

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: 7/16/14

Well information:

API WELL #	Well Name	Well #	Operator Name	Type	Stat	County	Surf_Owner	UL	Sec	Twp	N/S	Rng	W/E
30-039-31191-00-00	CHACO 2306 07L	183H	WPX ENERGY PRODUCTION, LLC	O	N	Rio Arriba	F	L	7	23	N	6	W

Application Type:

☐ P&A ☒ Drilling/Casing Change ☐ Recomplete/DHC
☒ Location Change ☒ Other: Project area enlarged

Conditions of Approval:

Notify NMOCD 24hrs prior to beginning operations

Hold C104 for directional survey, as drilled plat, NSP and NSL

NMOCD Approved by Signature

7-17-14
Date

//

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

JUL 16 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.

5. Lease-Serial No.
NMSF-078359

6. If Indian, Allottee or Tribe Name

7. If Unit of CA/Agreement, Name and/or No.
NMNM 132829(CA)

8. Well Name and No.
Chaco 2306-07L #183H

9. API Well No.
30-039-31490 30-039-3191

10. Field and Pool or Exploratory Area
Lybrook Gallup

11. Country or Parish, State
Rio Arriba County, NM

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other

2. Name of Operator
WPX Energy Production, LLC

3a. Address
PO Box 640 Aztec, NM 87410

3b. Phone No. (include area code)
505-333-1808

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
Sur: 1935' FSL & 301' FWL, sec 7, T23N, R6W – BHL: 2295' FSL & 214' FEL, Sec 11, T23N, R7W

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

CONDITIONS OF APPROVAL

OIL CONS. DIV DIST. 3

Adhere to previously issued stipulations

JUL 23 2014

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)

Larry Higgins

Title Regulatory Specialist

Signature

Date 7/16/2014

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

William Tambakou

Petroleum
Title Engineer

Date 7/17/2014

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 FFO

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)

NMOCDA

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
OIL CONS. DIV DIST. 3

JUL 23 2014

JUL 16 2014

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number 30-039-31190 31191	*Pool Code 42289	*Pool Name LYBROOK GALLUP
*Property Code 400816	*Property Name CHACO 2306-07L	*Well Number 183H
*GRID No. 120782	*Operator Name WPX ENERGY PRODUCTION, LLC	*Elevation 6950'

10 Surface Location

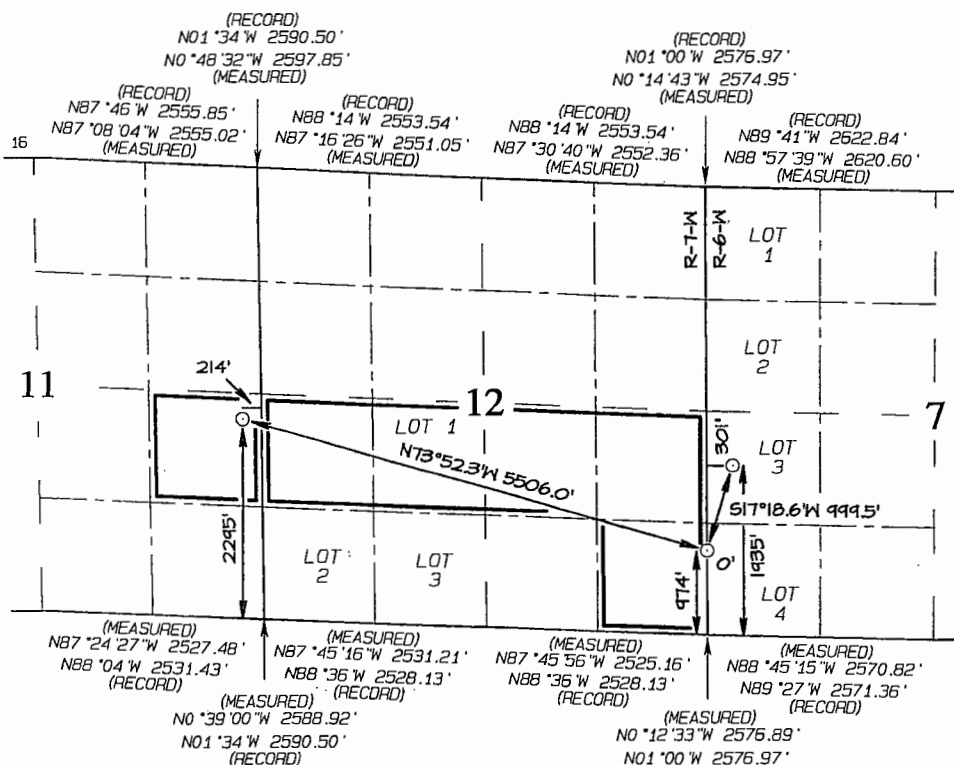
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
L	7	23N	6W	3	1935	SOUTH	301	WEST	RIO ARriba

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
I	11	23N	7W		2295	SOUTH	214	EAST	RIO ARriba

12 Dedicated Acres 237.61 Acres NE/4 SE/4 (11) N/2 SE/4, SE/4 SE/4, N/2 SW/4 (12)	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



END-OF-LATERAL
2295' FSL 214' FEL
SECTION 11, T23N, R7W
LAT: 36.23902°N
LONG: 107.53623°W
DATUM: NAD1927

LAT: 36.23904°N
LONG: 107.53684°W
DATUM: NAD1983

POINT-OF-ENTRY
974' FSL 0' FWL
SECTION 12, T23N, R7W
LAT: 36.23501°N
LONG: 107.51823°W
DATUM: NAD1927

LAT: 36.23503°N
LONG: 107.51884°W
DATUM: NAD1983

SURFACE LOCATION
1935' FSL 301' FWL
SECTION 7, T23N, R6W
LAT: 36.23765°N
LONG: 107.51726°W
DATUM: NAD1927

LAT: 36.23766°N
LONG: 107.51787°W
DATUM: NAD1983

17 OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom-hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature: [Signature] Date: 7/16/14

Printed Name: Larry Higgins

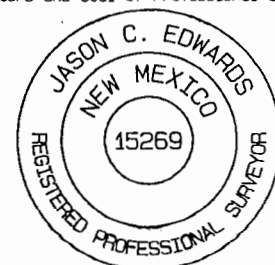
E-mail Address: larry.higgins@wpxenergy.com

18 SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

Date Revised: JULY 14, 2014
Survey Date: OCTOBER 1, 2012

Signature and Seal of Professional Surveyor



JASON C. EDWARDS
Certificate Number 15269

WPX ENERGY

Operations Plan

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

DATE: 2/27/2014 **FIELD:** Lybrook (Gallup)

WELL NAME: Chaco 2306-07L #183H **SURFACE:** BLM

SH Location: NWSW Sec 07-23N-06W **ELEVATION:** 6950' GR

BH Location: NESE Sec 11-23N-07W **MINERALS:** BLM
Rio Arriba, NM

MEASURED DEPTH: 11,666' **LEASE #:** NMSF 078359

I. GEOLOGY: Surface formation – San Jose

A. FORMATION TOPS: (KB)

Name	MD	TVD	Name	MD	TVD
Ojo Alamo	1,544	1,524	Point Lookout	4,445	4,258
Kirtland	1,727	1,696	Mancos	4,664	4,473
Pictured Cliffs	2,026	1,977	Kickoff Point	5,087	4,895
Lewis	2,139	2,084	Target Top	5,822	5,479
Chacra	2,489	2,413	Landing Point	6,160	5,561
Cliff House	3,647	3,501	Target Base	6,160	5,561
Menefee	3,689	3,541			
			TD	11,666	5,449

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

C. LOGGING PROGRAM: LWD GR from surface casing to TD. LWD GR / E- Sonic will be run in Lateral.

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 +/- 5,087' (MD) / 4,895' (TVD). Curve portion of wellbore will be drilled and landed at +/- 90 deg. at +/- 6,160' (MD) / 5,561' (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 +/- 11,666' (MD) / 5,449' (TVD). Will run 4-1/2 in. Production Liner from +/- 6,010 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"	6,160'	7"	23#	K-55
Prod. Liner	6.125"	6,010' - 11,666'	4-1/2"	11.6#	N-80
Tie-Back String	N/A	Surf. - 5,931'	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 +/- 5,710 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 6,160 ft. MD) with a Liner Hanger and pack-off assembly then cemented to +/- 300 ft above the liner hanger. TOL will be +/- 6,010 ft. (MD) +/- 78 degree angle. TOC: +/- 5,710 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 2306-07L #183H
 Surface Location: Chaco 2307-07L
 NAD 1927 (NADCON CONUS) , US State Plane 1927 (Exact solution) , New Mexico Central 3002
 Ground Elevation: 6950.00
 +N/-S +E/-W Northing Easting Latitude Longitude Slot
 0.00 0.00 1908157.96 126276.38 36.23765 -107.51726
 WELL @ 6964.00usft (Original Well Elev)



Azimuths to True North
 Magnetic North: 9.36°
 Magnetic Field
 Strength: 50176.1snT
 Dip Angle: 63.00°
 Date: 6/24/2014
 Model: IGRF2010

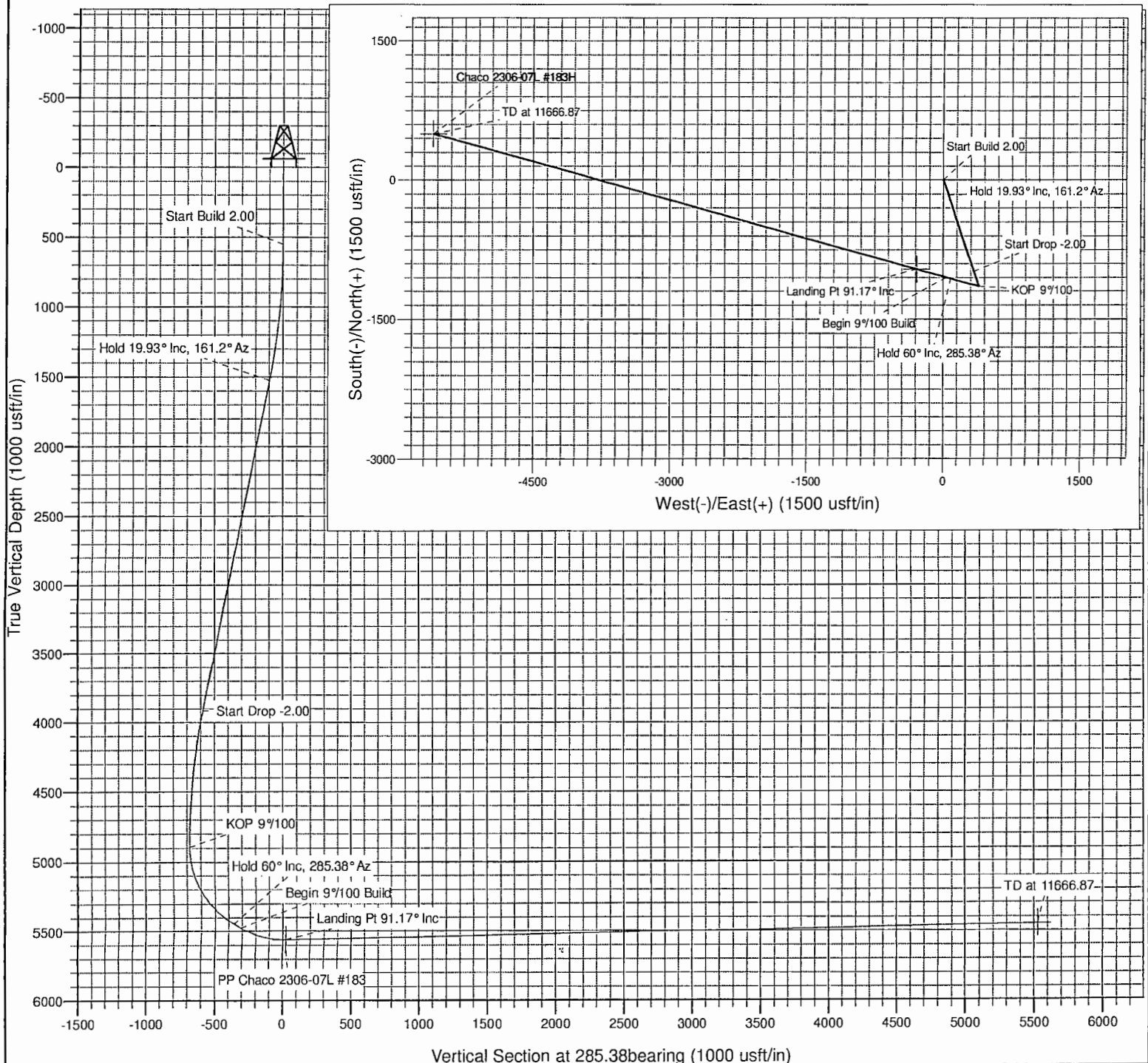
Project: SJ 07-23N-06W
 Site: Chaco 2307-07L
 Well: Chaco 2306-07L #183H
 Design #1 25Jun14 kjs

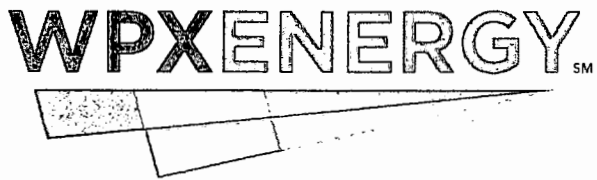
ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	Vsect	Departure	Annotation
550.00	550.00	0.00	0.00	0.00	0.00	0.00	0.00	Start Build 2.00
1526.63	1546.61	19.93	161.20	-162.45	55.31	-96.42	171.61	Hold 19.93° Inc, 161.2° Az
3917.88	4090.23	19.93	161.20	-983.32	334.80	-583.62	1038.75	Start Drop -2.00
4894.51	5086.84	0.00	0.00	-1145.77	390.11	-680.03	1210.36	KOP 9°/100
5445.84	5753.51	60.00	285.38	-1061.35	83.20	-361.72	1528.67	Hold 60° Inc, 285.38° Az
5475.84	5813.51	60.00	285.38	-1047.57	33.10	-309.76	1580.63	Begin 9°/100 Build
5561.00	6159.79	91.17	285.38	-959.71	-286.30	21.49	1911.89	Landing Pt 91.17° Inc
5449.02	11665.87	91.17	285.38	500.24	-5594.11	5526.44	7416.83	TD at 11666.87

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
TD / PBHL Chaco 2306-07L #183	5449.00	500.50	-5595.08	1908731.59	120688.33	36.23902	-107.53623	Point
PP Chaco 2306-07L #183	5561.00	-959.71	-286.30	1907202.07	125977.56	36.23501	-107.51823	Point
								- plan hits target center





SAN JUAN BASIN

SJ 07-23N-06W

Chaco 2307-07L

Chaco 2306-07L #183H

Wellbore #1

Plan: Design #1 25Jun14 kjs

Standard Planning Report - Geographic

26 June, 2014



WPX
Planning Report - Geographic

Database: COMPASS-PICEANCE
Company: SAN JUAN BASIN
Project: SJ 07-23N-06W
Site: Chaco 2307-07L
Well: Chaco 2306-07L #183H
Wellbore: Wellbore #1
Design: Design #1 25Jun14 kjs

Local Co-ordinate Reference: Well Chaco 2306-07L #183H
TVD Reference: WELL @ 6964.00usft (Original Well Elev)
MD Reference: WELL @ 6964.00usft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

Project: SJ 07-23N-06W, Rio Arriba 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 Central 3002

Site: Chaco 2307-07L
Site Position: Northing: 1,908,201.69 usft Latitude: 36.23777
From: Lat/Long Easting: 126,274.01 usft Longitude: -107.51727
Position Uncertainty: 0.00 usft Slot Radius: 13.200 in Grid Convergence: -0.75 °

Well: Chaco 2306-07L #183H
Well Position: +N/-S 0.00 usft Northing: 1,908,157.96 usft Latitude: 36.23765
+E/-W 0.00 usft Easting: 126,276.39 usft Longitude: -107.51726
Position Uncertainty: 0.00 usft Wellhead Elevation: 0.00 usft Ground Level: 6,950.00 usft

Wellbore: Wellbore #1
Magnetics: Model Name Sample Date Declination Dip Angle Field Strength
(°) (°) (nT)
IGRF2010 6/24/2014 9.36 63.00 50,176

Design: Design #1 25Jun14 kjs
Audit Notes:
Version: Phase: PLAN Tie On Depth: 0.00
Vertical Section: Depth From (TVD) +N/-S +E/-W Direction
(usft) (usft) (usft) (bearing)
0.00 0.00 0.00 285.38

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
550.00	0.00	0.00	550.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,546.61	19.93	161.20	1,526.63	-162.45	55.31	2.00	2.00	0.00	161.20	
4,090.23	19.93	161.20	3,917.88	-983.32	334.80	0.00	0.00	0.00	0.00	
5,086.84	0.00	0.00	4,894.51	-1,145.77	390.11	2.00	-2.00	0.00	180.00	
5,753.51	60.00	285.38	5,445.84	-1,061.35	83.20	9.00	9.00	0.00	285.38	
5,813.51	60.00	285.38	5,475.84	-1,047.57	33.10	0.00	0.00	0.00	0.00	
6,159.79	91.17	285.38	5,561.00	-959.71	-286.30	9.00	9.00	0.00	0.00	
11,666.87	91.17	285.38	5,449.00	500.50	-5,595.08	0.00	0.00	0.00	0.00	TD / PBHL Chaco 230

Database: COMPASS-PICEANCE
 Company: SAN JUAN BASIN
 Project: SJ 07-23N-06W
 Site: Chaco 2307-07L
 Well: Chaco 2306-07L #183H
 Wellbore: Wellbore #1
 Design: Design #1 25Jun14 kjs

Local Co-ordinate Reference: Well Chaco 2306-07L #183H
 TVD Reference: WELL @ 6964.00usft (Original Well Elev)
 MD Reference: WELL @ 6964.00usft (Original Well Elev)
 North Reference: True
 Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.00	0.00	0.00	0.00	0.00	0.00	1,908,157.96	126,276.39	36.23765	-107.51726
200.00	0.00	0.00	200.00	0.00	0.00	1,908,157.96	126,276.39	36.23765	-107.51726
400.00	0.00	0.00	400.00	0.00	0.00	1,908,157.96	126,276.39	36.23765	-107.51726
550.00	0.00	0.00	550.00	0.00	0.00	1,908,157.96	126,276.39	36.23765	-107.51726
Start Build 2.00									
600.00	1.00	161.20	600.00	-0.41	0.14	1,908,157.55	126,276.52	36.23765	-107.51726
800.00	5.00	161.20	799.68	-10.32	3.51	1,908,147.60	126,279.76	36.23762	-107.51725
1,000.00	9.00	161.20	998.15	-33.39	11.37	1,908,124.43	126,287.32	36.23756	-107.51722
1,200.00	13.00	161.20	1,194.44	-69.51	23.67	1,908,088.15	126,299.14	36.23746	-107.51718
1,400.00	17.00	161.20	1,387.58	-118.50	40.35	1,908,038.95	126,315.18	36.23733	-107.51713
1,546.61	19.93	161.20	1,526.63	-162.45	55.31	1,907,994.80	126,329.57	36.23720	-107.51708
Hold 19.93° Inc, 161.2° Az									
1,600.00	19.93	161.20	1,576.82	-179.68	61.18	1,907,977.50	126,335.21	36.23716	-107.51706
1,800.00	19.93	161.20	1,764.84	-244.23	83.15	1,907,912.67	126,356.34	36.23698	-107.51698
2,000.00	19.93	161.20	1,952.86	-308.77	105.13	1,907,847.85	126,377.47	36.23680	-107.51691
2,200.00	19.93	161.20	2,140.88	-373.31	127.10	1,907,783.02	126,398.60	36.23663	-107.51683
2,400.00	19.93	161.20	2,328.90	-437.85	149.08	1,907,718.20	126,419.73	36.23645	-107.51676
2,600.00	19.93	161.20	2,516.92	-502.40	171.06	1,907,653.37	126,440.86	36.23627	-107.51668
2,800.00	19.93	161.20	2,704.94	-566.94	193.03	1,907,588.55	126,461.99	36.23609	-107.51661
3,000.00	19.93	161.20	2,892.96	-631.48	215.01	1,907,523.72	126,483.12	36.23592	-107.51653
3,200.00	19.93	161.20	3,080.98	-696.03	236.98	1,907,458.90	126,504.25	36.23574	-107.51646
3,400.00	19.93	161.20	3,269.00	-760.57	258.96	1,907,394.07	126,525.38	36.23556	-107.51638
3,600.00	19.93	161.20	3,457.01	-825.11	280.93	1,907,329.25	126,546.51	36.23538	-107.51631
3,800.00	19.93	161.20	3,645.03	-889.66	302.91	1,907,264.42	126,567.64	36.23521	-107.51624
4,000.00	19.93	161.20	3,833.05	-954.20	324.88	1,907,199.60	126,588.76	36.23503	-107.51616
4,090.23	19.93	161.20	3,917.88	-983.32	334.80	1,907,170.35	126,598.30	36.23495	-107.51613
Start Drop -2.00									
4,200.00	17.74	161.20	4,021.76	-1,016.86	346.22	1,907,136.66	126,609.28	36.23486	-107.51609
4,400.00	13.74	161.20	4,214.23	-1,068.20	363.70	1,907,085.10	126,626.09	36.23472	-107.51603
4,600.00	9.74	161.20	4,410.01	-1,106.70	376.81	1,907,046.43	126,638.69	36.23461	-107.51599
4,800.00	5.74	161.20	4,608.15	-1,132.19	385.49	1,907,020.83	126,647.03	36.23454	-107.51596
5,000.00	1.74	161.20	4,807.68	-1,144.52	389.69	1,907,008.44	126,651.07	36.23451	-107.51594
5,086.84	0.00	0.00	4,894.51	-1,145.77	390.11	1,907,007.19	126,651.48	36.23450	-107.51594
KOP 9°/100									
5,200.00	10.18	285.38	5,007.07	-1,143.11	380.44	1,907,009.98	126,641.84	36.23451	-107.51597
5,400.00	28.18	285.38	5,195.19	-1,125.75	317.33	1,907,028.16	126,578.97	36.23456	-107.51619
5,600.00	46.18	285.38	5,353.88	-1,093.82	201.26	1,907,061.60	126,463.33	36.23465	-107.51658
5,753.51	60.00	285.38	5,445.84	-1,061.35	83.20	1,907,095.62	126,345.70	36.23474	-107.51698
Hold 60° Inc, 285.38° Az									
5,800.00	60.00	285.38	5,469.08	-1,050.67	44.38	1,907,106.80	126,307.02	36.23476	-107.51711
5,813.51	60.00	285.38	5,475.84	-1,047.57	33.10	1,907,110.05	126,295.78	36.23477	-107.51715
Begin 9°/100 Build									
6,000.00	76.78	285.38	5,544.27	-1,001.75	-133.48	1,907,158.05	126,129.82	36.23490	-107.51772
6,159.79	91.17	285.38	5,561.00	-959.71	-286.30	1,907,202.08	125,977.56	36.23501	-107.51823
Landing Pt 91.17° Inc - PP Chaco 2306-07L #183									
6,200.00	91.17	285.38	5,560.18	-949.05	-325.06	1,907,213.24	125,938.95	36.23504	-107.51836
6,400.00	91.17	285.38	5,556.11	-896.02	-517.86	1,907,268.79	125,746.86	36.23519	-107.51902
6,600.00	91.17	285.38	5,552.05	-842.99	-710.65	1,907,324.34	125,554.77	36.23534	-107.51967
6,800.00	91.17	285.38	5,547.98	-789.96	-903.45	1,907,379.88	125,362.68	36.23548	-107.52033
7,000.00	91.17	285.38	5,543.91	-736.93	-1,096.25	1,907,435.43	125,170.59	36.23563	-107.52098
7,200.00	91.17	285.38	5,539.84	-683.90	-1,289.05	1,907,490.98	124,978.50	36.23577	-107.52163
7,400.00	91.17	285.38	5,535.78	-630.87	-1,481.85	1,907,546.53	124,786.42	36.23592	-107.52229
7,600.00	91.17	285.38	5,531.71	-577.84	-1,674.65	1,907,602.07	124,594.33	36.23606	-107.52294
7,800.00	91.17	285.38	5,527.64	-524.81	-1,867.44	1,907,657.62	124,402.24	36.23621	-107.52359

Database:	COMPASS-PICEANCE	Local Co-ordinate Reference:	Well Chaco 2306-07L #183H
Company:	SAN JUAN BASIN	TVD Reference:	WELL @ 6964.00usft (Original Well Elev)
Project:	SJ 07-23N-06W	MD Reference:	WELL @ 6964.00usft (Original Well Elev)
Site:	Chaco 2307-07L	North Reference:	True
Well:	Chaco 2306-07L #183H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 25Jun14 kjs		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
8,000.00	91.17	285.38	5,523.57	-471.78	-2,060.24	1,907,713.17	124,210.15	36.23635	-107.52425
8,200.00	91.17	285.38	5,519.51	-418.75	-2,253.04	1,907,768.71	124,018.06	36.23650	-107.52490
8,400.00	91.17	285.38	5,515.44	-365.72	-2,445.84	1,907,824.26	123,825.97	36.23665	-107.52556
8,600.00	91.17	285.38	5,511.37	-312.69	-2,638.64	1,907,879.81	123,633.88	36.23679	-107.52621
8,800.00	91.17	285.38	5,507.30	-259.65	-2,831.44	1,907,935.36	123,441.80	36.23694	-107.52686
9,000.00	91.17	285.38	5,503.24	-206.62	-3,024.23	1,907,990.90	123,249.71	36.23708	-107.52752
9,200.00	91.17	285.38	5,499.17	-153.59	-3,217.03	1,908,046.45	123,057.62	36.23723	-107.52817
9,400.00	91.17	285.38	5,495.10	-100.56	-3,409.83	1,908,102.00	122,865.53	36.23737	-107.52882
9,600.00	91.17	285.38	5,491.03	-47.53	-3,602.63	1,908,157.54	122,673.44	36.23752	-107.52948
9,800.00	91.17	285.38	5,486.97	5.50	-3,795.43	1,908,213.09	122,481.35	36.23767	-107.53013
10,000.00	91.17	285.38	5,482.90	58.53	-3,988.23	1,908,268.64	122,289.27	36.23781	-107.53078
10,200.00	91.17	285.38	5,478.83	111.56	-4,181.03	1,908,324.19	122,097.18	36.23796	-107.53144
10,400.00	91.17	285.38	5,474.76	164.59	-4,373.82	1,908,379.73	121,905.09	36.23810	-107.53209
10,600.00	91.17	285.38	5,470.70	217.62	-4,566.62	1,908,435.28	121,713.00	36.23825	-107.53275
10,800.00	91.17	285.38	5,466.63	270.65	-4,759.42	1,908,490.83	121,520.91	36.23839	-107.53340
11,000.00	91.17	285.38	5,462.56	323.68	-4,952.22	1,908,546.37	121,328.82	36.23854	-107.53405
11,200.00	91.17	285.38	5,458.49	376.71	-5,145.02	1,908,601.92	121,136.73	36.23868	-107.53471
11,400.00	91.17	285.38	5,454.43	429.74	-5,337.82	1,908,657.47	120,944.65	36.23883	-107.53536
11,600.00	91.17	285.38	5,450.36	482.77	-5,530.61	1,908,713.02	120,752.56	36.23898	-107.53601
11,666.87	91.17	285.38	5,449.00	500.50	-5,595.08	1,908,731.59	120,688.33	36.23902	-107.53623

TD at 11666.87 - TD / PBHL Chaco 2306-07L #183

Design Targets

Target Name

- hit/miss target - Shape	Dip Angle (°)	Dip Dir. (bearing)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
TD / PBHL Chaco 2306- - plan hits target center - Point	0.00	360.00	5,449.00	500.50	-5,595.08	1,908,731.59	120,688.33	36.23902	-107.53623
PP Chaco 2306-07L #18 - plan hits target center - Point	0.00	0.00	5,561.00	-959.71	-286.30	1,907,202.08	125,977.56	36.23501	-107.51823

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
550.00	550.00	0.00	0.00	Start Build 2.00
1,546.61	1,526.63	-162.45	55.31	Hold 19.93° Inc, 161.2° Az
4,090.23	3,917.88	-983.32	334.80	Start Drop -2.00
5,086.84	4,894.51	-1,145.77	390.11	KOP 9°/100
5,753.51	5,445.84	-1,061.35	83.20	Hold 60° Inc, 285.38° Az
5,813.51	5,475.84	-1,047.57	33.10	Begin 9°/100 Build
6,159.79	5,561.00	-959.71	-286.30	Landing Pt 91.17° Inc
11,666.87	5,449.00	500.50	-5,595.08	TD at 11666.87