

0812

OCD-ARTESIA

6-06-68

FORM APPROVED
OMB No. 1004-0136
Expires January 31, 2004

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED

APPLICATION FOR PERMIT TO DRILL OR REENTER JUN 07 2006

1a. Type of Work: ☒ DRILL ☐ REENTER

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

2. Name of Operator

Mewbourne Oil Company - 14744

3a. Address

PO Box 5270 Hobbs, NM 88240

3b. Phone No. (include area code)

505-393-5905

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

At surface 1218' FSL & 1820' FEL Unit O

At proposed prod. zone Same

CAPTAN CONTROLLED WATER BASIN

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

12 miles North of Carlsbad

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 1218'

16. No. of Acres in lease

280

17. Spacing Unit dedicated to this well

320

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 1550'

19. Proposed Depth

11800'

20. BLM/BIA Bond No. on file

NM1693, Nationwide

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

3268' GL

22. Approximate date work will start*

ASAP

23. Estimated duration

45

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 shall be filed with the appropriate Forest Service Office).

4. Bond to cover the operations unless covered by an 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 authorized officer.

25. Signature

Kristi Green

Name (Printed/Typed)

Kristi Green

Date

04/27/06

Title

Hobbs Regulatory

Approved by (Signature) */s/ Tony J. Herrell*

Name (Printed/Typed)

Office

CARLSBAD FIELD OFFICE

Date

4/05/06

Title

FIELD MANAGER

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.

*(Instructions on reverse)

APPROVAL FOR 1 YEAR

WITNESS

APPROVAL SUBJECT TO
GENERAL REQUIREMENTS
AND SPECIAL STIPULATIONS
ATTACHED

Operator to test for chlorides in
Capitan Reef ever 100' from
01800 to 02922'

BGA-OCD

Salt
29.5

DISTRICT I
1825 N. French Dr., Hobbs, NM 88240
DISTRICT II
811 South First, Artesia, NM 86210
DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410
DISTRICT IV
2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-102
Revised March 17, 1999

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

OIL CONSERVATION DIVISION

2040 South Pacheco
Santa Fe, New Mexico 87504-2088

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code 73320	Pool Name East Burton Flat Morrow
Property Code	Property Name HENRY 8 FEDERAL COM#1	Well Number 1
OGRID No. 14744	Operator Name MEWBOURNE OIL COMPANY	Elevation 3268'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
0	8	20 S	29 E		1218	SOUTH	1820	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
Dedicated Acres 320	Joint or Infill	Consolidation Code	Order No.						

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

	<p>OPERATOR CERTIFICATION</p> <p>I hereby certify the the information contained herein is true and complete to the best of my knowledge and belief.</p> <p><i>Kristi Green</i></p> <p>Signature Kristi Green</p> <p>Printed Name Hobbs Regulatory</p> <p>Title 04/25/06</p> <p>Date</p>
	<p>SURVEYOR CERTIFICATION</p> <p>I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.</p> <p>MARCH 30, 2006</p> <p>Date Surveyed Signature & Seal of Professional Surveyor GARY L. JONES</p> <p>W.O. No. 644</p> <p>Certificate No. Gary L. Jones 7977</p> <p>BASIN SURVEYS</p>

MULTI-POINT SURFACE USE AND OPERATIONS PLAN
MEWBOURNE OIL COMPANY

Henry "8" Federal Com #1

1218' FSL & 1820' FEL

Sec 8-T20S-R29E

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 restoring the surface so that a complete appraisal can be made of the environmental impact associated with the proposed operations.

1. Existing Roads:

- A. Exhibit #3 is a road map showing the location of the proposed well. Existing roads are highlighted in black. Proposed road is highlighted in green. Exhibit #3A is a topographic map showing the location of the proposed well and access road. Existing roads are highlighted in black and proposed roads are highlighted in blue.
- B. **Directions to location from Carlsbad, NM: Go East on US62/180 13.8 miles to Eddy Co 238 (Burton Flat Road). Turn left (north) and continue North 2.1 miles. Turn left (west) 3 miles. Turn right (north) and continue north, then west 1.3 miles. Turn right (north) and continue north 0.3 miles. Turn left (west) on new road 800' to location.**

2. Proposed Access Road:

- A. Will need approx 800' of new road.
- B. The access to the location will be limited to 16' in width and will adequately drain runoff and control erosion as presently constructed.

3. Location of Existing Wells:

There are producing wells within the immediate vicinity of the well site. Exhibit #4 shows the proposed well and existing wells within a one mile radius.

4. Location of Existing and/or Proposed Facilities:

- A. There are no production facilities on this lease at the present time.
- B. In the event that the well is productive, production facilities will be located on the well pad.
- C. All production vessels left on location will be painted to conform with BLM painting stipulations within 180 days of installation.

5. Location and Type of Water Supply

The well will be drilled with a combination of fresh water and brine water based mud systems. The water will be obtained from commercial suppliers in the area and/or hauled to the location by transport trucks over existing and proposed roads as indicated in Exhibit #3.

6. Source of Construction Materials

All material required for construction of the drill pad and access roads will be obtained from private, state, or federal pits. The construction contractor will be solely responsible for securing construction materials required for this operation and paying any royalties that may be required on those materials.

7. Methods of Handling Waste Disposal:

- A. Drill cuttings not retained for evaluation purposed will be disposed of in the reserve pit.
- B. Drilling fluids will be allowed to evaporate in the reserve pit prior to closure.
- C. Water produced during operations will be disposed of in the reserve pit.
- D. If any liquid hydrocarbons are produced during operations, those liquids will be stored in suitable tanks until sold.
- E. Current regulations regarding the proper disposal of human waste will be followed.
- F. All trash, junk, and other waste materials will be stored in proper containers to prevent dispersal and will be removed to an appropriate facility within one week of cessation of drilling and completion activities.

8. Ancillary Facilities

There are no ancillary facilities within the immediate vicinity of the proposed well site.

9. Well Site Layout

- A. A diagram of the drill pad is shown in Exhibit #5. Dimensions of the pad, pits, and location of major rig components are shown.
- B. The reserve pit will be lined with a high quality plastic sheeting to prevent migration of fluids.
- C. The pad dimension of 400' X 250' has been staked and flagged.
- D. An archaeological survey has been conducted on the proposed access road and location pad.

10. Plans for Restoration of Surface

- A. Upon cessation of the proposed operations, if the well is abandoned, the location and road will be ripped and re-seeded. The reserve pit area, after allowing to dry will be leveled. The entire location will be restored to the original contour as much as reasonable possible. All trash, garbage, and pit lining will be hauled to appropriate disposal to assure the location is aesthetically pleasing as reasonable possible. All restoration work will be completed within 180 days of cessation of activities.
- B. The disturbed area will be restored by re-seeding during the proper growing season.
- C. Three sides of the reserve pit will be fenced prior to and during drilling operations. The reserve pit will be fenced on the fourth side after the drilling rig is removed to prevent the endangerment of livestock. The fence will remain in place until the pit area has been leveled and restored.

- D. Upon cessation of the proposed operations, if the well is not abandoned, the reserve pit area will be restored as per BLM guidelines. Any additional caliche required for production facilities will be obtained from a source as described in Section 6.
- E. Within 90 days of cessation of drilling and completion operations, all equipment not necessary for production operations will be removed. The location will be cleaned of all trash and junk to assure the well site is left as aesthetically pleasing as reasonably possible.

11. Surface Ownership:

The surface is owned by: USA

12. Other Information:

- A. Topography: Refer to the archaeological report for a detailed description of flora, fauna, soil characteristics, dwellings, and historical or cultural sites.
- B. The primary use of the surface at the location is for grazing of livestock.

13. Operator's Representative:

- A. Through APD approval, drilling, completion and production operations:

N.M. Young, District Manager
Mewbourne Oil Company
PO Box 5270
Hobbs, NM 88241
505-393-5905

14. Certification

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill site and access route; that I am familiar with the conditions which currently exist; that the statements made in this plan are to the best of my knowledge, true and correct; and the work associated with the operations proposed herein will be performed by Mewbourne Oil Company, its contractors and subcontractors, in accordance with this plan and the terms and conditions under which it is approved. This statement is subject to the provisions of 18 U.S.C. 1001 for the filing of a false statement.

Date: 04/27/06

Signature: 

N.M. Young, District Manager
Mewbourne Oil Company
PO Box 5270
Hobbs, NM 88241
(505) 393-5905

Drilling Program
Mewbourne Oil Company

Henry 8 Federal Com #1
1218' FSL & 1820' FEL
Section 8-T20S-R29E
Eddy County, New Mexico

1. The estimated top of geological markers are as follows:

Tansill	950'
Yates	1000'
Capitan Reef	1185'
Lamar	3250'
Delaware	3385'
Bonespring	5280'
Wolfcamp	9291'
Strawn	10325'
Atoka	10625'
Morrow	11250'
Barnett	11650'

2. Estimated depths of anticipated fresh water, oil, or gas:

Water	Below 200'
Hydrocarbons	All zones below Delaware

3. Pressure control equipment:

A 2000# working pressure annular BOP will be installed on the 13 3/8" surface casing. A 5000# WP Double Ram BOP and a 3000# WP Annular will be installed after running 9 5/8" casing. Pressure tests will be conducted prior to drilling out under all casing strings. BOP controls will be installed prior to drilling under surface casing and will remain in use until completion of drilling operations. BOP's will be inspected and operated daily to insure mechanical integrity and the inspection will be recorded on the daily drilling report.

Kelly cock and a sub equipped with a full opening valve sized to fit the drill pipe and collars will be available on the rig floor in the open position when the kelly is not in use.

4. Proposed casing and cementing program:

A. **Casing Program:**

<u>Hole Size</u>	<u>Casing</u>	<u>Wt/Ft.</u>	<u>Grade</u>	<u>Depth</u>
26"	20"	94#	J55	0-300'
17 1/2"	13 3/8"	48#	H40	0-1200'
12 1/4"	9 5/8"	40#	N80/J55	0-3300'
8 3/4"	5 1/2"	17#	P110/N80	0-11800'

Minimum casing design factors: Collapse 1.2, Burst 1.1, Tensile strength 2.0.

B. **Cementing Program**

- i. Surface Casing: 300 sacks Class C light cement containing 1/2#/sk cellophane flakes, 2% CaCl, 5#/sk gilsonite. 200 sks Class C cement containing 2% CaCl.
- ii. Deep Surface Casing: 700 sacks 35:65 Class "C" light cement containing 1/2#/sk cellophane flakes & 5 lbs/sack gilsonite. 400 sacks Class "C" cement containing 2% CaCl
- iii. Intermediate Casing: 900 sacks 35:65 pozmix cement containing 6% gel, 5#/sack gilsonite. 400 sacks Class C cement containing 2% CaCl.

- iv. Production Casing: 600 sacks Class H cement containing fluid loss additive, friction reducer additive, compressive strength enhancer, and NaCl. Shallower productive zones may be protected by utilizing a multiple stage cementing tool in the production casing below potentially productive zones and cementing with a light cement slurry.

**Mewbourne Oil Company reserves the right to change cement designs as hole conditions may warrant.*

5. Mud Program:

<u>Interval</u>	<u>Type System</u>	<u>Weight</u>	<u>Viscosity</u>	<u>Fluid Loss</u>
0'-300'	FW spud mud	8.6-9.4	32-34	NA
300'-1200' <i>3160'</i>	Brine water	10.0-10.2	28-30	NA
1200'-3300'	Fresh water	8.4-8.6	28-30	NA
<i>gas 3360'</i> 3300'-10000'	Cut brine water	8.8-9.2	28-30	NA
10000'-TD	BW/Starch	9.2-9.8	30-40	8-15

(Note: Any Weight Above 8.6#/gallon would be to hold back Wolfcamp shale, rather than abnormal BHP.)

6. Evaluation Program:

Samples:	10' samples from intermediate casing to TD
Logging:	Compensated density and dual laterlog from intermediate casing to TD
Coring:	As needed for evaluation
Drill Stem Tests:	As needed for evaluation

7. Downhole Conditions

Zones of abnormal pressure:	None anticipated
Zones of lost circulation:	Anticipated in surface and intermediate holes
Maximum bottom hole temperature:	180 degree F
Maximum bottom hole pressure:	9.0 lbs/gal gradient or less

8. Anticipated Starting Date:

Mewbourne Oil Company intends to drill this well as soon as possible after receiving approval with approximately 45 days involved in drilling operations and an additional 10 days involved in completion operations on the project.

Hydrogen Sulfide Drilling Operations Plan

Mewbourne Oil Company

Henry "8" Federal Com #1

1218' FSL & 1820' FEL

Sec 8-T20S-R29E

Eddy County, New Mexico

1. General Requirements

Rule 118 does not apply to this well because MOC has researched this area and no high concentrations of H₂S were found. MOC will have on location and working all H₂S safety equipment before the Yates formation @ 1000' for purposes of safety and insurance requirements.

2. Hydrogen Sulfide Training

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will have received training from a qualified instructor in the following areas prior to entering the drilling pad area of the well:

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

Additionally, supervisory personnel will be trained in the following areas:

- 1 The effects of hydrogen sulfide on metal components. If high tensile tubular systems are utilized, supervisory personnel will be trained in their special maintenance requirements.
- 2 Corrective action and shut in procedures, blowout prevention, and well control procedures while drilling a well.
- 3 The contents of the Hydrogen Sulfide Drilling Operations Plan.

There will be an initial training session prior to encountering a known hydrogen sulfide source. The initial training session shall include a review of the site specific Hydrogen Sulfide Drilling Operations Plan.

3. Hydrogen Sulfide Safety Equipment and Systems

All hydrogen sulfide safety equipment and systems will be installed, tested, and operational prior to drilling below the intermediate casing.

1. Well Control Equipment

- A. Flare line with automatic igniter or continuous ignition source.
- B. Choke manifold with minimum of one adjustable choke.
- C. Blowout preventers equipped with blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit
- D. Auxiliary equipment including rotating head and annular type blowout preventer.

2. Protective Equipment for Essential Personnel

Thirty minute self contained work unit located at briefing area as indicated on wellsite diagram.

3. Hydrogen Sulfide Protection and Monitoring Equipment
Two portable hydrogen sulfide monitors positioned on location for optimum coverage and detection. The units shall have audible sirens to notify personnel when hydrogen sulfide levels exceed 20 ppm.
4. Visual Warning Systems
 - A. Wind direction indicators as indicated on the wellsite diagram.
 - B. Caution signs shall be posted on roads providing access to location. Signs shall be painted a high visibility color with lettering of sufficient size to be readable at reasonable distances from potentially contaminated areas.

4. Mud Program

The mud program has been designed to minimize the amount of hydrogen sulfide entrained in the mud system. Proper mud weight, safe drilling practices, and the use of hydrogen sulfide scavengers will minimize hazards while drilling the well.

5. Metallurgy

All tubular systems, wellheads, blowout preventers, drilling spools, kill lines, choke manifolds, and valves shall be suitable for service in a hydrogen sulfide environment when chemically treated.

6. Communications

State & County Officials phone numbers are posted on rig floor and supervisors trailer. Communications in company vehicles and toolpushers are either two way radios or cellular phones.

7. Well Testing

Drill stem testing is not an anticipated requirement for evaluation of this well. A drill stem test is required, it will be conducted with a minimum number of personnel in the immediate vicinity. The test will be conducted during daylight hours only.

United States Department of the Interior
Bureau of Land Management
Roswell Field Office
2909 West Second Street
Roswell, New Mexico 88201-1287

Statement Accepting Responsibility for Operations

Operator Name: Mewbourne Oil Company
Street or Box: P.O. Box 5270
City, State: Hobbs, New Mexico
Zip Code: 88241

The undersigned accepts all applicable terms, conditions, stipulations, and restrictions concerning operations conducted of the leased land or portion thereof, as described below.

Lease Number: Lease Number #NM-01165

Legal Description of Land: Section 8, T-20S, R-29E Eddy County, New Mexico.
Location @ 1218' FSL & 1820' FEL.

Formation (if applicable):

Bond Coverage: \$150,000

BLM Bond File: NM1693, Nationwide

Authorized Signature: _____



Name: NM (Micky) Young

Title: District Manager

Date: April 27, 2006

Notes Regarding Blowout Preventer

Mewbourne Oil Company

Henry "8" Federal Com #1

1218' FSL & 1820' FEL

Sec 8-T20S-R29E

Eddy County, New Mexico

- I. Drilling nipple (bell nipple) to be constructed so that it can be removed without the use of a welder through the opening of the rotary table, with minimum internal diameter equal to blowout preventer bore.
- II. Blowout preventer and all fittings must be in good condition with a minimum 5000 psi working pressure.
- III. Safety valve must be available on the rig floor at all times with proper connections to install in the drill string. Valve must be full bore with minimum 5000 psi working pressure.
- IV. Equipment through which bit must pass shall be at least as large as internal diameter of the casing.
- V. A kelly cock shall be installed on the kelly at all times.

Blowout preventer closing equipment to include an accumulator of at least 40 gallon capacity, two independent sources of pressure on closing unit, and meet all other API specifications.

Mewbourne Oil Company
BOP Schematic for
12 1/4" Hole

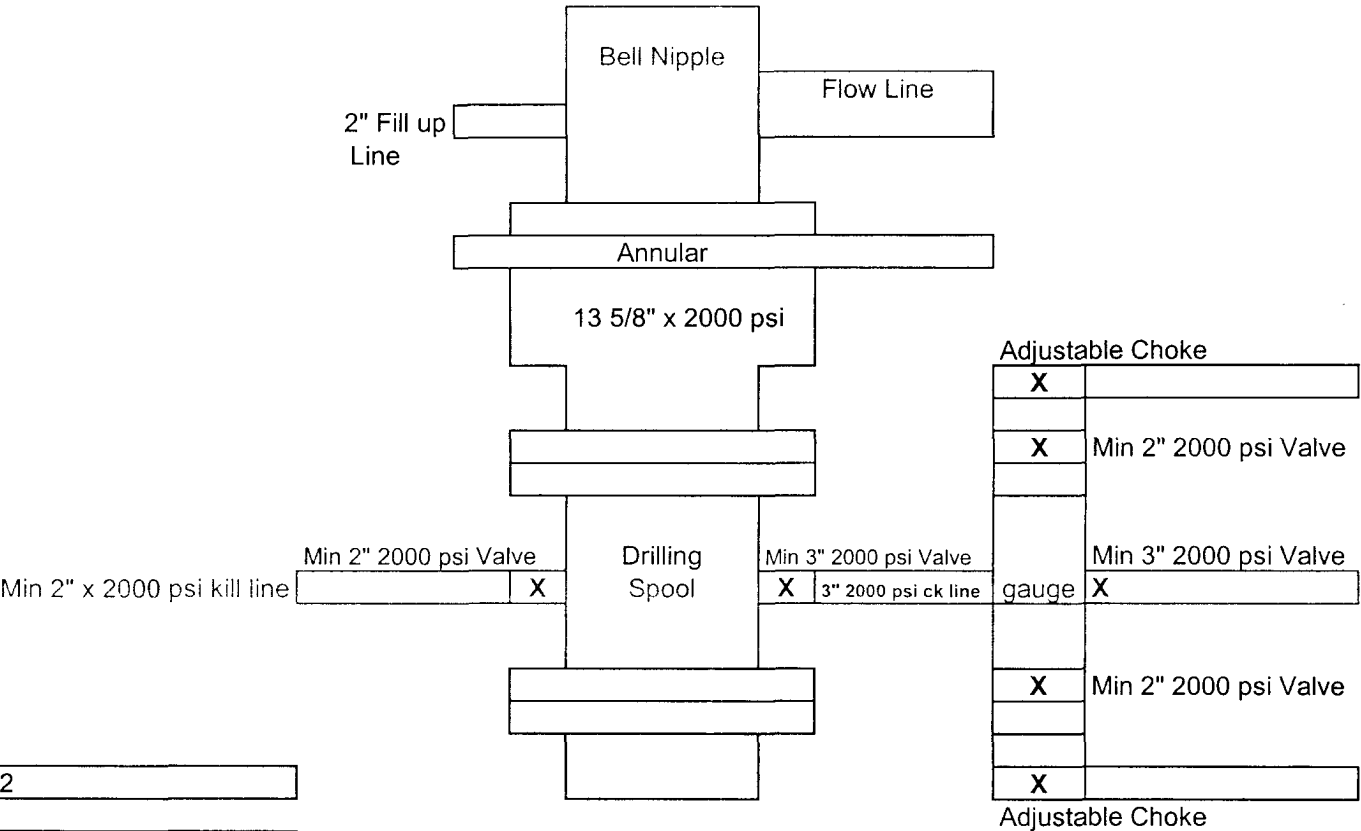


Exhibit #2

Henry 8 Federal Com #1
1218' FSL & 1820' FEL
Sec 8-T20S-R29E
Eddy, County
New Mexico

Mewbourne Oil Company
BOP Schematic for
8 3/4" or 7 7/8" Hole

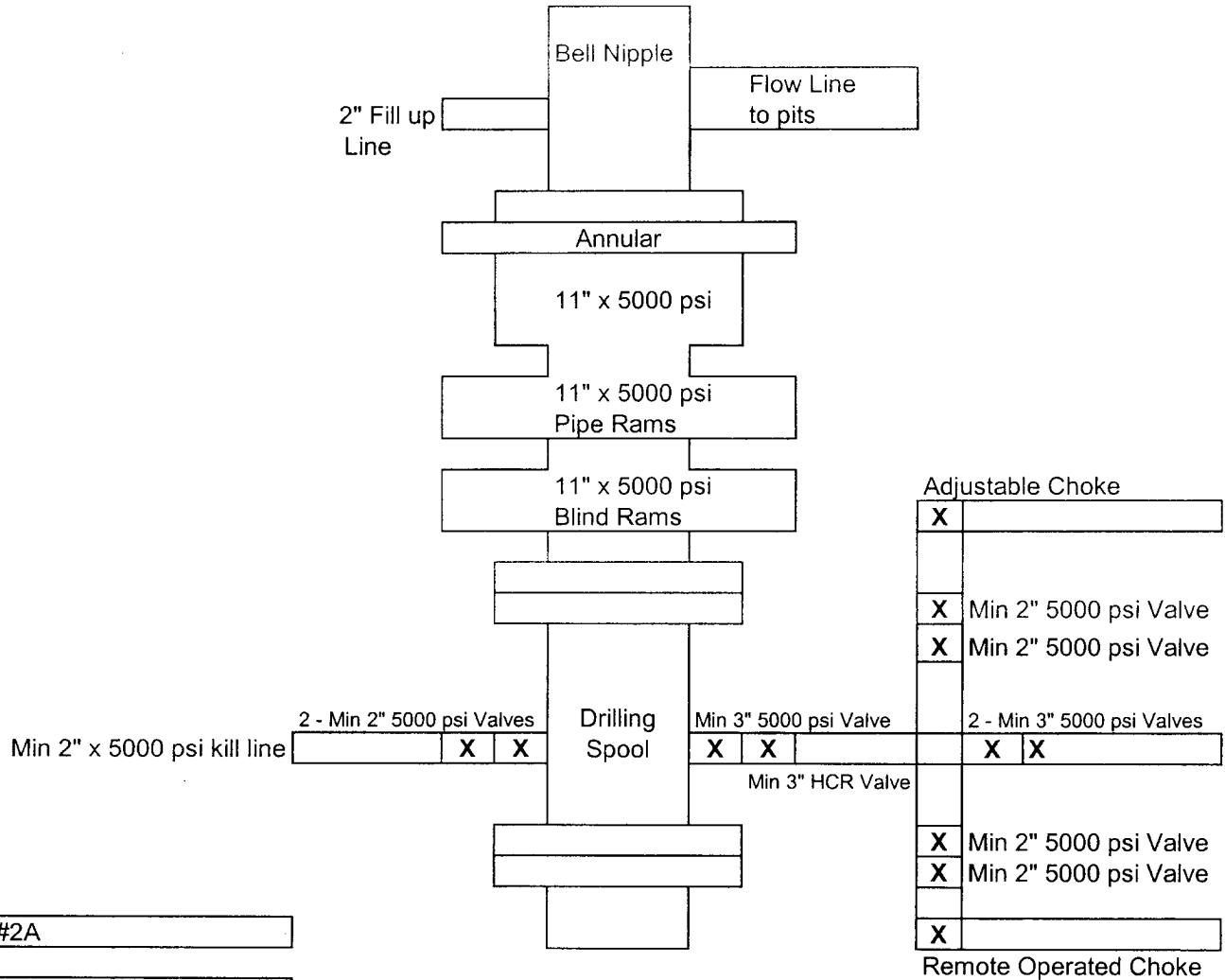


Exhibit #2A

Henry 8 Federal Com #1
1218' FSL & 1820' FEL
Sec 8-T20S-R29E
Eddy, County
New Mexico

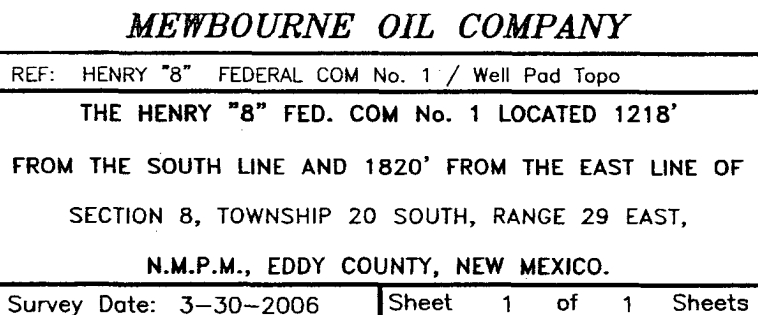


Exhibit #4
Status of Wells in Immediate Vicinity

Mewbourne Oil Company
Henry 8 Federal Com #1
1218' FSL & 1820' FEL
Sec 8-T20S-R29E
Eddy County, New Mexico

Section 8-T20S-R29E

Operator: Marathon Oil Company
Well Name: Yates Federal #1
Unit letter: N
Status: Pumping
Field: Burton Flat Morrow

CONDITIONS OF APPROVAL - DRILLING

Operator's Name: **Mewbourne Oil Company**

Well Name & No: **Henry "8" Federal No. 01**

Location: Surface: **1218' FSL & 1820' FEL Sec.08, T.20S., R.29E.**

Lease: **NM 01165**

Lea County

I. DRILLING OPERATIONS REQUIREMENTS:

1. The Bureau of Land Management (BLM) is to be notified at the Roswell Field Office, 2909 West Second St., Roswell, NM 88201, (505) 627-0272 for wells in Chaves and Roosevelt Counties; the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (505) 361-2822 for wells in Eddy County; and the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (505) 393-3612 for wells in Lea County, in sufficient time for a representative to witness:

A. Spudding

B. Cementing casing: 20 inch 13 3/8 inch 9 5/8 inch 5 1/2 inch

C. BOP Testing

2. A Hydrogen Sulfide (H₂S) Drilling Plan is not required for this wellbore.

3. 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.

4. Submit a Sundry Notice (Form 3160-5, one original and five copies) for each casing string, describing the casing and cementing operations. Include pertinent information such as; spud date, hole size, casing (size, weight, grade and thread type), cement (type, quantity and top), water zones and problems or hazards encountered. The Sundry shall be submitted within 15 days of completion of each casing string. The reports may be combined into the same Sundry if they fall within the same 15 day time frame.

5. The API No. assigned to the well by NMOCD shall be included on the subsequent report of setting the first casing string.

6. A communitization agreement shall be submitted to this office for approval prior to any sales from this well.

II. CASING:

1. The 20 inch shall be set at 300 Feet with cement circulated to the surface. If cement does not circulate to the surface the appropriate BLM office shall be notified and a temperature survey or cement bond log shall be run to verify the top of the cement. Remedial cementing shall be completed prior to drilling out that string.

2. The minimum required fill of cement behind the 13 3/8 inch casing is to circulate to surface.

3. The minimum required of cement behind the 9 5/8 inch which is to be set below the bottom of the Capitan Reef is to Tie Back to the 13 3/8 inch shoe by at least 200 Ft.

4. The minimum required fill of cement behind the 5 1/2 inch Production Casing is to place TOC at least 500 Feet above the Top of the Wolfcamp formation estimated to be at 9400 ft.

III. PRESSURE CONTROL:

1. All BOPE systems and related equipment shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2. The BOP and related equipment shall be installed and operational before drilling below the 20 inch casing shoe and shall be tested as described in Onshore Order No. 2. Any equipment failing to test satisfactorily shall be repaired or replaced.

2. Minimum working pressure of the blowout preventer and related equipment (BOPE) shall be 3 M psi

3. The appropriate BLM office shall be notified in sufficient time for a representative to witness the test.

- The test shall be done by an independent service company
- The results of the test shall be reported to the appropriate BLM office.
- Testing fluid must be water or an appropriate clear liquid suitable for sub-freezing temperatures.
- Use of drilling mud for testing is not permitted since it can mask small leaks.
- Testing must be done in safe workman-like manner. Hard line connections shall be required.
- Both low pressure and high pressure testing of BOPE is required.

IV. DRILLING MUD:

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp formation, and shall be used until production casing is run and cemented. Monitoring equipment shall consist of the following:

- . Recording pit level indicator to indicate volume gains and losses.
- . Mud measuring device for accurately determining the mud volumes necessary to fill the hole during trips.
- . Flow-sensor on the flow-line to warn of abnormal mud returns from the well.

United States Department of the Interior
Bureau of Land Management
Roswell Field Office

Refer To: 3160-3

May 11, 2006

To: AFM, lands and Minerals, RFO

From: Geologist, RFO

Subject: Geologic Review of Application for Permit to Drill

Operator: Mewbourne Oil Company

Well Name and Number: Henry 8 Federal Com. No. 1

Surface Location: 1218' FSL & 1820' FEL

Section: 8, T. 20 S., R. 29 E., NMPM

County: Eddy

State: NM

Lease No.: NM-01165

Date APD Rec'd: 5/10/06

1. Surface Elevation **X** Surface Geology **X**
2. Geologic Marker Tops (from reports on surrounding wells):

<u>Geologic Marker</u>	<u>Depth</u>
Dewey Lake	0
Rustler	180'*
Salado	455'
Tansill	926'
Yates	1424' *
T/Reef	1800' *
B/Reef	2922'*
Delaware	3485'
Bone Spring	5920'
Wolfcamp	9430'
Strawn	10,482'
Atoka	10,718'
Morrow	11,396'

Marker tops taken from the Canter Federal No. 2 Located in the NE $\frac{1}{4}$ NE $\frac{1}{4}$, sec. 10, T. 20 S.,

29 E., NMPM

<u>Geologic Marker</u>	<u>Depth</u>
Dewey Lake	0
Rustler	200'
Salado	380'
B/Salt	648'
Yates	992'
T/Reef	1360'
B/Reef	3143'
Delaware	3196'

Markers taken from the well log of the Yates federal No. 1 well located in the SE $\frac{1}{4}$ /SW $\frac{1}{4}$, sec. 8, T. 20 S., R. 29 E., NMPM

3. Fresh Water Information: Fresh water for stock use is found in the Alluviums and in the Redbeds. (Note: State engineers listing shows identifies the Rustler Formation as the source but this is difficult to verify without an intensive study of the area due to the geographic location at the northern terminus of the western salt trough. However, the typical gamma ray signature for the top of the Rustler appears at an approximate depth of 200 ft. Depth to useable water ranges from 50' to 330'. Additionally, in this section the salt section is present as well as the Capitan Reef.

Deepest Expected Fresh Water: above 200' in the detritus of the redbeds, Rustler and Salado and in the Capitan Reef from 1360 ft to 3143 ft.

The proposed casing program needed the 95/8 casing depth changed to 3160 ft. and the operator has been notified of the change. The proposed surface casing is fine.

All casing depths based on the values from the well logs in sec. 8, T. 20 S., R. 29 E., NMPM.

Controlled Water Basin: Yes

Capitan X Carlsbad Roswell Lea No basin

Remarks: Witness surface, intermediate and 3rd casing strings.

4. Geologic Hazards? Yes

H2S X Karst X Abnormal Pressures Other X

Remarks: Although no H2S has been reported in the area, it is always a possible hazard. Possible lost circulation in the Artesia Group, Delaware and Bone Springs. Possible Karst type

structures due to shallow occurrences of carbonates, Halite and/or Gypsum in the Roswell District. The well location lies within a High Potential Cave/Karst Occurrence Area according to CRA RMPA Draft Map 26, Chapter 3-16; September 1994.

5. Other Mineral Deposits: Possible Halite and other associated salts in the Rustler Formation, and the Castile and Salado Groups. Possible potash in the Salado Group.

6. Potash:

Secretary's		
Oil-Potash Area	R-111-P Area	Not Applicable X

7. Reference Geologic APD Review Report for: Lease No.

8. Other References:

New Mexico State Engineer's Water Well Listings;

Eddy County H2S List;

Hendrikson, G. E., and Jones, R. S., 1952, Geology and Ground-Water Resources of Eddy County, New Mexico, Ground Water Report No. 3, New Mexico Bureau of Mines and Mineral Resources, Campus Station, Socorro, New Mexico, p. 169.

Geohydrology Associates, Inc., 1978, Collection of Hydrologic Data, Eastside Roswell Range EIS Area, New Mexico, Albuquerque, New Mexico, p. 98.

9. No active mining claims are located in this area.

Geologist Signature: /s/ J. S. Simitz

Date: 5/11/06