

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

OCD Artesia

AUG - 5 2009

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. NMLC-046250 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 Lime Rock Resources, A, L.P.		7. If Unit or CA Agreement, Name and No.
3a. Address 1111 Bagby St., Suite 4600 Houston, TX 77002		8. Lease Name and Well No. Williams B Federal, Well No. 2
3b. Phone No. (include area code) 713.292.9537		9. API Well No. 30-015-37203
4. Location of Well (Report location clearly and in accordance with any State requirements *) At surface 1650' FNL & 1750' FWL At proposed prod. zone same		10. Field and Pool, or Exploratory Artesia; Glorieta-Yeso
11. Sec., T R M. or Blk. and Survey or Area Sec. 29-T17S-R28E		
14. Distance in miles and direction from nearest town or post office* 11 miles east of Artesia, NM		12. County or Parish Eddy
13. State NM		
15. Distance from proposed* location to nearest property or lease line, ft (Also to nearest drig. unit line, if any) 330'	16. No. of acres in lease 120	17. Spacing Unit dedicated to this well 40
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft 800'	19. Proposed Depth 3,600'	20. BLM/BIA Bond No. on file NMB-000499
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3617.9' GL	22. Approximate date work will start* 06/15/2009	23. Estimated duration 3-4 weeks

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, shall be attached to this form:

- | | |
|--|--|
| 1. Well plat certified by a registered surveyor. | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). |
| 2. A Drilling Plan. | 5. Operator certification |
| 3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office) | 6. Such other site specific information and/or plans as may be required by the authorized officer. |

25. Signature <i>George R. Smith</i>	Name (Printed/Typed) George R. Smith	Date 04/28/2009
Title POA agent for Lime Rock Resources		

Approved by (Signature) /s/ DAVID D. EVANS	Name (Printed/Typed) DAVID D. EVANS	Date AUG 3 2009
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 page 2)

Roswell Controlled Water Basin

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

**SEE ATTACHED FOR
CONDITIONS OF APPROVAL**

DISTRICT II
1301 W. GRAND AVENUE, ARTESIA, NM 86210

DISTRICT III
1000 Rio Brazos Rd , Aztec, NM 87410

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

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 30-015-37203	Pool Code 96830	Pool Name Artesia; Glorieta-Yeso
Property Code 305444	Property Name WILLIAMS B FEDERAL	Well Number 2
OGRID No. 255333	Operator Name LIME ROCK RESOURCES A, L.P.	Elevation 3618'

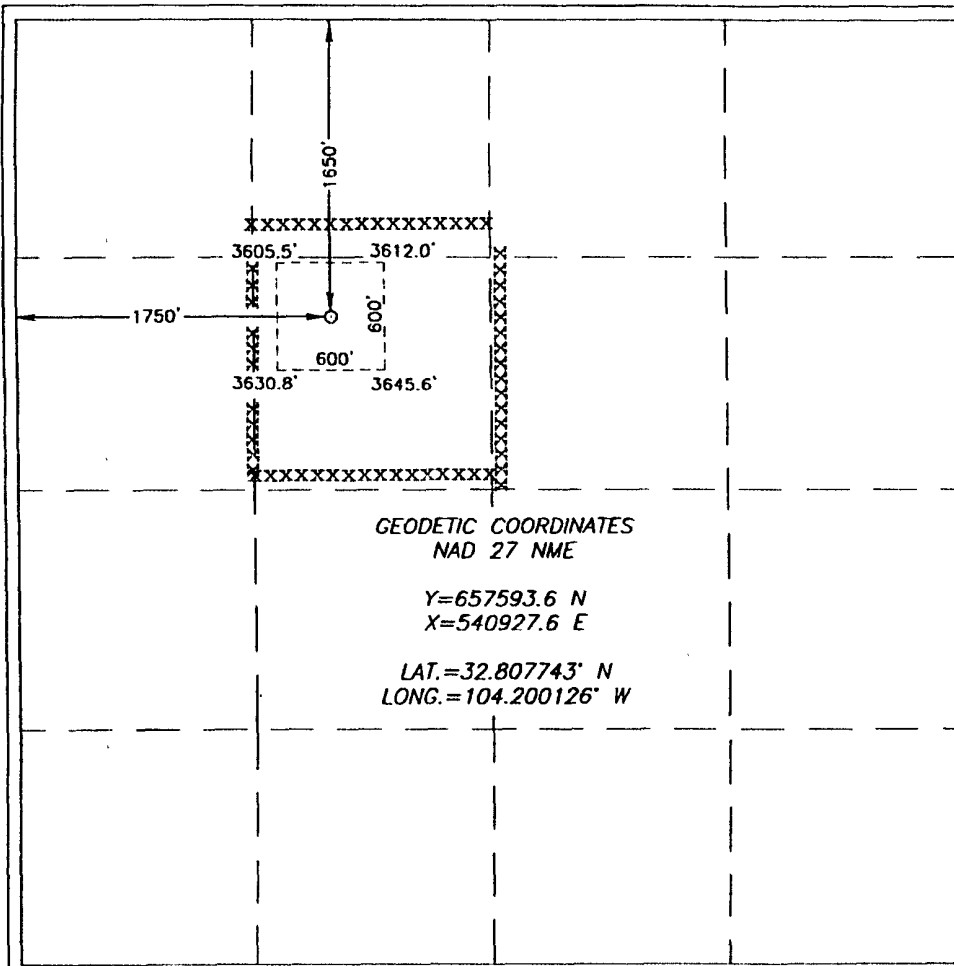
Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
F	29	17-S	28-E		1650	NORTH	1750	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 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



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.

George R. Smith 4/29/09
Signature Date

George R. Smith POA Agent
Printed Name

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.

NOVEMBER 25 2008
Date Surveyed _____
Signature & Seal of _____
Professional Surveyor _____

Harvey S. Gellman 12/04/08

Certificate No. GARY EIDSON 12641
RONALD J. EIDSON 3239

**APPLICATION FOR DRILLING
LIME ROCK RESOURCES A, L.P.**

Williams B Federal, Well No. 2
1650' FNL & 1750' 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:

- The geologic surface formation is recent Permian with quaternary alluvium and other surficial deposits.
- 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'

- 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'.

- 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	350' 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

- 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".

- 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

LIME ROCK RESOURCES A, L.P.

Williams B Federal, Well No. 2

Page 2

7. Proposed Mud Program: *See COA*

MUD PROGRAM		MUD WEIGHT	VIS.	W/L CONTROL
DEPTH	MUD			
0 – 350'	Fresh water mud:	8.5 ppg	40 - 45	No W/L control
350' – 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. H₂S: None expected, but the Mud Log Unit will be cautioned to use a gas trap to detect H₂S and if any is detected the mud weight will be increased along with H₂S inhibitors sufficient to control the gas

12. Anticipated starting date: June 15, 2009.

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

205x250

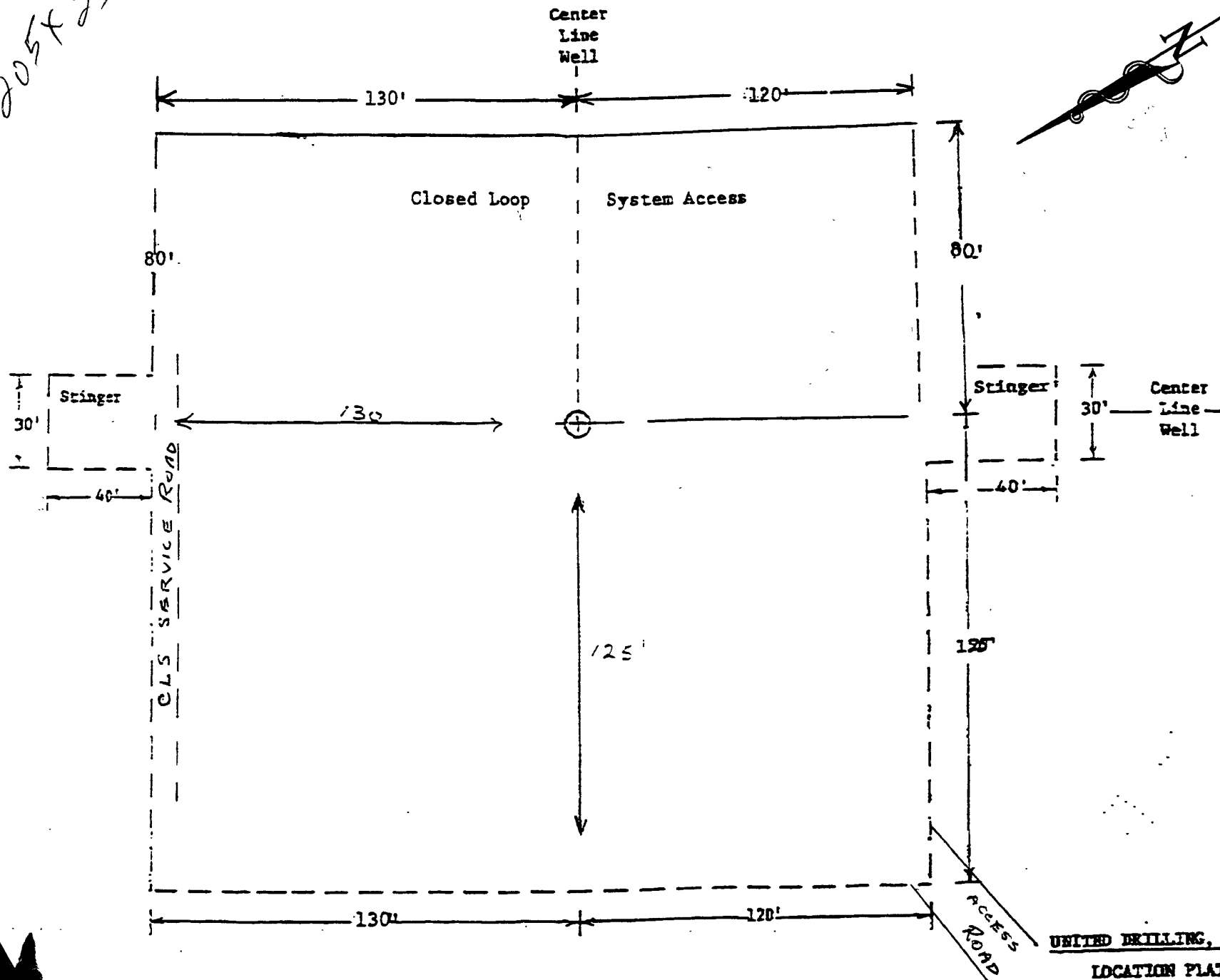


EXHIBIT "D"
LIME ROCK RESOURCES A, L.P.
Williams B Federal, Well No. 2
Pad & Pit Layout

UNITED DRILLING, INC.
LOCATION PLAT
RIG

BOP DIAGRAM 3000# SYSTEM

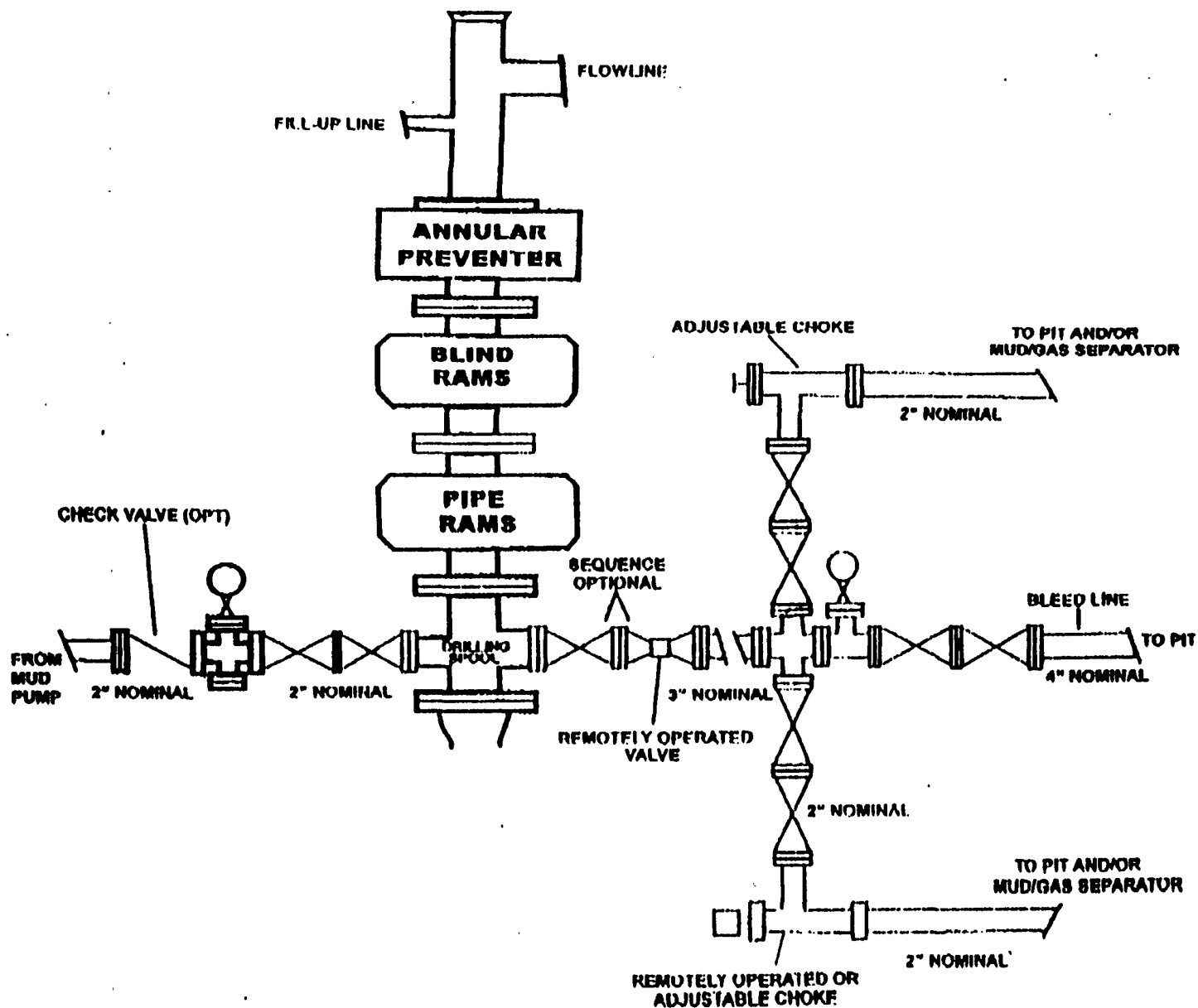


EXHIBIT "E"
LIME ROCK RESOURCES A, L.P.
Williams B Federal, Well No. 2
BOP Specifications

MULTI POINT SURFACE USE AND OPERATIONS PLAN

LIME ROCK RESOURCES A, L.P.

Williams B Federal, Well No. 2
1650' FNL & 1750' 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 .7 mile to the start of access road, on the right, to the Williams B Federal, Well No. 2 proposed well. The start of the proposed access road will run east 113 feet to the NW corner of the proposed well pad.

2. PLANNED ACCESS ROAD:

- A. Length and Width: The proposed and existing access road will be approximately 12 feet wide and 604 feet long. The proposed and existing roads are color coded on Exhibit "A".
- B. Construction: The proposed and existing 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 will be installed on the drilling pad. A production flow line will be installed to the William B Federal #3 tank battery on a utility corridor between the SE and NW 600' corners of the two wells.

LIME ROCK RESOURCES A, L.P.

Williams B Federal, Well No. 2

Page 2

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:

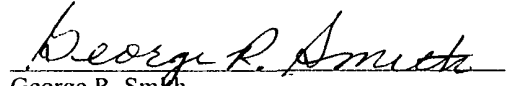
- A. The field representative for assuring compliance with the approved use and operations plan is as follows:

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 29, 2009


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

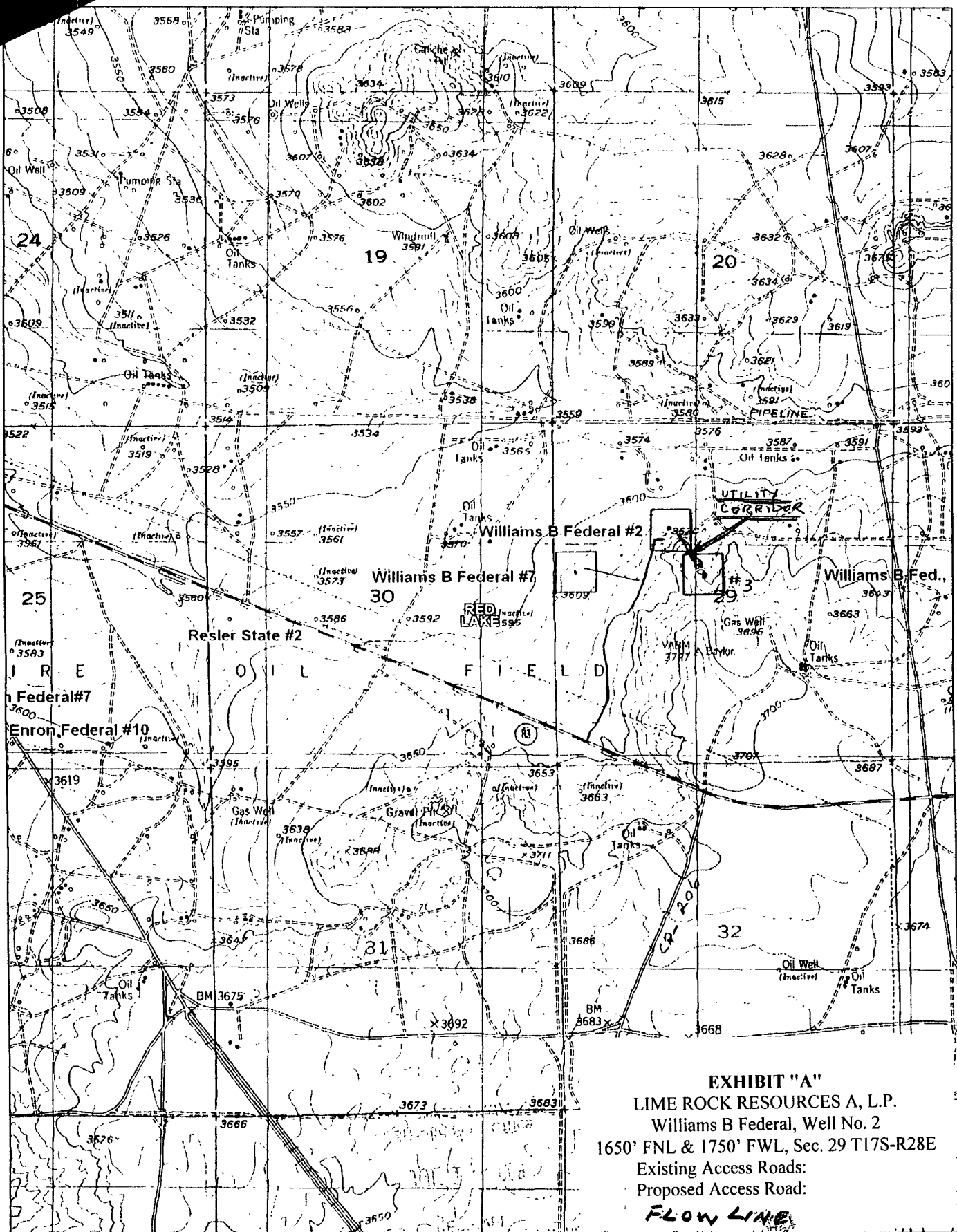


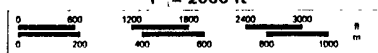
EXHIBIT "A"
LIME ROCK RESOURCES A, L.P.
 Williams B Federal, Well No. 2
 1650' FNL & 1750' FWL, Sec. 29 T17S-R28E
 Existing Access Roads:
 Proposed Access Road:
FLOW LINE



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Scale 1 : 24,000

1" = 2000 ft



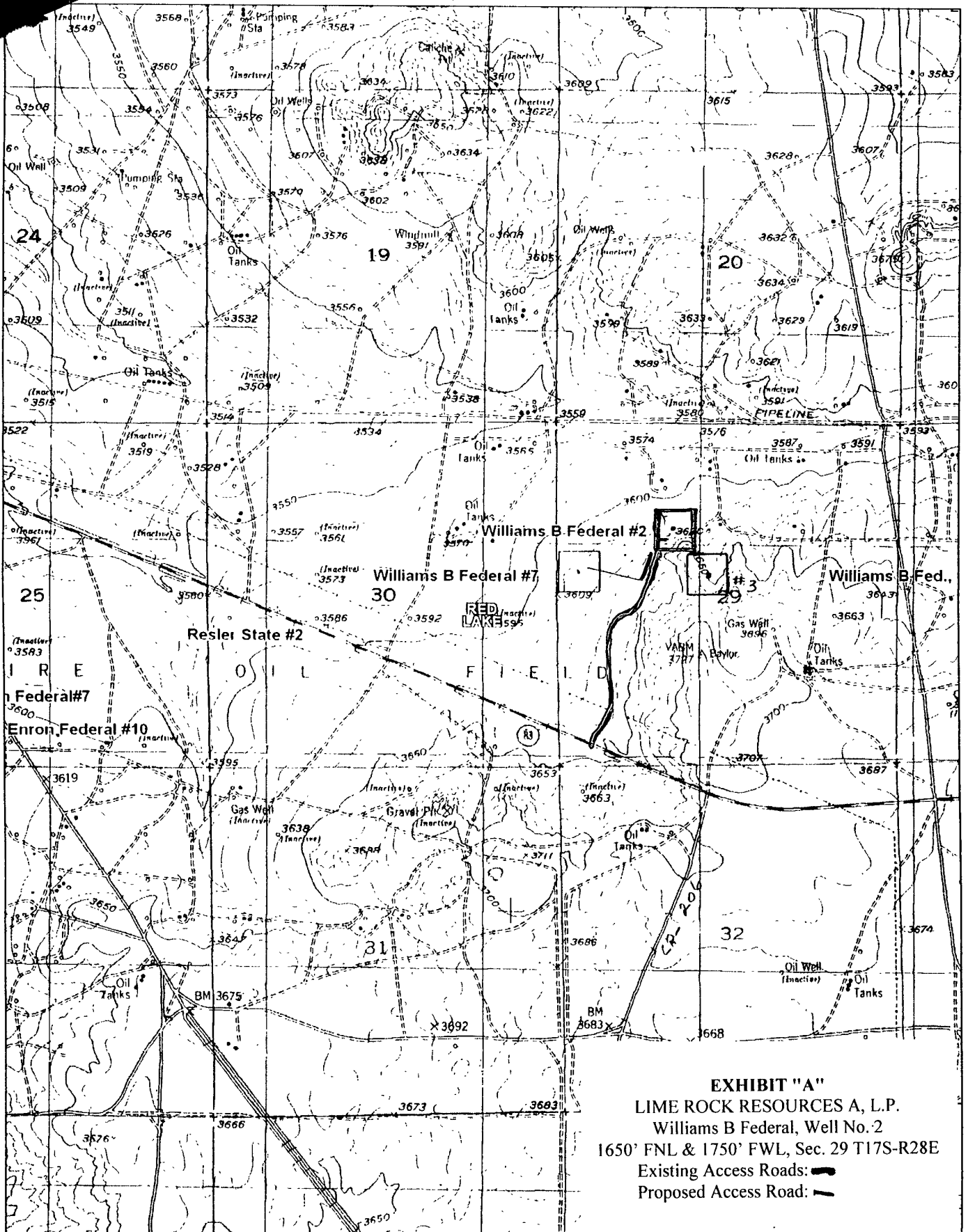


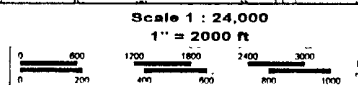


EXHIBIT "A"
LIME ROCK RESOURCES A, L.P.
 Williams B Federal, Well No. 2
 1650' FNL & 1750' FWL, Sec. 29 T17S-R28E
 Existing Access Roads: 
 Proposed Access Road: 



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TH
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SECTION 29, TOWNSHIP 17 SOUTH, RANGE 28 EAST, N.M.P.M.
EDDY COUNTY **NEW MEXICO**

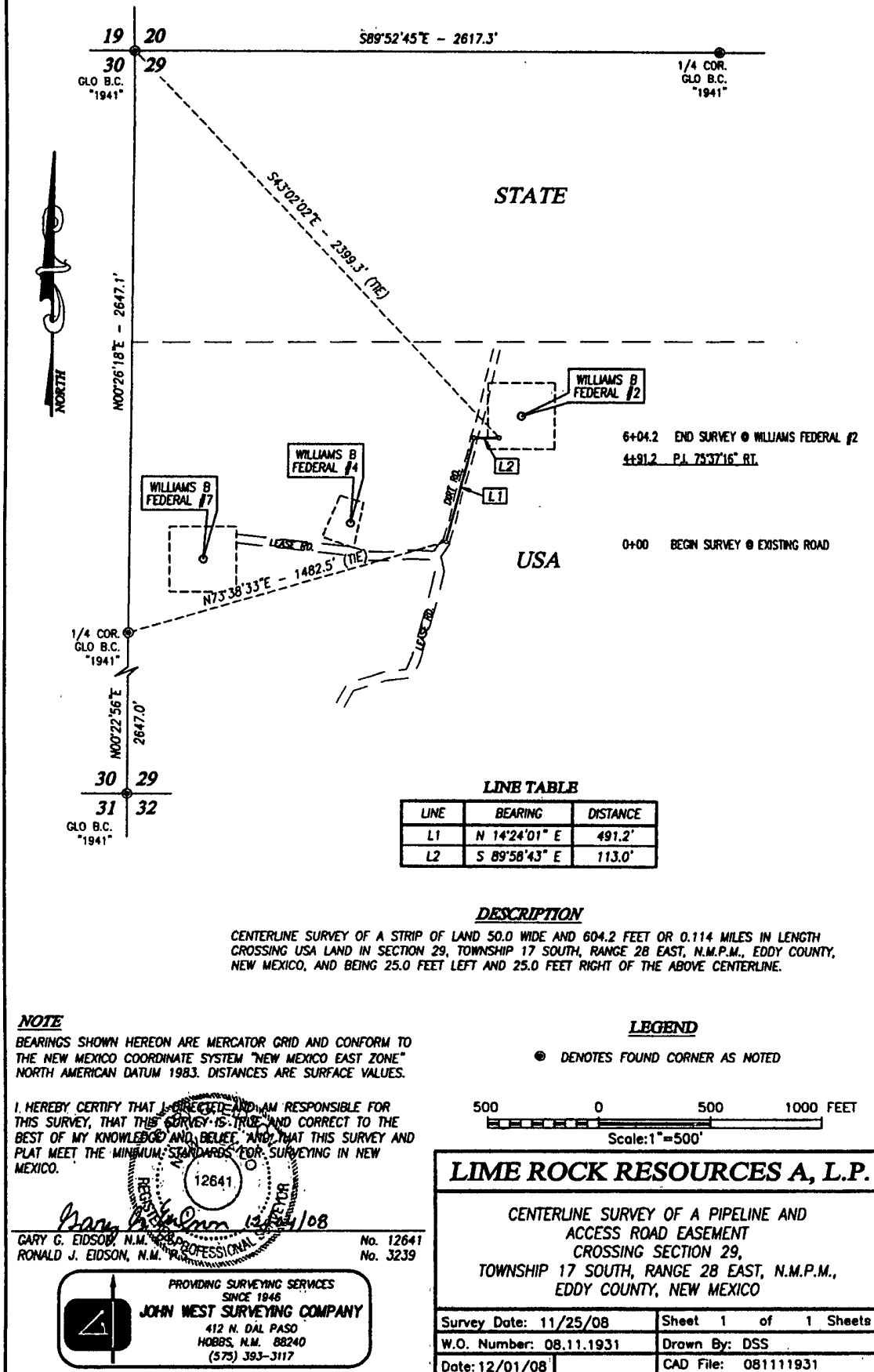
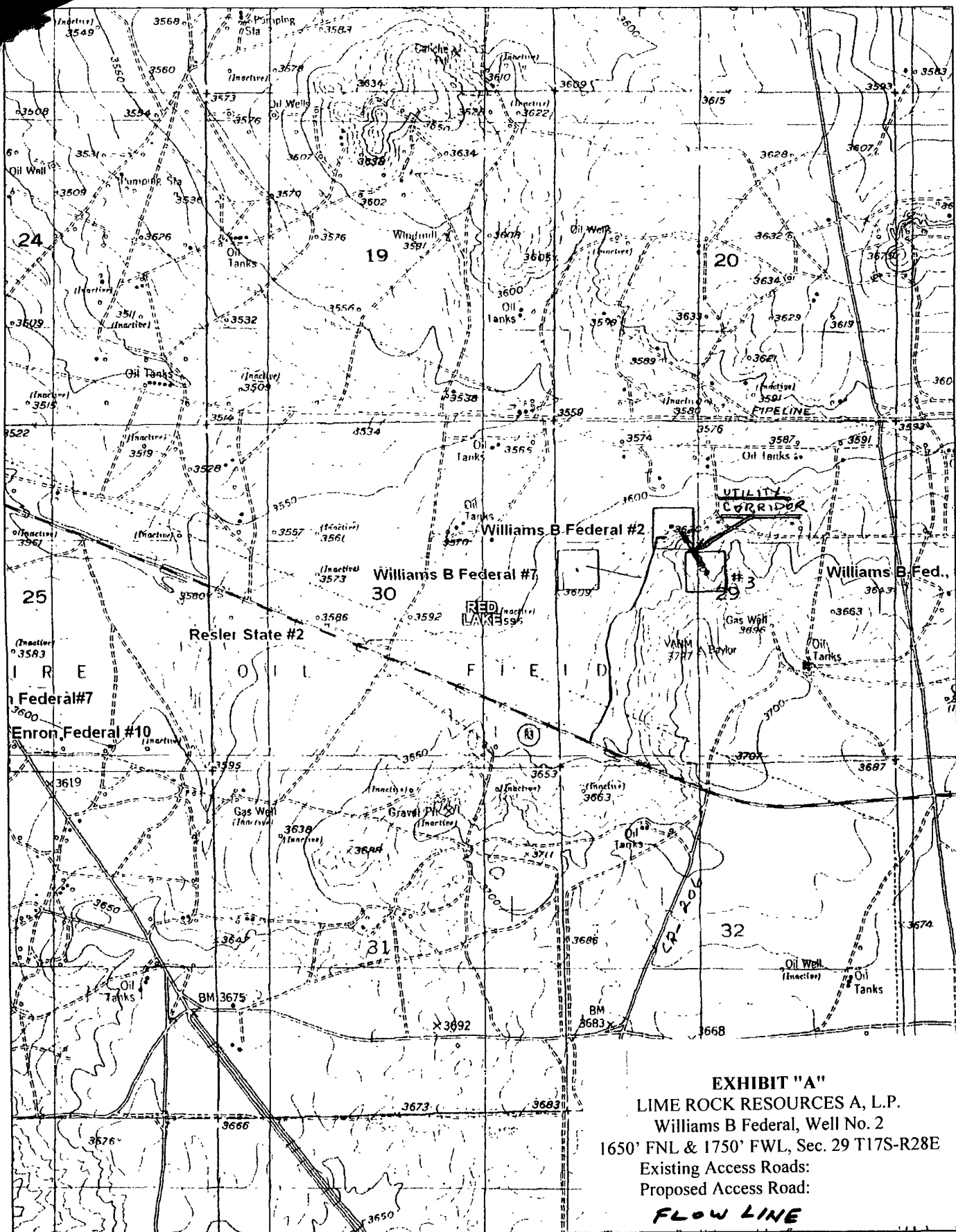
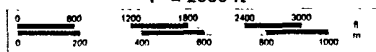


EXHIBIT "C"
LIME ROCK RESOURCES A, L.P.
Williams B Federal, Well No. 2
1650' FNL & 1750' FWL, Sec. 29 T17S-R28E
Existing Wells



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Scale 1 : 24,000
 1" = 2000 ft



PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Lime Rock Resources
LEASE NO.:	LC046250B
WELL NAME & NO.:	2 Williams B Federal
SURFACE HOLE FOOTAGE:	1650' FNL & 1750' FWL
BOTTOM HOLE FOOTAGE:	' F L & ' F L
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, situating 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 4 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

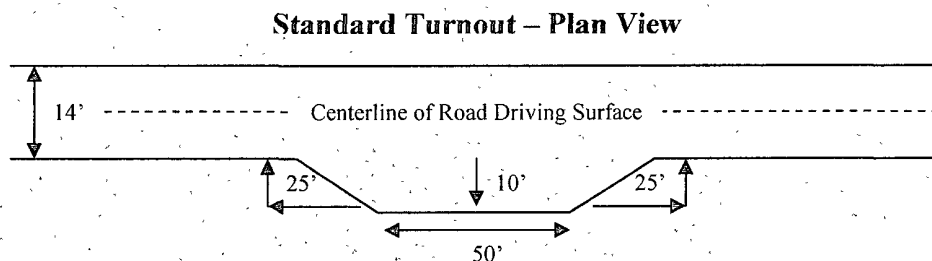
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

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:

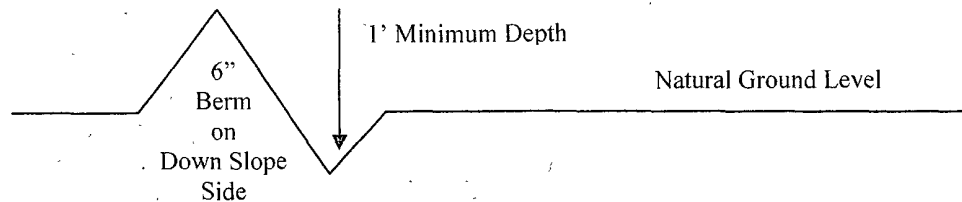


Drainage

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outslowing and insloping, 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.

Cross Section of a Typical 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

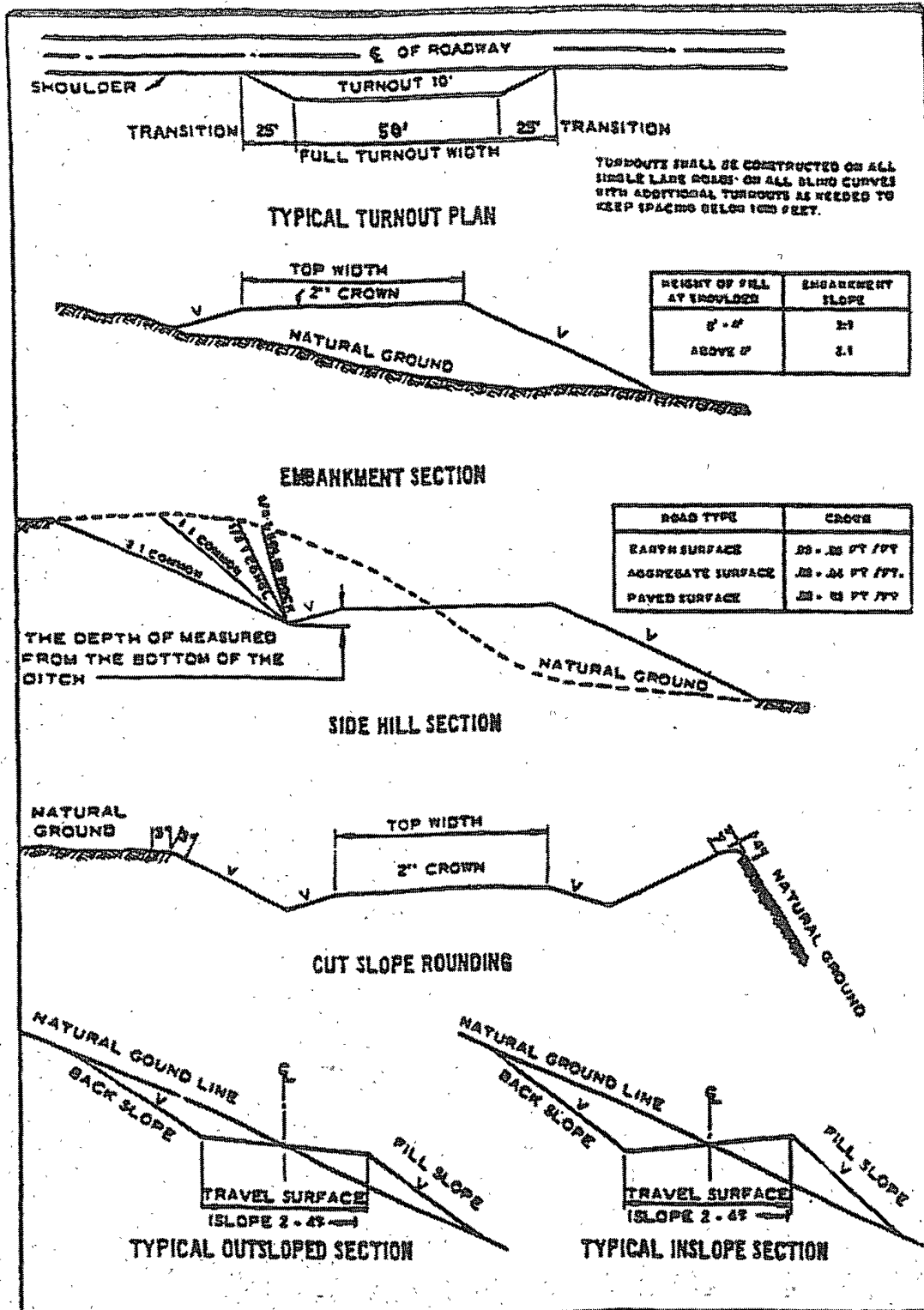
Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

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.
 - 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.

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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 3, for Shallow 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 of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/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 Bristlegrass (<i>Setaria magrostachya</i>)	1.0
Green Spangletop (<i>Leptochloa dubia</i>)	2.0
Side oats 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.