185 POD4		CP	LE		1	3	14	21S	37E	674633	3594610	530	70		
CP 01574 POD1		CP	LE	2	4	4	15	21S	37E	674559	3594598	547	68	57	11
CP 01574 POD2		CP	LE	1	3	3	14	21S	37E	674666	3594578	563	68	57	11

Average Depth to Water: **57 feet**

Minimum Depth: **57 feet**

Maximum Depth: **57 feet**

Record Count: 11

UTMNAD83 Radius Search (in meters):

Easting (X): 674628.63 **Northing (Y):** 3595141 **Radius:** 1000

8/22/19 1:02 PM

WATER COLUMN/ AVERAGE DEPTH TO WATER

New Mexico Office of the State Engineer
Point of Diversion Summary

Well Tag	POD Number	(quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are smallest to largest) Q64	Q16	Q4	Sec	Twn	Rng	(NAD83 UTM in meters) X	Y
	CP 01574 POD1	2	4	4	15	21S	37E	674559	3594598

Driller License:	1456	**Driller Company:**	WHITE DRILLING COMPANY		
Driller Name:	JOHN W WHITE				
Drill Start Date:	12/14/2015	**Drill Finish Date:**	12/15/2015	**Plug Date:**	
Log File Date:	12/30/2015	**PCW Rcv Date:**		**Source:**	Shallow
Pump Type:		**Pipe Discharge Size:**		**Estimated Yield:**	
Casing Size:	2.00	**Depth Well:**	68 feet	**Depth Water:**	57 feet

Water Bearing Stratifications:	Top	Bottom	Description
	53	63	Sandstone/Gravel/Conglomerate
	63	66	Sandstone/Gravel/Conglomerate
	66	68	Shale/Mudstone/Siltstone

Casing Perforations:	Top	Bottom
	52	67

New Mexico Office of the State Engineer
Point of Diversion Summary

Well Tag	POD Number	(quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are smallest to largest) Q64	Q16	Q4	Sec	Twn	Rng	(NAD83 UTM in meters) X	Y
	CP 01574 POD2	1	3	3	14	21S	37E	674666	3594578

Driller License:	1456	**Driller Company:**	WHITE DRILLING COMPANY		
Driller Name:	JOHN W WHITE				
Drill Start Date:	12/14/2015	**Drill Finish Date:**	12/15/2015	**Plug Date:**	
Log File Date:	12/30/2015	**PCW Rcv Date:**		**Source:**	Shallow
Pump Type:		**Pipe Discharge Size:**		**Estimated Yield:**	
Casing Size:	2.00	**Depth Well:**	68 feet	**Depth Water:**	57 feet

Water Bearing Stratifications:	Top	Bottom	Description
	55	66	Sandstone/Gravel/Conglomerate
	66	68	Sandstone/Gravel/Conglomerate

Casing Perforations:	Top	Bottom
	52	67

New Mexico Office of the State Engineer

Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced, O=orphaned, C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters) (In feet)

POD Number	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
CP 01185 POD1		CP	LE		1	3	14	21S	37E	674598	3594689	452	70		
CP 01185 POD2		CP	LE		1	3	14	21S	37E	674623	3594674	466	70		
CP 01110 POD1		CP	LE		1	3	14	21S	37E	674586	3594648	494	70		
CP 01110 POD2		CP	LE		1	3	14	21S	37E	674586	3594648	494	70		
CP 01110 POD3		CP	LE		1	3	14	21S	37E	674586	3594648	494	70		
CP 01110 POD4		CP	LE		1	3	14	21S	37E	674586	3594648	494	20		
CP 01110 POD5		CP	LE		1	3	14	21S	37E	674586	3594648	494	20		
CP 01185 POD3		CP	LE		1	3	14	21S	37E	674592	3594620	522	70		
CP 01185 POD4		CP	LE		1	3	14	21S	37E	674633	3594610	530	70		
CP 01574 POD1		CP	LE	2	4	4	15	21S	37E	674559	3594598	547	68	57	11
CP 01574 POD2		CP	LE	1	3	3	14	21S	37E	674666	3594578	563	68	57	11
CP 00235 POD3		CP	LE	1	1	1	23	21S	37E	674681	3594137*	1005	90	61	29
CP 00235 POD6		CP	LE	2	1	1	23	21S	37E	674881	3594137*	1035	85	65	20
CP 00235 POD2		CP	LE	1	2	1	23	21S	37E	675083	3594144*	1095	96	65	31
CP 00235 POD1		CP	LE	2	2	1	23	21S	37E	675283	3594144*	1192	81		
CP 00235 POD7		CP	LE	3	1	1	23	21S	37E	674681	3593937*	1205	85	65	20
CP 00239 POD1		CP	LE	1	1	2	23	21S	37E	675485	3594152*	1308	89	61	28
CP 00240 POD1		CP	LE	4	2	1	23	21S	37E	675283	3593944*	1364			
CP 00241 POD1		CP	LE	4	2	1	23	21S	37E	675283	3593944*	1364	79		
CP 01575 POD2		CP	LE	2	2	1	22	21S	37E	673615	3594181	1395	35	35	0
CP 01141 POD4		CP	LE				15	21S	37E	673556	3594239	1401	45		
CP 01141 POD2		CP	LE				15	21S	37E	673543	3594250	1404	40		
CP 00235 POD4		CP	LE	1	3	1	23	21S	37E	674688	3593735*	1407	100	80	20
CP 01141 POD3		CP	LE				15	21S	37E	673520	3594272	1408	40		
CP 01575 POD1		CP	LE	1	2	1	22	21S	37E	673544	3594204	1432	40	35	5
CP 00729 POD1		CP	LE	4	1	3	15	21S	37E	673259	3594711*	1435	8015		
CP 00235 POD8		CP	LE	3	1	2	23	21S	37E	675485	3593952*	1465	94	58	36
CP 00236 POD1		CP	LE	3	1	2	23	21S	37E	675485	3593952*	1465	83		
CP 00235 POD5		CP	LE	1	4	1	23	21S	37E	675090	3593742*	1473	90	70	20
CP 00731 POD1		CP	LE		2	1	22	21S	37E	673577	3594015*	1540	8130		

CP 00562	CP	LE	1	2	2	23	21S	37E	675887	3594159*	1596	136	65	71
CP 00235 POD10	CP	LE	1	3	2	23	21S	37E	675492	3593749*	1638	92	60	32
CP 00235 POD11	CP	LE	1	3	2	23	21S	37E	675492	3593749*	1638	97	60	37
CP 00237 POD1	CP	LE	1	3	2	23	21S	37E	675492	3593749*	1638	84		
CP 00235 POD9	CP	LE	3	4	1	23	21S	37E	675090	3593542*	1664	94	58	36
CP 00700	CP	LE			2	23	21S	37E	675794	3593851*	1738	75	65	10
CP 00238 POD1	CP	LE	3	3	2	23	21S	37E	675492	3593549*	1811	81		
CP 00732 POD1	CP	LE		4	1	22	21S	37E	673584	3593613*	1851	6633		
CP 00134 POD1	CP	LE	1	1	1	24	21S	37E	676289	3594166*	1925	85		
CP 00554	CP	LE		2	2	16	21S	37E	672744	3595610*	1942	80	70	10
CP 00252 POD1	CP	LE	4	2	4	22	21S	37E	674493	3593125*	2020	106	78	28
CP 00286 POD1	CP	LE	2	1	2	10	21S	37E	674019	3597338*	2279	70		
CP 00251 POD1	CP	LE	2	3	4	22	21S	37E	674099	3592915*	2288	103		
CP 00137 POD1	CP	LE	2	2	1	13	21S	37E	676862	3595783*	2323	65		
CP 00881	CP	LE		4	4	22	21S	37E	674402	3592824*	2328	95	53	42
CP 01222 POD3	CP	LE	2	4	4	23	21S	37E	676036	3592871	2670	60	48	12
CP 00017 POD1	CP	LE	2	1	2	27	21S	37E	674106	3592513*	2679	101		
CP 01741 POD1	CP	LE	1	3	4	03	21S	37E	673895	3597759	2718	45		
CP 00733 POD1	CP	LE		3	3	22	21S	37E	673196	3592801*	2743	7864		
CP 01636 POD3	CP	LE	2	2	1	27	21S	37E	673782	3592501	2772	96		
CP 00285 POD1	CP	LE	3	1	2	27	21S	37E	673906	3592313*	2918	80		
CP 00249 POD1	CP	LE	2	3	2	27	21S	37E	674113	3592111*	3073	102		
CP 00250 POD1	CP	LE	2	3	2	27	21S	37E	674113	3592111*	3073	101		
CP 00293 POD1	CP	LE	2	4	1	27	21S	37E	673711	3592104*	3172	80		
CP 01274 POD1	CP	LE		2	1	26	21S	37E	674992	3591934	3226	60		
CP 01274 POD2	CP	LE		2	1	26	21S	37E	674992	3591934	3226	60		
CP 00253 POD1	CP	LE	3	4	2	27	21S	37E	674315	3591918*	3238	101		
CP 00711	CP	LE	4	2	2	28	21S	37E	672900	3592291*	3333	100	65	35
CP 00294 POD1	CP	LE	1	3	1	27	21S	37E	673110	3592096*	3402			
CP 00736	CP	LE		3	1	27	21S	37E	673211	3591997*	3448	120	76	44
CP 00552	CP	LE		2	4	04	21S	37E	672700	3598022*	3466	90	75	15
CP 00553	CP	LE		2	4	04	21S	37E	672700	3598022*	3466	90	75	15
CP 01004 POD1	CP	LE	4	2	4	27	21S	37E	674616	3591478	3662	70	41	29
CP 00242 POD1	CP	LE	3	4	2	28	21S	37E	672708	3591889*	3776			
CP 01636 POD2	CP	LE	2	3	2	28	21S	37E	672430	3592065	3780	108		
CP 01096 POD2	CP	LE	2	2	4	28	21S	37E	672976	3591731	3788	98	48	50
CP 00220 POD1	CP	LE	1	1	3	25	21S	37E	676332	3591753*	3792	75		
CP 01001 POD1	CP	LE	2	3	4	27	21S	37E	674108	3591371	3805	72	40	32
CP 01095 POD2	CP	LE	2	2	4	28	21S	37E	672876	3591714	3848	109	48	61

CP 01095 POD1		CP	LE	2	2	4	28	21S	37E	672859	3591714	3856	108	48	60
CP 01096 POD1		CP	LE	2	2	4	28	21S	37E	672861	3591708	3861	108	48	60
CP 01003 POD1		CP	LE	1	3	3	26	21S	37E	674669	3591279	3862	79	43	36
CP 01002 POD1		CP	LE	3	4	4	27	21S	37E	674258	3591182	3975	75	39	36
CP 00197	O	CP	LE	1	4	1	01	21S	37E	676611	3598599*	3985	85		
CP 00197 POD1		CP	LE	1	4	1	01	21S	37E	676611	3598599*	3985	85		
CP 00735		CP	LE		2	4	28	21S	37E	672816	3591588*	3988	105		
CP 01540 POD1		CP	LE	1	1	1	35	21S	37E	674676	3590844	4296	51	36	15
CP 01222 POD1		CP	LE	2	2	2	35	21S	37E	676081	3591023	4366	58	48	10
CP 01222 POD2		CP	LE	2	2	2	35	21S	37E	676071	3591014	4371	60	48	12
CP 01222 POD4		CP	LE	2	2	2	35	21S	37E	676102	3591017	4378	59	44	15
CP 00966 POD1		CP	LE	1	3	4	28	21S	37E	672306	3591367	4431	154		
CP 00965 POD1	R	CP	LE	1	3	4	28	21S	37E	672333	3591346	4435	123	60	63
CP 00965 POD2		CP	LE	1	3	4	28	21S	37E	672273	3591336	4474	135		
CP 00287 POD1		CP	LE	3	1	2	35	21S	37E	675542	3590734*	4500	75		
CP 00138 POD1		CP	LE	3	2	2	35	21S	37E	675944	3590741*	4592	70		
CP 00749		CP	LE	2	4	3	28	21S	37E	672118	3591271*	4613	123	75	48
CP 01077 POD1		CP	LE	1	2	2	33	21S	37E	672710	3590940	4618	80	45	35
CP 01019 POD1		CP	LE	3	3	1	30	21S	38E	677929	3591884	4636	150		
CP 00322		CP	LE			3	28	21S	37E	671818	3591366*	4706	138	73	65
CP 00895		CP	LE		1	1	20	21S	37E	669957	3593956*	4819	163		
CP 00513 POD1		CP	LE	3	1	3	28	21S	37E	671508	3591467*	4820	5000	4374	626
CP 01026 POD1		CP	LE	1	1	3	17	21S	37E	669809	3594958	4822	167	95	72
CP 00139 POD1		CP	LE	2	4	2	19	21S	38E	679312	3593818*	4866	75		
CP 01301 POD1		CP	LE	3	4	3	28	21S	37E	671871	3591110	4883	130	35	95
L 13546 POD1		L	LE	4	4	3	34	20S	38E	675011	3600037	4910	88		
CP 00943 POD1		CP	LE	1	3	1	34	21S	37E	673166	3590405	4956	142		
CC 01999 POD1		CU	CU	3	3	2	29	03N	36E	670385	3592502	4997	415	372	43

Average Depth to Water: **160 feet**

Minimum Depth: **35 feet**

Maximum Depth: **4374 feet**

Record Count: 97

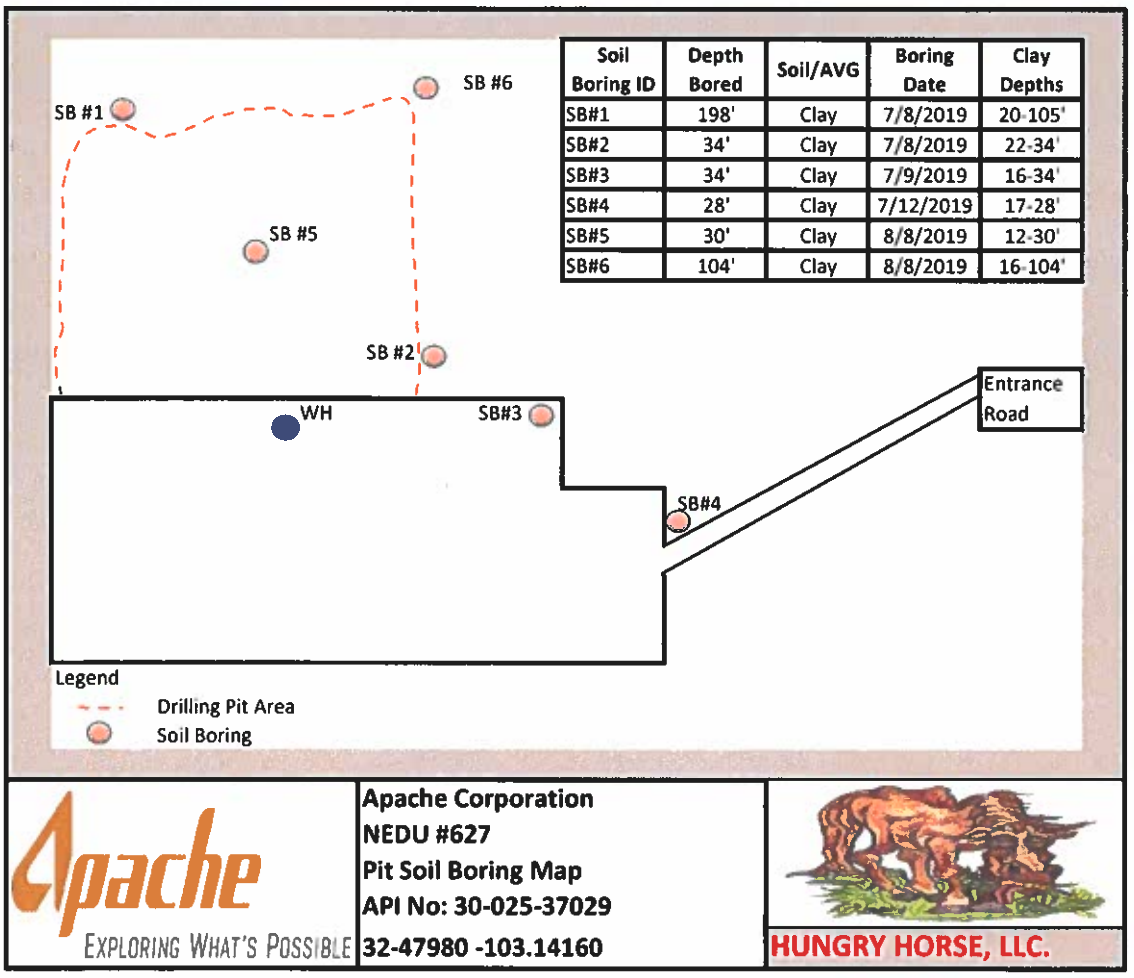
UTMNAD83 Radius Search (in meters):

Easting (X): 674628.63 **Northing (Y):** 3595141 **Radius:** 5000

***UTM location was derived from PLSS - see Help**

8/22/19 1:13 PM

WATER COLUMN/ AVERAGE DEPTH TO WATER



Soil Boring ID	Depth Bored	Soil/AVG	Boring Date	Clay Depths
SB#1	198'	Clay	7/8/2019	20-105'
SB#2	34'	Clay	7/8/2019	22-34'
SB#3	34'	Clay	7/9/2019	16-34'
SB#4	28'	Clay	7/12/2019	17-28'
SB#5	30'	Clay	8/8/2019	12-30'
SB#6	104'	Clay	8/8/2019	16-104'

Apache
EXPLORING WHAT'S POSSIBLE

Apache Corporation
NEDU #627
Pit Soil Boring Map
API No: 30-025-37029
32-47980 -103.14160

HUNGRY HORSE, LLC.

Apache Corporation
NEDU #627
Soil Boring Data 8/2019

Soil Boring ID	Depth Bored	Soil/AVG	Boring Date	Clay Depths
SB#1	198'	Clay	7/8/2019	20-198'
SB#2	34'	Clay	7/8/2019	22-34'
SB#3	34'	Clay	7/9/2019	16-34'
SB#4	28'	Clay	7/12/2019	17-28'
SB#5	30'	Clay	8/8/2019	12-30'
SB#6	104'	Clay	8/8/2019	16-104'

Hungry Horse, LLC
Environmental Solutions
P.O. Box 1058
Hobbs, NM 88241

FIELD BOREHOLE LOG

BOREHOLE NO.: **SB #1**
TOTAL DEPTH: **198'**

PROJECT INFORMATION

PROJECT:	**Apache Corporation**
SITE LOCATION:	**NEDU 627**
JOB NO.:	**71819-1**
LOGGED BY:	**Jerry Brian**
PROJECT MANAGER:	**Jerry Brian**
DATES DRILLED:	**7/8/2019**

DRILLING INFORMATION

DRILLING CO.:	**Hungry-Horse, LLC**
DRILLER:	**John Norris**
RIG TYPE:	**INGERSOLL RAND TH60**
METHOD OF DRILLING:	**Air Rotary**
SAMPLING METHODS:	**Cutting Recovery**
HAMMER WT./DROP	

DEPTH	WATER LEVEL	LITHOLOGY:	LITHOLOGY DESCRIPTION:	Sample Interval	FIELD CHLORIDES (mg/kg)	ANALYTICAL CHLORIDES (mg/kg)	DEPTH
0			Topsoil: Brn sandy loam				0
10			Caliche: Caliche/Tan				10
15							15
20			Clay: Brownish; MOIST at 20-21'; powder dry at 25'; redish brwn at 32-37'	20'-Moist			20
25							25
30							30
35							35
40			Clay and Silt: Red				40
45			Clay: Red				45
50			Clay and Silt: Red	Dry			50
55							55
60							60
65							65
70							70
75			Clay: Tan; 81-82' yellow; 82-87' tan; 87-88' yellow; 88-90 ' red; 90-99' tan;99-122' red;122-142 redish/tan	Dry			75
80							80
85							85
90							90
95							95
100							100

FIELD CHLORIDES 1.0 (mg/kg) 25000.0

ANALYTICAL CHLORIDES 1.0 (mg/kg) 25000.0

SYMBOL LEGEND - WATER LEVEL

Pattern Legend

- Caliche
- Clay
- Clay and Silt
- Sand
- Sandy Silt
- Topsoil

Hungry Horse, LLC

Environmental Solutions

P.O. Box 1058
Hobbs, NM 88241

FIELD BOREHOLE LOG

BOREHOLE NO.: **SB #1**

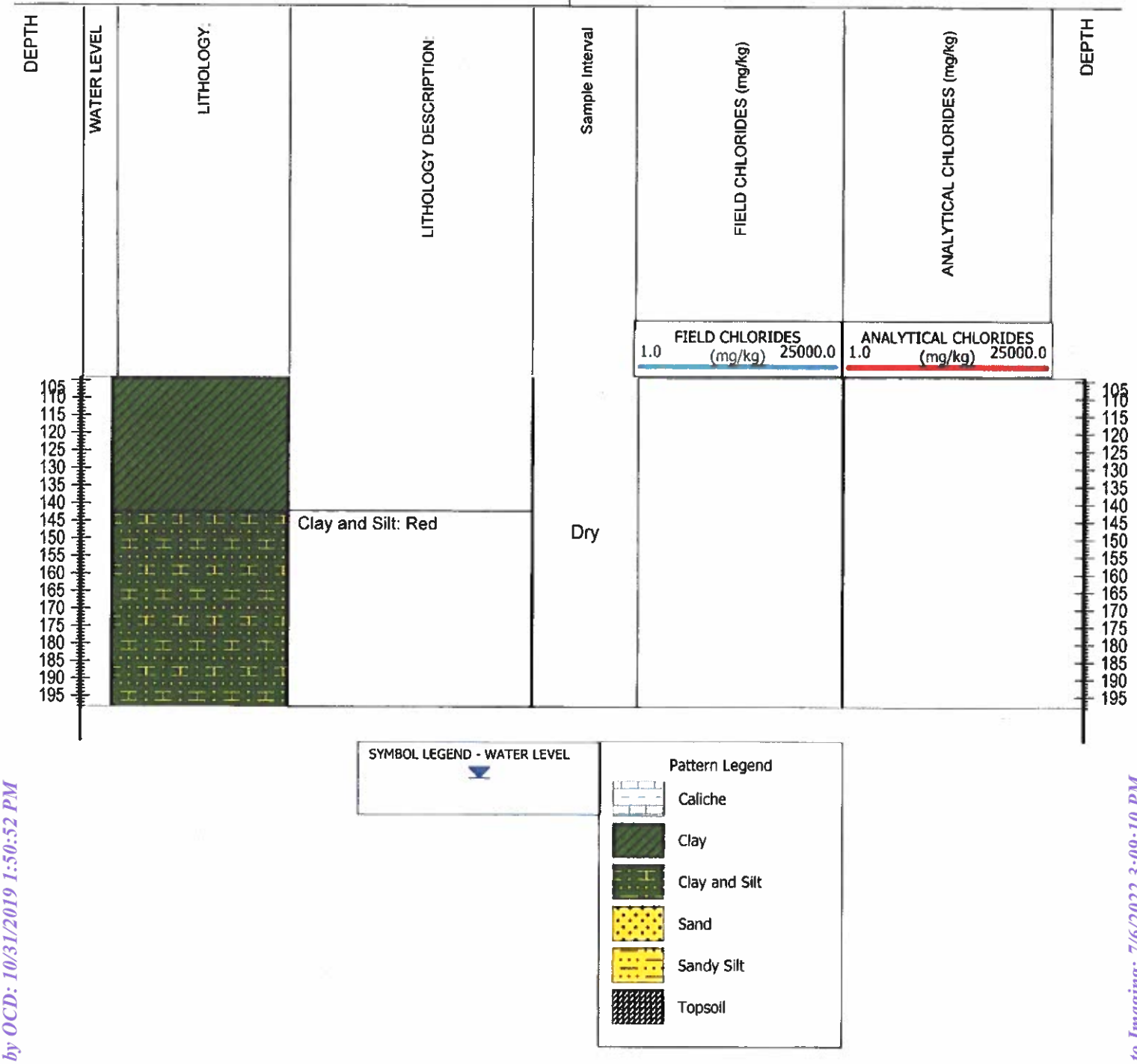
TOTAL DEPTH: **198'**

PROJECT INFORMATION

PROJECT:	Apache Corporation
SITE LOCATION:	NEDU 627
JOB NO.:	71819-1
LOGGED BY:	Jerry Brian
PROJECT MANAGER:	Jerry Brian
DATES DRILLED:	7/8/2019

DRILLING INFORMATION

DRILLING CO.:	Hungry-Horse, LLC
DRILLER:	John Norris
RIG TYPE:	INGERSOLL RAND TH60
METHOD OF DRILLING:	Air Rotary
SAMPLING METHODS:	Cutting Recovery
HAMMER WT./DROP	



Hungry Horse, LLC
Environmental Solutions
P.O. Box 1058
Hobbs, NM 88241

FIELD BOREHOLE LOG

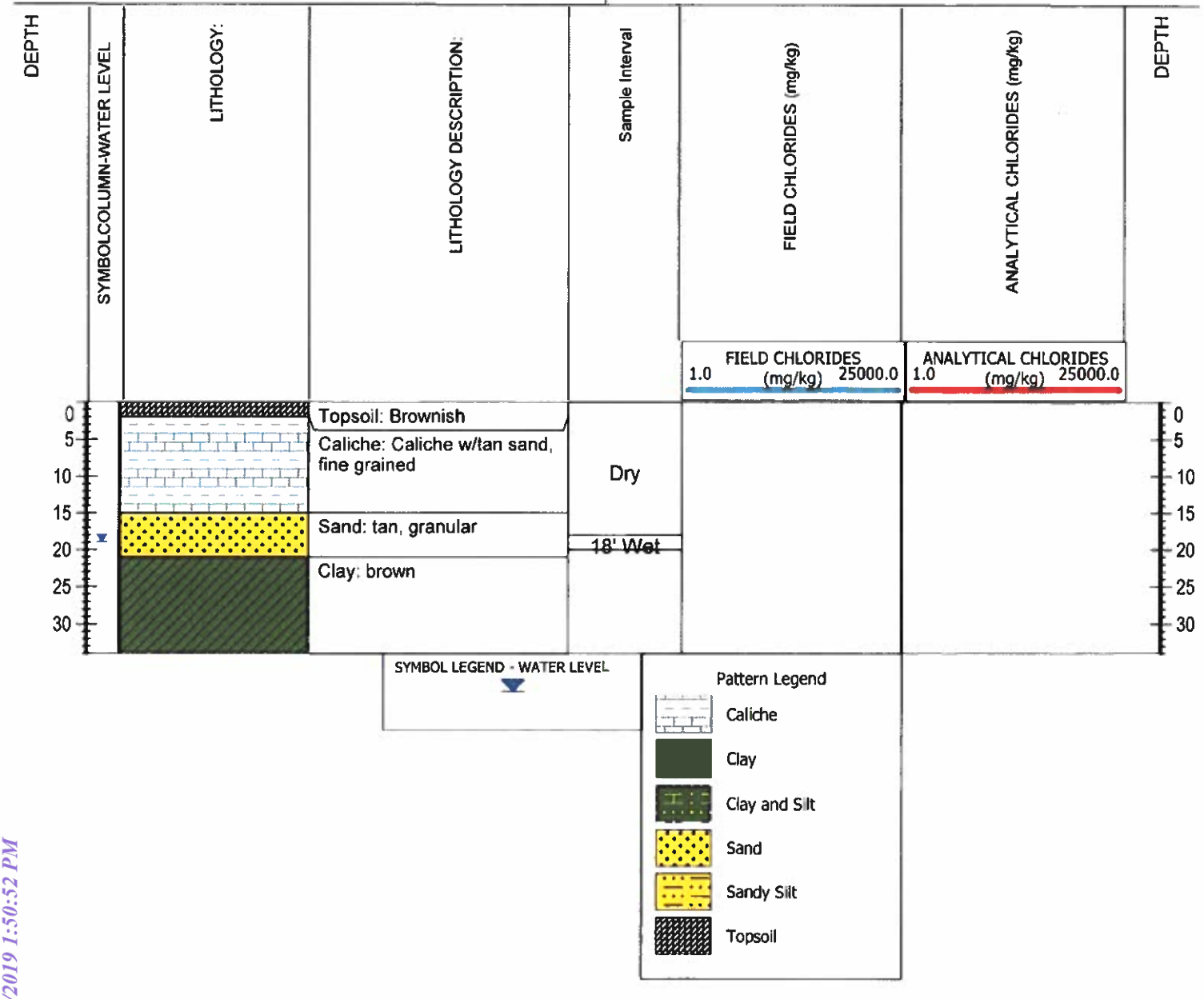
BOREHOLE No. **SB #2**
TOTAL DEPTH **34'**

PROJECT INFORMATION

PROJECT	**Apache Corporation**
SITE LOCATION:	**NEDU 627**
JOB NO.:	**71819-1**
LOGGED BY:	**Jerry Brian**
PROJECT MANAGER:	**Jerry Brian**
DATES DRILLED:	**7/8/2019**

DRILLING INFORMATION

DRILLING CO.:	**Hungry-Horse, LLC**
DRILLER:	**John Norris**
RIG TYPE:	**INGERSOLL RAND TH60**
METHOD OF DRILLING:	**Air Rotary**
SAMPLING METHODS:	**Cutting Recovery**
HAMMER WT./DROP	



Hungry Horse, LLC
Environmental Solutions
P.O. Box 1058
Hobbs, NM 88241

FIELD BOREHOLE LOG

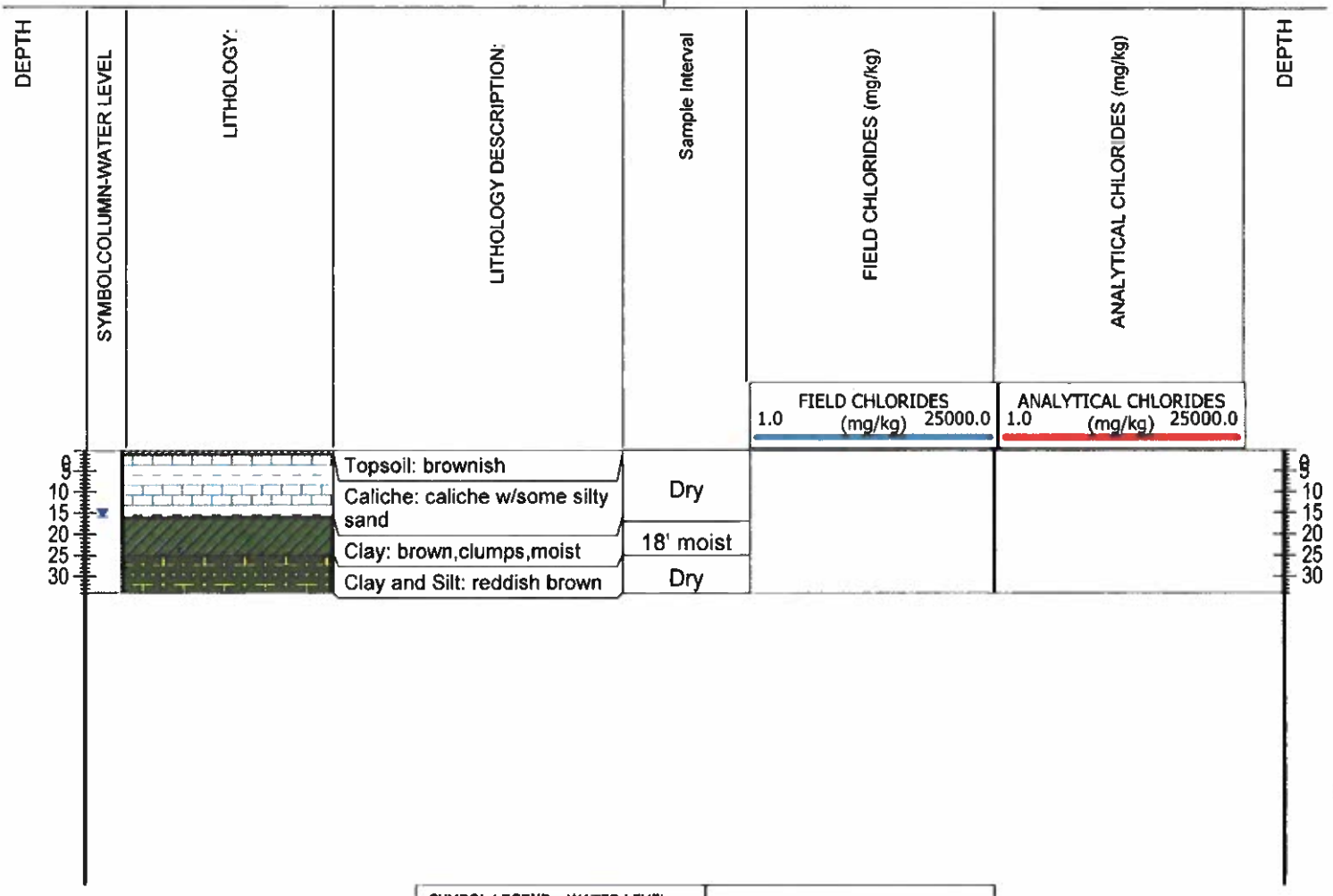
BOREHOLE No. **SB#3**
TOTAL DEPTH **34'**

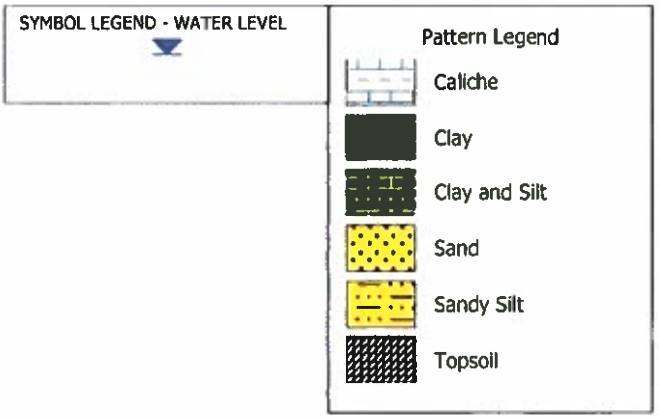
PROJECT INFORMATION

PROJECT	**Apache Corporation**
SITE LOCATION:	**NEDU 627**
JOB NO.:	**71819-1**
LOGGED BY:	**Jerry Brian**
PROJECT MANAGER:	**Jerry Brian**
DATES DRILLED:	**7/9/19**

DRILLING INFORMATION

DRILLING CO.:	**Hungry-Horse, LLC**
DRILLER:	**John Norris**
RIG TYPE:	**INGERSOLL RAND TH60**
METHOD OF DRILLING:	**Air Rotary**
SAMPLING METHODS:	**Cutting Recovery**
HAMMER WT./DROP	





Hungry Horse, LLC
Environmental Solutions
P.O. Box 1058
Hobbs, NM 88241

FIELD BOREHOLE LOG

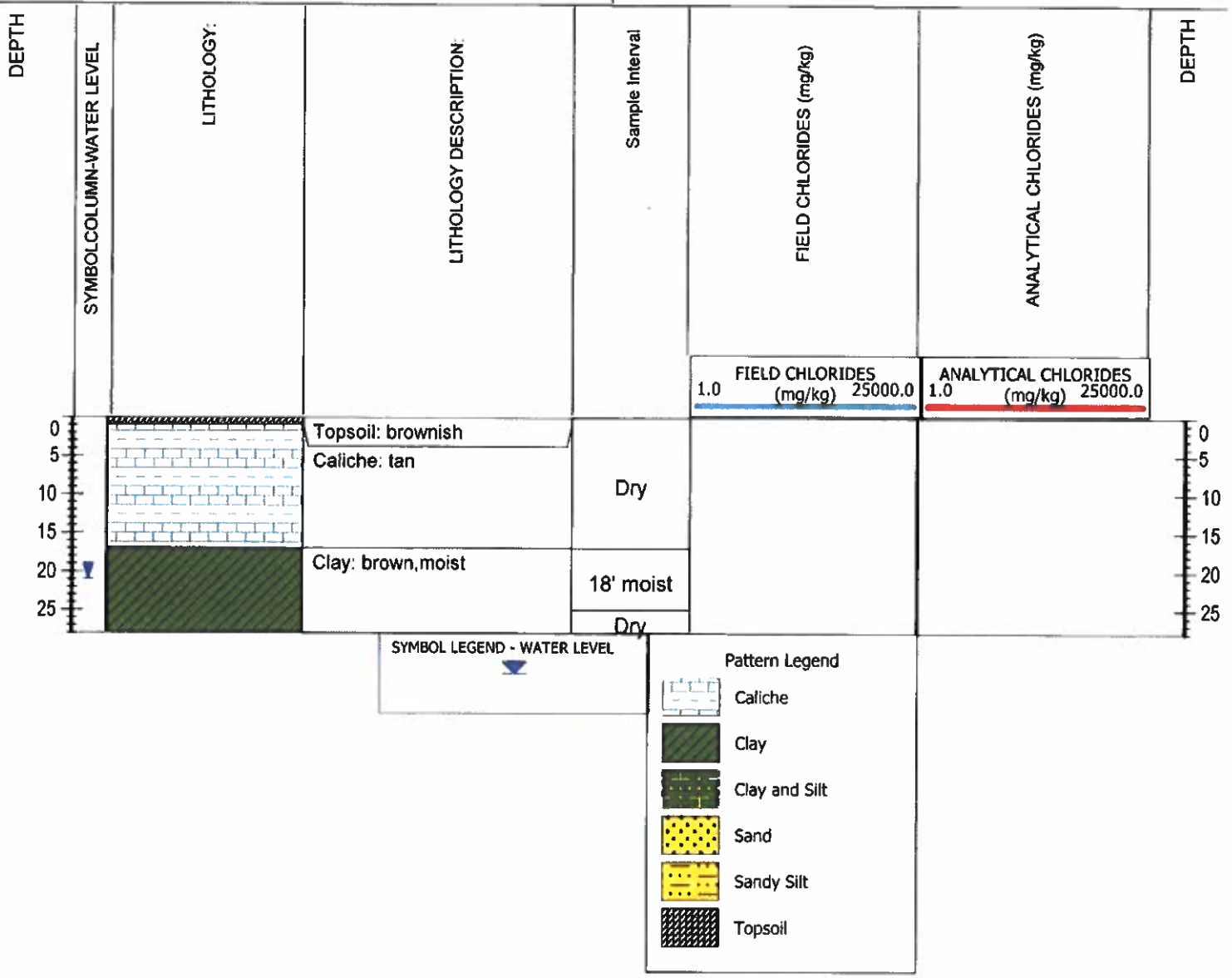
BOREHOLE No. **SB#4**
TOTAL DEPTH **28'**

PROJECT INFORMATION

PROJECT	**Apache Corporation**
SITE LOCATION:	**NEDU 627**
JOB NO.:	**71819-1**
LOGGED BY:	**Jerry Brian**
PROJECT MANAGER:	**Jerry Brian**
DATES DRILLED:	**7/12/2019**

DRILLING INFORMATION

DRILLING CO.:	**Hungry-Horse, LLC**
DRILLER:	**John Norris**
RIG TYPE:	**INGERSOLL RAND TH60**
METHOD OF DRILLING:	**Air Rotary**
SAMPLING METHODS:	**Cutting Recovery**
HAMMER WT./DROP	



Hungry Horse, LLC
Environmental Solutions
P.O. Box 1058
Hobbs, NM 88241

FIELD BOREHOLE LOG

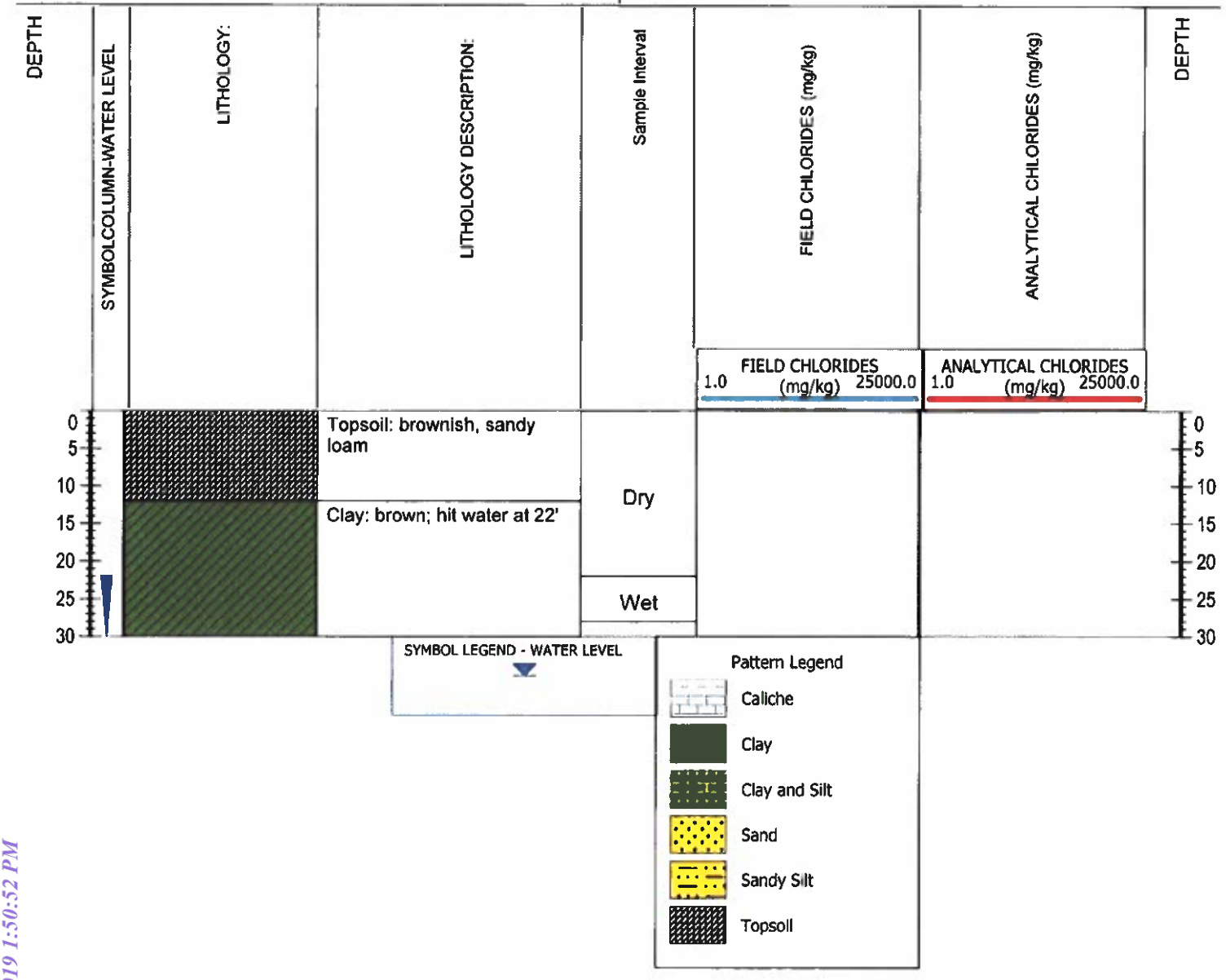
BOREHOLE No. **SB#5**
TOTAL DEPTH **30'**

PROJECT INFORMATION

PROJECT	**Apache Corporation**
SITE LOCATION:	**NEDU 627**
JOB NO.:	**71819-1**
LOGGED BY:	**Jerry Brian**
PROJECT MANAGER:	**Jerry Brian**
DATES DRILLED:	**8/8/19**

DRILLING INFORMATION

DRILLING CO.:	**Hungry-Horse, LLC**
DRILLER:	**John Norris**
RIG TYPE:	**INGERSOLL RAND TH60**
METHOD OF DRILLING:	**Air Rotary**
SAMPLING METHODS:	**Cutting Recovery**
HAMMER WT./DROP	



Hungry Horse, LLC
Environmental Solutions
P.O. Box 1058
Hobbs, NM 88241

FIELD BOREHOLE LOG

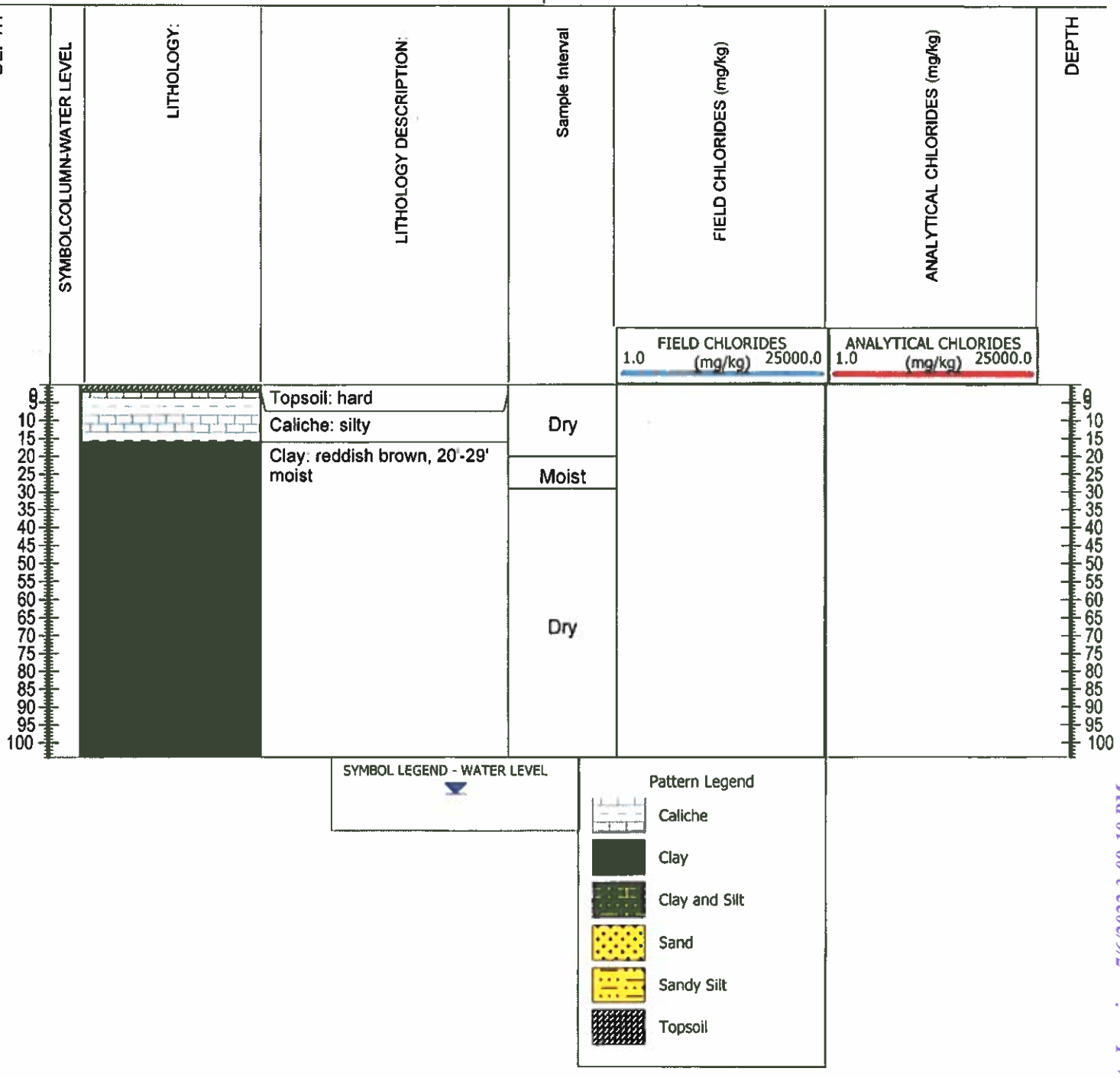
BOREHOLE No. **SB#6**
TOTAL DEPTH **104'**

PROJECT INFORMATION

PROJECT	**Apache Corporation**
SITE LOCATION:	**NEDU 627**
JOB NO.:	**71819-1**
LOGGED BY:	**Jerry Brian**
PROJECT MANAGER:	**Jerry Brian**
DATES DRILLED:	**8/8/19**

DRILLING INFORMATION

DRILLING CO.:	**Hungry-Horse, LLC**
DRILLER:	**John Norris**
RIG TYPE:	**INGERSOLL RAND TH60**
METHOD OF DRILLING:	**Air Rotary**
SAMPLING METHODS:	**Cutting Recovery**
HAMMER WT./DROP	



Apache Corporation
NEDU #627
Pit Sampling 08/8/19

Sample ID	Depth	Soil	Sample Date	Lab BTEX	Lab Chl	Lab TPH
MW5 (SB#5)	32'	Clay	8/8/2019	<0.300	3400	<10

CARDINAL Laboratories

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

August 19, 2019

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: NEDU #627

Enclosed are the results of analyses for samples received by the laboratory on 08/15/19 7:55.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. 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 CORP - HOBBS
BRUCE BAKER
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

Received:	08/15/2019	Sampling Date:	08/08/2019
Reported:	08/19/2019	Sampling Type:	Soil
Project Name:	NEDU #627	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

Sample ID: MW5 - 32' (H902797-01)

BTEX 8021B mg/kg Analyzed By: ms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/17/2019	ND	1.86	92.9	2.00	3.68	
Toluene*	<0.050	0.050	08/17/2019	ND	1.96	98.0	2.00	4.39	
Ethylbenzene*	<0.050	0.050	08/17/2019	ND	2.09	104	2.00	3.42	
Total Xylenes*	<0.150	0.150	08/17/2019	ND	6.31	105	6.00	2.69	
Total BTEX	<0.300	0.300	08/17/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID 98.3 % 73.3-129

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**3400**	16.0	08/16/2019	ND	432	108	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/16/2019	ND	191	95.7	200	1.10	
DRO >C10-C28*	<10.0	10.0	08/16/2019	ND	200	100	200	1.10	
EXT DRO >C28-C36	<10.0	10.0	08/16/2019	ND					

Surrogate: 1-Chlorooctane 102 % 41-142

Surrogate: 1-Chlorooctadecane 105 % 37.6-147

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

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
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
(575) 393-2326 FAX (575) 393-2476

Company Name:	Apache Corp
Project Manager:	Bruce Baker
Address:	
City:	State: Zip:
Phone #:	Fax #:
Project #:	Project Owner:
Project Name:	
Project Location:	NEDU 627
Sampler Name:	

BILL TO

P.O. #:	
Company:	Apache Corp
Attn:	Bruce Baker
Address:	2350 Marland
City:	Hobbs
State:	NM Zip: 88240
Phone #:	432-684-6980
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	BTEX	TPH
H902797	1 MW5-32'	G	1			X					X		8-8-19	10:11	X	X	X

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By:	Date: 8.15.19	Received By:	
Kaitlyn Montanez	Time: 9:53	Brandi Oldaker	
Relinquished By:	Date: 8-15-19	Received By:	
Brandi Oldaker	Time: 0755	Tamara Oldaker	

Delivered By: (Circle One) Sampler - UPS - Bus - Other: 2.0°c / 2.4° corrected #197

Sample Condition: Cool ☑ Yes ☐ No; Intact ☐ Yes ☐ No

CHECKED BY: (Initials) BWS KO

Phone Result: ☐ Yes ☐ No Add'l Phone #:
Fax Result: ☐ Yes ☐ No Add'l Fax #:
REMARKS:

Kmontanez@Hungry-Horse.com
larry.Baker@ApacheCorp.com

HUNGRY HORSE, LLC

3709 S. Eunice Hwy (P.O. Box 1058)
Hobbs, NM 88241
Office (575) 393-3386

Apache Corporation: NEDU #627
Soil Bore #1

DIRTWORK (PAD, FACILITY AND ROAD CONSTRUCTION)
ON SITE REMEDIATION, RECLAMATION, SUBSURFACE & SURFACE DELINEATION
MONITORING WELL INSTALLATION & GROUND WATER REMEDIATION
ELECTRICAL SERVICES

HUNGRY HORSE, LLC

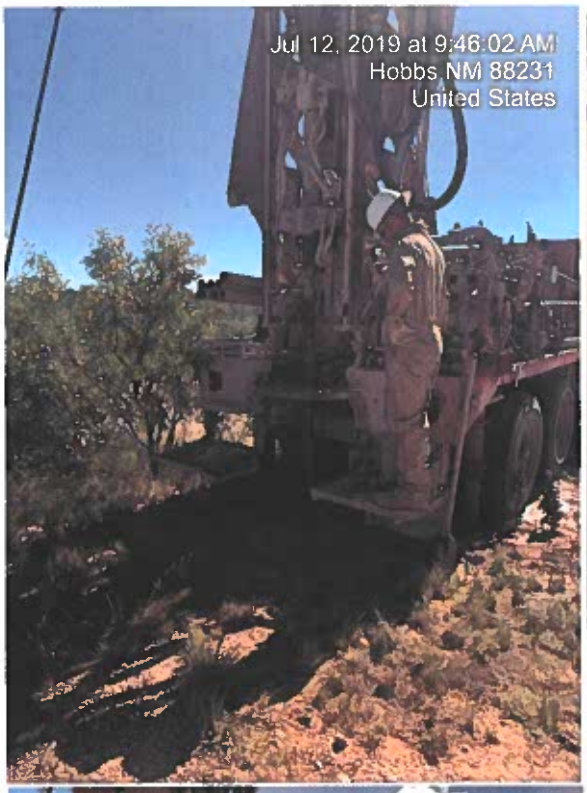
3709 S. Eunice Hwy (P.O. Box 1058)
Hobbs, NM 88241
Office (575) 393-3386

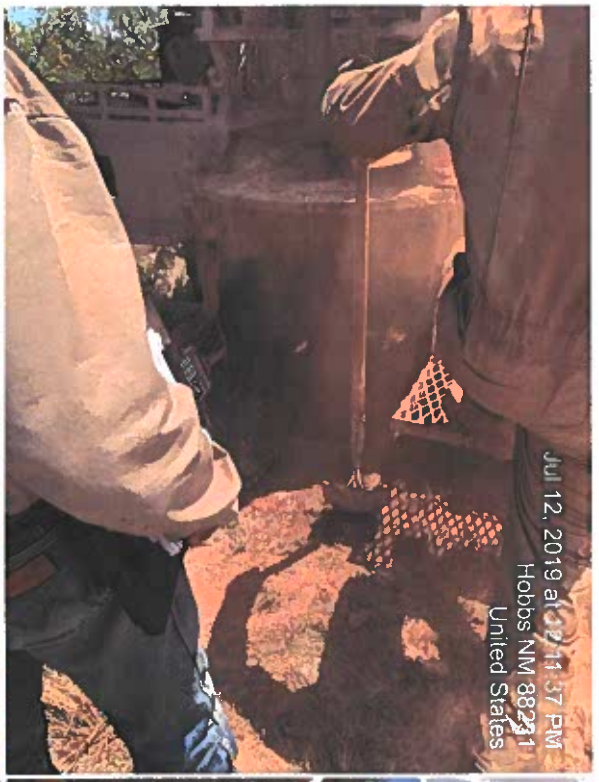
Apache Corporation: NEDU #627
Soil Bore #2

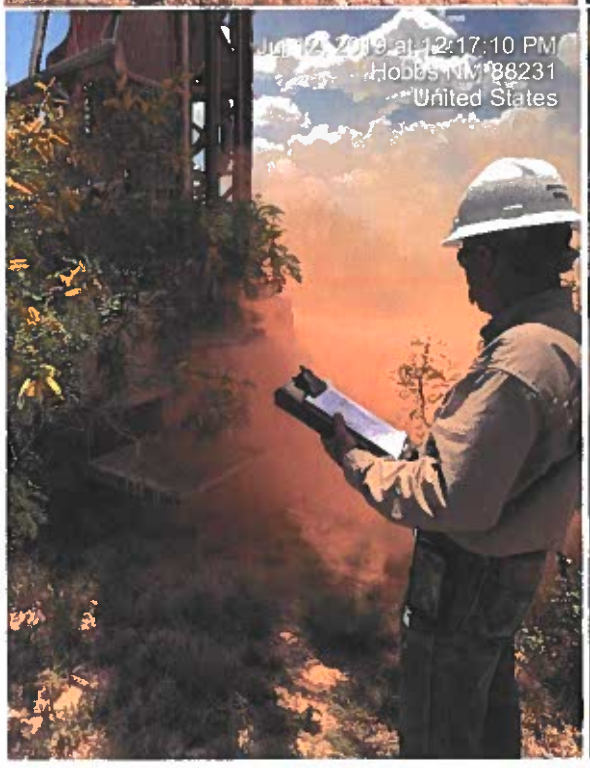
DIRTWORK (PAD, FACILITY AND ROAD CONSTRUCTION)
ON SITE REMEDIATION, RECLAMATION, SUBSURFACE & SURFACE DELINEATION
MONITORING WELL INSTALLATION & GROUND WATER REMEDIATION
ELECTRICAL SERVICES

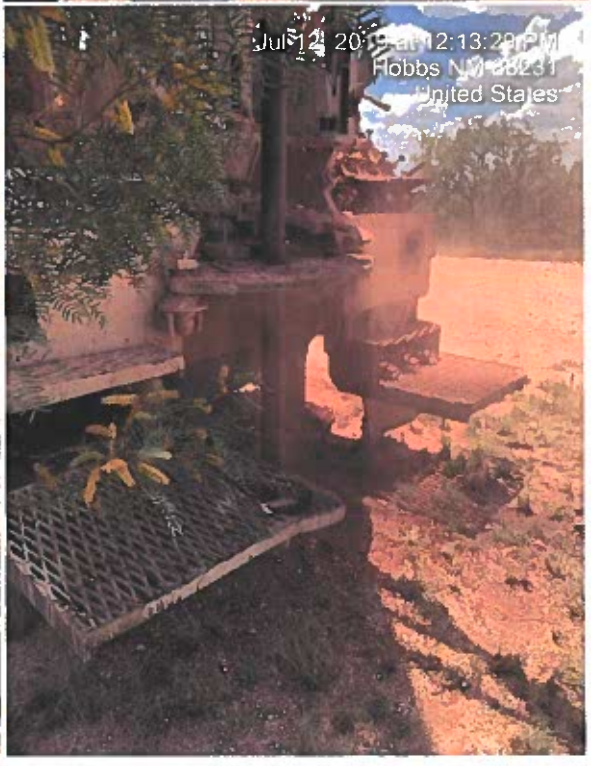
APACHE
NEDU 627 Soil Bore #3
DURING PHOTOS

APACHE
NEDU 627 "Soil Bore #4"
DURING PHOTOS

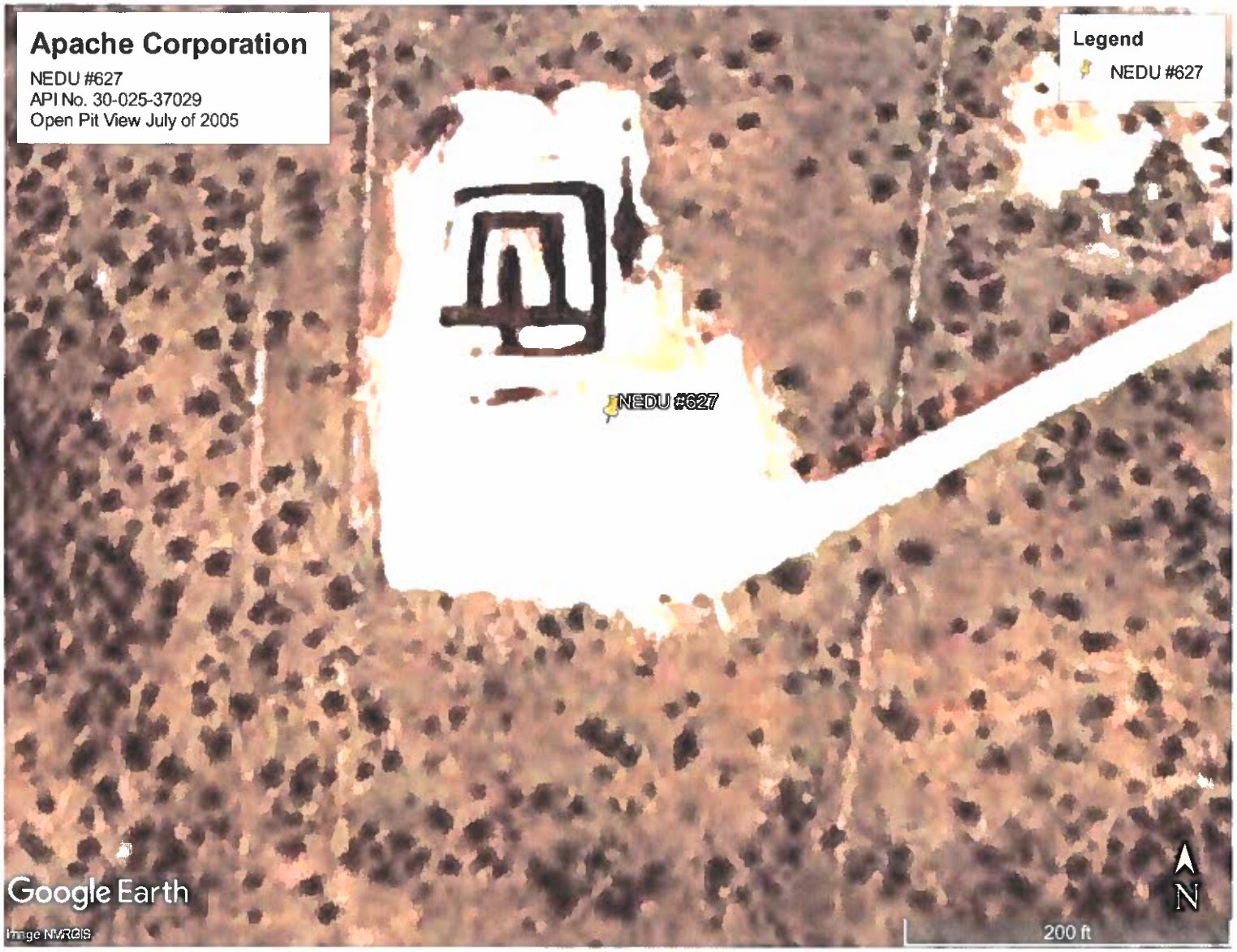


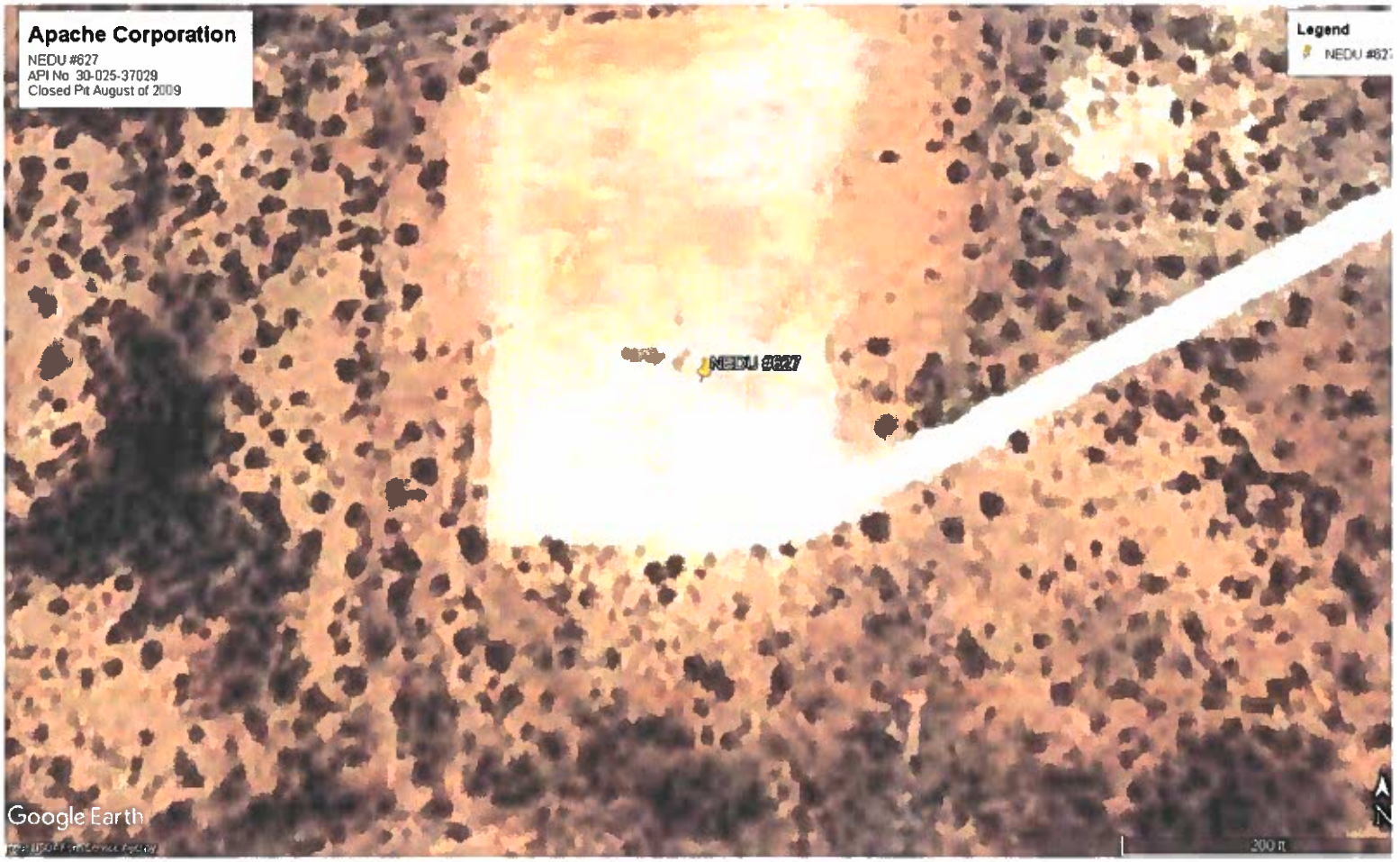






APACHE
NEDU 627 "Soil Bore #4"
DURING PHOTOS





District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 2192

CONDITIONS

Operator: APACHE CORPORATION 303 Veterans Airpark Ln Midland, TX 79705	OGRID: 873
	Action Number: 2192
	Action Type: [C-144] PIT Generic Plan (C-144)

CONDITIONS

Created By	Condition	Condition Date
jburdine	None	7/6/2022