

8111

OCD-ARTESIA

ATS-07-381

FORM APPROVED
OMB No 1004-0136
Expires January 31, 2004UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

HIGH CAVEKARST

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a Type of Work ☒ DRILL ☐ REENTER

Split Estate

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

2 Name of Operator

SEP 05 2007

Marbob Energy Corporation

3a Address

OCD-ARTESIA

3b Phone No (include area code)

505-748-3303

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

At surface 990' FNL & 660' FEL

At proposed prod zone

Carlsbad Controlled Water Basin

5 Lease Serial No

NM 97113, NMNM-116016

6 If Indian, Allottee or Tribe Name

7 If Unit or CA Agreement, Name and No.

8 Lease Name and Well No.

Hot Seat Federal Com #2 36714

9 API Well No

30-015-35776

10 Field and Pool, or Exploratory

Chosa Draw, Morrow (Gas)

11. Sec, T, R, M, or Blk and Survey or Area

Section 35, T24S - R25E

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

12 County or Parish

Eddy County

13. State

NM

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

17 Spacing Unit dedicated to this well

320

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

19. Proposed Depth

12000

20 BLM/BIA Bond No on file

NM-2056

NMB 000412

APR 29/07

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

3594'

22 Approximate date work will start*

April 26, 2007

23 Estimated duration

30 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 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

Nancy T. Agnew

Name (Printed Typed)

Nancy T. Agnew

Date

3/26/07

Title

Land Department

Approved by (Signature)

/s/ James Stovall

Name (Printed Typed)

Date AUG 30 2007

Title

FIELD MANAGER

Office

CARLSBAD FIELD OFFICE

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct
operations thereon.

Conditions of approval, if any, are attached

APPROVAL FOR TWO YEARS

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

*(Instructions on reverse)

SEE ATTACHED FOR
CONDITIONS OF APPROVALAPPROVAL SUBJECT TO
GENERAL REQUIREMENTS
AND SPECIAL STIPULATIONS
ATTACHEDIf earthen pits are used in
association with the drilling of this
well, an OCD pit permit must be
obtained prior to pit construction.

DISTRICT I
1625 N. FRENCH DR., HOBBES, NM 88240

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-102

DISTRICT II
1301 W. GRAND AVENUE, ARTESIA, NM 88210

OIL CONSERVATION DIVISION
1220 SOUTH ST. FRANCIS DR.
Santa Fe, New Mexico 87505

Revised October 12, 2005
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

DISTRICT IV
1220 S. ST. FRANCIS DR., SANTA FE, NM 87505

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number	Pool Code 74900	Pool Name Chosa Draw;Morrow (Gas)
Property Code	Property Name HOT SEAT FEDERAL COM	Well Number 2
OGRID No. 14049	Operator Name MARBOB ENERGY CORPORATION	Elevation 3594'

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	35	24-S	25-E		990	NORTH	660	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.
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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>GEODETIC COORDINATES NAD 27 NME Y=428559.7 N X=494880.2 E LAT.=32.178225° N LONG.=104.359578° W</p>	<p>3593.4' 3587.9' 3600.6' 3591.7'</p>	<p>OPERATOR CERTIFICATION I hereby certify that the information herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. Nancy T. Agnew 3/26/07 Signature Date Nancy T. Agnew Printed Name</p> <p>SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief. MARCH 13, 2007 Date Surveyed AR Signature & Seal of Professional Surveyor Ronald J. Eidson 13/16/07 07.11.0315 Certificate No. GARY EIDSON 12841 RONALD J. EIDSON 3239</p>
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MARBOB ENERGY CORPORATION
DRILLING AND OPERATIONS PROGRAM

Hot Seat Federal Com #2
990' FNL & 660' FEL
Section 35, T24S, R25E
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:

Top of Salt	450'	Strawn	10400'
Base of Salt	1250'	Atoka	10800'
Delaware	1650'	Morrow	11350'
Bone Spring	5300'	TD	12000'
Wolfcamp	8500'		

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

Base of Salt	1250'	Water
Delaware	1650'	Oil
Wolfcamp	8500'	
Strawn	10400'	Gas
Atoka	10800'	
Morrow	11350'	

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 13 3/8" casing at 250' 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 - 250'	13 3/8"	48#	H-40	STC
12 1/4"	0 - 1700'	9 5/8"	36#	J-55	STC
8 3/4"	0 - 12000'	5 1/2"	17#	S95/P110	LTC

Proposed Cement Program:

13 3/8" Surface Casing: Cement w/ 250 sx cmt. Circulate to surface.

9 5/8" Intermediate Casing: Cement w/ 800 sx cmt. Circulate to surface.

see COA → 5 1/2" Production Casing: Cement w/ 1800 sx cmt. 200' above all oil & gas zones.

5. Minimum Specifications for Pressure Control:

Propose to nipple up on 13 3/8" casing with 2M system and test to 1000# with rig pumps, then nipple up on 9 5/8" casing with 5M system and test to 5000# with independent tester before drilling out of casing.

Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. A 2" kill line and a 3" choke line will be included in the drilling spool located below the ram-type BOP. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold with 5000 psi WP rating.

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

see COA →

Depth	Type	Weight (ppg)	Viscosity (sec)	Waterloss (cc)
0 - 250'	Fresh Wtr	8.4 - 9.2	32 - 36	N.C.
250 - 1700'	Brine	9.9 - 10.2	28 - 32	N.C.
1700 - 12000'	Cut Brine	8.4 - 8.6	28 - 32	N.C.

7. Auxiliary Equipment: Kelly Cock; Sub with full opening valve on floor; and drill pipe connections.**8. Testing, Logging and Coring Program:**

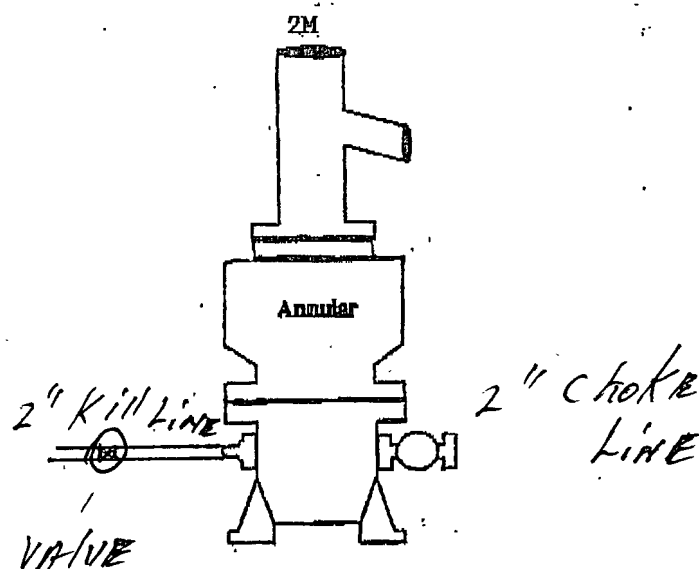
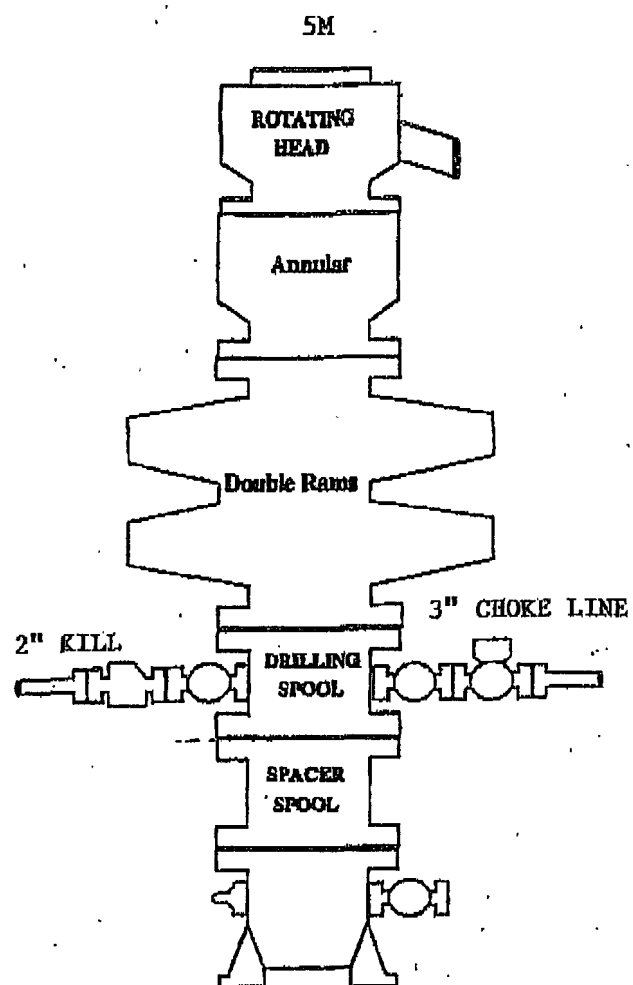
No drillstem tests are anticipated.

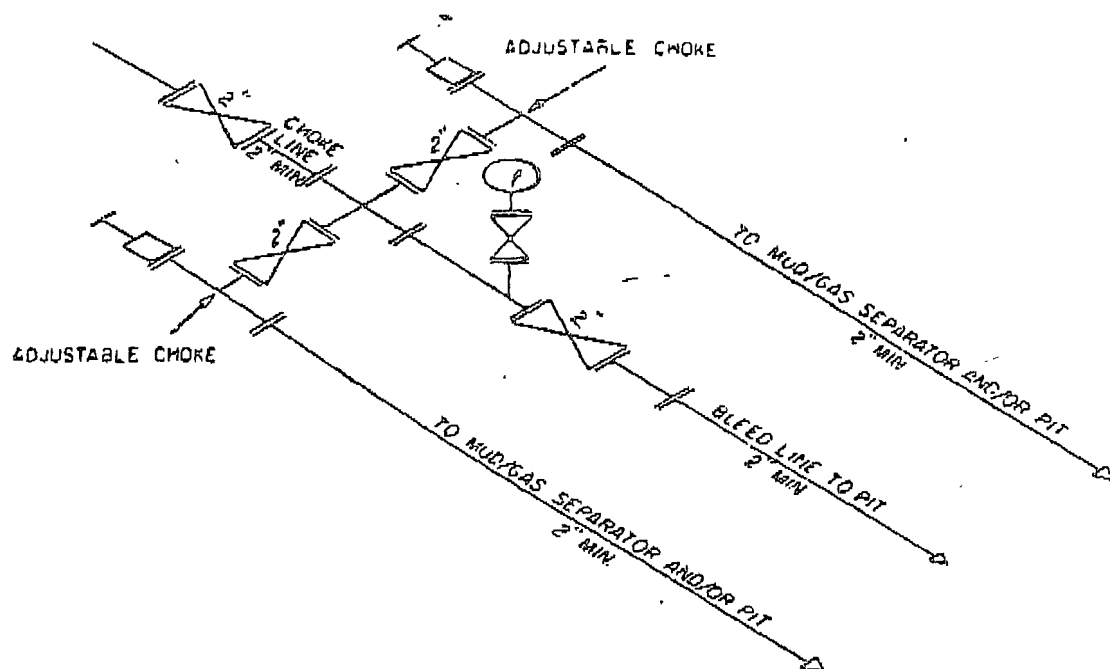
The electric logging program will consist of Dual Laterolog Micro SFL, Spectral Density Dual Spaced Neutron Csg Log, and Depth Control Log.

No conventional coring is anticipated.

9. No abnormal pressures or temperatures are anticipated.**10. Anticipated starting date: As soon as possible after approval.**

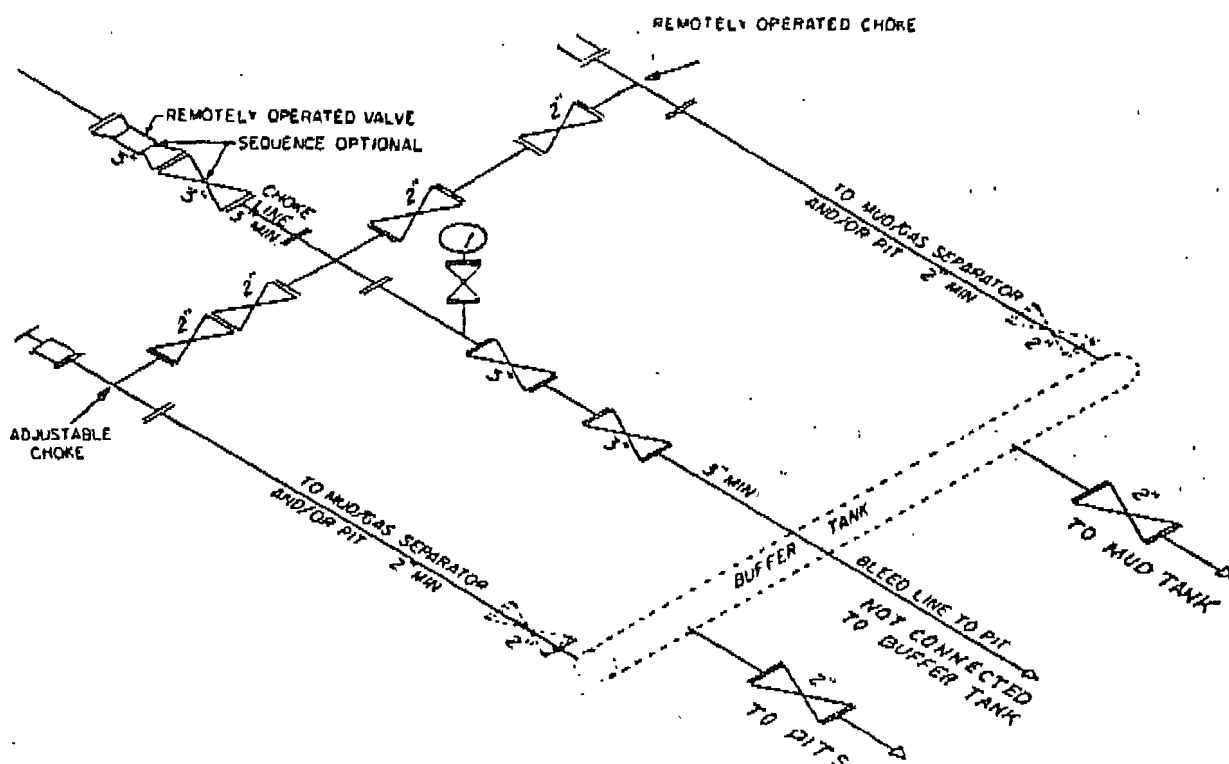
BOPE SCHEMATIC





2M CHOKE MANIFOLD EQUIPMENT — CONFIGURATION OF CHOKES

MAY VARY



5M CHOKE MANIFOLD EQUIPMENT — CONFIGURATION OF CHOKES

MAY VARY

Exhibit One

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 (H₂S).
- B. The proper use and maintenance of personal protective equipment and life support systems.
- C. The proper use of H₂S 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 H₂S 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 H₂S Drilling Operations Plan and the Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable H₂S zone (within 3 days or 500 feet) and weekly H₂S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H₂S Drilling 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. H₂S SAFETY EQUIPMENT AND SYSTEMS

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

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. H₂S detection and monitoring equipment:

2 - portable H₂S monitor positioned on location for best coverage and response. These units have warning lights and audible sirens when H₂S 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 H₂S 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 H₂S service.

G. Communication:

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

W A R N I N G

**YOU ARE ENTERING AN H₂S 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

MARBOB ENERGY CORPORATION
MULTI-POINT SURFACE USE AND OPERATIONS PLAN

Hot Seat Federal Com #2
990' FNL & 660' FEL
Section 35, T24S, R25E
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 U.S. Hwy. 62-180 and Eddy Co. Rd. #426 (Whites City), go east on Co. Rd. #426 approx. 150 feet. Turn left and follow staked road approx. 506 feet to the south. This location is approx. 150 feet off site.

2. PLANNED ACCESS ROAD:

A new access road of 506' will be necessary. The new road will be constructed as follows:

- A. The maximum width of the running surface will be 10'. The road will be crowned and ditched and constructed of 6" of rolled and compacted caliche. Ditches will be at 3:1 slope and 4 feet wide. Water will be diverted where necessary to avoid ponding, prevent erosion, maintain good drainage, and to be consistent with local drainage patterns. BLM may specify any additions or changes during the onsite inspection.
- B. The average grade will be less than 1%.
- C. No turnouts are planned.
- D. No culverts, cattleguard, gates, low-water crossings, or fence cuts are necessary.
- E. Surfacing material will consist of native caliche. Caliche will be obtained from the nearest BLM-approved caliche pit. Any additional materials that are required will be purchased from the dirt contractor.

F. The proposed access road as shown in Exhibit 2 has been centerline flagged by John West Engineering.

3. LOCATION OF EXISTING AND/OR PROPOSED FACILITIES:

A. Marbob Energy Corporation proposes a collection facility, if well is productive, to be located on Hot Seat Federal Com #2 well pad.

4. 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.

5. WELLSITE LAYOUT:

A. Exhibit 3 shows the relative location and dimensions of the well pad, the pit.

B. The reserve pit will be lined with high quality plastic sheeting.

6. 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 wellsite in as aesthetically pleasing a condition as possible.

B. Reserve pit will be fenced until they have dried and been leveled.

C. All rehabilitation and/or vegetation requirements of the BLM will be complied with and will be accomplished as expeditiously as possible. All pits will be filled level within 90 days after abandonment.

7. SURFACE OWNERSHIP:

The well site and lease are located on federal and fee surface. A surface agreement will complete before construction begins.

*See attached
Private Surface Owners Agreement.
RA*

8. 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.

9. OPERATOR'S REPRESENTATIVE:

A. Through A.P.D. Approval:

Ross Duncan, Landman
Marbob Energy Corporation
P. O. Box 227
Artesia, NM 88211-0227
Phone (505)748-3303
Cell (505) 513-2544

B. Through Drilling Operations

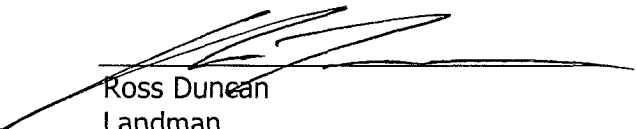
Sheryl Baker, Drilling Supervisor
Marbob Energy Corporation
P. O. Box 227
Artesia, NM 88211-0227
Phone (505)748-3303
Cell (505)748-5489

10. CERTIFICATION:

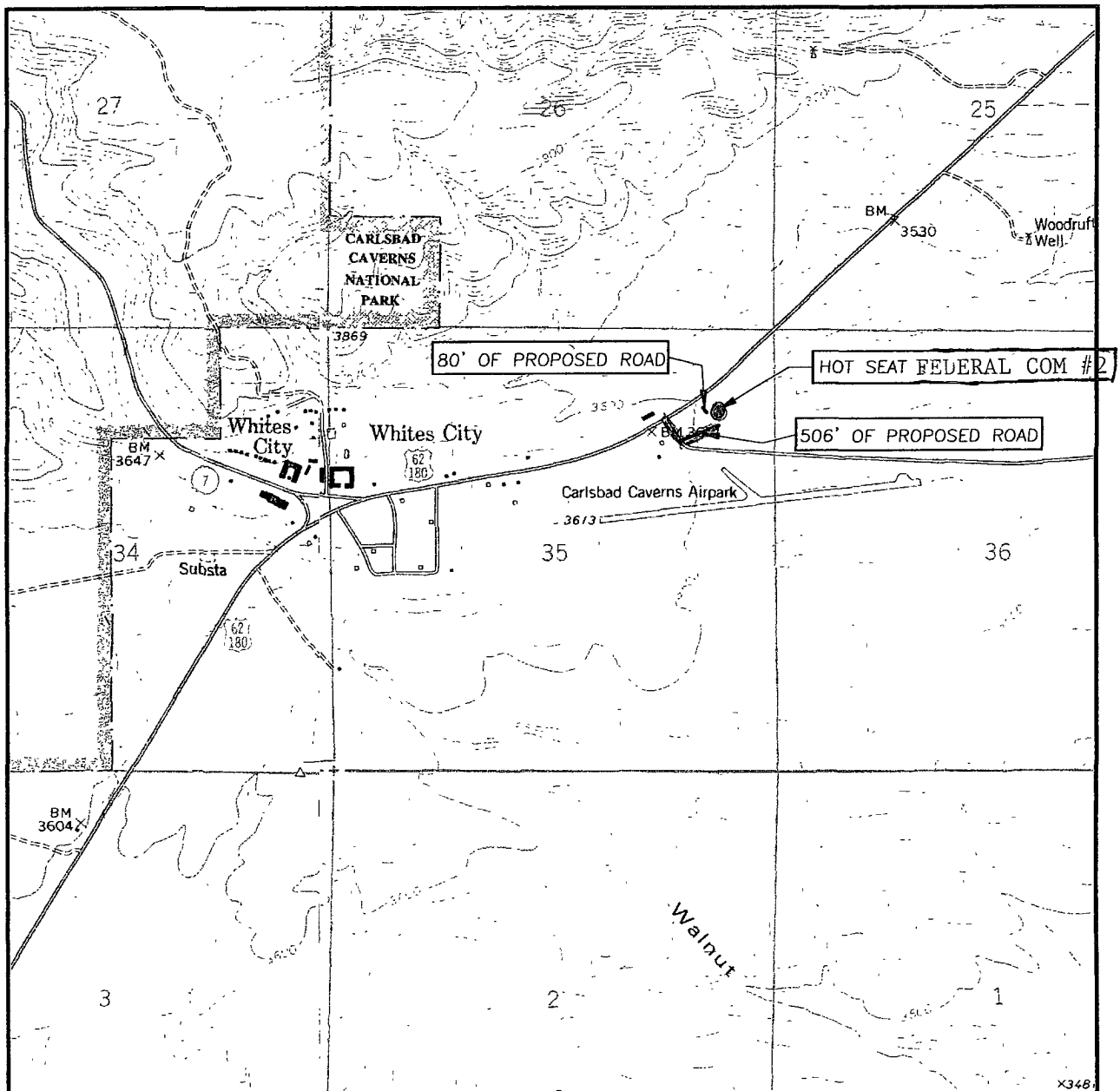
I hereby certify that I, or persons under my direct supervision, have inspected the proposed drillsite and access route, that I am familiar with the conditions which presently exist; that the statements made in this plan are to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed by Marbob Energy Corporation and its contractors and subcontractors in conformity 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.

3/27/07
Date

Marbob Energy Corporation


Ross Duncan
Landman

LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

SEC. 35 TWP. 24-S RGE. 25-E

SURVEY N.M.P.M.

COUNTY EDDY STATE NEW MEXICO

DESCRIPTION 990' FNL & 660' FEL


ELEVATION 3594'

OPERATOR MARBOB ENERGY CORPORATION

LEASE HOT SEAT FEDERAL COM #2

U.S.G.S. TOPOGRAPHIC MAP
BLACK RIVER VILLAGE, N.M.

CONTOUR INTERVAL:
BLACK RIVER VILLAGE, N.M. — 20'
CARLSBAD CAVERNS N, N.M. — 40'

 Existing Roads

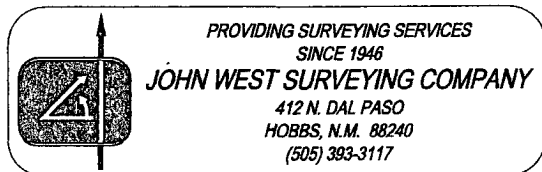


Exhibit #2

Conditions of Approval Cave and Karst

EA#: NM-080-07-0938

Lease #: NM-97113

**Marbob Energy Corporation
Hot Seat Fed. Com. #2**

Cave/Karst Surface Mitigation

The following stipulations will be applied to minimize impacts during construction, drilling and production.

Berming:

Any tank batteries will be constructed and bermed large enough to contain any spills that may occur.

Bermed areas will be lined with rip-stop padding to prevent tears or punctures in liners and lined with a permanent 20 mil plastic liner.

Closed Mud System Using Steel Tanks with All Fluids and Cuttings Hauled Off.

Cave/Karst Subsurface Mitigation

The following stipulations will be applied to protect cave/karst and ground water concerns:

Rotary Drilling with Fresh Water:

Rotary drilling techniques in cave or karst areas will include the use of fresh water as a circulating medium in zones where caves or karst features are expected. Use depth to the deepest expected fresh water as listed in the geologist report.

Fluorescent Dyes:

Nontoxic Fluorescent dyes will be added when the hole is spudded and be circulated to the bottom of the karst layers. These dyes will track the fluids if lost circulation occurs. Arrangements need to be made to have BLM witness the two dyes being injected prior to spudding the hole.

Fluorescent Dye Orange (Eosin Y):

Orange (Eosin Y) Fluorescent dye (32 oz) will be added to the drilling fluid and/or preflushes during the drilling of the first 2220 feet of the well (until the bottom of the Capitan).

Fluorescein Dye (Acid Yellow 73):

Yellow Green (Acid Yellow 73) Fluorescein dye (32 ounces) will be added to the drilling fluid and preflush during the drilling of the first 2220 feet of the well (to the base of the Capitan Massif).

Casing:

All casing will meet or exceed National Association of Corrosion Engineers specifications pertaining to the geology of the location and be run to American Petroleum Institute and BLM standards.

Lost Circulation:

ALL lost circulation zones from the surface to the base of the cave occurrence zone will be logged and reported.

Regardless of the type of drilling machinery used, if a void (bit drops) of four feet or more and circulation losses greater than 75 percent occur simultaneously while drilling in any cave-bearing zone, drilling operations will immediately stop and the BLM will be notified by the operator. The BLM will assess the consequences of the situation and work with operator on corrective actions to resolve the problem.

Delayed Blasting:

Any blasting will be phased and time delayed.

Abandonment Cementing:

Upon well abandonment the well bore will be cemented completely from 100 feet below the bottom of the cave bearing zone to the surface.

Differential Shut-off Systems:

A leak detection system and differential shut off systems will be installed for pipelines and tanks used in production or drilling.

Record Keeping:

The Operator will track customary drilling activities, including the rate of penetration, pump pressure, weight on bit, bit drops, percent of mud returns, and presence or absence of cuttings returning to the surface. As part of customary record keeping, each detectable void or sudden increase in the rate of penetration not attributable to a change in the formation type should be documented and evaluated as it is encountered.

Conditions of Approval

Visual Resources Management

EA#: NM-080-07-0938

Lease #: NM-97113

Marbob Energy Corporation
Hot Seat Fed. Com. #2

III. WELL COMPLETION REQUIREMENTS

(x) Other: Visual Resources

1. PAINTING REQUIREMENT- IN ACCORDANCE WITH NOTICE TO LESSEES (NTL) 87-1 NEW MEXICO, "Painting of Oil Field Facilities to Minimize Visual Impacts": ALL permanent surface production facilities, including the well-drive control system, treatment, storage, power (except specifically approved electrical transmission lines and poles, or other permanent above-ground facilities not otherwise specifically subject to safety coloring requirements), shall be painted by the holder to blend with the dominant natural color of the surrounding landscape. The paint used shall be one of the "Standard Environmental Colors" designated by the Rocky Mountain Five-State Interagency Committee, and shall be a flat, non-reflective finish. The color specified for this location is:

Standard Environmental Color: Shale Green

Munsell Soil Color Chart Number: 5Y 4/2 (# 657)

Any exception to this Painting Requirement must be approved by the BLM Authorized Officer in writing prior to implementation.

2. LOCATING FACILITIES - Facilities, such as tank batteries, will be located on the extreme southeast side of the well pad.

3. LOW PROFILE FACILITIES - All permanent surface production facilities (including offsite facilities), including the well-drive control system, treatment, storage, power (except specifically approved electrical transmission lines and poles), or other permanent above-ground facilities shall be "low profile," not to exceed 8 feet in height. Any exception to on, Low Profile Facilities must be approved in writing by the BLM Authorized Officer prior to implementation.

4. OTHER - The proposed project is located within a Class III Visual Resource Area. The project will be built in a manner to minimize visibility. The proposed project will be a linear feature for the life of the project, impacting visual resources.

1. The proposed construction and scenic impacts will be limited to the approved pad size.
2. Surfacing the well pad and access road with 6" of caliche is not required, but can be used if the location can not be accessed and drilled without surfacing material. The hope would be to minimize the visual contrast of the white surfacing material (caliche) with the surrounding natural terrain.
3. Upon completion of the well and installation of the production facilities (if the well is a producer) the pad will be reclaimed back to a minimal size needed for production operations. The pads edges will be recontoured and the extra caliche and pad material will be hauled off-site. After one year, the BLM may require additional site reclamation.
4. The reclaimed areas will be grid rolled and reseeded with seed mix as indicated in the Special Drilling Stipulations.
5. All above ground facilities, structures, appurtenances, and pipelines will be painted with the non-reflective (flat) paint color Shale Green.
6. Any existing tanks will be replaced or painted non-reflective (flat) paint color Shale Green.

CONDITIONS OF APPROVAL - DRILLING

Operator's Name: Marbob Energy Corporation
Well Name & No. 2-Hot Seat Federal Com
Location: 0990 FNL, 0660 FEL, Sec. 35, T-24-S, R-25-E, Eddy County, NM
Lease: NM-97113

.....

I. DRILLING OPERATIONS REQUIREMENTS:

- A. The Bureau of Land Management (BLM) is to be notified a minimum of 4 hours in advance for a representative to witness:
1. Spudding well
 2. Setting and/or Cementing of all casing strings
 3. BOPE tests
- Eddy County call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (505) 361-2822
- B. **Although no Hydrogen Sulfide has been reported in the area, it is always a potential hazard.**
- C. 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.
- D. If floor controls are required, (3M or Greater) 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.

II. CASING:

- A. The 13-3/8 inch surface casing shall be set at approximately 250 feet and cemented to the surface.
1. 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.
 2. Wait on cement (WOC) time for a primary cement job will be a minimum of 12 hours for a non-water basin, 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compression strength, whichever is greater. (This is to include the lead cement)
 3. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compression strength, whichever is greater.
 4. If cement falls back, remedial action will be done prior to drilling out that string.

This well lies on the boundary between the Capitan Reef and the Delaware Basin, so salt may be encountered rather than the reef.

Drilling below the surface casing shoe is to be done with fresh water mud until salt is detected. At that depth, a switch to brine mud is acceptable.

Possible lost circulation in Capitan Reef.

Possible high pressure gas bursts in the Wolfcamp and over pressurized zones in the Strawn, Atoka, and Morrow.

High cave/karst area.

- B. The minimum required fill of cement behind the 9-5/8 inch intermediate casing is cement shall circulate to surface. If cement does not circulate see A.1 thru 4.**
- C. The minimum required fill of cement behind the 5-1/2 inch production casing is cement shall circulate to surface due to high cave/karst.**
- D. 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 I joints of the drill pipe will be installed prior to continuing drilling operations.**

III. PRESSURE CONTROL:

- A. 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.**
- B. 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.**
- C. 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.**
- D. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.**
 - 1. The tests shall be done by an independent service company.**
 - 2. The results of the test shall be reported to the appropriate BLM office.**
 - 3. 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.**
 - 4. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi in accordance with API RP 53. 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.**
 - 5. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.**
 - 6. A variance to test the surface casing and BOP/BOPE to the reduced pressure of 1000 psi with the rig pumps is approved.**

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.

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

Engineer on call phone: 505-706-2779

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