

ATS-09-154  
RM

OCD-ARTESIA  
APR 15 2009

401

Form 3160-3  
(August 2007)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT  
APPLICATION FOR PERMIT TO DRILL OR REENTER

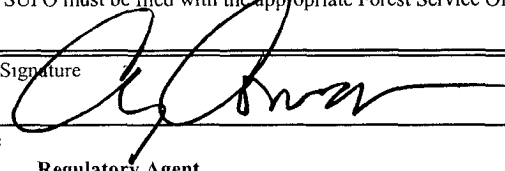
FORM APPROVED  
OMB NO. 1004-0137  
Expires: July 31, 2010

1a. Type of Work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. <u>NM 117120 BNL</u> <b>NM-102913</b>
1b. Type of Well: <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other <input type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name N/A
2. Name of Operator <b>Yates Petroleum Corporation 025575</b>		7. If Unit or CA Agreement, Name and No. N/A
3a. Address <b>105 South Fourth Street, Artesia, NM 88210</b>		8. Lease Name and Well No. <b>Balsam BNL Federal Com. 1H 37661</b>
3b. Phone No. (include area code) <b>505-748-1471</b>		9. API Well No. <b>30-015-37035</b>
4. Location of well (Report location clearly and in accordance with any State requirements. *) At surface <b>960' FNL &amp; 30' FEL Ut. Ltr. A</b> At proposed prod. zone <b>990' FNL &amp; 330' FWL, Ut. Ltr. D</b>		10. Field and Pool, or Exploratory <b>Wildcat Bone Springs</b>
14. Name of Operator <b>The well is about 10 miles south &amp; east of Malaga, NM.</b>		11. Sec., T., R., M., or Blk. and Survey or Area <b>Section 8-T24S-R29E</b>
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drlg. unit line, if any) <b>30'</b>	16. No. of acres in lease <b>160.00</b>	12. County or Parish <b>Eddy</b>
17. Spacing Unit dedicated to this well <b>Section 8-T34S-R29E</b>	18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. <b>None</b>	13. State <b>NM</b>
19. Proposed Depth <b>VD-7850' MD-12474'</b>	20. BLM/ BIA Bond No. on file <b>NATIONWIDE BOND #NMB000434</b>	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) <b>2990 GL</b>	22. Approximate date work will start* <b>ASAP</b>	23. Estimated duration <b>45 days</b>

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 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 must be filed with the appropriate Forest Service Office). | 6. Such other site specific information and/ or plans as may be required by the BLM          |

25. Signature 	Name (Printed/ Typed) <b>Cy Cowan</b>	Date <b>2/13/2009</b>
Title <b>Regulatory Agent</b>		
Approved By (Signature) <b>/s/ James Stovall</b>	Name (Printed/ Typed) <b>/s/ James Stovall</b>	Date <b>APR 13 2009</b>
Title <b>FIELD MANAGER</b>		
Office <b>CARLSBAD FIELD OFFICE</b>		

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 cc 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 wilfully 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)

Vertical well bore is unorthodox.

Carlsbad Controlled Water Basin

SEE ATTACHED FOR  
CONDITIONS OF APPROVAL

Approval Subject to General Requirements  
& Special Stipulations Attached

## DISTRICT I

1735 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, 2005Submit to Appropriate District Office  
State Lease - 4 Copies  
Fee Lease - 3 CopiesOIL CONSERVATION DIVISION  
1220 South St. Francis Dr.  
Santa Fe, New Mexico 87505☐ AMENDED REPORT

## WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-015-37035	Pool Code	Pool Name Wildcat Bone Springs
Property Code 37661	Property Name BALSAM "BNL" FEDERAL COM	Well Number 1H
OGRID No. 025575	Operator Name YATES PETROLEUM CORP.	Elevation 2990'

## Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	8	24 S	29 E		960	NORTH	30	EAST	EDDY

## Bottom Hole Location If Different From Surface

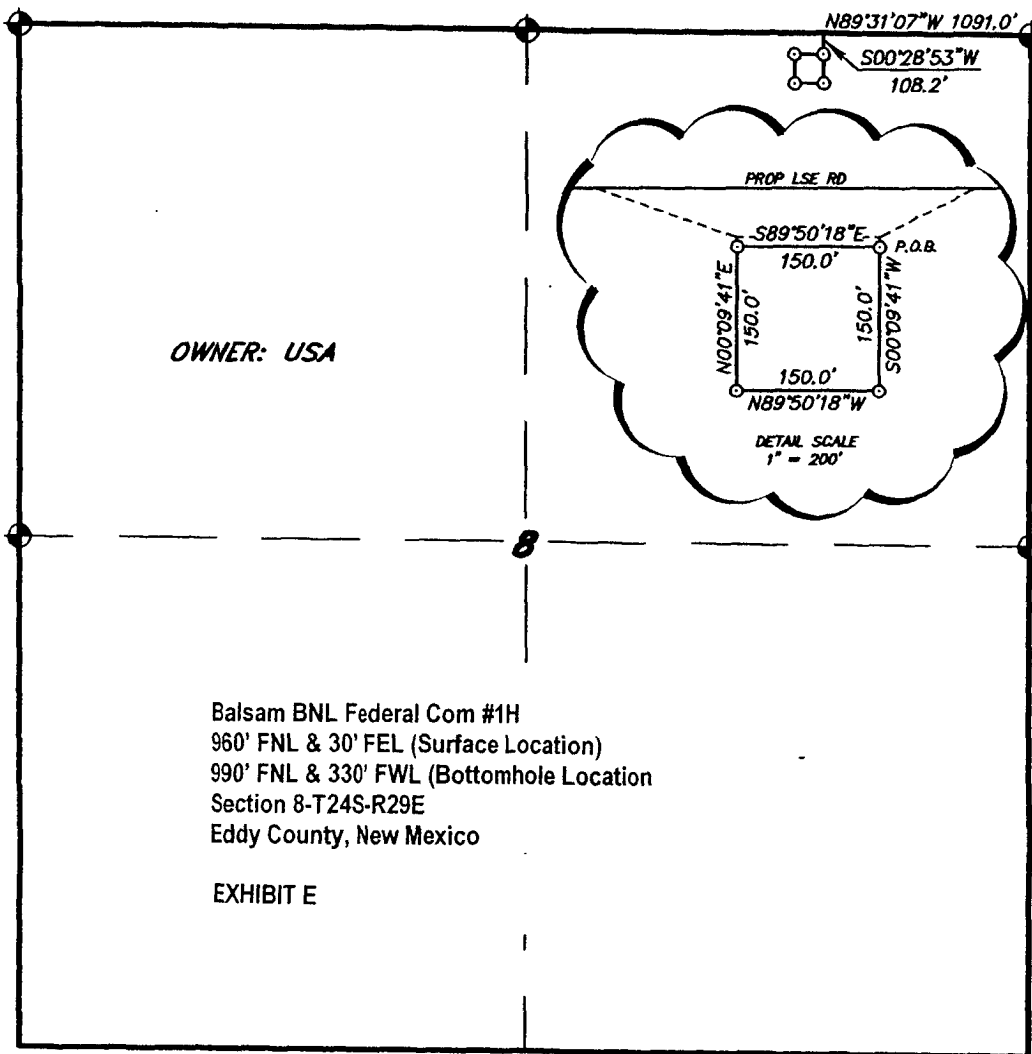
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	8	24 S	29 E		990	NORTH	330	WEST	EDDY

Dedicated Acres 160	Joint or Infill	Consolidation Code	Order No.
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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°14'12.70" Long - W104°00'50.89" SPC- N.: 450050.649 E.: 640029.999 (NAD-83)</p> <p><b>Project Area</b></p> <p><b>Producing Zone</b></p> <p>Penetration Point 963' FNL &amp; 514' FEL</p> <p><b>SURFACE LOCATION</b> Lat - N32°14'12.52" Long - W103°59'53.35" SPC- N.: 450046.958 E.: 644971.763 (NAD-83)</p> <p>Diagram showing a cloud-shaped area with dimensions: 2998.5', 3001.7', 2987.9', 2984.6'. A vertical line is labeled 'SECTION LINE'.</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>Cy Cowan</i> 2/13/09 Signature Date</p> <p>Cy Cowan, Regulatory Agent Printed Name</p> <p><b>SURVEYOR CERTIFICATION</b></p> <p>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.</p> <p>JANUARY 16 2009 Date Surveyed</p> <p><i>Gary L. Jones</i> Signature &amp; Seal of Professional Surveyor</p> <p>W.C. Jones 1046</p> <p>Certificate No. Gary L. Jones 7977</p> <p><b>BASIN SURVEYS</b></p>
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**SECTION 8, TOWNSHIP 24 SOUTH, RANGE 29 EAST, N.M.P.M.,  
EDDY COUNTY, NEW MEXICO.**



Balsam BNL Federal Com #1H  
960' FNL & 30' FEL (Surface Location)  
990' FNL & 330' FWL (Bottomhole Location)  
Section 8-T24S-R29E  
Eddy County, New Mexico

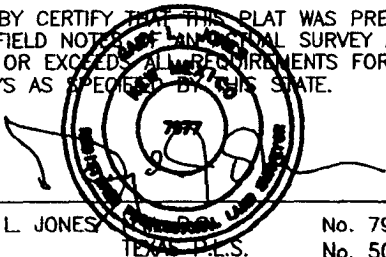
EXHIBIT E

**LEGAL DESCRIPTION**

A TRACT OF LAND LOCATED IN SECTION 8, TOWNSHIP 24 SOUTH, RANGE 29 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO AND BEING 15.0 FEET LEFT AND RIGHT OF THE FOLLOWING DESCRIBED CENTERLINE SURVEY.

BEGINNING AT A POINT WHICH LIES N.89°31'07\"W., 1091.0 FEET AND S.00°28'53\"W., 108.2 FEET FROM THE NORTHEAST CORNER OF SAID SECTION 8; THENCE S.00°09'41\"W., 150.0 FEET; THENCE N.89°50'18\"W., 150.0 FEET; THENCE N.00°09'41\"E., 150.0 FEET; THENCE S.89°50'18\"E., 150.0 FEET TO THE POINT OF BEGINNING. SAID TRACT OF LAND BEING 22500 SQUARE FEET OR 0.5165 ACRES, MORE OR LESS.

I HEREBY CERTIFY THAT THIS PLAT WAS PREPARED FROM FIELD NOTES OF AN ORIGINAL SURVEY AND MEETS OR EXCEEDS ALL REQUIREMENTS FOR LAND SURVEYS AS SPECIFIED BY THIS STATE.



GARY L. JONES

No. 7977  
No. 5074

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

W.O. Number: 21046

Drawn By: J. M. SMALL

Date: 01-19-2009

Disk: JMS 21046

1000 0 1000 2000 FEET

**YATES PETROLEUM CORP.**

REF: PROPOSED FRESH WATER RESERVOIR

A TRACT OF LAND IN  
SECTION 8, TOWNSHIP 24 SOUTH, RANGE 29 EAST,  
N.M.P.M., EDDY COUNTY, NEW MEXICO.

Survey Date: 01-16-2009

Sheet 1 of 1 Sheets

YATES PETROLEUM CORPORATION  
Balsam BNL Federal Com. #1H  
960' FNL and 30' FEL, Surface Hole  
990' FNL & 330' FWL, Bottom Hole  
Section 8-T24S-R29E  
Eddy County, New Mexico

1. The estimated tops of geologic markers are as follows:

Rustler	312'	Brushy Canyon	5050'-oil
Top of Salt	650'	Brushy Canyon Mkr	6320'
Base of Salt	2750'	Bone Springs	6620'-oil
Base of Salt	2990'	Bone Springs 1/SD/	7665'-oil
Cherry Canyon	3820'-oil	TD	7850'

2. The estimated depths at which anticipated water, oil or gas formations are expected to be encountered:

Water: 35'  
Oil or Gas: Oil Zones: 4350', 5650', 8150', and 8850'

3. Pressure Control Equipment: BOPE will be installed on the 11 3/4" casing and 8 5/8" casing and rated for 3000# BOP System. Pressure tests will be conducted before drilling out from under all casing strings, which are set and cemented in place. Blowout Preventer controls will be installed prior to drilling the surface plug and will remain in use until the well is completed or abandoned. Preventers will be inspected and operated at least daily to ensure good mechanical working order, and this inspection recorded on the daily drilling report. See Exhibit B.
4. Auxiliary Equipment: Kelly cock, pit level indicators, flow sensor equipment, and a sub with full opening valve to fit the drill pipe and collars will be available on the rig floor in the open position at all times for use when Kelly is not in use.
5. THE PROPOSED CASING AND CEMENTING PROGRAM:

A. Casing Program: All new casing to be used

See COA →

Hole Size	Casing Size	Wt./Ft	Grade	Coupling	Interval	Length
14 3/4"	11 3/4"	42#	H-40	ST&C	0-650'	650'
11"	8 5/8"	32#	J-55	ST&C	0-100'	100'
11"	8 5/8"	24#	J-55	ST&C	100-2200'	2100'
11"	8 5/8"	32#	J-55	ST&C	2200-2850'	650'
7 7/8"	5.5"	17#	HCP- 110	LT&C	0'-12474'	12474'

See COA → \*Pilot hole drilled vertically to 7850'. Well will be plugged back and then kicked off at approx. 7281' and directionally drilled at 12 degrees per 100' with a 7 7/8" hole to 12474' MD (7700' TVD) where 5 1/2" casing will be set and cemented. Penetration point of producing zone will be encountered at 962.95' FNL & 513.74' FEL, 8-24S-29E. Deepest TVD in the well is 7850' in the pilot hole. Deepest TVD in the lateral is 7758'.

1. Minimum Casing Design Factors: Burst 1.0, Tensile Strength 1.8, Collapse 1.125
2. A 3000 psi BOPE will be nipped up on the 11 3/4" casing and the 8 5/8" and tested to 3000 psi, -

B. CEMENTING PROGRAM: ← See COA

Surface Casing: 200 sacks C/CaCl<sub>2</sub> (WT 14.80 YLD 1.64). Tail in with 200 sacks C/CaCl<sub>2</sub> (WT 14.80 YLD 1.34) TOC surface.

Intermediate Casing: 600 sacks of C Lite (WT 12.40 YLD 2.00) Tail in with 200 sacks C/CaCl<sub>2</sub> (WT 14.80 YLD 1.32). TOC surface

Production Casing: Stage One: 1450 sacks 505010PzH (WT 13.20 YLD 1.57). Top of Cement approx. 6000'. DV Tool set about 6000'

Second Stage: 775 sacks 505010PzH (WT 13.20 YLD 1.57). Top of Cement approximately 2500'.

6. MUD PROGRAM AND AUXILIARY EQUIPMENT:

<u>Interval</u>	<u>Type</u>	<u>Weight</u>	<u>Viscosity</u>	<u>Fluid Loss</u>
0-650	Fresh Water	8.60-9.20	29-32	N/C
650-2850	Brine Water	10.00-10.20	28-28	N/C
2850-7850	Cut Brine	8.70-9.20	28-29	N/C
7281-12474 MD	Cut Brine (Lateral Section)	8-90-9.10	28-32	10.0-12.0

Sufficient mud material(s) to maintain mud properties, control lost circulation and contain a blow out will be available at the well site during drilling operations. Rig personnel will check mud hourly.

7. EVALUATION PROGRAM:

Samples: Thirty foot samples to 3000'. Every 10' from 3000' to TD

Logging: Platform Hals; CMR;

Coring: None anticipated

DST's: None Anticipated

Mudlogging: Yes. From surface casing

8. ABNORMAL CONDITIONS, BOTTOM HOLE PRESSURE, AND POTENTIAL HAZARDS:

Maximum Anticipated BHP:

0'-650' 310 PSI

650'-2850' 1510 PSI

2850'-7850' 3755 PSI

Abnormal Pressures Anticipated: None

Lost Circulation Zones Anticipated: None.

H<sub>2</sub>S Zones Anticipated: None Anticipated

Maximum Bottom Hole Temperature: 150 F

9. ANTICIPATED STARTING DATE:

Plans are to drill this well as soon as possible after receiving approval. It should take approximately 60 days to drill the well with completion taking another 20 days.

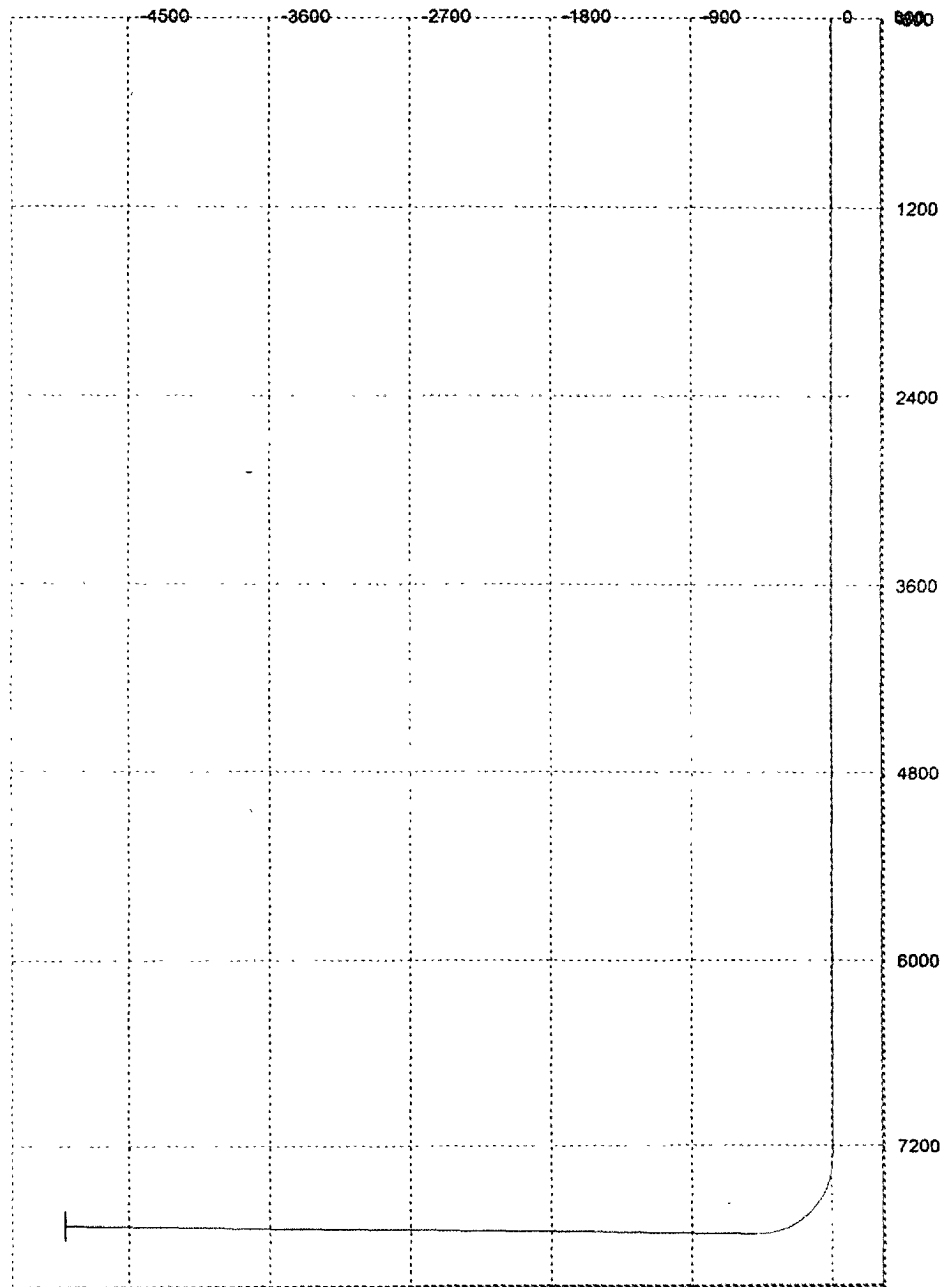
M.D.	Inclination	Azimuth	T.V.D.	N+/S-	E+/W-	D.L.S.	ToolFace	T.F. Ref (HS/GN)	
0	0	0	0	0	0	0			
312	0	0	312	0	0	0			RUSTLER
650	0	0	650	0	0	0			TOS
2,750	0	0	2,750	0	0	0			BOS
2,990	0	0	2,990	0	0	0			BELL CANYON
3,820	0	0	3,820	0	0	0			CHERRY CANYON
5,050	0	0	5,050	0	0	0			BRUSHY CANYON
6,320	0	0	6,320	0	0	0			BRUSHY CANYON MKR
6,620	0	0	6,620	0	0	0			BONE SPRINGS
7281	0	0	7281	0	0	12	270	GN	KOP
7300	2.28	269.65	7300	0	-0.38	12	360	HS	
7325	5.28	269.65	7324.94	-0.01	-2.03	12	360	HS	
7350	8.28	269.65	7349.76	-0.03	-4.98	12	0	HS	
7375	11.28	269.65	7374.39	-0.06	-9.22	12	360	HS	
7400	14.28	269.65	7398.77	-0.09	-14.75	12	0	HS	
7425	17.28	269.65	7422.83	-0.13	-21.55	12	0	HS	
7450	20.28	269.65	7446.49	-0.18	-29.6	12	360	HS	
7475	23.28	269.65	7469.71	-0.24	-38.87	12	0	HS	
7500	26.28	269.65	7492.4	-0.3	-49.35	12	0	HS	
7525	29.28	269.65	7514.52	-0.37	-61	12	0	HS	
7550	32.28	269.65	7535.99	-0.45	-73.79	12	0	HS	
7575	35.28	269.65	7556.77	-0.53	-87.69	12	360	HS	
7600	38.28	269.65	7576.79	-0.63	-102.66	12	0	HS	
7625	41.28	269.65	7596	-0.72	-118.65	12	360	HS	
7650	44.28	269.65	7614.35	-0.83	-135.63	12	360	HS	
7675	47.28	269.65	7631.78	-0.94	-153.54	12	0	HS	
7700	50.28	269.65	7648.25	-1.05	-172.34	12	360	HS	
7723	53.04	269.65	7662.52	-1.16	-190.38	12	360	HS	FIRST BONE SPRINGS
7725	53.28	269.65	7663.72	-1.17	-191.98	12	360	HS	
7750	56.28	269.65	7678.14	-1.3	-212.4	12	360	HS	
7775	59.28	269.65	7691.46	-1.42	-233.55	12	360	HS	
7800	62.28	269.65	7703.67	-1.56	-255.37	12	0	HS	
7825	65.28	269.65	7714.71	-1.69	-277.79	12	0	HS	
7850	68.28	269.65	7724.57	-1.83	-300.76	12	0	HS	
7875	71.28	269.65	7733.21	-1.98	-324.22	12	0	HS	
7900	74.28	269.65	7740.61	-2.12	-348.1	12	360	HS	
7925	77.28	269.65	7746.75	-2.27	-372.33	12	360	HS	
7950	80.28	269.65	7751.61	-2.42	-396.65	12	0	HS	
7975	83.28	269.65	7755.19	-2.57	-421.59	12	360	HS	
8000	86.28	269.65	7757.46	-2.72	-446.48	12	0	HS	
8025	89.28	269.65	7758.43	-2.87	-471.46	12	0	HS	
8037.29	90.75	269.65	7758.42	-2.95	-483.74	0			FBSG PAY
12474.01	90.75	269.65	7700	-30	-4920	0			LATERAL TD

Pilot hole drilled vertically to 7850'. Well will then be plugged back then kicked off at approx. 7281' and directionally drilled at 12 degrees per 100' with a 7 7/8" hole to 12,474' MD (7,700' TVD) where 5 1/2" casing will be set & cemented. Penetration point of producing zone will be encountered at 962.95' FNL and 513.74' FEL, 8-24S-29E. Deepest TVD in the well is 7850' in the pilot hole. Deepest TVD in the lateral is 7758'.

# 3D<sup>3</sup> Directional Drilling Planner - 3D View

Company: Yates Petroleum Corporation

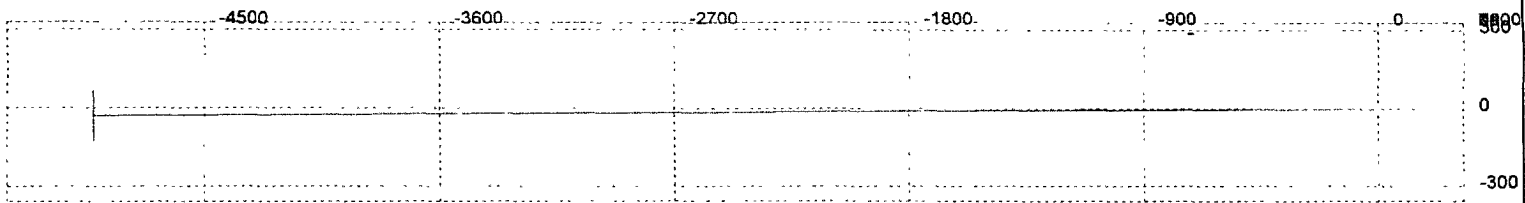
Well: Balsam BNL Federal Com. #1H



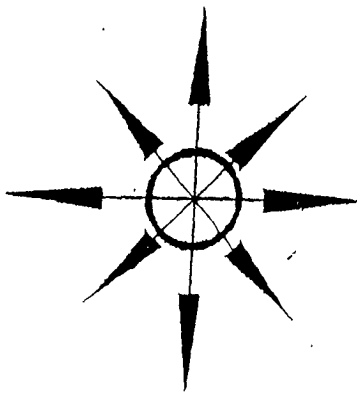
# 3D<sup>s</sup> Directional Drilling Planner - 3D View

Company: Yates Petroleum Corporation

Well: Balsam BNL Federal Com. #1H







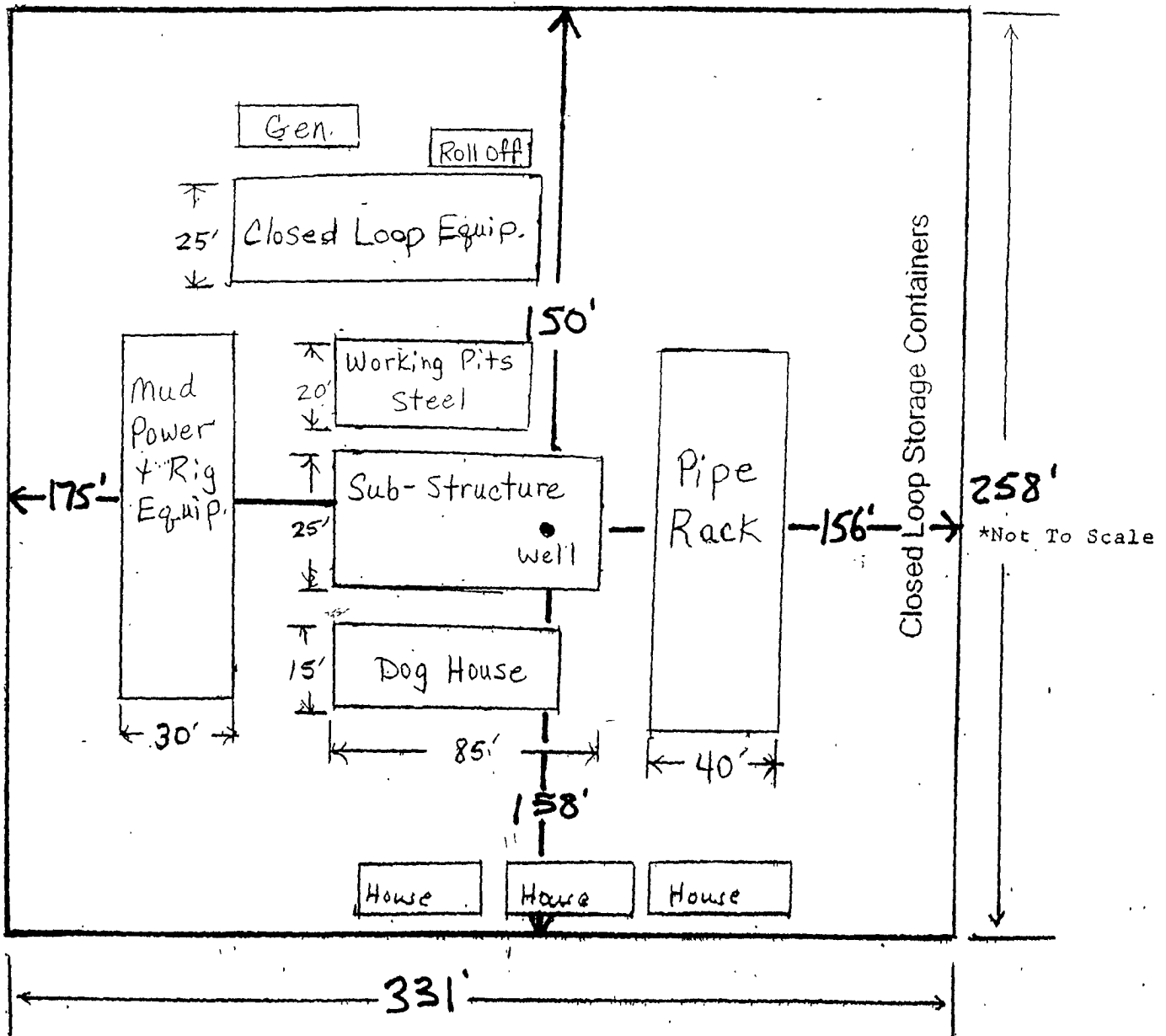
# Yates Petroleum Corporation

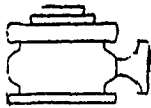
Location Layout for Permian Basin

## Closed Loop Design Plan

Balsam BNL Federal Com #1H  
960' FNL & 30' FEL (Surface Location)  
990' FNL & 330' FWL (Bottomhole Location)  
Section 8-T24S-R29E  
Eddy County, New Mexico

EXHIBIT C



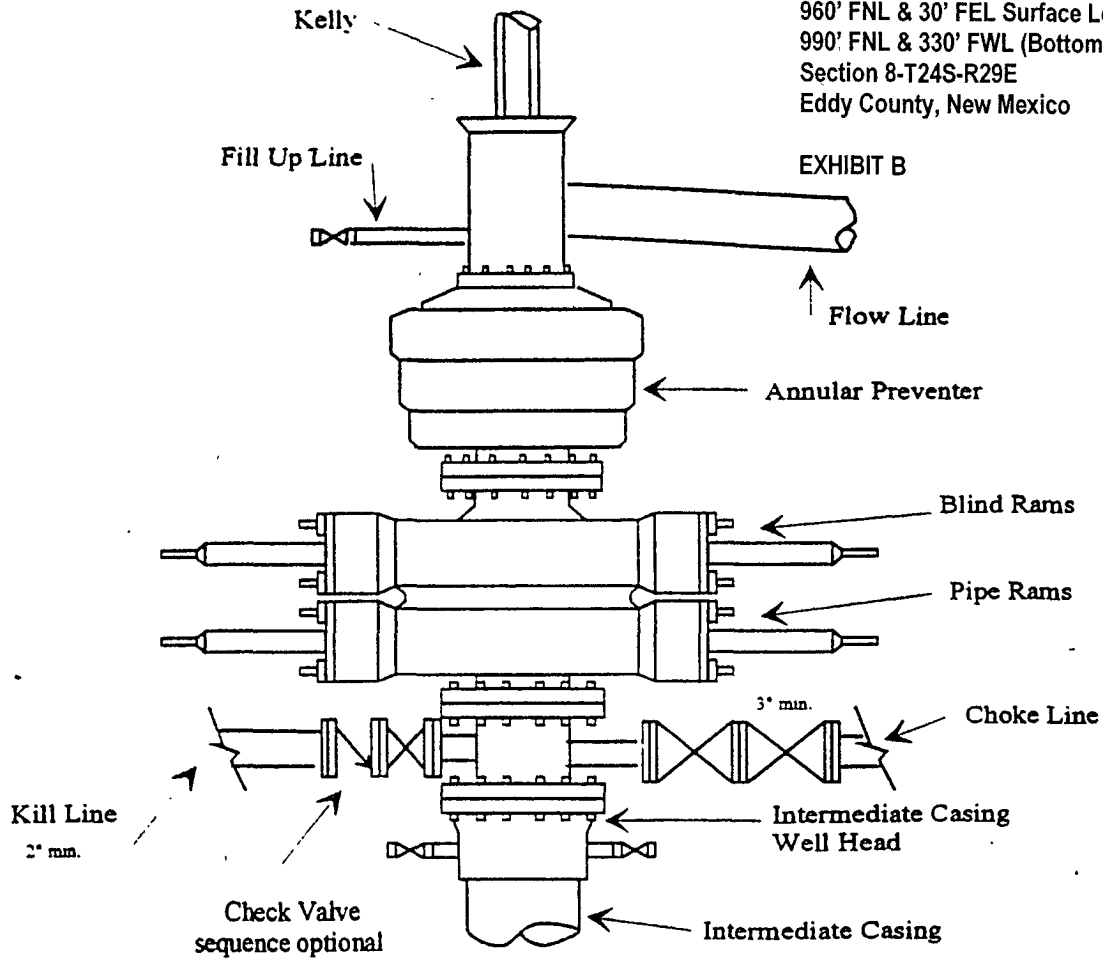


# Yates Petroleum Corporation

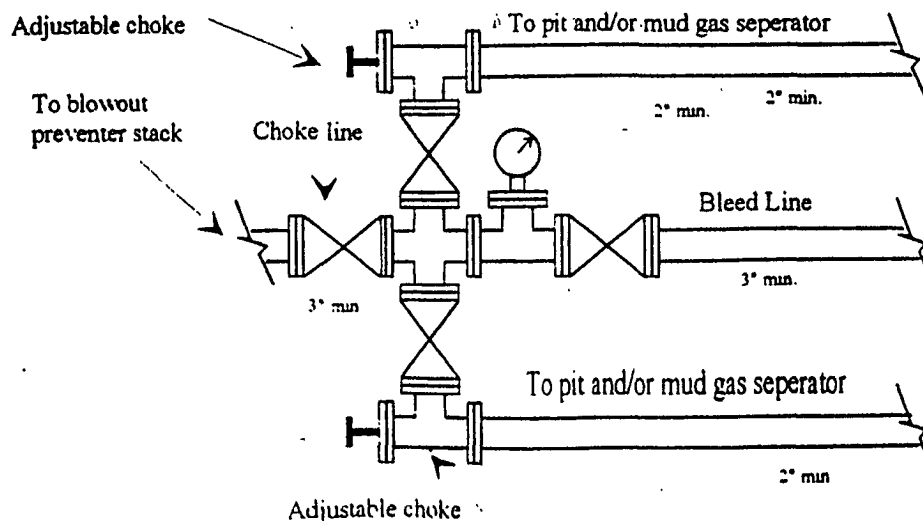
BOP-3

## Typical 3,000 psi Pressure System Schematic Annular with Double Ram Preventer Stack

Balsam BNL Federal Com. #1H  
960' FNL & 30' FEL Surface Location  
990' FNL & 330' FWL (Bottomhole Location)  
Section 8-T24S-R29E  
Eddy County, New Mexico

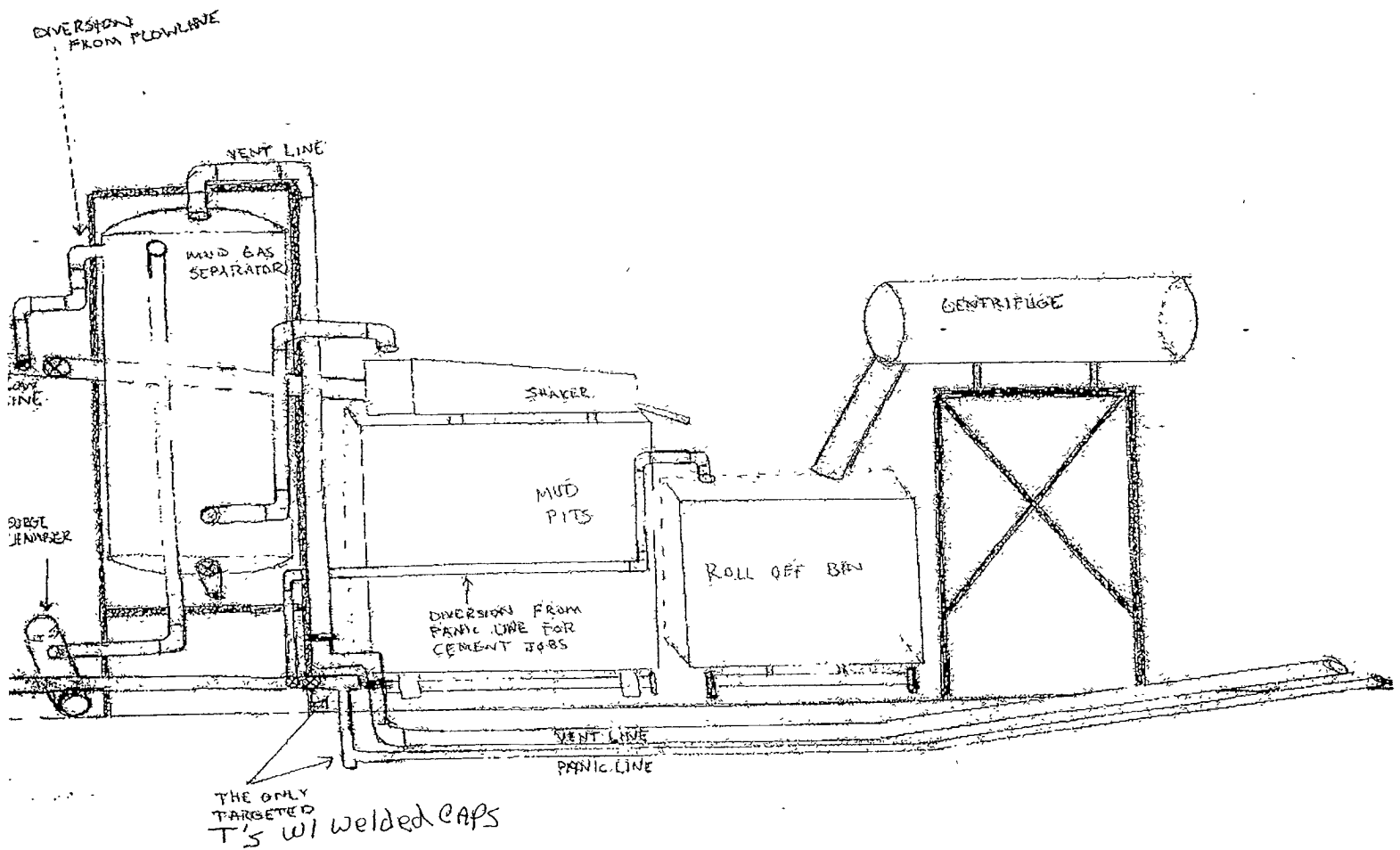


Typical 3,000 psi choke manifold assembly with at least these minimum features



YATES PETROLEUM CORPORATION  
Piping from Choke Manifold  
to the Closed-Loop Drilling Mud System

YATES PETROLEUM CORPORATION  
Balsam BNL Federal Com. #1H  
960' FNL and 30 FEL Surface Location  
990' FNL and 330' FWL Bottom Hole  
Section 8, T24S-R29E  
Eddy County, New Mexico Exhibit E



MULTI-POINT SURFACE USE AND OPERATIONS PLAN  
YATES PETROLEUM CORPORATION  
Balsam BNL Federal Com. #1H  
960' FSL & 30' FEL, Surface Location  
990' FNL & 330' FWL, Bottom Hole  
Eddy County, New Mexico

This plan is submitted with Form 3160-3, Application for Permit to Drill, covering the above described well. The purpose of this plan is to describe the location of the proposed well, the proposed construction activities and operations plan, the magnitude of the surface disturbance involved and the procedures to be followed in rehabilitating the surface after completion of the operations, so that a complete appraisal can be made of the environmental effect associated with the operations.

1. EXISTING ROADS:

Exhibit A is a portion of the BLM map showing the well and roads in the vicinity of the proposed location. The proposed well site is located approximately 8 miles east of Malaga, New Mexico and the access route to the location is indicated in red and green on Exhibit A.

DIRECTIONS: Go east of Malaga, NM on Duarte Road (CR-720) for about 0.7 of a mile to Harroun Road (CR-745). Turn left on Harroun Road and go approximately 2.9 miles to Dog Town Road (CR-788). Turn right on Dog Town Road and go approximately 1.1 miles. Turn left here onto caliche road and go approximately 0.6 of a mile. Turn left here on an existing road and go about 0.6 of a mile or to a point where an east/west powerline crosses the road. The new access will start here going east along the south side of the powerline for about 0.3 of a mile. The new access will turn right here and go about 0.1 of a mile to the northwest corner of the pad.

2. PLANNED ACCESS ROAD:

- A. The proposed new access will be approximately 0.4 of a mile in length from the point of origin to the northwest corner of the drilling pad.
- B. The new road will be 14 feet in width (driving surface) and will be adequately drained to control runoff and soil erosion.
- C. The new road will be bladed with drainage on both sides. One traffic turnout may be needed.
- D. The route of the road is visible.
- E. Existing roads will be maintained in the same or better condition.

3. LOCATION OF EXISTING WELL:

- A. There is drilling activity within a one-mile radius of the well site.
- B. Exhibit D shows existing wells within a one-mile radius of the proposed well site.

4. LOCATION OF EXISTING AND/OR PROPOSED FACILITIES:

- A. There are no production facilities on this lease at the present time.
- B. In the event that the well is productive, the necessary production facilities will be installed on the drilling pad. If the well is productive oil, a gas or diesel self-contained unit will be used to provide the necessary power until an electric line can be built, if needed.

5. LOCATION AND TYPE OF WATER SUPPLY:

- A. It is planned to drill the proposed well with a brine water system. The water will be obtained from commercial sources and will be hauled to the location by truck over the existing and proposed roads shown in Exhibit A.

6. SOURCE OF CONSTRUCTION MATERIALS:

The dirt contractor will be responsible for finding a source of material for construction of road and pad and will obtain any permits that may be required.

7. METHODS OF HANDLING WASTE DISPOSAL:

- A. Drill cuttings will be caught in tanks and disposed of at approved landfill.
- B. The well will be drilled using a closed loop system and it will be constructed, maintained, and closed in compliance with the State of New Mexico, Energy and Natural Resources Department, Oil Conservation Division – the “Pit Rule” 19.15.17 NMAC.
- C. Drilling fluids will be removed after drilling and completions are completed.
- D. Water produced during operations will be collected in tanks until hauled to an approved disposal system, or separate disposal application will be submitted.
- E. Oil produced during operations will be stored in tanks until sold.
- F. Current laws and regulations pertaining to the disposal of human waste will be complied with.
- G. All trash, junk, and other waste materials will be contained in trash cages or bins to prevent scattering and will be removed and deposited in an approved sanitary landfill. Burial on site is not approved.

8. ANCILLARY FACILITIES: Yates Petroleum Corporation wishes to have a fresh water reservoir to be located in the NENE of Section 8-T24S-R29E. Legal description as follows:  
Beginning at a point which lies N.89°31'07"W, 1091.0 feet and S.00°28'53"W., 108.2 feet from the northeast corner of said Section 8; Thence S.00°09'41"W., 150 feet; Thence N.89°50'18"W., 150 feet; N.00°09'41"E; Thence S.89°50'18"E., 150 feet to the beginning. Said tract of land being 22500 square feet or 0.5165 acres, more or less. See Exhibit E.

9. WELLSITE LAYOUT:

- A. Exhibit C shows the relative location and dimensions of the well pad, the closed loop system, the location of the drilling equipment, pulling unit orientation and access road approach. Note: Pits to north.
- B. The closed loop system will be constructed, maintained, and closed in compliance with the State of New Mexico, Energy and Natural Resources Department, Oil Conservation Division – the “Pit Rule” 19.15.17 NMAC.
- C. A 600' x 600' area has been staked and flagged.

10. PLANS FOR RESTORATION:

- A. After finishing drilling and/or completion operations, all equipment and other material not needed for further operations will be removed. The location will be cleaned of all trash and junk to leave the well site in as aesthetically pleasing a condition as possible.
- B. Unguarded pits, if any, containing fluids will be fenced until they have dried and have been leveled.
- C. If the proposed well is plugged and abandoned, all rehabilitation and/or vegetation requirements of the Bureau of Land Management will be complied with and will be

accomplished as expeditiously as possible. All pits, if any, will be filled level after they have evaporated and dried. Pit reclamation will meet 19.15.17 requirements.

11. SURFACE OWNERSHIP:

Federal Lands under the supervision of the Carlsbad BLM. .

12. OTHER INFORMATION:

- A. The primary use of the surface is for grazing.
- B. Refer to the archaeological report for a description of the topography, flora, fauna, soil characteristics, dwellings, and historical and cultural sites.

CERTIFICATION  
YATES PETROLEUM CORPORATION  
**Balsam BNL Federal Com. #1H**

I hereby certify that I or the company I represent, have inspected the drill site and access route proposed herein; that the company I represent is familiar with the conditions which currently exist; that full knowledge of state and federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with 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 the company I represent is 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 13th day of February, 2009.

Printed Name Cy Cowan

Signature 

Position Title Regulatory Agent

Address 105 South Fourth Street, Artesia, NM 88210

Telephone 575-748-4372

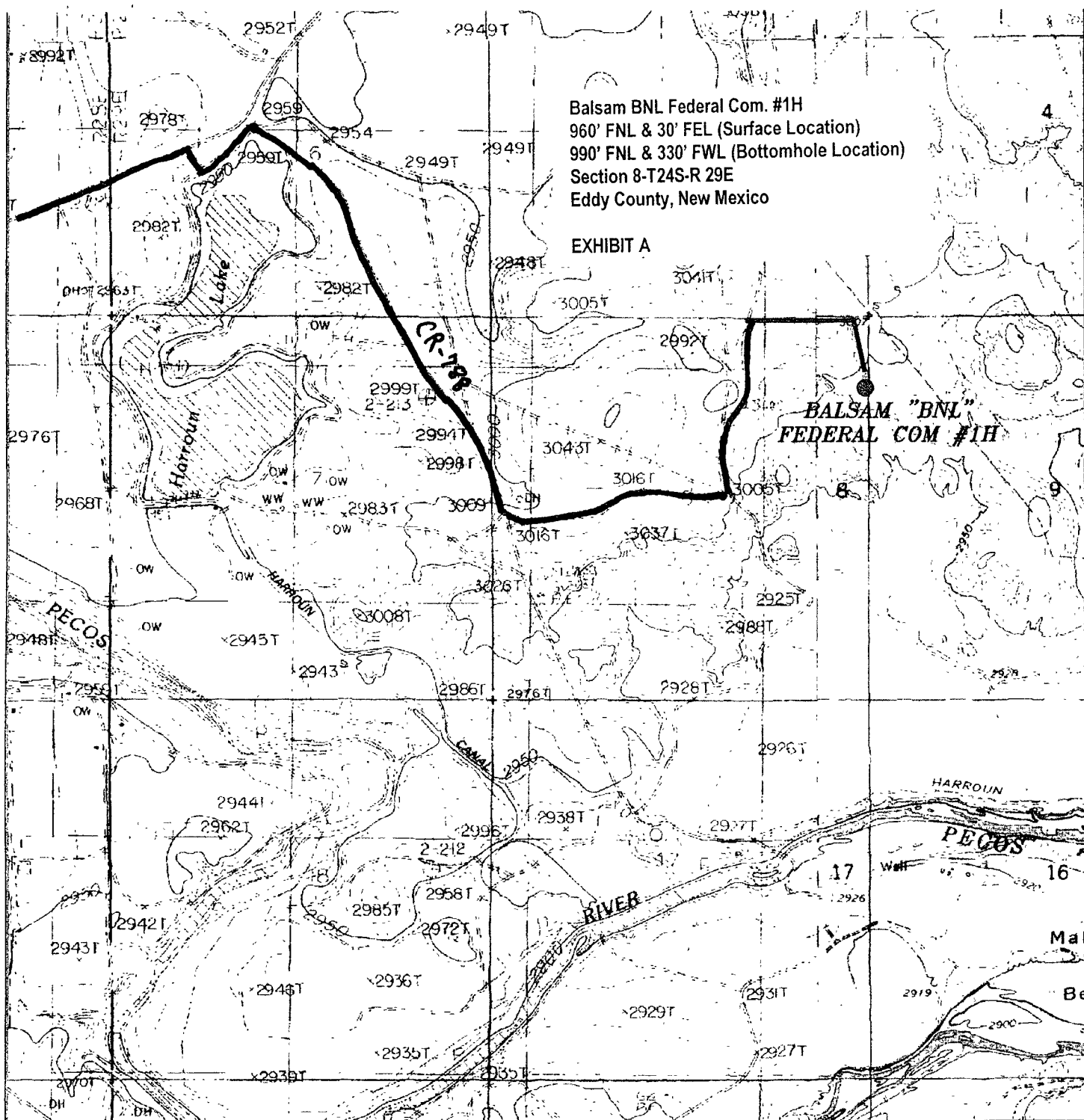
E-mail (optional) cy@yatespetroleum.com

Field Representative (if not above signatory) Tim Bussell

Address (if different from above) Same

Telephone (if different from above) 575-748-4221

E-mail (optional) \_\_\_\_\_



Balsam BNL Federal Com. #1H  
 960' FNL & 30' FEL (Surface Location)  
 990' FNL & 330' FWL (Bottomhole Location)  
 Section 8-T24S-R 29E  
 Eddy County, New Mexico

EXHIBIT A

**BALSAM "BNL"  
 FEDERAL COM #1H**

**BALSAM "BNL" FEDERAL COM #1H**  
 Located at 960' FNL AND 30' FEL  
 Section 8, Township 24 South, Range 29 East  
 N.M.P.M., Eddy County, New Mexico.

**basin  
 surveys**

focused on excellence  
 in the oilfield

P.O. Box 1786  
 1120 N. West County Rd.  
 Hobbs, New Mexico 88241  
 (575) 393-7316 - Office  
 (575) 392-2205 - Fax  
 basin-surveys.com

111 North 212th

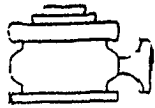
Survey Date 10-16-2009

Scale 1" = 20'

Date 01-19-2009

**YATES  
 PETROLEUM  
 CORP.**

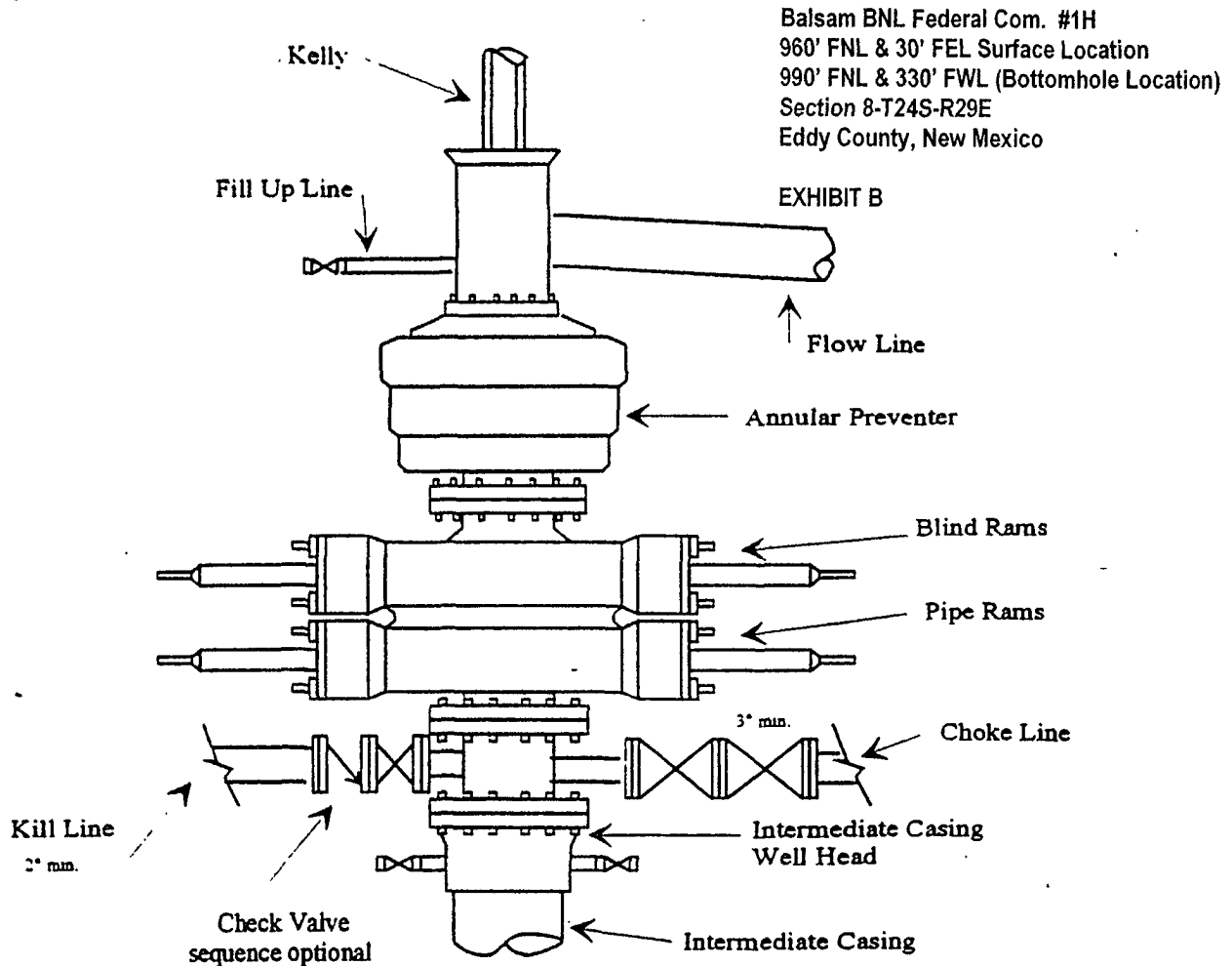




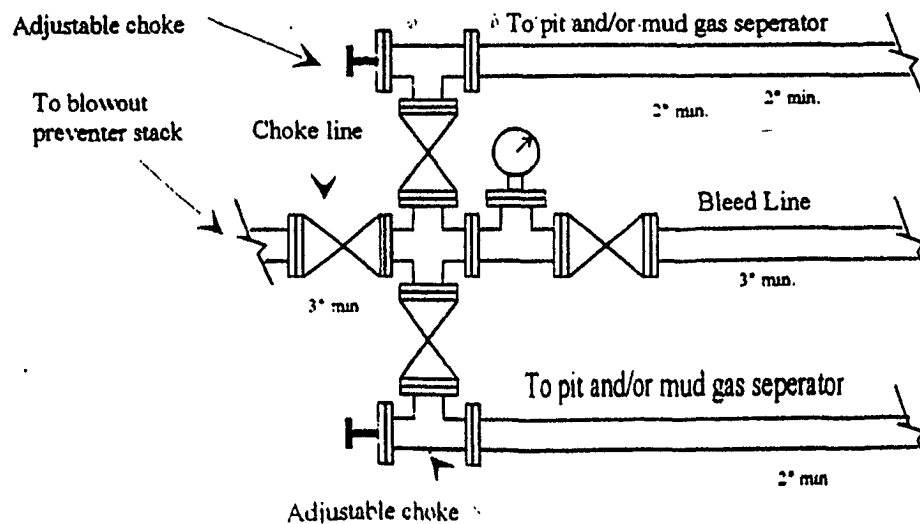
# Yates Petroleum Corporation

BOP-3

## Typical 3,000 psi Pressure System Schematic Annular with Double Ram Preventer Stack



Typical 3,000 psi choke manifold assembly with at least these minimum features





**Eddy County, New Mexico**  
**EXHIBIT D**

17  
C. B. A. JENNISON (OPER)  
MALAGA UNIT

## PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Yates Petroleum Corp.
LEASE NO.:	NM-117120
WELL NAME & NO.:	Balsam BNL Fed Com #1H
SURFACE HOLE FOOTAGE:	960' FNL & 30' FEL
BOTTOM HOLE FOOTAGE:	990' FNL & 330' FWL
LOCATION:	Section 08, T. 24 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
  - Communitization Agreement
- ☒ Construction
  - V-Door
  - Notification
  - Topsoil
  - Reserve Pit
  - Federal Mineral Material Pits
  - Well Pads
  - Roads
- ☐ Road Section Diagram
- ☒ Drilling
  - Pilot hole
- ☒ Production (Post Drilling)
  - Well Structures & Facilities
  - Pipelines
- ☐ 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)**

### **Communitization Agreement**

**A Communitization Agreement covering the acreage dedicated to this well must be filed for approval with the BLM. The effective date of the agreement shall be prior to any sales. Operator to supply NMOCD order or description of pool which details the vertical and horizontal extent of pool to verify that requested communitization is within an approved and established pool.**

## **VI. CONSTRUCTION**

### **V-DOOR NORTHEAST.**

#### **A. NOTIFICATION**

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5972 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 4 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**

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**

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

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

#### **E. WELL PAD SURFACING**

Surfacing of the well pad is not required.

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

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

## **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**

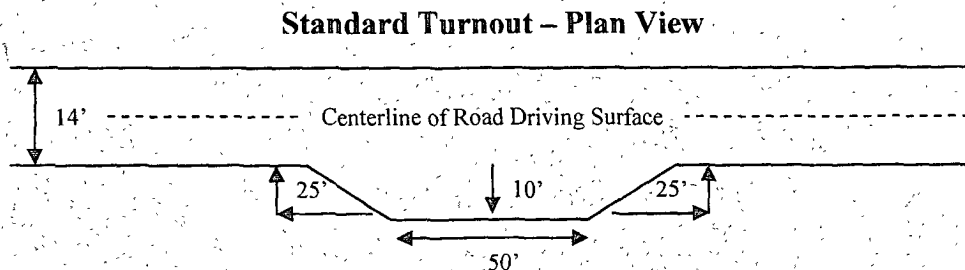
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

### **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:



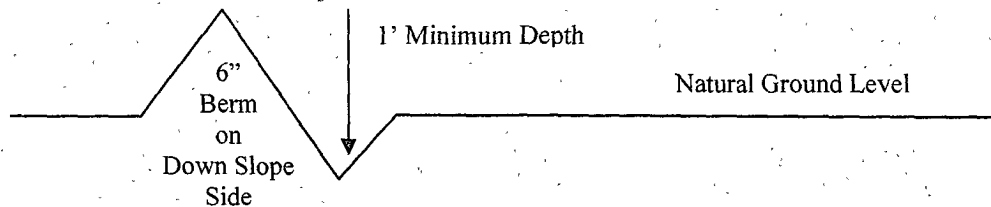


## **Drainage**

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outslowing 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:

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

## **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**

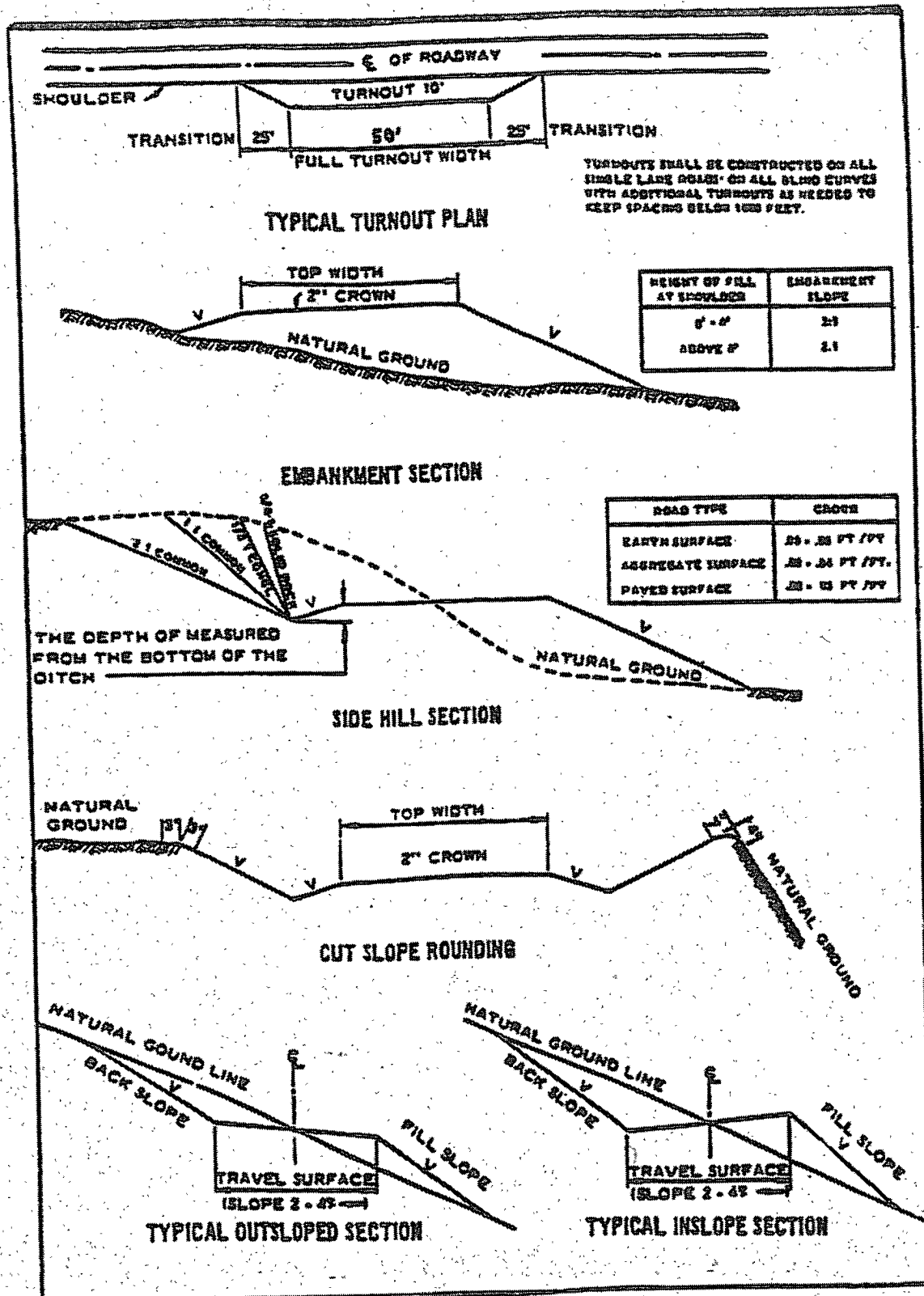
Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

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

### 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. Failure to obtain approval prior to work will result in an Incident of Non-Compliance being issued.**

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

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

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

**Medium cave/karst.**

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

1. The 11-3/4 inch surface casing shall be set **at approximately 650 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt)** and cemented to the surface. **If the salt is encountered at a shallower depth, the casing must be set 25' above the top of the salt.**
  - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with a surface log readout will be used or a cement bond log shall be run to verify the top of the cement.
  - b. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.**
  - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
  - d. If cement falls back, remedial cementing will be done prior to drilling out that string.
2. The minimum required fill of cement behind the 8-5/8 inch intermediate casing is:
  - ☒ Cement to surface. If cement does not circulate see B.1.a, c-d above.  
**Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst concerns.**

**Pilot hole to have a solid plug from bottom of pilot hole to kick-off point.**

**If 75% or greater lost circulation occurs while drilling the intermediate casing hole, the cement on the production casing must come to surface.**

**Centralizers required on horizontal leg, must be type for horizontal service and minimum of one every other joint.**

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 above DV tool, cement shall:
    - ☒ Cement should tie-back at least 350 feet into previous casing string. Operator shall provide method of verification.
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. **Piping from choke manifold and to flare to be as straight as possible.**
2. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
  - a. The tests shall be done by an independent service company.
  - b. The results of the test shall be reported to the appropriate BLM office.
  - c. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.
  - d. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug.

#### D. DRILL STEM TEST

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

WWI 040409

## **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

### **B. PIPELINES**

#### **STANDARD STIPULATIONS FOR SURFACE INSTALLED PIPELINES**

**A copy of the APD and attachments, including stipulations, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.**

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.
2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to activity of the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. The holder shall be liable for damage or injury to the United States to the extent provided by 43 CFR Sec. 2883.1-4. The holder shall be held to a standard of strict liability for damage or injury to the United States resulting from pipe rupture, fire, or spills caused or substantially aggravated by any of the following within the right-of-way or permit area:

- a. Activities of the holder including, but not limited to construction, operation, maintenance, and termination of the facility.
- b. Activities of other parties including, but not limited to:
  - (1) Land clearing.
  - (2) Earth-disturbing and earth-moving work.
  - (3) Blasting.
  - (4) Vandalism and sabotage.
- c. Acts of God.

The maximum limitation for such strict liability damages shall not exceed one million dollars (\$1,000,000) for any one event, and any liability in excess of such amount shall be determined by the ordinary rules of negligence of the jurisdiction in which the damage or injury occurred.

This section shall not impose strict liability for damage or injury resulting primarily from an act of war or from the negligent acts or omissions of the United States.

5. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil, salt water, or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil, salt water, or other pollutant, wherever found, shall be the responsibility of the holder, regardless of fault. Upon failure of the holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he deems necessary to control and clean up the discharge and restore the area, including, where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve the holder



of any responsibility as provided herein.

6. All construction and maintenance activity will be confined to the authorized right-of-way width of 25 feet.

7. No blading or clearing of any vegetation will be allowed unless approved in writing by the Authorized Officer.

8. The holder shall install the pipeline on the surface in such a manner that will minimize suspension of the pipeline across low areas in the terrain. In hummocky or dune areas, the pipeline will be "snaked" around hummocks and dunes rather than suspended across these features.

9. The pipeline shall be buried with a minimum of 24 inches under all roads, "two-tracks," and trails. Burial of the pipe will continue for 20 feet on each side of each crossing. The condition of the road, upon completion of construction, shall be returned to at least its former state with no bumps or dips remaining in the road surface.

10. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices.

12. Excluding the pipe, all above-ground structures not subject to safety requirement shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" – **Shale Green**, Munsell Soil Color No. 5Y 4/2; designated by the Rocky Mountain Five State Interagency Committee.

13. The pipeline will be identified by signs at the point of origin and completion of the right-of-way and at all road crossings. At a minimum, signs will state the holder's name, BLM serial number, and the product being transported. Signs will be maintained in a legible condition for the life of the pipeline.

14. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway.

15. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the authorized officer. Holder 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 will be made by the authorized officer to determine appropriate cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the authorized officer after consulting with the holder.

**LINES CANNOT BE GREATER THAN 4" IN DIAMETER ON THE SURFACE.**

## **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.

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

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

### Seed Mixture 3, for Shallow 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:

<u>Species</u>	<u>lb/acre</u>
Plains Bristlegrass ( <i>Setaria magrostachya</i> )	1.0
Green Spangletop ( <i>Leptochloa dubia</i> )	2.0
Side oats 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.