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OCD-ARTESIA

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Secretary's Petech

Form 3160-3  
(February 2005)

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>NMNM 22080</b>
1b Type of Well <input type="checkbox"/> Oil Well <input checked="" type="checkbox"/> Gas Well <input type="checkbox"/> Other <input type="checkbox"/> Single Zone <input checked="" type="checkbox"/> Multiple Zone			6 If Indian, Allottee or Tribe Name
2 Name of Operator <b>20165 Samson Resources Company</b>			7 If Unit or C/A Agreement Name and No
3a Address <b>Two West Second Street, Tulsa, OK 74103</b>			8 Lease Name and Well No <b>Livingston Ridge 12 Federal #1</b>
3b Phone No (include area code) <b>(918) 591-1939</b>			9 API Well No <b>30-015-35997</b>
4 Location of Well (Report location clearly and in accordance with any State requirements *) At surface <b>1310' FNL &amp; 1980' FWL</b> At proposed prod zone <b>1310' FNL &amp; 1980' FWL</b>			10 Field and Pool or Exploratory <b>Sand Dunes Morrow North</b>
11 Sec, T, R, M or Blk and Survey or Area <b>Section 12, T-23-S, R-31-E</b>			12 County or Parish <b>Eddy</b>
13 State <b>NM</b>			14 Distance in miles and direction from nearest town or post office* <b>22 miles east of Loving, NM</b>
15 Distance from proposed* location to nearest property or lease line (it (Also to nearest drig unit line, if any) <b>1310'</b>			16 No of acres in lease <b>320 Acres</b>
17 Spacing Unit dedicated to this well <b>320 Acres</b>			18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft <b>N/A</b>
19 Proposed Depth <b>15,500'</b>			20 BLM/BIA Bond No on file <b>NM-2037</b>
21 Elevations (Show whether DF, KDB, RT, GL, etc ) <b>3487'</b>			22 Approximate date work will start* <b>10/01/2007</b>
23 Estimated duration <b>35-40 days</b>			24 Attachments

**UNORTHODOX  
LOCATION**

The following completed in accordance with the requirements of Onshore Oil and Gas Order No 1, must 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 must be filed with the appropriate Forest Service Office) | 6 Such other site specific information and/or plans as may be required by the BLM             |

25 Signature 	Name (Printed Typed) <b>Brad P. Hargrove</b>	Date <b>9/19/07</b>
--	---	------------------------

Approved by (Signature) <b>/s/ Linda S. C. Rundell</b>	Name (Printed Typed) <b>/s/ Linda S. C. Rundell</b>	Date <b>DEC 12 2007</b>
Title <b>STATE DIRECTOR</b>	Office <b>NM STATE OFFICE</b>	

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 USC Section 1001 and Title 43 USC 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)

Carlsbad Controlled Water Basin

SEE ATTACHED FOR  
CONDITIONS OF APPROVAL

APPROVAL SUBJECT TO  
GENERAL REQUIREMENTS  
AND SPECIAL STIPULATIONS  
ATTACHED

## DISTRICT I

1626 N FRENCH DR., HOBBS, NM 88240

## DISTRICT II

1301 W GRAND AVENUE, ARTESIA, NM 88210

## DISTRICT III

1000 Rio Brazos Rd., Aztec, NM 87410

## DISTRICT IV

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

## State of New Mexico

Energy, Minerals and Natural Resources Department

## OIL CONSERVATION DIVISION

1220 SOUTH ST. FRANCIS DR.

Santa Fe, New Mexico 87505

Form C-102

Revised 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	Pool Code <b>84700</b>	Pool Name <b>Sand Dunes; Morrow, North</b>
Property Code <b>36903</b>	Property Name <b>LIVINGSTON RIDGE 12 FEDERAL</b>	Well Number <b>1</b>
OGRID No. <b>20165</b>	Operator Name <b>SAMSON RESOURCES</b>	Elevation <b>3487'</b>

## Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	12	23-S	31-E		1310	NORTH	1980	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 <b>320</b>		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>GEODETIC COORDINATES NAD 2011 NME</p> <p>Y=481524.0 N X=685489.9 E</p> <p>LAT = 32° 32' 48.1" N LONG. = 103° 43' 12.1" W</p> <p>LAT = 32° 19' 20.93" N LONG = 103° 43' 59.24" W</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>[Signature]</i> 10/22/07 Signature Date <b>Brad P. Hargrove</b> 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>DATE SURVEYED: AUGUST 14, 2007 Date Surveyed DSS Signature &amp; Seal of Professional Surveyor <i>[Signature]</i> 8/22/07 0741551074</p>		<p>Certificate No GARY EIDSON 12641 RONALD J. EIDSON 3239</p>

# OCD-ARTESIA

Form 3160-5  
(April 2004)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

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

## SUNDRY NOTICES AND REPORTS ON WELLS

*Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.*

### SUBMIT IN TRIPLICATE- Other instructions on reverse side

1 Type of Well  
☐ Oil Well ☒ Gas Well ☐ Other

2 Name of Operator **Samson Resources Company**

Attn: **Brad P. Hargrove**

3a Address  
**Two West Second Street, Tulsa, OK 74103**

3b Phone No. (include area code)  
**918-591-1939**

4 Location of Well (Footage, Sec., T., R., M., or Survey Description)

**1310' FNL & 1980' FWL, Section 12, T-23-S, R-31-E**

5 Lease Serial No.

**NMNM 22080**

6 If Indian, Allottee or Tribe Name

7 If Unit or CA/Agreement Name and/or No

8 Well Name and No

**Livingston Ridge 12 Federal #1**

9 API Well No

10 Field and Pool or Exploratory Area

**Sand Dunes Morrow North**

11 County or Parish, State

**Eddy County, New Mexico**

### 12 CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION				
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off	
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Fracture Treat	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity	
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input checked="" type="checkbox"/> Other <b>Change of Acreage</b>	
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	<b>Dedication - See</b>	
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal	<b>Attached Plat</b>	

13 Describe Proposed or Completed Operation (clearly state all pertinent details including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

**The purpose of this Sundry Notice is to change the acreage dedication for the proposed Livingston Ridge 12 Federal #1 well from the N/2 of Section 12, T-23-S, R-31-E, Eddy County, New Mexico to the W/2 of said section. The location of said well did not change.**

**See attached revised plat showing the correct acreage.**

14 I hereby certify that the foregoing is true and correct  
Name (Printed/Typed)

**Brad P. Hargrove**

Title **Senior Landman**

Signature



Date

**10/22/07**

### THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

**/s/ Don Peterson**

ACTING

FIELD MANAGER

Conditions of approval, if any, are attached. Approval of this notice 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.

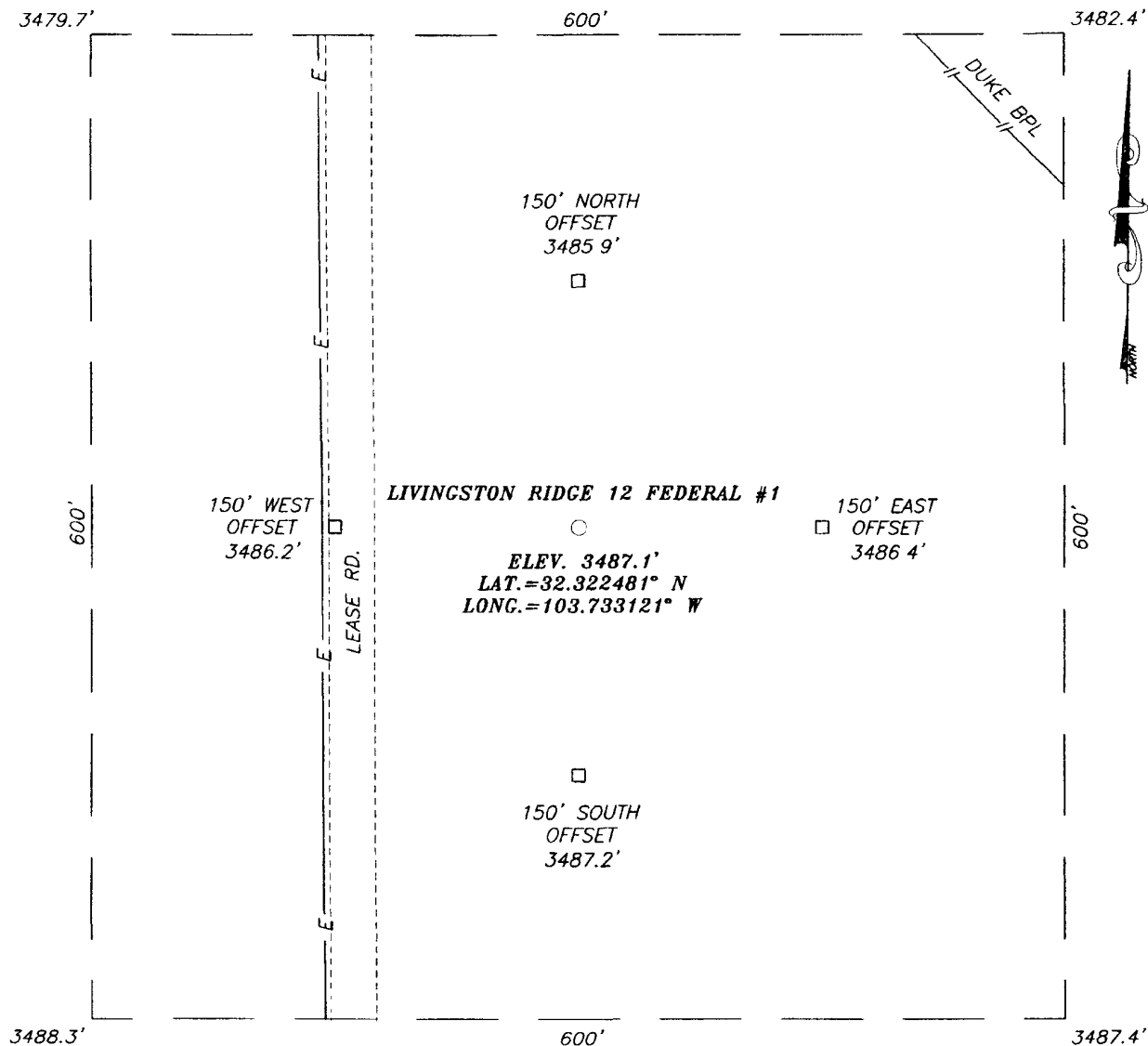
Office

**CARLSBAD FIELD OFFICE**

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.

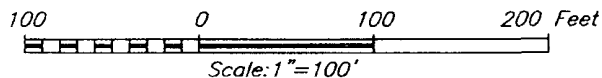
(Instructions on page 2)

**SECTION 12, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.,**  
 EDDY COUNTY NEW MEXICO



**DIRECTIONS TO LOCATION**

FROM THE INTERSECTION OF HWY #128 AND RED RD., GO NORTH ON RED RD. APPROX. 5.0 MILES. TURN RIGHT AND GO EAST APPROX. 0.4 MILES. TURN RIGHT AND GO SOUTH APPROX. 0.2 MILES. THIS LOCATION IS APPROX. 140 FEET EAST



PROVIDING SURVEYING SERVICES  
 SINCE 1946  
**JOHN WEST SURVEYING COMPANY**  
 412 N. DAL PASO  
 HOBBS, N.M. 88240  
 (505) 393-3117

**SAMSON RESOURCES**

LIVINGSTON RIDGE 12 FEDERAL #1  
 LOCATED 1310 FEET FROM THE NORTH LINE  
 AND 1980 FEET FROM THE WEST LINE OF SECTION 12,  
 TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.,  
 EDDY COUNTY, NEW MEXICO.

Survey Date: 08/14/07	Sheet 1 of 1 Sheets
W.O. Number 07.11 1074	DSS
Date: 08/21/07	Rev 1: N/A
Disk: .	07111074
	Scale: 1"=100'

#### 4. THE PROPOSED CASING AND CEMENTING PROGRAM

Hole Size	Casing Size	Weight/Foot Grade & Thread	Setting Depth	Quantity of Cement
17-1/2"	13-3/8"	48.0, H-40, 5 BT&C	0' - 700'	650 sacks <sup>300 Lead 350 Tail</sup> <b>Toc - Surface</b>
12-1/4"	9-5/8"	40#, HCK-55, BT&C	0' - 4,500'	<sup>300 Lead 300 Tail</sup> 600 sacks <b>Toc - Surface</b>
8-3/4"	7"	26#, P-110, LT&C <i>HCP-110 per oper. 10/17/07</i>	0' - 13,200'	<sup>250 Lead 250 Tail</sup> 500 sacks <b>Toc - 4400'</b>
6-1/8"	4-1/2"	13.5#, P-110, LT&C	0' - 15,500'	200 sacks <b>Toc - 13100'</b>

← see COA

← all per operator 10/17/07  
see COA  
← see COA

All casing will be new. Design factors are minimum BURST = 1.2; COLLAPSE = 1.1; TENSILE = 1.5 (buoyed in mud). Cement will be as follows: Surface – Class A CMT w/ 1.32 FT3/SX.; Intermediate #1 – Class C w/ Lead 2.5 FT3/SX & Tail w/ 1.32 ft3/sx; Intermediate #1 – Class H w/ Lead 2.5 FT3/SX & Tail w/ 1.32 ft3/sx; Production – CI H w/ 1.20 ft3/sx. BOP testing will be performed by a 3<sup>rd</sup> party vendor and chart recorded. Testing will be done at every casing point requiring that the BOP stack connections being broken. In addition, BOP test will be done every 30 days as per Onshore Order X.2.

\* Actual cement volumes will be determined from fluid calipers and/or open hole log caliper.

#### 5. MINIMUM SPECIFICATIONS FOR PRESSURE CONTROL EQUIPMENT:

A NU 13-5/8" 3M Hydrill annular preventer will be installed on the 13-3/8" before drilling 12-1/4" hole. A 11" 5K Double Ram BOP & 11" 3K Hydril will be installed before drilling the 8-3/4" and 6 1/8" holes. Will perform a 3M test on the casing and BOP before drilling 12-1/4" hole and a 5M test before drilling the 8-3/4" and 6-1/8" holes.

see COA →

#### 6. MUD PROGRAM:

Depth	Description	Mud Weight	Viscosity	W/L Control
0 - 700'	Fresh Water	8.4 ppg	29	No W/L control
700' - 4,500'	Brine Water	10.0 ppg	29	No W/L control
4,500' - 13,200'	Water / Brine	8.4 - 10.0 ppg	29	No W/L control
13,200' - 15,500'	LSND WBM	10.0 - 13.0 ppg	30 - 45	W/L control: <15 cc

see COA →

#### 7. AUXILIARY EQUIPMENT:

Blowout Preventer, flow sensors and stabbing valve.

**8. TESTING, LOGGING AND CORING PROGRAM:**

Drill Stem Test: None unless conditions warrant  
Logging: 4,500 to TD: CNL-DNL w/ GR-Cal. 4,500' to Surface: CNL-GR  
Coring: Rotary sidewall if dictated by logs.

**9. ANTICIPATED ABNORMAL OR HAZARDOUS SUBSURFACE CONDITIONS**

Abnormal pressures are anticipated in the Atoka and Morrow formations. In the event abnormal pressures are encountered, the proposed mud program will be modified to increase the mud weight. Estimated BHP = 8080 psi in the Morrow based on RFT pressure data. Maximum anticipated surface pressure is 7200 psi during production.

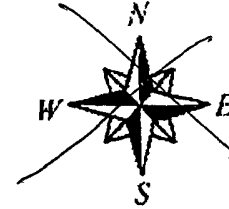
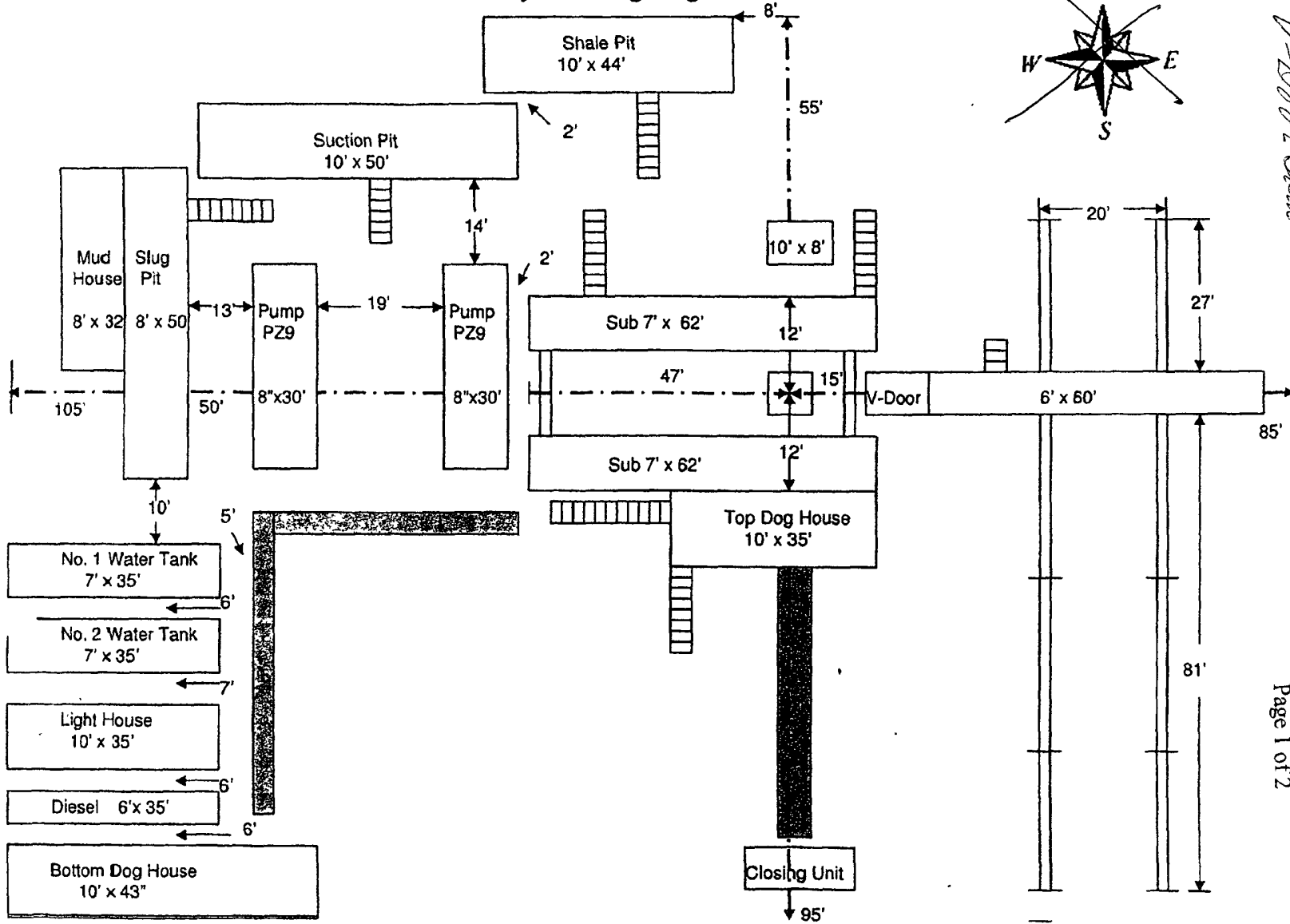
**10. H2S**

None expected. The Mud Log Unit will be cautioned to use a gas trap to detect H2S inhibitors sufficient to control the gas.

**11. ANTICIPATED STARTING DATE AND DURATION OF OPERATIONS**

The anticipated starting date is approximately October 1, 2007.  
Drilling time should be approximately 50 to 55 days.

# McVay Drilling Rig No. 5



*See COA's  
Part East  
V-Door South*

EXHIBIT "C" (Con't)

Samson Resources Company  
Livingston Ridge 12 Federal #1  
Eddy County, New Mexico  
Page 2 of 2

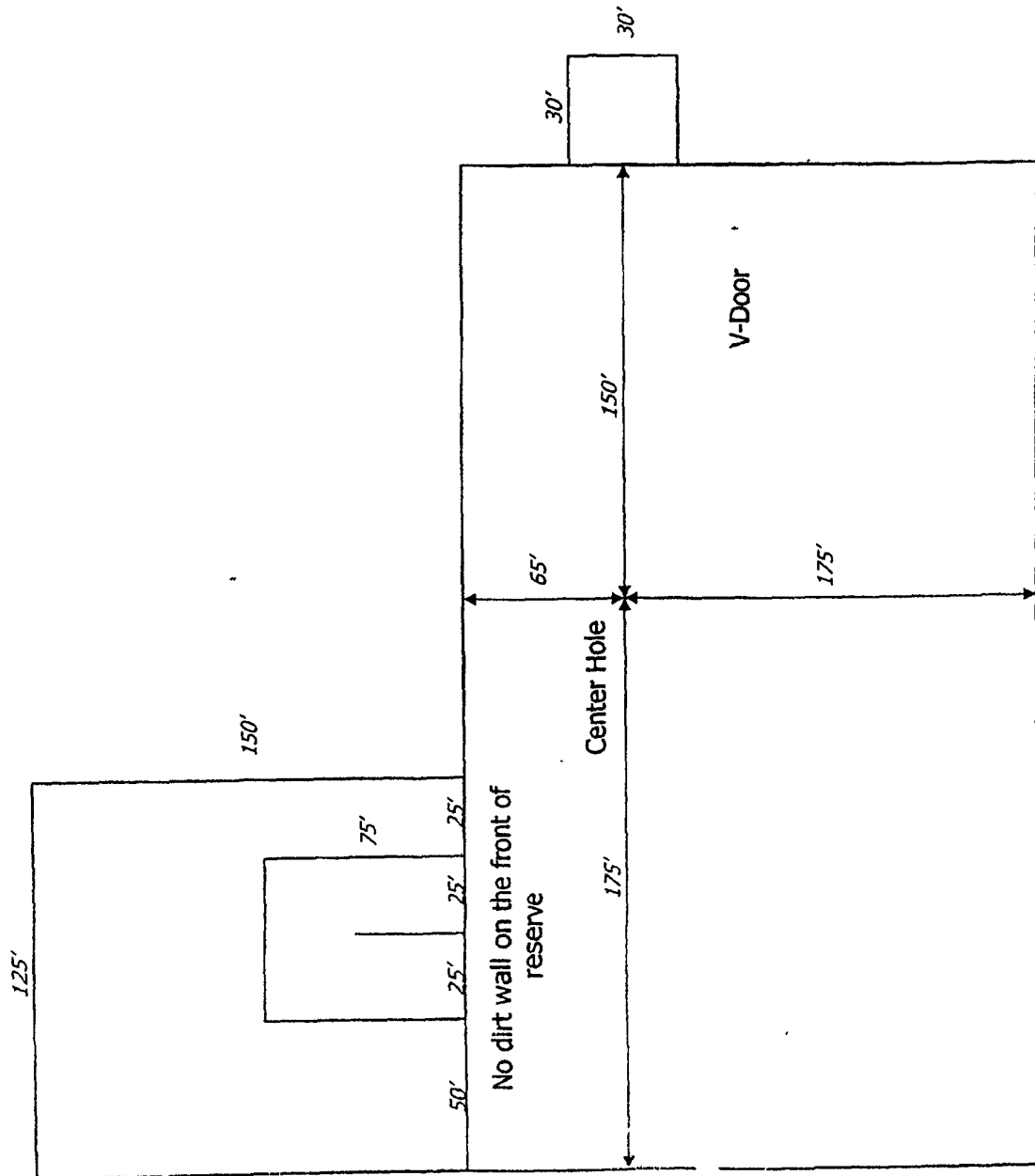


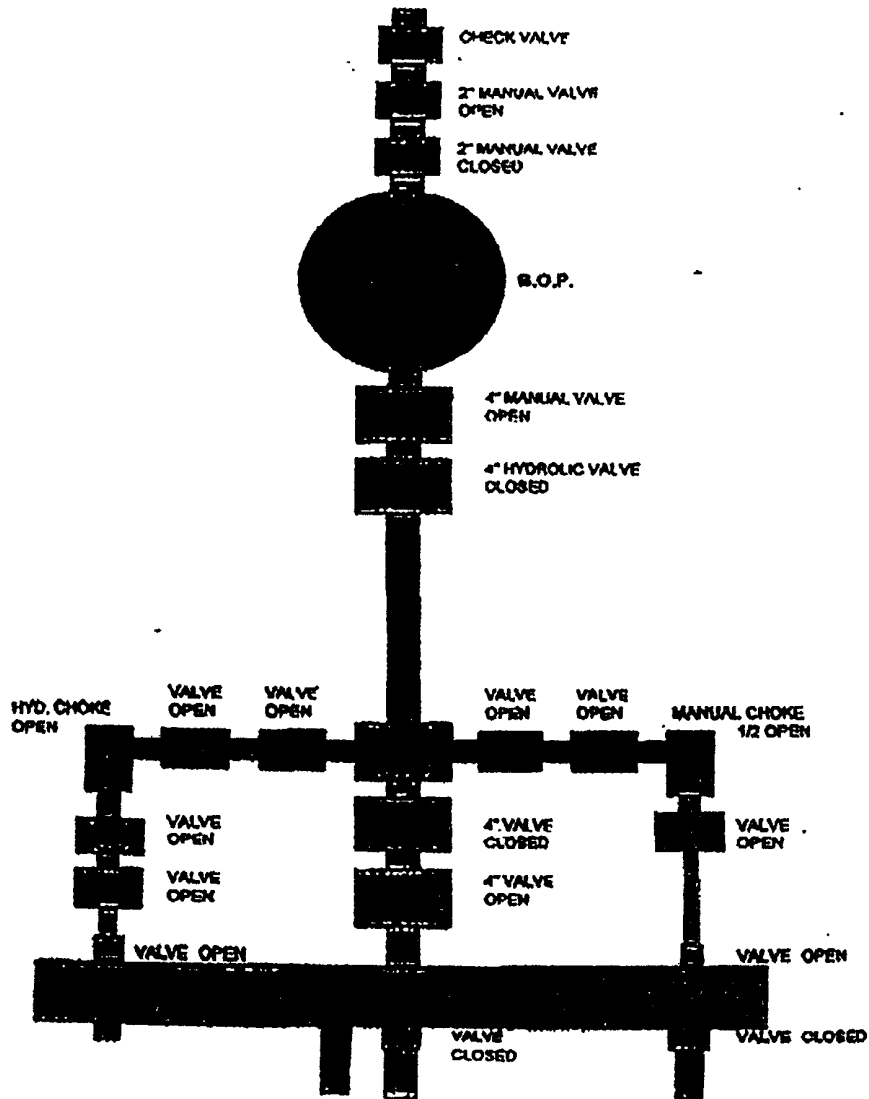


EXHIBIT "B"

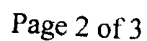
Samson Resources Company  
Livingston Ridge 12 Federal #1  
Eddy County, New Mexico

N.D.U.S.A.

MANIFOLD SETUP



Samson Resources Company  
Livingston Ridge 12 Federal #1  
Eddy County, New Mexico



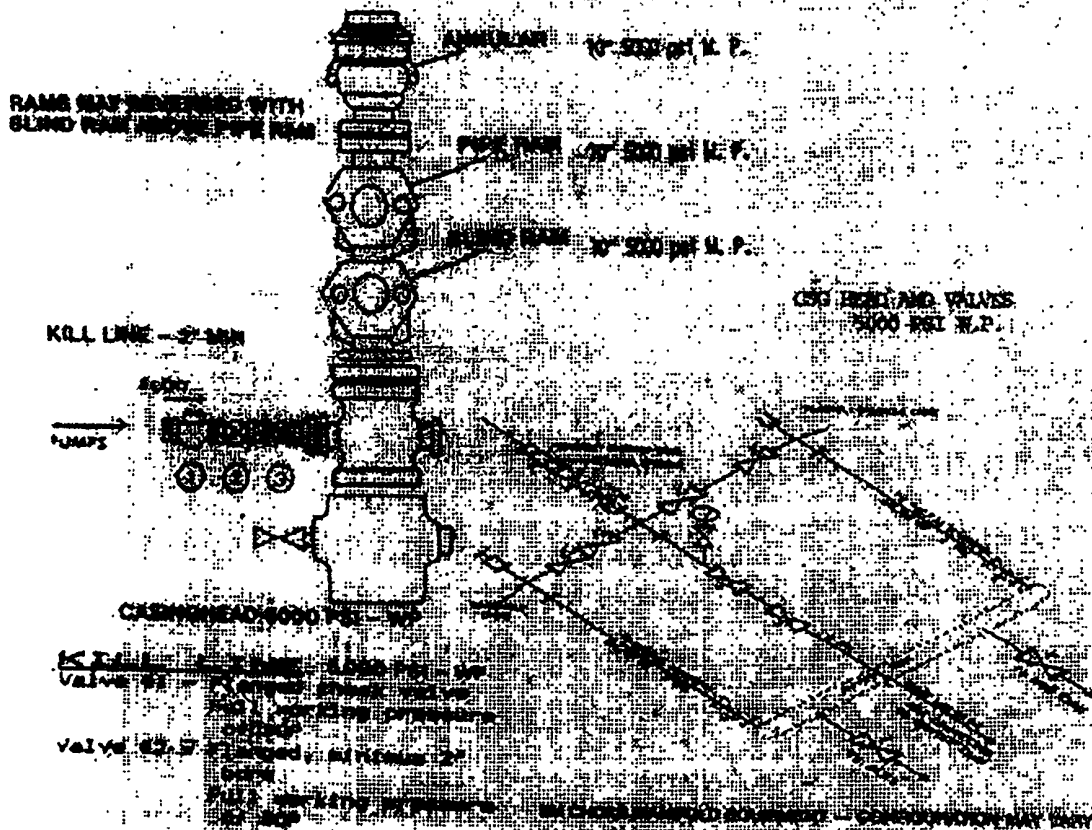
# EXHIBIT "B" (Con't)

Samson Resources Company  
Livingston Ridge 12 Federal #1  
Eddy County, New Mexico

## MINIMUM BOP Requirements

5000 PSI

FILL LINE ABOVE THE UPPERMOST PREVENTER



### GENERAL RECOMMENDATIONS

All lines to manifold are to be at least 1/2 inch N.P. and No. 40 size or larger are used.  
The fittings are to be steel for tubing.  
All lines to manifold are to be at least 1/2 inch N.P. and No. 40 size or larger are used.  
The fittings are to be steel for tubing.  
All lines to manifold are to be at least 1/2 inch N.P. and No. 40 size or larger are used.  
The fittings are to be steel for tubing.

RECEIVED	JUL 29 2004	D
	BUREAU OF LAND MANAGEMENT LIVINGSTON FIELD OFFICE	

## **SURFACE USE PLAN**

***Samson Resources Company***  
Livingston Ridge 12 Federal #1  
1310' FNL & 1980' FWL  
Section 12, T-23-S, R-31-E  
Eddy County, New Mexico  
Lease No.: NMNM 22080  
(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 environmental effects associated with the operations plan, to be followed in rehabilitating the surface environmental effect associated with the operations.

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

- A) Exhibit "A" is a portion of a USGS/BLM Topo map showing the location of Proposed well as staked. The well site is approximately 22 miles east of Loving, New Mexico.
- B) Directions to the well location:  
From the intersection of Hwy. #128 and Red Road, go north on Red Road approx. 5.0 miles. Turn right and go east approx. 0.4 miles. Turn right and go south approx. 0.2 miles. The location is approx. 140' east.

### **2. PROPOSED ACCESS AND LOCATION:**

- A) Length and Width: The proposed access road is approximately 144 feet in length and 30 feet in width. The access road is shown on Exhibit "A".
- B) Construction: The proposed access road will be constructed by grading and topping with compacted caliche and will be properly drained.
- C) Turnouts: As needed.
- D) Culverts: As needed.
- E) Cuts and Fills:
- F) No gates or cattle guards are planned.

### **3. LOCATION OF EXISTING WELLS AND/OR PLANNED FACILITIES:**

- A) Samson Resources Company has no production facilities on the lease at this time.
- B) If the well proves to be commercial, the necessary production facilities, gas production-processing equipment and tank battery, if required, will be installed on the drilling pad.

**4. 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 access roads.

**5. SOURCE OF CONSTRUCTION MATERIALS:**

- A) Caliche for the access road and well site pad will be obtained on location, if available, or from an approved private pit. No surface materials will be disturbed except those necessary for actual grading and construction of the drill site and access road.

**6. HANDLING OF WASTE MATERIALS AND DISPOSAL:**

- A) Drill cuttings will be disposed of in the reserve pits.
- B) Drilling fluids will be allowed to evaporate in the reserve pits until the pits are dry.
- C) All pits will be fenced with normal fencing materials to prevent livestock and wildlife from entering the area.
- D) 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.
- E) Oil produced during operations will be stored in tanks until sold.
- F) Current laws and regulations pertaining to the disposal of human waste will be complied with.
- G) Trash, waste paper, garbage and junk will be contained in trash bins to prevent scattering and will be removed for deposit in an approved sanitary landfill within 30 days after finishing drilling and/or completion operations.

**7. ANCILLARY FACILITIES:**

None required.

**8. WELLSITE LAYOUT:**

- A) Exhibit "C" shows the relative location and dimension of the well pad, reserve pits, and major rig components. The pad and pit area has been staked and flagged, 300' X 300'.
- B) Mat Size: 240' X 350', plus 125' X 150' mud pits.
- C) Cut & Fill: As Needed
- D) The surface will be topped with compacted caliche and the mud pits will be plastic lined.

**9. PLANS FOR RESTORATION OF SURFACE:**

- A) After completion of drilling and/or completion of operations, all equipment and other material not required for operations will be removed. Pits will be filled and the location cleaned of all trash and junk to leave the well site in an aesthetically pleasing a condition as possible.
- B) Any unguarded pits containing fluids will be fenced until they are filled.
- C) If the proposed well is not 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. All pits will be filled and leveled as soon as they are dry enough to work after completion or abandonment.

**10. SURFACE OWNERSHIP:**

- A) Well site & Access Roads: Bureau of Land Management

**11. OTHER INFORMATION:**

- A) Topography: The proposed well site and access road is located in an area of rolling grazing lands.
- B) Soil: The topsoil on the well site and access road is sandy in nature.
- C) Flora and Fauna: The vegetation at the well site and access road is sparse.
- D) Ponds and Streams: None.
- E) Residences and Other Structures: None, but existing oil field facilities.
- F) Land Use: Cattle grazing.
- G) There is no evidence of archaeological, historical or cultural sites in the area. Boone Archaeology, 2030 N. Canal, Carlsbad, NM 88220 is conducting an archaeological survey and their report will be submitted to the appropriate government agencies.

**12. OPERATOR'S REPRESENTATIVE:**

- A) The field representative responsible for assuring compliance with the approved Surface Use Plan is:

Brennan Short  
Samson Resources Company  
Two West Second Street  
Tulsa, OK 74103-3103  
Office Phone: (918) 591-1621

Samson Resources Company  
Livingston Ridge 12 Federal #1  
Eddy County, New Mexico

**13. CERTIFICATION:**

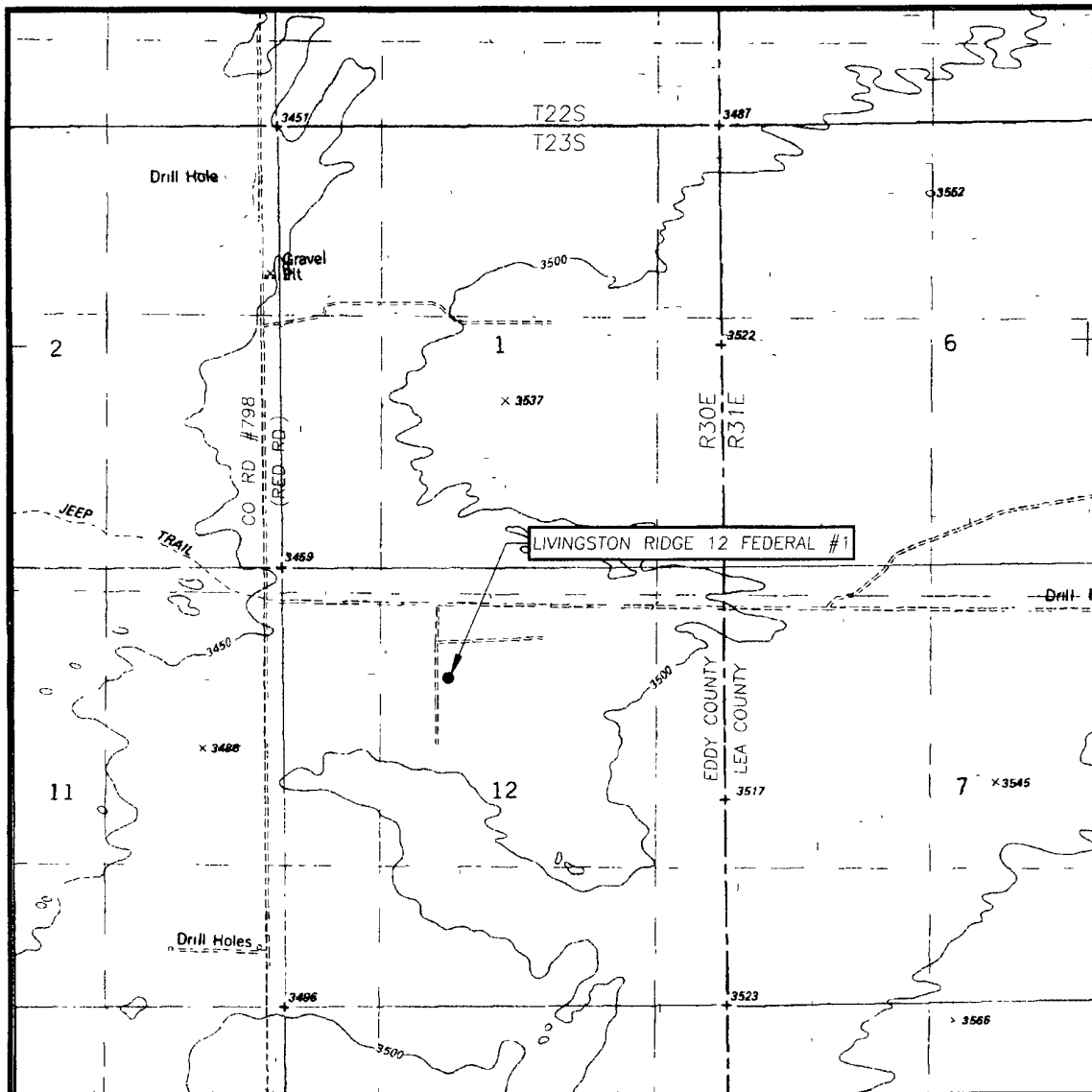
I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill site and access route; that I am familiar with the conditions which presently exist; that the statements made in this plan are, to the best of my knowledge, true and correct; and that the work associated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

9/10/07  
Date

Brad P. Hargrove  
Brad P. Hargrove  
Senior Landman  
Samson Resources Company

EXHIBIT "A"

# LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL:  
BOOTLEG RIDGE, N.M. - 10'

SEC. 12 TWP. 23-S RGE. 31-E

SURVEY N.M.P.M.

COUNTY EDDY STATE NEW MEXICO

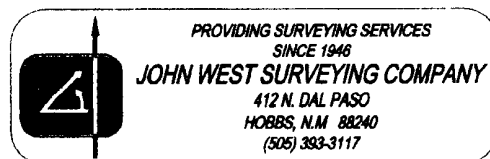
DESCRIPTION 1310' FNL & 1980' FWL

ELEVATION 3487'

OPERATOR SAMSON RESOURCES

LEASE LIVINGSTON RIDGE 12 FEDERAL

U.S.G.S. TOPOGRAPHIC MAP  
BOOTLEG RIDGE, N.M.





## VII. DRILLING

### A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified a minimum of 2 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,  
(505) 361-2822

1. **Although Hydrogen Sulfide has not been reported, it is always a potential hazard.**
2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
3. When floor controls are required, (3M or Greater) controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

### B. CASING

1. The 13-3/8 inch surface casing shall be set **a minimum of 25 feet into the Rustler Anhydrite and above the salt at approximately 880 feet** and cemented to the surface. **Fresh water mud to be used to the setting of surface casing.**
  - 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 a 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 will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement).

- 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 action will be done prior to drilling out that string.

**Possible lost circulation in the Delaware and Bone Spring formations.**

**Possible water flows in the Salado, Castile, Delaware and Bone Spring formations.**

- 2. The minimum required fill of cement behind the 9-5/8 inch intermediate casing is:

☒ Cement to surface. If cement does not circulate see B.1.a-d above. **Additional cement may be required.**

- 3. The minimum required fill of cement behind the 7 inch intermediate casing is:

☒ Cement should tie-back at least 500 feet into previous casing string. Operator shall provide method of verification. **Tie back of 500 feet required due to Secretary's Potash. Additional cement required.**

- 4. The minimum required fill of cement behind the 4-1/2 inch production casing is:

☒ Cement should tie-back at least 500 feet into previous casing string. Operator shall provide method of verification. **Tie back of 500 feet required due to Secretary's Potash. Additional cement required.**

- 5. 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.
- 3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the 9-5/8" intermediate casing shoe shall be **5000 (5M)** psi.

4. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the 7" intermediate casing shoe shall be **10,000 (10M) psi. Based on operator's RFT information and MASP during production.**
5. The appropriate BLM office shall be notified a minimum of 2 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.
  - e. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the **Wolfcamp** formation **if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days.** This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

#### **D. DRILLING MUD**

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the **Wolfcamp** formation, and shall be used until production casing is run and cemented.

#### **E. DRILL STEM TEST**

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

**Engineer on call phone (after hours):      Carlsbad: (505) 706-2779**

**WWI 101507**

## **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

#### **VRM Facility Requirement**

### **B. PIPELINES**

### **C. ELECTRIC LINES**