12-2666

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Form 3160-3
(April 2004)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.: NMNM-007724

6. If Indian, Allotee or Tribe Name:

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

1a. Type of work: ☑ DRILL ☐ REENTER

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

8. Lease Name and Well No.: BOQUILLAS 18 FEDERAL #1H 392167

2. Name of Operator: APACHE CORPORATION

9. API Well No.: 30-015- 40266

3a. Address: 303 VETERANS AIRPARK LN #3000, MIELAND, TX 79705

3b. Phone No. (include area code): 432-818-1167

10. Field and Pool, or Exploratory: WILDCAT; ABO <97019>

4. Location of Well (Report location clearly and in accordance with any State requirements.*)
At surface: 1980' FNL & 330' FEL
At proposed prod. zone: 1980' FNL & 330' FWL

11. Sec., T. R. M. or Blk. and Survey or Area: UL: H SEC: 18 T16S R30E

14. Distance in miles and direction from nearest town or post office*: 7 MILES NORTH OF LOCO HILLS, NM

12. County or Parish: EDDY

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: 2116.68 ACRES

17. Spacing Unit dedicated to this well: 156.38 ACRES

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.: ~ 50'

19. Proposed Depth: Pilot: ~7850' TVD: ~7850' MD: ~12000' 11787

20. BLM/BIA Bond No. on file: BLM - CO - 1463 NATIONWIDE

21. Elevations (Show whether DF, KDB, RT, GL, etc.): 3767'

22. Approximate date work will start*: As Soon As Approved

23. Estimated duration: ~ 38 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: Sorina L Flores — Name (Printed/Typed): SORINA L. FLORES — Date: 02/07/2012

Title: SUPV OF DRILLING SERVICES

Approved by (Signature): /s/ Don Peterson — Name (Printed/Typed): — Date: MAY 4 2012

Title: FIELD MANAGER — Office: CARLSBAD FIELD OFFICE

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 representations as to any matter within its jurisdiction.

*(Instructions on page 2)

ROSWELL CONTROLLED WATER BASIN

SEE ATTACHED FOR CONDITIONS OF APPROVAL

APPROVAL SUBJECT TO GENERAL REQUIREMENTS AND SPECIAL STIPULATIONS ATTACHED

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
CARLSBAD FIELD OFFICE
620 E. GREENE STREET
CARLSBAD, NM 88220

OPERATOR CERTIFICATION

I HEARBY CERTIFY THAT I, OR SOMEONE UNDER MY DIRECT SUPERVISION, HAVE INSPECTED THE DRILL SITE AND ACCESS ROUTE PROPOSED HEREIN; THAT I AM FAMILIAR WITH THE CONDITIONS WHICH CURRENTLY EXIST; THAT I HAVE FULL KNOWLEDGE OF STATE AND FEDERAL laws applicable to this operation; that the statements made in the APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S>C. 1001 for the filing of false statements.

Executed this 7 day of FEBRUARY, 2012

Well: BOQUILLAS 18 FEDERAL #1H

Operator Name: APACHE CORPORATION

Signature: Bob Lange **Printed Name:** BOB LANGE

Title: Drilling Engineer Date: 2/7/12

Email (optional): bob.lange@apachecorp.com

Street or Box: 303 Veterans Airpark Ln., Ste. 3000

City, State, Zip Code: Midland, TX 79705

Telephone: 432-818-1114

Field Representative (if not above signatory):

Address (if different from above):

Telephone (if different from above):

Email (optional):

Agents not directly employed by the operator must submit a letter from the operator authorizing that the agent to act or file this application on their behalf.

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 & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

Form C-102
Revised July 16, 2010
Submit to Appropriate
District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-015-40266	97019	Wildcat; ABO

Property Code	Property Name	Well Number
39216	BOQUILLAS 18 FEDERAL	#1H

OGRID No.	Operator Name	Elevation
873	APACHE CORPORATION	3767'

Surface Location

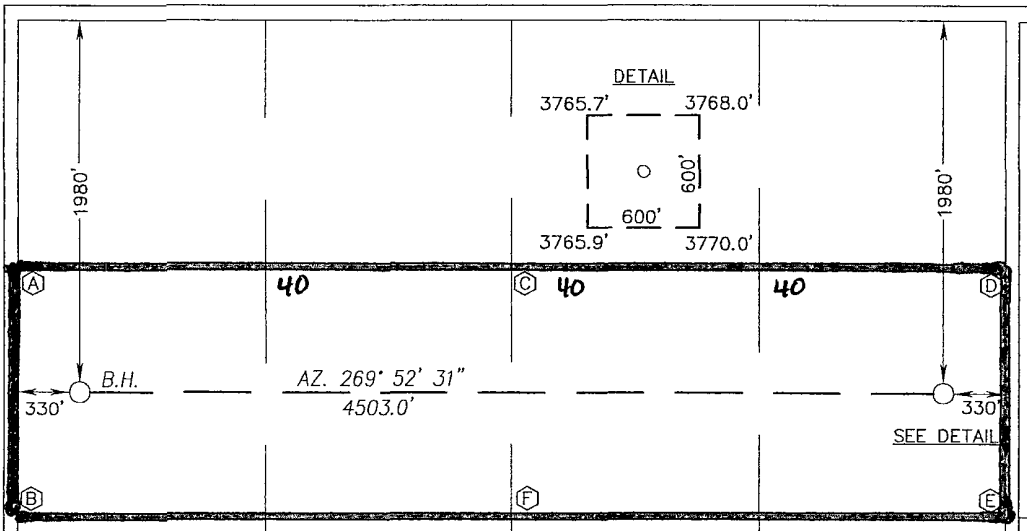
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H	18	16-S	30-E		1980'	NORTH	330'	EAST	EDDY

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
2	18	16-S	30-E		1980'	NORTH	330'	WEST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
156.38			

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



SECTION TABLE
QUARTER & SIXTEENTH CORNER COORDINATES

Ⓐ – Y=700415.7 N, X=596414.9 E
Ⓑ – Y=699095.0 N, X=596419.7 E
Ⓒ – Y=700421.2 N, X=598982.0 E
Ⓓ – Y=700426.9 N, X=601576.6 E
Ⓔ – Y=699106.3 N, X=601581.4 E
Ⓕ – Y=699100 6 N, X=598973 1 E

GEODETIC COORDINATES
NAD 27 NME

SURFACE LOCATION
Y=699767.3 N
X=601249.0 E
LAT.=32.923301° N
LONG.=104 003370° W
LAT.=32° 55' 24" N
LONG.=104° 00' 12" W

BOTTOM HOLE LOCATION
Y=699757.6 N
X=596747.2 E

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.

Sorina L. Flores 12/28/11
Signature Date

Sorina L. Flores
Printed Name

Sorina.flores@apachecorp.com
E-mail Address

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.

JULY 15, 2011
Date of Survey

Signature & Seal of Professional Surveyor:

RONALD J. EIDSON
NEW MEXICO
3239
REGISTERED PROFESSIONAL SURVEYOR

Ronald J. Eidson 8/11/2011

Certificate Number	Gary G. Eidson	12641
	Ronald J. Eidson	3239

CMH — WSC W.O 11 11.1360

DRILLING PLAN: BLM COMPLIANCE

(Supplement to BLM 3160-3)

APACHE CORPORATION (OGRID: 873) BOQUILLAS 18 FEDERAL #1H

Lease #: NMNM-007724 Projected TVD: 7850' MD: 11787' GL: 3767'

SHL: 1980' FNL & 330' FEL BHL: 1980' FNL & 330' FWL UL: H SEC: 18 T16S R30E EDDY COUNTY, NM

1. GEOLOGIC NAME OF SURFACE FORMATION: Eolian/Piedmond Alluvial Deposits

2. ESTIMATED TOPS OF GEOLOGICAL MARKERS & DEPTHS OF ANTICIPATED FRESH WATER, OIL OR GAS:

Rustler	397'	Glorieta	4184' (Oil)
Salt Top	415'	Paddock	4226' (Oil)
Salt Bottom	505'	Blinebry	4793' (Oil)
Yates	1172'	Tubb	5410' (Oil)
Seven Rivers	1315' (Oil)	Drinkard	5602' (Oil)
Queen	1941' (Oil)	ABO	6181' (Oil)
Grayburg	2357' (Oil)	TD	7850'TVD/~11787' MD
San Andres	2734' (Oil)		

Depth to Ground Water: ~ 91'

Fresh water & prospectively valuable minerals, as described by BLM, encountered during drilling, will be recorded by depth & adequately protected. All oil & gas shows within zones of correlative rights will be tested to determine commercial potential. Surface fresh water sands will be protected by setting 13-3/8" csg @ 400' & circ cmt back to surface. All intervals will be isolated by setting 7" csg to TD & circ cmt above the base of 9-5/8" csg. ** Apache proposes to drill a pilot hole to ~7850', run & set 7" csg to pilot hole TD ~ 7850'; Whipstock set @ ~ 7012' KOP @ ~7012', mill window, build curve, TD at ~ 11787' MD.

3. CASING PROGRAM: All casing is new & API approved

HOLE SIZE	DEPTH	OD CSG	WEIGHT	COLLAR	GRADE	COLLAPSE	BURST	TENSION
17-1/2"	0' – 400'	13-3/8".	48#	STC	H-40	1.125	1.0	1.8
12-1/4"	0'-2800'	9-5/8"	40#	LTC	J-55	1.125	1.0	1.8
8-3/4"	0'-7850'	7"	26#	LTC	L-80	1.125	1.0	1.8
6-1/8"	6800'-11787'	4-1/2" liner	11.6#	LTC	L-80	1.125	1.0	1.8

4. CEMENT PROGRAM:

A. **13-3/8" Surface:** **100% excess cmt; cmt to surface**

Lead: 430 sx Class C w/ 1% CaCl2 + 0.25% R38 (14.8 wt, 1.34 yld)

*Comp Strengths : **12 hr** – 813 psi **24 hr** – 1205 psi*

B. **9-5/8" Intermediate:** **50% excess cmt; cmt to surface**

Lead: 430 sx (50:50) Poz C w/ 6% Bentonite + 5% Salt + 0.25% R38 (1.9wt, 2.47 yld)

*Comp Strengths: **12 hr** – 589 psi **24 hr** – 947 psi*

Tail: 190 sx Class C w/ 0.25% R38 (14.8 wt, 1.34 yld)

*Comp Strengths: **12 hr** – 813 psi **24 hr** – 1205 psi*

C. **7" Production: (TOC: ~500' from surface):** **35% excess cmt**

Lead: 530 sx (50/50) H w/ 5% Salt + 0.25% R38 + 6% Bentonite (11.9 wt, 2.48 yld)

*Comp Strengths: **12 hr** – 540 psi **24 hr** – 866 psi*

Tail: 150 sx (50:50) H w/ 5% Salt + 0.25% R38 + 2% Bentonite (14.4 wt, 1.22 yld)

*Comp Strengths: **12 hr** – 1379 psi **24 psi** – 2332 psi*

D. **4-1/2" Liner (NO CMT):** Run & set 4-1/2" 11.6 L-80 LTC Packer/Sleeve liner to 11787' MD

***** The above cmt volumes could be revised pending caliper measurement from open hole logs.*** *For Surface csg: If cmt does not circ to surface, the appropriate BLM office shall be notified & a tag with 1" will be performed at four positions 90 degrees apart to verify cmt depth. If depth is greater than 100' or water is standing in the annulus, remedial cementing will be done. If no water & TOC tag is less than 100', when 100% excess cmt of the annulus volume is run on the primary job, ready-mix will be used to bring cmt to surface.*

5. PROPOSED CONTROL EQUIPMENT

"EXHIBIT 3 & 3A": 13-5/8" 3M psi WP BOP consisting of an annular type preventer. Annular will be nippled up on the 13-5/8" surface csg head & tested to 70% of csg burst. After intermediate csg is set & cemented, a 13 5/8" 3M X 11" 5M "B" section will be installed and an 11" 5M BOP (consisting of an annular type preventer, pipe rams & blind rams) will be installed on the "B" section & utilized continuously until TD is reached. BOP will be tested @ 3M psi (max surface pressure is not expected to exceed 3M psi). BHP calculated to be approx 3454psi. *All BOP's and associated equipment will be tested as per BLM *Drilling Operations Order #2*. BOP will be operated and checked each 24 hr period & blind rams will be operated & checked on each trip out of hole. Tests will be documented on the daily driller's log. *"EXHIBIT 3 & 3A"* also shows a 5M psi choke manifold with a 3" blow down line. Full opening stabbing valve & Kelly cock will be on derrick floor in case of need. No abnormal pressures of temperatures are expected in this well. No nearby wells have encountered any problems.

6. PROPOSED MUD CIRCULATION SYSTEM: (Closed Loop System)

INTERVAL	MW (ppg)	VISC (sec/qt)	FLUID LOSS (cc)	MUD TYPE
0' –400'	8.4	29	NC	Fresh Water
400' – 2800'	9.8 – 10.0	29	NC	Brine
2800' – 7850'	8 9 – 9.0	29	NC	Cut Brine
7200' – 11787'	8.9 – 9.0	29	NC	Cut Brine

***** The necessary mud products for weight addition and fluid loss control will be on location at all times. In order to run open hole logs & casing, the above mud properties may have to be altered to meet these needs.***

7. AUXILIARY WELL CONTROL EQUIPMENT / MONITORING EQUIPMENT:

13-5/8" x 3M psi annular type preventer
11" x 5M psi Double BOP/Blind & pipe ram & 11" 5M psi annular type preventer
5M psi upper and lower Kelly valve
5M Inside BOP and 5M safety valve
11" x 5M psi mud cross – H2S detector on production hole
Gate-type safety valve 3" choke line from BOP to manifold
2" adjustable chokes – 3" blow down line
Fill up line as per Onshore Order 2

8. LOGGING, CORING & TESTING PROGRAM: See COA

- **A.** OH logs: Dual Laterolog, MSFL, CNL, Litho-Density, Gamma Ray, Caliper & Sonic from TD back to 8-5/8" csg shoe.
- **B.** Run CNL, Gamma Ray from 8-5/8" csg shoe back to surface.
- **C.** No cores, DST's or mud logger are planned at this time.
- **D.** Additional testing will be initiated subsequent to setting the 5-1/2" production casing. Specific intervals will be targeted based on log evaluation, geological sample shows & drill stem tests.

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. There is known presence of H_2S in this area. If H_2S is encountered the operator will comply with the provisions of *Onshore Oil & Gas Order No. 6.* No lost circulation is expected to occur. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. Estimated BHP: 3454 psi and estimated BHT : 115°.

10. ANTICIPATED STARTING DATE AND DURATION OF OPERATIONS:

Road and location construction will begin after BLM has approved APD. Anticipated spud date will be as soon after Santa Fe and BLM approval and as soon as rig will be available. Move in operations and drilling is expected to take ~ 38 days. If production casing is run then an additional 90 days will be needed to complete well and construct surface facilities and/or lay flow lines in order to place well on production.

11. OTHER FACETS OF OPERATION:

After running csg, cased hole Gamma Ray, Neutron Collar logs will be run from TD back to all possible productive zones. The Wildcat; ABO formation will be perforated and stimulated in order to establish production. The well will be swab tested & potentialed as an oil well.

Apache Corporation

Eddy County, NM (NAD27 NME)
Boquillas 18 Federal #1H
Boquillas 18 Federal #1H

OH

Plan: Plan #1

Standard Planning Report

23 December, 2011

Scientific Drilling
Directional Drilling Operations

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Site Boquillas 18 Federal #1H
Company:	Apache Corporation	**TVD Reference:**	GL Elev @ 3767.00usft
Project:	Eddy County, NM (NAD27 NME)	**MD Reference:**	GL Elev @ 3767.00usft
Site:	Boquillas 18 Federal #1H	**North Reference:**	Grid
Well:	Boquillas 18 Federal #1H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Project Eddy County, NM (NAD27 NME)

Map System:	US State Plane 1927 (Exact solution)	**System Datum:**	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site Boquillas 18 Federal #1H

Site Position:		**Northing:**	699,767.30 usft	**Latitude:**	32° 55' 23 885 N
From:	Map	**Easting:**	601,249.00 usft	**Longitude:**	104° 0' 12.131 W
Position Uncertainty:	0.00 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.18 °

Well Boquillas 18 Federal #1H

Well Position	**+N/-S**	0.00 usft	**Northing:**	699,767.30 usft	**Latitude:**	32° 55' 23.885 N
	+E/-W	0.00 usft	**Easting:**	601,249.00 usft	**Longitude:**	104° 0' 12.131 W
Position Uncertainty		0.00 usft	**Wellhead Elevation:**		**Ground Level:**	3,767.00 usft

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2011/12/22	7.78	60.75	48,935

Design Plan #1

Audit Notes:

Version:		**Phase:**	PLAN	**Tie On Depth:**	0.00

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	269.88

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0 00	0.00	0.00	0.00	0.00	
7,012.00	0.00	0.00	7,012.00	0.00	0.00	0.00	0.00	0.00	0.00	
7,754.08	88.93	269.88	7,490 00	-1.01	-469.19	11.98	11.98	0.00	269.88	
11,787.39	88.93	269.88	7,565 00	-9.70	-4,501.80	0.00	0.00	0.00	0 00	PBHL-Boquillas 18 Fe

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Site Boquillas 18 Federal #1H
Company:	Apache Corporation	**TVD Reference:**	GL Elev @ 3767.00usft
Project:	Eddy County, NM (NAD27 NME)	**MD Reference:**	GL Elev @ 3767.00usft
Site:	Boquillas 18 Federal #1H	**North Reference:**	Grid
Well:	Boquillas 18 Federal #1H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
389.00	0.00	0.00	389.00	0.00	0.00	0.00	0.00	0.00	0.00
Rustler									
407.00	0.00	0.00	407.00	0.00	0.00	0.00	0.00	0.00	0.00
Top of Salt									
529.00	0.00	0.00	529.00	0.00	0.00	0.00	0.00	0 00	0.00
Base of Salt									
1,164.00	0 00	0.00	1,164.00	0.00	0.00	0.00	0.00	0.00	0.00
Yates									
1,307.00	0.00	0 00	1,307.00	0.00	0.00	0.00	0.00	0.00	0 00
Seven Rivers									
1,933.00	0.00	0.00	1,933.00	0.00	0.00	0.00	0.00	0.00	0.00
Queen									
2,726.00	0.00	0.00	2,726.00	0.00	0.00	0.00	0.00	0.00	0.00
San Andres									
4,176.00	0 00	0.00	4,176.00	0.00	0.00	0.00	0.00	0.00	0.00
Glorieta									
5,402.00	0.00	0.00	5,402.00	0.00	0.00	0.00	0.00	0.00	0.00
Tubb									
6,173.00	0.00	0 00	6,173.00	0 00	0.00	0.00	0.00	0.00	0.00
Abo									
7,012.00	0 00	0.00	7,012.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP Start Build 11.98°/100'									
7,100.00	10.55	269.88	7,099.50	-0.02	-8.08	8.08	11.98	11.98	0.00
7,200.00	22.53	269.88	7,195.19	-0 08	-36.49	36.49	11.98	11.98	0.00
7,300.00	34.52	269.88	7,282 89	-0.18	-84.15	84.16	11.98	11.98	0.00
7,400.00	46 50	269.88	7,358 79	-0.32	-148.99	148.99	11.98	11.98	0 00
7,443.73	51.74	269.88	7,387.40	-0.39	-182.05	182.05	11.98	11.98	0.00
T/Abo Porosity									
7,497.44	58.18	269 88	7,418.22	-0.49	-226.00	226.00	11.98	11.98	0.00
Base Abo Anhydrite									
7,500 00	58.48	269.88	7,419.56	-0.49	-228.17	228.17	11.98	11.98	0.00
7,600.00	70.47	269.88	7,462.57	-0.69	-318 25	318.25	11.98	11.98	0.00
7,700 00	82 45	269 88	7,485.94	-0 89	-415.29	415.30	11.98	11.98	0.00
7,754 08	88.93	269.88	7,490.00	-1.01	-469.19	469.19	11.98	11.98	0.00
Land EOC hold 88.93°									
7,800.00	88.93	269 88	7,490.85	-1.11	-515.10	515.11	0.00	0.00	0.00
7,900.00	88 93	269 88	7,492.71	-1.33	-615 09	615.09	0.00	0 00	0.00
8,000.00	88 93	269 88	7,494.57	-1.54	-715.07	715 07	0.00	0.00	0.00
8,100.00	88 93	269.88	7,496.43	-1.76	-815.05	815.05	0.00	0.00	0.00
8,200.00	88.93	269.88	7,498.29	-1.97	-915.03	915.04	0.00	0.00	0.00
8,300.00	88.93	269.88	7,500.15	-2.19	-1,015.02	1,015.02	0.00	0 00	0.00
8,400.00	88 93	269.88	7,502.01	-2 40	-1,115.00	1,115.00	0.00	0.00	0.00
8,500.00	88 93	269.88	7,503.87	-2.62	-1,214.98	1,214.98	0.00	0 00	0.00
8,600.00	88.93	269.88	7,505.73	-2.83	-1,314.96	1,314.97	0.00	0.00	0.00
8,700.00	88.93	269.88	7,507.59	-3 05	-1,414.95	1,414.95	0 00	0.00	0.00
8,800.00	88.93	269.88	7,509.45	-3.26	-1,514.93	1,514.93	0.00	0.00	0.00
8,900.00	88 93	269.88	7,511.31	-3.48	-1,614.91	1,614.92	0.00	0 00	0.00
9,000 00	88 93	269.88	7,513.17	-3.70	-1,714.89	1,714.90	0.00	0.00	0.00
9,100.00	88 93	269.88	7,515.03	-3.91	-1,814.88	1,814.88	0.00	0.00	0.00
9,200.00	88.93	269.88	7,516.89	-4.13	-1,914.86	1,914.86	0 00	0 00	0.00
9,300 00	88.93	269.88	7,518.75	-4 34	-2,014.84	2,014.85	0 00	0.00	0.00
9,400 00	88.93	269.88	7,520.61	-4 56	-2,114.82	2,114.83	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Site Boquillas 18 Federal #1H
Company:	Apache Corporation	**TVD Reference:**	GL Elev @ 3767.00usft
Project:	Eddy County, NM (NAD27 NME)	**MD Reference:**	GL Elev @ 3767.00usft
Site:	Boquillas 18 Federal #1H	**North Reference:**	Grid
Well:	Boquillas 18 Federal #1H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,500.00	88.93	269.88	7,522.46	-4.77	-2,214.81	2,214.81	0.00	0.00	0.00
9,600.00	88.93	269.88	7,524.32	-4.99	-2,314.79	2,314.79	0 00	0.00	0.00
9,700 00	88.93	269.88	7,526.18	-5.20	-2,414.77	2,414.78	0 00	0.00	0.00
9,800.00	88.93	269.88	7,528.04	-5.42	-2,514.75	2,514 76	0.00	0.00	0 00
9,900.00	88.93	269.88	7,529.90	-5.63	-2,614.74	2,614.74	0.00	0.00	0.00
10,000.00	88.93	269.88	7,531.76	-5.85	-2,714 72	2,714.73	0.00	0.00	0.00
10,100.00	88.93	269.88	7,533.62	-6.06	-2,814.70	2,814.71	0 00	0 00	0.00
10,200.00	88.93	269.88	7,535.48	-6.28	-2,914.68	2,914 69	0 00	0.00	0.00
10,300.00	88.93	269.88	7,537.34	-6.50	-3,014.67	3,014.67	0.00	0.00	0.00
10,400.00	88.93	269.88	7,539.20	-6.71	-3,114.65	3,114.66	0.00	0.00	0.00
10,500.00	88.93	269.88	7,541.06	-6.93	-3,214.63	3,214.64	0.00	0.00	0.00
10,600.00	88.93	269.88	7,542.92	-7.14	-3,314.61	3,314.62	0.00	0.00	0.00
10,700.00	88 93	269.88	7,544.78	-7.36	-3,414.60	3,414.60	0.00	0.00	0 00
10,800.00	88.93	269.88	7,546.64	-7.57	-3,514.58	3,514.59	0.00	0.00	0.00
10,900.00	88.93	269.88	7,548.50	-7.79	-3,614.56	3,614.57	0.00	0.00	0.00
11,000.00	88 93	269.88	7,550.36	-8.00	-3,714.54	3,714.55	0.00	0.00	0.00
11,100.00	88.93	269.88	7,552.22	-8.22	-3,814.53	3,814.54	0.00	0.00	0.00
11,200.00	88.93	269.88	7,554.08	-8.43	-3,914.51	3,914.52	0.00	0.00	0.00
11,300.00	88.93	269.88	7,555.94	-8.65	-4,014.49	4,014.50	0.00	0.00	0.00
11,400.00	88.93	269.88	7,557.80	-8 87	-4,114.47	4,114.48	0.00	0.00	0.00
11,500.00	88.93	269.88	7,559.66	-9.08	-4,214.46	4,214.47	0.00	0.00	0.00
11,600.00	88.93	269.88	7,561.52	-9.30	-4,314.44	4,314.45	0.00	0.00	0.00
11,700.00	88.93	269.88	7,563.38	-9.51	-4,414.42	4,414.43	0.00	0.00	0.00
11,787.39	88.93	269.88	7,565.00	-9 70	-4,501.80	4,501.81	0.00	0.00	0.00
PBHL-Boquillas 18 Fed #1H									

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
PBHL-Boquillas 18 Fed : - plan hits target center - Point	0.00	0.00	7,565.00	-9.70	-4,501.80	699,757.60	596,747.20	32° 55' 23.925 N	104° 1' 4.946 W

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Site Boquillas 18 Federal #1H
Company:	Apache Corporation	**TVD Reference:**	GL Elev @ 3767.00usft
Project:	Eddy County, NM (NAD27 NME)	**MD Reference:**	GL Elev @ 3767.00usft
Site:	Boquillas 18 Federal #1H	**North Reference:**	Grid
Well:	Boquillas 18 Federal #1H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
389.00	389.00	Rustler		1.07	269.88
407.00	407.00	Top of Salt		1.07	269.88
529.00	529.00	Base of Salt		1.07	269.88
1,164.00	1,164.00	Yates		1.07	269.88
1,307.00	1,307.00	Seven Rivers		1.07	269.88
1,933.00	1,933.00	Queen		1.07	269.88
2,726.00	2,726.00	San Andres		1.07	269.88
4,176.00	4,176.00	Glorieta		1.07	269.88
5,402.00	5,402.00	Tubb		1.07	269.88
6,173.00	6,173.00	Abo		1.07	269.88
7,443.73	7,387.40	T/Abo Porosity		1.07	269.88
7,497.44	7,418.22	Base Abo Anhydrite		1.07	269.88

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
7,012.00	7,012.00	0.00	0.00	KOP Start Build 11.98°/100'
7,754.08	7,490.00	-1.01	-469.19	Land EOC hold 88.93°

Apache CORPORATION

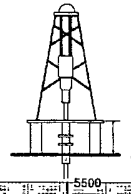
Boquillas 18 Federal #1H

Eddy County, NM (NAD27 NME)

Northing: (Y) 699767.30

Easting: (X) 601249.00

Plan #1



Ground Elev 3767 00

Azimuths to Grid North

True North -0 18°

Magnetic North: 7 60°

Magnetic Field

Strength: 48934 8nT

Dip Angle 60 75°

Date 2011/12/22

Model IGRF2010

To convert a Magnetic Direction to a Grid Direction, Add 7 60°

To convert a True Direction to a Grid Direction, Subtract 0 18°

Scientific Drilling

Directional Drilling Operations

WELL DETAILS: Boquillas 18 Federal #1H

Ground Level 3767 00

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0 00	0 00	699767 30	601249 00	32° 55' 23 885 N	104° 0' 12 131 W	

PROJECT DETAILS Eddy County, NM (NAD27 NME)

Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001

System Datum: Mean Sea Level

SITE DETAILS: Boquillas 18 Federal #1H

Site Centre Northing: 699767 30
Easting: 601249 00

Positional Uncertainty: 0 00
Convergence: 0 18
Local North: Grid

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	
2	7012 00	0 00	0 00	7012 00	0 00	0 00	0 00	0 00	0 00	
3	7754 08	88 93	269 88	7490 00	-1 01	-469 19	11 95	269 88	469 19	
4	11787 39	88 93	269 88	7565 00	-9 70	-4501 80	0 00	0 00	4501 81	PBHL-Boquillas 18 Fed #1H

Map System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone Name: New Mexico East 3001

Local Origin: Site Boquillas 18 Federal #1H, Grid North

Latitude: 32° 55' 23 885 N
Longitude: 104° 0' 12 131 W

Grid East: 601249 00
Grid North: 699767 30
Scale Factor: 1 000

Geomagnetic Model: IGRF2010
Sample Date: 22-Dec-11
Magnetic Declination: 7 78°
Dip Angle from Horizontal: 60 75°
Magnetic Field Strength: 48935

To convert a Magnetic Direction to a Grid Direction, Add 7 60°
To convert a Magnetic Direction to a True Direction, Add 7 78° East
To convert a True Direction to a Grid Direction, Subtract 0 18°

FORMATION TOP DETAILS

TVDPath	MDPath	Formation	DipAngle	DipDir
389 00	389 00	Rustler	1 07	269 88
407 00	407 00	Top of Salt	1 07	269 88
529 00	529 00	Base of Salt	1 07	269 88
1164 00	1164 00	Yates	1 07	269 88
1307 00	1307 00	Seven Rivers	1 07	269 88
1933 00	1933 00	Queen	1 07	269 88
2726 00	2726 00	San Andres	1 07	269 88
4176 00	4176 00	Glorieta	1 07	269 88
5402 00	5402 00	Tubb	1 07	269 88
6173 00	6173 00	Abo	1 07	269 88
7367 40	7443 73	T/Abo Porosity	1 07	269 88
7418 22	7497 44	Base Abo Anhydrite	1 07	269 88

DESIGN TARGET DETAILS

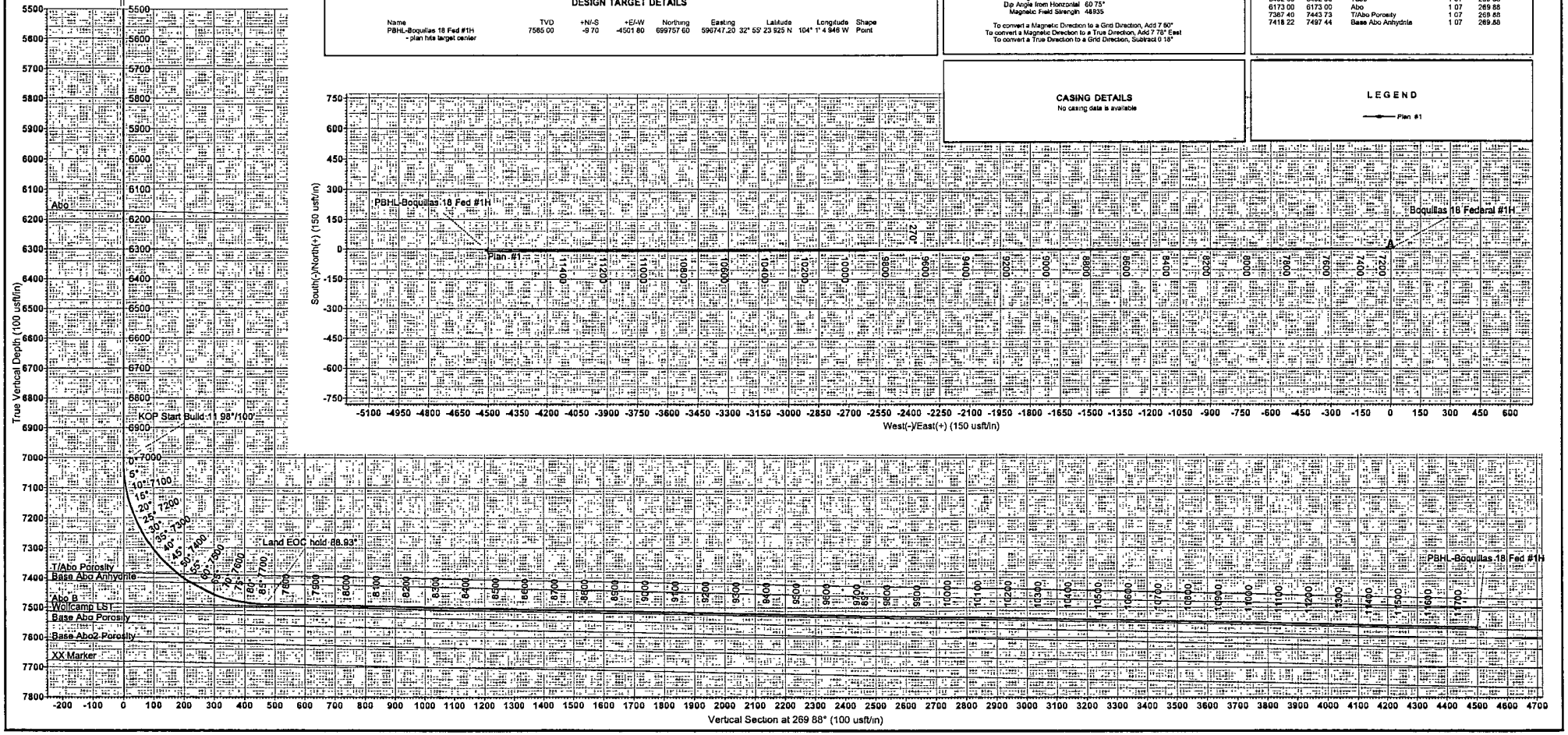
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
PBHL-Boquillas 18 Fed #1H - plan hits target center	7585 00	-9 70	-4501 80	699757 60	596747 20	32° 55' 23 925 N	104° 1' 4 946 W	Point

CASING DETAILS

No casing data is available

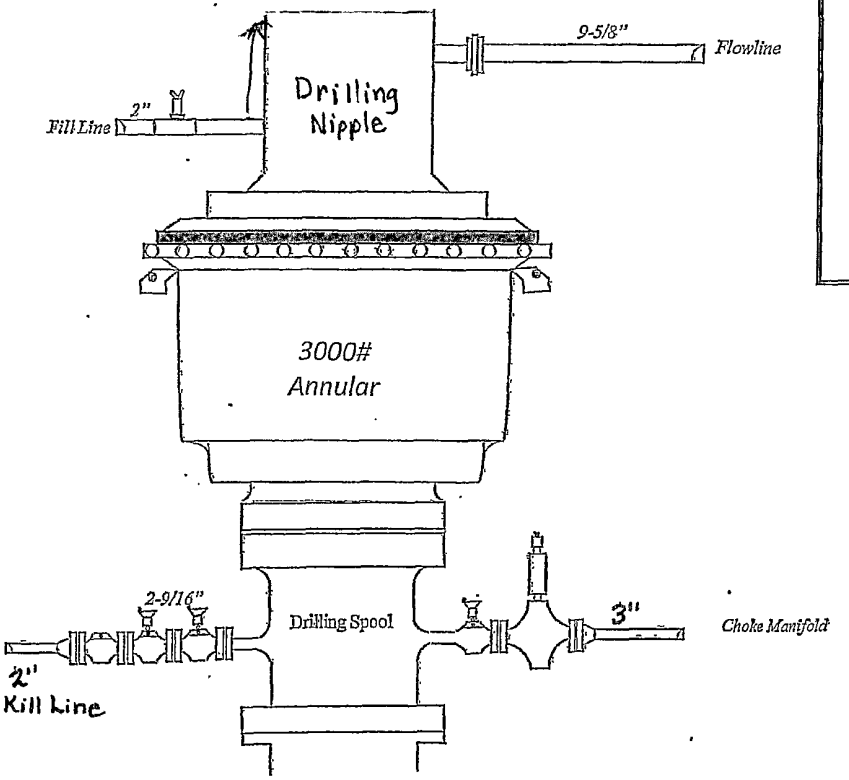
LEGEND

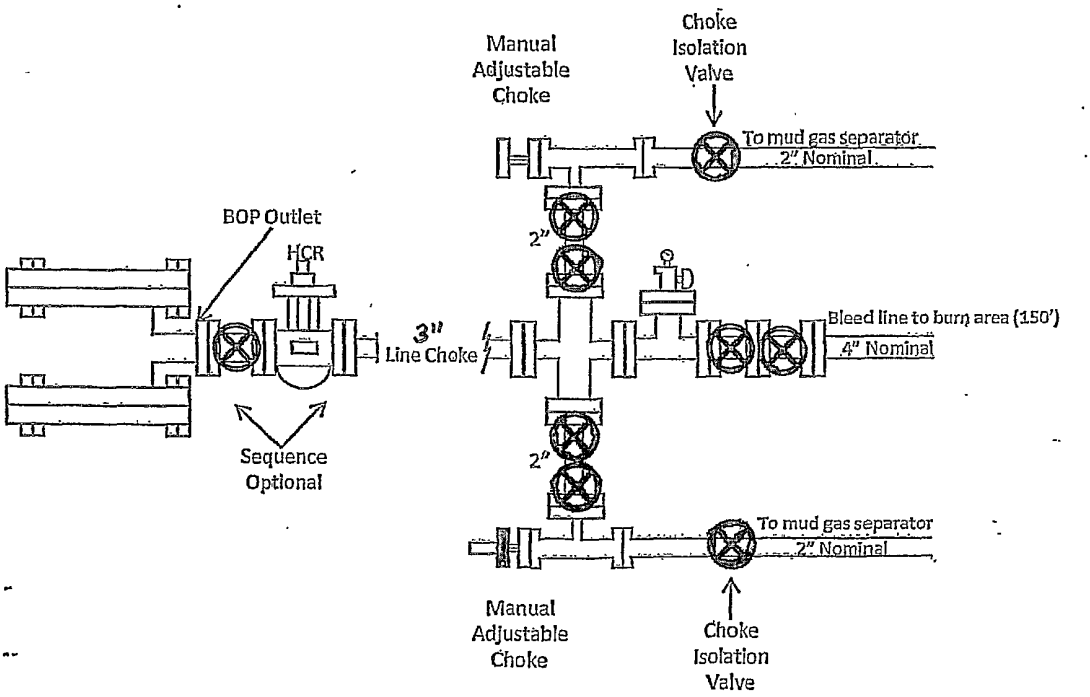
Plan #1



13-5/8" 3M psi
BOPE & Choke Manifold
Exhibit 3

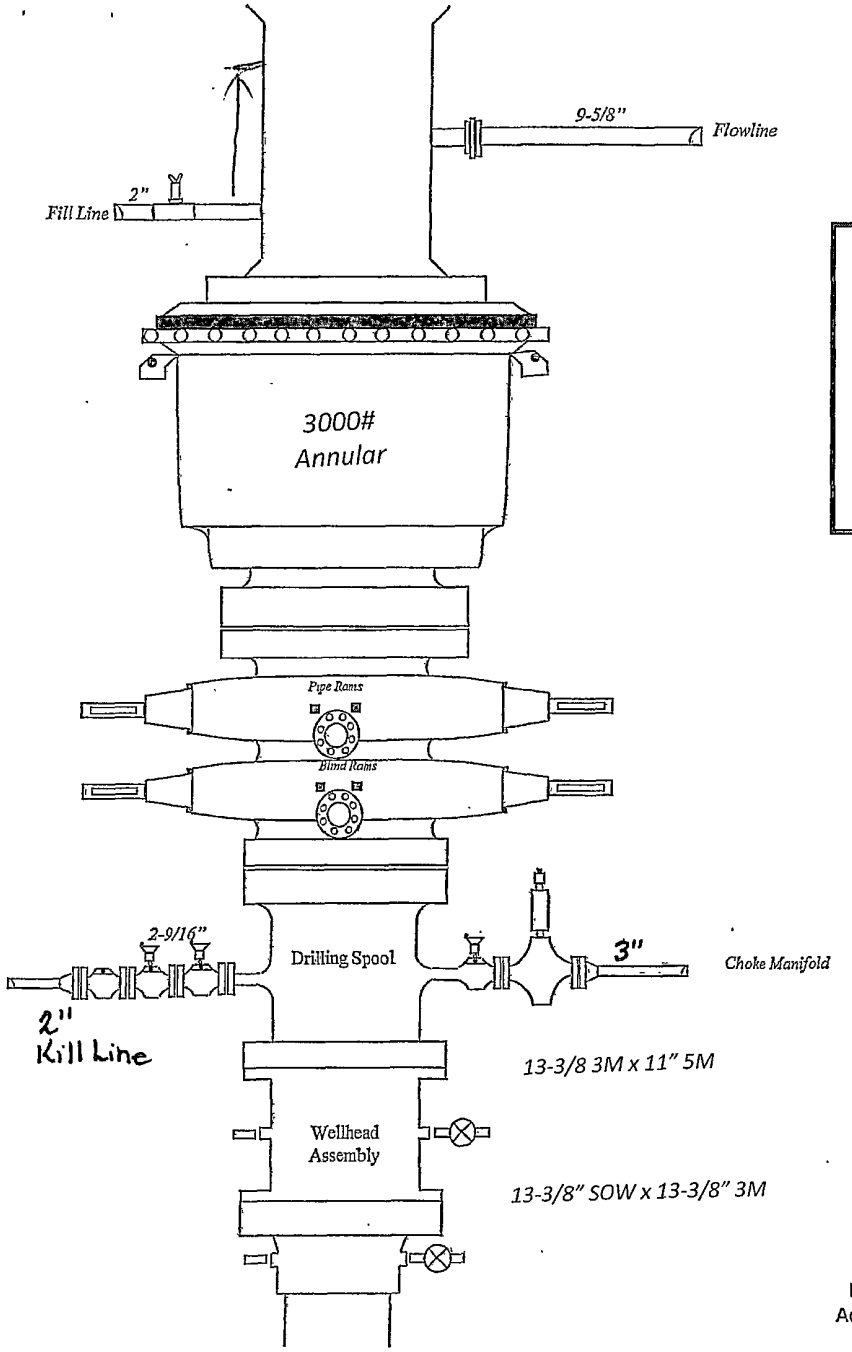
All valve & lines on choke manifold are 2" unless noted.
Exact manifold configuration may vary

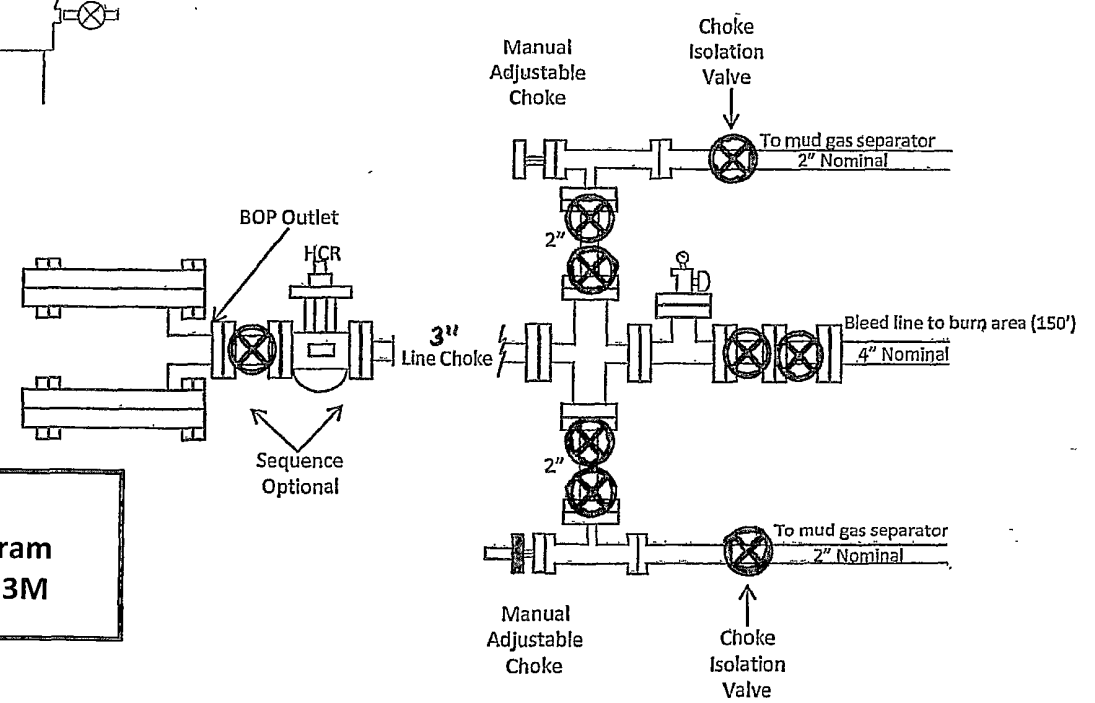




11" 5M psi
BOPE & Choke Manifold
EXHIBIT 3A

All valve & lines on choke manifold are 2" unless noted. Exact manifold configuration may vary

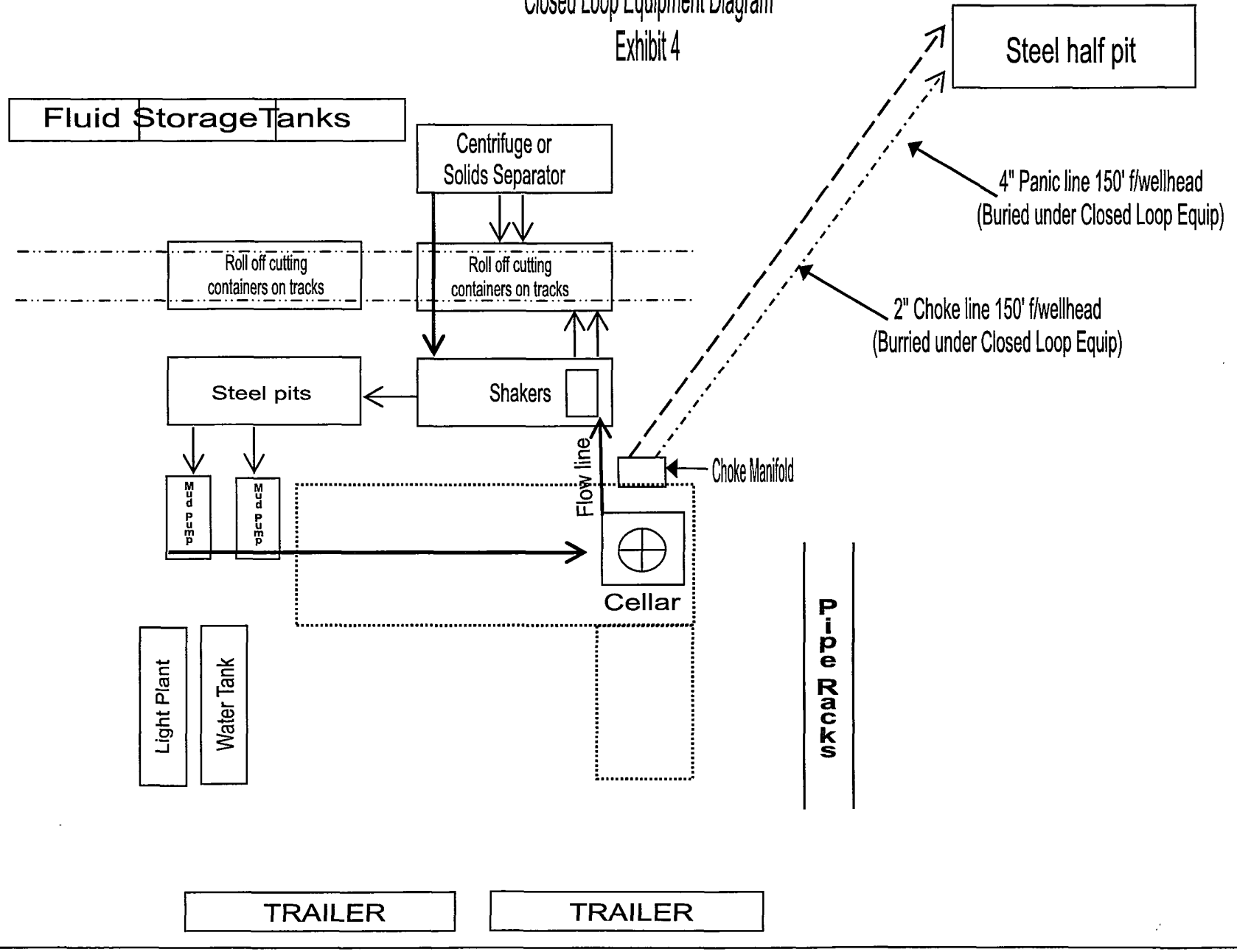




Choke Manifold Diagram
5M Service tested to 3M

Apache

Closed Loop Equipment Diagram
Exhibit 4



DESIGN PLAN, OPERATING & MAINTENANCE PLAN, & CLOSURE PLAN
FOR OCD FOR C-144 5/14/12

BOQUILLAS 19 FEDERAL #1H

DESIGN PLAN

Fluid & cuttings coming from drilling operations will pass over the Shale Shaker with the cuttings going to the Sundance Inc / CRI haul off bin and the cleaned fluid returning to the working steel pits.

Equipment includes:

2 – 500 bbl steel frac tanks (fresh water for drilling)
2 – 180 bbl steel working pits
3 – 75 bbl steel haul off bins
2 – Pumps (6-1/2" x 10" PZ 10 or equivalent)
1 – Shale shaker
1 – Mud cleaner – QMAX MudStripper

OPERATING AND MAINTENANCE PLAN

Inspection to occur every tour for proper operation of system and individual components. If any problems are found they will be repaired and/or corrected immediately.

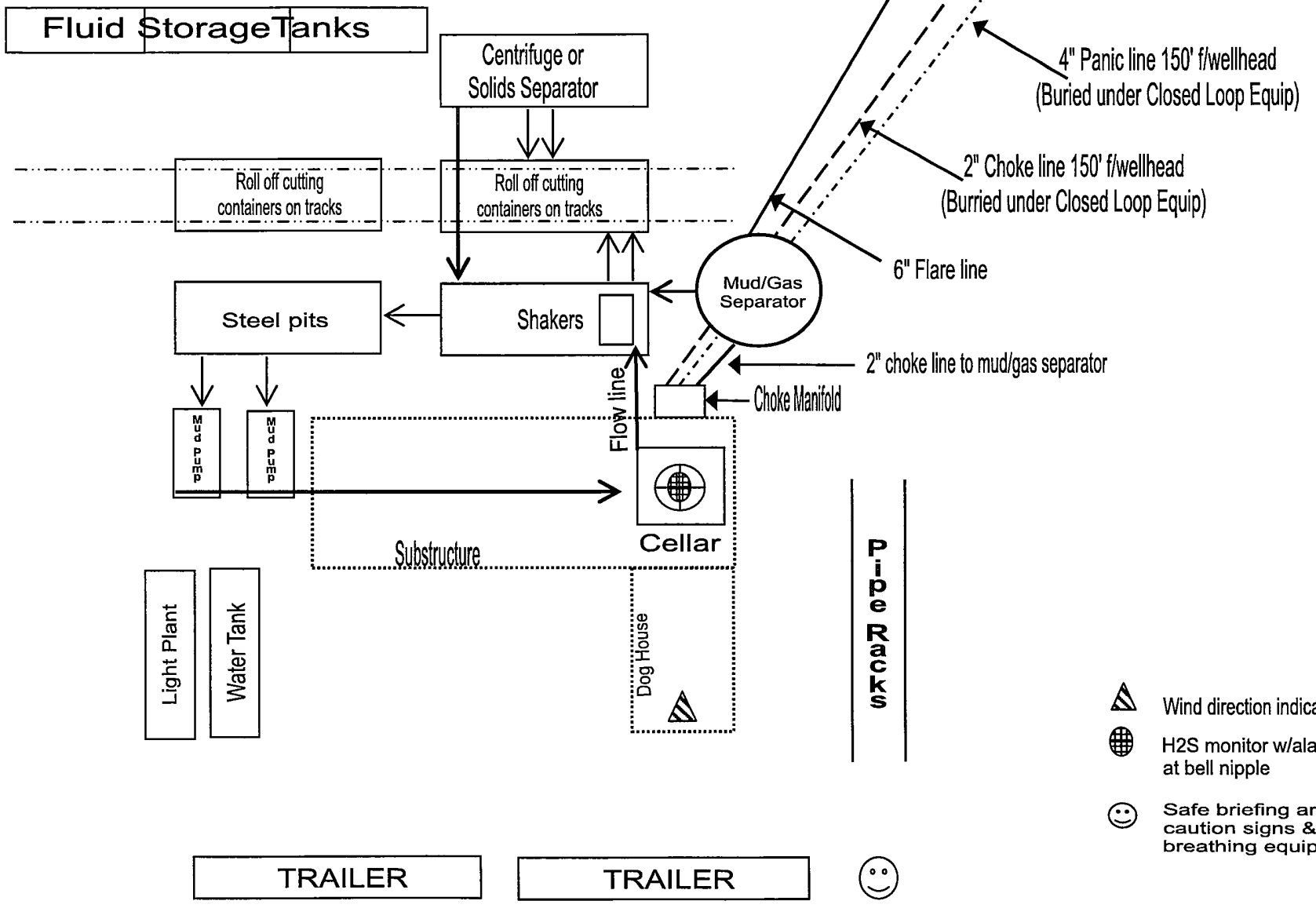
CLOSURE PLAN

All haul bins containing cuttings will be removed from location and hauled to Sundance Incorporated (NM-01-0003) disposal site located 3 miles East of Eunice, NM on the Texas border / Controlled Recovery, Inc's (NM-01-0006) disposal site located near mile marker 66 on Highway 62/180.

Sorina L. Flores
Supv. of Drilling Services

Apache

Drilling Location
H2S Safety Equipment Diagram
Exhibit 3A



HYDROGEN SULFIDE (H_2S) DRILLING OPERATIONS PLAN

Hydrogen Sulfide Training:

All regularly assigned personnel, contracted or employed by Apache Corporation will receive training from qualified instructor(s) in the following areas prior to commencing drilling possible hydrogen sulfide bearing formations in this well:

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

Supervisory personnel will be trained in the following areas:

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

There will be an initial training session just prior to encountering a known or probable H_2S zone (within 3 days or 500') and weekly H_2S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H_2S Drilling Operations Plan and the Public Protection Plan. This plan shall be available at the well site. All personnel will be required to carry documentation that they have received proper training.

H_2S SAFETY EQUIPMENT AND SYSTEMS:

Well Control Equipment that will be available & installed if H_2S is encountered:

- Flare Line with electronic igniter or continuous pilot.
- Choke manifold with a minimum of one remote choke.
- Blind rams & pipe rams to accommodate all pipe sizes with properly sized closing unit.
- Auxiliary equipment to include: annular preventer, mud-gas separator, rotating head & flare gun with flares

Protective Equipment for Essential Personnel:

- Mark II Survive-air 30 minute units located in dog house & at briefing areas, as indicated on wellsite diagram.

H2S Dection and Monitoring Equipment:

- Two portable H_2S monitors positioned on location for best coverage & response. These units have warning lights & audible sirens when H_2S levels of 20 ppm are reached.
- One portable H_2S monitor positioned near flare line.

H2S Visual Warning Systems:

- Wind direction indicators are shown on wellsite diagram.
- 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.

Mud Program:

- The Mud Program has been designed to minimize the volume of H_2S circulated to the surface. Proper mud weights, safe drilling practices & the use of H_2S scavengers will minimize hazards when penetrating H_2S bearing zones.
- A mud-gas separator and H_2S gas buster will be utilized as needed.

Metallurgy:

- All drill strings, casing, tubing, wellhead, blowout preventers, drilling spool, kill lines, choke manifold & lines, & valves will be suitable for H_2S service.
- All elastomers used for packing & seals shall be H_2S trim.

Communication:

- Cellular telephone and 2-way radio communications in company vehicles, rig floor and mud logging trailer.

HYDROGEN SULFIDE (H_2S) CONTINGENCY PLAN

Assumed 100 ppm ROE = 3000'

100 ppm H_2S concentration shall trigger activation of this plan.

Emergency Procedures

In the event of a release of gas containing 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 control the release.
- Use the "buddy system" to ensure no injuries occur during the response
- Take precautions to avoid personal injury during this operation.
- Contact operators and/or local officials to aid in operation. See list of phone numbers attached.
- Have received training in the :
  - Detection of H_2S, and
  - Measures for protection against the gas,
  - Equipment used for protection and emergency response.

Ignition of Gas source

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO_2). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever this is an ignition of the 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 = I	10 ppm	100 ppm/hr	600 ppm
Sulfur Dioxide	SO_2	2.21 Air = I	2 ppm	N/A	1000 ppm

Contacting Authorities

Apache Corporation personnel must liaison with local and state agencies to ensure a 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. Agencies will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared with 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's response must be in coordination with the State of New Mexico's *"Hazardous Materials Emergency Response Plan" (HMER).*

WELL CONTROL EMERGENCY RESPONSE PLAN

I. GENERAL PHILOSOPHY

Our objective is to ensure that during an emergency, a predetermined procedure is followed so that prompt decisions can be made based on accurate information.

The best way to handle and emergency is with an experienced organization set up for the sole purpose of solving the problem. The *Well Control Emergency Response Team* was organized to handle dangerous & expensive well control problems. The *Team* is structured such that each individual can contribute the most from his area of expertise. Key decision-makers are determined prior to an emergency to avoid confusion about who is in charge.

If the well is flowing uncontrolled at the surface or subsurface, *The Emergency Response Team* will be mobilized. The *Team* is customized for the people currently on the Apache staff. Staff changes may require a change in the plan.

II. EMERGENCY PROCEDURE ON DRILLING OR COMPLETION OPERATIONS

A. In the event of an emergency the *Drilling Foreman or Tool-Pusher* will immediately contact only one of the following starting with the first name listed:

Name	Office	Mobile	Home
Danny Laman – Drlg Superintendent	432-818-1022	432-634-0288	432-520-3528
Bob Lange – Drilling Engineer	432-818-1114	432-661-6404	
Bobby Smith – Drilling Manager	432-818-1020	432-556-7701	
Jeff Burt – EH&S Coordinator		432-631-9081	

***This one phone call will free the Drilling Foreman to devote his full time to securing the safety of personnel & equipment. This call will initiate the process to mobilize the Well Control Emergency Response Team. Apache maintains an Emergency Telephone Conference Room in the Houston office. This room is available for us by the Permian Region. The room has 50 separate telephone lines.*

B. The Apache employee contacted by the Drilling Foreman will begin contacting the rest of the *Team*. If **Danny Laman** is out of contact, **Bob Lange** will be notified.

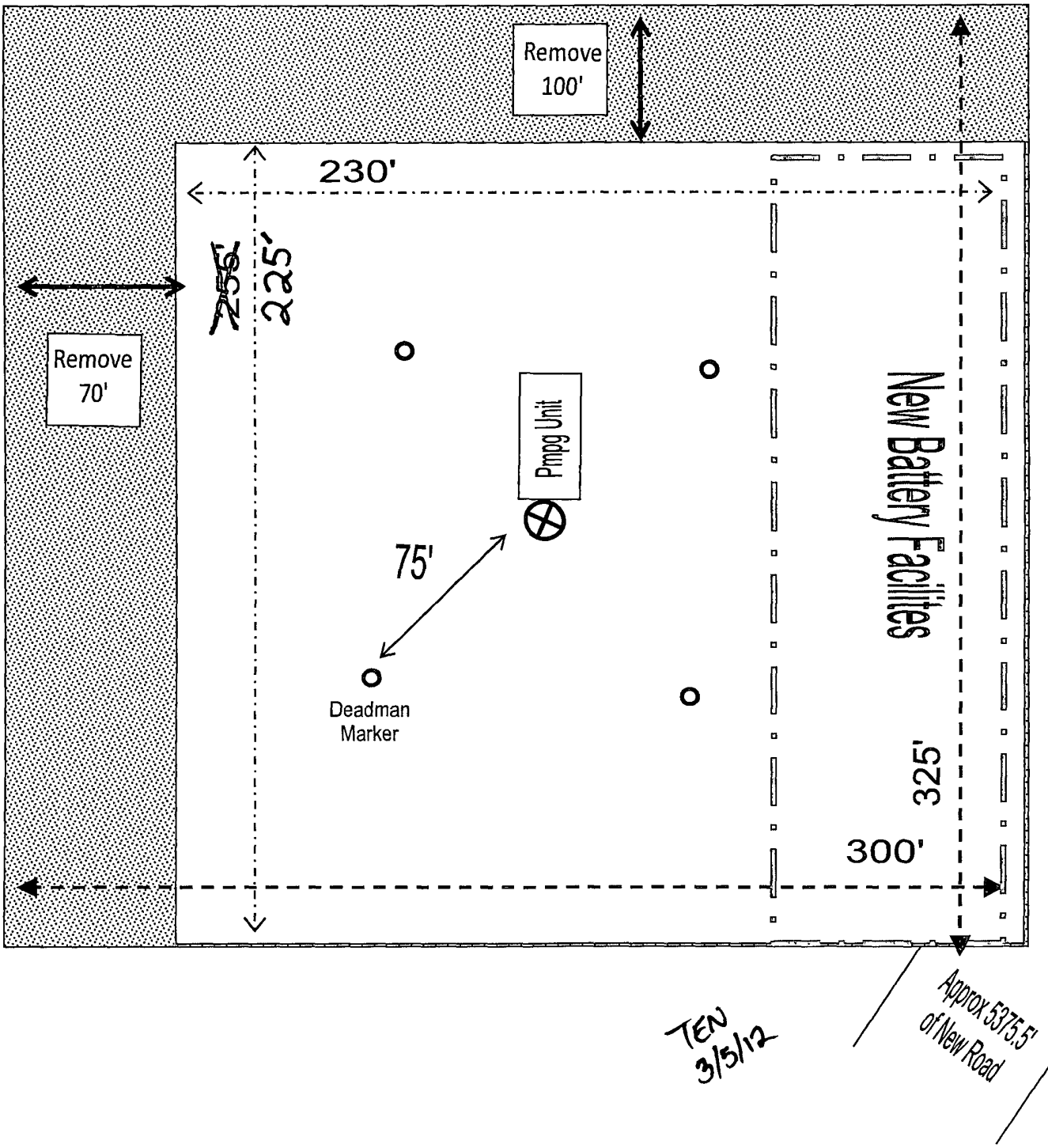
C. If a member of the *Emergency Response Team* is away from the job, he must be available for call back. Telephone numbers should be left with secretaries or a key decision-maker.

D. Apache's reporting procedure for spills or releases of oil or hazardous materials will be implemented when spills or releases have occurred or are probable.

EMERGENCY RESPONSE NUMBERS:

SHERIFF DEPARTMENT	
Eddy County	575-887-7551
Lea County	575-396-3611
FIRE DEPARTMENT	911
Artesia	575-746-5050
Carlsbad	575-885-2111
Eunice	575-394-2111
Hobbs	575-397-9308
Jal	575-395-2221
Lovington	575-396-2359
HOSPITALS	911
Artesia Medical Emergency	575-746-5050
Carlsbad Medical Emergency	575-885-2111
Eunice Medical Emergency	575-394-2112
Hobbs Medical Emergency	575-397-9308
Jal Medical Emergency	575-395-2221
Lovington Medical Emergency	575-396-2359
AGENT NOTIFICATIONS	
Bureau of Land Management	575-393-3612
New Mexico Oil Conservation Division	575-393-6161

INTERIM RECLAMATION LAYOUT
BOQUILLAS 18 FEDERAL #1H
EXHIBIT #6



PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	APACHE CORPORATION
LEASE NO.:	NM-7724
WELL NAME & NO.:	BOQUILLAS 18 FEDERAL #1H
SURFACE HOLE FOOTAGE:	1980' FNL & 330' FEL
BOTTOM HOLE FOOTAGE	1980' FNL & 330' FWL
LOCATION:	Section 18, T.16 S., R.30 E., NMPM
COUNTY:	Eddy 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.

☐ **General Provisions**
☐ **Permit Expiration**
☐ **Archaeology, Paleontology, and Historical Sites**
☐ **Noxious Weeds**
☒ **Special Requirements**
- Road Construction Requirement
- Lesser Prairie-Chicken Timing Stipulations
- Ground-level Abandoned Well Marker

☒ **Construction**
- Notification
- Topsoil
- Closed Loop System
- Federal Mineral Material Pits
- Well Pads
- Roads

☐ **Road Section Diagram**
☒ **Drilling**
- Logging Requirements
- Waste Material and Fluids

☒ **Production (Post Drilling)**
- Well Structures & Facilities

☐ **Interim Reclamation**
☒ **Final Abandonment & Reclamation**

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.

V. SPECIAL REQUIREMENT(S)

Road Construction Requirement:
The entire access road for this well shall be constructed upon the existing two track road from the well to the newly constructed caliche road as staked and platted in the APD.

As stated in the APD, the access road shall have a driving surface that does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed twenty (20) feet. The ditches shall be included in the 20 feet wide area.

Timing Limitation Stipulation / Condition of Approval for lesser prairie-chicken: Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 feet from the source of the noise.

Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well. For more installation details, contact the Carlsbad Field Office at 575-234-5972.

VI. CONSTRUCTION

A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-6235 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

The operator shall stockpile the topsoil in a low profile manner in order to prevent wind/water erosion of the topsoil. The topsoil to be stripped is approximately 6 inches in depth. The topsoil will be used for interim and final reclamation.

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

D. FEDERAL MINERAL MATERIALS PIT

Payment shall be made to the BLM prior to removal of any federal mineral materials. 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.

F. ON LEASE ACCESS ROADS

Road Width
The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed twenty (20) feet.

Surfacing
Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

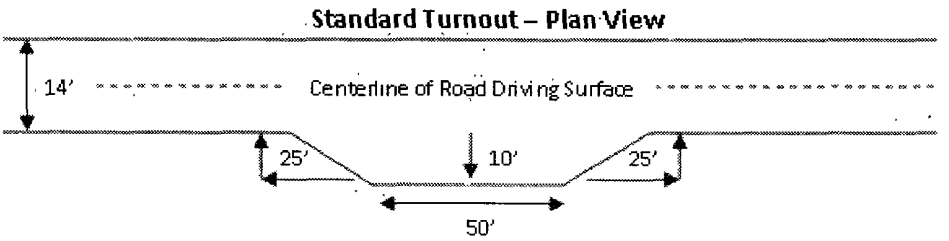
Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

Crowning
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

Ditching
Ditching shall be required on both sides of the road.

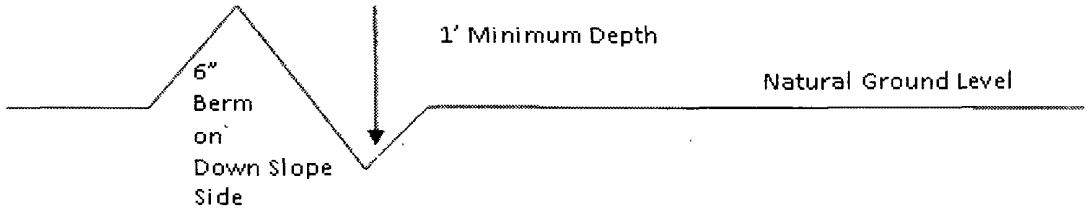
Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall be constructed on all blind curves. Turnouts shall conform to the following diagram:



Drainage
Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outsloping and insloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

Cross Section of a Typical Lead-off Ditch



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

Formula for Spacing Interval of Lead-off Ditches

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

$$\text{400 foot road with 4\% road slope: } \frac{400'}{4\%} + 100' = 200' \text{ lead-off ditch interval}$$

Culvert Installations
Appropriately sized culvert(s) shall be installed at the deep waterway channel flow crossing.

Cattleguards
An appropriately sized cattleguard(s) sufficient to carry out the project shall be installed and maintained at fence crossing(s).

Any existing cattleguard(s) on the access road shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattleguard(s) that are in place and are utilized during lease operations.

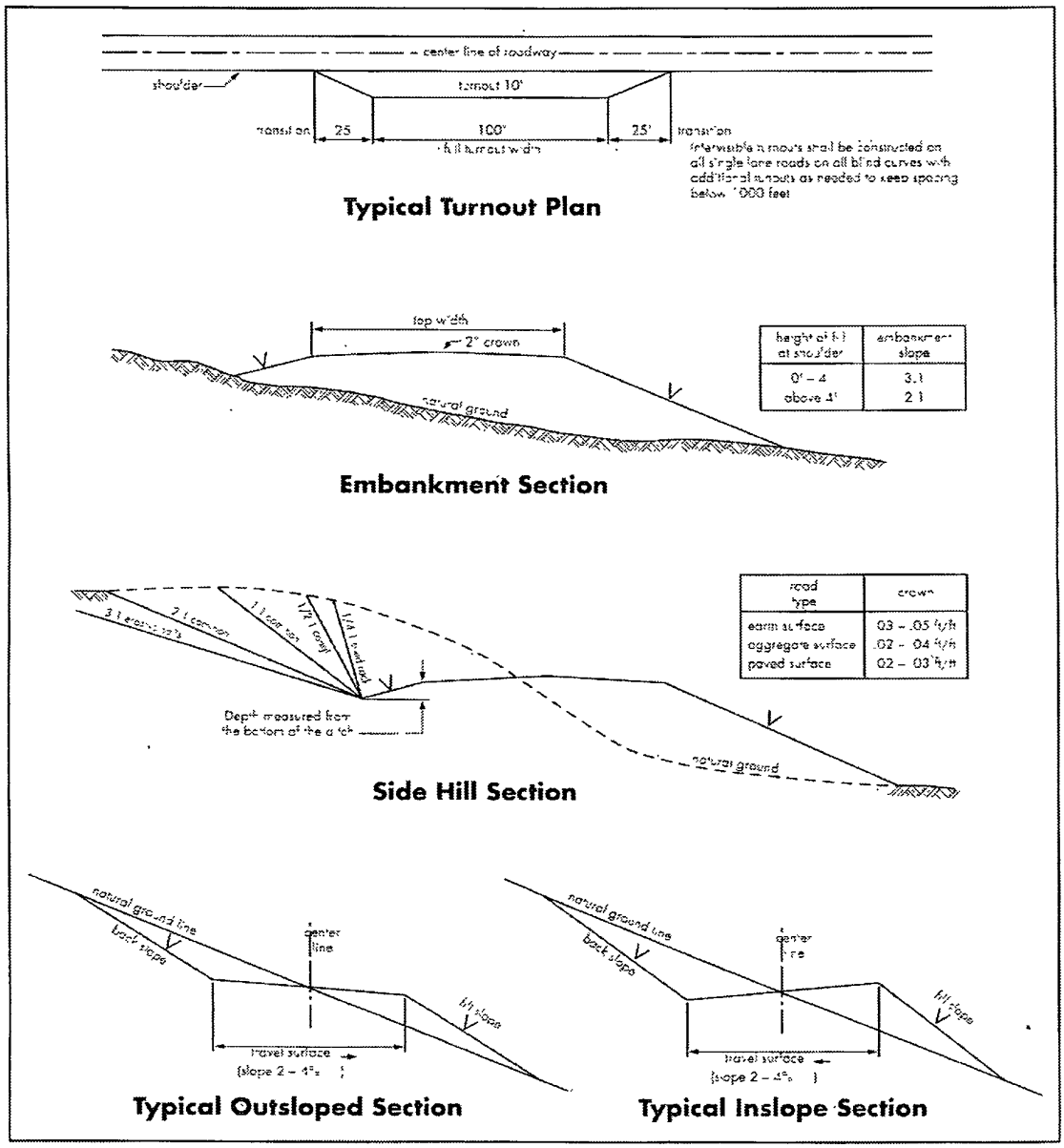
Fence Requirement

Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fence(s).

Public Access
Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

Figure 1 – Cross Sections and Plans For Typical Road Sections



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

☒ **Eddy County**
Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (575) 361-2822

1. **Although Hydrogen Sulfide has not been reported in the area, it is always a potential hazard. If Hydrogen Sulfide is encountered, please report measured amounts 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. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a "Major" violation.**

3. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works is located, this does not include the dog house or stairway area.

4. **The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. 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 program need prior approval if the items substituted are of lesser grade or different casing size. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.).

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

Wait on cement (WOC) time prior to drilling out 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. DURING THIS WOC TIME, NO DRILL PIPE, ETC. SHALL BE RUN IN THE HOLE. 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 San Andres Formation.

1. The **13-3/8** inch surface casing shall be set at **approximately 400 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 surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.

    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 **9-5/8** inch intermediate casing is:

    ☒ Cement to surface. If cement does not circulate see B.1.a, c-d above.

3. The minimum required fill of cement behind the 7 inch production casing is:

    ☒ Cement as proposed. Operator shall provide method of verification.

4. The minimum required fill of cement behind the **4-1/2** inch production Liner is:

   ☒ Cement not required – Packer/Port system to be used.

5. 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.

2. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **2000 (2M)** psi.

   a. **For surface casing only:** If the BOP/BOPE is to be tested against casing, the wait on cement (WOC) time for that casing is to be met (see WOC statement at start of casing section). Independent service company required.

3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **9-5/8** inch intermediate casing shoe shall be **3000 (3M)** psi.

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

   a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

b. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (18 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).

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

d. 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.**

e. 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.

E. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

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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

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.

Within six (6) months of well completion, operators should work with BLM surface management specialists (Jim Amos: 575-234-5909) to devise the best strategies to reduce the size of the location. Interim reclamation 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 that is free of contaminants 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.

All disturbed areas after they have been satisfactorily prepared need to be reseeded with the seed mixture provided below.

Upon completion of interim reclamation, the operator shall submit a Sundry Notices and Reports on Wells, Subsequent Report of Reclamation (Form 3160-5).

X. FINAL ABANDONMENT & RECLAMATION

At final abandonment, well locations, production facilities, and access roads must undergo "final" reclamation so that the character and productivity of the land are restored.

Earthwork for final reclamation must be completed within six (6) months of well plugging. All pads, pits, facility locations and roads must be reclaimed to a satisfactory revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact.

After all disturbed areas have been satisfactorily prepared, these areas need to be revegetated with the seed mixture provided below. Seeding should be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (Jim Amos: 575-234-5909).

Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well.

Seed Mixture 2, for Sandy 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 of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/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
Sand dropseed (Sporobolus cryptandrus)	1.0
Sand love grass (Eragrostis trichodes)	1.0
Plains bristlegrass (Setaria macrostachya)	2.0

*Pounds of pure live seed:

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