

R-111-POTASH

NM OIL CONSERVATION
BUREAU OF LAND MANAGEMENT
ARTESIA DISTRICT

JUL 30 2014

ATS-13-132
EA-13-499

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

TES
7-30-14

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		6. If Indian, Allottee or Tribe Name	
1b. Type of Well: <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		7. If Unit or CA Agreement, Name and No.	
2. Name of Operator Yates Petroleum Corporation		8. Lease Name and Well No. Rafter BJI Federal Com #2H <313546>	
3a. Address 105 S. Fourth St. Artesia, NM 88210		9. API Well No. 30-015-42546	
3b. Phone No. (include area code) 575-748-4120		10. Field and Port of Exploratory SANTANA CANYON; B.S.	
4. Location of Well (Report location clearly and in accordance with any State requirements.) At surface 1840' FSL & 1970' FEL At proposed prod. zone 1840' FSL & 330' FWL		11. Sec., T. R. M. or Blk. and Survey or Area Section 11, Township 20S - Range 30E <96688>	
14. Distance in miles and direction from nearest town or post office* 18 miles to Carlsbad		12. County or Parish Eddy County	
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 1840' 674'		13. State NM	
16. No. of acres in lease 1040		17. Spacing Unit dedicated to this well NW4/SE4 and N2/SW4	
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 15'		20. BLM/BIA Bond No. on file NMB000434 NMB000920	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3235'		22. Approximate date work will start* 09/15/2013	
		23. Estimated duration 25 days	

24. Attachments

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

- | | |
|--|---|
| 1. Well plat certified by a registered surveyor. | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). |
| 2. A Drilling Plan. | 5. Operator certification |
| 3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office). | 6. Such other site specific information and/or plans as may be required by the BLM. |

25. Signature	Name (Printed/Typed) Travis Hahn	Date 10/26/2012
---------------	-------------------------------------	--------------------

Title
Land Regulatory Agent

Approved by (Signature)	Name (Printed/Typed) /s/ STEPHEN J. CAFFEY	Date 7/28/14
-------------------------	---	-----------------

Title
FIELD MANAGER

Office
CARLSBAD FIELD OFFICE

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Continued on page 2)

*(Instructions on page 2)

CAPITAN CONTROLLED WATER BASIN

**SEE ATTACHED FOR
CONDITIONS OF APPROVAL**

**APPROVAL SUBJECT TO
GENERAL REQUIREMENTS
AND SPECIAL STIPULATIONS
ATTACHED**

CERTIFICATION
YATES PETROLEUM CORPORATION
Rafter BJI Federal Com #2H

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 someone under employment of Yates Petroleum Corporation has full knowledge of state and federal laws applicable to the 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 30 day of October 2012

Signature 

Name Travis Hahn

Position Title Land Regulatory Agent

Address 105 South Fourth Street, Artesia, New Mexico 88210

Telephone (575) 748-4120

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

Address (if different from above) Same as above

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

DISTRICT I
1625 N. French Dr., Hobbs, NM 88240
Phone (575) 393-8161 Fax: (575) 393-0720

DISTRICT II
1301 W. Grand Avenue, Artesia, NM 88210
Phone (575) 748-1283 Fax: (575) 748-9720

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone (505) 334-6178 Fax: (505) 334-6170

DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone (505) 478-3460 Fax: (505) 478-3462

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-102
Revised August 1, 2011

Submit one copy to appropriate
District Office

OIL CONSERVATION DIVISION

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

28/30

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-015-42546	Pool Code 96688	Well Name GATUNA CANYON Undesignated/2nd Bone Springs
Property Code 313546	Property Name RAFTER BJI FEDERAL COM	Well Number 2H
OGRID No. 025575	Operator Name YATES PETROLEUM CORP.	Elevation 3235'

Surface Location

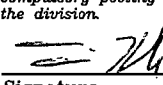
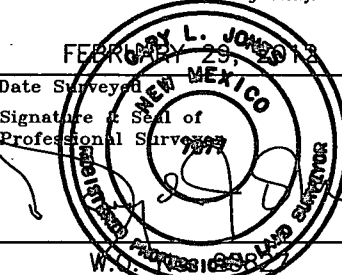
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
J	11	20 S	30 E		1840	SOUTH	1970	EAST	EDDY

Bottom Hole Location If Different From Surface

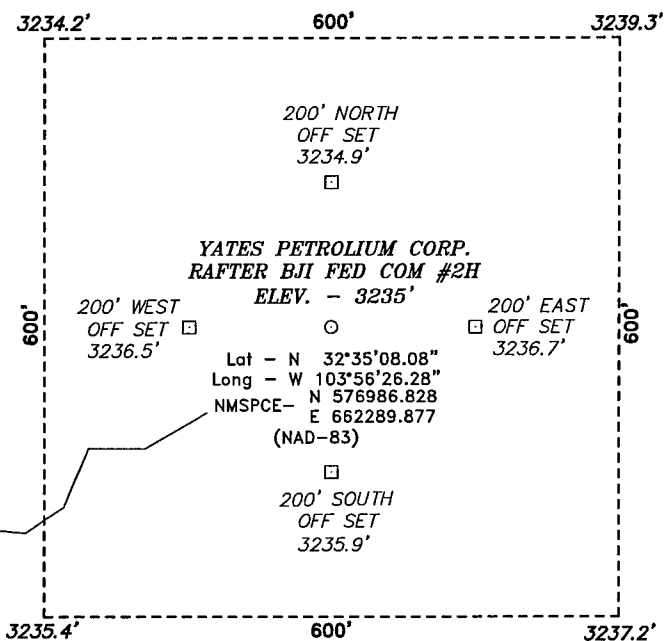
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
L	11	20 S	30 E		1840	SOUTH	330	WEST	EDDY

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

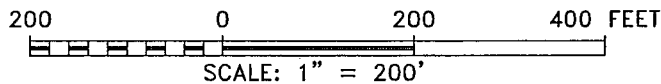
<p>PROPOSED BOTTOM HOLE LOCATION Lat - N 32°35'08.16" Long - W 103°57'01.21" NMSPC - N 576983.923 E 659301.472 (NAD-83)</p>	<p>Producing Zone</p>	<p>SURFACE LOCATION Lat - N 32°35'08.08" Long - W 103°56'26.28" NMSPC - N 576986.828 E 662289.877 (NAD-83)</p>	<p>OPERATOR CERTIFICATION I hereby certify that 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.</p> <p> 10/30/12 Signature Date Travis Hahn Printed Name thahn@yatespetroleum.com Email Address</p>
<p>Project Area</p> <p>Penetrations Point: 2455' FEL & 1840' FSL</p>			<p>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.</p> <p> Date Surveyed Signature & Seal of Professional Surveyor Certificate No. Gary L. Jones 7977 BASIN SURVEYS 25827</p>

SECTION 11, TOWNSHIP 20 SOUTH, RANGE 30 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO.



CR-360

LEASE ROAD



YATES PETROLEUM CORP.

REF: RAFTER BJI FED COM #2H

THE RAFTER BJI FED COM #2H LOCATED 1840'
FROM THE SOUTH LINE AND 1970' FROM THE EAST LINE OF
SECTION 11, TOWNSHIP 20 SOUTH, RANGE 30 EAST,
N.M.P.M., EDDY COUNTY, NEW MEXICO.

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

W.O. Number: 25827

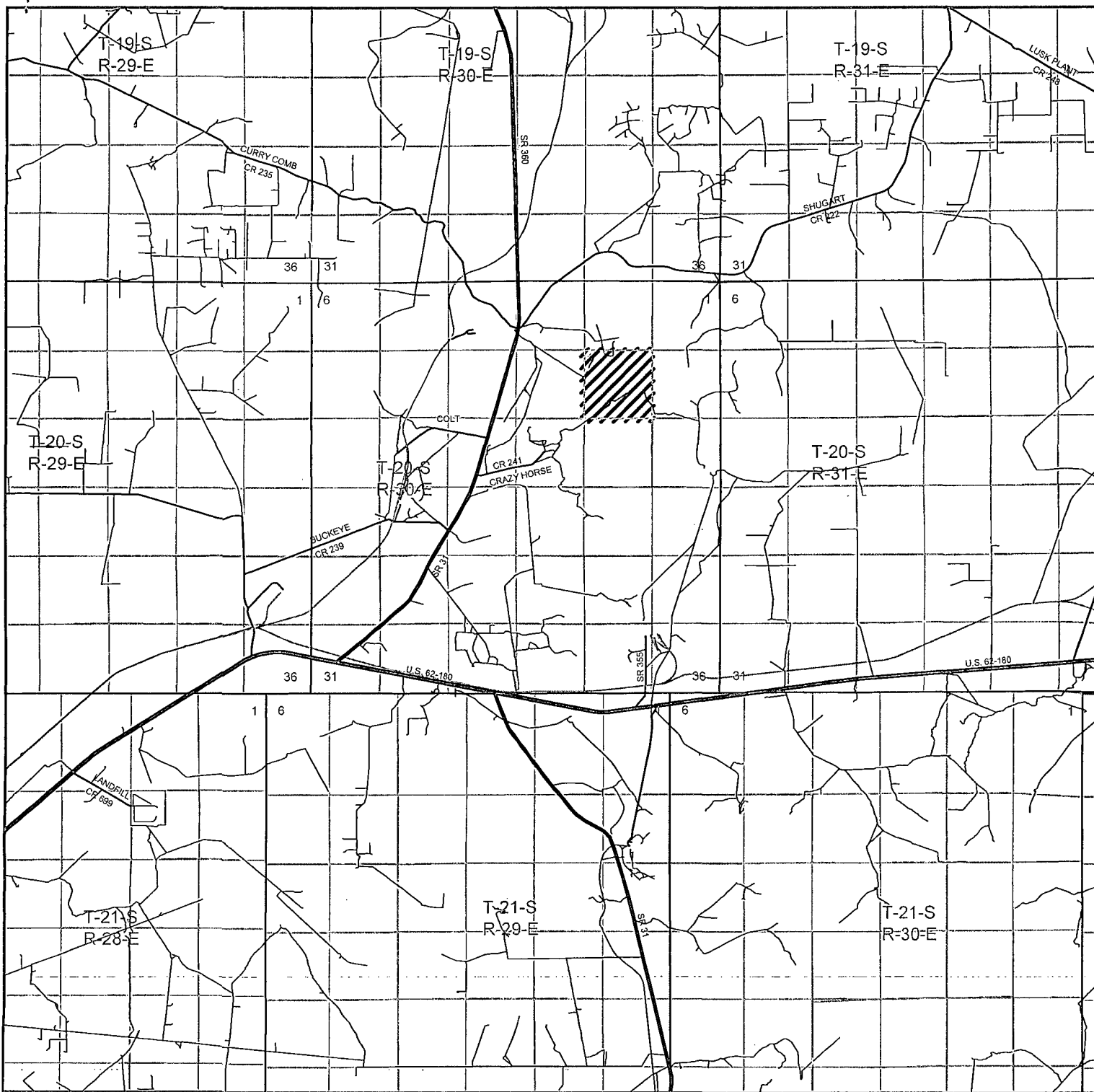
Drawn By: J. GOAD

Date: 2-29-2012

Disk: JG 25827WELL

Survey Date: 2-25-2012

Sheet 1 of 1 Sheets



RAFTER BJI FED COM #2H

Located 1840' FSL and 1970' FEL
Section 11, Township 20 South, Range 30 East,
N.M.P.M., Eddy County, New Mexico.

basin
surveys
focused on excellence
in the oilfield

P.O. Box 1786
1120 N. West County Rd.
Hobbs, New Mexico 88241
(575) 393-7316 - Office
(575) 392-2206 - Fax
basinsurveys.com

W.O. Number: JG 25827

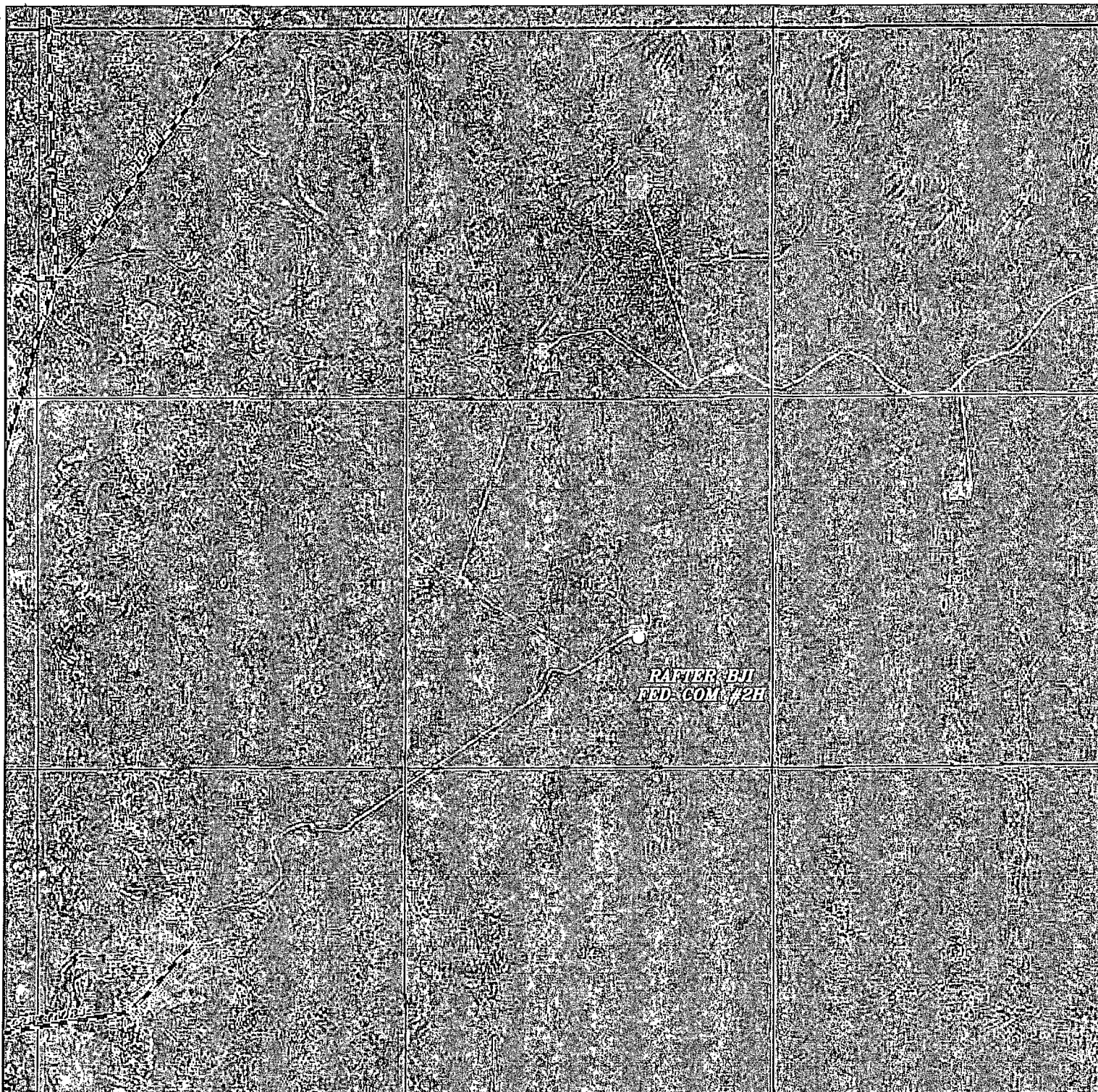
Survey Date: 2-25-2012

Scale: 1" = 2 Miles

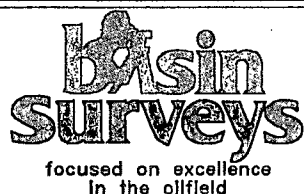
Date: 2-29-2012



YATES
PETROLEUM
CORP.



RAFTER BJI FED COM #2H
Located 1840' FSL and 1970' FEL
Section 11, Township 20 South, Range 30 East,
N.M.P.M., Eddy County, New Mexico.



P.O. Box 1786
1120 N. West County Rd.
Hobbs, New Mexico 88241
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basinsurveys.com

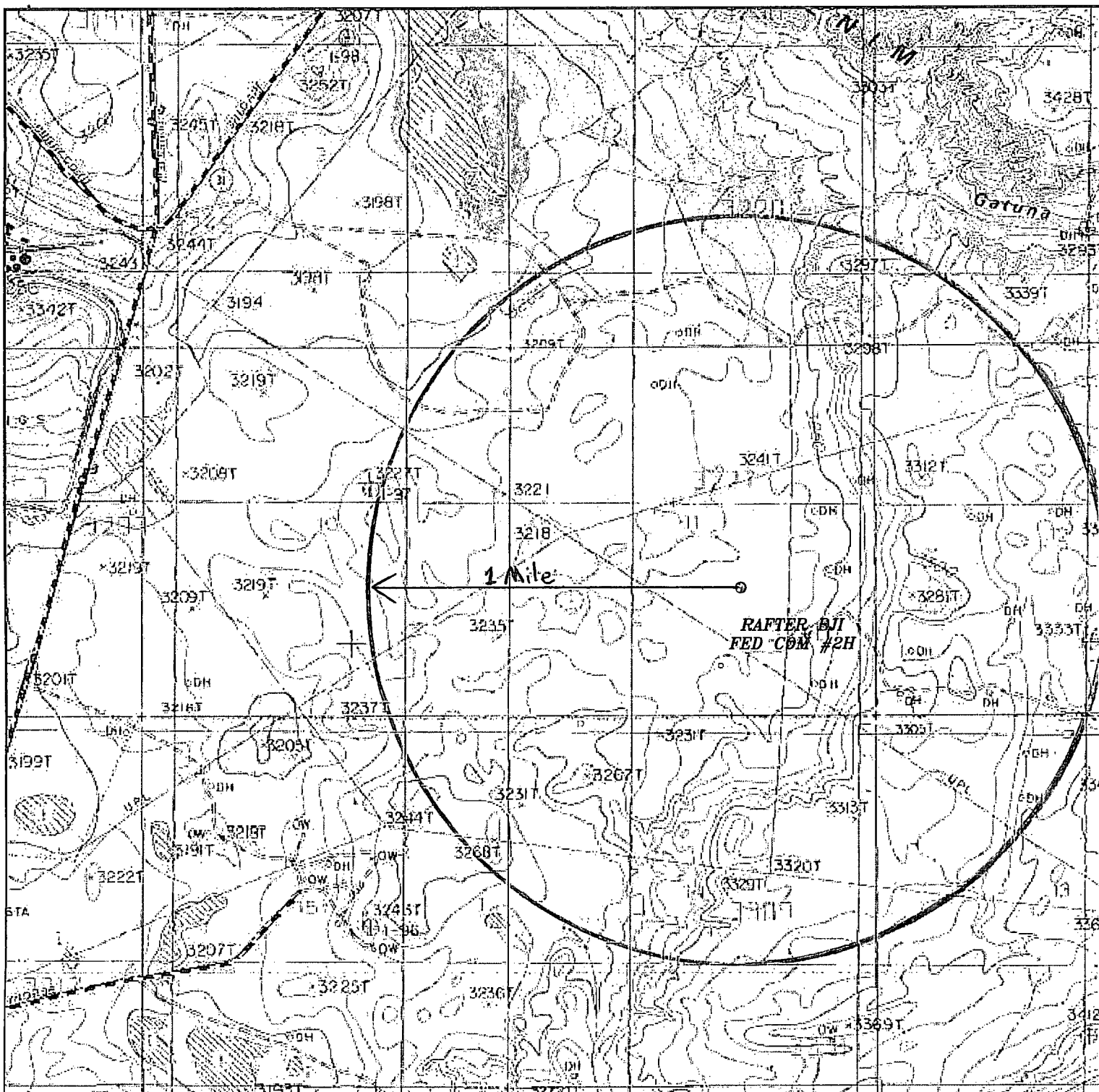
W.O. Number: JG 25827

Scale: 1" = 2000'

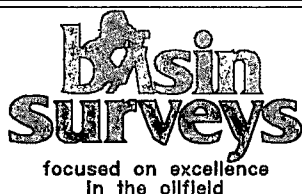
YELLOW TINT - USA LAND
BLUE TINT - STATE LAND
NATURAL COLOR - FEE LAND



YATES
PETROLEUM
CORP.



RAFTER BJI FED COM #2H
 Located 1855' FSL and 1970' FEL
 Section 11, Township 20 South, Range 30 East,
 N.M.P.M., Eddy County, New Mexico.



P.O. Box 1786
 1120 N. West County Rd.
 Hobbs, New Mexico 88241
 (575) 393-7316 - Office
 (575) 392-2206 - Fax
basinsurveys.com

W.O. Number: ERB 26127

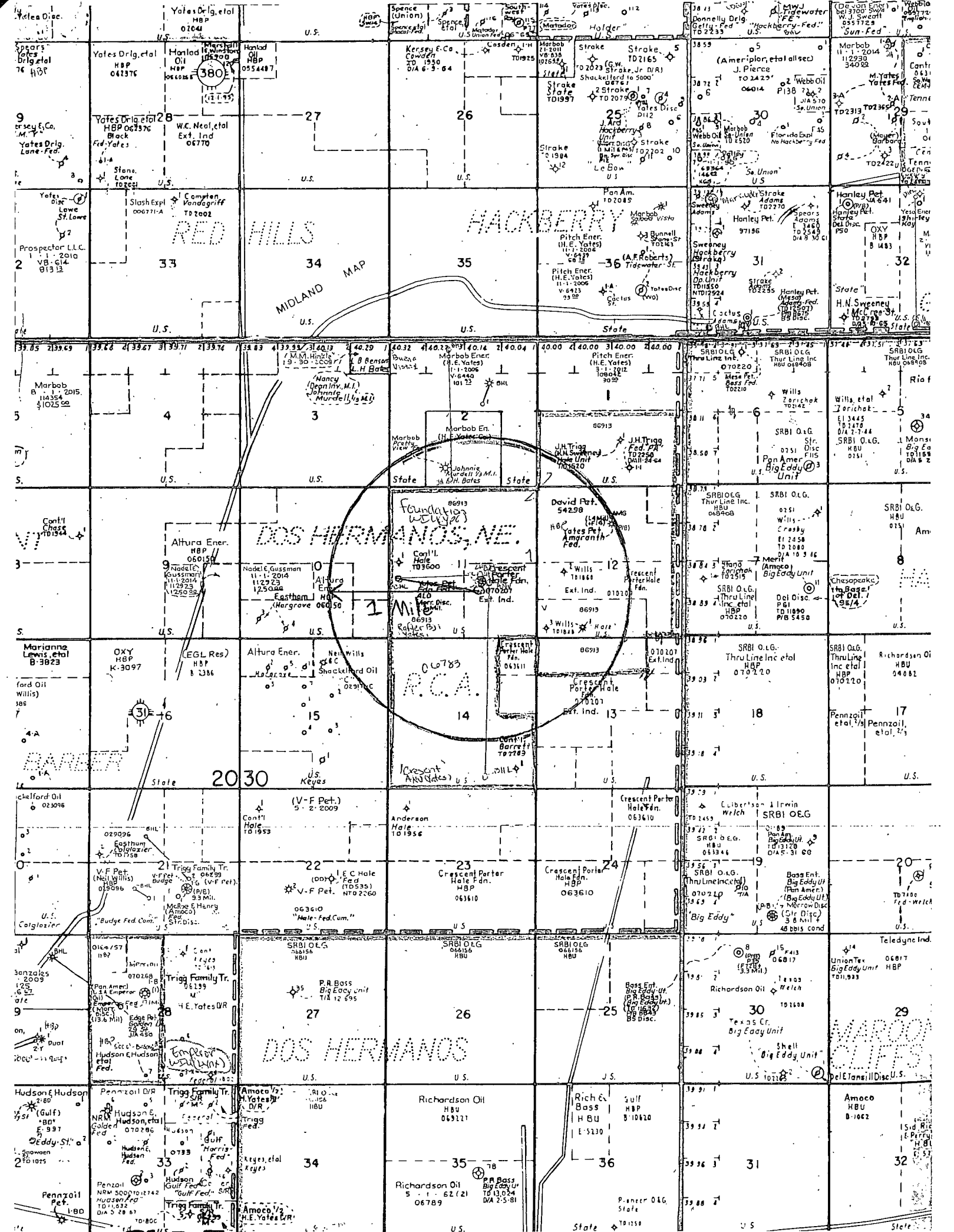
Survey Date: 2-25-2012

Scale: 1" = 2000'

Date: 2-29-2012



**YATES
 PETROLEUM
 CORP.**



YATES PETROLEUM CORPORATION

Rafter BJI Federal Com #2H

1840' FSL & 1970' FEL, Section 11 - T20S-R30E, Surface Hole

1840' FSL & 330' FWL, Section 11 - T20S-R30E, Bottom Hole

Eddy County, New Mexico

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

Rustler	463'	Bone Spring Lime	6533'
Top of Salt	503'	Avalon Sand	6698' Oil
Base of Salt	1353'	Middle Avalon	6928' Oil
Yates	1425'	Lower Avalon	7283' Oil
Capitan Reef	1863'	Bone Springs 1/SD	7753' Oil
Delaware	4059'	Bone Springs 2/SD	8394' Oil
Cherry Canyon	4129'	Target Zone SBSG	8906' Oil
Brushy Canyon	5001' Oil	TD	11409'

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

Water: Approx.: 0' - 322', 1863'

Oil or Gas: See above--All Potential Zones

3. Pressure Control Equipment: Yates Petroleum Corporation hereby request a variance to allow us to place a 2000 PSI annular system with a 21.25" opening will be installed on the 20" casing, then will be pressured up to 1000 PSI and held for 30 minutes for a test. A 3000 PSI BOP with a 13 5/8" opening will be installed on the 13 3/8" casing and a 5000 PSI BOP will be installed on the 9 5/8" casing. Pressure tests to 3000 PSI (on 13 3/8") and 5000 PSI (on 9 5/8") will be conducted and held for 30 minutes 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.

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) 13 3/8" will be H-40/J-55 Hybrid

Hole Size	Casing Size	Wt./Ft	Grade	Coupling	Interval	Length
36"	30"	N/A	H-40	ST&C	0'-58'	58'
26"	20"	94#	H-40	ST&C	0'-490' 370'	490' 370'
17 1/2"	13 3/8"	54.5#	J-55	ST&C	0'-80'	80'
17 1/2"	13 3/8"	48#	J-55	ST&C	80'-1200'	1120'
17 1/2"	13 3/8"	54.5#	J-55	ST&C	1200'-1450'	250'
12 1/4"	9 5/8"	40#	J-55	LT&C	0'-80'	80'
12 1/4"	9 5/8"	36#	J-55	LT&C	80'-3600' 405'	3520'
12 1/4"	9 5/8"	40#	J-55	LT&C	3600'-4150'	550'
8 3/4"	5 1/2"	17#	P-110	LT&C	0'-8100'	8100'
8 1/2"	5 1/2"	17#	P-110	Buttress Thread	8100'-114409'	3309'

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

B. CEMENTING PROGRAM:

Surface casing (0'-390'): Lead with 863 sacks of Class C + 2% CaCl₂ (YLD 1.71 WT 13.50), Tail with 100 sacks of Class C + 2% CaCl₂ (YLD 1.34 WT 14.80) designed with 100% excess, TOC is surface.

Intermediate 1 Cement (0'-1450'): Lead with 870 sacks of Class PozC 35:65:6 (YLD 2.00 WT 12.50); tail in with 200 sacks of Class C + 2% CaCl₂ (YLD 1.34 WT 14.80). Designed with 100% excess, TOC is surface. (The intermediate #1 string will be set at approximately 1450' in the top of the ^{Yes} to protect the Potash from the oil producing zone.) _{Yates}

Intermediate 2 Cement, Stage 2 (0'-1825'): Lead with 500 sacks of Class PozC 35:65:6 (YLD 2.00 WT 12.50); tail in with 100 sacks of Class C + 2% CaCl₂ (YLD 1.34 WT 14.80). Designed with 100% excess, TOC is surface.

Intermediate 2 Cement, Stage 1 (1825'-4150'): Lead with 590 sacks of Class PozC 35:65:6 (YLD 2.00 WT 12.50); tail in with 200 sacks of Class C + 2% CaCl₂ (YLD 1.34 WT 14.80). Designed with 100% excess, TOC is surface.

(The intermediate #2 string will be set at approximately 4150' to protect the Capitan from the oil producing Delaware zone. It will be cemented to surface in two stages with a packer stage tool at approximately 1825' to give the Capitan added protection against the Yates oil producing zone.)

Production Casing: Cement to be done with DV/Packer Stage tool at approximately 4200' and 4700'.

Stage 2 from 1700'-4200': Lead cement with 290 sacks of Class PozC 35:65:6 (YLD 2.00 WT 12.50); tail in with 200 sacks of Class C + 2% CaCl₂ (YLD 1.34 WT 14.80). Designed with 35% excess, TOC-1700'.

see COA
Stage 1 from 4200'-11409': Lead with 800 sacks Class PozC 35:65:6 (YLD 2.00 WT 12.50); tail in with 620 sacks of Pecos Valley Lite (YLD 1.34 WT 13.00). 30% CaCO₃ Weight, 3.2% Expansion additive, 2% Antifoam, .8% Retarder, 15 Fluid loss. TOC- 5000' Designed with 35% excess.

Well will be drilled vertically depth to 8148'. Well will be kicked off at approximately 8148' and directionally drilled at 12 degrees per 100' with an 8 3/4" hole to 8906' MD (8625' TVD). Hole size will then be reduced to 8 1/2" and drilled to 11409' MD (8583' TVD) where 5 1/2" casing will be set and cemented to surface in a two stages with a DV/Packer Stage tool will be between 4200' and 4700'. Penetration point of producing zone will be encountered at 1830' FSL & 2455' FEL, Section 11-20S-30E. Deepest TVD is 8625' in the lateral.

Mud Program and Auxiliary Equipment:

Interval	Type	Weight	Viscosity	Fluid Loss
0-490' ^{370'}	Fresh Water	8.6-9.2	32-34	N/C
490'-1450'	Brine Water	10.0-10.2	28-29	N/C
1450'-4150' ^{4050'}	Fresh Water	8.6-9.2	32-34	N/C
4150'-11409'	Cut Brine (lateral)	8.8-9.2	28-32	N/C

see COA
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.

6. EVALUATION PROGRAM:

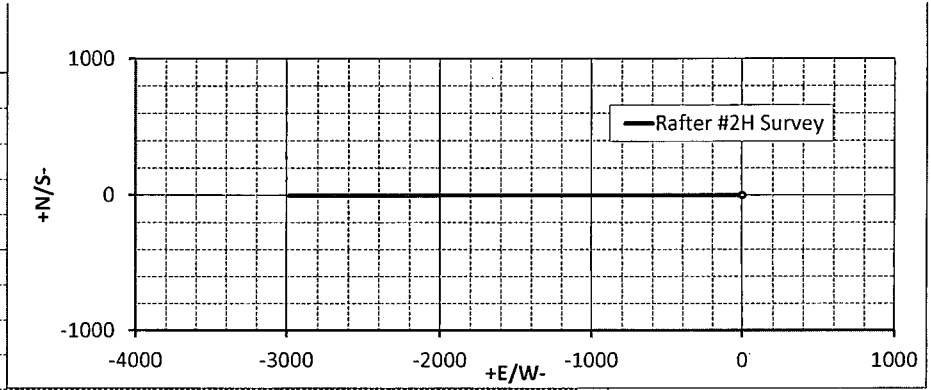
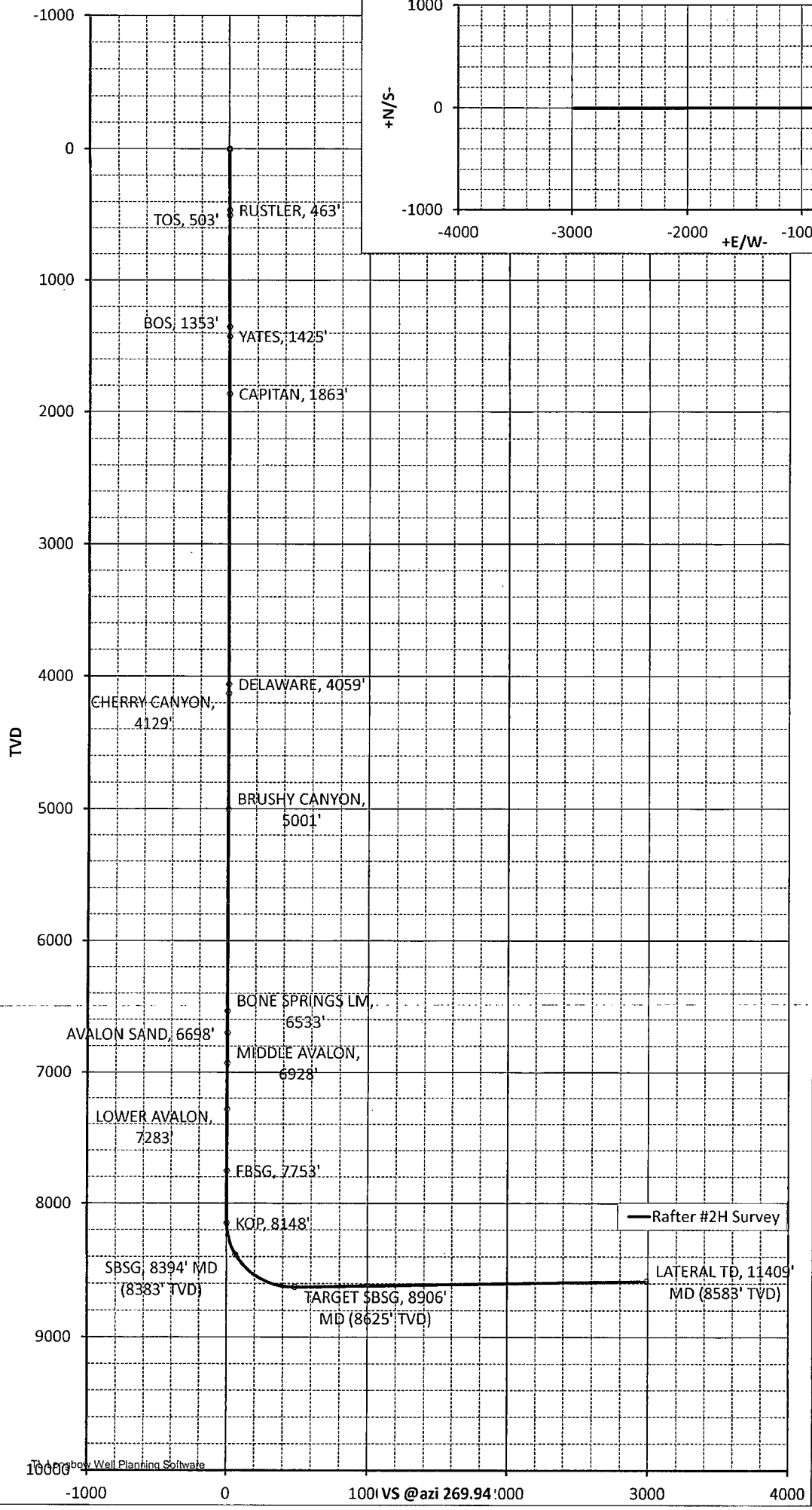
Samples: 30' samples to 4100'. 10' samples 4100' to TD.
Logging: Platform HRLA, CMR (Intermediate casing to TD).
Coring: None.
DST's: None.
Mudlogging: On surface casing to TD (490' to 8625').

Operator Co.

Your Co.

Survey/Planning Report									
Operator	Yates Petroleum Corp.			Northing				Date	3-Oct-12
Dir. Co.	Yates Petroleum Corp.			Easting				System	2 - St. Plane
Well Name	Rafter #2H Survey			Elevation				Datum	1983 - NAD83
Location	Sec. 11, 20S-30E			Latitude				Zone	4302 - Utah Central
Rig				Longitude				Scale Fac.	
Job				Units	Feet			Converg.	
MD	INC	AZI	TVD	N/S	E/W	VS@269.94°	BR	TR	DLS
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
463.00	0.00	360.00	463.00	0.00	0.00	0.00	0.00	0.00	0.00
463: RUSTLER, 463'									
503.00	0.00	360.00	503.00	0.00	0.00	0.00	0.00	0.00	0.00
503: TOS, 503'									
1353.00	0.00	360.00	1353.00	0.00	0.00	0.00	0.00	0.00	0.00
1353: BOS, 1353'									
1425.00	0.00	360.00	1425.00	0.00	0.00	0.00	0.00	0.00	0.00
1425: YATES, 1425'									
1863.00	0.00	360.00	1863.00	0.00	0.00	0.00	0.00	0.00	0.00
1863: CAPITAN, 1863'									
4059.00	0.00	360.00	4059.00	0.00	0.00	0.00	0.00	0.00	0.00
4059: DELAWARE, 4059'									
4129.00	0.00	360.00	4129.00	0.00	0.00	0.00	0.00	0.00	0.00
4129: CHERRY CANYON, 4129'									
5001.00	0.00	360.00	5001.00	0.00	0.00	0.00	0.00	0.00	0.00
5001: BRUSHY CANYON, 5001'									
6533.00	0.00	360.00	6533.00	0.01	0.00	0.00	0.00	0.00	0.00
6533: BONE SPRINGS LM, 6533'									
6698.00	0.00	360.00	6698.00	0.01	0.00	0.00	0.00	0.00	0.00
6698: AVALON SAND, 6698'									
6928.00	0.00	360.00	6928.00	0.01	0.00	0.00	0.00	0.00	0.00
6928: MIDDLE AVALON, 6928'									
7283.00	0.00	360.00	7283.00	0.01	0.00	0.00	0.00	0.00	0.00
7283: LOWER AVALON, 7283'									
7753.00	0.00	360.00	7753.00	0.01	0.00	0.00	0.00	0.00	0.00
7753: FBSG, 7753'									
8147.54	0.00	269.94	8147.54	0.01	0.00	0.00	0.00	3.31	0.00
8147.54: KOP, 8148'									
8200.00	6.29	269.94	8199.89	0.00	-2.88	2.88	12.00	0.00	12.00
8300.00	18.30	269.94	8297.42	-0.02	-24.13	24.13	12.00	0.00	12.00
8393.77	29.55	269.94	8383.00	-0.05	-62.10	62.10	12.00	0.00	12.00
8393.77: SBSG, 8394' MD (8383' TVD)									
8400.00	30.30	269.94	8388.40	-0.06	-65.20	65.20	12.00	0.00	12.00
8500.00	42.30	269.94	8468.85	-0.11	-124.29	124.29	12.00	0.00	12.00
8600.00	54.30	269.94	8535.26	-0.19	-198.81	198.81	12.00	0.00	12.00
8700.00	66.30	269.94	8584.72	-0.27	-285.51	285.51	12.00	0.00	12.00
8800.00	78.29	269.94	8615.08	-0.37	-380.60	380.60	12.00	0.00	12.00
8900.00	90.29	269.94	8625.00	-0.46	-479.93	479.93	12.00	0.00	12.00
8905.54	90.96	269.94	8624.94	-0.47	-485.46	485.46	12.00	0.00	12.00
8905.54: TARGET SBSG, 8906' MD (8625' TVD)									
11408.77	90.96	269.94	8583.00	-2.92	-2988.34	2988.34	0.00	0.00	0.00
11408.77: LATERAL TD, 11409' MD (8583' TVD)									





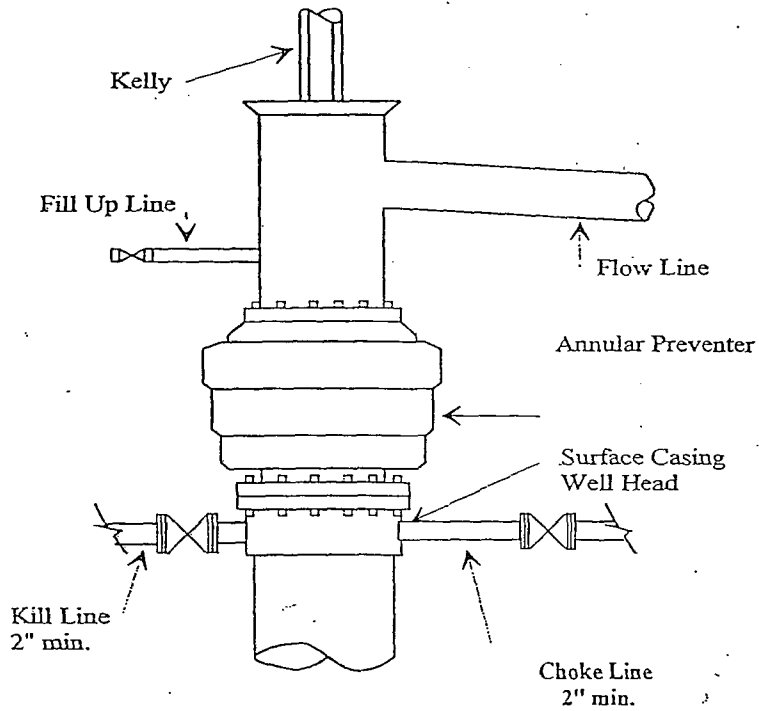
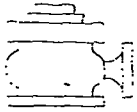
Yates Petroleum Corporation

BOP-1

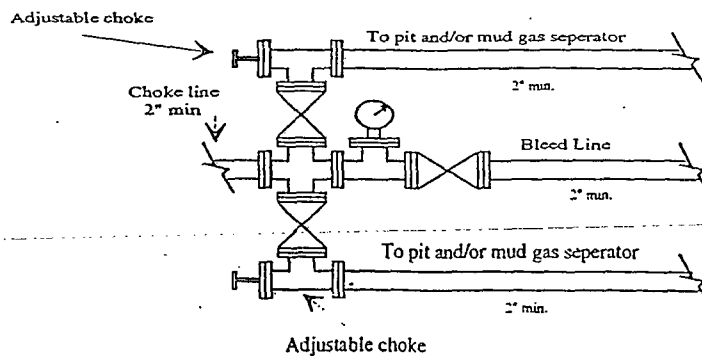
Typical low Pressure System

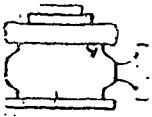
Schematic

Annular Preventer 2,000 psi



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

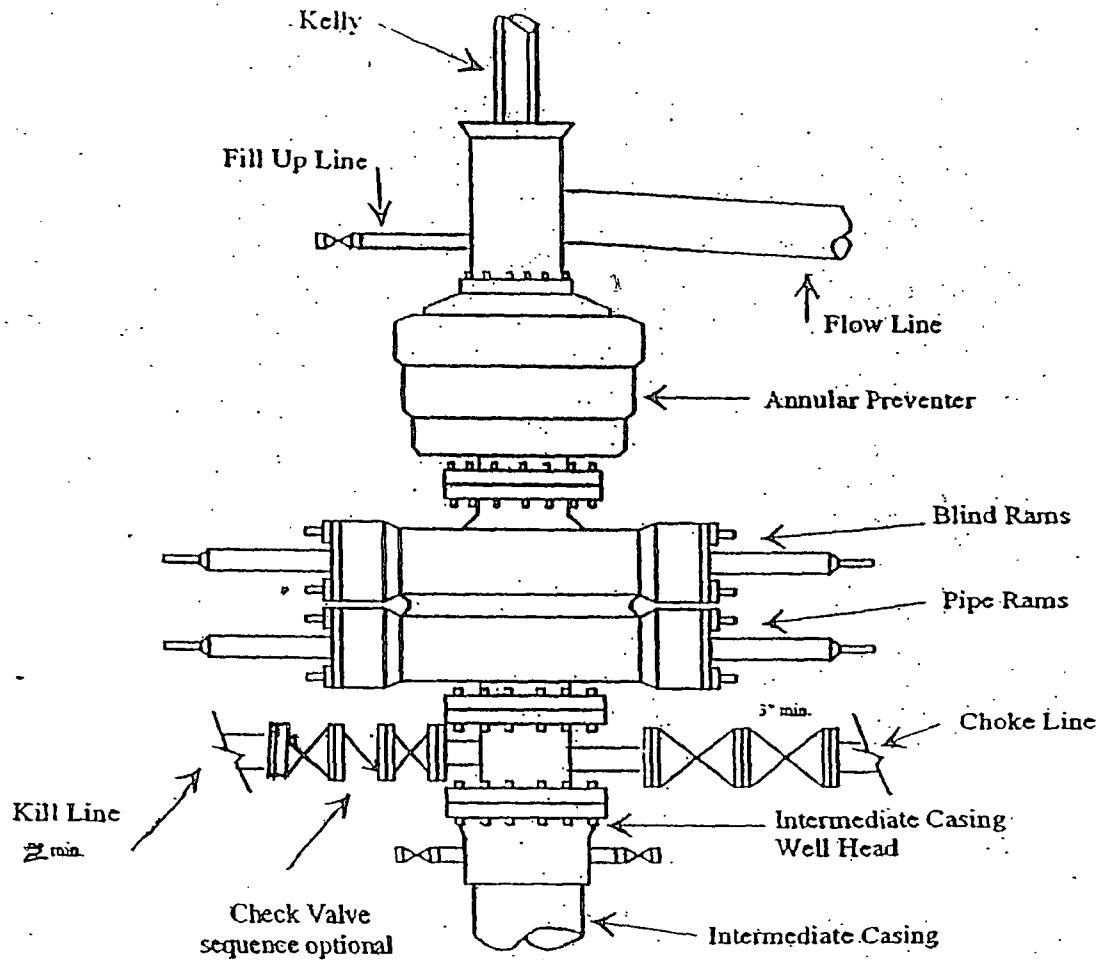




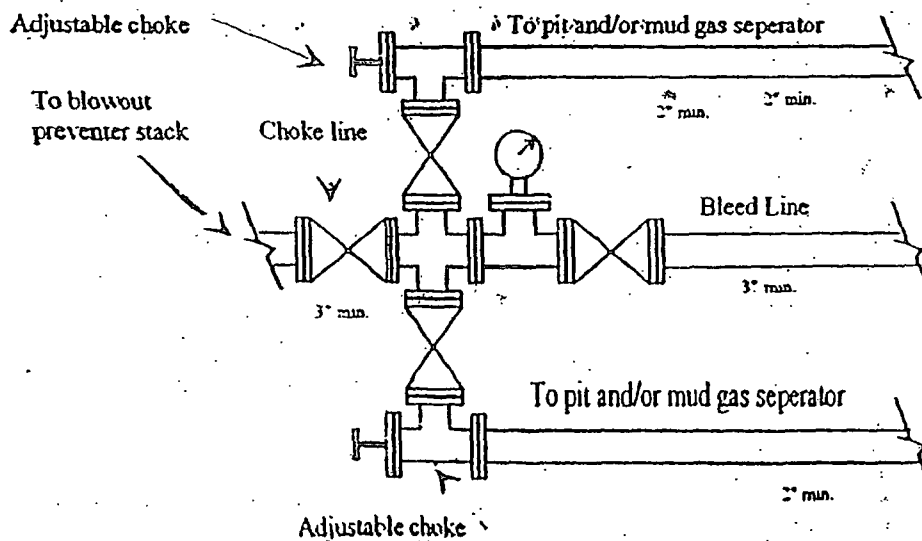
Yates Petroleum Corporation

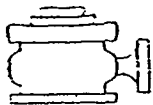
BOP-3

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



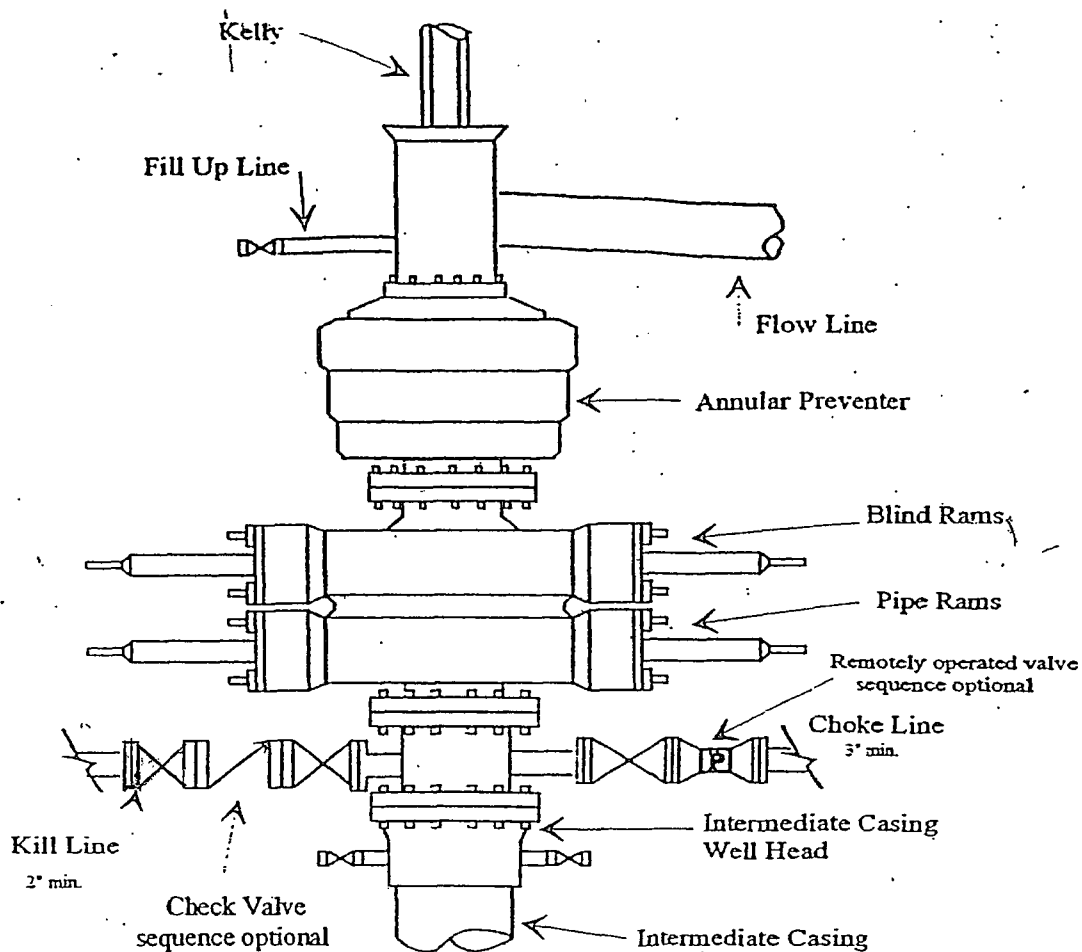
Typical 3,000 psi choke manifold assembly with at least these minimum features



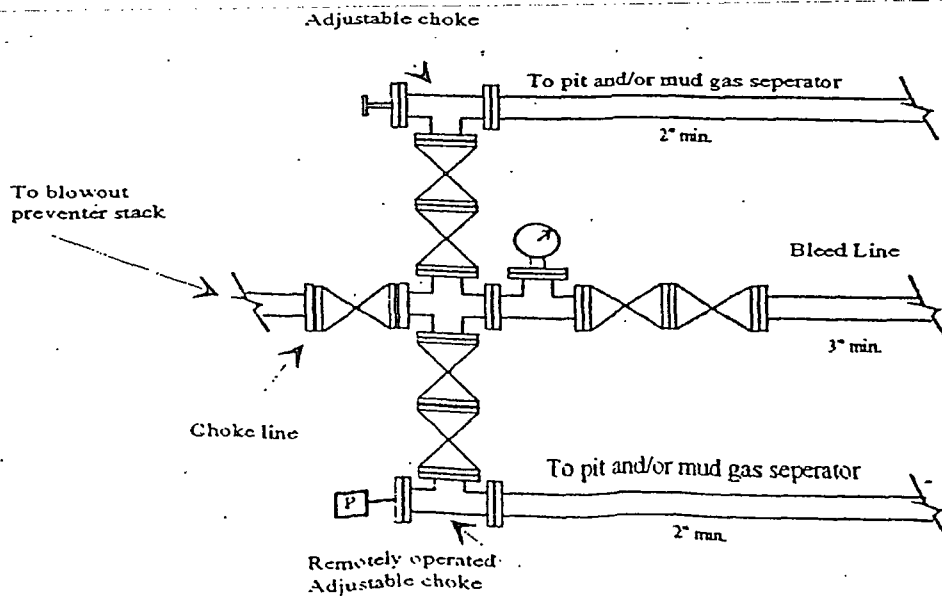


Yates Petroleum Corporation
Typical 5,000 psi Pressure System
Schematic
Annular with Double Ram Preventer Stack

BOP-4

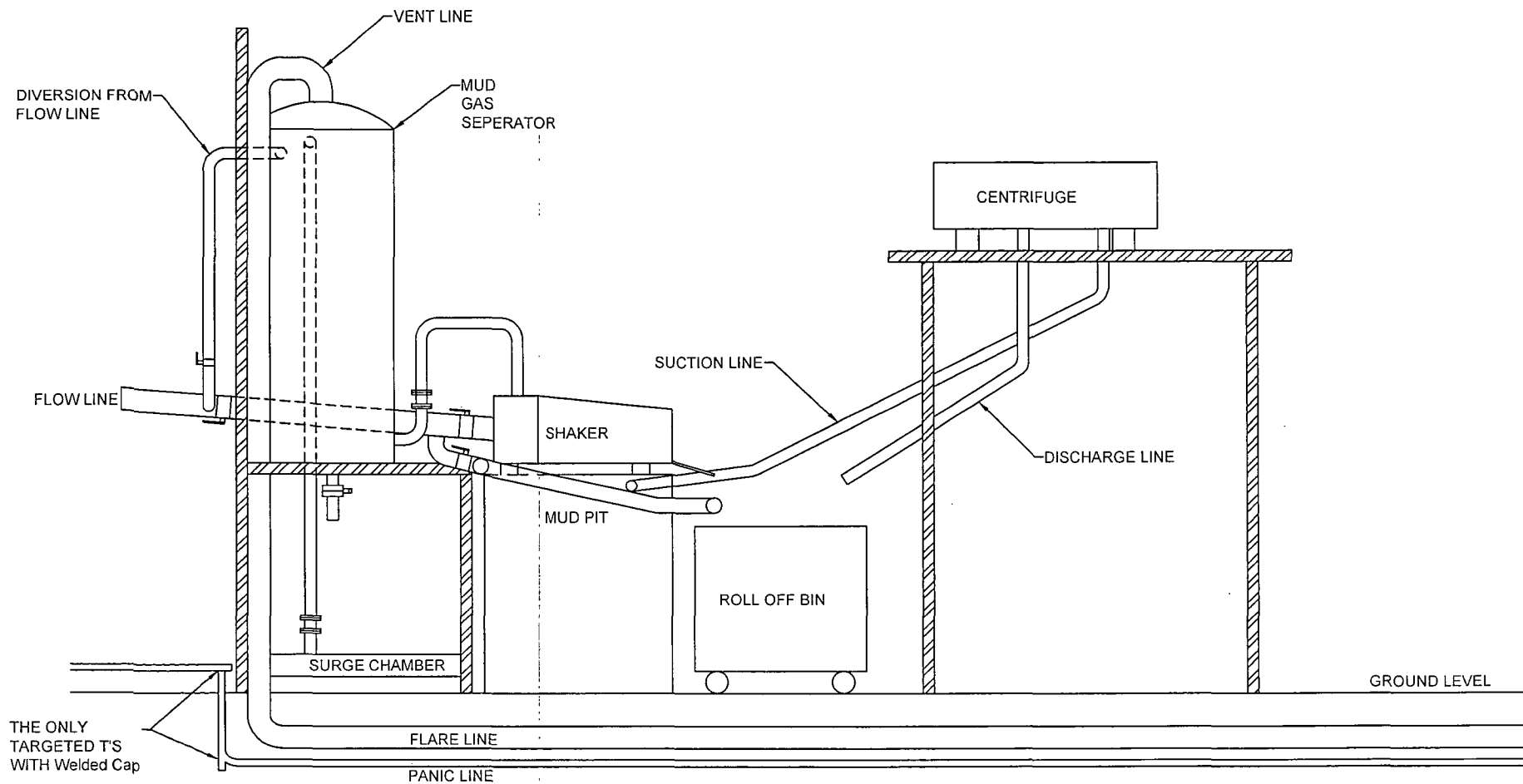


Typical 5,000 psi choke manifold assembly with at least these minimum features



YATES PETROLEUM CORPORATION

Piping from Choke Manifold
to the Closed Loop Drilling Mud System



The flare discharge must be 100' from wellhead for non H₂S wells and 150' from wellhead for wells expected to encounter H₂S.

Yates Petroleum Corporation

Closed Loop System

Equipment Design Plan

Closed Loop System will consist of:

- 1 – double panel shale shaker

- 1 – (minimum) Centrifuge, certain wells and flow rates may require 2 centrifuges

On certain wells, the Centrifuge will be replaced by a Clackco Settling Tank System

- 1 – minimum centrifugal pump to transfer fluids

- 2- 500 bbl. FW Tanks

- 1 – 500 bbl. BW Tank

- 1 – half round frac tank – 250 bbl. capacity as necessary to catch cement / excess mud returns generated during a cement job.

- 1 Set of rail cars / catch bins

Certain wells will use an ASC Auger Tank

Operation Plan

All equipment will be inspected at least hourly by rig personnel and daily by contractors' personnel.

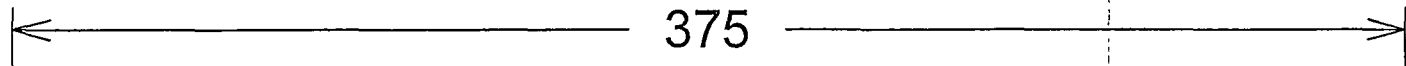
Any spills / leaks will be reported to YPC, NMOCD, and cleaned up without delay.

Closure Plan

Drilling with Closed Loop System, haul off bins will be taken to Gandy Marley, Lea Land Farm, CRI or Sundance Services Inc.

← 425.00 →

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A horizontal number line with arrows at both ends. A vertical tick mark is labeled 375.

Scale: 1 inch = 50 feet

Scale: 1 inch = 50 feet

Yates Petroleum Corporation

Hydrogen Sulfide Drilling Operation Plan

I. HYDROGEN SULFIDE TRAINING

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will receive training from a qualified instructor in the following areas prior to commencing drilling operations on this well:

1. The hazards and characteristics of hydrogen sulfide (H₂S).
2. The proper use and maintenance of personal protective equipment and life support systems.
3. The proper use of H₂S detectors, alarms, warning systems, briefing areas, evacuation procedures, and prevailing winds.
4. The proper techniques for first aid and rescue procedures.

In addition, supervisory personnel will be trained in the following areas:

1. The effects of H₂S on metal components. If high tensile tubular are to be used, personnel will be trained in their special maintenance requirements.
2. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.
3. The contents and requirements of the H₂S Drilling Operations Plan and H₂S Contingency Plan.

There will be an initial training session just prior to encountering a known or probable H₂S zone (within 3 days or 500 feet) and weekly H₂S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H₂S Drilling Operation Plan and the H₂S Contingency Plan. **The location of this well does not require a Public Protection Plan.**

II. H₂S SAFETY EQUIPMENT AND SYSTEMS

NOTE: All H₂S safety equipment and systems will be installed, tested, and operational when drilling reaches a depth of 500 feet above, or three days prior to penetrating the first zone containing or reasonably expected to contain H₂S.

1. Well Control Equipment:

- A. Flare line
- B. Choke manifold *remotely operated choke*
- C. Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit
- D. Auxiliary equipment may include if applicable: annular preventer & rotating head.

2. Protective equipment for essential personnel:

- A. Mark II Survive Air (or equivalent) 30-minute units located in the doghouse and at briefing areas, as indicated on well site diagram.

3. H₂S detection and monitoring equipment:

- A. 3 portable H₂S monitors positioned at: Shale Shaker, Bell Nipple, and Rig Floor. These units have warning lights and audible sirens when H₂S levels of 10 PPM are reached.

4. Visual warning systems:

- A. Wind direction indicators as shown on well site diagram (attached).
- B. Caution/Danger signs (attached) shall be posted on roads providing direct access to location. Signs will be painted with high visibility yellow with black lettering of a sufficient size to be readable at a reasonable distance from the immediate location. Bilingual signs will be used, when appropriate. See example attached.

5. Mud program:

- A. The mud program has been designed to minimize the volume of H₂S circulated to the surface. Proper mud weight, safe drilling practices and the use of H₂S scavengers will minimize hazards when penetrating H₂S bearing zones.

6. Metallurgy:

- A. All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold and lines, and valves shall be suitable for H₂S service.
- B. All elastomers used for packing and seals shall be H₂S trim.



7. Communication:

- A. Cellular communications in company vehicles.
- B. Land line (telephone) communication at the Office.

8. Well testing:

- A. There will be no drill stem testing.

EXHIBIT

DANGER	
POISONS GAS	
HYDROGEN SULFIDE	
	NORMAL OPERATIONS
(GREEN)	
CAUTION POTENTIAL DANGER	
(YELLOW)	
	DANGER POISONS GAS ENCOUNTERED
(RED) AUTHORIZED PERSONAL ONLY.	
LOCATION SECURED.	
1-575-746-1096	
1-877-879-8899	

EDDY COUNTY EMERGENCY NUMBERS

ARTESIA FIRE DEPT. 575-746-5050

ARTESIA POLICE DEPT. 575-746-5000

EDDY CO. SHERIFF DEPT. 575-746-9888

LEA COUNTY EMERGENCY NUMBERS

HOBBS FIRE DEPT. 575-397-9308

HOBBS POLICE DEPT. 575-397-9285

LEA CO. SHERIFF DEPT. 575-396-1196

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

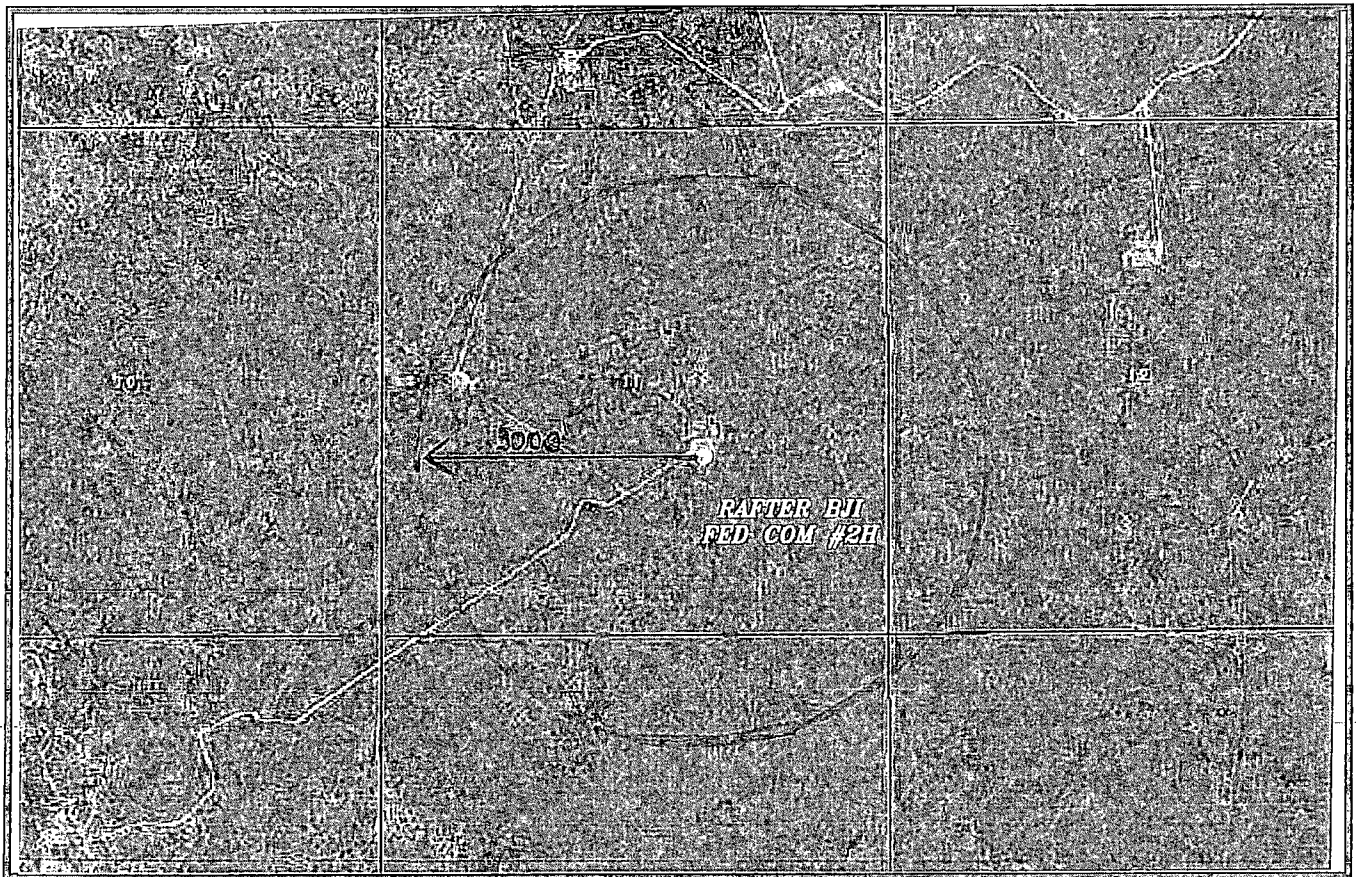
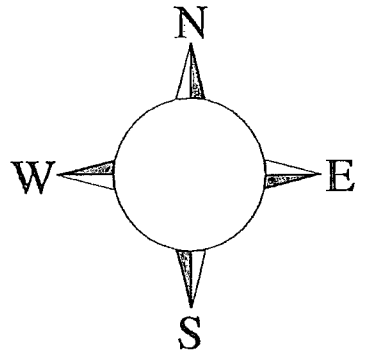
Hydrogen Sulfide (H₂S) Contingency Plan

For

Rafter BJI Federal Com. #2H
1855' FSL & 1970' FEL
Section 11, T20S-R30E
Eddy County NM

Rafter BJI Federal Com. #2H

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

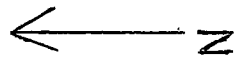
Carlsbad

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

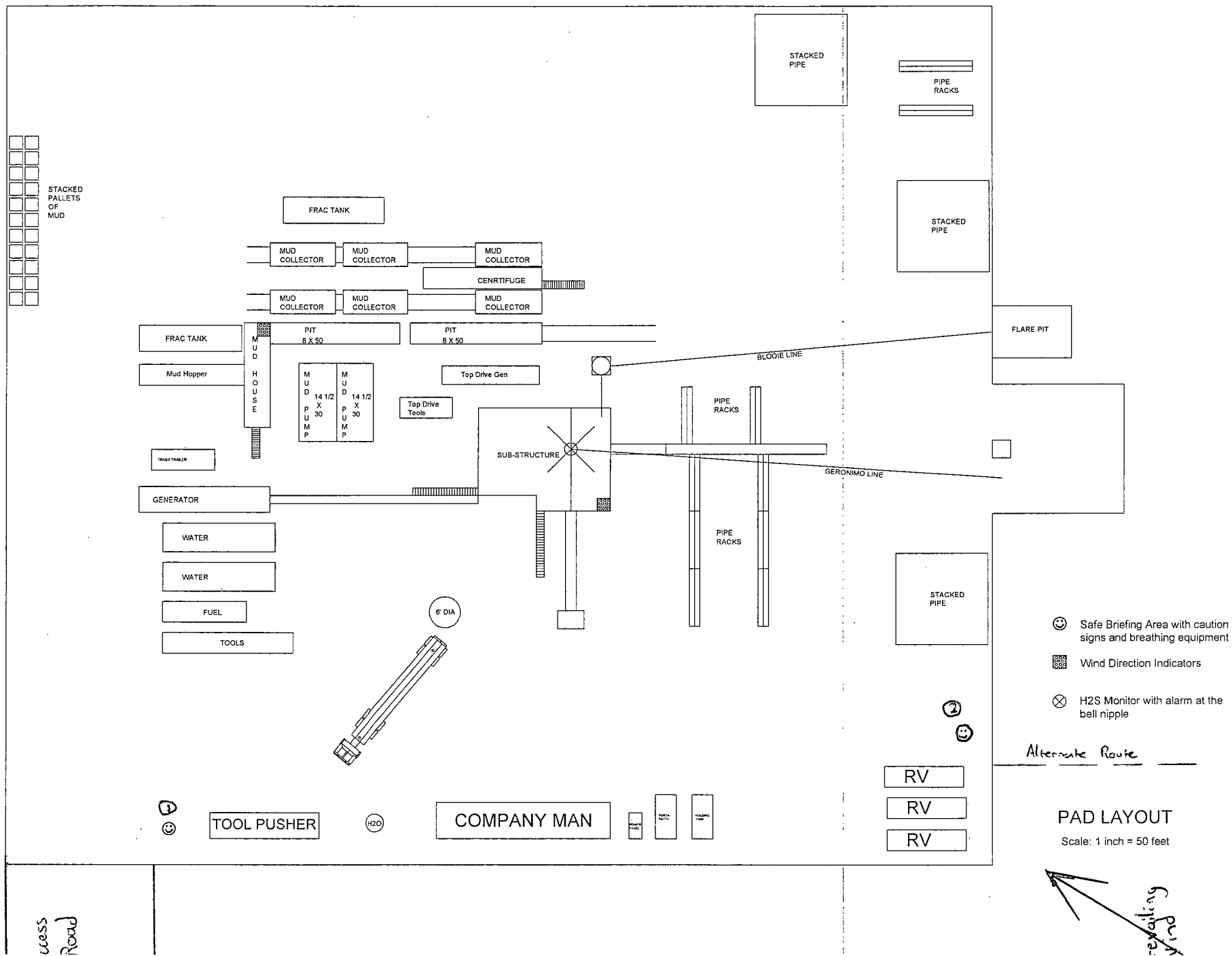
Other

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

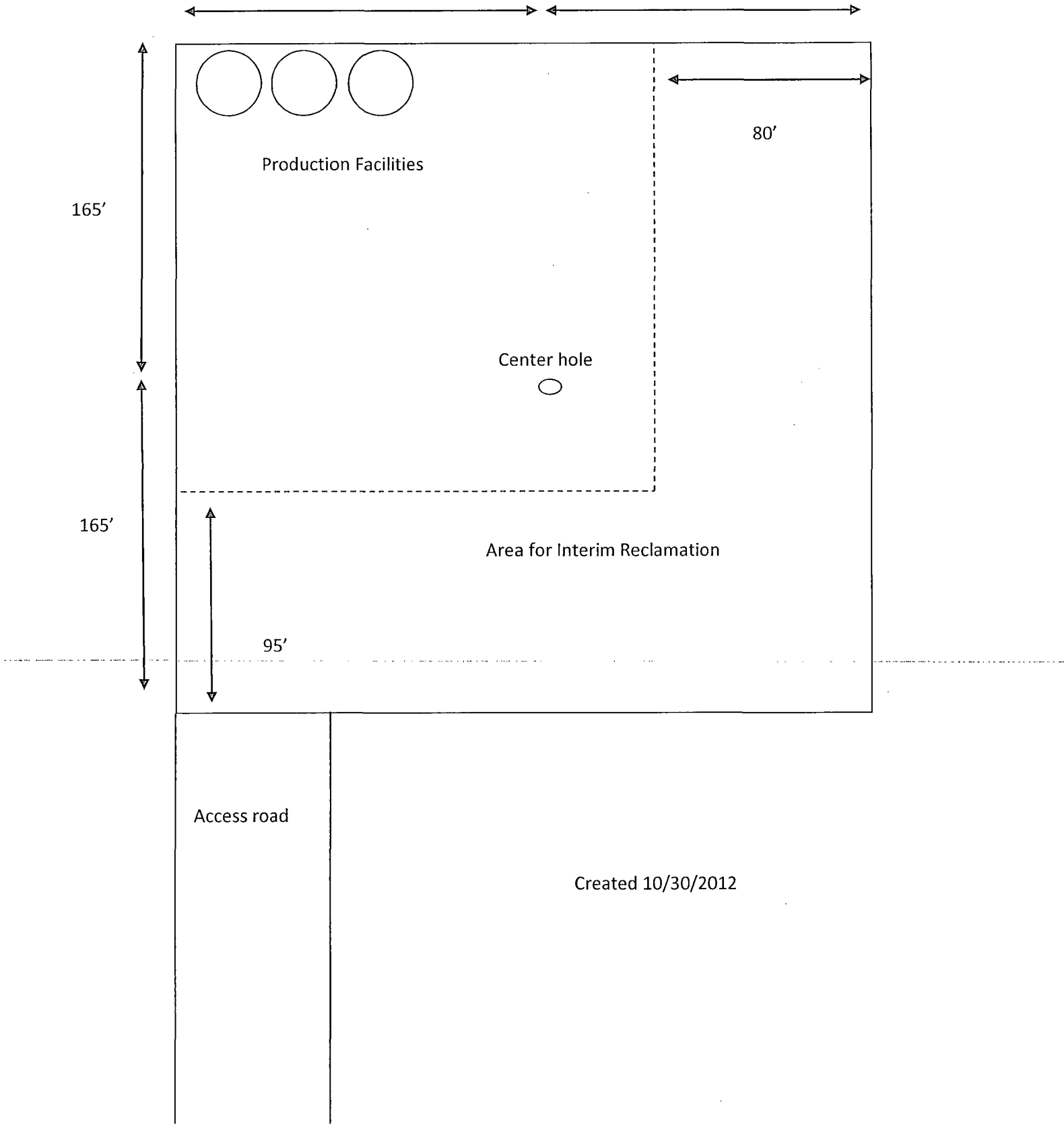


North ←

Rafter BJI Federal Com #2H

Interim Reclamation Well Pad Layout Example*

*dimensions will vary according to well location specifics



Plans for Interim and Final Surface Reclamation.

1. Well location will be contoured to resemble the original topography as closely as possible. Surface reclamation measures will be taken to avoid new erosion on the well location and the area surrounding the well location. These measures will be overseen by Yates' personnel following a structured plan for the reclamation of each individual site.
2. Major drainage systems will be avoided as determined at the onsite with the BLM. Minor drainages may be rerouted around the well site within the 600' x 600' cleared area to avoid moving the well location.
3. Segregation of topsoil or like soils will be placed in low lift rows rather than in a stockpile just off the caliche well pad. Placement of these lift rows will be determined at the BLM onsite or at the time of construction by Yates Personnel.
4. Yates will use prudent oil field practices when constructing well locations and related facilities. Yates personnel will determine the size of the well location needed for safe working conditions for personnel during all aspects on the drilling and production process.
5. Back fill requirements for above ground reserve pits will be met by using cut, fill, and contouring of available top soil and like soils from the pit area. Should additional material be needed it will be brought in from a BLM approved source.
6. All topsoil will be spread over the area reclaimed during interim reclamation using a front end loader. For final reclamation enough topsoil will be evenly distributed between the interim reclaimed area and the final reclaimed area. This method of soil stabilization should help maintain the productivity and viability of the topsoil.
7. Soil treatments will be determined at the time of final reclamation by Yates' Environmental Specialist or other designated personnel to meet BLM final reclamation goals.
8. Reseeding of disturbed areas will be accordance with the seed mixtures attached to the approved APD as Conditions of Approval. Planting and soil preparation will be done during the rainy season between June 1st and September 1st.
9. Yates' personnel will control weeds during the productive period through final abandonment of the well. Yates may also use the option to hire a third party to be in charge of weed control or participate in the Chaves Soil and Water District program to pool monies for weed control.
10. Well pads, roads and related facilities with caliche or other surfacing material will be picked up or turned over at the time of final abandonment. These materials may be used on other projects in the area if possible or placed back in the caliche pit or other designated site. Buried pipelines will be left in place after being bled down and purged. Above surface support equipment will be removed or cut down below plow depth and removed. Pipeline right-of-ways will be reseeded according to BLM Best Management Practices.

YATES PETROLEUM CORPORATION
Surface Use Plan of Operations
Rafter BJI Federal Com #2H
1855' FSL and 1970' FEL, Surface Hole
1840' FSL and 355' FWL, Bottom Hole

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:

Included 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 48 miles, southeast of Artesia, New Mexico and the access route to the location is indicated in red and green on the attached map.

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 22 miles to Crazy Horse Road. Turn left (east) on Crazy Horse Road and go approximately 1.2 miles, staying to the left at splits. Turn right (east) still on Crazy Horse Road and continue for 1.6 miles. Road will end at the southwest corner of the location.

2. PLANNED ACCESS ROAD:

- A. There will be no new proposed access road.
- B. The existing road will be bladed with drainage on both sides if needed. No traffic turnouts will be needed.
- C. The route of the road is visible.
- D. Existing roads will be maintained in the same or better condition.

3. LOCATION OF EXISTING WELL:

- A. There is no drilling activity within a one-mile radius of the well site.
- B. Exhibit attached shows existing wells within a one-mile radius of the proposed well site.

4. LOCATION OF EXISTING AND/OR PROPOSED FACILITIES:

- A. We are planning to place the production on this location.
- 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. Should a Pipeline Right-Of-Way be required it will be filed under a separate application and/or by 3rd party if applicable.

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 attached.

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.
- 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 attached 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 3.5 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.
- 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: Federal

Minerals: USA-Federal-NM-82902
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.

PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Yates Petroleum Corporation
LEASE NO.:	NMNM-086913
WELL NAME & NO.:	Rafter BJI Federal Com 2H
SURFACE HOLE FOOTAGE:	1840' FSL & 1970' FEL
BOTTOM HOLE FOOTAGE	1840' FSL & 0330' FWL
LOCATION:	Section 11, T. 20 S., R 30 E., NMPM
COUNTY:	Eddy County, New Mexico

TABLE OF CONTENTS

Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

- ☐ **General Provisions**
- ☐ **Permit Expiration**
- ☐ **Archaeology, Paleontology, and Historical Sites**
- ☐ **Noxious Weeds**
- ☒ **Special Requirements**

Hackberry Lake OHV Area
Communitization Agreement

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

- ☐ **Road Section Diagram**

- ☒ **Drilling**
 - Cement Requirements
 - H2S requirements
 - R-111-P Potash
 - Capitan Reef
 - Logging Requirements
 - Waste Material and Fluids

- ☐ **Production (Post Drilling)**
 - Well Structures & Facilities
 - Pipelines
 - Electric Lines

- ☐ **Interim Reclamation**

- ☐ **Final Abandonment & Reclamation**

I. GENERAL PROVISIONS

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

II. PERMIT EXPIRATION

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

IV. NOXIOUS WEEDS

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

V. SPECIAL REQUIREMENT(S)

Hackberry Lake Special Recreation Management Area (OHV)

Project falls within 200 feet of recreation OHV trails. Pipelines (including surface lines) shall be buried 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. Power poles and associated ground structures (poles, guy wires) will not be placed within 20 feet of recreation trails. Guy wires must be equipped with a sleeve, tape or other industry approved apparatus that is highly visible during the day and reflective at night. Appropriate safety signage will be in place during all phases of the project. Upon completion of construction, the road shall be returned to pre-construction condition with no bumps or dips. All vehicle and equipment operators will observe speed limits and practice responsible defensive driving habits.

Drilling:

Communitization Agreement

A Communitization Agreement covering the acreage dedicated to this well must be filed for approval with the BLM. The effective date of the agreement shall be prior to any sales. In addition, the well sign shall include the surface and bottom hole lease numbers. If the Communitization Agreement number is known, it shall also be on the sign. If not, it shall be placed on the sign when the sign is replaced.

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) 234-5909 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

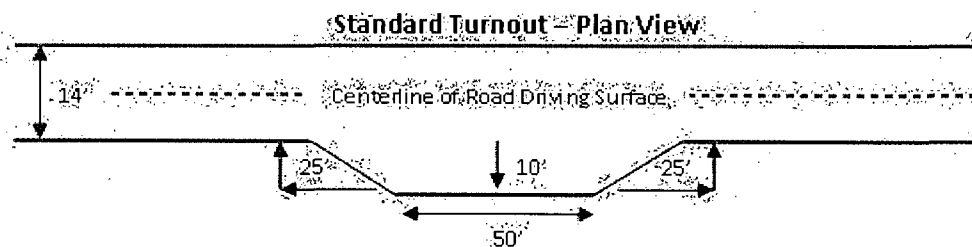
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

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:

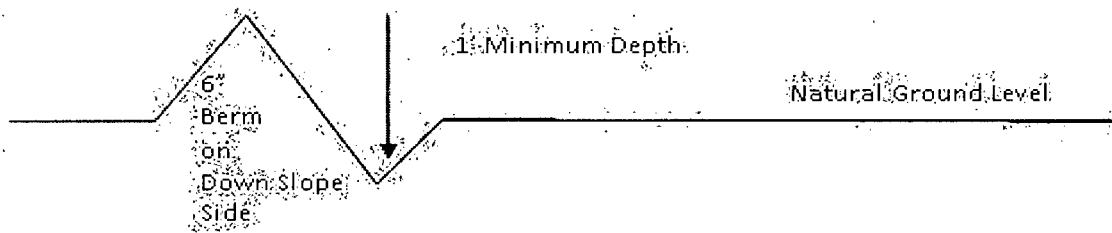


Drainage

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:

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

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

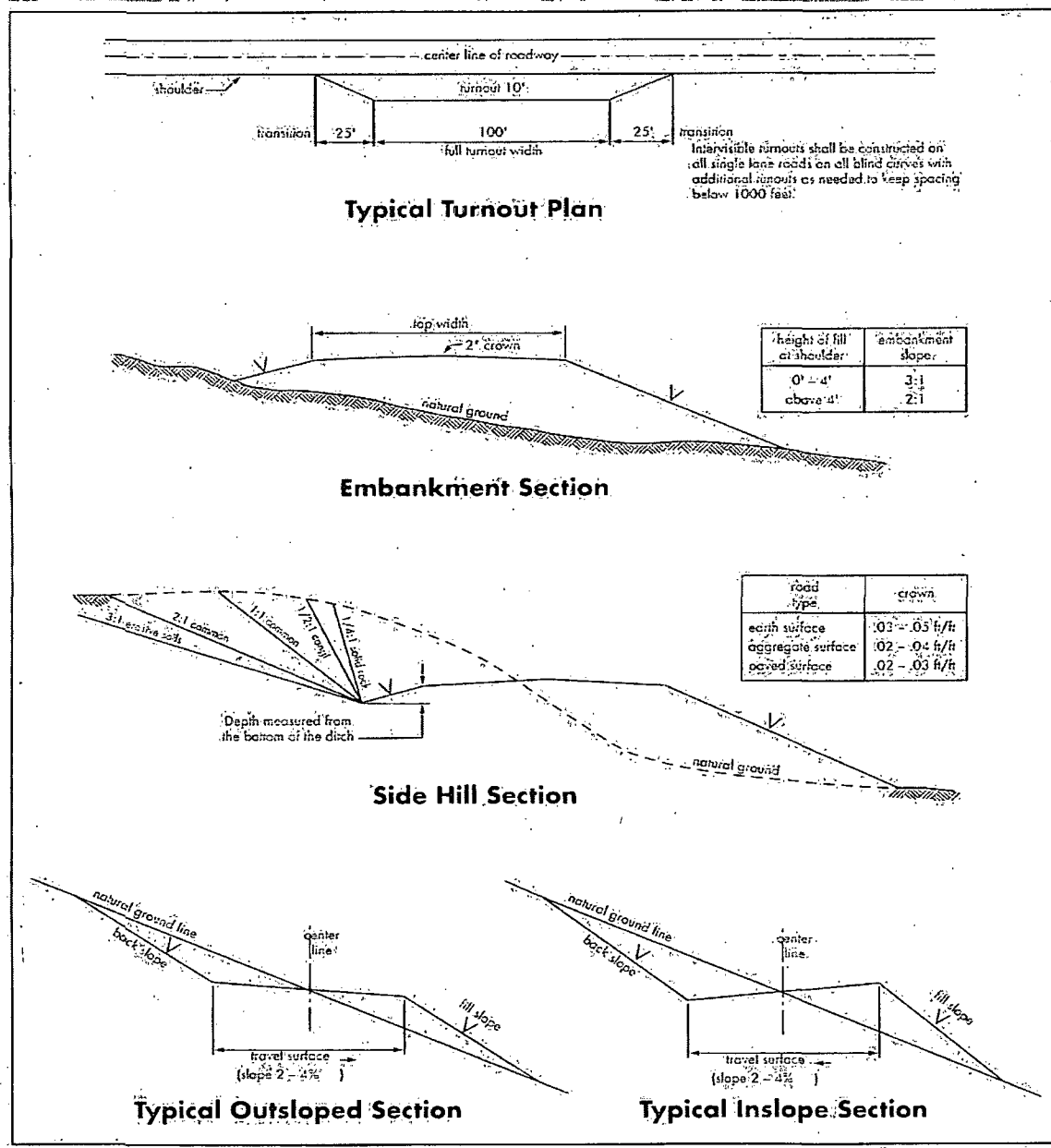
Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

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 in advance for a representative to witness:

- a. Spudding well (minimum of 24 hours)
- b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
- c. BOPE tests (minimum of 4 hours)

☒ **Eddy County**

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

1. **Hydrogen Sulfide (H₂S) monitors shall be installed prior to drilling out the surface shoe. If H₂S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.**
2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a “Major” violation.**
3. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works is located, this does not include the dog house or stairway area.
4. **The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.**

B. CASING

Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.).

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

Wait on cement (WOC) time prior to drilling out for a primary cement job will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater for all casing strings. DURING THIS WOC TIME, NO DRILL PIPE, ETC. SHALL BE RUN IN THE HOLE. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. IF OPERATOR DOES NOT HAVE THE WELL SPECIFIC CEMENT DETAILS ONSITE PRIOR TO PUMPING THE CEMENT FOR EACH CASING STRING, THE WOC WILL BE 30 HOURS. 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.

Capitan Reef

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

Possible lost circulation in the Artesia Group.

1. The 20 inch surface casing shall be set at approximately 370 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface. **If salt is encountered, set casing at least 25 feet above the salt.**
 - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with 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 1st 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.**
3. The minimum required fill of cement behind the 9-5/8 inch 2nd intermediate casing, which shall be set at approximately 4050 feet, 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 and 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:

Operator has proposed DV tool at depth between 4200'-4700'. Operator is to submit sundry if DV tool depth varies by more than 100' from approved depth.

- 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 as proposed by operator. Operator shall provide method of verification. **Additional cement may be required.**
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.
6. 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.
2. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **2000 (2M)** psi.
 - a. **For surface casing only:** If the BOP/BOPE is to be tested against casing, the wait on cement (WOC) time for that casing is to be met (see WOC statement at start of casing section). Independent service company required.
3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **13-3/8** 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 test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock.
 - d. The results of the test shall be reported to the appropriate BLM office.
 - e. 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.**

- f. 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. This test shall be performed prior to the test at full stack pressure.

D. DRILLING MUD

Operator shall use visual or electronic monitoring of the mud level.

E. DRILL STEM TEST

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

F. WASTE MATERIAL AND FLUIDS

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

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

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VIII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

Placement of Production Facilities

Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

Containment Structures

The containment structure shall be constructed to hold the capacity of the entire contents of the largest tank, plus 24 hour production, unless more stringent protective requirements are deemed necessary by the Authorized Officer.

Painting Requirement

All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color
Shale Green, Munsell Soil Color Chart # 5Y 4/2

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).

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 for LPC Sand/Shinnery Sites

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

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

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

<u>Species</u>	<u>lb/acre</u>
Plains Bristlegrass	5lbs/A
Sand Bluestem	5lbs/A
Little Bluestem	3lbs/A
Big Bluestem	6lbs/A
Plains Coreopsis	2lbs/A
Sand Dropseed	1lbs/A

*Pounds of pure live seed:

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