

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 120782, Well Name and Number Chaco 2308 31D#492H

API# 30-045-35723, 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.

Chuck Herson
NMOCD Approved by Signature

6-10-2016
Date kc

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

MAY 25 2016

RECEIVED

NOV 05 2015

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of Work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. NO-G-1402-1893
1b. Type of Well: <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name
2. Name of Operator WPX Energy Production, LLC		7. If Unit or CA Agreement, Name and No.
3a. Address P.O. Box 640 Aztec, NM 87410		8. Lease Name and Well No. Chaco 2308-31D #492H
3b. Phone No. (include area code) (505) 333-1816		9. API Well No. 30-045-35723
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface 225' FNL & 875' FWL SEC 31 T23N 8W At proposed prod. zone 2326' FNL & 697' FWL SEC 6 T22N 8W		10. Field and Pool, or Exploratory Basin Mancos
14. Distance in miles and direction from nearest town or post office* approximately 38.7 miles to Mile Marker 112.7		11. Sec., T., R., M., or Blk. and Survey or Area SHL: Sec 31, T23N, R8W BHL: Sec 6, T22N, R8W
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	12. County or Parish San Juan County
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'	13. State NM
19. Proposed Depth 12287' MD / 4460'' 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:

- Well plat certified by a registered surveyor.
- A Drilling Plan.
- A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office).
- Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
- Operator certification.
- 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) 	Name (Printed/Typed) AFM	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 #493H. 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 #493H will be utilized.

The pipeline for the Chaco 2308-31D #493H will be utilized.

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

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

District I
1525 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

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

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number 30-045-35723		*Pool Code 97232	*Pool Name BASIN MANCOS
*Property Code 3110322	*Property Name CHACO 2308-31D		*Well Number 492H
*GRID No. 120782	*Operator Name WPX ENERGY PRODUCTION, LLC		*Elevation 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	875	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
E	6	22N	8W	5	2326	NORTH	697	WEST	SAN JUAN

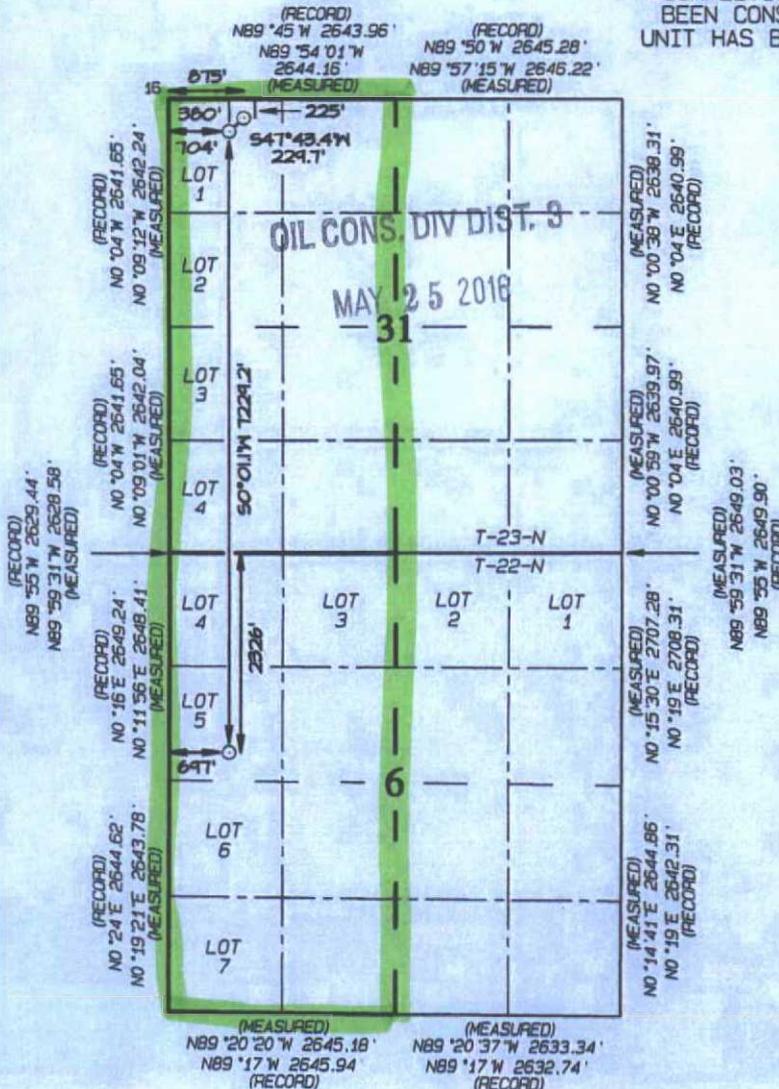
¹² Dedicated Acres 641.99	W/2 - Section 31, T23N R8W W/2 - Section 6, T22N R8W	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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NO ALLOWABLE WILL BE ASSIGNED TO THIS
COMPLETION UNTIL ALL INTERESTS HAVE
BEEN CONSOLIDATED OR A NON-STANDARD
UNIT HAS BEEN APPROVED BY THE DIVISION

SURFACE LOCATION
225' FNL 875' FWL
SEC 31, T23N, R8W
LAT: 36.1899973° N
LONG: 107.727934° W
DATUM: NAD1927
LAT: 36.190011° N
LONG: 107.728546° W
DATUM: NAD1983

POINT-OF-ENTRY
380' FNL 704' FWL
SEC 31, T23N, R8W
LAT: 36.189573° N
LONG: 107.728511° W
DATUM: NAD1927
LAT: 36.189587° N
LONG: 107.729123° W
DATUM: NAD1983

END-OF-LATERAL
2326' FNL 697' FWL
SEC 6, T22N, R8W
LAT: 36.169713° N
LONG: 107.728545° W
DATUM: NAD1927
LAT: 36.169727° N
LONG: 107.729157° 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: *[Signature]* Date: 11/5/15
Printed Name: LACEY GRANILLO
E-mail Address: LACEY.GRANILLO@WPXENERGY.COM

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
Certificate Number 15269

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"	5,056.77	7"	23 LBS	J-55 or equiv	LTC
PRODUCTION	6.125"	4906.77 - 12,287.24	4.5"	11.6 LBS	P-110 or equiv	LTC
TIE BACK	6.125"	Surf. - 4906.77	4.5"	11.6 LBS	P-110 or equiv	LTC

B. FLOAT EQUIPMENT:

- SURFACE CASING:** 9-5/8" notched regular pattern guide shoe. Run (1) standard centralizer on each of the bottom (4) joints of Surface Casing.
- 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.
- 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 (723 sx /983 cuft /175 bbls). Tail Spacer: 20 BBL of MMCR. Displacement: Displace w/ +/- 140 bbl Fr Water. Total Cement (723 sx /983bbls).

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 #492H - Slot A1

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 #492H (A1) - Slot A1
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 #492H	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 #492H - Slot A1						
Well Position	+N/-S	0.00 usft	Northing:	1,888,416.99 usft	Latitude:	36.189997
	+E/-W	0.00 usft	Easting:	531,101.59 usft	Longitude:	-107.727934
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	181.40

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	
1,014.95	10.30	344.59	1,012.19	44.50	-12.26	2.00	2.00	0.00	344.59	
3,873.72	10.30	344.59	3,824.89	537.24	-148.03	0.00	0.00	0.00	0.00	
4,651.02	60.00	180.07	4,485.83	228.28	-169.66	9.00	6.39	-21.17	-165.76	Start 60 tan 492H
4,711.02	60.00	180.07	4,515.83	176.32	-169.72	0.00	0.00	0.00	0.00	End 60 tan 492H
4,883.05	75.48	180.06	4,580.79	17.59	-169.91	9.00	9.00	0.00	-0.02	
5,056.77	91.12	180.08	4,601.00	-154.41	-170.13	9.00	9.00	0.01	0.06	POE 492H
12,287.24	91.12	180.08	4,460.00	-7,383.50	-180.26	0.00	0.00	0.00	0.00	BHL 492H

WPX
Planning Report

Database:	COMPASS	Local Co-ordinate Reference:	Well Chaco 2308-31D #492H (A1) - Slot A1
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 #492H	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	0.00
320.00	0.00	0.00	320.00	0.00	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	0.00
Start Build 2.00										
1,000.00	10.00	344.59	997.47	41.96	-11.56	-41.66	2.00	2.00	0.00	0.00
1,014.95	10.30	344.59	1,012.19	44.50	-12.26	-44.19	2.00	2.00	0.00	0.00
Hold 10.30 Inclination										
1,500.00	10.30	344.59	1,489.42	128.10	-35.30	-127.20	0.00	0.00	0.00	0.00
2,000.00	10.30	344.59	1,981.36	214.28	-59.04	-212.78	0.00	0.00	0.00	0.00
2,500.00	10.30	344.59	2,473.30	300.47	-82.79	-298.36	0.00	0.00	0.00	0.00
3,000.00	10.30	344.59	2,965.25	386.65	-106.54	-383.93	0.00	0.00	0.00	0.00
3,500.00	10.30	344.59	3,457.19	472.83	-130.29	-469.51	0.00	0.00	0.00	0.00
3,873.72	10.30	344.59	3,824.89	537.24	-148.03	-533.47	0.00	0.00	0.00	0.00
Start Build DLS 9.00 TFO -165.76										
4,000.00	2.87	239.97	3,950.49	546.58	-153.79	-542.66	9.00	-5.88	-82.85	
4,500.00	46.43	181.01	4,395.61	348.94	-168.61	-344.72	9.00	8.71	-11.79	
4,651.02	60.00	180.07	4,485.83	228.28	-169.66	-224.07	9.00	8.99	-0.62	
Hold 60.00 Inclination										
4,711.02	60.00	180.07	4,515.83	176.32	-169.72	-172.12	0.00	0.00	0.00	0.00
Start Build DLS 9.00 TFO -0.02										
4,883.05	75.48	180.06	4,580.79	17.59	-169.91	-13.44	9.00	9.00	0.00	0.00
Start DLS 9.00 TFO 0.06										
5,000.00	86.01	180.08	4,599.58	-97.67	-170.05	101.79	9.00	9.00	0.01	0.01
5,056.77	91.12	180.08	4,601.00	-154.41	-170.13	158.51	9.00	9.00	0.01	0.01
POE at 91.12 Inc at 180.08 deg										
5,057.00	91.12	180.08	4,601.00	-154.64	-170.13	158.74	0.00	0.00	0.00	0.00
7"										
5,500.00	91.12	180.08	4,592.36	-597.55	-170.75	601.54	0.00	0.00	0.00	0.00
6,000.00	91.12	180.08	4,582.61	-1,097.46	-171.45	1,101.31	0.00	0.00	0.00	0.00
6,500.00	91.12	180.08	4,572.86	-1,597.36	-172.15	1,601.09	0.00	0.00	0.00	0.00
7,000.00	91.12	180.08	4,563.11	-2,097.26	-172.85	2,100.86	0.00	0.00	0.00	0.00
7,500.00	91.12	180.08	4,553.36	-2,597.17	-173.55	2,600.63	0.00	0.00	0.00	0.00
8,000.00	91.12	180.08	4,543.60	-3,097.07	-174.25	3,100.40	0.00	0.00	0.00	0.00
8,500.00	91.12	180.08	4,533.85	-3,596.98	-174.95	3,600.18	0.00	0.00	0.00	0.00
9,000.00	91.12	180.08	4,524.10	-4,096.88	-175.65	4,099.95	0.00	0.00	0.00	0.00
9,500.00	91.12	180.08	4,514.35	-4,596.79	-176.35	4,599.72	0.00	0.00	0.00	0.00
10,000.00	91.12	180.08	4,504.60	-5,096.69	-177.06	5,099.49	0.00	0.00	0.00	0.00
10,500.00	91.12	180.08	4,494.85	-5,596.60	-177.76	5,599.27	0.00	0.00	0.00	0.00
11,000.00	91.12	180.08	4,485.10	-6,096.50	-178.46	6,099.04	0.00	0.00	0.00	0.00
11,500.00	91.12	180.08	4,475.35	-6,596.40	-179.16	6,598.81	0.00	0.00	0.00	0.00
12,000.00	91.12	180.08	4,465.60	-7,096.31	-179.86	7,098.59	0.00	0.00	0.00	0.00
12,287.24	91.12	180.08	4,460.00	-7,383.50	-180.26	7,385.70	0.00	0.00	0.00	0.00
TD at 12287.24										

WPX
Planning Report

Database:	COMPASS	Local Co-ordinate Reference:	Well Chaco 2308-31D #492H (A1) - Slot A1
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 #492H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 18Oct15 sam		

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(bearing)	(usft)	(usft)	(usft)	(usft)	(usft)		
- Shape									
BHL 492H - plan hits target center - Point	0.00	0.00	4,460.00	-7,383.50	-180.26	1,881,033.30	530,929.35	36.169713	-107.728545
Start 60 tan 492H - plan hits target center - Point	0.00	0.00	4,485.83	228.28	-169.66	1,888,645.09	530,931.68	36.190624	-107.728509
End 60 tan 492H - plan misses target center by 0.06usft at 4711.02usft MD (4515.83 TVD, 176.32 N, -169.72 E) - Point	0.00	0.00	4,515.83	176.32	-169.66	1,888,593.13	530,931.74	36.190481	-107.728509
POE 492H - plan hits target center - Point	0.00	0.00	4,601.00	-154.41	-170.13	1,888,262.40	530,931.63	36.189573	-107.728511

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	
5,057.00	4,601.00	7"	7.000	8.750	

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Comment	
500.00	500.00	0.00	0.00	Start Build 2.00	
1,014.95	1,012.19	44.50	-12.26	Hold 10.30 Inclination	
3,873.72	3,824.89	537.24	-148.03	Start Build DLS 9.00 TFO -165.76	
4,651.02	4,485.83	228.28	-169.66	Hold 60.00 Inclination	
4,711.02	4,515.83	176.32	-169.72	Start Build DLS 9.00 TFO -0.02	
4,883.05	4,580.79	17.59	-169.91	Start DLS 9.00 TFO 0.06	
5,056.77	4,601.00	-154.41	-170.13	POE at 91.12 Inc at 180.08 deg	
12,287.24	4,460.00	-7,383.50	-180.26	TD at 12287.24	



Well Name: Chaco 2308-31D #492H
 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 Latitude Longitude Slot
 0.00 0.00 1888416.99 531101.59 36.189997 -107.727934 A1
 GL @ 6680.00usft (Original Well Elev)



DESIGN TARGET DETAILS

Name	TVD	+N-S	+E-W	Northing	Easting	Latitude	Longitude	Shape
Start 60 tan 492H	4485.83	228.28	-169.86	1888645.09	530931.88	36.190624	-107.728509	Point
End 60 tan 492H	4515.83	178.32	-169.66	1888593.13	530931.74	36.190481	-107.728511	Point
POE 492H	4601.00	-154.41	-170.13	1888262.40	530931.63	36.189573	-107.728511	Point
BHL 492H	4460.00	-7383.50	-180.26	1881033.30	530929.35	36.169713	-107.728545	Point

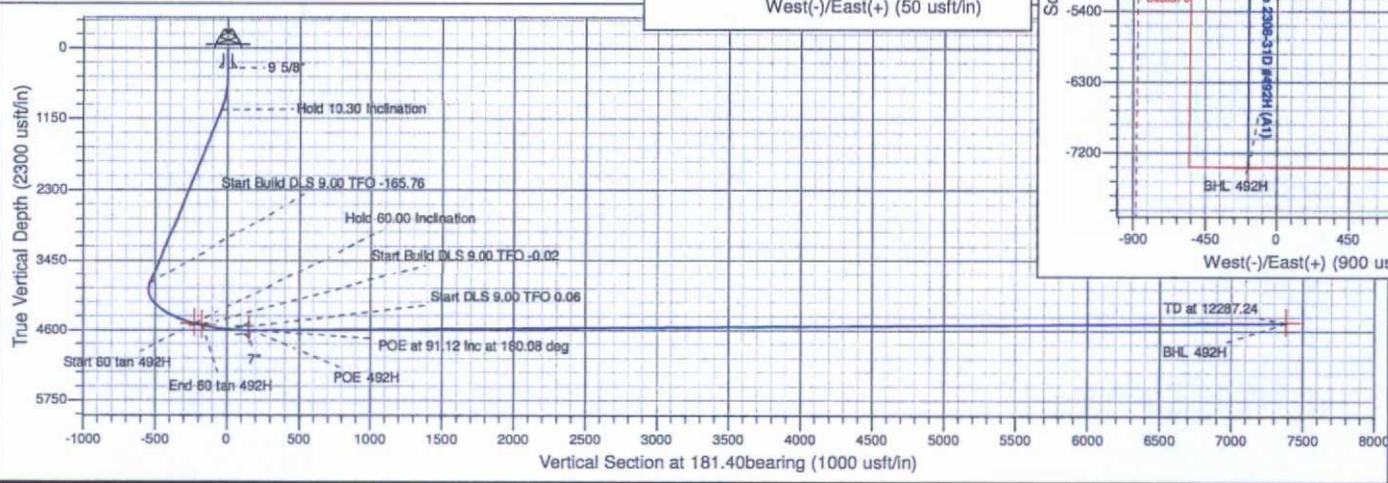
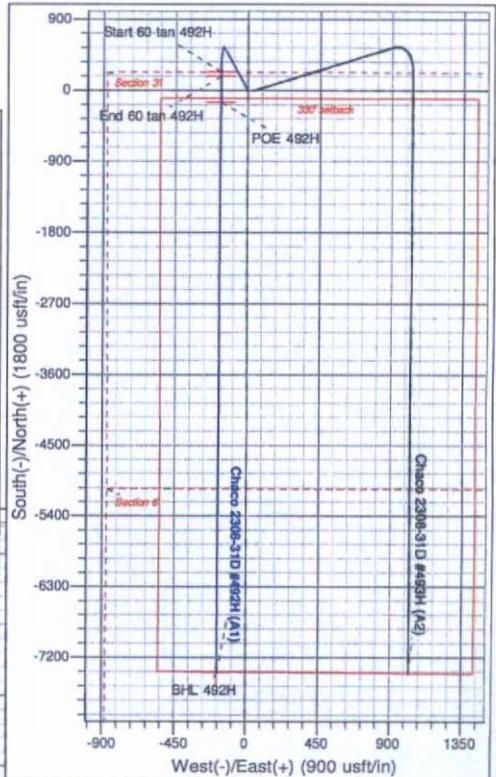
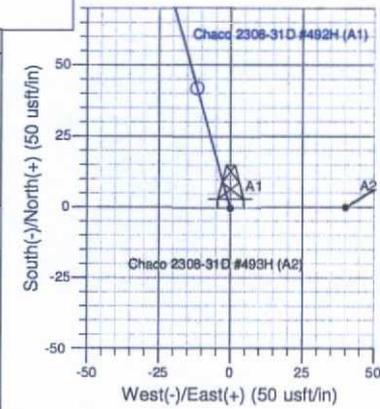
Project: T23N R8W
 Site: Chaco 2308-31D
 Well: Chaco 2308-31D #492H
 Wellbore: Wellbore #1
 Design: Design #1 16Oct15 sam

ANNOTATIONS

TVD	MD	Inc	Azi	+N-S	+E-W	V Sect	Departure	Annotation
500.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	Start Build 2.00
1012.19	1014.95	10.30	344.59	44.50	-12.26	-44.19	46.18	Hold 10.30 Inclination
3824.89	3873.72	10.30	344.59	537.24	-148.03	-533.47	557.27	Start Build DLS 9.00 TFO -165.76
4485.83	4515.02	80.00	180.07	228.28	-169.86	-224.07	889.59	Hold 60.00 Inclination
4515.83	4711.02	80.00	180.07	178.32	-169.72	-172.12	941.55	Start Build DLS 9.00 TFO -0.02
4580.79	4683.05	75.48	180.08	17.59	-169.91	-13.44	1100.27	Start DLS 9.00 TFO 0.06
4601.00	5056.77	91.12	180.08	-154.41	-170.13	158.51	1272.27	POE at 91.12 Inc at 180.08 deg
4460.00	12287.24	91.12	180.08	-7383.50	-180.26	7385.70	8501.37	TD at 12287.24

SLOTS

Slot Name	+N-S	+E-W	Northing	Easting
A1	0.00	0.00	1888416.99	531101.59
A2	0.00	40.13	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 #492H
225' FNL & 875' FWL, Section 31, T23N, R8W, N.M.P.M., San Juan County, NM

Latitude: 36.190011°N Longitude: 107.728546°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 #492H location.

3000 PSI BOP Schematic

