ATS-09-492

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OCD-HOBBS

Form 3160-3
(April 2004)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Split Estate

FORM APPROVED
OMB No 1004-0137
Expires March 31, 2007

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
NM NM 80650

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☑ DRILL ☐ REENTER

7. If Unit or CA Agreement, Name and No.

1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other ☐ Single Zone ☑ Multiple Zone

8. Lease Name and Well No.
Pall Mall #2 303225

2. Name of Operator
Apache Corportation 873

9. API Well No.
30-025-39530

3a. Address 6120 S. Yale, Ste 1500, Tulsa, Ok 74136

3b. Phone No. *(include area code)*
918-491-4900

10. Field and Pool, or Exploratory
House (Blinebry, Tubb, Drinkard) 33230; 78760; 33250

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At surface Sec 14 T20S R38E UL A 400 FNL & 330 FEL
At proposed prod. zone Same

11. Sec., T. R. M. or Blk. and Survey or Area
Sec 14 T20S R38E UL A

14 Distance in miles and direction from nearest town or post office*
14 Miles NE of Eunice

12. County or Parish
Lea

13. State
NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig unit line, if any) 330

16. No. of acres in lease
40

17 Spacing Unit dedicated to this well
40 Acres

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 440 +/-

19. Proposed Depth
7300

20. BLM/BIA Bond No. on file
BLM-CO-146 Nation Wide

21 Elevations (Show whether DF, KDB, RT, GL, etc.)
3565 GL

22. Approximate date work will start*
09/15/2009

23. Estimated duration
9 Days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, shall be attached to this form:

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification
6. Such other site specific information and/or plans as may be required by the authorized officer.

25 Signature [signature] Name *(Printed/Typed)* Curt Jones Date 6-18-09

Title Drilling Engineer

Approved by *(Signature)* /s/ Don Peterson Name *(Printed/Typed)* /s/ Don Peterson Date SEP - 8 2009

Title FIELD MANAGER Office CARLSBAD FIELD OFFICE

FOR

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

APPROVAL FOR TWO YEARS

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representat

**(Instructions on page 2)*

Condition of Approval for DHC -- Approval for Drilling Only CANNOT produce multiple zones without the OCD Hobbs office approval for Downhole Commingle per R-11363 set forth in Rule 19 15.12 11(2).

Lea County Controlled Water Basin

SEE ATTACHED FOR CONDITIONS OF APPROVAL

KZ

APPROVAL SUBJECT TO GENERAL REQUIREMENTS AND SPECIAL STIPULATIONS ATTACHED

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JUL 29 2009
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DISTRICT I
1625 N. FRENCH DR., HOBBS, NM 88240

DISTRICT II
1301 W. GRAND AVENUE, ARTESIA, NM 88210

DISTRICT III
1000 RIO BRAZOS RD., AZTEC, NM 87410

DISTRICT IV
11885 S. ST. FRANCIS DR., SANTA FE, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION
11885 SOUTH ST. FRANCIS DR.
Santa Fe, New Mexico 87505

Form C-102
Revised October 12, 2005
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number	Pool Code	Pool Name
	33230	House; Blinebry

Property Code	Property Name	Well Number
303225	PALL MALL	2

OGRID No.	Operator Name	Elevation
873	APACHE CORPORATION	3565'

Surface Location

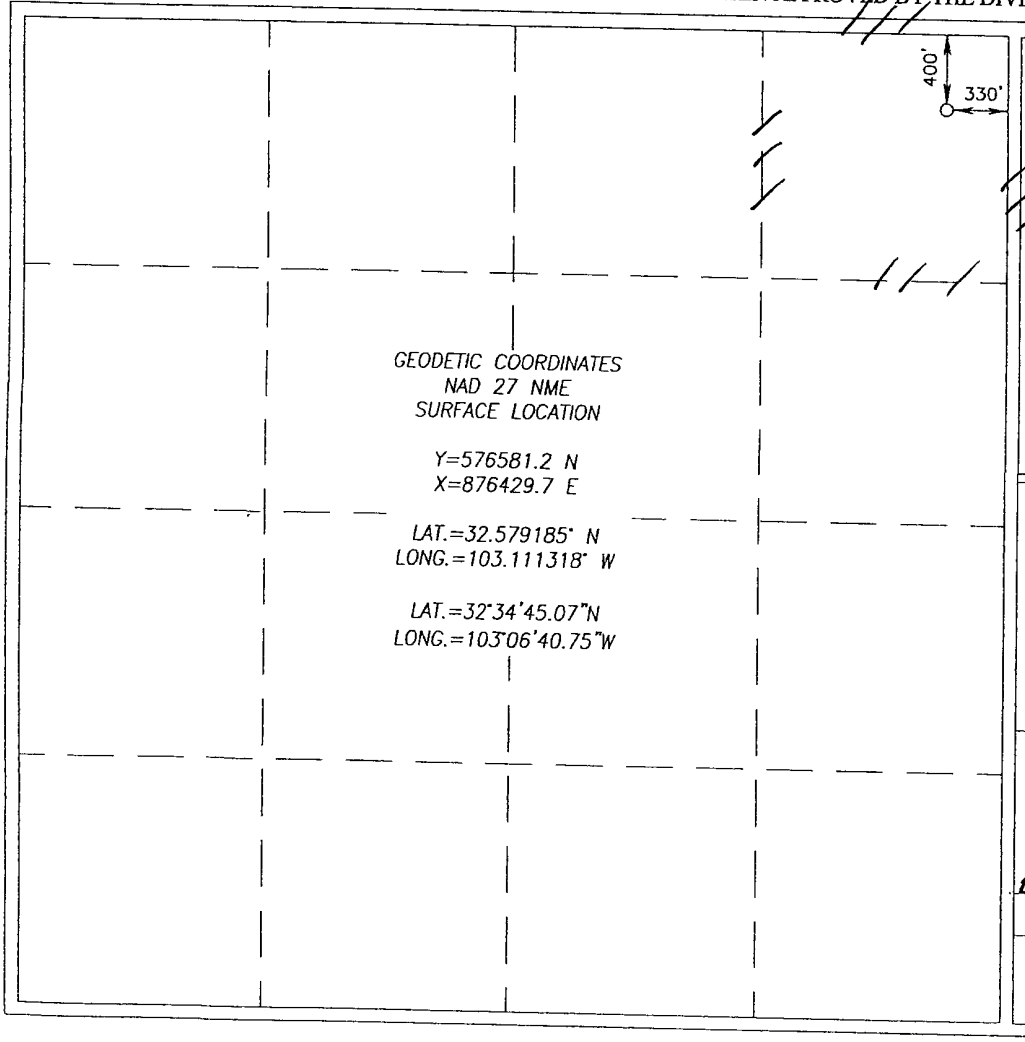
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	14	20-S	38-E		400	NORTH	330	EAST	LEA

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
40			

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



OPERATOR CERTIFICATION

I hereby certify that the information herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature 7/6/09 Date

CAM HAMPTON
Printed Name

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

RONALD J. EIDSON
JUNE 2, 2009
NEW MEXICO
3239
REGISTERED PROFESSIONAL SURVEYOR

Date Surveyed DSS

Signature & Seal of Professional Surveyor

Ronald J. Eidson 06/09/09

Certificate No. GARY G. EIDSON 12641
RONALD J. EIDSON 3239

DISTRICT I
1625 N. FRENCH DR., HOBBS, NM 88240

DISTRICT II
1301 W. GRAND AVENUE, ARTESIA, NM 88210

DISTRICT III
1000 RIO BRAZOS RD., AZTEC, NM 87410

DISTRICT IV
11885 S. ST. FRANCIS DR., SANTA FE, NM 87505

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SEP 16 2009
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State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION
11885 SOUTH ST. FRANCIS DR.
Santa Fe, New Mexico 87505

Form C-102
Revised October 12, 2005
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number	Pool Code	Pool Name
	78760	House; Tubb

Property Code	Property Name	
303225	PALL MALL	2
OGRID No.	**Operator Name**	**Elevation**
873	APACHE CORPORATION	3565'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	14	20-S	38-E		400	NORTH	330	EAST	LEA

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
40			

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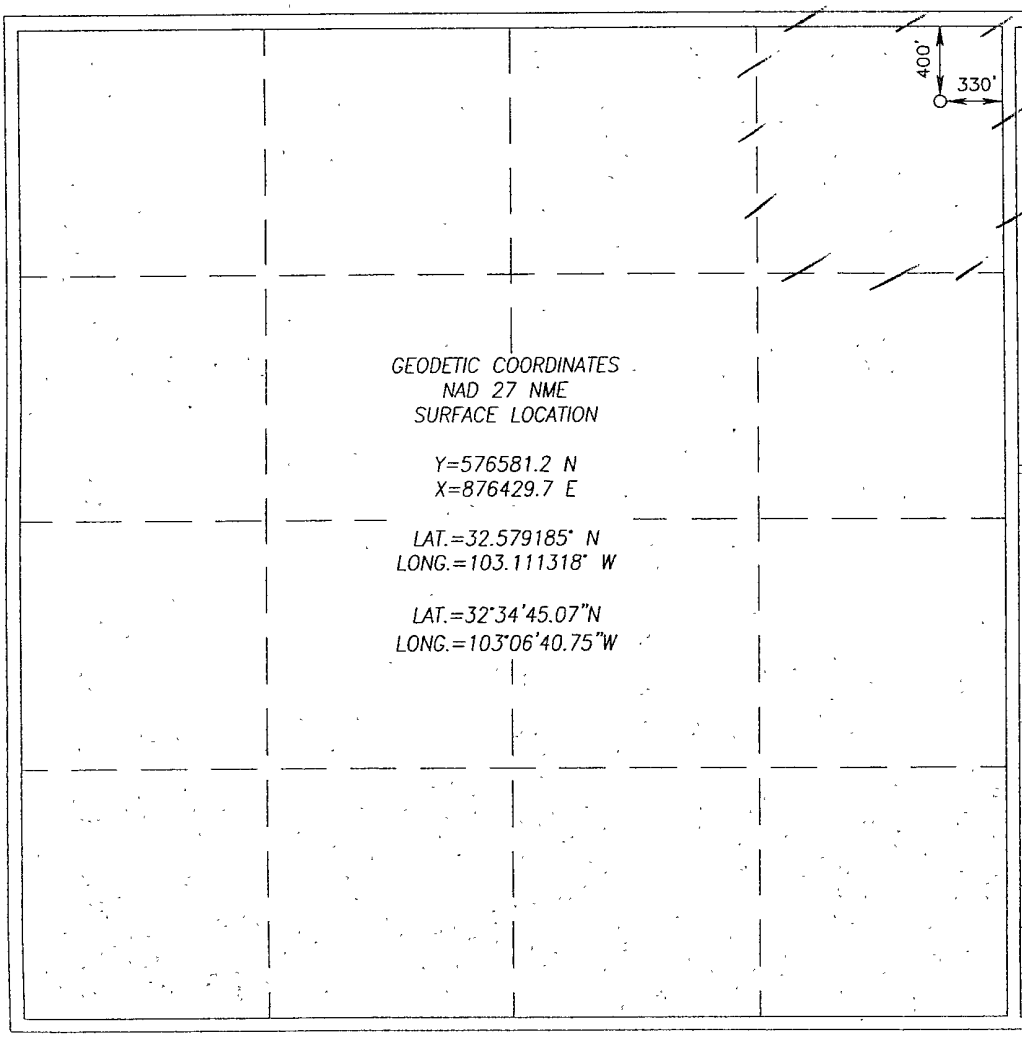

OPERATOR CERTIFICATION

I hereby certify that the information herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature — Date: 7-26-09

Curt Jones
Printed Name

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

RONALD J. EIDSON
NEW MEXICO
JUNE 6, 2009
REGISTERED PROFESSIONAL SURVEYOR
No. 3239

Date Surveyed: DSS

Signature & Seal of Professional Surveyor

Ronald J. Eidson 06/09/09

Certificate No. GARY G. EIDSON 12641
RONALD J. EIDSON 3239

RECEIVED
JUL 29 2009
HOBBSOCD

DISTRICT I
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1301 W. GRAND AVENUE, ARTESIA, NM 88210

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Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

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Santa Fe, New Mexico 87505

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Revised October 12, 2005
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number	Pool Code	Pool Name
	33250	House; Drinkard

Property Code	Property Name	Well Number
303225	PALL MALL	2

OGRID No.	Operator Name	Elevation
873	APACHE CORPORATION	3565'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	14	20-S	38-E		400	NORTH	330	EAST	LEA

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
40			

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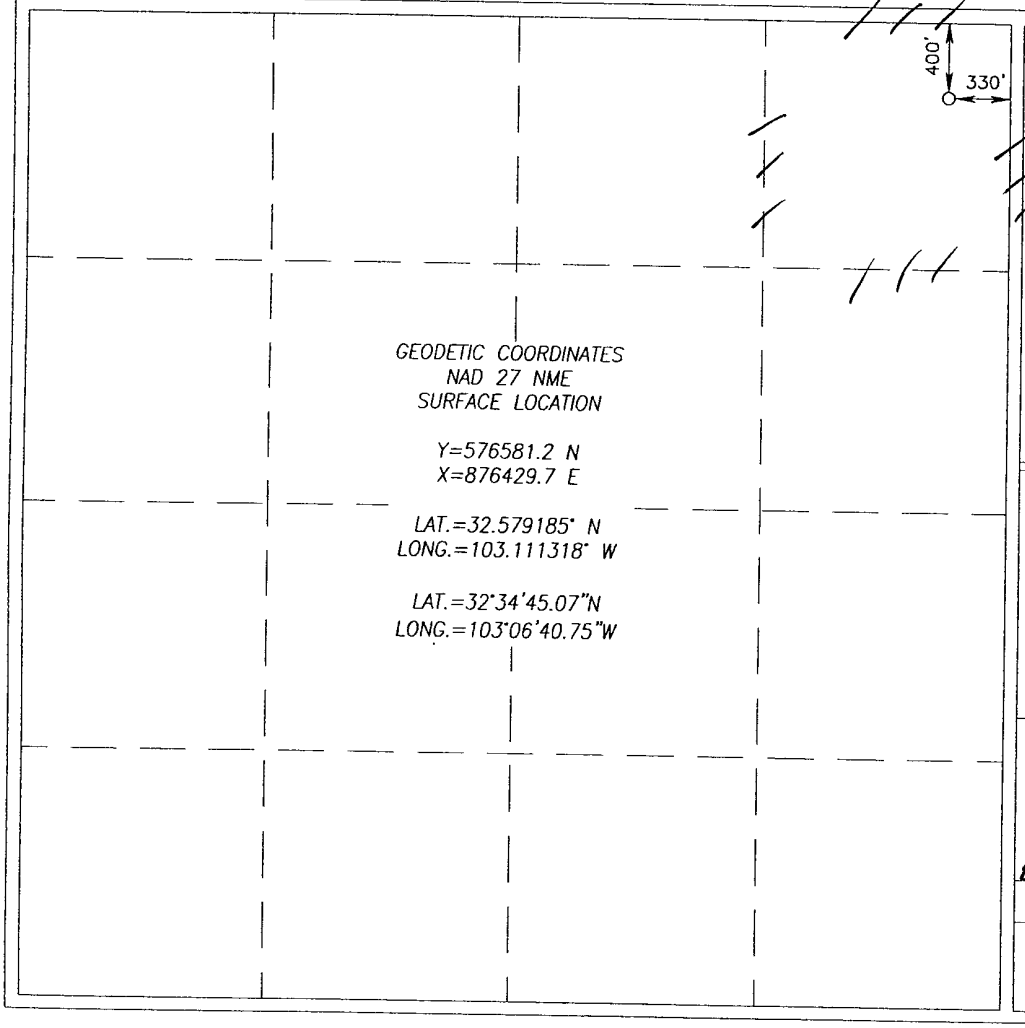

OPERATOR CERTIFICATION

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Signature — Date: 7-26-09

Printed Name: Curt Jones

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

RONALD J. EIDSON — NEW MEXICO — 3239 — REGISTERED PROFESSIONAL SURVEYOR

Date Surveyed: JUNE 26, 2009 DSS

Signature & Seal of Professional Surveyor: Ronald J. Eidson 06/09/09

Certificate No. GARY G. EIDSON 12641
RONALD J. EIDSON 3239

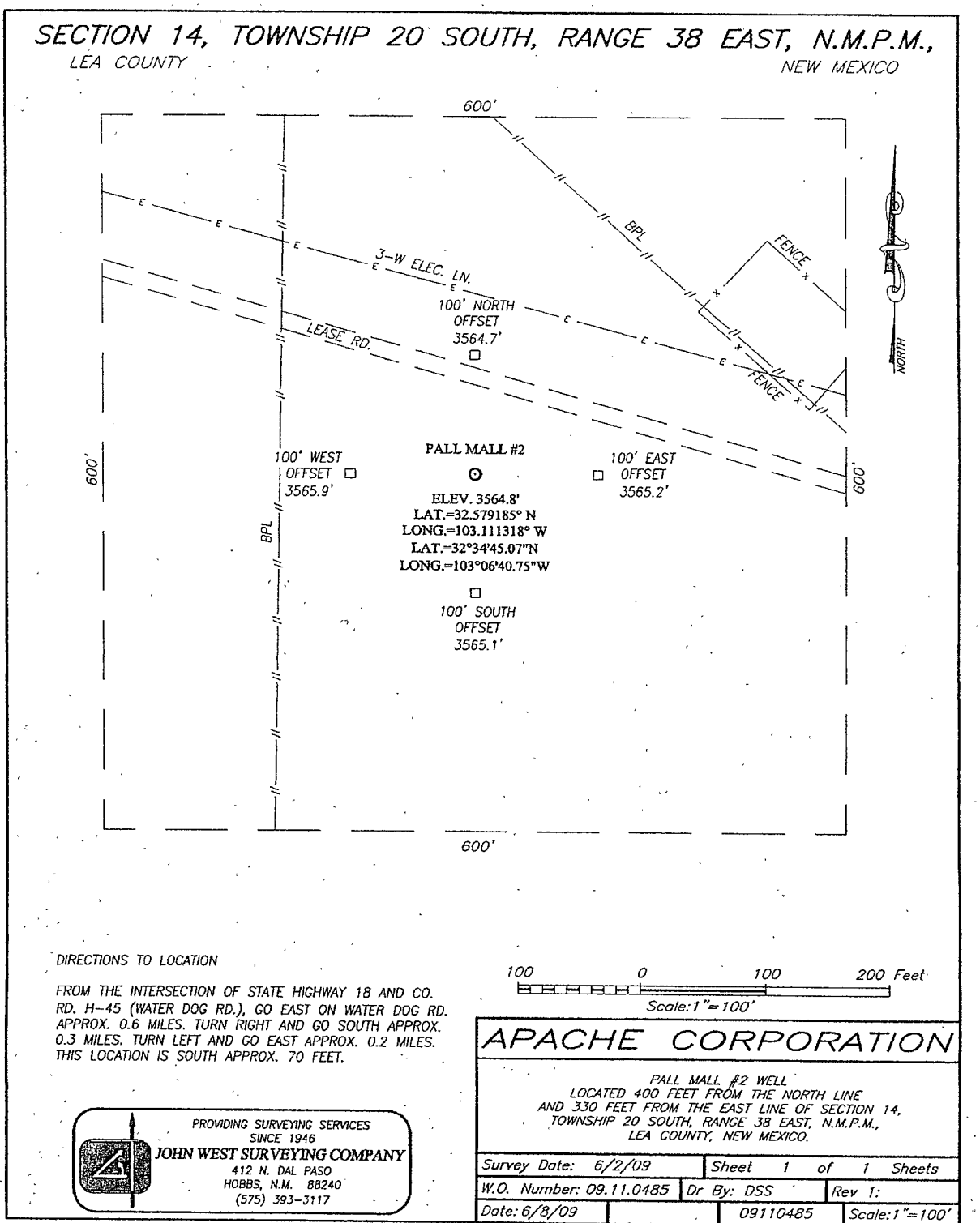
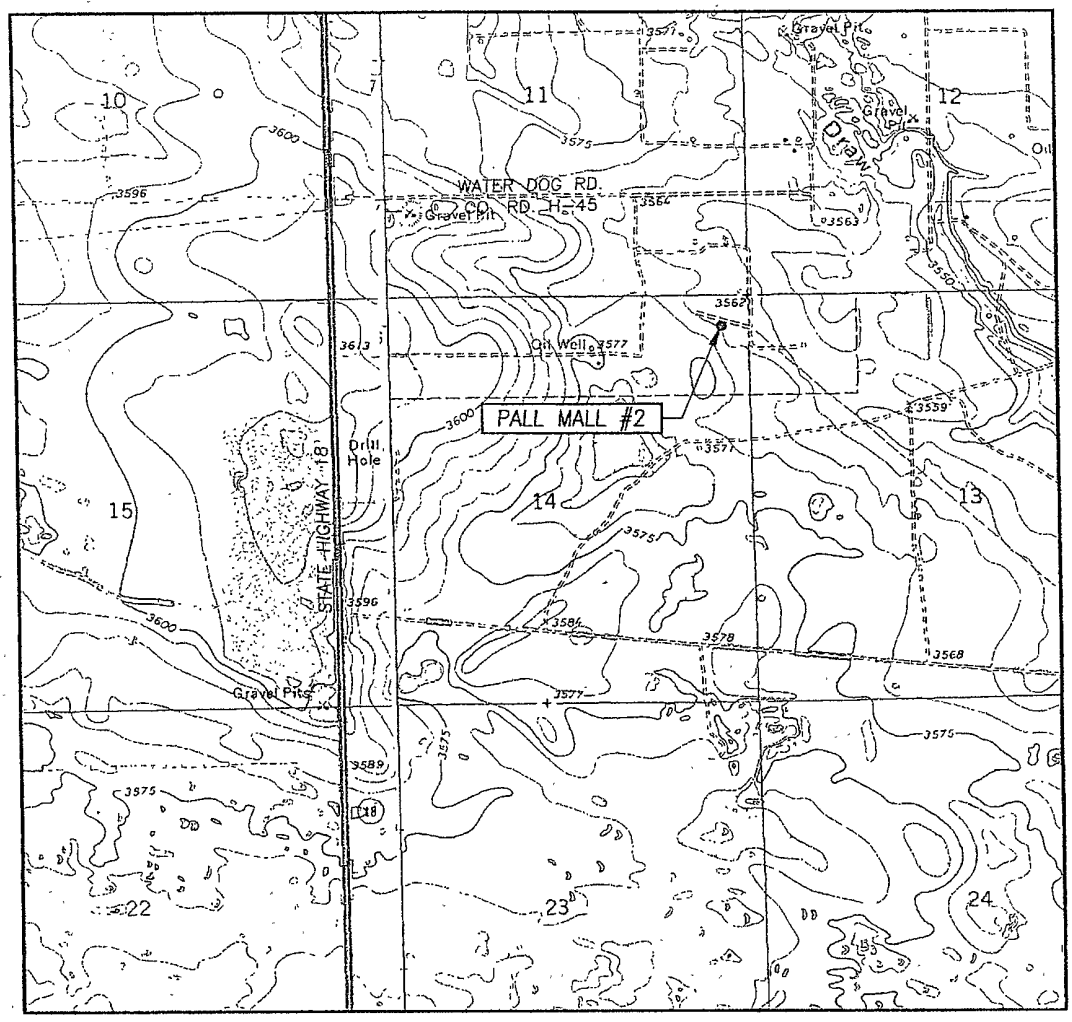

SECTION 14, TOWNSHIP 20 SOUTH, RANGE 38 EAST, N.M.P.M.,
LEA COUNTY
NEW MEXICO
600'
BPL
FENCE
3-W ELEC. LN.
100' NORTH
OFFSET
3564.7'
LEASE RD.
FENCE
NORTH
600'
100' WEST
OFFSET
3565.9'
PALL MALL #2
100' EAST
OFFSET
3565.2'
600'
BPL
ELEV. 3564.8'
LAT.=32.579185° N
LONG.=103.111318° W
LAT.=32°34'45.07"N
LONG.=103°06'40.75"W
100' SOUTH
OFFSET
3565.1'
600'
DIRECTIONS TO LOCATION
FROM THE INTERSECTION OF STATE HIGHWAY 18 AND CO. RD. H-45 (WATER DOG RD.), GO EAST ON WATER DOG RD. APPROX. 0.6 MILES. TURN RIGHT AND GO SOUTH APPROX. 0.3 MILES. TURN LEFT AND GO EAST APPROX. 0.2 MILES. THIS LOCATION IS SOUTH APPROX. 70 FEET.
100 0 100 200 Feet
Scale:1"=100'
PROVIDING SURVEYING SERVICES
SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N. DAL PASO
HOBBS, N.M. 88240
(575) 393-3117
APACHE CORPORATION
PALL MALL #2 WELL
LOCATED 400 FEET FROM THE NORTH LINE
AND 330 FEET FROM THE EAST LINE OF SECTION 14,
TOWNSHIP 20 SOUTH, RANGE 38 EAST, N.M.P.M.,
LEA COUNTY, NEW MEXICO.
Survey Date: 6/2/09
Sheet 1 of 1 Sheets
W.O. Number: 09.11.0485
Dr By: DSS
Rev 1:
Date: 6/8/09
09110485
Scale:1"=100'

EXHIBIT 'A'

LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL:
HOBBS SE, N.M. – 5'
HOBBS SW, N.M. – 5'

SEC. 14 TWP. 20-S RGE. 38-E

SURVEY N.M.P.M.

COUNTY LEA STATE NEW MEXICO

DESCRIPTION 400' FNL & 330' FEL

ELEVATION 3565'

OPERATOR APACHE CORPORATION

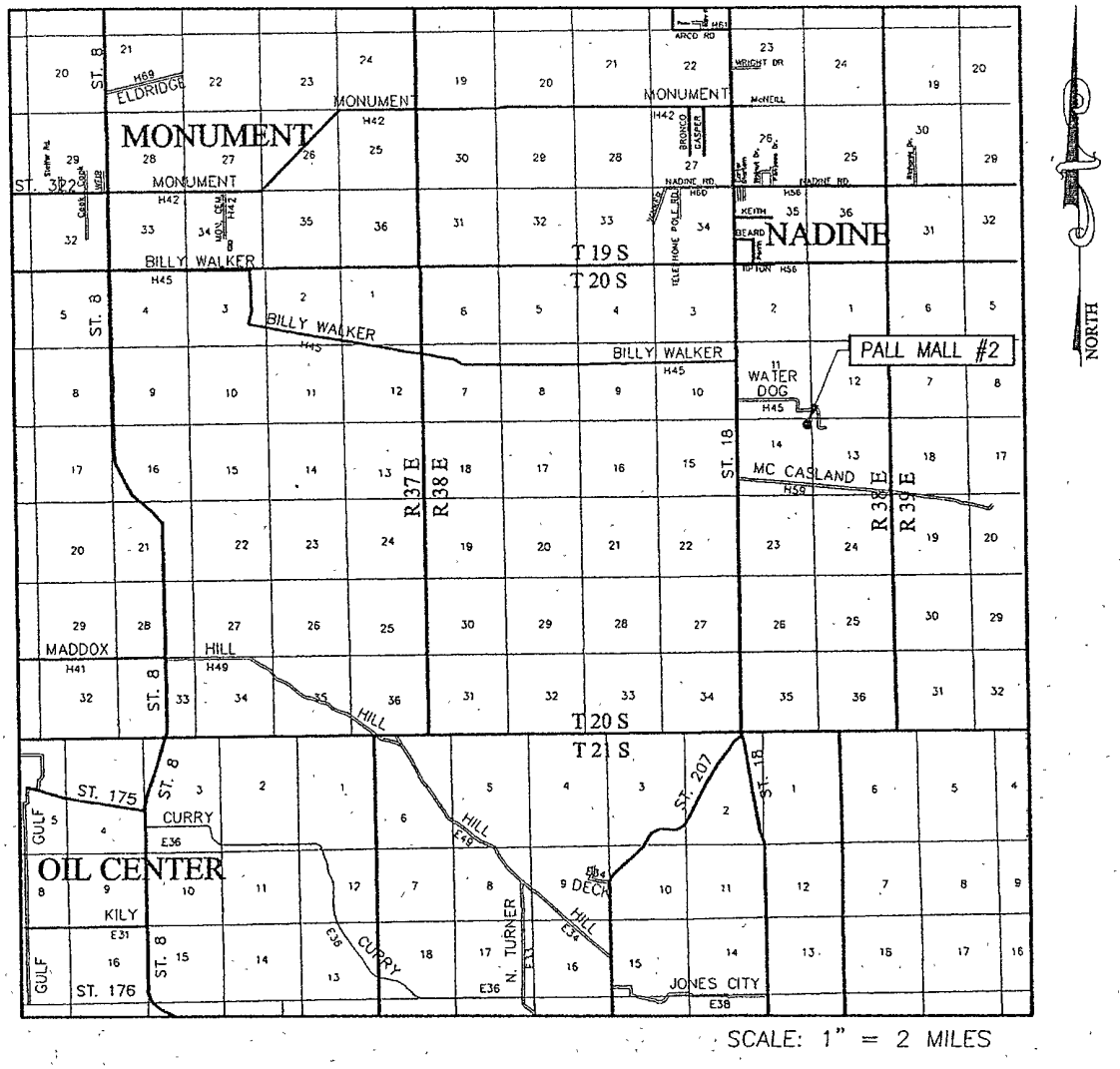
LEASE PALL MALL

U.S.G.S. TOPOGRAPHIC MAP
HOBBS SE, N.M.

PROVIDING SURVEYING SERVICES
SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N. DAL PASO
HOBBS, N.M. 88240
(575) 393-3117

EXHIBIT 'B'

VICINITY MAP



SCALE: 1" = 2 MILES

SEC. 14 TWP. 20-S RGE. 38-E

SURVEY N.M.P.M.

COUNTY LEA STATE NEW MEXICO

DESCRIPTION 400' FNL & 330' FEL

ELEVATION 3565'

OPERATOR APACHE CORPORATION

LEASE PALL MALL

PROVIDING SURVEYING SERVICES
SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N. DAL PASO
HOBBS, N.M. 88240
(575) 393-3117

EXHIBIT 'C'

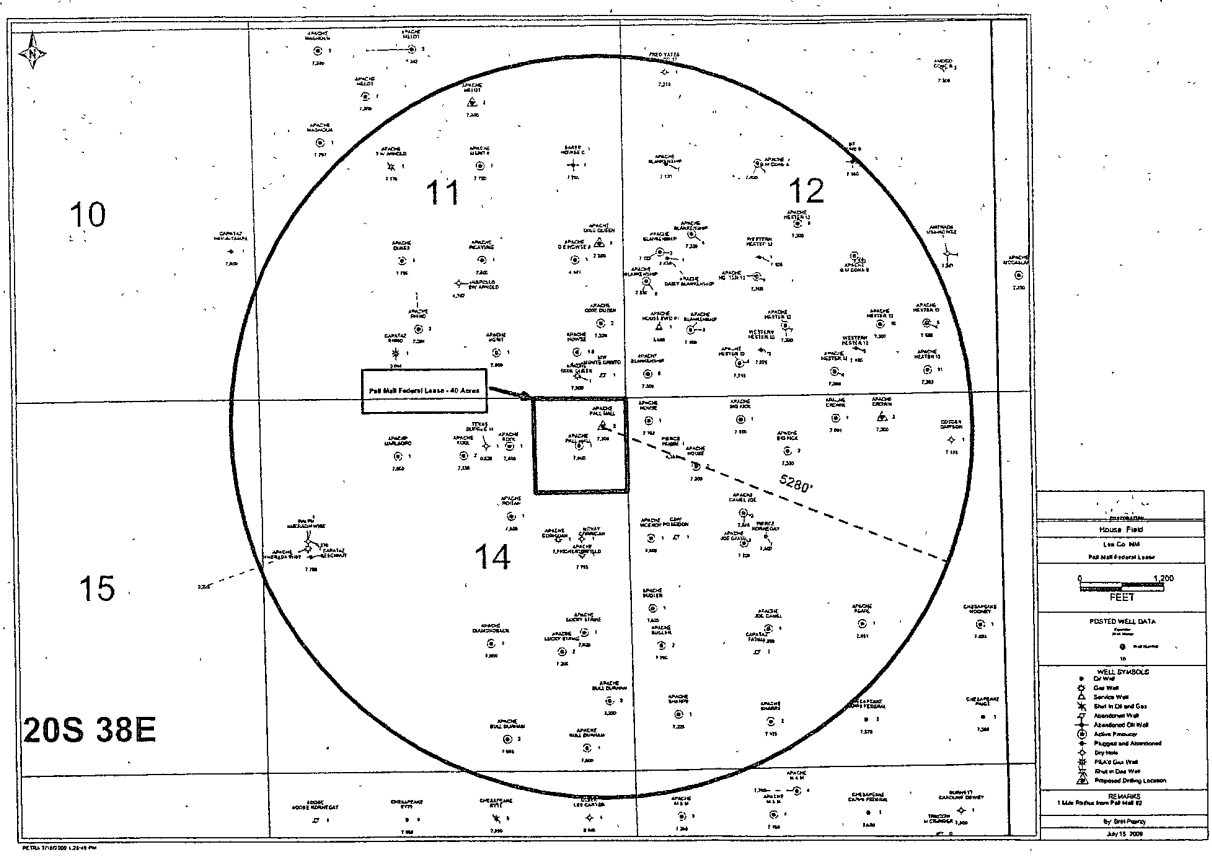
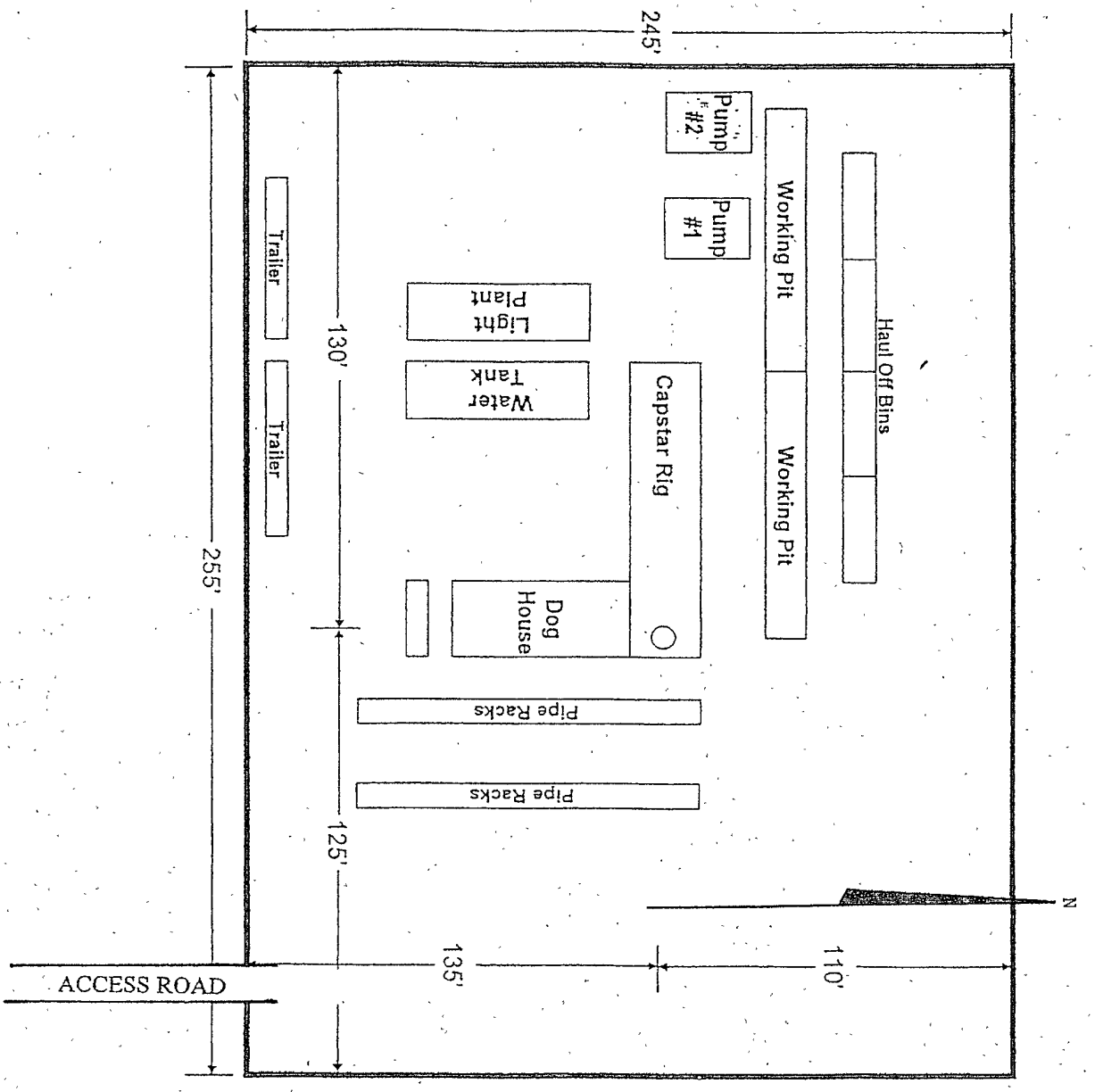

10
11
12
14
15
20S 38E
Pall Mall Federal Lease - 40 Acres
5280'
House Field
Lea Co. NM
Pall Mall Federal Lease
0
1,200
FEET
POSTED WELL DATA
WELL SYMBOLS
Oil Well
Gas Well
Service Well
Shut in Oil and Gas
Abandoned Well
Abandoned Oil Well
Active Pressure
Plugged and Abandoned
Dry Hole
P&A'd Gas Well
Shut in Gas Well
Proposed Drilling Location
REMARKS
1 Mile Radius from Pall Mall #2
By: Bret Pearcy
July 15, 2009

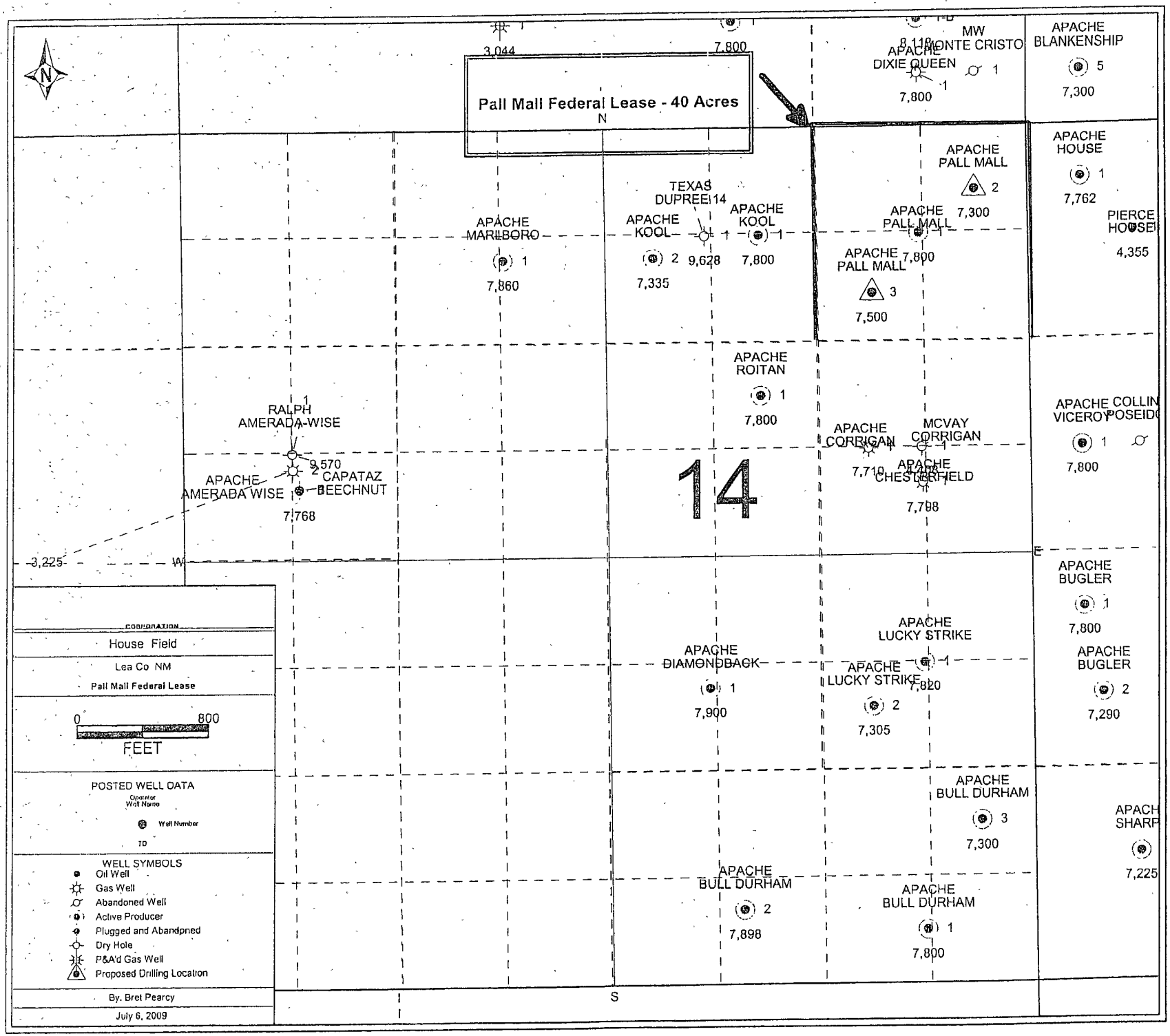
EXHIBIT 'D'



RIG LAY OUT PLAT

APACHE CORPORATION

EXHIBIT 'E'


Pall Mall Federal Lease - 40 Acres
N
14
3,044
7,800
APACHE DIXIE QUEEN 1
7,800
MW MONTE CRISTO 1
APACHE BLANKENSHIP 5
7,300
APACHE HOUSE 1
7,762
PIERCE HOUSE
4,355
APACHE PALL MALL 2
7,300
APACHE PALL MALL 7,800
APACHE PALL MALL 3
7,500
APACHE MARLBORO 1
7,860
TEXAS DUPREE 14 1
9,628
APACHE KOOL 1
7,800
APACHE KOOL 2
7,335
APACHE ROITAN 1
7,800
1 RALPH AMERADA-WISE
9,570
2 CAPATAZ BEECHNUT
APACHE AMERADA WISE
7,768
APACHE CORRIGAN
7,710
MCVAY CORRIGAN 1
APACHE CHESTERFIELD
7,788
APACHE COLLIN VICEROY POSEIDO
1
7,800
3,225
W
E
S
APACHE BUGLER 1
7,800
APACHE BUGLER 2
7,290
APACHE LUCKY STRIKE 1
APACHE LUCKY STRIKE 7,820
2
7,305
APACHE DIAMONDBACK 1
7,900
APACHE BULL DURHAM 3
7,300
APACH SHARP
7,225
APACHE BULL DURHAM 2
7,898
APACHE BULL DURHAM 1
7,800
CORPORATION
House Field
Lea Co NM
Pall Mall Federal Lease
0
800
FEET
POSTED WELL DATA
Operator
Well Name
Well Number
TD
WELL SYMBOLS
Oil Well
Gas Well
Abandoned Well
Active Producer
Plugged and Abandoned
Dry Hole
P&A'd Gas Well
Proposed Drilling Location
By. Bret Pearcy
July 6, 2009

P.O. Box 2079
Midland, Texas 79702-2079

Pierce Production Company

Office: 432/570-6009
Facsimile: 432/686-8469

July 14, 2009

Apache Corporation
Mr. Harold Swain
P. O. Box 848
Wink, Texas 79789

RE: Surface Use Agreement
NE4/NE4 of Section 14 – T20S – R38E
Lea County, New Mexico

Mr. Swain,

This letter is to confirm that a surface use agreement does exist between Eugenia L. Pierce, surface owner, and Apache Corporation regarding drilling operations on the above referenced surface land.

This letter is also approved to be used in any BLM drilling permit application regarding operations which may be conducted on the above referenced surface lands.

Sincerely,

E. A. Pierce

Eugenia L. Pierce
Surface owner

For

EXHIBIT 'F'

PALL MALL #2
DRILLING PLAN

Surface Location
400' FNL, 330' FEL
NE ¼ of NE 1/4 of Section 14, Township 20 South, Range 38 East, UL A
Lea County, New Mexico

DRILLING PROGRAM

1. **The geological surface formation** is recent Permian with quaternary alluvium and other superficial deposits.

2. **Estimated Tops of Geological Markers:**

FORMATION	DEPTH
Quaternary alluvials	Surface
Rustler	1531'
Yates	2827'
Seven Rivers	3086'
Queen	3650'
Glorieta	5572'
Blinebry	6008'
Tubb	6500'
Drinkard	6817'
Abo	7074'
TD	7300'

Estimated depths at which water, oil, gas, or other mineral-bearing formations are expected to be encountered:

SUBSTANCE	DEPTH
Oil	Blinebry @ 6088' Tubb @ 6500' Drinkard @ 6817' Abo @ 7074'
Gas	None anticipated
Fresh Water	None anticipated

All fresh water and prospectively valuable minerals (as described by BLM) encountered during drilling will be recorded by depth and adequately protected. All oil and gas shows within zones of correlative rights will be tested to determine commercial potential.

3. **Proposed Casing Program:**

HOLE SIZE	CASING SIZE OD / ID	GRADE	WEIGHT PER FOOT	DEPTH LENGTH	SACKS CEMENT	ESTIMATED TOC - REMARKS
12 ¼"	8 5/8" 8.097"	J55 STC	24#	1,600'	750	TOC – Surface Float collar at 1558 9.2 ppg Water-based Mud; 90 ° F Est. Static Temp; 84 ° F Est. Circ. Temp.
		Safety Factors	Clps.- 1.73 Brst – 3.85 Ten.J- 6.35			
7 7/8"	5 ½" 4.892"	L-80 LTC	17#	0-1,000'	1500	Included with above.
		J-55 LTC	17#	1000' ~~6,300'~~ 7300		TOC-Surface Float collar @ 7,258 Brine mud 10.1 ppg 135° F est Static Temp 120° F est Circ Temp
		L-80 Safety Factors	Clps.-11.98 Brst.- 14.74 Ten.J- 2.72			
		J-55 Safety Factors	Clps.- 1.28 Brst.- 1.39 Ten.J- 2.31			

All casing will be new and API approved.

4. **Proposed Cement Program:** ← See COA

CASING	LEAD SLURRY	TAIL SLURRY	DISPLACEMENT
8 5/8"	550 sacks 35:65 Poz C Cmt + 3% bwoc CaCl + 0.25 lbs/sack Cello Flake + 6% bwoc Bentonite Gel Slurry Weight 12.7 ppg Slurry yield 1.88 cf/sack Mix Water 10.7 gps 1034 cuft or 184.1 bbls Estimated Pumping Time – 70 BC (HH:MM) 5:00	200 sacks Class C Cement + 2% bwoc Calcium Chloride + 0.125 lbs/sack Cello Flake Slurry Weight (ppg) 14.8 Slurry Yield (cf/sack) 1.35 Mix Water (gps) 6.35 270 cuft or 48.1 bbls Estimated Pumping Time – 70 BC (HH:MM)-3:15	168.4 bbls Fresh Water @ 8.33 ppg

8 5/8" Casing: Volume Calculations:

1558 ft	x	0.4127 cf/ft	with	100% excess	=	1286 cf
42 ft	x	0.3576 cf/ft	with	0% excess	=	15.4cf (inside pipe)
		TOTAL SLURRY VOLUME			=	1301.4 cf
					=	231.8 bbls
				Plan	=	232.2 bbls

Spacer 20.0 bbls Water @ 8.33 ppg

CASING	LEAD SLURRY	TAIL SLURRY	DISPLACEMENT
5 ½"	900 sacks (50:50) Poz: Class C Cement + 5% bwow Sodium Chloride + 0.125 lbs/sack Cello Flake + 0.003 gps FL-6L + 10% bwoc Bentonite 2205 Vol. cuft or 392.7 bbls Slurry Weight (ppg) 11.8 Slurry Yield (cf/sack) 2.45 Mix Water (gps) 14.08; Estimated Pumping Time – 70 BC (HH:MM)-4:18;	500 sacks (50:50) Poz :Class C Cement + 5% bwow Sodium Chloride + 0.003 gps FL-6L 650 Vol. cuft or 115.8 bbls Slurry Weight (ppg) 14.2 Slurry Yield (cf/sack) 1.30 Mix Water (gps) 5.57; Estimated Pumping Time – 70 BC (HH:MM)-3:12	168.7 bbls 2% Kcl Water @ 8.43 ppg

5 ½" Casing: Volume Calculations:

1,600 ft	x	0.1926 cf/ft	with	0% excess	=	308.2 cf
5,658 ft	x	0.1733 cf/ft	with	160% excess	=	2549.7 cf
42 ft	x	0.1305 cf/ft	with	0% excess	=	5.2 cf(inside pipe)
		TOTAL SLURRY VOLUME			=	2863.1 cf
					=	509.9 bbls
				Plan =		508.5 bbls

All slurries will be tested prior to loading to confirm thickening times and a lab report furnished to Apache. Fluid loss will be tested and reported on slurries with fluid loss additives. Lab test report will be furnished prior to pumping cement.

5. **Proposed Pressure Control Equipment:**

See COA

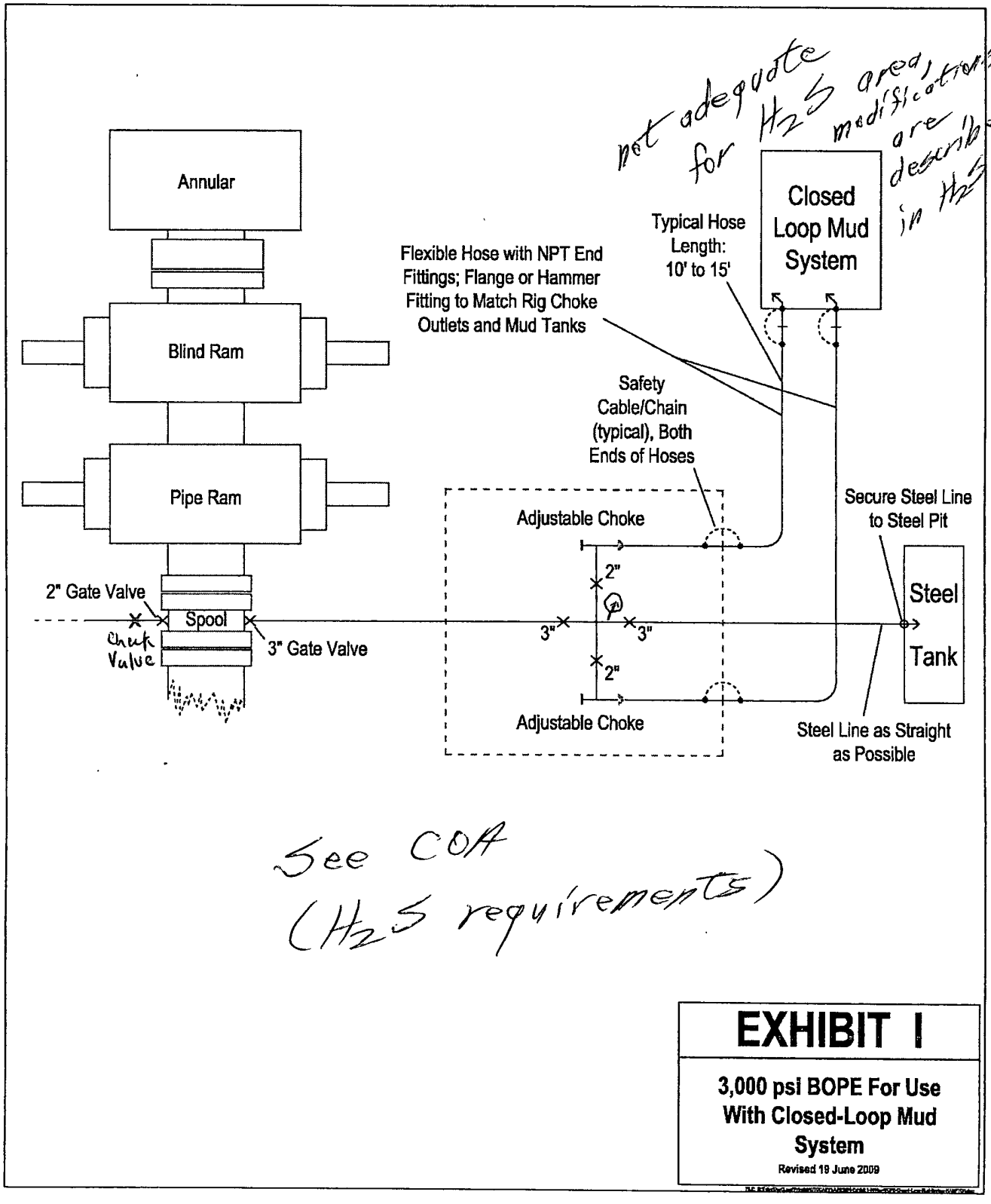
Will install on the 8 5/8" surface casing a 9" x 3000 psi WP Double Ram BOP with Annular, and will test using a 3rd party tester before drilling out of surface casing. **As maximum anticipated surface pressures do not exceed 2,000 psi, we will test the BOPE as a 2,000 psi system.** Bottom hole pressure calculations are included below. See Exhibit I, 3,000 psi BOPE attached.

Bottom Hole Pressure Calculations

The maximum anticipated bottom hole pressure is calculated y multiplying the depth of the well by 0.44. The maximum anticipated surface pressure is calculated assuming a partially evacuated hole with a pressure gradient of 0.22 psi/ft..

For the Pall Mall #2 the maximum anticipated bottom hole pressure is 7,300' x 0.44 psi/ft. = 3,212 psi.

The maximum anticipated surface pressure for the Pall Mall #2 assuming a partially evacuated hole is 4,500' x 0.22 psi/ft = 1606 psi.


not adequate for H2S area, modifications are described in H2S plan.
Annular
Blind Ram
Pipe Ram
2" Gate Valve
Spool
Check Valve
3" Gate Valve
Flexible Hose with NPT End Fittings; Flange or Hammer Fitting to Match Rig Choke Outlets and Mud Tanks
Typical Hose Length: 10' to 15'
Closed Loop Mud System
Safety Cable/Chain (typical), Both Ends of Hoses
Adjustable Choke
2"
3"
3"
2"
Adjustable Choke
Secure Steel Line to Steel Pit
Steel Tank
Steel Line as Straight as Possible
See COA (H2S requirements)
EXHIBIT I
3,000 psi BOPE For Use With Closed-Loop Mud System
Revised 19 June 2009

6. **Proposed Mud Program**

DEPTH	MUD PROPERTIES	REMARKS
0 – 1,600'	Weight: 8.6 – 9.2 ppg Viscosity: 34 – 36 sec/qt pH: NC Filtrate: NC	Spud with a Conventional New Gel/Lime "Spud mud". Use NewGel and native solids to maintain a sufficient viscosity to keep the hole clean. Mix Paper one-two sacks every 100 feet drilled to minimize wall cake build up on water sands and to control seepage loss. At TD of interval, mix in pre-mix pit, 100 barrels of system fluid, NewGel viscosity of 60 sec/100cc, add 0.25 ppb of Super Sweep.
1,600' – 7,000'	Weight: 9.0 – 10.2 ppg Viscosity: 32 – 34 sec/qt pH: NC Filtrate: NC	Drill out from under the surface casing with Brine Water. Paper should be added at 2 bags after every 100' drilled to control seepage losses. Mix one gallon of New-55 at flowline every 250 feet drilled to promote solids settling. Sweep hole with 3-ppb of Super Sweep every 500 feet.
7000 ~~7,300'~~ – TD	Weight: 10.0 – 10.2 ppg Viscosity: 34 – 36 sec/qt pH: 9-10 Filtrate: 15-20 cm/30 min	From 7,000' to Total Depth, it is recommended the system be restricted to the working pits. Adjust and maintain pH with Caustic Soda. Treat system with Newcide to prevent bacterial degradation of organic materials. Mix Starch (yellow) to control API filtrate at <15cc-20cc.

7. **Auxiliary Well Control and Monitoring Equipment:**

a. 41/2" x 3000 psi Kelly valve
b. H_2S detection equipment will be rigged up and functional and breathing apparatus will be on location before drilling out of 8 5/8" surface casing.

8. **Evaluation Program:**
Open Hole Logging: ← See COA
The following logs may be run:
CNL, Litho Density, GR, CAL, Dual Laterolog/MSFL, Sonic from TD-1400'
CNL, GR from TD-Surface

Mudlogging Program:
Mudlogging is planned from 2800' to TD on this well.

9. **Potential Hazards:**

No abnormal pressures or temperatures are anticipated. In the event abnormal pressures are encountered, however, the proposed mud program will be modified to increase the mud-weight. The estimated maximum bottom hole pressure is 3,212 psi., estimated BHT is 135°F. No H_2S is anticipated. See Public Protection Plan for Hydrogen Sulfide (H_2S) attached.

10. **Anticipated Starting Date:**

Road and location construction will begin after the BLM has approved the APD, the NMOCD has issued a drilling permit, and Apache Corporation management determines the well to be economically advantageous to drill. Drilling will begin when a rig becomes available following completion of the location construction and access roads.

Representative and Emergency Contacts

Senior Representative (Manager, Engineering & Production):
Ross Murphy
Apache Corporation
6120 South Yale Avenue
Suite 1500
Tulsa, Oklahoma 74136
(918) 491-4834

Project (Operations Engineer):
Jeff Frederick
Apache Corporation
6120 South Yale Avenue
Suite 1500
Tulsa, Oklahoma 74136
(918) 491-4982

Drilling Operations (Operations Engineer):
Curt Jones
Apache Corporation
6120 South Yale Avenue
Suite 1500
Tulsa, Oklahoma 74136
(918) 491-4828

HYDROGEN SULFIDE DRILLING OPERATIONS PLAN

APACHE CORP. – PERMIAN BASIN revised 4/9/2009

This Hydrogen Sulfide Drilling Operations Plan shall be implemented prior to drilling out from under casing (surface or intermediate) set above potential H_2S bearing formations.

I. Hydrogen Sulfide Training

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will receive training from a qualified instructor in the following areas prior to commencing drilling operations on this well:

1. The hazards and characteristics of hydrogen sulfide (H_2S).
2. The proper use and maintenance of personal protective equipment and life support systems.
3. The proper use of H_2S detectors, alarms, warning systems, briefing areas, evacuation procedures, and prevailing winds.
4. The proper techniques for first aid and rescue procedures.

In addition, supervisory personnel will be trained in the following areas:

1. The effects of H_2S on metal components. If high tensile tubulars are to be used, personnel will be trained in their special maintenance requirements.
2. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.
3. The contents and requirements of the H_2S Drilling Operations Plan and the Public Protection Plan.

All personnel entering a location posted with the potential of Hydrogen Sulfide shall be required to carry documentation that they have received the proper training. (Training certificate typically valid for 1 year after training)

II. Site Specific Information:

Upon installation of H2S Safety Equipment and Systems on a well, and prior to drilling out of casing above potential Hydrogen Sulfide bearing formations a briefing with all personnel on location shall be held. The briefing should include a review of H_2S Drilling Operations Plan and the Public Protection Plan. This briefing should include site specific elements such as;

- Identification of the briefing areas.
- Discussion of rig orientation and prevailing wind direction.

- Identification of access roads, including secondary egress.
- Confirmation that all personnel have current training.
- Formation tops of potential H2S bearing formations.

The H_2S Drilling Operations Plan and the Public Protection Plan shall be available at the well site.

III. H_2S Safety Equipment and Systems

1. Well Control Equipment that will be installed prior to drilling out of casing above potential Hydrogen Sulfide bearing formations:
   A. Choke manifold with a minimum of one adjustable choke.
   B At least one choke line must be directed away from the drilling unit and secured at the end. (For closed-loop operations this should be directed to containment bin at the back edge of the location.)
   C Blind rams and pipe rams to accommodate all pipe sizes
   D Annular preventor
   E Properly sized closing unit.

1.1 Well control equipment to be available to install as needed should H2S be encountered;
   .A Flare line with electronic igniter or continuous pilot.
   B Mud gas separator
   C Flare gun with flares.
   D One portable S02 monitor positioned near flare line.

2. Protective equipment for essential personnel:
   A. 30-minute air pack units located in the dog house and at briefing areas.

3. H_2S detection and monitoring equipment:
   A. Two portable H_2S monitors positioned on location for best coverage and response. These units have warning lights and audible sirens when H_2S levels of 20 ppm are reached.

4. Visual warning systems:
   A. Wind direction indicators.
   B. Caution/Danger signs shall be posted on roads providing direct access to location. Signs will be painted a high visibility yellow with black lettering of sufficient size to be readable at a reasonable distance from the immediate location. Bilingual signs will be used when appropriate.

5. Mud program:
   A. The mud program shall be designed to minimize the volume of H_2S circulated to the surface. Proper mud weight, safe drilling practices, and the use of H_2S scavengers will minimize hazards when penetrating H_2S-bearing zones.
   B. A mud-gas separator and an H_2S gas buster will be utilized as required if H2S is encountered.

6. Metallurgy:
   A. All drill strings, casings, tubing, wellhead, blowout preventers, drilling spool, kill lines, choke manifold and lines, and valves shall be suitable for H_2S service.
   B. All elastomers used for packing and seals shall be H_2S trim.

7. Communication:
   A. Communications shall be available on the rig site and in company vehicles. Communications equipment may include one or more of the following; land lines, satellite phones, cellular telephone and 2-way radios.

PUBLIC PROTECTION PLAN FOR HYDROGEN SULFIDE (H_2S)

Assumed 100 ppm Radius of Exposure (ROE) = 3000'

100 ppm H_2S concentration shall trigger activation of this plan.

Emergency Procedures

In the event of a release of gas containing 100 ppm H_2S, the first responder(s) must;

- Isolate the area and prevent entry by other persons into the 100 ppm ROE.
- Evacuate any public places encompassed by the 100 ppm ROE.
- Be equipped with H_2S monitors and air packs in order to safely conduct efforts to control the release.
- Use the "buddy system" to ensure no injuries during the response operations.
- Take precautions to avoid personal injury during the operation.
- Contact operator and/or local officials to aid in operations. See list of phone numbers attached.
- Have received training in the
    a. Detection of H_2S
    b. Measures for protection against H_2S gas
    c. Equipment used for protection and emergency response to H_2S gas

Ignition of Gas Source

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfer Dioxide (SO_2). Intentional ignition must be coorditnated with the NMOCD and local officials. Additionally the New Mexico State Police may be involved. The New Mexico State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever there is an ignition of gas.

Characteristics of H_2S and SO_2

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H_2S	1.189 Air = 1.0	10 ppm	100 ppm/hr	600 ppm
Sulfur Dioxide	SO_2	2.21 Air = 1.0	2 ppm	N/A	1000 ppm

Contacting Authorities

Apache Corporation's personnel must liaison with local and state agencies to ensure proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours after the release. Agencies will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared will all information available including directions to site. The following call list of essential and potential responders has been prepared for use during a release. Apache Corporation' response must be in coordination with the State of New Mexico's "Hazerdous Materials Emergency Response Plan" (HMER).

(Note: Apache Corporation's Central Region Well Control Emergency Response Team should have already been notified. See Central Region Well Control Emergency Response Plan with drilling prognosis)

PUBLIC PROTECTION PLAN FOR H_2S - EMERGENCY CONTACTS

LOCATION	ENTITIY	PHONE NUMBER
	Ambulance	911
Eunice, NM	Apache Corp	(575) 394-1503
Eunice, NM	Apache Corp	(575) 394-2743
Eunice, NM	Sheriff's Office	(575) 394-2020
Hobbs, NM	State Police	(575) 392-5588
Eunice, NM	Fire Department	(575) 394-3258
Hobbs, NM	Fire Department	(575) 397-9308
Hobbs, NM	Local Emergency Mgmt. Safety	(575) 397-9231
Hobbs, NM	NM Oil Conservation Division	(575) 393-6161
Carlsbad, NM	Bureau of Land Management	(575) 887-6544
Santa Fe, NM	NM Emergency Response Commission	(505) 476-9600 24 hr, (505) 827-9126
Washington, DC	Nat'l Emergency Response Center	(800) 424-8802
Other Services		
Well Control	GSM Engineering	(806) 358-6894
Snubbing	Cudd Pressure Control	(915) 699-0139
Pumping	BJ Services	(575) 392-5556

SURFACE USE PLAN OF OPERATIONS
Apache Corporation
Pall Mall #2
Section 14-T. 20 S., R. 38 E, UL A

1. Existing Roads:

Exhibit 'A' is a well pad Topo map showing 150' offsets to the East, West, South and North. This topographic map demonstrates that the area of the well pad is essentially flat and will not require any significant cuts or fills. This map also shows the well pad proximity to existing electric lines, fences and pipe lines. No obstructions to location construction are indicated.

The size of the drilling pad will depend upon the rig selected to drill the well, but it is anticipate that the outer limits of the area to be disturbed will be no larger than 100' to the North, 100' to the East, 100' to the South and 100' to the West.

Exhibit 'B' is a Topo/Location General Highway map of the Lea County, New Mexico area surrounding the proposed well pad. Directions to location are: From the Intersection of state hi-way 18 and county road H-45 (water dog road) in Lea Co. N.M., go east on water dog road approximately 0.6 miles. Turn right and go south approximately 0.3 miles, turn left and go east approximately 0.2 miles this location is south approximately 70 feet.

Exhibit 'C' is the Vicinity Map, showing area townships and ranges. All existing roads will be maintained in a condition to or better than the current conditions. Any new roads will be constructed to BLM specifications.

2. New or Reconstructed Access Roads:

The existing lease roads will be used to the extent possible. No new road is planned for this well. See Exhibit 'C'.

3. Locations of Existing Wells in a One-mile radius – Exhibit 'D'

1. Water Wells – None known
2. Disposal wells – None known
3. Drilling wells – None known
4. Producing wells- As shown on Exhibit 'D'
5. Abandoned wells – As shown on Exhibit 'D'

4. Location of Existing and / or Proposed Production Facilities

If this well is a producer, Apache Corporation will furnish maps and / or plats showing on site facilities and any additional off site facilities if needed.

5. Location and Type of Water Supply:

Apache Corporation plans to drill the proposed well with fresh and brine water which will be transported by truck over the proposed and existing roads.

6. **Source of Construction Material:**

If possible, construction will be obtained from excavation of drill site. If additional material is needed, it will be purchased from a local source. Material will be transported over the access route as described above.

7. **Methods of Handling Waste Material:**

A. Drill cuttings will be separated by a series of solids removal equipment and stored in steel containment pits and then hauled to a state- approved disposal facility.
B. All trash, junk and other waste material will be contained in trash cages or bins to prevent scattering. When the job is completed all contents will be removed and disposed of in an approved sanitary land fill.
C. Salts remaining after completion of well will be picked up by supplier including broken sacks.
D. Sewage from any living quarters will drain into holding tanks and be cleaned out periodically. A Porta-John will be provided for the rig crews. This equipment will be properly maintained during the drilling operations and removed upon completion of the well.
E. Drilling fluids will be contained in the steel pits in a closed circulating system. Fluids will be cleaned and reused Water produced during testing will be contained in the steel pits and disposed of at a state approved disposal facility. Any oil or condensate produced will be stored in test tanks until sold and hauled from the site.

8. **Ancillary Facilities:**

A. No camps or airstrips to be constructed.

9. **Well Site Layout:**

A. Exhibit 'E' shows a typical location and rig layout. No specific rig has been identified or contracted to drill this well at the time of this application.
B. Mud pits in the closed circulating system will be steel pits and the cuttings will be stored in steel containment pits. NMOCD form C-144 has been submitted to the OCD for approval.
C. Cuttings will be stored in steel pits until they are hauled to a state-approved disposal facility
D. If the well is a producer, those areas of the location not essential top production facilities will be reclaimed and seeded per BLM requirements.

10. **Plans for Restoration of Surface**:

Rehabilitation of the location will start in a timely manner after all drilling operations cease. The type of reclamation will depend on whether the well is a producer or a dry hole.

Drainage systems, if any, will be reshaped to the original configuration with provisions made to alleviate erosion. These may need to be notified in certain circumstances to prevent inundation of the location's pad and surface facilities. After the area has been shaped and contoured, topsoil form the spoil pile will be loaced overt the disturbed area to the extent possible. Re-vegetation. Procedures will comply with BLM standards.

If the well is a dry hole, the pad and road area will be re-contoured to match the existing terrain. Topsoil will be spread to the extent possible. Re-vegetation will comply with BLMM standards.

Should the well be a producer, the previously noted procedures will apply to those areas which are not required from production facilities.

11. Surface and Mineral Ownership:

The surface land is owned by the Eugenia L. Pierce, P.O. Box 1969 Eunice, NM 88231. The sub surface minerals are Federal, owned by USA, Department of Interior, managed by the Bureau of Land Management.

Leases Issued NM 8065

Operating Rights Apache Corp 100%

Lease Acreage Description:

Township 20 South, Range 38 East UL A
Section 14: NE NE
Total Lease Acres:
40

12. Other Information:

A. Topography consists of a sloping plane with loose tan sands. Vegetation is mainly Yucca, Mesquite and Shin Oak.
B. The well site is on the surface owned by the Eugenia L. Pierce, P.O. Box 1969 Eunice, NM 88231. The land is used mainly for cattle ranching, and oil and gas production. A surface use agreement is in place for the drilling of this well (see Exhibit F). Apache settled land usage for location at $7,000.00.
C. Boone Archeological Services, LLC, Carlsbad, New Mexico will be conducting an archaeological survey of the proposed well which covers the drilling location, production facilities, and access road, including a corridor along said access road for power and flow lines. His report is attached, and file separately.
D. There are no known occupancies within 1 ½ miles of this location.

Operator Certification:

I hereby certify that I, or persons under my direct supervision, have inspected the drill site and access roads proposed herein; that I am familiar with the conditions which presently exist; that I have knowledge of State and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with operations proposed herein will be performed in conformity with this plan and the terms and conditions under which it is approved. I also certify that I, or APACHE CORPORATION am responsible for the operations conducted under this application. This statement is subject to the provisions of 18 U.S.C. 1001 for the filing of a false statement.

Date August 18, 2009

Name and Title Curt Jones – Drilling Engineer

8-18-09

PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	APACHE CORPORATION
LEASE NO.:	NMNM80650
WELL NAME & NO.:	PALL MALL #2
SURFACE HOLE FOOTAGE:	400' FNL & 330' FEL
BOTTOM HOLE FOOTAGE	
LOCATION:	Section 14, T. 20 S., R 38 E., NMPM
COUNTY:	Lea County, New Mexico

TABLE OF CONTENTS

Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

I. GENERAL PROVISIONS

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

II. PERMIT EXPIRATION

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

IV. NOXIOUS WEEDS

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

VI. CONSTRUCTION

A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Hobbs Field Station at (575) 393-3612 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

B. TOPSOIL

There is no measurable soil on this well pad to stockpile. No topsoil stockpile is required.

C. RESERVE PITS

The operator has applied for a closed-loop system. The operator shall properly dispose of drilling contents at an authorized disposal site.

D. FEDERAL MINERAL MATERIALS PIT

If the operator elects to surface the access road and/or well pad, mineral materials extracted during construction of the reserve pit may be used for surfacing the well pad and access road and other facilities on the lease.

Payment shall be made to the BLM prior to removal of any additional federal mineral materials from any site other than the reserve pit. Call the
Carlsbad Field Office at (575) 234-5972.

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation.

The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

VII. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified a minimum of 4 hours in advance for a representative to witness:

a. Spudding well
b. Setting and/or Cementing of all casing strings
c. BOPE tests

☒ **Lea County**
Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240,
(575) 393-3612

1. A Hydrogen Sulfide (H2S) Drilling Plan should be activated 500 feet prior to drilling into the **Blinebry** formation. **As a result, the Hydrogen Sulfide area must meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.**

2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.

3. **The record of the drilling rate along with the CAL/GR/N well log run from TD to surface will be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.**

B. CASING

Changes to the approved APD casing and cement program require submitting a sundry and receiving approval prior to work. Failure to obtain approval prior to work will result in an Incident of Non-Compliance being issued.

Centralizers required on surface casing per Onshore Order 2.III.B.1.f.

Wait on cement (WOC) time for a primary cement job will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater for all casing strings. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. See individual casing strings for details regarding lead cement slurry requirements.

No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

Possible lost circulation in the Glorietta formation.

1. The **8-5/8** inch surface casing shall be set **at approximately 1600 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt)** and cemented to the surface.

    a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with a surface log readout will be used or a cement bond log shall be run to verify the top of the cement.

    b. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.

    c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.

    d. If cement falls back, remedial cementing will be done prior to drilling out that string.

2. The minimum required fill of cement behind the **5-1/2** inch production casing is:

    ☒ Cement to surface. If cement does not circulate, contact the appropriate BLM office.

3. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

C. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17. **If a flare line is installed, it must meet Onshore Order 2 requirements. Steel tank and choke line hoses must be sufficient distance from rig equipment to prevent ignition of gas vapors that may be released.**

2. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **3000 (3M)** psi. **Operator is installing a 3M system and testing as a 2M, approved based on reservoir pressure documentation.**

3. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

    a. The tests shall be done by an independent service company.

    b. The results of the test shall be reported to the appropriate BLM office.

    c. All tests are required to be recorded on a calibrated test chart. **A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.**

    d. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug.

D. DRILL STEM TEST

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

WWI 090709

VIII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

Placement of Production Facilities
Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

Containment Structures
The containment structure shall be constructed to hold the capacity of the entire contents of the largest tank, plus 24 hour production, unless more stringent protective requirements are deemed necessary by the Authorized Officer.

Painting Requirement
All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color
Shale Green, Munsell Soil Color Chart # 5Y 4/2

IX. INTERIM RECLAMATION & RESERVE PIT CLOSURE

A. INTERIM RECLAMATION

If the well is a producer, interim reclamation shall be conducted on the well site in accordance with the orders of the Authorized Officer. The operator shall submit a Sundry Notices and Reports on Wells (Notice of Intent), Form 3160-5, prior to conducting interim reclamation.

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

Operators should work with BLM surface management specialists to devise the best strategies to reduce the size of the location. Any reductions should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

Seed Mixture 1, for Loamy Sites

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (small/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

Species	lb/acre
Plains lovegrass (Eragrostis intermedia)	0.5
Sand dropseed (Sporobolus cryptandrus)	1.0
Sideoats grama (Bouteloua curtipendula)	5.0

*Pounds of pure live seed:

Pounds of seed **x** percent purity **x** percent germination = pounds pure live seed

X. FINAL ABANDONMENT & REHABILITATION REQUIREMENTS

Upon abandonment of the well and/or when the access road is no longer in service the Authorized Officer shall issue instructions and/or orders for surface reclamation and restoration of all disturbed areas.

On private surface/federal mineral estate land the reclamation procedures on the road and well pad shall be accomplished in accordance with the private surface land owner agreement.