

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
811 S. 1st Street, Artesia, NM 88210  
District III  
1000 Rio Brazos Rd., Aztec, NM 87410  
District IV  
2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico  
Energy, Minerals & Natural Resources

Form C-101  
Revised March 17, 1999

Oil Conservation Division  
2040 South Pacheco  
Santa Fe, NM 87505

RECEIVED Submit to appropriate District Office  
MAR 15 2004 State Lease - 6 Copies  
Fee Lease - 5 Copies

OCD-ARTESIA ☐ AMENDED REPORT

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

|  |   |  |
|--|---|--|
| <sup>1</sup> Operator Name and Address<br><b>KERR MCGEE OIL &amp; GAS ONSHORE LLC</b><br><b>16666 NORTHCHASE HOUSTON, TX 77060</b> |   | <sup>2</sup> OGRID Number<br><b>012558</b>     |
| <sup>4</sup> Property Code<br><b>000561-24520</b>  | <sup>5</sup> Property Name<br><b>LOWE STATE</b> | <sup>3</sup> API Number<br><b>30-015-33313</b> |
|  |   | <sup>6</sup> Well No.<br><b>6</b>              |

<sup>7</sup> Surface Location

| UL or lot no. | Section   | Township    | Range       | Lot. Idn | Feet from the | North/South Line | Feet from the | East/West line | County      |
|---------------|-----------|-------------|-------------|----------|---------------|------------------|---------------|----------------|-------------|
| <b>M</b>      | <b>36</b> | <b>21 S</b> | <b>23 E</b> |          | <b>660</b>    | <b>SOUTH</b>     | <b>990</b>    | <b>WEST</b>    | <b>EDDY</b> |

<sup>8</sup> Proposed 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 |
|---------------|---------|----------|-------|----------|---------------|------------------|---------------|----------------|--------|
|               |         |          |       |          |               |                  |               |                |        |

<sup>9</sup> Proposed Pool 1

**INDIAN BASIN (UPPER PENN) 37685**

<sup>10</sup> Proposed Pool 2

|  |   |  |  |  |
|--|---|--|--|--|
| <sup>11</sup> Work Type Code<br><b>N</b> | <sup>12</sup> Well Type Code<br><b>G</b>    | <sup>13</sup> Cable/Rotary<br><b>ROTARY</b>  | <sup>14</sup> Lease Type Code<br><b>S</b>          | <sup>15</sup> Ground Level Elevation<br><b>3875'</b> |
| <sup>16</sup> Multiple<br><b>NO</b>      | <sup>17</sup> Proposed Depth<br><b>8200</b> | <sup>18</sup> Formation<br><b>UPPER PENN</b> | <sup>19</sup> Contractor<br><b>NOT YET AWARDED</b> | <sup>20</sup> Spud Date                              |

<sup>21</sup> Proposed Casing and Cement Program

| Hole Size     | Casing Size  | Casing weight/foot   | Setting Depth | Sacks of Cement | Estimated TOC  |
|---------------|--------------|----------------------|---------------|-----------------|----------------|
| <b>12 1/4</b> | <b>9 5/8</b> | <b>36#</b>           | <b>1300</b>   | <b>1250</b>     | <b>SURFACE</b> |
| <b>8 3/4</b>  | <b>7</b>     | <b>23# &amp; 26#</b> | <b>8200</b>   | <b>360</b>      | <b>5000</b>    |
|               |              |                      |               |                 |                |
|               |              |                      |               |                 |                |
|               |              |                      |               |                 |                |

<sup>22</sup> Describe the proposed program. If this application is to DEEPEN or PLUG BACK, give the data on the present productive zone and proposed new productive zone. Describe the blowout prevention program, if any. Use additional sheets if necessary.

See Attached Drilling Program.

Cement to cover all oil, gas and water bearing zones.

NOTIFY OCD SPUD & TIME  
TO WITNESS 9 5/8" CASING

<sup>23</sup> I hereby certify that the information given above is true and complete to the best of my knowledge and belief.

Signature:

*Rod L. Bailey*

Printed name: **ROD L. BAILEY**

Title: **PRORATION MANAGER**

Date:

Phone:

**281 673-6590**

OIL CONSERVATION DIVISION

Approved by:

*James M. Brown*

Title:

*District Supervisor*

Approval Date:

**MAR 15 2004**

Expiration Date:

**MAR 15 2005**

Conditions of Approval:

Attached ☐

State of New Mexico

DISTRICT I  
P.O. Box 1980, Hobbs, NM 88241-1980

Energy, Minerals and Natural Resources Department

Form C-102  
Revised February 10, 1994  
Submit to Appropriate District Office  
State Lease - 4 Copies  
Fee Lease - 3 Copies

DISTRICT II  
P.O. Drawer DD, Artesia, NM 88211-0719

OIL CONSERVATION DIVISION

P.O. Box 2088

Santa Fe, New Mexico 87504-2088

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

DISTRICT IV  
P.O. BOX 2088, SANTA FE, N.M. 87504-2088

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

|               |                                   |           |                         |
|---------------|-----------------------------------|-----------|-------------------------|
| API Number    |                                   | Pool Code | Pool Name               |
|               |                                   | 33685     | INDIAN BASIN UPPER PENN |
| Property Code | Property Name                     |           | Well Number             |
| 24520         | LOWE STATE GAS COM                |           | 6                       |
| OGRID No.     | Operator Name                     |           | Elevation               |
| 012558        | KERR-McGEE OIL & GAS ONSHORE, LLC |           | 3860'                   |

Surface Location

| UL or lot No. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---------------|---------|----------|-------|---------|---------------|------------------|---------------|----------------|--------|
| M             | 36      | 21-S     | 23-E  |         | 660'          | SOUTH            | 990'          | 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 |
|---------------|---------|----------|-------|---------|---------------|------------------|---------------|----------------|--------|
|               |         |          |       |         |               |                  |               |                |        |

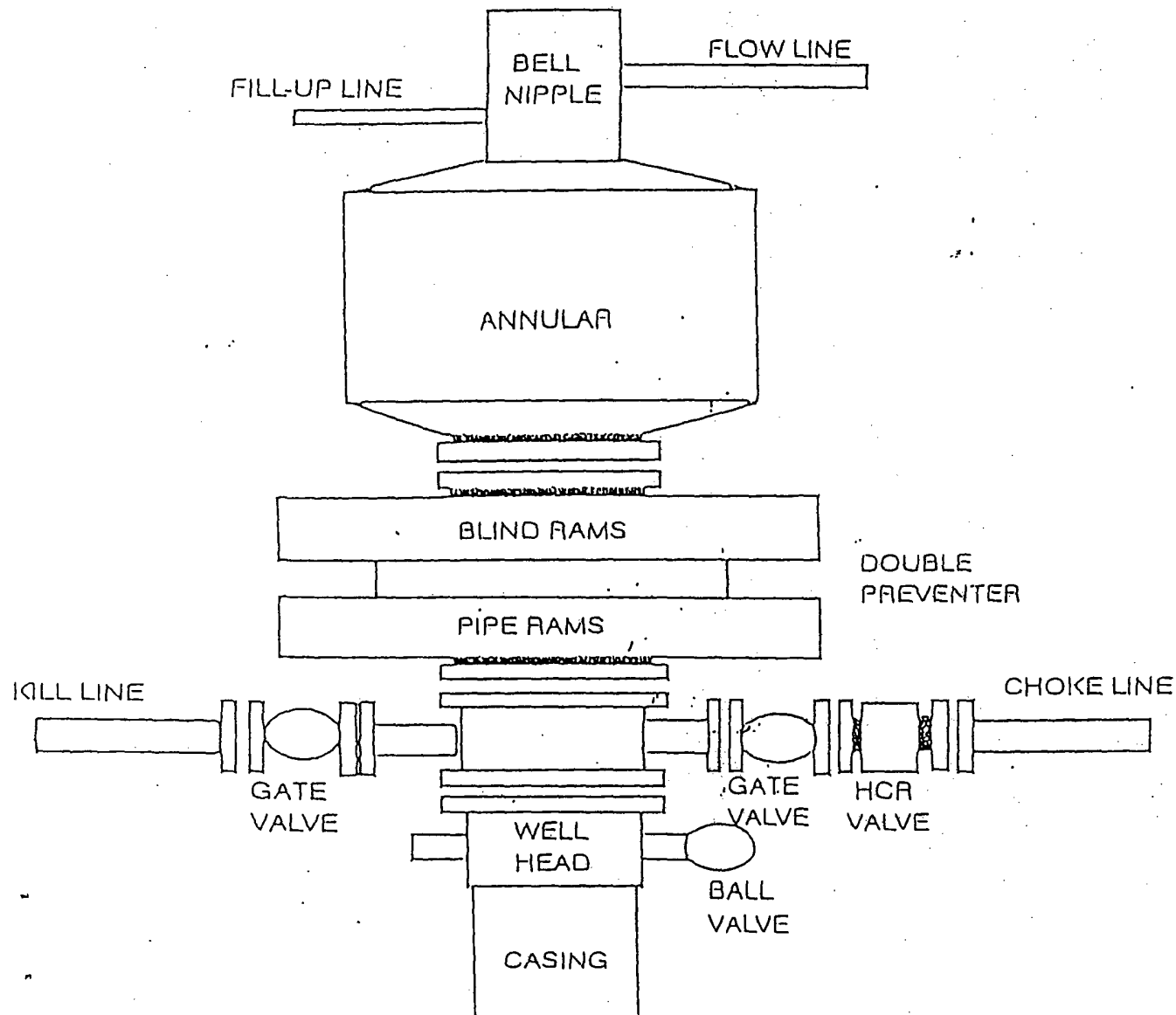
| Dedicated Acres | Joint or Infill | Consolidation Code | Order No. |
|-----------------|-----------------|--------------------|-----------|
|                 |                 |                    |           |

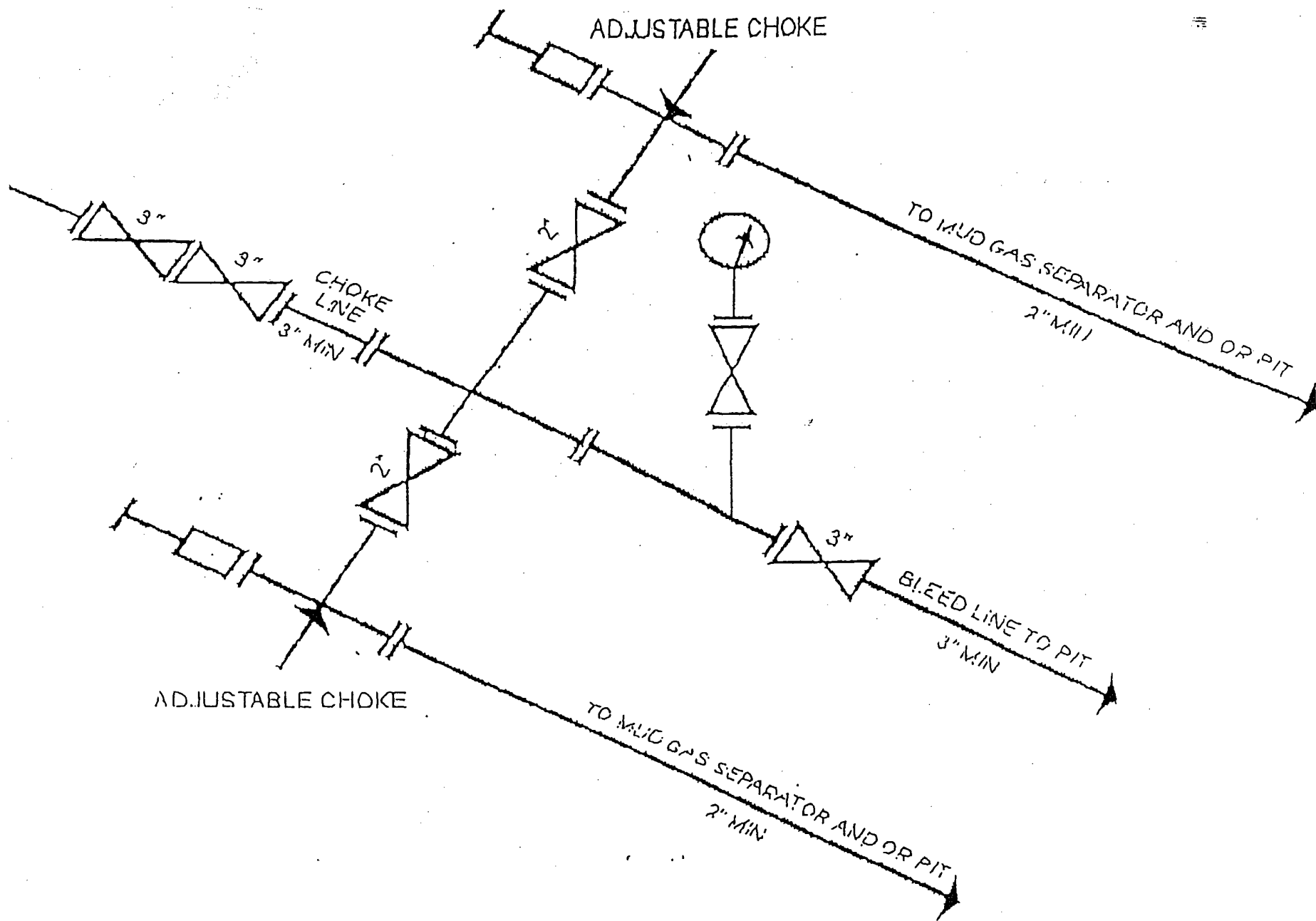
NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED  
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

|  |  |  |  |  |  |
|--|--|--|--|--|--|
|  |  |  |  | <p><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><i>[Signature]</i><br/>Signature</p> <p>ROD L. BARLEY<br/>Printed Name</p> <p>PRODUCTION MANAGER<br/>Title</p> <p>3/10/04<br/>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>June 23, 2003</p> <p>Date Surveyed</p> <p><i>[Signature]</i><br/>Signature &amp; Seal of Professional Surveyor</p> <p>AWB</p> <p>03-11-0437</p> <p>Certificate No.: RONALD J. EDSON 3239<br/>GARY EDSON 12641</p> |  |
|  |  |  |  | <p><b>GEODETIC COORDINATE</b><br/>NAD 27 NME<br/>Y = 520084.1 N<br/>X = 429847.4 E<br/>LAT. 32°25'46.63"N<br/>LONG. 104°33'38.53"W</p>   |  |
|  |  |  |  |  |  |

# KERR McGEE CORPORATION

BOP STACK FOR A 3,000 PSI WORKING PRESSURE  
FOR SURFACE USE





2 JM Choke Manifold Equipment -- Configuration of chokes may vary



# **Kerr-McGee Oil & Gas Onshore**

**16666 Northchase  
Houston, Texas 77060**

## **Hydrogen Sulfide (H<sub>2</sub>S) Contingency Plan**

**For**

**Lowe State #6  
660 Feet From South Line  
990 Feet From West Line  
Section-36, Township-21South, Range-23East  
Eddy County, New Mexico**

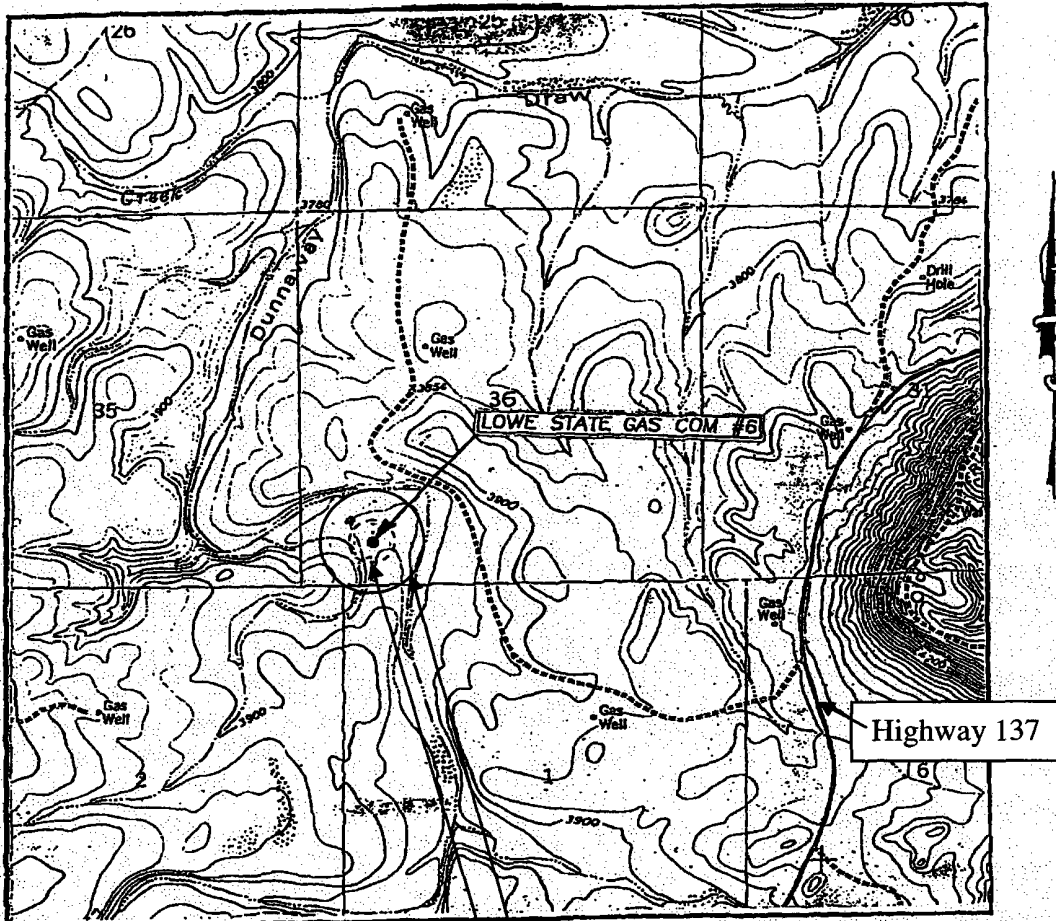
**And**

**Patterson Drilling Rig #500**

## Lowe State #6

Latitude 32° 25' 47.1" Longitude 104° 33' 40.4"

This is an open drilling site. H<sub>2</sub>S monitoring equipment and emergency response equipment will be used within 500' of zones known to contain H<sub>2</sub>S, including warning signs, wind indicators and H<sub>2</sub>S monitor.



SCALE: 1" = 2000'

SEC. 36 TWP. 21-S RGE. 23-E

SURVEY N.M.P.M.

COUNTY EDDY

DESCRIPTION 660' FSL & 990' FWL

ELEVATION 3860'

OPERATOR KERR-McGEE OIL & GAS ONSHORE,

LEASE LOWE STATE GAS COM

U.S.G.S. TOPOGRAPHIC MAP  
MARTHA DREEK, N.M.

100 ppm Radius Of Exposure  
= 736 Feet.

500 ppm Radius Of Exposure  
= 336 Feet

100 ppm H<sub>2</sub>S concentration shall  
trigger activation of this plan.

|                     |            |                |               |               |
|---------------------|------------|----------------|---------------|---------------|
| Lease:              | Lowe State |                |               |               |
| County:             | Eddy       |                |               |               |
| State:              | New Mexico |                |               |               |
|                     |            |                |               |               |
| Radius of Exposures |            |                |               |               |
|                     |            |                |               |               |
| Well                | H2S(ppm)   | Volume<br>mmcf | 100ppm<br>ROE | 500ppm<br>ROE |
| # 6                 | 6000       | 4              | 736.21        | 336.42        |

## Emergency Procedures

In the case of a release of gas containing H<sub>2</sub>S, the first responder(s) must isolate the area and prevent entry by other persons into the 100 ppm Radius Of Exposure. Additionally the first responder(s) must evacuate any public places encompassed by the 100 ppm Radius Of Exposure. 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 Radius Of Exposure.

All responders must have training in the detection of H<sub>2</sub>S, measures for protection against the gas, equipment used for protection and emergency response. Additionally, responders must be equipped with H<sub>2</sub>S 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<sub>2</sub>). Intentional ignition must be coordinated with the New Mexico Oil Conservation Division and local officials. Additionally, the New Mexico State Police may become involved. In the event of a major release, a Kerr-McGee Supervisor shall be designated as the Incident Commander and will request and/or direct the New Mexico State Police to assist in securing the area. Take care to protect downwind whenever there is an ignition of the gas.

### Characteristics of H<sub>2</sub>S and SO<sub>2</sub>

| Common Name      | Chemical Formula | Specific Gravity | Threshold Limit     | Hazardous Limit | Lethal Concentration |
|------------------|------------------|------------------|---------------------|-----------------|----------------------|
| Hydrogen Sulfide | H <sub>2</sub> S | 1.189<br>Air = 1 | 10 ppm <sup>4</sup> | 100 ppm/hr      | 600 ppm              |
| Sulfur Dioxide   | SO <sub>2</sub>  | 2.21<br>Air = 1  | 2 ppm               | N/A             | 1000 ppm             |

### Contacting Authorities

Kerr-McGee personnel will liaison with local and state agencies to ensure a proper response to a major release. Additionally, the Oil Conservation Division will be notified of the release as soon as possible but no later than 4 hours. Agencies will be provided 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. Kerr-McGee's response must be in coordination with the State of New Mexico's 'Hazardous Materials Emergency Response Plan' (HMER).

## Company Call List

|                | Office           | Cell Phone   | Home         |
|----------------|------------------|--------------|--------------|
| Ronnie Hawkins | N/A              | 432-208-2061 | N/A          |
| Tommie Deese   | 505-234-2703 X23 | 505-7063423  | 505-628-0212 |
| Andy Chalker   | 505-234-2703 X22 | 505-706-3722 | 505-628-1971 |
| Johnny Johnson | 281-673-6068     | 713-805-9809 | 713-466-7841 |

## Agency Call List

|   |  |  |              |
|---|--|--|--------------|
| <b>Carlsbad</b>                                 | State Emergency Operations Center 505 476 9635 |  |              |
| State Police .....                              |  |  | 505-885-3137 |
| City Police .....                               |  |  | 505-885-2111 |
| Sheriff's Office .....                          |  |  | 505-887-7551 |
| Ambulance.....                                  |  |  | 911          |
| Carlsbad Hospital .....                         |  |  | 505-887-4100 |
| Fire Department.....                            |  |  | 505-885-3125 |
| LEPC (Local Emergency Planning Committee) ..... |  |  | 505-887-9511 |
| NMOCD .....                                     |  |  | 505-748-1283 |

## Other

|  |                              |              |
|--|------------------------------|--------------|
| Patterson Drilling, Midland, TX                            | 432-682-9401                 |              |
| Patterson Drilling, Snyder, TX                             | 915-574-6300                 |              |
| Wild Well Control  | 281-353-5481                 |              |
| Cudd Pressure Control                                      | 915-699-0139 or 915-563-3356 |              |
| Halliburton  | 505-746-2757                 |              |
| B. J. Services   | 505-746-3569                 |              |
| Aerocare -RR 3 Box 49F , Lubbock, TX                       |                              | 806-725-1100 |
| Med Flight Air Amb -2301 Yale Blvd SE #D3, Albuquerque, NM |                              | 505-842-4433 |
| S B Air Med Svc -2505 Clark Carr Loop SE, Albuquerque, NM  |                              | 505-842-4949 |



**STATE OF NEW MEXICO  
ENERGY, MINERALS, AND NATURAL RESOURCES DEPARTMENT  
OIL CONSERVATION DIVISION**

**IN THE MATTER OF THE HEARING  
CALLED BY THE OIL CONSERVATION  
DIVISION FOR THE PURPOSE OF  
CONSIDERING:**

**CASE NO. 13202  
ORDER NO. R-12121**

**APPLICATION OF KERR-MCGEE OIL & GAS ONSHORE L.L.C. FOR AN  
EXCEPTION TO THE SPECIAL RULES AND REGULATIONS FOR THE  
INDIAN BASIN-UPPER PENNSYLVANIAN ASSOCIATED POOL AND FOR  
SIMULTANEOUS DEDICATION, EDDY COUNTY, NEW MEXICO.**

**ORDER OF THE DIVISION**

**BY THE DIVISION:**

This case came on for hearing at 8:15 a.m. on January 8, 2004, at Santa Fe, New Mexico, before Examiner David R. Catanach.

NOW, on this 10<sup>th</sup> day of March, 2004, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner,

**FINDS THAT:**

- (1) Due public notice has been given, and the Division has jurisdiction of this case and its subject matter.
- (2) The applicant, Kerr-McGee Oil & Gas Onshore L.L.C. ("Kerr-McGee"), seeks an exception to the *"Special Rules and Regulations for the Indian Basin-Upper Pennsylvanian Associated Pool"* to allow both its existing Lowe State Well No. 5 (API No. 30-015-30583) located 1650 feet from the South line and 2540 feet from the West line (Unit K) of Section 36, and its proposed Lowe State Gas Com Well No. 6 to be located 660 feet from the South line and 990 feet from the West line (Unit M) of Section 36, both in Township 21 South, Range 23 East, NMPM, Eddy County, New Mexico, to be located in the same quarter section.
- (3) The applicant further seeks authority to simultaneously dedicate the Lowe State Well No. 5 and the Lowe State Gas Com Well No. 6 to a standard 320-acre spacing and proration unit comprising the W/2 of Section 36, Township 21 South, Range 23 East, NMPM.

**Case No. 13202**

**Order No. R-12121**

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(4) The subject wells and proration unit are located within the Indian Basin-Upper Pennsylvanian Associated Pool. This pool is currently governed by the "*Special Rules and Regulations for the Indian Basin-Upper Pennsylvanian Associated Pool*," as established by Division Order No. R-9722, as amended, which provide that:

- (a) a standard oil proration unit shall comprise 320 acres. A standard gas proration unit shall comprise 320 acres;
- (b) no more than one well per 80-acre tract shall be drilled or produced on a standard proration unit; provided however, that pursuant to Division Order No. R-9922-E, certain acreage within the pool, including the W/2 of Section 36, Township 21 South, Range 23 East, is limited to a well density of no more than one well per quarter section, and no more than two wells per standard proration unit;
- (c) each well shall be located no closer than 660 feet to the outer boundary of the proration unit nor closer than 330 feet to any quarter-quarter section line or subdivision inner boundary; and
- (d) the special depth bracket allowable for a standard 320-acre proration unit is 1,400 barrels of oil per day. The limiting gas-oil ratio is 7,000 cubic feet of gas per barrel of oil.

(5) The evidence presented by Kerr-McGee and Division records demonstrate that:

- (a) the Lowe State Well No. 5 was drilled in 1999 by Kerr-McGee and was completed in the Pennsylvanian (Cisco) formation through the perforated interval from 7,421 feet to 7,559 feet;

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**Order No. R-12121**

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- (b) the Lowe State Well No. 5 initially produced at a test rate of 4.2 MMCF of gas, 5 barrels of oil, and 2,417 barrels of water per day. The well currently produces at a rate of approximately 3.8 MMCF of gas, 30 barrels of oil, and 282 barrels of water per day;
- (c) the Lowe State Well No. 5 has cumulatively produced 6.56 BCF of gas, 18,874 barrels of oil and 901,695 barrels of water from the Pennsylvanian (Cisco) interval;
- (d) the NW/4 of Section 36 has been previously produced in this Pennsylvanian (Cisco) reservoir by the existing Kerr-McGee Lowe State Gas Com Well No. 1 (API No. 30-015-10342) located 1995 feet from the North line and 1712 feet from the West line (Unit F). This well, which is currently shut-in due to mechanical problems, cumulatively produced 16.89 BCF of gas, 144,267 barrels of oil and 796,700 barrels of water from this reservoir; and
- (e) one additional well previously produced from this Pennsylvanian (Cisco) reservoir within the W/2 of Section 36, the Kerr McGee Lowe State Gas Com Well No. 2 (API No. 30-015-25654) located 330 feet from the South and West lines (Unit M). This well, which has been abandoned in the Pennsylvanian (Cisco) interval and recompleted to the Morrow formation, cumulatively produced 1.89 BCF of gas, 3,560 barrels of oil, and 2,184 barrels of water from this reservoir.

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**Order No. R-12121**  
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(6) Kerr-McGee presented geologic evidence that demonstrates that:

- (a) although the Cisco dolomite is present throughout the W/2 of Section 36, there is a thickening of this dolomite within the SW/4 of this section; and
- (b) the SW/4 of Section 36 is structurally higher in the Pennsylvanian (Cisco) reservoir than the NW/4 of Section 36. In terms of producing the remaining gas reserves within the W/2 of Section 36, the SW/4 is geologically favorable to the NW/4 due to the presence of water in the reservoir.

(7) Kerr-McGee testified that due to the extensive depletion in this reservoir that has already occurred within the NW/4 of Section 36 by virtue of the production from the Lowe State Gas Com Well No. 1, it may not be economic to drill an additional well in this quarter section to replace the Lowe State Gas Com Well No. 1.

(8) The majority of the remaining gas reserves in the Pennsylvanian (Cisco) reservoir within the W/2 of Section 36 are located within the SW/4.

(9) The Lowe State Gas Com Well No. 2 produced only from the upper portion of this Pennsylvanian (Cisco) reservoir. In its Lowe State Gas Com Well No. 6, Kerr-McGee proposes to perforate an additional 200 feet of dolomite that was not produced within the Lowe State Gas Com Well No. 2.

(10) The proposed Lowe State Gas Com Well No. 6 may recover gas reserves from the Pennsylvanian (Cisco) interval that may otherwise not be recovered by the existing Lowe State Well No. 5, thereby preventing waste.

(11) The combination of geologic and engineering circumstances existing within the W/2 of Section 36 provide sufficient justification to approve Kerr-McGee's application.

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**Order No. R-12121**  
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(12) Kerr-McGee has notified all offset operators of its application in this case. Kerr-McGee presented waivers of objection to the application from Marathon Oil Company, Devon Energy Production, L.P. and Yates Petroleum Corporation, being the three affected offset operators. The waiver of objection from Marathon Oil Company is conditioned upon Kerr-McGee not drilling an additional well within the NW/4 of Section 36, and only producing a total of two wells within the W/2 of Section 36. Kerr-McGee has consented to Marathon Oil Company's stipulations.

(13) Approval of the subject application will afford Kerr-McGee the opportunity to produce its just and equitable share of the gas in the Indian Basin-Upper Pennsylvanian Pool underlying the W/2 of Section 36, will result in the recovery of additional gas reserves from this pool that may otherwise not be recovered, thereby preventing waste, and will not violate correlative rights.

**IT IS THEREFORE ORDERED THAT:**

(1) The applicant, Kerr-McGee Oil & Gas Onshore L.L.C., is hereby granted an exception to the "*Special Rules and Regulations for the Indian Basin-Upper Pennsylvanian Associated Pool*" and the provisions of Division Order No. R-9922-B, to allow both its existing Lowe State Well No. 5 (API No. 30-015-30583) located 1650 feet from the South line and 2540 feet from the West line (Unit K) of Section 36, and its proposed Lowe State Gas Com Well No. 6 to be located 660 feet from the South line and 990 feet from the West line (Unit M) of Section 36, both in Township 21 South, Range 23 East, NMPM, Eddy County, New Mexico, to be located in the same quarter section. The applicant is further authorized to simultaneously dedicate the Lowe State Well No. 5 and the Lowe State Gas Com Well No. 6 to a standard 320-acre spacing and proration unit comprising the W/2 of Section 36, Township 21 South, Range 23 East, NMPM, and to produce both wells concurrently.

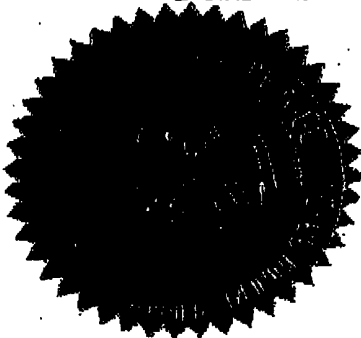
(2) No additional well shall be drilled, recompleted or produced in the Indian Basin-Upper Pennsylvanian Associated Pool within the W/2 of Section 36 during the time period in which the Lowe State Well No. 5 and Lowe State Gas Com Well No. 6 are both being produced. The Division may allow the drilling, recompletion or production of an additional well in the Indian Basin-Upper Pennsylvanian Associated Pool within the W/2 of Section 36 in the event that either the Lowe State Well No. 5 or the Lowe State Gas Com Well No. 6 ceases producing from the Indian Basin-Upper Pennsylvanian Associated Pool.

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**Order No. R-12121**  
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(3) Jurisdiction is hereby retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.



SEAL

STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION

*Lori Wrotenbery*  
LORI WROTENBERY  
Director

## DRILLING PROGRAM

Kerr-McGee Oil & Gas Onshore LLC.  
**Lowe State Gas Com #6**  
Sec. 36, T21S, R23E  
660' FSL & 990' FWL  
Eddy County, New Mexico

1) **Estimated Tops of Important Geologic Markers:**

|                     |         |
|---------------------|---------|
| Quaternary          | surface |
| Base Bone Springs   | 5,625'  |
| Wolfcamp            | 6,575'  |
| Upper Penn (Cisco)* | 7,400'  |

2) **Estimated Depth of Anticipated Water, Oil, Gas, or Minerals:**

Formations possibly productive with oil or gas are indicated with an asterisk(\*) in above section.

3) **Minimum Specifications for Pressure Control Equipment:**

All equipment will be consistent with OOGO No.2 and API RP 53.

**BOP and Auxiliary Equipment:**

BOP & choke manifold will be 3M systems and will be setup as indicated on attached exhibits.

Accumulator volume will be sufficient to provide an open and closing of preventers with 50% reserve.

A drill pipe full opening safety valve will be kept on the rig floor in the open position at all times during drilling operations.

An upper and lower kelly cock will be used.

**Test Procedure and Drills:**

Ram type preventers will be tested to 70 % of casing burst pressure.

Annular preventer will be tested to 1500 psi

Approved close-in procedure to be posted on the rig floor.

Each rig crew will hold a weekly bop drill.

4) **Casing and Cementing Program:**

|               |                 |               |              |                   |                         |
|---------------|-----------------|---------------|--------------|-------------------|-------------------------|
| <u>Casing</u> |                 |               |              |                   | <u>Design Factors</u>   |
| <u>size</u>   | <u>interval</u> | <u>weight</u> | <u>grade</u> | <u>connection</u> | <u>Coll.,Burst,Ten.</u> |

|        |               |      |      |      |                   |
|--------|---------------|------|------|------|-------------------|
| 9-5/8" | 0-1,300'      | 36 # | J-55 | ST&C | 3.57, 22.55, 5.77 |
| 7"     | 0-5,500'      | 23#  | J-55 | LT&C | 1.36, 4.51, 1.76  |
|        | 5,500'-8,075' | 26#  | J-55 | LT&C | 1.29, 5.01, 5.22  |

Collapse design considers maximum anticipated mud weight at string T.D. with casing fully evacuated. Burst design uses 0.4 psi/ft for bottom hole pressure and assumes maximum surface pressure as .45 times this number. Tension design considers weight of string in air.

#### Cementing

9-5/8" Attempt to cement to surface in one stage using:

1<sup>st</sup> Lead: 200 sx Class H + 5 pps gilsonite + 12% CalSeal + 1% CC  
 2<sup>nd</sup> Lead: 1090 sx Light C + 5 pps gilsonite + 2% CC  
 Tail: 205 sx class C + 2% CC

|               |                      |                  |          |
|---------------|----------------------|------------------|----------|
| Hole size     | 14-3/4"              |                  |          |
| cmt yield/wt: | 1 <sup>st</sup> lead | 1.56 cu.ft./sk   | 14.5 ppg |
| cmt yield/wt: | 2 <sup>nd</sup> lead | 1.92 cu.ft./sk   | 12.6 ppg |
| cmt yield/wt: | tail                 | 1.34 cu. Ft./sx. | 14.8 ppg |
| excess:       | 100%                 |                  |          |

7" Cement in two stages as follows:

Stage 1 consisting of 200 sx 65:35:6 Poz:H:Gel + 8% gilsonite + 1% Sodium Chloride

|               |                      |                |          |
|---------------|----------------------|----------------|----------|
| Hole size     | 8-3/4"               |                |          |
| cmt yield/wt: | lead                 | 2.23 cu.ft./sk | 13.2 ppg |
| top of cmt:   | 7000' ( excess: 50%) |                |          |

Stage Tool Set at 6975'

Stage 2 consisting of Lead CMT of 100 sx 65:35:6 Poz:H:Gel + 5#/sx Sodium Chloride + 5#/sx Gilsonite + 0.25#/sx Celloflake and Tail Cmt of 100 sx Class C

|               |        |                  |          |
|---------------|--------|------------------|----------|
| Hole size     | 8-3/4" |                  |          |
| cmt yield/wt: | lead   | 2.09 cu.ft./sk   | 12.4 ppg |
| cmt yield/wt: | tail   | 1.33 cu. Ft./sx. | 14.8 ppg |
| excess:       | 50%    |                  |          |

note: cement volumes will be adjusted by fluid caliper on the 9-5/8" and electric caliper on the 7" casing string. Cement types and additives may change based on actual downhole conditions.



**5) Type and Characteristics Proposed Circulating Medium:**

| <u>from</u> | <u>to</u> | <u>type</u> | <u>wt.</u> | <u>Vis</u> | <u>wl</u> |
|-------------|-----------|-------------|------------|------------|-----------|
| 0           | 6,000'    | fw/gel/lime | 8.4-8.6    | 28-30      | nc        |
| 6,000'      | 8,075'    | fw/gel/LSND | 8.5-8.7    | 32-34      | <15       |

No abnormal pressures are anticipated, however, sufficient quantities of mud materials shall be maintained for the purpose of assuring well control. Loss of circulation will be the primary concern, thus an adequate store of lost circulation material shall be maintained. Visual monitoring equipment shall be in place in the pits to detect volume changes.

**6) Anticipated Testing, Logging and Coring**

No drill stem tests are planned but tests could be run if determined necessary to evaluate the well.

Open Hole Logging Program:

Intermediate Run: (DLL/MSFL/GR, Den-Neu/Cal/PE/GR) Surface casing to -7,700'  
 Imaging Tool 6,897' – 7,700'  
 Production Run (DLL/MSFL/GR, Den-Neu/Cal/PE/GR) 7,725' – (T.D.)

Mud logging unit to be in service from 5,000' to T.D.

**7) Expected Bottom Hole Pressure and Potential Hazards**

Expected BHP = 3600 psi (per offset well information)

No abnormal temperatures or pressures are anticipated.

Potential H2S in Upper Penn. An H2S Drilling Operations Plan has been attached.

**8) Additional Information**

Anticipate starting operations on or before May 1, 2004

## **SURFACE USE PROGRAM**

Kerr-McGee Oil & Gas Onshore LLC.

**Lowe State Gas Com #6**

Sec. 36, T21S, R23E

660' FSL & 990' FWL

Eddy County, New Mexico

### **1) Existing Roads**

The proposed wellsite and existing roads to proposed location are shown in Exhibit #1. The directions to this well are as follows:

From Carlsbad, New Mexico proceed north on US hwy 285 for 12.3 miles to the intersection of State highway 137 (Sitting Bull Falls Rd). Take Hwy 137 west, proceed 8.8 miles to a fork in the road. This will be Queen City Rd. on the left and County Road 401 also known as Marathon road on the right. Turn right on Eddy CR 401 and go ~ 6 1/2 miles west to lease road. This is approximately 2 miles past gas plant. Go past Ponderosa Pine Rd on the right and the next left will be the entrance to the Federal 28 section. Follow the road to the #1 well.

### **2) Planned Access Roads**

### **3) Location of Existing Wells**

Existing wells within a one-mile radius are shown on exhibit #2

### **4) Location of Existing and/or Proposed Facilities**

A. Existing facilities within a one-mile radius of the proposed location can be seen on exhibit #1. These existing facilities include oil and gas wells and their respective batteries.

B. If the proposed well is completed and productive, plans are to construct a production facility at the well pad and no additional surface disturbance will occur.

**5) Location and Type of Water Supply**

Water will be purchased from a commercial water hauler and trucked to the proposed wellsite.

**6) Source of Construction Materials**

Calcite for construction the proposed well location and access road will be determined and discussed during onsite with the BLM.

**7) Methods of Handling Waste Disposal**

- A. Drill cuttings will be disposed of in the reserve pit.
- B. Drilling fluids will be allowed to evaporate.
- C. Water produced during tests will be disposed of in the reserve pits. Oil produced during tests will be stored in a test tank until sold. Gas will be flared.
- D. Salts and chemicals will be deposited in the reserve pit.
- E. A portable septic tank will be used at the location for the disposal of human waste. Waste will be disposed of at an approved site.
- F. Thrash, waste paper, garbage and junk will be contained in trash trailer and hauled to an approved land fill.
- G. All trash and debris will be buried or removed from the wellsite after finishing drilling and/or completion operations.

**8) Ancillary Facilities**

none required

**9) Wellsite Layout**

- A. Exhibit #1 shows the general location and dimensions of the well location, mud pits, and reserve pit.
- B. Leveling of the wellsite will be required, no significant cut or fills will be necessary.
- C. The reserve pit will be plastic lined.

**10) Plans for Reclamation of the Surface:**

- A. After completion of drilling and testing program, all equipment and other material not needed for operations will be removed. Pits will be filled and the location cleaned of all thrash and junk.
- B. Any unguarded pits containing fluids will be fenced until they are filled.
- C. Agreement between drilling contractor and BLM to stack the drilling rig on location will be the responsibility of the drilling contractor.
- D. After abandonment of the well, surface restoration will be in accordance with the requirements of the surface management agency. Pits will be filled and location will be cleaned. The pit area, well pad surface location will be ripped to promote re-vegetation.

**11) Surface Ownership**

Mineral Owner:  
Bureau of Land Management  
P.O. Box 1778  
Carlsbad, NM 88220

Surface Owner:  
Bureau of Land Management

**12) Other Information**

A. Topography: land surface is gently sloping with silty clay loam and sporadic limestone outcrops. Vegetation consists of yucca, desert sumac, juniper, prickly pear, and various grama.

The ground level elevation of the wellsite is 3,931'.

B. Soil: silty clay loam.

C. Ponds and streams: None

D. Archaeological Survey: A cultural resource inventory has been conducted by an investigator from Mesa Field Services, Inc. The archaeological clearance report is attached.

E. Land use: grazing

**13) Lessee's or Operator's Representative and Certification**

Mike Miles

281.683.6069 (office)

281.686.9710 (cell)

**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 that the work associated with operations proposed herein will be performed by **Kerr-McGee 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.



Mike Miles  
Drilling Engineer

03/12/2004  
date