

Secretary's Potash
OCD-ARTESIA

ATS-11-1019

Form 3160-3
(February 2005)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

RECEIVED

DEC 20 2011

NM OCD ARTESIA

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

5. Lease Serial No.

NM-62211

6. If Indian, Allottee or Tribe Name

N/A

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

N/A

8. Lease Name and Well No.

Hanagan APL Fed Com #3-H

9. API Well No.

30-OK-3801

10. Field and Pool, or Exploratory

Parkway; Bone Spring

11. Sec., T., R., M., or Bld. and Survey or Area

Sec. 31-19S-30E

12. County or Parish

Eddy

13. State

NM

1a. Type of Work: ☒ DRILL ☐ REENTER

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

2. Name of Operator

Yates Petroleum Corporation 025575

3a. Address

105 South Fourth Street, Artesia, NM 88210

3b. Phone No. (include area code)

505-748-1471

4. Location of well (Report location clearly and in accordance with any State requirements. *)

At surface

660' FSL & 180' FWL, 31-19S-30E, SWSW

At proposed prod. zone

660' FSL & 330' FEL, 31-19S-30E, SESE

14. Distance in miles and direction from the nearest town or post office*

Approximately 41 miles southeast of Artesia, New Mexico

15. Distance from proposed* location to nearest

(Also to nearest drlg. unit line, if any)

330'

16. No. of acres in lease

200.00

17. Spacing Unit dedicated to this well

S2S2, Section 31, T19S-R30E

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

940' N

19. Proposed Depth

8400' TVD & 12926' MD
No Pilot Hole

20. BLM/ BIA Bond No. on file

NATIONWIDE BOND #NMB000434

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

3326' GL

22. Approximate date work will start*

ASAP

23. Estimated duration

60 days

24. Attachments

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

1. Well plat certified by a registered surveyor

2. ap

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)

4. Bond to cover the operations unless covered by existing bond on file (see item 20 above).

5. Operator certification.

6. Such other site specific information and/ or plans as may be required by the BLM

25. Signature

[Signature]

Name (Printed/ Typed)

Travis Hahn

Date

9/26/2011

Title

Land Regulatory Agent

Approved By (Signature)

[Signature]

Name (Printed/ Typed)

[Signature]

Date

DEC 13 2011

Title
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 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)

CAPITAN CONTROLLED WATER BASIN

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

APPROVAL SUBJECT TO
GENERAL REQUIREMENTS
AND SPECIAL STIPULATIONS
ATTACHED

Colt

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 Department

Form C-102

Revised July 16, 2010

Submit one copy to appropriate
District Office

OIL CONSERVATION DIVISION

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

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number 30-015-39801	Pool Code 49622	Pool Name Parkway; B.S.
Property Code 17558	Property Name HANAGAN "APL" FEDERAL COM	Well Number 3H
OGRID No. 025575	Operator Name YATES PETROLEUM CORPORATION	Elevation 3326'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	31	19 S	30 E		660	SOUTH	180	WEST	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
P	31	19 S	30 E		660	SOUTH	330	EAST	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>SURFACE LOCATION Lat - N 32°36'41.46" Long - W 104°01'09.33" NMSPCE- N 586337.128 E 638048.206 (NAD-83)</p>		<p>BOTTOM HOLE LOCATION Lat - N 32°36'41.32" Long - W 104°00'13.78" NMSPCE- N 586343.144 E 642796.750 (NAD-83)</p>	
<p>Penetration Point 660' FSL & 655' FWL</p>		<p>Producing Zone</p>	
<p>Project Area</p>		<p>Diagram showing well location and acreage with dimensions: 3322.3', 3325.8', 180', 3325.6', 3328.9', 4613.3', 330' B.H.</p>	

OPERATOR CERTIFICATION

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 or has a right to drill this well at this 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.

Signature Travis Hahn Date 9/27/11

Printed Name
Email Address thahn@yatespetroleum.com

SURVEYOR CERTIFICATION

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

Date Surveyed APR 20 2011
Signature & Seal of Professional Surveyor
W.O. No. 24548

Certificate No. Gary L. Jones 7977
BASIN SURVEYS 24548

YATES PETROLEUM CORPORATION

Hanagan APL Federal Com #3H
660' FSL & 180' FWL, Surface Hole
660' FSL & 330' FEL, Bottom Hole
Section 31 -T19S-R30-E
Eddy County, New Mexico

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

Rustler	340'	Cherry Canyon	3650' Oil Pay
Top of Salt	400'	Brushy Canyon	4550' Oil Pay
Yates	1450' Oil Pay	Bone Spring Lime	6080'
Seven Rivers	1560' Oil Pay	1st Bone Spring	7430'
Capitan	2390' Water/LC	2 nd Bone Spring	8052' Oil Pay
Delaware	3550' Oil Pay	Target Sand	8382' Oil Pay 8653'-MD
		TD (Lateral Hole)	8400' 12926'-MD

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

Water: Approx 250' - 350'

Oil or Gas: See above--All Potential Zones

3. Pressure Control Equipment: Yates Petroleum Corporation hereby requests a variance to allow us to place a 2000 PSI annular system with a 17.5" opening will be installed on the 20" casing. 3000 PSI BOPE with a 13 5/8" opening will be installed on the 13.3/8" casing and also on the 9 5/8" casing. Pressure tests to 3000 PSI and held for 30 minutes 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:

- A. 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)

Hole Size	Casing Size	Wt./Ft	Grade	Coupling	Interval	Length
26"	20"	94#	H-40	ST&C	0- 400' 215'	400'
17 1/2"	13 3/8"	54.5#	J-55	ST&C	0-100'	100'
17 1/2"	13 3/8"	48#	H-40	ST&C	100'-1200'	1100'
17 1/2"	13 3/8"	54.5#	J-55	ST&C	1200'- 1560' 1680'	360'
12 1/4"	9 5/8"	36#	K-55	LT&C	0- 3550' 3500'	3550'
8 1/2"	5 1/2"	17#	HCP-110	LT&C	0-7900'	7900'
8 1/2"	5 1/2"	17#	L-80	LT&C	7900'-12926'	5026'

Minimum Casing Design Factors: Burst 1.0, Tensile 1.8, Collapse 1.125

- B. CEMENTING PROGRAM:

Surface casing: Tail in 900 sacks Class C + 2% CaCl₂ (YLD 1.34 WT 14.80). Designed with 100% excess. TOC-Surface.

Intermediate Casing: Lead with 760 sacks Pecos Valley Lite + 2% CaCl₂ (YLD 2.00 WT 12.50); tail in with 200 sacks Class C + 2% CaCl₂ (YLD 1.34 WT 14.80). Designed with 100% excess. TOC-Surface

2nd Intermediate Casing: Lead with 600 sacks Pecos Valley Lite + CaCl₂ (YLD 2.18 WT 12.50); tail in with 200 sacks Class C + CaCl₂ (YLD 1.34 WT 14.80). Designed with 100% Excess. TOC-Surface

Production Casing: Cement to be done in two stages with stage tool at approx. 6500'.

Stage 1 from 6500'-12792'; Lead with 500 sacks 35:65;6PzC (YLD 2.08 WT 12.60); cement with 1100 sacks Pecos VILt (YLD 1.83 WT. 13.00). 30%CaCO₃, 3.2% Expansion additive, 2% Antifoam, .8% Retarder, 15 Fluid loss. Designed with 35% excess. TOC-6500'

Stage 2 from 2350'-6500'; Lead with 925 sacks C Lite (YLD 2.00 WT 12.50) 5% Salt, 6% Extenter, 1% Fluid Loss, .2% w/100 sacks Antifoam, 2.0 lb/sack LCM Extender, .125 lb/sack LCM, .35 gal/sk Retarder. Tail in 200 sacks Class C (YLD 1.34 Wt 14.80) TOC- ~~3000'~~ ^{7350'}. Designed with 35% excess.

The hole will be drilled vertically to approximately 7905'. The well will be kicked off at approximately 7905' and directionally drilled at 12 degrees per 100' with a 8 3/4" hole to 8653' MD (8382' TVD). Hole size will then be reduced to 8 1/2" and drilled to 12926 MD (8400' TVD) where 5 1/2" casing will be set and cemented. Penetration point of producing zone will be encountered at 660' FSL & 655' FWL, 31-19S-30E. Deepest TVD in the well is 8400' in the lateral. No Pilot Hole.

6. Mud Program and Auxiliary Equipment:

Interval	Type	Weight	Viscosity	Fluid Loss
0-400' ²⁷⁵	Fresh Water	8.60-9.20	32-36	N/C
400'-1500' ¹⁶⁸⁰	Brine Water	10.00-10.00	28-29	N/C
1500'-3500' ^{OK}	Fresh Water	8.60-8.80	28-29	N/C
3500'-7905'	Cut Brine	8.80-9.00	28-32	N/C
7905'-12926'	Cut Brine (lateral section)	9.00-9.20	28-32	<10-12

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. Mud will be checked hourly by rig personnel.

7. EVALUATION PROGRAM:

Samples: 30' samples to 3000'. 10 samples 3000' to TD.

Logging: Platform Express/Hals/ NGT, CMR.

Coring: As warranted.

DST's: As warranted.

Mudlogging on from surface casing to TD

8. Abnormal Conditions, Bottom hole pressure and potential hazards:

Anticipated BHP:

From: 0	TO: 400'	Anticipated Max. BHP:	190	PSI
From: 400'	TO: 1500'	Anticipated Max. BHP:	720	PSI
From: 1500	TO: 3500'	Anticipated Max. BHP	1820	PSI
From: 3500'	TO: 8400'	Anticipated Max. BHP	4020	PSI

No abnormal pressures or temperatures are anticipated.

Lost Circulation Zones Anticipated: None.

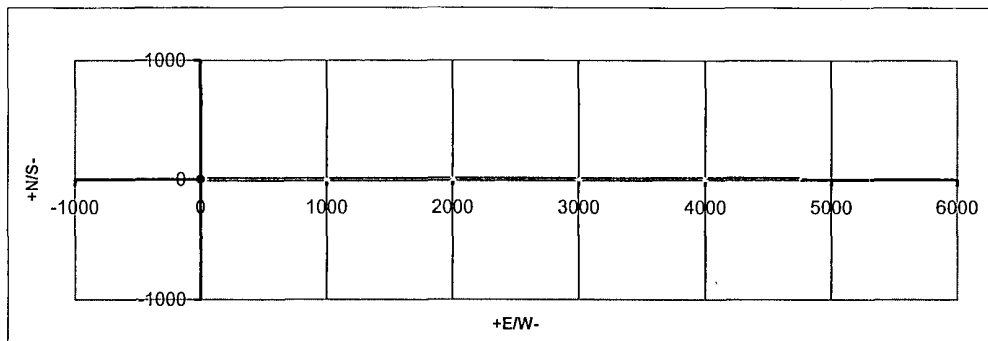
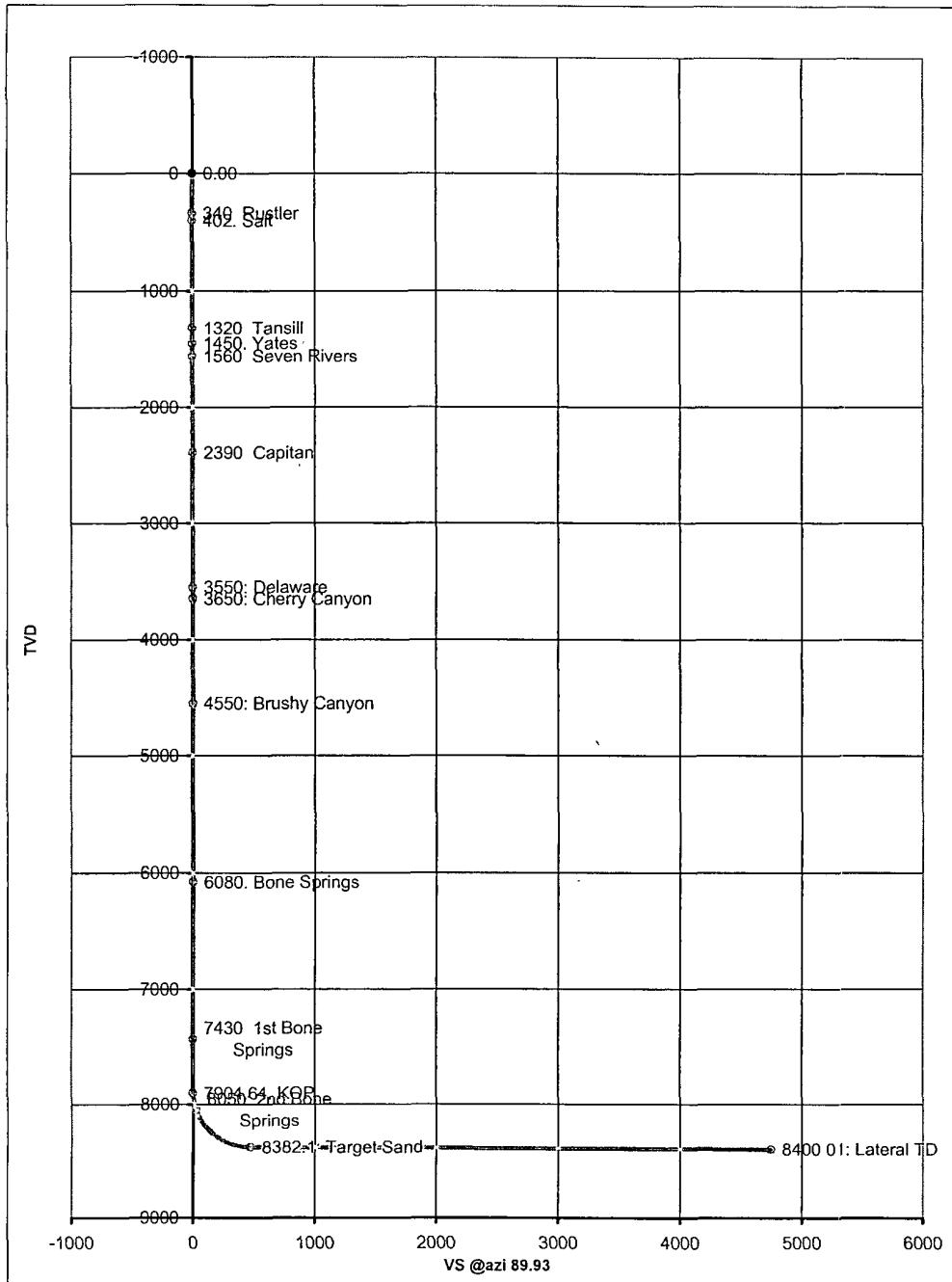
H2S Zones Anticipated: None

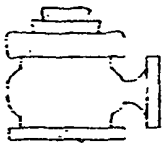
9. ANTICIPATED STARTING DATE:

Plans are to drill this well as soon as possible after receiving approval. It should take approximately 65 days to drill the well with completion taking another 30 days.

Co: Yates Petroleum Corporation				Units: Feet, ° 1100ft		VS Az: 89.93		Tgt TVD: 8400.00	
Drillers: 0				Elevation:		Tgt Radius: 0.00		Tgt MD: 0.00	
Well Name: Hanagan APL Federal Com. #3H				Northing:		Tgt N/S: 6.02		Tgt Displ.: 0.00	
Location: Section 31, 19S-30E				Easting:		Tgt E/W: 4748.54		Method: Minimum Curvature	

No.	MD	CL	Inc	Azi	TVD	VS	+N/S	+E/W	BR	WR	DLS	Comments
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1	340.00	340.00	0.00	0.00	340.00	0.00	0.00	0.00	0.00	0.00	0.00	Rustler
2	402.00	62.00	0.00	0.00	402.00	0.00	0.00	0.00	0.00	0.00	0.00	Salt
3	1320.00	918.00	0.00	0.00	1320.00	0.00	0.00	0.00	0.00	0.00	0.00	Tansill
4	1450.00	130.00	0.00	0.00	1450.00	0.00	0.00	0.00	0.00	0.00	0.00	Yates
5	1560.00	110.00	0.00	0.00	1560.00	0.00	0.00	0.00	0.00	0.00	0.00	Seven Rivers
6	2390.00	830.00	0.00	0.00	2390.00	0.00	0.00	0.00	0.00	0.00	0.00	Capitan
7	3550.00	1160.00	0.00	0.00	3550.00	0.00	0.00	0.00	0.00	0.00	0.00	Delaware
8	3650.00	100.00	0.00	0.00	3650.00	0.00	0.00	0.00	0.00	0.00	0.00	Cherry Canyon
9	4550.00	900.00	0.00	0.00	4550.00	0.00	0.00	0.00	0.00	0.00	0.00	Brushy Canyon
10	6080.00	1530.00	0.00	0.00	6080.00	0.00	0.01	0.00	0.00	0.00	0.00	Bone Springs
11	7430.00	1350.00	0.00	0.00	7430.00	0.00	0.01	0.00	0.00	0.00	0.00	1st Bone Springs
12	7904.64	7904.64	0.00	89.93	7904.64	0.00	0.01	0.00	0.00	1.14	0.00	KOP
13	8000.00	95.36	11.44	89.93	7999.37	9.49	0.02	9.49	12.00	0.00	12.00	
14	8052.35	147.71	17.72	89.93	8050.00	22.67	0.04	22.67	12.00	0.00	12.00	2nd Bone Springs
15	8100.00	47.65	23.44	89.93	8094.59	39.41	0.06	39.41	12.00	0.00	12.00	
16	8200.00	100.00	35.44	89.93	8181.52	88.48	0.12	88.48	12.00	0.00	12.00	
17	8300.00	100.00	47.44	89.93	8256.34	154.54	0.20	154.54	12.00	0.00	12.00	
18	8400.00	100.00	59.44	89.93	8315.80	234.72	0.30	234.72	12.00	0.00	12.00	
19	8500.00	100.00	71.44	89.93	8357.28	325.51	0.42	325.51	12.00	0.00	12.00	
20	8600.00	100.00	83.44	89.93	8378.98	422.94	0.54	422.94	12.00	0.00	12.00	
21	8652.64	748.00	89.76	89.93	8382.10	475.46	0.61	475.46	12.00	0.00	12.00	Target Sand
22	12925.76	4273.12	89.76	89.93	8400.01	4748.54	6.02	4748.54	0.00	0.00	0.00	Lateral-TD



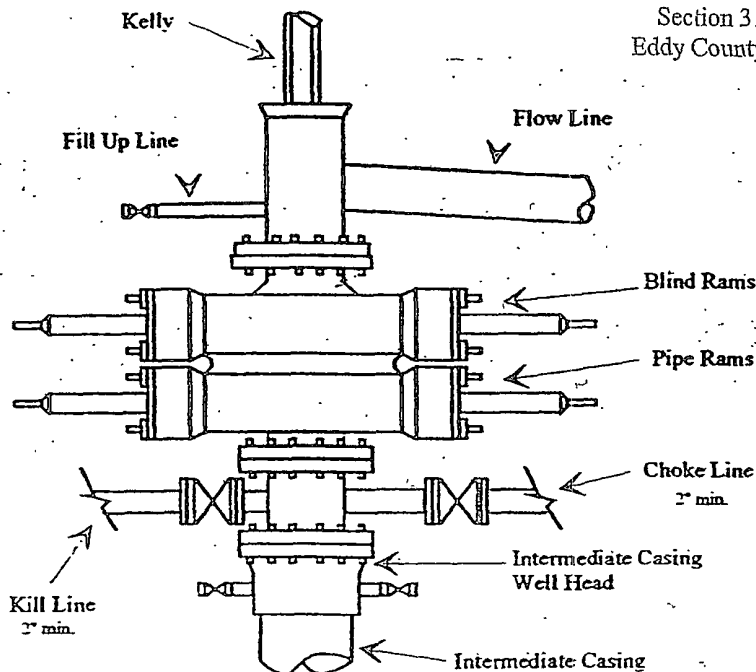


Yates Petroleum Corporation

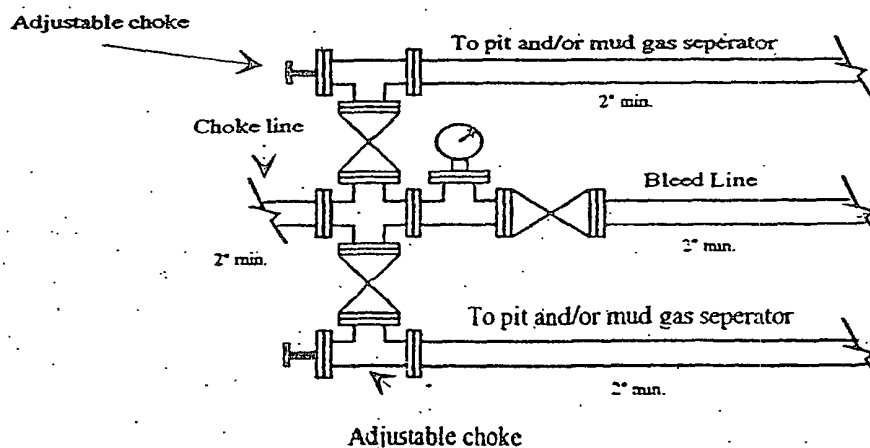
BOP-2

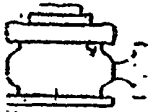
Typical 2,000 psi Pressure System Schematic Double Ram Preventer Stack

YATES PETROLEUM CORPORATION
Hanagan APL Federal Com. #3H
660' FSL and 180' FWL SHL
660' FSL and 330' FEL BHL
Section 31, T19S-R30E
Eddy County, NM Exhibit C-1



Typical 2,000 psi choke manifold assembly with at least these minimum features





Yates Petroleum Corporation

BOP-3

Typical 3,000 psi Pressure System

Schematic

Annular with Double Ram Preventer Stack

YATES PETROLEUM CORPORATION

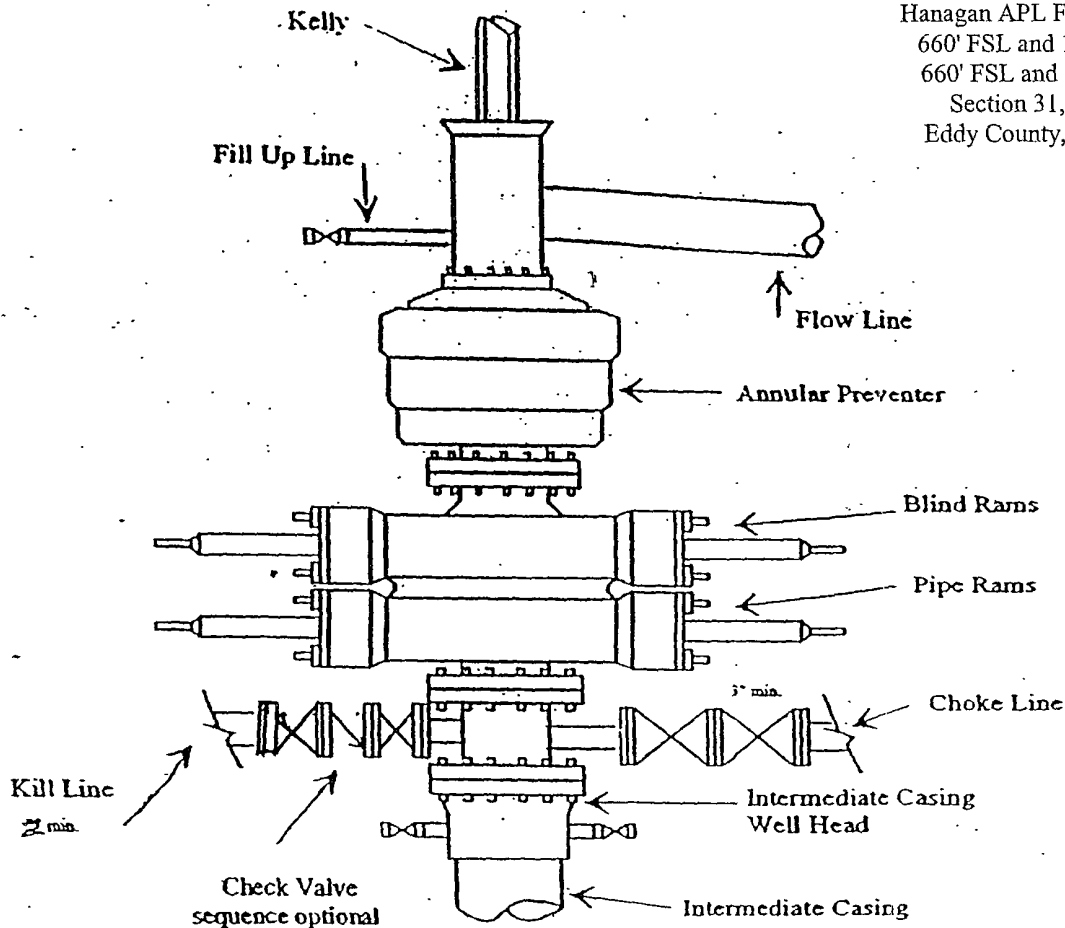
Hanagan APL Federal Com. #3H

660' FSL and 180' FWL SHL

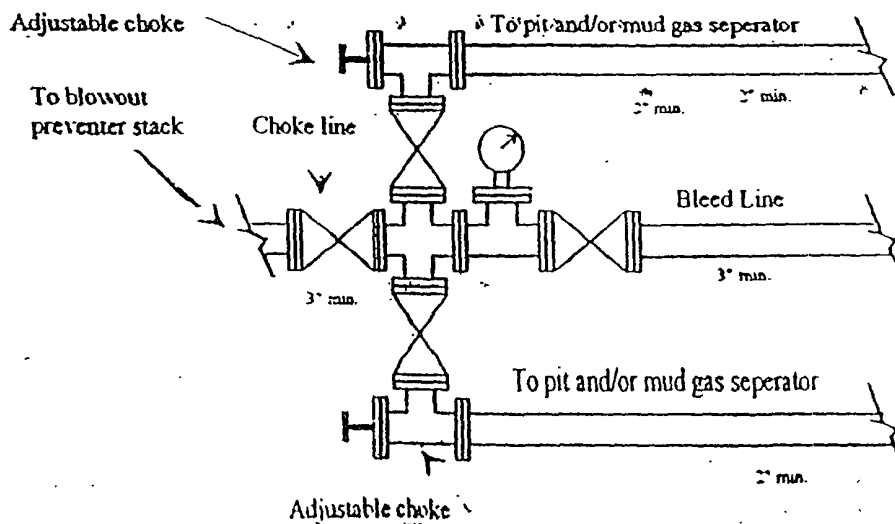
660' FSL and 330' FEL BHL

Section 31, T19S-R30E

Eddy County, NM Exhibit C



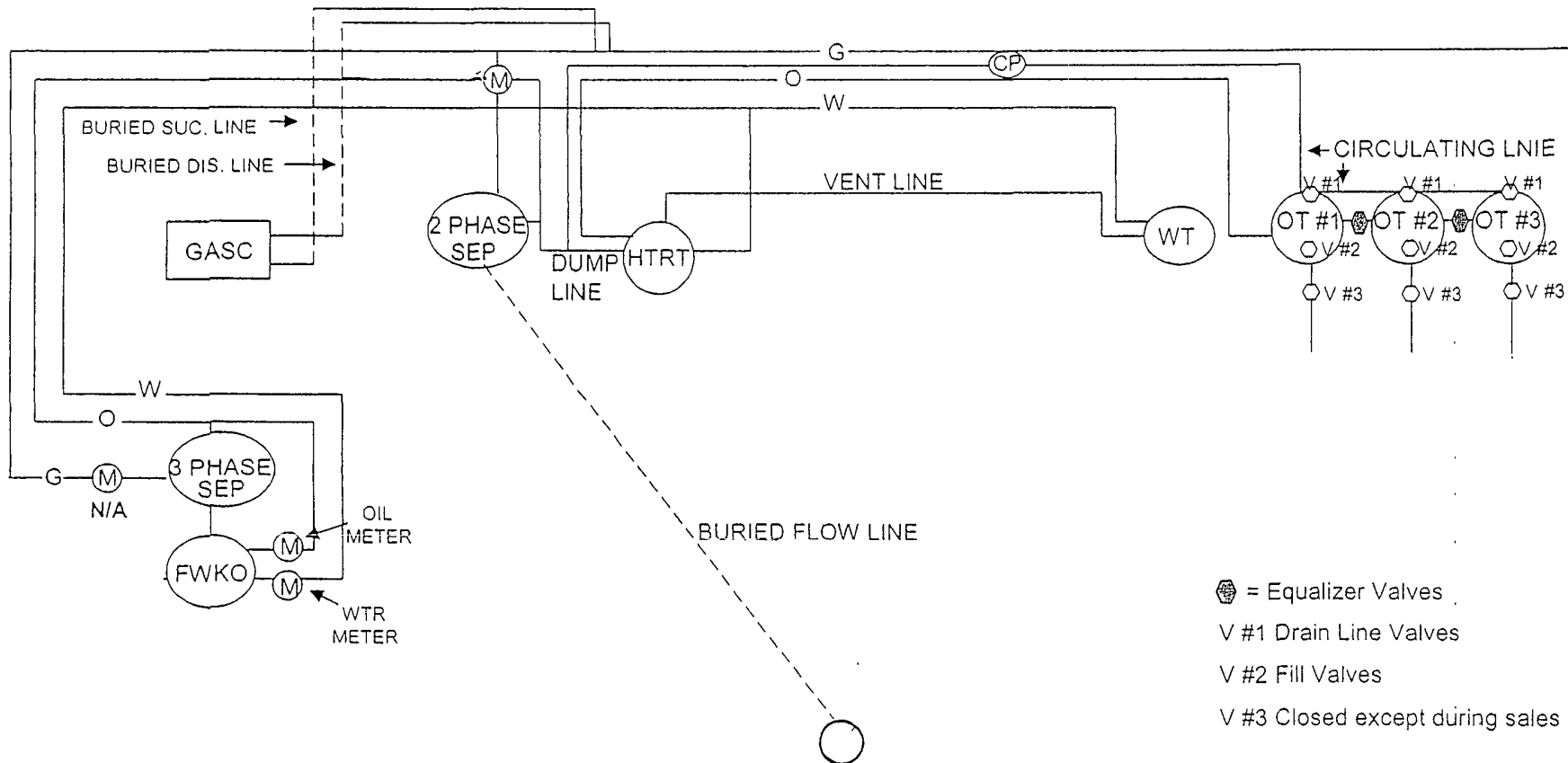
Typical 3,000 psi choke manifold assembly with at least these minimum features





105 South 4th Street * Artesia, NM 88210
(575)-748-1471

-Danny Matthews
June, 2010



⊗ = Equalizer Valves
V #1 Drain Line Valves
V #2 Fill Valves
V #3 Closed except during sales

YATES PETROLEUM CORPORATION
Hanagan APL Federal Com. #3H
660' FSL and 180' FWL SHL
660' FSL and 330' FEL BHL
Section 31, T19S-R30E
Eddy County, NM Exhibit D

This diagram is subject to the Yates Petroleum Corporation August 1983 Security Plan
which is on file at 105 South 4th Street, Artesia, NM

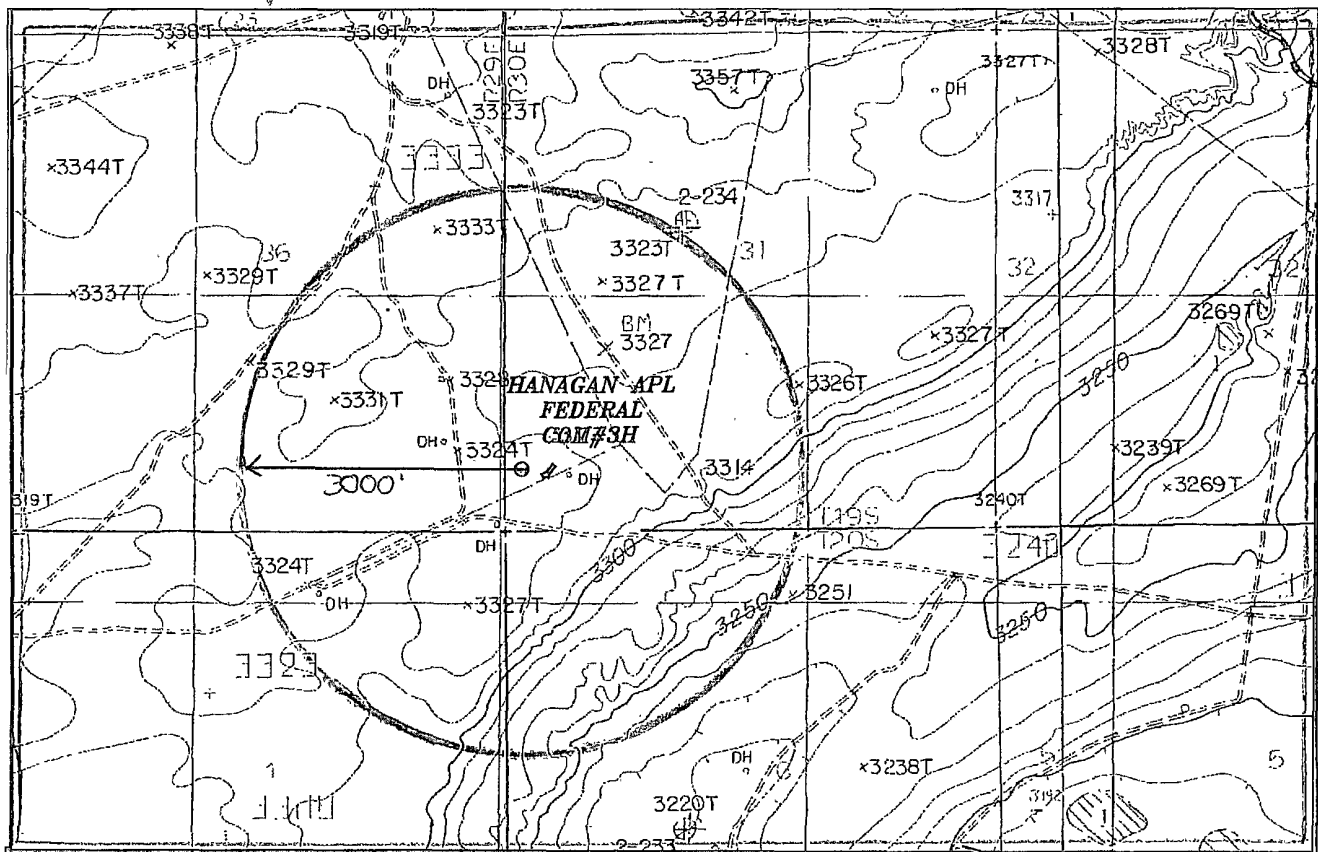
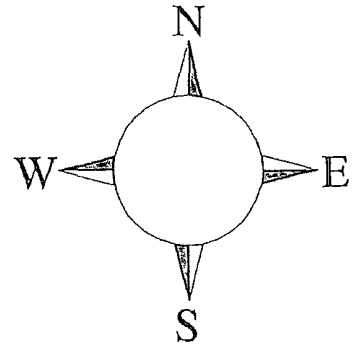
Yates Petroleum Corporation
105 S. Fourth Street
Artesia, NM 88210

Hydrogen Sulfide (H₂S) Contingency Plan

For

Hanagan APL Federal Com. #3H
660' FSL & 180' FWL
Section 31, T19S-R30E
Eddy County NM

This is an open drilling site. H₂S monitoring equipment and emergency response equipment will be used within 500' of zones known to contain H₂S, including warning signs, wind indicators and H₂S monitor.



Assumed 100 ppm ROE = 3000'

100 ppm H₂S concentration shall trigger activation of this plan.

Emergency Procedures

In the case of a release of gas containing H₂S, the first responder(s) must isolate the area and prevent entry by other persons into the 100 ppm ROE. Additionally the first responder(s) must evacuate any public places encompassed by the 100 ppm ROE. First responder(s) must take care not to injure themselves during this operation. Company and/or local officials must be contacted to aid in this operation. Evacuation of the public should be beyond the 100 ppm ROE.

All responders must have training in the detection of H₂S, measures for protection against the gas, equipment used for protection and emergency response. Additionally, responders must be equipped with H₂S monitors and air packs in order to control the release. Use the “buddy system” to ensure no injuries during the response.

Ignition of Gas Source

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO₂). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever there is an ignition of the gas

Characteristics of H₂S and SO₂

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H ₂ S	1.189 Air = 1	10 ppm	100 ppm/hr	600 ppm
Sulfur Dioxide	SO ₂	2.21 Air = 1	2 ppm	N/A	1000 ppm

Contacting Authorities

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

Yates Petroleum Corporation Phone Numbers

YPC Office	(575) 748-1471
Wade Bennett/Prod Superintendent	(575) 748-4236
LeeRoy Richards/Assistant Prod Superintendent	(575) 748-4228
Mike Larkin/Drilling	(575) 748-4222
Paul Hanes/Prod. Foreman/Roswell	(575) 624-2805
Tim Bussell/Drilling Superintendent	(575) 748-4221
Artesia Answering Service	(575) 748-4302
(During non-office hours)	

Agency Call List

Eddy County (575)

Artesia

State Police	746-2703
City Police.....	746-2703
Sheriff's Office	746-9888
Ambulance.....	911
Fire Department	746-2701
LEPC (Local Emergency Planning Committee)	746-2122
NMOCD.....	748-1283

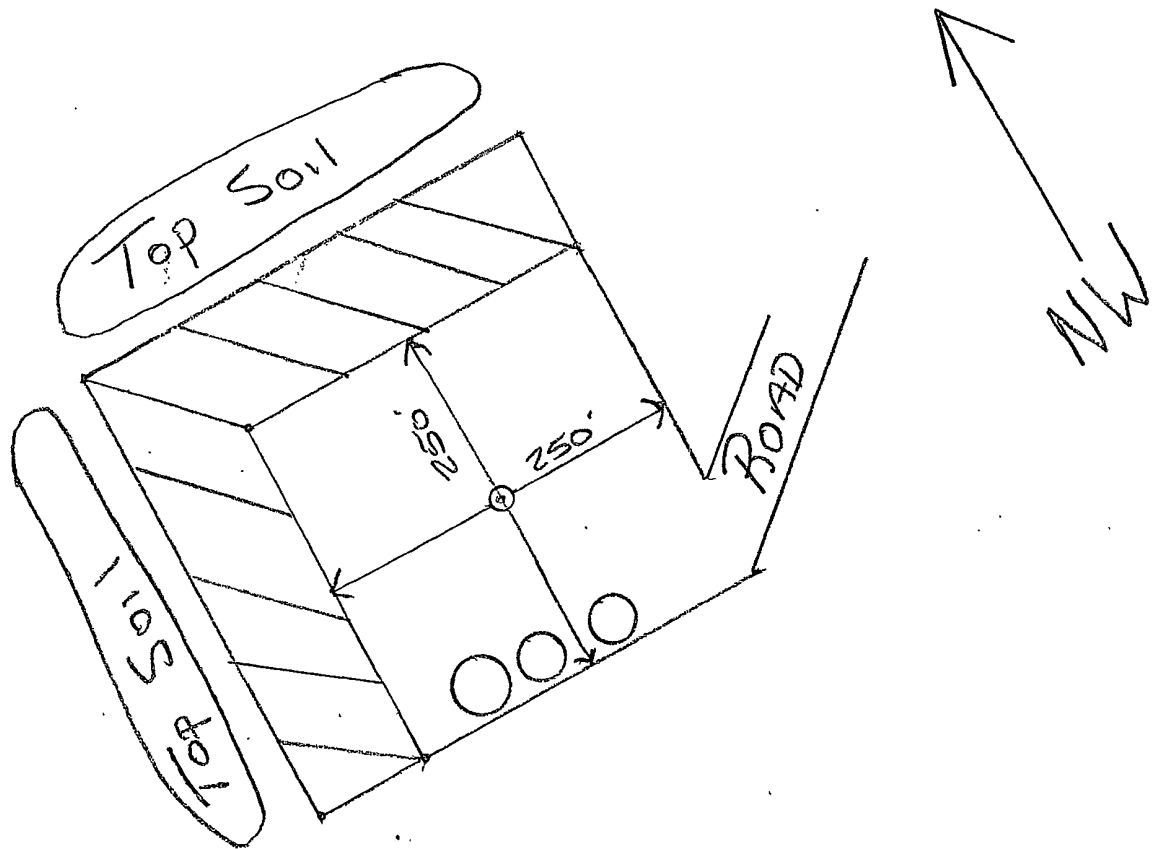
Carlsbad

State Police	885-3137
City Police.....	885-2111
Sheriff's Office.....	887-7551
Ambulance.....	911
Fire Department	885-2111
LEPC (Local Emergency Planning Committee).....	887-3798
US Bureau of Land Management.....	887-6544
New Mexico Emergency Response Commission (Santa Fe)	(505)476-9600
24 HR	(505) 827-9126
New Mexico State Emergency Operations Center	(505) 476-9635
National Emergency Response Center (Washington, DC)	...(800) 424-8802

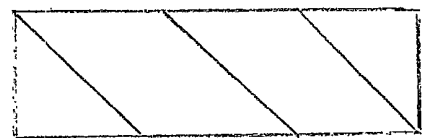
Other

Boots & Coots IWC	1-800-256-9688 or (281) 931-8884
Cudd Pressure Control.....	(915) 699-0139 or (915) 563-3356
Halliburton	(575) 746-2757
B. J. Services.....	(575) 746-3569
Flight For Life -4000 24th St, Lubbock, TX	(806) 743-9911
Aerocare -Rr 3 Box 49f, Lubbock, TX	(806) 747-8923
Med Flight Air Amb 2301 Yale Blvd SE #D3, Albuq, NM	(505) 842-4433
S B Air Med Svc 2505 Clark Carr Loop SE, Albuq, NM	(505) 842-4949

YATES PETROLEUM CORPORATION
Hanagan APL Federal Com. #3H
RECLAMATION PLAN



Not to Scale
Final Reclamation
may look different
from this PLAT.



Possible Reclamation
AREA

YATES PETROLEUM CORPORATION
Surface Use Plan of Operations
Hanagan APL Federal Com. #3-H
660' FSL and 180' FWL, Surface Hole Location
660' FSL and 330' FEL, Bottom Hole Location
Section 31, T19S-R30E

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 wellsite is located approximately 42 miles, east of Artesia, New Mexico and the access route to the location is indicated in red and green on Exhibit A.

DIRECTIONS:

Go east of Artesia, NM on Highway 82 for approximately 14 miles to the intersection of 82 and 360 (Bluestem Road). Turn right on Bluestem and go approximately 20 miles to Curry Comb Road. Turn right on Curry Comb Road and go approximately 4.4 miles. At this point there will be a lease road on the left and a St. Marys sign. Turn left here and follow the lease road for 0.5 of a mile. Go right here for 0.1 of a mile. Turn left here crossing a cattle guard and go south here for 0.7 of a mile. The road will "T" here. Turn left on existing lease road and go 0.6 of a mile. Turn right here on existing lease road and go approximately 0.2 of a mile. The new road will start here going southwest for approximately 200 feet to the southeast corner of the proposed well pad.

2. PLANNED ACCESS ROAD:

- A. The proposed new access will be approximately 200 feet in length from the point of origin to the southeast corner of the drilling pad.
- B. The new road will be 30 feet in width with 16 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 if needed. No traffic turnouts will 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. Production from this well be sent via flowline north to the tank battery on the Hanagan APL Federal Com. #2H. The length of the flowline will be approximately .2 of a mile.
- B. 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. Power should not be required if the well is productive of gas.
- C. A Pipeline Right-Of-Way will not be required because the proposed flowline will be on lease

5. LOCATION AND TYPE OF WATER SUPPLY:

- A. It is planned to drill the proposed well with a fresh 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:

- A. Dirt contractor will locate nearest pit and obtain any permits and materials needed for construction.

7. METHODS OF HANDLING WASTE DISPOSAL:

- A. Drill cuttings will be collected in tanks until hauled to an approved disposal system.
- B. A 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. Form C-144 attached – Exhibit E.
- C. Drilling fluids will be removed after drilling and completions are finalized.
- 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: NONE

9. WELLSITE LAYOUT:

- A. Exhibit C shows the relative location and dimensions of the well pad, the closed loop design plan, the location of the drilling equipment, orientation and access road approach (Approximately 4.5 acres)
- 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. Form C-144 is attached – Exhibit E.
- 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. 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.

11. SURFACE OWNERSHIP: Managed by the Bureau of Land Management
620 East Greene Street
Carlsbad, NM 88210

MINERAL OWNERSHIP: Federal Lease-NM-62211
Administered by: Bureau of Land Management
Carlsbad Field Office
620 E. Greene Street
Carlsbad, NM 88220-6292

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
Hanagan APQ Federal Com. #3H

I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; and an someone under employment of Yates Petroleum Corporation has 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 I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

Executed this 15th day of September, 2011

Signature 

Name Cy Cowan

Position Title Land Regulatory Agent

Address 105 South Fourth Street, Artesia, New Mexico 88210

Telephone (505) 748-4372

Field Representative (if not above signatory) Tim Bussell, Drilling Supervisor

Address (if different from above) Same as above.

Telephone (if different from above) ⁵¹⁵~~(505)~~ 748-4221

E-mail (optional) _____

PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Yates Petroleum Corporation
LEASE NO.:	NM-62211
WELL NAME & NO.:	Hanagan APL Fed #3H
SURFACE HOLE FOOTAGE:	660' FSL & 180' FWL
BOTTOM HOLE FOOTAGE:	660' FSL & 330' FEL
LOCATION:	Section 31, T. 19 S., R. 30 E., NMPM
COUNTY:	Eddy County, New Mexico

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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.

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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)

Avoid rancher's fence located approximately 160 feet south of center hole

Cave and Karst

**** Depending on location, additional Drilling, Casing, and Cementing procedures may be required by engineering to protect critical karst groundwater recharge areas.**

Cave/Karst Surface Mitigation

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

Construction:

In the advent that any underground voids are opened up during construction activities, construction activities will be halted and the BLM will be notified immediately.

No Blasting:

No blasting will be utilized for pad construction. The pad will be constructed and leveled by adding the necessary fill and caliche.

Tank Battery Liners and Berms:

Tank battery locations will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank.

Leak Detection System:

A method of detecting leaks is required. The method could incorporate gauges to measure loss, siting valves and lines so they can be visually inspected, or installing electronic sensors to alarm when a leak is present. Leak detection plan will be submitted to BLM for approval.

Automatic Shut-off Systems:

Automatic shut off, check valves, or similar systems will be installed for pipelines and tanks to minimize the effects of catastrophic line failures used in production or drilling.

Cave/Karst Subsurface Mitigation

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

Rotary Drilling with Fresh Water:

Fresh water will be used as a circulating medium in zones where caves or karst features are expected. SEE ALSO: Drilling COAs for this well.

Directional Drilling:

Kick off for directional drilling will occur at least 100 feet below the bottom of the cave occurrence zone. SEE ALSO: Drilling COAs for this well.

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 70 percent occur simultaneously while drilling in any cave-bearing zone, the BLM will be notified immediately by the operator. The BLM will assess the situation and work with the operator on corrective actions to resolve the problem.

Abandonment Cementing:

Upon well abandonment in high cave karst areas additional plugging conditions of approval may be required. The BLM will assess the situation and work with the operator to ensure proper plugging of the wellbore.

Pressure Testing:

Annual pressure monitoring will be performed by the operator on all casing annuli and reported in a sundry notice. If the test results indicated a casing failure has occurred, remedial action will be undertaken to correct the problem to the BLM's approval.

VI. CONSTRUCTION

A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5972 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 in a low profile manner in order to prevent wind/water erosion of the topsoil. The topsoil to be stripped is approximately 4 inches in depth. The topsoil will be used for interim and final reclamation.

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

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

D. FEDERAL MINERAL MATERIALS PIT

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call the Carlsbad Field Office at (575) 234-5972.

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

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

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

F. ON LEASE ACCESS ROADS

Road Width

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

Surfacing

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

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

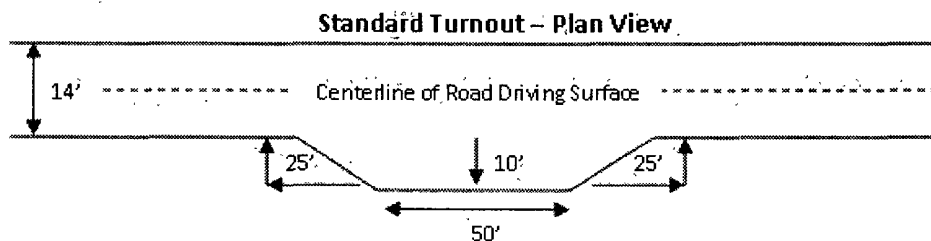
The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing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

Crowning

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

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:

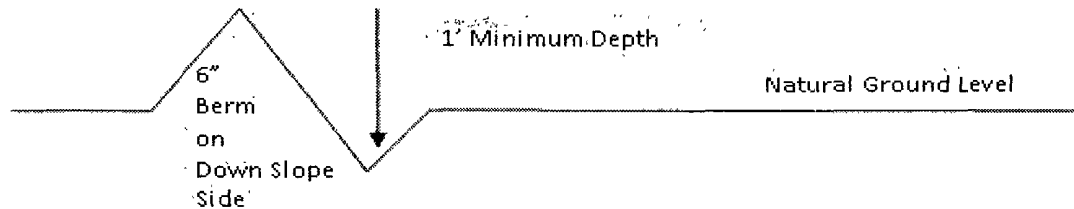


Drainage

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

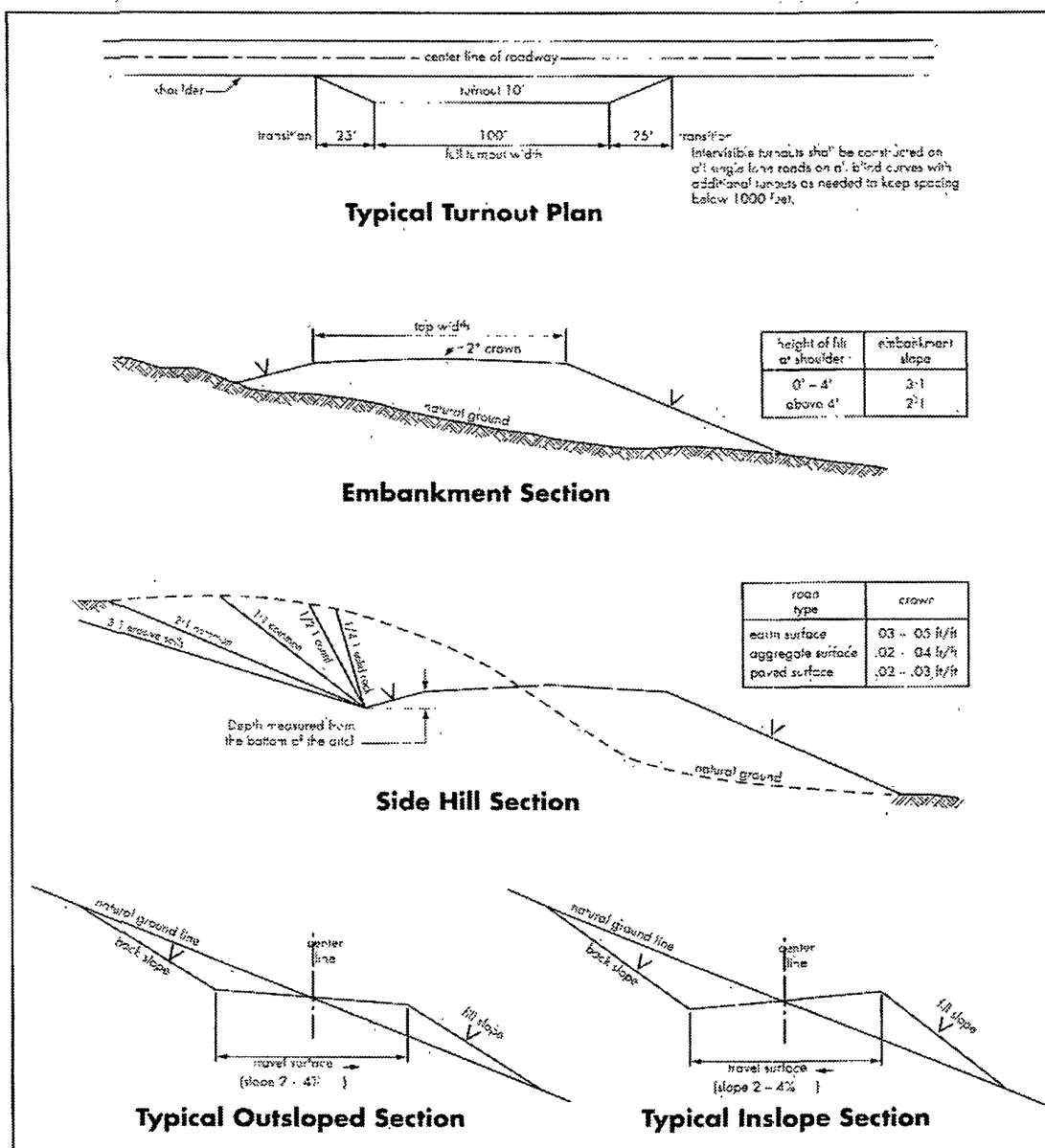
Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

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. **Due to recent H2S encounters in the salt formation, it is recommended that monitoring equipment be onsite for potential Hydrogen Sulfide prior to drilling out the surface shoe. If Hydrogen Sulfide is encountered, please report measurements and formations to the BLM.**
2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a “Major” violation.**
3. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works is located, this does not include the dog house or stairway area.
4. **The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.**

B. CASING

Changes to the approved APD casing 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 prior to drilling out for a primary cement job will be a minimum 18 hours for a water basin; 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater for all casing strings. DURING THIS WOC TIME, NO DRILL PIPE, ETC. SHALL BE RUN IN THE HOLE. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. See individual casing strings for details regarding lead cement slurry requirements.

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

High Cave/Karst potential

Secretary's Potash

Possible water and brine flows in the Artesia and Salado Groups.

Possible lost circulation in the Artesia Group and Capitan Reef.

1. The 20 inch surface casing shall be set at approximately 275 feet (a minimum of 25 feet above the salt) and cemented to the surface.
 - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
 - b. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.
 - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
 - d. If cement falls back, remedial cementing will be done prior to drilling out that string.
2. The minimum required fill of cement behind the 13-3/8 inch intermediate casing is: (set in the Seven Rivers formation at approximately 1680')
 - ☒ 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 and potash.

3. The minimum required fill of cement behind the 9-5/8 inch 2nd intermediate casing, **which is to be set in the base of the Capitan reef or the top of the Delaware at approximately 3500', 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 the Capitan Reef.

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

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

- a. First stage to DV tool:

- ☒ Cement to circulate. If cement does not circulate, contact the appropriate BLM office before proceeding with second stage cement job. Operator should have plans as to how they will achieve circulation on the next stage.

- b. Second stage above DV tool:

- ☒ Cement should tie-back a minimum of **50 feet above the Capitan Reef.**
Operator shall provide method of verification.

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

C. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17. **Piping from choke manifold to flare to be as straight as possible.**
2. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **20 inch surface casing shoe** shall be **2000 (2M) psi.**
 - a. **For surface casing only:** If the BOP/BOPE is to be tested against casing, the wait on cement (WOC) time for that casing is to be met (see WOC statement at start of casing section). Independent service company required.

3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **13-3/8 inch intermediate casing shoe** shall be **3000 (3M) psi**.
4. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
 - a. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time.
 - b. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (18 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).
 - c. The results of the test shall be reported to the appropriate BLM office.
 - d. All tests are required to be recorded on a calibrated test chart. **A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.**
 - e. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug.

D. DRILL STEM TEST

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

E. WASTE MATERIAL AND FLUIDS

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

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

CRW 113011

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 (not applied for in APD)

C. ELECTRIC LINES (not applied for in APD)

IX. INTERIM RECLAMATION

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

Within six (6) months of well completion, operators should work with BLM surface management specialists (Jim Amos: 575-234-5909) to devise the best strategies to reduce the size of the location. Interim reclamation should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

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

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

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

X. FINAL ABANDONMENT & RECLAMATION

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

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

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

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

Seed Mixture 4, for Gypsum 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>
Alkali Sacaton (<i>Sporobolus airoides</i>)	1.0
DWS Four-wing saltbush (<i>Atriplex canescens</i>)	5.0

DWS: DeWinged Seed

*Pounds of pure live seed:

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