ATS- 36,

R-111-POTASH

OCD-ARTESIA

RECEIVED
FEB 17 2012
NMOCD ARTESIA

Form 3160-3
(February 2005)

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5 Lease Serial No
NM-61358

6 If Indian, Allottee or Tribe Name
N/A

7 If Unit or CA Agreement, Name and No
N/A

1a. Type of Work [X] DRILL [ ] REENTER

1b Type of Well [X] Oil Well [ ] Gas Well [ ] Other [ ] Single Zone [ ] Multiple Zone

8 Lease Name and Well No
Wolf "AJA" Federal #20H (12900)

2 Name of Operator
Yates Petroleum Corporation 025575

9 API Well No
30-015-39966

3a. Address
105 South Fourth Street, Artesia, NM 88210

3b Phone No *(include area code)*
505-748-1471

10 Field and Pool, or Exploratory
Lost Tank Delaware (40299)

4 Location of well *(Report location clearly and In accordance with any State requirements *)*
At surface
1950' FSL & 330' FEL
At proposed prod. zone
660' FSL & 330' FWL

11 Sec , T , R , M , or Blk And Survey or Area
Sec. 25-T21S-R31E

14 Distance in miles and direction from the nearest town or post office*
38 miles northeast of Loving, NM

12 County or Parish
Eddy

13 State
NM

15 Distance from proposed* location to nearest property or lease line, ft (Also to nearest drlg unit line, if any) 330	16 No of acres in lease 880.00	17 Spacing Unit dedicated to this well S2/SW4, SWSE
18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft	19 Proposed Depth 8,607' TVD & 13154 MD	20 BLM/ BIA Bond No on file NATIONWIDE BOND #NMB000434
21 Elevations (Show whether DF, KDB, RT, GL, etc) 3697' GL	22 Aproximate date work will start* June 30, 2010	23 Estimated duration 50 days

24 Attachments

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

1 Well plat certified by a registered surveyor.
2 A Drilling Plan
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 Clifton May	Name *(Printed/ Typed)* Clifton May	Date 5/13/2010
Title Land Regulatory Agent		
Approved By *(Signature)* /S/ Douglas J. Burger	Name *(Printed/ Typed)* /S/ Douglas J. Burger	Date FEB - 9 2012
Title for 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 willfully to make to any department or agency of the Unitec States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction

* *(Instructions on page 2)*

CARLSBAD CONTROLLED WATER BASIN

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

APPROVAL SUBJECT TO
GENERAL REQUIREMENTS
AND SPECIAL STIPULATIONS
ATTACHED

CERTIFICATION
YATES PETROLEUM CORPORATION
Wolf "AJA" Federal #20H
1950' FSL & 330' FEL, Surface Hole
660' FSL & 330' FWL. Bottom Hole
Section 25-T21S-R31E
Eddy County, New Mexico

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 May, 2010.

Printed Name Clifton May

Signature Clifton May

Position Title Land Regulatory Agent

Address 105 South Fourth Street, Artesia, NM 88210

Telephone 575-748-4347

E-mail (optional) cliff@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)

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

OIL CONSERVATION DIVISION

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

Form C-102
Revised October 15, 2009
Submit one copy to appropriate District Office

RECEIVED
FEB 17 2012
NMOCD ARTESIA

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-015-39966	40299	Lost Tank Delaware

Property Code	Property Name	Well Number
12900	WOLF "AJA" FEDERAL	20H

OGRID No.	Operator Name	Elevation
025575	YATES PETROLEUM CORP.	3697'

Surface Location

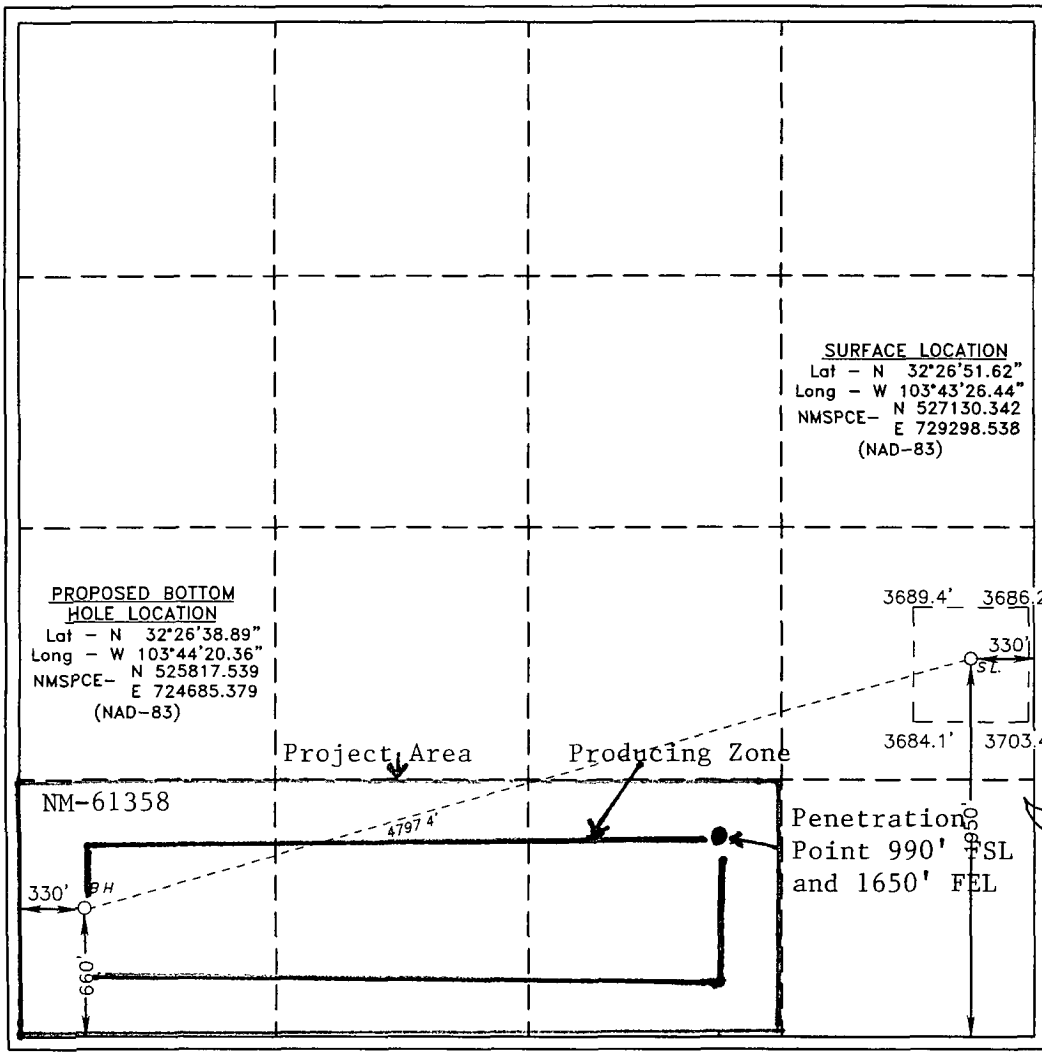
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
I	25	21 S	31 E		1950	SOUTH	330	EAST	EDDY

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	25	21 S	31 E		660	SOUTH	330	WEST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
120			

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



OPERATOR CERTIFICATION

I hereby certify that the information 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.

Clifton May 5/17/10
Signature Date

Clifton May
Printed Name

SURVEYOR CERTIFICATION

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

MARCH 29, 2010
Date Surveyed

Signature & Seal of Professional Surveyor

GARY L. JONES
NEW MEXICO
7977
REGISTERED PROFESSIONAL SURVEYOR

NM PLS 7977

Certificate No. Gary L. Jones 7977

BASIN SURVEYS

YATES PETROLEUM CORPORATION
Wolf "AJA" Federal #20H
1950' FSL and 330' FEL Surface Hole Location
660' FSL and 330' FWL Bottom Hole Location
Section 25-T21S-R31E
Eddy County, New Mexico

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

Rustler	798'	Brushy Canyon Mkr	8210'
Top of Salt	1118'	Target-Basal Sand	8400'-Oil
Bottom of Salt	4031'	Bone Spring	8507'-Oil
Bell Canyon	4518'	TD (Pilot Hole)	8607'
Cherry Canyon	5576'-Oil	MTD (Lateral)	13154'
Brushy Canyon	7305'-Oil		

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

Water: 150'
Oil or Gas: Oil Zones: 5576', 7305', 8400' & 8507'.

3. Pressure Control Equipment: 13 3/8" BOPE will be installed on the 13 3/8" and the 9 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

Hole Size	Casing Size	Wt./Ft	Grade	Coupling	Interval	Length
17 1/2"	13 3/8"	48#	H-40	ST&C	0-900'	900'
12 1/4"	9 5/8"	40#	J-55	ST&C	0-100'	100'
12 1/4"	9 5/8"	36#	J-55	ST&C	100'-3300'	3200'
12 1/4"	9 5/8"	40#	J-55	ST&C	3300'-4250'	950'
12 1/4"	9 5/8"	40#	HCK-55	ST&C	4250'-4600'	350'
8 3/4"Pilot Hole						
7 7/8"	5.1/2"	17#	P- 110	LT&C	0'-13154'	13154'

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

B. CEMENTING PROGRAM:

Surface Casing: Lead with 600 sacks C Lite (Yld 1.64 Wt. 14.80). Tail in with 250 sacks Class C (Yld. 1.34 Wt. 14.80) TOC surface.

Intermediate Casing: Lead with 1425 sacks of Poz C (Yld. 1.96 Wt. 12.60). Tail in with 100 sacks Class C (Yld 1.34Wt 14.80). TOC surface

Production Casing: Cement to be done in two stages with stage tools approx. 6000'.

Stage One: Cement with 1000 sacks Pecos Valley Lite (Yld 1.41Wt 13.00). TOC 6000'.

See COA

See COA Stage Two: Lead with 250 sacks Lite Crete (Yld. 2.66 Wt 9.90). Tail in with 75 sacks Pecos Valley Lite (Yld. 1.41Wt 13,00). TOC ~~4100'~~. Surface See COA

Pilot hole drilled vertically to 8607'. Well will be plugged back with a 400'-500' kick off plug, then kicked off at 7920' and directionally drilled at 12 degrees per 100' with a 7 7/8" hole to 9825' MD (8400' TVD). 7 7/8" hole will then be drilled to 13154' MD (8400' TVD) where 5 ½" casing will be run and cemented in place. Penetration point of producing zone will be encountered at 990' FSL & 1650' FEL, 25-21S-31E. Deepest TVD in the pilot hole is 8607'. Deepest TVD in the lateral will be 8400'.

See COA

6. MUD PROGRAM AND AUXILIARY EQUIPMENT:

Interval	Type	Weight	Viscosity	Fluid Loss
0-900'	Fresh Water	8.60-9.20	29-36	N/C
900'-4600'	Brine Water	10.00-10.20	28-30	N/C
4600'-8610'	Cut Brine (Pilot Hole)	8.90-9.10	28-29	N/C
7620'-13154'	Cut Brine(Lateral Section)	9.00-9.30	28-34	<=15

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: 30' samples to 4400'. 10' samples from 4400' to TD. Mudloggers on at surface casing
Logging: Platform Hals,CMR (DLWR), NGT – See COA
Coring: None anticipated
DST's: None Anticipated

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

Maximum Anticipated BHP:

0'-900'	431 PSI
900'-4600'	2440 PSI
4600'-8607'	4164 PSI

Abnormal Pressures Anticipated: None
Lost Circulation Zones Anticipated: None.
H2S Zones Anticipated: None Anticipated – See COA
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			
798	0	0	798	0	0	0			RUSTLER
1,118	0	0	1,118	0	0	0			TOP OF SALT
4,031	0	0	4,031	0	0	0			BASE OF SALT
4,518	0	0	4,518	0	0	0			BELL CANYON
5,576	0	0	5,576	0	0	0			CHERRY CANYON
7,305	0	0	7,305	0	0	0			BRUSHY CANYON
7920	0	0	7920	0	0	12	234	GN	KOP
7950	3.6	233.97	7949.98	-0.55	-0.76	12	360	HS	
8000	9.6	233 97	7999.63	-3 93	-5 41	12	360	HS	
8050	15 6	233 97	8048 4	-10.34	-14 22	12	360	HS	
8100	21 6	233 97	8095.77	-19 72	-27 12	12	360	HS	
8150	27 6	233 97	8141.21	-31 96	-43.94	12	360	HS	
8200	33 6	233 97	8184.23	-46 92	-64 52	12	0	HS	
8232	37.44	233 97	8210 27	-57 85	-79.55	12	360	HS	BRUSHY CANYON MKR
8250	39 6	233.97	8224 35	-64 45	-88.61	12	360	HS	
8300	45.6	233 97	8261.14	-84.34	-115.97	12	360	HS	
8350	51.6	233.97	8294.19	-106 39	-146.29	12	360	HS	
8400	57.6	233.97	8323.14	-130.35	-179.24	12	360	HS	
8450	63 6	233 97	8347.67	-155.96	-214.45	12	0	HS	
8500	69 6	233 97	8367.52	-182.94	-251.54	12	360	HS	
8550	75 6	233.97	8382.47	-210.99	-290.11	12	360	HS	
8600	81 6	233.97	8392.34	-239 81	-329 73	12	360	HS	
8650	87 6	233.97	8397 05	-269.07	-369 97	12	360	HS	
8668 95	89 87	233 97	8397 46	-280.21	-385.3	12	360	HS	
9824 72	89 87	233'97	8400	-960	-1320	0			TARGET-BASAL SAND
9824 72	89.87	233.97	8400	-960	-1320	12	90	HS	
9850	89.89	237.01	8400.05	-974 32	-1340.83	12	90	HS	
9900	89.91	243.01	8400.14	-999 31	-1384.12	12	90	HS	
9950	89 93	249.01	8400.21	-1019.63	-1429 78	12	90	HS	
10000	89 96	255 01	8400.26	-1035.07	-1477.31	12	90	HS	
10050	89 99	261.01	8400 28	-1045.45	-1526 2	12	90	HS	
10085 76	90 01	265.3	8400.28	-1049 72	-1561 7	12	90	HS	
12900 22	90 01	265.3	8400.01	-1280.42	-4366.68	0			
12950	90	266 29	8400 01	-1284 07	-4416.33	2	90	HS	
13000	90	267 29	8400.01	-1286 87	-4466 25	2	90	HS	
13050	90	268 29	8400	-1288.79	-4516 21	2	90	HS	
13100	90	269.29	8400	-1289 84	-4566 2	2	90	HS	
13150	90	270 29	8400	-1290 02	-4616.2	2	90	HS	
13153.8	90	270.37	8400	-1290	-4620	2	90	HS	
13153.8	90	270.37	8400	-1290	-4620	0			LATERAL TD

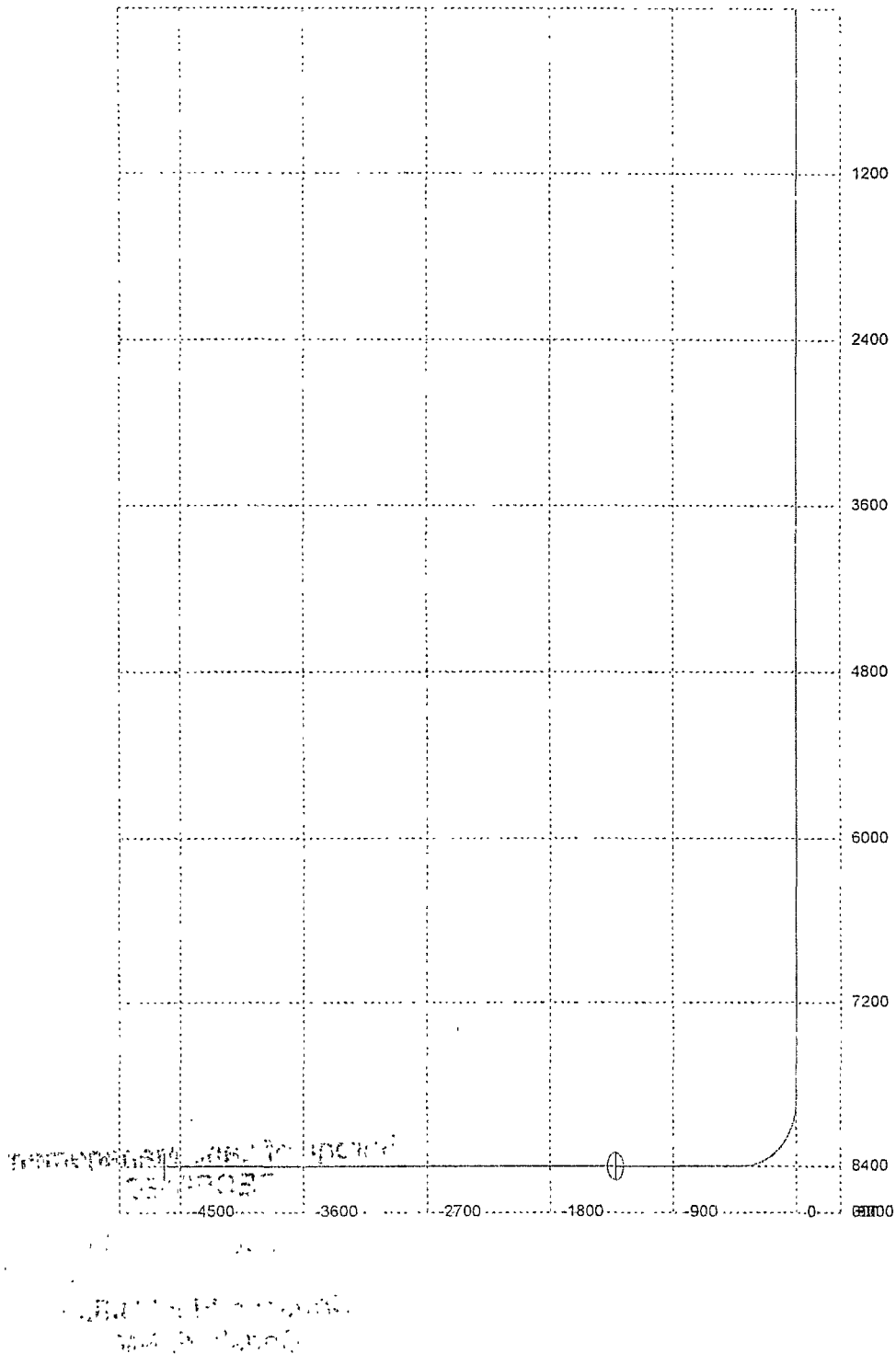
~~8610~~ 8607

Pilot hole drilled vertically to ~~8610'~~. Well will be plugged back with a 400'-500' kick off, then kicked off at approx. 7920' and directionally drilled at 12 degrees per 100' with a 7 7/8" hole to 9825' MD (8400' TVD). 7-7/8" hole will then be drilled to 13,154' MD (8400' TVD) where 5-1/2" casing will be run and cement in place Penetration point of producing zone will be encountered at 990' FSL and 1650' FEL, 25-21S-31E Deepest TVD in the pilot hole is ~~8610~~'. Deepest TVD in the lateral will be 8400'

8607

3D³ Directional Drilling Planner - 3D View

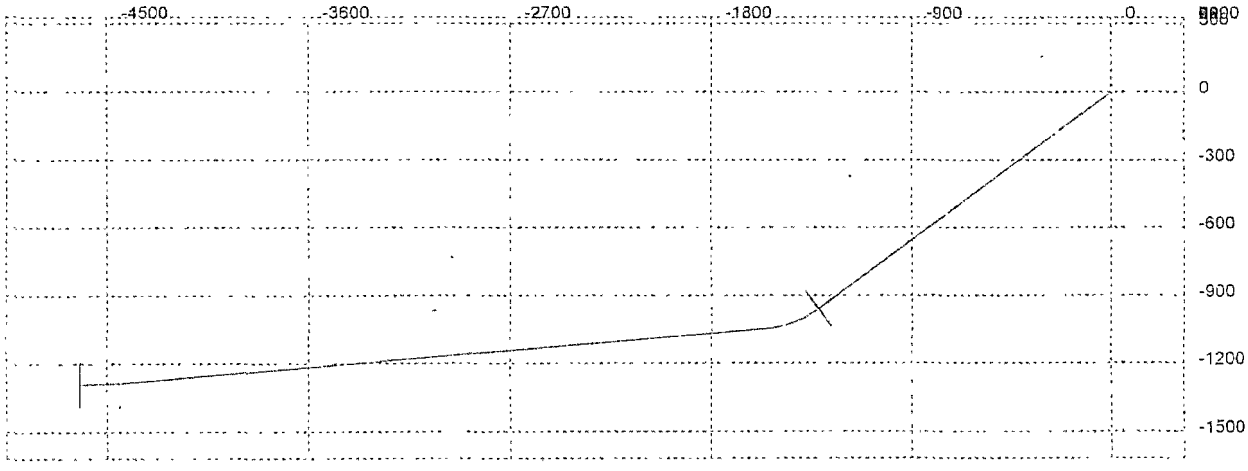
Company: **Yates Petroleum Corporation**
Well: **Wolf AJA Federal #20H**



File: G:\drilling toolbox wellplans\Horizontal\wolf20h.wpp

3D³ Directional Drilling Planner - 3D View

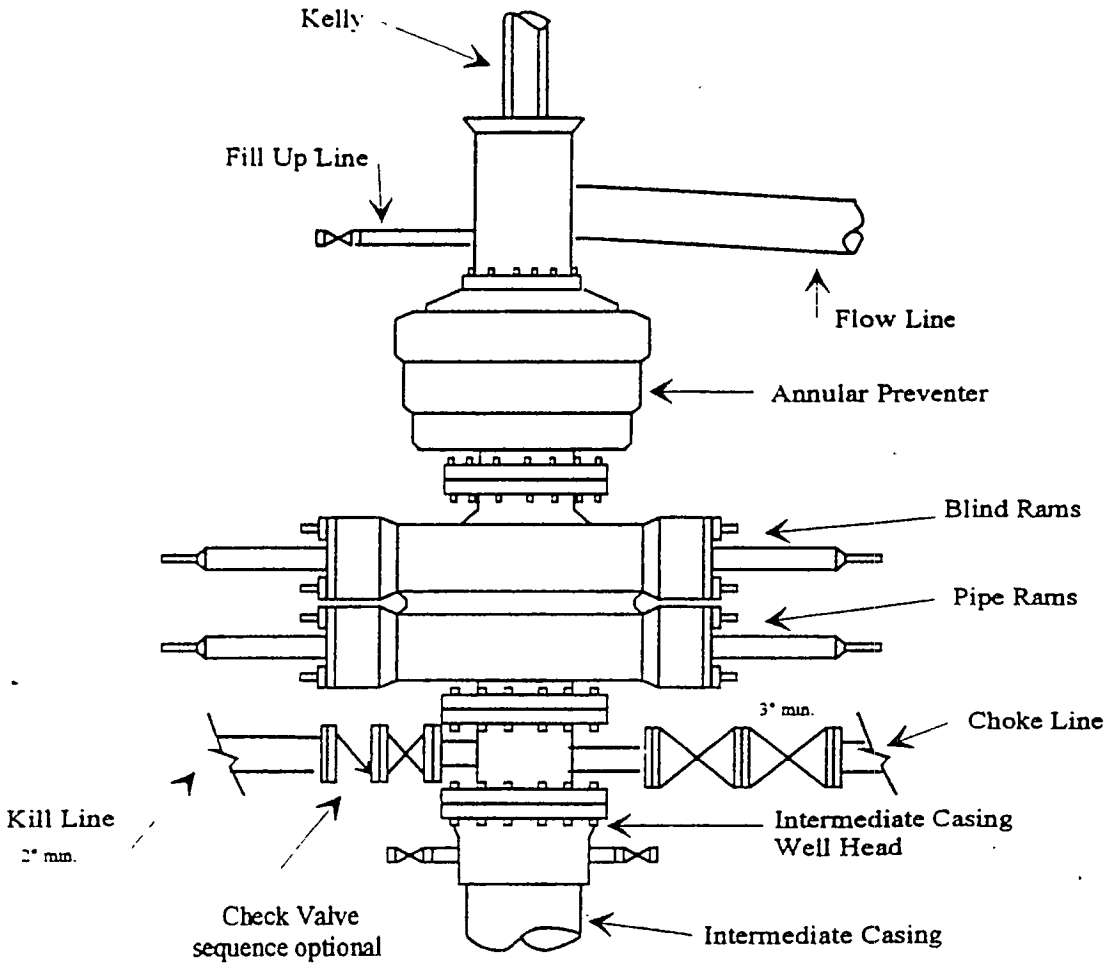
Company: **Yates Petroleum Corporation**
Well: **Wolf AJA Federal #20H**



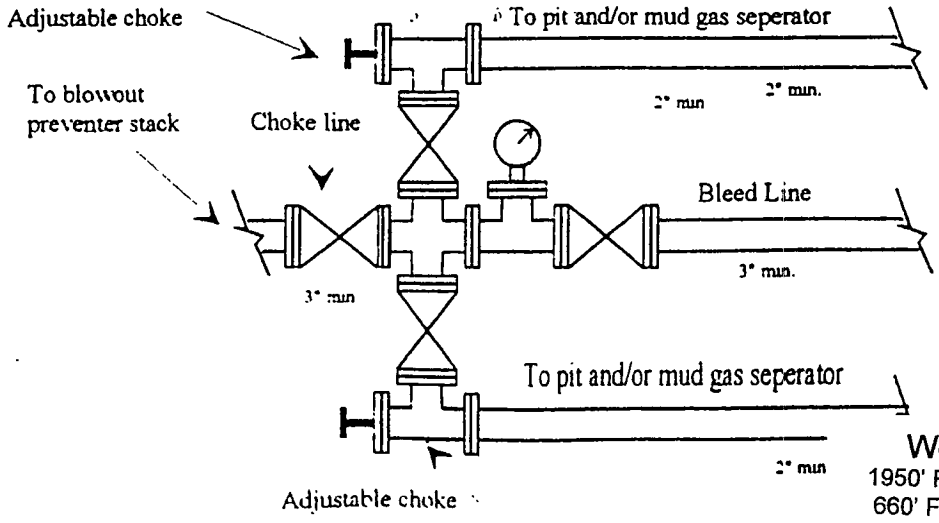
File: G:\drilling toolbox wellplans\Horizontal\wolf20h.wpp

Yates Petroleum Corporation

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



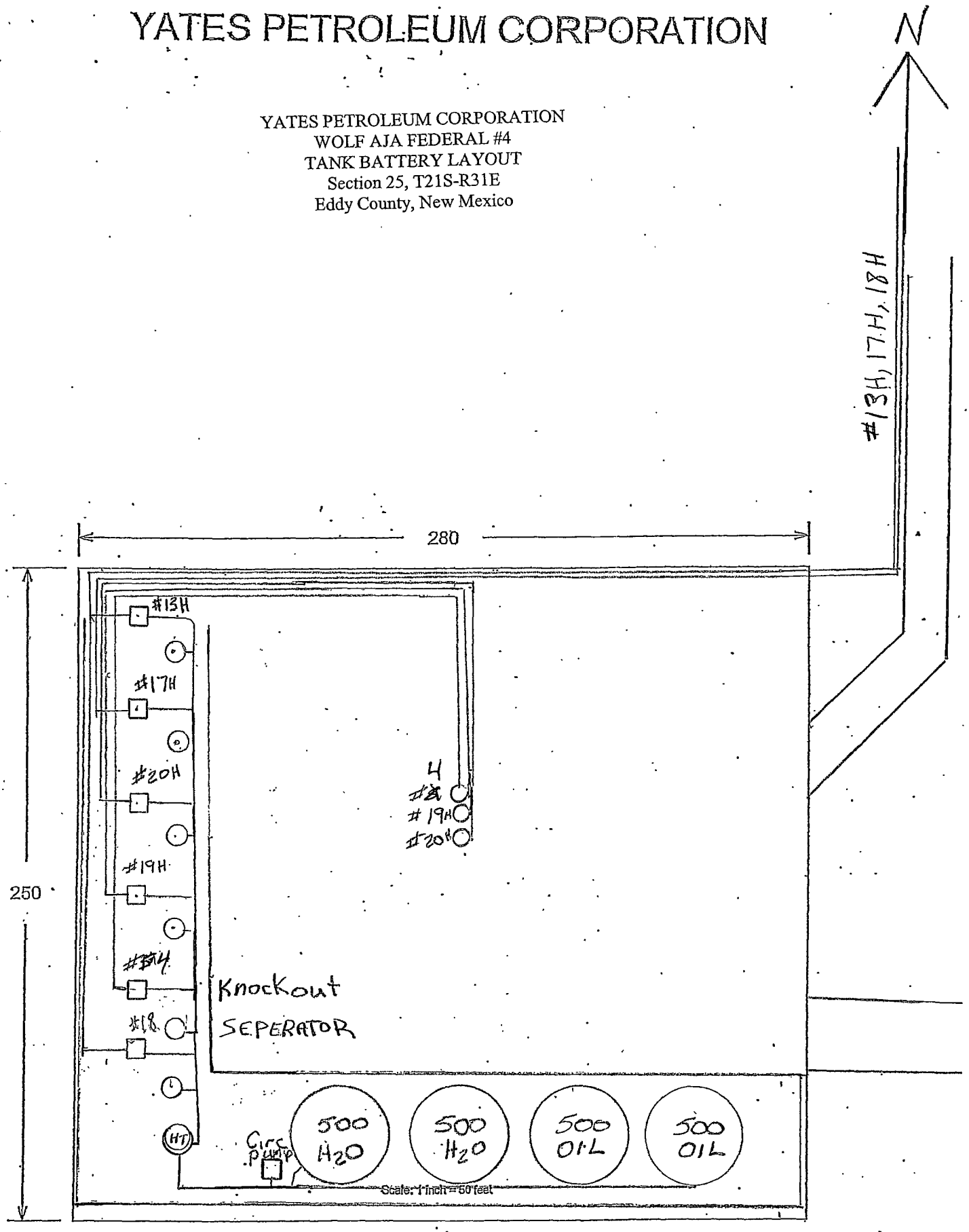
Typical 3,000 psi choke manifold assembly with at least these minimun features



Wolf AJA Federal #20H
1950' FSL and 330' FEL, Surface Hole
660' FSL and 330' FWL, Bottom Hole
Section 25, T21S-R31E
Eddy County, New Mexico
Exhibit "B"

YATES PETROLEUM CORPORATION

YATES PETROLEUM CORPORATION
WOLF AJA FEDERAL #4
TANK BATTERY LAYOUT
Section 25, T21S-R31E
Eddy County, New Mexico



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

Hydrogen Sulfide (H_2S) Contingency Plan

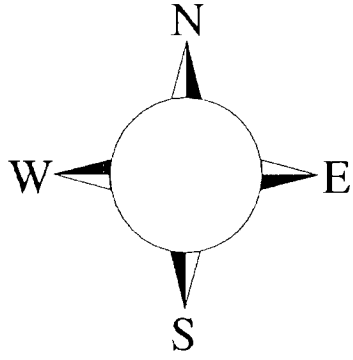
For

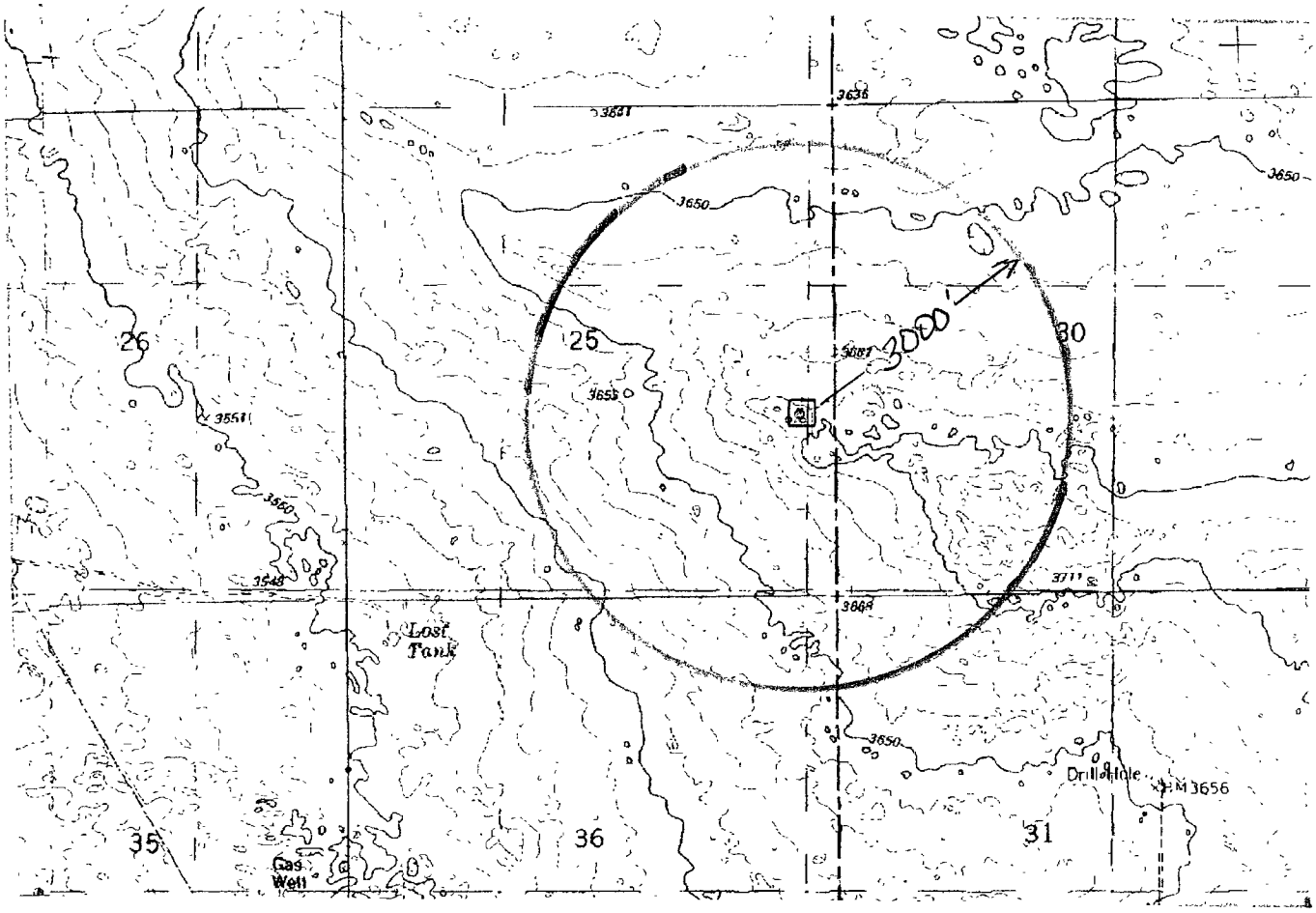
Wolf AJA Federal #20H

1950' FSL and 330' FEL Surface Hole Location
660' FSL and 330' FWL Bottom Hole Location
Section 25, T-21S, R-31E
Eddy County NM

Wolf AJA Federal #20H

This is an open drilling site. H_2S monitoring equipment and emergency response equipment will be used within 500' of zones known to contain H_2S, including warning signs, wind indicators and H_2S monitor.



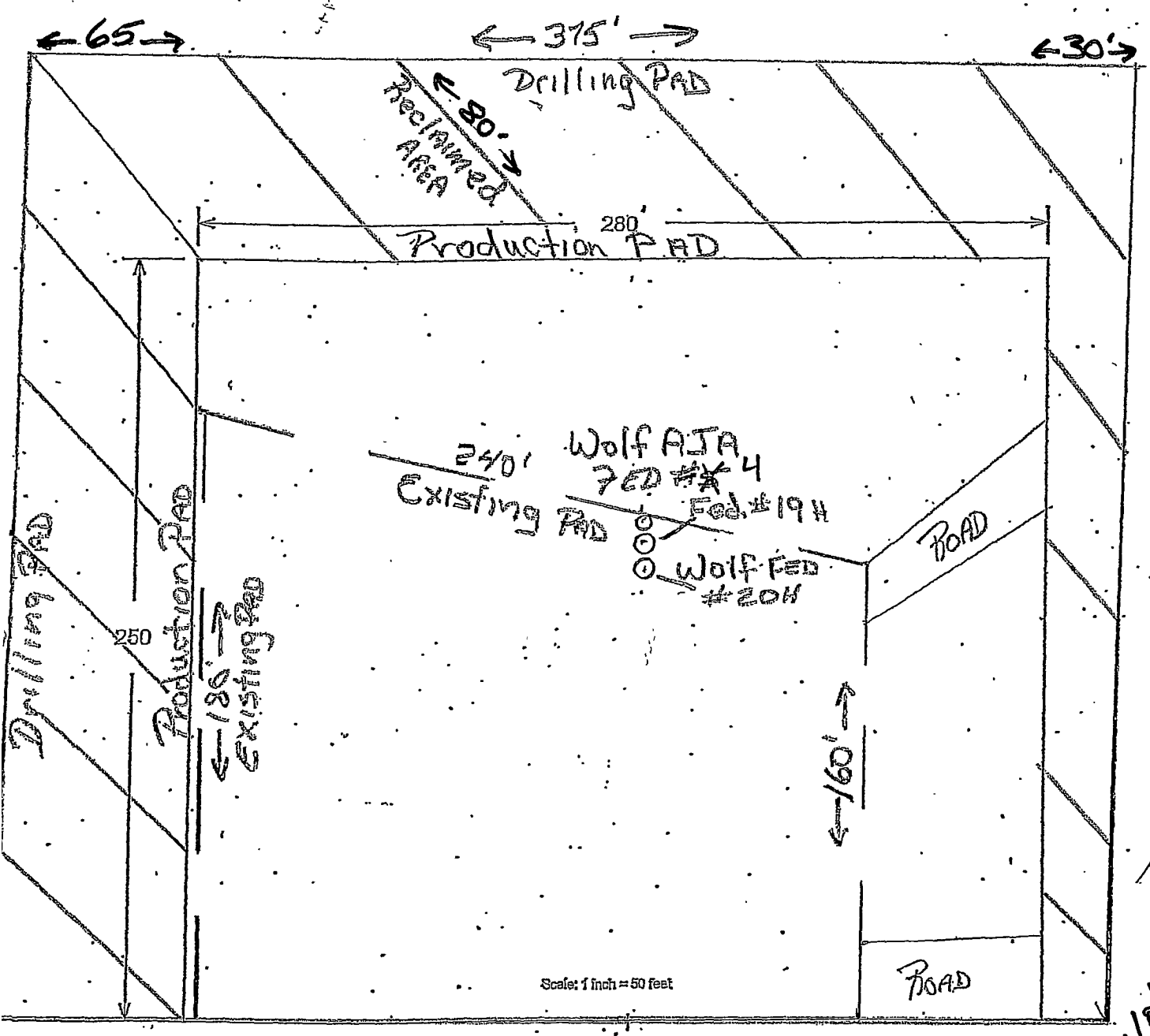


Assumed 100 ppm ROE = 3000'

100 ppm H2S concentration shall trigger activation of this plan.

YATES PETROLEUM CORPORATION

YATES PETROLEUM CORPORATION
WOLF AJA FEDERAL #20H
RECLAIMATION PLAN



TEN 11/29/11

10/18/11

WF 10/7/11

PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Yates Petroleum Corporation
LEASE NO.:	NM-61358
WELL NAME & NO.:	Wolf AJA Federal # 20H
SURFACE HOLE FOOTAGE:	1950' FSL & 0330' FEL
BOTTOM HOLE FOOTAGE	0660' FSL & 0330' FWL
LOCATION:	Section 25, T. 21 S., R 31 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.

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)

Constructing over a Reserve Pit
Yates shall not excavate any portion of the existing reserve pit area. No topsoil shall be stripped from the reserve pit area. Reclamation over the reserve pit area during interim reclamation or final reclamation must be satisfactory to the authorized officer. Yates must comply with OCD rules when drilling over a reserve pit.

Interim Reclamation
Yates shall perform the maximum amount of interim reclamation on this location. If it is discovered that the well pad can be downsized further than 280'x250', Yates is responsible for performing the task.

Painting Requirement:
All new and old 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

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

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

VI. CONSTRUCTION

A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5972 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 6 inches in depth. The topsoil will be used for interim and final reclamation.

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

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

D. FEDERAL MINERAL MATERIALS PIT

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

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

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

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

F. ON LEASE ACCESS ROADS

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

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

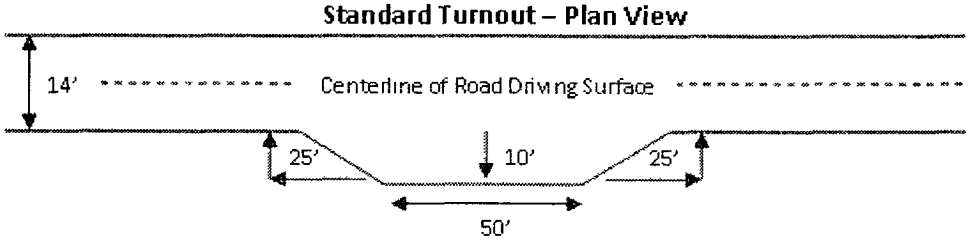
Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

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

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

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

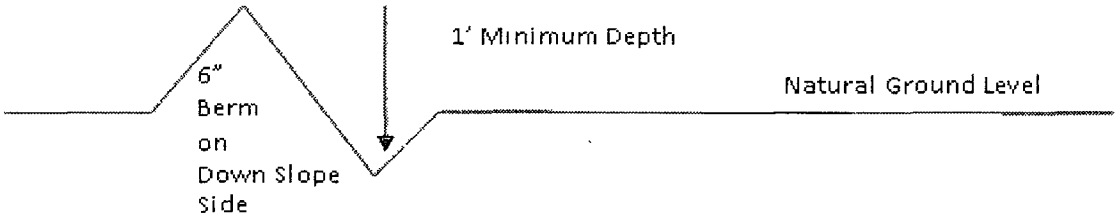
Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall be constructed on all blind curves. Turnouts shall conform to the following diagram:



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

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

Cross Section of a Typical Lead-off Ditch



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

Formula for Spacing Interval of Lead-off Ditches

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

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

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

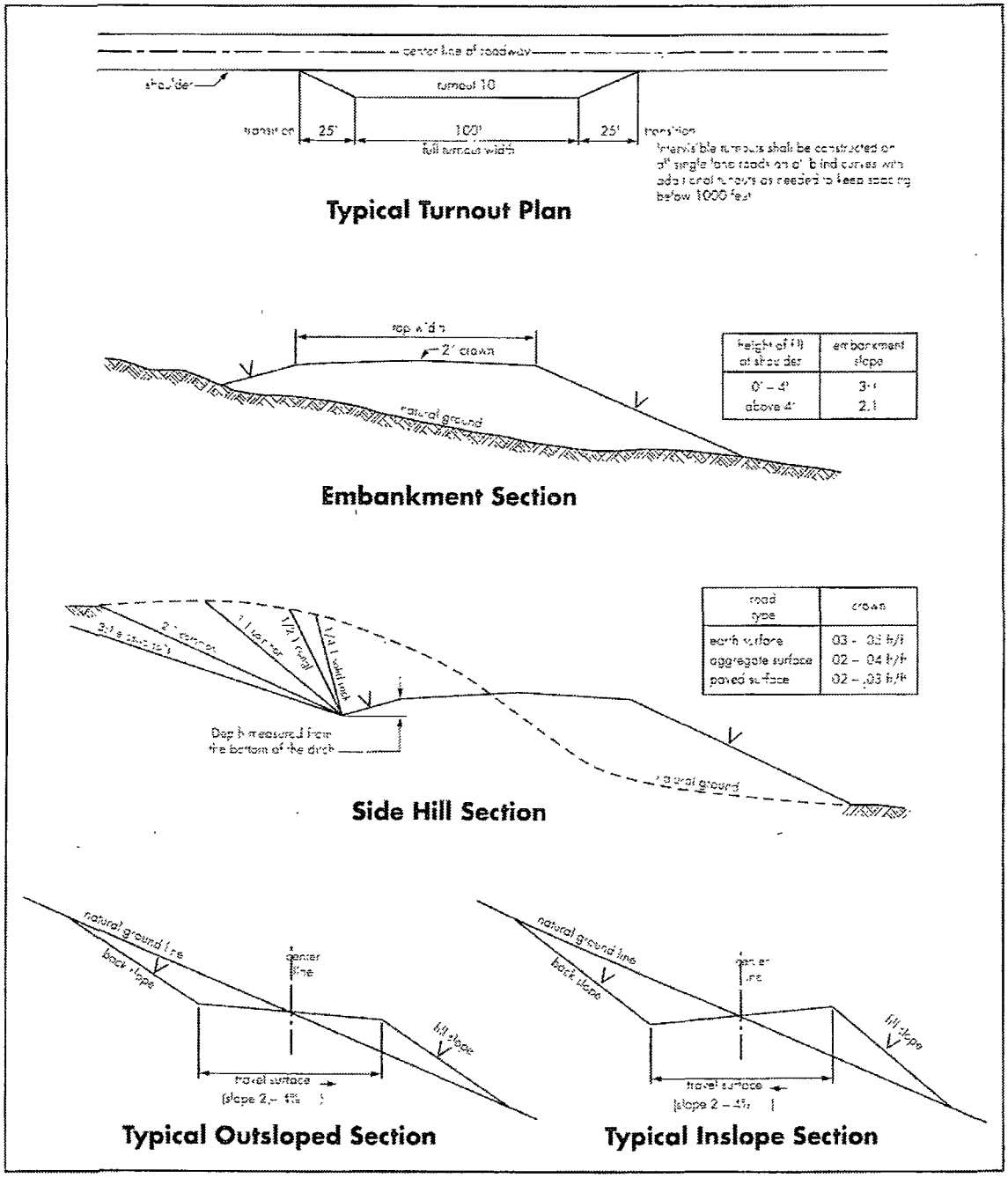
Cattleguards
An appropriately sized cattleguard(s) sufficient to carry out the project shall be installed and maintained at fence crossing(s).

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.

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) will 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.

R-111-P Potash
Possible lost circulation within the Glorietta formation.
Possible water flows in the Blinebry formation.

1. The **13-3/8** inch surface casing shall be set at **approximately 900 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt)** and cemented to the surface.

    a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.

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

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

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

2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:

    ☒ Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to potash.**

Pilot hole shall have a plug set at the bottom of the hole. Plug shall be 186' in length and shall be tagged – contact 575-361-2822 a minimum of 4 hours prior to tag. Operator can place one plug to the KOP and no tag is required.

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. Operator should have plans as to how they will achieve circulation on the next stage. **May require additional cement as the excess calculates 13%.**

    b. Second stage above DV tool, cement shall:

    ☒ Cement to surface. **Required due to R-111-P Potash.** If cement does not circulate, contact the appropriate BLM office. **May require additional cement as the excess calculates negative 48%.**

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.

5. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

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 surface casing shoe shall be **3000 (3M)** 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. 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**.

    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.

RGH/WWI 092410/090511

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. The authorized right-of-way width will be **20** feet. 14 feet of the right-of-way width will consist of existing disturbance (existing lease roads) and the remaining 6 feet will consist of area adjacent to the disturbance. All construction and maintenance activity will be confined to existing roads.

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 of duney areas, the pipeline will be "snaked" around hummocks and dunes rather then 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.

16. 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, powerline 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.

IX. INTERIM RECLAMATION

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

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

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

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

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

X. FINAL ABANDONMENT & RECLAMATION

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

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

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

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

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

Seed Mixture 2, for Sandy Sites

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

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

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

Species	lb/acre
Sand dropseed (Sporobolus cryptandrus)	1.0
Sand love grass (Eragrostis trichodes)	1.0
Plains bristlegrass (Setaria macrostachya)	2.0

*Pounds of pure live seed:

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