

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

OIL CONSERVATION DIVISION
1220 South St. Francis Drive
Santa Fe, NM 87505

Submit one copy to
Appropriate District Office

☒ AMENDED REPORT
AS DRILLED PLAT

CONFIDENTIAL

WELL LOCATION AND ACREAGE DEDICATION PLAT

'API Number	'Pool Code	'Pool Name
30-045-35564	97232	BASIN MANCOS
'Property Code	'Property Name	'Well Number
313863	CHACO 2308-11A	407H
'OGRID No.	'Operator Name	'Elevation
120782	WPX ENERGY PRODUCTION, LLC	7011'

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
A	11	23N	8W		335	NORTH	1047	EAST	SAN JUAN

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	12	23N	8W		1291	NORTH	240	EAST	SAN JUAN

12	Dedicated Acres	160.00	N/2 N/2 - Section 12	13	Joint or Infill	14	Consolidation Code	15	Order No.
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NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

SURFACE LOCATION
335' FNL 1047' FEL
SECTION 11, T23N, R8W
LAT: 36.247948 °N
LONG: 107.645090 °W
DATUM: NAD1927

LAT: 36.247961°N
LONG: 107.645700°W
DATUM: NAD1983

POINT-OF-ENTRY
437' FNL 389' FWL
SECTION 12, T23N, RBW
LAT: 36.247678°N
LONG: 107.640217°W
DATUM: NAD1927

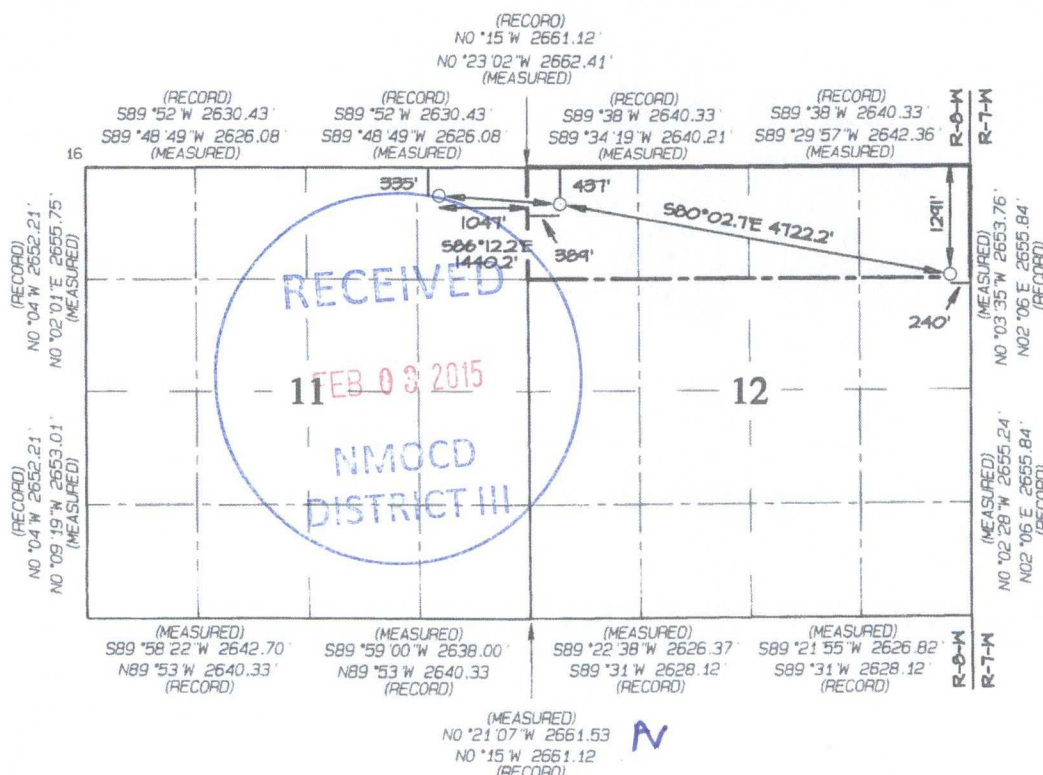
LAT: 36.247691°N
LONG: 107.640827°W
DATUM: NAD1983

BASE-OF-PERFORATION
1269' FNL 338' FEL
SECTION 12, T23N, R8W
LAT: 36.245468°N
LONG: 107.624781°W
DATUM: NAD1927

LAT: 36.245481°N
LONG: 107.625390°W
DATUM: NAD1983

END-OF-LATERAL
1291' FNL 240' FEL
SECTION 12, T23N, R8W
LAT: 36.245409°N
LONG: 107.624450°W
DATUM: NAD1927

LAT: 36.245422°N
LONG: 107.625059°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 mining interest, or to a unitized, pooling or agreement or compulsory pooling order or certificate entered by the Division.

Signature _____
Marie E. Jaramillo

Printed Name marie.jaramillo@wpxenergy.com
E-mail Address

¹⁸ SURVEYOR CERTIFICATION

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

Date Revised: JANUARY 27, 2015
Survey Date: SEPTEMBER 4, 2014

Signature and Seal of Professional Surveyor



JASON C. EDWARDS
Certificate Number 15269

WPXENERGY



WPX Energy Production, LLC

San Juan Co., NM

Sec.11-T23N-R8W

Chaco 2308-11A 407H

Wellbore #1

Survey: TES Surveys

Standard Survey Report

13 January, 2015



Company:	WPX Energy Production, LLC	Local Co-ordinate Reference:	Well Chaco 2308-11A 407H
Project:	San Juan Co., NM	TVD Reference:	Elev @ 7025.00usft
Site:	Sec.11-T23N-R8W	MD Reference:	Elev @ 7025.00usft
Well:	Chaco 2308-11A 407H	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Project	San Juan Co., 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	Sec.11-T23N-R8W		
Site Position:		Northing:	1,909,548.863892 usft
From:	Lat/Long	Easting:	555,506.541408 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	36.247948
		Longitude:	-107.645090
		Grid Convergence:	0.11 °

Well	Chaco 2308-11A 407H					
Well Position	+N/-S	0.00 usft	Northing:	1,909,548.863892 usft	Latitude:	36.247948
	+E/-W	0.00 usft	Easting:	555,506.541408 usft	Longitude:	-107.645090
Position Uncertainty	0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	7,011.00 usft	

Wellbore		Wellbore #1			
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	12/22/14	9.36	62.98	50,116

Design	Wellbore #1				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	5,379.47	0.00	0.00	98.37	

Survey Program		Date	01/13/15	
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
64.00	354.00	Surface Gyro (Wellbore #1)	GYRO	Gyro-compassing and drop
434.00	10,753.00	TES Surveys (Wellbore #1)	MWD	MWD - Standard

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
354.00	0.79	333.09	353.98	2.25	-2.88	-3.17	0.00	0.00	0.00
434.00	0.50	312.60	433.97	2.97	-3.38	-3.78	0.46	-0.36	-25.61
First TES Survey									
498.00	0.50	306.45	497.97	3.33	-3.81	-4.26	0.08	0.00	-9.61
561.00	0.48	102.13	560.97	3.44	-3.78	-4.24	1.52	-0.03	247.11
624.00	2.23	104.67	623.95	3.07	-2.33	-2.76	2.78	2.78	4.03
687.00	3.82	96.98	686.86	2.51	0.94	0.56	2.60	2.52	-12.21
750.00	5.44	90.42	749.65	2.23	6.01	5.62	2.70	2.57	-10.41
814.00	7.22	82.70	813.26	2.72	13.03	12.49	3.08	2.78	-12.06
877.00	8.87	81.67	875.64	3.92	21.76	20.96	2.63	2.62	-1.63



Terrapin Energy Services
Survey Report



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Site:	Sec.11-T23N-R8W	MD Reference:	Elev @ 7025.00usft
Well:	Chaco 2308-11A 407H	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
940.00	9.77	87.65	937.81	4.85	31.91	30.86	2.10	1.43	9.49
1,003.00	10.15	87.37	999.86	5.32	42.80	41.56	0.61	0.60	-0.44
1,066.00	10.59	84.85	1,061.83	6.10	54.11	52.64	1.00	0.70	-4.00
1,130.00	10.70	82.67	1,124.73	7.38	65.86	64.08	0.65	0.17	-3.41
1,193.00	10.88	79.21	1,186.62	9.24	77.50	75.33	1.07	0.29	-5.49
1,256.00	10.91	80.22	1,248.48	11.37	89.21	86.61	0.31	0.05	1.60
1,320.00	11.35	77.58	1,311.28	13.75	101.33	98.25	1.05	0.69	-4.13
1,380.00	11.92	74.04	1,370.04	16.72	113.06	109.42	1.52	0.95	-5.90
1,440.00	11.69	72.69	1,428.78	20.24	124.82	120.54	0.60	-0.38	-2.25
1,502.00	11.60	71.88	1,489.50	24.04	136.74	131.78	0.30	-0.15	-1.31
1,561.00	11.40	72.19	1,547.31	27.67	147.93	142.32	0.35	-0.34	0.53
1,622.00	11.16	71.44	1,607.14	31.39	159.26	152.99	0.46	-0.39	-1.23
1,682.00	10.42	69.43	1,666.08	35.15	169.85	162.92	1.38	-1.23	-3.35
1,744.00	9.99	69.32	1,727.09	39.02	180.13	172.53	0.69	-0.69	-0.18
1,804.00	9.39	72.91	1,786.24	42.29	189.68	181.50	1.42	-1.00	5.98
1,865.00	9.93	84.73	1,846.38	44.24	199.67	191.10	3.36	0.89	19.38
1,926.00	11.09	87.44	1,906.36	44.99	210.77	201.97	2.07	1.90	4.44
1,987.00	10.91	84.10	1,966.24	45.84	222.37	213.33	1.09	-0.30	-5.48
2,048.00	11.26	78.26	2,026.10	47.65	233.95	224.51	1.93	0.57	-9.57
2,109.00	10.71	74.05	2,085.98	50.42	245.23	235.27	1.59	-0.90	-6.90
2,169.00	10.92	69.35	2,144.92	53.95	255.91	245.32	1.51	0.35	-7.83
2,230.00	10.02	69.02	2,204.90	57.89	266.27	255.00	1.48	-1.48	-0.54
2,291.00	9.93	68.51	2,264.98	61.72	276.12	264.19	0.21	-0.15	-0.84
2,352.00	10.01	70.18	2,325.06	65.44	286.00	273.42	0.49	0.13	2.74
2,413.00	9.97	73.24	2,385.13	68.76	296.04	282.87	0.87	-0.07	5.02
2,474.00	9.58	73.73	2,445.25	71.71	305.97	292.27	0.65	-0.64	0.80
2,535.00	10.19	75.23	2,505.34	74.50	316.06	301.84	1.09	1.00	2.46
2,598.00	10.98	77.10	2,567.27	77.26	327.30	312.56	1.37	1.25	2.97
2,662.00	10.66	76.24	2,630.13	80.03	338.99	323.72	0.56	-0.50	-1.34
2,726.00	10.47	74.97	2,693.05	82.95	350.35	334.54	0.47	-0.30	-1.98
2,790.00	11.12	74.47	2,755.91	86.11	361.92	345.52	1.03	1.02	-0.78
2,854.00	12.97	74.23	2,818.50	89.71	374.78	357.72	2.89	2.89	-0.38
2,917.00	12.59	73.04	2,879.94	93.64	388.15	370.38	0.73	-0.60	-1.89
2,980.00	11.51	70.92	2,941.55	97.70	400.66	382.16	1.85	-1.71	-3.37
3,044.00	10.56	69.59	3,004.37	101.83	412.19	392.97	1.54	-1.48	-2.08
3,107.00	9.99	72.09	3,066.36	105.52	422.80	402.92	1.15	-0.90	3.97
3,170.00	10.33	77.89	3,128.37	108.39	433.52	413.12	1.71	0.54	9.21
3,233.00	9.95	80.43	3,190.39	110.48	444.41	423.59	0.93	-0.60	4.03
3,297.00	9.80	78.27	3,253.44	112.50	455.20	433.96	0.62	-0.23	-3.38
3,360.00	10.14	79.87	3,315.49	114.57	465.90	444.25	0.70	0.54	2.54
3,423.00	9.66	78.81	3,377.55	116.57	476.55	454.49	0.81	-0.76	-1.68
3,486.00	9.73	77.31	3,439.65	118.77	486.93	464.44	0.42	0.11	-2.38
3,549.00	10.53	78.72	3,501.67	121.06	497.77	474.83	1.33	1.27	2.24



Terrapin Energy Services

Survey Report



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Site:	Sec.11-T23N-R8W	MD Reference:	Elev @ 7025.00usft
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Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
3,612.00	10.03	75.77	3,563.66	123.54	508.73	485.32	1.15	-0.79	-4.68
3,676.00	9.60	74.20	3,626.72	126.36	519.27	495.33	0.79	-0.67	-2.45
3,739.00	9.51	75.72	3,688.85	129.07	529.37	504.93	0.43	-0.14	2.41
3,802.00	10.31	83.04	3,750.91	131.04	540.01	515.17	2.37	1.27	11.62
3,866.00	9.83	81.69	3,813.92	132.52	551.10	525.93	0.84	-0.75	-2.11
3,929.00	9.37	81.02	3,876.04	134.10	561.48	535.97	0.75	-0.73	-1.06
3,959.00	9.29	81.83	3,905.64	134.83	566.29	540.62	0.51	-0.27	2.70
4,022.00	9.12	80.54	3,967.83	136.37	576.25	550.25	0.42	-0.27	-2.05
4,086.00	8.52	75.98	4,031.08	138.35	585.85	559.46	1.44	-0.94	-7.13
4,150.00	7.68	69.52	4,094.44	141.00	594.46	567.59	1.93	-1.31	-10.09
4,213.00	7.29	66.67	4,156.90	144.05	602.08	574.68	0.85	-0.62	-4.52
4,274.00	6.45	63.29	4,217.46	147.13	608.69	580.78	1.53	-1.38	-5.54
4,338.00	5.58	61.06	4,281.11	150.25	614.62	586.19	1.41	-1.36	-3.48
4,401.00	5.28	62.39	4,343.83	153.07	619.87	590.98	0.52	-0.48	2.11
4,465.00	4.16	68.44	4,407.61	155.29	624.64	595.37	1.91	-1.75	9.45
4,528.00	2.47	82.72	4,470.50	156.30	628.11	598.66	2.97	-2.68	22.67
4,592.00	1.74	97.25	4,534.46	156.35	630.45	600.96	1.40	-1.14	22.70
4,656.00	1.55	131.05	4,598.44	155.66	632.06	602.66	1.52	-0.30	52.81
4,719.00	1.55	113.57	4,661.41	154.76	633.49	604.20	0.75	0.00	-27.75
4,783.00	5.93	115.33	4,725.26	153.00	637.27	608.20	6.85	6.84	2.75
4,847.00	11.84	110.57	4,788.47	149.28	646.41	617.79	9.30	9.23	-7.44
4,911.00	16.47	112.30	4,850.51	143.52	660.96	633.02	7.26	7.23	2.70
4,974.00	20.46	112.27	4,910.25	135.96	679.42	652.38	6.33	6.33	-0.05
5,038.00	24.00	108.49	4,969.49	127.59	702.12	676.06	5.96	5.53	-5.91
5,101.00	27.23	108.71	5,026.29	118.90	727.93	702.86	5.13	5.13	0.35
5,164.00	30.93	110.33	5,081.34	108.65	756.78	732.89	6.00	5.87	2.57
5,228.00	32.88	112.60	5,135.67	96.26	788.24	765.83	3.58	3.05	3.55
5,291.00	35.94	112.21	5,187.64	82.69	821.16	800.36	4.87	4.86	-0.62
5,354.00	39.11	108.39	5,237.60	69.43	857.14	837.90	6.24	5.03	-6.06
5,417.00	45.31	111.24	5,284.25	55.03	896.91	879.34	10.30	9.84	4.52
5,481.00	53.11	113.80	5,326.03	36.43	941.61	926.27	12.56	12.19	4.00
5,545.00	60.88	112.96	5,360.87	15.17	990.84	978.07	12.19	12.14	-1.31
5,609.00	62.42	111.86	5,391.26	-6.30	1,042.91	1,032.71	2.84	2.41	-1.72
5,673.00	68.82	109.31	5,417.66	-26.75	1,097.46	1,089.66	10.64	10.00	-3.98
5,737.00	75.32	106.02	5,437.36	-45.19	1,155.45	1,149.71	11.27	10.16	-5.14
5,801.00	80.25	101.83	5,450.90	-60.21	1,216.13	1,211.94	10.01	7.70	-6.55
5,864.00	80.78	99.00	5,461.29	-71.44	1,277.24	1,274.03	4.51	0.84	-4.49
5,927.00	82.63	99.09	5,470.38	-81.24	1,338.80	1,336.36	2.94	2.94	0.14
5,978.00	84.34	98.80	5,476.16	-89.12	1,388.86	1,387.03	3.40	3.35	-0.57
6,038.00	86.40	103.14	5,481.01	-100.50	1,447.55	1,446.76	7.99	3.43	7.23
6,101.00	86.26	99.18	5,485.04	-112.67	1,509.22	1,509.54	6.28	-0.22	-6.29
6,162.00	89.21	98.13	5,487.45	-121.84	1,569.47	1,570.48	5.13	4.84	-1.72
6,223.00	90.53	98.22	5,487.59	-130.51	1,629.85	1,631.48	2.17	2.16	0.15



Terrapin Energy Services
Survey Report



Company: WPX Energy Production, LLC
Project: San Juan Co., NM
Site: Sec.11-T23N-R8W
Well: Chaco 2308-11A 407H
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Chaco 2308-11A 407H
TVD Reference: Elev @ 7025.00usft
MD Reference: Elev @ 7025.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
6,284.00	90.66	98.39	5,486.96	-139.32	1,690.21	1,692.48	0.35	0.21	0.28
6,345.00	89.96	98.31	5,486.63	-148.18	1,750.56	1,753.48	1.16	-1.15	-0.13
6,406.00	90.62	98.83	5,486.32	-157.27	1,810.88	1,814.48	1.38	1.08	0.85
6,467.00	90.13	99.10	5,485.92	-166.77	1,871.13	1,875.47	0.92	-0.80	0.44
6,528.00	90.53	99.98	5,485.57	-176.88	1,931.28	1,936.46	1.58	0.66	1.44
6,589.00	89.60	99.71	5,485.50	-187.31	1,991.39	1,997.44	1.59	-1.52	-0.44
6,649.00	90.09	99.54	5,485.66	-197.35	2,050.54	2,057.42	0.86	0.82	-0.28
6,711.00	89.54	99.44	5,485.86	-207.57	2,111.69	2,119.41	0.90	-0.89	-0.16
6,772.00	90.75	99.62	5,485.71	-217.67	2,171.85	2,180.39	2.01	1.98	0.30
6,832.00	91.66	100.06	5,484.45	-227.92	2,230.95	2,240.36	1.68	1.52	0.73
6,893.00	91.36	99.98	5,482.84	-238.53	2,291.00	2,301.31	0.51	-0.49	-0.13
6,954.00	90.92	99.89	5,481.62	-249.05	2,351.07	2,362.28	0.74	-0.72	-0.15
7,015.00	91.93	99.54	5,480.11	-259.34	2,411.18	2,423.24	1.75	1.66	-0.57
7,075.00	91.32	98.92	5,478.41	-268.96	2,470.38	2,483.21	1.45	-1.02	-1.03
7,136.00	91.27	99.18	5,477.03	-278.55	2,530.60	2,544.19	0.43	-0.08	0.43
7,197.00	91.53	99.36	5,475.54	-288.38	2,590.79	2,605.17	0.52	0.43	0.30
7,257.00	91.58	99.45	5,473.91	-298.18	2,649.96	2,665.13	0.17	0.08	0.15
7,317.00	90.97	99.27	5,472.57	-307.93	2,709.15	2,725.11	1.06	-1.02	-0.30
7,381.00	90.70	99.27	5,471.64	-318.24	2,772.30	2,789.10	0.42	-0.42	0.00
7,445.00	90.79	99.10	5,470.81	-328.46	2,835.48	2,853.08	0.30	0.14	-0.27
7,508.00	90.22	99.01	5,470.25	-338.37	2,897.69	2,916.08	0.92	-0.90	-0.14
7,571.00	89.78	98.66	5,470.25	-348.05	2,959.94	2,979.07	0.89	-0.70	-0.56
7,634.00	89.38	99.01	5,470.72	-357.72	3,022.19	3,042.07	0.84	-0.63	0.56
7,697.00	90.43	99.01	5,470.82	-367.59	3,084.41	3,105.06	1.67	1.67	0.00
7,760.00	90.04	99.01	5,470.56	-377.46	3,146.64	3,168.06	0.62	-0.62	0.00
7,823.00	91.19	99.10	5,469.89	-387.37	3,208.85	3,231.05	1.83	1.83	0.14
7,886.00	89.30	98.13	5,469.62	-396.81	3,271.13	3,294.05	3.37	-3.00	-1.54
7,950.00	91.36	97.95	5,469.25	-405.76	3,334.50	3,358.04	3.23	3.22	-0.28
8,013.00	91.19	97.87	5,467.85	-414.43	3,396.88	3,421.02	0.30	-0.27	-0.13
8,077.00	92.24	98.39	5,465.93	-423.47	3,460.21	3,484.99	1.83	1.64	0.81
8,140.00	91.49	98.31	5,463.88	-432.62	3,522.51	3,547.96	1.20	-1.19	-0.13
8,204.00	91.76	98.57	5,462.06	-442.01	3,585.79	3,611.93	0.59	0.42	0.41
8,268.00	91.58	98.83	5,460.20	-451.68	3,649.03	3,675.90	0.49	-0.28	0.41
8,331.00	92.90	99.71	5,457.74	-461.82	3,711.15	3,738.85	2.52	2.10	1.40
8,394.00	92.59	99.80	5,454.72	-472.48	3,773.17	3,801.76	0.51	-0.49	0.14
8,457.00	92.07	99.98	5,452.16	-483.30	3,835.18	3,864.68	0.87	-0.83	0.29
8,520.00	91.85	99.71	5,450.00	-494.06	3,897.22	3,927.62	0.55	-0.35	-0.43
8,583.00	91.58	99.71	5,448.12	-504.68	3,959.29	3,990.58	0.43	-0.43	0.00
8,646.00	91.71	99.89	5,446.31	-515.40	4,021.35	4,053.53	0.35	0.21	0.29
8,709.00	91.93	99.98	5,444.31	-526.27	4,083.37	4,116.48	0.38	0.35	0.14
8,773.00	91.19	98.83	5,442.57	-536.72	4,146.48	4,180.44	2.14	-1.16	-1.80
8,836.00	90.84	98.22	5,441.45	-546.06	4,208.78	4,243.43	1.12	-0.56	-0.97
8,899.00	92.02	97.87	5,439.88	-554.87	4,271.14	4,306.41	1.95	1.87	-0.56
8,961.00	91.58	98.04	5,437.93	-563.45	4,332.51	4,368.38	0.76	-0.71	0.27



Terrapin Energy Services

Survey Report



Company:	WPX Energy Production, LLC	Local Co-ordinate Reference:	Well Chaco 2308-11A 407H
Project:	San Juan Co., NM	TVD Reference:	Elev @ 7025.00usft
Site:	Sec. 11-T23N-R8W	MD Reference:	Elev @ 7025.00usft
Well:	Chaco 2308-11A 407H	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
9,022.00	91.41	97.78	5,436.34	-571.84	4,392.91	4,429.35	0.51	-0.28	-0.43	
9,083.00	91.10	98.04	5,435.00	-580.23	4,453.31	4,490.34	0.66	-0.51	0.43	
9,144.00	90.48	98.57	5,434.16	-589.04	4,513.67	4,551.33	1.34	-1.02	0.87	
9,205.00	91.27	99.89	5,433.23	-598.83	4,573.87	4,612.32	2.52	1.30	2.16	
9,267.00	91.01	99.80	5,432.00	-609.42	4,634.94	4,674.28	0.44	-0.42	-0.15	
9,327.00	92.24	100.15	5,430.30	-619.81	4,694.01	4,734.23	2.13	2.05	0.58	
9,388.00	91.85	100.24	5,428.12	-630.60	4,754.01	4,795.16	0.66	-0.64	0.15	
9,448.00	93.52	101.82	5,425.31	-642.07	4,812.83	4,855.03	3.83	2.78	2.63	
9,512.00	93.12	101.56	5,421.60	-655.01	4,875.40	4,918.82	0.75	-0.63	-0.41	
9,575.00	92.68	101.65	5,418.41	-667.67	4,937.03	4,981.63	0.71	-0.70	0.14	
9,638.00	91.62	101.12	5,416.05	-680.10	4,998.75	5,044.50	1.88	-1.68	-0.84	
9,702.00	91.76	100.94	5,414.16	-692.34	5,061.54	5,108.41	0.36	0.22	-0.28	
9,766.00	90.22	100.59	5,413.06	-704.29	5,124.40	5,172.34	2.47	-2.41	-0.55	
9,830.00	89.34	100.85	5,413.30	-716.19	5,187.28	5,236.28	1.43	-1.38	0.41	
9,894.00	90.22	101.38	5,413.55	-728.53	5,250.08	5,300.21	1.61	1.38	0.83	
9,957.00	88.95	101.65	5,414.01	-741.11	5,311.81	5,363.11	2.06	-2.02	0.43	
10,020.00	89.47	104.02	5,414.87	-755.10	5,373.23	5,425.91	3.85	0.83	3.76	
10,084.00	92.59	104.89	5,413.72	-771.07	5,435.18	5,489.53	5.06	4.88	1.36	
10,148.00	92.50	104.72	5,410.88	-787.41	5,497.00	5,553.06	0.30	-0.14	-0.27	
10,212.00	91.67	104.19	5,408.55	-803.37	5,558.93	5,616.66	1.54	-1.30	-0.83	
10,276.00	91.67	104.67	5,406.69	-819.31	5,620.88	5,680.28	0.75	0.00	0.75	
10,339.00	90.09	102.88	5,405.72	-834.31	5,682.06	5,742.99	3.79	-2.51	-2.84	
10,402.00	89.43	101.91	5,405.99	-847.84	5,743.59	5,805.83	1.86	-1.05	-1.54	
10,465.00	89.34	102.70	5,406.66	-861.26	5,805.14	5,868.68	1.26	-0.14	1.25	
10,528.00	89.91	102.79	5,407.07	-875.16	5,866.59	5,931.49	0.92	0.90	0.14	
10,591.00	89.87	102.35	5,407.19	-888.87	5,928.07	5,994.32	0.70	-0.06	-0.70	
10,655.00	89.92	102.70	5,407.31	-902.75	5,990.55	6,058.15	0.55	0.08	0.55	
10,680.00	89.96	102.17	5,407.34	-908.13	6,014.96	6,083.09	2.13	0.16	-2.12	
Final TES Survey										
10,753.00	89.96	102.17	5,407.39	-923.52	6,086.32	6,155.93	0.00	0.00	0.00	
Projection To Bit										

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										
407H Base Perf	0.00	0.00	5,407.31	-902.31	5,988.60	1,908,658.190	561,496.88308	36.245468		-107.624781
						059	6			
- survey hits target center										
- Point										



Terrapin Energy Services
Survey Report



Company:	WPX Energy Production, LLC	Local Co-ordinate Reference:	Well Chaco 2308-11A 407H
Project:	San Juan Co., NM	TVD Reference:	Elev @ 7025.00usft
Site:	Sec.11-T23N-R8W	MD Reference:	Elev @ 7025.00usft
Well:	Chaco 2308-11A 407H	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
6,027.00	5,480.28	7" Casing	7	8-3/4	

Survey Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
434.00	433.97	2.97	-3.38	First TES Survey	
10,680.00	5,407.34	-908.13	6,014.96	Final TES Survey	
10,753.00	5,407.39	-923.52	6,086.32	Projection To Bit	

Checked By: _____ Approved By: _____ Date: _____



Project: San Juan Co., NM
Site: Sec.11-T23N-R8W
Well: Chaco 2308-11A 407H
Wellbore: Wellbore #1
Design: Wellbore #1



WELL DETAILS: Chaco 2308-11A 407H

		Ground Level:					
		7011.00					
		Easting		Latitude		Longitude	Slot
+N/-S	+E/-W	Northing					
0.00	0.00	1909548.863891		555506.541408		36.247948	-107.645090

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
PBHL Chaco 2308-11A 407H	5379.47	-897.38	6096.86	36.245481	-107.624414	Point
407H Base Perf	5407.31	-902.31	5988.60	36.245468	-107.624781	Point

Survey: TES Surveys (Chaco 2308-11A 407H/Wellbore #1)

Created By: M. Ramich Date: 9:56, January 13 2015

