

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED

OCT 10 2012

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

APPLICATION FOR PERMIT TO DRILL OR REENTER

Farmington Field Office

Bureau of Land Management

5. Lease Serial No.
SF-078894 / SF-078777 / SF-078774
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

WPX Energy Production, LLC

3a. Address

P.O. Box 640 Aztec, NM 87410

3b. Phone No. (include area code)

(505) 333-1808

4. Location of Well (Report location clearly and in accordance with any State requirements. *)

At surface 915' FSL & 930' FWL, Sec 29, T31N, R4W

At proposed prod. zone 10' FSL & 1950' FWL, Sec 30, T31N, R4W

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

approximately 31 miles northeast of Blanco, New Mexico

15. Distance from proposed*

location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 10'

16. No. of Acres in lease

2284.16 / 716.91 / 508.84

17. Spacing Unit dedicated to this well

SW/4 sec 29 & S/2 sec 30

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

19. Proposed Depth

3550' TVD / 7359' MD

20. BLM/BIA Bond No. on file

UT0899

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

6584' GR

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

22. Approximate date work will start*

April 1, 2013

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

Name (Printed/Typed)

Date

Larry Higgins

10/10/2012

Permit Supervisor

Approved by (Signature)

Name (Printed/Typed)

Date

Title

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.

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)

NOTE: USFS SURFACE

WPX Energy Production, LLC. proposes to develop the Basin Fruitland Coal formation 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.

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 183.5 feet would be required for this well.

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

Hold C104

for Directional Survey and "As Drilled" plat

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

Hold C104

for Directional Survey and "As Drilled" plat

NMOCD

NOTIFY AZTEC OCD 24 HRS.

PRIOR TO CASING & CEMENT JAN 04 2013

District I
1625 N. French Drive, Hobbs, NM 88240
Phone: (575) 393-6151 Fax: (575) 393-0720

District II
811 S. First Street, Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720

District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

District IV
1220 S. St. Francis Drive, Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department

Form C-102
Revised August 1, 2011

Submit one copy to
Appropriate District Office

OIL CONSERVATION DIVISION

1220 South St. Francis Drive
Santa Fe, NM 87505

☐ AMENDED REPORT

RCVD JAN 2 '13

OIL CONS. DIV.
DIST. 3

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number 30-039-31149		*Pool Code 71629	*Pool Name BASIN FRUITLAND COAL
*Property Code 17033	*Property Name ROSA UNIT		*Well Number 313B
*GRID No. 120782	*Operator Name WPX ENERGY PRODUCTION, LLC		*Elevation 6584'

¹⁰ Surface Location

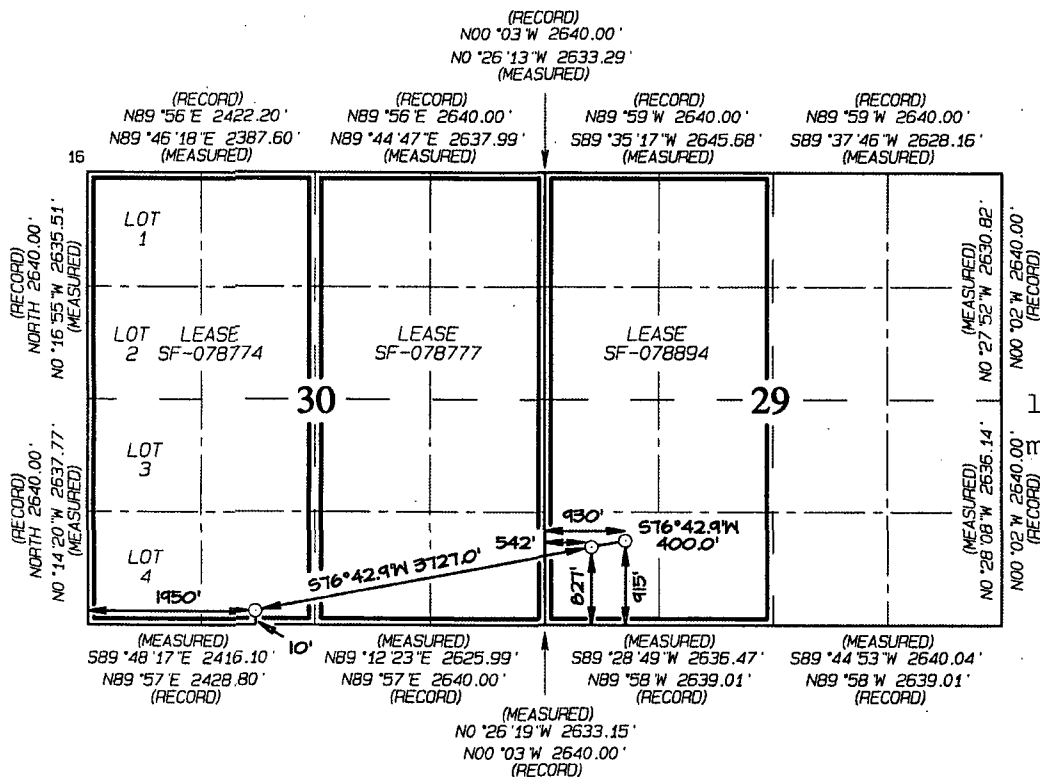
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	29	31N	4W		915	SOUTH	930	WEST	RIO ARriba

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
N	30	31N	4W		10	SOUTH	1950	WEST	RIO ARriba

¹² Dedicated Acres 934.0 Acres	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No. R-14727
W/2 Section 29 & Entire Section 30			

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



END-OF-LATERAL
10' FSL 1950' FWL
SECTION 30, T31N, R4W
LAT: 36.86333°N
LONG: 107.29726°W
DATUM: NAD1927
LAT: 36.86334°N
LONG: 107.29786°W
DATUM: NAD1983

POINT-OF-ENTRY
827' FSL 542' FWL
SECTION 29, T31N, R4W
LAT: 36.86563°N
LONG: 107.28485°W
DATUM: NAD1927
LAT: 36.86564°N
LONG: 107.28545°W
DATUM: NAD1983

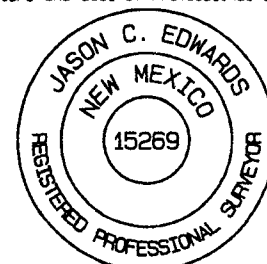
SURFACE LOCATION
915' FSL 930' FWL
SECTION 29, T31N, R4W
LAT: 36.86588°N
LONG: 107.28351°W
DATUM: NAD1927
LAT: 36.86589°N
LONG: 107.28411°W
DATUM: NAD1983

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: 12/26/12
Printed Name: Larry Higgins
E-mail Address: larry.higgins@wpxenergy.co

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 19, 2011
Signature and Seal of Professional Surveyor



JASON C. EDWARDS
Certificate Number 15269

District IV
1220 S. St. Francis Drive, Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

JASON C. EDWARDS
Certificate Number 15269

WPX ENERGY COMPANY**Operations Plan***(Note: This procedure will be adjusted on site based upon actual conditions)*

DATE: 10/09/2012

WELLNAME: Rosa Unit #313-B **FIELD:** Basin Fruitland Coal

BH LOCATION: SESW Sec. 30-T31N-4W **SURFACE:** USFS
Rio Arriba, NM

ELEVATION: 6,584' GR **MINERALS:** BLM

TOTAL DEPTH: 7,359' MD **LEASE #** SF-078774

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

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

NAME		TVD	MD		NAME		TVD	MD
San Jose		Surface	Surface		Top Target Coal		3,393	3,627
Nacimiento		1,589	1,589		Bottom Target Coal		3,406	3,406
Ojo Alamo		2,765	2,765		Base Coal		3,447	3,447
Kirtland		2,868	2,868		Picture Cliffs		3,448	3,448
Fruitland		3,182	3,191		TD		3,550	7,359

- **NOTE:** Well will be vertically drilled to 100' into Pictured Cliffs, 7" csg will be run with shoe 100' into Pictured Cliffs. Cased hole whipstock will be set at KOP (+/-410') above top of target coal). Well will be geosteered in lateral.

B. **LOGGING PROGRAM:** NONE

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 from 500' to TD of intermediate casing. Then from mill out of intermediate casing to TD.

II. **DRILLING**

A. **MUD PROGRAM:** Clear water with benex to 7" casing point. Convert to a LSND mud to log and run pipe. Treat for lost circulation as necessary. Obtain 100% returns prior to cementing. Notify Engineering of any mud losses.

B. **DRILLING FLUID:** Horizontal section will be drilled with LSLD Polymer fluid.

- 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.**
- D. **SURVEYING:** RU Gyrodata and run Gyro with CCL from 3,100 ft. to surface. Tie in Surveys to Pathfinder Directional Plan and select interval to cut Window. Adjust Azimuth for Window if necessary.

III. **MATERIALS**

A. **CASING PROGRAM:**

<u>CASING TYPE</u>	<u>HOLE SIZE</u>	<u>DEPTH (MD)</u>	<u>CASING SIZE</u>	<u>WT. & GRADE</u>
Surface	12-1/4"	+ 300'	9-5/8"	36# K-55
Intermediate	8-3/4"	+/- 3,545'	7"	23# K-55
Prod. Liner	6-1/4"	+/- 2,993'- 7,359'	4-1/2"	11.6# K-55

Note: Intermediate casing is set 100' into Pictured Cliffs in the pilot hole. Production liner is 4-1/2" 11.6# Pre-perforated K-55 and the liner will be set with liner hanger 5-10' outside of the window.

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.
3. **PRODUCTION LINER / CASING:** No centralization

C. **CEMENTING:**

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

1. **SURFACE:** Slurry: 150sx (269.4 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 600psi.
2. **INTERMEDIATE:** Lead - 330 sx (898.6 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.). Total volume = 1016 cu.ft. Bump Plug to 1,500 psi. Notify engineering if cement is not circulated to surface. WOC 12 hours. Test csg to 1500psi.
3. **PRODUCTION LINER:** Open hole completion. No cement.

IV. COMPLETION

A. PRESSURE TEST

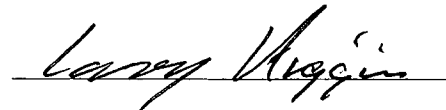
1. Pressure test 7" casing to 1500# for 30 minutes.

B. STIMULATION

1. No stimulation

C. RUNNING TUBING

1. Fruitland Coal: Run 2-7/8", 6.5#, J-55, EUE tubing with a SN on top of bottom joint. Land tubing approximately 50' above PBTD of 7" casing.

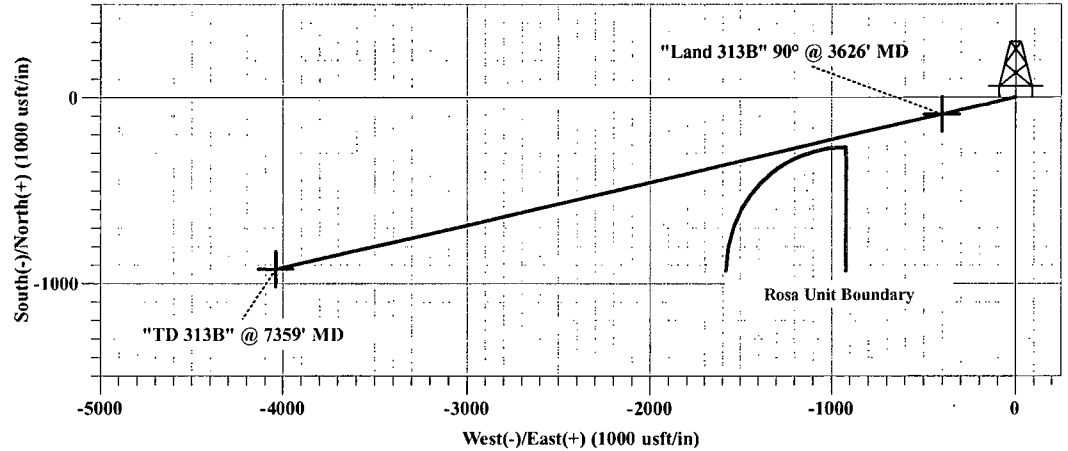


Larry Higgins
Permit Supervisor

Ground Level: 6584.0
KB: 14'

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
BHL 313B	3393.0	-922.3	-4037.7	2135164.33	193623.10	Point
Land 313B	3393.0	-91.1	-399.0	2135956.10	197270.54	Point

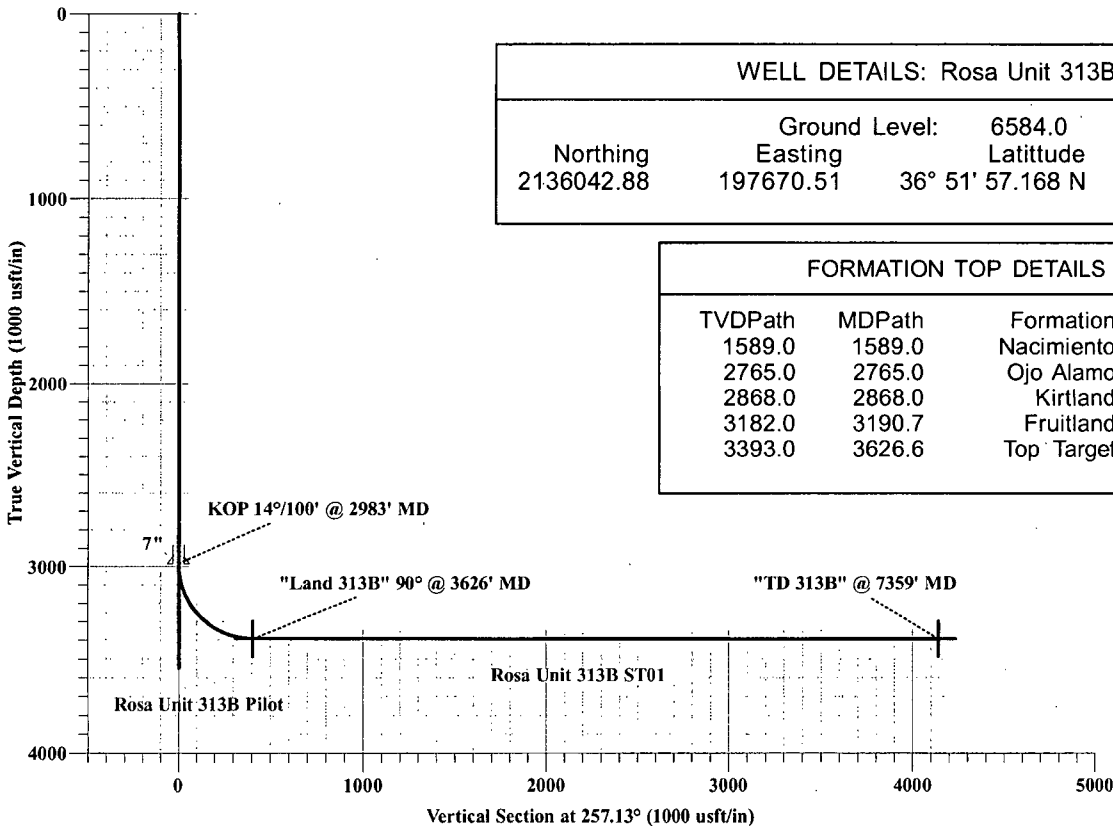


WELL DETAILS: Rosa Unit 313B

Ground Level:	6584.0
Northing	2136042.88
Easting	197670.51
Latitude	36° 51' 57.168 N
Longitude	107° 17' 0.636 W

FORMATION TOP DETAILS

TVDPPath	MDPath	Formation
1589.0	1589.0	Nacimiento
2765.0	2765.0	Ojo Alamo
2868.0	2868.0	Kirtland
3182.0	3190.7	Fruitland
3393.0	3626.6	Top Target



SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2983.7	0.00	0.00	2983.7	0.0	0.0	0.00	0.00	0.0	
3626.6	90.00	257.13	3393.0	-91.1	-399.0	14.00	257.13	409.3	
7359.0	90.00	257.13	3393.0	-922.3	-4037.7	0.00	0.00	4141.7	BHL 313B

Database: EDM 5000.1 Single User Db
Company: WPXEnergy
Project: Rio Arriba Co., NM
Site: Sec 29 T 31N R04W
Well: Rosa Unit 313B
Wellbore: ST01
Design: Design #1

Local Co-ordinate Reference: Well Rosa Unit 313B
TVD Reference: WELL @ 6598.0usft (Original Well Elev)
MD Reference: WELL @ 6598.0usft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

Project: Rio Arriba Co., NM
Map System: US State Plane 1927 (Exact solution)
Geo Datum: NAD 1927 (NADCON CONUS)
Map Zone: New Mexico Central 3002
System Datum: Mean Sea Level

Site: Sec 29 T 31N R04W
Site Position: Northing: 2,136,138.57 usft Latitude: 36° 51' 58.464 N
From: Lat/Long Easting: 200,957.09 usft Longitude: 107° 16' 20.208 W
Position Uncertainty: 0.0 usft Slot Radius: 13-3/16 " Grid Convergence: -0.61 °

Well: Rosa Unit 313B
Well Position: +N/-S -130.9 usft Northing: 2,136,042.87 usft Latitude: 36° 51' 57.168 N
+E/-W -3,285.4 usft Easting: 197,670.51 usft Longitude: 107° 17' 0.636 W
Position Uncertainty: 0.0 usft Wellhead Elevation: Ground Level: 6,584.0 usft

Wellbore: ST01
Magnetics: Model Name Sample Date Declination Dip Angle Field Strength
 (°) (°) (nT)
 IGRF2010 2012/10/08 9.54 63.63 50,738

Design: Design #1
Audit Notes:
Version: Phase: PROTOTYPE Tie On Depth: 0.0
Vertical Section: Depth From (TVD) +N/-S +E/-W Direction
 (usft) (usft) (usft) (°)
 0.0 0.0 0.0 257.13

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,983.7	0.00	0.00	2,983.7	0.0	0.0	0.00	0.00	0.00	0.00	
3,626.6	90.00	257.13	3,393.0	-91.1	-399.0	14.00	14.00	0.00	257.13	
7,359.0	90.00	257.13	3,393.0	-922.3	-4,037.7	0.00	0.00	0.00	0.00	BHL 313B

Database: EDM 5000.1 Single User Db
Company: WPXEnergy
Project: Rio Arriba Co., NM
Site: Sec 29 T 31N R04W
Well: Rosa Unit 313B
Wellbore: ST01
Design: Design #1

Local Co-ordinate Reference: Well Rosa Unit 313B
TVD Reference: WELL @ 6598.0usft (Original Well Elev)
MD Reference: WELL @ 6598.0usft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,589.0	0.00	0.00	1,589.0	0.0	0.0	0.0	0.00	0.00	0.00
Nacimiento									
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00
2,765.0	0.00	0.00	2,765.0	0.0	0.0	0.0	0.00	0.00	0.00
Ojo Alamo									
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00
2,868.0	0.00	0.00	2,868.0	0.0	0.0	0.0	0.00	0.00	0.00
Kirtland									
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,983.7	0.00	0.00	2,983.7	0.0	0.0	0.0	0.00	0.00	0.00
KOP 14°/100' @ 2983' MD - 7"									
3,000.0	2.28	257.13	3,000.0	-0.1	-0.3	0.3	13.96	13.96	0.00
3,025.0	5.78	257.13	3,024.9	-0.5	-2.0	2.1	14.00	14.00	0.00
3,050.0	9.28	257.13	3,049.7	-1.2	-5.2	5.4	14.00	14.00	0.00
3,075.0	12.78	257.13	3,074.2	-2.3	-9.9	10.1	14.00	14.00	0.00
3,100.0	16.28	257.13	3,098.4	-3.7	-16.0	16.4	14.00	14.00	0.00
3,125.0	19.78	257.13	3,122.2	-5.4	-23.5	24.1	14.00	14.00	0.00
3,150.0	23.28	257.13	3,145.5	-7.4	-32.5	33.3	14.00	14.00	0.00
3,175.0	26.78	257.13	3,168.1	-9.8	-42.8	43.9	14.00	14.00	0.00
3,190.7	28.98	257.13	3,182.0	-11.4	-49.9	51.2	14.00	14.00	0.00
Fruitland									
3,200.0	30.28	257.13	3,190.1	-12.4	-54.4	55.8	14.00	14.00	0.00
3,225.0	33.78	257.13	3,211.3	-15.4	-67.3	69.1	14.00	14.00	0.00
3,250.0	37.28	257.13	3,231.6	-18.6	-81.5	83.6	14.00	14.00	0.00
3,275.0	40.78	257.13	3,251.0	-22.1	-96.8	99.3	14.00	14.00	0.00
3,300.0	44.28	257.13	3,269.5	-25.9	-113.3	116.2	14.00	14.00	0.00
3,325.0	47.78	257.13	3,286.8	-29.9	-130.9	134.2	14.00	14.00	0.00

Database: EDM 5000.1 Single User Db
 Company: WPXEnergy
 Project: Rio Arriba Co., NM
 Site: Sec 29 T 31N R04W
 Well: Rosa Unit 313B
 Wellbore: ST01
 Design: Design #1

Local Co-ordinate Reference: Well Rosa Unit 313B
 TVD Reference: WELL @ 6598.0usft (Original Well Elev)
 MD Reference: WELL @ 6598.0usft (Original Well Elev)
 North Reference: True
 Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
3,350.0	51.28	257.13	3,303.0	-34.1	-149.4	153.2	14.00	14.00	0.00
3,375.0	54.78	257.13	3,318.1	-38.6	-168.9	173.2	14.00	14.00	0.00
3,400.0	58.28	257.13	3,331.9	-43.2	-189.2	194.1	14.00	14.00	0.00
3,425.0	61.78	257.13	3,344.3	-48.0	-210.3	215.7	14.00	14.00	0.00
3,450.0	65.28	257.13	3,355.5	-53.0	-232.1	238.1	14.00	14.00	0.00
3,475.0	68.78	257.13	3,365.2	-58.1	-254.5	261.1	14.00	14.00	0.00
3,500.0	72.28	257.13	3,373.6	-63.4	-277.5	284.7	14.00	14.00	0.00
3,525.0	75.78	257.13	3,380.5	-68.7	-300.9	308.7	14.00	14.00	0.00
3,550.0	79.28	257.13	3,385.9	-74.2	-324.7	333.1	14.00	14.00	0.00
3,575.0	82.78	257.13	3,389.8	-79.7	-348.8	357.8	14.00	14.00	0.00
3,600.0	86.28	257.13	3,392.1	-85.2	-373.1	382.7	14.00	14.00	0.00
3,626.6	90.00	257.13	3,393.0	-91.1	-399.0	409.3	14.00	14.00	0.00
"Land 313B" 90° @ 3626' MD - Top Target									
3,700.0	90.00	257.13	3,393.0	-107.5	-470.5	482.7	0.00	0.00	0.00
3,800.0	90.00	257.13	3,393.0	-129.8	-568.0	582.7	0.00	0.00	0.00
3,900.0	90.00	257.13	3,393.0	-152.0	-665.5	682.7	0.00	0.00	0.00
4,000.0	90.00	257.13	3,393.0	-174.3	-763.0	782.7	0.00	0.00	0.00
4,100.0	90.00	257.13	3,393.0	-196.6	-860.5	882.7	0.00	0.00	0.00
4,200.0	90.00	257.13	3,393.0	-218.8	-958.0	982.7	0.00	0.00	0.00
4,300.0	90.00	257.13	3,393.0	-241.1	-1,055.5	1,082.7	0.00	0.00	0.00
4,400.0	90.00	257.13	3,393.0	-263.4	-1,153.0	1,182.7	0.00	0.00	0.00
4,500.0	90.00	257.13	3,393.0	-285.6	-1,250.4	1,282.7	0.00	0.00	0.00
4,600.0	90.00	257.13	3,393.0	-307.9	-1,347.9	1,382.7	0.00	0.00	0.00
4,700.0	90.00	257.13	3,393.0	-330.2	-1,445.4	1,482.7	0.00	0.00	0.00
4,800.0	90.00	257.13	3,393.0	-352.4	-1,542.9	1,582.7	0.00	0.00	0.00
4,900.0	90.00	257.13	3,393.0	-374.7	-1,640.4	1,682.7	0.00	0.00	0.00
5,000.0	90.00	257.13	3,393.0	-397.0	-1,737.9	1,782.7	0.00	0.00	0.00
5,100.0	90.00	257.13	3,393.0	-419.2	-1,835.4	1,882.7	0.00	0.00	0.00
5,200.0	90.00	257.13	3,393.0	-441.5	-1,932.9	1,982.7	0.00	0.00	0.00
5,300.0	90.00	257.13	3,393.0	-463.8	-2,030.4	2,082.7	0.00	0.00	0.00
5,400.0	90.00	257.13	3,393.0	-486.1	-2,127.8	2,182.7	0.00	0.00	0.00
5,500.0	90.00	257.13	3,393.0	-508.3	-2,225.3	2,282.7	0.00	0.00	0.00
5,600.0	90.00	257.13	3,393.0	-530.6	-2,322.8	2,382.7	0.00	0.00	0.00
5,700.0	90.00	257.13	3,393.0	-552.9	-2,420.3	2,482.7	0.00	0.00	0.00
5,800.0	90.00	257.13	3,393.0	-575.1	-2,517.8	2,582.7	0.00	0.00	0.00
5,900.0	90.00	257.13	3,393.0	-597.4	-2,615.3	2,682.7	0.00	0.00	0.00
6,000.0	90.00	257.13	3,393.0	-619.7	-2,712.8	2,782.7	0.00	0.00	0.00
6,100.0	90.00	257.13	3,393.0	-641.9	-2,810.3	2,882.7	0.00	0.00	0.00
6,200.0	90.00	257.13	3,393.0	-664.2	-2,907.8	2,982.7	0.00	0.00	0.00
6,300.0	90.00	257.13	3,393.0	-686.5	-3,005.2	3,082.7	0.00	0.00	0.00
6,400.0	90.00	257.13	3,393.0	-708.7	-3,102.7	3,182.7	0.00	0.00	0.00
6,500.0	90.00	257.13	3,393.0	-731.0	-3,200.2	3,282.7	0.00	0.00	0.00
6,600.0	90.00	257.13	3,393.0	-753.3	-3,297.7	3,382.7	0.00	0.00	0.00
6,700.0	90.00	257.13	3,393.0	-775.5	-3,395.2	3,482.7	0.00	0.00	0.00
6,800.0	90.00	257.13	3,393.0	-797.8	-3,492.7	3,582.7	0.00	0.00	0.00
6,900.0	90.00	257.13	3,393.0	-820.1	-3,590.2	3,682.7	0.00	0.00	0.00
7,000.0	90.00	257.13	3,393.0	-842.4	-3,687.7	3,782.7	0.00	0.00	0.00
7,100.0	90.00	257.13	3,393.0	-864.6	-3,785.2	3,882.7	0.00	0.00	0.00
7,200.0	90.00	257.13	3,393.0	-886.9	-3,882.6	3,982.7	0.00	0.00	0.00
7,300.0	90.00	257.13	3,393.0	-909.2	-3,980.1	4,082.7	0.00	0.00	0.00
7,359.0	90.00	257.13	3,393.0	-922.3	-4,037.7	4,141.7	0.00	0.00	0.00
"TD 313B" @ 7359' MD									

Database: EDM 5000.1 Single User Db
 Company: WPXEnergy
 Project: Rio Arriba Co., NM
 Site: Sec 29 T 31N R04W
 Well: Rosa Unit 313B
 Wellbore: ST01
 Design: Design #1

Local Co-ordinate Reference: Well Rosa Unit 313B
 TVD Reference: WELL @ 6598.0usft (Original Well Elev)
 MD Reference: WELL @ 6598.0usft (Original Well Elev)
 North Reference: True
 Survey Calculation Method: Minimum Curvature

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
BHL 313B - plan hits target center - Point	0.00	0.00	3,393.0	-922.3	-4,037.7	2,135,164.33	193,623.10	36° 51' 48.046 N	107° 17' 50.320 W
Land 313B - plan hits target center - Point	0.00	0.00	3,393.0	-91.1	-399.0	2,135,956.10	197,270.55	36° 51' 56.267 N	107° 17' 5.546 W

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
2,983.7	2,983.7	7"	7	8-3/4

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,589.0	1,589.0	Nacimiento		0.00	
2,765.0	2,765.0	Ojo Alamo		0.00	
2,868.0	2,868.0	Kirtland		0.00	
3,190.7	3,182.0	Fruitland		0.00	
3,626.6	3,393.0	Top Target		0.00	

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
2,983.7	2,983.7	0.0	0.0	KOP 14°/100' @ 2983' MD
3,626.6	3,393.0	-91.1	-399.0	"Land 313B" 90° @ 3626' MD
7,359.0	3,393.0	-922.3	-4,037.7	"TD 313B" @ 7359' MD

Legend

- ▲ Active or Proposed Wells
- Rio Arriba County Roads

Espinosa Ranch & Bancos Mesa NM 7.5-Minute USGS Quads

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)

