

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

Jami Bailey, 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 3160-4 or 3160-5 form.

Operator Signature Date: August 25th, 2014
Well information:

API WELL #	Well Name	Well #	Operator Name	Type	Stat	County	Surf Owner	UL	Sec	Twp	N/S	Rng	W/E
30-039-31247-00-00	CHACO 2306 8L	199H	WPX ENERGY PRODUCTION, LLC	O	N	Rio Arriba	F	L	8	23	N	6	W

Application Type:

- ☐ P&A ☐ Drilling/Casing Change ☒ Location Change
☐ Recomplete/DHC (For hydraulic fracturing operations review EPA Underground injection control Guidance #84)
☒ Other: Project area change

Conditions of Approval:

Notify NMOCD 24hrs prior to beginning operations

Hold C-104 for directional survey, as drilled plat, NSL, NSP, DHC

NMOCD Approved by Signature

9-3-14
Date

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED

AUG 21 2014

FORM APPROVED
OMB No. 1004-0137
Expires: March 31, 2007

SUNDRY NOTICES AND REPORTS ON WELLS
Do not use this form for proposals to drill or to re-enter an
abandoned well. Use Form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE - Other instructions on page 2.

1. Type of Well ☒ Oil Well ☐ Gas Well ☐ Other		5. Lease Serial No. NMSF 078362
2. Name of Operator WPX Energy Production, LLC		6. If Indian, Allottee or Tribe Name
3a. Address PO Box 640 Aztec, NM 87410		7. If Unit of CA/Agreement, Name and/or No. NMNM 132829(CA)
3b. Phone No. (include area code) 505-333-1822		8. Well Name and No. Chaco 2306-08L #199H
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) SHL: 1436' FSL & 231' FWL SEC 8 23N 6W BHL: 2321' FNL & 329' FEL SEC 12 23N 7W		9. API Well No. 30-039-31247
		10. Field and Pool or Exploratory Area Lybrook Gallup/Counselors GL DK
		11. Country or Parish, State Rio Arriba County, NM

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other <u>SHL change/Realign lateral</u>
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.)

WPX plans to change the surface hole location and realign the lateral on this well as per attached C-102, operations plan and directional plan. This well will be in Northeast Chaco Communitized Area, NMNM 132829CA.

CONDITIONS OF APPROVAL

Adhere to previously issued stipulations

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

14. I hereby certify that the foregoing is true and correct. Name (Printed/Typed) Heather Riley		Title Regulatory Manager	
Signature <i>Heather Riley</i>		Date 8/21/14	
THIS SPACE FOR FEDERAL OR STATE OFFICE USE			
Approved by <i>William Tambekou</i>		Title <i>Petroleum Engineer</i>	Date <i>8/25/2014</i>
Conditions of approval, if any, are attached. Approval of this notice 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.		Office <i>FFO</i>	

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 page 2)

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

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
RECEIVED

AUG 21 2014

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number 30-039-31247	*Pool Code 42289 / 13379	*Pool Name LYBROOK GALLUP / COUNSELORS GALLUP-DAKOTA
*Property Code 313513	*Property Name CHACO 2306-08L	*Well Number 199H
*GRID No. 120782	*Operator Name WPX ENERGY PRODUCTION, LLC	*Elevation 6832'

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
L	8	23N	6W		1436	SOUTH	231	WEST	RIO ARriba

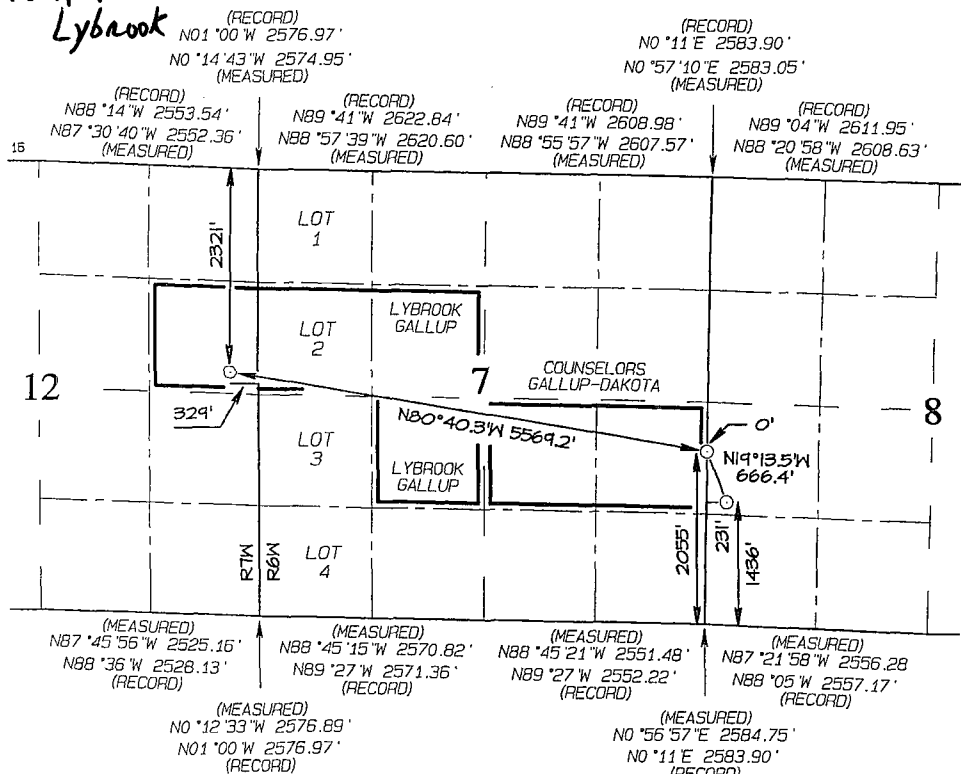
11 Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H	12	23N	7W		2321	NORTH	329	EAST	RIO ARriba

12 Dedicated Acres 240.50	SE/4 NE/4 (12) N/2 SE/4-NE/4 SW/4-S/2 NW/4 (7)	13 Joint or Infill	14 Consolidation Code	15 Order No.
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80 ac. Counselors
160.5 ac. Lybrook

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



END-OF-LATERAL
2321' FNL 329' FEL
SECTION 12, T23N, R7W
LAT: 36.240139°N
LONG: 107.519454°W
DATUM: NAD1927

LAT: 36.240153°N
LONG: 107.520060°W
DATUM: NAD1983

POINT-OF-ENTRY
2055' FSL 0' FEL
SECTION 7, T23N, R6W
LAT: 36.237856°N
LONG: 107.500784°W
DATUM: NAD1927

LAT: 36.237870°N
LONG: 107.501389°W
DATUM: NAD1983

SURFACE LOCATION
1436' FSL 231' FWL
SECTION 8, T23N, R6W
LAT: 36.236136°N
LONG: 107.500012°W
DATUM: NAD1927

LAT: 36.236149°N
LONG: 107.500617°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: Heather Riley Date: 8/28/14

Printed Name: Heather Riley

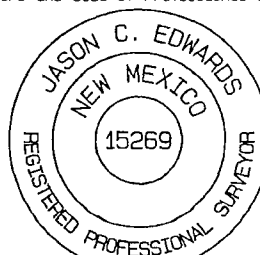
E-mail Address: heather.riley@wpenergy.com

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.

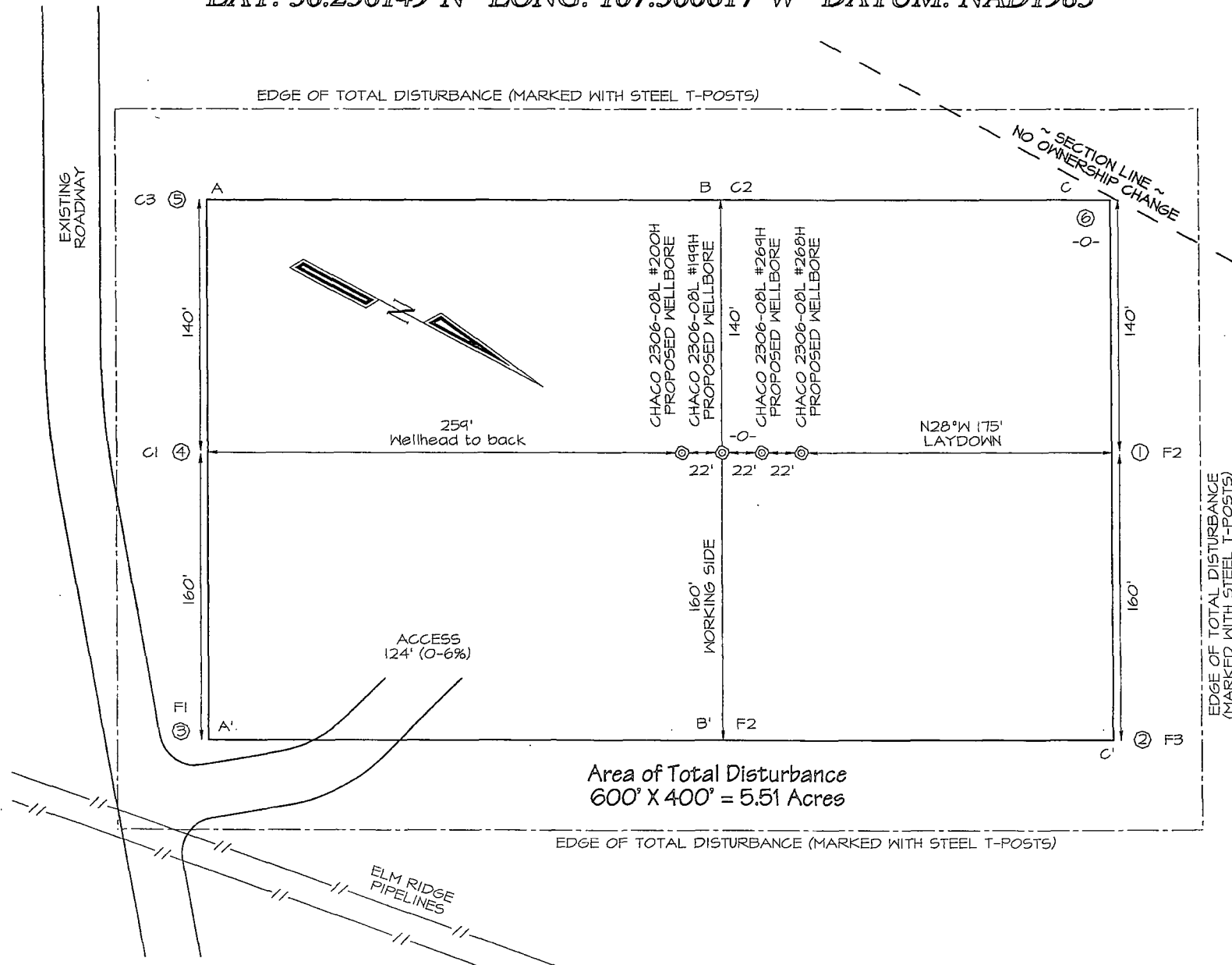
Date Revised: AUGUST 15, 2014
Survey Date: AUGUST 22, 2013

Signature and Seal of Professional Surveyor

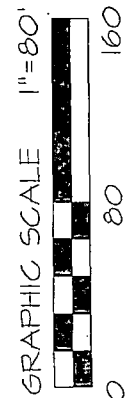


JASON C. EDWARDS
Certificate Number 15269

WPX ENERGY PRODUCTION, LLC CHACO 2306-08L #199H
 1436' FSL & 231' FWL, SECTION 8, T23N, R6W, NMPM
 RIO ARriba COUNTY, NEW MEXICO ELEVATION: 6832'
 LAT: 36.236149°N LONG: 107.500617°W DATUM: NAD1983



~ SURFACE OWNER ~
 Bureau of Land Management



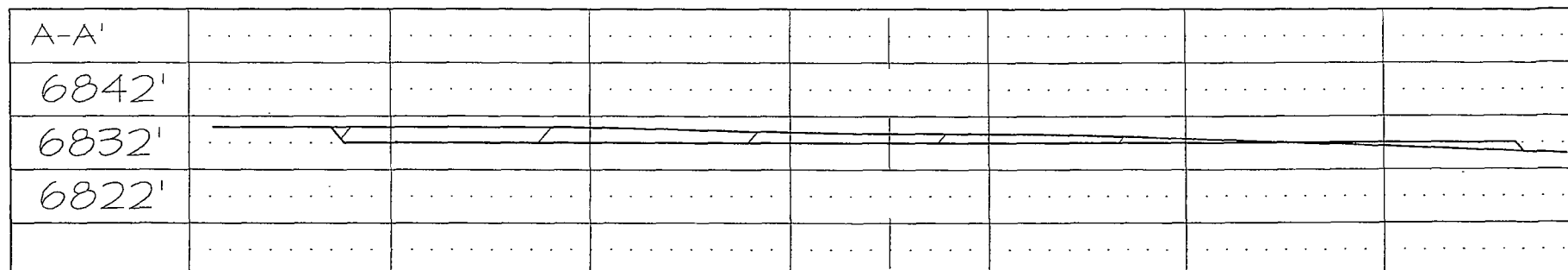
Steel T-Posts have been set to define the Edge of Disturbance limits which are 50' offset from the edge of the staked wellpad.

WPX ENERGY PRODUCTION, LLC CHACO 2306-08L #199H
 1436' FSL & 231' FWL, SECTION 8, T23N, R6W, NMPM
 RIO ARriba COUNTY, NEW MEXICO ELEVATION: 6832'

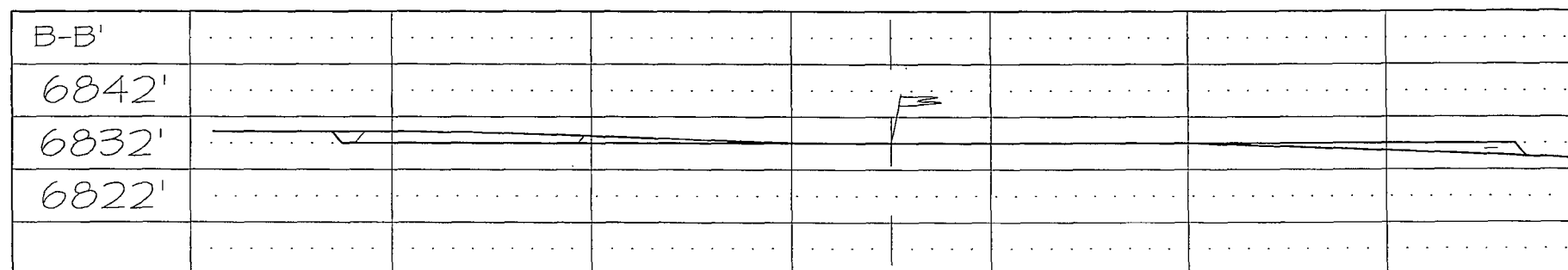
HORIZONTAL SCALE
 1"=40'

C/L

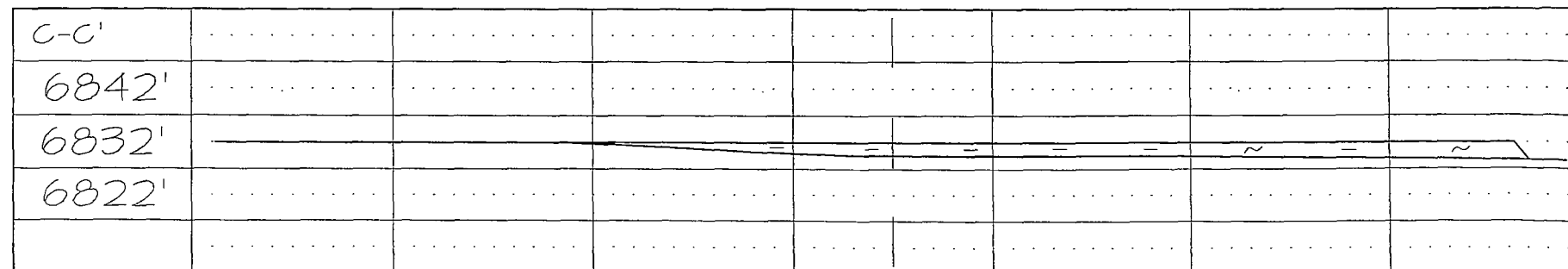
VERTICAL SCALE
 1"=30'



C/L



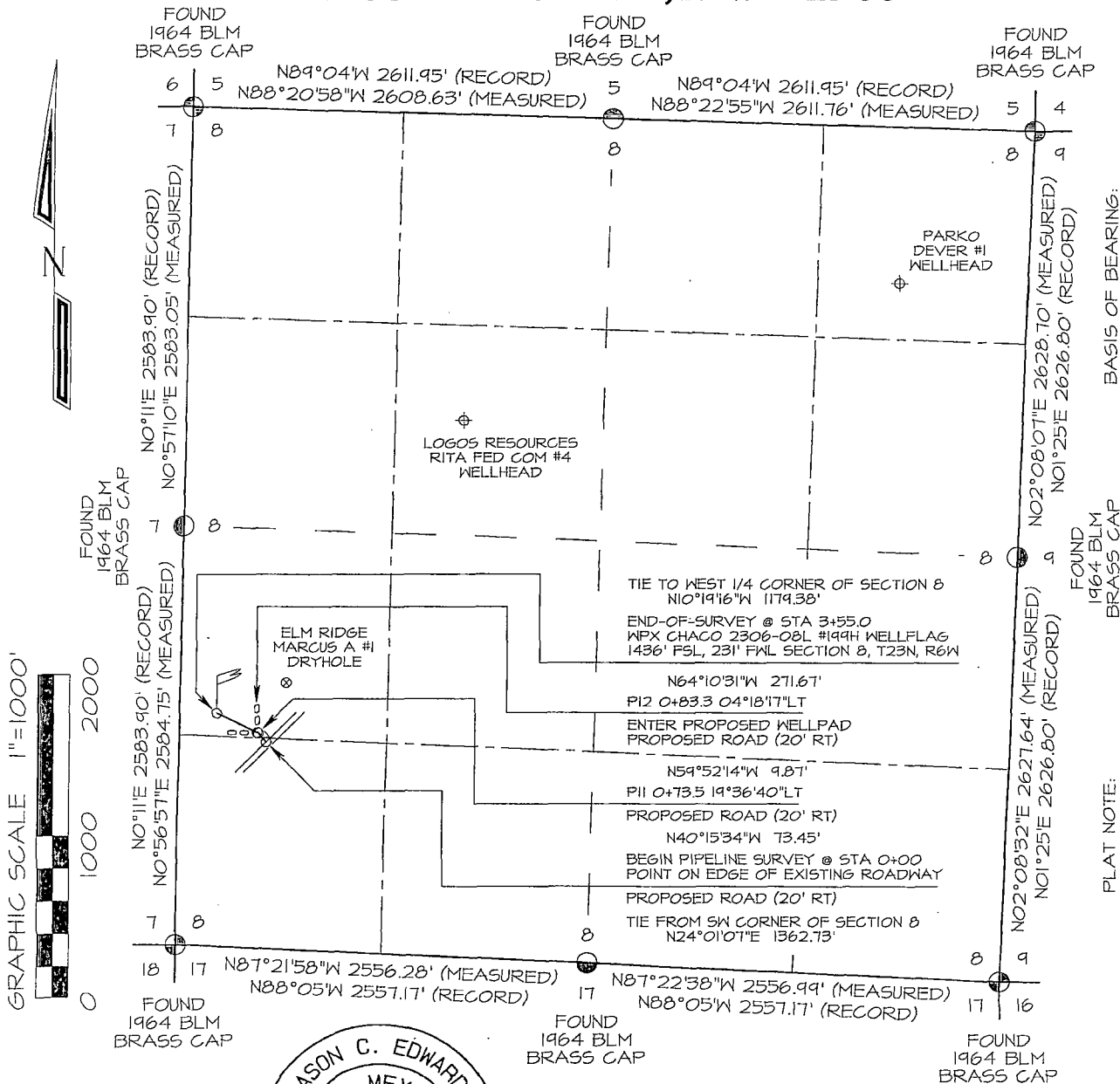
C/L



NCE SURVEYS IS NOT LIABLE FOR LOCATION OF UNDERGROUND UTILITIES OR PIPELINES.

CONTRACTOR SHOULD CONTACT ONE-CALL FOR LOCATION OF ANY MARKED OR UNMARKED UNDERGROUND UTILITIES OR PIPELINES ON WELLPAD AND/OR ACCESS ROAD AT LEAST TWO WORKING DAYS PRIOR TO CONSTRUCTION.

**WPX ENERGY PRODUCTION, LLC CHACO 2306-08L #199H
PROPOSED PIPELINE SURVEY LOCATED IN THE
W/2 SW/4 OF SECTION 8, T23N, R6W, NMPM
RIO ARriba COUNTY, NEW MEXICO**

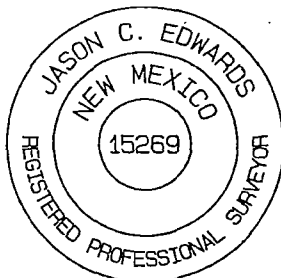


REAL-TIME KINEMATIC GPS SURVEY
SOLUTION OBTAINED FROM SATELLITES
TRACKED ON JANUARY 30, 2014 FROM
A REFERENCE STATION POSITIONED IN
SW/4 NW/4 OF SECTION 9, T23N, R6W

BASIS OF BEARING:

PLAT NOTE:

BEFORE ANY CONSTRUCTION BEGINS,
CONTRACTOR IS ADVISED TO CALL
ONE-CALL FOR LOCATION OF ANY
MARKED OR UNMARKED PIPELINES OR
CABLES IN THE AREA OF THE PROJECT



~ SURFACE OWNERSHIP ~ Bureau of Land Management	
0+00 TO 3+55.0	355.0 FT / 21.5 RODS

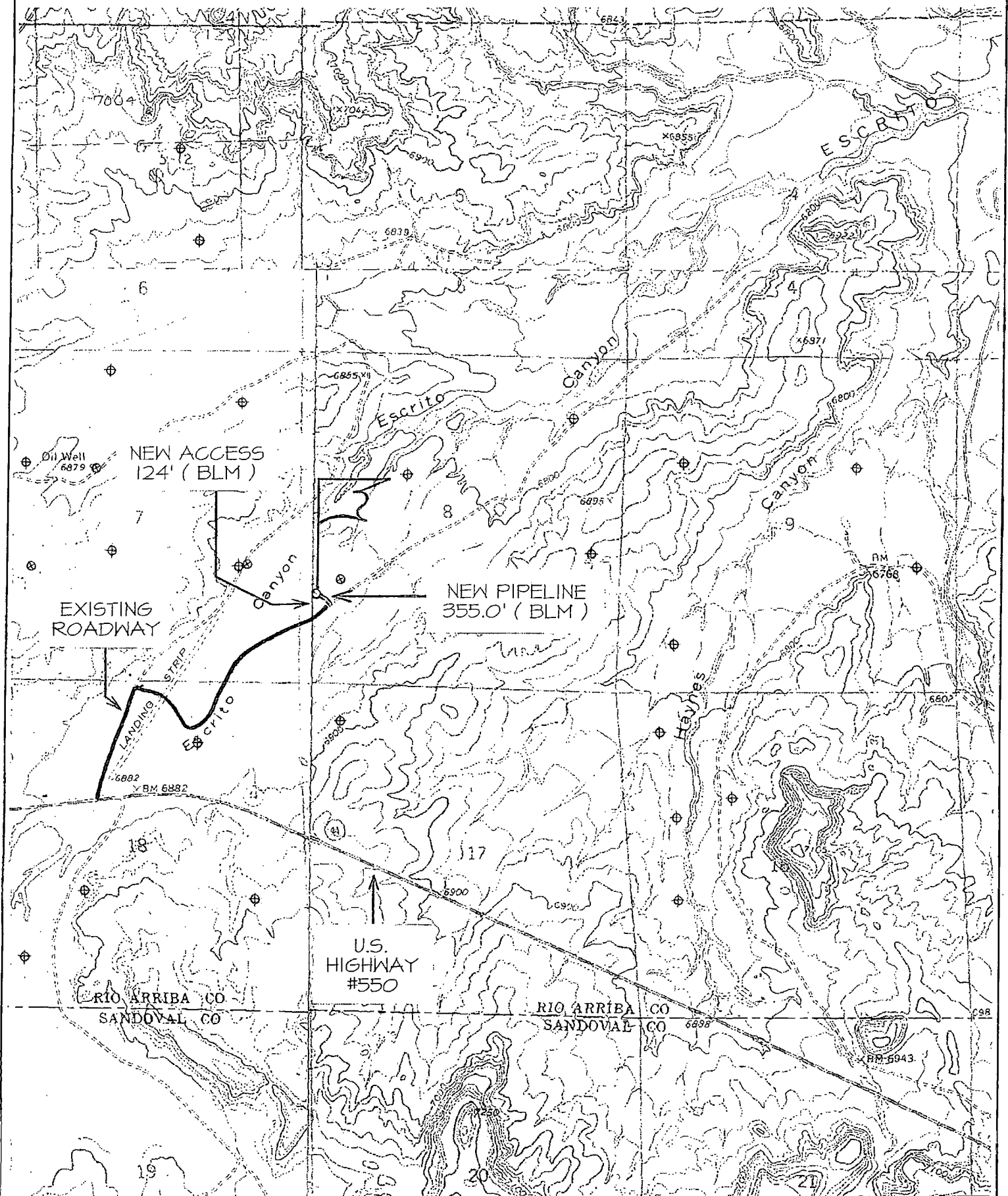
I, Jason C. Edwards, a registered Professional Surveyor under the laws of the State of New Mexico, hereby certify that this plat was prepared from field notes of an actual survey meeting the minimum requirements of the standards for easement surveys and is true and correct to the best of my knowledge and belief.

JASON C. EDWARDS Date: July 28, 2014
Jason C. Edwards, P.L.S.
New Mexico L.S. #15269

Prepared for: WPX ENERGY PRODUCTION P.O. BOX #640 AZTEC, NM 87410		Land Surveyor: Jason C. Edwards	CHECKED BY: JCE FILE NAME: 2366162
		Mailing Address: Post Office Box 6612 Farmington, NM 87499 Business Address: 111 East Pinon Street Farmington, NM 87402 (505) 325-2654 (Office) (505) 326-5650 (Fax)	
SURVEYS, INC.			SHEET 4 OF 5

WPX ENERGY PRODUCTION, LLC CHACO 2306-08L #199H

1436' FSL & 231' FWL, SECTION 8, T23N, R6W, N.M.P.M.
RIO ARriba COUNTY, NEW MEXICO



TOPO NAMES: LYBROOK & COUNSELOR

⊕ PRODUCING WELL

⊗ PLUGGED & ABANDONED WELL

WPX ENERGY

Operations Plan

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

<u>DATE:</u>	8/1//2014	<u>FIELD:</u>	Lybrook (Gallup)
<u>WELL NAME:</u>	Chaco 2306-08L #199H	<u>SURFACE:</u>	BLM
<u>SH Location:</u>	NWSW Sec 8 -23N -06W	<u>ELEVATION:</u>	6832' GR
<u>BH Location:</u>	SENE Sec 12 -23N -07W Rio Arriba Co, NM	<u>MINERALS:</u>	BLM
<u>MEASURED DEPTH:</u>	11,546'	<u>LEASE #:</u>	NMSF 078362

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

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

Name	MD	TVD	Name	MD	TVD
Ojo Alamo	1337	1329	Point Lookout	4272	4201
Kirtland	1655	1640	Mancos	4496	4420
Picture Cliffs	1952	1930	Kickoff Point	4819	4736
Lewis	2067	2043	Top Target	5656	5422
Chacra	2399	2368	Landing Point	5976	5506
Cliff House	3502	3447	Base Target	5976	5506
Menefee	3546	3490			
			TD	11546	5387

- 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 +/- 4,901' (MD) / 4,839' (TVD). Curve portion of wellbore will be drilled and landed at +/- 90 deg. at +/- 5,976' (MD) / 5,506' (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 +/- 11,546' (MD) / 5,470' (TVD). Will run 4-1/2 in. Production Liner from +/- 5,826 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:

<u>CASING TYPE</u>	<u>OH SIZE (IN)</u>	<u>DEPTH (MD) (FT)</u>	<u>CASING SIZE (IN)</u>	<u>WEIGHT(LB)</u>	<u>GRADE</u>
Surface	12.25"	400'+	9.625"	36#	J-55
Intermediate	8.75"	5,976'	7"	23#	K-55
Prod. Liner	6.125"	5,826' - 11,546'	4-1/2"	11.6#	N-80
Tie-Back String	N/A	Surf. - 5851'	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., 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 + (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 +/- 5,526 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 (~5,800' 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 5,976 ft. MD) with a Liner Hanger and pack-off assembly then cemented to +/- 300 ft above the liner hanger. TOL will be +/- 5,826 ft. (MD) +/- 78 degree angle. TOC: +/- 5,526 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.



Chaco 2306-08L #199H R2 mdv 22Jul14 Proposal Geodetic Report



(Def Plan)

Report Date: July 22, 2014 - 02:21 PM
Client: WPX Energy
Field: NM, Rio Arriba (NAD 27 CZ)
Structure / Slot: WPX 8-23N-6W (Chaco 2306-08L Pad) / Chaco 2306-08L #199H
Well: Chaco 2306-08L #199H
Borehole: Original Hole
UWI / API#: Unknown / Unknown
Survey Name: Chaco 2306-08L #199H R2 mdv 22Jul14
Survey Date: June 18, 2014
Tort / AHD / DDI / ERD Ratio: 112.233 * / 6969.363 ft / 6.215 / 1.266
Coordinate Reference System: NAD27 New Mexico State Plane, Central Zone, US Feet
Location Lat / Long: N 36° 14' 10.10400", W 107° 30' 0.03600"
Location Grid N/E Y/X: N 1907542.195 ftUS, E 131356.683 ftUS
CRS Grid Convergence Angle: -0.7390 *
Grid Scale Factor: 1.00005551
Version / Patch: 2.7.1043.0

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 284.251 * (True North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: KB
TVD Reference Elevation: 6846.000 ft above MSL
Seabed / Ground Elevation: 6832.000 ft above MSL
Magnetic Declination: 9.435 *
Total Gravity Field Strength: 998.5056mgn (9.80665 Based)
Gravity Model: GARM
Total Magnetic Field Strength: 50101.311 nT
Magnetic Dip Angle: 63.020 *
Declination Date: June 18, 2014
Magnetic Declination Model: BGGM 2014
North Reference: True North
Grid Convergence Used: 0.0000 *
Total Corr Mag North->True North: 9.4353 *
Local Coord Referenced To: Well Head

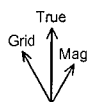
Comments	MD (ft)	Incl (°)	Azim True (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (*/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S * ° ' ")	Longitude (E/W * ° ' ")
Surface	0.00	0.00	41.89	0.00	0.00	0.00	0.00	N/A	1907542.20	131356.68	N 36 14 10.10	W 107 30 0.04
Build 2"/100'	100.00	0.00	41.89	100.00	0.00	0.00	0.00	0.00	1907542.20	131356.68	N 36 14 10.10	W 107 30 0.04
	200.00	0.00	41.89	200.00	0.00	0.00	0.00	0.00	1907542.20	131356.68	N 36 14 10.10	W 107 30 0.04
	300.00	0.00	41.89	300.00	0.00	0.00	0.00	0.00	1907542.20	131356.68	N 36 14 10.10	W 107 30 0.04
	400.00	0.00	41.89	400.00	0.00	0.00	0.00	0.00	1907542.20	131356.68	N 36 14 10.10	W 107 30 0.04
	500.00	0.00	41.89	500.00	0.00	0.00	0.00	0.00	1907542.20	131356.68	N 36 14 10.10	W 107 30 0.04
	550.00	0.00	41.89	550.00	0.00	0.00	0.00	0.00	1907542.20	131356.68	N 36 14 10.10	W 107 30 0.04
	600.00	1.00	41.89	600.00	-0.20	0.32	0.29	2.00	1907542.52	131356.98	N 36 14 10.11	W 107 30 0.03
	700.00	3.00	41.89	699.93	-1.82	2.92	2.82	2.00	1907545.08	131359.34	N 36 14 10.13	W 107 30 0.00
	800.00	5.00	41.89	799.68	-5.06	8.12	7.28	2.00	1907550.22	131364.07	N 36 14 10.18	W 107 29 59.95
	900.00	7.00	41.89	899.13	-9.91	15.90	14.26	2.00	1907557.91	131371.14	N 36 14 10.26	W 107 29 59.86
Hold 10.5" INC	1000.00	9.00	41.89	998.15	-16.36	26.26	23.55	2.00	1907568.15	131380.57	N 36 14 10.36	W 107 29 59.75
	1075.21	10.50	41.89	1072.27	-22.27	35.74	32.05	2.00	1907577.52	131389.20	N 36 14 10.46	W 107 29 59.64
	1100.00	10.50	41.89	1096.65	-24.37	39.10	35.07	0.00	1907580.85	131392.26	N 36 14 10.49	W 107 29 59.61
	1200.00	10.50	41.89	1194.97	-32.82	52.68	47.24	0.00	1907594.26	131404.61	N 36 14 10.62	W 107 29 59.46
	1300.00	10.50	41.89	1293.30	-41.28	66.25	59.42	0.00	1907607.68	131416.95	N 36 14 10.76	W 107 29 59.31
	1400.00	10.50	41.89	1391.62	-49.74	79.82	71.59	0.00	1907621.09	131429.30	N 36 14 10.89	W 107 29 59.16
	1500.00	10.50	41.89	1489.94	-58.19	93.39	83.76	0.00	1907634.50	131441.65	N 36 14 11.03	W 107 29 59.01
	1600.00	10.50	41.89	1588.27	-66.65	106.96	95.93	0.00	1907647.92	131453.99	N 36 14 11.16	W 107 29 58.87
	1700.00	10.50	41.89	1686.59	-75.11	120.54	108.11	0.00	1907661.33	131466.34	N 36 14 11.30	W 107 29 58.72
	1800.00	10.50	41.89	1784.92	-83.56	134.11	120.28	0.00	1907674.75	131478.69	N 36 14 11.43	W 107 29 58.57
	1900.00	10.50	41.89	1883.24	-92.02	147.68	132.45	0.00	1907688.16	131491.03	N 36 14 11.56	W 107 29 58.42
	2000.00	10.50	41.89	1981.56	-100.48	161.25	144.62	0.00	1907701.58	131503.38	N 36 14 11.70	W 107 29 58.27
	2100.00	10.50	41.89	2079.89	-108.93	174.82	156.80	0.00	1907714.99	131515.73	N 36 14 11.83	W 107 29 58.12
	2200.00	10.50	41.89	2178.21	-117.39	188.39	168.97	0.00	1907728.41	131528.08	N 36 14 11.97	W 107 29 57.97
	2300.00	10.50	41.89	2276.54	-125.85	201.97	181.14	0.00	1907741.82	131540.42	N 36 14 12.10	W 107 29 57.82
	2400.00	10.50	41.89	2374.86	-134.30	215.54	193.31	0.00	1907755.23	131552.77	N 36 14 12.24	W 107 29 57.68
	2500.00	10.50	41.89	2473.19	-142.76	229.11	205.48	0.00	1907768.65	131565.12	N 36 14 12.37	W 107 29 57.53
	2600.00	10.50	41.89	2571.51	-151.22	242.68	217.66	0.00	1907782.06	131577.46	N 36 14 12.50	W 107 29 57.38
	2700.00	10.50	41.89	2669.83	-159.67	256.25	229.83	0.00	1907795.48	131589.81	N 36 14 12.64	W 107 29 57.23
	2800.00	10.50	41.89	2768.16	-168.13	269.83	242.00	0.00	1907808.89	131602.16	N 36 14 12.77	W 107 29 57.08
	2900.00	10.50	41.89	2866.48	-176.59	283.40	254.17	0.00	1907822.31	131614.50	N 36 14 12.91	W 107 29 56.93
	3000.00	10.50	41.89	2964.81	-185.04	296.97	266.35	0.00	1907835.72	131626.85	N 36 14 13.04	W 107 29 56.78
	3100.00	10.50	41.89	3063.13	-193.50	310.54	278.52	0.00	1907849.13	131639.20	N 36 14 13.17	W 107 29 56.64
	3200.00	10.50	41.89	3161.45	-201.96	324.11	290.69	0.00	1907862.55	131651.55	N 36 14 13.31	W 107 29 56.49
	3300.00	10.50	41.89	3259.78	-210.41	337.68	302.86	0.00	1907875.96	131663.89	N 36 14 13.44	W 107 29 56.34
	3400.00	10.50	41.89	3358.10	-218.87	351.26	315.04	0.00	1907889.38	131676.24	N 36 14 13.58	W 107 29 56.19
	3500.00	10.50	41.89	3456.43	-227.33	364.83	327.21	0.00	1907902.79	131688.59	N 36 14 13.71	W 107 29 56.04
	3600.00	10.50	41.89	3554.75	-235.78	378.40	339.38	0.00	1907916.21	131700.93	N 36 14 13.85	W 107 29 55.89
	3700.00	10.50	41.89	3653.08	-244.24	391.97	351.55	0.00	1907929.62	131713.28	N 36 14 13.98	W 107 29 55.74
	3800.00	10.50	41.89	3751.40	-252.70	405.54	363.72	0.00	1907943.04	131725.63	N 36 14 14.11	W 107 29 55.60
3900.00	10.50	41.89	3849.72	-261.15	419.11	375.90	0.00	1907956.45	131737.97	N 36 14 14.25	W 107 29 55.45	
4000.00	10.50	41.89	3948.05	-269.61	432.69	388.07	0.00	1907969.86	131750.32	N 36 14 14.38	W 107 29 55.30	
4100.00	10.50	41.89	4046.37	-278.07	446.26	400.24	0.00	1907983.28	131762.67	N 36 14 14.52	W 107 29 55.15	
4200.00	10.50	41.89	4144.70	-286.53	459.83	412.41	0.00	1907996.69	131775.02	N 36 14 14.65	W 107 29 55.00	
4300.00	10.50	41.89	4243.02	-294.98	473.40	424.59	0.00	1908010.11	131787.36	N 36 14 14.79	W 107 29 54.85	
4400.00	10.50	41.89	4341.34	-303.44	486.97	436.76	0.00	1908023.52	131799.71	N 36 14 14.92	W 107 29 54.70	
Drop 2"/100'	4500.00	10.50	41.89	4439.67	-311.90	500.55	448.93	0.00	1908036.94	131812.06	N 36 14 15.05	W 107 29 54.56
	4576.04	10.50	41.89	4514.43	-318.33	510.86	458.19	0.00	1908047.14	131824.44	N 36 14 15.16	W 107 29 54.44
	4600.00	8.56	41.89	4538.06	-320.17	513.82	460.84	8.00	1908050.06	131824.14	N 36 14 15.19	W 107 29 54.41
Hold Vertical	4700.00	0.59	41.89	4637.66	-323.88	519.77	466.17	8.00	1908055.94	131829.55	N 36 14 15.24	W 107 29 54.35
	4707.34	0.00	41.89	4645.00	-323.89	519.80	466.20	8.00	1908055.97	131829.57	N 36 14 15.24	W 107 29 54.35
	4800.00	0.00	41.89	4737.66	-323.89	519.80	466.20	0.00	1908055.97	131829.57	N 36 14 15.24	W 107 29 54.35
Build 9"/100'	4900.00	0.00	41.89	4837.66	-323.89	519.80	466.20	0.00	1908055.97	131829.57	N 36 14 15.24	W 107 29 54.35
	4901.81	0.00	41.89	4839.47	-323.89	519.80	466.20	0.00	1908055.97	131829.57	N 36 14 15.24	W 107 29 54.35
	5000.00	8.84	278.59	4937.27	-316.37	520.93	458.73	9.00	1908057.19	131822.12	N 36 14 15.26	W 107 29 54.44
5100.00	17.84	278.59	5034.47	-293.44	524.37	435.94	9.00	1908060.93	131799.38	N 36 14 15.29	W 107 29 54.71	
5200.00	26.84	278.59	5126.88	-255.66	530.05	398.40	9.00	1908067.09	131761.91	N 36 14 15.35	W 107 29 55.17	
5300.00	35.84	278.59	5212.20	-203.96	537.81	347.03	9.00	1908075.52	131710.64	N 36 14 15.42	W 107 29 55.80	
5400.00	44.84	278.59	5288.35	-139.61	547.48	283.10	9.00	1908086.00	131646.83	N 36 14 15.52	W 107 29 56.58	
5500.00	53.84	278.59	5353.44	-64.20	558.80	208.17	9.00	1908098.29	131572.05	N 36 14 15.63	W 107 29 57.50	
Hold 60" INC	5568.52	60.00	278.59	5390.82	-7.10	567.38	151.43	9.00	1908107.60	131515.42	N 36 14 15.71	W 107 29 58.19
	5600.00	60.00	278.59	5406.58	20.04	571.45	124.47	0.00	1908112.02	131488.52	N 36 14 15.76	W 107 29 58.52
Build 9"/100' to Landing	5628.64	60.00	278.59	5420.88	44.72	575.16	99.95	0.00	1908116.05	131464.04	N 36 14 15.79	W 107 29 58.82
	5700.00	66.43	278.59	5453.02	108.08	584.67	36.99	9.00	1908126.37	131401.21	N 36 14 15.89	W 107 29 59.58
	5800.00	75.43	278.59	5485.66	202.03	598.78	-56.36	9.00	1908141.68	131308.04	N 36 14 16.03	W 107 30 0.72
	5900.00	84.43	278.59	5503.14	299.91	613.47	-153.62	9.00	1908157.63	131210.98	N 36 14 16.17	W 107 30 1.91
Landing Point, Hold to TD	5975.53	91.22	278.59	5506.00	374.97	624.74	-228.20	9.00	1908169.86	131136.55	N 36 14 16.28	W 107 30 2.82
	6000.00	91.22	278.59	5505.48	399.32	628.39	-252.39	0.00	1908173.83	131112.40	N 36 14 16.32	W 107 30 3.12
	6100.00	91.22	278.59	5503.34	498.81	643.33	-351.25	0.00	1908190.03	131013.74	N 36 14 16.47	W 107 30 4.32
	6200.00	91.22	278.59	5501.20	598.30	658.26	-450.10	0.00	1908206.24	130915.08	N 36 14 16.61	W 107 30 5.53
	6300.00	91.22	278.59	5499.07	697.79	673.19	-548.9					

Comments	MD	Incl	Azim True	TVD	VSEC	NS	EW	DLS	Northing	Latitude	Longitude	(E/W...)
6800.00	278.50	91.22	5488.35	1195.23	747.86	-1043.24	-1043.24	1908303.49	13023.12	(N/S...)	(E/W...)	
6900.00	278.50	91.22	5486.25	1294.72	762.79	-1142.09	-1142.09	1908319.69	13022.46	(N/S...)	(E/W...)	
7000.00	278.50	91.22	5484.11	1394.21	777.72	-1240.95	-1240.95	1908335.90	130125.80	(N/S...)	(E/W...)	
7100.00	278.50	91.22	5481.98	1493.70	792.66	-1339.80	-1339.80	1908352.11	130027.14	(N/S...)	(E/W...)	
7200.00	278.50	91.22	5479.84	1593.19	807.59	-1438.66	-1438.66	1908368.32	129928.48	(N/S...)	(E/W...)	
7300.00	278.50	91.22	5477.70	1692.68	822.52	-1537.52	-1537.52	1908384.52	129829.82	(N/S...)	(E/W...)	
7400.00	278.50	91.22	5475.57	1792.17	837.45	-1636.37	-1636.37	1908400.73	129731.16	(N/S...)	(E/W...)	
7500.00	278.50	91.22	5473.43	1891.66	852.39	-1735.23	-1735.23	1908416.94	129632.50	(N/S...)	(E/W...)	
7600.00	278.50	91.22	5471.29	1991.15	867.32	-1834.08	-1834.08	1908433.15	129533.84	(N/S...)	(E/W...)	
7700.00	278.50	91.22	5469.16	2090.44	882.25	-1932.94	-1932.94	1908449.35	129435.18	(N/S...)	(E/W...)	
7800.00	278.50	91.22	5467.02	2190.13	897.18	-2031.79	-2031.79	1908465.56	129336.52	(N/S...)	(E/W...)	
7900.00	278.50	91.22	5464.89	2289.62	912.12	-2130.65	-2130.65	1908481.77	129237.86	(N/S...)	(E/W...)	
8000.00	278.50	91.22	5462.75	2389.11	927.05	-2229.51	-2229.51	1908497.97	129139.20	(N/S...)	(E/W...)	
8100.00	278.50	91.22	5460.61	2488.60	941.98	-2328.36	-2328.36	1908514.18	129040.54	(N/S...)	(E/W...)	
8200.00	278.50	91.22	5458.48	2588.09	956.92	-2427.22	-2427.22	1908530.39	128941.88	(N/S...)	(E/W...)	
8300.00	278.50	91.22	5456.34	2687.58	971.85	-2526.07	-2526.07	1908546.60	128843.22	(N/S...)	(E/W...)	
8400.00	278.50	91.22	5454.20	2787.07	986.78	-2624.93	-2624.93	1908562.80	128744.56	(N/S...)	(E/W...)	
8500.00	278.50	91.22	5452.07	2886.56	1001.71	-2723.78	-2723.78	1908578.01	128645.90	(N/S...)	(E/W...)	
8600.00	278.50	91.22	5449.93	2986.05	1016.65	-2822.64	-2822.64	1908593.22	128547.24	(N/S...)	(E/W...)	
8700.00	278.50	91.22	5447.79	3085.54	1031.58	-2921.50	-2921.50	1908611.43	128448.58	(N/S...)	(E/W...)	
8800.00	278.50	91.22	5445.66	3185.03	1046.51	-3020.35	-3020.35	1908627.63	128349.92	(N/S...)	(E/W...)	
8900.00	278.50	91.22	5443.52	3284.51	1061.45	-3119.21	-3119.21	1908643.84	128251.26	(N/S...)	(E/W...)	
9000.00	278.50	91.22	5441.39	3384.01	1076.38	-3218.06	-3218.06	1908660.05	128152.60	(N/S...)	(E/W...)	
9100.00	278.50	91.22	5439.25	3483.49	1091.31	-3316.92	-3316.92	1908676.26	128053.94	(N/S...)	(E/W...)	
9200.00	278.50	91.22	5437.11	3582.98	1106.24	-3415.77	-3415.77	1908692.46	127955.28	(N/S...)	(E/W...)	
9300.00	278.50	91.22	5434.98	3682.47	1121.18	-3514.63	-3514.63	1908708.67	127856.62	(N/S...)	(E/W...)	
9400.00	278.50	91.22	5432.84	3781.96	1136.11	-3613.49	-3613.49	1908724.88	127757.96	(N/S...)	(E/W...)	
9500.00	278.50	91.22	5430.70	3881.45	1151.04	-3712.34	-3712.34	1908741.09	127659.30	(N/S...)	(E/W...)	
9600.00	278.50	91.22	5428.57	3980.94	1165.98	-3811.20	-3811.20	1908757.29	127560.64	(N/S...)	(E/W...)	
9700.00	278.50	91.22	5426.43	4080.43	1180.91	-3910.05	-3910.05	1908773.50	127461.98	(N/S...)	(E/W...)	
9800.00	278.50	91.22	5424.29	4179.92	1195.84	-4008.91	-4008.91	1908789.71	127363.32	(N/S...)	(E/W...)	
9900.00	278.50	91.22	5422.16	4279.41	1210.77	-4107.76	-4107.76	1908805.92	127264.66	(N/S...)	(E/W...)	
10000.00	278.50	91.22	5420.02	4378.90	1225.71	-4206.62	-4206.62	1908822.12	127166.00	(N/S...)	(E/W...)	
10100.00	278.50	91.22	5417.88	4478.39	1240.64	-4305.48	-4305.48	1908838.33	127067.34	(N/S...)	(E/W...)	
10200.00	278.50	91.22	5415.75	4577.88	1255.57	-4404.33	-4404.33	1908854.54	126968.68	(N/S...)	(E/W...)	
10300.00	278.50	91.22	5413.61	4677.37	1270.50	-4503.19	-4503.19	1908870.74	126870.02	(N/S...)	(E/W...)	
10400.00	278.50	91.22	5411.48	4776.86	1285.44	-4602.04	-4602.04	1908886.95	126771.36	(N/S...)	(E/W...)	
10500.00	278.50	91.22	5409.34	4876.35	1300.37	-4700.90	-4700.90	1908903.16	126672.70	(N/S...)	(E/W...)	
10600.00	278.50	91.22	5407.20	4975.84	1315.30	-4799.75	-4799.75	1908919.37	126574.04	(N/S...)	(E/W...)	
10700.00	278.50	91.22	5405.07	5075.33	1330.24	-4898.61	-4898.61	1908935.57	126475.38	(N/S...)	(E/W...)	
10800.00	278.50	91.22	5402.93	5174.82	1345.17	-4997.47	-4997.47	1908951.78	126376.72	(N/S...)	(E/W...)	
10900.00	278.50	91.22	5400.79	5274.31	1360.10	-5096.32	-5096.32	1908967.99	126278.06	(N/S...)	(E/W...)	
11000.00	278.50	91.22	5398.66	5373.80	1375.03	-5195.18	-5195.18	1908984.20	126179.40	(N/S...)	(E/W...)	
11100.00	278.50	91.22	5396.52	5473.29	1389.97	-5294.03	-5294.03	1909000.40	126080.73	(N/S...)	(E/W...)	
11200.00	278.50	91.22	5394.38	5572.78	1404.90	-5392.89	-5392.89	1909016.61	125982.07	(N/S...)	(E/W...)	
11300.00	278.50	91.22	5392.25	5672.26	1419.83	-5491.74	-5491.74	1909032.82	125883.41	(N/S...)	(E/W...)	
11400.00	278.50	91.22	5390.11	5771.75	1434.77	-5590.60	-5590.60	1909049.03	125784.75	(N/S...)	(E/W...)	
11500.00	278.50	91.22	5387.98	5871.24	1449.70	-5689.46	-5689.46	1909065.23	125686.09	(N/S...)	(E/W...)	
11545.64	278.50	91.22	5387.00	5916.65	1456.51	-5734.57	-5734.57	1909072.63	125641.06	(N/S...)	(E/W...)	
Survey Type: Def Plan												
Survey Error Model: ISCSWA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma												
Description												
Part												
MD From (ft)												
MD To (ft)												
EOU Freq (ft)												
Hole Size (in)												
Casing Diameter (in)												
Survey Tool Type												
Borehole / Survey												
SLB_MWWD-STD-Depth Only												
SLB_MWWD-STD												
#199H R2 mdy 22Jul14												
Original Hole / Chaco 2306-08L												
#199H R2 mdy 22Jul14												
Original Hole / Chaco 2306-08L												

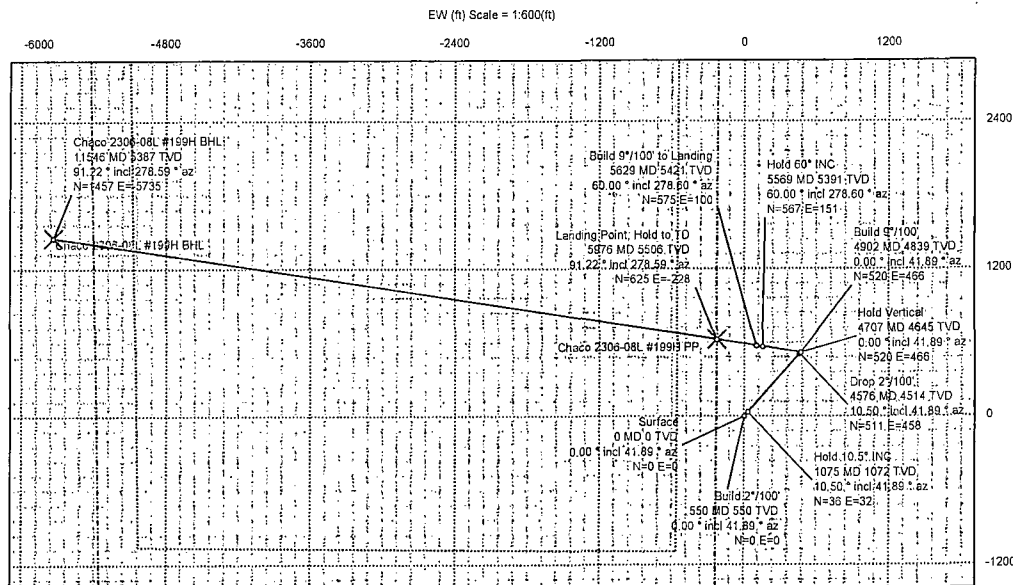
Borehole:	Well:	Field:	Structure:
Original Hole	Chaco 2306-08L #199H	NM, Rio Arriba (NAD 27 CZ)	8-23N-6W (Chaco 2306-08L Pad)

Gravity & Magnetic Parameters	Surface Location	Miscellaneous
Model: BGGM 2014 Dip: 63.02° Date: 18-Jun-2014	NAD27 New Mexico State Plane, Central Zone, US Feet	Slot: Chaco 2306-08L #199H TVD Ref: KB(6846ft above MSL)
MagDec: 9.435° FS: 50101.311nT Gravity FS: 998.506mgn (9.80665 Based)	Lat: N 36 14 10.10 Northing: 1907542.196ft US 131356.683ft S	Plan: Chaco 2306-08L #199H R2 mdiv 22Jul14
	Lon: W 107 30 0.04 Easting: 100005551	
	Grid Conv: -0.739° Scale Fact: 1.00005551	

Proposal



True North
Tot Corr (M-T 9.435°)
Mag Dec (9.435°)
Grid Conv (-0.739°)



Surface Location								
Northing: 1907542.196			Easting: 131356.683		Latitude: N 36 14 10.10		Longitude: W 107 30 0.04	
					VSec Azimuth: 284.251			
Target Description		Grid Coord					Local Coord	
Target Name	Latitude	Longitude	Northing	Easting	TVD	VSec	N(+)/S(-)	E(+)/W(-)
Chaco 2306-08L #199H BHL	N 36 14 24.50	W 107 31 10.04	1909072.63	125641.07	5387.00	5916.65	1456.51	-5734.57
Chaco 2306-08L #199H PP	N 36 14 16.28	W 107 30 2.82	1908169.86	131136.55	5506.00	374.97	624.74	-228.20
Chaco 2306-08L Pad Sec 7 330' Setback	N 36 14 10.46	W 107 30 0.29	1907578.87	131336.51	6846.00	28.97	36.40	-20.65
Chaco 2306-08L Pad Sec 7	N 36 14 10.46	W 107 30 0.29	1907578.87	131336.51	6846.00	28.97	36.40	-20.65

Critical Points								
Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
Surface	0.00	0.00	41.89	0.00	0.00	0.00	0.00	
Build 2°/100°	550.00	0.00	41.89	550.00	0.00	0.00	0.00	0.00
Hold 10.5° INC	1075.21	10.50	41.89	1072.27	-22.27	35.74	32.05	2.00
Drop 2°/100°	4576.04	10.50	41.89	4514.43	-318.33	510.86	458.19	0.00
Hold Vertical	4707.34	0.00	41.89	4645.00	-323.89	519.80	466.20	8.00
Build 9°/100°	4901.81	0.00	41.89	4839.47	-323.89	519.80	466.20	0.00
Hold 60° INC	5568.52	60.00	278.59	5390.82	-7.10	567.38	151.43	9.00
Build 9°/100° to Landing	5626.64	60.00	278.59	5420.88	44.72	575.15	99.95	0.00
Landing Point, Hold to TD	5975.53	91.22	278.59	5506.00	374.97	624.74	-228.20	9.00
Chaco 2306-08L #199H BHL	11545.64	91.22	278.59	5387.00	5916.65	1456.51	-5734.57	0.00

