

AUG - 3 2009  
OCD Artesia

Form 3160-3  
(April 2004)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

**APPLICATION FOR PERMIT TO DRILL OR REENTER**

FORM APPROVED  
OMB No. 1004-0137  
Expires March 31, 2007

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. <b>NMLC-046250 B</b>
1b. Type of Well: <input checked="" type="checkbox"/> Oil Well <input 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 <b>Lime Rock Resources, A. L.P.</b>		7. If Unit or CA Agreement, Name and No.
3a. Address <b>1111 Bagby St., Suite 4600 Houston, TX 77002</b>		8. Lease Name and Well No. <b>Williams B Federal, Well No. 7</b>
3b. Phone No. (include area code) <b>713.292.9537</b>		9. API Well No. <b>30-018-37196</b>
4. Location of Well (Report location clearly and in accordance with any State requirements *) At surface <b>2310' FNL &amp; 330' FWL</b> At proposed prod. zone <b>same</b>		10. Field and Pool, or Exploratory <b>Artesia; Glorieta-Yeso</b>
14. Distance in miles and direction from nearest town or post office* <b>11 miles east of Artesia, NM</b>		11. Sec., T. R. M. or Blk. and Survey or Area <b>Sec. 29-T17S-R28E</b>
15. Distance from proposed* location to nearest property or lease line, ft (Also to nearest drig. unit line, if any) <b>330'</b>	16. No. of acres in lease <b>120</b>	17. Spacing Unit dedicated to this well <b>40</b>
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft <b>700'</b>	19. Proposed Depth <b>3,600'</b>	20. BLM/BIA Bond No. on file <b>NMB-000499</b>
21. Elevations (Show whether DF, KDB, RT, GL, etc.) <b>3613' GL</b>	22. Approximate date work will start* <b>05/25/2009</b>	23. Estimated duration <b>3-4 weeks</b>

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<br>2. A Drilling Plan.<br>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).<br>5. Operator certification<br>6. Such other site specific information and/or plans as may be required by the authorized officer. |
|--|--|

25. Signature <i>George R. Smith</i>	Name (Printed-Typed) <b>George R. Smith</b>	Date <b>04/28/2009</b>
---	--	---------------------------

Title  
**POA agent for Lime Rock Resources**

Approved by (Signature) */s/ Don Peterson*

Title  
**FIELD MANAGER**

Name (Printed-Typed)

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.

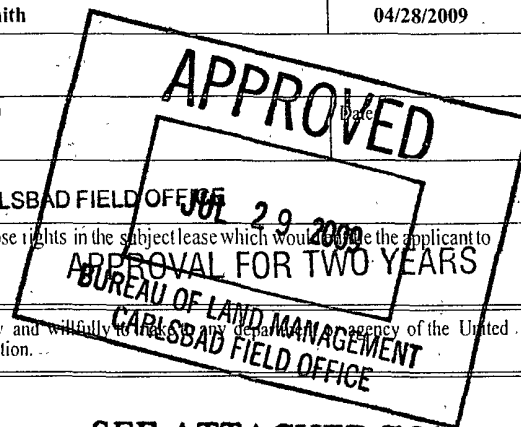
Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

\*(Instructions on page 2)

**Roswell Controlled Water Basin**

**SEE ATTACHED FOR  
CONDITIONS OF APPROVAL**

**Approval Subject to General Requirements  
& Special Stipulations Attached**



DISTRICT I  
1626 N. FRENCH BL., BOHNS, NM 88240

DISTRICT II  
1901 W. GRAND AVENUE, ALBUQUERQUE, NM 88210

DISTRICT III  
1000 Rio Brazos Ed., Artes, NM 87410

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

State of New Mexico  
Energy, Minerals and Natural Resources Department

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

Form C-102  
Revised October 12, 2005  
Submit to Appropriate District Office  
State Lease - 4 Copies  
Fee Lease - 3 Copies

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number 30-015-37196	Pool Code 96830	Pool Name Artesia; Glorieta-Yeso
Property Code 305444	Property Name WILLIAMS B FEDERAL	Well Number 7
OGED No. 255333	Operator Name LIME ROCK RESOURCES A, L.P.	Elevation 3613'

Surface Location

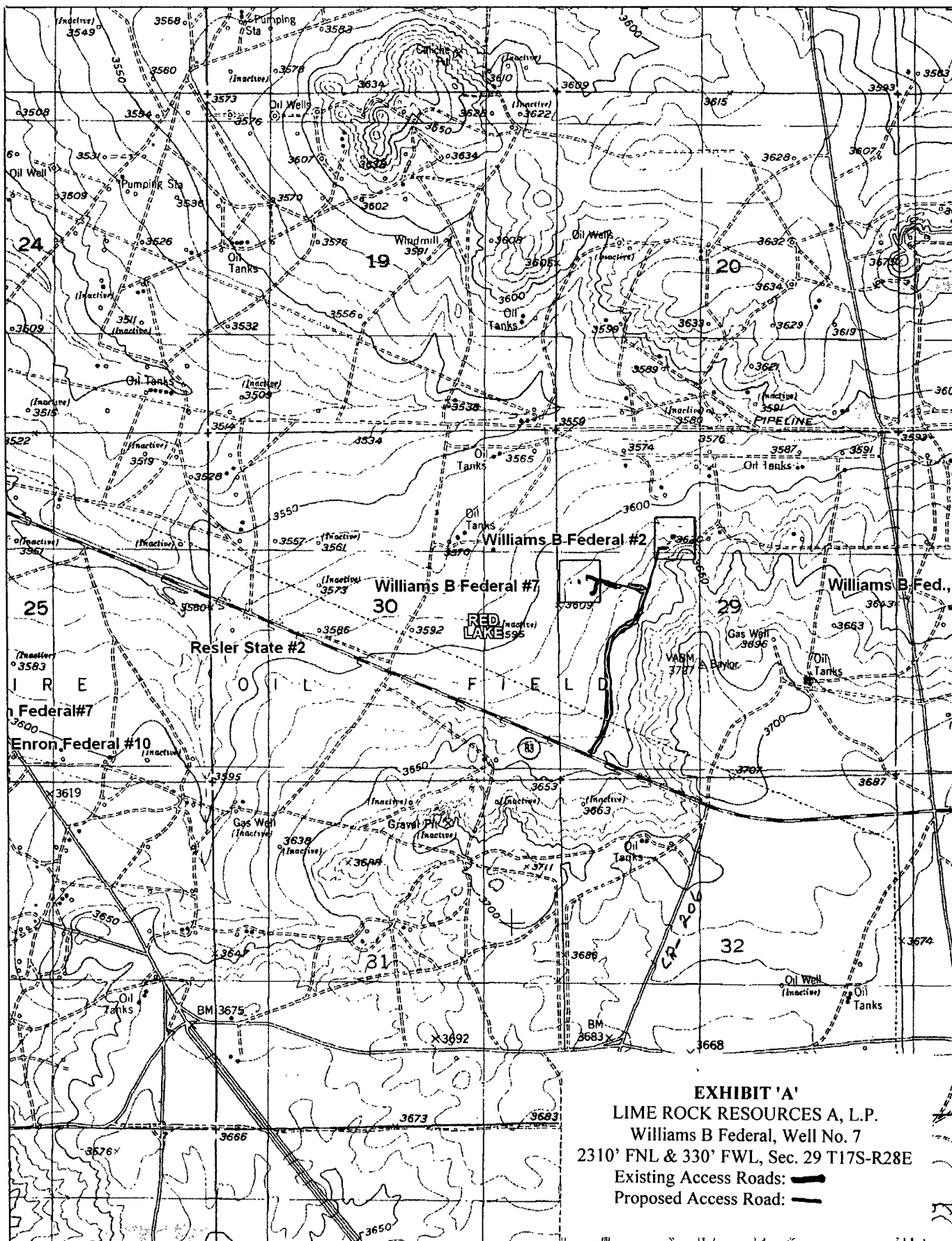
UL or lot No. E	Section 29	Township 17-S	Range 28-E	Lot Idn	Feet from the 2310	North/South line NORTH	Feet from the 330	East/West line WEST	County EDDY
--------------------	---------------	------------------	---------------	---------	-----------------------	---------------------------	----------------------	------------------------	----------------

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 40	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>2310'</p> <p>XXXXXXXXXXXX</p> <p>GEODETIC COORDINATES NAD 27 NME</p> <p>Y=656936.8 N X=539502.9 E</p> <p>SEE DETAIL</p> <p>330'</p> <p>XXXXXXXXXXXX</p> <p>DETAIL</p> <p>3603.9' 3613.4'</p> <p>600'</p> <p>3611.4' 3622.2'</p>	<p><b>OPERATOR CERTIFICATION</b></p> <p>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.</p> <p><i>George R. Smith</i> 4/29/09 Signature Date George R. Smith POA Agent Printed Name</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>NOVEMBER 18, 2008 GARY E. EDSON Date Surveyed Signature &amp; Seal of Professional Surveyor 12341 11/25/08 08-11-1930</p> <p>Certificate No. GARY EDSON 12641 RONALD J. EDSON 3239</p>
--	---



# **EXHIBIT 'A'**

**LIME ROCK RESOURCES A, L.P.**

**Williams B Federal, Well No. 7**

**2310' FNL & 330' FWL, Sec. 29 T17S-R28E**

**Existing Access Roads: —**

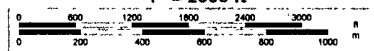
**Proposed Access Road: —**

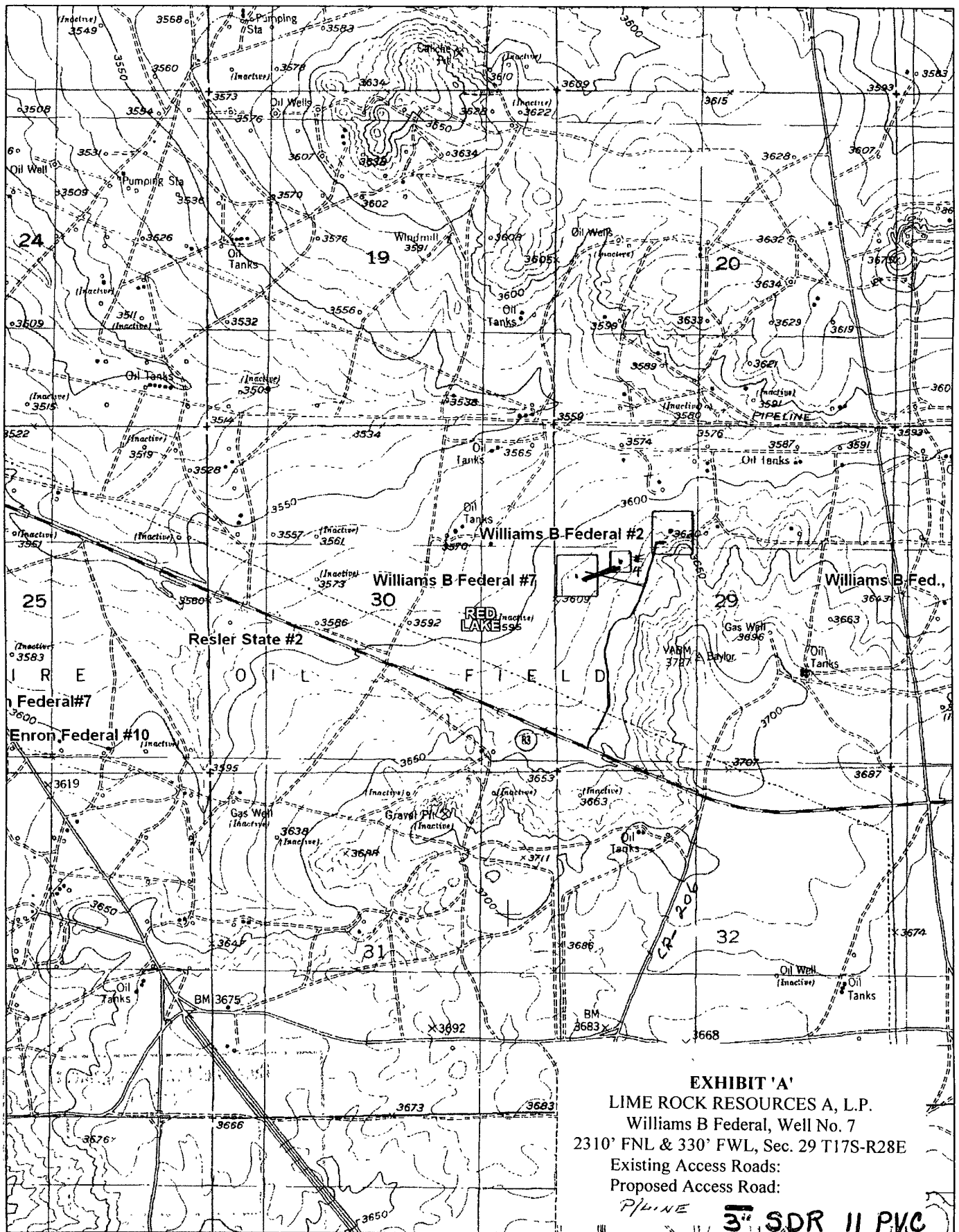


© 2002 DeLorme. 3-D TopoQuads ©. Data copyright of content owner.  
www.delorme.com

Scale 1 : 24,000

1" = 2000 ft



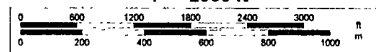


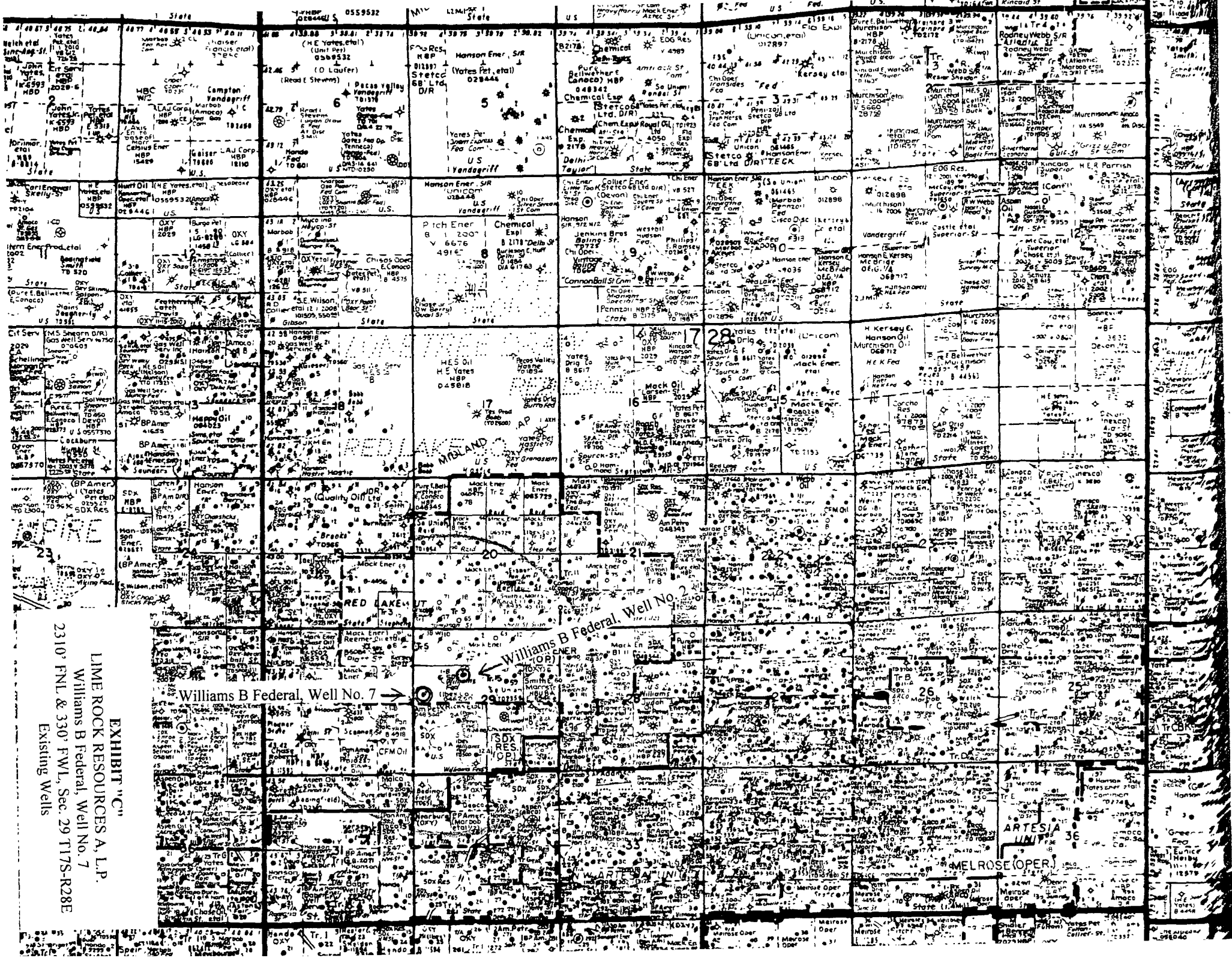
**DELORME**

© 2002 DeLorme. 3-D TopoQuads®. Data copyright of content owner.  
[www.delorme.com](http://www.delorme.com)

Scale 1 : 24,000

1" = 2000 ft





**APPLICATION FOR DRILLING  
LIME ROCK RESOURCES A, L.P.**  
Williams B Federal, Well No. 7  
2310' FNL & 330' FWL, Sec. 29-T17S-R28E  
Eddy County, New Mexico  
Lease No.: NMLC-046250-B  
(Development Well)

In conjunction with Form 3160-3, Application for Permit to Drill subject well, Lime Rock Resources A, L.P. submits the following items of pertinent information in accordance with BLM requirements:

1. The geologic surface formation is recent Permian with quaternary alluvium and other surficial deposits.
2. The estimated tops of geologic markers are as follows:

Yates	370'	San Andres	1,900'
Seven Rivers	600'	Glorieta	3,280'
Queen	1,170'	Yeso	3,370'
Grayburg	1,580'	T.D.	3,600'

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

Water: Surface water in the Triassic between 80' - 230'.  
Oil: Possible in San Andres, Glorieta and Yeso below 1900'.  
Gas: Possible in the San Andres, Glorieta or Yeso below 1900'.

4. **Proposed New Casing Program:**

See COA

HOLE SIZE	CASING SIZE	WEIGHT	GRADE	JOINT	SETTING DEPTH FACTOR	COLLAPSE DESIGN FACTOR	BURST DESIGN FACTOR	TENSION DESIGN FACTOR
12 1/4"	8 5/8"	24.0#	J-55	ST&C	<del>350</del> 360'	1.2	1.18	2.0
7 7/8"	5 1/2"	14.0#	J-55	ST&C	3,600'	1.2	1.18	2.0

5. **Proposed Control Equipment:**

BOP Program:

A 3M Shaffer Type LWS Double Gate BOP will be installed on the 8 5/8" casing. Casing and BOP will be tested as a 2000 psi wp system as per Onshore Oil & gas Order #2 before drilling out with the 7 7/8". The Pipe Rams will be operated and checked daily, plus each time drill pipe is out of hole. This will be documented on the driller's log. See Exhibit "E".

6. **Proposed Cement Program:** See COA

CASING	SETTING DEPTH	QUANTITY OF CEMENT	TOC	YEILD
8 5/8"	350'	350 sx "C" w/add.	Surface	1.3
5 1/2"	3,600'	Lead: 350 sx 35/65 Poz /"C" plus additives		2.0
		Tail: 400 sx "C" w/additives	Surface	1.3

**7. Proposed Mud Program:**

*See CDA*

MUD PROGRAM		MUD WEIGHT	VIS.	W/L CONTROL
DEPTH	MUD			
0 - <del>350'</del> 360'	Fresh water mud:	8.5 ppg	40 - 45	No W/L control
<del>350'</del> - 3600'	Brine water, Starch, SWG	10.5 ppg	30	W/L control <24cc

**8. Auxiliary Equipment:** Blowout Preventer, gas detector and Kelly cock.

**9. Testing, Logging, and Coring Program:**

Drill Stem Tests: As deemed necessary.

Logging: T.D. to 350': GR-DLL and GR-CND

350' to surface: GR/Neutron

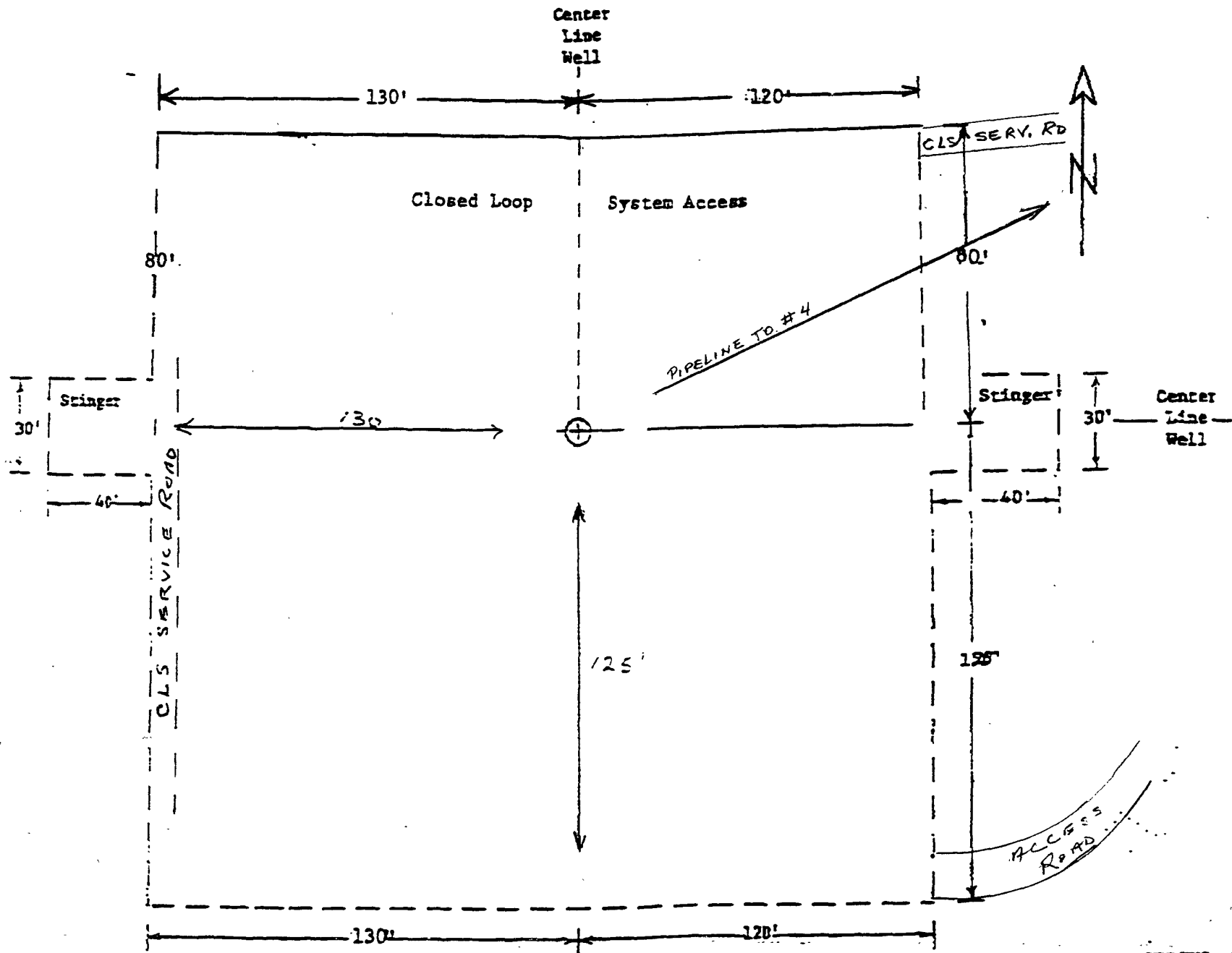
Coring: As deemed necessary.

**10.** No abnormal pressures or temperatures are anticipated. In the event abnormal pressures are encountered, the proposed mud program will be modified to increase the mud weight. Estimated bottom hole pressure (BHP) = 1966 psi (evac. hole) and surface pressure = 1174 psi (evac. hole) with a BH temperature of 96°.

**11. H<sub>2</sub>S:** None expected, but the Mud Log Unit will be cautioned to use a gas trap to detect H<sub>2</sub>S and if any is detected the mud weight will be increased along with H<sub>2</sub>S inhibitors sufficient to control the gas

**12.** Anticipated starting date: May 25, 2009.

Anticipated completion of drilling operations: Approx. 3 - 4 weeks.



UNITED DRILLING, INC.

LOCATION PLAT

RIG

EXHIBIT "D"  
LIME ROCK RESOURCES A, L.P.  
Williams B Federal, Well No. 7  
Pad & Pit Layout



**Lime Rock Resources, WILLIAMS B FEDERAL, WELL NO. 7**  
**API: 30--**

**Sec. 29, T17S-R28E: 2310' FNL & 330' FWL Eddy Co., NM**

**DESIGN: Closed Loop System with roll-off steel bins (pits)**

**CLS/Carlsbad** will supply (2) bins ( ) volume, rails and transportation relating to the Close Loop system. Specifications of Close Loop System attached.

Contacts: Tommy Wilson 575-748-6367 Cell Office # 575-885-3996

**Closed Loop Specialties: Supervisor: Curtis: 575-706-4605 - Carlsbad Cell**

Monitoring 24 hour service

Equipment:

2-Centrifuges (brand): Swaco

2-Rig Shakers (brand): Mongoose

Air pumps on location for immediate remediation process

Layout of Close Loop System with bins, centrifuges and shakers attached.

Cuttings and associated liquids will be hauled to a State regulated third party disposal site: CRI (Controlled Recovery, Inc) Disposal Facility Permit # R-9166

2- CLS Bins with track system

1 500 bbl tank for fresh water

**OPERATIONS:**

Closed Loop equipment will be inspected daily by each tour and any necessary maintenance performed.

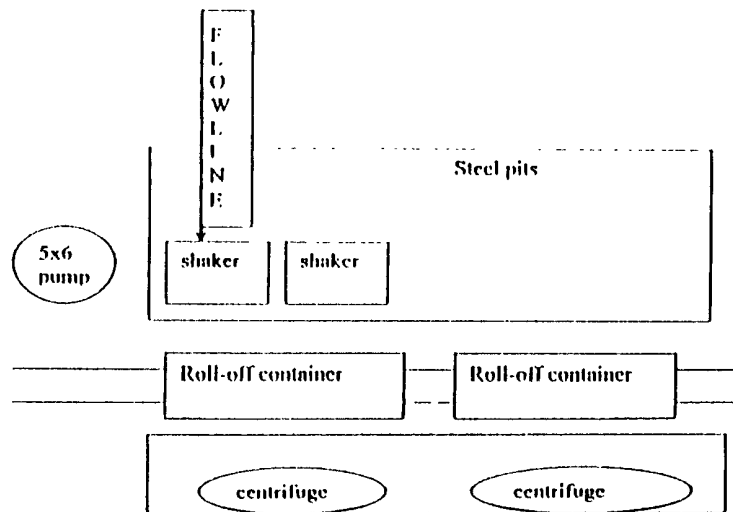
Any leak in system will be repaired and or/contained immediately

OCD will be notified within 48 hours of the spill.

Remediation process started immediately

**CLOSURE:**

During drilling operations all liquids, drilling fluids and cuttings will be hauled off by CLS (Closed Loop Specialties) to disposal facility, Controlled Recovery, Inc. Permit # R-9166



This will be maintained by 24 hour solids control personnel that stay on location.

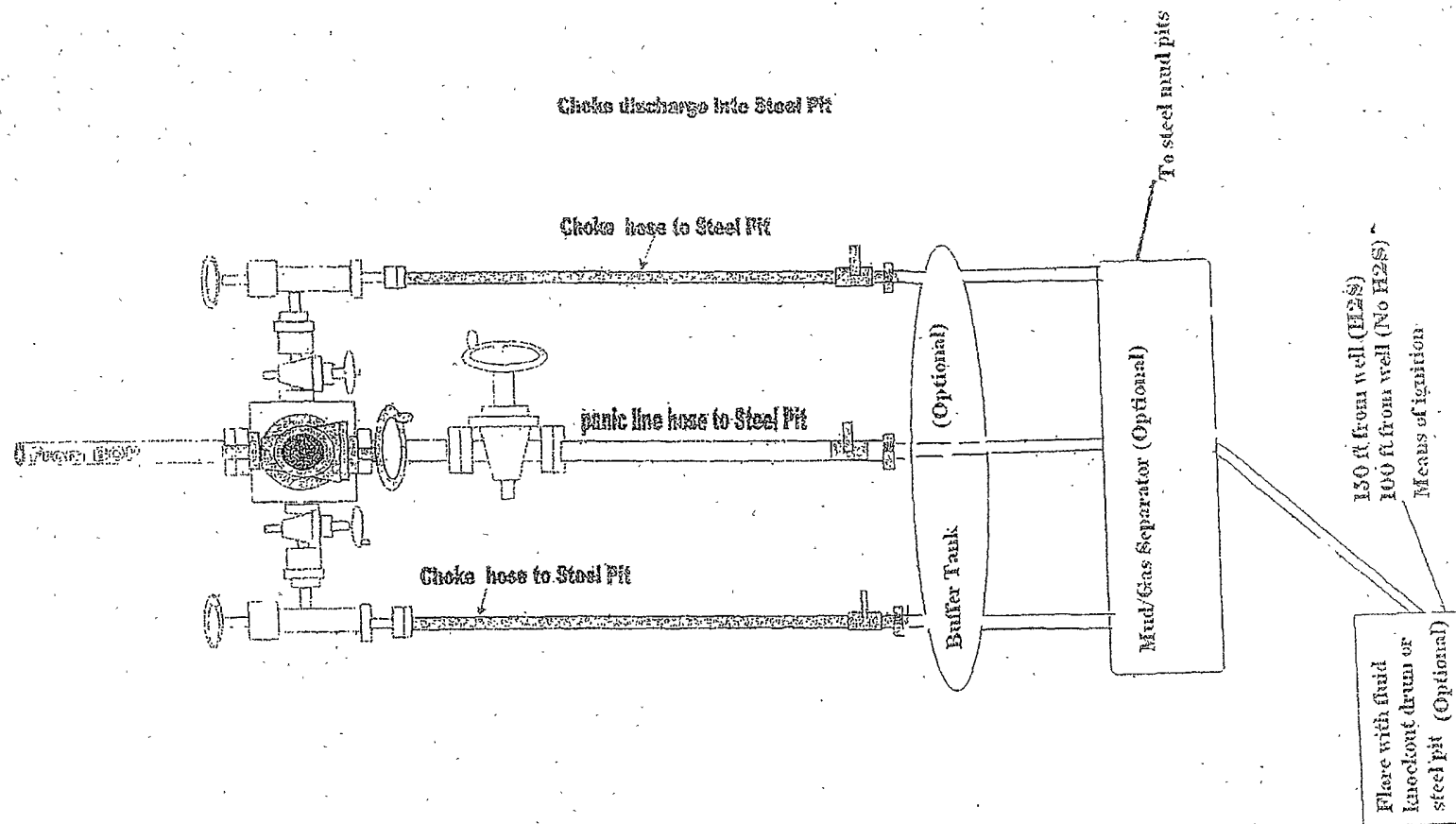
*TOMMY WILSON*



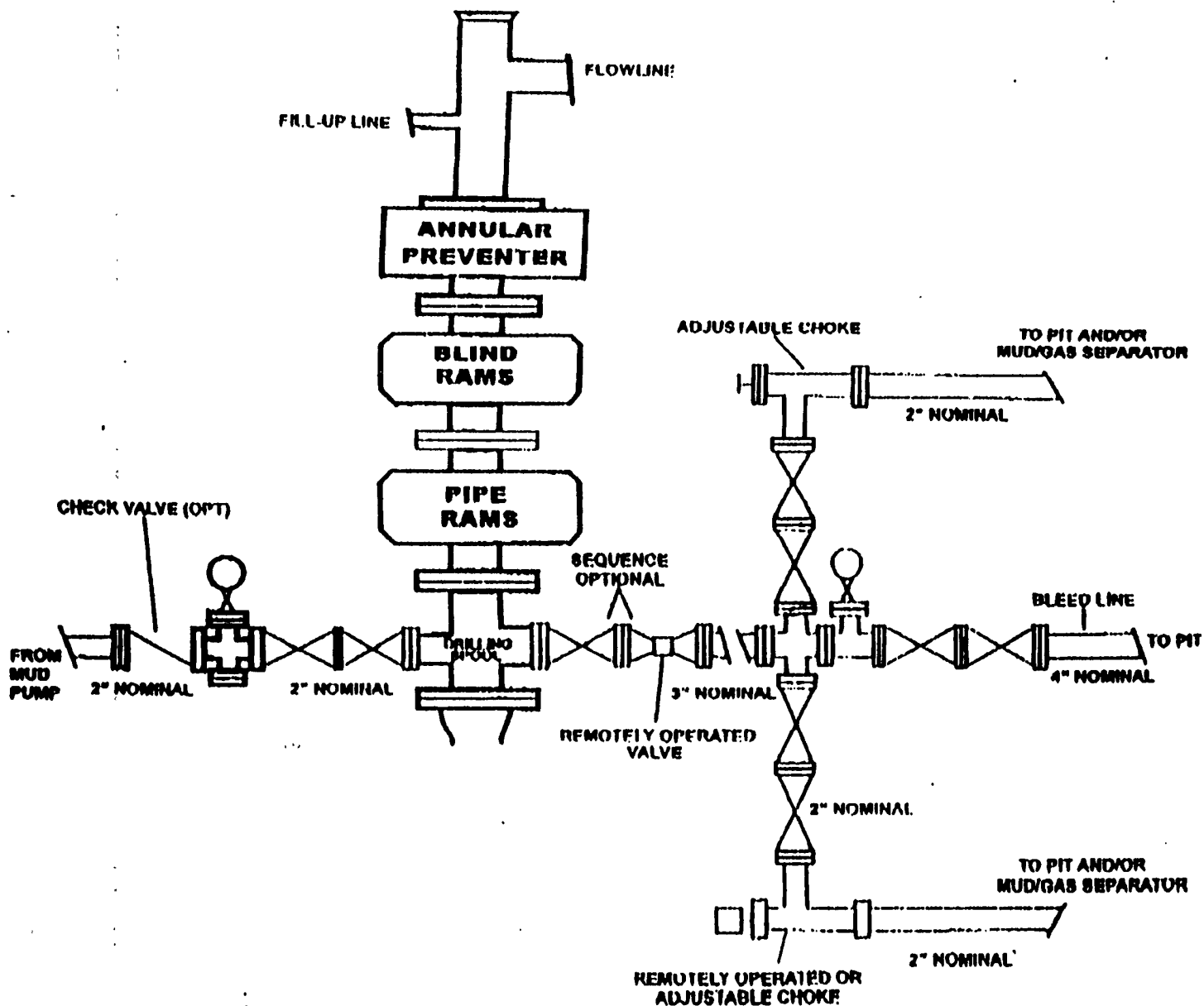
**CLOSED LOOP  
SPECIALTY**

Office: 575.746.1689

Cell: 575.748.6167



**3000# BOP MANIFOLD SYSTEM**  
 (Suggested configuration)

**BOP DIAGRAM  
3000# SYSTEM**

**EXHIBIT "E"**  
LIME ROCK RESOURCES A, L.P.  
Williams B Federal, Well No. 7  
BOP Specifications

## **MULTI POINT SURFACE USE AND OPERATIONS PLAN**

**LIME ROCK RESOURCES A, L.P.**  
Williams B Federal, Well No. 7  
2310' FNL & 330' FWL, Sec.29-T17S-R28E  
Eddy County, New Mexico  
Lease No.: NMLC-046250-B  
(Development Well)

This plan is submitted with the Application for Permit to Drill the above described well. The purpose of the plan is to describe the location of the proposed well, the proposed construction activities and operations plan to be followed in rehabilitating the surface and environmental effects associated with the operations.

### **1. EXISTING ROADS:**

- A. Exhibit "A" is a portion of a BLM topo map showing the location of the proposed well as staked. The well site location is approximately 10.7 road miles east of Artesia, NM. Traveling east of Artesia on U.S. Hwy 82 there will be approximately 10 miles of existing paved road and .7 miles of gravel oil field roads
- B. Directions: Travel east of U.S. Hwy 285 in Artesia on U.S. Hwy 82 for 10 miles to County Rd. 205. Turn north approximately .1 mile east on CR 205 on caliche road. Continue north .6 mile turning west for approximately .1 mile to the Williams B Federal, Well No. 4 well. The start of the proposed access road is on the southwest side of the well site and will run west 567 feet to the NE corner of the proposed well pad.

### **2. PLANNED ACCESS ROAD:**

- A. Length and Width: The proposed new access road will be approximately 12 feet wide and 567 feet long. The proposed and existing roads are color coded on Exhibits "A".
- B. Construction: The proposed access road will be constructed by grading and topping with compacted caliche as needed. The surface will be properly drained.
- C. Turnouts: None will be required.
- D. Culverts: None.
- E. Cuts and Fills: None required.
- F. Gates, Cattle guards: None will be required.
- G. Off lease right of way: None required. There is an existing Right of Way for the Williams B Fed. #4 and other wells.

### **3. LOCATION OF EXISTING WELLS:**

- A. Existing wells within a two-mile radius are shown on Exhibit "C".

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

- A. Lime Rock Resources A, L.P. has production facilities on the lease at this time.
- B. If the well proves to be commercial, the necessary production facilities, gas separation-process equipment will be installed on the drilling pad. A production line will be installed to the William B Federal #4 flow line to the tank battery at the Williams B Fed. #3.

**5. LOCATION AND TYPE OF WATER SUPPLY:**

- A. It is planned to drill the proposed well with fresh water that will be obtained from private or commercial sources and will be transported over the existing and proposed access roads

**6. SOURCE OF CONSTRUCTION MATERIALS:**

- A. Caliche for surfacing the proposed access road and well site pad, as needed, will be obtained from the nearest available pit. No surface materials will be disturbed except those necessary for actual grading and leveling of the drill site and access road.

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

- A. Drill cuttings and liquids will be stored in the steel tanks of the closed loop mud system during the drilling operations and delivered to CRI, Permit No. R-9166, as needed and at closure.
- B. There will be no mud pits to be fenced.
- C. Water produced during operations will be collected in tanks until hauled to an approved disposal system, or a separate disposal application will be submitted to the BLM for approval.
- D. Oil produced during operations will be stored in tanks until sold.
- E. Current laws and regulations pertaining to the disposal of human waste will be complied with.
- F. Trash, waste paper, garbage and junk will be contained in trash bins to prevent scattering by the wind and will be removed for deposit in an approved sanitary landfill within 30 days after finishing drilling and/or completion operations.

**8. ANCILLARY FACILITIES:**

- A. None required.

**9. WELL SITE LAYOUT:**

- A. Exhibit "D" shows the relative location and dimensions of the well pad, closed loop mud system location, and major rig components. The pad and pit area has been staked and flagged, 600' X 600'.
- B. Mat Size: 250' X 125', plus 80' X 250' pad to service the closed loop mud system on the north.
- C. Cut & Fill: The location will require a 1-1.5 foot cut on the southeast with fill to the northwest.
- D. The surface will be topped with compacted caliche as needed..

**10. PLANS FOR RESTORATION OF THE SURFACE:**

- A. After completion of drilling and/or completion operations, all equipment and other material not required for operations will be removed. The location will be cleaned of all trash and junk to leave the well site in an aesthetically pleasing a condition as possible.
- B. There will be no unguarded pits containing fluids.
- C. If the proposed well is non-productive, all rehabilitation and/or vegetation requirements of the Bureau of Land Management will be complied with and will be accomplished as expeditiously as possible. Mud from the closed system will be disposed of as required.

**11. OTHER INFORMATION:**

- A. Topography: The proposed well site and access road are located on a 2% slope to the northwest. The location has an elevation of 3613.4' GL.
- B. Soil: The topsoil at the well site is a reddish clay loamy soil with some surface rock scatter. The soil is part of the Reeves-Gypsum land complex.
- C. Flora and Fauna: The location has a fair to poor grass cover of three awn, tobosa and grama along with plants of mesquite, yucca, broomweed, creosote bush, cacti and miscellaneous weeds and wildflowers. The wildlife consists of rabbits, coyotes, antelope, deer, rattlesnakes, lizards, dove, quail and other wildlife typical of the semi-arid desert land.
- D. Ponds and Streams: None except intermittent running draws when it rains.
- E. Residences and Other Structures: None in the immediate vicinity except the Williams A Federal Well No. 4, 700 feet to the northeast.
- F. Land Use: Cattle grazing.
- G. Surface Ownership: The proposed well site and access road is on Federal surface and minerals.
- H. There is no evidence of archaeological, historical or cultural sites in the staked area. Archaeological Survey Consultants, P.O. Box 2285, Roswell, NM 88202 has conducted an archaeological survey and their report has been submitted to the appropriate government agencies.

**12. OPERATOR'S REPRESENTATIVE:**

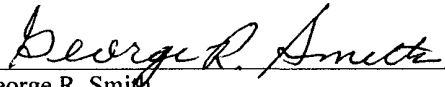
- A. The field representative for assuring compliance with the approved use and operations plan is as follows:

Jerry B. Ables  
LIME ROCK RESOURCES A, L.P.  
Heritage Plaza  
1111 Bagby St., Suite 4600  
Houston, TX 77002  
Office Phone: 713-292-9537  
Cell Phone: 713-213-0254

**CERTIFICATION:**

I hereby certify that I have inspected the proposed drill site and access route; that I am familiar with the conditions which presently exist; that the statements made in the 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 Lime Rock Resources A, L.P. 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.

April 28, 2009

  
George R. Smith  
Agent for: LIME ROCK RESOURCES A, L.P.



## PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Lime Rock Resources, A, L.P.
LEASE NO.:	LC-046250B
WELL NAME & NO.:	Williams B Federal #7
SURFACE HOLE FOOTAGE:	2310' FNL & 330' FWL
BOTTOM HOLE FOOTAGE:	Same
LOCATION:	Section 29, T. 17 S., R 28 E., NMPM
COUNTY:	Eddy County, New Mexico

### TABLE OF CONTENTS

Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

- ☐ **General Provisions**
- ☐ **Permit Expiration**
- ☐ **Archaeology, Paleontology, and Historical Sites**
- ☐ **Noxious Weeds**
- ☒ **Special Requirements**
  - Cave/Karst
- ☐ **Construction**
  - Notification
  - Topsoil
  - Reserve Pit
  - Federal Mineral Material Pits
  - Well Pads
  - Roads
- ☐ **Road Section Diagram**
- ☒ **Drilling**
  - High cave/karst
- ☒ **Production (Post Drilling)**
  - Well Structures & Facilities
  - Pipelines
- ☐ **Interim Reclamation**
- ☐ **Final Abandonment/Reclamation**

## **I. GENERAL PROVISIONS**

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

## **II. PERMIT EXPIRATION**

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

## **III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES**

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

## **IV. NOXIOUS WEEDS**

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

## **V. SPECIAL REQUIREMENT(S)**

### **Cave/Karst Surface Mitigation**

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

#### **Construction:**

In the advent that any underground voids are opened up during construction activities, construction activities will be halted and the BLM will be notified immediately.

#### **No Blasting:**

No blasting will be utilized for pad construction. The pad will be constructed and leveled by adding the necessary fill and caliche.

#### **Pad Berming:**

The pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the pad. All sides will be bermed.

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

A closed mud system using steel tanks for all cuttings and fluids is required. All fluids and cuttings will be hauled off site for disposal. No pits are allowed.

#### **Tank Battery Liners and Berms:**

Tank battery locations will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank.

#### **Leak Detection System:**

A method of detecting leaks is required. The method could incorporate gauges to measure loss, siting valves and lines so they can be visually inspected, or installing electronic sensors to alarm when a leak is present. Leak detection plan will be submitted to BLM for approval.

#### **Automatic Shut-off Systems:**

Automatic shut off, check valves, or similar systems will be installed for pipelines and tanks to minimize the effects of catastrophic line failures used in production or drilling.

### **Cave/Karst Subsurface Mitigation**

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

#### **Rotary Drilling with Fresh Water:**

Fresh water will be used as a circulating medium in zones where caves or karst features are expected. SEE ALSO: Drilling COAs for this well.

**Directional Drilling:**

Kick off for directional drilling will occur at least 100 feet below the bottom of the cave occurrence zone. SEE ALSO: Drilling COAs for this well.

**Lost Circulation:**

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

Regardless of the type of drilling machinery used, if a void of four feet or more and circulation losses greater than 70 percent occur simultaneously while drilling in any cave-bearing zone, the BLM will be notified immediately by the operator. The BLM will assess the situation and work with the operator on corrective actions to resolve the problem.

**Abandonment Cementing:**

Upon well abandonment in high cave karst areas additional plugging conditions of approval may be required. The BLM will assess the situation and work with the operator to ensure proper plugging of the wellbore.

**Pressure Testing:**

Annual pressure monitoring will be performed by the operator on all casing annuli and reported in a sundry notice. If the test results indicated a casing failure has occurred, remedial action will be undertaken to correct the problem to the BLM's

## **VI. CONSTRUCTION**

### **A. NOTIFICATION**

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

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

### **B. TOPSOIL**

The operator shall stockpile the topsoil of the well pad. The topsoil to be stripped is approximately 6 inches in depth. The topsoil shall not be used to backfill the reserve pit and will be used for interim and final reclamation.

### **C. RESERVE PITS**

Tanks are required for drilling operations: No Pits.

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

### **D. FEDERAL MINERAL MATERIALS PIT**

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

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

### **E. WELL PAD SURFACING**

Surfacing of the well pad is not required.

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

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

## **F. ON LEASE ACCESS ROADS**

### **Road Width**

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

### **Surfacing**

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

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

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

### **Crowning**

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

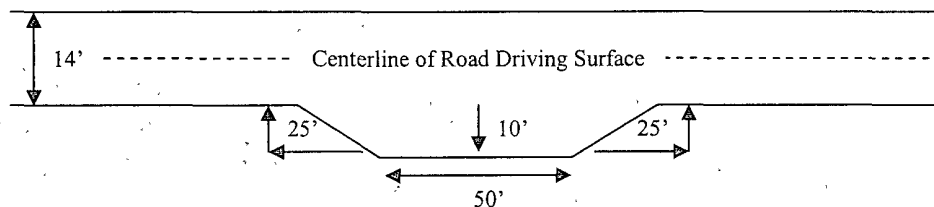
### **Ditching**

Ditching shall be required on both sides of the road.

### **Turnouts**

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

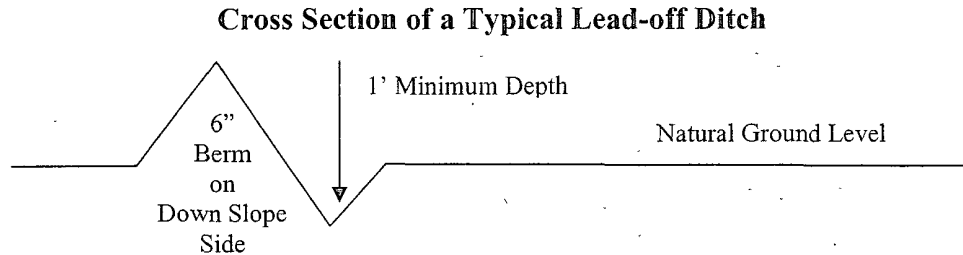
**Standard Turnout – Plan View**



### **Drainage**

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outslowing and inslaping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

#### **Formula for Spacing Interval of Lead-off Ditches**

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

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

#### **Culvert Installations**

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

#### **Cattleguards**

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

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

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

**Fence Requirement**

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

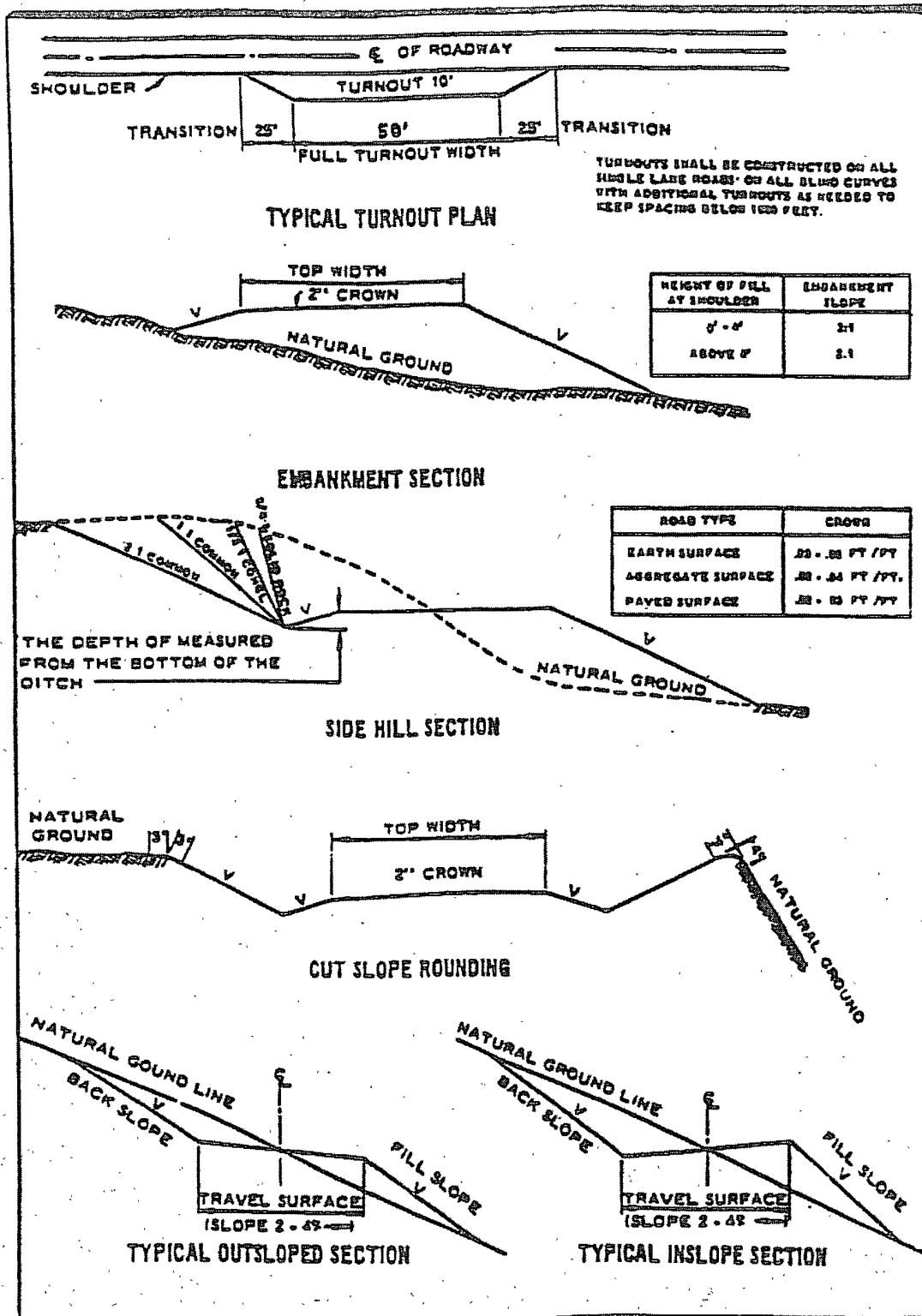
The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fence(s).

**Public Access**

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



Figure 1 – Cross Sections and Plans For Typical Road Sections



## **VII. DRILLING**

### **A. DRILLING OPERATIONS REQUIREMENTS**

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

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

☒ **Eddy County**

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

1. **Although there are no measured amounts of Hydrogen Sulfide reported, it is always a potential hazard. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.**
2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.

### **B. CASING**

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

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

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

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

**HIGH CAVE/KARST – CONTINGENCY CASING WILL BE REQUIRED IF LOST CIRCULATION OCCURS WHILE DRILLING THE SURFACE HOLE. THE SURFACE HOLE WILL HAVE TO BE REAMED AND A LARGER CASING INSTALLED. IF LOST CIRCULATION OCCURS WHILE DRILLING THE 7-7/8" HOLE, THE CEMENT PROGRAM FOR THE 5-1/2" CASING WILL NEED TO BE MODIFIED AND THE BLM IS TO BE CONTACTED PRIOR TO RUNNING THE CASING. A MINIMUM OF TWO CASING STRINGS CEMENTED TO SURFACE IS REQUIRED IN HIGH CAVE/KARST AREAS. THE CEMENT MUST BE IN A SOLID SHEATH THEREFORE, ONE INCH OPERATIONS WILL NOT BE PERMITTED. A DV TOOL WILL BE REQUIRED.**

**Possible lost circulation in the Grayburg and San Andres formations.**

1. The 8-5/8 inch surface casing shall be set at approximately 360 feet into the Tansill formation and cemented to the surface. Freshwater mud to be used to setting depth.
  - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement.
  - b. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.
  - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
  - d. If cement falls back, remedial cementing will be done prior to drilling out that string.
2. The minimum required fill of cement behind the 5-1/2 inch production casing is:
  - ☒ Cement to surface. If cement does not circulate, contact the appropriate BLM office.
3. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

### **C. PRESSURE CONTROL**

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
2. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **2000 (2M) psi. Operator is using 3M but testing as 2M.**
3. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
  - a. The tests shall be done by an independent service company. **Operator to submit copies of test done for each casing string with the subsequent sundry detailing the casing/cementing details.**
  - b. The results of the test shall be reported to the appropriate BLM office.
  - c. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.
  - d. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug.

### **D. DRILL STEM TEST**

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

**RGH 071709**

## **VIII. PRODUCTION (POST DRILLING)**

### **A. WELL STRUCTURES & FACILITIES**

#### **Placement of Production Facilities**

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

#### **Containment Structures**

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

#### **Painting Requirement**

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

### **B. PIPELINES**

#### **STANDARD STIPULATIONS FOR SURFACE INSTALLED PIPELINES**

**A copy of the APD and attachments, including stipulations, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.**

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.
2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to activity of the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. The holder shall be liable for damage or injury to the United States to the extent provided by 43 CFR Sec. 2883.1-4. The holder shall be held to a standard of strict liability for damage or injury to the United States resulting from pipe rupture, fire, or spills caused or substantially aggravated by any of the following within the right-of-way or permit area:

- a. Activities of the holder including, but not limited to construction, operation, maintenance, and termination of the facility.
- b. Activities of other parties including, but not limited to:
  - (1) Land clearing.
  - (2) Earth-disturbing and earth-moving work.
  - (3) Blasting.
  - (4) Vandalism and sabotage.
- c. Acts of God.

The maximum limitation for such strict liability damages shall not exceed one million dollars (\$1,000,000) for any one event, and any liability in excess of such amount shall be determined by the ordinary rules of negligence of the jurisdiction in which the damage or injury occurred.

This section shall not impose strict liability for damage or injury resulting primarily from an act of war or from the negligent acts or omissions of the United States.

5. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil, salt water, or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil, salt water, or other pollutant, wherever found, shall be the responsibility of the holder, regardless of fault. Upon failure of the holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he deems necessary to control and clean up the discharge and restore the area, including, where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve the holder

of any responsibility as provided herein.

6. All construction and maintenance activity will be confined to the authorized right-of-way width of 25 feet.

7. No blading or clearing of any vegetation will be allowed unless approved in writing by the Authorized Officer.

8. The holder shall install the pipeline on the surface in such a manner that will minimize suspension of the pipeline across low areas in the terrain. In hummocky or dune areas, the pipeline will be "snaked" around hummocks and dunes rather than suspended across these features.

9. The pipeline shall be buried with a minimum of 24 inches under all roads, "two-tracks," and trails. Burial of the pipe will continue for 20 feet on each side of each crossing. The condition of the road, upon completion of construction, shall be returned to at least its former state with no bumps or dips remaining in the road surface.

10. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices.

12. Excluding the pipe, all above-ground structures not subject to safety requirement shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" – **Shale Green**, Munsell Soil Color No. 5Y 4/2; designated by the Rocky Mountain Five State Interagency Committee.

13. The pipeline will be identified by signs at the point of origin and completion of the right-of-way and at all road crossings. At a minimum, signs will state the holder's name, BLM serial number, and the product being transported. Signs will be maintained in a legible condition for the life of the pipeline.

14. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway.

15. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the authorized officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the authorized officer. An evaluation of the discovery will be made by the authorized officer to determine appropriate cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the authorized officer after consulting with the holder.



## **IX. INTERIM RECLAMATION & RESERVE PIT CLOSURE**

### **A. INTERIM RECLAMATION**

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

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

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

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

## Seed Mixture 1, for Loamy Sites

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)\* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (small/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed\* per acre:

<u>Species</u>	<u>lb/acre</u>
Plains lovegrass ( <i>Eragrostis intermedia</i> )	0.5
Sand dropseed ( <i>Sporobolus cryptandrus</i> )	1.0
Sideoats grama ( <i>Bouteloua curtipendula</i> )	5.0

\*Pounds of pure live seed:

Pounds of seed x percent purity x percent germination = pounds pure live seed  
(Insert Seed Mixture Here)

## **X. FINAL ABANDONMENT & REHABILITATION REQUIREMENTS**

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

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