

State of New Mexico
Energy, Minerals and Natural Resources Department

Susana Martinez
Governor

David Martin
Cabinet Secretary

Brett F. Woods, Ph.D.
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: 12-1-14

Well information;


Operator WPX, Well Name and Number S Charo UT #339

API# 30-043-21244, Section 35, Township 23 N/S, Range 7 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 PHC
- ☐ 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
- ☒ 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.



NMOCD Approved by Signature

3-31-2015
Date KC

Form 160-3
(September 2000)

CONS. DIV DIST. 3

UNITED STATES

DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

MAR 23 2015

DEC 05 2014


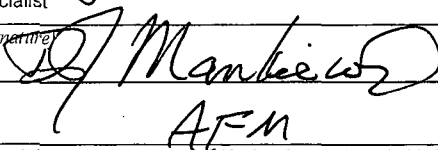
FORM APPROVED
OMB No. 1004-0136
Expires January 31, 2004

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of Work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. N0-G-1312-1790
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. CA 133321X
3a. Address P.O. Box 640 Aztec, NM 87410		8. Lease Name and Well No. S Chaco UT 339H
3b. Phone No. (include area code) (505) 333-1849		9. API Well No. 30-043-21244
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface 910' FSL & 687' FEL, sec 35, T23N, R7W At proposed prod. zone 2283' FSL & 230' FWL, sec 35, T23N, R7W		10. Field and Pool, or Exploratory Lybrook Gallup Pool
14. Distance in miles and direction from nearest town or post office* approximately 4 miles east of Lybrook, New Mexico		11. Sec., T., R., M., or Blk. and Survey or Area SHL: Section 35, T23N, R7W BHL: Section 35, T23N, R7W
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 687'	16. No. of Acres in lease 1,282 160.00	17. Spacing Unit dedicated to this well 320 acres 52
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 22'	19. Proposed Depth 10,664' MD / 5,342' TVD	20. BLM/BIA Bond No. on file UTB000178 B001576
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 7084' GR	22. Approximate date work will start* February 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) Andrea Felix	Date 12-1-2014
Title Regulatory Specialist		
Approved by (Signature) 	Name (Printed/Typed) AFM	Date 3/17/15
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 South Chaco UT / Lybrook Gallup pool at the above described location in accordance with the attached drilling and surface use plans.

The well pad surface is on lease on Indian Allotted surface and is co-located with the S Chaco UT #340H.

This location has been archaeologically surveyed by Western Cultural Resource Management, Inc. Copies of their report have been submitted directly to the BLM and Navajo Nation Historic Preservation Department.

New access road is approximately 297.28' on lease on Indian Allotted surface.

New pipeline is approximately 1021.10' on lease on Indian Allotted surface.

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

NMCCDN

DISTRICT I

1625 N. French Dr., Hobbs, N.M. 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

DISTRICT II

811 S. First St., Artesia, N.M. 88210
Phone: (575) 748-1283 Fax: (575) 748-9720

DISTRICT III

1000 Rio Brazos Rd., Aztec, N.M. 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

DISTRICT IV

1220 S. St. Francis Dr., Santa Fe, N.M. 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

OIL CONSERVATION DIVISION

DEC 05 2014

Submit one copy to appropriate

District Office

1220 South St. Francis Dr.
Santa Fe, N.M. 87505

AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-043-21244	² Pool Code 42289	³ Pool Name LYBROOK GALLUP
⁴ Property Code 314331	⁵ Property Name S CHACO UT	⁶ Well Number 339H
⁷ GRID No. 120782	⁸ Operator Name WPX ENERGY PRODUCTION, LLC	⁹ Elevation 7084

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	35	23 N	7 W		910	SOUTH	687	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
L	35	23 N	7 W		2283	SOUTH	230	WEST	SANDOVAL

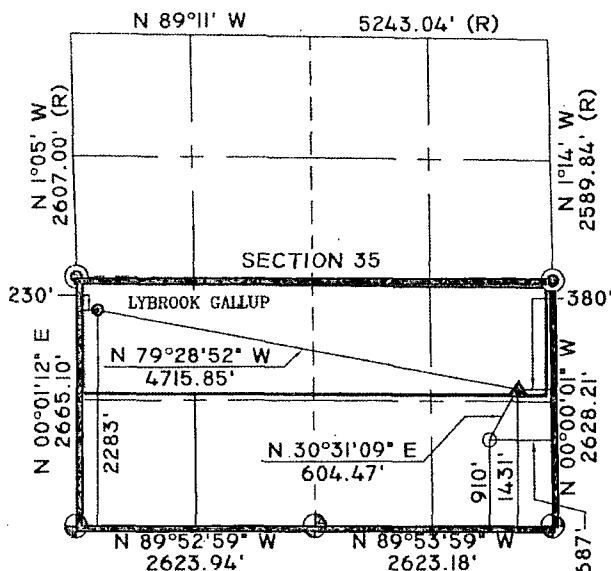
¹² Dedicated Acres 320 ACRES N 1/2 S 1/2 - SECTION 35	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
----------------------------------------------------------------------------	-------------------------------	----------------------------------	-------------------------

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

16

LEGEND:

- = SURFACE LOCATION ⊕ = FOUND 1947 U.S.G.L.O.
 ▲ = LANDING POINT BRASS CAP
 ● = END OF LATERAL (R) = RECORD
 ⊙ = FOUND 1948 U.S.G.L.O.
 BRASS CAP



NOTE:

BEARINGS & DISTANCES SHOWN ARE REFERENCED TO
NEW MEXICO STATE PLANE, WEST ZONE, NAD 83.

SURFACE LOCATION

SEC. 35, T23N, R7W
910' FSL, 687' FEL
LAT: 36.178217° N
LONG: 107.537740° W
NAD 83
LAT: 36.178203° N
LONG: 107.537133° W
NAD 27

LANDING POINT

SEC. 35, T23N, R7W
1431' FSL, 380' FEL
LAT: 36.179645° N
LONG: 107.536694° W
NAD 83
LAT: 36.179631° N
LONG: 107.536088° W
NAD 27

END OF LATERAL

SEC. 35, T23N, R7W
2283' FSL, 230' FWL
LAT: 36.182048° N
LONG: 107.552397° W
NAD 83
LAT: 36.182034° N
LONG: 107.551790° W
NAD 27

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.

Andrea Felix 12.1.14
Signature Date

Andrea Felix

Printed Name

andrea.felix@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.

REV 4

06/25/2014

Date of Survey

Signature and Seal of Professional Engineer

JOHN A. VUKOVICH

REGISTERED PROFESSIONAL SURVEYOR

14831

14831

Certificate Number

United Field Services, Inc.

11-19-2014

WPXENERGY.

WPX ENERGY

Operations Plan

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

DATE: 8/28/2014 **FIELD:** Lybrook Gallup
WELL NAME: S Chaco UT 339H **SURFACE:** Indian allotted
SH Location: SESE Sec 35-23N-07W **ELEVATION:** 7084' GR
BH Location: NWSW Sec 35-23N-07W **MINERALS:** Indian allotted
Sandoval County, NM
MEASURED DEPTH: 10,664' **LEASE #:** NO-G-1312-1790

I. **GEOLOGY:** Surface formation – Nacimiento

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

Name	MD	TVD	Name	MD	TVD
Ojo Alamo	1248	1241	Point Lookout	4249	4100
Kirtland	1406	1393	Mancos	4560	4406
Picture Cliffs	1733	1704	Kickoff Point	4881	4726
Lewis	1833	1799	Top Target	5713	5346
Chacra	2132	2084	Landing Point	5762	5395
Cliff House	3355	3246	Base Target	5762	5395
Menefee	3383	3273			
			TD	10664	5342

- 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 3/4" 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.**

NOTE: Vertical portion of the well (8-3/4 in.) will be directionally drilled as per attached Directional Plan to +/- 4,881'(MD) / 4,726' (TVD). Curve portion of wellbore will be drilled and landed at +/- 90 deg. at +/- 5,762' (MD) / 5,395' (TVD). 7 in. csg will be set at this point. A 6-1/8" Lateral will be drilled as per the attached Directional Plan to +/- 10,664' (MD) / 5,342' (TVD). Will run 4-1/2 in. Production Liner from +/- 5,612 ft. to TD and cemented. Liner will be tied back to surface w / 4-1/2" Casing for stimulation / testing, then removed from the well.

III. MATERIALS**A. CASING PROGRAM:**

CASING TYPE	OH SIZE (IN)	DEPTH (MD) (FT)	CASING SIZE (IN)	WEIGHT(LB)	GRADE
Surface	12.25"	400'+	9.625"	36#	J-55
Intermediate	8.75"	5,762'	7"	23#	K-55
Prod. Liner	6.125"	5,612' - 10,664'	4-1/2"	11.6#	N-80
Tie-Back String	N/A	Surf. - 5,612'	4-1/2"	11.6#	N-80

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 2,700 ft., 2,500 ft., 2,300ft., and 2,000ft. Additionally run 1 turbolizing centralizer on every other joint from 100' below the top of the Kirtland to 100' above the top of the Ojo Alamo, as referenced in Formation Tops in Section I-A.
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 + (2) RSI (Sliding Sleeves) 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.
4. **TIE-BACK CASING:** None

C. CEMENTING:

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

1. **SURFACE:** 10 bbl Fr Water Spacer + 190 sx (222.3 cu.ft.) of "Premium Cement" + 2% Calcium Chloride Cement + 0.125# pps of Poly-E-Flake, 15.8 #/gal (1.17 cu ft./sk, Vol 39.58 Bbls.). The 100% excess should circulate cement to the surface. WOC 12 hours. Test csg to 600psi. Total Volume: (222.3 cu-ft/190 sx/39.6 Bbls). TOC at Surface.
2. **INTERMEDIATE:** 20 bbl (112 cu-ft) Mud Flush III spacer + Lead: 850 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: 1216 cu-ft / 216.5 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). Test Casing to 1500 PSI for 30 minutes. Total Cement Volume: (1050 sx / 1461 cu-ft / 260 bbls). Mix with +/- 84,000 SCF Nitrogen. TOC at surface.
3. **PRODUCTION LINER: STAGE 1:** 10 bbl (56 cu-ft) Fr Water Spacer. **STAGE 2:** 40 bbl 9.5 ppg (224.6 cu-ft) Tuned Spacer III + 0.5 gal/bbl Musol + 38.75 ppb Barite + 0.5 gal/bbl SEM-7. **STAGE 3:** 10 bbl Fr Water Spacer. **STAGE 4: Lead Cement:** 50 / 50 Poz Premium + 0.2% Versaset + 0.2% Halad -766, Yield 1.43 cu ft/sk, 13.0 ppg, (10 sx / 14.3 cu ft. / 2.5 bbls). **STAGE 5:** 200 sx. Foamed Lead Cement: 50 / 50 Poz Standard + 0.2% Versaset + 0.2% HALAD-766 + 1.5% Chem-Foamer 760. Yield 1.97 cu-ft/sk. 13.0 ppg (200 sx / 394 cu-ft. / 70.2 bbls.). **STAGE 6:** Tail Cement : 100 sx. 50/50 Poz Standard + 0.2% Versaset + 0.05% HALAD-766 + .05% SA-1015, Weight: 13.5 ppg (100 sx / Yield 1.28 cu ft/sk. / 128 cu ft. / 22.8 bbls) **STAGE 7:** Displace w/ +/- 137 bbl Fr Water. Total Cement (536.3 cu ft / 95.5 bbls). Mix Foamed Cement w/ +/- 75,000 SCF Nitrogen. Est. TOC +/- 5,312 ft.

IV. COMPLETION

A. CBL

1. Run CCL for perforating.

B. 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.

C. 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.

D. 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 point of curve (~5,700' MD).

- 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:

Installation of RSI sleeves at Toe of Lateral.

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 (set at 5,762 ft. MD) with a Liner Hanger and pack-off assembly then cemented to +/- 300 ft above the liner hanger. TOL will be +/- 5,612 ft. (MD) +/- 78 degree angle. TOC: +/- 5,312 ft. (MD).

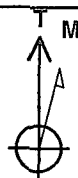
After cementing and TOL clean up operations are complete, the TOL will be tested to 1500 psi (per BLM).

A 4-1/2" 11.6# N-80 tie-back string with seal assembly will be run and stung into the PBR of the liner hanger, tested to 1500 PSI and hung off at the surface.

The Drilling Rig will be rigged down at this point and Completion operations will begin. After Stimulation and Testing operations are complete the 4-1/2" tie-back string will be removed from the well.

Note: Changes to formation tops, casing landing points, well TD and Directional Plan.

Well Name: Chaco 2307-35P #339H
 Surface Location: Chaco 2307-35P
 NAD 1927 (NADCON CONUS) , US State Plane 1927 (Exact solution) New Mexico West 3003
 Ground Elevation: 7084.0
 +N/-S +E/-W Northing Easting Latitude Longitude Slot
 0.0 0.0 1884240.24 587416.90 36.178203 -107.537133
 WELL @ 7098.0usft (Original Well Elev)



Azimuths to True North
 Magnetic North: 9.35°
 Magnetic Field
 Strength: 50123.5snT
 Dip Angle: 62.95°
 Date: 8/18/2014
 Model: IGRF2010

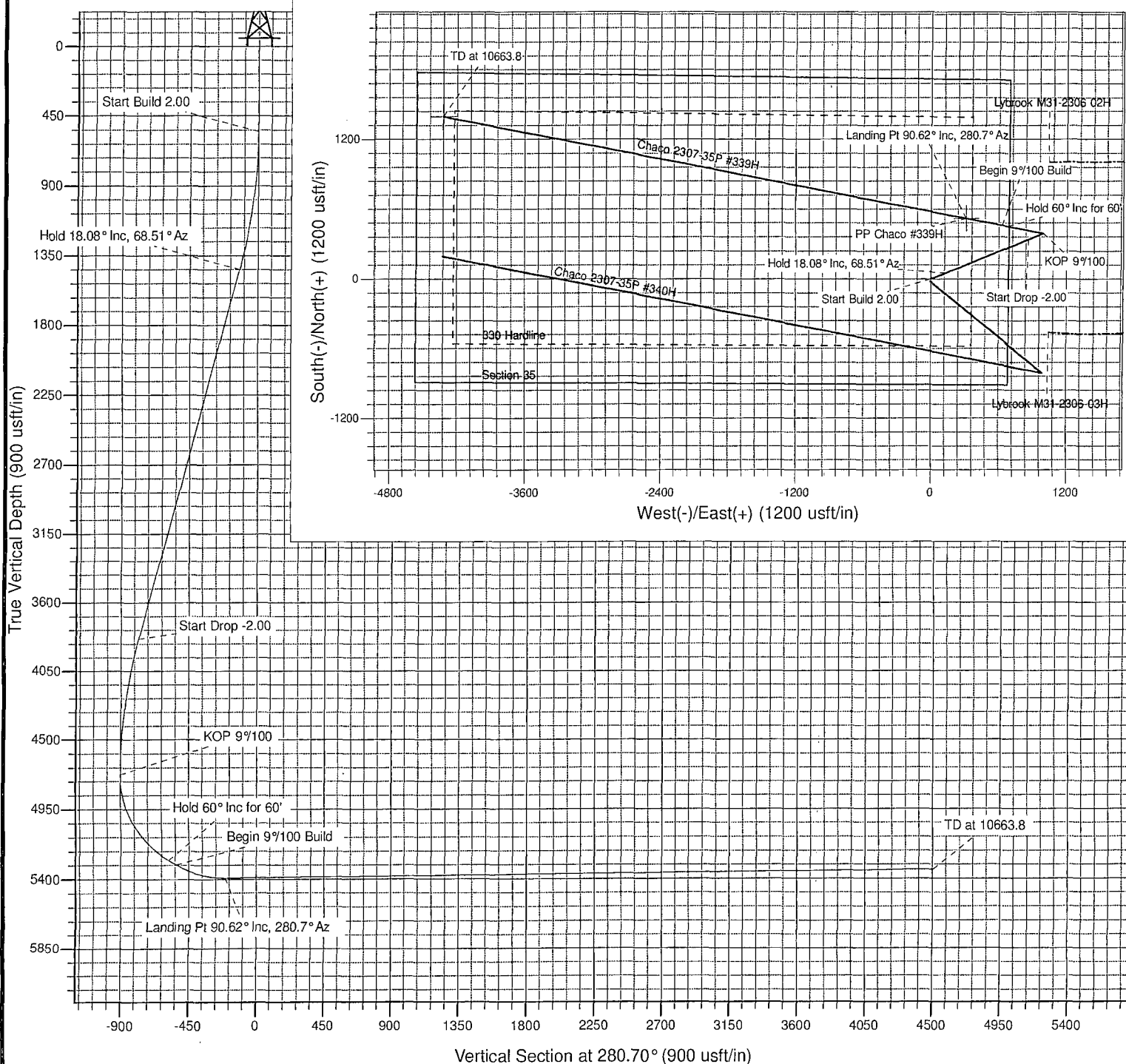
Project: SJ 35-23N-07W
 Site: Chaco 2307-35P
 Well: Chaco 2307-35P #339H
 Design #1 18Aug14 kjs

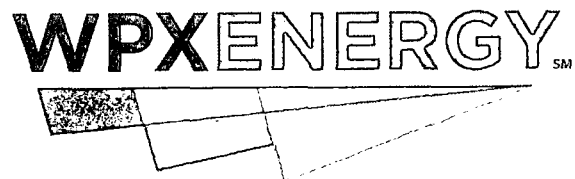
ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	VSec	Departure	Annotation
550.0	550.0	0.00	0.00	0.0	0.0	0.0	0.0	Start Build 2.00
1439.3	1454.2	18.08	68.51	51.9	131.7	-119.8	141.5	Hold 18.08° Inc, 68.51° Az
3837.1	3976.7	18.08	68.51	338.7	860.2	-782.4	924.5	Start Drop -2.00
4726.4	4880.9	0.00	0.00	390.6	991.9	-902.1	1066.0	KOP 9°/100
5277.7	5547.5	60.00	280.70	449.7	679.1	-583.8	1384.3	Hold 60° Inc for 60'
5307.7	5607.5	60.00	280.70	459.3	628.1	-531.9	1436.3	Begin 9°/100 Build
5393.0	5947.8	90.62	280.70	519.7	308.5	-206.7	1761.5	Landing Pt 90.62° Inc, 280.7° Az
5342.0	10663.8	90.62	280.70	1395.0	-4325.3	4509.1	6477.3	TD at 10663.8

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
TD / PBHL Chaco #339H	5342.0	1395.0	-4325.3	1885622.07	583087.37	36.182034	-107.551790	Point
PP Chaco #339H	5393.0	519.6	308.4	1884760.77	587723.73	36.179630	-107.536088	Point
- plan hits target center								
- plan misses target center by 0.1usft at 5947.9usft MD (5393.0 TVD, 519.7 N, 308.4 E)								





SAN JUAN BASIN

SJ 35-23N-07W

Chaco 2307-35P

Chaco 2307-35P #339H

Wellbore #1

Plan: Design #1 18Aug14 kjs

Standard Planning Report - Geographic

25 August, 2014

Database:	COMPASS-SANJUAN	Local Co-ordinate Reference:	Well Chaco 2307-35P #339H
Company:	SAN JUAN BASIN	TVD Reference:	WELL @ 7098.0usft (Original Well Elev)
Project:	SJ 35-23N-07W	MD Reference:	WELL @ 7098.0usft (Original Well Elev)
Site:	Chaco 2307-35P	North Reference:	True
Well:	Chaco 2307-35P #339H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 18Aug14 kjs		

Project	SJ 35-23N-07W, Sandoval County, NM		
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 2307-35P		
Site Position:		Northing:	1,884,240.24 usft
From:	Map	Easting:	587,416.91 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13.200 in
		Latitude:	36.178203
		Longitude:	-107.537134
		Grid Convergence:	0.17 °

Well	Chaco 2307-35P #339H		
Well Position	+N/-S	0.0 usft	Northing:
	+E/-W	0.0 usft	Easting:
Position Uncertainty	0.0 usft	Wellhead Elevation:	0.0 usft
		Latitude:	36.178203
		Longitude:	-107.537134
		Ground Level:	7,084.0 usft

Wellbore	Wellbore #1		
Magnetics	Model Name	Sample Date	Declination
			(°)
	IGRF2010	8/18/2014	9.35
			Dip Angle
			(°)
			Field Strength
			(nT)
			50,123

Design	Design #1 18Aug14 kjs		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth:
			0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			Direction
			(°)
			280.70

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	
550.0	0.00	0.00	550.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,454.2	18.08	68.51	1,439.3	51.9	131.7	2.00	2.00	0.00	68.51	
3,976.7	18.08	68.51	3,837.1	338.7	860.2	0.00	0.00	0.00	0.00	
4,880.9	0.00	0.00	4,726.4	390.6	991.9	2.00	-2.00	0.00	180.00	
5,547.5	60.00	280.70	5,277.7	449.7	679.1	9.00	9.00	0.00	280.70	
5,607.5	60.00	280.70	5,307.7	459.3	628.1	0.00	0.00	0.00	0.00	
5,947.8	90.62	280.70	5,393.0	519.7	308.5	9.00	9.00	0.00	-0.01	
10,663.8	90.62	280.70	5,342.0	1,395.0	-4,325.3	0.00	0.00	0.00	0.00	TD / PBHL Chaco #33

Database:	COMPASS-SANJUAN	Local Co-ordinate Reference:	Well Chaco 2307-35P #339H
Company:	SAN JUAN BASIN	TVD Reference:	WELL @ 7098.0usft (Original Well Elev)
Project:	SJ 35-23N-07W	MD Reference:	WELL @ 7098.0usft (Original Well Elev)
Site:	Chaco 2307-35P	North Reference:	True
Well:	Chaco 2307-35P #339H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 18Aug14 kjs		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.0	0.00	0.00	0.0	0.0	0.0	1,884,240.24	587,416.91	36.178203	-107.537134
200.0	0.00	0.00	200.0	0.0	0.0	1,884,240.24	587,416.91	36.178203	-107.537134
400.0	0.00	0.00	400.0	0.0	0.0	1,884,240.24	587,416.91	36.178203	-107.537134
550.0	0.00	0.00	550.0	0.0	0.0	1,884,240.24	587,416.91	36.178203	-107.537134
Start Build 2.00									
600.0	1.00	68.51	600.0	0.2	0.4	1,884,240.40	587,417.31	36.178203	-107.537132
800.0	5.00	68.51	799.7	4.0	10.1	1,884,244.27	587,427.04	36.178214	-107.537099
1,000.0	9.00	68.51	998.2	12.9	32.8	1,884,253.26	587,449.68	36.178238	-107.537022
1,200.0	13.00	68.51	1,194.4	26.9	68.3	1,884,267.35	587,485.14	36.178277	-107.536902
1,400.0	17.00	68.51	1,387.6	45.9	116.5	1,884,286.46	587,533.24	36.178329	-107.536739
1,454.2	18.08	68.51	1,439.3	51.9	131.7	1,884,292.49	587,548.42	36.178345	-107.536687
Hold 18.08° Inc, 68.51° Az									
1,600.0	18.08	68.51	1,577.9	68.4	173.8	1,884,309.20	587,590.48	36.178391	-107.536545
1,800.0	18.08	68.51	1,768.0	91.2	231.5	1,884,332.13	587,648.17	36.178453	-107.536349
2,000.0	18.08	68.51	1,958.1	113.9	289.3	1,884,355.05	587,705.87	36.178516	-107.536153
2,200.0	18.08	68.51	2,148.2	136.7	347.1	1,884,377.97	587,763.57	36.178578	-107.535958
2,400.0	18.08	68.51	2,338.3	159.4	404.8	1,884,400.90	587,821.26	36.178641	-107.535762
2,600.0	18.08	68.51	2,528.5	182.2	462.6	1,884,423.82	587,878.96	36.178703	-107.535566
2,800.0	18.08	68.51	2,718.6	204.9	520.4	1,884,446.74	587,936.65	36.178766	-107.535370
3,000.0	18.08	68.51	2,908.7	227.7	578.1	1,884,469.67	587,994.35	36.178828	-107.535175
3,200.0	18.08	68.51	3,098.8	250.4	635.9	1,884,492.59	588,052.04	36.178891	-107.534979
3,400.0	18.08	68.51	3,288.9	273.2	693.7	1,884,515.51	588,109.74	36.178953	-107.534783
3,600.0	18.08	68.51	3,479.1	295.9	751.4	1,884,538.44	588,167.43	36.179016	-107.534587
3,800.0	18.08	68.51	3,669.2	318.7	809.2	1,884,561.36	588,225.13	36.179078	-107.534392
3,976.7	18.08	68.51	3,837.1	338.7	860.2	1,884,581.61	588,276.10	36.179133	-107.534219
Start Drop -2.00									
4,000.0	17.62	68.51	3,859.3	341.4	866.9	1,884,584.25	588,282.74	36.179141	-107.534196
4,200.0	13.62	68.51	4,051.9	361.1	917.0	1,884,604.13	588,332.77	36.179195	-107.534027
4,400.0	9.62	68.51	4,247.8	375.8	954.4	1,884,619.00	588,370.19	36.179235	-107.533900
4,600.0	5.62	68.51	4,446.0	385.6	979.1	1,884,628.78	588,394.82	36.179262	-107.533816
4,800.0	1.62	68.51	4,645.5	390.2	990.8	1,884,633.44	588,406.55	36.179275	-107.533776
4,880.9	0.00	0.00	4,726.4	390.6	991.9	1,884,633.87	588,407.61	36.179276	-107.533773
KOP 9°/100									
5,000.0	10.72	280.70	4,844.8	392.7	981.0	1,884,635.89	588,396.68	36.179281	-107.533810
5,200.0	28.72	280.70	5,032.3	405.1	914.9	1,884,648.17	588,330.61	36.179316	-107.534033
5,400.0	46.72	280.70	5,189.9	427.8	795.2	1,884,670.43	588,210.80	36.179378	-107.534439
5,547.5	60.00	280.70	5,277.7	449.7	679.1	1,884,692.01	588,094.66	36.179438	-107.534832
Hold 60° Inc for 60'									
5,600.0	60.00	280.70	5,304.0	458.1	634.5	1,884,700.31	588,050.00	36.179461	-107.534984
5,607.5	60.00	280.70	5,307.7	459.3	628.1	1,884,701.50	588,043.57	36.179465	-107.535005
Begin 9°/100 Build									
5,800.0	77.32	280.70	5,377.5	492.5	452.6	1,884,734.12	587,868.00	36.179556	-107.535600
5,947.8	90.62	280.70	5,393.0	519.7	308.5	1,884,760.89	587,723.85	36.179631	-107.536088
Landing Pt 90.62° Inc, 280.7° Az									
5,947.9	90.62	280.70	5,393.0	519.7	308.4	1,884,760.91	587,723.75	36.179631	-107.536088
PP Chaco #339H									
6,000.0	90.62	280.70	5,392.4	529.4	257.2	1,884,770.43	587,672.49	36.179657	-107.536262
6,200.0	90.62	280.70	5,390.3	566.5	60.7	1,884,806.95	587,475.87	36.179759	-107.536928
6,400.0	90.62	280.70	5,388.1	603.7	-135.8	1,884,843.48	587,279.24	36.179861	-107.537594
6,600.0	90.62	280.70	5,385.9	640.8	-332.3	1,884,880.00	587,082.62	36.179963	-107.538260
6,800.0	90.62	280.70	5,383.8	677.9	-528.9	1,884,916.52	586,885.99	36.180065	-107.538926
7,000.0	90.62	280.70	5,381.6	715.0	-725.4	1,884,953.04	586,689.36	36.180167	-107.539591
7,200.0	90.62	280.70	5,379.4	752.1	-921.9	1,884,989.56	586,492.74	36.180269	-107.540257
7,400.0	90.62	280.70	5,377.3	789.3	-1,118.4	1,885,026.08	586,296.11	36.180371	-107.540923

Database:	COMPASS-SANJUAN	Local Co-ordinate Reference:	Well Chaco 2307-35P #339H
Company:	SAN JUAN BASIN	TVD Reference:	WELL @ 7098.0usft (Original Well Elev)
Project:	SJ 35-23N-07W	MD Reference:	WELL @ 7098.0usft (Original Well Elev)
Site:	Chaco 2307-35P	North Reference:	True
Well:	Chaco 2307-35P #339H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 18Aug14 kjs		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
7,600.0	90.62	280.70	5,375.1	826.4	-1,314.9	1,885,062.60	586,099.49	36.180473	-107.541589
7,800.0	90.62	280.70	5,373.0	863.5	-1,511.4	1,885,099.12	585,902.86	36.180575	-107.542255
8,000.0	90.62	280.70	5,370.8	900.6	-1,707.9	1,885,135.64	585,706.24	36.180677	-107.542921
8,200.0	90.62	280.70	5,368.6	937.7	-1,904.4	1,885,172.17	585,509.61	36.180779	-107.543587
8,400.0	90.62	280.70	5,366.5	974.9	-2,101.0	1,885,208.69	585,312.99	36.180881	-107.544253
8,600.0	90.62	280.70	5,364.3	1,012.0	-2,297.5	1,885,245.21	585,116.36	36.180983	-107.544918
8,800.0	90.62	280.70	5,362.1	1,049.1	-2,494.0	1,885,281.73	584,919.74	36.181085	-107.545584
9,000.0	90.62	280.70	5,360.0	1,086.2	-2,690.5	1,885,318.25	584,723.11	36.181186	-107.546250
9,200.0	90.62	280.70	5,357.8	1,123.3	-2,887.0	1,885,354.77	584,526.49	36.181288	-107.546916
9,400.0	90.62	280.70	5,355.7	1,160.5	-3,083.5	1,885,391.29	584,329.86	36.181390	-107.547582
9,600.0	90.62	280.70	5,353.5	1,197.6	-3,280.0	1,885,427.81	584,133.23	36.181492	-107.548248
9,800.0	90.62	280.70	5,351.3	1,234.7	-3,476.5	1,885,464.33	583,936.61	36.181594	-107.548914
10,000.0	90.62	280.70	5,349.2	1,271.8	-3,673.1	1,885,500.86	583,739.98	36.181696	-107.549580
10,200.0	90.62	280.70	5,347.0	1,309.0	-3,869.6	1,885,537.38	583,543.36	36.181798	-107.550246
10,400.0	90.62	280.70	5,344.9	1,346.1	-4,066.1	1,885,573.90	583,346.73	36.181900	-107.550911
10,600.0	90.62	280.70	5,342.7	1,383.2	-4,262.6	1,885,610.42	583,150.11	36.182002	-107.551577
10,663.8	90.62	280.70	5,342.0	1,395.0	-4,325.3	1,885,622.07	583,087.38	36.182034	-107.551790

TD at 10663.8 - TD / PBHL Chaco #339H

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
TD / PBHL Chaco #339H	0.00	0.00	5,342.0	1,395.0	-4,325.3	1,885,622.07	583,087.38	36.182034	-107.551790
- plan hits target center									
- Point									
PP Chaco #339H	0.00	0.00	5,393.0	519.6	308.4	1,884,760.78	587,723.73	36.179630	-107.536089
- plan misses target center by 0.1usft at 5947.9usft MD (5393.0 TVD, 519.7 N, 308.4 E)									
- Point									

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
550.0	550.0	0.0	0.0	Start Build 2.00
1,454.2	1,439.3	51.9	131.7	Hold 18.08° Inc, 68.51° Az
3,976.7	3,837.1	338.7	860.2	Start Drop -2.00
4,880.9	4,726.4	390.6	991.9	KOP 9°/100
5,547.5	5,277.7	449.7	679.1	Hold 60° Inc for 60'
5,607.5	5,307.7	459.3	628.1	Begin 9°/100 Build
5,947.8	5,393.0	519.7	308.5	Landing Pt 90.62° Inc, 280.7° Az
10,663.8	5,342.0	1,395.0	-4,325.3	TD at 10663.8

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. 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 waste material

1. Garbage, trash, and other waste materials will be collected in a portable, self-contained, and fully enclosed trash container during drilling and completion operations. The accumulated trash will be removed, as needed, and will be disposed of at an authorized sanitary landfill. No trash will be buried or burned on location.

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

