

# Bonanza Creek Energy Inc.

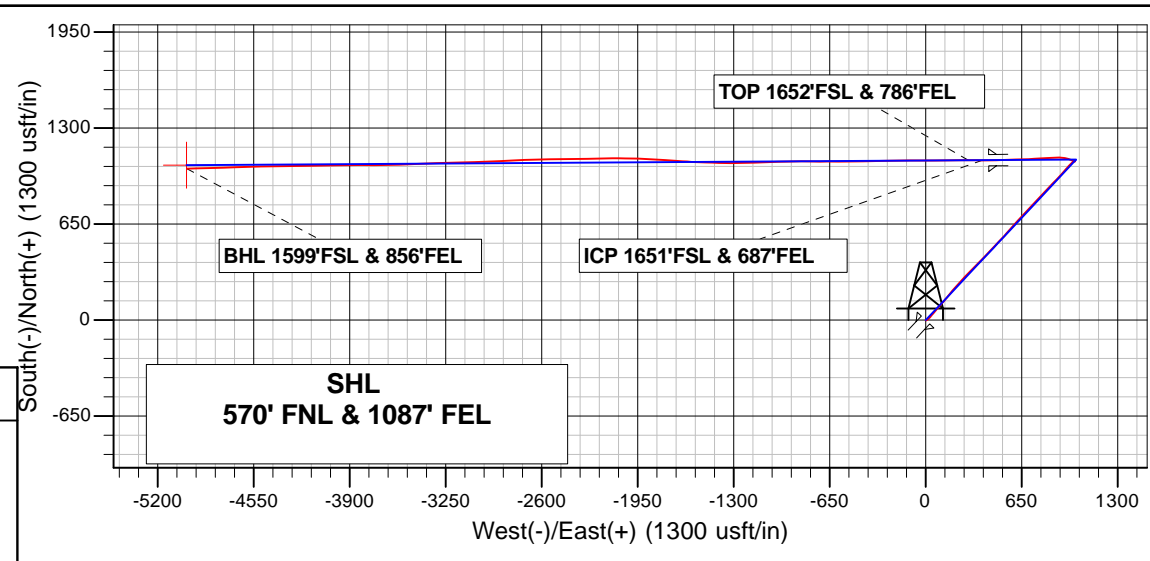
# Archer

Bonanza Creek Energy Inc.  
Project: Weld Co., CO  
Site: Sec.32-T5N-R61W  
Well: State Pronghorn X43-32-31MRLNC  
Wellbore: Wellbore #1  
Design: Design #3  
Lat: 40° 21' 5.508 N  
Long: 104° 13' 38.064 W  
Pad GL: 4529.0  
KB: Well @ 4546.0usft

## PROJECT DETAILS: Weld Co., CO

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

System Datum: Mean Sea Level



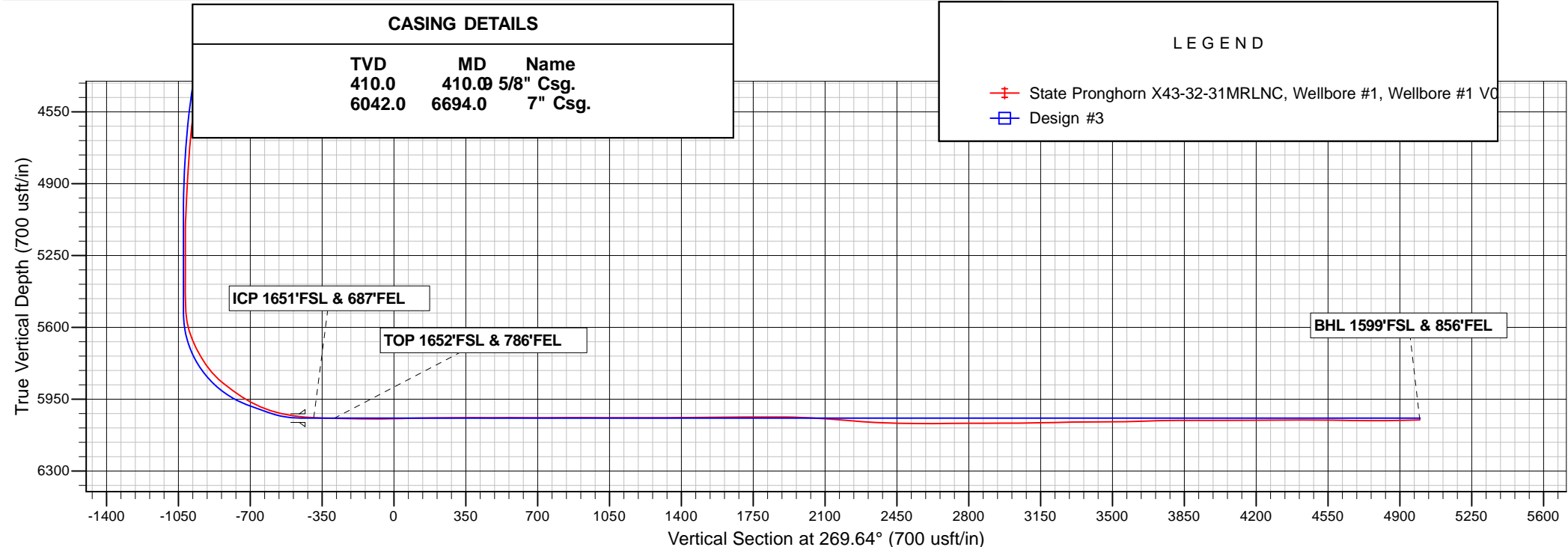
Projected Bottom Hole Location  
12085'MD 6050.8'TVD 1026.2'N & 5002.9'W OF SHL  
91.60 degree Incl @ 268.50 degree AZM

## CASING DETAILS

TVD	MD	Name
410.0	410.0	5/8" Csg.
6042.0	6694.0	7" Csg.

## LEGEND

- State Pronghorn X43-32-31MRLNC, Wellbore #1, Wellbore #1 VO
- Design #3



# **Bonanza Creek Energy Inc.**

**Weld Co., CO**

**Sec.32-T5N-R61W**

**State Pronghorn X43-32-31MRLNC**

**Wellbore #1**

**Survey: Survey #1**

## **Standard Survey Report**

**29 July, 2015**

# Archer

## Survey Report

<b>Company:</b>	Bonanza Creek Energy Inc.	<b>Local Co-ordinate Reference:</b>	Well State Pronghorn X43-32-31MRLNC
<b>Project:</b>	Weld Co., CO	<b>TVD Reference:</b>	Well @ 4546.0usft
<b>Site:</b>	Sec.32-T5N-R61W	<b>MD Reference:</b>	Well @ 4546.0usft
<b>Well:</b>	State Pronghorn X43-32-31MRLNC	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	EDMDBBW

<b>Project</b>	Weld Co., CO		
<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	Sec.32-T5N-R61W				
Site Position:		Northing:	1,373,452.07 usft	Latitude:	40° 21' 5.544 N
From:	Lat/Long	Easting:	3,354,698.54 usft	Longitude:	104° 13' 38.316 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.82 °

Well	State Pronghorn X43-32-31MRLNC					
Well Position	+N/-S	0.0 usft	Northing:	1,373,448.70 usft	Latitude:	40° 21' 5.508 N
	+E/-W	0.0 usft	Easting:	3,354,718.10 usft	Longitude:	104° 13' 38.064 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	4,529.0 usft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF200510	2009/12/31	8.73	67.16	53,338

<b>Design</b>	Wellbore #1				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>	
	0.0	0.0	0.0	269.64	

<b>Survey Program</b>	<b>Date</b>	2015/07/29			
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
532.0	12,085.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard	

<b>Survey</b>										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Vertical Section (usft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
<b>First Archer Survey</b>										
532.0	0.40	123.60	532.0	-1.0	1.5	-1.5	0.08	0.08	0.00	
624.0	2.10	86.80	624.0	-1.1	3.5	-3.5	1.95	1.85	-40.00	
718.0	3.90	56.20	717.8	0.8	7.9	-7.9	2.50	1.91	-32.55	
812.0	6.30	52.90	811.5	5.7	14.6	-14.7	2.57	2.55	-3.51	
906.0	7.80	46.80	904.8	13.1	23.4	-23.5	1.78	1.60	-6.49	
1,001.0	8.50	33.60	998.8	23.4	32.0	-32.1	2.10	0.74	-13.89	
1,094.0	10.60	44.20	1,090.5	35.3	41.8	-42.0	2.94	2.26	11.40	
1,187.0	12.50	40.20	1,181.6	49.1	54.2	-54.5	2.22	2.04	-4.30	
1,282.0	14.70	39.20	1,274.0	66.3	68.5	-68.9	2.33	2.32	-1.05	
1,375.0	16.50	40.50	1,363.5	85.5	84.5	-85.1	1.97	1.94	1.40	
1,469.0	18.10	42.70	1,453.3	106.3	103.1	-103.8	1.84	1.70	2.34	

# Archer

## Survey Report

<b>Company:</b>	Bonanza Creek Energy Inc.	<b>Local Co-ordinate Reference:</b>	Well State Pronghorn X43-32-31MRLNC
<b>Project:</b>	Weld Co., CO	<b>TVD Reference:</b>	Well @ 4546.0usft
<b>Site:</b>	Sec.32-T5N-R61W	<b>MD Reference:</b>	Well @ 4546.0usft
<b>Well:</b>	State Pronghorn X43-32-31MRLNC	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	EDMDBBW

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,564.0	18.60	38.70	1,543.4	129.0	122.6	-123.4	1.43	0.53	-4.21
1,657.0	20.40	40.50	1,631.1	152.9	142.4	-143.3	2.04	1.94	1.94
1,752.0	22.00	39.90	1,719.7	179.2	164.5	-165.7	1.70	1.68	-0.63
1,846.0	23.30	38.90	1,806.4	207.1	187.5	-188.8	1.44	1.38	-1.06
1,940.0	24.40	41.40	1,892.4	236.2	212.0	-213.5	1.59	1.17	2.66
2,034.0	24.60	42.70	1,977.9	265.1	238.1	-239.8	0.61	0.21	1.38
2,128.0	24.50	45.80	2,063.4	293.1	265.4	-267.2	1.37	-0.11	3.30
2,222.0	25.80	45.00	2,148.5	321.1	293.8	-295.8	1.43	1.38	-0.85
2,316.0	24.70	44.10	2,233.5	349.7	321.9	-324.1	1.24	-1.17	-0.96
2,411.0	26.30	43.40	2,319.3	379.2	350.2	-352.6	1.71	1.68	-0.74
2,506.0	25.00	42.00	2,404.9	409.5	378.1	-380.7	1.51	-1.37	-1.47
2,600.0	26.00	45.60	2,489.8	438.6	406.1	-408.9	1.96	1.06	3.83
2,695.0	25.00	43.10	2,575.5	467.9	434.7	-437.7	1.55	-1.05	-2.63
2,790.0	26.70	44.50	2,661.0	497.7	463.4	-466.5	1.90	1.79	1.47
2,884.0	24.10	43.30	2,745.9	526.8	491.4	-494.7	2.82	-2.77	-1.28
2,978.0	25.80	42.70	2,831.1	555.8	518.4	-521.9	1.83	1.81	-0.64
3,073.0	24.70	39.80	2,917.1	586.2	545.1	-548.8	1.74	-1.16	-3.05
3,168.0	25.20	41.30	3,003.2	616.7	571.2	-575.1	0.85	0.53	1.58
3,263.0	25.40	42.50	3,089.1	646.9	598.3	-602.4	0.58	0.21	1.26
3,357.0	26.90	43.90	3,173.5	677.1	626.7	-630.9	1.73	1.60	1.49
3,452.0	28.10	42.60	3,257.7	709.0	656.7	-661.2	1.41	1.26	-1.37
3,546.0	27.60	45.00	3,340.9	740.7	687.1	-691.7	1.31	-0.53	2.55
3,641.0	27.70	42.70	3,425.0	772.5	717.6	-722.5	1.13	0.11	-2.42
3,735.0	24.80	43.20	3,509.3	802.9	746.0	-751.0	3.09	-3.09	0.53
3,829.0	23.90	42.10	3,594.9	831.4	772.2	-777.4	1.07	-0.96	-1.17
3,924.0	22.70	40.00	3,682.2	859.8	796.9	-802.3	1.54	-1.26	-2.21
4,019.0	21.10	46.30	3,770.3	885.6	821.1	-826.6	2.99	-1.68	6.63
4,112.0	20.70	44.10	3,857.2	909.0	844.6	-850.3	0.95	-0.43	-2.37
4,207.0	18.70	42.40	3,946.7	932.3	866.5	-872.4	2.19	-2.11	-1.79
4,301.0	17.90	45.20	4,035.9	953.6	887.0	-892.9	1.26	-0.85	2.98
4,395.0	15.80	43.20	4,125.9	973.1	906.0	-912.1	2.32	-2.23	-2.13
4,489.0	14.30	39.50	4,216.6	991.4	922.1	-928.3	1.89	-1.60	-3.94
4,583.0	13.80	42.60	4,307.8	1,008.6	937.1	-943.4	0.96	-0.53	3.30
4,677.0	12.10	41.30	4,399.4	1,024.3	951.2	-957.6	1.83	-1.81	-1.38
4,771.0	10.60	39.70	4,491.6	1,038.3	963.2	-969.7	1.63	-1.60	-1.70
4,865.0	9.40	48.20	4,584.2	1,050.1	974.5	-981.0	2.02	-1.28	9.04
4,959.0	7.70	45.90	4,677.1	1,059.6	984.7	-991.3	1.84	-1.81	-2.45
5,053.0	5.80	40.70	4,770.5	1,067.6	992.3	-999.0	2.12	-2.02	-5.53
5,148.0	4.00	58.00	4,865.1	1,073.0	998.3	-1,005.0	2.43	-1.89	18.21
5,242.0	3.00	67.30	4,959.0	1,075.7	1,003.3	-1,010.1	1.22	-1.06	9.89
5,337.0	2.60	79.00	5,053.8	1,077.0	1,007.7	-1,014.5	0.73	-0.42	12.32
5,431.0	1.10	175.90	5,147.8	1,076.5	1,009.9	-1,016.6	3.13	-1.60	103.09
5,526.0	0.80	184.40	5,242.8	1,075.0	1,009.9	-1,016.6	0.35	-0.32	8.95
5,620.0	0.60	22.40	5,336.8	1,074.8	1,010.0	-1,016.8	1.47	-0.21	-172.34
5,714.0	0.30	22.50	5,430.8	1,075.5	1,010.3	-1,017.0	0.32	-0.32	0.11
5,808.0	3.50	294.70	5,524.7	1,076.9	1,007.8	-1,014.5	3.72	3.40	-93.40
5,854.0	10.50	286.00	5,570.4	1,078.6	1,002.5	-1,009.2	15.35	15.22	-18.91
5,901.0	17.80	289.40	5,615.9	1,082.2	991.6	-998.4	15.63	15.53	7.23
5,948.0	23.10	288.60	5,659.9	1,087.5	976.1	-982.9	11.29	11.28	-1.70
5,995.0	27.60	285.10	5,702.4	1,093.3	956.8	-963.6	10.09	9.57	-7.45
6,042.0	31.00	280.00	5,743.4	1,098.3	934.4	-941.2	8.97	7.23	-10.85
6,089.0	34.60	271.90	5,782.9	1,100.8	909.1	-916.0	12.06	7.66	-17.23
6,136.0	40.60	267.80	5,820.1	1,100.7	880.4	-887.3	13.83	12.77	-8.72
6,183.0	48.00	267.20	5,853.7	1,099.2	847.7	-854.5	15.77	15.74	-1.28

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## Survey Report

<b>Company:</b>	Bonanza Creek Energy Inc.	<b>Local Co-ordinate Reference:</b>	Well State Pronghorn X43-32-31MRLNC
<b>Project:</b>	Weld Co., CO	<b>TVD Reference:</b>	Well @ 4546.0usft
<b>Site:</b>	Sec.32-T5N-R61W	<b>MD Reference:</b>	Well @ 4546.0usft
<b>Well:</b>	State Pronghorn X43-32-31MRLNC	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	EDMDBBW

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
6,230.0	52.10	266.80	5,883.9	1,097.3	811.7	-818.6	8.75	8.72	-0.85	
6,277.0	55.30	266.10	5,911.7	1,095.0	773.9	-780.7	6.91	6.81	-1.49	
6,324.0	57.60	266.00	5,937.7	1,092.3	734.8	-741.7	4.90	4.89	-0.21	
6,371.0	60.20	267.00	5,962.0	1,089.8	694.6	-701.5	5.82	5.53	2.13	
6,417.0	65.00	268.30	5,983.1	1,088.2	653.8	-660.7	10.73	10.43	2.83	
6,464.0	71.60	268.20	6,000.5	1,086.8	610.2	-617.0	14.04	14.04	-0.21	
6,511.0	75.90	268.10	6,013.7	1,085.4	565.1	-571.9	9.15	9.15	-0.21	
6,559.0	78.30	268.40	6,024.4	1,083.9	518.4	-525.2	5.04	5.00	0.62	
6,590.0	81.10	268.50	6,029.9	1,083.1	487.9	-494.7	9.04	9.03	0.32	
6,621.0	83.10	269.20	6,034.2	1,082.5	457.2	-464.0	6.83	6.45	2.26	
6,652.0	85.10	270.20	6,037.4	1,082.3	426.4	-433.1	7.21	6.45	3.23	
ICP 1651'FSL & 687'FEL										
6,694.0	86.88	270.69	6,040.3	1,082.7	384.5	-391.3	4.40	4.24	1.18	
6,737.0	88.70	271.20	6,042.0	1,083.4	341.5	-348.3	4.40	4.24	1.17	
TOP 1652'FSL & 786'FEL										
6,793.0	88.76	269.88	6,043.2	1,083.9	285.5	-292.3	2.37	0.11	-2.37	
6,830.0	88.80	269.00	6,044.0	1,083.5	248.5	-255.3	2.37	0.11	-2.37	
6,922.0	89.10	268.80	6,045.7	1,081.8	156.6	-163.4	0.39	0.33	-0.22	
7,014.0	90.00	269.10	6,046.4	1,080.1	64.6	-71.4	1.03	0.98	0.33	
7,105.0	92.00	271.00	6,044.8	1,080.2	-26.4	19.6	3.03	2.20	2.09	
7,196.0	91.40	270.10	6,042.1	1,081.0	-117.4	110.6	1.19	-0.66	-0.99	
7,288.0	90.20	269.00	6,040.8	1,080.3	-209.3	202.5	1.77	-1.30	-1.20	
7,380.0	90.60	268.80	6,040.2	1,078.6	-301.3	294.5	0.49	0.43	-0.22	
7,471.0	89.60	267.90	6,040.0	1,075.9	-392.3	385.5	1.48	-1.10	-0.99	
7,563.0	90.30	269.80	6,040.1	1,074.1	-484.3	477.5	2.20	0.76	2.07	
7,655.0	90.00	270.00	6,039.9	1,073.9	-576.3	569.5	0.39	-0.33	0.22	
7,748.0	89.50	269.50	6,040.3	1,073.5	-669.3	662.5	0.76	-0.54	-0.54	
7,840.0	90.40	271.20	6,040.3	1,074.1	-761.2	754.5	2.09	0.98	1.85	
7,932.0	90.00	269.90	6,040.0	1,075.0	-853.2	846.5	1.48	-0.43	-1.41	
8,023.0	90.00	269.20	6,040.0	1,074.2	-944.2	937.5	0.77	0.00	-0.77	
8,114.0	89.70	267.00	6,040.3	1,071.2	-1,035.2	1,028.4	2.44	-0.33	-2.42	
8,205.0	89.80	267.40	6,040.7	1,066.8	-1,126.1	1,119.3	0.45	0.11	0.44	
8,296.0	90.90	270.80	6,040.1	1,065.4	-1,217.0	1,210.3	3.93	1.21	3.74	
8,388.0	89.90	269.30	6,039.5	1,065.4	-1,309.0	1,302.3	1.96	-1.09	-1.63	
8,480.0	90.30	270.90	6,039.3	1,065.6	-1,401.0	1,394.3	1.79	0.43	1.74	
8,572.0	90.30	272.40	6,038.8	1,068.2	-1,493.0	1,486.2	1.63	0.00	1.63	
8,664.0	89.90	272.50	6,038.7	1,072.2	-1,584.9	1,578.1	0.45	-0.43	0.11	
8,756.0	91.30	274.50	6,037.7	1,077.8	-1,676.7	1,669.9	2.65	1.52	2.17	
8,848.0	90.10	273.50	6,036.6	1,084.2	-1,768.5	1,761.6	1.70	-1.30	-1.09	
8,940.0	90.10	273.50	6,036.4	1,089.8	-1,860.3	1,853.4	0.00	0.00	0.00	
9,031.0	88.30	271.50	6,037.7	1,093.8	-1,951.2	1,944.3	2.96	-1.98	-2.20	
9,116.0	87.00	270.90	6,041.2	1,095.6	-2,036.1	2,029.2	1.68	-1.53	-0.71	
9,201.0	86.20	269.80	6,046.2	1,096.1	-2,121.0	2,114.0	1.60	-0.94	-1.29	
9,286.0	85.30	268.70	6,052.5	1,095.0	-2,205.7	2,198.8	1.67	-1.06	-1.29	
9,370.0	85.50	268.40	6,059.2	1,092.9	-2,289.4	2,282.5	0.43	0.24	-0.36	
9,455.0	87.80	269.10	6,064.2	1,091.0	-2,374.3	2,367.4	2.83	2.71	0.82	
9,542.0	88.60	269.90	6,066.9	1,090.3	-2,461.2	2,454.3	1.30	0.92	0.92	
9,627.0	89.40	269.50	6,068.4	1,089.8	-2,546.2	2,539.3	1.05	0.94	-0.47	
9,712.0	90.00	268.20	6,068.9	1,088.1	-2,631.2	2,624.3	1.68	0.71	-1.53	
9,797.0	91.30	267.00	6,067.9	1,084.5	-2,716.1	2,709.2	2.08	1.53	-1.41	
9,881.0	90.10	267.40	6,066.9	1,080.4	-2,800.0	2,793.1	1.51	-1.43	0.48	
9,966.0	90.10	267.50	6,066.7	1,076.7	-2,884.9	2,878.1	0.12	0.00	0.12	
10,051.0	90.30	267.70	6,066.4	1,073.1	-2,969.8	2,963.0	0.33	0.24	0.24	
10,136.0	90.20	267.70	6,066.1	1,069.7	-3,054.7	3,048.0	0.12	-0.12	0.00	

# Archer Survey Report

<b>Company:</b>	Bonanza Creek Energy Inc.	<b>Local Co-ordinate Reference:</b>	Well State Pronghorn X43-32-31MRLNC
<b>Project:</b>	Weld Co., CO	<b>TVD Reference:</b>	Well @ 4546.0usft
<b>Site:</b>	Sec.32-T5N-R61W	<b>MD Reference:</b>	Well @ 4546.0usft
<b>Well:</b>	State Pronghorn X43-32-31MRLNC	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	EDMDBBW

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
10,221.0	91.00	268.70	6,065.2	1,067.0	-3,139.7	3,132.9	1.51	0.94	1.18	
10,306.0	91.30	269.00	6,063.5	1,065.3	-3,224.7	3,217.9	0.50	0.35	0.35	
10,392.0	91.00	268.60	6,061.7	1,063.5	-3,310.6	3,303.9	0.58	-0.35	-0.47	
10,477.0	90.60	267.00	6,060.6	1,060.3	-3,395.6	3,388.8	1.94	-0.47	-1.88	
10,562.0	90.40	266.90	6,059.8	1,055.7	-3,480.4	3,473.7	0.26	-0.24	-0.12	
10,647.0	90.50	268.40	6,059.2	1,052.2	-3,565.4	3,558.7	1.77	0.12	1.76	
10,732.0	91.90	269.90	6,057.4	1,051.0	-3,650.3	3,643.6	2.41	1.65	1.76	
10,817.0	91.60	269.90	6,054.8	1,050.8	-3,735.3	3,728.6	0.35	-0.35	0.00	
10,902.0	90.40	269.40	6,053.3	1,050.3	-3,820.3	3,813.6	1.53	-1.41	-0.59	
10,987.0	89.90	269.40	6,053.1	1,049.4	-3,905.3	3,898.6	0.59	-0.59	0.00	
11,072.0	89.90	268.50	6,053.2	1,047.9	-3,990.2	3,983.6	1.06	0.00	-1.06	
11,158.0	90.50	269.30	6,052.9	1,046.2	-4,076.2	4,069.6	1.16	0.70	0.93	
11,243.0	90.60	270.00	6,052.1	1,045.7	-4,161.2	4,154.6	0.83	0.12	0.82	
11,328.0	89.50	268.40	6,052.0	1,044.5	-4,246.2	4,239.6	2.28	-1.29	-1.88	
11,413.0	90.80	269.60	6,051.8	1,043.0	-4,331.2	4,324.6	2.08	1.53	1.41	
11,500.0	90.20	269.30	6,051.0	1,042.2	-4,418.2	4,411.6	0.77	-0.69	-0.34	
11,585.0	88.80	267.80	6,051.8	1,040.0	-4,503.2	4,496.5	2.41	-1.65	-1.76	
11,670.0	89.50	269.00	6,053.0	1,037.7	-4,588.1	4,581.5	1.63	0.82	1.41	
11,754.0	89.50	268.40	6,053.8	1,035.8	-4,672.1	4,665.5	0.71	0.00	-0.71	
11,839.0	89.70	267.50	6,054.4	1,032.7	-4,757.0	4,750.4	1.08	0.24	-1.06	
11,924.0	90.40	268.90	6,054.3	1,030.1	-4,842.0	4,835.4	1.84	0.82	1.65	
Last Archer Survey										
12,020.0	91.60	268.50	6,052.6	1,027.9	-4,937.9	4,931.4	1.32	1.25	-0.42	
BHL 1599'FSL & 856'FEL - State Pronghorn X43-32-31MRLNC tgt										
12,085.0	91.60	268.50	6,050.8	1,026.2	-5,002.9	4,996.3	0.00	0.00	0.00	

Survey Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
532.0	532.0	-1.0	1.5	First Archer Survey	
6,694.0	6,040.3	1,082.7	384.5	ICP 1651'FSL & 687'FEL	
6,793.0	6,043.2	1,083.9	285.5	TOP 1652'FSL & 786'FEL	
12,020.0	6,052.6	1,027.9	-4,937.9	Last Archer Survey	
12,085.0	6,050.8	1,026.2	-5,002.9	BHL 1599'FSL & 856'FEL	

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