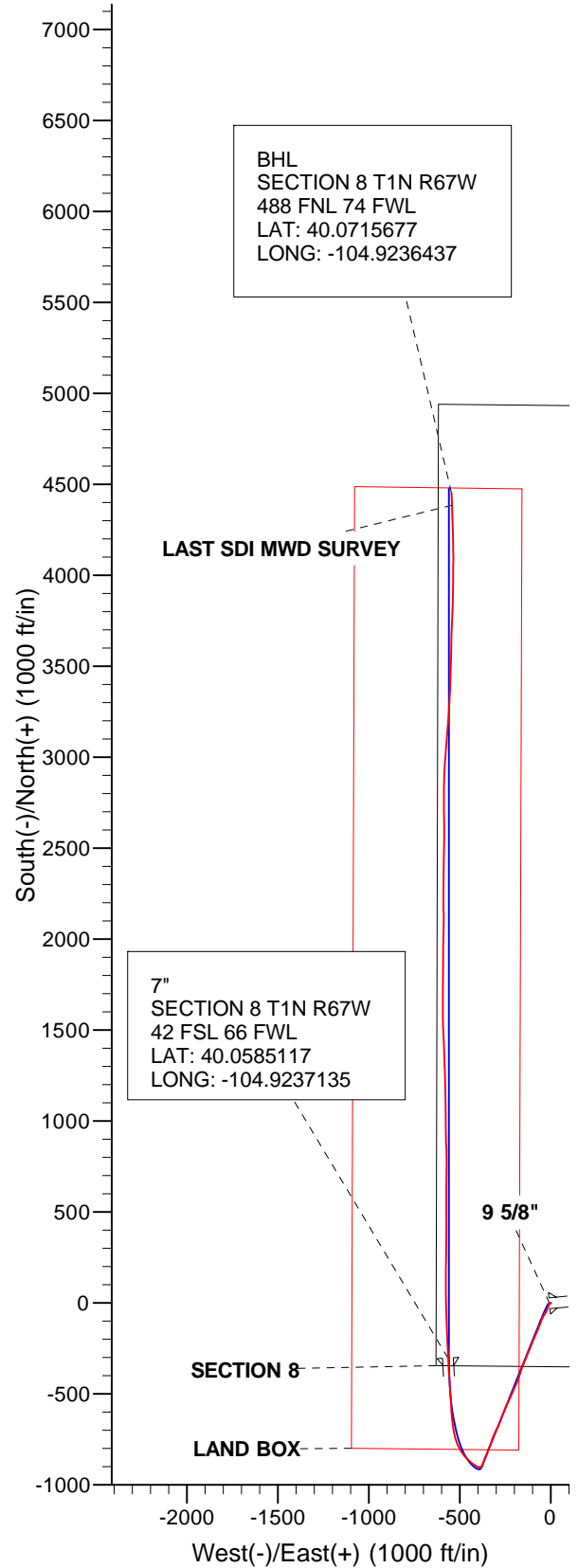
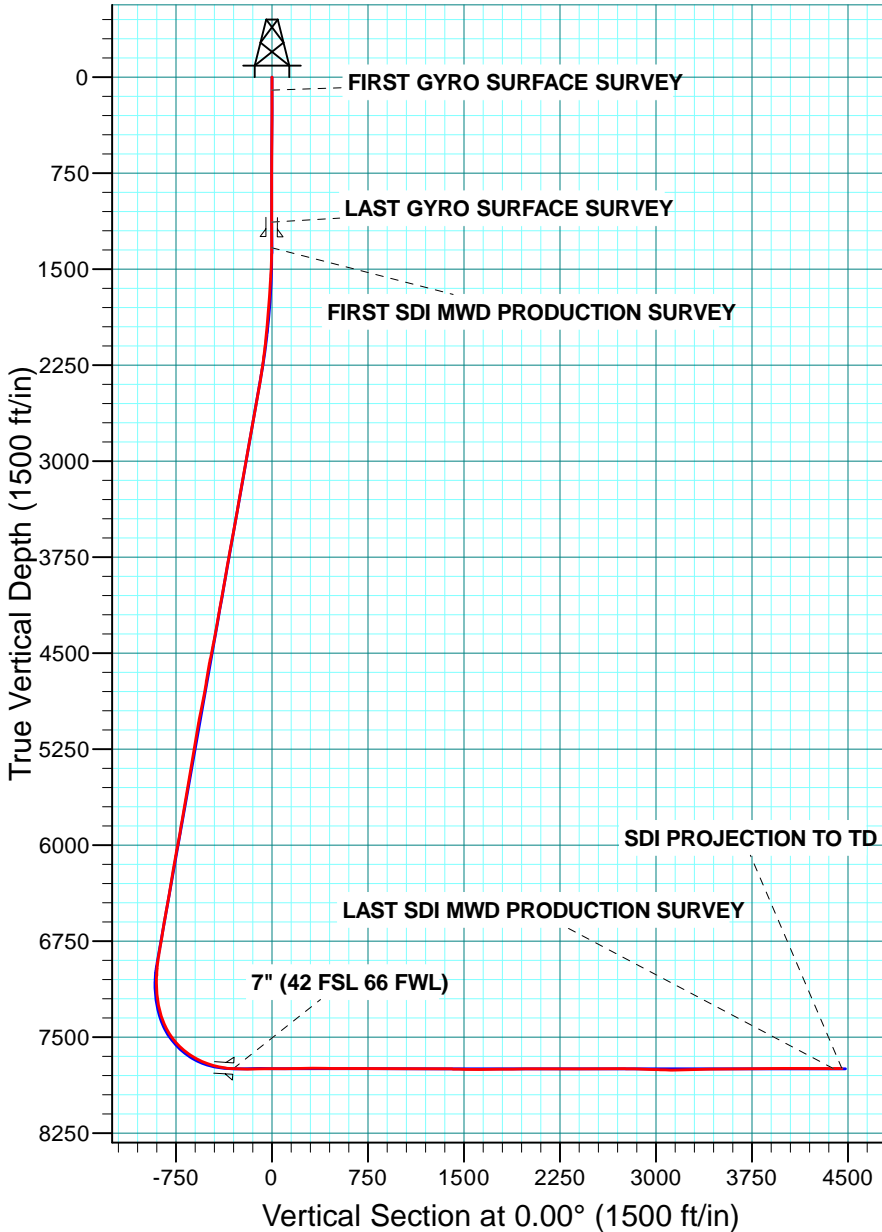


WELL DETAILS: NRC 30C-8HZ					
GL 5049 & KB 25 @ 5074.00ft (HP 311)					
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	1264991.47	3161871.82	40.0593420	-104.9216960





**Scientific Drilling**

# **US ROCKIES REGION PLANNING**

**COLORADO NORTHERN ZONE - 83**

**NRC 13-8HZ PAD**

**NRC 30C-8HZ**

**OH**

**Design: OH**

## **Standard Survey Report**

**12 March, 2014**

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well NRC 30C-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 30C-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>Latitude:</b>	40.0593420
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,161,871.82 usft	<b>Longitude:</b>	-104.9216960
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b>	0.37 °

<b>Well</b>	NRC 30C-8HZ, 350 FSL 630 FWL					
<b>Well Position</b>	<b>+N/-S</b>	0.00 ft	<b>Northing:</b>	1,264,991.47 usft	<b>Latitude:</b>	40.0593420
	<b>+E/-W</b>	0.00 ft	<b>Easting:</b>	3,161,871.82 usft	<b>Longitude:</b>	-104.9216960
<b>Position Uncertainty</b>		0.00 ft	<b>Wellhead Elevation:</b>	0.00 ft	<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>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	BGGM2013	1/21/2014	8.61	66.65	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) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>	
	0.00	0.00	0.00	0.00	

<b>Survey Program</b>	<b>Date</b>	3/12/2014			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
100.00	1,133.00	Survey #1 GYRO SURFACE (OH)	NS-GYRO-MS	North sensing gyrocompassing m/s	
1,332.00	12,950.00	Survey #2 SDI MWD PRODUCTION (OH)	SDI_MWD+CRUST_1.0	SDI MWD + Crustal anomaly, Version 1.0	

<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 (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
100.00	0.46	171.31	100.00	-0.40	0.06	-0.40	0.46	0.46	0.00	
<b>FIRST GYRO SURFACE SURVEY</b>										
200.00	0.41	247.07	200.00	-0.93	-0.21	-0.93	0.54	-0.05	75.76	
300.00	0.42	49.00	300.00	-0.83	-0.26	-0.83	0.82	0.01	161.93	
400.00	0.66	206.46	399.99	-1.11	-0.24	-1.11	1.06	0.24	157.46	
500.00	0.58	319.37	499.99	-1.24	-0.83	-1.24	1.03	-0.08	112.91	
600.00	0.34	178.99	599.99	-1.15	-1.15	-1.15	0.87	-0.24	-140.38	
700.00	0.78	263.20	699.99	-1.53	-1.82	-1.53	0.82	0.44	84.21	
800.00	0.32	48.88	799.98	-1.43	-2.29	-1.43	1.06	-0.46	145.68	

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well NRC 30C-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 30C-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	0.89	245.41	899.98	-1.56	-2.78	-1.56	1.20	0.57	-163.47	
1,000.00	0.61	352.37	999.97	-1.36	-3.56	-1.36	1.22	-0.28	106.96	
1,100.00	0.76	236.31	1,099.97	-1.20	-4.18	-1.20	1.16	0.15	-116.06	
1,133.00	0.97	275.96	1,132.97	-1.29	-4.64	-1.29	1.88	0.64	120.15	
<b>LAST GYRO SURFACE SURVEY</b>										
1,246.00	0.89	264.67	1,245.95	-1.28	-6.47	-1.28	0.18	-0.07	-9.99	
<b>9 5/8"</b>										
1,332.00	0.86	254.99	1,331.94	-1.51	-7.76	-1.51	0.18	-0.04	-11.25	
<b>FIRST SDI MWD PRODUCTION SURVEY</b>										
1,424.00	2.30	191.82	1,423.91	-3.49	-8.81	-3.49	2.24	1.57	-68.66	
1,515.00	2.94	192.37	1,514.81	-7.56	-9.68	-7.56	0.70	0.70	0.60	
1,607.00	3.70	195.88	1,606.66	-12.72	-11.00	-12.72	0.85	0.83	3.82	
1,699.00	4.37	202.79	1,698.43	-18.80	-13.17	-18.80	0.90	0.73	7.51	
1,790.00	4.57	203.02	1,789.15	-25.34	-15.93	-25.34	0.22	0.22	0.25	
1,882.00	5.34	203.70	1,880.81	-32.63	-19.08	-32.63	0.84	0.84	0.74	
1,974.00	5.68	204.65	1,972.39	-40.69	-22.70	-40.69	0.38	0.37	1.03	
2,065.00	6.83	210.37	2,062.84	-49.45	-27.32	-49.45	1.44	1.26	6.29	
2,157.00	8.85	211.71	2,153.98	-60.19	-33.80	-60.19	2.20	2.20	1.46	
2,248.00	9.05	210.96	2,243.87	-72.28	-41.16	-72.28	0.25	0.22	-0.82	
2,339.00	9.72	201.06	2,333.66	-85.59	-47.61	-85.59	1.92	0.74	-10.88	
2,431.00	10.88	200.28	2,424.17	-100.98	-53.41	-100.98	1.27	1.26	-0.85	
2,523.00	10.82	200.51	2,514.53	-117.22	-59.44	-117.22	0.08	-0.07	0.25	
2,615.00	10.88	202.46	2,604.88	-133.33	-65.78	-133.33	0.40	0.07	2.12	
2,706.00	10.09	201.62	2,694.36	-148.68	-72.00	-148.68	0.88	-0.87	-0.92	
2,798.00	11.30	204.69	2,784.77	-164.36	-78.74	-164.36	1.45	1.32	3.34	
2,889.00	10.51	204.76	2,874.12	-180.00	-85.94	-180.00	0.87	-0.87	0.08	
2,983.00	11.03	202.32	2,966.47	-196.10	-92.94	-196.10	0.74	0.55	-2.60	
3,078.00	11.95	202.35	3,059.56	-213.60	-100.13	-213.60	0.97	0.97	0.03	
3,172.00	10.99	201.94	3,151.68	-230.91	-107.18	-230.91	1.02	-1.02	-0.44	
3,267.00	10.07	201.83	3,245.08	-247.02	-113.66	-247.02	0.97	-0.97	-0.12	
3,361.00	10.27	202.47	3,337.60	-262.40	-119.91	-262.40	0.24	0.21	0.68	
3,455.00	11.04	202.72	3,429.98	-278.44	-126.59	-278.44	0.82	0.82	0.27	
3,550.00	11.04	201.40	3,523.23	-295.30	-133.42	-295.30	0.27	0.00	-1.39	
3,644.00	11.09	201.69	3,615.48	-312.08	-140.05	-312.08	0.08	0.05	0.31	
3,738.00	11.78	202.98	3,707.61	-329.32	-147.14	-329.32	0.78	0.73	1.37	
3,832.00	10.17	202.46	3,799.89	-345.82	-154.05	-345.82	1.72	-1.71	-0.55	
3,927.00	10.74	199.79	3,893.31	-361.90	-160.26	-361.90	0.79	0.60	-2.81	
4,021.00	10.15	196.66	3,985.76	-378.08	-165.60	-378.08	0.87	-0.63	-3.33	
4,116.00	10.53	198.36	4,079.21	-394.33	-170.73	-394.33	0.51	0.40	1.79	
4,210.00	11.14	196.76	4,171.54	-411.18	-176.05	-411.18	0.72	0.65	-1.70	
4,305.00	10.88	202.56	4,264.79	-428.25	-182.14	-428.25	1.20	-0.27	6.11	
4,399.00	11.08	205.23	4,357.07	-444.61	-189.39	-444.61	0.58	0.21	2.84	
4,493.00	12.65	205.13	4,449.06	-462.10	-197.62	-462.10	1.67	1.67	-0.11	
4,587.00	12.62	202.65	4,540.78	-480.90	-205.94	-480.90	0.58	-0.03	-2.64	

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<b>Site:</b>	NRC 13-8HZ PAD	<b>MD Reference:</b>	GL 5049 & KB 25 @ 5074.00ft (HP 311)
<b>Well:</b>	NRC 30C-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)	
4,682.00	10.12	202.55	4,633.91	-498.19	-213.14	-498.19	2.63	-2.63	-0.11	
4,776.00	10.37	206.76	4,726.41	-513.37	-220.12	-513.37	0.84	0.27	4.48	
4,870.00	11.08	205.29	4,818.77	-529.09	-227.78	-529.09	0.81	0.76	-1.56	
4,965.00	12.91	204.68	4,911.69	-546.99	-236.12	-546.99	1.93	1.93	-0.64	
5,059.00	11.95	203.05	5,003.49	-565.48	-244.31	-565.48	1.09	-1.02	-1.73	
5,153.00	10.68	201.64	5,095.66	-582.54	-251.33	-582.54	1.38	-1.35	-1.50	
5,248.00	9.79	203.34	5,189.15	-598.13	-257.78	-598.13	0.99	-0.94	1.79	
5,342.00	9.77	200.21	5,281.78	-612.96	-263.70	-612.96	0.57	-0.02	-3.33	
5,436.00	10.15	197.89	5,374.37	-628.32	-269.00	-628.32	0.59	0.40	-2.47	
5,530.00	10.54	200.84	5,466.84	-644.24	-274.60	-644.24	0.70	0.41	3.14	
5,625.00	11.23	206.17	5,560.13	-660.66	-281.78	-660.66	1.28	0.73	5.61	
5,719.00	10.12	203.78	5,652.50	-676.44	-289.14	-676.44	1.27	-1.18	-2.54	
5,813.00	11.41	206.98	5,744.85	-692.28	-296.69	-692.28	1.51	1.37	3.40	
5,908.00	9.99	206.75	5,838.19	-708.01	-304.66	-708.01	1.50	-1.49	-0.24	
6,002.00	10.82	202.67	5,930.65	-723.44	-311.73	-723.44	1.18	0.88	-4.34	
6,097.00	12.05	200.52	6,023.76	-740.95	-318.65	-740.95	1.37	1.29	-2.26	
6,191.00	10.20	197.48	6,115.99	-758.08	-324.59	-758.08	2.06	-1.97	-3.23	
6,286.00	10.06	199.05	6,209.51	-773.95	-329.82	-773.95	0.33	-0.15	1.65	
6,380.00	10.32	204.82	6,302.03	-789.35	-336.04	-789.35	1.12	0.28	6.14	
6,475.00	10.54	200.92	6,395.46	-805.19	-342.71	-805.19	0.78	0.23	-4.11	
6,569.00	10.41	195.37	6,487.90	-821.41	-348.03	-821.41	1.08	-0.14	-5.90	
6,663.00	11.05	203.74	6,580.26	-837.85	-353.91	-837.85	1.79	0.68	8.90	
6,758.00	9.18	201.39	6,673.78	-853.24	-360.34	-853.24	2.02	-1.97	-2.47	
6,852.00	11.07	202.19	6,766.31	-868.58	-366.48	-868.58	2.02	2.01	0.85	
6,946.00	9.65	198.41	6,858.78	-884.41	-372.38	-884.41	1.67	-1.51	-4.02	
6,993.00	8.71	197.28	6,905.18	-891.55	-374.68	-891.55	2.04	-2.00	-2.40	
7,041.00	7.15	220.29	6,952.73	-897.30	-377.69	-897.30	7.30	-3.25	47.94	
7,088.00	8.11	255.39	6,999.33	-900.37	-382.80	-900.37	9.96	2.04	74.68	
7,135.00	10.19	260.11	7,045.73	-901.92	-390.10	-901.92	4.70	4.43	10.04	
7,182.00	9.40	276.84	7,092.06	-902.17	-398.01	-902.17	6.26	-1.68	35.60	
7,230.00	9.45	302.42	7,139.43	-899.59	-405.23	-899.59	8.66	0.10	53.29	
7,277.00	12.04	307.09	7,185.60	-894.57	-412.40	-894.57	5.81	5.51	9.94	
7,324.00	15.01	303.07	7,231.30	-888.29	-421.41	-888.29	6.62	6.32	-8.55	
7,371.00	18.25	305.19	7,276.33	-880.72	-432.53	-880.72	7.01	6.89	4.51	
7,418.00	21.94	311.21	7,320.46	-870.69	-445.15	-870.69	8.99	7.85	12.81	
7,465.00	26.48	316.96	7,363.32	-857.24	-458.92	-857.24	10.87	9.66	12.23	
7,513.00	32.39	319.62	7,405.11	-839.61	-474.57	-839.61	12.61	12.31	5.54	
7,560.00	36.27	325.10	7,443.92	-818.61	-490.69	-818.61	10.55	8.26	11.66	
7,607.00	38.56	331.93	7,481.27	-794.26	-505.54	-794.26	10.08	4.87	14.53	
7,654.00	39.74	340.29	7,517.74	-767.18	-517.51	-767.18	11.50	2.51	17.79	
7,701.00	43.00	346.35	7,553.02	-737.44	-526.37	-737.44	10.98	6.94	12.89	
7,748.00	47.40	349.97	7,586.14	-704.81	-533.17	-704.81	10.84	9.36	7.70	
7,796.00	52.51	351.73	7,617.01	-668.54	-538.99	-668.54	11.01	10.65	3.67	

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well NRC 30C-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 30C-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)	
7,843.00	57.09	354.50	7,644.10	-630.43	-543.56	-630.43	10.87	9.74	5.89	
7,890.00	62.24	356.63	7,667.83	-590.00	-546.68	-590.00	11.63	10.96	4.53	
7,937.00	66.36	357.10	7,688.21	-547.72	-548.99	-547.72	8.81	8.77	1.00	
7,984.00	69.52	357.06	7,705.86	-504.22	-551.21	-504.22	6.72	6.72	-0.09	
8,031.00	74.53	356.02	7,720.36	-459.61	-553.91	-459.61	10.87	10.66	-2.21	
8,079.00	77.40	355.79	7,732.00	-413.17	-557.24	-413.17	6.00	5.98	-0.48	
8,126.00	82.58	355.91	7,740.17	-367.02	-560.59	-367.02	11.02	11.02	0.26	
8,144.00	83.88	356.11	7,742.29	-349.19	-561.83	-349.19	7.31	7.22	1.11	
8,191.00	86.09	356.79	7,746.40	-302.46	-564.73	-302.46	4.92	4.70	1.45	
<b>7" (42 FSL 66 FWL)</b>										
8,302.00	91.31	358.39	7,748.91	-191.63	-569.39	-191.63	4.92	4.70	1.44	
8,397.00	90.81	358.03	7,747.16	-96.70	-572.36	-96.70	0.65	-0.53	-0.38	
8,491.00	90.10	358.53	7,746.41	-2.74	-575.18	-2.74	0.92	-0.76	0.53	
8,585.00	90.07	359.41	7,746.27	91.24	-576.87	91.24	0.94	-0.03	0.94	
8,680.00	91.55	1.58	7,744.93	186.22	-576.05	186.22	2.76	1.56	2.28	
8,774.00	91.78	0.89	7,742.20	280.16	-574.02	280.16	0.77	0.24	-0.73	
8,869.00	88.69	359.42	7,741.81	375.14	-573.76	375.14	3.60	-3.25	-1.55	
8,963.00	88.82	359.36	7,743.85	469.12	-574.77	469.12	0.15	0.14	-0.06	
9,057.00	90.00	0.78	7,744.82	563.11	-574.65	563.11	1.96	1.26	1.51	
9,152.00	90.97	0.67	7,744.01	658.09	-573.45	658.09	1.03	1.02	-0.12	
9,246.00	89.97	0.20	7,743.24	752.09	-572.73	752.09	1.18	-1.06	-0.50	
9,341.00	88.05	358.20	7,744.88	847.05	-574.06	847.05	2.92	-2.02	-2.11	
9,435.00	89.43	358.61	7,746.95	940.99	-576.68	940.99	1.53	1.47	0.44	
9,530.00	90.54	359.89	7,746.98	1,035.98	-577.92	1,035.98	1.78	1.17	1.35	
9,624.00	90.27	359.18	7,746.31	1,129.98	-578.68	1,129.98	0.81	-0.29	-0.76	
9,719.00	89.93	358.22	7,746.15	1,224.95	-580.84	1,224.95	1.07	-0.36	-1.01	
9,813.00	89.63	358.47	7,746.51	1,318.91	-583.55	1,318.91	0.42	-0.32	0.27	
9,908.00	88.39	357.30	7,748.15	1,413.83	-587.06	1,413.83	1.79	-1.31	-1.23	
10,002.00	88.28	357.45	7,750.88	1,507.69	-591.36	1,507.69	0.20	-0.12	0.16	
10,096.00	89.73	359.52	7,752.51	1,601.63	-593.84	1,601.63	2.69	1.54	2.20	
10,191.00	91.58	0.61	7,751.43	1,696.62	-593.74	1,696.62	2.26	1.95	1.15	
10,285.00	91.21	0.69	7,749.14	1,790.59	-592.67	1,790.59	0.40	-0.39	0.09	
10,380.00	90.13	0.97	7,748.03	1,885.57	-591.30	1,885.57	1.17	-1.14	0.29	
10,475.00	90.44	0.58	7,747.55	1,980.56	-590.01	1,980.56	0.52	0.33	-0.41	
10,569.00	90.17	0.60	7,747.05	2,074.55	-589.04	2,074.55	0.29	-0.29	0.02	
10,663.00	90.07	359.25	7,746.86	2,168.55	-589.17	2,168.55	1.44	-0.11	-1.44	
10,758.00	89.73	359.80	7,747.02	2,263.55	-589.95	2,263.55	0.68	-0.36	0.58	
10,852.00	89.53	0.77	7,747.63	2,357.54	-589.49	2,357.54	1.05	-0.21	1.03	
10,946.00	90.13	1.68	7,747.91	2,451.52	-587.48	2,451.52	1.16	0.64	0.97	
11,041.00	90.47	0.42	7,747.41	2,546.50	-585.74	2,546.50	1.37	0.36	-1.33	
11,135.00	90.57	359.11	7,746.56	2,640.49	-586.12	2,640.49	1.40	0.11	-1.39	
11,229.00	89.73	359.32	7,746.31	2,734.48	-587.41	2,734.48	0.92	-0.89	0.22	
11,324.00	88.35	0.52	7,747.90	2,829.47	-587.54	2,829.47	1.92	-1.45	1.26	

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well NRC 30C-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 30C-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)
11,418.00	88.32	2.89	7,750.63	2,923.38	-584.75	2,923.38	2.52	-0.03	2.52
11,512.00	87.92	4.56	7,753.72	3,017.13	-578.64	3,017.13	1.83	-0.43	1.78
11,607.00	89.50	4.80	7,755.86	3,111.78	-570.89	3,111.78	1.68	1.66	0.25
11,701.00	90.30	4.26	7,756.02	3,205.49	-563.47	3,205.49	1.03	0.85	-0.57
11,795.00	92.02	3.35	7,754.12	3,299.26	-557.23	3,299.26	2.07	1.83	-0.97
11,889.00	92.42	2.30	7,750.48	3,393.07	-552.60	3,393.07	1.19	0.43	-1.12
11,984.00	90.91	1.49	7,747.72	3,487.97	-549.46	3,487.97	1.80	-1.59	-0.85
12,078.00	90.74	0.31	7,746.36	3,581.95	-547.99	3,581.95	1.27	-0.18	-1.26
12,173.00	89.56	2.17	7,746.11	3,676.92	-545.93	3,676.92	2.32	-1.24	1.96
12,267.00	90.40	2.68	7,746.15	3,770.84	-541.95	3,770.84	1.05	0.89	0.54
12,362.00	90.20	1.62	7,745.65	3,865.77	-538.39	3,865.77	1.14	-0.21	-1.12
12,456.00	90.57	0.37	7,745.02	3,959.75	-536.76	3,959.75	1.39	0.39	-1.33
12,550.00	91.78	0.53	7,743.09	4,053.72	-536.02	4,053.72	1.30	1.29	0.17
12,645.00	89.19	359.30	7,742.29	4,148.71	-536.16	4,148.71	3.02	-2.73	-1.29
12,739.00	89.26	358.37	7,743.56	4,242.68	-538.07	4,242.68	0.99	0.07	-0.99
12,833.00	89.60	358.04	7,744.49	4,336.63	-541.02	4,336.63	0.50	0.36	-0.35
12,882.00	90.40	357.99	7,744.49	4,385.60	-542.71	4,385.60	1.64	1.63	-0.10
<b>LAST SDI MWD PRODUCTION SURVEY</b>									
12,950.00	90.40	357.99	7,744.02	4,453.56	-545.10	4,453.56	0.00	0.00	0.00
<b>SDI PROJECTION TO TD</b>									

Casing Points						
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)		
1,246.00	1,245.95	9 5/8"	9.625	12.250		
8,191.00	7,746.40	7" (42 FSL 66 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	-0.40	0.06	FIRST GYRO SURFACE SURVEY	
1,133.00	1,132.97	-1.29	-4.64	LAST GYRO SURFACE SURVEY	
1,332.00	1,331.94	-1.51	-7.76	FIRST SDI MWD PRODUCTION SURVEY	
12,882.00	7,744.49	4,385.60	-542.71	LAST SDI MWD PRODUCTION SURVEY	
12,950.00	7,744.02	4,453.56	-545.10	SDI PROJECTION TO TD	

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