

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED

FEB 25 2009

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

APPLICATION FOR PERMIT TO DRILL OR REENTER

Bureau of Land Management
Farmington Field Office

1a. Type of Work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. NMSF-078766
1b. Type of Well: <input type="checkbox"/> Oil Well <input checked="" type="checkbox"/> Gas Well <input type="checkbox"/> Other <input type="checkbox"/> Single Zone <input checked="" type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name
2. Name of Operator Williams Production Company, LLC		7. If Unit or CA Agreement, Name and No. Rosa Unit NMNM-78407B-DK
3a. Address P.O. Box 640 Aztec, NM 87410		8. Lease Name and Well No. -621 160D
3b. Phone No. (include area code) (505) 634-4208		9. API Well No. 30-039-30689
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface Surf 160D FSL & 1400FWL N At proposed prod. zone BHL 670/S 670/W M		10. Field and Pool, or Exploratory Basin Mancos/Basin Dakota Basin Mancos
14. Distance in miles and direction from nearest town or post office* approximately 31 miles northeast of Blanco, New Mexico		11. Sec., T., R., M., or Blk. and Survey or Area N Section 25, 31N, 6W
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 1375'	16. No. of Acres in lease 2,552.710	12. County or Parish Rio Arriba
17. Spacing Unit dedicated to this well RCVD JUL 14 '09	18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 129' Rosa 160A	13. State NM
19. Proposed Depth 8331 MP 8047 8181 TVD	20. BLM/BIA Bond No. on file UT084789	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 6,393' GR	22. Approximate date work will start* April 1, 2009	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 <i>Larry Higgins</i>	Name (Printed/Typed) Larry Higgins	Date 2-25-09
Title Drilling COM		
Approved by (Signature) <i>Manteewee</i>	Name (Printed/Typed)	Date 7/13/09
Title AFM	Office FFC	

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 and Basin Dakota formations 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.

This APD is also serving as an application to obtain a pipeline right-of-way. An associated pipeline tie of 219 feet would be required for this well.

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

NOTIFY AZTEC OCD 24 HRS.
PRIOR TO CASING & CEMENT

NMOC

Hold C104

for Directional Survey
and "As Drilled" platDRILLING OPERATIONS AUTHORIZED ARE
SUBJECT TO COMPLIANCE WITH ATTACHED
"GENERAL REQUIREMENTS".

JUL 27 2009

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

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

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

'API Number 30039-30689	'Pool Code 97232 / 72319 / 71599	'Pool Name BASIN MANCOS / BLANCO MESAVERDE / BASIN DAKOTA	
'Property Code 17033	'Property Name ROSA UNIT		'Well Number 160D
'OGRID No 120782	'Operator Name WILLIAMS PRODUCTION COMPANY		'Elevation 6392'

¹⁰ Surface Location

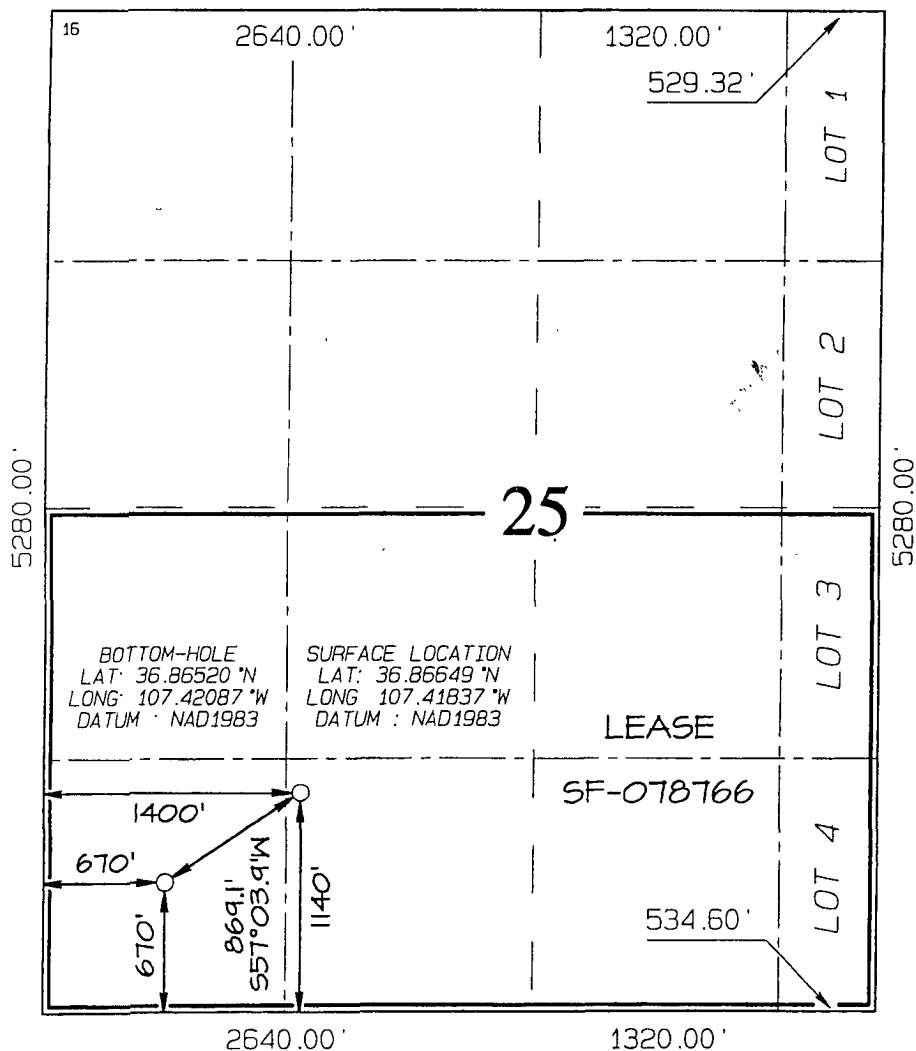
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	25	31N	6W		1140	SOUTH	1400	WEST	RIO ARRIBA

¹¹Bottom 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	25	31N	6W		670	SOUTH	670	WEST	RIO ARBITA

12 Dedicated Acres	13 Joint or Infill	14 Consolidation Code	15 Order No
272.32 Acres - S/2			R-13063

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



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 Higin Date 6-12-09

Printed Name

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

Date of Survey: MAY 16, 2009

Signature and Seal of Professional Surveyor



JASON C. EDWARDS
Certificate Number 15269

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED

JUN 12 2009

FORM APPROVED
OMB No. 1004-0137
Expires: July 31, 2010

SUNDRY NOTICES AND REPORTS ON WELLS
Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

Office of Land
Farmington

5 Lease Serial No.

NMSF-078766

6a If Indian Allottee or Tribe Name

SUBMIT IN TRIPLICATE - Other instructions on page 2.

1. Type of Well

☐ Oil Well ☒ Gas Well ☐ Other

2. Name of Operator
WILLIAMS PRODUCTION CO., LLC

3a Address
P O BOX 640
AZTEC, NM 87410

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

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

ROSA UNIT

8. Well Name and No.
ROSA UNIT #160D

9 API Well No.
3003930689

4. Location of Well (Footage, Sec, T, R., M., or Survey Description)
Surface - 1140' FSL & 1400' FWL
BHL - 670' FSL & 670' FWL Sec 25, T31N, R6W

10. Field and Pool or Exploratory Area
BLANCO MV/BASIN MC/BASIN DK

11 Country or Parish, State
RIO ARRIBA, NM

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

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

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

This well was originally permitted as the Rosa Unit #621, due to change in plans Williams Production intends to move this location and drill this well as a Blanco Mesa Verde, Basin Mancos and Basin Dakota. We also wish to change the name of this well to the Rosa Unit #160D. See attached plat, operation plan, directional plan, surface use plan and attachments.

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

Larry Higgins

Title Drilling COM

Signature

Date 06/12/2009

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

Title

Date

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

Office

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

(Instructions on page 2)

NMOC



WILLIAMS PRODUCTION COMPANY

Operations Plan

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

DATE: 6/11/2009 **FIELD:** Basin DK/ Basin MC/BlancoMV
WELL NAME: Rosa Unit #160D **SURFACE:** BLM
BH LOCATION: SWSW Sec 25-31N-6W **MINERALS:** FEDERAL
Rio Arriba, NM
ELEVATION: 6,392' GR **LEASE #** SF-078766
MEASURED DEPTH: 8,331'

I. GEOLOGY: Surface formation - San Jose

A. FORMATION TOPS: (KB)

Name	TVD	MD	Name	TVD	MD
Ojo Alamo	2,456	2,574	Point Lookout	5,621	5,761
Kirtland	2,591	2,716	Mancos	5,986	6,126
Fruitland	2,976	3,112	Gallup	6,966	7,106
Pictured Cliffs	3,201	3,340	Greenhorn	7,686	7,826
Lewis	3,516	3,656	Graneros	7,731	7,871
Cliff House	5,371	5,511	Dakota	7,856	7,996
Menefee	5,421	5,561	Morrison	8,101	8,251
			TD	8,181	8,331

- B. MUD LOGGING PROGRAM:** Mudlogger on location from intermediate csg to TD. Mud logger to pick TD.
- C. LOGGING PROGRAM:** HRI/Temp from intermediate casing to TD. SDL\DSN over zones of interest.
- D. NATURAL GAUGES:** Gauge any noticeable increases in gas flow. Record all gauges in Tour book and on morning reports.

II. DRILLING

- A. MUD PROGRAM:** Use Water + Gel/Polymer sweeps to drill Surface hole. Convert to a LSLD - EZ-MUD system mud (+/-50 Vis.) to drill 9-7/8 in. Intermediate Hole. Increase vis to +/-60 to run Casing. Treat for lost circulation as necessary. Obtain 100% returns prior to cementing. Notify Engineering of any mud losses. Use Air , Air Hammer and 6-3/4 in. Flat btm. bit to drill-out of 7-5/8 in. csg. and to TD well at +/- 8,341 ft. (MD).
- B. 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	14 3/4	300	10 3/4	40.5	K-55
Intermediate	9 7/8	3,816	7 5/8	26.4	K-55
Longstring	6 3/4	8,331	5 1/2	17	N-80

B. FLOAT EQUIPMENT:

1. SURFACE CASING: 10 3/4" notched regular pattern guide shoe. Run (1) standard centralizer on each of the bottom (4) joints of Surface Casing.
2. INTERMEDIATE CASING: 7 5/8" 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 with a latch collar on top of 20' bottom joint. Place marker joint above 5,400'. Place centralizers as needed across selected production intervals.

C. CEMENTING:

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

1. SURFACE: Slurry: 290sx (521 cu.ft.) of "Type III" + 2% Cal-Seal 60 + 1/4 # 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 min**
2. INTERMEDIATE: Lead - 525 sx (1430 cu.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.). **NO EXCESS PUMP AS WRITTEN SHOULD CIRCULATE TO SURFACE** Total volume = 1548 cu.ft. Bump Plug to 1,500 psi. Notify engineering if cement is not circulated to surface **Test csg to 1500 psi. For 30 min**
3. PRODUCTION CASING: 10 bbl Gelled Water spacer. Cement: 375 sx (525 ft³) of "FRACCCEM" + 0.8% Halad-9 + 0.1% CFR-3 + 5 #/sk Gilsonite + 0.125 #/sk Poly-E-Flake + 0.15% HR-800. (Yield = 1.398 ft³/sk, Weight = 13.1 #/gal.). Displace cement at a minimum of 8 BPM. **NO EXCESS SHOULD COVER 150 FEET INTO 7" CASING** Total volume (525) ft³. WOC 12 hours.

7 5/8"

IV. IV COMPLETION**A. CBL**

1. Run Cement Bond Log across all intervals to be perforated and find Top of Cement behind all casing strings if cement not circulated to surface..

B. PRESSURE TEST


1. Pressure test 5-1/2" casing to 6000 psi max, hold at 1500 psi for 30 minutes.

C. STIMULATION

1. Stimulate Dakota with approximately 5000# 100 mesh sand and 120,000# Ottawa Sand in slick water.
2. Isolate Dakota with a RBP.
3. Perforate Mancos as determined from the open hole logs
4. Stimulate Mancos with 3 stages of approximately 5000# 100 mesh sand and 150,000# 40/70 Ottawa sand
5. Stimulate Point Lookout with approximately 40,000# 20/40 Ottawa sand in slick water.
6. Isolate Point Lookout with a RBP.
7. Perforate the Menefee/Cliff House as determined from the open hole logs.
8. Stimulate with approximately 40,000# 20/40 Ottawa sand in slick water.
9. Test each zone before removing bridge plugs.

D. RUNNING TUBING

1. Production Tubing: Run 2-3/8", 4.7#, J-55, EUE tubing with a SN (1.91" ID) on top of bottom joint. Land tubing approximately 25' above the bottom Point Lookout perforation


FOR Brian Alleman
Drilling Engineer



ROSA UNIT #160D
RIO ARRIBA CO., NEW MEXICO

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	237.31	0.00	0.00	0.00	0.00	0.00	0.00	
2	400.00	0.00	237.31	400.00	0.00	0.00	0.00	0.00	0.00	
3	1126.67	21.80	237.31	1109.26	-73.76	-114.95	3.00	237.31	136.58	
4	2363.33	21.80	237.31	2257.48	-321.77	-501.49	0.00	0.00	595.84	
5	3816.66	0.00	237.31	3676.00	-469.28	-731.39	1.50	180.00	869.00	Int. Csg. Pt.
6	8151.66	0.00	237.31	8011.00	-469.28	-731.39	0.00	237.31	869.00	PBHL

WELL DETAILS

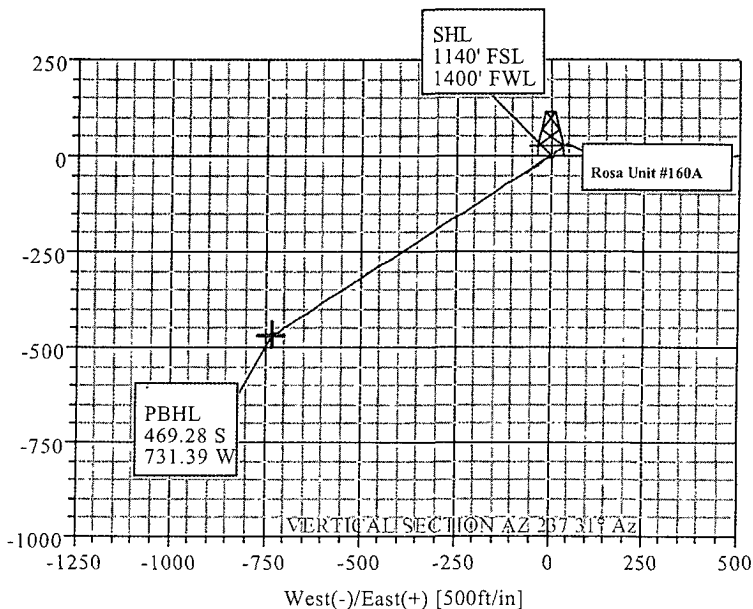
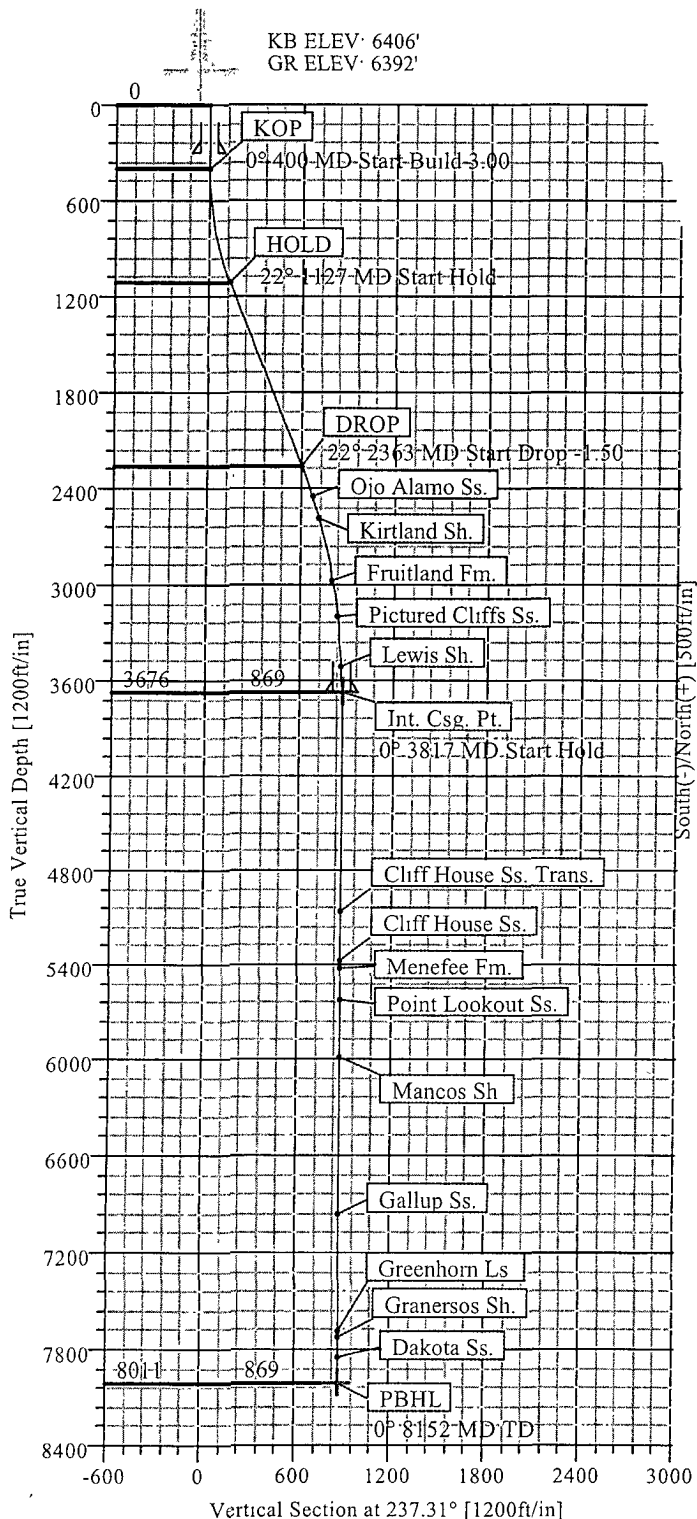
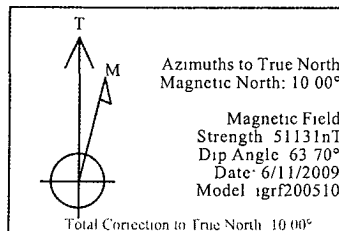
Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
#160D	0.00	0.00	2136785.68	1298649.31	36°51'59.360N	107°25'06.130W	N/A

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
Int. Csg. Pt.	3676.00	-469.28	-731.39	2136325.38	1297912.23	36°51'54.720N	107°25'15.130W	Point
PBHL	8011.00	-469.28	-731.39	2136325.38	1297912.23	36°51'54.720N	107°25'15.130W	Point

FORMATION TOP DETAILS

No.	TVDPath	MDPath	Formation
1	2456.00	2574.90	Ojo Alamo Ss.
2	2591.00	2716.51	Kirtland Sh.
3	2976.00	3112.68	Fruitland Fm.
4	3201.00	3340.42	Pictured Cliffs Ss.
5	3516.00	3656.61	Lewis Sh.
6	5066.00	5206.66	Cliff House Ss. Trans.
7	5371.00	5511.66	Cliff House Ss.
8	5421.00	5561.66	Menefee Fm.
9	5621.00	5761.66	Point Lookout Ss.
10	5986.00	6126.66	Mancos Sh.
11	6966.00	7106.66	Gallup Ss.
12	7686.00	7826.66	Greenhorn Ls.
13	7731.00	7871.66	Graneros Sh.
14	7856.00	7996.66	Dakota Ss.



Weatherford

CASING DETAILS

No.	TVD	MD	Name	Size
1	300.00	300.00	10 3/4"	10.750
2	3676.00	3816.66	7 5/8" Int. Csg.	0.000

Plan: Plan #1 (#160D/1)

Created By: Lindsey Maddux

Date: 6/11/2009



Weatherford International, Inc.

Proposal Plan Report



Weatherford

Company:	WILLIAMS PRODUCTION	Date:	6/11/2009	Time:	09:49:26	Page:	3
Field:	Rio Arriba Co. NM (NAD 83)	Co-ordinate(NE) Reference:	Well: #160D True North				
Site:	Rosa Unit #160D	Vertical (TVD) Reference:	SITE 6406.0				
Well:	#160D	Section (VS) Reference:	Well (0.00N 0.00E 237.31Azi)				
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
6000.00	0.00	237.31	5859.34	-469.28	-731.39	869.00	0.00	0.00	0.00	237.31	
6100.00	0.00	237.31	5959.34	-469.28	-731.39	869.00	0.00	0.00	0.00	237.31	
6126.66	0.00	237.31	5986.00	-469.28	-731.39	869.00	0.00	0.00	0.00	237.31	Mancos Sh.
6200.00	0.00	237.31	6059.34	-469.28	-731.39	869.00	0.00	0.00	0.00	237.31	
6300.00	0.00	237.31	6159.34	-469.28	-731.39	869.00	0.00	0.00	0.00	237.31	
6400.00	0.00	237.31	6259.34	-469.28	-731.39	869.00	0.00	0.00	0.00	237.31	
6500.00	0.00	237.31	6359.34	-469.28	-731.39	869.00	0.00	0.00	0.00	237.31	
6600.00	0.00	237.31	6459.34	-469.28	-731.39	869.00	0.00	0.00	0.00	237.31	
6700.00	0.00	237.31	6559.34	-469.28	-731.39	869.00	0.00	0.00	0.00	237.31	
6800.00	0.00	237.31	6659.34	-469.28	-731.39	869.00	0.00	0.00	0.00	237.31	
6900.00	0.00	237.31	6759.34	-469.28	-731.39	869.00	0.00	0.00	0.00	237.31	
7000.00	0.00	237.31	6859.34	-469.28	-731.39	869.00	0.00	0.00	0.00	237.31	
7100.00	0.00	237.31	6959.34	-469.28	-731.39	869.00	0.00	0.00	0.00	237.31	
7106.66	0.00	237.31	6966.00	-469.28	-731.39	869.00	0.00	0.00	0.00	237.31	Gallup Ss.
7200.00	0.00	237.31	7059.34	-469.28	-731.39	869.00	0.00	0.00	0.00	237.31	
7300.00	0.00	237.31	7159.34	-469.28	-731.39	869.00	0.00	0.00	0.00	237.31	
7400.00	0.00	237.31	7259.34	-469.28	-731.39	869.00	0.00	0.00	0.00	237.31	
7500.00	0.00	237.31	7359.34	-469.28	-731.39	869.00	0.00	0.00	0.00	237.31	
7600.00	0.00	237.31	7459.34	-469.28	-731.39	869.00	0.00	0.00	0.00	237.31	
7700.00	0.00	237.31	7559.34	-469.28	-731.39	869.00	0.00	0.00	0.00	237.31	
7800.00	0.00	237.31	7659.34	-469.28	-731.39	869.00	0.00	0.00	0.00	237.31	
7826.66	0.00	237.31	7686.00	-469.28	-731.39	869.00	0.00	0.00	0.00	237.31	Greenhorn Ls.
7871.66	0.00	237.31	7731.00	-469.28	-731.39	869.00	0.00	0.00	0.00	237.31	Graneros Sh.
7900.00	0.00	237.31	7759.34	-469.28	-731.39	869.00	0.00	0.00	0.00	237.31	
7996.66	0.00	237.31	7856.00	-469.28	-731.39	869.00	0.00	0.00	0.00	237.31	Dakota Ss.
8000.00	0.00	237.31	7859.34	-469.28	-731.39	869.00	0.00	0.00	0.00	237.31	
8100.00	0.00	237.31	7959.34	-469.28	-731.39	869.00	0.00	0.00	0.00	237.31	
8151.66	0.00	237.31	8011.00	-469.28	-731.39	869.00	0.00	0.00	0.00	237.31	PBHL

Targets

Name	Description	TVD	+N/-S	+E/-W	Map Northing	Map Eastings	Latitude	Longitude
Dir.	Dip.	ft	ft	ft	ft	ft	Deg Min Sec	Deg Min Sec
Int. Csg. Pt.		3676.00	-469.28	-731.39	2136325	3812979	12.23 N	107 25 15.130 W
-Plan hit target								
PBHL		8011.00	-469.28	-731.39	2136325	3812979	12.23 N	107 25 15.130 W
-Plan hit target								

Formations

MD	TVD	Formations	Lithology	Dip Angle	Dip Direction
ft	ft			deg	deg
2574.90	2456.00	Ojo Alamo Ss.		0.00	0.00
2716.51	2591.00	Kirtland Sh.		0.00	0.00
3112.68	2976.00	Fruitland Fm.		0.00	0.00
3340.42	3201.00	Pictured Cliffs Ss.		0.00	0.00
3656.61	3516.00	Lewis Sh.		0.00	0.00
5206.66	5066.00	Cliff House Ss. Trans		0.00	0.00
5511.66	5371.00	Cliff House Ss.		0.00	0.00
5561.66	5421.00	Menefee Fm.		0.00	0.00
5761.66	5621.00	Point Lookout Ss.		0.00	0.00
6126.66	5986.00	Mancos Sh.		0.00	0.00
7106.66	6966.00	Gallup Ss.		0.00	0.00
7826.66	7686.00	Greenhorn Ls.		0.00	0.00
7871.66	7731.00	Graneros Sh.		0.00	0.00
7996.66	7856.00	Dakota Ss.		0.00	0.00



Weatherford International, Inc.

Proposal Plan Report



Weatherford

Company:	WILLIAMS PRODUCTION	Date:	6/11/2009	Time:	09:49:26	Page:	4
Field:	Rio Arriba Co., NM (NAD 83)	Co-ordinate(NE) Reference:	Well: #160D, True North				
Site:	Rosa Unit #160D	Vertical (TVD) Reference:	SITE 6406.0				
Well:	#160D	Section (VS) Reference:	Well (0.00N,0.00E,237.31Azi)				
Wellpath:	1	Survey Calculation Method:	Minimum Curvature	Db:	Sybase		

Annotation

MD ft	TVD ft	
400.00	400.00	KOP
1126.67	1109.26	HOLD
2363.33	2257.48	DROP
3816.66	3676.00	Int. Csg. Pt.
8151.66	8011.00	PBHL

Casing Points

MD ft	TVD ft	Diameter in	Hole Size in	Name
300.00	300.00	10.750	12.250	10 3/4"
3816.66	3676.00	0.000	0.000	7 5/8" 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)

