

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

RECEIVED

FEB 12 2010

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

5. Lease Serial No.
NMSF-078762
6. If Indian Allottee or Tribe Name

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 20' FSL & 1875' FWL

At proposed prod. zone 905' FSL & 1065' FWL

7. If Unit or CA Agreement, Name and No.

Rosa Unit NMM-78407X

8. Lease Name and Well No.

Rosa Unit 405

9. API Well No.

30-039-30919

10. Field and Pool, or Exploratory

Basin Fruitland Coal

11. Sec., T., R., M., or Bk. and Survey or Area

N Section 12, 31N, 5W

14. Distance in miles and direction from nearest town or post office*

approximately 33 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 drig. unit line, if any)

320'

16. No. of Acres in lease

2,560.00

17. Spacing Unit dedicated to this well

320.0 - (W/2)

18. Distance from proposed location*
to nearest well, drilling, completed,
applied for, on this lease, ft.

1993' Rosa 382

19. Proposed Depth

3,955'

20. BLM/BIA Bond No. on file

UT0899 UT B000138

21. Elevations (Show whether DF, KDB, RT, GL, etc.)

6,791' GR

22. Approximate date work will start*

April 1, 2010

23. Estimated duration

1 month

24. Attachments

RCVD OCT 18 '10

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.

OIL CONS. DIV.

DIST. 3

25. Signature

Larry Higgins

Name (Printed/Typed)

Larry Higgins

Date

2-12-10

Title

Drilling COM

Approved by (Signature)

AFM

Name (Printed/Typed)

Office

FFO

Date

10/13/2010

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 Fruitland Coal formations at the above described location in accordance with the attached drilling and surface use plans.

The surface is under Jurisdiction of the Carson National Forest, Jicarilla Ranger District.

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

A new access road of 2,296 feet will be required for this proposed well.

Hold C104

This APD is also serving as an application to obtain a pipeline right-of-way. An associated pipeline tie of 2,492.2 feet would be required for this well.

A COMPLETE C-144 MUST BE SUBMITTED TO AND APPROVED BY THE NMCD FOR: A PIT, CLOSED LOOP SYSTEM, BELOW GRADE TANK, OR PROPOSED ALTERNATIVE METHOD, PURSUANT TO NMCD PART 19.15.17, PRIOR TO THE USE OR CONSTRUCTION OF THE ABOVE APPLICATIONS.

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

NMCD

NOV 01 2010

NOTIFY AZTEC OCD 24 HRS.
PRIOR TO CASING & CEMENT

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

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

APD Certification:

I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

Executed this 12th day of February, 2010.

Name Larry Higgins

Position Title Drilling COM

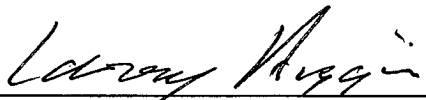
Address P.O. Box 640, Aztec, NM 87410

Telephone (505) 634-4208

Field representative (if not above signatory) _____

E-mail larry.higgins@williams.com

Date: 2-12-10



Larry Higgins
Drlg COM
Williams Production Company, LLC

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

Management
Engineering 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

*API Number 30-039-30919		*Pool Code 71629	*Pool Name BASIN FRUITLAND COAL
*Property Code 17033	*Property Name ROSA UNIT		*Well Number 405
*GRID No. 120782	*Operator Name WILLIAMS PRODUCTION COMPANY		*Elevation 6791'

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
N	12	31N	5W		20	SOUTH	1875	WEST	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
M	12	31N	5W		905	SOUTH	1065	WEST	RIO ARriba

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

<div>15</div> <div>5282.64'</div> <div>LEASE SF-078762</div> <div>5280.00'</div> <div>12</div> <div>5280.00'</div> <div>BOTTOM-HOLE LAT: 36.90925°N LONG: 107.31895°W DATUM: NAD1983</div> <div>SURFACE LOCATION LAT: 36.90682°N LONG: 107.31618°W DATUM: NAD1983</div> <div>1065'</div> <div>905'</div> <div>N42°51.4'W 1198.9'</div> <div>1875'</div> <div>20'</div> <div>5282.64'</div>	<div>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. <i>Larry Higgins</i> 2-12-10 Signature Date <i>Larry Higgins</i> Printed Name</div> <div>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: OCTOBER 14, 2009 Signature and Seal of Professional Surveyor  <i>JASON C. EDWARDS</i> Certificate Number 15269</div>
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WILLIAMS PRODUCTION COMPANY

Operations Plan

(Note: This procedure will be adjusted on site based upon actual conditions)

DATE: 11/16/2009

WELLNAME: Rosa Unit #405 **FIELD:** Basin Fruitland Coal

BH LOCATION: SWSW Sec 12-T31N-R5W **SURFACE:** USFS

SURF LOCATION: SESW Sec 12-T31N-R5W
Rio Arriba, NM **MINERALS:** BLM

ELEVATION: 6,791' GR **LEASE #** SF-078762

TOTAL DEPTH: 3,955'

I. **GEOLOGY:** Surface formation - San Jose

A. **FORMATION TOPS:** (KB)

NAME		TVD	MD		NAME		TVD	MD
San Jose		Surface	Surface		Top Coal		3,506	3,752
Nacimiento		1,751	1,829		Bottom Coal		3,591	3,845
Ojo Alamo		2,956	3,149		Pictured Cliffs		3,596	3,851
Kirtland		3,066	3,270		TD		3,691	3,955
Fruitland		3,411	3,648					

B. **LOGGING PROGRAM:** HRD from intermediate csg to TD, DSN from surface csg to TD

C. **NATURAL GAUGES:** Gauge any noticeable increases in gas flow. Record all gauges in Tour book and on morning reports.

D. **MUD LOGGING PRORAM:** Mud logger will be on location at drill out below 7" casing to TD. Mud Logger to pick TD

II. **DRILLING**

A. **MUD PROGRAM:** Clear water with benex to 7" casing point. Treat for lost circulation as necessary. Expect 100% returns prior to cementing. Notify Engineering of any mud losses. If coal is detected before 3,730', **DO NOT** drill deeper until Engineering is contacted.

B. **DRILLING FLUID:** Coal section will be drilled with Fruitland Coal water.

- C. **BOP TESTING:** While drill pipe is in use, the pipe rams and the blind rams will be function tested once each trip. The anticipated reservoir is expected to be less than 1300 psi, so the BOPE will be tested to **250 psi (Low) for 5 minutes** and **1500 psi (High) for 10 minutes**. Utilize a BOPE Testing Unit with a recording chart and appropriate test plug for testing. The drum brakes will be inspected and tested each tour. **All tests and inspections will be recorded in the tour book as to time and results.**

III. **MATERIALS**

A. **CASING PROGRAM:**

CASING TYPE	OH SIZE (IN)	DEPTH (MD) (FT)	CASING SIZE (IN)	WEIGHT(LB)	GRADE
Surface	12 1/4	300	9 5/8	36	K-55
Intermediate	8 3/4	3,730	7	23	K-55
Liner	6 1/4	3,630 3,955	5 1/2	15.5	J-55

B. **FLOAT EQUIPMENT:**

1. **SURFACE CASING:** 9-5/8" notched regular pattern guide shoe. Run (1) standard centralizer on each of the bottom (4) joints of Surface Casing.
2. **INTERMEDIATE CASING:** 7" cement nose guide shoe with a self-fill insert float. Place float collar one joint above the shoe. Install (1) Turbulent centralizer on each of the bottom (3) joints and one standard centralizer every (3) joints to 2,500 ft. Run (1) Turbulent centralizer at 2,700 ft., 2,500 ft., 2,300ft., 2,000ft., 1,500 ft., and 1,000 ft. (**NTL-FRA 90-1**).
3. **PRODUCTION LINER / CASING:** 5-1/2" whirler type cement nose guide shoe

C. **CEMENTING:**

(Note: Volumes may be adjusted onsite due to actual conditions)

1. **SURFACE:** Slurry: 125sx (225 cu.ft.) of "Type III" + 2% Cal-Seal 60 + ¼ # of poly-e-flake/sk + 0.3% Versaset + 2% Econolite + 6% Salt (Yield = 1.796 cu.ft./sk, Weight = 13.5 #/gal.). The 100% excess should circulate cement to the surface. WOC 12 hours. Test csg to 1500psi, **for 30 minutes**
2. **INTERMEDIATE:** Lead - 400 sx (1089 .2cu.ft.) of "EXTENDACEM" + 5 #/sk pheno-seal + 5% Cal-Seal 60 (Yield = 2.723 cu.ft./sk, Weight = 11.5 #/gal.). Tail - 100 sx (117.8cu.ft.) of Premium cement + 0.125 #/sk Poly-E-Flake, (Yield = 1.178 cu.ft./sk, Weight = 15.6#/gal.). **PUMP AS WRITTEN SHOULD CIRCULATE TO SURFACE** Total volume = 1207 cu.ft. Bump Plug to 1,500 psi. Notify engineering if cement is not circulated to surface
1. **PRODUCTION LINER:** Open hole completion. No cement.



ROSA UNIT #405
RIO ARRIBA CO., NEW MEXICO

FORMATION TOP DETAILS

No.	TVDPath	MDPath	Formation
1	1751.00	1829.17	Nacimiento Fm.
2	2956.00	3149.54	Ojo Alamo Ss.
3	3066.00	3270.07	Kirtland Sh.
4	3411.00	3648.11	Fruitland Fm.

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	317.54	0.00	0.00	0.00	0.00	0.00	0.00	
2	400.00	0.00	317.54	400.00	0.00	0.00	0.00	0.00	0.00	
3	1204.34	24.13	317.54	1180.77	123.12	-112.66	3.00	317.54	166.89	
4	3730.29	24.13	317.54	3486.00	884.97	-809.74	0.00	0.00	1199.52	Pbhl

WELL DETAILS

Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
#405	0.00	0.00	2151119.23	1328706.58	36°54'24.550N	107°18'58.250W	N/A

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
Pbhl	3486.00	884.97	-809.74	2152013.20	1327906.78	36°54'33.300N	107°19'08.220W	Point

FIELD DETAILS

RIO ARRIBA CO. NM (NAD 83)

Geodetic System: US State Plane Coordinate System 1983
Ellipsoid: GRS 1980
Zone: New Mexico, Central Zone
Magnetic Model: igrf200510

System Datum: Mean Sea Level
Local North: True North

SITE DETAILS

Rosa Unit #405
20' FSL 1875' FWL of Sec 12, T31N, R5W
Site Centre Latitude: 36°54'24.550N
Longitude: 107°18'58.250W
Ground Level: 6791.00
Positional Uncertainty: 0.00
Convergence: -0.64



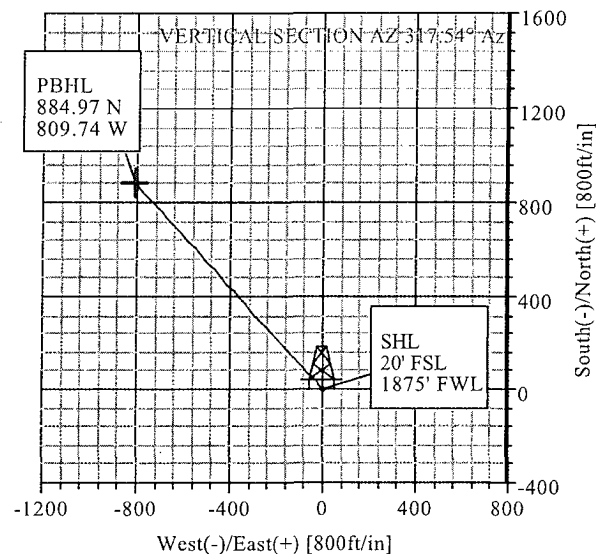
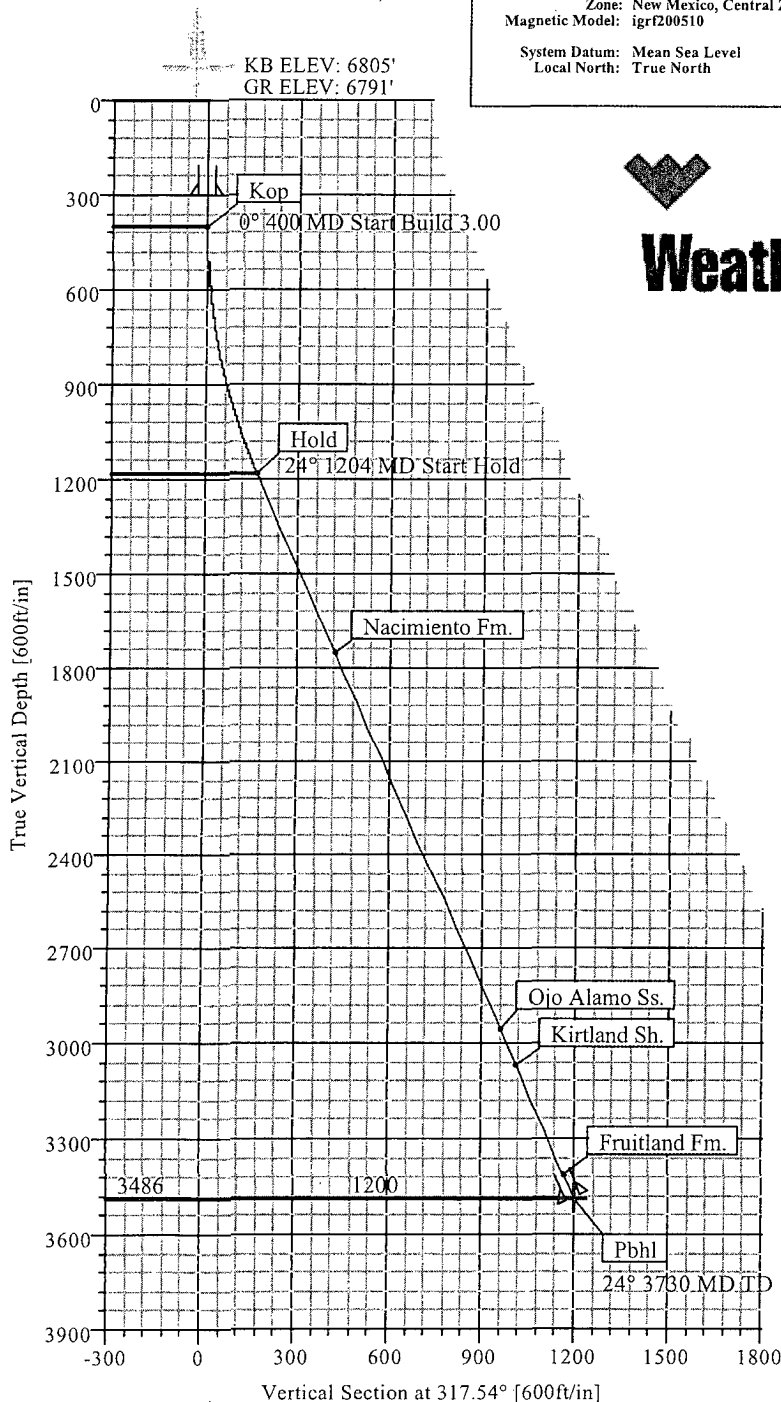
Weatherford®



Azimuths to True North
Magnetic North: 9.91°

Magnetic Field
Strength: 51127nT
Dip Angle: 63.74°
Date: 11/16/2009
Model: igrf200510

Total Correction to True North: 9.91°



CASING DETAILS

No.	TVD	MD	Name	Size
1	300.00	300.00	9 5/8"	9.625
2	3486.00	3730.29	7" Int. Csg.	0.000

Plan: Plan #1 (#405/1)

Created By: Lindsey Maddux

Date: 11/16/2009



Weatherford International, Inc.

Proposal Plan Report



Weatherford

Company: WILLIAMS PRODUCTION Date: 11/16/2009 Time: 13:00:41 Page: 2
 Field: RIO ARRIBA CO. NM (NAD 83) Co-ordinate(NE) Reference: Well: #405, True North
 Site: Rosa Unit #405 Vertical (TVD) Reference: SITE 6805.0
 Well: #405 Section (VS) Reference: Well: (0.00N,0.00E;317.54Azi)
 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	Build deg/100ft	Turn deg/100ft	DLS deg/100ft	TFO deg	Comment
2000.00	24.13	317.54	1906.91	363.10	-332.23	492.16	0.00	0.00	0.00	0.00	
2100.00	24.13	317.54	1998.17	393.26	-359.83	533.04	0.00	0.00	0.00	0.00	
2200.00	24.13	317.54	2089.43	423.42	-387.43	573.92	0.00	0.00	0.00	0.00	
2300.00	24.13	317.54	2180.69	453.58	-415.02	614.80	0.00	0.00	0.00	0.00	
2400.00	24.13	317.54	2271.95	483.75	-442.62	655.69	0.00	0.00	0.00	0.00	
2500.00	24.13	317.54	2363.22	513.91	-470.22	696.57	0.00	0.00	0.00	0.00	
2600.00	24.13	317.54	2454.48	544.07	-497.81	737.45	0.00	0.00	0.00	0.00	
2700.00	24.13	317.54	2545.74	574.23	-525.41	778.33	0.00	0.00	0.00	0.00	
2800.00	24.13	317.54	2637.00	604.39	-553.01	819.21	0.00	0.00	0.00	0.00	
2900.00	24.13	317.54	2728.26	634.55	-580.61	860.09	0.00	0.00	0.00	0.00	
3000.00	24.13	317.54	2819.53	664.71	-608.20	900.97	0.00	0.00	0.00	0.00	
3100.00	24.13	317.54	2910.79	694.87	-635.80	941.85	0.00	0.00	0.00	0.00	
3149.54	24.13	317.54	2956.00	709.81	-649.47	962.11	0.00	0.00	0.00	0.00	Ojo Alamo Ss.
3200.00	24.13	317.54	3002.05	725.03	-663.40	982.73	0.00	0.00	0.00	0.00	
3270.07	24.13	317.54	3066.00	746.17	-682.73	1011.38	0.00	0.00	0.00	0.00	Kirtland Sh.
3300.00	24.13	317.54	3093.31	755.19	-690.99	1023.62	0.00	0.00	0.00	0.00	
3400.00	24.13	317.54	3184.57	785.35	-718.59	1064.50	0.00	0.00	0.00	0.00	
3500.00	24.13	317.54	3275.84	815.52	-746.19	1105.38	0.00	0.00	0.00	0.00	
3600.00	24.13	317.54	3367.10	845.68	-773.78	1146.26	0.00	0.00	0.00	0.00	
3648.11	24.13	317.54	3411.00	860.19	-787.06	1165.93	0.00	0.00	0.00	0.00	Fruitland Fm.
3700.00	24.13	317.54	3458.36	875.84	-801.38	1187.14	0.00	0.00	0.00	0.00	
3730.29	24.13	317.54	3486.00	884.97	-809.74	1199.52	0.00	0.00	0.00	0.00	Pbhl

Targets

Name	Description Dip Dir.	TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	Latitude Deg Min Sec	Longitude Deg Min Sec
Pbhl -Plan hit target		3486.00	884.97	-809.74	2152013.20	1327906.78	36 54 33.300 N	107 19 8.220 W

Formations

MD ft	TVD ft	Formations	Lithology	Dip Angle deg	Dip Direction deg
1829.17	1751.00	Nacimiento Fm.		0.00	0.00
3149.54	2956.00	Ojo Alamo Ss.		0.00	0.00
3270.07	3066.00	Kirtland Sh.		0.00	0.00
3648.11	3411.00	Fruitland Fm.		0.00	0.00

Annotation

MD ft	TVD ft	
400.00	400.00	Kop
1204.34	1180.77	Hold
3730.29	3486.00	Pbhl

Casing Points

MD ft	TVD ft	Diameter in	Hole Size in	Name
300.00	300.00	9.625	12.250	9 5/8"
3730.29	3486.00	0.000	0.000	7" Int. Csg.

Well Control Equipment Schematic for 2M Service

Attachment to Drilling Technical Program

Exhibit #1 Typical BOP setup

Location: San Juan Basin, New Mexico

Date: August 20, 2001

By: John Thompson (Walsh E&P)

