Form 3160-3
(September 2001)

RECEIVED
MAY 21 2010
Bureau of Land Management
Farmington Field Office

FORM APPROVED
OMB No 1004-0136
Expires January 31, 2004

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No: NMSF-078771
6. If Indian, Allottee or Tribe Name:
7. If Unit or CA Agreement, Name and No.: Rosa Unit NMNM-78407X
8. Lease Name and Well No: Rosa Unit #634A
9. API Well No: 30-039-30970
10. Field and Pool, or Exploratory: Basin Mancos
11. Sec , T., R , M , or Blk and Survey or Area: Section 22, 31N, 6W

1a. Type of Work: ☒ DRILL ☐ REENTER

1b. Type of Well: ☐ Oil Well ☒ Gas Well ☐ Other ☒ Single Zone Multiple Zone

2. Name of Operator: Williams Production Company, LLC

3a. Address: P.O. Box 640 Aztec, NM 87410

3b. Phone No. *(include area code)*: (505) 634-4208

4. Location of Well *(Report location clearly and in accordance with any State requirements *)*
At surface: 1480' FNL & 700' FEL Section 22, T31N., R6W
At proposed prod. zone: 720' FNL & 20' FEL Section 23, T31N R6W

14. Distance in miles and direction from nearest town or post office*: approximately 30 miles northeast of Blanco, New Mexico

12. County or Parish: Rio Arriba

13. State: NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drlg. unit line, if any): 645'

16. No. of Acres in lease: 2,560.000

17. Spacing Unit dedicated to this well: 320.0 – (N/2)

RCVD JUN 22 '10
OIL CONS. DIV.
DIST. 3

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft: 50' Rosa 634B

19. Proposed Depth: 7058'

20. BLM/BIA Bond No. on file: UT0899

21. Elevations (Show whether DF, KDB, RT, GL, etc.): 6,258' GR

22. Approximate date work will start*: June 15, 2010

23. Estimated duration: 1 month

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
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: Larry Higgins — Name *(Printed/Typed)*: Larry Higgins — Date: 5-21-10

Title: Permit Supervisor

Approved by *(Signature)*: /s/ Monica Kuehling — Name *(Printed/Typed)*: — Date: 6/17/2010

Title: AFM — Office: FFO

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon
Conditions of approval, if any, are attached.

Title 18 U.S.C Section 1001 and Title 43 U.S.C Section 1212, make it a crime for any person knowingly and willfully to make 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)*

Williams Production Company, LLC, proposes to develop the Basin Mancos formation at the above described location in accordance with the attached drilling and surface use plans

The well pad surface is under jurisdiction of the Bureau of Land Management, Farmington Field Office (BLM/FFO).

This location has been archaeologically surveyed by La Plata Archaeological Consultants. Copies of their report have been submitted directly to the BLM

No new access road will be required for this proposed well.

NOTIFY AZTEC OCD 24 HRS.
PRIOR TO CASING & CEMENT

This APD is also serving as an application to obtain a pipeline right-of-way. An associated pipeline tie of 18.2 feet would be required for this well

Hold C104
for Directional Survey
and "As Drilled" plat

JUN 24 2010

NMOCD

CONFIDENTIAL

BLM'S APPROVAL OR ACCEPTANCE OF THIS ACTION DOES NOT RELIEVE THE LESSEE AND OPERATOR FROM OBTAINING ANY OTHER AUTHORIZATION REQUIRED FOR OPERATIONS ON FEDERAL AND INDIAN LANDS

DRILLING OPERATIONS AUTHORIZED ARE SUBJECT TO COMPLIANCE WITH ATTACHED "GENERAL REQUIREMENTS".

This action is subject to technical and procedural review pursuant to 43 CFR 3165.3 and appeal pursuant to 43 CFR 3165.4

District I
1625 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 & Natural Resources Department

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

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MAY 21 2010
Bureau of Land Management
Farmington Field Office

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number	2 Pool Code	3 Pool Name
30-039-30970	97232	BASIN MANCOS

4 Property Code	5 Property Name	6 Well Number
17033	ROSA UNIT	634A

7 OGRID No	8 Operator Name	9 Elevation
120782	WILLIAMS PRODUCTION COMPANY	6258'

10 Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H	22	31N	6W		1480	NORTH	700	EAST	RIO ARRIBA

11 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
A	23	31N	6W		725	NORTH	20	EAST	RIO ARRIBA

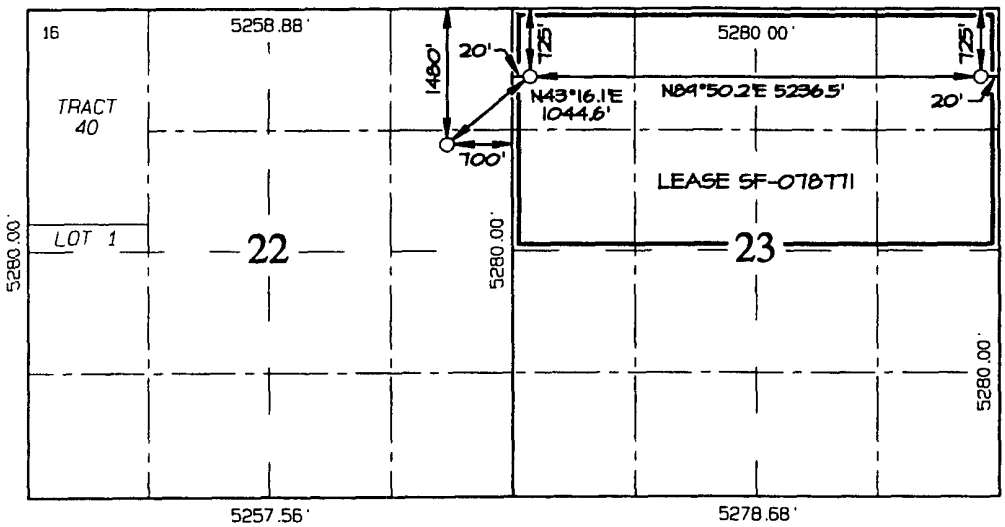
12 Dedicated Acres	13 Joint or Infill	14 Consolidation Code	15 Order No.
320.0 Acres - (N/2)			NSL-R-13200

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

SURFACE LOCATION
1480' FNL 700' FEL
SECTION 22, T31N, R6W
LAT: 36.88832 °N
LONG: 107.44357 °W
DATUM: NAD1983

POINT-OF-ENTRY
725' FNL 20' FWL
SECTION 23, T31N, R6W
LAT: 36.89040 °N
LONG: 107.44111 °W
DATUM: NAD1983

END-OF-LATERAL
725' FNL 20' FEL
SECTION 23, T31N, R6W
LAT: 36.89038 °N
LONG: 107.42320 °W
DATUM: NAD1983



THE HORIZONTAL LATERAL REPRESENTED ON THIS PLAT CORRESPONDS TO THE OLIVE SEGMENT WHICH VARIES IN VERTICAL DEPTH FROM 7169.0' AT THE POINT-OF-ENTRY TO 7013.0' AT THE END-OF-LATERAL.

17 OPERATOR CERTIFICATION

I hereby certify that the information contained 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 a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature: Larry Higgins — Date: 5-21-10

Printed Name: LARRY HIGGINS

18 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.

Survey Date: SEPTEMBER 11, 2009

Signature and Seal of Professional Surveyor

JASON C. EDWARDS
NEW MEXICO
15269
REGISTERED PROFESSIONAL SURVEYOR

JASON C. EDWARDS
Certificate Number 15269

DRILLING PROGRAM

Operator: Williams Production Company LLC.

Well: Rosa Unit 634A

Surface: 1480' FNL & 700' FEL, Sec. 22, T31N, R6W, N.M.P.M.

Bottom Hole: 725' FNL & 20' FEL Sec. 23, T31N, R6W, N.M.P.M.

Rio Arriba County, New Mexico

ONSHORE OIL & GAS ORDER NO. 1
Approval of Operations on Onshore Federal and Indian Oil and Gas Leases

All lease and/or unit operations are to be conducted in such a manner that full compliance is made with the applicable laws, regulations (CFR 43, Part 3160) and the approved Application for Permit to Drill. The operator is considered fully responsible for the actions of his subcontractors. A copy of the approved APD must be on location during construction, drilling and completion operations.

Approval of this application does not warrant or certify that the applicant holds legal of equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

1. FORMATION TOPS:

The estimated tops of important geologic markers are as follows:
The referenced surface elevation is 6260' ungraded. KBm 6280'

Name	TVD	MD	Name	TVD	MD
Ojo Alamo	2,345	2,345	Menefee	5,350	5,367
Kirtland	2,445	2,445	Point Lookout	5,585	5,626
Fruitland	2,945	2,945	Mancos	5,880	5,880
Pictured Cliffs	3,120	3,120	Top of Olive Zone	7,025	7,357
Lewis	3,410	3,410	Bottom of Olive Zone	7,151	7,891
Cliff House	5,295	5,307	**TD**	**7,058**	**13,129**

2. ESTIMATED DEPTH OF WATER, OIL, GAS & OTHER MINERAL BEARING FORMATIONS:

The estimated depths at which the top and bottom of the anticipated water, oil, gas or other mineral bearing formations are expected to be encountered are as follows:

Substance	Formation	Depth TVD
Gas	Fruitland Coal	2945
Gas	Cliff House	5295
Gas	Point Lookout	5585

All shows of fresh water and minerals will be reported and protected.

3. BOPE EQUIPMENT:

Williams Production Company, LLC. minimum specifications for pressure control equipment are as follows:

The well control equipment will be a Class 3 – 5000 # W.P. with 2- Hydraulic Rams at 5000 # rating and 1- Annular at 3000 # rating. The choke manifold is a 2" 5000 # rating flange valves system & two (2) 2" valves per wing, one wing with one (1) Manual adjustable choke, second (2) wing is a fixed choke 5000 # rating, third (3) wing is a gate. Choke/ Kill outlets between rams or drilling spool 2" flanged gate, choke valves one(1) manual and one(1) hydraulic 2" flange 5000 # rating, the kill valves with two(2) manual 2" flange 5000# rating gate valves, and secondary kill with two(2) manual gate valves 2" flange 5000# rating with pressure gauge. See attached schematic of BOP stack and choke manifold system.

Ram type preventers and associated equipment shall be tested with a test plug to approved stack working pressure of up to 70 percent of internal yield pressure of casing. Pressure shall be maintained for at least 10 minutes or until requirements of test are met, whichever is longer. If a test plug is utilized, no bleed-off pressure is acceptable. Valve on casing head below test plug shall be open during test of BOPE stack.

Annular type preventers shall be tested with a test plug to 50 percent of rated working pressure. Pressure shall be maintained at least 10 minutes or until provisions of test are met, whichever is longer..

As a minimum, the above test shall be performed:

a. when initially installed
b. whenever any seal subject to test is broken
c. following related repairs
d. at 30-day intervals

Pressure tests are required before drilling out from under all casing strings set and cemented in place. Blowout preventer controls must be installed prior to drilling the surface casing plug and will remain in use until the well is completed or abandoned.

Preventers will be inspected and operated at least daily to insure good mechanical working order, and this inspection recorded on the daily drilling report. Preventers will be pressure tested before drilling casing cement plugs. All BOPE pressure tests must be recorded on the daily drilling report.

NOTIFY THE FIELD OFFICE PETROLEUM ENGINEER AT LEAST 24 HOURS IN ADVANCE OF PRESSURE TESTS.

Valves shall be tested from working pressure side during BOPE tests with all down stream valves open.

When testing the kill line valve(s) the check valve shall be held open of the ball removed.

Annular preventers shall be functionally operated at least weekly.

Pipe and blind rams shall be activated each trip; however, this function need not be performed more than once a day.

A BOPE pit level drill shall be conducted weekly for each drilling crew.

Pressure tests shall apply to all related well control equipment.

All of the above described tests and/or drills shall be recorded in the drilling log. Test charts, with individual test results identified, shall be maintained on location while drilling and shall be made available to a BLM representative upon request. A test plug will be used on all pressure testing BOPE.

The choke manifold, BOPE extension rods and hand wheels will be located outside the substructure. The hydraulic BOPE closing unit will be located at least 100 ft from the well head, with the remote control unit on the rig floor. The casing head and BOPE will be flanged 13-3/8" 5000 psi. Kill line will be 2" i.d. with burst pressure rating of at least 5,000 psi. These items will be pressure tested concurrently with BOPE's. The BOPE will be tested when the stack is first installed on the well. It will also be tested at each casing shoe and at least every 30 days. BOPE and choke manifold sizes will be in accordance with API-RP-53 as per the attached. See attached schematic of choke manifold.

a. The size and rating of the BOPE stack is shown on the attached diagram.
b. A choke line and a kill line are to be properly installed. The kill line is not to be used as a fill-up line.
c. The accumulator system shall have a pressure capacity to provide for repeated operation of hydraulic preventers.
d. Drill string safety valve(s), to fit all tools in the drill string, are to be maintained on the rig floor while drilling operations are in progress.

4. CASING AND CEMENTING PROGRAM:

The proposed casing and cementing program shall be conducted as approved to protect and/or isolate all usable water zones, potentially productive zones, lost circulation zones, abnormally pressured zones, and any prospectively valuable deposits of minerals. Any isolating medium other than cement shall receive approval prior to use. The casing setting depth shall be calculated to position the casing seat opposite a competent formation which will contain the maximum pressure to which it will be exposed during normal drilling operations. Determination of casing setting depth shall be based on all relevant factors, including; presence/absence of hydrocarbons; fracture gradients; usable water zones; formation pressures; lost circulation zones; other minerals; or other unusual characteristics. All indications of usable water shall be reported.

Casing design shall assume formation pressure gradients of 0.44 to 0.50 psi per foot for exploratory wells (lacking better data).

Casing design shall assume fracture gradients from 0.70 to 1.00 psi per foot for exploratory wells (lacking better data).

Casing collars shall have a minimum clearance of 0.422 inches of all sides in the hole/casing annulus, with recognition that variances can be granted for justified exceptions.

All waiting on cement times shall be adequate to achieve a minimum of 500 psi compressive strength at the casing shoe prior to drilling out.

All indications of usable water shall be reported to the authorized officer prior to running the next string of casing or before plugging orders are requested, whichever occurs first.

Top plugs shall be used to reduce contamination of cement by displacement fluid. A bottom plug or other acceptable technique, such as a suitable pre-flush fluid, inner string cement method, etc. shall be utilized to help isolate the cement from contamination by the mud fluid being displaced ahead of the cement slurry.

All casing strings below the conductor shall be pressure tested to 0.22 psi per foot of casing string length or 1500 psi, whichever is greater, but not to exceed 70 percent of the minimum internal yield. If pressure declines more than 10 percent in 30 minutes, corrective action shall be taken.

The proposed casing program will be as follows:

Purpose	Depth MD	Hole Size	O.D.	Weight #/ft.	Grade	Type
Conductor	0-80'	26"	20"	94	J55	ST&C
Surface	0-500'	17-1/2"	13-3/8"	68	K55	BUTT
Intermediate	0-6452	12-1/4"	9-5/8"	43.5	HCP110	LT&C
Drilling Liner	5800-7891	8-1/2"	7"	23	N-80	LT&C
Production	5600-13129'	6-1/4"	4-1/2"	11.6	HCP110	LT&C

Casing Design Subject to revision based on geologic conditions encountered.

Conductor: No centralization

Surface: One centralizer every other joint beginning with shoe joint. 6 total centralizers

Intermediate: One centralizer every other joint beginning with shoe joint up to 5000' MD, every 3rd joint from 5000' MD to surface. 75 total centralizers

Drilling Liner: One centralizer every joint. 46 total centralizers (solid body turbolizer style)

Production Liner: One centralizer every joint. 180 total centralizers (solid body turbolizer style)

The cement program will be as follows:

Conductor Cement Program:

0-80 ft depth 20" Conductor Cement with 120 cuft or105 sacks of Type I cement or Neat cement with Yield of 1.14 cuft./ft. and weight of slurry is 14.8 ppg which is 100 % excess of hole capacity volume.

Surface Cement Program:

Fluid 1: Water Based Spacer		
Water	Fluid Density:	8.34 lbm/gal
	Fluid Volume:	10 bbl
Fluid 2: Lead Cement		
VARICEM (TM) CEMENT	Fluid Weight	12.70 lbm/gal
0.25 lbm/sk Poly-E-Flake (Lost Circulation Additive)	Slurry Yield:	1.78 ft^3/sk
1 % Cal-Seal 60 (Accelerator)	Total Mixing Fluid:	9.13 Gal/sk
	Top of Fluid:	0 ft
	Calculated Fill:	334 ft
	Volume:	80.11 bbl
	Calculated Sacks:	252.98 sks
	Proposed Sacks:	255 sks
Fluid 3: Tail Cement		
Premium Plus - Type III	Fluid Weight	13.50 lbm/gal
94 lbm/sk Premium Plus - Type III (Cement-non-api)	Slurry Yield:	1.77 ft^3/sk
0.25 lbm/sk Poly-E-Flake (Lost Circulation Additive)	Total Mixing Fluid:	9.26 Gal/sk
0.3 % Versaset (Thixotropic Additive)	Top of Fluid:	334 ft
2 % Econolite (Light Weight Additive)	Calculated Fill:	166 ft
6 % Salt (Salt)	Volume:	47.15 bbl
	Calculated Sacks:	150 sks
	Proposed Sacks:	150 sks
Fluid 4: Water Based Spacer		
Water Displacement	Fluid Density:	8.34 lbm/gal
	Fluid Volume:	71.11 bbl

TOTAL SURFACE VOLUME: 715 ft^3
SUFFICIENT VOLUME IN SLURRY TO CIRCULATE CEMENT TO SURFACE

Intermediate Casing Cement Program:

Fluid 1: Water Spacer		
Water	Fluid Density:	8.40 lbm/gal
	Fluid Volume:	20 bbl
Fluid 2: Reactive Spacer		
SUPER FLUSH 101	Fluid Density:	10 lbm/gal
	Fluid Volume:	20 bbl
Fluid 3: Water Spacer		
Water	Fluid Density:	8.40 lbm/gal
	Fluid Volume:	20 bbl

Fluid 4: Lead Cement
FILLSEAL (TM) SYSTEM
0.2 % Versaset (Thixotropic Additive)
0.1 % HALAD-766 (Low Fluid Loss Control)
1 % ZoneSeal 4000 (Foamer)

Fluid Weight	13 lbm/gal
Slurry Yield:	1.43 ft^3/sk
Total Mixing Fluid:	6.76 Gal/sk
Top of Fluid:	0 ft
Calculated Fill:	5000 ft
Volume:	484.12 bbl
Calculated Sacks:	1278.83 sks
Proposed Sacks:	1280 sks

Fluid 5: Lead Cement
FILLSEAL (TM) SYSTEM
0.2 % Versaset (Thixotropic Additive)
0.1 % HALAD-766 (Low Fluid Loss Control)
1 % ZoneSeal 4000 (Foamer)

Fluid Weight	13 lbm/gal
Slurry Yield:	1.43 ft^3/sk
Total Mixing Fluid:	6.76 Gal/sk
Top of Fluid:	5000 ft
Calculated Fill:	1000 ft
Volume:	100.41 bbl
Calculated Sacks:	273.98 sks
Proposed Sacks:	275 sks

Fluid 6: Tail Cement
HALCEM (TM) SYSTEM
0.2 % Versaset (Thixotropic Additive)
0.1 % HALAD-766 (Low Fluid Loss Control)
1 % ZoneSeal 4000 (Foamer)

Fluid Weight	13 lbm/gal
Slurry Yield:	1.43 ft^3/sk
Total Mixing Fluid:	6.76 Gal/sk
Top of Fluid:	6000 ft
Calculated Fill:	506 ft
Volume:	53.78 bbl
Calculated Sacks:	211.02 sks
Proposed Sacks:	215 sks

Fluid 7: Oil Based Mud
OBM Displacement

Fluid Density:	9 lbm/gal
Fluid Volume:	481.46 bbl

Foam Output Parameter Summary:

Fluid #	Fluid Name	Unfoamed Liquid Volume	Beginning Density lbm/gal	Ending Density lbm/gal	Beginning Rate scf/bbl	Ending Rate scf/bbl
Stage 1						
4	Lead Cement Slurry 9 ppg	325.94 bbl	9.0	9.0	5.0	413.5
5	Lead Cement Slurry 9.5 ppg	69.83bbl	9.5	9.5	340.3	412.3

Foam Design Specifications:

Foam Calculation Method: Constant Density
Backpressure: 14.70 psig

Calculated Gas = 94659.7 scf
Additional Gas = 15000 scf

Bottom Hole Circulating Temp: 130 degF
Mud Outlet Temperature: 100 degF

Total Gas = 109659.7 scf

TOTAL INTERMEDIATE VOLUME: 3,044 ft^3
SUFFICIENT VOLUME IN SLURRY TO CIRCULATE CEMENT TO SURFACE

Drilling Liner Cement Program:

Fluid Instructions
Fluid 1: Water Based Spacer
MUD FLUSH III

0.1 gal/bbl	SEM-7 (Emulsifier)
0.1 gal/bbl	Musol(R) A (Mutual Solvent)

Fluid Density:	8.40 lbm/gal
Fluid Volume:	20 bbl

Fluid 2: Primary Cement
HALCEM (TM) SYSTEM

0.4 %	Halad(R)-9 (Low Fluid Loss Control)
0.4 %	Halad(R)-413 (Low Fluid Loss Control)
2.5 lbm/sk	Kol-Seal (Lost Circulation Additive)
0.3 %	D-AIR 3000 (Defoamer)
0.05 %	HR-5 (Retarder)

Fluid Weight	13.50 lbm/gal
Slurry Yield:	1.30 ft^3/sk
Total Mixing Fluid:	5.52 Gal/sk
Top of Fluid:	6050 ft
Calculated Fill:	2165 ft
Volume:	74.95 bbl
Calculated Sacks:	323.95 sks
Proposed Sacks:	325 sks (458 ft^3)

Fluid 3: Oil Based Mud
Displacement

Fluid Density:	9 lbm/gal
Fluid Volume:	163.90 bbl

TOTAL DRILLING LINER VOLUME: 458 ft^3

SUFFICIENT VOLUME IN SLURRY TO CIRCULATE CEMENT ABOVE TOP OF LINER

Lateral Production Casing Cement Program:

Fluid Instructions
Fluid 1: Oil Base Spacer
Mineral Oil

Fluid Density:	6.80 lbm/gal
Fluid Volume:	20 bbl

Fluid 2: Water Based Spacer
9 ppg WBM

Fluid Density:	9 lbm/gal
Fluid Volume:	369.53 bbl

Fluid 3: Water Based Spacer
MUD FLUSH III

0.1 gal/bbl	SEM-7 (Emulsifier)	Fluid Density:	8.40 lbm/gal
0.1 gal/bbl	Musol(R) (Mutual Solvent)	Fluid Volume:	20 bbl
0.1 gal/bbl	ZoneSeal 4000 (Foamer)		

Fluid 4: Water Based Spacer
Foamed MUD FLUSH III

0.1 gal/bbl	SEM-7 (Emulsifier)	Fluid Density:	8.40 lbm/gal
0.1 gal/bbl	Musol(R) (Mutual Solvent)	Fluid Volume:	20 bbl
0.1 gal/bbl	ZoneSeal 4000 (Foamer)		

Fluid 5: Lead Cement
FRACSEAL (TM) SYSTEM

0.2 %	Versaset (Thixotropic Additive)	Fluid Weight	13 lbm/gal
0.2 %	HALAD-766 (Low Fluid Loss Control)	Slurry Yield:	1.43 ft^3/sk
1 %	ZoneSeal 4000 (Foamer)	Total Mixing Fluid:	6.76 Gal/sk
		Top of Fluid:	6000 ft
		Calculated Fill:	7085 ft
		Volume:	162.98 bbl
		Calculated Sacks:	406.39 sks
		Proposed Sacks:	410 sks

Fluid 6: Tail Cement
FRACCEM (TM) SYSTEM

0.2 %	Versaset (Thixotropic Additive)	Fluid Weight	13 lbm/gal
0.2 %	HALAD-766 (Low Fluid Loss Control)	Slurry Yield:	1.43 ft^3/sk
1 %	ZoneSeal 4000 (Foamer)	Total Mixing Fluid:	6.76 Gal/sk
		Top of Fluid:	13085 ft
		Calculated Fill:	235 ft
		Volume:	6.37 bbl
		Calculated Sacks:	24.97 sks
		Proposed Sacks:	25 sks

Fluid 7: Oil Based Mud
OBM Displacement

Fluid Density:	9 lbm/gal
Fluid Volume:	197.62 bbl

Foam Output Parameter Summary:

Fluid #	Fluid Name	Unfoamed Liquid Volume	Beginning Density lbm/gal	Ending Density lbm/gal	Beginning Rate scf/bbl	Ending Rate scf/bbl
Stage 1						
4	Spacer	11.72bbl	7.0	7.0	206.3	214.4
5	Foamed Slurry	103.65bbl	9.2	9.2	416.7	937.2

TOTAL PRODUCTION LINER VOLUME: 586 ft^3

SUFFICIENT VOLUME IN SLURRY TO CIRCULATE CEMENT ABOVE TOP OF LINER

Note: Actual volumes to be calculated as determined by conditions on site. All cement slurries will meet or exceed minimum BLM and New Mexico Oil Conservation Division requirements. Slurries used will be the slurries listed above, or equivalent slurries depending on service provider selected. Cement yield may change depending on slurries selected, but cement volume in cubic feet will be based on the above excess numbers.

After cementing but before commencing any test, the casing string shall stand cemented until the cement has reached a compressive strength of at least 500 psi at the shoe. WOC time shall be recorded in the driller's log.

The following reports shall be filed with the Area manager within 30 days after the work is completed.

Progress reports, Form 3160-5 "Sundry notices and Reports on Wells", must include complete information concerning: Setting of each string of casing, showing the size, grade, weight of casing set, hole size, setting depth, amounts and type of cement used, whether cement circulated or the top of the cement behind the casing, depth of cementing tools used, casing test method and results, and the date work was done. Show the spud date on the first reports submitted.

5. MUD PROGRAM:

The proposed circulating mediums to be employed in drilling are as follows:

Mud Type:Fresh Water / NewGel / NewPHPA Sweeps/ LSND:

Hole Size (in)	TVD (ft)	Mud Wt.	Visc.	Yield Point ($lb/100ft^2$)	API Fluid Loss (ml/30min)	Total Solids (%)
26"	0-80'	8.3 - 9.2 ppg	38-100	4-28	4-28	6-30

Hole Size (in)	TVD (ft)	Mud Type	Mud Wt.	Visc.	Yield Point ($lb/100ft^2$)	API Fluid Loss (ml/30min)	pH Range	Total Solids (%)
17-1/2"	0-500'	Fresh Water	8.4-8.6	60-70	25-35	NC	8.5-9.5	<4
12-1/4"	500-6452'	Fresh Water LSND	8.5 – 8.8 w/ air mist	40-50	10-12	8-10	8.5-9.5	<4
8-1/2"	6452-7891	Oil Based	8.6-9.0	15-25	8-15	<15	NA	<4

6-1/4"	7891-13,129	Oil Based	8.6-9.0	15-25	8-15	<10	NA	<4

There will be sufficient mud on location to control a blowout should one occur.

Mud test shall be performed every 24 hours after mudding up to determine, as applicable: density, viscosity, gel strength, filtration, and pH.

The mud systems from surface to intermediate point at 6337' TVD will be a fresh water base LSND mud system.

The mud systems from the intermediate casing point of 6337'TVD through the curve and lateral section will be an Oil Base Mud system.

A closed loop system will be used to recover drilling fluid and dry cuttings on all hole intervals. Thick black plastic will be laid down under the rig mats and other equipment. For spill control and containment, and 1-2 ft tall dirt berm will be built around all drilling machinery. The cellar will be used as a sump and all fluid will be pumped out of the cellar daily back into a slop tank. From there, fluids will be treated and usable fluid returned to drilling fluid system and waste disposed of properly.

Mud monitoring equipment to be used is as follows:

Periodic visual monitoring of the mud system will be done to determine volume changes.

The concentration of hazardous substances in the reserve pit at the time of pit backfilling must not exceed the standards set forth in the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA).

All oil and gas drilling related CERCLA hazardous wastes/substances removed from a location and not reused at another drilling location must be disposed of at an EPA approved hazardous waste facility.

6. TESTING, LOGGING & CORING:

No drill stem tests are anticipated.

The logging program will consist of a GR/Triple Combo from the 7,891'MD (Shoe of the 7") to 6,452'MD (shoe of the 9-5/8") and log the lateral section with a GR/HMI /Resistivity Log w/ Caliper from Total Depth MD to 7" casing shoe at 7,891'(heel) to 13,129' (toe of the lateral) MD.

Mud loggers on location from Surface Casing to TD. Portable source rock analysis and X-ray diffraction from KOP to TD

No coring is anticipated.

Whether the well is completed as a dry hole or as a producer, "Well Completion and Recompletion Report and Log" (Form 3160-4) will be submitted not later then 30 days after completion of the well or after completion of operations being performed, in accordance with 43 CFR 3164. Two copies of all logs, core descriptions, core analysis, well-test data, geologic summaries, sample description, and all other surveys or data obtained and compiled during the drilling, workover, and/or completion operations, will be filed with Form 3160-4. Samples (cuttings, fluids, and/or gases) will be submitted when requested by the authorized officer (AO).

7. ABNORMAL PRESSURES AND HYDROGEN SULFIDE:

The expected bottom hole pressure is +/- 3200 psi based on a 9.0 ppg at 6800' TVD. No abnormal pressures or temperatures are anticipated.

No hydrogen sulfide gas is anticipated, however, if H2S is encountered the guidelines in Onshore Order No. 6 will be complied with.

8. OTHER INFORMATION AND NOTIFICATION REQUIREMENTS:

Drilling is planned to commence on **April 1, 2010.** It is anticipated that completion operations will begin within 30- 40 days after the well has been drilled pending on frac treatment schedule with various pump service companies.

It is anticipated that the drilling of this well will take **approximately 45 days.**

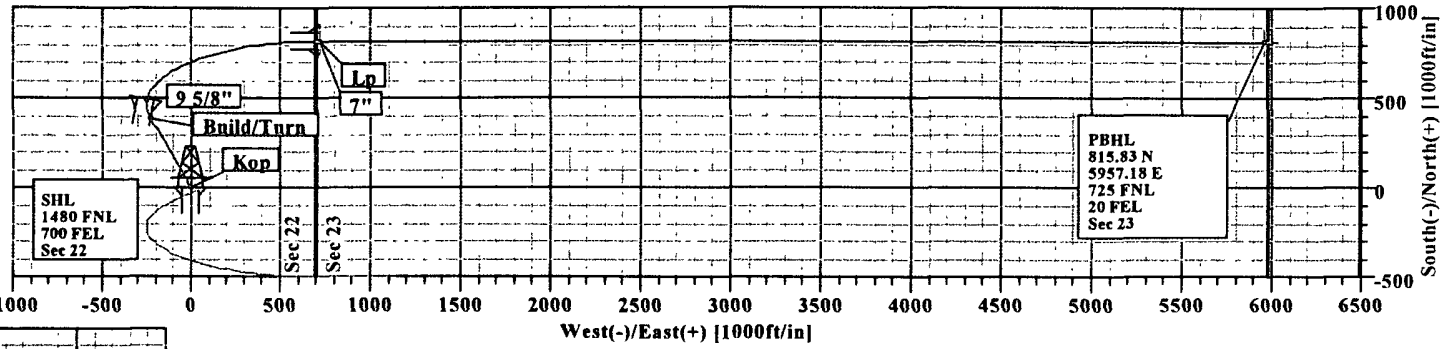
The proposed completion program is as follows: zones with porosity and permeability as determined by open hole logging will be perforated and stimulated with 2% KCl slick water and Ottawa sand. Number of stages will be determined after examining logs. Stages will be treated using the "perf and plug" method.

5-21-10 — Larry Higgins

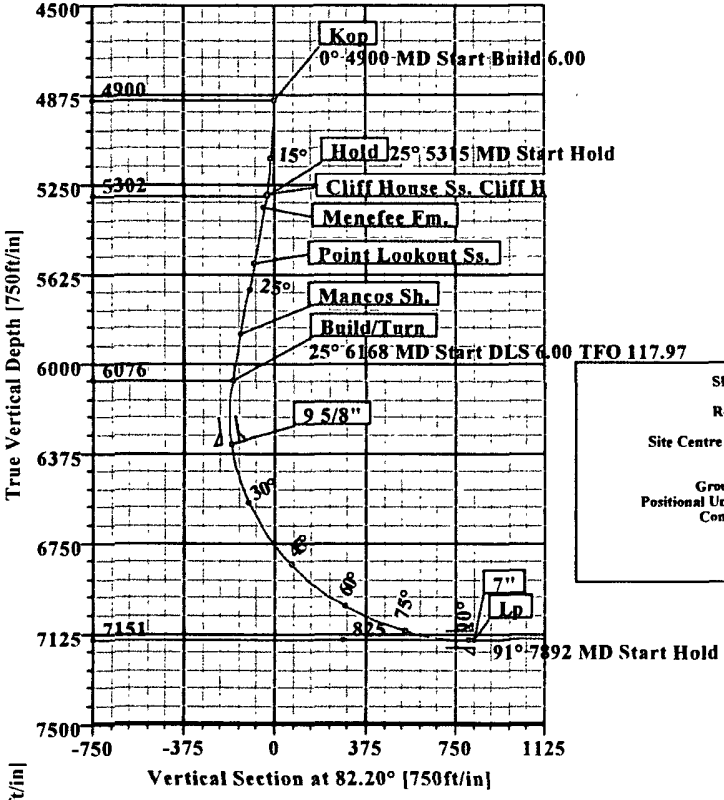
Date — Brian Alleman FOR Drilling Engineer I

Williams

Rosa Unit 634A
RIO ARRIBA CO. NM



KB ELEV: 6276.5 est.
GL ELEV: 6258



LEGEND

Rosa Unit 634B (1)
Plan #2

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	4900.00	0.00	0.00	4900.00	0.00	0.00	0.00	0.00	0.00	
3	5315.17	24.91	329.31	5302.22	76.40	-45.34	6.00	0.00	-34.56	
4	6168.46	24.91	329.31	6076.12	385.46	-228.79	0.00	0.00	-174.37	
5	7891.52	91.02	90.07	7151.00	821.89	719.95	6.00	117.97	824.81	Lp
6	13129.58	91.02	90.07	7058.00	815.83	5957.18	0.00	0.00	6012.78	Pbhl

WELL DETAILS

Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
Rosa Unit 634A	0.00	0.00	2142906.76	2837072.21	36°53'17.910N	107°26'36.922W	N/A

SITE DETAILS

Rosa Unit 634A

Site Centre Northing: 2142906.76
Easting: 2837072.21

Ground Level: 6258.00
Positional Uncertainty: 0.00
Convergence: 0.23

FORMATION TOP DETAILS

No.	TVDPath	MDPath	Formation
1	2345.00	2345.00	Ojo Alamo Ss.
2	2445.00	2445.00	Kirtland Sh.
3	2945.00	2945.00	Fruitland Fm.
4	3120.00	3120.00	Pictured Cliffs Ss.
5	3401.00	3401.00	Lewis Sh.
6	5295.00	5307.23	Cliff House Ss. Cliff House S
7	5350.00	5367.86	Menefee Fm.
8	5585.00	5626.96	Point Lookout Ss.
9	5880.00	5952.22	Mancos Sh.

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
Pbhl	7058.00	815.83	5957.18	Point
Lp	7151.00	821.89	719.95	Point

CASING DETAILS

No.	TVD	MD	Name	Size
1	500.00	500.00	13 3/8"	13.375
2	6337.98	6452.22	9 5/8"	9.625
3	7151.00	7891.52	7"	7.000

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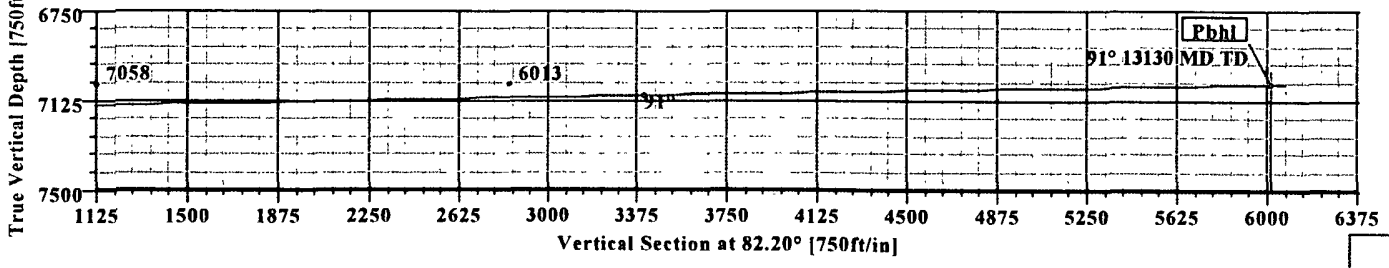

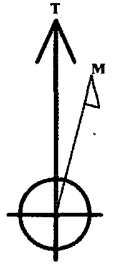

Azimuths to True North
Magnetic North: 9.91°

Magnetic Field
Strength: 51020nT
Dip Angle: 63.67°
Date: 5/17/2010
Model: IGRF2010

Total Correction To True North 9.91°

Plan: Plan #2 (Rosa Unit 634A/1)

Created By: Russell W Joyner Date: 5/19/2010

Weatherford International Ltd.

WFT Plan Report - X & Y's

Company:	WILLIAMS PRODUCTION	**Date:** 5/19/2010	**Time:** 08:55:00	**Page:**	3
Field:	RIO ARRIBA CO. NM (NAD 83 NM W Zone)	**Co-ordinate(NE) Reference:**	Well: Rosa Unit 634A, True North		
Site:	Rosa Unit 634A	**Vertical (TVD) Reference:**	SITE 6276.5		
Well:	Rosa Unit 634A	**Section (VS) Reference:**	Well (0.00N,0.00E,82.20Azi)		
Wellpath:	1	**Survey Calculation Method:**	Minimum Curvature	**Db:**	Sybase

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS deg/100ft	MapN ft	MapE ft	Comment
6100.00	24.91	329.31	6014.03	360.66	-214.07	-163.15	0.00	2143266.55	2836856.68	
6168.46	24.91	329.31	6076.12	385.46	-228.79	-174.37	0.00	2143291.29	2836841.86	Build/Turn
6200.00	24.08	333.41	6104.82	396.93	-235 06	-179.03	6.00	2143302.73	2836835.54	
6300.00	22.26	347.98	6196.83	433.72	-248 14	-187.00	6.00	2143339.47	2836822.30	
6400.00	21.90	3.96	6289.59	470.88	-250.80	-184.59	6 00	2143376.62	2836819.50	
6452 22	22.32	12.22	6337.98	490.29	-248.02	-179.21	6.00	2143396.04	2836822.19	9 5/8"
6500.00	23.06	19.40	6382.07	507.99	-242 99	-171.82	6.00	2143413.76	2836827.15	
6600.00	25.55	32.70	6473.26	544.65	-224.82	-148.84	6.00	2143450.49	2836845.17	
6700.00	29.02	43.41	6562.18	580.45	-196.47	-115.89	6.00	2143486.41	2836873.38	
6800.00	33.17	51.84	6647.83	615.01	-158.25	-73 34	6.00	2143521.12	2836911.45	
6900.00	37.76	58.50	6729.29	647.93	-110.59	-21.66	6.00	2143554.24	2836958.97	
7000.00	42.66	63.88	6805.65	678.88	-54.01	38.60	6.00	2143585.41	2837015.43	
7100.00	47.77	68.32	6876.09	707.49	10.87	106.77	6.00	2143614.30	2837080.20	
7200.00	53.02	72.09	6939.84	733.47	83.35	182 10	6.00	2143640 57	2837152.57	
7300.00	58 37	75.37	6996.18	756.53	162.62	263.76	6.00	2143663.95	2837231.74	
7400.00	63.81	78.29	7044.52	776 41	247.82	350.88	6.00	2143684.17	2837316.87	
7500.00	69.29	80.94	7084.31	792.89	338.02	442.48	6.00	2143701.03	2837407.00	
7600.00	74.81	83.41	7115.12	805.80	432.23	537.57	6.00	2143714.32	2837501.15	
7700.00	80.36	85.75	7136.61	814.99	529.41	635.10	6.00	2143723.91	2837598.29	
7800.00	85.92	88.02	7148.56	820.37	628.50	734.00	6.00	2143729.69	2837697.36	
7891.52	91.02	90.07	7151.00	821.89	719.95	824.81	6.00	2143731.59	2837788.80	Lp
7900.00	91.02	90.07	7150.85	821.88	728.42	833.20	0.00	2143731.61	2837797.27	
8000.00	91.02	90.07	7149.07	821.77	828.41	932.25	0.00	2143731.91	2837897.26	
8100.00	91.02	90.07	7147.30	821.65	928.39	1031.29	0.00	2143732.20	2837997.24	
8200.00	91.02	90.07	7145.52	821 54	1028.38	1130.33	0.00	2143732.49	2838097.23	
8300.00	91.02	90.07	7143.75	821.42	1128.36	1229 38	0.00	2143732.78	2838197.21	
8400.00	91.02	90.07	7141.97	821.31	1228.34	1328 42	0.00	2143733.08	2838297.19	
8500.00	91.02	90.07	7140.20	821.19	1328.33	1427.46	0.00	2143733.37	2838397.18	
8600.00	91.02	90.07	7138.42	821.07	1428.31	1526.51	0.00	2143733.66	2838497.16	
8700.00	91.02	90.07	7136.65	820.96	1528.30	1625.55	0.00	2143733.95	2838597.15	
8800.00	91.02	90.07	7134.87	820.84	1628.28	1724.60	0.00	2143734.25	2838697.13	
8900.00	91.02	90.07	7133.09	820.73	1728.26	1823.64	0.00	2143734.54	2838797.11	
9000.00	91.02	90.07	7131.32	820.61	1828.25	1922.68	0.00	2143734.83	2838897.10	
9100.00	91 02	90.07	7129.54	820.49	1928.23	2021.73	0.00	2143735.12	2838997.08	
9200.00	91.02	90.07	7127 77	820.38	2028 22	2120.77	0.00	2143735.42	2839097.06	
9300.00	91.02	90.07	7125.99	820.26	2128.20	2219.82	0.00	2143735.71	2839197.05	
9400.00	91.02	90.07	7124.22	820.15	2228.19	2318.86	0.00	2143736.00	2839297.03	
9500.00	91.02	90.07	7122.44	820.03	2328.17	2417.90	0.00	2143736.29	2839397.02	
9600.00	91.02	90.07	7120.67	819.92	2428.15	2516.95	0.00	2143736.59	2839497.00	
9700.00	91 02	90.07	7118 89	819.80	2528 14	2615 99	0.00	2143736.88	2839596.98	
9800.00	91.02	90.07	7117.12	819.68	2628.12	2715.03	0.00	2143737.17	2839696.97	
9900.00	91 02	90.07	7115.34	819.57	2728.11	2814.08	0.00	2143737.46	2839796.95	
10000.00	91.02	90.07	7113.56	819.45	2828.09	2913.12	0 00	2143737.76	2839896.93	
10100.00	91.02	90.07	7111.79	819.34	2928.07	3012.17	0.00	2143738.05	2839996.92	
10200.00	91.02	90.07	7110.01	819.22	3028.06	3111.21	0.00	2143738.34	2840096.90	
10300.00	91.02	90.07	7108.24	819.10	3128.04	3210.25	0.00	2143738.63	2840196.89	
10400.00	91.02	90.07	7106.46	818.99	3228.03	3309.30	0.00	2143738.93	2840296.87	
10500.00	91.02	90.07	7104.69	818.87	3328.01	3408.34	0.00	2143739.22	2840396.85	
10600.00	91.02	90.07	7102.91	818.76	3428.00	3507.39	0.00	2143739.51	2840496.84	
10700.00	91.02	90.07	7101 14	818.64	3527 98	3606.43	0.00	2143739.80	2840596.82	
10800.00	91.02	90.07	7099.36	818.53	3627.96	3705.47	0.00	2143740.10	2840696.81	
10900.00	91.02	90.07	7097.59	818.41	3727.95	3804.52	0.00	2143740.39	2840796.79	
11000.00	91 02	90.07	7095.81	818.29	3827.93	3903.56	0.00	2143740.68	2840896.77	

Weatherford International Ltd.

WFT Plan Report - X & Y's

Company:	WILLIAMS PRODUCTION	**Date:** 5/19/2010	**Time:** 08:55:00	**Page:**	5
Field:	RIO ARRIBA CO. NM (NAD 83 NM W Zone)	**Co-ordinate(NE) Reference:**	Well: Rosa Unit 634A, True North		
Site:	Rosa Unit 634A	**Vertical (TVD) Reference:**	SITE 6276.5		
Well:	Rosa Unit 634A	**Section (VS) Reference:**	Well (0.00N,0.00E,82.20Azi)		
Wellpath:	1	**Survey Calculation Method:**	Minimum Curvature	**Db:**	Sybase

Formations

MD ft	TVD ft	Formations	Lithology	Dip Angle deg	Dip Direction deg
3401.00	3401.00	Lewis Sh		0.00	0.00
5307.23	5295.00	Cliff House Ss Cliff House S		0.00	0.00
5367.86	5350.00	Menefee Fm.		0.00	0.00
5626.96	5585.00	Point Lookout Ss.		0.00	0.00
5952.22	5880.00	Mancos Sh		0.00	0.00

Attachment 1

Rosa Unit #634A

MUD SYSTEM AND CUTTINGS CONTAINMENT / DISPOSAL

From spud to the end of the lateral this well will be drilled using a closed loop mud system. We will be using both fresh water and oil base mud. A 4 ounce geo pad, a 30 mil reinforced liner, a 8 ounce geo pad then covered with 5 to 6 inched of 3 inch road base will be laid down under the rig mats and all drilling machinery as per the black area shown on attachment 2. The approximate size of this lined area will 175' X 250'. An approximately 12 inch high dirt berm will then be installed completely around this area for spill prevention control. A ramp will be built over this berm on the upper left side of the bermed area for access to the solids control area. This area will be designed with a slight grade to drain back to the cellar. The cellar will be used as a sump and all fluid will be pumped out of cellar daily back into to a slump tank and then treated and pumped back into the main mud tank system to be used in the main drilling fluids.

From spud to setting of intermediate casing at approximately 6452' this well will be drilled using a water based mud system. During this phase of the drilling, the cuttings will be disposed of onsite in a NMOCD permitted reserve/disposal pit shown in the upper right corned of attachment 2. This pit would have a 20 mil reinforced liner. The cuttings will be transported from the cutting containment pit to the reserve pit by a bobcat or front end loader. Upon completion of this well this pit would be closed in accordance with BLM and NMOCD regulations.

From intermediate setting depth to TD this well will be drilled using an oil based mud system. During this phase of the drilling the cuttings will be contained on location within the lined area in a four sided pit and transferred by back hoe to portable containers which will then be loaded on trucks and hauled and disposed of at Envirotech's land farm south of Bloomfield, NM.

Upon completion of the well all contaminated soils will be removed and hauled to the land farm. Any non contaminated road base would be used on area roads. The liner material would be removed and hauled to the local landfill.

5,000 psi BOP Schematic