



## Directional Survey Certification

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

<b>Operator</b>	WPX Energy Rocky Mountain, LLC.
<b>Well Name &amp; No.</b>	RU 31-8
<b>County &amp; State</b>	Garfield County, CO
<b>SDI Job No.</b>	420216DEFK344085
<b>Rig</b>	H&P 318

I, Mel Mireles Jr., having personal knowledge of all the facts, hereby certify that the attached directional survey run from a measured depth of 0 feet to a measured depth of 10,121 feet is true and correct as determined from all available records.

A handwritten signature in black ink, appearing to read 'Mel Mireles Jr.', written over a horizontal line.

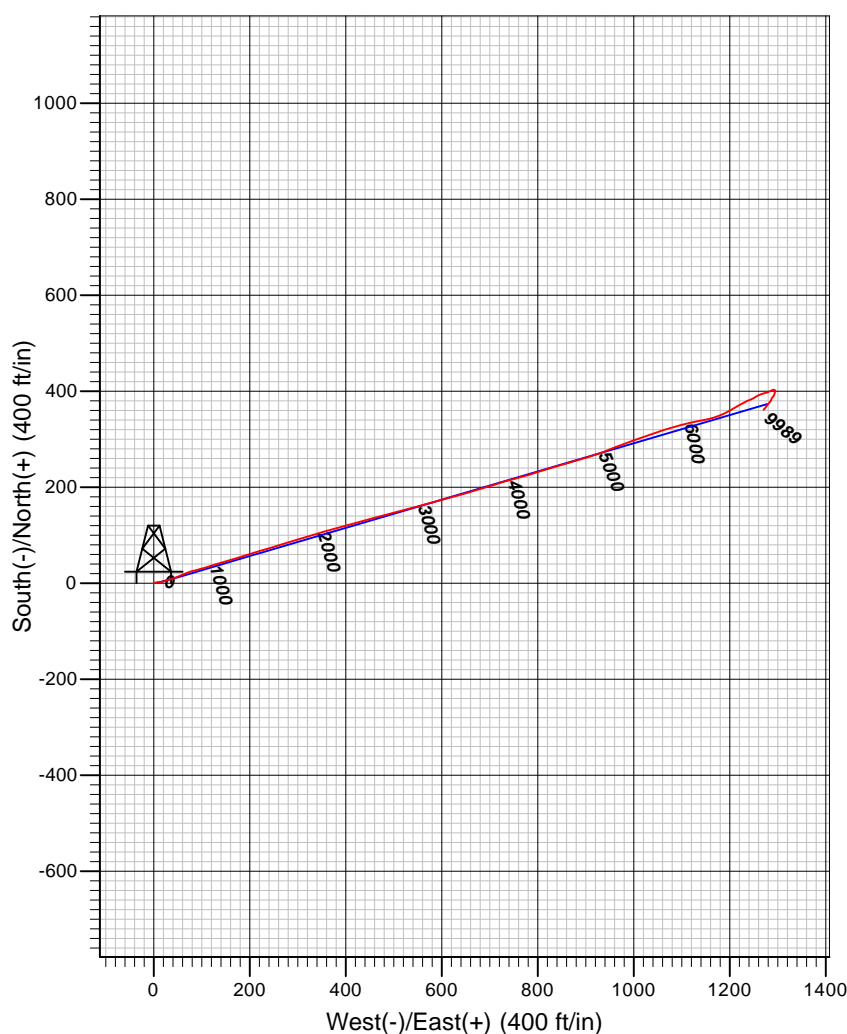
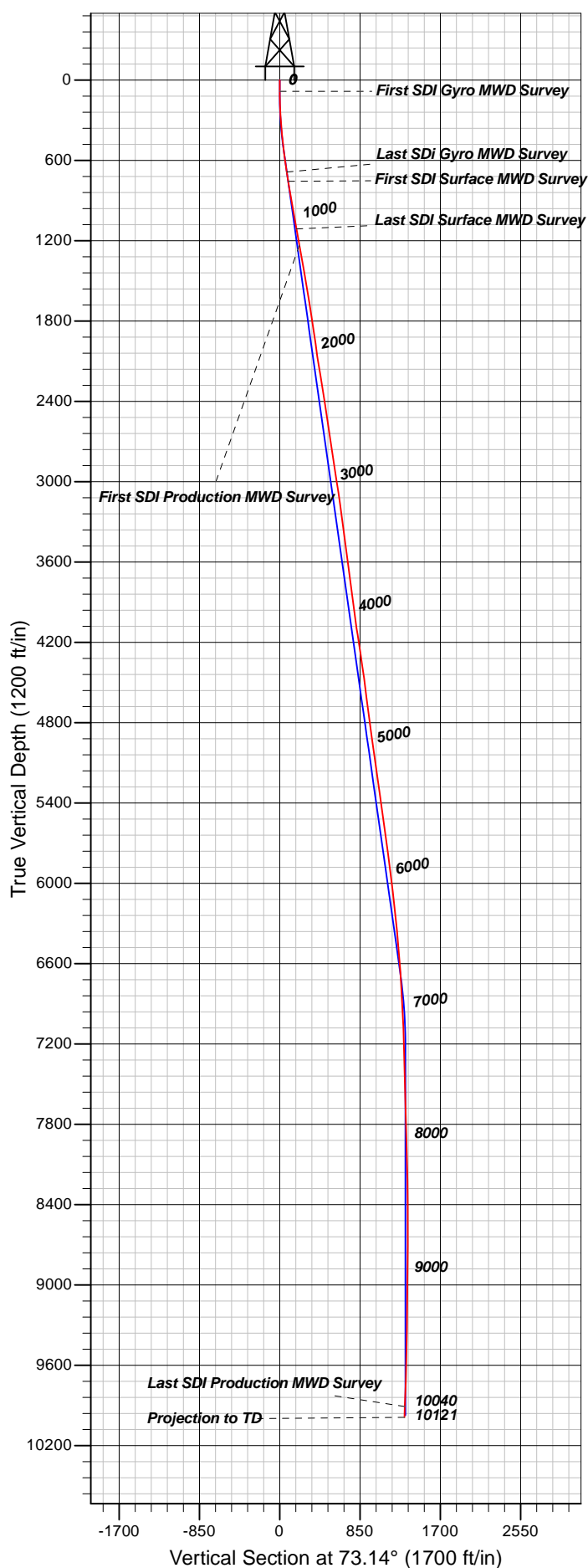
Signature

16-Feb-16

Date

### Mel Mireles Jr.

Grand Junction Assistant Well Planner  
Scientific Drilling - Colorado District



## Well Details: RU 31-8

+N/-S	+E/-W	TVD Reference: KB @ 7760.02ft (H&P 318)	Ground Level: 7736.02	Slot
0.00	0.00	Northing: 1602659.89 Easting: 2350497.81	Latitude: 39.4654920 Longitude: -107.8008119	

## REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well RU 31-8, True North  
 Vertical (TVD) Reference: KB @ 7760.02ft (H&P 318)  
 Section (VS) Reference: Slot - (0.00N, 0.00E)  
 Measured Depth Reference: KB @ 7760.02ft (H&P 318)  
 Calculation Method: Minimum Curvature

## PROJECT DETAILS: Garfield County, CO NAD83

Geodetic System: US State Plane 1983  
 Datum: North American Datum 1983  
 Ellipsoid: GRS 1980  
 Zone: Colorado Central Zone

System Datum: Mean Sea Level

Plan: Wellbore #1

13:30, February 16 2016  
 Created By: Mel Mireles

<b>Company:</b>	WPX Energy Rocky Mountain, LLC	<b>Local Co-ordinate Reference:</b>	Well RU 31-8
<b>Project:</b>	Garfield County, CO NAD83	<b>TVD Reference:</b>	KB @ 7760.02ft (H&P 318)
<b>Site:</b>	RU 21-8 Pad	<b>MD Reference:</b>	KB @ 7760.02ft (H&P 318)
<b>Well:</b>	RU 31-8	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	Grand Junction District

<b>Project</b>	Garfield County, CO NAD83		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Central Zone		

Site		RU 21-8 Pad			
Site Position:		Northing:	1,602,707.70 usft	Latitude:	39.4656273
From:	Map	Easting:	2,350,555.60 usft	Longitude:	-107.8006116
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.45 °

Well	RU 31-8					
Well Position	+N/-S	0.00 ft	Northing:	1,602,659.89 usft	Latitude:	39.4654920
	+E/-W	0.00 ft	Easting:	2,350,497.81 usft	Longitude:	-107.8008119
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	7,736.02 ft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	9/8/2014	9.84	65.66	51,918

<b>Design</b>	Wellbore #1				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>	
	0.00	0.00	0.00	73.14	

<b>Survey Program</b>	<b>Date</b>	2/15/2016			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
84.00	693.00	Survey #1 - Gyro MWD (Wellbore #1)	SDI Gyro MWD 104	SDI Gyro MWD Error Model Ver 1.0.4	
763.00	1,130.00	Survey #2 - Surface MWD (Wellbore #1)	MWD SDI	MWD - Standard ver 1.0.1	
1,255.00	10,121.00	Survey #3 - Production MWD (Wellbore #1)	MWD SDI	MWD - Standard ver 1.0.1	

<b>Survey</b>										
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Vertical Section (ft)</b>	<b>Dogleg Rate (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Turn Rate (°/100ft)</b>	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
84.00	0.35	73.83	84.00	0.07	0.25	0.26	0.42	0.42	0.00	
<b>First SDI Gyro MWD Survey</b>										
148.00	2.11	76.90	147.98	0.39	1.58	1.63	2.75	2.75	4.80	
240.00	4.05	82.00	239.85	1.23	6.45	6.53	2.13	2.11	5.54	
330.00	6.25	79.89	329.48	2.53	14.42	14.53	2.45	2.44	-2.34	
421.00	8.45	74.09	419.72	5.23	25.73	26.14	2.55	2.42	-6.37	
512.00	10.29	71.02	509.51	9.71	39.85	40.95	2.09	2.02	-3.37	
603.00	11.09	65.57	598.93	15.97	55.50	57.75	1.42	0.88	-5.99	

<b>Company:</b>	WPX Energy Rocky Mountain, LLC	<b>Local Co-ordinate Reference:</b>	Well RU 31-8
<b>Project:</b>	Garfield County, CO NAD83	<b>TVD Reference:</b>	KB @ 7760.02ft (H&P 318)
<b>Site:</b>	RU 21-8 Pad	<b>MD Reference:</b>	KB @ 7760.02ft (H&P 318)
<b>Well:</b>	RU 31-8	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	Grand Junction District

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
693.00	11.61	71.10	687.17	22.49	71.95	75.38	1.34	0.58	6.14
<b>Last SDI Gyro MWD Survey</b>									
763.00	12.35	75.95	755.65	26.59	85.88	89.90	1.78	1.06	6.93
<b>First SDI Surface MWD Survey</b>									
854.00	13.56	73.44	844.33	31.99	105.54	110.28	1.47	1.33	-2.76
945.00	14.66	73.20	932.58	38.36	126.79	132.47	1.21	1.21	-0.26
1,036.00	13.63	72.75	1,020.82	44.87	148.06	154.71	1.14	-1.13	-0.49
1,130.00	14.03	73.48	1,112.10	51.39	169.56	177.18	0.46	0.43	0.78
<b>Last SDI Surface MWD Survey</b>									
1,255.00	15.01	72.62	1,233.10	60.54	199.53	208.51	0.80	0.78	-0.69
<b>First SDI Production MWD Survey</b>									
1,349.00	14.29	72.93	1,324.05	67.58	222.24	232.29	0.77	-0.77	0.33
1,444.00	13.80	73.84	1,416.21	74.17	244.33	255.34	0.57	-0.52	0.96
1,539.00	13.34	73.32	1,508.56	80.47	265.71	277.63	0.50	-0.48	-0.55
1,634.00	12.87	73.31	1,601.08	86.66	286.35	299.17	0.49	-0.49	-0.01
1,729.00	12.52	73.15	1,693.76	92.68	306.33	320.05	0.37	-0.37	-0.17
1,823.00	12.36	72.88	1,785.55	98.59	325.70	340.30	0.18	-0.17	-0.29
1,917.00	12.19	73.85	1,877.40	104.32	344.85	360.28	0.28	-0.18	1.03
2,012.00	11.81	73.93	1,970.33	109.80	363.82	380.03	0.40	-0.40	0.08
2,106.00	11.09	72.98	2,062.46	115.11	381.71	398.69	0.79	-0.77	-1.01
2,201.00	13.13	75.09	2,155.34	120.56	400.88	418.61	2.20	2.15	2.22
2,296.00	13.09	75.55	2,247.86	126.02	421.72	440.14	0.12	-0.04	0.48
2,390.00	12.96	75.01	2,339.44	131.40	442.21	461.31	0.19	-0.14	-0.57
2,484.00	12.66	75.14	2,431.10	136.77	462.35	482.14	0.32	-0.32	0.14
2,579.00	12.13	75.67	2,523.89	141.91	482.08	502.52	0.57	-0.56	0.56
2,673.00	11.88	75.74	2,615.83	146.74	501.03	522.05	0.27	-0.27	0.07
2,768.00	11.08	75.40	2,708.93	151.45	519.34	540.94	0.85	-0.84	-0.36
2,862.00	12.49	75.23	2,800.95	156.31	537.91	560.13	1.50	1.50	-0.18
2,957.00	12.48	74.19	2,893.70	161.73	557.72	580.66	0.24	-0.01	-1.09
3,051.00	12.22	74.83	2,985.53	167.10	577.10	600.75	0.31	-0.28	0.68
3,145.00	12.08	73.68	3,077.42	172.47	596.14	620.53	0.30	-0.15	-1.22
3,239.00	11.33	73.72	3,169.46	177.82	614.44	639.60	0.80	-0.80	0.04
3,333.00	10.97	74.37	3,261.69	182.82	631.92	657.78	0.41	-0.38	0.69
3,427.00	10.44	74.07	3,354.05	187.57	648.72	675.24	0.57	-0.56	-0.32
3,522.00	10.18	74.56	3,447.52	192.16	665.09	692.23	0.29	-0.27	0.52
3,616.00	9.76	74.52	3,540.10	196.50	680.77	708.50	0.45	-0.45	-0.04
3,711.00	11.95	73.05	3,633.40	201.52	697.94	726.39	2.32	2.31	-1.55
3,805.00	11.12	72.76	3,725.50	207.04	715.91	745.19	0.89	-0.88	-0.31
3,900.00	10.82	73.82	3,818.76	212.24	733.22	763.26	0.38	-0.32	1.12
3,994.00	10.47	74.66	3,911.14	216.96	749.93	780.63	0.41	-0.37	0.89
4,088.00	9.98	74.02	4,003.65	221.46	766.00	797.31	0.54	-0.52	-0.68
4,182.00	11.34	74.25	4,096.02	226.21	782.73	814.69	1.45	1.45	0.24
4,277.00	12.78	72.72	4,188.93	231.87	801.75	834.54	1.55	1.52	-1.61
4,371.00	11.91	72.64	4,280.75	237.85	820.94	854.64	0.93	-0.93	-0.09

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<b>Site:</b>	RU 21-8 Pad	<b>MD Reference:</b>	KB @ 7760.02ft (H&P 318)
<b>Well:</b>	RU 31-8	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	Grand Junction District

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
4,466.00	11.42	73.15	4,373.79	243.50	839.29	873.84	0.53	-0.52	0.54	
4,560.00	10.89	73.60	4,466.01	248.71	856.72	892.03	0.57	-0.56	0.48	
4,654.00	10.36	74.74	4,558.40	253.44	873.39	909.36	0.61	-0.56	1.21	
4,749.00	9.73	73.35	4,651.94	257.99	889.32	925.92	0.71	-0.66	-1.46	
4,844.00	10.65	72.14	4,745.44	262.98	905.37	942.73	0.99	0.97	-1.27	
4,938.00	10.30	72.86	4,837.88	268.12	921.67	959.82	0.40	-0.37	0.77	
5,033.00	11.39	68.00	4,931.18	274.14	938.48	977.65	1.50	1.15	-5.12	
5,127.00	10.87	68.55	5,023.41	280.86	955.34	995.73	0.56	-0.55	0.59	
5,221.00	12.30	69.17	5,115.50	287.66	972.95	1,014.56	1.53	1.52	0.66	
5,316.00	12.27	70.48	5,208.32	294.63	991.92	1,034.74	0.30	-0.03	1.38	
5,410.00	11.58	70.39	5,300.29	301.13	1,010.22	1,054.14	0.73	-0.73	-0.10	
5,505.00	10.92	71.09	5,393.47	307.25	1,027.72	1,072.65	0.71	-0.69	0.74	
5,599.00	10.86	71.26	5,485.77	312.98	1,044.52	1,090.40	0.07	-0.06	0.18	
5,694.00	10.07	69.94	5,579.19	318.71	1,060.80	1,107.64	0.87	-0.83	-1.39	
5,788.00	11.29	75.55	5,671.57	323.82	1,077.43	1,125.04	1.70	1.30	5.97	
5,883.00	11.01	75.87	5,764.77	328.36	1,095.23	1,143.39	0.30	-0.29	0.34	
5,977.00	10.48	76.17	5,857.12	332.59	1,112.24	1,160.89	0.57	-0.56	0.32	
6,072.00	10.13	77.86	5,950.59	336.41	1,128.80	1,177.85	0.49	-0.37	1.78	
6,166.00	9.74	78.95	6,043.18	339.68	1,144.68	1,194.00	0.46	-0.41	1.16	
6,261.00	8.96	76.50	6,136.92	342.94	1,159.76	1,209.38	0.92	-0.82	-2.58	
6,356.00	8.15	67.07	6,230.87	347.29	1,173.16	1,223.46	1.70	-0.85	-9.93	
6,451.00	8.09	69.95	6,324.91	352.21	1,185.64	1,236.83	0.43	-0.06	3.03	
6,546.00	7.54	57.40	6,419.04	357.86	1,197.17	1,249.50	1.88	-0.58	-13.21	
6,641.00	6.86	59.05	6,513.29	364.13	1,207.29	1,261.01	0.75	-0.72	1.74	
6,735.00	6.42	62.04	6,606.66	369.49	1,216.75	1,271.61	0.60	-0.47	3.18	
6,829.00	5.54	62.75	6,700.15	374.03	1,225.42	1,281.23	0.94	-0.94	0.76	
6,924.00	4.21	64.86	6,794.80	377.61	1,232.66	1,289.19	1.41	-1.40	2.22	
7,019.00	4.40	66.79	6,889.53	380.53	1,239.16	1,296.26	0.25	0.20	2.03	
7,114.00	3.83	62.37	6,984.29	383.43	1,245.32	1,303.00	0.69	-0.60	-4.65	
7,208.00	3.00	58.26	7,078.12	386.18	1,250.20	1,308.46	0.92	-0.88	-4.37	
7,303.00	2.55	62.48	7,173.01	388.47	1,254.18	1,312.94	0.52	-0.47	4.44	
7,397.00	2.02	62.22	7,266.93	390.21	1,257.50	1,316.63	0.56	-0.56	-0.28	
7,492.00	2.37	64.42	7,361.86	391.84	1,260.76	1,320.21	0.38	0.37	2.32	
7,586.00	2.47	67.26	7,455.78	393.46	1,264.38	1,324.15	0.17	0.11	3.02	
7,680.00	2.15	74.76	7,549.70	394.70	1,267.95	1,327.92	0.47	-0.34	7.98	
7,775.00	2.26	76.69	7,644.63	395.60	1,271.49	1,331.57	0.14	0.12	2.03	
7,870.00	2.06	74.92	7,739.56	396.48	1,274.96	1,335.15	0.22	-0.21	-1.86	
7,964.00	1.88	77.90	7,833.51	397.24	1,278.10	1,338.38	0.22	-0.19	3.17	
8,059.00	2.45	58.18	7,928.44	398.64	1,281.35	1,341.89	0.98	0.60	-20.76	
8,154.00	2.14	59.21	8,023.37	400.62	1,284.60	1,345.57	0.33	-0.33	1.08	
8,247.00	1.81	69.47	8,116.31	402.02	1,287.47	1,348.73	0.52	-0.35	11.03	
8,342.00	1.55	78.89	8,211.27	402.80	1,290.13	1,351.50	0.40	-0.27	9.92	
8,436.00	1.21	99.28	8,305.24	402.88	1,292.36	1,353.66	0.63	-0.36	21.69	

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<b>Site:</b>	RU 21-8 Pad	<b>MD Reference:</b>	KB @ 7760.02ft (H&P 318)
<b>Well:</b>	RU 31-8	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	Grand Junction District

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
8,531.00	1.08	130.77	8,400.23	402.13	1,294.03	1,355.04	0.67	-0.14	33.15	
8,626.00	1.09	177.06	8,495.21	400.65	1,294.75	1,355.30	0.90	0.01	48.73	
8,721.00	0.53	347.42	8,590.21	400.17	1,294.70	1,355.11	1.70	-0.59	179.33	
8,813.00	0.45	262.40	8,682.20	400.54	1,294.25	1,354.79	0.72	-0.09	-92.41	
8,908.00	0.66	166.48	8,777.20	399.96	1,294.01	1,354.39	0.88	0.22	-100.97	
9,002.00	0.98	182.07	8,871.19	398.63	1,294.11	1,354.10	0.41	0.34	16.59	
9,097.00	1.41	195.72	8,966.17	396.69	1,293.76	1,353.20	0.54	0.45	14.37	
9,191.00	1.81	198.34	9,060.13	394.17	1,292.98	1,351.73	0.43	0.43	2.79	
9,286.00	1.85	205.50	9,155.08	391.36	1,291.85	1,349.83	0.24	0.04	7.54	
9,380.00	1.76	218.58	9,249.04	388.86	1,290.29	1,347.62	0.45	-0.10	13.91	
9,475.00	1.58	217.03	9,344.00	386.68	1,288.60	1,345.36	0.20	-0.19	-1.63	
9,569.00	1.80	198.80	9,437.96	384.25	1,287.34	1,343.45	0.61	0.23	-19.39	
9,663.00	2.53	206.81	9,531.89	381.00	1,285.93	1,341.16	0.84	0.78	8.52	
9,757.00	2.55	219.72	9,625.80	377.54	1,283.66	1,337.98	0.61	0.02	13.73	
9,852.00	3.44	222.53	9,720.67	373.81	1,280.38	1,333.76	0.95	0.94	2.96	
9,946.00	3.57	215.42	9,814.49	369.35	1,276.78	1,329.02	0.48	0.14	-7.56	
10,040.00	3.34	217.43	9,908.32	364.79	1,273.42	1,324.48	0.28	-0.24	2.14	
Last SDI Production MWD Survey										
10,121.00	3.34	217.43	9,989.18	361.04	1,270.55	1,320.65	0.00	0.00	0.00	
Projection to TD										

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
10,040.00	9,908.32	364.79	1,273.42	Last SDI Production MWD Survey	
10,121.00	9,989.18	361.04	1,270.55	Projection to TD	

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_