OCD-ARTESIA MAY 18 2009

JUN - 2 2009

ATS-09-122

RM

Form 3160-3
(August 2007)

R-111-POTASH

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

176

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a Type of Work. [x] DRILL [ ] REENTER	5. Lease Serial No: **NM-81953**
1b Type of Well: [X] Oil Well [ ] Gas Well [ ] Other [ ] Single Zone [ ] Multiple Zone	6. If Indian, Allottee or Tribe Name: **N/A**
2 Name of Operator: **Yates Petroleum Corporation 025575**	7. If Unit or CA Agreement, Name and No.: **N/A**
3a Address: **105 South Fourth Street, Artesia, NM 88210**	8. Lease Name and Well No.: **Glow Worm ALX Federal #4H** (13749)
3b. Phone No *(include area code)*: **505-748-1471**	9. API Well No: **30-015-37075**
4 Location of well *(Report location clearly and In accordance with any State requirements *)* At surface: **200' FNL ' & 990' FEL, Sec.3-23S-31E, Ut A, NENE** At proposed prod zone: **330' FSL & 990' FEL Sec. 3-23S-31E, UtP, SESE**	10 Field and Pool, or Exploratory: **Los Medanos; Delaware** (96149)
	11. Sec., T., R , M , or Blk And Survey or Area: **Section 3-T23S-R31E**
14. Distance in miles and direction from the nearest town or post office*: **The well is about 23 miles east of Carlsbad, 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)	**200**	16 No of acres in lease: **1716.94**	17. Spacing Unit dedicated to this well: **E2E2 of Section 3-T23S-R31E**
18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft	**None**	19 Proposed Depth: **VD-8160' MD-12705'**	20 BLM/ BIA Bond No. on file: **NATIONWIDE BOND #NMB000434**
21. Elevations (Show whether DF, KDB, RT, GL, etc.): **3429' GL**		22 Approximate date work will start*: **ASAP**	23 Estimated duration: **45 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: Cy Cowan	Name *(Printed/ Typed)*: **Cy Cowan**	Date: 11/10/08
Title: **Regulatory Agent**		
Approved By *(Signature)*: Rosemary Herrell	Name *(Printed/ Typed)*: Rosemary Herrell	Date: **MAY 13 2009**
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 wilfully to make to any department or agency of the Unite 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 & Special Stipulations Attached

DISTRICT I
1625 N. French Dr., Hobbs, NM 88240
DISTRICT II
1301 W. Grand Avenue, Artesia, NM 88210
DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410
DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

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

Form C-102
Revised October 12, 2005

Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-015-37075	96149	~~Los Medanos~~; Livingston Ridge Delaware South

Property Code	Property Name	Well Number
13749	GLOW WORM "ALX" FEDERAL	4H

OGRID No.	Operator Name	Elevation
025575	YATES PETROLEUM CORP.	3429'

Surface Location

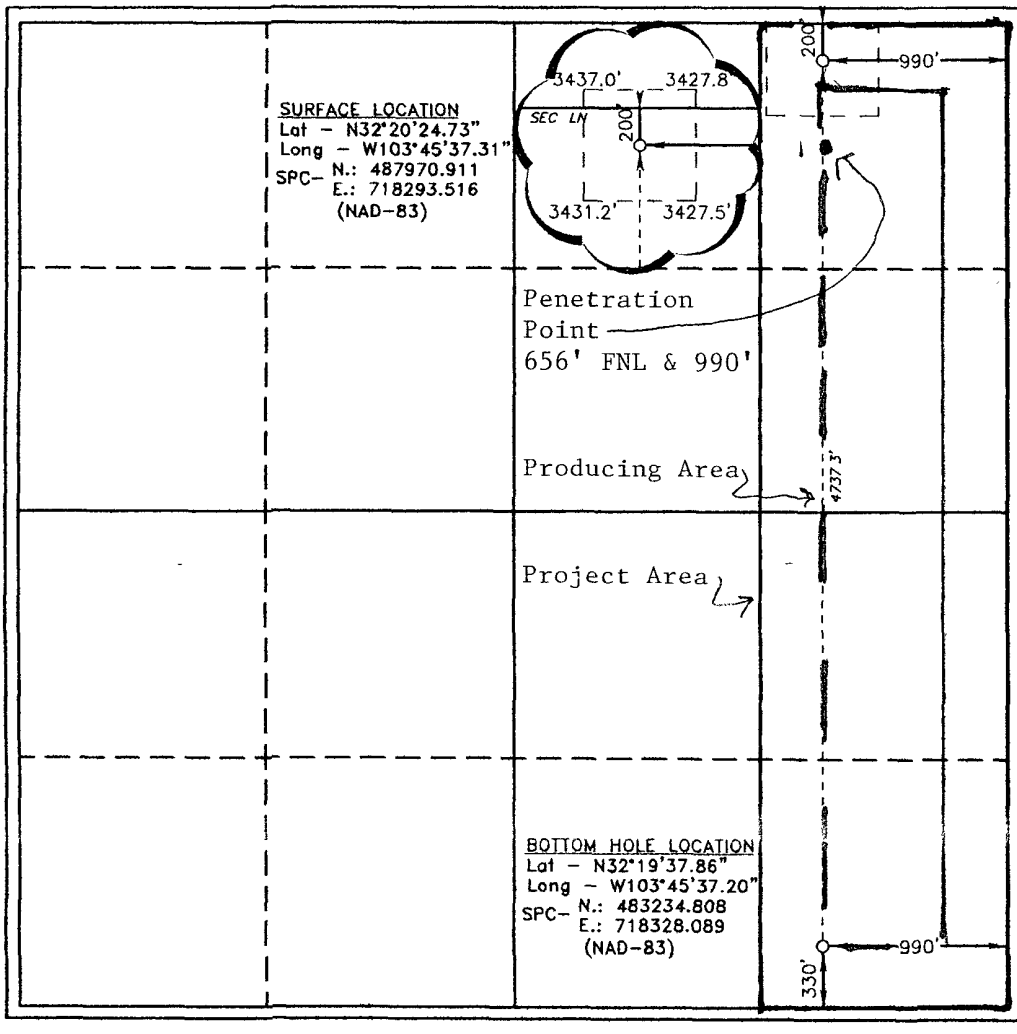
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	3	23 S	31 E		200	NORTH	990	EAST	EDDY

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
P	3	23 S	31 E		330	SOUTH	990	EAST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
160			

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 pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature — Date

Cy Cowan — 11/10/08

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 12, 2008

Date Surveyed

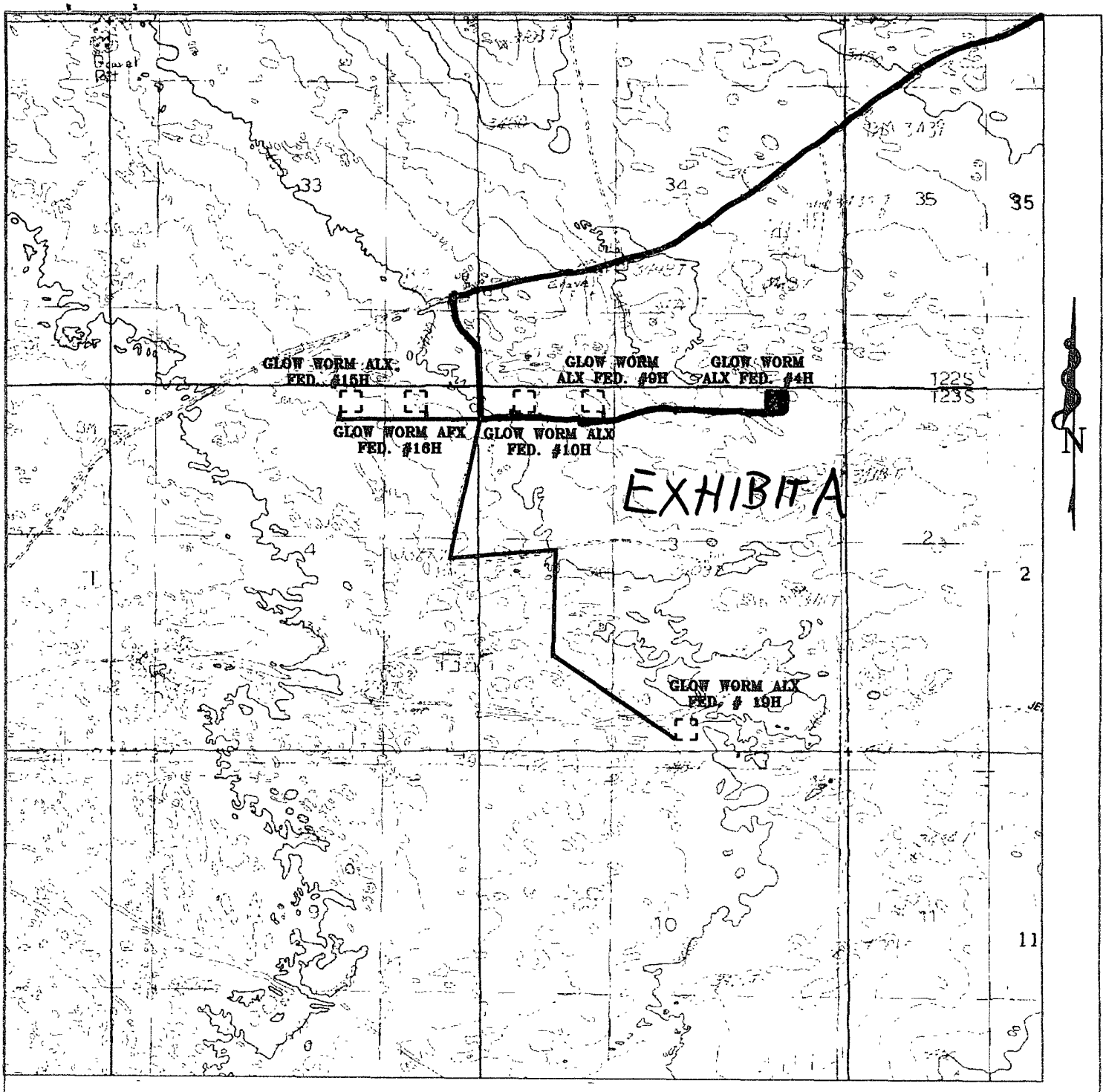
Signature & Seal of Professional Surveyor

GARY L. JONES — NEW MEXICO — 7977

W.O. No. 19

Certificate No. Gary L. Jones 7977

BASIN SURVEYS



GLOW WORM "ALX" FEDERAL #4H
Located at 200' FNL AND 990' FEL
Section 3, Township 23 South, Range 31 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
(505) 393-7316 - Office
(505) 392-3074 - Fax
basinsurveys.com

W.O. Number:	19326T
Survey Date:	03-12-2008
Scale:	1" = 2000'
Date:	03-12-2008

YATES PETROLEUM CORP.

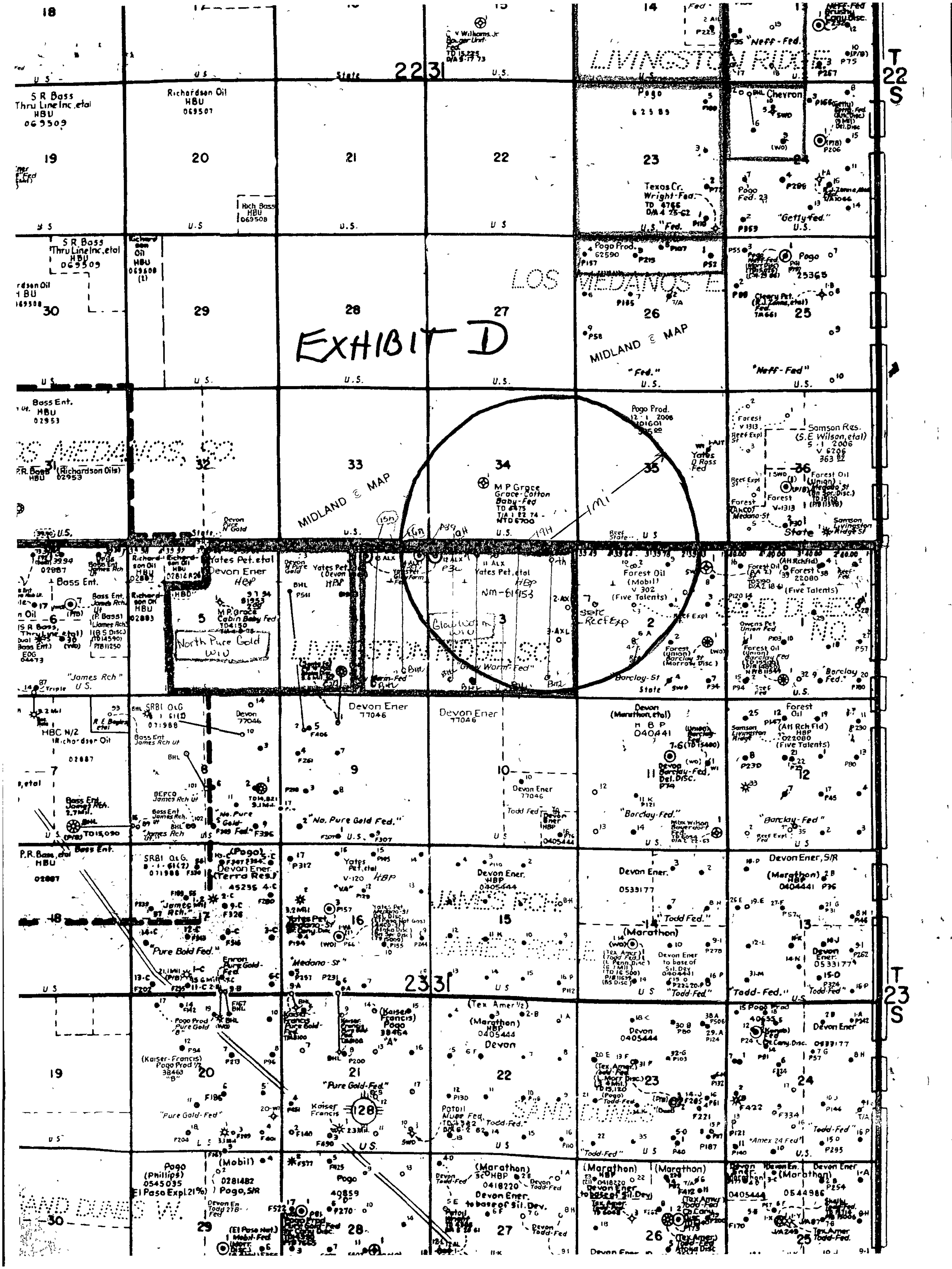


EXHIBIT D
T 22 S
T 23 S
2231
2331
LIVINGSTON RIDGE
LOS MEDANOS E.
LOS MEDANOS
MIDLAND MAP
LIVINGSTON RIDGE SO.
SAND DUNES NO.
JAMES RCH
SAND DUNES
SAND DUNES W.
1 mi
S R Bass
Thru Line Inc, etal
HBU
069509
Richardson Oil
HBU
069507
Rich Bass
HBU
069508
Pogo
62589
Chevron
Texas Cr.
Wright-Fed.
"Getty Fed."
Pogo Prod.
62590
Pogo
25365
"Neff-Fed"
"Fed."
Bass Ent.
HBU
02953
Pogo Prod.
Samson Res.
(S.E Wilson, etal)
Yates
D Ross
Fed
M P Grace
Grace-Cotton
Baby-Fed
Forest Oil
Yates Pet. etal
Devon Ener
HBP
NM-61153
Forest Oil
(Mobil)
V 302
(Five Talents)
State
Reef Exp
North Pure Gold
W/U
M.P. Grace
Cabin Baby Fed
Glow Worm
W/U
"Glow Worm-Fed"
Barclay-St
"James Rch"
Devon Ener
77046
Devon
(Marathon, etal)
HBP
040441
Devon
Barclay-Fed.
Del. Disc.
"Barclay-Fed."
"Barclay-Fed"
"No. Pure Gold Fed."
Pure Gold Fed.
Yates Pet. etal
V-120
HBP
Devon Ener.
HBP
0405444
Devon Ener.
0533177
"Todd Fed."
(Marathon)
"Todd-Fed."
Devon Ener, S/R
(Marathon)
0404441
"Medano-St"
(Pogo)
Devon Ener.
(Terra Res.)
45235
(Kaiser-Francis)
Pogo Prod 1/2
38463
"Pure Gold-Fed."
Kaiser Francis
(Tex Amer 1/2)
(Marathon)
0405444
Devon
Devon Ener
"Todd-Fed"
Pogo
(Phillips)
0545035
El Paso Expl (21%)
(Mobil)
0281482
Pogo, S/R
Pogo
40859
(Marathon)
HBP
0418220
Devon Ener.
to base of Sil. Dev.
0405444
0544986

YATES PETROLEUM CORPORATION
Glow Worm ALX Federal #4H
200' FNL and 990' FEL, SHL
330' FSL and 990' FEL, BHL
Section 3-T23S-R31E
Eddy County, New Mexico

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

Rustler	605'	Brushy Canyon	7045' Oil
Base of Salt	4035'	Brushy Canyon Marker	7948' Oil
Bell Canyon	4375'	Brushy Sand Target	8373' Oil
Cherry Canyon	5425' Oil	TMD	12705'

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

Water: 170'
Oil or Gas: 5425', 7045', 7948' & 8373'

3. Pressure Control Equipment: BOPE will be installed on the 13 3/8" and then the 9 5/8" casing and rated for 3000 BOP systems will be consistent with API RP 53. Yates request that a variance be given to test the BOP on the surface casing to 1000 psi using the rig pumps. Pressure tests will be conducted before drilling out from under all casing strings which are set and cemented in place. Blowout Preventor controls will be installed prior to drilling the surface plug and will remain in use until the well is completed or abandoned. Preventors 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.

See COA →

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.

4. THE PROPOSED CASING AND CEMENTING PROGRAM:

A. Casing Program: (All New)**(DV Tool set about 6300')**

Hole Size	Casing Size	Wt./Ft	Grade	Coupling	Interval	Length
17 ½"	13 3/8"	48#	H-40	ST&C	0-550'	550'
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	3300-4050'	750'
8 3/4"	5 ½"	17#	HCP-110	LT&C	0-12705'	12705'

See COA → See COA

**Well will be drilled vertically to approximately 7683'. At 7683' well will be kicked off and directionally drilled at 12 degrees per 100' with an 8 ¾" hole to 12705 MD (8160' TVD) where 5.5" casing will be set and cements. Penetration point of producing zone will be encountered at 656' FNL & 990' FEL, 3-23S-31E. No pilot hole will be drilled.

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

B. CEMENTING PROGRAM: ← See COA

Surface casing: Lead with 250 sx C Lite(Wt 12.50 Yld 1.96) Tail in w/200 sx Class "C" + 2% CaCl2 (Wt 14.80 YlD 1.34). Cement circulated to surface.
Intermediate Casing: Lead in with 1100 sx C Lite (Wt 12.60 Yld 2.00). Tail in w/250 sx Class C (Wt 14.80 Yld 1.34). Cement circulated to surface.
Production Casing: Stage I TOC 6300'; 2300 sx Pecos VILt (Wt 13.00 Yld 1.41).
Stage II Lead with 550 sx LiteCrete (Wt 9.90 Yld 2.78) Tail in with 100 sx PecosVILt (Wt 13.00 Yld 1.41) Cement circulated to surface.

5. MUD PROGRAM AND AUXILIARY EQUIPMENT:

See COA

Interval	Type	Weight	Viscosity	Fluid Loss
0-550'	Fresh Water	8.60-9.20	32-34	N/C
550'-4050'	Brine Water	10.00-10.20	28-28	N/C
4050'-12705'	Cut Brine	8.50-8.80	28-29	N/C

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: Every 10' from surface casing to TD.
Logging: Platform HALS: CMR.
Coring: Sidewall cores as warranted.
DST's: As warranted.

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

Anticipated BHP:

From: 0	TO: 550'	Anticipated Max. BHP:	265	PSI
From: 550'	TO: 4050'	Anticipated Max. BHP:	2150	PSI
From: 4050'	TO: TD	Anticipated Max. BHP:	3735	PSI

No abnormal pressures or temperatures are anticipated.
Lost Circulation Zones Anticipated: None
H2S Zones Anticipated: H2S water flow possible below 2800'.

8. ANTICIPATED STARTING DATE:

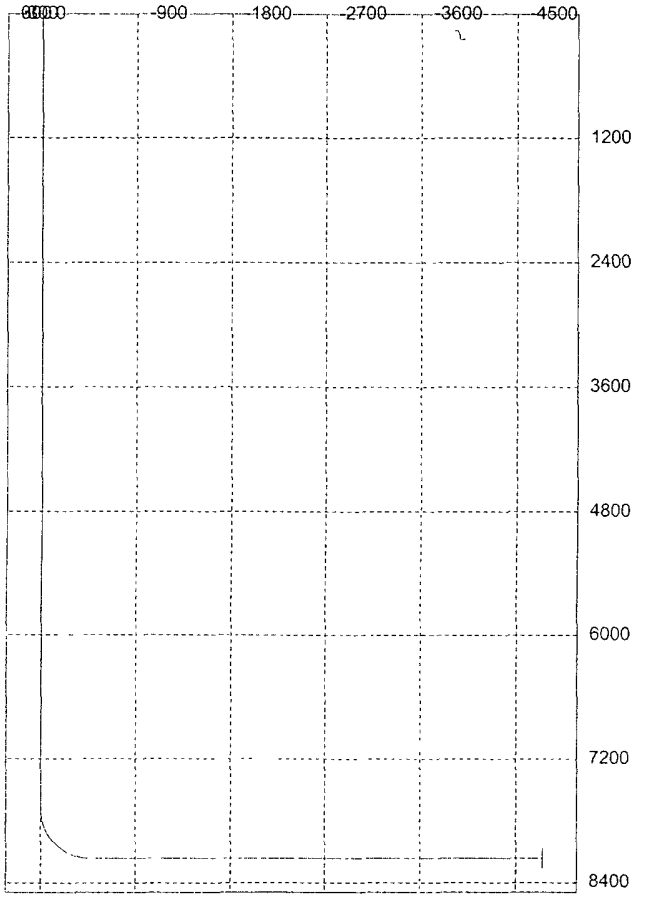
Plans are to drill this well as soon as possible after receiving approval. It should take approximately 30 days to drill the well with completion taking another 15 days.

MD	Inclination	Azimuth	TVD	+N/-S	+E/-W	D L S	Tool Face	TF Ref HS/GN	
0	0	0	0	0	0	0			
605	0	0	605	0	0	0			RUSTLER
4,035	0	0	4,035	0	0	0			BASE OF SALT
4,375	0	0	4,375	0	0	0			BELL CANYON
5,425	0	0	5,425	0	0	0			CHERRY CANYON
7,045	0	0	7,045	0	0	0			BRUSHY CANYON
7683	0	0	7683	0	0	12	180	GN	KOP
7700	2 04	180	7700	-0 3	0	12	0	HS	
7725	5.04	180	7724 95	-1.85	0	12	0	HS	
7750	8.04	180	7749 78	-4.69	0	12	0	HS	
7775	11.04	180	7774 43	-8 84	0	12	0	HS	
7800	14 04	180	7798 83	-14.26	0	12	0	HS	
7825	17.04	180	7822 92	-20 96	0	12	0	HS	
7850	20.04	180	7846.62	-28.91	0	12	0	HS	
7875	23.04	180	7869 87	-38 09	0	12	0	HS	
7900	26 04	180	7892.61	-48.47	0	12	0	HS	
7925	29.04	180	7914.77	-60 03	0	12	0	HS	
7948.5	31.86	180	7935.03	-71.93	0	12	0	HS	BRUSHY CANYON MARKER
7950	32.04	180	7936.3	-72.73	0	12	0	HS	
7975	35 04	180	7957 14	-86.54	0	12	0	HS	
8000	38 04	180	7977 22	-101 42	0	12	0	HS	
8025	41 04	180	7996 5	-117.34	0	12	0	HS	
8050	44 04	180	8014 91	-134 24	0	12	0	HS	
8075	47 04	180	8032 42	-152 08	0	12	0	HS	
8100	50.04	180	8048 97	-170 81	0	12	0	HS	
8125	53 04	180	8064 52	-190.39	0	12	0	HS	
8150	56 04	180	8079 02	-210 75	0	12	0	HS	
8175	59.04	180	8092.44	-231 84	0	12	0	HS	
8200	62 04	180	8104 73	-253.6	0	12	0	HS	
8225	65 04	180	8115 87	-275.98	0	12	0	HS	
8250	68.04	180	8125 82	-298 91	0	12	0	HS	
8275	71.04	180	8134 56	-322 33	0	12	0	HS	
8300	74 04	180	8142 06	-346.18	0	12	0	HS	
8325	77.04	180	8148.3	-370 38	0	12	0	HS	
8350	80 04	180	8153 27	-394.88	0	12	0	HS	
8375	83 04	180	8156 95	-419 61	0	12	0	HS	
8400	86.04	180	8159.33	-444 49	0	12	0	HS	
8412	87.48	180	8160	-456.47	0	12	0	HS	BRUSHY SAND
8425	89.04	180	8160.4	-469 47	0	12	0	HS	
8433 05	90.01	180	8160 46	-477.52	0	0			
12705 54	90.01	180	8160	-4750	0	0			LATERAL TD

Well will be drilled vertically to approx 7683' At 7683' well will be kicked off and directionally drilled at 12 degrees per 100' with a 8 3/4" hole to 12,705' MD 8,160' TVD where 5 1/2" casing will be set and cemented. Penetration point of producing zone will be encountered at 656' FNL and 990' FEL, 3-23S-31E
Deepest TVD in the well is 8160.46' in the lateral NO PILOT HOLE

3D³ Directional Drilling Planner - 3D View

Company: **Yates Petroleum Corporation**
Well: **Glow Worm ALX Federal #4H**



File: C:\Program Files\Drilling Toolbox 2001\Templates\Visual Wellbore\Horizontal\glowworm4h.wpp

3D³ Directional Drilling Planner - 3D View

Company: **Yates Petroleum Corporation**
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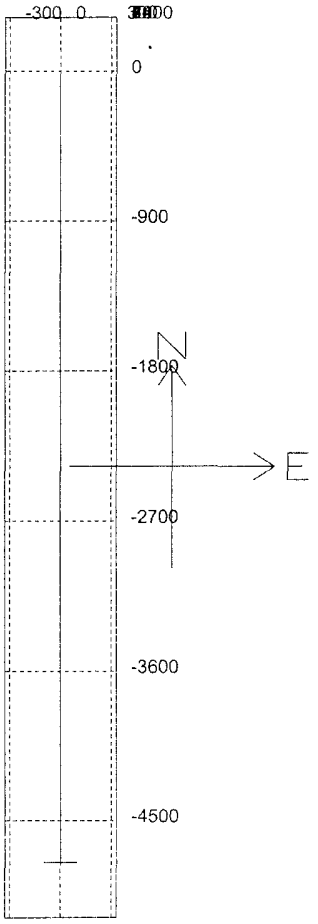

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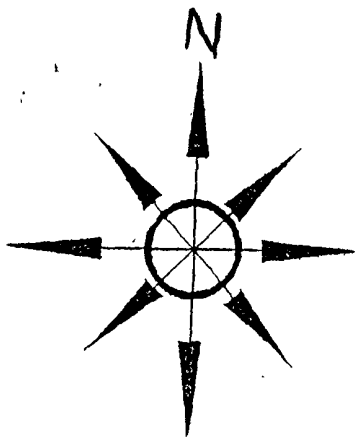


Yates Petroleum Corporation

Location Layout for Permian Basin

Closed Loop Design Plan

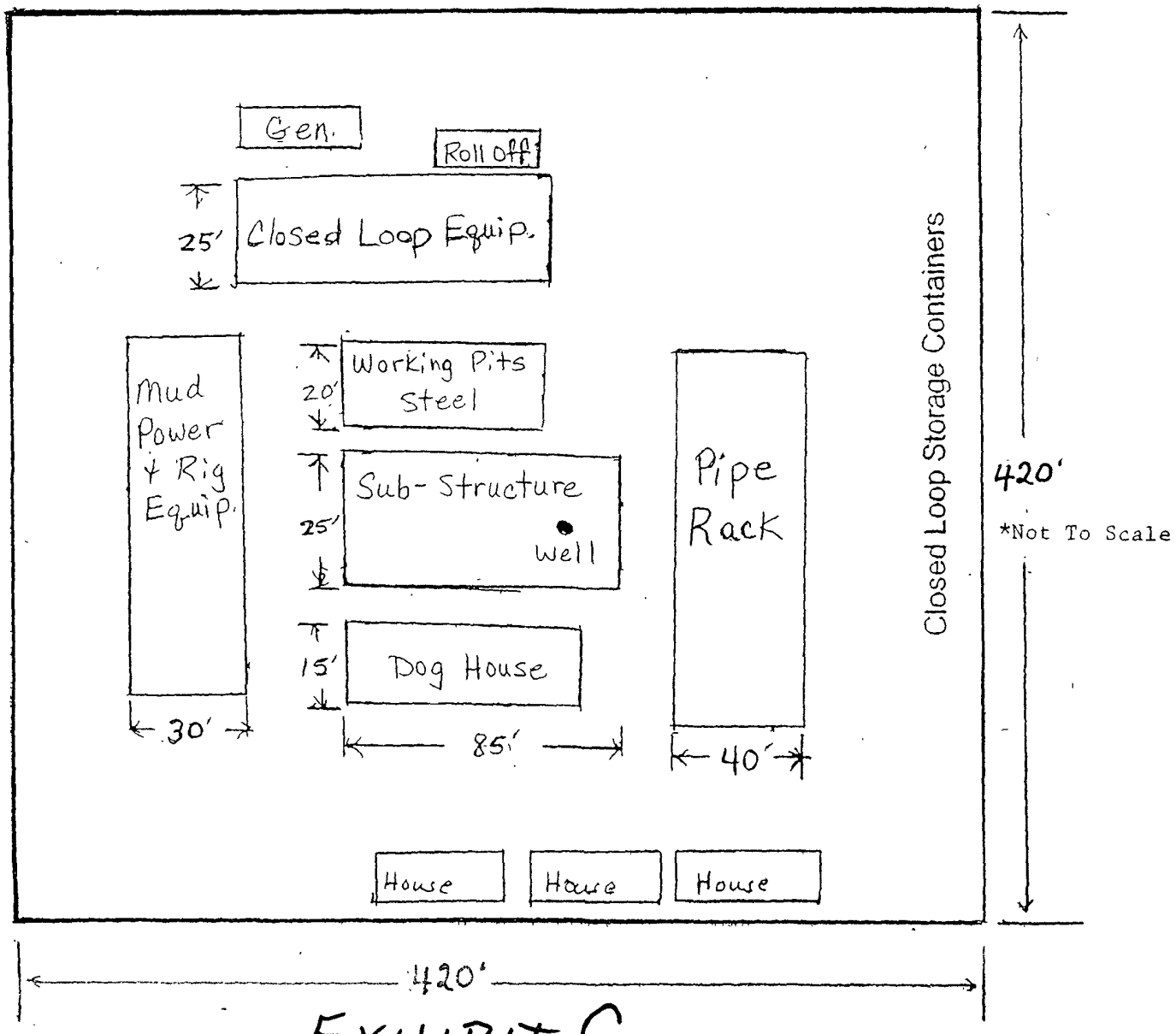
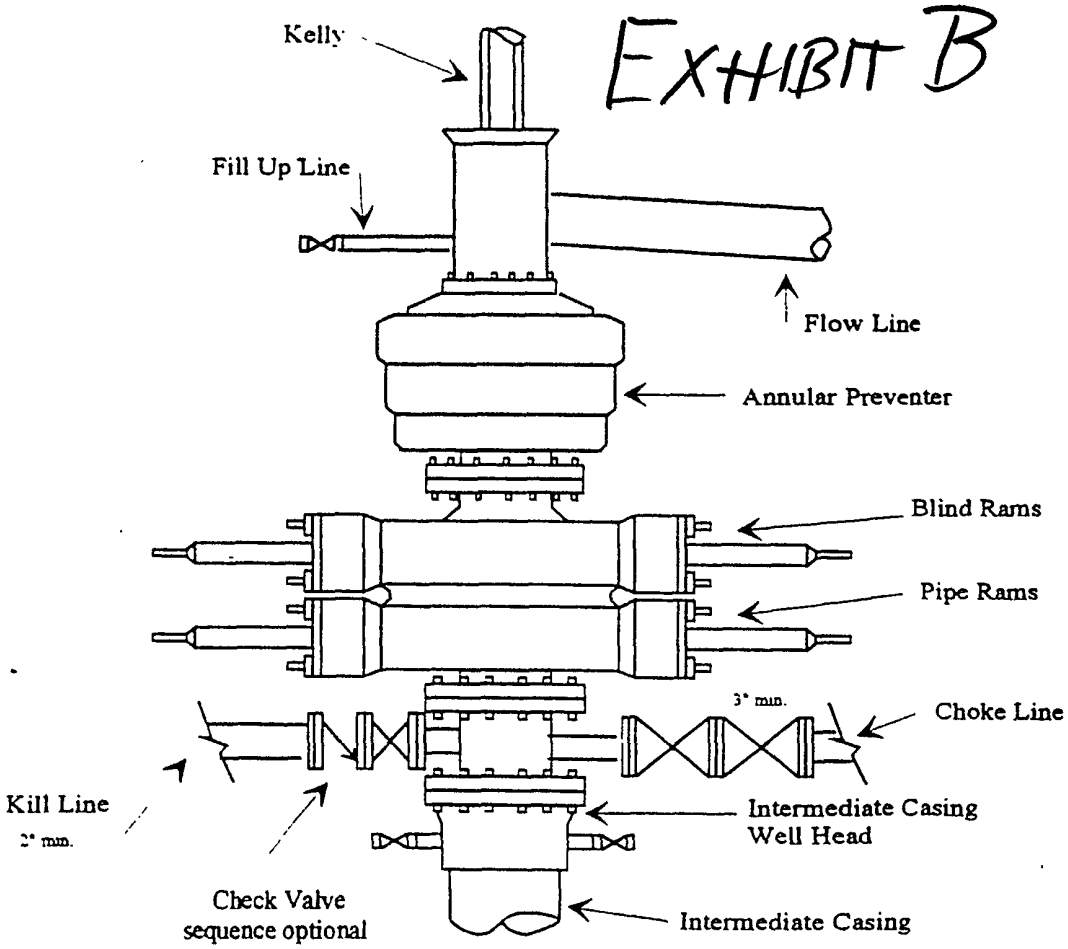


EXHIBIT C

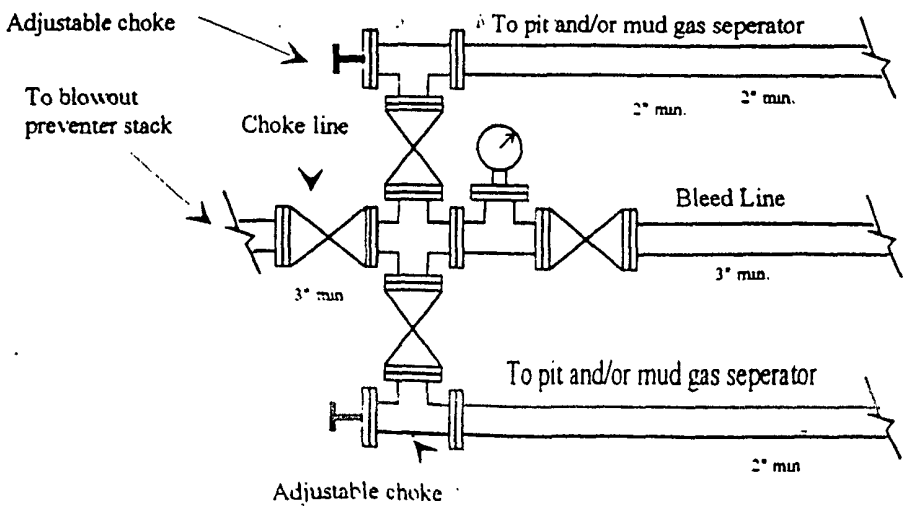
Yates Petroleum Corporation

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

EXHIBIT B



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



Yates Petroleum Corporation

105 S. Fourth Street
Artesia, NM 88210

Hydrogen Sulfide (H_2S) Contingency Plan

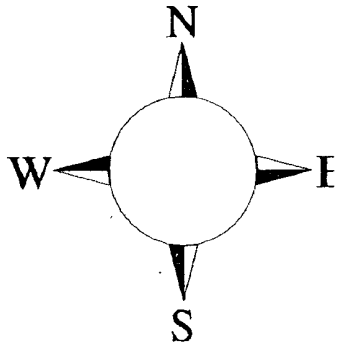
For

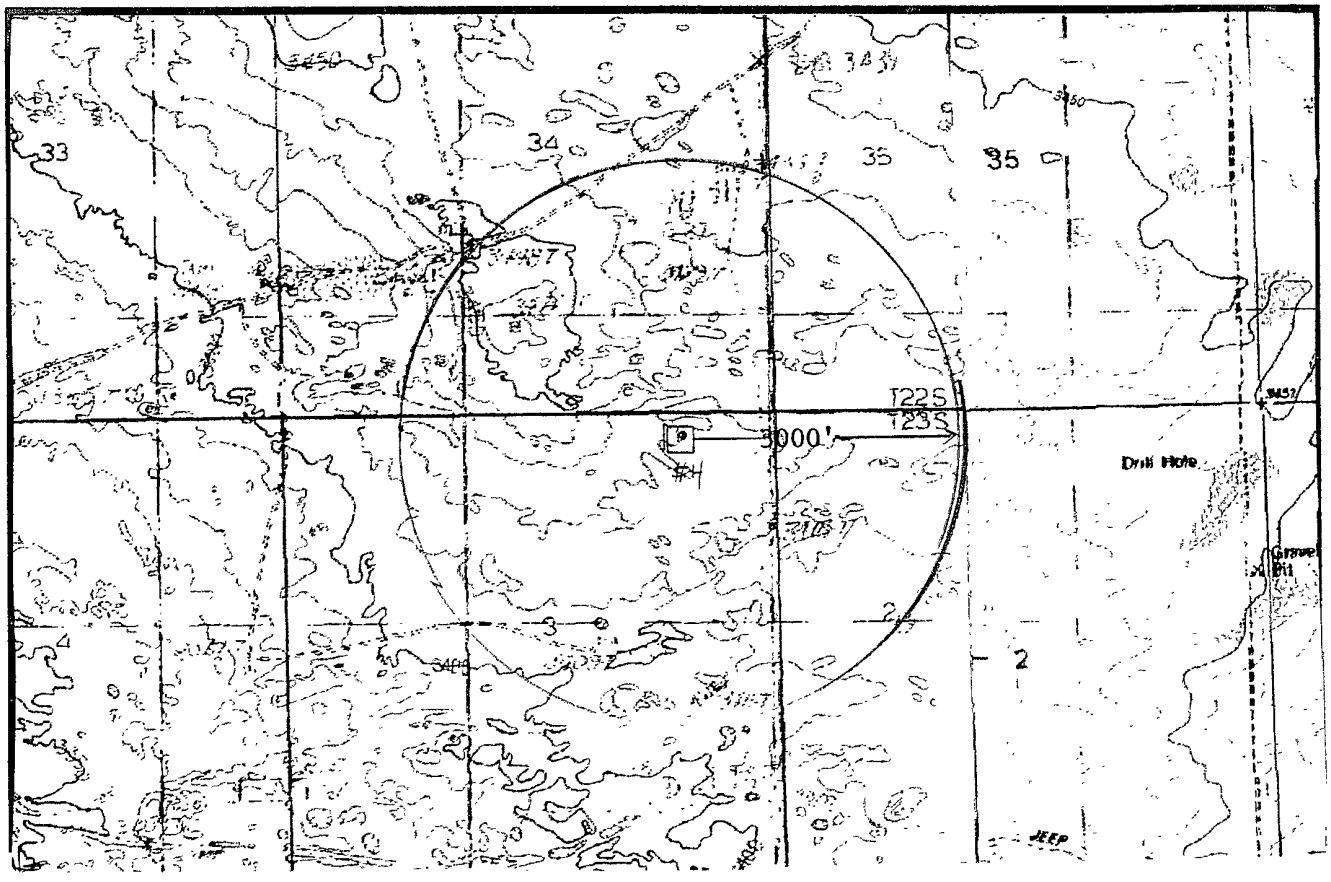
Glow Worm ALX Federal #4H

200' FNL, 990' FEL, Surface Location
330' FSL, 990' FEL, Bottom Hole
Section 3, T-23S, R-31E
Eddy County NM

Glow Worm ALX Federal #4H Location

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.

Emergency Procedures

In the case of a release of gas containing H_2S, 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 H_2S, measures for protection against the gas, equipment used for protection and emergency response. Additionally, responders must be equipped with H_2S 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 (SO_2). 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 H_2S and SO_2

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentr-ation
Hydrogen Sulfide	**H_2S**	**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
Paul Ragsdale/Operations Manager ..... (575) 748-4520
Ron Beasley/Production Manager ..... (575) 748-4210
Wade Bennett/Prod Superintendent ..... (575) 748-4236
Mike Lankin/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 (505)

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 ..... (505) 746-2757
B. J. Services ..... (505) 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

MULTI-POINT SURFACE USE AND OPERATIONS PLAN
YATES PETROLEUM CORPORATION
Glow Worm ALX Federal #4H
200' FNL and 990" FEL, SHL
330' FSL and 990' FEL. BHL
Section 3-T23S-R31E
Eddy County, New Mexico

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

1. EXISTING ROADS:

Exhibit A is a portion of the BLM map showing the well and roads in the vicinity of the proposed location. The proposed well site is located approximately 23 miles east of Carlsbad, New Mexico and the access route to the location is indicated in red and green on Exhibit A.

DIRECTIONS:

Go East of Carlsbad on Highway 62-180 to Hwy 31. Turn south on Hwy 31 and go to Hwy 128 (Jal Highway). Turn east and go approx. 16 miles to Red Road (CR-802). Turn left on Red Rd. and go approx. 7 miles to Mills Ranch Road (CR-798). Turn left here and go approx. 2.2 of a mile. Turn left here (there will be a blue marker here with H-175 on it) and go approx. 0.3 this spot will be just past a big WIPP sign. Turn east for approximately 0.3 of a mile to the tank battery. The new road will start here and continue east for about 0.5 of a mile to the southwest corner of the proposed Glow Worm #4H location.

2. PLANNED ACCESS ROAD:

A. The proposed new access will go east for approximately .5 to the southeast corner of the drilling pad. The road will lie in a west to east direction.
B. The new road will be 14 feet in width (driving surface) and will be adequately drained to control runoff and soil erosion.
C. The new road will be bladed with drainage on one side. Some traffic turnouts will be built.
D The route of the road is visible.
E Existing roads will be maintained in the same or better condition.

3. LOCATION OF EXISTING WELL:

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

4. LOCATION OF EXISTING AND/OR PROPOSED FACILITIES:

A. There are any production facilities on this lease at the present time.
B. In the event that the well is productive, the necessary production facilities will be installed on the drilling pad. If the well is productive oil, a gas or diesel self-contained unit will be used to provide the necessary power until an electric power line can be built if necessary.

5. LOCATION AND TYPE OF WATER SUPPLY:

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

6. SOURCE OF CONSTRUCTION MATERIALS:

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

7. METHODS OF HANDLING WASTE DISPOSAL:

A. A closed loop system will be used to drill this well instead of reserve pits.
B. The closed loop system will be constructed, maintained and closed in compliance with the State of New Mexico, Energy and Natural Resources Department, Oil Conservation Division—the "Pit Rule" 19.15.17 NMAC.
C. Water produced during operations will be collected in tanks until hauled to an approved disposal system, or separate disposal application will be submitted.
D. Oil produced during operations will be stored in tanks until sold.
E. Current laws and regulations pertaining to the disposal of human waste will be complied with.
F. All trash, junk, and other waste materials will be contained in trash cages or bins to prevent scattering and will be removed and deposited in an approved sanitary landfill. Burial on site is not approved.

8. ANCILLARY FACILITIES:

None

9. WELLSITE LAYOUT:

A. Exhibit C shows the relative location and dimensions of the well pad, the closed loop, the location of the drilling equipment, rig orientation and access road approach.
B. The reserve pits will be constructed, maintained and closed in compliance with the Pit Rule 19.15.17 NMAC.
C. A 600' x 600' area has been staked and flagged.

10. PLANS FOR RESTORATION:

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

11. SURFACE OWNERSHIP: Federal Surface, Administered by Bureau of Land Management, Carlsbad, New Mexico

12. OTHER INFORMATION:

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

CERTIFICATION
YATES PETROLEUM CORPORATION
Glow Worm ALX Federal #4H

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 10th day of November, 2008.

Printed Name Cy Cowan

Signature Cy Cowan

Position Title Regulatory Agent

Address 105 South Fourth Street, Artesia, NM 88210

Telephone 575-748-4372

E-mail (optional) cyc@ypcnm.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) _____

PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Yates Petroleum Corporation
LEASE NO.:	NMNM81953
WELL NAME & NO.:	Glow Worm ALX Federal No 4H
SURFACE HOLE FOOTAGE:	200' FNL & 990' FEL
BOTTOM HOLE FOOTAGE	330' FSL & 990' FEL
LOCATION:	Section 3, T. 23 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)

LESSER PRAIRIE-CHICKENS

No surface use is allowed during the following time periods; unless otherwise specified, this stipulation does not apply to operation and maintenance of production facilities.

For the purpose of: Protecting Lesser Prairie-Chickens:

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, geophysical exploration other than 3-D operations, and 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 ft. from the source of the noise.

Reporting

1. **Subsequent sundries to be filed with drilling details about spud, casing and completion work.**
2. **Completion report to be sent within 30 days of completion. Completion report to have all items completed.**

VI. CONSTRUCTION

RESTRICT PAD SIZE TO 180 FT. TO THE NORTH DUE TO POWER LINE AND WIPP LANDS TO THE NORTH.

A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5972 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

B. TOPSOIL

The operator shall stockpile the topsoil of the well pad. The topsoil to be stripped is approximately 8 inches in depth. The topsoil shall not be used to backfill the reserve pit and will be used for interim and final reclamation.

C. RESERVE PITS

Tanks are required for drilling operations: No Pits.

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

D. FEDERAL MINERAL MATERIALS PIT

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

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

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

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

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

F. ON LEASE ACCESS ROADS

Road Width
The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed thirty (30) feet.

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

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

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

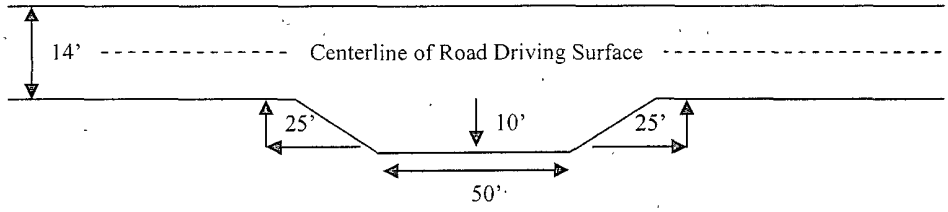
Crowning
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

Ditching

Ditching shall be required on both sides of the road.

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

Standard Turnout – Plan View

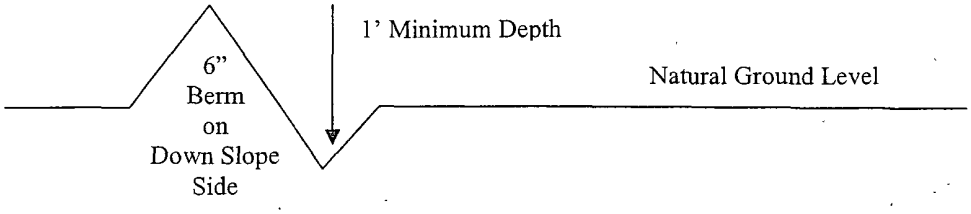


Drainage

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:

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

Culvert Installations

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

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

Any existing cattleguard(s) on the access road shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattleguard(s) that are in place and are utilized during lease operations.

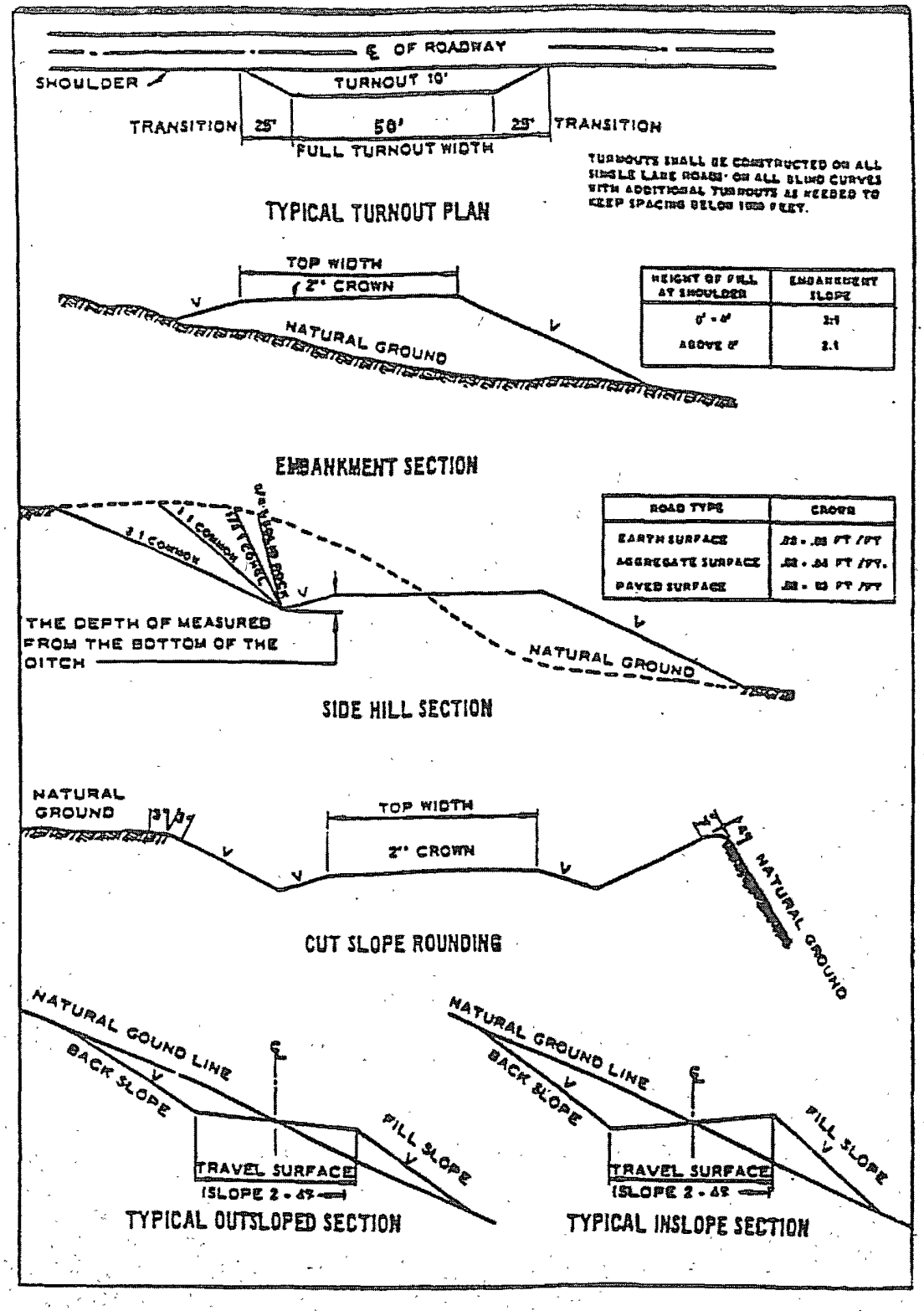
A gate shall be constructed and fastened securely to H-braces.

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

The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fence(s).

Public Access
Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

Figure 1 – Cross Sections and Plans For Typical Road Sections



VII. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified a minimum of 4 hours in advance for a representative to witness:

a. Spudding well
b. Setting and/or Cementing of all casing strings
c. BOPE tests

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

1. A Hydrogen Sulfide (H2S) Drilling Plan should be activated 500 feet prior to drilling into the **Salado** formation. **If Hydrogen Sulfide is encountered, please 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.

3. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

4. Gamma-Ray/Neutron logs shall be run from the base of the Salado formation to the surface. The logs shall be run at a speed which allows the logs to be legible and no faster than manufacturer of the logging tools recommended speed. (R-111-P area only)

B. CASING

Changes to the approved APD casing and cement program require submitting a sundry and receiving approval prior to work. Failure to obtain approval prior to work will result in an Incident of Non-Compliance being issued.

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

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

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

R-111-P potash / WIPP
Possible lost circulation in the Delaware and Bone Spring formations.
Possible water flows in the Salado, Castile, Delaware and Bone Spring formations.

1. The **13-3/8** inch surface casing shall be set **at approximately 575 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt)** and cemented to the surface. **Fresh water mud to be used to setting depth.**

    a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with a surface log readout will be used or a cement bond log shall be run to verify the top of the cement.

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

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

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

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

    ☒ Cement to surface. If cement does not circulate see B.1.a, c-d above. **Per R-111-P potash regulations, this casing is to be set a minimum of 100' below the salt and not more than 600' below the salt. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to R-111-P potash.**

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

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

   a. First stage to DV tool, cement shall:

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

   b. Second stage above DV tool, cement shall:

   ☒ Cement to surface. If cement does not circulate, contact the appropriate BLM office. **Additional cement will be required as excess cement calculates to less than 5%.**

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.

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.

3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **9-5/8"** 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. The tests shall be done by an independent service company.

   b. The results of the test shall be reported to the appropriate BLM office.

c. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.

d. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug.

e. **Effective November 1, 2008, no variances will be granted on reduced pressure tests on the surface casing and BOP/BOPE. Onshore Order 2 requirements will be in effect.**

D. DRILL STEM TEST

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

E. WIPP Requirements

The proposed well is located within 330' of the WIPP Land Withdrawal Area boundary. As a result, Yates Petroleum Corporation is required to submit daily logs and deviation survey information to the Department of Energy per requirements of the Joint Powers Agreement. Information from this well will be included in the Quarterly Drilling Report. Information will also be provided to the New Mexico Oil Conservation Division after drilling activities have been completed. Any future entry into the well for purposes of completing additional drilling will require supplemental information. Further, Yates should carefully observe the distance of any structures placed on the well pad to ensure that no supporting structure encroaches on the WIPP Land Withdrawal Area.

Yates Petroleum Corporation can email the required information to Ms. Susan McCauslin at susan.mccauslin@wipp.ws or fax to her attention at 575-234-6003.

WWI 122008

VIII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

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

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

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

IX. INTERIM RECLAMATION & RESERVE PIT CLOSURE

A. INTERIM RECLAMATION

If the well is a producer, interim reclamation shall be conducted on the well site in accordance with the orders of the Authorized Officer. The operator shall submit a Sundry Notices and Reports on Wells (Notice of Intent), Form 3160-5, prior to conducting interim reclamation.

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

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

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

Seed Mixture 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:

Species	lb/acre
Plains Bristlegrass	5lbs/A
Sand Bluestem	5lbs/A
Little Bluestem	3lbs/A
Big Bluestem	6lbs/A
Plains Coreopsis	2lbs/A
Sand Dropseed	1lbs/A
**Four-winged Saltbush	5lbs/A

* This can be used around well pads and other areas where caliche cannot be removed.

*Pounds of pure live seed:

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

(Insert Seed Mixture Here)

X. FINAL ABANDONMENT & REHABILITATION REQUIREMENTS

Upon abandonment of the well and/or when the access road is no longer in service the Authorized Officer shall issue instructions and/or orders for surface reclamation and restoration of all disturbed areas.

On private surface/federal mineral estate land the reclamation procedures on the road and well pad shall be accomplished in accordance with the private surface land owner agreement.