State of New Mexico
Energy, Minerals and Natural Resources Department

Susana Martinez
Governor

David Martin
Cabinet Secretary

Tony Delfin
Deputy Cabinet Secretary

David R. Catanach, Division Director
Oil Conservation Division

New Mexico Oil Conservation Division approval and conditions listed below are made in accordance with OCD Rule 19.15.7.11 and are in addition to the actions approved by BLM on the following 3160-3 APD form.

Operator Signature Date: 11-5-15
Well information;
Operator WPX, Well Name and Number Chaco 2308 31D #493H

API# 30-045-35724, Section 31, Township 23 (N)/S, Range 08 E/(W)

Conditions of Approval: (See the below checked and handwritten conditions)

- ✓ Notify Aztec OCD 24hrs prior to casing & cement.
- ✓ Hold C-104 for directional survey & "As Drilled" Plat
- ✓ Hold C-104 for NSL, NSP, DHC
- ○ Spacing rule violation. Operator must follow up with change of status notification on other well to be shut in or abandoned
- ○ Regarding the use of a pit, closed loop system or below grade tank, the operator must comply with the following as applicable:
  - A pit requires a complete C-144 be submitted and approved prior to the construction or use of the pit, pursuant to 19.15.17.8.A
  - A closed loop system requires notification prior to use, pursuant to 19.15.17.9.A
  - A below grade tank requires a registration be filed prior to the construction or use of the below grade tank, pursuant to 19.15.17.8.C
- ✓ Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string
- ✓ Submit Gas Capture Plan form prior to spudding or initiating recompletion operations
- ✓ Regarding Hydraulic Fracturing, review EPA Underground Injection Control Guidance 84
- ✓ Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system.
- ✓ Well-bore communication is regulated under 19.15.29 NMAC. This requires well-bore Communication to be reported in accordance with 19.15.29.8.

Chad Hanna
NMOCD Approved by Signature

6-10-2016
Date KC

1220 South St. Francis Drive • Santa Fe, New Mexico 87505
Phone (505) 476-3460 • Fax (505) 476-3462 • www.emnrd.state.nm.us/ocd

Form 3160-3
(September 2001)

RECEIVED
NOV 05 2015
Farmington Field Office
Bureau of Land Management

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.
NO-G-1402-1893

6. If Indian, Allottee or Tribe Name

1a. Type of Work: ☒ DRILL ☐ REENTER

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

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

8. Lease Name and Well No.
Chaco 2308-31D #493H

2. Name of Operator
WPX Energy Production, LLC

9. API Well No.
30-045-35724

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

3b. Phone No. *(include area code)*
(505) 333-1816

10. Field and Pool, or Exploratory
Basin Mancos

4. Location of Well *(Report location clearly and in accordance with any State requirements. *)*
At surface D 225' FNL & 915' FWL SEC 31 23N 8W
At proposed prod. zone F 2339' FNL & 1897' FWL SEC 6 22N 8W

OIL CONS. DIV DIST. 3
MAY 25 2016

11. Sec., T., R., M., or Blk. and Survey or Area
SHL: Sec 31, T23N, R8W
BHL: Sec 6, T22N, R8W

14. Distance in miles and direction from nearest town or post office*
approximately 38.7 miles from mile marker 112.7

12. County or Parish
San Juan County

13. State
NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 225'	16. No. of Acres in lease 160 acres	17. Spacing Unit dedicated to this well 641.99 acres – W/2 Section 31, T23N, R8W W/2 Section 6, T22N, R8W
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 40'	19. Proposed Depth 12436' MD / 4465' TVD	20. BLM/BIA Bond No. on file UTB000178
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 6680' GR	22. Approximate date work will start* December 1, 2015	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)* Lacey Granillo	Date 11/5/15
Title Permit Technician III		
Approved by *(Signature)* /s/ Maurice Ward	Name *(Printed/Typed)*	Date 5/20/16
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)*

WPX Energy Production, 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 BLM and is on lease and will be twinned with the Chaco 2308-31D #492H. This location is on IA surface and a Surface Use Agreement has been secured.

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

The access road for the Chaco 2308-31D #492H will be utilized.

The pipeline for the Chaco 2308-31D #492H will be utilized.

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

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

NMOCD

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 Drive, Hobbs, NM 88240
Phone: (575) 393-6161 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

OIL CONSERVATION DIVISION

1220 South St. Francis Drive
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011

Submit one copy to
Appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number	2 Pool Code	3 Pool Name
30-045-35724	97232	BASIN MANCOS

4 Property Code	5 Property Name	6 Well Number
316322	CHACO 2308-31D	493H

7 OGRID No.	8 Operator Name	9 Elevation
120782	WPX ENERGY PRODUCTION, LLC	6680'

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
D	31	23N	8W	1	225	NORTH	915	WEST	SAN JUAN

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
F	6	22N	8W		2339	NORTH	1897	WEST	SAN JUAN

12 Dedicated Acres		13 Joint or Infill	14 Consolidation Code	15 Order No.
641.99	W/2 - Section 31, T23N R8W W/2 - Section 6, T22N R8W			

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
225' FNL 915' FWL
SEC 31, T23N, R8W
LAT: 36.189997 °N
LONG: 107.727798 °W
DATUM: NAD1927

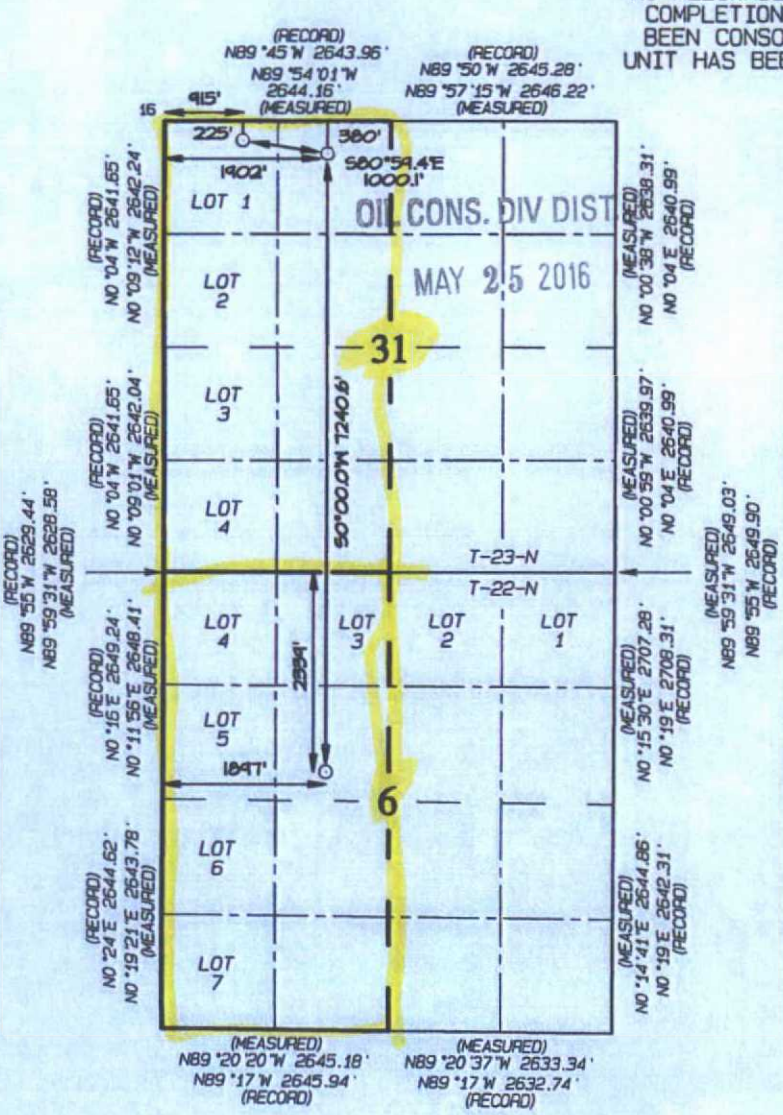
LAT: 36.190011 °N
LONG: 107.728411 °W
DATUM: NAD1983

POINT-OF-ENTRY
380' FNL 1902' FWL
SEC 31, T23N, R8W
LAT: 36.189564 °N
LONG: 107.724452 °W
DATUM: NAD1927

LAT: 36.189577 °N
LONG: 107.725064 °W
DATUM: NAD1983

END-OF-LATERAL
2339' FNL 1897' FWL
SEC 6, T22N, R8W
LAT: 36.169672 °N
LONG: 107.724479 °W
DATUM: NAD1927

LAT: 36.169686 °N
LONG: 107.725091 °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 — Date 11/5/15

LACEY GRANILLO

Printed Name

LACEY.GRANILLO@WPXENERGY.COM

E-mail Address

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 Revised: OCTOBER 28, 2015
Date of Survey: JUNE 9, 2015

Signature and Seal of Professional Surveyor

JASON C. EDWARDS
NEW MEXICO
15269
REGISTERED PROFESSIONAL SURVEYOR

JASON C. EDWARDS
Certificate Number 15269

WPXENERGY

WPX Energy

Operations Plan

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

Date:	October 23, 2015	**Field:**	Basin Mancos
Well Name:	Chaco 2308-31D #493H	**Surface:**	IA
SH Location:	NWNW Sec 31 23N-08W	**Elevation:**	6680' GR
BH Location:	SENW Sec 6 22N-08W	**Minerals:**	IA FED

Measured Depth: 12,436.07

I. **GEOLOGY:** SURFACE FORMATION - NACIMIENTO

A. FORMATION TOPS (GL)

NAME	MD	TVD	NAME	MD	TVD
OJO ALAMO	252	252	POINT LOOKOUT	3454	3319
KIRTLAND	414	414	MANCOS	3639	3494
PICTURED CLIFFS	984	982	GALLUP	3999	3833
LEWIS	1105	1101	KICKOFF POINT	4,788.60	4,488.83
CHACRA	1293	1283	TOP TARGET	4952	4563
CLIFF HOUSE	2467	2390	LANDING POINT	5,194.15	4,604.00
MENEFEE	2485	2407	BASE TARGET	5,194.15	4,604.00
			TD	12,436.07	4,465.00

B. MUD LOGGING PROGRAM: Mudlogger on location from surface csg to TD.

C. LOGGING PROGRAM: LWD GR from surface casing to TD.

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:** LSND mud (WBM) will be used to drill the 12-1/4" Surface hole, the 8 ¾" Directional Vertical hole, and the curve portion of the wellbore. A LSND (WBM) or (OBM) will be used to drill the lateral portion of well. Treat for lost circulation as necessary. Obtain 100% returns prior to cementing. Notify Engineering of any mud losses.

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**. Pressure test surface casing to **600 psi for 30 minutes** and intermediate casing to **1500 psi for 30 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)	CSG SIZE	WEIGHT	GRADE	CONN
SURFACE	12.25"	320.00'	9.625"	36 LBS	J-55 or equiv	STC
INTERMEDIATE	8.75"	5,194.15'	7"	23 LBS	J-55 or equiv	LTC
PRODUCTION	6.125"	5044.15 - 12,436.07	4.5"	11.6 LBS	P-110 or equiv	LTC
TIE BACK	6.125"	Surf. - 5044.15	4.5"	11.6 LBS	P-110 or equiv	LTC

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) centralizer on each of the bottom (3) joints and one standard centralizer every (3) joints to 2,500 ft. Run (1) centralizer at 2,500 ft., 2,300ft., 2,000ft., 1,500 ft., and 1,000 ft.

3. PRODUCTION LINER: Run 4-1/2" Liner with cement nose guide Float Shoe + 2jts. of 4-1/2" casing + Landing Collar + 4-1/2" pup joint + 1 RSI (Sliding Sleeve) positioned inside the 330ft Hard line. Centralizer program will be determined by Wellbore condition and when Lateral is evaluated by Geoscientists and Reservoir Engineers. Set seals on Liner Hanger. Test TOL to 1500 psi for 15 minutes.

C. CEMENTING:

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

1. **Surface** 5 bbl Fresh Water Spacer, 100 sx (160 cu.ft.) of 14.5 ppg Type I-II (Neat G) + 20% Fly Ash cement w/ 7.41 gal/sack mix water ratio @ 1.61 cu ft/sx yield. Calculated @ volume + 50% excess. WOC 12 hours. Test csg to 600psi. Total Volume: (160 cu-ft/100 sx/ Bbls).TOC at Surface.

2.Intermediate 20 bbl (112 cu-ft) Mud Flush III spacer + Lead: +/- 700 sx Foamed 50/50 Poz Cement. 13.0 ppg + 0.1% Halad 766 + 0.2% Versaset + 1.5% Chem-Foamer 760 (Yield :1.43 cu-ft/ sk. / Vol: 1001 cu-ft / 178.3 Bbls.) + TAIL: 100 sx 13.5 #/gal. + 0.2% Versaset + 0.15% HALAD-766 (Yield: 1.28 cu-ft / sk / Vol: 128 cu-ft / 22.8 Bbls.). + Fresh Water Displacement (1,362 cu-ft / +/- 242 Bbls) + 100 sx Top-Out Cement Premium: Yield: (1.17 cu-ft/ sk / (Vol: 117 cu-ft / 20.8 Bbls). WOC 12 hrs. Test Casing to 1500 PSI for 30 minutes. Total Cement Volume: (900 sx / 1246 cu-ft / 222 bbls). Mix with +/- 84,000 SCF Nitrogen. TOC at surface.

3. PROD. LINER: Spacer #1:10 bbl (56.cu-ft) Water Spacer. Spacer #2: 40 bbl 9.5 ppg (224.6 cu-ft) Tuned Spacer III. Spacer #3: 10 bbl Water Spacer. Lead Cement: Extencem ™ System. Yield 1.36 cuft/sk 13.3 ppg (724 sx /985 cuft /175 bbls). Tail Spacer: 20 BBL of MMCR. Displacement: Displace w/ +/- 140 bbl Fr Water. Total Cement (724 sx /985bbls).

I.

COMPLETION

A. **CBL**

Run CCL for perforating

A. **PRESSURE TEST**

1. Pressure test 4-1/2" casing to 4500 psi max, hold at 1500 psi for 30 minutes. Increase pressure to Open RSI sleeves.

B. **STIMULATION**

1. Stimulate with approximately 2,805,000# 20/40 mesh sand and 340,000# 16/30 mesh sand in 619,113 gallons water with 42,696 mscf N2 for 17 stages.
2. Isolate stages with flow through frac plug.
3. Drill out frac plugs and flowback lateral.

C. **RUNNING TUBING**

1. *Production Tubing:* Run 2-7/8", 6.5#, J-55, EUE tubing with a SN on top of bottom joint. Land tubing near Top of Liner.

- Although this horizontal well will be drilled past the applicable setbacks, an unorthodox location application is not required because the completed interval in this well, as defined by 19.15.16.7 B(1) NMAC,will be entirely within the applicable setbacks . This approach complies with all applicable rules, including 19.15.16.14 A(3) NMAC, 19.15.16.14 B(2) NMAC, 19.15.16.15 B(2)NMAC, and 19.15.16.15. B(4) NMAC.

NOTE:

Proposed Operations:

A 4-1/2" 11.6# N-80 Liner will be run to TD and landed +/- 150 ft. into the 7" 23# K-55 Intermediate casing with a Liner Hanger and pack-off assembly then cemented to top of liner hanger.

After cementing and TOL clean up operations are complete, the TOL will be tested to 1500 psi (per BLM).

WPX Energy

T23N R8W
Chaco 2308-31D
Chaco 2308-31D #493H - Slot A2

Wellbore #1

Plan: Design #1 16Oct15 sam

Standard Planning Report

21 October, 2015

WPX
Planning Report

Database:	COMPASS	**Local Co-ordinate Reference:**	Well Chaco 2308-31D #493H (A2) - Slot A2
Company:	WPX Energy	**TVD Reference:**	GL @ 6680.00usft (Original Well Elev)
Project:	T23N R8W	**MD Reference:**	GL @ 6680.00usft (Original Well Elev)
Site:	Chaco 2308-31D	**North Reference:**	True
Well:	Chaco 2308-31D #493H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 16Oct15 sam		

Project	T23N R8W		
Map System:	US State Plane 1927 (Exact solution)	**System Datum:**	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico West 3003		

Site	Chaco 2308-31D				
Site Position:		**Northing:**	1,888,416.99 usft	**Latitude:**	36.189997
From:	Map	**Easting:**	531,101.59 usft	**Longitude:**	-107.727934
Position Uncertainty:	0.00 usft	**Slot Radius:**	13.200 in	**Grid Convergence:**	0.06 °

Well	Chaco 2308-31D #493H - Slot A2					
Well Position	**+N/-S**	0.00 usft	**Northing:**	1,888,417.03 usft	**Latitude:**	36.189997
	+E/-W	40.13 usft	**Easting:**	531,141.72 usft	**Longitude:**	-107.727798
Position Uncertainty		0.00 usft	**Wellhead Elevation:**	0.00 usft	**Ground Level:**	6,680.00 usft

Wellbore	Wellbore #1			
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF2010	10/16/2015	9.29	62.89	49,994

Design	Design #1 16Oct15 sam			
Audit Notes:				
Version:	**Phase:**	PLAN	**Tie On Depth:**	0.00

Vertical Section:	**Depth From (TVD) (usft)**	**+N/-S (usft)**	**+E/-W (usft)**	**Direction (bearing)**
	0.00	0.00	0.00	172.46

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,485.16	19.70	57.78	1,465.86	89.42	141.91	2.00	2.00	0.00	57.78	
3,992.50	19.70	57.78	3,826.40	540.09	857.10	0.00	0.00	0.00	0.00	
4,788.60	60.00	180.05	4,488.83	224.70	987.81	9.00	5.06	15.36	129.51	Start 60 tan 493H
4,848.60	60.00	180.05	4,518.83	172.74	987.76	0.00	0.00	0.00	0.00	End 60 tan 493H
5,024.47	75.83	180.05	4,584.74	10.30	987.61	9.00	9.00	0.00	-0.01	
5,194.15	91.10	180.06	4,604.00	-157.78	987.45	9.00	9.00	0.01	0.05	POE 493H
12,436.07	91.10	180.06	4,465.00	-7,398.37	979.58	0.00	0.00	0.00	0.00	BHL 493H

Database:	COMPASS	**Local Co-ordinate Reference:**	Well Chaco 2308-31D #493H (A2) - Slot A2
Company:	WPX Energy	**TVD Reference:**	GL @ 6680.00usft (Original Well Elev)
Project:	T23N R8W	**MD Reference:**	GL @ 6680.00usft (Original Well Elev)
Site:	Chaco 2308-31D	**North Reference:**	True
Well:	Chaco 2308-31D #493H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 16Oct15 sam		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
320.00	0.00	0.00	320.00	0.00	0.00	0.00	0.00	0.00	0.00
9 5/8"									
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
1,000.00	10.00	57.78	997.47	23.20	36.82	-18.17	2.00	2.00	0.00
1,485.16	19.70	57.78	1,465.86	89.42	141.91	-70.02	2.00	2.00	0.00
Hold 19.70 Inclination									
1,500.00	19.70	57.78	1,479.83	92.09	146.14	-72.11	0.00	0.00	0.00
2,000.00	19.70	57.78	1,950.55	181.96	288.76	-142.48	0.00	0.00	0.00
2,500.00	19.70	57.78	2,421.28	271.83	431.38	-212.85	0.00	0.00	0.00
3,000.00	19.70	57.78	2,892.01	361.70	574.00	-283.23	0.00	0.00	0.00
3,500.00	19.70	57.78	3,362.73	451.57	716.62	-353.60	0.00	0.00	0.00
3,992.50	19.70	57.78	3,826.40	540.09	857.10	-422.91	0.00	0.00	0.00
Start Build DLS 9.00 TFO 129.51									
4,000.00	19.28	59.36	3,833.47	541.39	859.24	-423.93	9.00	-5.64	21.03
4,500.00	35.78	167.05	4,296.30	435.51	968.70	-304.59	9.00	3.30	21.54
4,788.60	60.00	180.05	4,488.83	224.70	987.81	-93.10	9.00	8.39	4.51
Hold 60.00 Inclination									
4,848.60	60.00	180.05	4,518.83	172.74	987.76	-41.59	0.00	0.00	0.00
Start Build DLS 9.00 TFO -0.01									
5,000.00	73.63	180.05	4,578.30	33.90	987.63	96.03	9.00	9.00	0.00
5,024.47	75.83	180.05	4,584.74	10.30	987.61	119.43	9.00	9.00	0.00
Start DLS 9.00 TFO 0.05									
5,194.00	91.09	180.06	4,604.00	-157.64	987.45	285.88	9.00	9.00	0.01
7"									
5,194.15	91.10	180.06	4,604.00	-157.78	987.45	286.03	9.00	9.00	0.01
POE at 91.10 Inc 180.06 deg									
5,500.00	91.10	180.06	4,598.13	-463.58	987.12	589.14	0.00	0.00	0.00
6,000.00	91.10	180.06	4,588.53	-963.49	986.57	1,084.65	0.00	0.00	0.00
6,500.00	91.10	180.06	4,578.94	-1,463.40	986.03	1,580.16	0.00	0.00	0.00
7,000.00	91.10	180.06	4,569.34	-1,963.30	985.49	2,075.67	0.00	0.00	0.00
7,500.00	91.10	180.06	4,559.74	-2,463.21	984.94	2,571.18	0.00	0.00	0.00
8,000.00	91.10	180.06	4,550.15	-2,963.12	984.40	3,066.69	0.00	0.00	0.00
8,500.00	91.10	180.06	4,540.55	-3,463.03	983.86	3,562.20	0.00	0.00	0.00
9,000.00	91.10	180.06	4,530.95	-3,962.93	983.32	4,057.72	0.00	0.00	0.00
9,500.00	91.10	180.06	4,521.35	-4,462.84	982.77	4,553.23	0.00	0.00	0.00
10,000.00	91.10	180.06	4,511.76	-4,962.75	982.23	5,048.74	0.00	0.00	0.00
10,500.00	91.10	180.06	4,502.16	-5,462.66	981.69	5,544.25	0.00	0.00	0.00
11,000.00	91.10	180.06	4,492.56	-5,962.56	981.14	6,039.76	0.00	0.00	0.00
11,500.00	91.10	180.06	4,482.97	-6,462.47	980.60	6,535.27	0.00	0.00	0.00
12,000.00	91.10	180.06	4,473.37	-6,962.38	980.06	7,030.78	0.00	0.00	0.00
12,436.07	91.10	180.06	4,465.00	-7,398.37	979.58	7,462.94	0.00	0.00	0.00
TD at 12436.07									

Database:	COMPASS	**Local Co-ordinate Reference:**	Well Chaco 2308-31D #493H (A2) - Slot A2
Company:	WPX Energy	**TVD Reference:**	GL @ 6680.00usft (Original Well Elev)
Project:	T23N R8W	**MD Reference:**	GL @ 6680.00usft (Original Well Elev)
Site:	Chaco 2308-31D	**North Reference:**	True
Well:	Chaco 2308-31D #493H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 16Oct15 sam		

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (bearing	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
BHL 493H - plan hits target center - Point	0.00	0.00	4,465.00	-7,398.37	979.58	1,881,019.73	532,129.35	36.169672	-107.724479
Start 60 tan 493H - plan hits target center - Point	0.00	0.00	4,488.83	224.70	987.81	1,888,642.81	532,129.29	36.190614	-107.724451
End 60 tan 493H - plan misses target center by 0.05usft at 4848.60usft MD (4518.83 TVD, 172.74 N, 987.76 E) - Point	0.00	0.00	4,518.83	172.74	987.81	1,888,590.85	532,129.34	36.190472	-107.724451
POE 493H - plan hits target center - Point	0.00	0.00	4,604.00	-157.78	987.45	1,888,260.32	532,129.34	36.189564	-107.724452

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)
320.00	320.00	9 5/8"	9.625	12.250
5,194.00	4,604.00	7"	7.000	8.750

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
500.00	500.00	0.00	0.00	Start Build 2.00
1,485.16	1,465.86	89.42	141.91	Hold 19.70 Inclination
3,992.50	3,826.40	540.09	857.10	Start Build DLS 9.00 TFO 129.51
4,788.60	4,488.83	224.70	987.81	Hold 60.00 Inclination
4,848.60	4,518.83	172.74	987.76	Start Build DLS 9.00 TFO -0.01
5,024.47	4,584.74	10.30	987.61	Start DLS 9.00 TFO 0.05
5,194.15	4,604.00	-157.78	987.45	POE at 91.10 Inc 180.06 deg
12,436.07	4,465.00	-7,398.37	979.58	TD at 12436.07

WPXENERGY

Well Name: Chaco 2308-31D #493H
Surface Location: Chaco 2308-31D
NAD 1927 (NADCON CONUS) , US State Plane 1927 (Exact solution) New Mexico West 3003
Ground Elevation: 6680.00

+N/-S	+E/-W	Northing	Easting	Latittude	Longitude	Slot
0.00	0.00	1888417.03	531141.72	36.189997	-107.727798	A2

GL @ 6680.00usft (Original Well Elev)

Azimuths to True North
Magnetic North: 9.29°

Magnetic Field
Strength: 49994.4snT
Dip Angle: 62.89°
Date: 10/16/2015
Model: IGRF2010

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
Start 60 tan 493H	4488.83	224.70	987.81	1888642.80	532129.29	36.190614	-107.724450	Point
	- plan hits target center							
End 60 tan 493H	4518.83	172.74	987.81	1888590.84	532129.34	36.190472	-107.724450	Point
	- plan misses target center by 0.05usft at 4848.60usft MD (4518.83 TVD, 172.74 N, 987.76 E)							
POE 493H	4604.00	-157.78	987.45	1888260.32	532129.34	36.189563	-107.724452	Point
	- plan hits target center							
BHL 493H	4465.00	-7398.37	979.58	1881019.73	532129.35	36.169672	-107.724479	Point
	- plan hits target center							

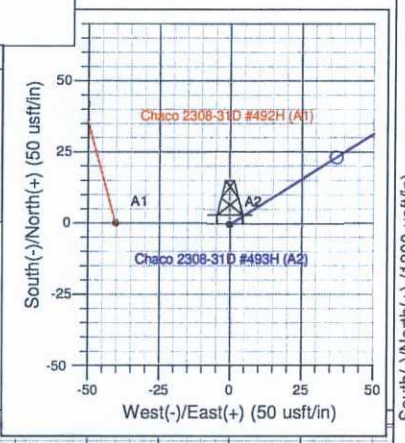
Project: T23N R8W
Site: Chaco 2308-31D
Well: Chaco 2308-31D #493H
Wellbore: Wellbore #1
Design: Design #1 16Oct15 sam

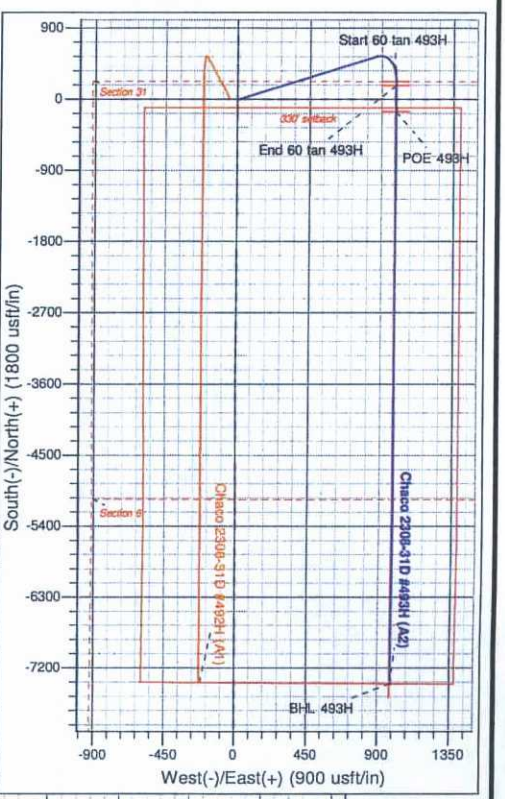
ANNOTATIONS

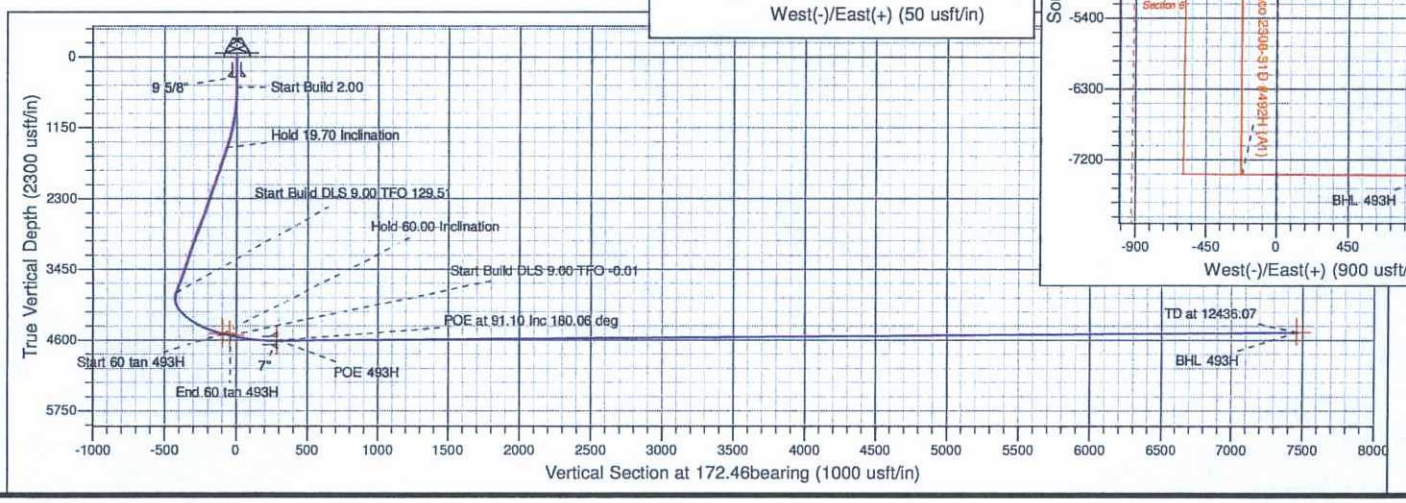
TVD	MD	Inc	Azi	+N/-S	+E/-W	VSect	Departure	Annotation
500.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	Start Build 2.00
1485.86	1485.16	19.70	57.78	89.42	141.91	-70.02	167.73	Hold 19.70 Inclination
3826.40	3992.50	19.70	57.78	540.09	857.10	-422.91	1013.07	Start Build DLS 9.00 TFO 129.51
4488.83	4788.60	60.00	180.05	224.70	987.81	-93.10	1409.33	Hold 60.00 Inclination
4518.83	4848.60	60.00	180.05	172.74	987.76	-41.59	1461.29	Start Build DLS 9.00 TFO -0.01
4564.74	5024.47	75.83	180.05	10.30	987.61	119.43	1623.73	Start DLS 9.00 TFO 0.05
4604.00	5194.15	91.10	180.06	-157.78	987.45	286.03	1791.81	POE at 91.10 Inc 180.06 deg
4465.00	12436.07	91.10	180.06	-7398.37	979.58	7462.94	9032.40	TD at 12436.07

SLOTS

Slot Name	+N/-S	+E/-W	Northing	Easting
A1	0.00	-40.13	1888416.99	531101.59
A2	0.00	0.00	1888417.03	531141.72







11. During construction of the well-connect pipeline, from approximately STA 10+40 to STA 19+90, water bars will be placed as needed upon final reclamation to accommodate and blend with natural hill contours.

C. Well pad
    1. The construction phase of the project will commence upon receipt of the approved APDs.
    2. Vegetation and topsoil removal, storage, and protection are described in detail in the Reclamation Plan (Appendix C).
    3. The well pad will be leveled to provide space and a level surface for vehicles and equipment. Excavated materials from cuts will be used on fill portions of the well pad to level the pad. Construction of the well pad will require a maximum fill of approximately 5 feet at the southeast corner, and a cut of 5 feet near the middle of the north edge to create a level well pad. No additional surfacing materials will be required for construction.
    4. As determined during the onsite on September 29, 2015, the following best management practices will be implemented:
        a. Diversions will be installed upon reclamation.
        b. No additional fill would be required to construct the pad.
    5. All project activities will be confined to permitted areas only.
    6. Construction equipment may include chain saws, a brush hog, scraper, maintainer, excavator, and a dozer.
    7. If drilling has not been initiated on the well pad within 120 days of the well pad being constructed, the operator will consult with the BLM to address a site-stabilization plan.

D. Production Facilities
    1. As practical, access will be a teardrop-shaped road through the production area so that the center may be revegetated.
    2. Within 90 days of installation, production facilities would be painted Juniper Green to blend with the natural color of the landscape and would be located, to the extent practical, to reasonably minimize visual impact.
    3. Berms will be constructed around all storage facilities sufficient in size to contain the storage capacity of tanks. Berm walls will be compacted with appropriate equipment to assure containment.

After the completion phases and pipeline installation, portions of the project area not needed for operation will be reclaimed. When the well is plugged, final reclamation will occur within the remainder of the project area. Reclamation is described in detail in the Reclamation Plan (Appendix C).

7.0 Methods for Handling Waste

A. Cuttings
    1. Drilling operations will utilize a closed-loop system. Drilling of the horizontal laterals will be accomplished with water-based mud. All cuttings will be placed in roll-off bins and hauled to a commercial disposal facility or land farm. WPX will follow Onshore Oil and Gas Order No. 1 regarding the placement, operation, and removal of closed-loop systems. No blow pit will be used.
    2. Closed-loop tanks will be adequately sized for containment of all fluids.

B. Drilling Fluids

Directions from the Intersection of US Hwy 550 & US Hwy 64

in Bloomfield, NM to WPX Energy Production, LLC Chaco 2308-31D #493H

225' FNL & 915' FWL, Section 31, T23N, R8W, N.M.P.M., San Juan County, NM

Latitude: 36.190011°N Longitude: 107.728411°W Datum: NAD1983

From the intersection of US Hwy 550 & US Hwy 64 in Bloomfield, NM, travel Southerly on US Hwy 550 for 38.7 miles to Mile Marker 112.7;

Go Right (Southerly) on County Road #7900 for 2.3 miles to fork in road;

Go Right (Westerly) on County Road #7940 for 2.6 miles to new access on right-hand side of existing roadway which continues for 1071.2' to staked WPX Chaco 2308-31D #493H location.

3000 PSI BOP Schematic