

CIR

7036

ATS-08-421

PLEASE EXPEDITE RIG AVAILABLE 04/03/08±

Form 3160-3  
(April 2004)

568

OCD-ARTESIA

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

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

5. Lease Serial No.  
NM-19848

6. Indian Allottee or Tribe Name  
SECRETARY'S POTASH

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		7. If Unit or CA Agreement, Name and No.
1b. Type of Well: <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		8. Lease Name and Well No. 37172 CYPRESS "33" FEDERAL # 1H
2. Name of Operator POGO PRODUCING COMPANY, LLC. 256949		9. API Well No. 30-015-36321
3a. Address 700 MILAM SUITE 3100 HOUSTON, TEXAS 77002	3b. Phone No. (include area code) 432-685-8100	10. Field and Pool, or Exploratory CEDAR CANYON-BONE SPRING 11520
4. Location of Well (Report location clearly and in accordance with any State requirements.) At surface 660' FSL & 330' FEL SECTION 33 T23S-R29E At proposed prod. zone 622' FSL & 993' FWL SECTION 33 T23S-R29E		11. Sec., T. R. M. or Blk. and Survey or Area SECTION 33 T23S-R29E
14. Distance in miles and direction from nearest town or post office* Approximately 8 miles East of Loving New Mexico		12. County or Parish EDDY CO.
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 330'		13. State NM
16. No. of acres in lease 960	17. Spacing Unit dedicated to this well 160	
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. NA	19. Proposed Depth MD-11,522' Deep TVD-7714' 7766' with 7.08	20. BLM/BIA Bond No. on file Nationwide WYB-000296
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 2949' GL.	22. Approximate date work will start* WHEN APPROVED	23. Estimated duration 50 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.  | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).    |
| 2. A Drilling Plan.   | 5. Operator certification  |
| 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). | 6. Such other site specific information and/or plans as may be required by the authorized officer. |

25. Signature <i>Joe T. Janica</i>	Name (Printed/Typed) Joe T. Janica	Date 02/27/08
Title Permit Engineer		
Approved by (Signature) <i>/s/ Jesse J. Juen</i>	Name (Printed/Typed) <i>/s/ Jesse J. Juen</i>	Date APR 25 2008
Title ACTING STATE DIRECTOR	Office NM STATE 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)

NOTE: New Pit Rule  
NMAC 19-15-17

Carlsbad Controlled Water Basin  
SEE ATTACHED FOR  
CONDITIONS OF APPROVAL

Approver subject to General Requirements  
& Special Stipulations Attached

## 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

1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy, Minerals and Natural Resources DepartmentForm C-102  
Revised October 12, 2005

Submit to Appropriate District Office

State Lease - 4 Copies

Fee Lease - 3 Copies

## OIL CONSERVATION DIVISION

1220 South St. Francis Dr.  
Santa Fe, New Mexico 87505☐ AMENDED REPORT

## WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code 11520	Pool Name CEDAR CANYON-BONE SPRING
Property Code	Property Name CYPRESS "33" FEDERAL	Well Number 1H
OGRID No. 256999	Operator Name POGO PRODUCING COMPANY, LLC	Elevation 2949'

## Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	33	23 S	29 E		660	SOUTH	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
M	33	23 S	29 E		622	SOUTH	993	WEST	EDDY
Dedicated Acres 160	Joint or Infill	Consolidation Code	Order No.						

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

<p><b>BOTTOM HOLE LOCATION</b> LAT - N32°15'20.9" LONG - W103°59'41.6" SPC- N.: 456955.548 E.: 645961.037 (NAD-83)</p>		<p><b>SURFACE LOCATION</b> LAT - N32°15'21.10" LONG - W103°58'55.50" SPC- N.: 456993.458 E.: 649917.909 (NAD-83)</p>		<p><b>OPERATOR CERTIFICATION</b></p> <p>I hereby certify that the information contained 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 pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.</p> <p><i>Joe T. Janica</i> Signature Date 02/27/08 Joe T. Janica Printed Name</p>
<p><b>SUPPLYOR CERTIFICATION</b></p> <p>I hereby certify that the well location shown or was plotted from field notes of surveys made by me or under my son, and that the same is true and to the best of my belief.</p> <p>SEPTEMBER 12, 2007</p> <p>Date Surveyed Signature &amp; Seal of Professional Surveyor W.O. No. 18545 Certificate No. Gary Jones 7977 BASIN SURVEYS</p>		<p><b>POINT OF ENTRY INTO PAY</b></p> <p>667' FEL &amp; 657' FSL</p>		

PROJECT AREA

PRODUCING AREA

EXHIBIT "A"

NM-019848

3955'

330'

660'

2940.3'

2966.0'

2967.2'

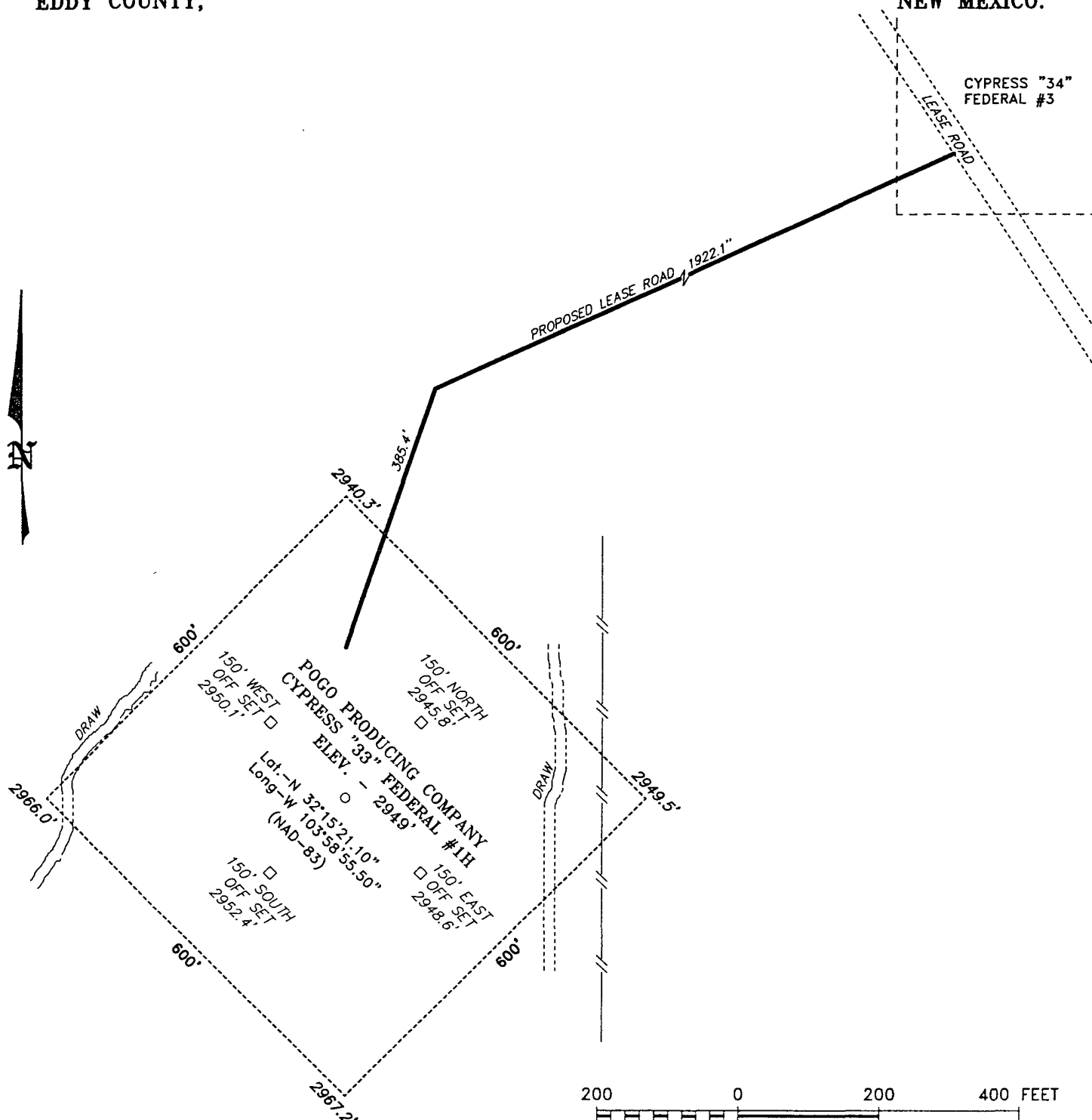
667'

330'

993'

B.H.

SECTION 33, TOWNSHIP 23 SOUTH, RANGE 29 EAST, N.M.P.M.,  
EDDY COUNTY, NEW MEXICO.



Directions to Location:

FROM THE JUNCTION OF STATE HWY 128 AND CO. RD. 793 (RAWHIDE), GO SOUTH 3.5 MILES TO LEASE ROAD, ON LEASE ROAD GO WEST 3.6 MILES TO LEASE ROAD, ON LEASE ROAD GO SOUTH 0.6 THENCE SOUTHEAST 0.3 MILES TO GOODNIGHT "27" #1 LOCATION, CONTINUE SOUTH TO CYPRESS "34" #2 LOCATION AND PROPOSED LEASE ROAD.

**BASIN SURVEYS** P.O. BOX 1786 - HOBBS, NEW MEXICO

W.O. Number: 18545 Drawn By: J. SMALL

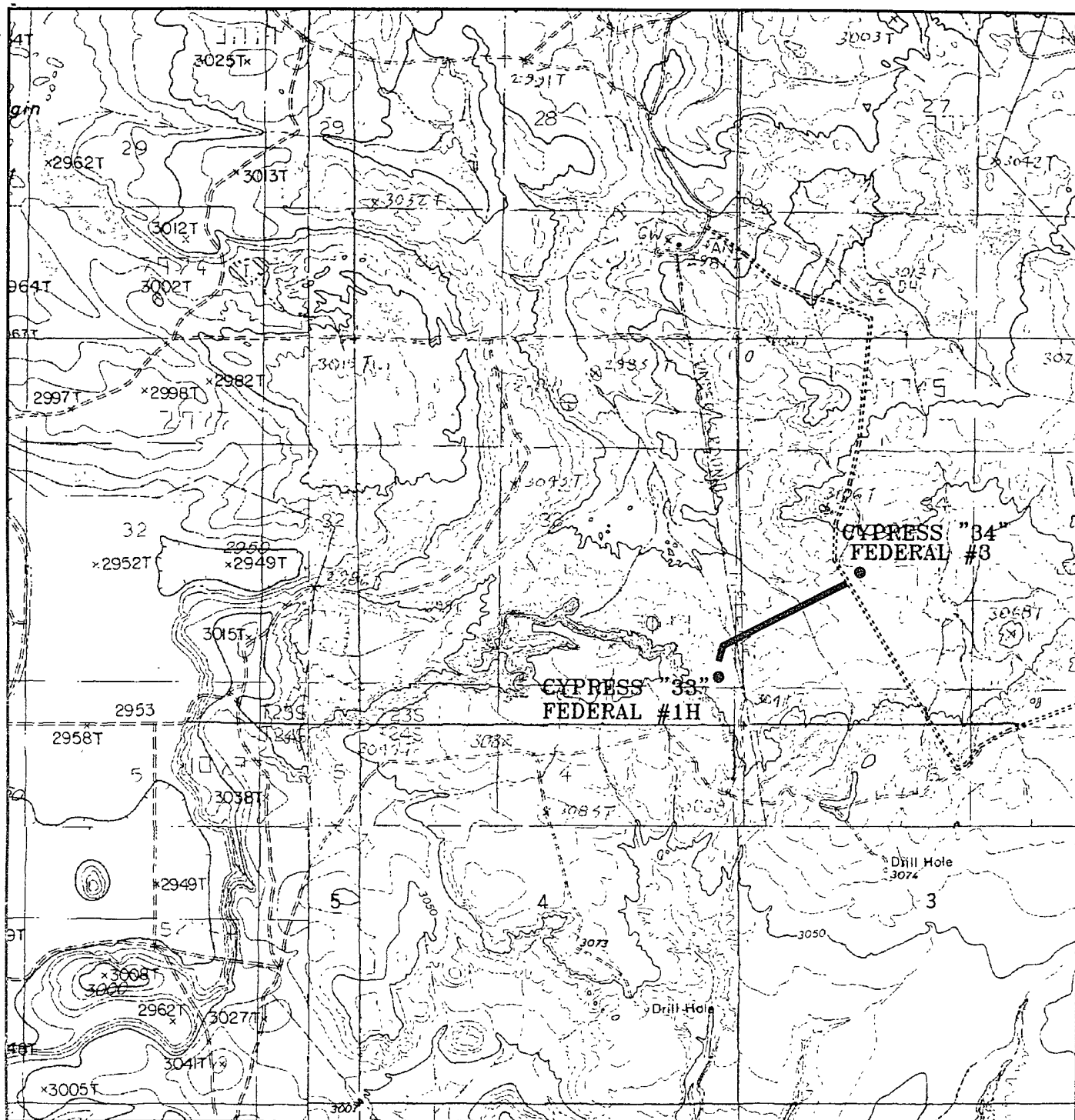
Date: 09-13-2007 Disk: JMS 18545W

**POGO PRODUCING CO.**

REF: CYPRESS "33" FEDERAL #1H / Well Pad Topo

THE CYPRESS "33" FEDERAL #1H LOCATED 660' FROM THE SOUTH LINE AND 330' FROM THE EAST LINE OF SECTION 33, TOWNSHIP 23 SOUTH, RANGE 29 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO.

Survey Date: 09-12-2007 Sheet 1 of 1 Sheets



# CYPRESS "33" FEDERAL #1H

Located at 660' FSL and 330' FEL  
 Section 33, Township 23 South, Range 29 East,  
 N.M.P.M., Eddy County, New Mexico.



P.O. Box 1786  
 1120 N. West County Rd.  
 Hobbs, New Mexico 88241  
 (505) 393-7316 - Office  
 (505) 392-3074 - Fax  
 basinsurveys.com

W.O. Number: JMS 18545T

Survey Date: 09-12-2007

Scale: 1" = 2000'

Date: 09-13-2007

**POGO  
 PRODUCING  
 COMPANY**



# CYPRESS "33" FEDERAL #1H

Located at 660' FSL and 330' FEL  
Section 33, Township 23 South, Range 29 East,  
N.M.P.M., Eddy County, New Mexico.



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(505) 393-7316 - Office  
(505) 392-3074 - Fax  
basinsurveys.com

W.O. Number: JMS 18545TR

Survey Date: 09-12-2007

Scale: 1" = 2 MILES

Date: 09-13-2007

POGO  
PRODUCING  
COMPANY

APPLICATION TO DRILL

POGO PRODUCING COMPANY  
CYPRESS "33" FEDERAL #1H  
UNIT "P" SECTION 33  
T23S-R29E EDDY CO. NM

1. Move in rat hole machine. Drill 26" hole to 40'. Set 40' of 20" conductor pipe and cement to surface with Redi-mix.
2. Drill 17½" hole to 550'. Run and set 550' of 13 3/8" 48# H-40 ST&C casing. Cement with 450 Sx. of Class "C" 65/35/6 POZ, tail in with 200 Sx. of Class "C" cement + 2% CaCl, circulate cement to surface. For yields see page 2.
3. Drill 12½" hole to 2950'. Run and set 2950' of 9 5/8" 36# J-55 ST&C casing. Cement with 800 Sx. of 65/35/6 Class "C" POZ cement + 5% salt, tail in with 200 Sx. of Class "C" cement + 2% CaCl, circulate cement to surface. for yield see page 2
4. Drill 8½" hole to 7987'±MD, reduce hole size to 7 7/8" and drill to a MD of 11,520±'. Run and set 11,520' of 5½" casing as follows: 4300' of 5½" 17# N-80 BT&C, 7220' of 5½" 17# N-80 LT&C casing. Cement in three stages with DV Tools at 4500±' and 2500±'. Cement 1st stage with 1900 Sx. of Class "H" cement + additives, cement 2nd stage with 650 Sx. of Class "C" cement + additives, cement 3rd stage with 600 Sx. of Class "C" cement + additives, tail in with 100 Sx. of Class "C" cement + additives, circulate cement to surface. Check Page 2 for yields.

# APPLICATION TO DRILL

POGO PRODUCING COMPANY  
CYPRESS "33" FEDERAL #1H  
UNIT "P" SECTION 33  
T23S-R29E EDDY CO. NM

In response to questions asked under Section II of Bulliten NTL-6, the following information on the above will be provided.

1. LOCATION: 660' FSL & 330' FEL SECTION 33 T23S-R29E EDDY CO. NM
2. ELEVATION ABOVE SEA LEVEL: 2949' GL
3. GEOLOGICAL NAME OF SURFACE FORMATION: Quaternary Aeolian Deposits.
4. DRILLING TOOLS AND ASSOCIATED EQUIPMENT: Conventional rotary drilling rig using drilling mud as a circulating medium for solids removal from hole.
5. PROPOSED DRILLING DEPTH: TVD 7714'± MD-11,522'±
6. ESTIMATED TOPS OF GEOLOGICAL FORMATIONS:

Basal Anhydrite	2936'	Brushy Canyon	5288'
Delaware Lime	3160'	Bone Spring	6981'
Delaware Sand	3190'	TVD	7769'
Cherry Canyon	4040'	MD	11,520'

## 7. POSSIBLE MINERAL BEARING FORMATIONS:

Bone Spring Oil

## 8. CASING PROGRAM:

HOLE SIZE	INTERVAL	OD OF CASING...	WEIGHT	THREAD	COLLAR	GRADE	CONDITION
26"	0-40'	20"	NA	NA	NA	Conductor	New
17½"	0-550'	13 3/8"	48#	8-R	ST&C	H-40	New
12½"	0-2950'	9 5/8"	36#	8-R	ST&C	J-55	New
8½" & 7 7/8"	0-11,522'±	5½"	17#	8-R BUTTRESS	LT&C	N-80	New

DESIGN FACTORS: Collapse 1.125 Burst 1.00 Body Yield 1.5 Joint Strength 8-R 1.8 Buttress 1.6

# APPLICATION TO DRILL

POGO PRODUCING COMPANY  
CYPRESS "33" FEDERAL #1H  
UNIT "P" SECTION 33  
T23S-R29E EDDY CO. NM

## 9. CASING CEMENTING & SETTING DEPTHS:

20"	Conductor	Set 40' of 20" Conductor pipe and cement to surface with Redi-mix.
13 3/8"	Surface	550' of 13 3/8" 48# H-40 ST&C casing. Cement with 450 Sx. of 65/35/6 Class "C" POZ 6% Gel, + 5# Salt/Sx. Yield 1.89, tail in with 200 Sx. of Class "C" cement + 2% CaCl, Yield 1.32, circulate cement to surface.
9 5/8"	Intermediate	Set 2950' of 9 5/8" 36# J-55 LT&C casing. Cement with 800 Sx. of 65/35 Class "C" POZ + 6% Gel, 5# Salt/Sx. Yield 2.09, tail in with 200 Sx. of Class "C" cement + 1% CaCl, 1.32, circulate cement to surface.
5 1/2"	Production	Set 5 1/2" casing as follows: 4320' of 5 1/2" 17# N-80 BT&C, 7200' of 5 1/2" 17# N-80 LT&C casing. cement in 3 stages with DV Tools at 4500'± and 2500'±. Cement 1st stage with 1900 Sx. of Class "H" cement + 1% FL, + .3% DISP, + .15% SMS, + .1% Retarder, Yield 1.17, Cement 2nd stage with 650 Sx. of Class "C" cement + 1.25% FL, + .75% DISP, + 8# Gilsonite/Sx., + 1# Flocele/Sx. Yield 1.5. cement 3rd stage with 600 Sx. of Premium + Class "C" .01% Bentonite, + .6LAP-1, + 5# Gilsonite/Sx. + .3% CFR-3, + .25#/Sx. D-AIR-3000, + .125# Flocele/Sx. + .25% Econolite, + .2% HR-7, Yield 1.33, tail in with 100 Sx. of Class "C" cement + 1% FL, + .25% DISP, yield 1.16. circulate cement to surface.

10. PRESSURE CONTROL EQUIPMENT: Exhibit "E" shows a 900 Series 3000 PSI working pressure B.O.P. consisting of an annular bag type preventor, middle blind rams, and bottom pipe rams. The B.O.P. will be nipped up on the 13 3/8" casing and tested to API specifications. The B.O.P. will be operated at least once in each 24 hour period and the blind rams will be operated when the drill pipe is out of the hole on trips. Full opening stabbing valve and upper kelly cock will be utilized. Exhibit "E-1" shows a hydraulically operated closing unit and a 3" 5000 PSI working pressure choke manifold with dual adjustable chokes. No abnormal pressure or temperatures are expected while drilling this well.

## 11. PROPOSED MUD CIRCULATING SYSTEM:

DEPTH	MUD WT.	VISC.	FLUID LOSS	TYPE MUD SYSTEM
40-550'	8.4-8.6	29-34	NC	Fresh water spud mud add paper to control seepage
550-2950'	9.8-10.1	29-36	NC	Brine water use paper to control seepage and use high viscosity sweeps to clean hole.
2950-11,520'	9.5-10.0	29-38	NC *	Cut brine use high viscosity sweeps to clean hole. If water loss control is required to log and run casing go to a polymer system.

Continue mud system to page 3



APPLICATION TO DRILL

POGO PRODUCING COMPANY  
CYPRESS "33" FEDERAL #1H  
UNIT "P" SECTION 33  
T23S-R29E EDDY CO. NM

\* Water Loss may have to be controled in order  
to run casing, run logs and any tests.

Sufficient mud materials will be kept on location at all times in order to combat lost circulation, or unexpected kicks. In order to run DST's, open hole logs, and casing, viscosity, and water loss may have to be adjusted to meet these needs.

12. LOGGING, CORING, AND TESTING PROGRAM:

A. Open hole logs: Run Dual Laterolog, CNL, LDT, Gamma Ray, Caliper from 7900'± back to 9 5/8" casing shoe. Run Gamma Ray, Neutron from 9 5/8" casing shoe back to surface.

B. No DST's or cores are planned at this time.

C. Mud logger will be rigged up on hole at 6900'±.

13. POTENTIAL HAZARDS:

No abnormal pressures or temperatures are expected. There is no known presence of H<sup>2</sup>S in this area. If H<sup>2</sup>S is encountered the operator will comply with the provisions of Onshore Oil and 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 3800 PSI, and Estimated BHT 180°.

14. ANTICIPATED STARTING DATE AND DURATION OF OPERATION:

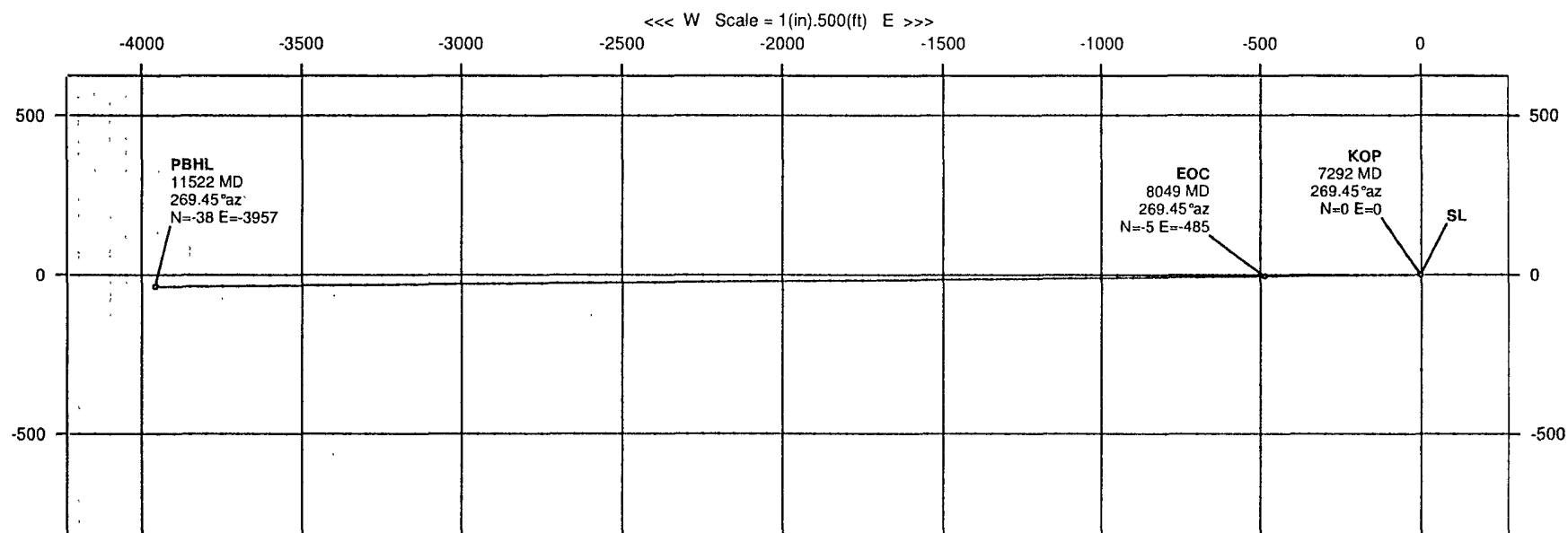
Road and location construction will begin after the BLM has approved the APD. Anticipated spud date will be as soon after BLM approval and as soon as a rig will be available. Move in operation and drilling is expected to take 40-45 days. If production casing is run then an additional 30 days will be needed to complete well and construct surface facilities and/or lay flowlines in order to place well on production.

15. OTHER FACETS OF OPERATIONS:

After running casing, cased hole Gamma Ray, Neutron Collar logs will be run from TD back to all possible productive zones. The Bone Spring formation will be perforated and stimulated in order to establish production. The well will be swab tested and potentialied as an oil well.

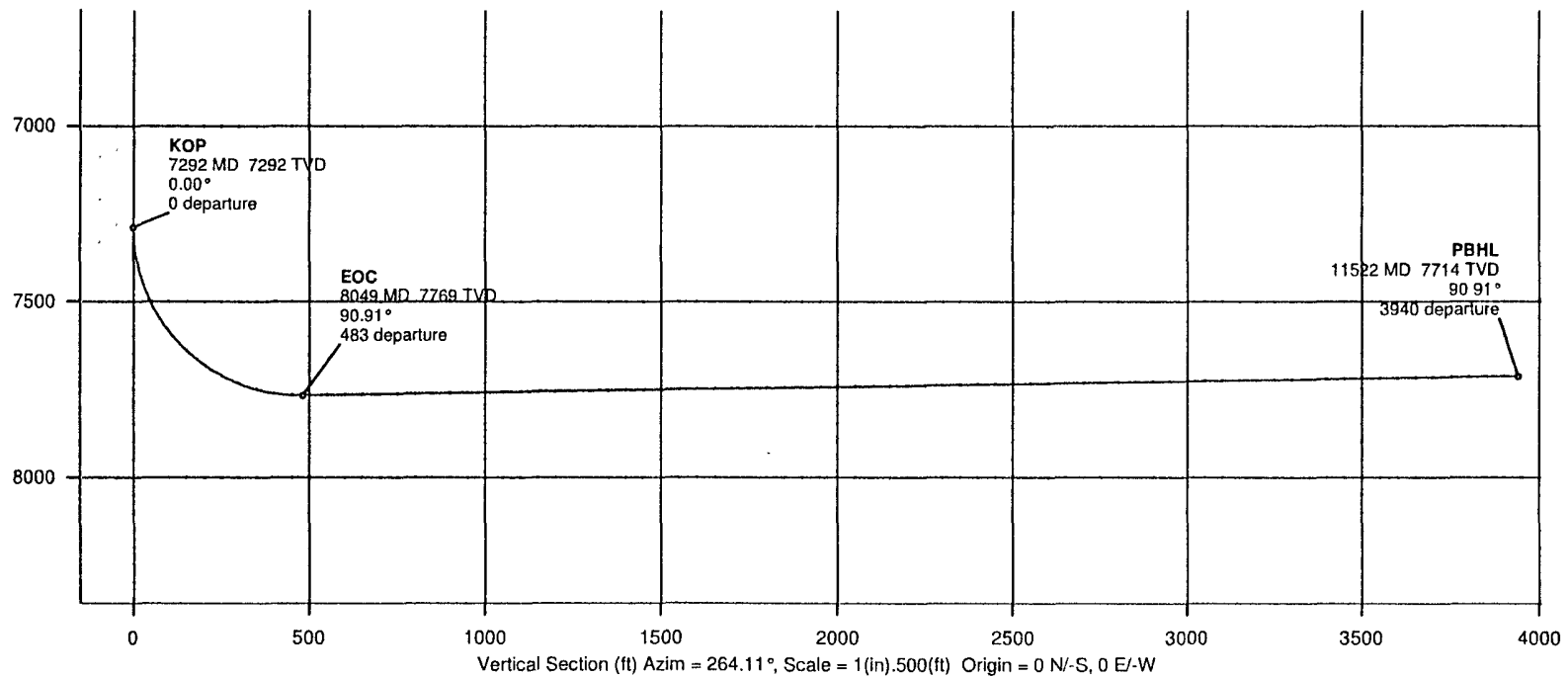
# Plains Exploration & Production

WELL	Cypress 33 Federal #1	FIELD	Eddy County, NM Nad 83	STRUCTURE	Cypress 33 Federal #1
Magnetic Parameters Model IGRF-2005	Dip 80.236° Mag Dec -8.160°	Date February 21, 2008 FB 48959 S nT	Surface Location Lat N32 15 21 103 Lon W103 58 55 497	NAD83 New Mexico State Plane: Elevation Zone, US Feet Northing 456993 46 81US Easting 649917 91 81US Grid Conv +0.18746464° Scale Fact 0.9999255935	Miscellaneous Spot Cypress 33 Federal #1 Plan Cypress 33 Federal #1, 14 TVD Ref RKB (0.00 ft above) Spot Date February 21, 2008



# Plains Exploration & Production

WELL	Cypress 33 Federal #1	FIELD	Eddy County, NM Nad 83	STRUCTURE	Cypress 33 Federal #1
Magnetic Parameters Model IGRF 2005	Dip 60.236° Mag Dec +8.160°	Date February 21, 2008 FB 48958.6 mT	Surface Location Lat N32 15 21.103 Lon W103 58 55.497	NAD83 New Mexico State Plane East Zone US Feet 455903.48 FUS 649917.91 FUS Grid Conv +0.19745454° Scale Fact 0.999925935	Mascelaneous Slot Cypress 33 Federal #1 Plan Cypress 33 Federal #1, n4 TVD Ref RKB (3.00 ft above) Sny Date February 21, 2008



# Proposal

Report Date: February 21, 2008	Survey / DLS Computation Method: Minimum Curvature / Lubinski
Client: Plains Exploration & Production	Vertical Section Azimuth: 264.110°
Field: Eddy County, NM Nad 83	Vertical Section Origin: N 0.000 ft, E 0.000 ft
Structure / Slot: Cypress 33 Federal #1 / Cypress 33 Federal #1	TVD Reference Datum: RKB
Well: Cypress 33 Federal #1	TVD Reference Elevation: 0.0 ft relative to
Borehole: Cypress 33 Federal #1	Sea Bed / Ground Level Elevation: 0.000 ft relative to
UWNAPI#:	Magnetic Declination: 8.160°
Survey Name / Date: Cypress 33 Federal #1_r4 / February 21, 2008	Total Field Strength: 48969.616 nT
Tort / AHD / DDI / ERD ratio: 90.908° / 3957.37 ft / 5.727 / 0.509	Magnetic Dip: 60.236°
Grid Coordinate System: NAD83 New Mexico State Planes, Eastern Zone, US Feet	Declination Date: February 21, 2008
Location Lat/Long: N 32 15 21.103, W 103 58 55.497	Magnetic Declination Model: IGRF 2005
Location Grid N/E Y/D: N 456993.458 RUS, E 649917.907 RUS	North Reference: Grid North
Grid Convergence Angle: +0.18746464°	Total Corr Mag North -> Grid North: +7.973°
Grid Scale Factor: 0.99992259	Local Coordinates Referenced To: Well Head

Comments	Measured Depth (ft)	Inclination (deg)	Azimuth (deg)	TVD (ft)	Vertical Section (ft)	NS (ft)	EW (ft)	Closure (ft)	Closure Azimuth (deg)	DLS (deg/100 ft)	Mag / Grav Tool Face (deg)	Build Rate (deg/100 ft)	Walk Rate (deg/100 ft)
Tie-In	0.00	0.00	269.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.00
	100.00	0.00	269.45	100.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.00
	200.00	0.00	269.45	200.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.00
	300.00	0.00	269.45	300.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.00
	400.00	0.00	269.45	400.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.00
	500.00	0.00	269.45	500.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.00
	600.00	0.00	269.45	600.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.00
	700.00	0.00	269.45	700.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.00
	800.00	0.00	269.45	800.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.00
	900.00	0.00	269.45	900.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.00
	1000.00	0.00	269.45	1000.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.00
	1100.00	0.00	269.45	1100.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.00
	1200.00	0.00	269.45	1200.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.00
	1300.00	0.00	269.45	1300.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.00
	1400.00	0.00	269.45	1400.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.00
	1500.00	0.00	269.45	1500.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.00
	1600.00	0.00	269.45	1600.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.00
	1700.00	0.00	269.45	1700.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.00
	1800.00	0.00	269.45	1800.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.00
	1900.00	0.00	269.45	1900.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.00
	2000.00	0.00	269.45	2000.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.00
	2100.00	0.00	269.45	2100.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.00
	2200.00	0.00	269.45	2200.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.00
	2300.00	0.00	269.45	2300.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.00
	2400.00	0.00	269.45	2400.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.00
	2500.00	0.00	269.45	2500.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.00
	2600.00	0.00	269.45	2600.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.00
	2700.00	0.00	269.45	2700.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.00
	2800.00	0.00	269.45	2800.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.00
	2900.00	0.00	269.45	2900.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.00
	3000.00	0.00	269.45	3000.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.00
	3100.00	0.00	269.45	3100.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.00
	3200.00	0.00	269.45	3200.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.00
	3300.00	0.00	269.45	3300.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.00
	3400.00	0.00	269.45	3400.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.00
	3500.00	0.00	269.45	3500.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.00
	3600.00	0.00	269.45	3600.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.00
	3700.00	0.00	269.45	3700.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.00
	3800.00	0.00	269.45	3800.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.00
	3900.00	0.00	269.45	3900.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.00
4000.00	0.00	269.45	4000.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.00	
4100.00	0.00	269.45	4100.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.00	
4200.00	0.00	269.45	4200.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.00	
4300.00	0.00	269.45	4300.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.00	





Well name:  
 Operator: **Pogo Producing Company**  
 String type: **Surface**  
 Location: **New Mexico**

## Cypress 33 Fd # 1

### Design parameters:

#### Collapse

Mud weight: 9.500 ppg  
 Design is based on evacuated pipe.

#### Burst

Max anticipated surface pressure: 280 psi  
 Internal gradient: 0.120 psi/ft  
 Calculated BHP 346 psi

No backup mud specified.

### Minimum design factors:

#### Collapse:

Design factor 1.125

#### Burst:

Design factor 1.00

#### Tension:

8 Round STC: 1.80 (J)  
 8 Round LTC: 1.80 (J)  
 Buttress: 1.60 (J)  
 Premium: 1.50 (J)  
 Body yield: 1.50 (B)

Tension is based on buoyed weight.  
 Neutral point: 474 ft

### Environment:

H2S considered? No  
 Surface temperature: 75 °F  
 Bottom hole temperature: 83 °F  
 Temperature gradient: 1.40 °F/100ft  
 Minimum section length: 550 ft

Cement top: ~~8,607~~ ft  
**SURFACE**

Non-directional string.

### Re subsequent strings:

Next setting depth: 2,950 ft  
 Next mud weight: 10.000 ppg  
 Next setting BHP: 1,532 psi  
 Fracture mud wt: 10.600 ppg  
 Fracture depth: 650 ft  
 Injection pressure 358 psi

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (lbs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift Diameter (in)	Internal Capacity (ft³)
1	550	13.375	48.00	H-40	ST&C	550	550	12.59	485
Run Seq	Collapse Load (psi)	Collapse Strength (psi)	Collapse Design Factor	Burst Load (psi)	Burst Strength (psi)	Burst Design Factor	Tension Load (Kips)	Tension Strength (Kips)	Tension Design Factor
1	271	740	2.726	346	1730	5.00	23	322	14.17 J

Well name:	<b>Cypress 33 Fd # 1</b>
Operator:	<b>Pogo Producing Company</b>
String type:	<b>Intermediate</b>
Location:	<b>New Mexico</b>

**Design parameters:**
**Collapse**

Mud weight: 9.500 ppg  
Design is based on evacuated pipe.

**Minimum design factors:**
**Collapse:**

Design factor 1.125

**Burst:**

Design factor 1.00

**Environment:**

H2S considered? No  
Surface temperature: 75 °F  
Bottom hole temperature: 116 °F  
Temperature gradient: 1.40 °F/100ft  
Minimum section length: 1,500 ft

Cement top:

~~6,200 ft~~  
**SURFACE**

**Burst**

Max anticipated surface pressure: 1,507 psi  
Internal gradient: 0.120 psi/ft  
Calculated BHP 1,861 psi

No backup mud specified.

**Tension:**

8 Round STC: 1.80 (J)  
8 Round LTC: 1.80 (J)  
Buttress: 1.60 (J)  
Premium: 1.50 (J)  
Body yield: 1.50 (B)

Tension is based on buoyed weight.  
Neutral point: 2,535 ft

Non-directional string.

**Re subsequent strings:**

Next setting depth: 7,820 ft  
Next mud weight: 9.200 ppg  
Next setting BHP: 3,737 psi  
Fracture mud wt: 10.600 ppg  
Fracture depth: 3,500 ft  
Injection pressure 1,927 psi

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (lbs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift Diameter (in)	Internal Capacity (ft³)
1	2950	9.625	36.00	J-55	LT&C	2950	2950	8.796	1280.5
Run Seq	Collapse Load (psi)	Collapse Strength (psi)	Collapse Design Factor	Burst Load (psi)	Burst Strength (psi)	Burst Design Factor	Tension Load (Kips)	Tension Strength (Kips)	Tension Design Factor
1	1456	2020	1.388	1861	3520	1.89	91	453	4.96 J



Well name:	<b>Cypress 33 Fd # 1H</b>
Operator:	<b>Pogo Producing Company</b>
String type:	<b>Production: Frac</b>
Location:	<b>New Mexico</b>

**Design parameters:**

**Collapse**

Mud weight: 9.500 ppg  
Design is based on evacuated pipe.

**Burst**

Max anticipated surface pressure: 3,326 psi  
Internal gradient: 0.120 psi/ft  
Calculated BHP: 4,265 psi

No backup mud specified.

**Minimum design factors:**

**Collapse:**

Design factor 1.125

**Burst:**

Design factor 1.00

**Tension:**

8 Round STC: 1.80 (J)  
8 Round LTC: 1.80 (J)  
Buttress: 1.60 (J)  
Premium: 1.50 (J)  
Body yield: 1.50 (B)

Tension is based on buoyed weight.  
Neutral point: 6,693 ft

**Environment:**

H2S considered? No  
Surface temperature: 75 °F  
Bottom hole temperature: 184 °F  
Temperature gradient: 1.40 °F/100ft  
Minimum section length: 1,500 ft  
Minimum Drift: 4.750 in  
Cement top: 7004 ft

~~SURFACE~~  
**SURFACE**

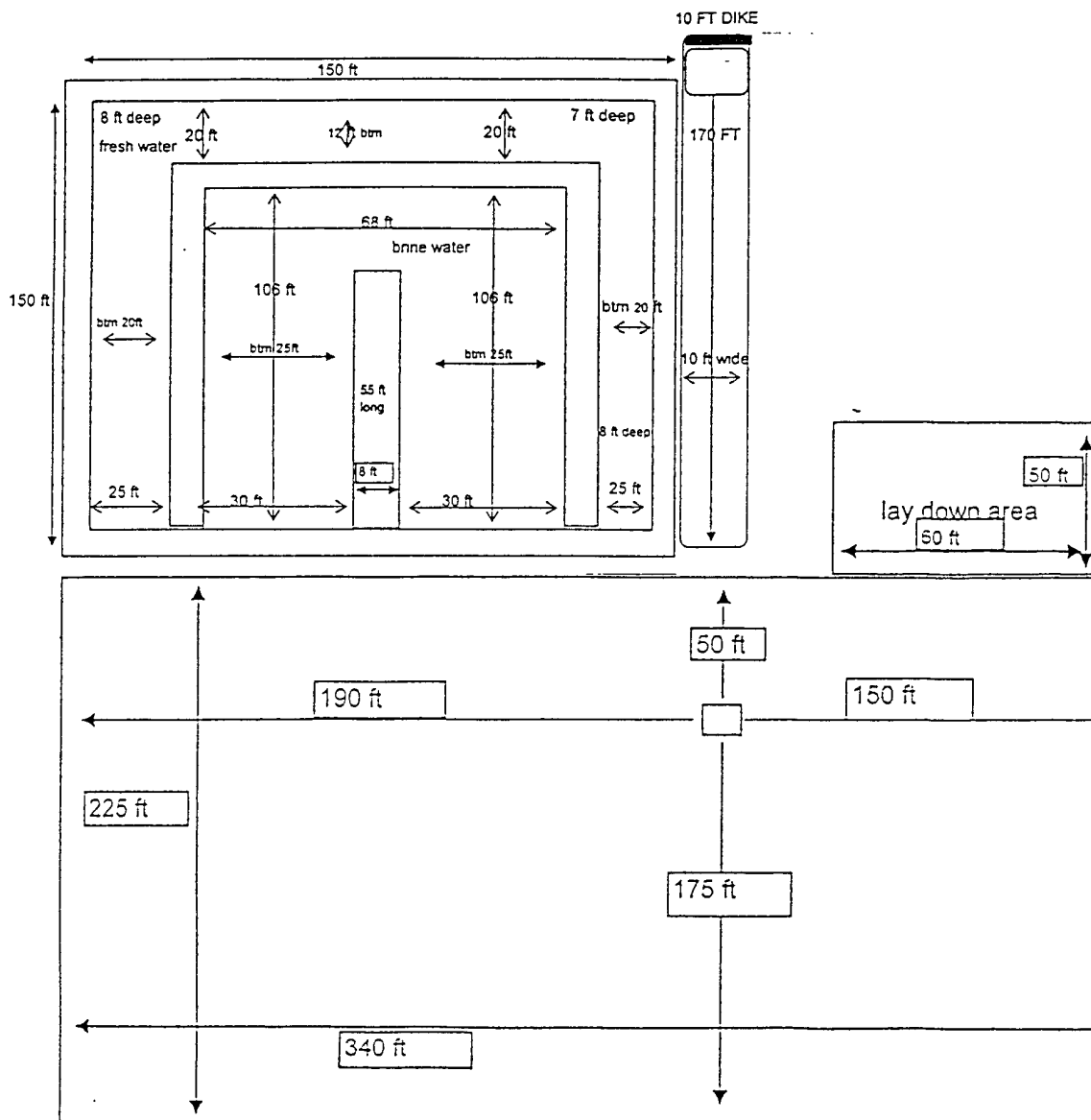
**Directional Info - Build & Hold**

Kick-off point: 7343 ft  
Departure at shoe: 3315 ft  
Maximum dogleg: 12 °/100ft  
Inclination at shoe: 90.01 °

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (lbs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift Diameter (in)	Internal Capacity (ft³)
2	4322' ±	5.5	17.00	N-80	LT&C	7100	7100	4.767	926.7
1	7200' ±	5.5	17.00	N-80	Buttress	7820	10931	4.767	500

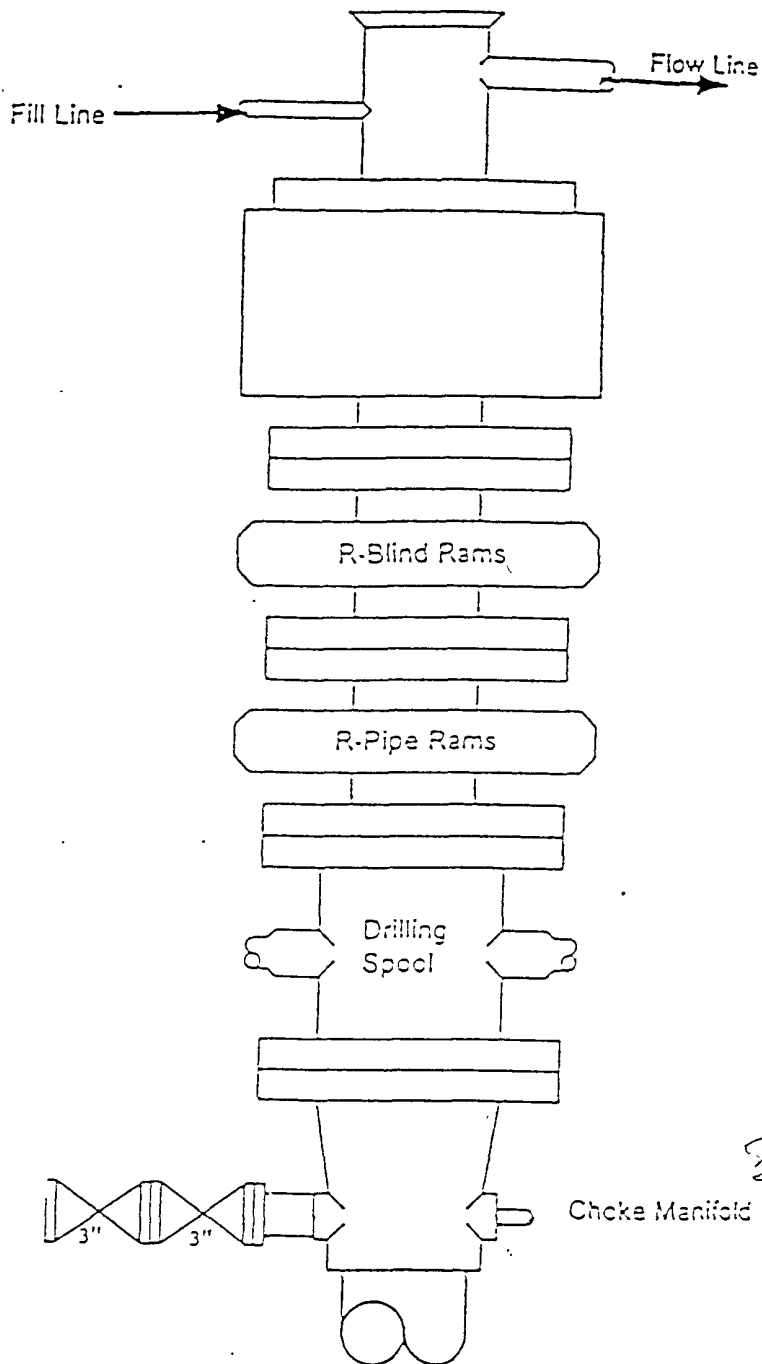
Run Seq	Collapse Load (psi)	Collapse Strength (psi)	Collapse Design Factor	Burst Load (psi)	Burst Strength (psi)	Burst Design Factor	Tension Load (Kips)	Tension Strength (Kips)	Tension Design Factor
2	3504	6290	1.795	4178	7740	1.85	114	348	3.06 J
1	3859	6290	1.630	4265	7740	1.81	-7	397	-57.44 B



- Wind Direction Indicators  
(wind sock or streamers)
- △ H2S Monitors  
(alarms at bell nipple and shale shaker)
- Briefing Areas
- Remote BOP Closing Unit
- Sign and Condition Flags

EXHIBIT "D"  
RIG LAY OUT PLAT

POGO PRODUCING COMPANY  
CYPRESS "33" FEDERAL #1H  
UNIT "P" SECTION 33  
T23S-R29E EDDY CO. NM



Type 900 Series  
3000 psi WP

EXHIBIT "E"  
SKETCH OF B.O.P. TO BE USED ON

POGO PRODUCING COMPANY, LLC.  
CYPRESS "33" FEDERAL #1H  
UNIT "P" SECTION 33  
T23S-R29E EDDY CO. NM

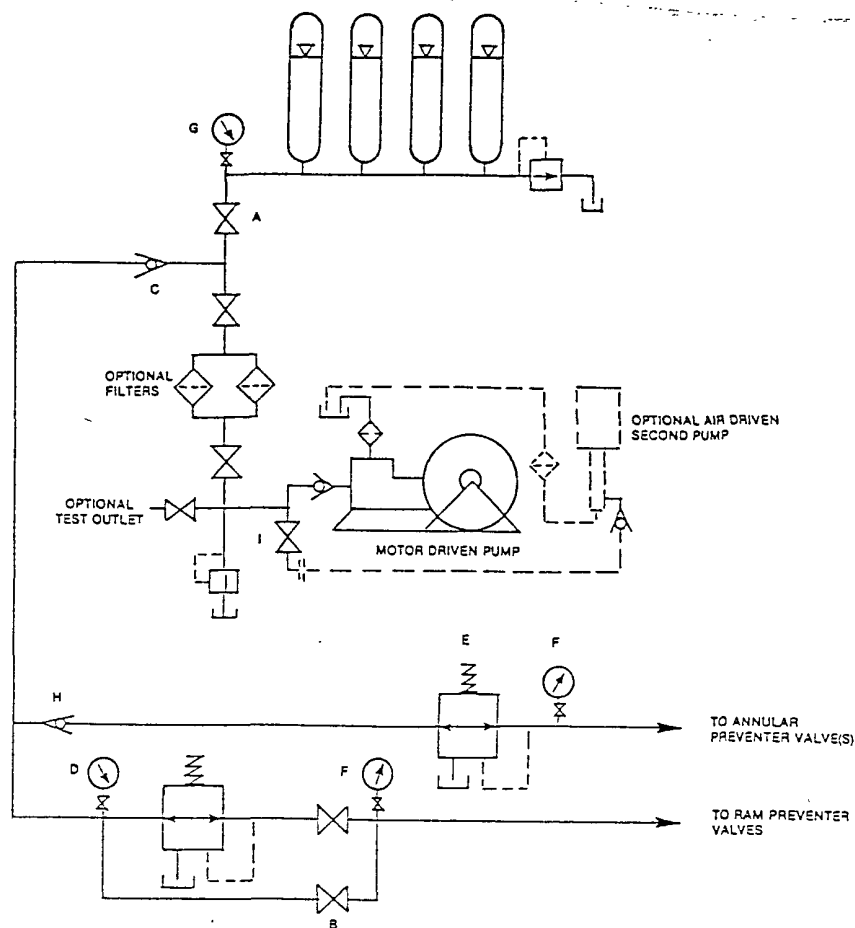


FIGURE K6-1. The schematic sketch of an accumulator system shows required and optional components.

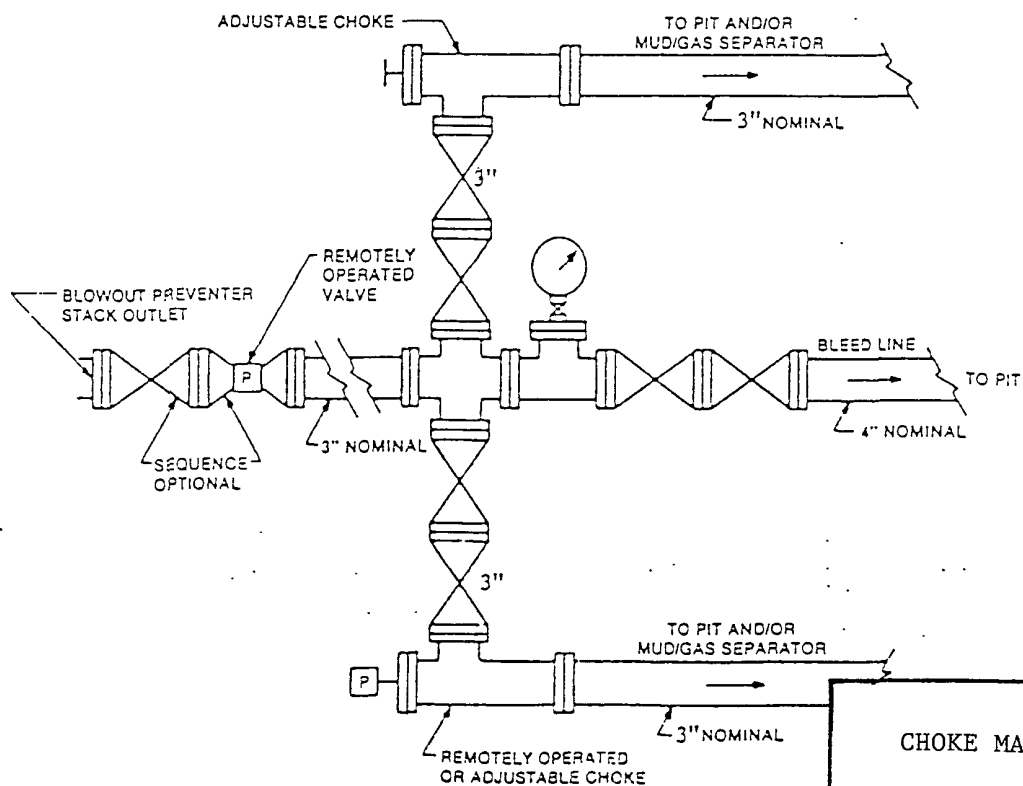


FIGURE K4-2. Typical choke manifold assembly for 5M rated work pressure service — surface installation.

EXHIBIT "E-1"  
CHOKE MANIFOLD & CLOSING UNIT

POGO PRODUCING COMPANY, LLC.  
CYPRESS "33" FEDERAL #1H  
UNIT "P" SECTION 33  
T23S-R29E EDDY CO. NM

## HYDROGEN SULFIDE DRILLING OPERATIONS PLAN

1. All Company and Contract personnel admitted on location must be trained by a qualified H<sub>2</sub>S safety instructor to the following:
  - A. Characteristics of H<sub>2</sub>S
  - B. Physical effects and hazards
  - C. Proper use of safety equipment and life support systems.
  - D. Principle and operation of H<sub>2</sub>S detectors, warning system and briefing areas.
  - E. Evacuation procedure, routes and first aid.
  - F. Proper use of 30 minute pressure demand air pack.
2. H<sub>2</sub>S Detection and Alarm Systems
  - A. H<sub>2</sub>S detectors and audio alarm system to be located at bell nipple, end of blooie line (mud pit) and on derrick floor or doghouse.
3. Windsock and/or wind streamers
  - A. Windsock at mudpit area should be high enough to be visible.
  - B. Windsock at briefing area should be high enough to be visible.
  - C. There should be a windsock at entrance to location.
4. Condition Flags and Signs
  - A. Warning sign on access road to location.
  - B. Flags to be displayed on sign at entrance to location. Green flag, normal safe condition. Yellow flag indicates potential pressure and danger. Red flag, danger, H<sub>2</sub>S present in dangerous concentration. Only emergency personnel admitted to location.
5. Well control equipment
  - A. See exhibit "E"
6. Communication
  - A. While working under masks chalkboards will be used for communication.
  - B. Hand signals will be used where chalk board is inappropriate.
  - C. Two way radio will be used to communicate off location in case of emergency help is required. In most cases cellular telephoned will be available at most drilling foreman's trailer or living quarters.
7. Drillstem Testing
  - A. Exhausts will be watered.
  - B. Flare line will be equipped with an electric ignitor or a propane pilot light in case gas reaches the surface.
  - C. If location is near any dwelling a closed D.S.T. will be performed.

HYDROGEN SULFIDE DRILLING OPERATIONS PLAN

8. Drilling contractor supervisor will be required to be familiar with the effects  $H_2S$  has on tubular goods and other mechanical equipment.
9. If  $H_2S$  is encountered, mud system will be altered if necessary to maintain control of formation. A mud gas separator will be brought into service along with  $H_2S$  scavengers if necessary.

SURFACE USE PLAN

POGO PRODUCING COMPANY  
CYPRESS "33" FEDERAL #1H  
UNIT "P" SECTION 33  
T23S-R29E EDDY CO. NM

1. EXISTING ROADS: Area maps, Exhibit "B" is a reproduction of a County General Hi-way Map. Exhibit "C" is a reproduction of a USGS topographic map showing existing roads and proposed new roads. All existing roads will be maintained in a condition equal to or better than current conditions. All new roads will be constructed according to Bureau of Land Management specifications.

A. Exhibit "A" shows the location as staked.

B. From Hobbs New Mexico take U. S. 62-180 West toward Carlsbad New Mexico go 42± miles to the WIPP road, turn Left go 13 miles to CR-802, turn Right go 3.7 miles to State Hi-way 128, turn Right go 6 miles to CR-793 (Rawhide Road) go 3.5 miles, turn Right (West) follow road 3.5 miles, turn Left (South) follow road 1± miles South and East, bear Right and follow lease road South for .7 miles to well #3. bear Right and follow new road Southwest .4 miles to location.

C. Exhibit "C" shows proposed Powerline route along existing road. Tank battery and production facility will be constructed on location.

2. PLANNED ACCESS ROADS: Approximately .4 miles of new road will be constructed.

A. Access roads will be crowned and ditched to a 12' wide travel surface within a 40' Right-of-Way.

B. Gradient of all roads will be less than 5.00%

C. Turnouts will be constructed where necessary.

D. If necessary the new roads will be surfaced with a minimum of 4" of caliche. This material will be obtained from the nearest local source.

E. The centerline of the new road will be flagged. The earthwork will be done as required by the field conditions.

F. Culverts will not be used unless they are necessary, the roads will be constructed to utilize low water crossings as dictated by the topography.

3. EXHIBIT "A-1" SHOWS EXISTING WELLS IN THE AREA AND THOSE WITHIN A 1 MILE RADIUS.

A. Water wells	- None known
B. Disposal wells	- None known
C. Drilling wells	- None known
D. Abandoned wells	- As shown on Exhibit "A-1"
E. Producing wells	- As shown on Exhibit "A-1"

## SURFACE USE PLAN

POGO PRODUCING COMPANY  
CYPRESS "33" FEDERAL #1H  
UNIT "P" SECTION 33  
T23S-R29E EDDY CO. NM

4. If on completion this well is a producer the operator will lay pipelines and construct powerlines along existing road R-O-W's or other existing R-O-W's. Exhibit "C" shows possible gas flowline to sales point.

5. LOCATION AND TYPE OF WATER SUPPLY:

Water will be purchased locally from a commercial source and trucked over the access roads or piped to location in flexible lines laid on top of the ground.

6. SOURCE OF CONSTRUCTION MATERIAL:

If possible construction material will be obtained from the excavation of drill site, if additional material is needed it will be obtained from a local source and transported over the access roads as shown on Exhibit "C".

7. METHODS OF HANDLING WASTE MATERIAL:

- A. Drill cuttings will be disposed of in the reserve pits.
- B. All trash, junk and other waste material will be contained in trash cages or trash bins to prevent scattering. When the job is completed all contents will be removed and disposed of in a approved sanitary land fill.
- C. Salts remaining after completion of well will be picked up by the supplier, including broken sacks.
- D. Waste water from living quarters will be drained into holes with a minimum of 10'. These holes will be covered during drilling and will be back filled when the well is completed. A Porto-John will be provided for the rig crews. This equipment will be properly maintained during the drilling and completion operations and will be removed when all operations are complete.
- E. Remaining drilling fluids will be allowed to evaporate in the reserve pits until the pits are dry enough to be broken out for further drying. If the drilling fluids do not evaporate in a reasonable time they will be hauled off by transports to a state approve disposal site. Later pits will be broken out to speed drying. Water produced during completion will be put in reserve pits. Oil and condensate produced will be put in storage tanks and sold.

8. ANCILLARY FACILITIES:

- A. No camps or air strips will be constructed on location.



## SURFACE USE PLAN

POGO PRODUCING COMPANY  
CYPRESS "33" FEDERAL #1H  
UNIT "P" SECTION 33  
T23S-R29E EDDY CO. NM

### 9. WELL SITE LAYOUT

- A. Exhibit "D" shows the proposed well site layout.
- B. This exhibit indicated proposed location of reserve and sump pits and living facilities.
- C. Mud pits in the active circulating system will be steel pits & the reserve pit is proposed to be unlined unless subsurface condition encountered during pit construction indicate that lining is needed for lateral containment of fluids.
- D. If needed, the reserve pit is to be lined with polyethelene. The pit liner will be 12mils thick. Pit liner will extend a minimum 2'00" over the reserve pits dikes where the liner will be anchored down.
- E. The reserve pit will be fenced on three sides with four strands of barbed wire during drilling and completion phases. The fourth side will be fenced after all drilling operations have ceased. If the well is a producer, the reserve pit fence will be torn down. The reserve pit and those areas of the location not essential to production facilities will be reclaimed and seeded per BLM requirements.

### 10. PLANS FOR RESTORATION OF SURFACE

Rehabilitation of the location and reserve pit 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.

However, in either event, the reserve pit will be allowed to dry properly, and fluid removed and disposed of in accordance with Article 7.B as previously noted. The pit area will then be leveled and contoured to conform to the original and surrounding area. Drainage systems, if any, will be reshaped to the original configuration with provisions made to alleviate erosion. These may need to be modified in certain circumstances to prevent inundation of the location's pad and surface facilities. After the area has been shaped and contoured, topsoil from the spoil pile will be placed over the disturbed area to the extent possible. Revegetation procedures will comply with BLM standards.

If the well is a dry hole, the pad and road area will be contoured to match the existing terrain. Topsoil will be spread to the extent possible. Revegetation will comply with BLM standards.

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

SURFACE USE PLAN

POGO PRODUCING COMPANY  
CYPRESS "33" FEDERAL #1H  
UNIT "P" SECTION 33  
T23S-R29E EDDY CO. NM

11. OTHER INFORMATION:

- A. Topography consists of limestone hills with deep cut drainages to the North-West direction into the salt lakes located to the North of the location. Soil consists of silty loams where present, calcium formation and gypsum can be found on the South edge of the 600'X600' area. vegetation consists of desert scrub, broom weed, catclaw, salt brush, mesquite, creosote, sumac, yucca, ephedra, and native range grasses.
- B. The surface is owned by The Federal Government, and is administered by the Bureau of Land Management. Minerals are owned by The Federal Government and administered by The Bureau of Land Management. The surface is used to graze livestock and the production of Oil and Gas.
- C. An Archaeological survey has been completed and is on file with The Bureau of Land Management Carlsbad Field Office.
- D. There are no dwellings located within several miles of this location.

## CERTIFICATION

I HEREBY CERTIFY THAT I OR PERSONS UNDER MY DIRECT SUPERVISION HAVE INSPECTED THE PROPOSED DRILL SITE AND THE ACCESS ROAD ROUTES, THAT I AM FAMILIAR WITH THE CONDITIONS THAT CURRENTLY EXIST, AND THAT THE STATEMENTS MADE IN THIS PLAN ARE TO THE BEST OF MY KNOWLEDGE ARE TRUE AND CORRECT, AND THAT THE WORK ASSOCIATED WITH THE OPERATIONS PROPOSED HEREIN WILL BE PERFORMED BY POGO PRODUCING COMPANY, LLC. ITS CONTRACTORS AND/OR ITS SUB-CONTRACTORS AND IS IN CONFORMANCE WITH THIS PLAN AND THE TERMS AND THE CONDITIONS UNDER WHICH IT IS APPROVED. THIS STATEMENT IS SUBJECT TO THE PROVISIONS OF U.S.C. 1001 FOR FILING OF A FALSE REPORT.

### OPERATOR'S REPRESENTATIVES

#### BEFORE CONSTRUCTION

TIERRA EXPLORATION, INC  
HOBBS, NEW MEXICO 88241  
P. O. BOX 2188  
HOBBS, NEW MEXICO 88241  
JOE T. JANICA  
CELL 505-390-1598  
OFFICE PHONE 505-391-8503

#### DURING & AFTER CONSTRUCTION

POGO PRODUCING COMPANY, LLC.  
700 MILAM SUITE 3100  
HOUSTON, TEXAS 77002  
PETE ORTIZ  
432-413-9933  
MIDLAND, TEXAS

NAME: *Joe T Janica*

DATE: - 02/27/08

TITLE Permit Engineer



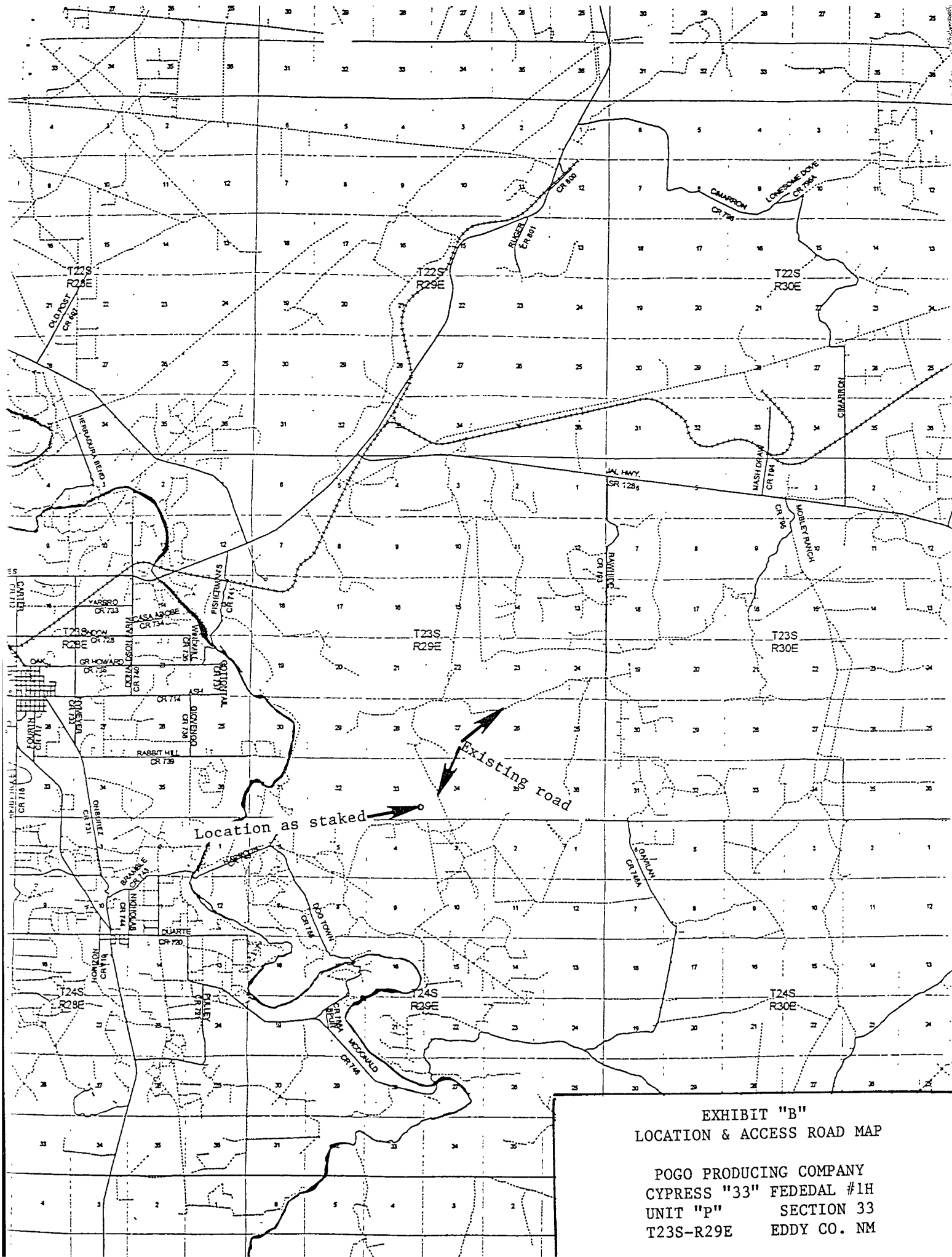


EXHIBIT "B"  
LOCATION & ACCESS ROAD MAP

POGO PRODUCING COMPANY  
CYPRESS "33" FEDERAL #1H  
UNIT "P" SECTION 33  
T23S-R29E EDDY CO. NM

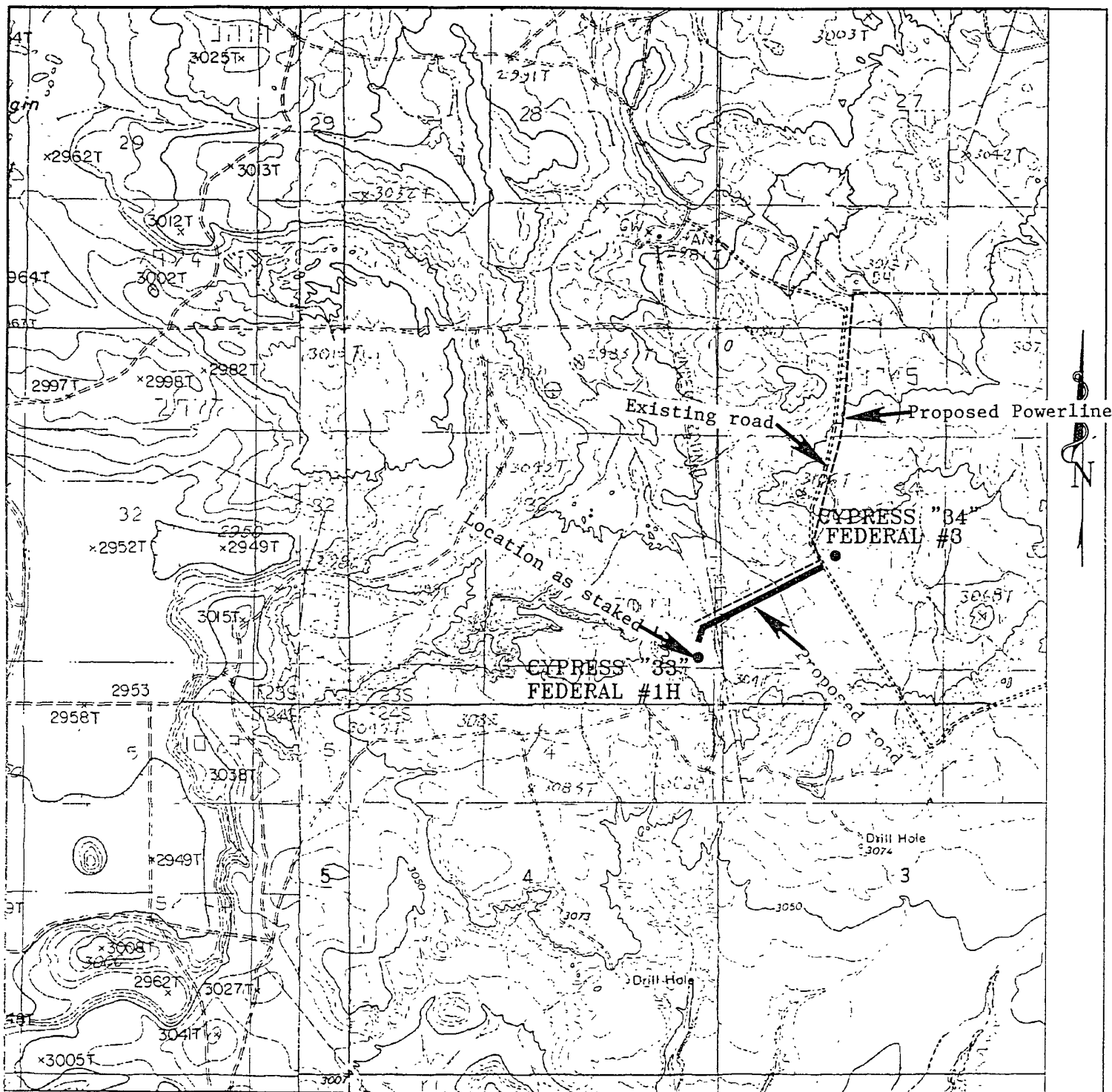


EXHIBIT "C"  
TOPOGRAPHIC MAP SHOWING  
ROADS & DIRECTIONS TO

POGO PRODUCING COMPANY  
CYPRESS "33" FEDERAL #1H  
UNIT "P" SECTION 33  
T23S-R29E EDDY CO. NM

## PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Pogo Producing Company, LLC
LEASE NO.:	NM-19848
WELL NAME & NO.:	1H-Cypress 33 Federal
SURFACE HOLE FOOTAGE:	660' FSL & 330' FEL
BOTTOM HOLE FOOTAGE:	622' FSL & 993' FWL
LOCATION:	Section 33, T. 23 S., R 29 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**
  - Cave/Karst
- ☐ **Construction**
  - Notification
  - Topsoil
  - Reserve Pit
  - Federal Mineral Material Pits
  - Well Pads
  - Roads
- ☐ **Road Section Diagram**
- ☒ **Drilling**
- ☐ **Production (Post Drilling)**
  - Well Structures & Facilities
- ☐ **Reserve Pit Closure/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)

### Cave and Karst

#### **Cave/Karst Surface Mitigation**

The following stipulations will be applied to minimize impacts during construction, drilling and production.

##### **Berming:**

Tank batteries will be bermed to contain 1 ½ times the content of the largest tank.

Bermed areas will be lined with a permanent 20 mil plastic liner and then lined with a 4 oz. felt liner to prevent tears or punctures in liner.

#### **Cave/Karst Subsurface Mitigation**

The following stipulations will be applied to protect cave/karst and ground water concerns:

##### **Lost Circulation:**

ALL lost circulation zones from the surface to the base of the cave occurrence zone will be logged and reported in the drilling report.

Regardless of the type of drilling machinery used, if a void of four feet or more and circulation losses greater than 100 percent occur simultaneously while drilling in any cave-bearing zone, the BLM will be notified immediately by the operator. The BLM will assess the consequences of the situation and work with operator on corrective actions to resolve the problem.

##### **Delayed Blasting:**

Any blasting will be phased and time delayed.

##### **Abandonment Cementing:**

Upon well abandonment the well bore will be cemented completely from 100 feet below the bottom of the cave bearing zone to the surface.

##### **Record Keeping:**

The Operator will track customary drilling activities, including the rate of penetration, pump pressure, weight on bit, bit drops, percent of mud returns, and presence or absence of cuttings returning to the surface. As part of customary record keeping, each detectable void or sudden increase in the rate of penetration not attributable to a change in the formation type should be documented and evaluated as it is encountered.

## **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 (505) 234-5972 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 of the well pad. The topsoil to be stripped is approximately 6 inches in depth. The topsoil shall not be used to backfill the reserve pit and will be used for interim and final reclamation.

### **C. RESERVE PITS**

The reserve pit shall be constructed and closed in accordance with the NMOCD rules.

The reserve pit shall be constructed 150' X 150' on the Southwest side of the well pad.

The reserve pit shall be constructed, so that upon completion of drilling operations, the dried pit contents shall be buried a minimum depth of three feet below ground level. Should the pit content level not meet the three foot minimum depth requirement, the excess contents shall be removed until the required minimum depth of three feet below ground level has been met. The operator shall properly dispose of the excess contents at an authorized disposal site.

The reserve pit shall be constructed and maintained so that runoff water from outside the location is not allowed to enter the pit. The berms surrounding the entire perimeter of the pit shall extend a minimum of two (2) feet above ground level. At no time will standing fluids in the pit be allowed to rise above ground level.

The reserve pit shall be fenced on three (3) sides during drilling operations. The fourth side shall be fenced immediately upon rig release.

### **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 (505) 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 thirty (30) 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**

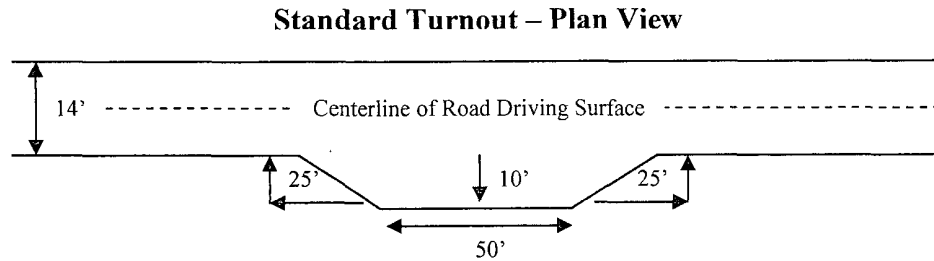
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

##### **Ditching**

Ditching shall be required on both sides of the road.

### Turnouts

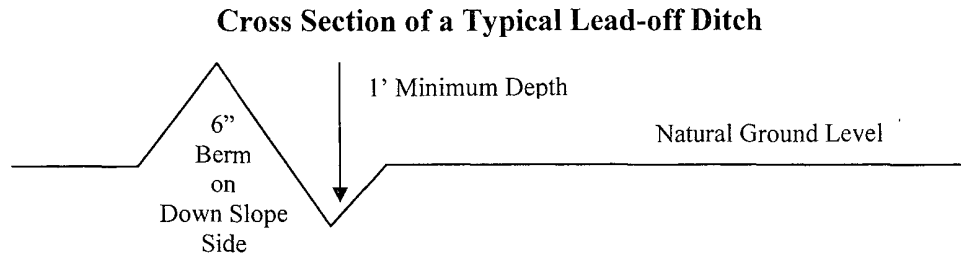
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall be constructed on all blind curves. Turnouts shall conform to the following diagram:



### 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.



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:

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

### **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.

A gate shall be constructed and fastened securely to H-braces.

### **Fence Requirement**

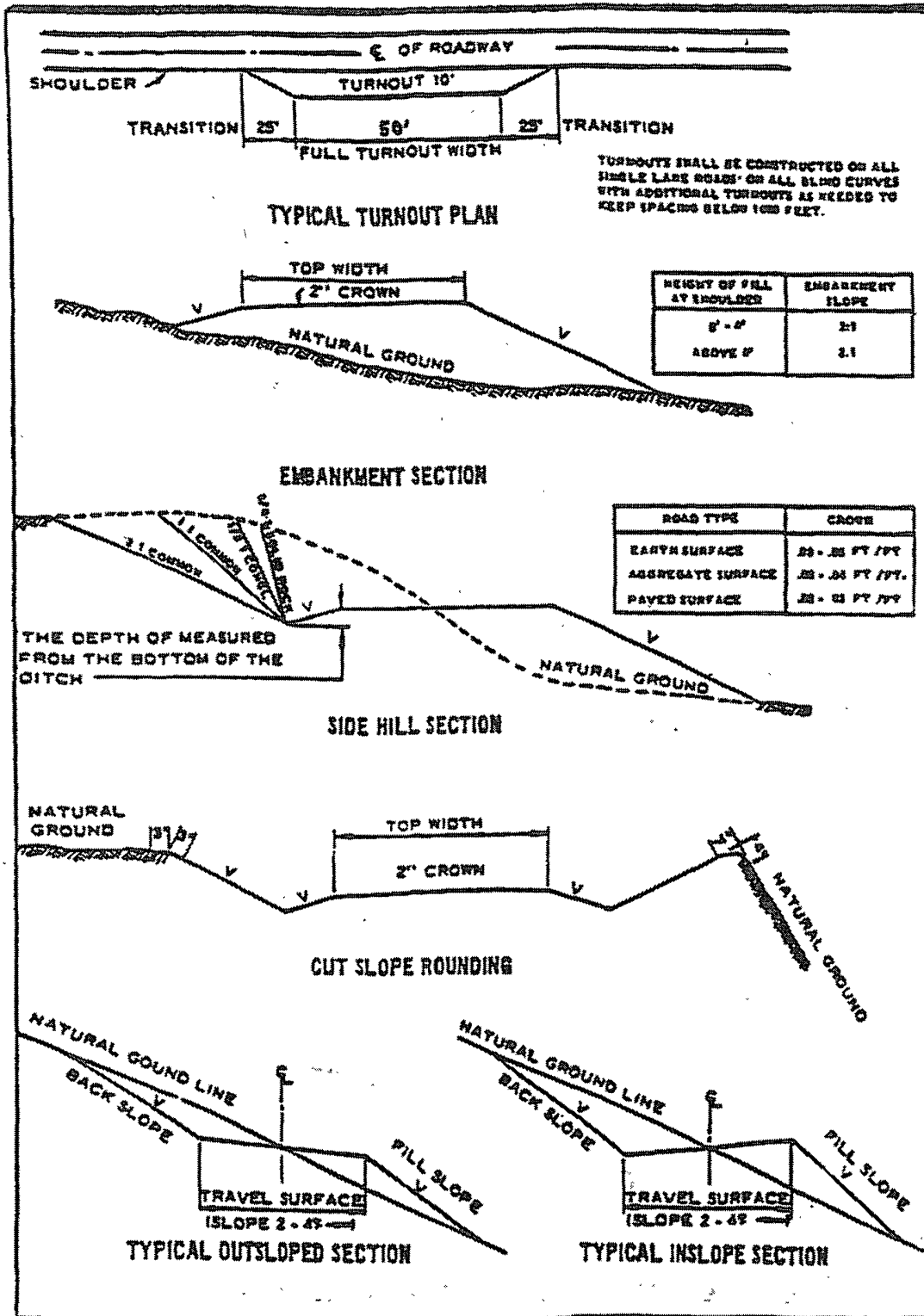
Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

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

### **Changes to COAs:**

**WOC times required prior to cementing.**

**Casing/cement modifications to be approved prior to work.**

**Centralizers on surface casing and horizontal section.**

### **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.
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 are located, this does not include the dog house or stairway area.

### **B. CASING**

**Changes to the approved APD casing and cement program require submitting a sundry and receiving approval prior to work.**

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

**Centralizers required on horizontal leg, minimum of one every other joint.**

**High cave/karst.**

**Possible lost circulation in the Delaware Mountain Group and Bone Spring formations.**

1. The 13-3/8 inch surface casing shall be set **at approximately 550 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 will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement).
  - c. **Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing.**
  - d. 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.
  - e. If cement falls back, remedial action will be done prior to drilling out that string.
2. The minimum required fill of cement behind the 9-5/8 inch intermediate casing **(to be set below the salt)** is:
  - ☒ Cement to surface. If cement does not circulate see B.1.a-d above.  
**Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing.**
3. The minimum required fill of cement behind the 5-1/2 inch production casing is:
  - a. **First stage to DV tool, cement shall:**
    - ☒ Cement to circulate. If cement does not circulate, contact the appropriate BLM office, before proceeding with second stage cement job.



b. **Second stage to DV tool, cement shall:**

- ☒ Cement to circulate. If cement does not circulate, contact the appropriate BLM office, before proceeding with third stage cement job

c. **Third stage above DV tool, cement shall:**

- ☒ Cement to circulate. If cement does not circulate, contact the appropriate BLM office, before proceeding with second stage cement job

**Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing.**

4. 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. The appropriate BLM office shall be notified a minimum of 2 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 040308**

## **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.

At the time reserve pits are to be reclaimed, 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.

### **B. RESERVE PIT CLOSURE**

The reserve pit, when dried and closed, shall be recontoured, all trash removed, and reseeded as follows:

## 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:

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

\*Pounds of pure live seed:

Pounds of seed x percent purity x percent germination = pounds pure live seed  
(Insert Seed Mixture Here)

## **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.