

N.M. Oil Cons. DIV-Dist. 2

1301 W. Grand Avenue

Artesia, NM 88210

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

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

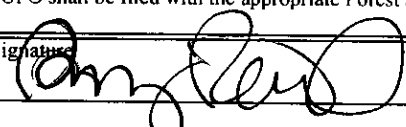
APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of Work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. NM-074935
1b. Type of Well: <input type="checkbox"/> Oil Well <input checked="" type="checkbox"/> Gas Well <input type="checkbox"/> Other <input type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name
2. Name of Operator Marbob Energy Corporation		7. If Unit or CA Agreement, Name and No.
3a. Address PO Box 227, Artesia NM 88211-0227		8. Lease Name and Well No. Greenthroat Federal #1 34954
3b. Phone No. (include area code) 505-748-3303		9. API Well No. 30-015-34211
4. Location of Well (Report location clearly and in accordance with any State requirements.) At surface 660' FNL & 810' FWL At proposed prod. zone		10. Field and Pool, or Exploratory Loco Hills Morrow
14. Distance in miles and direction from nearest town or post office*		11. Sec., T., R., M., or Blk. and Survey or Area Sec 15 - T17S - R30E
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No. of Acres in lease	12. County or Parish Eddy
17. Spacing Unit dedicated to this well 320	13. State NM	
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth 11600'	20. BLM/BIA Bond No. on file 585716
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3697' GL	22. Approximate date work will start* 6/3/05	23. Estimated duration 21 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.  | 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 shall be filed with the appropriate Forest Service Office). | 6. Such other site specific information and/or plans as may be required by the authorized officer. |

25. Signature 	Name (Printed Typed) Amy Reid	Date 5/3/2005
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Land Department	
Approved by (Signature) /s/ Tony J. Herrell	Name (Printed Typed) /s/ Tony J. Herrell
Title FIELD MANAGER	Office CARLSBAD FIELD OFFICE
Date JUL 13 2005	

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.

APPROVAL FOR 1 YEAR

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)

Recess Controlled Water Basin

APPROVAL SUBJECT TO  
GENERAL REQUIREMENTS AND  
SPECIAL STIPULATIONS  
ATTACHED

Witness Surface Casing.

Salt  
29.5

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

State of New Mexico  
Energy Minerals and Natural Resources

Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Form 6  
March 1:

For drilling and production facilities, submit to appropriate NMOCD District Office.  
For downstream facilities, submit to Santa Fe office

**Pit or Below-Grade Tank Registration or Closure**

Is pit or below-grade tank covered by a "general plan"? Yes ☐ No ☒

Type of action: Registration of a pit or below-grade tank ☒ Closure of a pit or below-grade tank ☐

Operator: **Marbob Energy Corporation**

Telephone: **505-748-3303**

e-mail address: **land2@marbob.com**

Address: **PO Box 227, Artesia, NM 88211-0227**

Facility or well name: **Greenthroat Federal #1**

API #: **30-015-**

U/L or Qtr/Qtr **N/2** Sec **15** T **17S** R **30E**

County: **Eddy**

Latitude \_\_\_\_\_ Longitude \_\_\_\_\_

NAD: 1927 ☐ 1983 ☐ Surface Owner Federal ☒ State ☐ Private ☐ Indi

**Pit**

Type: Drilling ☒ Production ☐ Disposal ☐

Workover ☐ Emergency ☐

Lined ☒ Unlined ☐

Liner type: Synthetic ☒ Thickness **12** mil Clay ☐ Volume \_\_\_\_\_ bbl

**Below-grade tank**

Volume: \_\_\_\_\_ bbl Type of fluid: \_\_\_\_\_

Construction material: \_\_\_\_\_

Double-walled, with leak detection? Yes ☐ If not, explain why not. \_\_\_\_\_

Depth to ground water (vertical distance from bottom of pit to seasonal high water elevation of ground water.)

Less than 50 feet

(20 points)

50 feet or more, but less than 100 feet

(10 points)

**100 feet or more**

( 0 points)

**0 points**

Wellhead protection area: (Less than 200 feet from a private domestic water source, or less than 1000 feet from all other water sources.)

Yes

(20 points)

**No**

( 0 points)

**0 points**

Distance to surface water: (horizontal distance to all wetlands, playas, irrigation canals, ditches, and perennial and ephemeral watercourses.)

Less than 200 feet

(20 points)

200 feet or more, but less than 1000 feet

(10 points)

**1000 feet or more**

( 0 points)

**0 points**

**Ranking Score (Total Points)**

**0 points**

**If this is a pit closure:** (1) attach a diagram of the facility showing the pit's relationship to other equipment and tanks. (2) Indicate disposal location:

onsite ☐ offsite ☐ If offsite, name of facility \_\_\_\_\_ (3) Attach a general description of remedial action taken including remediation start date. date. (4) Groundwater encountered: No ☐ Yes ☐ If yes, show depth below ground surface \_\_\_\_\_ ft. and attach sample results. (5) Attach soil sample results and diagram of sample locations and excavations.

I hereby certify that the information above is true and complete to the best of my knowledge and belief. I further certify that the above-described pit or below-grade tank been/will be constructed or closed according to NMOCD guidelines ☒, a general permit ☐, or an (attached) alternative OCD-approved plan ☐.

Date: **July 18, 2005**

Printed Name/Title: **Amy Reid / Land Department**

Signature 

Your certification and NMOCD approval of this application/closure does not relieve the operator of liability should the contents of the pit or tank contaminate ground water otherwise endanger public health or the environment. Nor does it relieve the operator of its responsibility for compliance with any other federal, state, or local laws and/or regulations.

Approval: **JUL 26 2005**

Field Supervisor

Date: \_\_\_\_\_

Printed Name/Title \_\_\_\_\_

Signature 

## DISTRICT I

1625 N. FRENCH DR., BOBBS, 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 JUNE 10, 2003

Submit to Appropriate District Office

State Lease - 4 Copies

Fee Lease - 3 Copies

## WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number	Pool Code 80360	Pool Name LOCO HILLS MORROW
Property Code	Property Name GREENTHROAT FEDERAL	Well Number 1
OGRID No. 14049	Operator Name MARBOB ENERGY CORPORATION	Elevation 3697'

## Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	15	17-S	30-E		660	NORTH	810	WEST	EDDY

## Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

Dedicated Acres 320	Joint or Infill	Consolidation Code	Order No.
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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>3692.5' 3701.3'</p> <p>810' 600'</p> <p>3691.8' 3700.7'</p> <p>GEODETIC COORDINATES NAD 27 NME</p> <p>Y=669443.2 N X=613062.5 E</p> <p>LAT.=32°50'23.44" N LONG.=103°57'54.78" W</p>	<p><b>OPERATOR CERTIFICATION</b></p> <p>I hereby certify the the information contained herein is true and complete to the best of my knowledge and belief.</p> <p></p> <p>Signature</p> <p>AMY REID</p> <p>Printed Name</p> <p>LAND DEPARTMENT</p> <p>Title</p> <p>MAY 3, 2005</p> <p>Date</p> <p><b>SURVEYOR CERTIFICATION</b></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></p> <p>Date Surveyed</p> <p>Signature &amp; Seal of Professional Surveyor</p> <p>Gary Eidsen 4/15/05</p> <p>05.11.0578</p> <p>Certificate No. GARY EIDSON 12641</p>
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**MARBOB ENERGY CORPORATION**  
**DRILLING AND OPERATIONS PROGRAM**

**Greenthroat Federal #1**  
**660' FNL & 810' FWL, Unit D**  
**Section 15, T17S, R30E**  
**Eddy County, New Mexico**

In conjunction with Form 3160-3, Application for Permit to Drill subject well, Marbob Energy Corporation submits the following ten items of pertinent information in accordance with BLM requirements.

1. The geological surface formation is Permian.
2. The estimated tops of geologic markers are as follows:

Yates	1300'	Wolfcamp	8000'
Queen	2150'	Cisco Canyon	8300'
San Andres	2880'	Strawn	10450'
Glorieta	4320'	Atoka	10680'
Abo	6800'	Morrow	11200'
		TD	11600'

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

Yates	1300'	Oil
Queen	2150'	Oil
San Andres	2880'	Oil
Wolfcamp	8000'	Oil
Strawn	10450'	Gas
Atoka	10680'	Gas
Morrow	11200'	Gas

No other formations are expected to give up oil, gas, or fresh water in measurable quantities. The surface fresh water sands will be protected by setting 8 5/8" casing at 3000' and circulating cement back to surface. Any shallower zones above TD which contain commercial quantities of oil and/or gas will have cement circulated across them by inserting a float shoe joint into the 5 1/2" production casing which will be run at TD to sufficiently cover all known oil and gas horizons above 200'.

4. Proposed Casing Program:

Hole Size	Interval	OD Casing	Wt	Grade
17 1/2"	0-400'	13 3/8"	48#	H-40
12 1/4"	0-3000'	8 5/8"	32#	J-55
7 7/8"	0-11600	5 1/2"	17#	S-95/P110

Proposed Cement Program:

13 3/8" Surface Casing: Cement w/ 400 sx Class C. Circulate to surface.

8 5/8" Intermediate Casing: Cement w/ 750 sx Class C. Attempt to tie in to 13 3/8" csg.

5 1/2" Production Casing: Cement w/ 850 sx Class C. Attempt to tie in to 8 5/8" csg.

5. Pressure Control Equipment: See Exhibit 1. Marbob proposes to nipple up on the 13 3/8" casing with a 2M system, testing it to 1000# with rig pumps, then nipple up on the 8 5/8" casing with a 5M system, tested to 5000# before drilling out.

6. Mud Program: The applicable depths and properties of this system are as follows:

Depth	Type	Weight (ppg)	Viscosity (sec)	Waterloss (cc)
0 – 400'	Fresh Wtr	8.4 – 9.2	32 – 36	N.C.
400 – 3000'	Brine	9.9 – 10.2	28 – 32	N.C.
3000 – 11600'	Cut Brine	8.7 – 9.5	28 – 34	N.C.

7. Auxiliary Equipment: Kelly Cock; Sub with full opening valve on floor; and drill pipe connections.

8. Testing, Logging and Coring Program:

No drillstem tests are anticipated.

The electric logging program will consist of Dual Laterolog Micro SFL, Spectral Density Dual Spaced Neutron Csg Log, and Depth Control Log.

No conventional coring is anticipated.

9. No abnormal pressures or temperatures are anticipated.

10. Anticipated starting date: As soon as possible after approval.

**MARBOB ENERGY CORPORATION**  
**MULTI-POINT SURFACE USE AND OPERATIONS PLAN**

**Greenthroat Federal #1**  
**660' FNL & 810' FWL, Unit D**  
**Section 15, T17S, R30E**  
**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 2 is a portion of a topo map showing the well and roads in the vicinity of the proposed location. The proposed wellsite and the access route to the location are indicated in red on Exhibit 2.

**DIRECTIONS:**

From the intersection of US Hwy #82I and Co. Rd #219 go north on Co. Rd. 219 approx. 0.4 miles. Turn right and go east approx. 0.2 miles. Turn left and go north approx. 0.2 miles. Turn to the right and go east approx. 0.4 miles. Turn left and go north approx. 0.3 miles. Turn right and go east approx. 0.3 miles. Turn left and go north approx. 0.2 miles to an existing well location. This location is 150' east.

**2. PLANNED ACCESS ROAD:**

**3.** No new access road is necessary.

**4. LOCATION OF EXISTING AND/OR PROPOSED FACILITIES:**

A. Marbob Energy Corporation proposes a collection facility, if well is productive, to be located on Greenthroat Federal #1 well pad.

**5. METHODS OF HANDLING WASTE DISPOSAL:**

A. Drill cuttings will be disposed of in the lined pit.

B. Drilling fluids will be allowed to evaporate in the lined pit until the pit is dry.

C. Water produced during completion may be disposed into the lined reserve pit.

D. All trash and debris will be removed from the wellsite within 30 days after finishing drilling and/or completion operations. All waste material will be contained to prevent scattering by the wind.

## **MARBOB ENERGY CORPORATION**

### **HYDROGEN SULFIDE DRILLING OPERATIONS 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:

- A. The hazards and characteristics of hydrogen sulfide (H<sub>2</sub>S).
- B. The proper use and maintenance of personal protective equipment and life support systems.
- C. The proper use of H<sub>2</sub>S detectors, alarms, warning systems, briefing areas, evacuation procedures, and prevailing winds.
- D. The proper techniques for first aid and rescue procedures.

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

- A. The effects of H<sub>2</sub>S on metal components. If high tensile tubulars are to be used, personnel will be trained in their special maintenance requirements.
- B. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.
- C. The contents and requirements of the H<sub>2</sub>S Drilling Operations Plan and the Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable H<sub>2</sub>S zone (within 3 days or 500 feet) and weekly H<sub>2</sub>S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H<sub>2</sub>S Drilling Operations Plan and the Public Protection Plan. This plan shall be available at the well site. All personnel will be required to carry documentation that they have received the proper training.

## **II. H<sub>2</sub>S SAFETY EQUIPMENT AND SYSTEMS**

Note: All H<sub>2</sub>S 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 H<sub>2</sub>S.

### **A. Well Control Equipment:**

Flare line.

Choke manifold.

Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit.

Auxiliary equipment to include: annular preventer, mud-gas separator, rotating head.

### **B. Protective equipment for essential personnel:**

Mark II Surviveair 30-minute units located in the dog house and at briefing areas.

### **C. H<sub>2</sub>S detection and monitoring equipment:**

2 - portable H<sub>2</sub>S monitor positioned on location for best coverage and response. These units have warning lights and audible sirens when H<sub>2</sub>S levels of 20 ppm are reached.

### **D. Visual warning systems:**

Caution/Danger signs shall be posted on roads providing direct access to location. Signs will be painted a high visibility yellow with black lettering of sufficient size to be readable at a reasonable distance from the immediate location. Bilingual signs will be used, when appropriate. See example attached.



E. Mud Program:

The mud program has been designed to minimize the volume of H<sub>2</sub>S circulated to the surface.

A mud-gas separator will be utilized.

F. Metallurgy:

All drill strings, casings, tubing, wellhead, blowout preventers, drilling spool, kill lines, choke manifold and lines, and valves shall be suitable for H<sub>2</sub>S service.

G. Communication:

Company vehicles equipped with cellular telephone and 2-way radio.

# **W A R N I N G**

**YOU ARE ENTERING AN H<sub>2</sub>S AREA  
AUTHORIZED PERSONNEL ONLY**

- 1. BEARDS OR CONTACT LENSES NOT ALLOWED**
- 2. HARD HATS REQUIRED**
- 3. SMOKING IN DESIGNATED AREAS ONLY**
- 4. BE WIND CONSCIOUS AT ALL TIMES**
- 5. CK WITH MARBOB FOREMAN AT MAIN OFFICE**

**MARBOB ENERGY CORPORATION**

**1-505-748-3303**

## STATEMENT ACCEPTING RESPONSIBILITY FOR OPERATIONS

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

Date: May 3, 2005

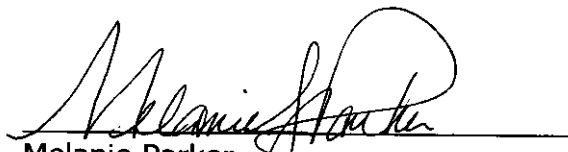
Lease #: NM 074935  
Greenthroat Federal

Legal Description: N/2 Sec. 15-T17S-R30E  
Eddy County, New Mexico

Formation(s): Morrow

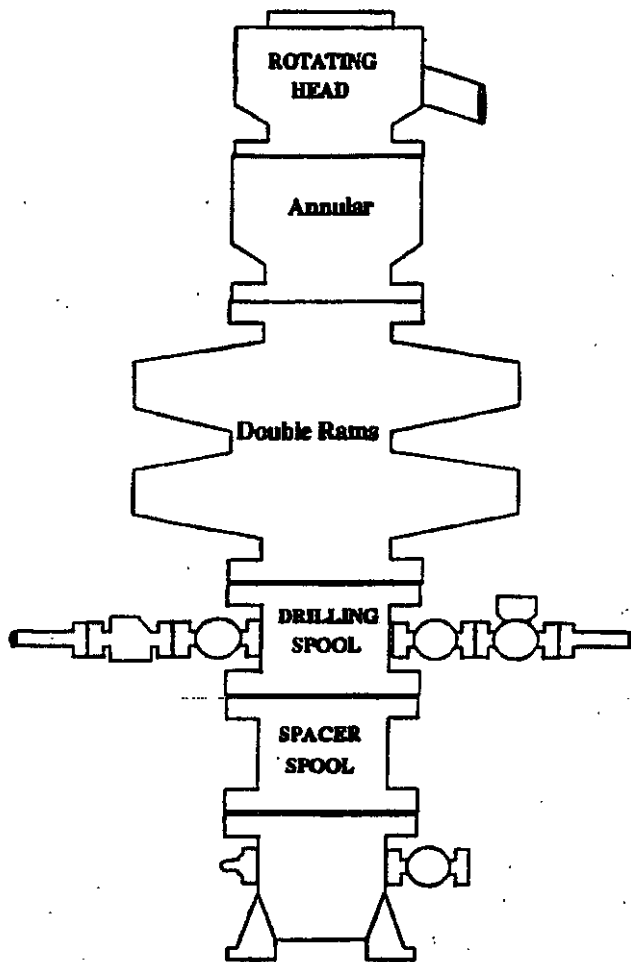
Bond Coverage: Statewide

BLM Bond File #: 585716

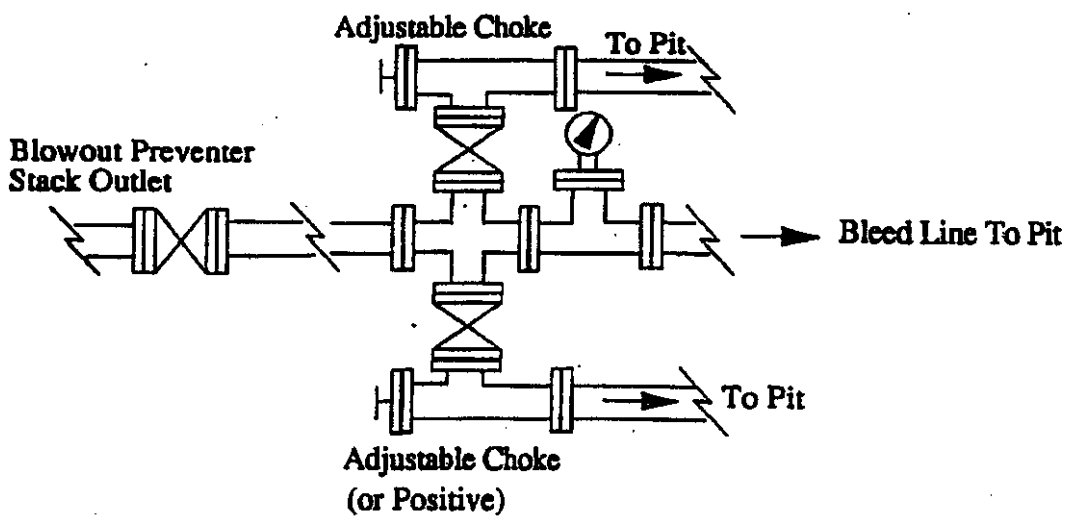
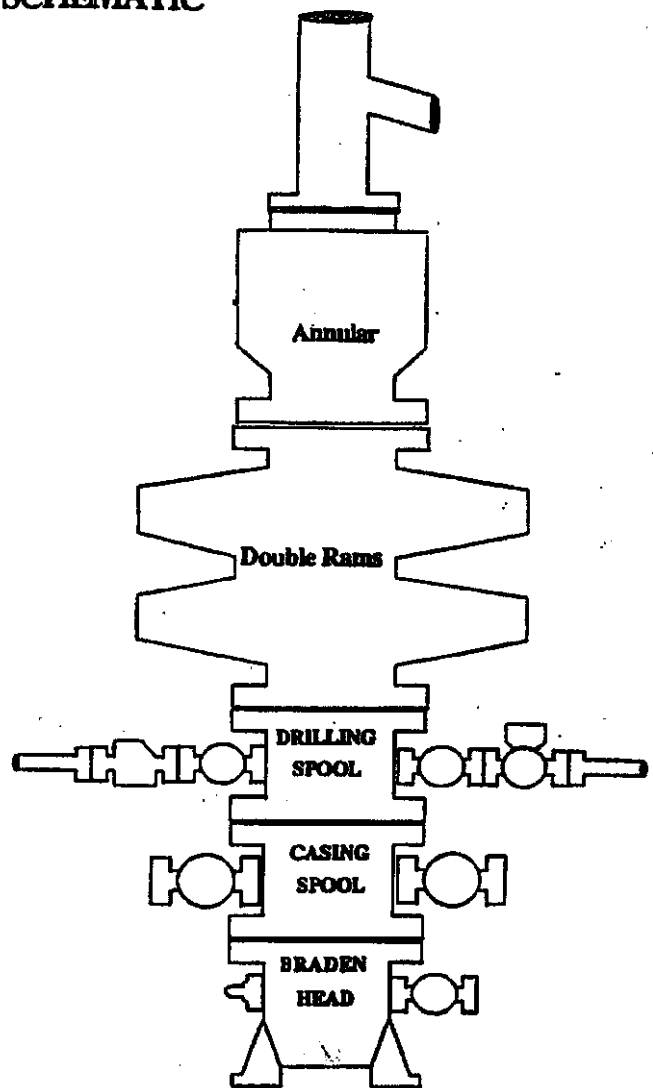


Melanie Parker  
Land Department

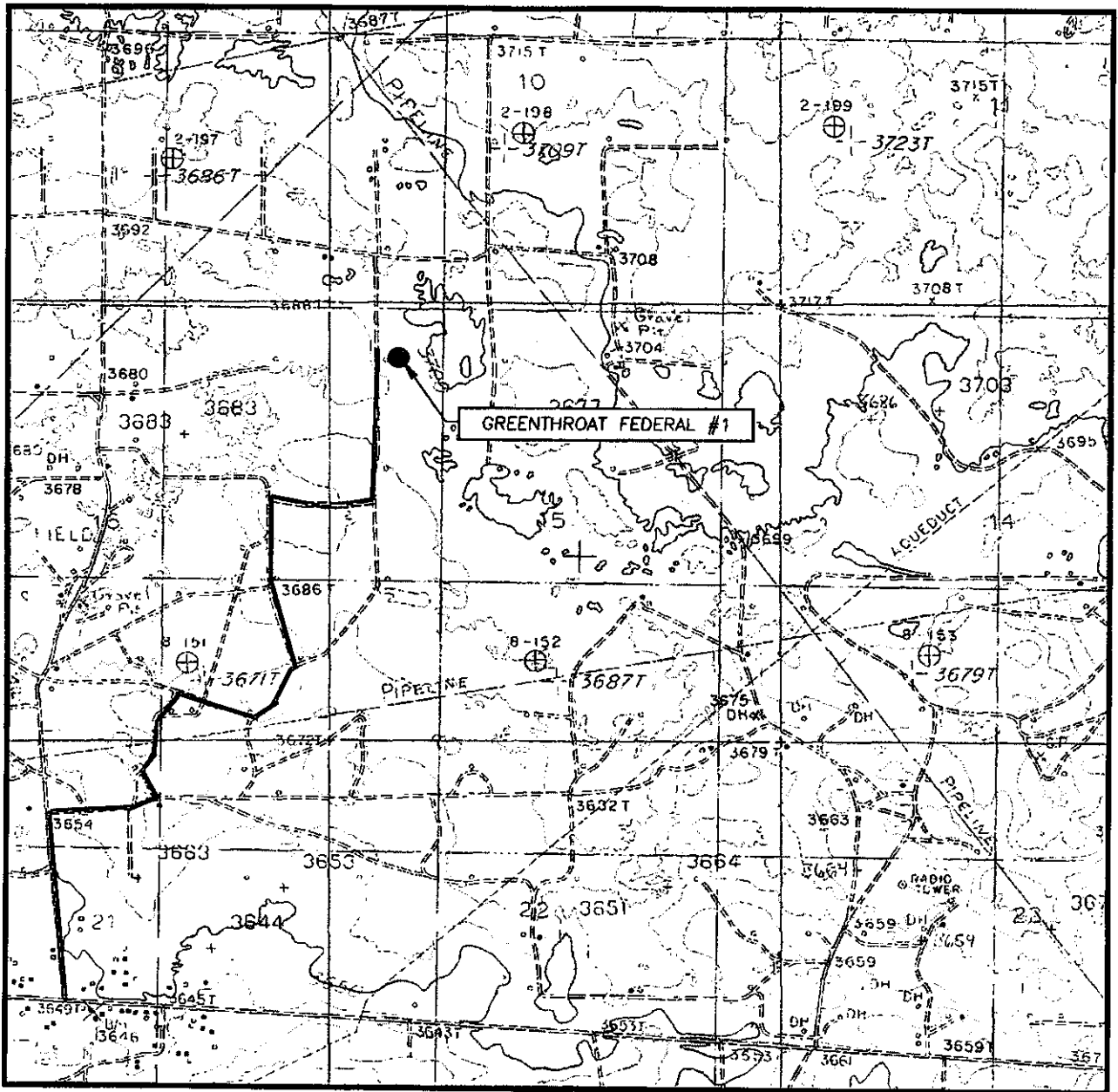
# BOPE SCHEMATIC



**Choke Manifold**



# LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL:  
LOCO HILLS, N.M. - 10'

SEC. 15 TWP. 17-S RGE. 30-E

SURVEY N.M.P.M.

COUNTY EDDY

DESCRIPTION 660' FNL & 810' FWL

ELEVATION 3697'

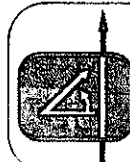
OPERATOR MARBOB ENERGY CORPORATION

LEASE GREENTHROAT FEDERAL

U.S.G.S. TOPOGRAPHIC MAP  
LOCO HILLS, N.M.



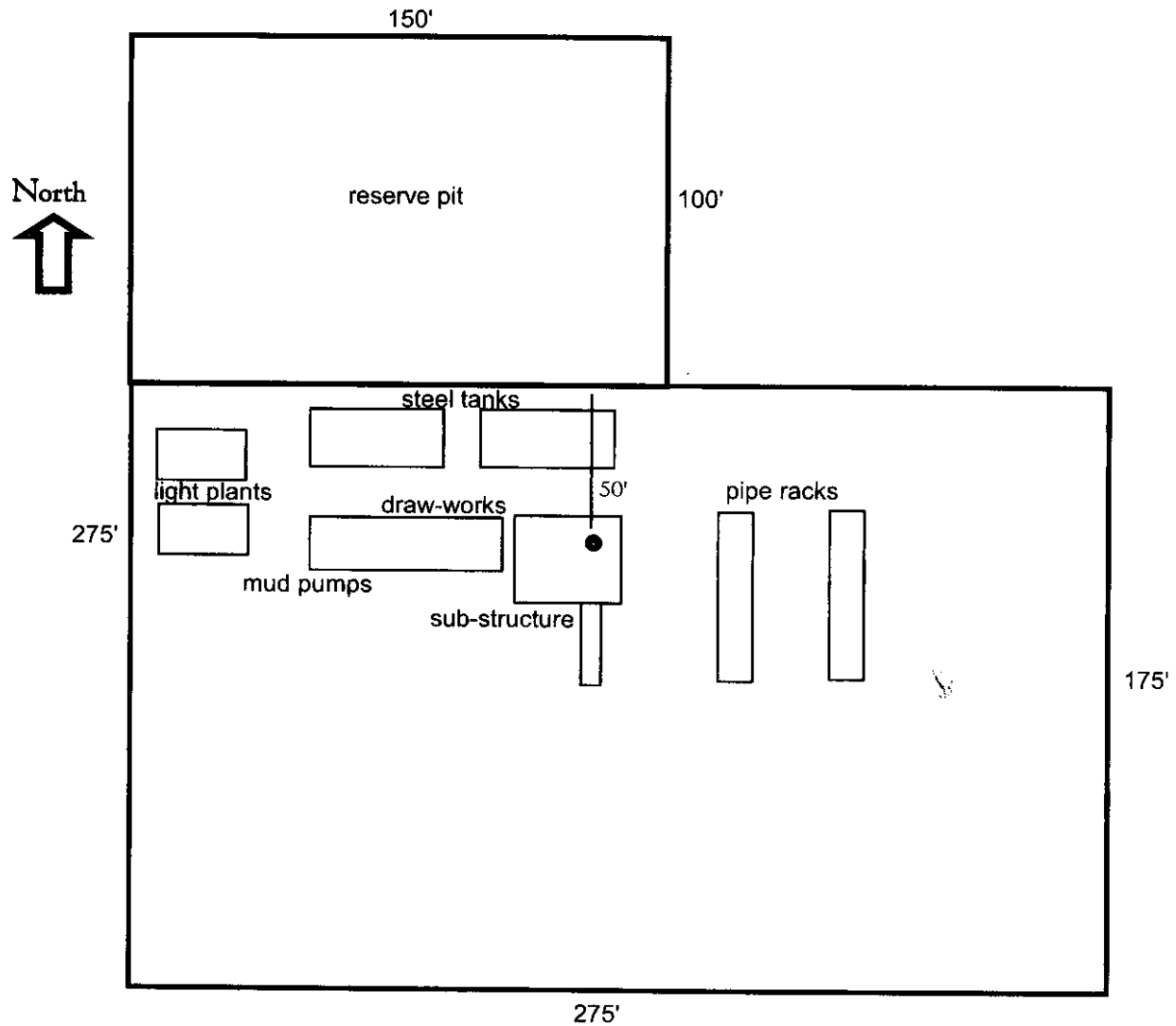
Existing Roads



PROVIDING SURVEYING SERVICES  
SINCE 1946  
**JOHN WEST SURVEYING COMPANY**  
412 N. DAL PASO  
HOBBS, N.M. 78240  
(505) 393-3117

**Exhibit Two**

# Well Site Lay-Out Plat



Greenthroat Federal #1  
660" FNL & 810' FWL, Unit D  
Section 15, T1718S, R30E  
Eddy County, New Mexico

EXHIBIT THREE

## CONDITIONS OF APPROVAL - DRILLING

Operator's Name: Marbob Energy Corporation  
Well Name & No. Greenthroat Federal #1  
Location: 660' FNL, ~~640'~~ 810' FWL, Section 15, T. 17 S., R. 30 E., Eddy County, New Mexico  
Lease: NM-074935 *EH*

### I. DRILLING OPERATIONS REQUIREMENTS:

1. The Bureau of Land Management (BLM) is to be notified at the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (505) 361-2822 for wells in Eddy County in sufficient time for a representative to witness:

A. Well spud

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

C. BOP tests

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. 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.

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

### II. CASING:

1. The 13-3/8 inch surface casing shall be set at approximately 400 feet and 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 8-5/8 inch first intermediate casing is to be circulated to the surface.

3. The minimum required fill of cement behind the 5-1/2 inch production casing is to be sufficient to reach at least 500 feet above the uppermost hydrocarbon productive interval.

### III. PRESSURE CONTROL:

1. All BOP 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 13-3/8 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) from base of surface casing shall be 2000 psi. Testing to 1000 psi with rig pumps is ok.

3. Minimum working pressure of the blowout preventer and related equipment (BOPE) from base of intermediate casing shall be 5000 psi.

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

- The tests 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 a safe workman-like manner. Hard line connections shall be 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.