



Survey Certification

7327 West Barton Road
Casper, WY 82604
(307)-472-6621 Fax (307) 472-5439

Operator	HighPoint Resources
Well Name & No.	Critter Creek 16-6005BW OH
API #	05-123-47309
County & State	Weld County, CO
SDI Job #	OP.015462
Rig	Savanna 802
Survey Date	3-Jan-2019

I, Seth M. Burstad, having personal knowledge of all the facts, hereby certify that the attached directional survey run from a measured depth of 1475.5 feet to a measured depth of 8038 feet is true and correct as determined from all available records.

Seth M. Burstad

Signature

4-Jan-2019

Date

Seth M. Burstad

Rockies Region Well Planner
Scientific Drilling - Rocky Mountain District



Project: Weld County, CO NAD 83
Site: Critter Creek 16 SE Pad
Well: Critter Creek 16-6005BW
Wellbore: OH
Design: OH

WELL DETAILS: Critter Creek 16-6005BW

Design: OH (Critter Creek 16-6005BW/OH)

Created By: Seth Burstad

GL 5251.3' & KB 20' @ 5271.30ft (Savanna 802) 5251.30
Northing Easting Latitude Longitude
1578431.56 3295074.25 40° 54' 58.632 N 104° 25' 56.532 W

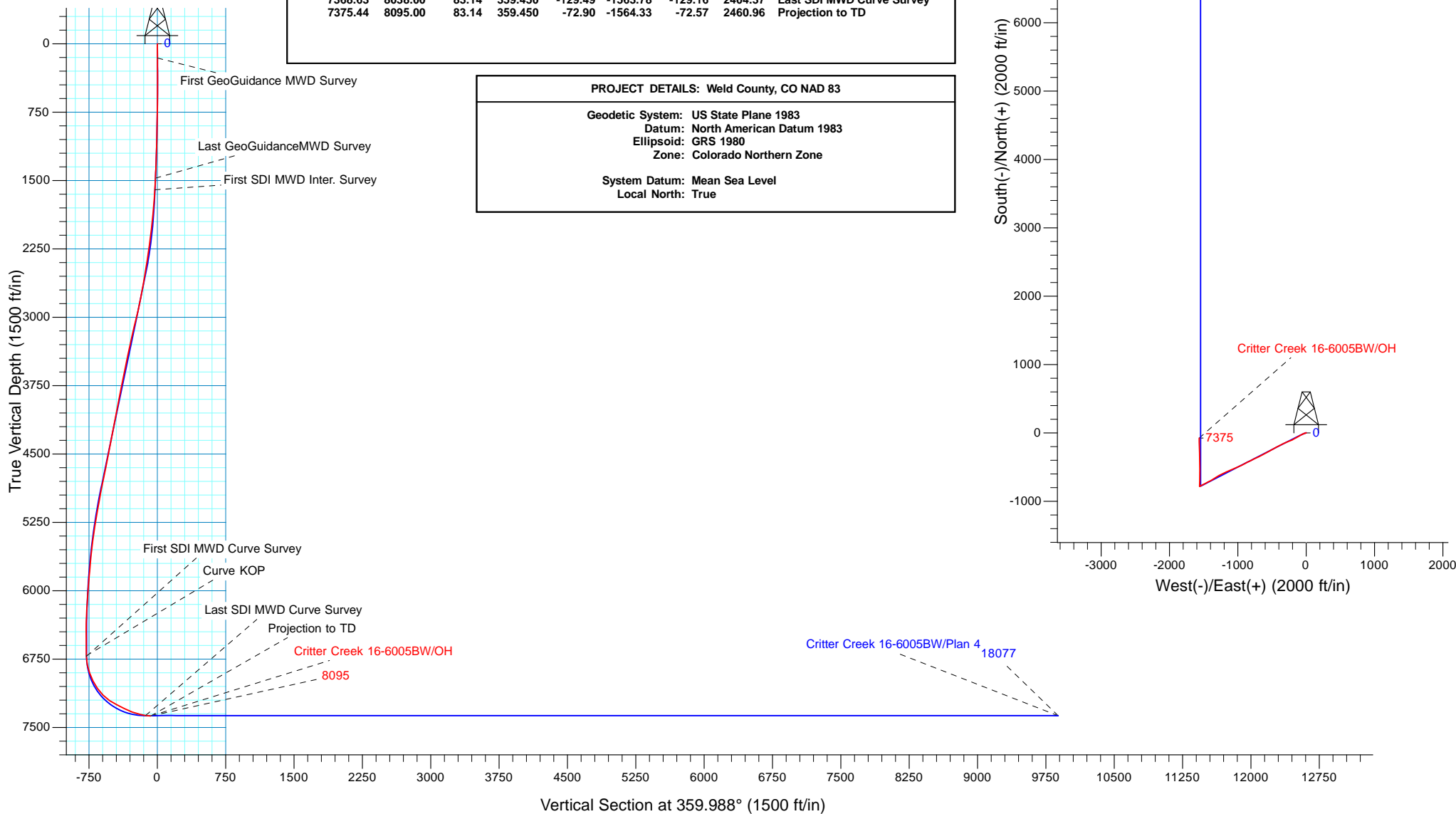
ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	Vsect	Departure	Annotation
156.50	156.50	0.79	36.360	0.87	0.64	0.87	1.08	First GeoGuidance MWD Survey
1473.10	1475.50	5.67	245.320	-20.48	-60.37	-20.47	68.52	Last GeoGuidanceMWD Survey
1601.92	1605.00	6.06	237.360	-26.84	-71.94	-26.83	81.75	First SDI MWD Inter. Survey
6714.34	7035.00	1.77	354.187	-779.97	-1560.03	-779.64	1753.69	Curve KOP
6720.33	7041.00	1.90	354.780	-779.78	-1560.05	-779.45	1753.80	First SDI MWD Curve Survey
7368.63	8038.00	83.14	359.450	-129.49	-1563.78	-129.16	2404.37	Last SDI MWD Curve Survey
7375.44	8095.00	83.14	359.450	-72.90	-1564.33	-72.57	2460.96	Projection to TD

PROJECT DETAILS: Weld County, CO NAD 83

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

System Datum: Mean Sea Level
Local North: True





HighPoint Resources

Weld County, CO NAD 83

Critter Creek 16 SE Pad

Critter Creek 16-6005BW

OH

Design: OH

Standard Survey Report

09 January, 2019



Company:	HighPoint Resources	Local Co-ordinate Reference:	Well Critter Creek 16-6005BW
Project:	Weld County, CO NAD 83	TVD Reference:	GL 5251.3' & KB 20' @ 5271.30ft (Savanna 802)
Site:	Critter Creek 16 SE Pad	MD Reference:	GL 5251.3' & KB 20' @ 5271.30ft (Savanna 802)
Well:	Critter Creek 16-6005BW	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Casper District

Project	Weld County, CO NAD 83		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		Critter Creek 16 SE Pad, Site Center : Critter Creek 16-5708B			
Site Position:		Northing:	1,578,436.56 usft	Latitude:	40° 54' 58.651 N
From:	Lat/Long	Easting:	3,295,329.88 usft	Longitude:	104° 25' 53.202 W
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.69 °

Well	Critter Creek 16-6005BW, 430' FSL 1079' FEL Sec 16 T11N R63W					
Well Position	+N/-S	0.00 ft	Northing:	1,578,431.55 usft	Latitude:	40° 54' 58.632 N
	+E/-W	0.00 ft	Easting:	3,295,074.26 usft	Longitude:	104° 25' 56.532 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	5,251.30 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	5/21/2018	8.28	67.20	52,778

Design	OH				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0.00	0.00	359.988	

Survey Program	Date	1/9/2019			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
156.50	1,475.50	Survey #1 - Surface (OH)	OWSG MWD	OWSG MWD - Standard	
1,605.00	8,095.00	Survey #2 - Intermediate (OH)	OWSG MWD	OWSG MWD - Standard	

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)	
0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
156.50	0.79	36.360	156.50	0.87	0.64	0.87	0.50	0.50	0.00	
First GeoGuidance MWD Survey										
200.50	0.70	11.930	200.49	1.38	0.88	1.38	0.74	-0.20	-55.52	
245.50	0.48	316.420	245.49	1.78	0.80	1.78	1.30	-0.49	-123.36	
289.50	0.35	359.750	289.49	2.05	0.67	2.05	0.75	-0.30	98.48	
333.50	0.48	269.490	333.49	2.18	0.49	2.18	1.35	0.30	-205.14	
377.50	1.23	285.310	377.48	2.31	-0.15	2.31	1.77	1.70	35.95	
422.50	1.24	294.890	422.47	2.64	-1.06	2.64	0.46	0.02	21.29	
466.50	1.32	269.320	466.46	2.83	-2.00	2.83	1.30	0.18	-58.11	

Company:	HighPoint Resources	Local Co-ordinate Reference:	Well Critter Creek 16-6005BW
Project:	Weld County, CO NAD 83	TVD Reference:	GL 5251.3' & KB 20' @ 5271.30ft (Savanna 802)
Site:	Critter Creek 16 SE Pad	MD Reference:	GL 5251.3' & KB 20' @ 5271.30ft (Savanna 802)
Well:	Critter Creek 16-6005BW	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Casper 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)
510.50	1.58	264.390	510.45	2.77	-3.11	2.77	0.65	0.59	-11.20
554.50	1.98	245.360	554.43	2.39	-4.40	2.39	1.61	0.91	-43.25
599.50	1.85	243.480	599.40	1.74	-5.76	1.74	0.32	-0.29	-4.18
643.50	1.49	246.600	643.38	1.20	-6.92	1.20	0.84	-0.82	7.09
685.50	1.76	241.100	685.37	0.67	-7.98	0.67	0.74	0.64	-13.10
729.50	2.20	249.140	729.34	0.04	-9.37	0.04	1.18	1.00	18.27
774.50	1.98	245.230	774.31	-0.59	-10.88	-0.59	0.58	-0.49	-8.69
818.50	2.33	247.300	818.28	-1.25	-12.39	-1.25	0.81	0.80	4.70
862.50	2.86	244.350	862.23	-2.08	-14.21	-2.07	1.24	1.20	-6.70
906.50	2.87	241.760	906.18	-3.07	-16.17	-3.07	0.30	0.02	-5.89
938.50	2.94	239.430	938.14	-3.87	-17.58	-3.86	0.43	0.22	-7.28
970.50	3.34	251.390	970.09	-4.58	-19.17	-4.58	2.39	1.25	37.38
1,002.50	3.52	245.670	1,002.03	-5.29	-20.95	-5.28	1.21	0.56	-17.88
1,033.50	3.87	257.710	1,032.97	-5.90	-22.84	-5.90	2.74	1.13	38.84
1,065.50	4.08	253.950	1,064.89	-6.44	-24.99	-6.44	1.05	0.66	-11.75
1,097.50	4.61	255.570	1,096.80	-7.08	-27.33	-7.07	1.70	1.66	5.06
1,128.50	4.75	256.220	1,127.70	-7.70	-29.78	-7.69	0.48	0.45	2.10
1,192.50	5.80	250.950	1,191.42	-9.38	-35.41	-9.38	1.81	1.64	-8.23
1,224.50	5.84	249.670	1,223.26	-10.48	-38.47	-10.47	0.42	0.13	-4.00
1,255.50	5.67	250.160	1,254.10	-11.54	-41.38	-11.53	0.57	-0.55	1.58
1,287.50	5.71	247.030	1,285.94	-12.70	-44.34	-12.69	0.98	0.13	-9.78
1,319.50	5.76	243.040	1,317.78	-14.05	-47.23	-14.04	1.26	0.16	-12.47
1,350.50	5.45	242.900	1,348.64	-15.43	-49.93	-15.42	1.00	-1.00	-0.45
1,382.50	5.27	243.340	1,380.50	-16.78	-52.60	-16.77	0.58	-0.56	1.38
1,413.50	5.23	244.440	1,411.37	-18.03	-55.14	-18.02	0.35	-0.13	3.55
1,445.50	5.24	244.750	1,443.23	-19.28	-57.78	-19.27	0.09	0.03	0.97
1,475.50	5.67	245.320	1,473.10	-20.48	-60.37	-20.47	1.44	1.43	1.90
Last GeoGuidanceMWD Survey									
1,605.00	6.06	237.360	1,601.92	-26.84	-71.94	-26.83	0.70	0.30	-6.15
First SDI MWD Inter. Survey									
1,696.00	7.30	238.550	1,692.30	-32.45	-80.91	-32.43	1.37	1.36	1.31
1,787.00	9.69	238.550	1,782.30	-39.46	-92.38	-39.44	2.63	2.63	0.00
1,879.00	11.83	241.010	1,872.67	-48.07	-107.24	-48.05	2.38	2.33	2.67
1,970.00	12.90	240.940	1,961.56	-57.53	-124.28	-57.50	1.18	1.18	-0.08
2,061.00	14.27	242.040	2,050.01	-67.72	-143.06	-67.69	1.53	1.51	1.21
2,152.00	14.80	240.980	2,138.10	-78.62	-163.13	-78.58	0.65	0.58	-1.16
2,243.00	16.08	241.740	2,225.82	-90.22	-184.40	-90.18	1.42	1.41	0.84
2,337.00	18.33	244.020	2,315.60	-102.86	-209.15	-102.82	2.50	2.39	2.43
2,431.00	20.06	247.230	2,404.38	-115.58	-237.31	-115.53	2.16	1.84	3.41
2,525.00	21.90	247.380	2,492.14	-128.56	-268.36	-128.51	1.96	1.96	0.16
2,619.00	23.69	246.620	2,578.80	-142.80	-301.88	-142.74	1.93	1.90	-0.81
2,713.00	24.00	245.740	2,664.77	-158.15	-336.64	-158.08	0.50	0.33	-0.94
2,807.00	24.37	245.160	2,750.52	-174.15	-371.67	-174.07	0.47	0.39	-0.62

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Site:	Critter Creek 16 SE Pad	MD Reference:	GL 5251.3' & KB 20' @ 5271.30ft (Savanna 802)
Well:	Critter Creek 16-6005BW	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Casper 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)
2,901.00	25.45	241.820	2,835.78	-191.84	-407.07	-191.75	1.89	1.15	-3.55
2,995.00	25.73	242.180	2,920.56	-210.90	-442.92	-210.80	0.34	0.30	0.38
3,089.00	25.34	240.750	3,005.38	-230.25	-478.52	-230.15	0.78	-0.41	-1.52
3,184.00	24.87	239.460	3,091.41	-250.33	-513.46	-250.23	0.76	-0.49	-1.36
3,278.00	24.68	239.070	3,176.75	-270.46	-547.32	-270.35	0.27	-0.20	-0.41
3,372.00	25.84	241.140	3,261.77	-290.44	-582.10	-290.32	1.55	1.23	2.20
3,466.00	25.47	241.840	3,346.50	-309.87	-617.86	-309.74	0.51	-0.39	0.74
3,560.00	25.12	244.860	3,431.49	-327.88	-653.74	-327.74	1.42	-0.37	3.21
3,654.00	24.69	245.050	3,516.75	-344.64	-689.60	-344.50	0.47	-0.46	0.20
3,746.00	24.18	244.490	3,600.51	-360.86	-724.03	-360.71	0.61	-0.55	-0.61
3,841.00	24.15	244.260	3,687.18	-377.68	-759.09	-377.52	0.10	-0.03	-0.24
3,935.00	24.67	243.760	3,772.78	-394.70	-794.01	-394.54	0.60	0.55	-0.53
4,030.00	24.71	242.930	3,859.10	-412.51	-829.48	-412.33	0.37	0.04	-0.87
4,123.00	24.09	241.770	3,943.79	-430.33	-863.51	-430.15	0.84	-0.67	-1.25
4,217.00	22.95	242.010	4,029.98	-448.00	-896.59	-447.82	1.22	-1.21	0.26
4,311.00	22.45	243.010	4,116.70	-464.75	-928.77	-464.56	0.67	-0.53	1.06
4,405.00	21.97	246.350	4,203.73	-479.95	-960.87	-479.75	1.44	-0.51	3.55
4,499.00	24.66	246.330	4,290.04	-494.88	-994.95	-494.67	2.86	2.86	-0.02
4,592.00	26.63	246.890	4,373.88	-510.85	-1,031.89	-510.64	2.13	2.12	0.60
4,687.00	27.09	245.890	4,458.63	-528.04	-1,071.22	-527.82	0.68	0.48	-1.05
4,781.00	27.97	246.990	4,541.98	-545.40	-1,111.04	-545.17	1.08	0.94	1.17
4,875.00	27.04	246.840	4,625.36	-562.43	-1,150.98	-562.18	0.99	-0.99	-0.16
4,969.00	25.04	245.020	4,709.81	-579.23	-1,188.66	-578.98	2.29	-2.13	-1.94
5,064.00	24.60	243.370	4,796.04	-596.58	-1,224.56	-596.33	0.86	-0.46	-1.74
5,158.00	22.05	240.500	4,882.35	-614.05	-1,257.41	-613.78	2.97	-2.71	-3.05
5,252.00	20.08	241.020	4,970.07	-630.56	-1,286.89	-630.29	2.11	-2.10	0.55
5,347.00	19.12	239.450	5,059.56	-646.37	-1,314.55	-646.09	1.15	-1.01	-1.65
5,441.00	18.08	237.050	5,148.65	-662.12	-1,340.05	-661.84	1.37	-1.11	-2.55
5,535.00	17.70	236.870	5,238.11	-677.87	-1,364.26	-677.58	0.41	-0.40	-0.19
5,629.00	17.14	242.260	5,327.80	-692.13	-1,388.49	-691.84	1.82	-0.60	5.73
5,723.00	16.06	242.420	5,417.88	-704.59	-1,412.27	-704.30	1.15	-1.15	0.17
5,817.00	14.70	243.380	5,508.51	-715.96	-1,434.46	-715.66	1.47	-1.45	1.02
5,911.00	12.45	241.420	5,599.88	-726.15	-1,454.02	-725.85	2.44	-2.39	-2.09
6,005.00	10.51	239.860	5,692.00	-735.30	-1,470.34	-735.00	2.09	-2.06	-1.66
6,099.00	10.98	242.560	5,784.35	-743.73	-1,485.70	-743.42	0.73	0.50	2.87
6,193.00	9.36	244.070	5,876.87	-751.20	-1,500.52	-750.89	1.75	-1.72	1.61
6,288.00	10.04	244.330	5,970.51	-758.17	-1,514.93	-757.85	0.72	0.72	0.27
6,383.00	9.12	240.010	6,064.19	-765.52	-1,528.91	-765.20	1.23	-0.97	-4.55
6,477.00	7.02	242.960	6,157.25	-771.85	-1,540.48	-771.53	2.28	-2.23	3.14
6,571.00	5.67	241.070	6,250.67	-776.71	-1,549.66	-776.39	1.45	-1.44	-2.01
6,665.00	2.86	238.310	6,344.40	-780.19	-1,555.72	-779.86	3.00	-2.99	-2.94
6,759.00	0.75	278.190	6,438.35	-781.33	-1,558.33	-781.01	2.48	-2.24	42.43
6,853.00	0.32	280.840	6,532.35	-781.20	-1,559.19	-780.87	0.46	-0.46	2.82
6,947.00	0.30	248.200	6,626.35	-781.24	-1,559.68	-780.91	0.19	-0.02	-34.72

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Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Casper District

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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)
7,035.00	1.77	354.187	6,714.34	-779.97	-1,560.03	-779.64	2.13	1.67	120.44
Curve KOP									
7,041.00	1.90	354.780	6,720.33	-779.78	-1,560.05	-779.45	2.13	2.11	9.89
First SDI MWD Curve Survey									
7,135.00	12.62	1.140	6,813.44	-767.93	-1,559.99	-767.60	11.42	11.40	6.77
7,229.00	18.39	4.460	6,903.99	-742.85	-1,558.63	-742.53	6.21	6.14	3.53
7,323.00	27.10	3.310	6,990.59	-706.63	-1,556.24	-706.30	9.28	9.27	-1.22
7,418.00	35.77	0.520	7,071.58	-657.16	-1,554.73	-656.84	9.25	9.13	-2.94
7,512.00	44.01	359.060	7,143.64	-596.94	-1,555.02	-596.61	8.82	8.77	-1.55
7,607.00	54.80	359.810	7,205.37	-524.91	-1,555.69	-524.58	11.37	11.36	0.79
7,700.00	64.30	359.050	7,252.44	-444.83	-1,556.51	-444.51	10.24	10.22	-0.82
7,794.00	63.61	358.570	7,293.72	-360.40	-1,558.27	-360.07	0.87	-0.73	-0.51
7,888.00	68.96	358.720	7,331.51	-274.39	-1,560.30	-274.07	5.69	5.69	0.16
7,982.00	77.02	358.250	7,358.99	-184.61	-1,562.68	-184.28	8.59	8.57	-0.50
8,038.00	83.14	359.450	7,368.63	-129.49	-1,563.78	-129.16	11.13	10.93	2.14
Last SDI MWD Curve Survey									
8,095.00	83.14	359.450	7,375.44	-72.90	-1,564.33	-72.57	0.00	0.00	0.00
Projection to TD									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
Sharon Spring (50' away)	0.00	0.000	7,241.00	-467.14	-1,556.20	1,577,945.71	3,293,523.80	40° 54' 54.016 N	104° 26' 16.801 W
- actual wellpath misses target center by 0.08ft at 7674.94ft MD (7241.08 TVD, -467.16 N, -1556.18 E)									
- Circle (radius 50.00)									

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
156.50	156.50	0.87	0.64	First GeoGuidance MWD Survey	
1,475.50	1,473.10	-20.48	-60.37	Last GeoGuidanceMWD Survey	
1,605.00	1,601.92	-26.84	-71.94	First SDI MWD Inter. Survey	
7,035.00	6,714.34	-779.97	-1,560.03	Curve KOP	
7,041.00	6,720.33	-779.78	-1,560.05	First SDI MWD Curve Survey	
8,038.00	7,368.63	-129.49	-1,563.78	Last SDI MWD Curve Survey	
8,095.00	7,375.44	-72.90	-1,564.33	Projection to TD	

Checked By: _____	Approved By: _____	Date: _____
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