



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

Project: Weld County, CO NAD 83  
Site: Lion Creek 23 NWNW Pad  
Well: Lion Creek 23-0164B  
Wellbore: OH  
Design: Plan 1



Azimuths to True North  
Magnetic North: 8.37°



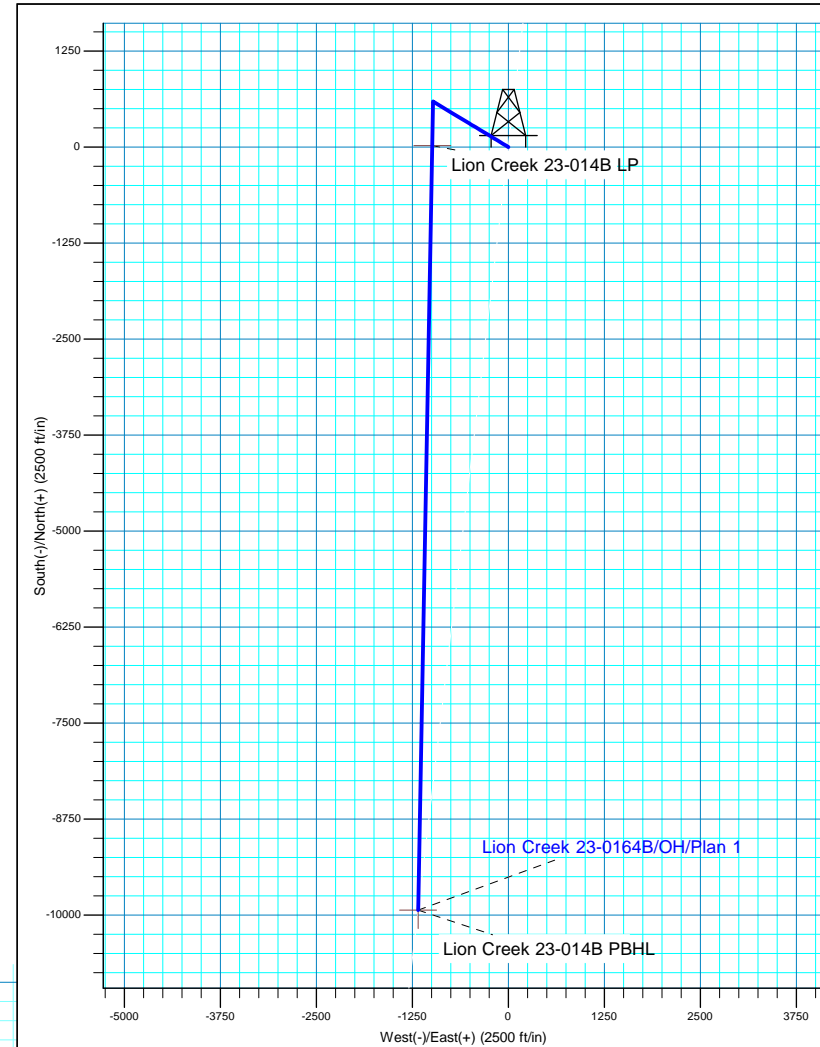
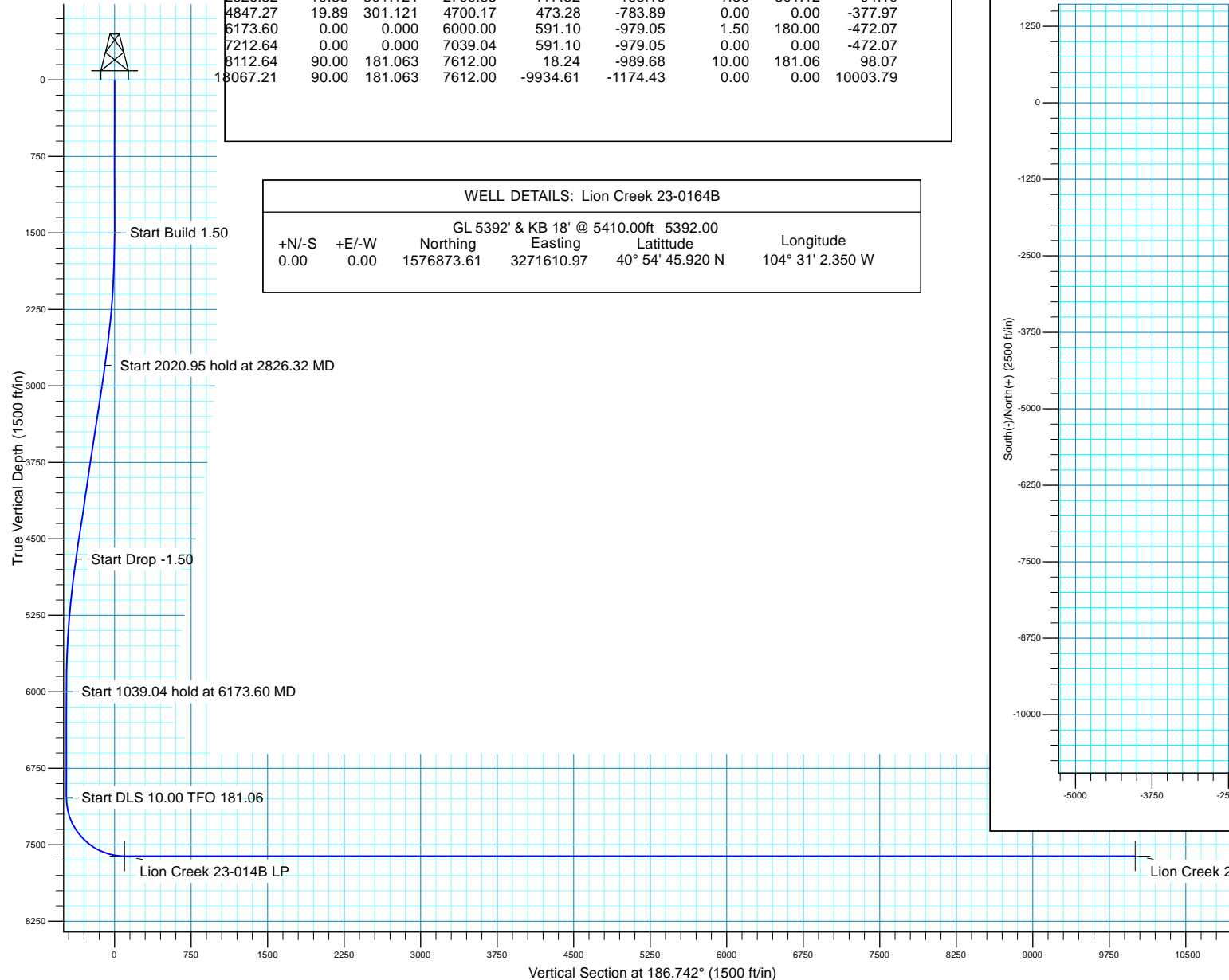
Magnetic Field  
Strength: 52713.9nT  
Dip Angle: 67.18°  
Date: 6/19/2018  
Model: HDGM

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00
1500.00	0.00	0.000	1500.00	0.00	0.00	0.00	0.00	0.00
2826.32	19.89	301.121	2799.83	117.82	-195.16	1.50	301.12	-94.10
4847.27	19.89	301.121	4700.17	473.28	-783.89	0.00	0.00	-377.97
6173.60	0.00	0.000	6000.00	591.10	-979.05	1.50	180.00	-472.07
7212.64	0.00	0.000	7039.04	591.10	-979.05	0.00	0.00	-472.07
8112.64	90.00	181.063	7612.00	18.24	-989.68	10.00	181.06	98.07
10067.21	90.00	181.063	7612.00	-9934.61	-1174.43	0.00	0.00	10003.79

WELL DETAILS: Lion Creek 23-0164B

GL 5392' & KB 18' @ 5410.00ft				5392.00		Longitude
+N/-S	+E/-W	Northing	Easting	Latitude		
0.00	0.00	1576873.61	3271610.97	40° 54' 45.920 N		104° 31' 2.350 W



# HighPoint Resources

Weld County, CO NAD 83  
Lion Creek 23 NWNW Pad  
Lion Creek 23-0164B

OH

Plan: Plan 1

## Standard Planning Report

19 June, 2018



# Scientific Drilling, Intl

## Planning Report

<b>Database:</b>	Casper District	<b>Local Co-ordinate Reference:</b>	Well Lion Creek 23-0164B
<b>Company:</b>	HighPoint Resources	<b>TVD Reference:</b>	GL 5392' & KB 18' @ 5410.00ft
<b>Project:</b>	Weld County, CO NAD 83	<b>MD Reference:</b>	GL 5392' & KB 18' @ 5410.00ft
<b>Site:</b>	Lion Creek 23 NWNW Pad	<b>North Reference:</b>	True
<b>Well:</b>	Lion Creek 23-0164B	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan 1		

<b>Project</b>	Weld County, CO NAD 83		
<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		

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:	1,576,873.61 usft	Latitude:	40° 54' 45.920 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:	5,392.00 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>
	HDGM	6/19/2018	8.37	67.18	52,714

<b>Design</b>	Plan 1			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD)</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Direction</b>
	(ft)	(ft)	(ft)	(°)
	0.00	0.00	0.00	186.742

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,500.00	0.00	0.000	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,826.32	19.89	301.121	2,799.83	117.82	-195.16	1.50	1.50	0.00	301.12	
4,847.27	19.89	301.121	4,700.17	473.28	-783.89	0.00	0.00	0.00	0.00	
6,173.60	0.00	0.000	6,000.00	591.10	-979.05	1.50	-1.50	0.00	180.00	
7,212.64	0.00	0.000	7,039.04	591.10	-979.05	0.00	0.00	0.00	0.00	
8,112.64	90.00	181.063	7,612.00	18.24	-989.68	10.00	10.00	-19.88	181.06	
18,067.21	90.00	181.063	7,612.00	-9,934.61	-1,174.43	0.00	0.00	0.00	0.00	Lion Creek 23-014B F

# Scientific Drilling, Intl

## Planning Report

<b>Database:</b>	Casper District	<b>Local Co-ordinate Reference:</b>	Well Lion Creek 23-0164B
<b>Company:</b>	HighPoint Resources	<b>TVD Reference:</b>	GL 5392' & KB 18' @ 5410.00ft
<b>Project:</b>	Weld County, CO NAD 83	<b>MD Reference:</b>	GL 5392' & KB 18' @ 5410.00ft
<b>Site:</b>	Lion Creek 23 NWNW Pad	<b>North Reference:</b>	True
<b>Well:</b>	Lion Creek 23-0164B	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan 1		

Planned 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
100.00	0.00	0.000	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.000	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.000	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.000	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.000	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.000	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.000	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.000	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.000	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.000	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.000	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.000	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.000	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.000	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.000	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	1.50	301.121	1,599.99	0.68	-1.12	-0.54	1.50	1.50	0.00
1,700.00	3.00	301.121	1,699.91	2.71	-4.48	-2.16	1.50	1.50	0.00
1,800.00	4.50	301.121	1,799.69	6.09	-10.08	-4.86	1.50	1.50	0.00
1,900.00	6.00	301.121	1,899.27	10.82	-17.91	-8.64	1.50	1.50	0.00
2,000.00	7.50	301.121	1,998.57	16.89	-27.97	-13.49	1.50	1.50	0.00
2,100.00	9.00	301.121	2,097.54	24.31	-40.26	-19.41	1.50	1.50	0.00
2,200.00	10.50	301.121	2,196.09	33.06	-54.76	-26.40	1.50	1.50	0.00
2,300.00	12.00	301.121	2,294.16	43.14	-71.46	-34.45	1.50	1.50	0.00
2,400.00	13.50	301.121	2,391.70	54.55	-90.35	-43.56	1.50	1.50	0.00
2,500.00	15.00	301.121	2,488.62	67.27	-111.42	-53.72	1.50	1.50	0.00
2,600.00	16.50	301.121	2,584.86	81.30	-134.66	-64.93	1.50	1.50	0.00
2,700.00	18.00	301.121	2,680.36	96.63	-160.04	-77.17	1.50	1.50	0.00
2,800.00	19.50	301.121	2,775.05	113.24	-187.56	-90.44	1.50	1.50	0.00
2,826.32	19.89	301.121	2,799.83	117.82	-195.16	-94.10	1.50	1.50	0.00
2,900.00	19.89	301.121	2,869.11	130.78	-216.62	-104.45	0.00	0.00	0.00
3,000.00	19.89	301.121	2,963.14	148.37	-245.75	-118.49	0.00	0.00	0.00
3,100.00	19.89	301.121	3,057.17	165.96	-274.88	-132.54	0.00	0.00	0.00
3,200.00	19.89	301.121	3,151.21	183.55	-304.01	-146.59	0.00	0.00	0.00
3,300.00	19.89	301.121	3,245.24	201.14	-333.15	-160.63	0.00	0.00	0.00
3,400.00	19.89	301.121	3,339.27	218.72	-362.28	-174.68	0.00	0.00	0.00
3,500.00	19.89	301.121	3,433.30	236.31	-391.41	-188.73	0.00	0.00	0.00
3,600.00	19.89	301.121	3,527.33	253.90	-420.54	-202.77	0.00	0.00	0.00
3,700.00	19.89	301.121	3,621.37	271.49	-449.67	-216.82	0.00	0.00	0.00
3,800.00	19.89	301.121	3,715.40	289.08	-478.80	-230.87	0.00	0.00	0.00
3,900.00	19.89	301.121	3,809.43	306.67	-507.94	-244.91	0.00	0.00	0.00
4,000.00	19.89	301.121	3,903.46	324.25	-537.07	-258.96	0.00	0.00	0.00
4,100.00	19.89	301.121	3,997.49	341.84	-566.20	-273.01	0.00	0.00	0.00
4,200.00	19.89	301.121	4,091.53	359.43	-595.33	-287.05	0.00	0.00	0.00
4,300.00	19.89	301.121	4,185.56	377.02	-624.46	-301.10	0.00	0.00	0.00
4,400.00	19.89	301.121	4,279.59	394.61	-653.60	-315.15	0.00	0.00	0.00
4,500.00	19.89	301.121	4,373.62	412.20	-682.73	-329.19	0.00	0.00	0.00
4,600.00	19.89	301.121	4,467.65	429.78	-711.86	-343.24	0.00	0.00	0.00
4,700.00	19.89	301.121	4,561.68	447.37	-740.99	-357.29	0.00	0.00	0.00
4,800.00	19.89	301.121	4,655.72	464.96	-770.12	-371.33	0.00	0.00	0.00
4,847.27	19.89	301.121	4,700.17	473.28	-783.89	-377.97	0.00	0.00	0.00
4,900.00	19.10	301.121	4,749.87	482.37	-798.96	-385.24	1.50	-1.50	0.00
5,000.00	17.60	301.121	4,844.78	498.65	-825.92	-398.24	1.50	-1.50	0.00
5,100.00	16.10	301.121	4,940.48	513.63	-850.74	-410.20	1.50	-1.50	0.00

# Scientific Drilling, Intl

## Planning Report

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<b>Company:</b>	HighPoint Resources	<b>TVD Reference:</b>	GL 5392' & KB 18' @ 5410.00ft
<b>Project:</b>	Weld County, CO NAD 83	<b>MD Reference:</b>	GL 5392' & KB 18' @ 5410.00ft
<b>Site:</b>	Lion Creek 23 NWNW Pad	<b>North Reference:</b>	True
<b>Well:</b>	Lion Creek 23-0164B	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan 1		

Planned 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)	
5,200.00	14.60	301.121	5,036.91	527.32	-873.40	-421.13	1.50	-1.50	0.00	
5,300.00	13.10	301.121	5,134.00	539.69	-893.90	-431.02	1.50	-1.50	0.00	
5,400.00	11.60	301.121	5,231.68	550.75	-912.22	-439.85	1.50	-1.50	0.00	
5,500.00	10.10	301.121	5,329.89	560.48	-928.34	-447.62	1.50	-1.50	0.00	
5,600.00	8.60	301.121	5,428.56	568.88	-942.25	-454.33	1.50	-1.50	0.00	
5,700.00	7.10	301.121	5,527.62	575.94	-953.95	-459.97	1.50	-1.50	0.00	
5,800.00	5.60	301.121	5,627.00	581.66	-963.42	-464.54	1.50	-1.50	0.00	
5,900.00	4.10	301.121	5,726.64	586.04	-970.67	-468.03	1.50	-1.50	0.00	
6,000.00	2.60	301.121	5,826.46	589.06	-975.67	-470.45	1.50	-1.50	0.00	
6,100.00	1.10	301.121	5,926.41	590.73	-978.44	-471.78	1.50	-1.50	0.00	
6,173.60	0.00	0.000	6,000.00	591.10	-979.05	-472.07	1.50	-1.50	0.00	
6,200.00	0.00	0.000	6,026.40	591.10	-979.05	-472.07	0.00	0.00	0.00	
6,300.00	0.00	0.000	6,126.40	591.10	-979.05	-472.07	0.00	0.00	0.00	
6,400.00	0.00	0.000	6,226.40	591.10	-979.05	-472.07	0.00	0.00	0.00	
6,500.00	0.00	0.000	6,326.40	591.10	-979.05	-472.07	0.00	0.00	0.00	
6,600.00	0.00	0.000	6,426.40	591.10	-979.05	-472.07	0.00	0.00	0.00	
6,700.00	0.00	0.000	6,526.40	591.10	-979.05	-472.07	0.00	0.00	0.00	
6,800.00	0.00	0.000	6,626.40	591.10	-979.05	-472.07	0.00	0.00	0.00	
6,900.00	0.00	0.000	6,726.40	591.10	-979.05	-472.07	0.00	0.00	0.00	
7,000.00	0.00	0.000	6,826.40	591.10	-979.05	-472.07	0.00	0.00	0.00	
7,100.00	0.00	0.000	6,926.40	591.10	-979.05	-472.07	0.00	0.00	0.00	
7,200.00	0.00	0.000	7,026.40	591.10	-979.05	-472.07	0.00	0.00	0.00	
7,212.64	0.00	0.000	7,039.04	591.10	-979.05	-472.07	0.00	0.00	0.00	
7,300.00	8.74	181.063	7,126.06	584.45	-979.17	-465.46	10.00	10.00	0.00	
7,400.00	18.74	181.063	7,223.08	560.74	-979.61	-441.86	10.00	10.00	0.00	
7,500.00	28.74	181.063	7,314.51	520.55	-980.36	-401.86	10.00	10.00	0.00	
7,600.00	38.74	181.063	7,397.56	465.09	-981.39	-346.66	10.00	10.00	0.00	
7,700.00	48.74	181.063	7,469.72	396.06	-982.67	-277.95	10.00	10.00	0.00	
7,800.00	58.74	181.063	7,528.80	315.54	-984.16	-197.82	10.00	10.00	0.00	
7,900.00	68.74	181.063	7,572.99	225.99	-985.83	-108.70	10.00	10.00	0.00	
8,000.00	78.74	181.063	7,600.96	130.13	-987.61	-13.29	10.00	10.00	0.00	
8,100.00	88.74	181.063	7,611.86	30.87	-989.45	85.50	10.00	10.00	0.00	
8,112.64	90.00	181.063	7,612.00	18.24	-989.68	98.07	10.00	10.00	0.00	
8,200.00	90.00	181.063	7,612.00	-69.11	-991.30	185.01	0.00	0.00	0.00	
8,300.00	90.00	181.063	7,612.00	-169.09	-993.16	284.52	0.00	0.00	0.00	
8,400.00	90.00	181.063	7,612.00	-269.07	-995.02	384.02	0.00	0.00	0.00	
8,500.00	90.00	181.063	7,612.00	-369.06	-996.87	483.53	0.00	0.00	0.00	
8,600.00	90.00	181.063	7,612.00	-469.04	-998.73	583.04	0.00	0.00	0.00	
8,700.00	90.00	181.063	7,612.00	-569.02	-1,000.58	682.55	0.00	0.00	0.00	
8,800.00	90.00	181.063	7,612.00	-669.00	-1,002.44	782.06	0.00	0.00	0.00	
8,900.00	90.00	181.063	7,612.00	-768.99	-1,004.30	881.57	0.00	0.00	0.00	
9,000.00	90.00	181.063	7,612.00	-868.97	-1,006.15	981.08	0.00	0.00	0.00	
9,100.00	90.00	181.063	7,612.00	-968.95	-1,008.01	1,080.59	0.00	0.00	0.00	
9,200.00	90.00	181.063	7,612.00	-1,068.93	-1,009.86	1,180.10	0.00	0.00	0.00	
9,300.00	90.00	181.063	7,612.00	-1,168.92	-1,011.72	1,279.61	0.00	0.00	0.00	
9,400.00	90.00	181.063	7,612.00	-1,268.90	-1,013.57	1,379.12	0.00	0.00	0.00	
9,500.00	90.00	181.063	7,612.00	-1,368.88	-1,015.43	1,478.63	0.00	0.00	0.00	
9,600.00	90.00	181.063	7,612.00	-1,468.87	-1,017.29	1,578.14	0.00	0.00	0.00	
9,700.00	90.00	181.063	7,612.00	-1,568.85	-1,019.14	1,677.65	0.00	0.00	0.00	
9,800.00	90.00	181.063	7,612.00	-1,668.83	-1,021.00	1,777.15	0.00	0.00	0.00	
9,900.00	90.00	181.063	7,612.00	-1,768.81	-1,022.85	1,876.66	0.00	0.00	0.00	
10,000.00	90.00	181.063	7,612.00	-1,868.80	-1,024.71	1,976.17	0.00	0.00	0.00	
10,100.00	90.00	181.063	7,612.00	-1,968.78	-1,026.57	2,075.68	0.00	0.00	0.00	
10,200.00	90.00	181.063	7,612.00	-2,068.76	-1,028.42	2,175.19	0.00	0.00	0.00	

# Scientific Drilling, Intl

## Planning Report

<b>Database:</b>	Casper District	<b>Local Co-ordinate Reference:</b>	Well Lion Creek 23-0164B
<b>Company:</b>	HighPoint Resources	<b>TVD Reference:</b>	GL 5392' & KB 18' @ 5410.00ft
<b>Project:</b>	Weld County, CO NAD 83	<b>MD Reference:</b>	GL 5392' & KB 18' @ 5410.00ft
<b>Site:</b>	Lion Creek 23 NWNW Pad	<b>North Reference:</b>	True
<b>Well:</b>	Lion Creek 23-0164B	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan 1		

Planned 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)
10,300.00	90.00	181.063	7,612.00	-2,168.75	-1,030.28	2,274.70	0.00	0.00	0.00
10,400.00	90.00	181.063	7,612.00	-2,268.73	-1,032.13	2,374.21	0.00	0.00	0.00
10,500.00	90.00	181.063	7,612.00	-2,368.71	-1,033.99	2,473.72	0.00	0.00	0.00
10,600.00	90.00	181.063	7,612.00	-2,468.69	-1,035.85	2,573.23	0.00	0.00	0.00
10,700.00	90.00	181.063	7,612.00	-2,568.68	-1,037.70	2,672.74	0.00	0.00	0.00
10,800.00	90.00	181.063	7,612.00	-2,668.66	-1,039.56	2,772.25	0.00	0.00	0.00
10,900.00	90.00	181.063	7,612.00	-2,768.64	-1,041.41	2,871.76	0.00	0.00	0.00
11,000.00	90.00	181.063	7,612.00	-2,868.62	-1,043.27	2,971.27	0.00	0.00	0.00
11,100.00	90.00	181.063	7,612.00	-2,968.61	-1,045.12	3,070.77	0.00	0.00	0.00
11,200.00	90.00	181.063	7,612.00	-3,068.59	-1,046.98	3,170.28	0.00	0.00	0.00
11,300.00	90.00	181.063	7,612.00	-3,168.57	-1,048.84	3,269.79	0.00	0.00	0.00
11,400.00	90.00	181.063	7,612.00	-3,268.56	-1,050.69	3,369.30	0.00	0.00	0.00
11,500.00	90.00	181.063	7,612.00	-3,368.54	-1,052.55	3,468.81	0.00	0.00	0.00
11,600.00	90.00	181.063	7,612.00	-3,468.52	-1,054.40	3,568.32	0.00	0.00	0.00
11,700.00	90.00	181.063	7,612.00	-3,568.50	-1,056.26	3,667.83	0.00	0.00	0.00
11,800.00	90.00	181.063	7,612.00	-3,668.49	-1,058.12	3,767.34	0.00	0.00	0.00
11,900.00	90.00	181.063	7,612.00	-3,768.47	-1,059.97	3,866.85	0.00	0.00	0.00
12,000.00	90.00	181.063	7,612.00	-3,868.45	-1,061.83	3,966.36	0.00	0.00	0.00
12,100.00	90.00	181.063	7,612.00	-3,968.44	-1,063.68	4,065.87	0.00	0.00	0.00
12,200.00	90.00	181.063	7,612.00	-4,068.42	-1,065.54	4,165.38	0.00	0.00	0.00
12,300.00	90.00	181.063	7,612.00	-4,168.40	-1,067.39	4,264.89	0.00	0.00	0.00
12,400.00	90.00	181.063	7,612.00	-4,268.38	-1,069.25	4,364.40	0.00	0.00	0.00
12,500.00	90.00	181.063	7,612.00	-4,368.37	-1,071.11	4,463.90	0.00	0.00	0.00
12,600.00	90.00	181.063	7,612.00	-4,468.35	-1,072.96	4,563.41	0.00	0.00	0.00
12,700.00	90.00	181.063	7,612.00	-4,568.33	-1,074.82	4,662.92	0.00	0.00	0.00
12,800.00	90.00	181.063	7,612.00	-4,668.31	-1,076.67	4,762.43	0.00	0.00	0.00
12,900.00	90.00	181.063	7,612.00	-4,768.30	-1,078.53	4,861.94	0.00	0.00	0.00
13,000.00	90.00	181.063	7,612.00	-4,868.28	-1,080.39	4,961.45	0.00	0.00	0.00
13,100.00	90.00	181.063	7,612.00	-4,968.26	-1,082.24	5,060.96	0.00	0.00	0.00
13,200.00	90.00	181.063	7,612.00	-5,068.25	-1,084.10	5,160.47	0.00	0.00	0.00
13,300.00	90.00	181.063	7,612.00	-5,168.23	-1,085.95	5,259.98	0.00	0.00	0.00
13,400.00	90.00	181.063	7,612.00	-5,268.21	-1,087.81	5,359.49	0.00	0.00	0.00
13,500.00	90.00	181.063	7,612.00	-5,368.19	-1,089.67	5,459.00	0.00	0.00	0.00
13,600.00	90.00	181.063	7,612.00	-5,468.18	-1,091.52	5,558.51	0.00	0.00	0.00
13,700.00	90.00	181.063	7,612.00	-5,568.16	-1,093.38	5,658.02	0.00	0.00	0.00
13,800.00	90.00	181.063	7,612.00	-5,668.14	-1,095.23	5,757.53	0.00	0.00	0.00
13,900.00	90.00	181.063	7,612.00	-5,768.13	-1,097.09	5,857.03	0.00	0.00	0.00
14,000.00	90.00	181.063	7,612.00	-5,868.11	-1,098.94	5,956.54	0.00	0.00	0.00
14,100.00	90.00	181.063	7,612.00	-5,968.09	-1,100.80	6,056.05	0.00	0.00	0.00
14,200.00	90.00	181.063	7,612.00	-6,068.07	-1,102.66	6,155.56	0.00	0.00	0.00
14,300.00	90.00	181.063	7,612.00	-6,168.06	-1,104.51	6,255.07	0.00	0.00	0.00
14,400.00	90.00	181.063	7,612.00	-6,268.04	-1,106.37	6,354.58	0.00	0.00	0.00
14,500.00	90.00	181.063	7,612.00	-6,368.02	-1,108.22	6,454.09	0.00	0.00	0.00
14,600.00	90.00	181.063	7,612.00	-6,468.00	-1,110.08	6,553.60	0.00	0.00	0.00
14,700.00	90.00	181.063	7,612.00	-6,567.99	-1,111.94	6,653.11	0.00	0.00	0.00
14,800.00	90.00	181.063	7,612.00	-6,667.97	-1,113.79	6,752.62	0.00	0.00	0.00
14,900.00	90.00	181.063	7,612.00	-6,767.95	-1,115.65	6,852.13	0.00	0.00	0.00
15,000.00	90.00	181.063	7,612.00	-6,867.94	-1,117.50	6,951.64	0.00	0.00	0.00
15,100.00	90.00	181.063	7,612.00	-6,967.92	-1,119.36	7,051.15	0.00	0.00	0.00
15,200.00	90.00	181.063	7,612.00	-7,067.90	-1,121.21	7,150.65	0.00	0.00	0.00
15,300.00	90.00	181.063	7,612.00	-7,167.88	-1,123.07	7,250.16	0.00	0.00	0.00
15,400.00	90.00	181.063	7,612.00	-7,267.87	-1,124.93	7,349.67	0.00	0.00	0.00
15,500.00	90.00	181.063	7,612.00	-7,367.85	-1,126.78	7,449.18	0.00	0.00	0.00
15,600.00	90.00	181.063	7,612.00	-7,467.83	-1,128.64	7,548.69	0.00	0.00	0.00

# Scientific Drilling, Intl

## Planning Report

<b>Database:</b>	Casper District	<b>Local Co-ordinate Reference:</b>	Well Lion Creek 23-0164B
<b>Company:</b>	HighPoint Resources	<b>TVD Reference:</b>	GL 5392' & KB 18' @ 5410.00ft
<b>Project:</b>	Weld County, CO NAD 83	<b>MD Reference:</b>	GL 5392' & KB 18' @ 5410.00ft
<b>Site:</b>	Lion Creek 23 NWNW Pad	<b>North Reference:</b>	True
<b>Well:</b>	Lion Creek 23-0164B	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan 1		

Planned 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)	
15,700.00	90.00	181.063	7,612.00	-7,567.82	-1,130.49	7,648.20	0.00	0.00	0.00	
15,800.00	90.00	181.063	7,612.00	-7,667.80	-1,132.35	7,747.71	0.00	0.00	0.00	
15,900.00	90.00	181.063	7,612.00	-7,767.78	-1,134.21	7,847.22	0.00	0.00	0.00	
16,000.00	90.00	181.063	7,612.00	-7,867.76	-1,136.06	7,946.73	0.00	0.00	0.00	
16,100.00	90.00	181.063	7,612.00	-7,967.75	-1,137.92	8,046.24	0.00	0.00	0.00	
16,200.00	90.00	181.063	7,612.00	-8,067.73	-1,139.77	8,145.75	0.00	0.00	0.00	
16,300.00	90.00	181.063	7,612.00	-8,167.71	-1,141.63	8,245.26	0.00	0.00	0.00	
16,400.00	90.00	181.063	7,612.00	-8,267.69	-1,143.49	8,344.77	0.00	0.00	0.00	
16,500.00	90.00	181.063	7,612.00	-8,367.68	-1,145.34	8,444.28	0.00	0.00	0.00	
16,600.00	90.00	181.063	7,612.00	-8,467.66	-1,147.20	8,543.78	0.00	0.00	0.00	
16,700.00	90.00	181.063	7,612.00	-8,567.64	-1,149.05	8,643.29	0.00	0.00	0.00	
16,800.00	90.00	181.063	7,612.00	-8,667.63	-1,150.91	8,742.80	0.00	0.00	0.00	
16,900.00	90.00	181.063	7,612.00	-8,767.61	-1,152.76	8,842.31	0.00	0.00	0.00	
17,000.00	90.00	181.063	7,612.00	-8,867.59	-1,154.62	8,941.82	0.00	0.00	0.00	
17,100.00	90.00	181.063	7,612.00	-8,967.57	-1,156.48	9,041.33	0.00	0.00	0.00	
17,200.00	90.00	181.063	7,612.00	-9,067.56	-1,158.33	9,140.84	0.00	0.00	0.00	
17,300.00	90.00	181.063	7,612.00	-9,167.54	-1,160.19	9,240.35	0.00	0.00	0.00	
17,400.00	90.00	181.063	7,612.00	-9,267.52	-1,162.04	9,339.86	0.00	0.00	0.00	
17,500.00	90.00	181.063	7,612.00	-9,367.51	-1,163.90	9,439.37	0.00	0.00	0.00	
17,600.00	90.00	181.063	7,612.00	-9,467.49	-1,165.76	9,538.88	0.00	0.00	0.00	
17,700.00	90.00	181.063	7,612.00	-9,567.47	-1,167.61	9,638.39	0.00	0.00	0.00	
17,800.00	90.00	181.063	7,612.00	-9,667.45	-1,169.47	9,737.90	0.00	0.00	0.00	
17,900.00	90.00	181.063	7,612.00	-9,767.44	-1,171.32	9,837.41	0.00	0.00	0.00	
18,000.00	90.00	181.063	7,612.00	-9,867.42	-1,173.18	9,936.91	0.00	0.00	0.00	
18,067.21	90.00	181.063	7,612.00	-9,934.61	-1,174.43	10,003.79	0.00	0.00	0.00	

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									
Lion Creek 23-014B LP	0.00	0.000	7,612.00	18.24	-989.68	1,576,880.88	3,270,621.16	40° 54' 46.100 N	104° 31' 15.240 W
- plan hits target center									
- Point									
Lion Creek 23-014B PBI	0.00	0.000	7,612.00	-9,934.61	-1,174.43	1,566,926.61	3,270,546.72	40° 53' 7.760 N	104° 31' 17.640 W
- plan hits target center									
- Point									