State of New Mexico
Energy, Minerals and Natural Resources Department

Susana Martinez
Governor

Ken McQueen
Cabinet Secretary

Matthias Sayer
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: 11/5/2015
Well information;
Operator WPX, Well Name and Number S. Chaco UT 345H

API# 30-043-21279, Section 2, Township 22 (N)/S, Range 7 E/(W)

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

- ~~x~~ Notify Aztec OCD 24hrs prior to casing & cement.
- ~~x~~ Hold C-104 for directional survey & "As Drilled" Plat
- ~~x~~ Hold C-104 for NSL, NSP, DHC
- o Spacing rule violation. Operator must follow up with change of status notification on other well to be shut in or abandoned
- o 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
- o 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
- o 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.

Charles Perrin
NMOCD Approved by Signature

6-12-2017
Date

1220 South St. Francis Drive • Santa Fe, New Mexico 87505
Phone (505) 476-3441 • Fax (505) 476-3462 • www.emnrd.state.nm.us/ocd

Form 3160-3
(September 2001)

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED
NOV 05 2015
Farmington Field Office
Bureau of Land Management

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.	N0-G-1312-1799
6. If Indian, Allottee or Tribe Name	
7. If Unit or CA Agreement, Name and No.	S Chaco Unit NMNM133321X
8. Lease Name and Well No.	S. Chaco UT #345H
9. API Well No.	30-043-21279
10. Field and Pool, or Exploratory	Lybrook Gallup
11. Sec., T., R., M., or Blk. and Survey or Area	SHL: Sec 2, T22N, R7W BHL: Sec 2, T22N, R7W
12. County or Parish	Sandoval County
13. State	NM

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 P 1027' FSL & 356' FEL, sec 2, T22N, R7W SESE
At proposed prod. zone D 892' FNL & 330' FWL, sec 2, T22N, R7W NWNW

14. Distance in miles and direction from nearest town or post office* Approximately Southerly on US HWY 550 for 48.3 miles to Mile Marker 103.0		
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 356'	16. No. of Acres in lease 160.00 Acres	17. Spacing Unit dedicated to this well 641.80 acres – Entire Section 2
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 20'	19. Proposed Depth 11497.59' MD / 5215' TVD	20. BLM/BIA Bond No. on file UTB000178
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 7003' GR	22. Approximate date work will start* December 1, 2015	23. Estimated duration 1 month

OIL CONS. DIV DIST. 3

AP

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, shall be attached to this form:

JUN 01 2017

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: Marie E. Jaramillo	Name *(Printed/Typed)* Marie E. Jaramillo	Date 11/5/15
Title Permit Technician III		
Approved by *(Signature)*: D. Mankiewicz AFM	Name *(Printed/Typed)*	Date 6/1/17
Title	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 Lybrook Gallup formation at the above described location in accordance with the attached drilling and surface use plans.

The well pad surface is under jurisdiction of BLM and FIMO and is on lease and will be twinned with the S Chaco UT #344, and S Chaco UT #908H.

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

The existing access road to S. Chaco UT #342H will be utilized and a new 3,818.1' onlease access road will be built and permitted via the APD.

A new 4,150.5' on lease well connect pipeline will be built and permitted via the APD.

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

BLM'S APPROVAL OR ACCEPTANCE OF THIS ACTION DOES NOT RELIEVE THE LESSEE AND OPERATOR OF OBTAINING ANY OTHER AUTHORIZATION REQUIRED FOR OPERATIONS ON FEDERAL AND INDIAN LANDS

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

~~OPERATOR~~
NMOCD
AV

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
30-043-21279	42289	LYBROOK GALLUP

4 Property Code	5 Property Name	6 Well Number
314331	S CHACO UT	345H

7 OGRID No.	8 Operator Name	9 Elevation
120782	WPX ENERGY PRODUCTION, LLC	7003'

10 Surface Location

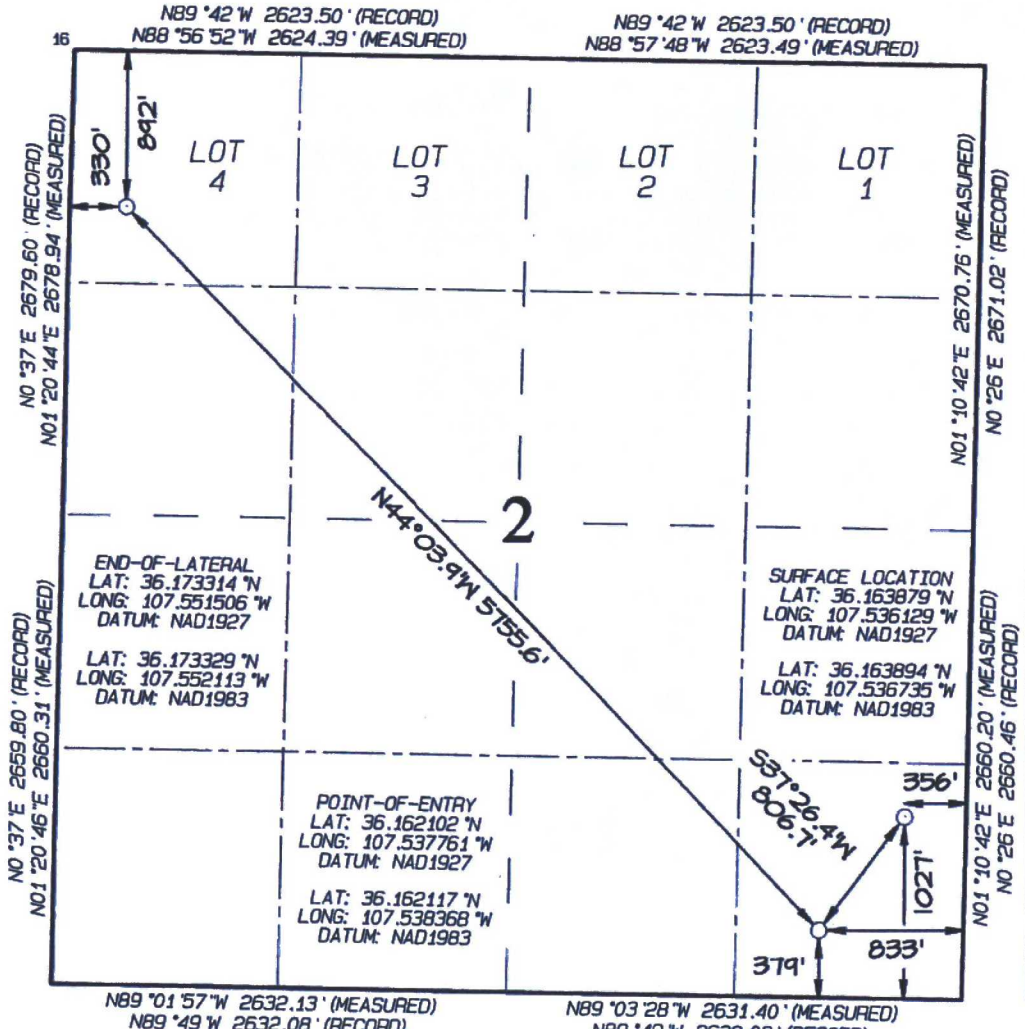
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	2	22N	7W		1027	SOUTH	356	EAST	SANDOVAL

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
D	2	22N	7W	4	892	NORTH	330	WEST	SANDOVAL

12 Dedicated Acres	13 Joint or Infill	14 Consolidation Code	15 Order No.
641.80 Entire Section 2			R-13883-A / 1282' Acres

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 11/5/15 Date

Marie E. Jaramillo
Printed Name

marie.jaramillo@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: SEPTEMBER 28, 2015
Date of Survey: JUNE 12, 2015

Signature and Seal of Professional Surveyor

JASON C. EDWARDS NEW MEXICO 15269 REGISTERED PROFESSIONAL SURVEYOR

JASON C. EDWARDS
Certificate Number 15269

Indian Surface & minerals

WPX Energy

Operations Plan

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

Date:	**November 4, 2015**	**Field:**	**Lybrook Gallup**
Well Name:	**S Chaco UT 345H**	**Surface:**	**IA**
SH Location:	**SESE Sec 2-22N-07W**	**Elevation:**	**7003' GR**
BH Location:	**NWNW Sec 2-22N-07W**	**Minerals:**	**IA**

Measured Depth: **11,497.60'**

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

A. FORMATION TOPS (GL)

NAME	MD	TVD	NAME	MD	TVD
OJO ALAMO	1038	1035	POINT LOOKOUT	4041	3910
KIRTLAND	1194	1187	MANCOS	4221	4082
PICTURED CLIFFS	1540	1519	GALLUP	4592	4437
LEWIS	1631	1606	KICKOFF POINT	5,352.50	5,074.72
CHACRA	1877	1841	TOP TARGET	5546	5159
CLIFF HOUSE	3103	3013	LANDING POINT	5,742.80	5,190.00
MENEFEE	3152	3060	BASE TARGET	5,742.80	5,190.00
			TD	11,497.60	5,215.00

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"	5,742.80'	7"	23 LBS	J-55 or equiv	LTC
PRODUCTION	6.125"	5592.8' - 11,497.60'	4.5"	11.6 LBS	P-110 or equiv	LTC
TIE BACK	6.125"	Surf. - 5592.8'	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 (578 sx /787 cuft /140 bbls). Tail Spacer: 20 BBL of MMCR. Displacement: Displace w/ +/- 140 bbl Fr Water. Total Cement (578 sx /787bbls).

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# P-110 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

T22N R7W
Chaco 2207-2P
S Chaco UT #345H - Slot A1

Wellbore #1

Plan: Design #1 17Aug15 sam

Standard Planning Report

18 August, 2015

WPX
Planning Report

Database:	San Juan	**Local Co-ordinate Reference:**	Well S Chaco UT #345H (A1) - Slot A1
Company:	WPX Energy	**TVD Reference:**	KB @ 7017.00usft (Aztec 920)
Project:	T22N R7W	**MD Reference:**	KB @ 7017.00usft (Aztec 920)
Site:	Chaco 2207-2P	**North Reference:**	True
Well:	S Chaco UT #345H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 17Aug15 sam		

Project	T22N R7W		
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 2207-2P				
Site Position:		**Northing:**	1,879,067.21 usft	**Latitude:**	36.1639890
From:	Lat/Long	**Easting:**	587,728.55 usft	**Longitude:**	-107.5361310
Position Uncertainty:	0.00 usft	**Slot Radius:**	13.20 in	**Grid Convergence:**	0.18 °

Well	S Chaco UT #345H - Slot A1					
Well Position	**+N/-S**	-40.04 usft	**Northing:**	1,879,027.17 usft	**Latitude:**	36.1638790
	+E/-W	0.59 usft	**Easting:**	587,729.27 usft	**Longitude:**	-107.5361290
Position Uncertainty		0.00 usft	**Wellhead Elevation:**	0.00 usft	**Ground Level:**	7,003.00 usft

Wellbore	Wellbore #1				
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF2010	8/15/2015	9.22	62.91	50,018

Design	Design #1 17Aug15 sam			
Audit Notes:				
Version:	**Phase:**	PLAN	**Tie On Depth:**	0.00

Vertical Section:	**Depth From (TVD) (usft)**	**+N/-S (usft)**	**+E/-W (usft)**	**Direction (°)**
	0.00	0.00	0.00	307.12

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
0.00	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	
1,353.56	17.07	176.87	1,340.99	-126.03	6.89	2.00	2.00	0.00	176.87	
4,538.48	17.07	176.87	4,385.58	-1,059.60	57.97	0.00	0.00	0.00	0.00	
5,352.50	60.00	315.22	5,074.72	-907.38	-223.18	9.00	5.27	17.00	143.06	#345H Start 60 tan
5,412.50	60.00	315.22	5,104.72	-870.50	-259.78	0.00	0.00	0.00	0.00	#345H End 60 tan
5,436.08	62.10	315.27	5,116.13	-855.84	-274.31	8.91	8.91	0.20	1.14	
5,742.80	89.75	315.18	5,190.00	-646.72	-481.85	9.02	9.02	-0.03	-0.20	#345H POE
11,497.60	89.75	315.18	5,215.00	3,434.94	-4,538.59	0.00	0.00	0.00	0.00	#345H BHL

Database:	San Juan	**Local Co-ordinate Reference:**	Well S Chaco UT #345H (A1) - Slot A1
Company:	WPX Energy	**TVD Reference:**	KB @ 7017.00usft (Aztec 920)
Project:	T22N R7W	**MD Reference:**	KB @ 7017.00usft (Aztec 920)
Site:	Chaco 2207-2P	**North Reference:**	True
Well:	S Chaco UT #345H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 17Aug15 sam		

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)
0.00	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" Surface									
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	176.87	997.47	-43.46	2.38	-28.12	2.00	2.00	0.00
1,353.56	17.07	176.87	1,340.99	-126.03	6.89	-81.56	2.00	2.00	0.00
Hold 17.07 Inclination									
1,500.00	17.07	176.87	1,480.98	-168.96	9.24	-109.33	0.00	0.00	0.00
2,000.00	17.07	176.87	1,958.95	-315.52	17.26	-204.17	0.00	0.00	0.00
2,500.00	17.07	176.87	2,436.92	-462.08	25.28	-299.01	0.00	0.00	0.00
3,000.00	17.07	176.87	2,914.89	-608.64	33.30	-393.85	0.00	0.00	0.00
3,500.00	17.07	176.87	3,392.86	-755.20	41.31	-488.69	0.00	0.00	0.00
4,000.00	17.07	176.87	3,870.83	-901.76	49.33	-583.53	0.00	0.00	0.00
4,500.00	17.07	176.87	4,348.80	-1,048.32	57.35	-678.37	0.00	0.00	0.00
4,538.48	17.07	176.87	4,385.58	-1,059.60	57.97	-685.67	0.00	0.00	0.00
Start Build DLS 9.00 TFO 143.06									
5,000.00	29.41	302.62	4,826.69	-1,066.46	-38.02	-613.28	9.00	2.67	27.25
5,352.50	60.00	315.22	5,074.72	-907.38	-223.18	-369.63	9.00	8.68	3.57
Hold 60.00 Inclination									
5,412.50	60.00	315.22	5,104.72	-870.50	-259.78	-318.18	0.00	0.00	0.00
Start Build DLS 8.98 TFO 0.19									
5,436.08	62.10	315.27	5,116.13	-855.84	-274.31	-297.76	8.91	8.91	0.20
5,500.00	67.86	315.25	5,143.15	-814.72	-315.06	-240.44	9.02	9.02	-0.03
5,516.34	69.34	315.24	5,149.12	-803.92	-325.78	-225.38	9.02	9.02	-0.03
Start DLS 9.02 TFO -0.22									
5,742.79	89.75	315.18	5,190.00	-646.72	-481.84	-6.07	9.02	9.02	-0.03
POE at 89.75 Inc 315.18 deg									
5,743.00	89.75	315.18	5,190.00	-646.57	-481.99	-5.87	0.13	0.13	0.00
7"									
6,000.00	89.75	315.18	5,191.12	-464.29	-663.16	248.60	0.00	0.00	0.00
6,500.00	89.75	315.18	5,193.29	-109.66	-1,015.62	743.66	0.00	0.00	0.00
7,000.00	89.75	315.18	5,195.46	244.97	-1,368.09	1,238.72	0.00	0.00	0.00
7,500.00	89.75	315.18	5,197.63	599.60	-1,720.55	1,733.78	0.00	0.00	0.00
8,000.00	89.75	315.18	5,199.81	954.23	-2,073.02	2,228.84	0.00	0.00	0.00
8,500.00	89.75	315.18	5,201.98	1,308.86	-2,425.49	2,723.90	0.00	0.00	0.00
9,000.00	89.75	315.18	5,204.15	1,663.49	-2,777.95	3,218.96	0.00	0.00	0.00
9,500.00	89.75	315.18	5,206.32	2,018.12	-3,130.42	3,714.03	0.00	0.00	0.00
10,000.00	89.75	315.18	5,208.49	2,372.75	-3,482.89	4,209.09	0.00	0.00	0.00
10,500.00	89.75	315.18	5,210.67	2,727.39	-3,835.35	4,704.15	0.00	0.00	0.00
11,000.00	89.75	315.18	5,212.84	3,082.02	-4,187.82	5,199.21	0.00	0.00	0.00
11,497.59	89.75	315.18	5,215.00	3,434.94	-4,538.59	5,691.89	0.00	0.00	0.00
TD at 11497.59									

Database:	San Juan	**Local Co-ordinate Reference:**	Well S Chaco UT #345H (A1) - Slot A1
Company:	WPX Energy	**TVD Reference:**	KB @ 7017.00usft (Aztec 920)
Project:	T22N R7W	**MD Reference:**	KB @ 7017.00usft (Aztec 920)
Site:	Chaco 2207-2P	**North Reference:**	True
Well:	S Chaco UT #345H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 17Aug15 sam		

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
#345H Start 60 tan - plan hits target center - Point	0.00	0.00	5,074.72	-907.38	-223.18	1,878,119.11	587,508.86	36.1613863	-107.5368851
#345H End 60 tan - plan misses target center by 0.28usft at 5412.26usft MD (5104.60 TVD, -870.64 N, -259.63 E) - Point	0.00	0.00	5,104.72	-870.52	-259.41	1,878,155.86	587,472.52	36.1614875	-107.5370078
#345H POE - plan hits target center - Point	0.00	0.00	5,190.00	-646.72	-481.85	1,878,378.98	587,249.40	36.1621023	-107.5377614
#345H BHL - plan hits target center - Point	0.00	0.00	5,215.00	3,434.94	-4,538.59	1,882,448.20	583,180.18	36.1733143	-107.5515064

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)
320.00	320.00	9 5/8" Surface	9.62	12.25
5,743.00	5,190.00	7"	7.00	8.75

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
1,353.56	1,340.99	-126.03	6.89	Hold 17.07 Inclination
4,538.48	4,385.58	-1,059.60	57.97	Start Build DLS 9.00 TFO 143.06
5,352.50	5,074.72	-907.38	-223.18	Hold 60.00 Inclination
5,412.50	5,104.72	-870.50	-259.78	Start Build DLS 8.98 TFO 0.19
5,516.34	5,149.12	-803.92	-325.78	Start DLS 9.02 TFO -0.22
5,742.79	5,190.00	-646.72	-481.84	POE at 89.75 Inc 315.18 deg
11,497.59	5,215.00	3,434.94	-4,538.59	TD at 11497.59

WPXENERGY

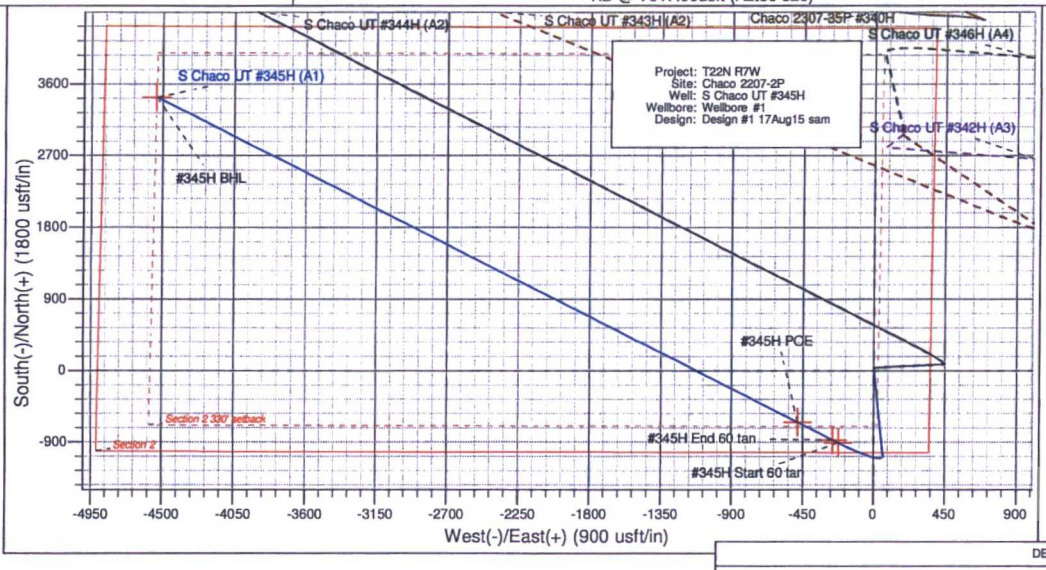
Well Name: S Chaco UT #345H
Surface Location: Chaco 2207-2P
NAD 1927 (NADCON CONUS) , US State Plane 1927 (Exact solution) New Mexico West 3003
Ground Elevation: 7003.00

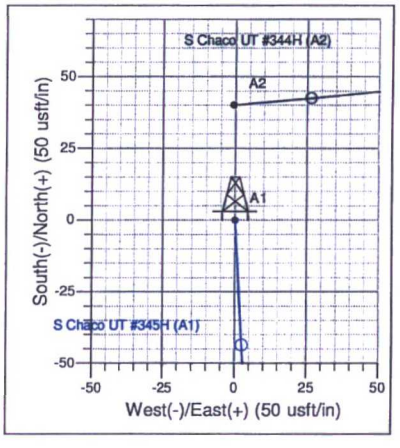
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1879027.17	587729.26	36.1638790	-107.5361290	A1

KB @ 7017.00usft (Aztec 920)

Azimuths to True North
Magnetic North: 9.22°

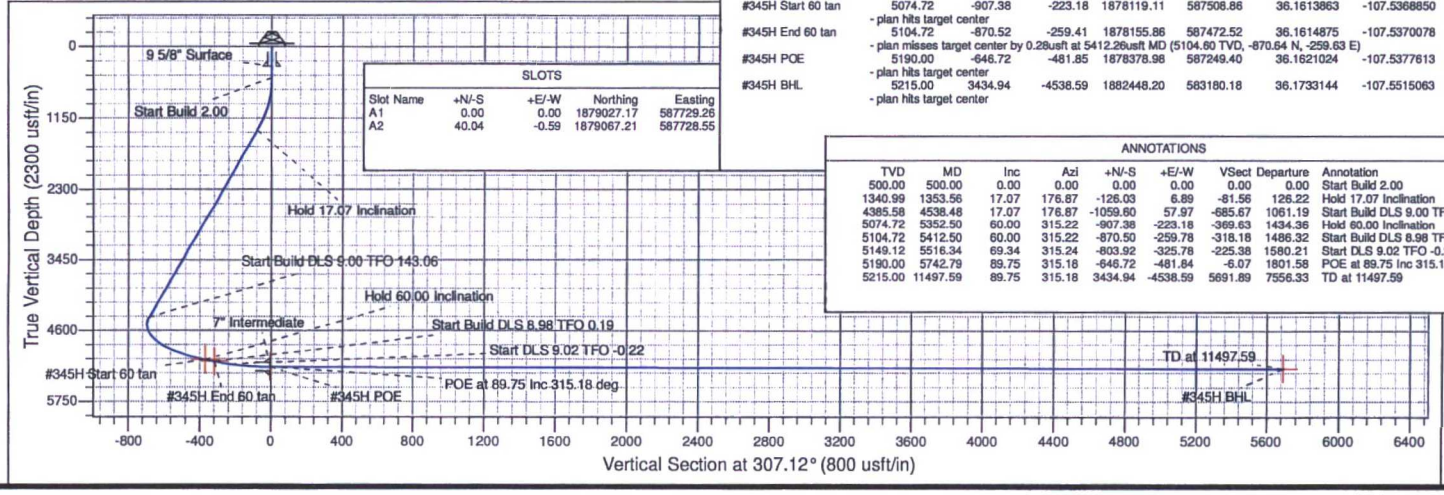
Magnetic Field
Strength: 50018.5snT
Dip Angle: 62.91°
Date: 8/15/2015
Model: IGRF2010





DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
#345H Start 60 tan	5074.72	-907.38	-223.18	1878119.11	587508.86	36.1613863	-107.5368850	Point
	- plan hits target center							
#345H End 60 tan	5104.72	-870.52	-259.41	1878155.86	587472.52	36.1614875	-107.5370078	Point
	- plan misses target center by 0.28usft at 5412.26usft MD (5104.60 TVD, -870.64 N, -259.63 E)							
#345H POE	5190.00	-646.72	-481.85	1878378.98	587249.40	36.1621024	-107.5377613	Point
	- plan hits target center							
#345H BHL	5215.00	3434.94	-4538.59	1882448.20	583180.18	36.1733144	-107.5515063	Point
	- plan hits target center							



SLOTS

Slot Name	+N/-S	+E/-W	Northing	Easting
A1	0.00	0.00	1879027.17	587729.26
A2	40.04	-0.59	1879067.21	587728.55

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
1340.99	1353.56	17.07	176.87	-126.03	6.89	-81.56	126.22	Hold 17.07 Inclination
4385.58	4538.48	17.07	176.87	-1059.60	57.97	-685.67	1061.19	Start Build DLS 9.00 TFO 143.06
5074.72	5352.50	60.00	315.22	-907.38	-223.18	-369.63	1434.36	Hold 60.00 Inclination
5104.72	5412.50	60.00	315.22	-870.50	-259.78	-318.18	1486.32	Start Build DLS 8.98 TFO 0.19
5149.12	5516.34	69.34	315.24	-803.92	-325.78	-225.38	1580.21	Start DLS 9.02 TFO -0.22
5190.00	5742.79	89.75	315.18	-646.72	-481.84	-6.07	1801.58	POE at 89.75 Inc 315.18 deg
5215.00	11497.59	89.75	315.18	3434.94	-4538.59	5691.89	7556.33	TD at 11497.59

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
   1. Drilling fluids will be stored onsite in above-ground storage tanks. Upon termination of drilling operations, the drilling fluids will be recycled and transferred to other permitted closed-loop systems or returned to the vendor for reuse, as practical. All residual fluids will be hauled to a commercial disposal facility.

C. Spills
   1. Any spills of non-freshwater fluids will be immediately cleaned up and removed to an approved disposal site.

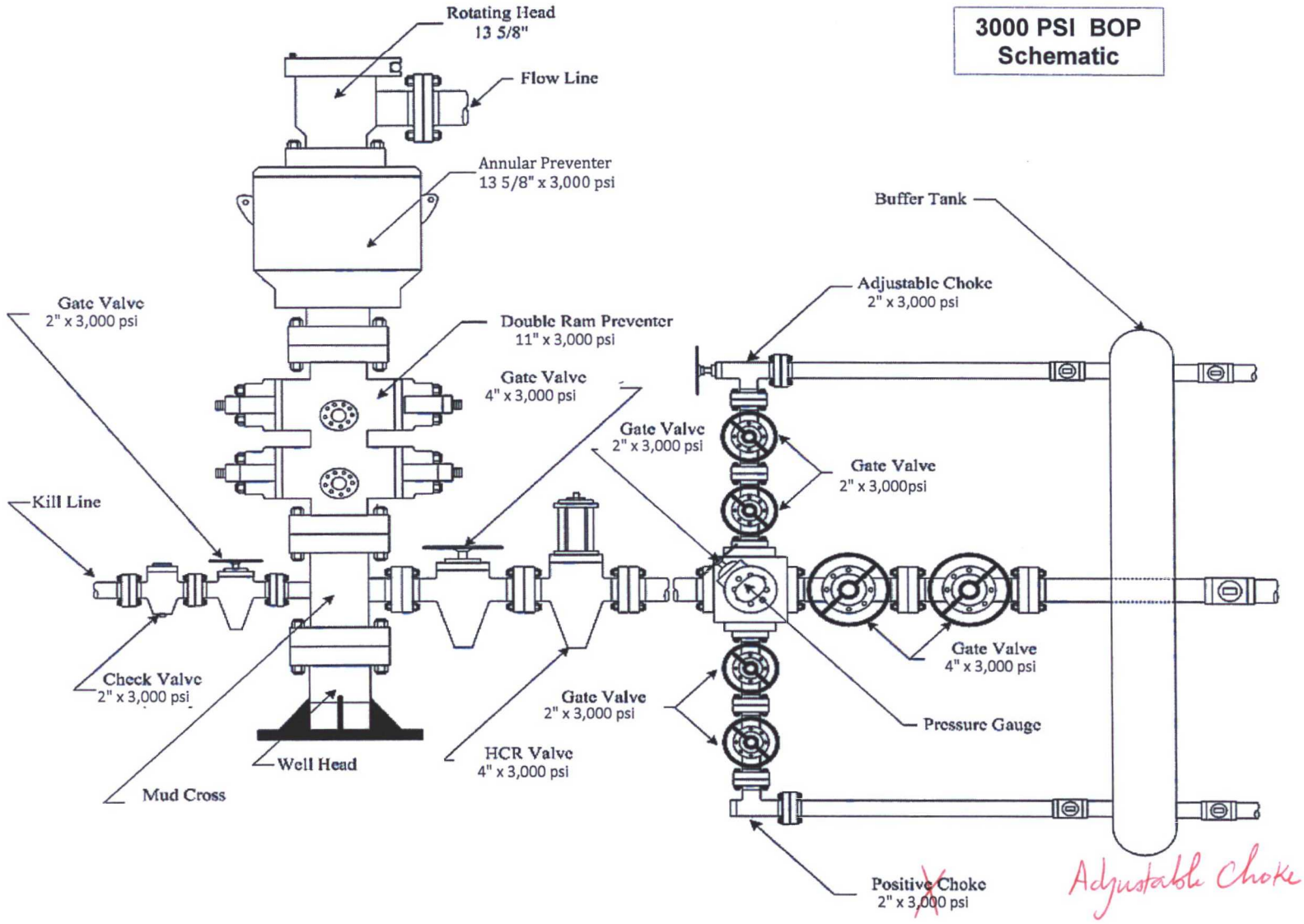
D. Sewage
   1. Portable toilets will be provided and maintained during construction, as needed (see Figure 4 in Appendix B for the location of toilets).

E. Garbage and other water material
   1. All garbage and trash will be placed in a metal trash containment. The trash and garbage will be hauled off site and dumped in an approved landfill, as needed.

F. Hazardous Waste
   1. No chemicals subject to reporting under Superfund Amendments and Reauthorization Act Title III in an amount equal to or greater than 10,000 pounds will be used, produced, stored, transported, or disposed of annually in association with the drilling, testing, or completing of these wells.
   2. No extremely hazardous substances, as defined in 40 CFR 355, in threshold planning quantities will be used, produced, stored, transported, or disposed of annually in association with the drilling, testing, or completing of these wells.
   3. All fluids (i.e., scrubber cleaners) used during washing of production equipment will be properly disposed of to avoid ground contamination or hazard to livestock or wildlife.

G. Produced Water:
   1. WPX Energy will dispose of produced water from this well at one of the following facilities:
      a. Lybrook Yard WDW #1, API #30-039-27533, NMOCD permit #SWD-907, operated by Elm Ridge Resources, located in NE ¼, Section 14, Township 23 North, Range 7 West
      b. Jillson Federal #1, NMOCD order #R-10168, operated by ConocoPhillips, located in NW ¼, Section 8, Township 24 North, Range 3 West
      c. Basin Disposal, permit #NM-01-005, located in the NW ¼, Section 3, Township 29 North, Range 11 West
      d. Sunco SWD #001, API #30-045-28653, NMOCD permit SWD-457, operated by Key Energy, located in NW ¼, Section 2, Township 29 North, Range 12 West
   2. Water will be hauled by truck. Some produced water may also be used in drilling and completion operations as an alternative disposal method.

3000 PSI BOP Schematic



APD Certification:

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

Executed this 5th day of November, 2015.

Name Marie E Jaramillo

Position Title Permit Technician III

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

Telephone (505) 333-1808

Field representative (if not above signatory) _____

E-mail marie.jaramillo@wpxenergy.com

Date: 11/5/15

Marie E. Jaramillo
Permit Technician III
WPX Energy Production, LLC

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

in Bloomfield, NM to WPX Energy Production, LLC S Chaco UT #345H

1027' FSL & 356' FEL, Section 2, T22N, R7W, N.M.P.M., Sandoval County, NM

Latitude: 36.163894°N Longitude: 107.536735°W Datum: NAD1983

From the intersection of US Hwy 550 & US Hwy 64 in Bloomfield, NM, travel Southerly on US Hwy 550 for 48.3 miles to Mile Marker 103.0;

Go Right (Southerly) on Atkins Road for 4.2 miles to 4-way intersection;

Go Left (Easterly) exiting Atkins Road for 0.3 miles to fork in roadway;

Go Right (Southerly) along WPX S Chaco UT #342H existing access for 0.2 miles to begin access on right-hand side of roadway from which continuing for an additional 3818.1' to staked WPX S Chaco UT #345H location.