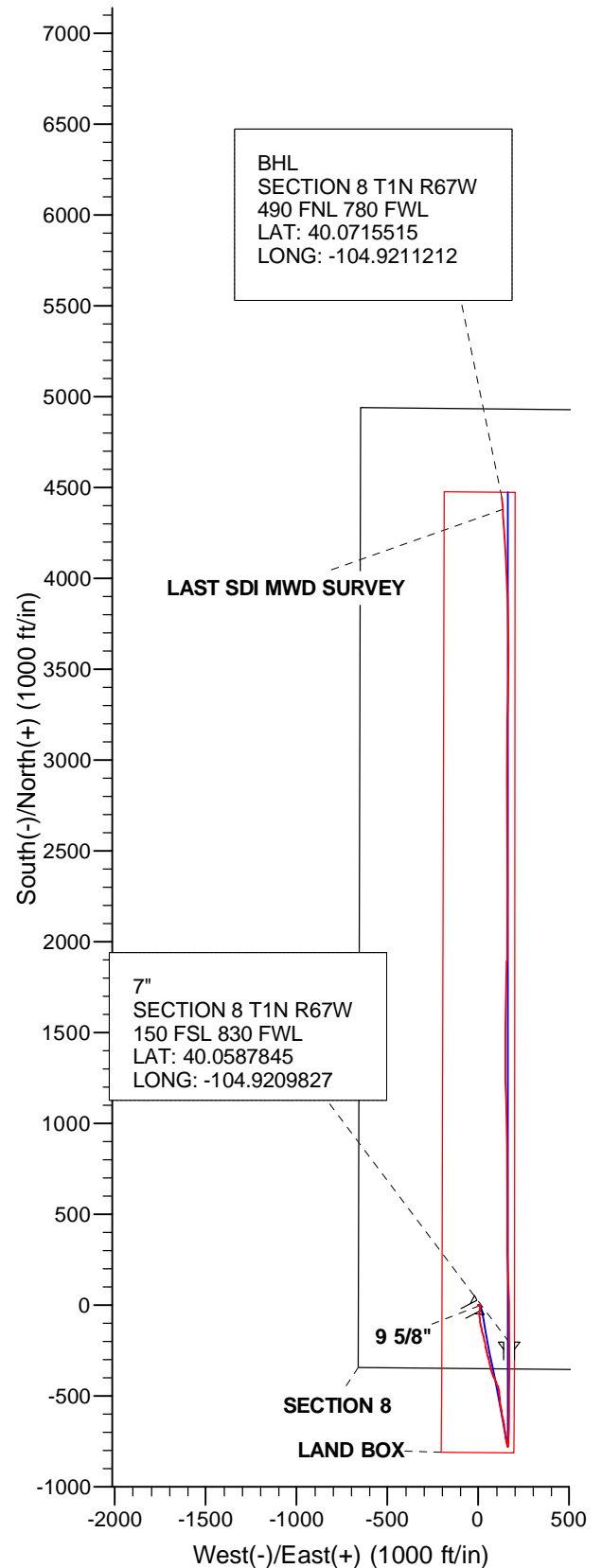
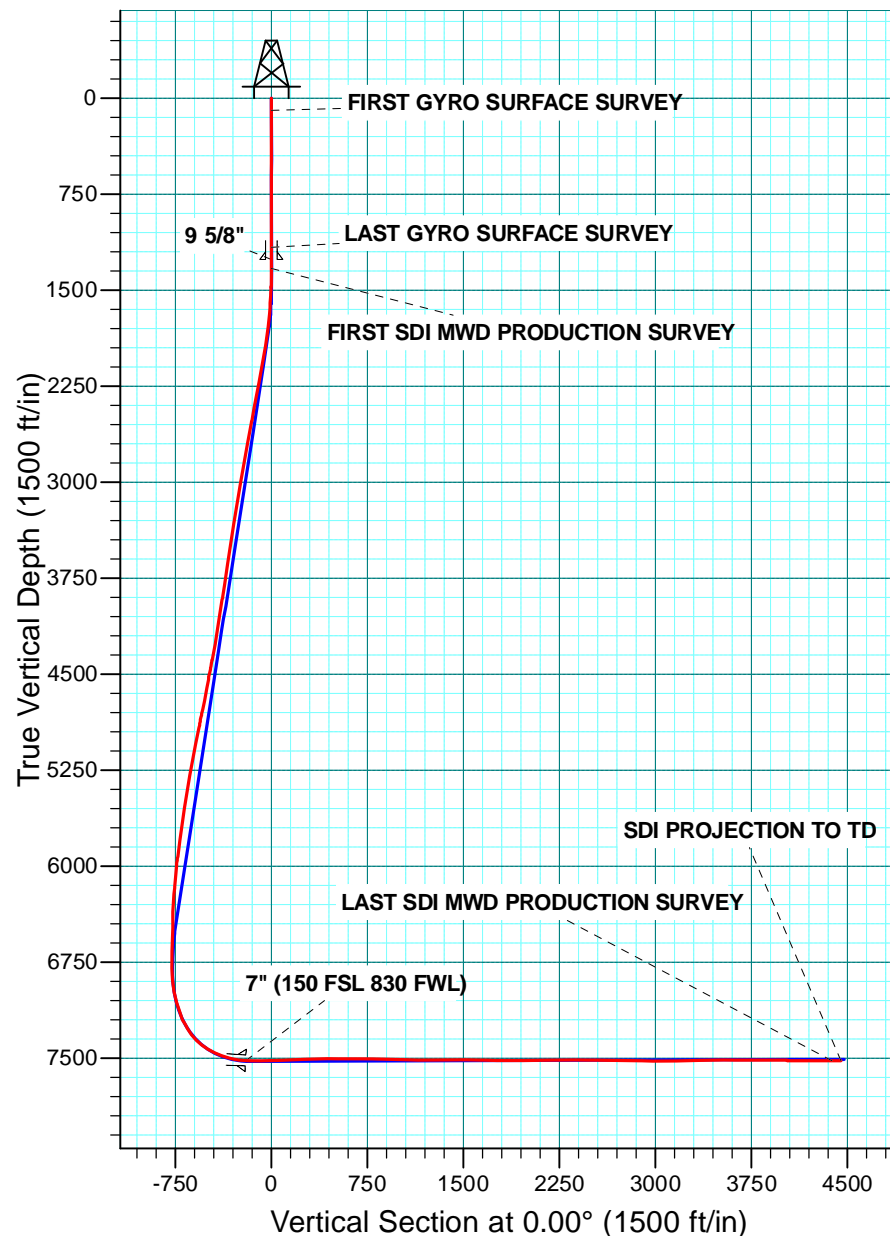


**WELL DETAILS: NRC 4N-8HZ**

GL 5049 & KB 25 @ 5074.00ft (HP 311)

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	1264991.30	3161901.77	40.0593410	-104.9215890



# **US ROCKIES REGION PLANNING**

**COLORADO NORTHERN ZONE - 83**

**NRC 13-8HZ PAD**

**NRC 4N-8HZ**

**OH**

**Design: OH**

## **Standard Survey Report**

**06 March, 2014**

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well NRC 4N-8HZ
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	GL 5049 & KB 25 @ 5074.00ft (HP 311)
<b>Site:</b>	NRC 13-8HZ PAD	<b>MD Reference:</b>	GL 5049 & KB 25 @ 5074.00ft (HP 311)
<b>Well:</b>	NRC 4N-8HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	Denver Sales Office

<b>Project</b>	COLORADO NORTHERN ZONE - 83, KERR MCGEE OIL & GAS ONSHORE LP		
<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 Northern Zone		

<b>Site</b>	NRC 13-8HZ PAD, SWSW SECTION 8 T1N R67W		
<b>Site Position:</b>		<b>Northing:</b>	1,264,991.47 usft
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,161,871.82 usft
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13.200 in
		<b>Latitude:</b>	40.0593420
		<b>Longitude:</b>	-104.9216960
		<b>Grid Convergence:</b>	0.37 °

<b>Well</b>	NRC 4N-8HZ		
<b>Well Position</b>	<b>+N/-S</b>	0.00 ft	<b>Northing:</b>
	<b>+E/-W</b>	0.00 ft	<b>Easting:</b>
<b>Position Uncertainty</b>	0.00 ft	<b>Wellhead Elevation:</b>	0.00 ft
		<b>Latitude:</b>	40.0593410
		<b>Longitude:</b>	-104.9215890
		<b>Ground Level:</b>	5,049.00 ft

<b>Wellbore</b>	OH		
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination</b>
			(°)
	BGGM2013	1/22/2014	8.61
			<b>Dip Angle</b>
			(°)
			66.65
			<b>Field Strength</b>
			(nT)
			52,581

<b>Design</b>	OH		
<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)</b>	<b>+N/-S</b>	<b>+E/-W</b>
	(ft)	(ft)	(ft)
	0.00	0.00	0.00
			<b>Direction</b>
			(°)
			0.00

<b>Survey Program</b>	<b>Date</b>	3/6/2014		
<b>From</b>	<b>To</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
(ft)	(ft)			
100.00	1,167.00	Survey #1 GYRO SURFACE (OH)	NS-GYRO-MS	North sensing gyrocompassing m/s
1,332.00	12,553.00	Survey #2 SDI MWD PRODUCTION (OH)	SDI_MWD+CRUST_1.0	SDI MWD + Crustal anomaly, Version 1.0

<b>Survey</b>									
<b>Measured</b>	<b>Inclination</b>	<b>Azimuth</b>	<b>Vertical</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Vertical</b>	<b>Dogleg</b>	<b>Build</b>	<b>Turn</b>
<b>Depth</b>	<b>(°)</b>	<b>(°)</b>	<b>Depth</b>	<b>(ft)</b>	<b>(ft)</b>	<b>Section</b>	<b>Rate</b>	<b>Rate</b>	<b>Rate</b>
<b>(ft)</b>			<b>(ft)</b>			<b>(ft)</b>	<b>(°/100usft)</b>	<b>(°/100usft)</b>	<b>(°/100usft)</b>
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.71	169.39	100.00	-0.61	0.11	-0.61	0.71	0.71	0.00
<b>FIRST GYRO SURFACE SURVEY</b>									
200.00	0.20	2.36	200.00	-1.04	0.24	-1.04	0.91	-0.51	-167.03
300.00	0.76	130.80	299.99	-1.30	0.74	-1.30	0.90	0.56	128.44
400.00	0.32	252.85	399.99	-1.82	0.98	-1.82	0.97	-0.44	122.05
500.00	0.49	78.17	499.99	-1.81	1.13	-1.81	0.81	0.17	-174.68
600.00	0.59	192.22	599.99	-2.23	1.44	-2.23	0.91	0.10	114.05
700.00	0.43	55.66	699.98	-2.52	1.64	-2.52	0.95	-0.16	-136.56
800.00	0.53	141.67	799.98	-2.67	2.24	-2.67	0.66	0.10	86.01

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well NRC 4N-8HZ
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	GL 5049 & KB 25 @ 5074.00ft (HP 311)
<b>Site:</b>	NRC 13-8HZ PAD	<b>MD Reference:</b>	GL 5049 & KB 25 @ 5074.00ft (HP 311)
<b>Well:</b>	NRC 4N-8HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	Denver Sales Office

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
900.00	0.57	7.25	899.98	-2.54	2.59	-2.54	1.01	0.04	-134.42
1,000.00	0.69	117.48	999.98	-2.32	3.19	-2.32	1.04	0.12	110.23
1,100.00	0.47	19.20	1,099.97	-2.22	3.85	-2.22	0.89	-0.22	-98.28
1,167.00	0.92	67.02	1,166.97	-1.75	4.44	-1.75	1.04	0.67	71.37
<b>LAST GYRO SURFACE SURVEY</b>									
1,263.00	0.59	62.92	1,262.96	-1.22	5.59	-1.22	0.35	-0.34	-4.28
<b>9 5/8"</b>									
1,332.00	0.36	55.36	1,331.96	-0.93	6.09	-0.93	0.35	-0.34	-10.95
<b>FIRST SDI MWD PRODUCTION SURVEY</b>									
1,423.00	1.45	158.74	1,422.95	-1.84	6.74	-1.84	1.73	1.20	113.60
1,515.00	3.16	170.33	1,514.87	-5.43	7.59	-5.43	1.92	1.86	12.60
1,607.00	4.29	188.28	1,606.68	-11.33	7.52	-11.33	1.75	1.23	19.51
1,698.00	5.48	189.01	1,697.35	-18.99	6.35	-18.99	1.31	1.31	0.80
1,790.00	7.24	185.76	1,788.78	-29.10	5.08	-29.10	1.95	1.91	-3.53
1,882.00	7.73	181.35	1,879.99	-41.06	4.35	-41.06	0.82	0.53	-4.79
1,973.00	8.77	171.76	1,970.05	-54.04	5.20	-54.04	1.89	1.14	-10.54
2,065.00	9.92	174.10	2,060.83	-68.86	7.02	-68.86	1.32	1.25	2.54
2,156.00	11.14	172.71	2,150.30	-85.38	8.94	-85.38	1.37	1.34	-1.53
2,247.00	11.05	169.99	2,239.60	-102.69	11.57	-102.69	0.58	-0.10	-2.99
2,339.00	9.64	166.35	2,330.10	-118.86	14.92	-118.86	1.69	-1.53	-3.96
2,431.00	11.10	166.55	2,420.60	-134.96	18.80	-134.96	1.59	1.59	0.22
2,523.00	11.14	165.59	2,510.87	-152.18	23.07	-152.18	0.21	0.04	-1.04
2,614.00	10.01	166.23	2,600.32	-168.38	27.14	-168.38	1.25	-1.24	0.70
2,706.00	10.42	166.78	2,690.86	-184.24	30.95	-184.24	0.46	0.45	0.60
2,797.00	10.54	168.98	2,780.35	-200.42	34.42	-200.42	0.46	0.13	2.42
2,891.00	10.75	167.62	2,872.73	-217.42	37.94	-217.42	0.35	0.22	-1.45
2,986.00	10.27	168.94	2,966.13	-234.39	41.47	-234.39	0.57	-0.51	1.39
3,080.00	10.25	166.42	3,058.63	-250.74	45.04	-250.74	0.48	-0.02	-2.68
3,175.00	9.23	169.13	3,152.26	-266.44	48.46	-266.44	1.18	-1.07	2.85
3,269.00	8.68	162.55	3,245.12	-280.61	52.01	-280.61	1.24	-0.59	-7.00
3,363.00	9.52	164.92	3,337.93	-294.88	56.16	-294.88	0.98	0.89	2.52
3,458.00	10.11	167.34	3,431.54	-310.61	60.03	-310.61	0.76	0.62	2.55
3,552.00	8.57	167.55	3,524.29	-325.50	63.35	-325.50	1.64	-1.64	0.22
3,646.00	8.81	166.21	3,617.22	-339.33	66.57	-339.33	0.33	0.26	-1.43
3,740.00	8.47	166.80	3,710.15	-353.06	69.87	-353.06	0.37	-0.36	0.63
3,835.00	9.67	162.66	3,803.96	-367.48	73.85	-367.48	1.44	1.26	-4.36
3,929.00	9.75	159.90	3,896.61	-382.50	78.94	-382.50	0.50	0.09	-2.94
4,024.00	9.97	154.61	3,990.21	-397.48	85.23	-397.48	0.98	0.23	-5.57
4,118.00	10.59	151.66	4,082.70	-412.43	92.82	-412.43	0.87	0.66	-3.14
4,213.00	10.04	158.86	4,176.17	-427.84	99.95	-427.84	1.47	-0.58	7.58
4,307.00	9.91	158.53	4,268.75	-443.01	105.86	-443.01	0.15	-0.14	-0.35
4,401.00	10.71	165.39	4,361.24	-458.99	111.03	-458.99	1.56	0.85	7.30
4,495.00	11.70	172.93	4,453.45	-476.90	114.40	-476.90	1.88	1.05	8.02
4,590.00	10.19	176.14	4,546.72	-494.85	116.15	-494.85	1.71	-1.59	3.38

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well NRC 4N-8HZ
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	GL 5049 & KB 25 @ 5074.00ft (HP 311)
<b>Site:</b>	NRC 13-8HZ PAD	<b>MD Reference:</b>	GL 5049 & KB 25 @ 5074.00ft (HP 311)
<b>Well:</b>	NRC 4N-8HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	Denver Sales Office

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,684.00	10.21	173.94	4,639.23	-511.43	117.59	-511.43	0.41	0.02	-2.34
4,778.00	11.26	175.70	4,731.59	-528.86	119.16	-528.86	1.17	1.12	1.87
4,873.00	12.12	170.60	4,824.62	-547.95	121.49	-547.95	1.41	0.91	-5.37
4,967.00	12.63	169.23	4,916.43	-567.78	125.02	-567.78	0.63	0.54	-1.46
5,061.00	11.53	171.87	5,008.35	-587.18	128.27	-587.18	1.31	-1.17	2.81
5,156.00	10.42	172.62	5,101.61	-605.10	130.71	-605.10	1.18	-1.17	0.79
5,250.00	10.12	167.22	5,194.11	-621.59	133.63	-621.59	1.07	-0.32	-5.74
5,344.00	10.90	164.84	5,286.53	-638.22	137.78	-638.22	0.95	0.83	-2.53
5,439.00	9.69	171.27	5,380.00	-654.79	141.35	-654.79	1.75	-1.27	6.77
5,533.00	8.19	175.81	5,472.86	-669.29	143.04	-669.29	1.76	-1.60	4.83
5,627.00	8.69	172.59	5,565.84	-683.01	144.44	-683.01	0.73	0.53	-3.43
5,721.00	8.79	173.17	5,658.75	-697.18	146.21	-697.18	0.14	0.11	0.62
5,816.00	8.32	173.66	5,752.69	-711.22	147.83	-711.22	0.50	-0.49	0.52
5,910.00	7.19	173.24	5,845.83	-723.82	149.28	-723.82	1.20	-1.20	-0.45
6,005.00	6.90	168.57	5,940.12	-735.32	151.11	-735.32	0.68	-0.31	-4.92
6,099.00	6.62	165.52	6,033.46	-746.10	153.58	-746.10	0.48	-0.30	-3.24
6,194.00	5.15	164.25	6,127.96	-755.51	156.11	-755.51	1.55	-1.55	-1.34
6,288.00	3.53	173.16	6,221.69	-762.44	157.60	-762.44	1.86	-1.72	9.48
6,383.00	2.64	182.35	6,316.55	-767.53	157.86	-767.53	1.07	-0.94	9.67
6,477.00	1.81	164.65	6,410.48	-771.12	158.16	-771.12	1.14	-0.88	-18.83
6,571.00	1.90	148.94	6,504.43	-773.89	159.36	-773.89	0.55	0.10	-16.71
6,666.00	0.99	155.17	6,599.40	-775.98	160.51	-775.98	0.97	-0.96	6.56
6,760.00	0.80	159.94	6,693.39	-777.34	161.08	-777.34	0.22	-0.20	5.07
6,854.00	0.78	167.52	6,787.38	-778.58	161.44	-778.58	0.11	-0.02	8.06
6,901.00	0.80	22.17	6,834.38	-778.59	161.64	-778.59	3.21	0.04	-309.26
6,949.00	4.86	8.28	6,882.31	-776.26	162.06	-776.26	8.52	8.46	-28.94
6,996.00	8.03	13.62	6,929.01	-771.10	163.12	-771.10	6.86	6.74	11.36
7,043.00	10.23	7.96	6,975.41	-763.78	164.47	-763.78	5.05	4.68	-12.04
7,090.00	13.10	3.52	7,021.43	-754.33	165.37	-754.33	6.39	6.11	-9.45
7,138.00	15.71	3.60	7,067.92	-742.41	166.11	-742.41	5.44	5.44	0.17
7,185.00	17.98	3.70	7,112.90	-728.82	166.98	-728.82	4.83	4.83	0.21
7,232.00	21.07	2.62	7,157.19	-713.13	167.84	-713.13	6.62	6.57	-2.30
7,279.00	24.36	2.72	7,200.54	-695.01	168.68	-695.01	7.00	7.00	0.21
7,327.00	27.76	2.27	7,243.66	-673.94	169.60	-673.94	7.10	7.08	-0.94
7,374.00	32.48	0.30	7,284.30	-650.37	170.10	-650.37	10.26	10.04	-4.19
7,421.00	38.11	357.04	7,322.65	-623.25	169.41	-623.25	12.63	11.98	-6.94
7,468.00	44.22	358.89	7,358.02	-592.34	168.34	-592.34	13.25	13.00	3.94
7,515.00	50.35	0.41	7,389.88	-557.83	168.16	-557.83	13.26	13.04	3.23
7,562.00	55.88	0.89	7,418.08	-520.26	168.59	-520.26	11.79	11.77	1.02
7,609.00	61.24	0.72	7,442.59	-480.17	169.15	-480.17	11.41	11.40	-0.36
7,656.00	65.91	0.23	7,463.50	-438.10	169.50	-438.10	9.98	9.94	-1.04
7,704.00	69.29	0.55	7,481.79	-393.73	169.80	-393.73	7.07	7.04	0.67
7,751.00	73.44	0.33	7,496.80	-349.20	170.14	-349.20	8.84	8.83	-0.47

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well NRC 4N-8HZ
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	GL 5049 & KB 25 @ 5074.00ft (HP 311)
<b>Site:</b>	NRC 13-8HZ PAD	<b>MD Reference:</b>	GL 5049 & KB 25 @ 5074.00ft (HP 311)
<b>Well:</b>	NRC 4N-8HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	Denver Sales Office

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
7,798.00	77.16	0.22	7,508.73	-303.75	170.36	-303.75	7.92	7.91	-0.23
7,845.00	82.88	359.30	7,516.87	-257.48	170.16	-257.48	12.32	12.17	-1.96
7,900.00	86.67	359.76	7,521.88	-202.72	169.71	-202.72	6.94	6.89	0.84
<b>7" (150 FSL 830 FWL)</b>									
7,924.00	88.32	359.96	7,522.93	-178.75	169.65	-178.75	6.94	6.89	0.83
8,018.00	90.30	359.03	7,524.06	-84.76	168.83	-84.76	2.33	2.11	-0.99
8,113.00	92.35	358.77	7,521.86	10.19	167.00	10.19	2.18	2.16	-0.27
8,207.00	92.45	357.83	7,517.93	104.07	164.22	104.07	1.00	0.11	-1.00
8,301.00	92.69	358.62	7,513.71	197.92	161.31	197.92	0.88	0.26	0.84
8,395.00	91.82	358.98	7,510.01	291.83	159.34	291.83	1.00	-0.93	0.38
8,490.00	90.77	0.33	7,507.87	386.80	158.77	386.80	1.80	-1.11	1.42
8,584.00	90.30	0.29	7,506.99	480.80	159.28	480.80	0.50	-0.50	-0.04
8,679.00	89.46	0.14	7,507.19	575.79	159.63	575.79	0.90	-0.88	-0.16
8,773.00	89.56	0.37	7,507.99	669.79	160.05	669.79	0.27	0.11	0.24
8,867.00	89.03	359.57	7,509.15	763.78	160.00	763.78	1.02	-0.56	-0.85
8,962.00	90.34	358.74	7,509.67	858.77	158.60	858.77	1.63	1.38	-0.87
9,056.00	88.45	358.81	7,510.66	952.74	156.59	952.74	2.01	-2.01	0.07
9,150.00	87.88	358.83	7,513.67	1,046.67	154.66	1,046.67	0.61	-0.61	0.02
9,245.00	88.55	358.19	7,516.63	1,141.59	152.19	1,141.59	0.98	0.71	-0.67
9,339.00	90.84	358.85	7,517.13	1,235.55	149.76	1,235.55	2.54	2.44	0.70
9,434.00	90.44	359.26	7,516.07	1,330.53	148.19	1,330.53	0.60	-0.42	0.43
9,528.00	90.10	359.89	7,515.63	1,424.52	147.50	1,424.52	0.76	-0.36	0.67
9,623.00	89.73	0.75	7,515.77	1,519.52	148.03	1,519.52	0.99	-0.39	0.91
9,717.00	89.23	0.99	7,516.62	1,613.51	149.45	1,613.51	0.59	-0.53	0.26
9,812.00	88.52	1.54	7,518.49	1,708.46	151.55	1,708.46	0.95	-0.75	0.58
9,906.00	88.86	1.89	7,520.64	1,802.40	154.36	1,802.40	0.52	0.36	0.37
10,001.00	90.47	1.33	7,521.19	1,897.35	157.03	1,897.35	1.79	1.69	-0.59
10,095.00	91.04	1.25	7,519.95	1,991.32	159.15	1,991.32	0.61	0.61	-0.09
10,189.00	90.74	359.78	7,518.49	2,085.30	159.99	2,085.30	1.60	-0.32	-1.56
10,284.00	89.97	0.12	7,517.91	2,180.30	159.91	2,180.30	0.89	-0.81	0.36
10,379.00	90.57	0.56	7,517.46	2,275.30	160.47	2,275.30	0.78	0.63	0.46
10,473.00	90.61	359.69	7,516.49	2,369.29	160.68	2,369.29	0.93	0.04	-0.93
10,568.00	89.87	0.06	7,516.09	2,464.29	160.47	2,464.29	0.87	-0.78	0.39
10,662.00	89.06	359.13	7,516.97	2,558.28	159.81	2,558.28	1.31	-0.86	-0.99
10,756.00	88.55	359.55	7,518.93	2,652.25	158.73	2,652.25	0.70	-0.54	0.45
10,851.00	88.69	359.87	7,521.22	2,747.23	158.24	2,747.23	0.37	0.15	0.34
10,945.00	88.32	359.78	7,523.67	2,841.19	157.96	2,841.19	0.41	-0.39	-0.10
11,039.00	89.23	359.64	7,525.68	2,935.17	157.48	2,935.17	0.98	0.97	-0.15
11,134.00	90.91	0.11	7,525.56	3,030.17	157.27	3,030.17	1.84	1.77	0.49
11,228.00	91.28	0.82	7,523.77	3,124.14	158.04	3,124.14	0.85	0.39	0.76
11,322.00	91.48	1.38	7,521.50	3,218.10	159.84	3,218.10	0.63	0.21	0.60
11,417.00	91.31	1.69	7,519.19	3,313.04	162.39	3,313.04	0.37	-0.18	0.33
11,511.00	91.21	0.87	7,517.12	3,406.99	164.48	3,406.99	0.88	-0.11	-0.87

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well NRC 4N-8HZ
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	GL 5049 & KB 25 @ 5074.00ft (HP 311)
<b>Site:</b>	NRC 13-8HZ PAD	<b>MD Reference:</b>	GL 5049 & KB 25 @ 5074.00ft (HP 311)
<b>Well:</b>	NRC 4N-8HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	Denver Sales Office

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
11,605.00	89.80	0.42	7,516.30	3,500.98	165.54	3,500.98	1.57	-1.50	-0.48
11,700.00	88.96	0.16	7,517.32	3,595.97	166.02	3,595.97	0.93	-0.88	-0.27
11,794.00	90.47	359.13	7,517.79	3,689.96	165.44	3,689.96	1.94	1.61	-1.10
11,888.00	90.64	359.00	7,516.88	3,783.95	163.91	3,783.95	0.23	0.18	-0.14
11,983.00	89.43	357.85	7,516.82	3,878.91	161.30	3,878.91	1.76	-1.27	-1.21
12,077.00	87.95	356.91	7,518.97	3,972.78	157.00	3,972.78	1.87	-1.57	-1.00
12,172.00	89.66	356.83	7,520.95	4,067.61	151.82	4,067.61	1.80	1.80	-0.08
12,266.00	89.03	357.19	7,522.03	4,161.48	146.91	4,161.48	0.77	-0.67	0.38
12,360.00	89.43	356.90	7,523.29	4,255.35	142.07	4,255.35	0.53	0.43	-0.31
12,455.00	90.10	356.54	7,523.68	4,350.19	136.63	4,350.19	0.80	0.71	-0.38
12,485.00	90.67	356.67	7,523.48	4,380.14	134.86	4,380.14	1.95	1.90	0.43
LAST SDI MWD PRODUCTION SURVEY									
12,553.00	90.67	356.67	7,522.68	4,448.02	130.91	4,448.02	0.00	0.00	0.00
SDI PROJECTION TO TD									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,263.00	1,262.96	9 5/8"	9.625	12.250	
7,900.00	7,521.88	7" (150 FSL 830 FWL)	7.000	7.500	

Design Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
100.00	100.00	-0.61	0.11	FIRST GYRO SURFACE SURVEY
1,167.00	1,166.97	-1.75	4.44	LAST GYRO SURFACE SURVEY
1,332.00	1,331.96	-0.93	6.09	FIRST SDI MWD PRODUCTION SURVEY
12,485.00	7,523.48	4,380.14	134.86	LAST SDI MWD PRODUCTION SURVEY
12,553.00	7,522.68	4,448.02	130.91	SDI PROJECTION TO TD

Checked By: _____	Approved By: _____	Date: _____
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