

CONFIDENTIAL TIGHT HOLE

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., 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 Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico Energy, Minerals & Natural Resources Department OIL CONSERVATION DIVISION 1220 South St. Francis Dr. Santa Fe. NM 87505

Form C-102
Revised August 1, 2011
Submit one copy to
appropriate
District Office

☒ AS DRILLED
☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-045- 35242		² Pool Code 97232	³ Pool Name BASIN MANCOS
⁴ Property Code 314806	⁵ Property Name RICHARDSON NAVAJO 27-13-10		⁶ Well Number 04H
⁷ OGRID No. 162928	⁸ Operator Name ENERGEN RESOURCES CORPORATION		⁹ Elevation 5922'

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
N	11	27-N	13-W		1281'	SOUTH	1385'	WEST	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
M	10	27-N	13-W		382'	SOUTH	255'	WEST	SAN JUAN

¹² Dedicated Acres 320 Acres S/2 SEC 10	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No. NSL-7312-0
--	-------------------------------	----------------------------------	---------------------------------------

No allowable will be assigned to this completion until all interest have been consolidated or a non-standard unit has been approved by the division.

AS-DRILL

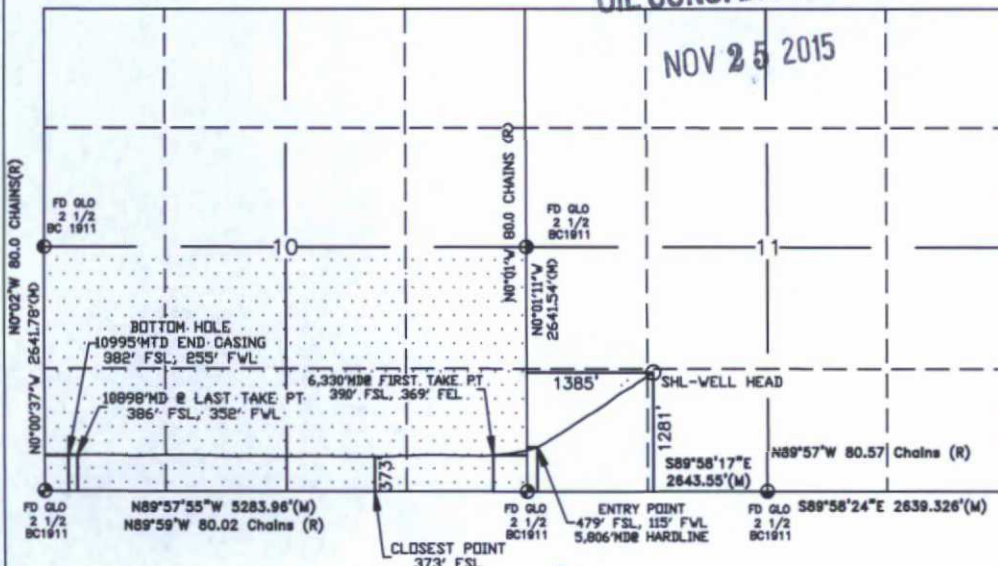
BOTTOM HOLE:
LAT: 36.58357°N-NAD 83
LONG: 108.21466°W-NAD 83
LAT: 36.58357°N-NAD 27
LONG: 108.21403°W-NAD 27
(INFORMATION PROVIDED BY
ENERGEN RESOURCES CORP.)

ENTRY POINT:
LAT: 36.58383°N-NAD 83
LONG: 108.19714°W-NAD 83
LAT: 36.58383°N-NAD 27
LONG: 108.19651°W-NAD 27

SURFACE HOLE LOCATION:
LAT: 36.58603°N-NAD 83
LONG: 108.19282°W-NAD 83
LAT: 36.58603°N-NAD 27
LONG: 108.19219°W-NAD 27

OIL CONS. DIV DIST. 3

NOV 25 2015



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.

Theresa McAndrews 11/23/15
Signature Date

Theresa McAndrews
Printed Name

tmcandre@energen.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.

20th Oct 2015

Date of Survey
Signature and Seal of Professional Surveyor:

THIS CERTIFICATION ONLY
CERTIFIES THE AS-DRILLED
WELL HEAD

8466

WILLIAM E. MAHNKE II
Certificate Number PLS 8466

ENERGEN

Energen Resources Corp.

San Juan County, NM (NAD83)

Richardson Navajo

Richardson Navajo 27-13-10 #4H

Horizontal

Design: Horizontal

Standard Survey Report

24 November, 2015



Scientific Drilling

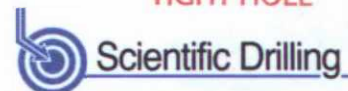
www.scientificdrilling.com



ENERGEN

Survey Report

NOV 25 2015



Company:	Energen Resources Corp.	Local Co-ordinate Reference:	Well Richardson Navajo 27-13-10 #4H
Project:	San Juan County, NM (NAD83)	TVD Reference:	GL 5922' & RKB 17' @ 5938.99usft (Key 881)
Site:	Richardson Navajo	MD Reference:	GL 5922' & RKB 17' @ 5938.99usft (Key 881)
Well:	Richardson Navajo 27-13-10 #4H	North Reference:	True
Wellbore:	Horizontal	Survey Calculation Method:	Minimum Curvature
Design:	Horizontal	Database:	Grand Junction District

Project	San Juan County, NM (NAD83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Western Zone		

Site	Richardson Navajo		
Site Position:		Northing:	2,032,822.99 usft
From:	Lat/Long	Easting:	2,617,552.70 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in
		Latitude:	36.5860330
		Longitude:	-108.1928180
		Grid Convergence:	-0.21 °

Well	Richardson Navajo 27-13-10 #4H					
Well Position	+N/-S	0.00 usft	Northing:	2,032,822.99 usft	Latitude:	36.5860330
	+E/-W	0.00 usft	Easting:	2,617,552.70 usft	Longitude:	-108.1928180
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	5,921.99 usft

Wellbore	Horizontal				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	9/29/2015	9.33	63.25	50,109

Design	Horizontal				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	3,853.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	237.24	

Survey Program		Date	11/24/2015	
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
357.00	3,853.00	Survey #1 - MWD Surveys (Pilot)	SDI MWD	SDI MWD - Standard ver 1.0.1
3,948.00	6,276.00	Survey #2 - Curve MWD Survey (Horizontal)	SDI MWD	SDI MWD - Standard ver 1.0.1
6,362.00	10,995.00	Survey #3 - Lateral MWD Survey (Horizontal)	SDI MWD	SDI MWD - Standard ver 1.0.1

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
357.00	0.65	87.45	356.99	0.09	2.02	-1.75	0.18	0.18	0.00
419.00	0.65	79.02	418.99	0.17	2.72	-2.38	0.15	0.00	-13.60
480.00	0.64	200.02	479.99	-0.08	2.94	-2.43	1.84	-0.02	198.36
541.00	1.28	217.52	540.98	-0.94	2.41	-1.52	1.14	1.05	28.69
603.00	1.31	220.25	602.96	-2.03	1.53	-0.19	0.11	0.05	4.40
665.00	1.49	221.24	664.94	-3.18	0.54	1.26	0.29	0.29	1.60
726.00	1.40	213.79	725.92	-4.39	-0.40	2.71	0.34	-0.15	-12.21
787.00	1.44	219.08	786.91	-5.61	-1.29	4.12	0.22	0.07	8.67

Company:	Energen Resources Corp.	Local Co-ordinate Reference:	Well Richardson Navajo 27-13-10 #4H
Project:	San Juan County, NM (NAD83)	TVD Reference:	GL 5922' & RKB 17' @ 5938.99usft (Key 881)
Site:	Richardson Navajo	MD Reference:	GL 5922' & RKB 17' @ 5938.99usft (Key 881)
Well:	Richardson Navajo 27-13-10 #4H	North Reference:	True
Wellbore:	Horizontal	Survey Calculation Method:	Minimum Curvature
Design:	Horizontal	Database:	Grand Junction District

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)
849.00	1.66	224.98	848.88	-6.85	-2.42	5.74	0.44	0.35	9.52
910.00	1.71	224.58	909.86	-8.12	-3.68	7.49	0.08	0.08	-0.66
971.00	0.78	218.84	970.84	-9.09	-4.58	8.77	1.54	-1.52	-9.41
1,033.00	0.35	236.62	1,032.84	-9.53	-5.00	9.36	0.74	-0.69	28.68
1,092.00	0.32	192.33	1,091.84	-9.79	-5.19	9.66	0.43	-0.05	-75.07
1,153.00	0.24	133.35	1,152.84	-10.04	-5.13	9.75	0.47	-0.13	-96.69
1,214.00	0.20	181.00	1,213.84	-10.24	-5.04	9.78	0.30	-0.07	78.11
1,275.00	0.21	4.74	1,274.84	-10.23	-5.03	9.77	0.67	0.02	-288.95
1,338.00	0.31	0.78	1,337.84	-9.94	-5.02	9.61	0.16	0.16	-6.29
1,400.00	0.58	333.06	1,399.83	-9.50	-5.16	9.48	0.54	0.44	-44.71
1,463.00	0.39	339.94	1,462.83	-9.01	-5.38	9.40	0.31	-0.30	10.92
1,526.00	1.36	274.95	1,525.82	-8.75	-6.20	9.95	1.98	1.54	-103.16
1,589.00	2.84	250.79	1,588.78	-9.19	-8.42	12.05	2.69	2.35	-38.35
1,652.00	5.20	243.48	1,651.62	-10.98	-12.45	16.41	3.83	3.75	-11.60
1,715.00	6.13	244.54	1,714.31	-13.70	-18.04	22.59	1.49	1.48	1.68
1,778.00	6.08	243.76	1,776.96	-16.63	-24.07	29.24	0.15	-0.08	-1.24
1,840.00	5.86	242.73	1,838.62	-19.53	-29.83	35.65	0.39	-0.35	-1.66
1,902.00	5.70	242.30	1,900.30	-22.41	-35.37	41.87	0.27	-0.26	-0.69
1,965.00	5.54	241.80	1,963.00	-25.30	-40.82	48.01	0.27	-0.25	-0.79
2,028.00	5.67	241.67	2,025.70	-28.21	-46.24	54.15	0.21	0.21	-0.21
2,091.00	5.89	235.83	2,088.38	-31.51	-51.65	60.48	1.00	0.35	-9.27
2,153.00	5.93	231.82	2,150.05	-35.27	-56.80	66.85	0.67	0.06	-6.47
2,216.00	5.88	238.03	2,212.72	-38.99	-62.09	73.32	1.02	-0.08	9.86
2,279.00	6.08	240.40	2,275.38	-42.35	-67.73	79.88	0.50	0.32	3.76
2,342.00	5.63	237.24	2,338.05	-45.67	-73.23	86.30	0.88	-0.71	-5.02
2,405.00	5.44	238.32	2,400.75	-48.91	-78.37	92.37	0.34	-0.30	1.71
2,468.00	5.15	237.55	2,463.48	-52.00	-83.30	98.19	0.47	-0.46	-1.22
2,594.00	5.90	238.66	2,588.90	-58.40	-93.60	110.32	0.60	0.60	0.88
2,657.00	5.60	238.70	2,651.58	-61.68	-99.00	116.63	0.48	-0.48	0.06
2,720.00	5.14	238.71	2,714.30	-64.74	-104.03	122.52	0.73	-0.73	0.02
2,783.00	5.56	235.57	2,777.03	-67.93	-108.96	128.39	0.81	0.67	-4.98
2,846.00	5.90	237.18	2,839.71	-71.41	-114.20	134.68	0.60	0.54	2.56
2,909.00	5.58	237.95	2,902.40	-74.79	-119.52	140.98	0.52	-0.51	1.22
2,972.00	5.91	239.61	2,965.08	-78.06	-124.91	147.28	0.59	0.52	2.63
3,035.00	6.05	241.20	3,027.74	-81.30	-130.62	153.84	0.34	0.22	2.52
3,098.00	6.61	241.20	3,090.36	-84.65	-136.71	160.77	0.89	0.89	0.00
3,161.00	7.05	238.26	3,152.91	-88.43	-143.17	168.25	0.89	0.70	-4.67
3,223.00	6.62	237.15	3,214.47	-92.37	-149.41	175.63	0.73	-0.69	-1.79
3,286.00	6.47	238.18	3,277.06	-96.21	-155.48	182.81	0.30	-0.24	1.63
3,350.00	6.41	240.06	3,340.65	-99.89	-161.64	189.98	0.34	-0.09	2.94
3,412.00	6.42	238.44	3,402.27	-103.44	-167.59	196.90	0.29	0.02	-2.61
3,475.00	6.38	237.63	3,464.87	-107.15	-173.55	203.93	0.16	-0.06	-1.29
3,537.00	6.19	238.41	3,526.50	-110.75	-179.30	210.71	0.34	-0.31	1.26

Company:	Energen Resources Corp.	Local Co-ordinate Reference:	Well Richardson Navajo 27-13-10 #4H
Project:	San Juan County, NM (NAD83)	TVD Reference:	GL 5922' & RKB 17' @ 5938.99usft (Key 881)
Site:	Richardson Navajo	MD Reference:	GL 5922' & RKB 17' @ 5938.99usft (Key 881)
Well:	Richardson Navajo 27-13-10 #4H	North Reference:	True
Wellbore:	Horizontal	Survey Calculation Method:	Minimum Curvature
Design:	Horizontal	Database:	Grand Junction District

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)
3,600.00	6.50	240.10	3,589.11	-114.30	-185.29	217.67	0.57	0.49	2.68
3,663.00	6.16	235.75	3,651.73	-117.98	-191.17	224.61	0.93	-0.54	-6.90
3,726.00	5.74	234.77	3,714.39	-121.70	-196.54	231.14	0.69	-0.67	-1.56
3,790.00	5.38	232.96	3,778.09	-125.36	-201.55	237.33	0.63	-0.56	-2.83
3,853.00	5.24	237.05	3,840.82	-128.70	-206.32	243.15	0.64	-0.22	6.49
3,948.00	8.84	207.44	3,935.12	-137.55	-213.33	253.83	5.26	3.79	-31.17
First SDI Curve MWD Survey									
4,011.00	14.44	236.72	3,996.85	-146.17	-222.14	265.90	12.66	8.89	46.48
4,074.00	21.49	247.02	4,056.75	-154.99	-239.36	285.16	12.23	11.19	16.35
4,136.00	26.71	241.64	4,113.34	-166.06	-262.09	310.26	9.13	8.42	-8.68
4,199.00	30.86	240.04	4,168.54	-180.86	-288.56	340.53	6.70	6.59	-2.54
4,262.00	33.81	239.98	4,221.76	-197.70	-317.75	374.19	4.68	4.68	-0.10
4,325.00	38.10	239.84	4,272.75	-216.24	-349.74	411.13	6.81	6.81	-0.22
4,388.00	41.86	236.96	4,321.02	-237.48	-384.18	451.58	6.65	5.97	-4.57
4,451.00	41.51	232.56	4,368.08	-261.64	-418.39	493.42	4.68	-0.56	-6.98
4,514.00	41.02	232.14	4,415.43	-287.02	-451.29	534.82	0.89	-0.78	-0.67
4,577.00	44.93	235.10	4,461.52	-312.44	-485.87	577.66	6.98	6.21	4.70
4,640.00	47.63	235.94	4,505.06	-338.21	-523.41	623.17	4.39	4.29	1.33
4,703.00	47.84	234.86	4,547.43	-364.69	-561.78	669.77	1.31	0.33	-1.71
4,766.00	50.90	237.90	4,588.46	-391.13	-601.60	717.56	6.08	4.86	4.83
4,829.00	52.07	239.53	4,627.69	-416.72	-643.72	766.83	2.75	1.86	2.59
4,892.00	52.28	240.02	4,666.33	-441.77	-686.72	816.55	0.70	0.33	0.78
4,954.00	50.51	238.82	4,705.01	-466.41	-728.43	864.96	3.23	-2.85	-1.94
5,017.00	49.81	237.42	4,745.37	-491.95	-769.51	913.32	2.04	-1.11	-2.22
5,080.00	50.41	236.98	4,785.77	-518.14	-810.14	961.66	1.09	0.95	-0.70
5,143.00	49.11	236.36	4,826.47	-544.56	-850.32	1,009.75	2.20	-2.06	-0.98
5,206.00	48.74	235.75	4,867.86	-571.08	-889.72	1,057.23	0.94	-0.59	-0.97
5,269.00	48.69	236.85	4,909.43	-597.35	-929.11	1,104.56	1.31	-0.08	1.75
5,332.00	47.52	237.44	4,951.50	-622.79	-968.50	1,151.46	1.98	-1.86	0.94
5,394.00	48.50	239.52	4,992.98	-646.87	-1,007.78	1,197.52	2.95	1.58	3.35
5,457.00	48.27	239.67	5,034.82	-670.71	-1,048.40	1,244.58	0.41	-0.37	0.24
5,518.00	48.12	237.65	5,075.49	-694.36	-1,087.23	1,290.03	2.48	-0.25	-3.31
5,581.00	47.38	236.61	5,117.85	-719.66	-1,126.40	1,336.67	1.69	-1.17	-1.65
5,644.00	45.39	235.76	5,161.30	-745.04	-1,164.30	1,382.27	3.31	-3.16	-1.35
5,708.00	48.31	242.10	5,205.09	-769.06	-1,204.28	1,428.89	8.54	4.56	9.91
5,771.00	50.08	245.01	5,246.26	-790.28	-1,246.97	1,476.27	4.48	2.81	4.62
5,834.00	53.41	249.21	5,285.28	-809.47	-1,292.54	1,524.98	7.44	5.29	6.67
5,897.00	59.90	253.69	5,319.90	-826.12	-1,342.41	1,575.93	11.89	10.30	7.11
5,960.00	67.19	257.88	5,347.96	-839.90	-1,397.05	1,629.33	13.01	11.57	6.65
6,023.00	74.25	260.29	5,368.75	-851.12	-1,455.41	1,684.47	11.77	11.21	3.83
6,086.00	77.19	260.32	5,384.29	-861.40	-1,515.58	1,740.64	4.67	4.67	0.05
6,149.00	81.85	261.34	5,395.74	-871.27	-1,576.72	1,797.39	7.57	7.40	1.62
6,212.00	85.93	263.63	5,402.45	-879.45	-1,638.81	1,854.03	7.42	6.48	3.63
6,276.00	88.99	264.65	5,405.28	-885.98	-1,702.40	1,911.04	5.04	4.78	1.59

Company:	Energen Resources Corp.	Local Co-ordinate Reference:	Well Richardson Navajo 27-13-10 #4H
Project:	San Juan County, NM (NAD83)	TVD Reference:	GL 5922' & RKB 17' @ 5938.99usft (Key 881)
Site:	Richardson Navajo	MD Reference:	GL 5922' & RKB 17' @ 5938.99usft (Key 881)
Well:	Richardson Navajo 27-13-10 #4H	North Reference:	True
Wellbore:	Horizontal	Survey Calculation Method:	Minimum Curvature
Design:	Horizontal	Database:	Grand Junction District

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)
Last SDI Curve MWD Survey									
6,288.00	89.26	264.84	5,405.47	-887.08	-1,714.35	1,921.68	2.73	2.23	1.57
Crossed POE Hardline @ 6288' MD - 36.5835961, -108.1986571									
6,362.00	90.91	266.00	5,405.36	-892.99	-1,788.11	1,986.91	2.73	2.23	1.57
First SDI Lateral MWD Survey									
6,394.00	91.88	266.71	5,404.58	-895.02	-1,820.04	2,014.86	3.76	3.03	2.22
6,457.00	91.18	269.86	5,402.90	-896.91	-1,882.98	2,068.80	5.12	-1.11	5.00
6,520.00	91.04	271.29	5,401.68	-896.28	-1,945.96	2,121.43	2.28	-0.22	2.27
6,583.00	91.10	270.72	5,400.50	-895.17	-2,008.94	2,173.79	0.91	0.10	-0.90
6,645.00	90.74	271.52	5,399.51	-893.96	-2,070.92	2,225.25	1.41	-0.58	1.29
6,709.00	89.43	271.83	5,399.41	-892.09	-2,134.89	2,278.03	2.10	-2.05	0.48
6,772.00	89.53	272.08	5,399.98	-889.94	-2,197.85	2,329.82	0.43	0.16	0.40
6,835.00	88.62	271.10	5,401.00	-888.19	-2,260.82	2,381.82	2.12	-1.44	-1.56
6,898.00	89.40	269.67	5,402.09	-887.77	-2,323.80	2,434.56	2.59	1.24	-2.27
6,959.00	91.84	269.82	5,401.43	-888.04	-2,384.80	2,485.99	4.01	4.00	0.25
7,021.00	91.28	269.59	5,399.74	-888.36	-2,446.77	2,538.28	0.98	-0.90	-0.37
7,082.00	90.81	269.42	5,398.63	-888.89	-2,507.76	2,589.85	0.82	-0.77	-0.28
7,143.00	90.91	268.86	5,397.71	-889.80	-2,568.74	2,641.63	0.93	0.16	-0.92
7,205.00	89.80	267.69	5,397.33	-891.67	-2,630.71	2,694.75	2.60	-1.79	-1.89
7,267.00	90.91	268.19	5,396.94	-893.90	-2,692.67	2,748.06	1.96	1.79	0.81
7,328.00	89.90	267.55	5,396.51	-896.16	-2,753.63	2,800.55	1.96	-1.66	-1.05
7,389.00	92.65	266.99	5,395.16	-899.07	-2,814.54	2,853.34	4.60	4.51	-0.92
7,451.00	94.87	266.88	5,391.09	-902.37	-2,876.31	2,907.08	3.59	3.58	-0.18
7,513.00	95.62	268.06	5,385.42	-905.10	-2,937.99	2,960.42	2.25	1.21	1.90
7,574.00	96.22	269.49	5,379.13	-906.40	-2,998.65	3,012.13	2.53	0.98	2.34
7,635.00	95.04	270.68	5,373.15	-906.31	-3,059.35	3,063.13	2.74	-1.93	1.95
7,696.00	93.92	271.11	5,368.38	-905.36	-3,120.16	3,113.75	1.97	-1.84	0.70
7,758.00	93.79	271.02	5,364.21	-904.21	-3,182.01	3,165.13	0.25	-0.21	-0.15
7,819.00	93.02	270.23	5,360.59	-903.54	-3,242.89	3,215.98	1.81	-1.26	-1.30
7,881.00	92.62	270.14	5,357.54	-903.34	-3,304.82	3,267.94	0.66	-0.65	-0.15
7,940.00	92.69	270.65	5,354.81	-902.94	-3,363.75	3,317.28	0.87	0.12	0.86
8,001.00	92.01	271.37	5,352.31	-901.86	-3,424.69	3,367.94	1.62	-1.11	1.18
8,062.00	91.85	271.95	5,350.25	-900.10	-3,485.63	3,418.23	0.99	-0.26	0.95
8,123.00	92.15	271.26	5,348.12	-898.39	-3,546.57	3,468.55	1.23	0.49	-1.13
8,184.00	91.91	270.70	5,345.96	-897.35	-3,607.52	3,519.25	1.00	-0.39	-0.92
8,246.00	91.78	270.06	5,343.96	-896.94	-3,669.49	3,571.13	1.05	-0.21	-1.03
8,307.00	91.98	269.80	5,341.96	-897.01	-3,730.45	3,622.44	0.54	0.33	-0.43
8,367.00	92.19	269.02	5,339.78	-897.63	-3,790.41	3,673.19	1.35	0.35	-1.30
8,428.00	92.48	268.03	5,337.30	-899.20	-3,851.34	3,725.28	1.69	0.48	-1.62
8,488.00	93.46	268.62	5,334.19	-900.95	-3,911.23	3,776.59	1.91	1.63	0.98
8,550.00	95.39	270.48	5,329.40	-901.43	-3,973.04	3,828.83	4.32	3.11	3.00
8,610.00	93.20	271.10	5,324.91	-900.61	-4,032.86	3,878.69	3.79	-3.65	1.03
8,672.00	91.21	270.13	5,322.52	-899.94	-4,094.81	3,930.42	3.57	-3.21	-1.56

Company:	Energen Resources Corp.	Local Co-ordinate Reference:	Well Richardson Navajo 27-13-10 #4H
Project:	San Juan County, NM (NAD83)	TVD Reference:	GL 5922' & RKB 17' @ 5938.99usft (Key 881)
Site:	Richardson Navajo	MD Reference:	GL 5922' & RKB 17' @ 5938.99usft (Key 881)
Well:	Richardson Navajo 27-13-10 #4H	North Reference:	True
Wellbore:	Horizontal	Survey Calculation Method:	Minimum Curvature
Design:	Horizontal	Database:	Grand Junction District

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)
8,733.00	91.14	269.87	5,321.27	-899.94	-4,155.80	3,981.71	0.44	-0.11	-0.43
8,795.00	92.28	270.76	5,319.42	-899.60	-4,217.77	4,033.63	2.33	1.84	1.44
8,856.00	92.18	270.16	5,317.05	-899.11	-4,278.72	4,084.63	1.00	-0.16	-0.98
8,918.00	92.63	270.00	5,314.45	-899.03	-4,340.66	4,136.67	0.77	0.73	-0.26
8,979.00	93.39	270.09	5,311.24	-898.98	-4,401.58	4,187.87	1.25	1.25	0.15
9,041.00	93.83	269.58	5,307.34	-899.16	-4,463.45	4,240.00	1.09	0.71	-0.82
9,102.00	92.85	269.35	5,303.79	-899.73	-4,524.35	4,291.51	1.65	-1.61	-0.38
9,163.00	93.37	270.41	5,300.48	-899.85	-4,585.26	4,342.80	1.93	0.85	1.74
9,225.00	92.98	271.28	5,297.04	-898.94	-4,647.15	4,394.36	1.54	-0.63	1.40
9,286.00	91.36	271.77	5,294.73	-897.32	-4,708.09	4,444.72	2.77	-2.66	0.80
9,346.00	90.60	272.47	5,293.71	-895.10	-4,768.04	4,493.93	1.72	-1.27	1.17
9,407.00	90.30	272.08	5,293.23	-892.68	-4,828.98	4,543.87	0.81	-0.49	-0.64
9,469.00	90.30	271.60	5,292.90	-890.69	-4,890.95	4,594.91	0.77	0.00	-0.77
9,530.00	90.64	270.82	5,292.40	-889.40	-4,951.94	4,645.49	1.39	0.56	-1.28
9,592.00	90.91	270.69	5,291.57	-888.58	-5,013.92	4,697.18	0.48	0.44	-0.21
9,653.00	91.37	270.31	5,290.35	-888.05	-5,074.91	4,748.17	0.98	0.75	-0.62
9,716.00	90.34	270.41	5,289.41	-887.66	-5,137.90	4,800.93	1.64	-1.63	0.16
9,779.00	90.17	270.48	5,289.13	-887.17	-5,200.90	4,853.64	0.29	-0.27	0.11
9,842.00	89.70	269.25	5,289.20	-887.31	-5,263.90	4,906.70	2.09	-0.75	-1.95
9,904.00	89.60	268.86	5,289.58	-888.34	-5,325.89	4,959.38	0.65	-0.16	-0.63
9,967.00	90.34	270.30	5,289.61	-888.80	-5,388.88	5,012.60	2.57	1.17	2.29
10,030.00	90.13	269.14	5,289.36	-889.11	-5,451.88	5,065.75	1.87	-0.33	-1.84
10,093.00	90.97	268.23	5,288.75	-890.55	-5,514.86	5,119.49	1.97	1.33	-1.44
10,156.00	92.79	268.71	5,286.68	-892.23	-5,577.80	5,173.33	2.99	2.89	0.76
10,219.00	93.02	268.50	5,283.49	-893.77	-5,640.70	5,227.05	0.49	0.37	-0.33
10,281.00	91.82	270.04	5,280.87	-894.55	-5,702.64	5,279.56	3.15	-1.94	2.48
10,344.00	90.94	271.34	5,279.36	-893.80	-5,765.61	5,332.11	2.49	-1.40	2.06
10,407.00	90.71	271.29	5,278.45	-892.35	-5,828.59	5,384.28	0.37	-0.37	-0.08
10,470.00	90.37	270.88	5,277.86	-891.16	-5,891.58	5,436.61	0.85	-0.54	-0.65
10,532.00	91.98	270.92	5,276.58	-890.18	-5,953.55	5,488.20	2.60	2.60	0.06
10,595.00	91.95	270.68	5,274.42	-889.30	-6,016.51	5,540.66	0.38	-0.05	-0.38
10,658.00	92.29	270.04	5,272.09	-888.91	-6,079.46	5,593.39	1.15	0.54	-1.02
10,721.00	91.58	269.80	5,269.97	-889.00	-6,142.43	5,646.38	1.19	-1.13	-0.38
10,784.00	91.35	269.92	5,268.36	-889.15	-6,205.41	5,699.43	0.41	-0.37	0.19
10,847.00	91.07	269.24	5,267.02	-889.61	-6,268.39	5,752.64	1.17	-0.44	-1.08
10,910.00	89.93	267.57	5,266.48	-891.37	-6,331.36	5,806.54	3.21	-1.81	-2.65
10,915.00	89.87	267.48	5,266.48	-891.58	-6,336.36	5,810.86	2.18	-1.25	-1.79
36.5835819, -108.2143998									
10,915.90	89.86	267.46	5,266.49	-891.62	-6,337.26	5,811.64	2.18	-1.25	-1.79
Crossed TD Hardline @ 10,915' MD									
10,938.00	89.58	267.07	5,266.59	-892.67	-6,359.33	5,830.77	2.18	-1.25	-1.79
Last SDI Lateral MWD Survey									
10,995.00	89.58	267.07	5,267.01	-895.59	-6,416.25	5,880.22	0.00	0.00	0.00
Projection to TD									

Company:	Energen Resources Corp.	Local Co-ordinate Reference:	Well Richardson Navajo 27-13-10 #4H
Project:	San Juan County, NM (NAD83)	TVD Reference:	GL 5922' & RKB 17' @ 5938.99usft (Key 881)
Site:	Richardson Navajo	MD Reference:	GL 5922' & RKB 17' @ 5938.99usft (Key 881)
Well:	Richardson Navajo 27-13-10 #4H	North Reference:	True
Wellbore:	Horizontal	Survey Calculation Method:	Minimum Curvature
Design:	Horizontal	Database:	Grand Junction District

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
3,948.00	3,935.12	-137.55	-213.33	First SDI Curve MWD Survey
6,276.00	5,405.28	-885.98	-1,702.40	Last SDI Curve MWD Survey
6,288.00	5,405.47	-887.08	-1,714.35	Crossed POE Hardline @ 6288' MD
6,288.00	5,405.47	-887.08	-1,714.35	36.5835961, -108.1986571
6,362.00	5,405.36	-892.99	-1,788.11	First SDI Lateral MWD Survey
10,915.00	5,266.48	-891.58	-6,336.36	36.5835819, -108.2143998
10,915.90	5,266.49	-891.62	-6,337.26	Crossed TD Hardline @ 10,915' MD
10,938.00	5,266.59	-892.67	-6,359.33	Last SDI Lateral MWD Survey
10,995.00	5,267.01	-895.59	-6,416.25	Projection to TD

Checked By: _____	Approved By: _____	Date: _____
-------------------	--------------------	-------------



D & D Services
P. O. Box 336
Flora Vista, NM 87415
505-215-4600 Fax: 505-334-9508
nowdrilling@yahoo.com

CONFIDENTIAL
TIGHT HOLE

DEVIATION REPORT

Richardson Navajo

27-13-10 4H

S11 T27N R13W

San Juan County, NM

145' $\frac{3}{4}$

325' $\frac{3}{4}$

To the best of my knowledge I believe these numbers to be true and accurate.

Glen Davis

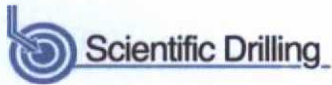
Sworn to and subscribed before me

this 21 day of October, 2015.

Kia Cordell

My commission expires: 4-10-17





Directional Survey Certification

2948 I-70 Business Loop
Grand Junction, CO 81504
(970)-245-9447 Fax (970)-245-9454

Operator	<u>Energen</u>
Well Name & No.	<u>Richardson Navajo 27-13-10 #4H</u>
County & State	<u>San Juan County, NM</u>
SDI Job No.	<u>331015HEF316877</u>
Rig	<u>Key 881</u>

I, Janie Collins, having personal knowledge of all the facts, hereby
certify that the attached directional survey run from a measured depth of 357 feet to a
measured depth of 10,995 feet is true and correct as determined from all available records.


Signature

24-Nov-15
Date

Janie Collins
Colorado District Well Planner
Scientific Drilling International

Company:	Energen Resources Corp.	Local Co-ordinate Reference:	Well Richardson Navajo 27-13-10 #4H
Project:	San Juan County, NM (NAD83)	TVD Reference:	GL 5922' & RKB 17' @ 5938.99usft (Key 881)
Site:	Richardson Navajo	MD Reference:	GL 5922' & RKB 17' @ 5938.99usft (Key 881)
Well:	Richardson Navajo 27-13-10 #4H	North Reference:	True
Wellbore:	Horizontal	Survey Calculation Method:	Minimum Curvature
Design:	Horizontal	Database:	Grand Junction District

Project	San Juan County, NM (NAD83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Western Zone		

Site	Richardson Navajo				
Site Position:		Northing:	2,032,822.99 usft	Latitude:	36.5860330
From:	Lat/Long	Easting:	2,617,552.70 usft	Longitude:	-108.1928180
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	-0.21 °

Well		Richardson Navajo 27-13-10 #4H				
Well Position	+N/-S	0.00 usft	Northing:	2,032,822.99 usft	Latitude:	36.5860330
	+E/-W	0.00 usft	Easting:	2,617,552.70 usft	Longitude:	-108.1928180
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	5,921.99 usft

Wellbore	Horizontal				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	9/29/2015	9.33	63.25	50,109

Design	Horizontal				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	3,853.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	237.24	

Survey Program	Date	11/24/2015			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
357.00	3,853.00	Survey #1 - MWD Surveys (Pilot)	SDI MWD	SDI MWD - Standard ver 1.0.1	
3,948.00	6,276.00	Survey #2 - Curve MWD Survey (Horizontal)	SDI MWD	SDI MWD - Standard ver 1.0.1	
6,362.00	10,995.00	Survey #3 - Lateral MWD Survey (Horizontal)	SDI MWD	SDI MWD - Standard ver 1.0.1	

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
357.00	0.65	87.45	356.99	0.09	2.02	-1.75	0.18	0.18	0.00	
419.00	0.65	79.02	418.99	0.17	2.72	-2.38	0.15	0.00	-13.60	
480.00	0.64	200.02	479.99	-0.08	2.94	-2.43	1.84	-0.02	198.36	
541.00	1.28	217.52	540.98	-0.94	2.41	-1.52	1.14	1.05	28.69	
603.00	1.31	220.25	602.96	-2.03	1.53	-0.19	0.11	0.05	4.40	
665.00	1.49	221.24	664.94	-3.18	0.54	1.26	0.29	0.29	1.60	
726.00	1.40	213.79	725.92	-4.39	-0.40	2.71	0.34	-0.15	-12.21	
787.00	1.44	219.08	786.91	-5.61	-1.29	4.12	0.22	0.07	8.67	

Company:	Energen Resources Corp.	Local Co-ordinate Reference:	Well Richardson Navajo 27-13-10 #4H
Project:	San Juan County, NM (NAD83)	TVD Reference:	GL 5922' & RKB 17' @ 5938.99usft (Key 881)
Site:	Richardson Navajo	MD Reference:	GL 5922' & RKB 17' @ 5938.99usft (Key 881)
Well:	Richardson Navajo 27-13-10 #4H	North Reference:	True
Wellbore:	Horizontal	Survey Calculation Method:	Minimum Curvature
Design:	Horizontal	Database:	Grand Junction District

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)
849.00	1.66	224.98	848.88	-6.85	-2.42	5.74	0.44	0.35	9.52
910.00	1.71	224.58	909.86	-8.12	-3.68	7.49	0.08	0.08	-0.66
971.00	0.78	218.84	970.84	-9.09	-4.58	8.77	1.54	-1.52	-9.41
1,033.00	0.35	236.62	1,032.84	-9.53	-5.00	9.36	0.74	-0.69	28.68
1,092.00	0.32	192.33	1,091.84	-9.79	-5.19	9.66	0.43	-0.05	-75.07
1,153.00	0.24	133.35	1,152.84	-10.04	-5.13	9.75	0.47	-0.13	-96.69
1,214.00	0.20	181.00	1,213.84	-10.24	-5.04	9.78	0.30	-0.07	78.11
1,275.00	0.21	4.74	1,274.84	-10.23	-5.03	9.77	0.67	0.02	-288.95
1,338.00	0.31	0.78	1,337.84	-9.94	-5.02	9.61	0.16	0.16	-6.29
1,400.00	0.58	333.06	1,399.83	-9.50	-5.16	9.48	0.54	0.44	-44.71
1,463.00	0.39	339.94	1,462.83	-9.01	-5.38	9.40	0.31	-0.30	10.92
1,526.00	1.36	274.95	1,525.82	-8.75	-6.20	9.95	1.98	1.54	-103.16
1,589.00	2.84	250.79	1,588.78	-9.19	-8.42	12.05	2.69	2.35	-38.35
1,652.00	5.20	243.48	1,651.62	-10.98	-12.45	16.41	3.83	3.75	-11.60
1,715.00	6.13	244.54	1,714.31	-13.70	-18.04	22.59	1.49	1.48	1.68
1,778.00	6.08	243.76	1,776.96	-16.63	-24.07	29.24	0.15	-0.08	-1.24
1,840.00	5.86	242.73	1,838.62	-19.53	-29.83	35.65	0.39	-0.35	-1.66
1,902.00	5.70	242.30	1,900.30	-22.41	-35.37	41.87	0.27	-0.26	-0.69
1,965.00	5.54	241.80	1,963.00	-25.30	-40.82	48.01	0.27	-0.25	-0.79
2,028.00	5.67	241.67	2,025.70	-28.21	-46.24	54.15	0.21	0.21	-0.21
2,091.00	5.89	235.83	2,088.38	-31.51	-51.65	60.48	1.00	0.35	-9.27
2,153.00	5.93	231.82	2,150.05	-35.27	-56.80	66.85	0.67	0.06	-6.47
2,216.00	5.88	238.03	2,212.72	-38.99	-62.09	73.32	1.02	-0.08	9.86
2,279.00	6.08	240.40	2,275.38	-42.35	-67.73	79.88	0.50	0.32	3.76
2,342.00	5.63	237.24	2,338.05	-45.67	-73.23	86.30	0.88	-0.71	-5.02
2,405.00	5.44	238.32	2,400.75	-48.91	-78.37	92.37	0.34	-0.30	1.71
2,468.00	5.15	237.55	2,463.48	-52.00	-83.30	98.19	0.47	-0.46	-1.22
2,594.00	5.90	238.66	2,588.90	-58.40	-93.60	110.32	0.60	0.60	0.88
2,657.00	5.60	238.70	2,651.58	-61.68	-99.00	116.63	0.48	-0.48	0.06
2,720.00	5.14	238.71	2,714.30	-64.74	-104.03	122.52	0.73	-0.73	0.02
2,783.00	5.56	235.57	2,777.03	-67.93	-108.96	128.39	0.81	0.67	-4.98
2,846.00	5.90	237.18	2,839.71	-71.41	-114.20	134.68	0.60	0.54	2.56
2,909.00	5.58	237.95	2,902.40	-74.79	-119.52	140.98	0.52	-0.51	1.22
2,972.00	5.91	239.61	2,965.08	-78.06	-124.91	147.28	0.59	0.52	2.63
3,035.00	6.05	241.20	3,027.74	-81.30	-130.62	153.84	0.34	0.22	2.52
3,098.00	6.61	241.20	3,090.36	-84.65	-136.71	160.77	0.89	0.89	0.00
3,161.00	7.05	238.26	3,152.91	-88.43	-143.17	168.25	0.89	0.70	-4.67
3,223.00	6.62	237.15	3,214.47	-92.37	-149.41	175.63	0.73	-0.69	-1.79
3,286.00	6.47	238.18	3,277.06	-96.21	-155.48	182.81	0.30	-0.24	1.63
3,350.00	6.41	240.06	3,340.65	-99.89	-161.64	189.98	0.34	-0.09	2.94
3,412.00	6.42	238.44	3,402.27	-103.44	-167.59	196.90	0.29	0.02	-2.61
3,475.00	6.38	237.63	3,464.87	-107.15	-173.55	203.93	0.16	-0.06	-1.29
3,537.00	6.19	238.41	3,526.50	-110.75	-179.30	210.71	0.34	-0.31	1.26

Company:	Energren Resources Corp.	Local Co-ordinate Reference:	Well Richardson Navajo 27-13-10 #4H
Project:	San Juan County, NM (NAD83)	TVD Reference:	GL 5922' & RKB 17' @ 5938.99usft (Key 881)
Site:	Richardson Navajo	MD Reference:	GL 5922' & RKB 17' @ 5938.99usft (Key 881)
Well:	Richardson Navajo 27-13-10 #4H	North Reference:	True
Wellbore:	Horizontal	Survey Calculation Method:	Minimum Curvature
Design:	Horizontal	Database:	Grand Junction District

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)
3,600.00	6.50	240.10	3,589.11	-114.30	-185.29	217.67	0.57	0.49	2.68
3,663.00	6.16	235.75	3,651.73	-117.98	-191.17	224.61	0.93	-0.54	-6.90
3,726.00	5.74	234.77	3,714.39	-121.70	-196.54	231.14	0.69	-0.67	-1.56
3,790.00	5.38	232.96	3,778.09	-125.36	-201.55	237.33	0.63	-0.56	-2.83
3,853.00	5.24	237.05	3,840.82	-128.70	-206.32	243.15	0.64	-0.22	6.49
3,948.00	8.84	207.44	3,935.12	-137.55	-213.33	253.83	5.26	3.79	-31.17
First SDI Curve MWD Survey									
4,011.00	14.44	236.72	3,996.85	-146.17	-222.14	265.90	12.66	8.89	46.48
4,074.00	21.49	247.02	4,056.75	-154.99	-239.36	285.16	12.23	11.19	16.35
4,136.00	26.71	241.64	4,113.34	-166.06	-262.09	310.26	9.13	8.42	-8.68
4,199.00	30.86	240.04	4,168.54	-180.86	-288.56	340.53	6.70	6.59	-2.54
4,262.00	33.81	239.98	4,221.76	-197.70	-317.75	374.19	4.68	4.68	-0.10
4,325.00	38.10	239.84	4,272.75	-216.24	-349.74	411.13	6.81	6.81	-0.22
4,388.00	41.86	236.96	4,321.02	-237.48	-384.18	451.58	6.65	5.97	-4.57
4,451.00	41.51	232.56	4,368.08	-261.64	-418.39	493.42	4.68	-0.56	-6.98
4,514.00	41.02	232.14	4,415.43	-287.02	-451.29	534.82	0.89	-0.78	-0.67
4,577.00	44.93	235.10	4,461.52	-312.44	-485.87	577.66	6.98	6.21	4.70
4,640.00	47.63	235.94	4,505.06	-338.21	-523.41	623.17	4.39	4.29	1.33
4,703.00	47.84	234.86	4,547.43	-364.69	-561.78	669.77	1.31	0.33	-1.71
4,766.00	50.90	237.90	4,588.46	-391.13	-601.60	717.56	6.08	4.86	4.83
4,829.00	52.07	239.53	4,627.69	-416.72	-643.72	766.83	2.75	1.86	2.59
4,892.00	52.28	240.02	4,666.33	-441.77	-686.72	816.55	0.70	0.33	0.78
4,954.00	50.51	238.82	4,705.01	-466.41	-728.43	864.96	3.23	-2.85	-1.94
5,017.00	49.81	237.42	4,745.37	-491.95	-769.51	913.32	2.04	-1.11	-2.22
5,080.00	50.41	236.98	4,785.77	-518.14	-810.14	961.66	1.09	0.95	-0.70
5,143.00	49.11	236.36	4,826.47	-544.56	-850.32	1,009.75	2.20	-2.06	-0.98
5,206.00	48.74	235.75	4,867.86	-571.08	-889.72	1,057.23	0.94	-0.59	-0.97
5,269.00	48.69	236.85	4,909.43	-597.35	-929.11	1,104.56	1.31	-0.08	1.75
5,332.00	47.52	237.44	4,951.50	-622.79	-968.50	1,151.46	1.98	-1.86	0.94
5,394.00	48.50	239.52	4,992.98	-646.87	-1,007.78	1,197.52	2.95	1.58	3.35
5,457.00	48.27	239.67	5,034.82	-670.71	-1,048.40	1,244.58	0.41	-0.37	0.24
5,518.00	48.12	237.65	5,075.49	-694.36	-1,087.23	1,290.03	2.48	-0.25	-3.31
5,581.00	47.38	236.61	5,117.85	-719.66	-1,126.40	1,336.67	1.69	-1.17	-1.65
5,644.00	45.39	235.76	5,161.30	-745.04	-1,164.30	1,382.27	3.31	-3.16	-1.35
5,708.00	48.31	242.10	5,205.09	-769.06	-1,204.28	1,428.89	8.54	4.56	9.91
5,771.00	50.08	245.01	5,246.26	-790.28	-1,246.97	1,476.27	4.48	2.81	4.62
5,834.00	53.41	249.21	5,285.28	-809.47	-1,292.54	1,524.98	7.44	5.29	6.67
5,897.00	59.90	253.69	5,319.90	-826.12	-1,342.41	1,575.93	11.89	10.30	7.11
5,960.00	67.19	257.88	5,347.96	-839.90	-1,397.05	1,629.33	13.01	11.57	6.65
6,023.00	74.25	260.29	5,368.75	-851.12	-1,455.41	1,684.47	11.77	11.21	3.83
6,086.00	77.19	260.32	5,384.29	-861.40	-1,515.58	1,740.64	4.67	4.67	0.05
6,149.00	81.85	261.34	5,395.74	-871.27	-1,576.72	1,797.39	7.57	7.40	1.62
6,212.00	85.93	263.63	5,402.45	-879.45	-1,638.81	1,854.03	7.42	6.48	3.63
6,276.00	88.99	264.65	5,405.28	-885.98	-1,702.40	1,911.04	5.04	4.78	1.59

Company:	Energen Resources Corp.	Local Co-ordinate Reference:	Well Richardson Navajo 27-13-10 #4H
Project:	San Juan County, NM (NAD83)	TVD Reference:	GL 5922' & RKB 17' @ 5938.99usft (Key 881)
Site:	Richardson Navajo	MD Reference:	GL 5922' & RKB 17' @ 5938.99usft (Key 881)
Well:	Richardson Navajo 27-13-10 #4H	North Reference:	True
Wellbore:	Horizontal	Survey Calculation Method:	Minimum Curvature
Design:	Horizontal	Database:	Grand Junction District

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)
Last SDI Curve MWD Survey									
6,288.00	89.26	264.84	5,405.47	-887.08	-1,714.35	1,921.68	2.73	2.23	1.57
Crossed POE Hardline @ 6288' MD - 36.5835961, -108.1986571									
6,362.00	90.91	266.00	5,405.36	-892.99	-1,788.11	1,986.91	2.73	2.23	1.57
First SDI Lateral MWD Survey									
6,394.00	91.88	266.71	5,404.58	-895.02	-1,820.04	2,014.86	3.76	3.03	2.22
6,457.00	91.18	269.86	5,402.90	-896.91	-1,882.98	2,068.80	5.12	-1.11	5.00
6,520.00	91.04	271.29	5,401.68	-896.28	-1,945.96	2,121.43	2.28	-0.22	2.27
6,583.00	91.10	270.72	5,400.50	-895.17	-2,008.94	2,173.79	0.91	0.10	-0.90
6,645.00	90.74	271.52	5,399.51	-893.96	-2,070.92	2,225.25	1.41	-0.58	1.29
6,709.00	89.43	271.83	5,399.41	-892.09	-2,134.89	2,278.03	2.10	-2.05	0.48
6,772.00	89.53	272.08	5,399.98	-889.94	-2,197.85	2,329.82	0.43	0.16	0.40
6,835.00	88.62	271.10	5,401.00	-888.19	-2,260.82	2,381.82	2.12	-1.44	-1.56
6,898.00	89.40	269.67	5,402.09	-887.77	-2,323.80	2,434.56	2.59	1.24	-2.27
6,959.00	91.84	269.82	5,401.43	-888.04	-2,384.80	2,485.99	4.01	4.00	0.25
7,021.00	91.28	269.59	5,399.74	-888.36	-2,446.77	2,538.28	0.98	-0.90	-0.37
7,082.00	90.81	269.42	5,398.63	-888.89	-2,507.76	2,589.85	0.82	-0.77	-0.28
7,143.00	90.91	268.86	5,397.71	-889.80	-2,568.74	2,641.63	0.93	0.16	-0.92
7,205.00	89.80	267.69	5,397.33	-891.67	-2,630.71	2,694.75	2.60	-1.79	-1.89
7,267.00	90.91	268.19	5,396.94	-893.90	-2,692.67	2,748.06	1.96	1.79	0.81
7,328.00	89.90	267.55	5,396.51	-896.16	-2,753.63	2,800.55	1.96	-1.66	-1.05
7,389.00	92.65	266.99	5,395.16	-899.07	-2,814.54	2,853.34	4.60	4.51	-0.92
7,451.00	94.87	266.88	5,391.09	-902.37	-2,876.31	2,907.08	3.59	3.58	-0.18
7,513.00	95.62	268.06	5,385.42	-905.10	-2,937.99	2,960.42	2.25	1.21	1.90
7,574.00	96.22	269.49	5,379.13	-906.40	-2,998.65	3,012.13	2.53	0.98	2.34
7,635.00	95.04	270.68	5,373.15	-906.31	-3,059.35	3,063.13	2.74	-1.93	1.95
7,696.00	93.92	271.11	5,368.38	-905.36	-3,120.16	3,113.75	1.97	-1.84	0.70
7,758.00	93.79	271.02	5,364.21	-904.21	-3,182.01	3,165.13	0.25	-0.21	-0.15
7,819.00	93.02	270.23	5,360.59	-903.54	-3,242.89	3,215.98	1.81	-1.26	-1.30
7,881.00	92.62	270.14	5,357.54	-903.34	-3,304.82	3,267.94	0.66	-0.65	-0.15
7,940.00	92.69	270.65	5,354.81	-902.94	-3,363.75	3,317.28	0.87	0.12	0.86
8,001.00	92.01	271.37	5,352.31	-901.86	-3,424.69	3,367.94	1.62	-1.11	1.18
8,062.00	91.85	271.95	5,350.25	-900.10	-3,485.63	3,418.23	0.99	-0.26	0.95
8,123.00	92.15	271.26	5,348.12	-898.39	-3,546.57	3,468.55	1.23	0.49	-1.13
8,184.00	91.91	270.70	5,345.96	-897.35	-3,607.52	3,519.25	1.00	-0.39	-0.92
8,246.00	91.78	270.06	5,343.96	-896.94	-3,669.49	3,571.13	1.05	-0.21	-1.03
8,307.00	91.98	269.80	5,341.96	-897.01	-3,730.45	3,622.44	0.54	0.33	-0.43
8,367.00	92.19	269.02	5,339.78	-897.63	-3,790.41	3,673.19	1.35	0.35	-1.30
8,428.00	92.48	268.03	5,337.30	-899.20	-3,851.34	3,725.28	1.69	0.48	-1.62
8,488.00	93.46	268.62	5,334.19	-900.95	-3,911.23	3,776.59	1.91	1.63	0.98
8,550.00	95.39	270.48	5,329.40	-901.43	-3,973.04	3,828.83	4.32	3.11	3.00
8,610.00	93.20	271.10	5,324.91	-900.61	-4,032.86	3,878.69	3.79	-3.65	1.03
8,672.00	91.21	270.13	5,322.52	-899.94	-4,094.81	3,930.42	3.57	-3.21	-1.56

Company:	Energen Resources Corp.	Local Co-ordinate Reference:	Well Richardson Navajo 27-13-10 #4H
Project:	San Juan County, NM (NAD83)	TVD Reference:	GL 5922' & RKB 17' @ 5938.99usft (Key 881)
Site:	Richardson Navajo	MD Reference:	GL 5922' & RKB 17' @ 5938.99usft (Key 881)
Well:	Richardson Navajo 27-13-10 #4H	North Reference:	True
Wellbore:	Horizontal	Survey Calculation Method:	Minimum Curvature
Design:	Horizontal	Database:	Grand Junction District

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)
8,733.00	91.14	269.87	5,321.27	-899.94	-4,155.80	3,981.71	0.44	-0.11	-0.43
8,795.00	92.28	270.76	5,319.42	-899.60	-4,217.77	4,033.63	2.33	1.84	1.44
8,856.00	92.18	270.16	5,317.05	-899.11	-4,278.72	4,084.63	1.00	-0.16	-0.98
8,918.00	92.63	270.00	5,314.45	-899.03	-4,340.66	4,136.67	0.77	0.73	-0.26
8,979.00	93.39	270.09	5,311.24	-898.98	-4,401.58	4,187.87	1.25	1.25	0.15
9,041.00	93.83	269.58	5,307.34	-899.16	-4,463.45	4,240.00	1.09	0.71	-0.82
9,102.00	92.85	269.35	5,303.79	-899.73	-4,524.35	4,291.51	1.65	-1.61	-0.38
9,163.00	93.37	270.41	5,300.48	-899.85	-4,585.26	4,342.80	1.93	0.85	1.74
9,225.00	92.98	271.28	5,297.04	-898.94	-4,647.15	4,394.36	1.54	-0.63	1.40
9,286.00	91.36	271.77	5,294.73	-897.32	-4,708.09	4,444.72	2.77	-2.66	0.80
9,346.00	90.60	272.47	5,293.71	-895.10	-4,768.04	4,493.93	1.72	-1.27	1.17
9,407.00	90.30	272.08	5,293.23	-892.68	-4,828.98	4,543.87	0.81	-0.49	-0.64
9,469.00	90.30	271.60	5,292.90	-890.69	-4,890.95	4,594.91	0.77	0.00	-0.77
9,530.00	90.64	270.82	5,292.40	-889.40	-4,951.94	4,645.49	1.39	0.56	-1.28
9,592.00	90.91	270.69	5,291.57	-888.58	-5,013.92	4,697.18	0.48	0.44	-0.21
9,653.00	91.37	270.31	5,290.35	-888.05	-5,074.91	4,748.17	0.98	0.75	-0.62
9,716.00	90.34	270.41	5,289.41	-887.66	-5,137.90	4,800.93	1.64	-1.63	0.16
9,779.00	90.17	270.48	5,289.13	-887.17	-5,200.90	4,853.64	0.29	-0.27	0.11
9,842.00	89.70	269.25	5,289.20	-887.31	-5,263.90	4,906.70	2.09	-0.75	-1.95
9,904.00	89.60	268.86	5,289.58	-888.34	-5,325.89	4,959.38	0.65	-0.16	-0.63
9,967.00	90.34	270.30	5,289.61	-888.80	-5,388.88	5,012.60	2.57	1.17	2.29
10,030.00	90.13	269.14	5,289.36	-889.11	-5,451.88	5,065.75	1.87	-0.33	-1.84
10,093.00	90.97	268.23	5,288.75	-890.55	-5,514.86	5,119.49	1.97	1.33	-1.44
10,156.00	92.79	268.71	5,286.68	-892.23	-5,577.80	5,173.33	2.99	2.89	0.76
10,219.00	93.02	268.50	5,283.49	-893.77	-5,640.70	5,227.05	0.49	0.37	-0.33
10,281.00	91.82	270.04	5,280.87	-894.55	-5,702.64	5,279.56	3.15	-1.94	2.48
10,344.00	90.94	271.34	5,279.36	-893.80	-5,765.61	5,332.11	2.49	-1.40	2.06
10,407.00	90.71	271.29	5,278.45	-892.35	-5,828.59	5,384.28	0.37	-0.37	-0.08
10,470.00	90.37	270.88	5,277.86	-891.16	-5,891.58	5,436.61	0.85	-0.54	-0.65
10,532.00	91.98	270.92	5,276.58	-890.18	-5,953.55	5,488.20	2.60	2.60	0.06
10,595.00	91.95	270.68	5,274.42	-889.30	-6,016.51	5,540.66	0.38	-0.05	-0.38
10,658.00	92.29	270.04	5,272.09	-888.91	-6,079.46	5,593.39	1.15	0.54	-1.02
10,721.00	91.58	269.80	5,269.97	-889.00	-6,142.43	5,646.38	1.19	-1.13	-0.38
10,784.00	91.35	269.92	5,268.36	-889.15	-6,205.41	5,699.43	0.41	-0.37	0.19
10,847.00	91.07	269.24	5,267.02	-889.61	-6,268.39	5,752.64	1.17	-0.44	-1.08
10,910.00	89.93	267.57	5,266.48	-891.37	-6,331.36	5,806.54	3.21	-1.81	-2.65
10,915.00	89.87	267.48	5,266.48	-891.58	-6,336.36	5,810.86	2.18	-1.25	-1.79
36.5835819, -108.2143998									
10,915.90	89.86	267.46	5,266.49	-891.62	-6,337.26	5,811.64	2.18	-1.25	-1.79
Crossed TD Hardline @ 10,915' MD									
10,938.00	89.58	267.07	5,266.59	-892.67	-6,359.33	5,830.77	2.18	-1.25	-1.79
Last SDI Lateral MWD Survey									
10,995.00	89.58	267.07	5,267.01	-895.59	-6,416.25	5,880.22	0.00	0.00	0.00
Projection to TD									

Company:	Energen Resources Corp.	Local Co-ordinate Reference:	Well Richardson Navajo 27-13-10 #4H
Project:	San Juan County, NM (NAD83)	TVD Reference:	GL 5922' & RKB 17' @ 5938.99usft (Key 881)
Site:	Richardson Navajo	MD Reference:	GL 5922' & RKB 17' @ 5938.99usft (Key 881)
Well:	Richardson Navajo 27-13-10 #4H	North Reference:	True
Wellbore:	Horizontal	Survey Calculation Method:	Minimum Curvature
Design:	Horizontal	Database:	Grand Junction District

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
3,948.00	3,935.12	-137.55	-213.33	First SDI Curve MWD Survey
6,276.00	5,405.28	-885.98	-1,702.40	Last SDI Curve MWD Survey
6,288.00	5,405.47	-887.08	-1,714.35	Crossed POE Hardline @ 6288' MD
6,288.00	5,405.47	-887.08	-1,714.35	36.5835961, -108.1986571
6,362.00	5,405.36	-892.99	-1,788.11	First SDI Lateral MWD Survey
10,915.00	5,266.48	-891.58	-6,336.36	36.5835819, -108.2143998
10,915.90	5,266.49	-891.62	-6,337.26	Crossed TD Hardline @ 10,915' MD
10,938.00	5,266.59	-892.67	-6,359.33	Last SDI Lateral MWD Survey
10,995.00	5,267.01	-895.59	-6,416.25	Projection to TD

Checked By: _____ Approved By: _____ Date: _____