

Form 3160-3
(August 1999)UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OPERATOR'S COPY

FORM APPROVED
OMB No. 1004-0136
Expires November 30, 2000

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of Work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. NM-2515	
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 type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name	
2. Name of Operator Samson Resources		7. If Unit or CA Agreement, Name and No.	
3a. Address Samson Plaza—Two W. 2nd St. Tulsa, OK 74103		8. Lease Name and Well No. <u><34255></u> Mesa Verde 15 Federal, Well # 1	
3b. Phone No. (include area code) (918) 591-1822		9. API Well No. 30-025-36836	
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface 990' FNL & 990' FEL At proposed prod. zone same <u>A</u> R-111-P Potash		10. Field and Pool, or Exploratory Hat Mesa Morrow <u><78240></u>	
11. Sec., T., R., M., or Blk. and Survey or Area Sec. 15-T21S-R32E		12. County or Parish Lea	
13. State NM		14. Distance in miles and direction from nearest town or post office* 40 miles northeast of Carlsbad, NM	
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 990'		16. No. of Acres in lease 716.36	
17. Spacing Unit dedicated to this well 320		18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 10,500' Pubco Fed# / 14,800'	
19. Proposed Depth 14,800'		20. BLM/BIA Bond No. on file NM-2037	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3864' GL		22. Approximate date work will start* December 15, 2003	
23. Estimated duration 8 weeks		24. Attachments Carlsbad Controlled Water Basin	

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

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

25. Signature <u>George R. Smith</u>	Name (Printed/Typed) George R. Smith	Date 11/6/03
Title Agent for Samson Resources		
Approved by (Signature) <u>Linda S. C. Rundell</u>	Name (Printed/Typed) Linda S. C. Rundell	Date 9/9/04
Title STATE DIRECTOR	Office NM STATE 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 1 YEAR

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

*(Instructions on reverse)

Lease Responsibility Statement: Samson Resources accepts all applicable terms, conditions, stipulations, and restrictions concerning operations conducted on the leased land or portion thereof.

R-111-P Potash
CEMENT BEHIND THE 11 3/4"
CASING MUST BE CIRCULATEDGeorge R. Smith
George R. Smith, agent**DECLARED WATER BASIN**
CEMENT BEHIND THE 16"
CASING MUST BE CIRCULATED**APPROVAL SUBJECT TO**
GENERAL REQUIREMENTS AND
SPECIAL STIPULATIONS
ATTACHED

DISTRICT I

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

State of New Mexico

Energy, Minerals and Natural Resources Department

Form C-102

Revised February 10, 1994

Submit to Appropriate District Office

State Lease - 4 Copies

Fee Lease - 3 Copies

DISTRICT II

P.O. Drawer 100, Artesia, NM 88211-0719

OIL CONSERVATION DIVISION

P.O. Box 2088

Santa Fe, New Mexico 87504-2088

DISTRICT III

1600 Edo Brazos Rd., Aztec, NM 87410

DISTRICT IV

P.O. Box 2088, SANTA FE, N.M. 87504-2088

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number 30-D25-36836	Pool Code 78240	Pool Name Hat Mesa Norrow
Property Code 34255	Property Name MESA VERDE FEDERAL	Well Number 1
GRID No. 20165	Operator Name SAMSON RESOURCES	Elevation 3864'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	15	21-S	32-E		990	NORTH	990	EAST	LEA

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
Dedicated Acres 320	Joint or Infill	Consolidation Code	Order No.						

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 the information contained herein is true and complete to the best of my knowledge and belief. <i>George R. Smith</i> Signature George R. Smith, agent Printed Name for Samson Resources Title 11/6/03 Date
	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. SEPTEMBER 29, 2003 Date Surveyed <i>G. Smith</i> Signature Professional Surveyor NEW MEXICO 03.1.1075 Certificate No. GARY ELLISON 12841
	GEOGRAPHIC COORDINATES SPC NME NAD 1927 Y = 540185.6 N X = 708635.0 E LAT. = 32°28'59.75"N LONG. = 103°39'24.26"W

APPLICATION FOR DRILLING

SAMSON RESOURCES
Mesa Verde Federal, Well No. 1
990' FNL & 990' FEL Sec. 15-T21S-R32E
Lea County, New Mexico
Lease No.: NM-2515
(Development Well)

In conjunction with Form 3160-3, Application for Permit to Drill subject well, Samson Resources 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:

Rustler	1,500'	Penn Shale	12,100'
Yates	3,515'	Strawn	13,096'
Capitan	3,670'	Atoka	13,290'
Delaware	5,536'	Morrow	13,507'
1 st Bone Spring	9,864'	T.D.	14,800'
Wolfcamp	11,842'		

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

Water: Surface water between 100' - 300'.
Oil: Possible in the Delaware below 5536'.
Gas: Possible in Atoka below 13,290' and the Morrow below 13,507'.

4. Proposed Casing Program:

HOLE SIZE	CASING SIZE	WEIGHT	GRADE	JOINT	SETTING DEPTH	QUANTITY OF CEMENT
18 1/2"	16"	75.0#	K-55	BT&C	0' - 1,500'	Circ 750 sx "C" cement
14 3/4"	11 3/4"	54.5#	K-55	BT&C	0' - 3,650'	Circ. 1330 sx. HLC Prem Plus
10 5/8"	8 5/8"	32.0#	N-80	LT&C	0' - 5,350'	Circ. 2550 sx. Interfill C & Prem
7 7/8"	5 1/2"	20.0#	P110	LT&C	0' - 14,800'	1450 sx Zoneseal & Super H TOC 8000'

5. Minimum Specifications for Pressure Control Equipment:

A 13 5/8" 10,000 psi WP Shaffer, LWS Double Gate BOP will be installed on the 11 3/4" casing and tested as per Onshore Oil & Gas Order #2 as a 5,000 psi system.. An annular preventer will be installed on the 16" casing to drill to the 3150" depth. The casing and BOP will be tested before drilling out with the 10 5/8" and 7 7/8". See Exhibit "E".

6. MUD PROGRAM:	MUD WEIGHT	VIS.	W/L CONTROL
0' - 930':	Fresh water mud:	8.8 - 9.2 ppg	32 - 36
930' - 1,590':	Fresh/native mud	10.0 - 10.4 ppg	28 - 29
1,590' - 3,150':	FW native brine	10.0 - 10.4 ppg	26 - 29
3,150' - 5,350':	Fresh water/Cut brine	8.4 - 9.2 ppg	28 - 29
11,500' - 12,900':	Cut Brine	8.8 - 9.6 ppg	28 - 29
12,900' - 14,800':	Cut Brine/xcd Polymer	9.4 - 11.5 ppg	38 - 42

- Auxiliary Equipment:** Blowout Preventer, flow sensors and stabbing valve.

SAMSON RESOURCES

Mesa Verde Federal, Well No. 1

Page 2

8. Testing, Logging, and Coring Program:

Drill Stem Tests: None unless conditions warrant.

Logging: 5,350' to T.D: CNL-DNL w/GR-Cal.

5,350' to Surface: CNL-GR

Coring: Rotary sidewall if dictated by logs.

9. 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 evacuated BHP = 6512 psi and surface pressure of 3256 psi with a temperature of 208°.

10. H₂S: None expected. The Minis "2" Fed. #1 producing in the Delaware was tested and is totally sweet, no H₂S.

11. Anticipated starting date: December 1, 2003.

Anticipated completion of drilling operations: Approximately 6 weeks.

MULTI POINT SURFACE USE AND OPERATIONS PLAN**SAMSON RESOURCES**

Mesa Verde 15 Federal, Well No.1
990' FNL & 990' FEL, Sec. 15-R21S-R32E
Lea County, New Mexico
Lease No.: NM-2515
(Exploratory 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.

1. EXISTING ROADS:

- A. Exhibit "A" is a portion of a USGS/BLM Topo map showing the location of the proposed well as staked. The well site location is approximately 40 road miles northeast of Carlsbad, New Mexico. Traveling east from Carlsbad there will be approximately 37.5 miles of paved highway and 2.7 miles of gravel ranch/oilfield roads.
- B. Directions: Travel east from Carlsbad, NM on U.S. Highway 62/180 for approximately 32 miles to NM Highway #176. Turn southeast on NM #176 for 5.3 miles. Turn south on oil field road at a Phillips Petroleum and a Conoco sign onto a good gravel road. Continue south for 2.7 miles to a Conoco gas well site at the end of the road. The start of the proposed access road is on the northwest corner of the pad. The road will run southwest for 3000 feet to the northeast corner of the proposed well site.

2. PLANNED ACCESS ROAD:

- A. Length and Width: The proposed access road is approximately 3000 feet in length and is color coded red 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: There will be at least two turnouts, increasing the road width to 20 feet for passing.
- D. Culverts: None required.
- E. Cuts and Fills: None required except the leveling of small dunes and deflation basins.
- F. Gates, Cattle guards: None required. The road will be crossing an old fence line
- G. Off Lease R/W: A Right of Way is included with the APD to cover about 2000 feet of off lease new access road.

3. LOCATION OF EXISTING WELLS:

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

SAMSON RESOURCES
Mesa Verde 15 Federal, Well No.1
Page 2

4. LOCATION OF EXISTING AND/OR PROPOSED FACILITIES;

- A. Samson Resources has production facilities on the lease at this time.
- B. If the well proves to be commercial, the necessary production facilities, gas production-process equipment will be installed on the drilling pad. A 3" steel 3200 psi gas flow line, with maximum of 1000 psi operating pressures, will be buried and will run parallel to the access road back to the Conoco well site and gas pipeline. *W/prior Sundry Notice approval. TSO*

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 the access road and well site pad will be obtained on location, if available, or an approved Federal pit in the SENE Sec. 11-T21S-R32E. No surface materials will be disturbed except those necessary for actual grading and construction of the drill site and access road.

7. METHODS OF HANDLING WASTE 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.

8. ANCILLARY FACILITIES:

- A. None required.

SAMSON RESOURCES
Mesa Verde 15 Federal, Well No.1
Page 3

9. WELL SITE LAYOUT:

- A. Exhibit "D" shows the relative location and dimensions of the well pad, reserve pits, and major rig components.
- B. Mat Size: 300' X 210', plus 150' x 150' mud pits on the north.
- C. Cut & Fill: There will be a 4.5 foot cut on the east with fill to the west.
- D. The surface will be topped with compacted caliche and the mud pits will be plastic lined.

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. 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 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. All pits will be filled and leveled as soon as they are dry enough to work after abandonment.

11. OTHER INFORMATION:

- A. Topography: The proposed well site and access road is located on the west side of Hat Mesa. The location has a westerly slope of 3.75% from an elevation of 3864'.
- B. Soil: The topsoil on the well site and access road is a light brown colored fine sand. The soil is of the Pyote Soils and Dune Land Series.
- C. Flora and Fauna: The vegetation at the well site is a sparse to fair grass cover of threeawn, dropseed, burrograss, longspine sandbur and other miscellaneous native grasses along with plants of mesquite, yucca, sage, broomweed, cacti, buckwheat and miscellaneous weeds and wildflowers. The wildlife consists of rabbits, coyotes, rattlesnakes, lizards, dove, quail and other wildlife typical of the semi-arid desert land.
- D. Ponds and Streams: None.
- E. Residences and Other Structures: None, but existing oil field facilities.
- F. Land Use: Cattle grazing.
- G. Surface Ownership: The proposed well site and access road are on Federal surface.
- H. There is no evidence of archaeological, historical or cultural sites in the area. Archaeological Survey Consultants, P.O. Box 2285, Roswell, NM 88202 are conducting an archaeological survey and their report will be submitted to the appropriate government agencies.

SAMSON RESOURCES

Mesa Verde 15 Federal, Well No.1

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12. OPERATOR'S REPRESENTATIVE:

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

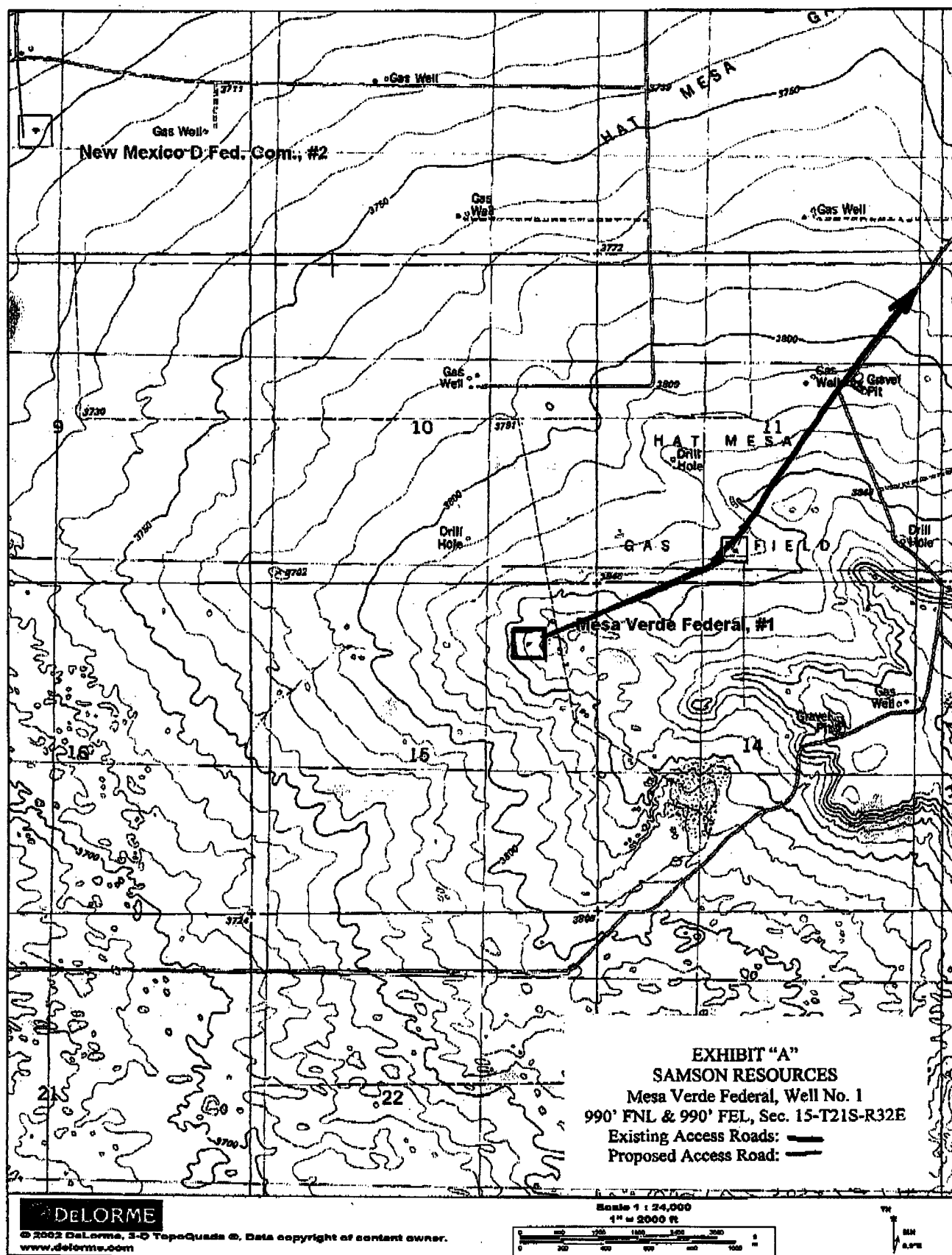
Billy Goodwin
Samson Resources
Samson Plaza-Two West Second St.
Tulsa, OK 74103-3103
Office Phone: (918) 591-1822

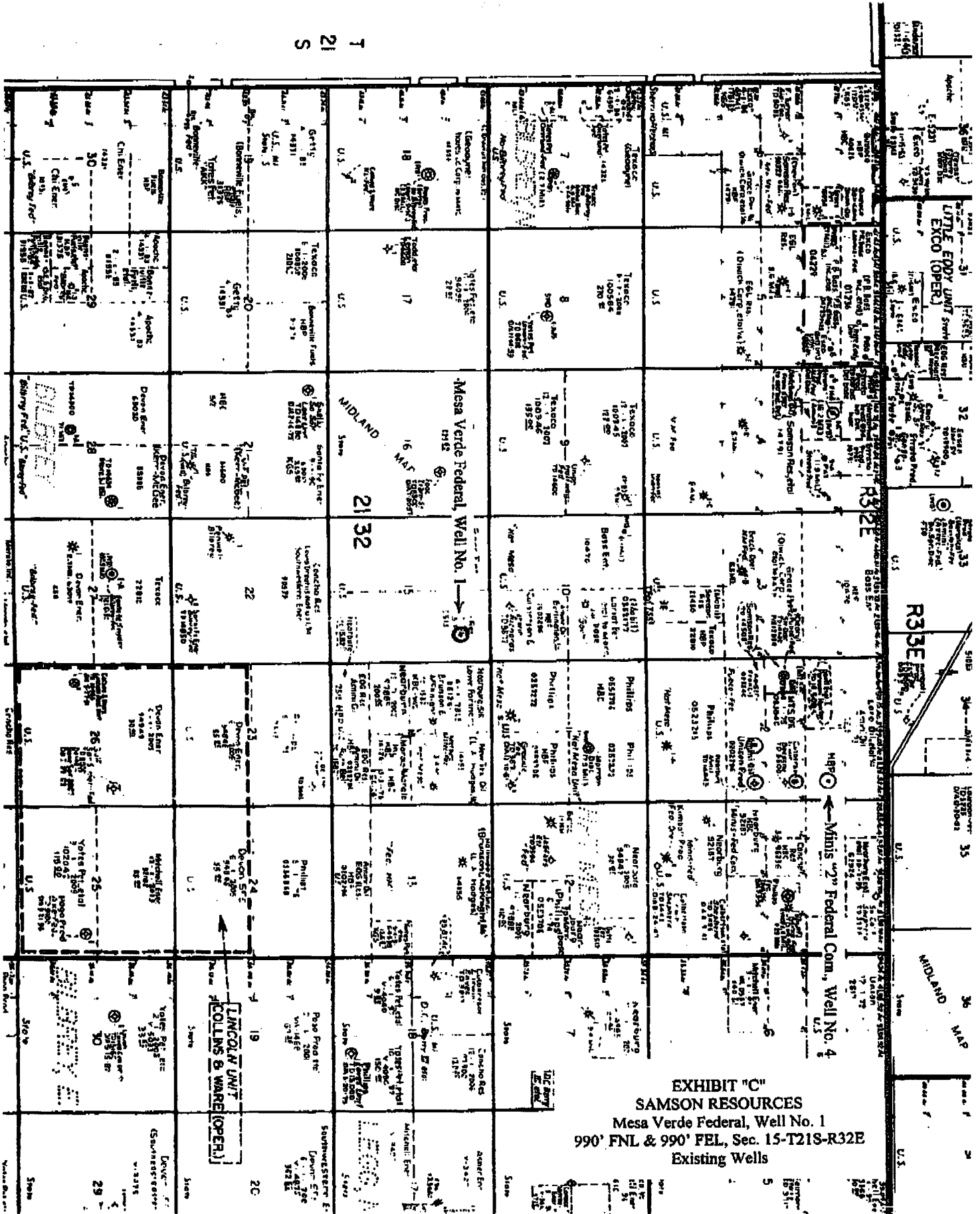
13. CERTIFICATION:

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 Samson Resources 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.

November 6, 2003


George R. Smith
Agent for: Samson Resources



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21
S

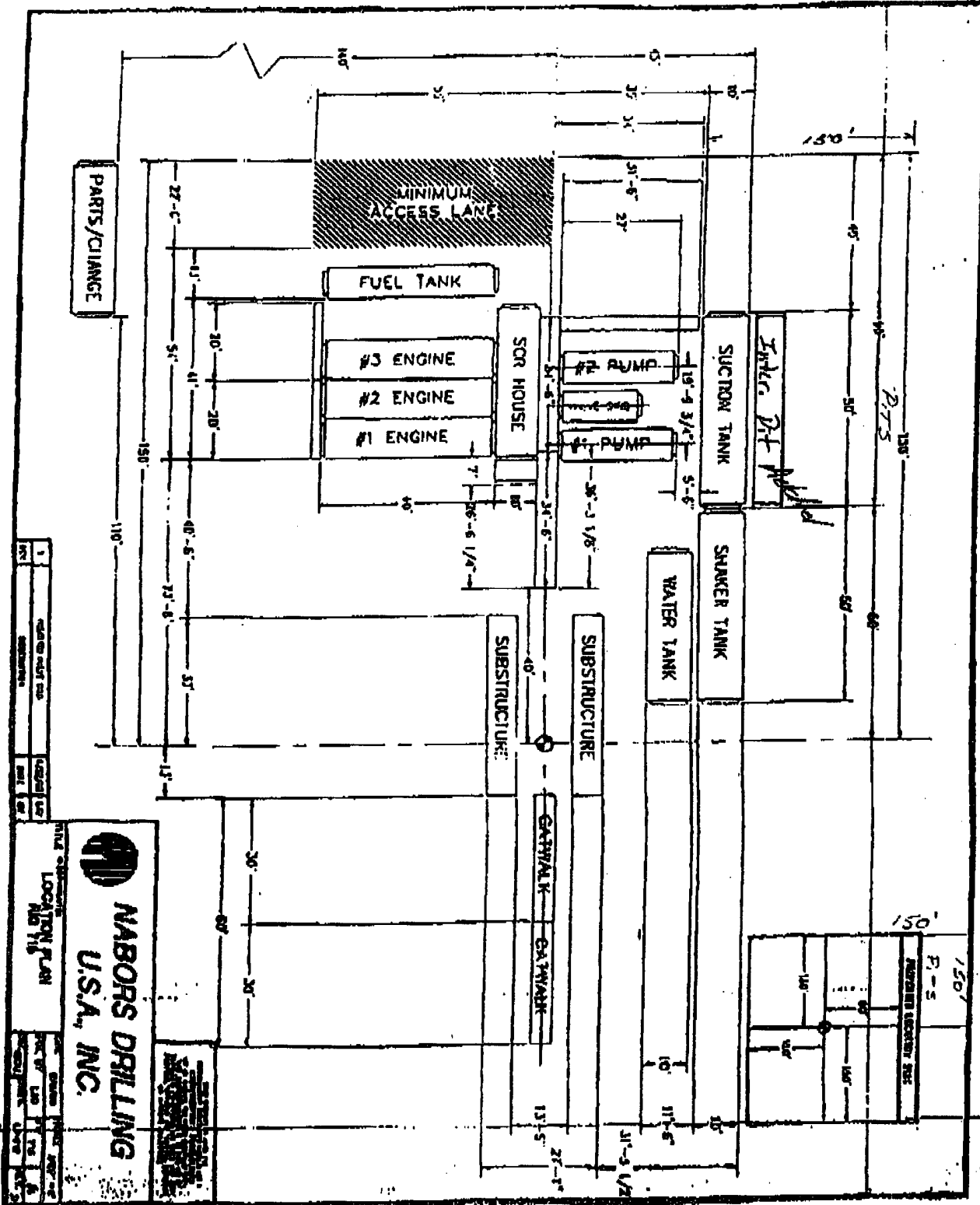


EXHIBIT "D"
SAMSON RESOURCES
Mesa Verde Federal, Well No. 1
Pad & Pit Layout

SEP 16 '02 09:33AM SAMSON

P.6



N/O = NORMALLY OPEN
N/C = NORMALLY CLOSE

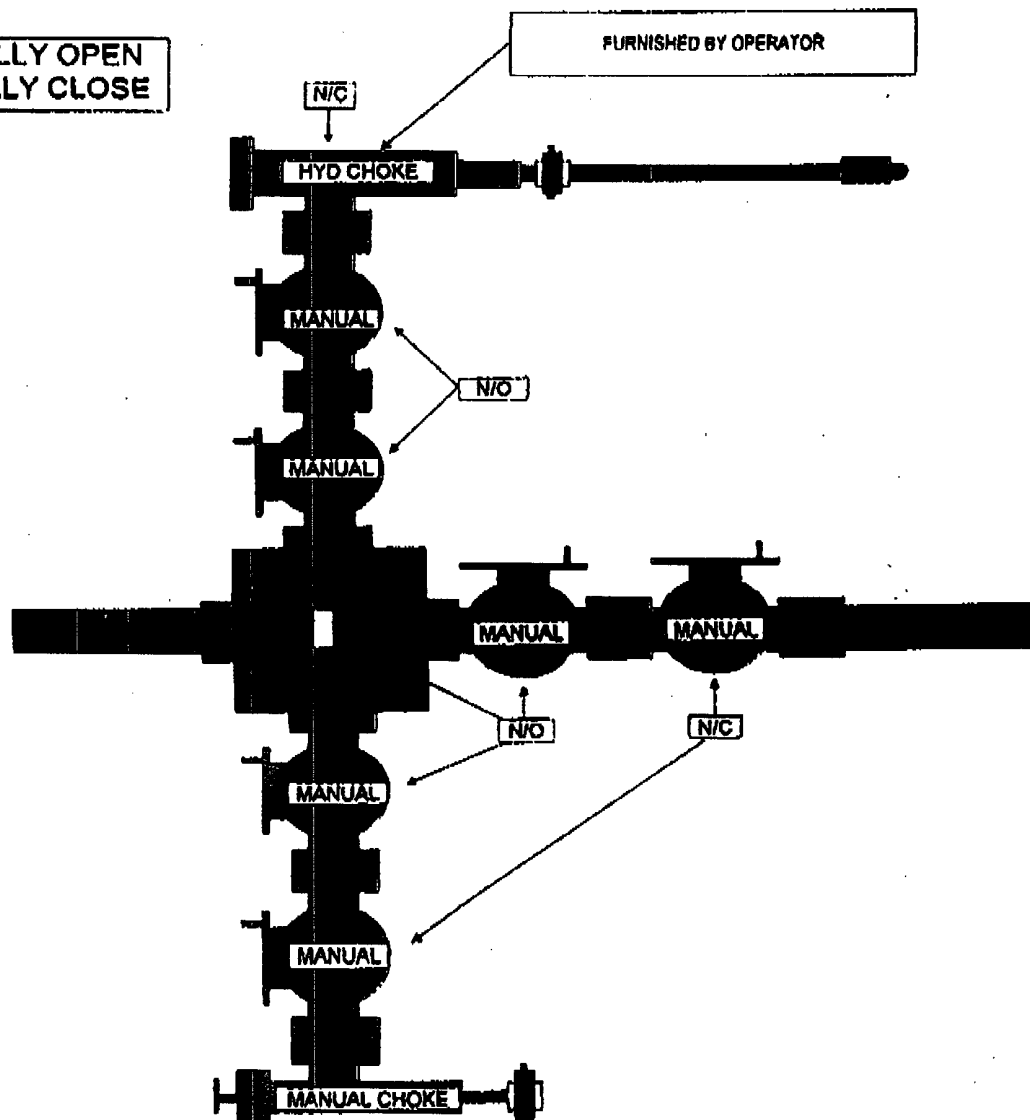
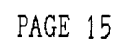


EXHIBIT "E"
SAMSON RESOURCES
Mesa Verde Federal, Well No. 1
BOP Specifications

P.5



SPECIAL DRILLING STIPULATIONS

THE FOLLOWING DATA IS REQUIRED ON THE WELL SIGN

Operator's Name Samson Resources Well Name & No. Mesa Verde 15 Federal #1
 Location 990 F.N.L. & 990 F.E.L. Sec. 15, T. 21 S, R. 32 E.
 Lease No. NM-2515 County Lea State New Mexico

The Special stipulations check marked below are applicable to the above described well and approval of this application to drill is conditioned upon compliance with such stipulations in addition to the General Requirements. The permittee should be familiar with the General Requirements, a copy of which is available from a Bureau of Land Management office. EACH PERMITTEE HAS THE RIGHT OF ADMINISTRATIVE APPEAL TO THESE STIPULATIONS PURSUANT TO TITLE 43 CRF 3165.3 AND 3165.4.

This permit is valid for a period of one year from the date of approval or until lease expiration or termination whichever is shorter.

I. SPECIAL ENVIRONMENT REQUIREMENTS

- (X) Lesser Prairie Chicken (stips attached) () Flood plain (stips attached)
 () San Simon Swale (stips attached) (X) Other Cultural stips (attached) SL

II. ON LEASE - SURFACE REQUIREMENTS PRIOR TO DRILLING

(X) The BLM will monitor construction of this drill site. Notify the (X) Carlsbad Field Office at (505) 234-5972 () Hobbs Office (505) 393-3612; at least 3 working days prior to commencing construction.

(X) Roads and the drill pad for this well must be surfaced with 6 inches of compacted caliche.

() All topsoil and vegetation encountered during the construction of the drill site area will be stockpiled and made available for resurfacing of the disturbed area after completion of the drilling operation. Topsoil on the subject location is approximately _____ inches in depth. Approximately _____ cubic yards of topsoil material will be stockpiled for reclamation.

() Other.

III. WELL COMPLETION REQUIREMENTS

() A Communitization Agreement covering the acreage dedicated to the well must be filed for approval with the BLM. The effective date of the agreement must be prior to any sales.

(X) Surface Restoration: If the well is a producer, the reserve pit(s) will be backfilled when dry, and cut-and-fill slopes will be reduced to a slope of 3:1 or less. All areas of the pad not necessary for production must be re-contoured to resemble the original contours of the surrounding terrain, and topsoil must be re-distributed and re-seeded with a drill equipped with a depth indicator (set at depth of 1/2 inch) with the following seed mixture, in pounds of Pure Live Seed (PLS), per acre.

- | | |
|---|---|
| () A. Seed Mixture 1 (Loamy Sites) | () B. Seed Mixture 2 (Sandy Sites) |
| Side Oats Grama (<i>Bouteloua curtipendula</i>) 5.0 | Sand Dropseed (<i>Sporobolus cryptandrus</i>) 1.0 |
| Sand Dropseed (<i>Sporobolus cryptandrus</i>) 1.0 | Sand Lovegrass (<i>Eragrostis trichodes</i>) 1.0 |
| | Plains Bristlegrass (<i>Setaria magrostachya</i>) 2.0 |
| () C. Seed Mixture 3 (Shallow Sites) | () D. Seed Mixture 4 (Gypsum Sites) |
| Side oats Grama (<i>Boute curtipendula</i>) 1.0 | Alkali Sacaton (<i>Sporobolus airoides</i>) 1.0 |
| | Four-Wing Saltbush (<i>Atriplex canescens</i>) 5.0 |

(X) OTHER SEE ATTACHED SEED MIXTURE

Seeding should be done either late in the fall (September 15 - November 15, before freeze up, or early as possible the following spring to take advantage of available ground moisture.

() Other.

RESERVE PIT CONSTRUCTION STANDARDS

The reserve pit shall be constructed entirely in cut material and lined with 6 mil plastic.

Mineral material extracted during construction of the reserve pit may be used for development of the pad and access road as needed. Removal of any additional material on location must be purchased from BLM.

Reclamation: Reclamation of this type of deep pit will consist of pushing the pit walls into the pit when sufficiently dry to support track equipment. The pit liner is NOT TO BE RUPTURED to facilitate drying; a ten month period after completion of the well is allowed for drying of the pit contents.

The pit area must be contoured to the natural terrain with all contaminated drilling mud buried with at least 3 feet of clean soil. The reclaimed area will then be seeded as specified in this permit.

OPTIONAL PIT CONSTRUCTION STANDARDS

The reserve pit may be constructed in predominantly fill material if:

- (1) Lined as specified above and
- (2) A borrow/caliche/gravel pit can be constructed immediately adjacent to the reserve pit and it capable of containing all reserve pit contents. The mineral material removed in the process can be used for pad and access road construction. However, a material sales contract must be purchased from the BLM prior to removal of the material.

Reclamation of the reserve pit consists of bulldozing all reserve pit contents and contaminants into the borrow pit and covering with a minimum of 3 feet of clean soil material. The entire area must be recontoured, all trash removed, and reseeded as specified in this permit.

CULTURAL

Whether or not an archaeological survey has been completed and notwithstanding that operations are being conducted as approved, the lessee/operator/grantee shall notify the BLM immediately if previously unidentified cultural resources are observed during surface disturbing operations. From the time of the observation, the lessee/operator/grantee shall avoid operations that will result in disturbance to these cultural resources until directed to processed by BLM.

TRASH PIT STIPS

All trash, junk, and other waste material shall be contained in trash cages or bins to prevent scattering and will be removed and deposited in an approved sanitary landfill. Burial on site is not permitted.

EXHIBIT B

BLM Serial No.: NM-2515

Company Reference: Samson Resources

Seed Mixture for LPC Sand/Shinnery 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	5lbs/A
Sand Bluestem	5lbs/A
Little Bluestem	3lbs/A
Big Bluestem	6lbs/A
Plains Coreopsis	2lbs/A
Sand Dropseed	1lbs/A

**Four-winged Saltbush 5lbs/A

* This can be used around well pads and other areas where caliche cannot be removed.

*Pounds of pure live seed:

Pounds of seed x percent purity x percent germination = pounds pure live seed

SENM-S-22

PRAIRIE CHICKENS

No surface use is allowed during the following time periods; unless otherwise specified, this stipulation does not apply to operation and maintenance of production facilities.

On the following lands: All of Section 15 T. 21 S., R. 32 E.

For the purpose of: Protecting Prairie Chickens:

Drilling for oil and gas, and 3-D geophysical exploration operations will not be allowed in Lesser Prairie Chicken Habitat during the period of March 15 through June 15, each year. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, geophysical exploration other than 3-D operations, and pipeline, road, and well pad construction, will be allowed except between 3:00 a.m. and 9:00 a.m. The 3:00 a.m. and 9:00 a.m. restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during the period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 feet from the source of the noise.

Bureau of Land Management
Carlsbad Field Office

SENM-S-22
December 1997

EXHIBIT NO. _____

**CULTURAL RESOURCES STIPULATIONS
CARLSBAD FIELD OFFICE**

PROJECT NAME: Samson Resources Mesa Verde 15 #1 and access road

REPORT NUMBER: 04-NM-080-147

SITE PROTECTION AND EMPLOYEE EDUCATION: All employees of the project shall be informed that cultural sites are to be avoided by all personnel, personal vehicles and company equipment. They shall also be notified that it is illegal to collect, damage or disturb cultural resources.

YES A. Monitoring is required.

YES 1. A copy of these stipulations shall be supplied to the archaeological monitor at least two (2) working days prior to the start of construction activities.

YES 2. No construction activities, including vegetation removal, may begin before the arrival of the archaeological monitor.

YES 3. The archaeological monitor will:

YES a. Ensure that the site protection barrier is located as indicated on the attached map.

NO b. Observe all surface disturbing activities within _____ feet of cultural site
_____ (see attached map(s)).

NO c. Other: _____

YES d. Submit a report of the monitoring activities within thirty (30) days of completion of monitoring unless other arrangements are made with the BLM. These stipulations must be attached to the report.

NO B. The grantee must select one of the following alternatives:

- _____ 1. Controlled test excavations to determine if cultural resources are present;
- _____ 2. Reduction of the project size to avoid all significant cultural materials;
- _____ 3. Relocation of the project;
- _____ 4. Preparation and implementation of a data recovery plan for cultural sites(s)

YES C. SITE BARRIER/FENCING:

YES 1. A temporary site protection barrier shall be erected under the direction of the monitoring archaeologist prior to any and all construction. The barrier shall, at a minimum, consist of upright wooden survey lath spaced no more than ten (10) feet apart and marked with ribbon flagging or paint. There shall be no construction activities or vehicular traffic past the barrier. The barrier shall remain in place through reclamation and reseeding.

NO 2. A permanent fence(s) shall be erected prior to _____ construction. There shall be no construction activities or vehicle traffic past the fence(s).

YES 3. The barrier shall be placed as indicated on the attached map.

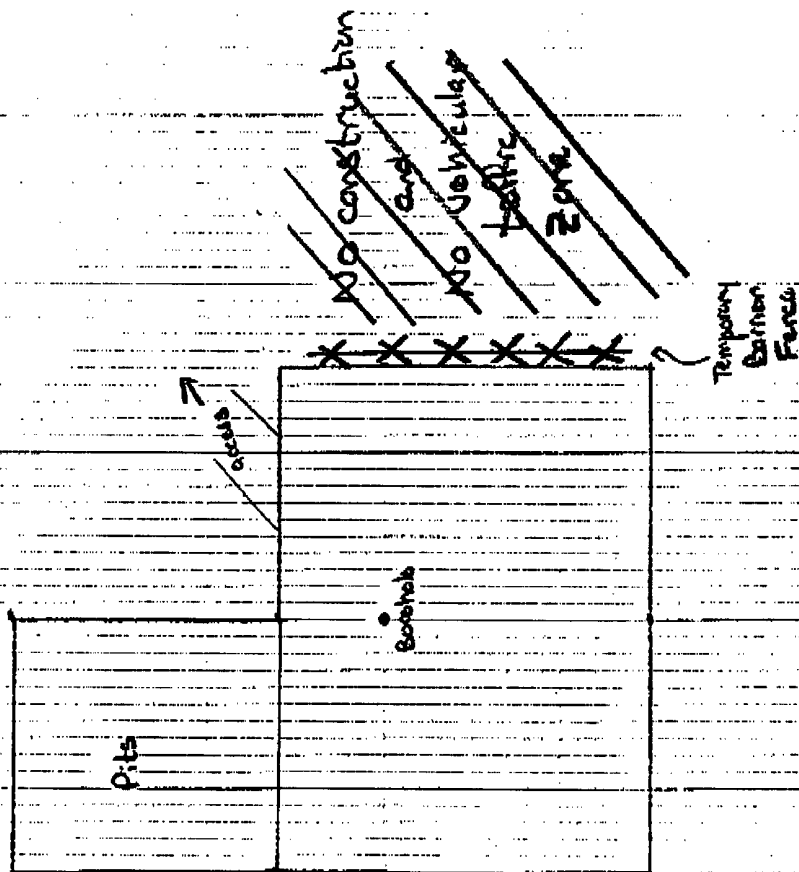
YES D. CONSTRUCTION ZONES: There shall be a no construction zone nor vehicular traffic zone (see attached map).

NO E. OTHER:

Mesa Verde 15 #1
990' FM, 990' FEL

0 100ft

Adapted from Exhibit D,
Sander Resources



CONDITIONS OF APPROVAL - DRILLING

Operator's Name: Samson Resources Well No. 1 - Mesa Verde 15 Federal
 Location: 990' FNL & 990' FEL sec. 15, T. 21 S., R. 32 E.
 Lease: NM-2515

I. DRILLING OPERATIONS REQUIREMENTS:

1. The Bureau of Land Management (BLM) is to be notified at (505) 393-3612 in sufficient time for a representative to witness:

A. Spudding

B. Cementing casing: 16 inch 11-3/4 inch 8-5/8 inch 5-1/2 inch

C. BOP tests

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. Include the API No. assigned to the well by NMOCD on the subsequent report of setting the first casing string.

4. Gamma-Ray/Neutron logs shall be run from the base of the Salado formation to the surface; cable speed not to exceed 30 feet per minute.

II. CASING:

1. 16 inch surface casing must be set at approximately 1525 feet (25 feet in the Rustler Anhydrite at approximately 1500 feet), below usable water and circulate cement to the surface. If cement does not circulate to the surface this BLM office shall be notified and a temperature survey or cement bond log shall be run to verify the top of the cement. Remedial cementing shall be completed prior to drilling out that string.

2. 11-3/4 inch salt protection casing must be set at approximately 3650 feet (not less than 100 feet nor more than 600 feet below the Base of the Salt) and circulate cement to the surface. If cement does not circulate to the surface this BLM office shall be notified and a temperature survey or cement bond log shall be run to verify the top of the cement. Remedial cementing shall be completed prior to drilling out that string.

3. 8-5/8 inch intermediate casing must be set at approximately 5350 feet (below the Base of the Capitan Reef) and the minimum required fill of cement behind the 8-5/8 inch intermediate casing is sufficient to tie back 200 feet into the 11-3/4 inch salt protection casing set at approximately 3650 feet. If cement does not circulate to the surface, a temperature survey or cement bond log shall be run to verify the top of the cement. Remedial cementing may be required prior to drilling out that string. Fresh water mud shall be used to drill the hole for the 8-5/8 inch intermediate casing set at approximately 5350 feet. *circulate to surface. (J2)*

4. Minimum required fill of cement behind the 5-1/2 inch production casing is sufficient to tie back 500 feet above the uppermost perforation in the pay zone. *hydrocarbon bearing zone. (J2)*

5. Whenever a casing string is cemented in the R-111-P Potash Area, cement shall be allowed to stand a minimum of twelve (12) hours under pressure and a total of twenty-four (24) hours before drilling the plug or initiating tests.

III. PRESSURE CONTROL:

1. Before drilling below the 16 inch surface casing, the blowout preventer assembly shall consist of a minimum of One Annular Preventer or Two Ram-Type Preventers and a Kelly Cock/Stabbing Valve. Before drilling below the 8-5/8 inch intermediate casing, the blowout preventer assembly shall consist of a minimum of One Annular Preventer, Two Ram-Type Preventers, and a Kelly Cock/Stabbing Valve.

CONDITIONS OF APPROVAL - DRILLING (CONTINUED)

Operator's Name: Samson Resources **Well No.** 1 - Mesa Verde 15 Federal
Location: 990' FNL & 990' FEL **sec.** 15, **T.** 21 S., **R.** 32 E.
Lease: NM-2515

2. Before drilling below the 16 inch surface casing, minimum working pressure of the blowout preventer and related equipment (BOPE) shall be 2000 psi. Before drilling below the 8-5/8 inch intermediate casing, minimum working pressure of the blowout preventer and related equipment (BOPE) shall be 5000 psi.

3. After setting the 8-5/8 inch intermediate casing string and before drilling into the Wolfcamp formation, the BOPE shall be tested as described in Onshore Order No. 2. Any equipment failing to test satisfactorily shall be repaired or replaced.

A. The BLM office shall be notified at (505) 393-3612 in sufficient time for a representative to witness the tests.

B. The tests shall be done by an independent service company.

C. The results of the test shall be reported to the BLM Hobbs Office at 414 West Taylor, Hobbs, New Mexico 88240.

D. Testing fluid must be water or an appropriate clear liquid suitable for sub-freezing temperatures. Use of drilling mud for testing is not permitted since it can mask small leaks.

E. Testing must be done in a safe workman like manner. Hard line connections shall be required.

IV. DRILLING MUD:

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

A. Recording pit level indicator to indicate volume gains and losses.

B. Flow-sensor on the flow-line to warn of abnormal mud returns from the well.

BLM Serial Number: NM-2515
Company Reference: Samson Resources
Well No. & Name: Mesa Verde 15 Federal #1

**STANDARD STIPULATIONS FOR PERMANENT RESOURCE ROADS
CARLSBAD FIELD OFFICE**

A copy of the grant and attachments, including stipulations and map, will be on location during construction. BLM personnel may request to view a copy of your permit during construction to ensure compliance with all stipulations.

The holder/grantee/permittee shall hereafter be identified as the holder in these stipulations. The Authorized Officer is the person who approves the Application for Permit to Drill (APD) and/or Right-of-Way (ROW).

GENERAL REQUIREMENTS

A. 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.

B. 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 U.S.C. 2601, *et. seq.*) with regard to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized by this 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.

C. 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 the right-of-way holder's activity 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.

D. If, during any phase of the construction, operation, maintenance, or termination of the road, any oil or other pollutant should be discharged, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil 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 to Federal lands resulting there from, the Authorized Officer may take such measures as deemed necessary to control and cleanup 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 liability or responsibility.

E. The holder shall minimize disturbance to existing fences and other improvements on public domain surface. 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 make a documented good-faith effort to 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.

F. The Holder shall ensure that the entire right-of-way, including the driving surface, ditching and drainage control structures, road verges and any construction sites or zones, will be kept free of the following plant species: Malta starthistle, African rue, Scotch thistle and salt cedar.

Holder agrees to comply with the following stipulations:

1. ROAD WIDTH AND GRADE

The road will have a driving surface of 14 feet (all roads shall have a minimum driving surface of 12 feet, unless local conditions dictate a different width). The maximum grade is 10 percent unless the box below is checked. Maximum width of surface disturbance from construction will be 30 feet.

☐ Those segments of road where grade is in excess of 10% for more than 300 feet shall be designed by a professional engineer.

2. CROWNING AND DITCHING

Crowning with materials on site and ditching on one side of the road on the uphill side will be required. The road cross-section will conform to the cross section diagrams in Figure 1. If conditions dictate, ditching may be required for both sides of the road; if local conditions permit, a flat-bladed road may be considered (if these conditions exist, check the appropriate box below). The crown shall have a grade of approximately 2% (i.e., 1" crown on a 12' wide road).

☒ Ditching will be required on both sides of the roadway as shown on the attached map or as staked in the field.

☐ Flat-blading is authorized on segment(s) delineated on the attached map.

3. DRAINAGE

Drainage control shall be ensured over the entire road through the use of borrow ditches, outsloping, insloping, natural rolling topography, lead-off (turnout) ditches, culverts, and/or drainage dips.

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

SPACING INTERVAL FOR TURNOUT DITCHES

Percent slope	Spacing interval
0% - 4%	400' - 150'
4% - 6%	250' - 125'
6% - 8%	200' - 100'
8% - 10%	150' - 75'

A typical lead-off ditch has a minimum depth of 1 foot below and a berm 6 inches above natural ground level. The berm will be on the down-slope side of the lead-off ditch. The ditch end will tie into vegetation whenever possible.

For this road the spacing interval for lead-off ditches shall be at

☒ 400 foot intervals.

☐ _____ foot intervals.

☐ locations staked in the field as per spacing intervals above.

☐ locations delineated on the attached map.

B. Culvert pipes shall be used for cross drains where drainage dips or low water crossings are not feasible. The minimum culvert diameter must be 18 inches. Any culvert pipe installed shall be of sufficient diameter to pass the anticipated flow of water. Culvert location and required diameter are shown on the attached map (Further details can be obtained from the Roswell District Office or the appropriate Resource Area Office).

C. On road slopes exceeding 2%, drainage dips shall drain water into an adjacent lead-off ditch. Drainage dip location and spacing shall be determined by the formula:

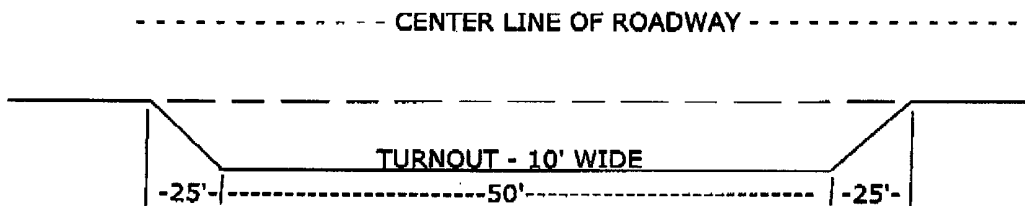
$$\text{spacing interval} = \frac{400'}{\text{road slope in \%}} + 100'$$

3

Example: 4% slope: spacing interval = $\frac{400}{4} + 100 = 200$ feet

4. TURNOUTS

Unless otherwise approved by the Authorized Officer, vehicle turnouts will be required. Turnouts will be located at 2000-foot intervals, or the turnouts will be intervisible, whichever is less. Turnouts will conform to the following diagram:



STANDARD TURNOUT - PLAN VIEW

5. SURFACING

Surfacing of the road or those portions identified on the attached map may, at the direction of the Authorized Officer, be required, if necessary, to maintain traffic within the right-of-way with caliche, gravel, or other surfacing material which shall be approved by the Authorized Officer. When surfacing is required, surfacing materials will be compacted to a minimum thickness of six inches with caliche material. The width of surfacing shall be no less than the driving surface. Prior to using any mineral materials from an existing or proposed Federal source, authorization must be obtained from the Authorized Officer.

A sales contract for the removal of mineral materials (caliche, sand, gravel, fill dirt, etc.) from an authorized pit, site, or on location must be obtained from the BLM prior to using any such mineral material from public lands. Contact the BLM solid minerals staff for the various options to purchase mineral material.

6. CATTLEGUARDS

Where used, all cattleguard grids and foundation designs and construction shall meet the American Association of State Highway and Transportation Officials (AASHTO) Load Rating H-20, although AASHTO U-80 rated grids shall be required where heavy loads (exceeding H-20 loading), are anticipated (See BLM standard drawings for cattleguards). Cattleguard grid length shall not be less than 8 feet and width of not less than 14 feet. A wire gate (16-foot minimum width) will be provided on one side of the cattleguard unless requested otherwise by the surface user.

7. MAINTENANCE

The holder shall maintain the road in a safe, usable condition. A maintenance program shall include, but not be limited to blading, ditching, culvert installation, culvert cleaning, drainage installation, cattleguard maintenance, and surfacing.

8. PUBLIC ACCESS

Public access along this road will not be restricted by the holder without specific written approval being granted by the Authorized Officer. Gates or cattleguards on public lands will not be locked or closed to public use unless closure is specifically determined to be necessary and is authorized in writing by the Authorized Officer.

9. CULTURAL RESOURCES

Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on the holder's behalf, on public or Federal land shall be immediately reported to the authorized officer. The 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 actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to the proper mitigation measures will be made by the authorized officer after consulting with the holder.

10. SPECIAL STIPULATIONS:

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-144
March 12, 2004

For drilling and production facilities, submit to
appropriate NMOCD District Office.
For downstream facilities, submit to Santa Fe
office

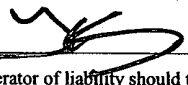
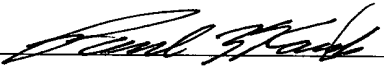
Pit or Below-Grade Tank Registration or Closure

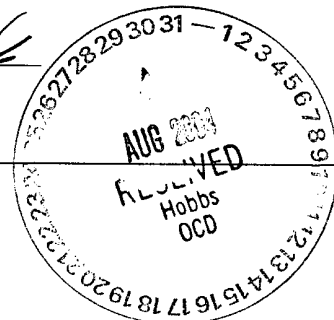
Is pit or below-grade tank covered by a "general plan"? Yes ☐ No ☒

Type of action: Registration of a pit or below-grade tank ☒ Closure of a pit or below-grade tank ☐

Operator: SAMSON RESOURCES CO Telephone: 918/591-1386 e-mail address: TKOSCELNY@SAMSON.COM		
Address: TWO WEST SECOND ST., TULSA, OK 74103-3103		
Facility or well name: MESA VERDE 15 FEDERAL #1 30-025-36836 U/L or Qtr/Qtr NW Sec 15 T 21S R 32E		
County: LEA Latitude 32 28 59.75 Longitude 103 39 24.26 NAD: 1927 <input checked="" type="checkbox"/> 1983 <input type="checkbox"/> Surface Owner Federal <input checked="" type="checkbox"/> State <input type="checkbox"/> Private <input type="checkbox"/> Indian <input type="checkbox"/>		
Pit Type: Drilling <input checked="" type="checkbox"/> Production <input type="checkbox"/> Disposal <input type="checkbox"/> Workover <input type="checkbox"/> Emergency <input type="checkbox"/> Lined <input checked="" type="checkbox"/> Unlined <input type="checkbox"/> Liner type: Synthetic <input checked="" type="checkbox"/> Thickness 12 mil Clay <input type="checkbox"/> Volume 32,000 bbl	Below-grade tank Volume: _____ bbl Type of fluid: _____ Construction material: _____ Double-walled, with leak detection? Yes <input type="checkbox"/> If not, explain why not. _____	
Depth to ground water (vertical distance from bottom of pit to seasonal high water elevation of ground water.)	Less than 50 feet <u>50 feet or more, but less than 100 feet</u> 100 feet or more	(20 points) (10 points) (0 points)
Wellhead protection area: (Less than 200 feet from a private domestic water source, or less than 1000 feet from all other water sources.)	Yes <u>No</u>	(20 points) (0 points)
Distance to surface water: (horizontal distance to all wetlands, plays, irrigation canals, ditches, and perennial and ephemeral watercourses.)	Less than 200 feet 200 feet or more, but less than 1000 feet <u>1000 feet or more</u>	(20 points) (10 points) (0 points)
Ranking Score (Total Points)		10

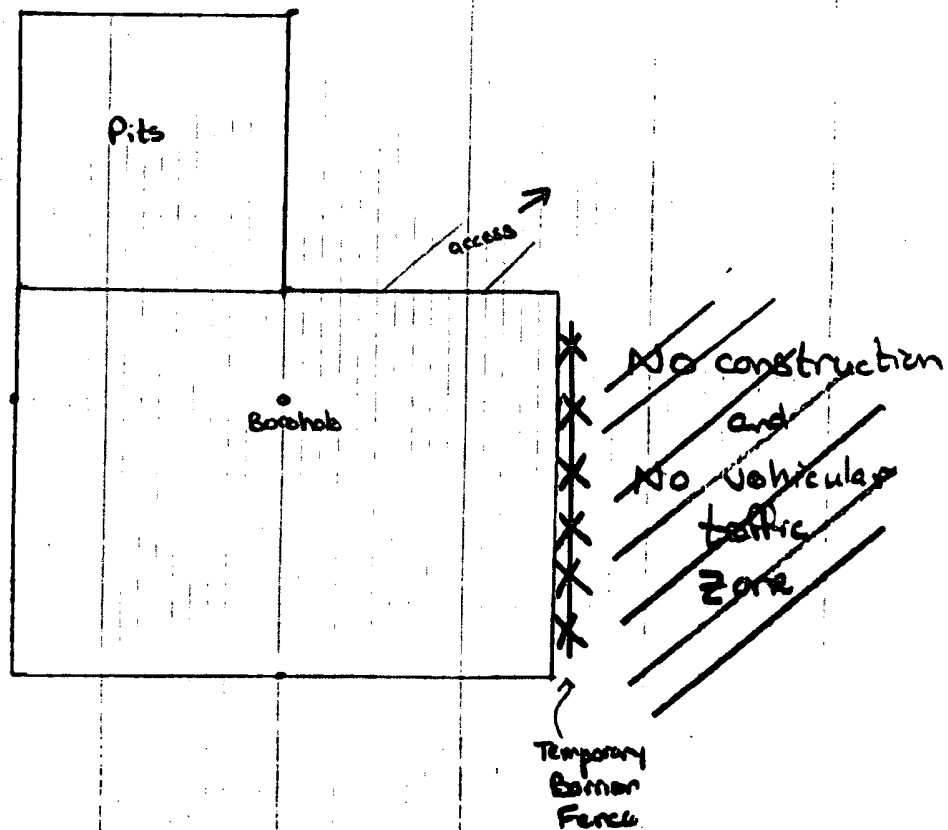
If this is a pit closure: (1) attach a diagram of the facility showing the pit's relationship to other equipment and tanks. (2) Indicate disposal location: onsite ☐ offsite ☐ If offsite, name of facility _____. (3) Attach a general description of remedial action taken including remediation start date and end date. (4) Groundwater encountered: No ☐ Yes ☐ If yes, show depth below ground surface _____ ft. and attach sample results. (5) Attach soil sample results and a diagram of sample locations and excavations.

I hereby certify that the information above is true and complete to the best of my knowledge and belief. I further certify that the above-described pit or below-grade tank has been/will be constructed or closed according to NMOCD guidelines <input checked="" type="checkbox"/> , a general permit <input type="checkbox"/> , or an (attached) alternative OCD-approved plan <input type="checkbox"/> .	
Date: 8/25/04	
Printed Name/Title: TOM KOSCELNY, ENVIRONMENTAL SUPERVISOR	Signature: 
Your certification and NMOCD approval of this application/closure does not relieve the operator of liability should the contents of the pit or tank contaminate ground water or otherwise endanger public health or the environment. Nor does it relieve the operator of its responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Approval: 8/31/04 PETROLEUM ENGINEER	
Date: 8/31/04	Signature: 
Printed Name/Title: _____	Signature: _____



0 N 100ft
Adapted from Exhibit D,
Samson Resources)

Mesa Verde 15#1
990' FNL, 990' FEL





1" = 3,125.0 ft Data Zoom 12-0