



Survey Certification

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

Operator	HighPoint Resources
Well Name & No.	Lion Creek 23-0164B
API #	05-123-47385
County & State	Weld County, CO
SDI Job #	OP.012784
Rig	Savanna 802
Survey Date	10-Sep-2018

I, Seth M. Burstad, having personal knowledge of all the facts, hereby certify that the attached directional survey run from a measured depth of 1499.5 feet to a measured depth of 18115 feet is true and correct as determined from all available records.

Seth M. Burstad

Signature

10-Sep-2018

Date

Seth M. Burstad

Rockies Region Well Planner
Scientific Drilling - Rocky Mountain District



Project: Weld County, CO NAD 83
Site: Lion Creek 23 NWNW Pad
Well: Lion Creek 23-0164B
Wellbore: OH
Design: OH



WELL DETAILS: Lion Creek 23-0164B

GL 5391.2' & KB 20' @ 5411.20ft (Savanna 802) 5391.20
Northing 1576873.54 Easting 3271610.97 Latitude 40° 54' 45.919 N Longitude 104° 31' 2.350 W

Design: OH (Lion Creek 23-0164B/OH)

Created By: Seth Burstad

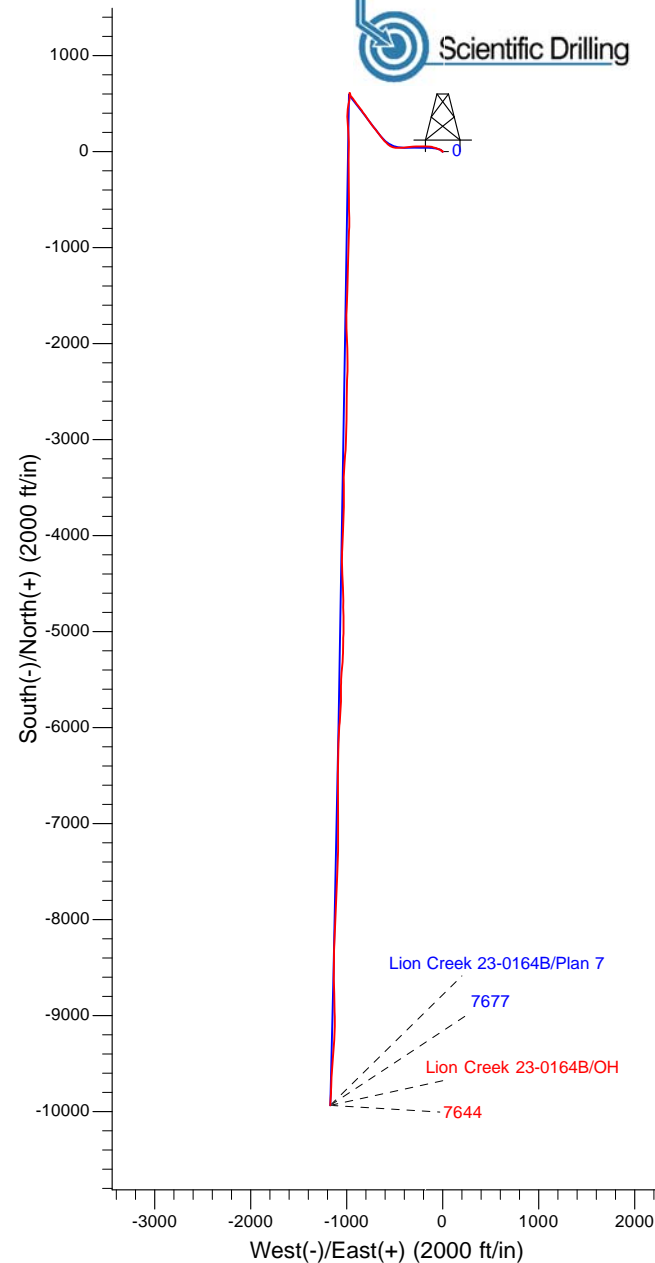
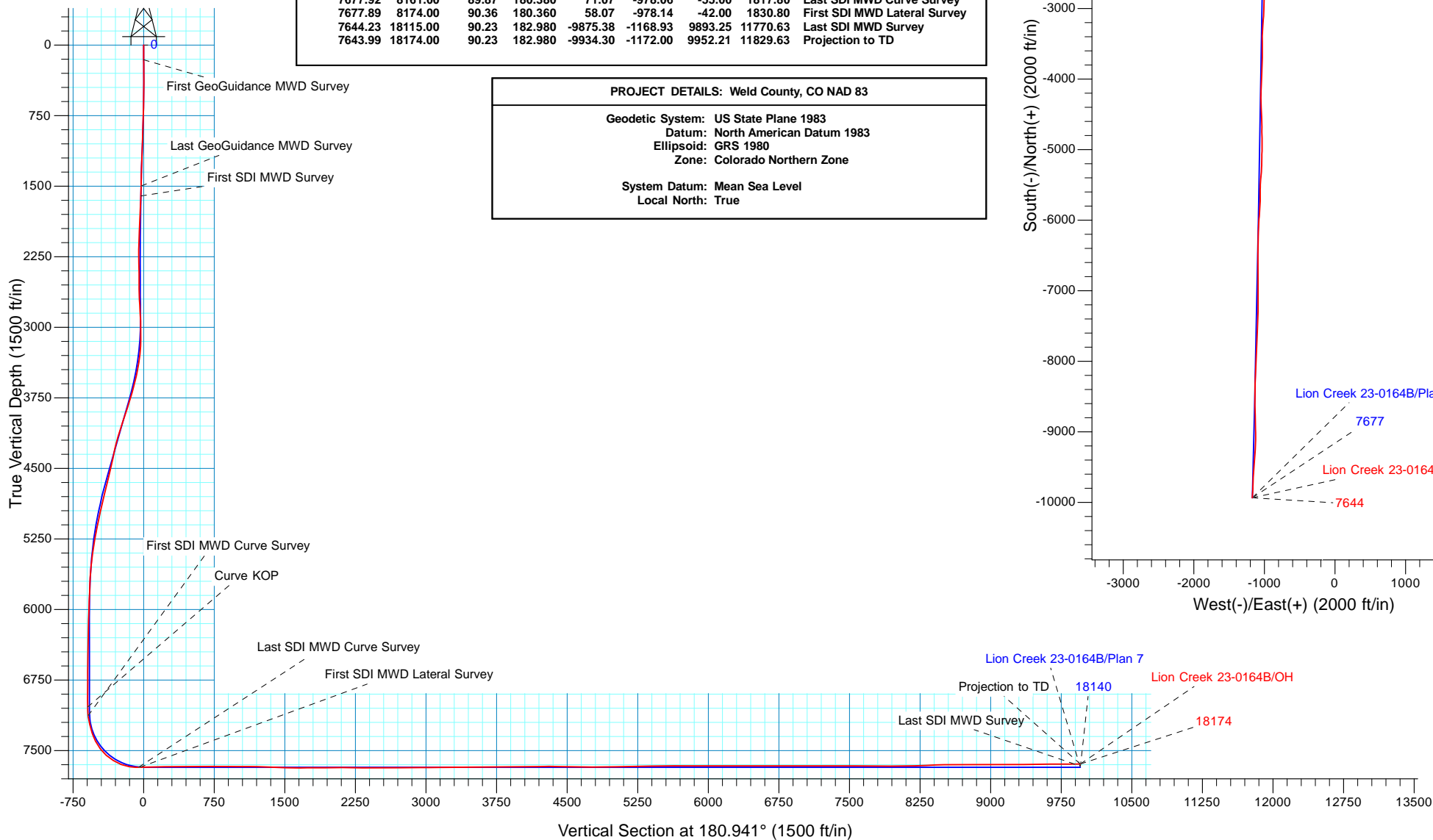
ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	Vsect	Departure	Annotation
156.50	156.50	0.68	210.450	-0.80	-0.47	0.81	0.93	First GeoGuidance MWD Survey
1497.32	1499.50	4.61	284.510	28.16	-52.25	-27.30	64.55	Last GeoGuidance MWD Survey
1604.43	1607.00	5.14	296.520	31.39	-60.75	-30.39	73.68	First SDI MWD Survey
7038.00	7220.00	0.70	234.310	611.67	-970.30	-595.65	1274.12	Curve KOP
7130.78	7313.00	6.53	186.900	606.08	-971.40	-590.05	1279.98	First SDI MWD Curve Survey
7677.92	8161.00	89.87	180.380	71.07	-978.06	-55.00	1817.80	Last SDI MWD Curve Survey
7677.89	8174.00	90.36	180.360	58.07	-978.14	-42.00	1830.80	First SDI MWD Lateral Survey
7644.23	18115.00	90.23	182.980	-9875.38	-1168.93	9893.25	11770.63	Last SDI MWD Survey
7643.99	18174.00	90.23	182.980	-9934.30	-1172.00	9952.21	11829.63	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
Lion Creek 23 NWNW Pad
Lion Creek 23-0164B

OH

Design: OH

Standard Survey Report

10 September, 2018



Company:	HighPoint Resources	Local Co-ordinate Reference:	Well Lion Creek 23-0164B
Project:	Weld County, CO NAD 83	TVD Reference:	GL 5391.2' & KB 20' @ 5411.20ft (Savanna 802)
Site:	Lion Creek 23 NWNW Pad	MD Reference:	GL 5391.2' & KB 20' @ 5411.20ft (Savanna 802)
Well:	Lion Creek 23-0164B	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		Lion Creek 23 NWNW Pad, Site Center: Lion Creek 23-0164B			
Site Position:		Northing:	1,576,873.61 usft	Latitude:	40° 54' 45.920 N
From:	Lat/Long	Easting:	3,271,610.98 usft	Longitude:	104° 31' 2.350 W
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.63 °

Well	Lion Creek 23-0164B, 300' FNL 330' FWL Sec 23 T11N R64W					
Well Position	+N/-S	0.00 ft	Northing:	1,576,873.53 usft	Latitude:	40° 54' 45.919 N
	+E/-W	0.00 ft	Easting:	3,271,610.98 usft	Longitude:	104° 31' 2.350 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	5,391.20 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	6/19/2018	8.37	67.18	52,714

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	180.941	

Survey Program	Date	9/10/2018			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
156.50	1,499.50	Survey #1 - Surface (OH)	OWSG MWD	OWSG MWD - Standard	
1,607.00	8,161.00	Survey #2 - Intermediate (OH)	OWSG MWD	OWSG MWD - Standard	
8,174.00	18,174.00	Survey #3 - Lateral (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	0.68	210.450	156.50	-0.80	-0.47	0.81	0.43	0.43	0.00	
First GeoGuidance MWD Survey										
200.50	0.97	228.700	200.49	-1.27	-0.88	1.29	0.88	0.66	41.48	
245.50	0.79	228.700	245.49	-1.73	-1.40	1.75	0.40	-0.40	0.00	
289.50	0.52	217.270	289.48	-2.09	-1.75	2.12	0.68	-0.61	-25.98	
333.50	0.31	36.700	333.48	-2.15	-1.80	2.18	1.89	-0.48	407.80	
377.50	0.44	17.850	377.48	-1.89	-1.68	1.92	0.40	0.30	-42.84	
422.50	0.40	327.440	422.48	-1.60	-1.71	1.62	0.80	-0.09	-112.02	

Company:	HighPoint Resources	Local Co-ordinate Reference:	Well Lion Creek 23-0164B
Project:	Weld County, CO NAD 83	TVD Reference:	GL 5391.2' & KB 20' @ 5411.20ft (Savanna 802)
Site:	Lion Creek 23 NWNW Pad	MD Reference:	GL 5391.2' & KB 20' @ 5411.20ft (Savanna 802)
Well:	Lion Creek 23-0164B	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)
466.50	0.26	40.000	466.48	-1.39	-1.73	1.42	0.92	-0.32	164.91
510.50	0.79	334.300	510.48	-1.04	-1.80	1.07	1.64	1.20	-149.32
554.50	0.78	11.340	554.47	-0.47	-1.87	0.50	1.13	-0.02	84.18
599.50	1.03	345.710	599.47	0.22	-1.91	-0.19	1.04	0.56	-56.96
643.50	2.11	327.890	643.45	1.29	-2.44	-1.25	2.66	2.45	-40.50
685.50	1.49	325.990	685.43	2.39	-3.15	-2.34	1.48	-1.48	-4.52
729.50	1.54	320.810	729.42	3.33	-3.85	-3.26	0.33	0.11	-11.77
774.50	2.02	316.760	774.39	4.37	-4.77	-4.29	1.10	1.07	-9.00
818.50	3.12	305.690	818.35	5.64	-6.27	-5.53	2.73	2.50	-25.16
862.50	3.03	297.690	862.29	6.88	-8.28	-6.74	1.00	-0.20	-18.18
938.50	3.24	304.990	938.17	9.04	-11.82	-8.85	0.59	0.28	9.61
970.50	3.65	299.670	970.12	10.06	-13.44	-9.84	1.62	1.28	-16.63
1,002.50	4.31	304.460	1,002.04	11.25	-15.32	-11.00	2.31	2.06	14.97
1,033.50	4.13	307.100	1,032.95	12.58	-17.17	-12.30	0.85	-0.58	8.52
1,065.50	4.44	313.640	1,064.86	14.13	-18.98	-13.82	1.81	0.97	20.44
1,097.50	4.04	307.180	1,096.78	15.67	-20.78	-15.32	1.94	-1.25	-20.19
1,129.50	4.53	305.560	1,128.69	17.08	-22.70	-16.71	1.58	1.53	-5.06
1,160.50	4.92	301.870	1,159.58	18.50	-24.83	-18.09	1.59	1.26	-11.90
1,192.50	5.58	293.960	1,191.45	19.85	-27.42	-19.40	3.06	2.06	-24.72
1,224.50	5.36	290.660	1,223.30	21.01	-30.24	-20.51	1.20	-0.69	-10.31
1,255.50	5.23	294.310	1,254.17	22.10	-32.88	-21.56	1.16	-0.42	11.77
1,287.50	5.27	293.830	1,286.04	23.30	-35.55	-22.71	0.19	0.13	-1.50
1,319.50	5.05	287.140	1,317.91	24.31	-38.24	-23.68	2.00	-0.69	-20.91
1,350.50	4.65	284.850	1,348.80	25.03	-40.76	-24.36	1.43	-1.29	-7.39
1,382.50	4.26	283.500	1,380.70	25.64	-43.17	-24.93	1.26	-1.22	-4.22
1,414.50	4.31	283.500	1,412.61	26.20	-45.50	-25.45	0.16	0.16	0.00
1,445.50	4.70	286.050	1,443.51	26.82	-47.85	-26.03	1.41	1.26	8.23
1,477.50	5.12	288.160	1,475.40	27.63	-50.47	-26.80	1.43	1.31	6.59
1,499.50	4.61	284.510	1,497.32	28.16	-52.25	-27.30	2.71	-2.32	-16.59
Last GeoGuidance MWD Survey									
1,607.00	5.14	296.520	1,604.43	31.39	-60.75	-30.39	1.07	0.49	11.17
First SDI MWD Survey									
1,698.00	5.54	293.850	1,695.04	34.99	-68.41	-33.86	0.52	0.44	-2.93
1,789.00	7.28	287.240	1,785.46	38.47	-77.94	-37.19	2.07	1.91	-7.26
1,879.00	9.42	287.190	1,874.51	42.34	-90.42	-40.85	2.38	2.38	-0.06
1,970.00	9.30	286.160	1,964.29	46.59	-104.60	-44.86	0.23	-0.13	-1.13
2,061.00	11.26	282.150	2,053.83	50.50	-120.35	-48.52	2.29	2.15	-4.41
2,152.00	12.31	275.820	2,142.91	53.36	-138.68	-51.07	1.83	1.15	-6.96
2,244.00	14.71	269.580	2,232.37	54.27	-160.12	-51.63	3.05	2.61	-6.78
2,335.00	17.11	267.430	2,319.88	53.58	-185.05	-50.54	2.72	2.64	-2.36
2,429.00	18.58	270.040	2,409.35	52.97	-213.85	-49.45	1.78	1.56	2.78
2,522.00	20.16	271.120	2,497.09	53.30	-244.69	-49.27	1.74	1.70	1.16
2,616.00	20.57	268.400	2,585.21	53.15	-277.39	-48.59	1.10	0.44	-2.89
2,710.00	21.01	264.750	2,673.09	51.15	-310.68	-46.04	1.46	0.47	-3.88

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Well:	Lion Creek 23-0164B	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)
2,804.00	20.91	262.640	2,760.88	47.46	-344.10	-41.80	0.81	-0.11	-2.24
2,898.00	20.50	262.530	2,848.80	43.17	-377.05	-36.97	0.44	-0.44	-0.12
2,991.00	20.25	266.180	2,935.99	39.98	-409.26	-33.25	1.39	-0.27	3.92
3,085.00	19.20	269.400	3,024.48	38.73	-440.95	-31.49	1.61	-1.12	3.43
3,178.00	18.85	270.880	3,112.40	38.80	-471.26	-31.06	0.64	-0.38	1.59
3,272.00	17.84	279.340	3,201.63	41.37	-500.66	-33.15	3.03	-1.07	9.00
3,366.00	17.30	289.630	3,291.27	48.41	-528.04	-39.73	3.35	-0.57	10.95
3,459.00	16.47	305.940	3,380.31	60.80	-551.75	-51.73	5.15	-0.89	17.54
3,553.00	17.37	311.780	3,470.25	77.97	-573.00	-68.55	2.04	0.96	6.21
3,648.00	19.18	314.360	3,560.45	98.33	-594.74	-88.55	2.09	1.91	2.72
3,742.00	20.18	319.840	3,648.97	121.52	-616.24	-111.38	2.23	1.06	5.83
3,836.00	20.68	320.300	3,737.06	146.68	-637.30	-136.20	0.56	0.53	0.49
3,931.00	21.47	324.390	3,825.71	173.73	-658.14	-162.89	1.76	0.83	4.31
4,025.00	22.31	323.060	3,912.93	201.97	-678.87	-190.80	1.04	0.89	-1.41
4,119.00	23.33	322.320	3,999.57	230.97	-700.98	-219.42	1.13	1.09	-0.79
4,213.00	23.16	321.720	4,085.94	260.21	-723.80	-248.29	0.31	-0.18	-0.64
4,307.00	19.70	320.520	4,173.43	286.95	-745.34	-274.68	3.71	-3.68	-1.28
4,401.00	17.08	324.320	4,262.62	310.40	-763.46	-297.82	3.06	-2.79	4.04
4,495.00	15.18	327.750	4,352.92	332.03	-778.09	-319.20	2.26	-2.02	3.65
4,589.00	14.36	326.110	4,443.81	352.11	-791.15	-339.07	0.98	-0.87	-1.74
4,682.00	15.39	324.720	4,533.70	371.76	-804.71	-358.49	1.17	1.11	-1.49
4,776.00	16.71	324.590	4,624.03	392.96	-819.75	-379.44	1.40	1.40	-0.14
4,869.00	18.05	325.320	4,712.78	415.70	-835.69	-401.92	1.46	1.44	0.78
4,963.00	17.16	322.690	4,802.38	438.71	-852.38	-424.65	1.27	-0.95	-2.80
5,057.00	15.45	322.050	4,892.60	459.61	-868.49	-445.29	1.83	-1.82	-0.68
5,150.00	14.69	324.070	4,982.40	478.93	-883.03	-464.36	0.99	-0.82	2.17
5,244.00	15.23	324.200	5,073.21	498.59	-897.24	-483.79	0.58	0.57	0.14
5,338.00	14.19	323.280	5,164.13	517.84	-911.36	-502.81	1.13	-1.11	-0.98
5,431.00	10.97	325.640	5,254.89	534.29	-923.17	-519.06	3.51	-3.46	2.54
5,526.00	11.28	325.630	5,348.10	549.42	-933.51	-534.02	0.33	0.33	-0.01
5,620.00	10.35	319.200	5,440.43	563.40	-944.22	-547.82	1.62	-0.99	-6.84
5,714.00	7.87	314.240	5,533.24	574.29	-954.35	-558.53	2.77	-2.64	-5.28
5,808.00	5.19	315.110	5,626.62	581.79	-961.97	-565.91	2.85	-2.85	0.93
5,902.00	2.62	2,520	5,720.42	586.95	-964.87	-571.02	4.17	-2.73	50.44
5,996.00	2.75	37.060	5,814.32	590.90	-963.42	-574.99	1.70	0.14	36.74
6,090.00	2.06	352.800	5,908.24	594.37	-962.27	-578.49	2.04	-0.73	-47.09
6,184.00	1.99	331.470	6,002.19	597.48	-963.26	-581.58	0.80	-0.07	-22.69
6,278.00	1.98	339.450	6,096.13	600.44	-964.61	-584.51	0.29	-0.01	8.49
6,371.00	1.26	347.690	6,189.09	602.94	-965.39	-587.00	0.81	-0.77	8.86
6,465.00	1.35	354.450	6,283.07	605.05	-965.72	-589.11	0.19	0.10	7.19
6,559.00	1.33	335.610	6,377.04	607.15	-966.28	-591.20	0.47	-0.02	-20.04
6,654.00	0.82	330.650	6,472.03	608.74	-967.07	-592.78	0.55	-0.54	-5.22
6,748.00	0.83	5,050	6,566.02	610.01	-967.34	-594.04	0.52	0.01	36.60

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Well:	Lion Creek 23-0164B	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)
6,842.00	0.45	314.610	6,660.01	610.95	-967.54	-594.97	0.69	-0.40	-53.66
6,937.00	0.56	288.160	6,755.01	611.35	-968.25	-595.37	0.27	0.12	-27.84
7,031.00	0.50	308.860	6,849.00	611.75	-969.00	-595.76	0.21	-0.06	22.02
7,125.00	0.31	269.590	6,943.00	612.01	-969.58	-596.00	0.35	-0.20	-41.78
7,220.00	0.70	234.310	7,038.00	611.67	-970.30	-595.65	0.51	0.41	-37.14
Curve KOP									
7,313.00	6.53	186.900	7,130.78	606.08	-971.40	-590.05	6.54	6.27	-50.98
First SDI MWD Curve Survey									
7,407.00	14.39	171.830	7,223.16	589.18	-970.38	-573.17	8.78	8.36	-16.03
7,501.00	18.19	183.630	7,313.40	562.96	-969.65	-546.96	5.34	4.04	12.55
7,533.00	21.44	187.120	7,343.50	552.17	-970.69	-536.16	10.80	10.16	10.91
7,596.00	26.75	191.040	7,400.99	526.81	-974.84	-510.73	8.80	8.43	6.22
7,691.00	37.14	188.260	7,481.50	477.31	-983.08	-461.10	11.04	10.94	-2.93
7,785.00	48.26	186.890	7,550.47	414.21	-991.39	-397.87	11.87	11.83	-1.46
7,879.00	58.71	178.210	7,606.40	338.95	-994.35	-322.57	13.35	11.12	-9.23
7,973.00	68.83	173.100	7,647.91	255.03	-987.81	-238.77	11.81	10.77	-5.44
8,066.00	81.14	176.730	7,671.97	165.74	-979.95	-149.62	13.76	13.24	3.90
8,129.00	88.73	179.740	7,677.53	103.07	-978.03	-86.99	12.95	12.05	4.78
8,161.00	89.87	180.380	7,677.92	71.07	-978.06	-55.00	4.09	3.56	2.00
Last SDI MWD Curve Survey									
8,174.00	90.36	180.360	7,677.89	58.07	-978.14	-42.00	3.77	3.77	-0.15
First SDI MWD Lateral Survey									
8,266.00	92.69	181.300	7,675.44	-33.88	-979.47	49.96	2.73	2.53	1.02
8,359.00	91.38	180.020	7,672.14	-126.81	-980.54	142.90	1.97	-1.41	-1.38
8,453.00	89.66	179.510	7,671.29	-220.80	-980.16	236.87	1.91	-1.83	-0.54
8,547.00	90.13	178.790	7,671.46	-314.79	-978.76	330.82	0.91	0.50	-0.77
8,641.00	89.63	179.250	7,671.66	-408.78	-977.16	424.77	0.72	-0.53	0.49
8,735.00	91.17	179.150	7,671.00	-502.76	-975.84	518.72	1.64	1.64	-0.11
8,829.00	90.74	180.070	7,669.43	-596.75	-975.21	612.68	1.08	-0.46	0.98
8,923.00	90.07	179.580	7,668.77	-690.74	-974.92	706.66	0.88	-0.71	-0.52
9,017.00	89.70	180.480	7,668.96	-784.74	-974.97	800.65	1.04	-0.39	0.96
9,110.00	89.60	182.430	7,669.53	-877.71	-977.33	893.64	2.10	-0.11	2.10
9,204.00	89.56	182.000	7,670.21	-971.63	-980.96	987.61	0.46	-0.04	-0.46
9,297.00	90.70	181.280	7,670.00	-1,064.59	-983.62	1,080.60	1.45	1.23	-0.77
9,391.00	88.99	181.740	7,670.26	-1,158.56	-986.10	1,174.59	1.88	-1.82	0.49
9,485.00	87.89	181.460	7,672.82	-1,252.48	-988.72	1,268.55	1.21	-1.17	-0.30
9,579.00	87.25	181.700	7,676.80	-1,346.36	-991.31	1,362.46	0.73	-0.68	0.26
9,673.00	86.78	181.270	7,681.70	-1,440.20	-993.75	1,456.33	0.68	-0.50	-0.46
9,767.00	90.20	182.010	7,684.17	-1,534.12	-996.44	1,550.27	3.72	3.64	0.79
9,861.00	90.17	182.830	7,683.87	-1,628.03	-1,000.40	1,644.24	0.87	-0.03	0.87
9,955.00	89.93	181.020	7,683.79	-1,721.97	-1,003.56	1,738.22	1.94	-0.26	-1.93
10,050.00	89.83	178.620	7,683.99	-1,816.97	-1,003.26	1,833.20	2.53	-0.11	-2.53
10,144.00	90.91	177.440	7,683.38	-1,910.91	-1,000.03	1,927.07	1.70	1.15	-1.26
10,238.00	90.94	177.440	7,681.86	-2,004.80	-995.83	2,020.88	0.03	0.03	0.00

Company:	HighPoint Resources	Local Co-ordinate Reference:	Well Lion Creek 23-0164B
Project:	Weld County, CO NAD 83	TVD Reference:	GL 5391.2' & KB 20' @ 5411.20ft (Savanna 802)
Site:	Lion Creek 23 NWNW Pad	MD Reference:	GL 5391.2' & KB 20' @ 5411.20ft (Savanna 802)
Well:	Lion Creek 23-0164B	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)	
10,332.00	90.97	178.910	7,680.30	-2,098.74	-992.84	2,114.76	1.56	0.03	1.56	
10,426.00	88.59	179.540	7,680.66	-2,192.72	-991.57	2,208.71	2.62	-2.53	0.67	
10,519.00	88.69	181.760	7,682.86	-2,285.68	-992.62	2,301.68	2.39	0.11	2.39	
10,613.00	89.30	181.480	7,684.51	-2,379.63	-995.28	2,395.65	0.71	0.65	-0.30	
10,707.00	89.53	181.450	7,685.47	-2,473.59	-997.68	2,489.64	0.25	0.24	-0.03	
10,798.00	91.11	180.880	7,684.97	-2,564.57	-999.53	2,580.64	1.85	1.74	-0.63	
10,889.00	91.75	180.860	7,682.69	-2,655.53	-1,000.92	2,671.61	0.70	0.70	-0.02	
10,980.00	90.77	181.310	7,680.69	-2,746.49	-1,002.64	2,762.59	1.18	-1.08	0.49	
11,071.00	89.66	179.960	7,680.35	-2,837.48	-1,003.65	2,853.58	1.92	-1.22	-1.48	
11,162.00	90.23	181.780	7,680.44	-2,928.47	-1,005.03	2,944.58	2.10	0.63	2.00	
11,253.00	90.07	182.450	7,680.20	-3,019.40	-1,008.39	3,035.56	0.76	-0.18	0.74	
11,344.00	90.30	183.170	7,679.91	-3,110.29	-1,012.85	3,126.51	0.83	0.25	0.79	
11,436.00	90.34	184.180	7,679.39	-3,202.10	-1,018.74	3,218.40	1.10	0.04	1.10	
11,527.00	90.84	184.300	7,678.46	-3,292.85	-1,025.47	3,309.24	0.57	0.55	0.13	
11,618.00	90.64	181.670	7,677.28	-3,383.71	-1,030.21	3,400.17	2.90	-0.22	-2.89	
11,709.00	90.50	179.310	7,676.38	-3,474.69	-1,030.99	3,491.16	2.60	-0.15	-2.59	
11,800.00	90.47	179.890	7,675.60	-3,565.69	-1,030.35	3,582.13	0.64	-0.03	0.64	
11,890.00	90.37	180.250	7,674.95	-3,655.69	-1,030.46	3,672.12	0.42	-0.11	0.40	
11,982.00	90.37	181.380	7,674.35	-3,747.67	-1,031.77	3,764.11	1.23	0.00	1.23	
12,073.00	90.44	181.740	7,673.71	-3,838.64	-1,034.25	3,855.10	0.40	0.08	0.40	
12,164.00	90.40	183.060	7,673.04	-3,929.55	-1,038.06	3,946.07	1.45	-0.04	1.45	
12,255.00	90.91	182.790	7,672.00	-4,020.43	-1,042.70	4,037.01	0.63	0.56	-0.30	
12,346.00	90.13	181.150	7,671.17	-4,111.37	-1,045.83	4,127.99	2.00	-0.86	-1.80	
12,436.00	91.74	182.520	7,669.71	-4,201.30	-1,048.71	4,217.96	2.35	1.79	1.52	
12,527.00	88.86	178.310	7,669.23	-4,292.27	-1,049.37	4,308.92	5.60	-3.16	-4.63	
12,618.00	89.16	177.580	7,670.80	-4,383.20	-1,046.11	4,399.79	0.87	0.33	-0.80	
12,709.00	89.23	177.640	7,672.08	-4,474.11	-1,042.31	4,490.62	0.10	0.08	0.07	
12,801.00	88.96	177.500	7,673.53	-4,566.01	-1,038.41	4,582.45	0.33	-0.29	-0.15	
12,892.00	88.99	179.280	7,675.16	-4,656.96	-1,035.86	4,673.34	1.96	0.03	1.96	
12,983.00	89.77	179.780	7,676.15	-4,747.95	-1,035.11	4,764.31	1.02	0.86	0.55	
13,074.00	90.13	179.500	7,676.23	-4,838.95	-1,034.54	4,855.29	0.50	0.40	-0.31	
13,165.00	91.01	180.300	7,675.32	-4,929.94	-1,034.38	4,946.26	1.31	0.97	0.88	
13,255.00	91.64	180.180	7,673.24	-5,019.92	-1,034.76	5,036.23	0.71	0.70	-0.13	
13,346.00	92.11	181.260	7,670.26	-5,110.86	-1,035.90	5,127.18	1.29	0.52	1.19	
13,437.00	91.51	181.160	7,667.39	-5,201.79	-1,037.82	5,218.14	0.67	-0.66	-0.11	
13,528.00	90.47	184.580	7,665.81	-5,292.65	-1,042.38	5,309.06	3.93	-1.14	3.76	
13,619.00	90.07	184.410	7,665.39	-5,383.37	-1,049.51	5,399.88	0.48	-0.44	-0.19	
13,710.00	90.60	183.700	7,664.85	-5,474.14	-1,055.94	5,490.74	0.97	0.58	-0.78	
13,801.00	90.80	180.800	7,663.74	-5,565.05	-1,059.51	5,581.70	3.19	0.22	-3.19	
13,893.00	90.20	180.300	7,662.94	-5,657.04	-1,060.40	5,673.70	0.85	-0.65	-0.54	
13,984.00	89.97	181.120	7,662.80	-5,748.04	-1,061.52	5,764.69	0.94	-0.25	0.90	
14,074.00	89.56	183.410	7,663.17	-5,837.96	-1,065.08	5,854.66	2.58	-0.46	2.54	
14,166.00	90.77	185.540	7,662.91	-5,929.67	-1,072.26	5,946.48	2.66	1.32	2.32	

Company:	HighPoint Resources	Local Co-ordinate Reference:	Well Lion Creek 23-0164B
Project:	Weld County, CO NAD 83	TVD Reference:	GL 5391.2' & KB 20' @ 5411.20ft (Savanna 802)
Site:	Lion Creek 23 NWNW Pad	MD Reference:	GL 5391.2' & KB 20' @ 5411.20ft (Savanna 802)
Well:	Lion Creek 23-0164B	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)
14,257.00	89.60	182.600	7,662.61	-6,020.43	-1,078.72	6,037.33	3.48	-1.29	-3.23
14,348.00	89.83	181.980	7,663.07	-6,111.36	-1,082.35	6,128.31	0.73	0.25	-0.68
14,439.00	90.20	182.000	7,663.04	-6,202.30	-1,085.51	6,219.29	0.41	0.41	0.02
14,530.00	90.13	182.170	7,662.78	-6,293.24	-1,088.82	6,310.27	0.20	-0.08	0.19
14,620.00	89.97	181.500	7,662.70	-6,383.19	-1,091.71	6,400.26	0.77	-0.18	-0.74
14,711.00	89.97	180.160	7,662.75	-6,474.18	-1,093.02	6,491.26	1.47	0.00	-1.47
14,802.00	89.90	179.530	7,662.85	-6,565.18	-1,092.78	6,582.24	0.70	-0.08	-0.69
14,893.00	90.03	179.690	7,662.91	-6,656.18	-1,092.16	6,673.22	0.23	0.14	0.18
14,984.00	89.93	179.220	7,662.94	-6,747.17	-1,091.29	6,764.19	0.53	-0.11	-0.52
15,074.00	90.07	179.740	7,662.94	-6,837.17	-1,090.48	6,854.16	0.60	0.16	0.58
15,164.00	90.03	179.500	7,662.86	-6,927.17	-1,089.88	6,944.13	0.27	-0.04	-0.27
15,255.00	90.00	179.480	7,662.84	-7,018.16	-1,089.07	7,035.10	0.04	-0.03	-0.02
15,345.00	90.10	181.000	7,662.76	-7,108.16	-1,089.45	7,125.09	1.69	0.11	1.69
15,435.00	89.66	179.950	7,662.95	-7,198.16	-1,090.19	7,215.09	1.26	-0.49	-1.17
15,526.00	89.90	180.860	7,663.30	-7,289.15	-1,090.84	7,306.08	1.03	0.26	1.00
15,618.00	90.07	182.400	7,663.32	-7,381.11	-1,093.45	7,398.07	1.68	0.18	1.67
15,709.00	89.93	181.900	7,663.32	-7,472.05	-1,096.87	7,489.05	0.57	-0.15	-0.55
15,800.00	89.77	181.130	7,663.56	-7,563.01	-1,099.27	7,580.05	0.86	-0.18	-0.85
15,891.00	89.70	181.950	7,663.98	-7,653.98	-1,101.72	7,671.04	0.90	-0.08	0.90
15,982.00	89.93	183.480	7,664.27	-7,744.87	-1,106.03	7,761.99	1.70	0.25	1.68
16,073.00	89.70	182.720	7,664.57	-7,835.74	-1,110.95	7,852.93	0.87	-0.25	-0.84
16,164.00	89.66	182.890	7,665.08	-7,926.63	-1,115.40	7,943.88	0.19	-0.04	0.19
16,258.00	90.37	183.400	7,665.05	-8,020.49	-1,120.56	8,037.81	0.93	0.76	0.54
16,352.00	90.64	182.040	7,664.22	-8,114.38	-1,125.02	8,131.76	1.47	0.29	-1.45
16,446.00	92.25	182.240	7,661.85	-8,208.28	-1,128.53	8,225.70	1.73	1.71	0.21
16,540.00	91.88	180.930	7,658.47	-8,302.18	-1,131.13	8,319.63	1.45	-0.39	-1.39
16,634.00	93.05	181.820	7,654.42	-8,396.06	-1,133.38	8,413.54	1.56	1.24	0.95
16,728.00	90.64	179.670	7,651.40	-8,489.99	-1,134.60	8,507.48	3.43	-2.56	-2.29
16,821.00	90.57	179.470	7,650.41	-8,582.98	-1,133.90	8,600.45	0.23	-0.08	-0.22
16,915.00	90.64	178.870	7,649.42	-8,676.97	-1,132.54	8,694.40	0.64	0.07	-0.64
17,010.00	90.40	177.830	7,648.56	-8,771.92	-1,129.81	8,789.30	1.12	-0.25	-1.09
17,104.00	89.60	178.940	7,648.56	-8,865.88	-1,127.16	8,883.20	1.46	-0.85	1.18
17,198.00	90.10	179.950	7,648.81	-8,959.88	-1,126.25	8,977.17	1.20	0.53	1.07
17,292.00	90.03	178.740	7,648.70	-9,053.87	-1,125.17	9,071.13	1.29	-0.07	-1.29
17,386.00	89.80	182.500	7,648.84	-9,147.85	-1,126.19	9,165.11	4.01	-0.24	4.00
17,480.00	89.70	181.990	7,649.25	-9,241.77	-1,129.87	9,259.08	0.55	-0.11	-0.54
17,573.00	90.74	183.820	7,648.89	-9,334.65	-1,134.58	9,352.02	2.26	1.12	1.97
17,668.00	91.78	185.350	7,646.80	-9,429.32	-1,142.17	9,446.80	1.95	1.09	1.61
17,762.00	90.47	185.180	7,644.96	-9,522.90	-1,150.80	9,540.52	1.41	-1.39	-0.18
17,856.00	90.07	183.020	7,644.51	-9,616.65	-1,157.52	9,634.37	2.34	-0.43	-2.30
17,950.00	89.73	181.280	7,644.68	-9,710.58	-1,161.05	9,728.34	1.89	-0.36	-1.85
18,045.00	90.37	183.480	7,644.60	-9,805.50	-1,164.99	9,823.31	2.41	0.67	2.32
18,115.00	90.23	182.980	7,644.23	-9,875.38	-1,168.93	9,893.25	0.74	-0.20	-0.71
Last SDI MWD Survey									



Scientific Drilling, Intl Survey Report



Company:	HighPoint Resources	Local Co-ordinate Reference:	Well Lion Creek 23-0164B
Project:	Weld County, CO NAD 83	TVD Reference:	GL 5391.2' & KB 20' @ 5411.20ft (Savanna 802)
Site:	Lion Creek 23 NWNW Pad	MD Reference:	GL 5391.2' & KB 20' @ 5411.20ft (Savanna 802)
Well:	Lion Creek 23-0164B	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)
18,174.00	90.23	182.980	7,643.99	-9,934.30	-1,172.00	9,952.21	0.00	0.00	0.00
Projection to TD									

Design Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
156.50	156.50	-0.80	-0.47	First GeoGuidance MWD Survey
1,499.50	1,497.32	28.16	-52.25	Last GeoGuidance MWD Survey
1,607.00	1,604.43	31.39	-60.75	First SDI MWD Survey
7,220.00	7,038.00	611.67	-970.30	Curve KOP
7,313.00	7,130.78	606.08	-971.40	First SDI MWD Curve Survey
8,161.00	7,677.92	71.07	-978.06	Last SDI MWD Curve Survey
8,174.00	7,677.89	58.07	-978.14	First SDI MWD Lateral Survey
18,115.00	7,644.23	-9,875.38	-1,168.93	Last SDI MWD Survey
18,174.00	7,643.99	-9,934.30	-1,172.00	Projection to TD

Checked By: _____	Approved By: _____	Date: _____
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