

# **BONANZA CREEK ENERGY INC.**

**WELD COUNTY, COLORADO (NAD 83)**

**NW NE SEC 18 T5N R61W 6th P.M.**

**PRONGHORN 11-14-18HNB**

**JOB # 2009-296**

**21 August, 2014**

**Survey: FINAL SURVEYS**





Project: WELD COUNTY, COLORADO (NAD 83)  
Site: NW NE SEC 18 T5N R61W 6th P.M.  
Well: PRONGHORN 11-14-18HNB  
Wellbore: JOB # 2009-296  
Design: FINAL SURVEYS

ANNOTATIONS

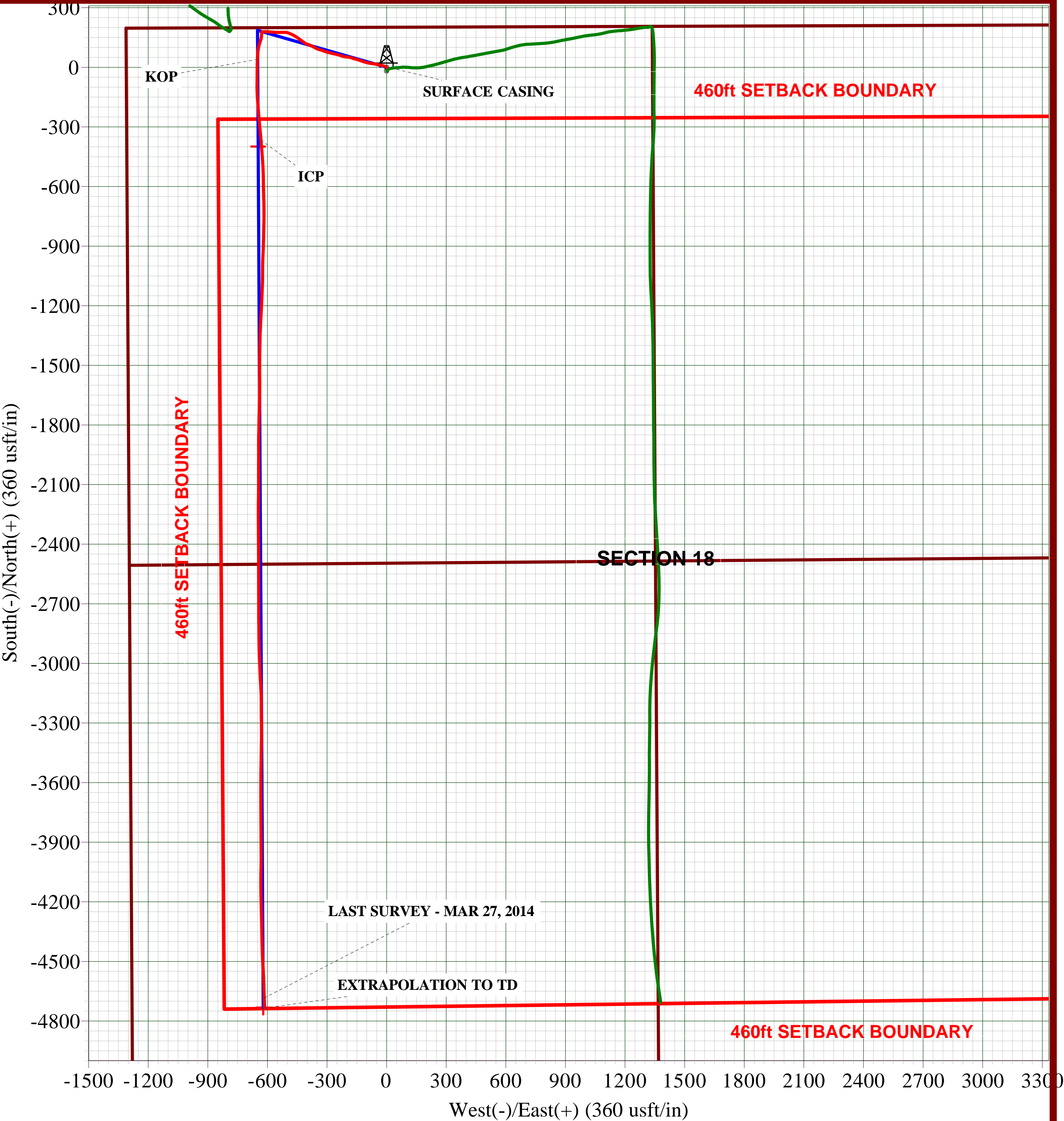
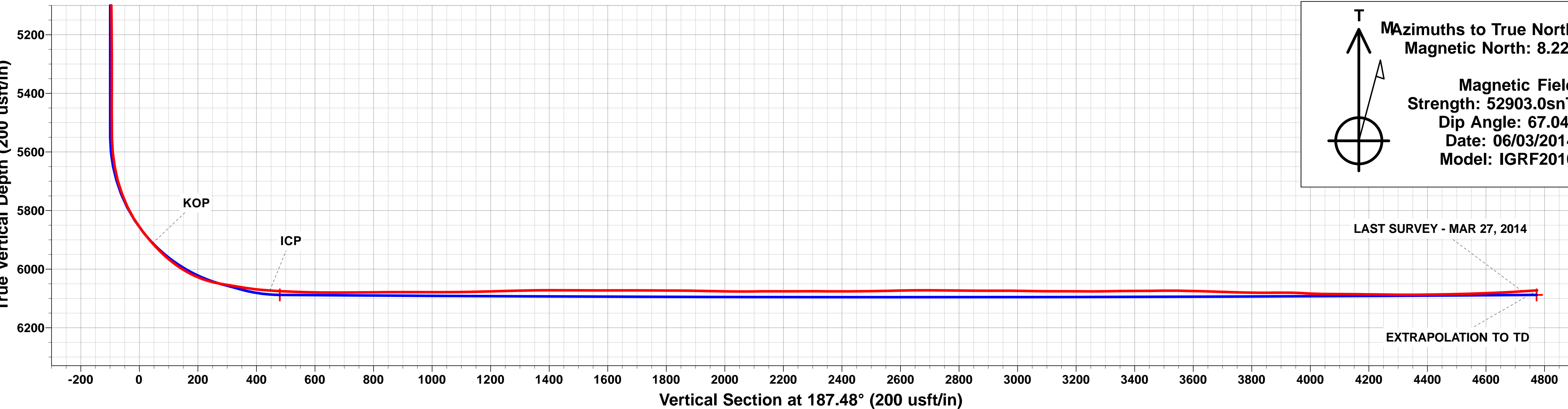
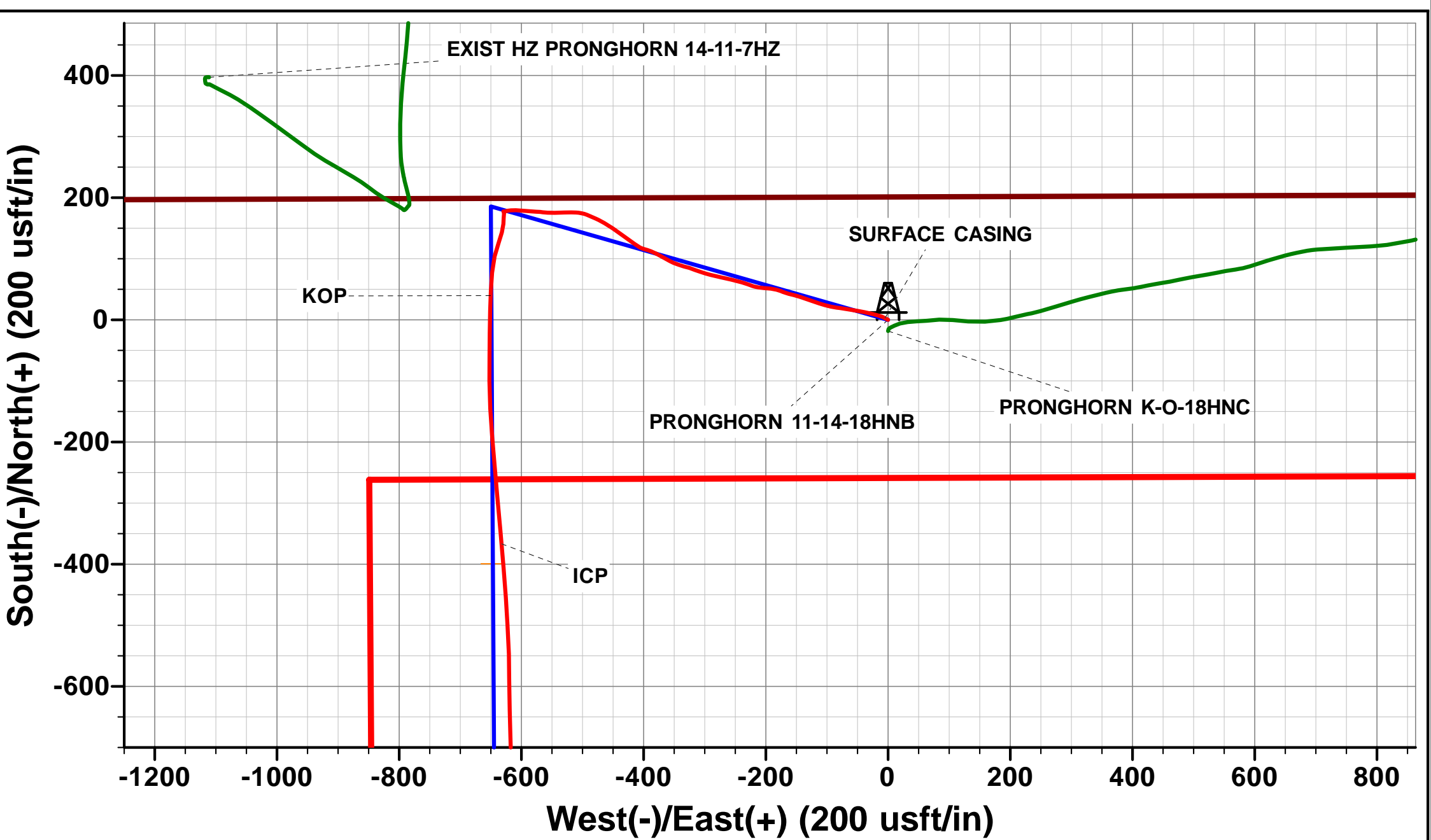
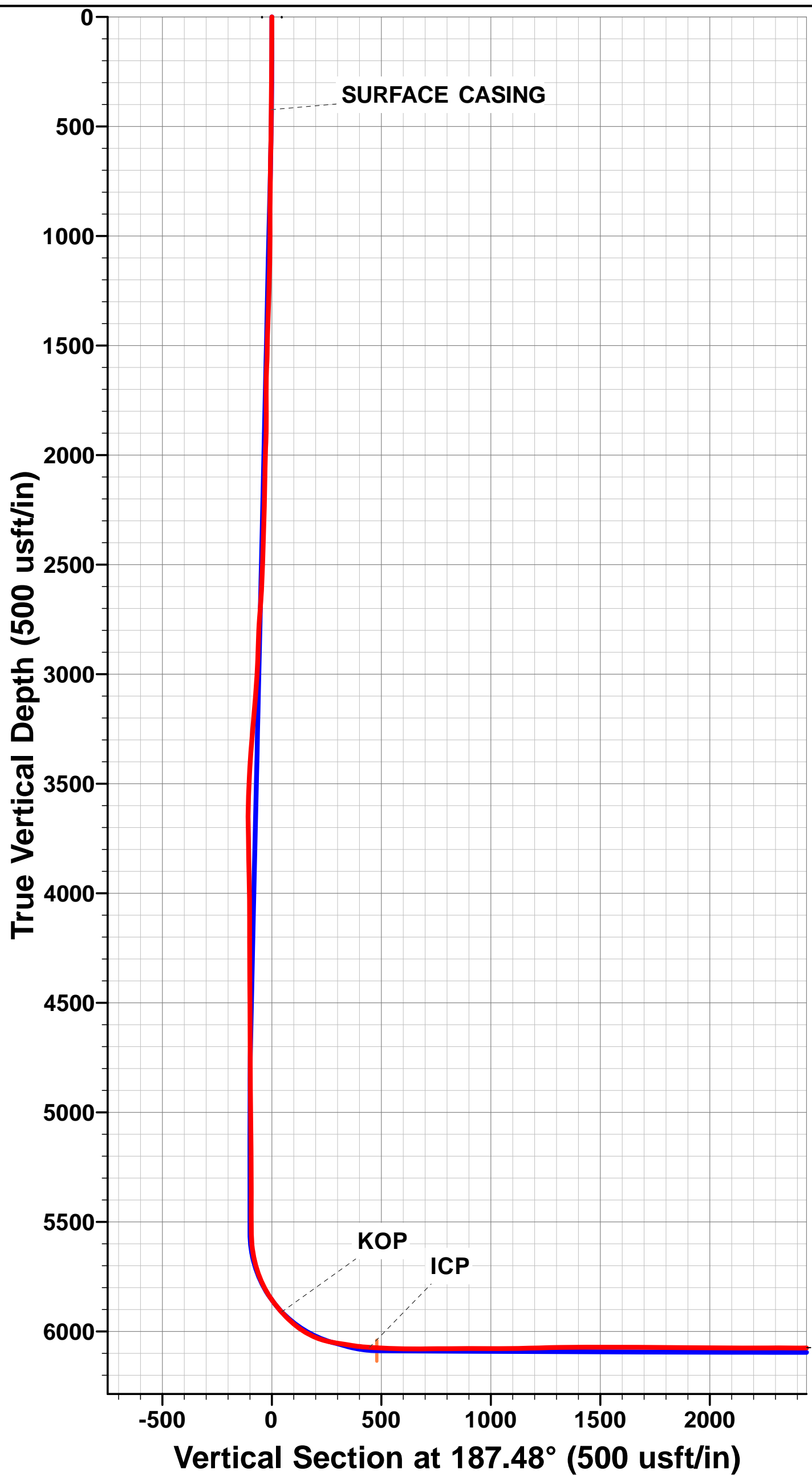
TVD	MD	Inc	Azi	+N/-S	+E/-W	VSect	Dep	Annotation
423.9	424.0	1.57	299.50	2.9	-5.1	-2.2	7.0	SURFACE CASING
5912.1	5999.0	41.57	182.52	40.0	-650.3	45.0	807.3	KOP
6073.1	6451.0	86.08	175.03	-366.4	-632.5	445.6	1214.3	ICP
6076.0	10771.0	93.70	177.70	-4684.1	-616.1	4724.4	5533.5	LAST SURVEY - MAR 27, 2014
6072.7	10822.0	93.70	177.70	-4735.0	-614.0	4774.6	5584.4	EXTRAPOLATION TO TD

PROPOSED LOCAL COORDINATES:

SHL: 200ft FNL & 1311ft FWL Sec 18  
7" ICP \*NEW\*: ft 598.7ft FNL & 662ft FWL Sec 18  
BHL: 470ft FSL & 659ft FWL Sec 18

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
BHL - PRONGHORN 11-14-18HNB	6088.0	-4732.4	-621.1	40.394960	-104.259420
ICP - PRONGHORN 11-14-18HNB *NEW* (P2)	6088.0	-399.0	-646.6	40.406855	-104.259512



Mazimuths to True North  
Magnetic North: 8.22°  
Magnetic Field  
Strength: 52903.0snT  
Dip Angle: 67.04°  
Date: 06/03/2014  
Model: IGRF2010

# Survey Report



<b>Company:</b>	BONANZA CREEK ENERGY INC.	<b>Local Co-ordinate Reference:</b>	Well PRONGHORN 11-14-18HNB
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>TVD Reference:</b>	KB @ 4586.0usft (CADE 25)
<b>Site:</b>	NW NE SEC 18 T5N R61W 6th P.M.	<b>MD Reference:</b>	KB @ 4586.0usft (CADE 25)
<b>Well:</b>	PRONGHORN 11-14-18HNB	<b>North Reference:</b>	True
<b>Wellbore:</b>	JOB # 2009-296	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	FINAL SURVEYS	<b>Database:</b>	EDM 5000.1 Single User Db

<b>Project</b>	WELD COUNTY, COLORADO (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		Using geodetic scale factor

<b>Site</b>	NW NE SEC 18 T5N R61W 6th P.M.		
<b>Site Position:</b>		<b>Northing:</b>	1,393,885.48 usft
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,346,083.48 usft
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	1.10000ft
		<b>Latitude:</b>	40.407960
		<b>Longitude:</b>	-104.257190
		<b>Grid Convergence:</b>	0.80 °

<b>Well</b>	PRONGHORN 11-14-18HNB		
<b>Well Position</b>	<b>+N/-S</b>	0.0 usft	<b>Northing:</b>
	<b>+E/-W</b>	0.0 usft	<b>Easting:</b>
<b>Position Uncertainty</b>	0.0 usft	<b>Wellhead Elevation:</b>	
			<b>Latitude:</b>
			<b>Longitude:</b>
			<b>Ground Level:</b>

<b>Wellbore</b>	JOB # 2009-296		
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>
	IGRF2010	06/03/2014	8.22
			<b>Dip Angle (°)</b>
			67.04
			<b>Field Strength (nT)</b>
			52,903

<b>Design</b>	FINAL SURVEYS		
<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>
	0.0	0.0	0.0
			<b>Direction (°)</b>
			187.48

<b>Survey Program</b>	<b>Date</b>	27/03/2014		
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
513.0	10,822.0	FINAL SURVEYS (JOB # 2009-296)	MWD	MWD - Standard

<b>Survey</b>										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>Subsea 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	4,586.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>SURFACE CASING</b>										
424.0	1.57	299.50	423.9	4,162.1	2.9	-5.1	-2.2	0.37	0.37	0.00
513.0	1.90	299.50	512.9	4,073.1	4.2	-7.4	-3.2	0.37	0.37	0.00
603.0	5.90	287.60	602.7	3,983.3	6.3	-13.1	-4.6	4.51	4.44	-13.22
695.0	7.90	283.50	694.0	3,892.0	9.2	-23.8	-6.1	2.24	2.17	-4.46
788.0	7.70	282.40	786.1	3,799.9	12.1	-36.1	-7.3	0.27	-0.22	-1.18
879.0	7.90	280.10	876.3	3,709.7	14.5	-48.2	-8.1	0.41	0.22	-2.53
970.0	10.20	279.30	966.2	3,619.8	16.9	-62.3	-8.6	2.53	2.53	-0.88
1,062.0	10.70	279.50	1,056.6	3,529.4	19.6	-78.8	-9.2	0.54	0.54	0.22
1,156.0	10.30	279.70	1,149.1	3,436.9	22.4	-95.6	-9.8	0.43	-0.43	0.21
1,246.0	11.30	290.00	1,237.5	3,348.5	26.8	-111.9	-12.0	2.41	1.11	11.44
1,339.0	10.90	288.00	1,328.7	3,257.3	32.7	-128.8	-15.6	0.60	-0.43	-2.15

# Survey Report



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<b>Site:</b>	NW NE SEC 18 T5N R61W 6th P.M.	<b>MD Reference:</b>	KB @ 4586.0usft (CADE 25)
<b>Well:</b>	PRONGHORN 11-14-18HNB	<b>North Reference:</b>	True
<b>Wellbore:</b>	JOB # 2009-296	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	FINAL SURVEYS	<b>Database:</b>	EDM 5000.1 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,432.0	9.80	288.40	1,420.2	3,165.8	37.9	-144.7	-18.7	1.19	-1.18	0.43
1,524.0	7.90	282.30	1,511.1	3,074.9	41.7	-158.3	-20.7	2.30	-2.07	-6.63
1,616.0	10.30	290.90	1,602.0	2,984.0	46.0	-172.1	-23.2	2.99	2.61	9.35
1,708.0	9.40	281.60	1,692.6	2,893.4	50.4	-187.2	-25.6	1.98	-0.98	-10.11
1,799.0	8.80	271.30	1,782.5	2,803.5	52.1	-201.4	-25.4	1.90	-0.66	-11.32
1,891.0	8.40	283.20	1,873.5	2,712.5	53.8	-215.0	-25.3	1.98	-0.43	12.93
1,986.0	11.30	290.70	1,967.0	2,619.0	58.6	-230.5	-28.1	3.33	3.05	7.89
2,081.0	10.30	282.00	2,060.4	2,525.6	63.7	-247.5	-30.9	2.01	-1.05	-9.16
2,176.0	11.60	285.10	2,153.6	2,432.4	67.9	-265.0	-32.9	1.50	1.37	3.26
2,271.0	10.40	280.10	2,246.9	2,339.1	71.9	-282.7	-34.5	1.61	-1.26	-5.26
2,366.0	10.30	287.70	2,340.3	2,245.7	76.0	-299.2	-36.4	1.44	-0.11	8.00
2,461.0	11.60	290.60	2,433.6	2,152.4	82.0	-316.2	-40.1	1.49	1.37	3.05
2,556.0	11.10	284.30	2,526.8	2,059.2	87.6	-334.0	-43.4	1.41	-0.53	-6.63
2,651.0	11.10	294.10	2,620.0	1,966.0	93.6	-351.2	-47.1	1.98	0.00	10.32
2,745.0	11.60	301.10	2,712.2	1,873.8	102.2	-367.6	-53.4	1.56	0.53	7.45
2,840.0	9.90	293.50	2,805.5	1,780.5	110.3	-383.3	-59.5	2.33	-1.79	-8.00
2,936.0	8.40	285.50	2,900.3	1,685.7	115.5	-397.6	-62.8	2.05	-1.56	-8.33
3,031.0	8.30	302.00	2,994.3	1,591.7	121.0	-410.1	-66.6	2.52	-0.11	17.37
3,126.0	9.90	309.20	3,088.1	1,497.9	129.8	-422.2	-73.7	2.06	1.68	7.58
3,220.0	9.60	303.90	3,180.7	1,405.3	139.3	-435.0	-81.5	1.01	-0.32	-5.64
3,315.0	9.90	303.10	3,274.4	1,311.6	148.2	-448.4	-88.5	0.35	0.32	-0.84
3,411.0	10.70	303.50	3,368.8	1,217.2	157.6	-462.8	-96.0	0.84	0.83	0.42
3,507.0	10.50	292.90	3,463.2	1,122.8	165.9	-478.3	-102.3	2.04	-0.21	-11.04
3,602.0	8.70	292.60	3,556.8	1,029.2	172.0	-492.9	-106.4	1.90	-1.89	-0.32
3,697.0	8.40	275.40	3,650.8	935.2	175.4	-506.4	-108.1	2.70	-0.32	-18.11
3,792.0	7.70	269.30	3,744.9	841.1	176.0	-519.7	-106.9	1.16	-0.74	-6.42
3,889.0	6.60	268.10	3,841.1	744.9	175.8	-531.8	-105.1	1.14	-1.13	-1.24
3,984.0	6.60	268.40	3,935.5	650.5	175.4	-542.7	-103.3	0.04	0.00	0.32
4,079.0	5.40	269.80	4,030.0	556.0	175.3	-552.6	-101.9	1.27	-1.26	1.47
4,175.0	5.20	279.60	4,125.6	460.4	176.0	-561.4	-101.4	0.96	-0.21	10.21
4,271.0	4.30	272.20	4,221.2	364.8	176.8	-569.3	-101.2	1.13	-0.94	-7.71
4,366.0	4.00	273.60	4,316.0	270.0	177.2	-576.2	-100.7	0.33	-0.32	1.47
4,461.0	4.40	275.40	4,410.7	175.3	177.7	-583.1	-100.3	0.44	0.42	1.89
4,557.0	4.30	273.90	4,506.4	79.6	178.3	-590.4	-100.0	0.16	-0.10	-1.56
4,652.0	5.20	273.30	4,601.1	-15.1	178.8	-598.2	-99.4	0.95	0.95	-0.63
4,748.0	4.40	274.10	4,696.8	-110.8	179.3	-606.2	-98.9	0.84	-0.83	0.83
4,843.0	3.30	272.00	4,791.6	-205.6	179.7	-612.6	-98.4	1.17	-1.16	-2.21
4,939.0	2.40	261.40	4,887.4	-301.4	179.5	-617.3	-97.6	1.08	-0.94	-11.04
5,036.0	2.10	262.80	4,984.4	-398.4	178.9	-621.1	-96.6	0.31	-0.31	1.44
5,132.0	1.60	251.30	5,080.3	-494.3	178.3	-624.1	-95.6	0.65	-0.52	-11.98
5,227.0	1.20	256.80	5,175.3	-589.3	177.6	-626.3	-94.6	0.44	-0.42	5.79
5,322.0	1.00	268.30	5,270.3	-684.3	177.4	-628.1	-94.1	0.31	-0.21	12.11
5,417.0	0.30	296.00	5,365.3	-779.3	177.5	-629.2	-94.1	0.79	-0.74	29.16
5,512.0	0.20	318.60	5,460.3	-874.3	177.7	-629.5	-94.3	0.15	-0.11	23.79
5,608.0	1.60	140.80	5,556.3	-970.3	176.8	-628.8	-93.5	1.87	1.46	-185.21
5,656.0	6.00	183.20	5,604.1	-1,018.1	173.8	-628.5	-90.5	10.29	9.17	88.33
5,703.0	9.60	184.60	5,650.7	-1,064.7	167.4	-629.0	-84.1	7.67	7.66	2.98
5,751.0	15.10	182.70	5,697.6	-1,111.6	157.2	-629.6	-73.9	11.49	11.46	-3.96
5,797.0	20.90	194.70	5,741.3	-1,155.3	143.2	-631.9	-59.8	14.90	12.61	26.09
5,845.0	24.70	199.80	5,785.6	-1,199.6	125.5	-637.5	-41.5	8.92	7.92	10.62
5,892.0	32.00	193.50	5,826.9	-1,240.9	104.1	-643.8	-19.5	16.77	15.53	-13.40
5,940.0	37.30	184.90	5,866.4	-1,280.4	77.2	-648.0	7.8	15.00	11.04	-17.92
5,987.0	40.30	182.90	5,903.0	-1,317.0	47.9	-650.0	37.1	6.92	6.38	-4.26

# Survey Report



<b>Company:</b>	BONANZA CREEK ENERGY INC.	<b>Local Co-ordinate Reference:</b>	Well PRONGHORN 11-14-18HNB
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>TVD Reference:</b>	KB @ 4586.0usft (CADE 25)
<b>Site:</b>	NW NE SEC 18 T5N R61W 6th P.M.	<b>MD Reference:</b>	KB @ 4586.0usft (CADE 25)
<b>Well:</b>	PRONGHORN 11-14-18HNB	<b>North Reference:</b>	True
<b>Wellbore:</b>	JOB # 2009-296	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	FINAL SURVEYS	<b>Database:</b>	EDM 5000.1 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
<b>KOP</b>										
5,999.0	41.57	182.52	5,912.1	-1,326.1	40.0	-650.3	45.0	10.81	10.61	-3.13
6,035.0	45.40	181.50	5,938.2	-1,352.2	15.2	-651.2	69.6	10.81	10.63	-2.84
6,083.0	50.80	180.40	5,970.3	-1,384.3	-20.5	-651.8	105.1	11.38	11.25	-2.29
6,131.0	57.80	180.60	5,998.2	-1,412.2	-59.4	-652.1	143.8	14.59	14.58	0.42
6,178.0	64.50	179.80	6,020.9	-1,434.9	-100.6	-652.3	184.6	14.33	14.26	-1.70
6,226.0	72.80	176.70	6,038.4	-1,452.4	-145.2	-650.9	228.7	18.31	17.29	-6.46
6,274.0	80.20	175.40	6,049.6	-1,463.6	-191.7	-647.6	274.4	15.64	15.42	-2.71
6,322.0	81.00	175.20	6,057.4	-1,471.4	-238.9	-643.8	320.7	1.72	1.67	-0.42
6,369.0	81.40	174.90	6,064.6	-1,478.6	-285.2	-639.7	366.0	1.06	0.85	-0.64
6,432.0	85.60	174.90	6,071.7	-1,485.7	-347.5	-634.2	427.1	6.67	6.67	0.00
<b>ICP</b>										
6,451.0	86.08	175.03	6,073.1	-1,487.1	-366.4	-632.5	445.6	2.63	2.54	0.68
6,491.0	87.10	175.30	6,075.5	-1,489.5	-406.2	-629.2	484.6	2.63	2.54	0.68
6,539.0	88.00	176.10	6,077.5	-1,491.5	-454.0	-625.6	531.6	2.51	1.87	1.67
6,584.0	88.70	176.50	6,078.8	-1,492.8	-498.9	-622.7	575.7	1.79	1.56	0.89
6,632.0	89.10	178.50	6,079.8	-1,493.8	-546.8	-620.6	623.0	4.25	0.83	4.17
6,676.0	90.20	179.60	6,080.0	-1,494.0	-590.8	-619.8	666.5	3.54	2.50	2.50
6,724.0	90.40	178.80	6,079.8	-1,493.8	-638.8	-619.2	714.0	1.72	0.42	-1.67
6,768.0	90.50	177.90	6,079.4	-1,493.4	-682.8	-617.9	757.4	2.06	0.23	-2.05
6,816.0	90.40	180.10	6,079.1	-1,493.1	-730.8	-617.1	804.9	4.59	-0.21	4.58
6,860.0	90.60	181.20	6,078.7	-1,492.7	-774.8	-617.6	848.6	2.54	0.45	2.50
6,908.0	90.00	181.40	6,078.4	-1,492.4	-822.8	-618.6	896.3	1.32	-1.25	0.42
6,951.0	89.30	181.40	6,078.7	-1,492.7	-865.8	-619.7	939.0	1.63	-1.63	0.00
6,999.0	90.10	182.20	6,078.9	-1,492.9	-913.7	-621.2	986.8	2.36	1.67	1.67
7,043.0	90.30	182.00	6,078.8	-1,492.8	-957.7	-622.8	1,030.6	0.64	0.45	-0.45
7,091.0	90.30	180.40	6,078.5	-1,492.5	-1,005.7	-623.8	1,078.3	3.33	0.00	-3.33
7,138.0	91.00	180.70	6,078.0	-1,492.0	-1,052.7	-624.3	1,125.0	1.62	1.49	0.64
7,186.0	91.70	181.90	6,076.9	-1,490.9	-1,100.7	-625.4	1,172.7	2.89	1.46	2.50
7,234.0	91.50	182.80	6,075.5	-1,489.5	-1,148.6	-627.3	1,220.5	1.92	-0.42	1.87
7,282.0	91.70	182.90	6,074.2	-1,488.2	-1,196.5	-629.7	1,268.3	0.47	0.42	0.21
7,330.0	91.00	182.30	6,073.1	-1,487.1	-1,244.5	-631.9	1,316.1	1.92	-1.46	-1.25
7,378.0	90.80	183.30	6,072.3	-1,486.3	-1,292.4	-634.2	1,363.9	2.12	-0.42	2.08
7,426.0	89.80	181.90	6,072.0	-1,486.0	-1,340.3	-636.4	1,411.8	3.58	-2.08	-2.92
7,474.0	89.60	181.30	6,072.3	-1,486.3	-1,388.3	-637.8	1,459.5	1.32	-0.42	-1.25
7,522.0	89.80	180.80	6,072.6	-1,486.6	-1,436.3	-638.6	1,507.2	1.12	0.42	-1.04
7,570.0	89.80	180.80	6,072.7	-1,486.7	-1,484.3	-639.3	1,554.9	0.00	0.00	0.00
7,617.0	89.90	179.20	6,072.8	-1,486.8	-1,531.3	-639.3	1,601.5	3.41	0.21	-3.40
7,665.0	90.20	179.70	6,072.8	-1,486.8	-1,579.3	-638.8	1,649.0	1.21	0.62	1.04
7,713.0	89.80	180.40	6,072.8	-1,486.8	-1,627.3	-638.9	1,696.6	1.68	-0.83	1.46
7,761.0	89.80	181.00	6,073.0	-1,487.0	-1,675.3	-639.5	1,744.3	1.25	0.00	1.25
7,809.0	89.90	181.70	6,073.1	-1,487.1	-1,723.3	-640.6	1,792.0	1.47	0.21	1.46
7,857.0	89.50	181.40	6,073.3	-1,487.3	-1,771.3	-641.9	1,839.7	1.04	-0.83	-0.62
7,905.0	89.10	181.40	6,073.9	-1,487.9	-1,819.3	-643.1	1,887.5	0.83	-0.83	0.00
7,953.0	89.00	180.80	6,074.7	-1,488.7	-1,867.2	-644.0	1,935.2	1.27	-0.21	-1.25
7,999.0	88.70	179.90	6,075.6	-1,489.6	-1,913.2	-644.3	1,980.8	2.06	-0.65	-1.96
8,047.0	89.40	179.90	6,076.4	-1,490.4	-1,961.2	-644.2	2,028.4	1.46	1.46	0.00
8,095.0	90.80	180.40	6,076.4	-1,490.4	-2,009.2	-644.3	2,076.0	3.10	2.92	1.04
8,143.0	90.30	180.10	6,075.9	-1,489.9	-2,057.2	-644.5	2,123.6	1.21	-1.04	-0.62
8,191.0	89.80	180.10	6,075.9	-1,489.9	-2,105.2	-644.6	2,171.2	1.04	-1.04	0.00
8,239.0	90.10	180.80	6,075.9	-1,489.9	-2,153.2	-645.0	2,218.8	1.59	0.62	1.46
8,287.0	90.40	180.10	6,075.7	-1,489.7	-2,201.2	-645.4	2,266.5	1.59	0.62	-1.46
8,335.0	90.10	180.20	6,075.5	-1,489.5	-2,249.2	-645.5	2,314.1	0.66	-0.62	0.21



# Survey Report



<b>Company:</b>	BONANZA CREEK ENERGY INC.	<b>Local Co-ordinate Reference:</b>	Well PRONGHORN 11-14-18HNB
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>TVD Reference:</b>	KB @ 4586.0usft (CADE 25)
<b>Site:</b>	NW NE SEC 18 T5N R61W 6th P.M.	<b>MD Reference:</b>	KB @ 4586.0usft (CADE 25)
<b>Well:</b>	PRONGHORN 11-14-18HNB	<b>North Reference:</b>	True
<b>Wellbore:</b>	JOB # 2009-296	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	FINAL SURVEYS	<b>Database:</b>	EDM 5000.1 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,380.0	89.40	179.90	6,075.7	-1,489.7	-2,294.2	-645.5	2,358.7	1.69	-1.56	-0.67
8,428.0	89.80	179.70	6,076.0	-1,490.0	-2,342.2	-645.4	2,406.3	0.93	0.83	-0.42
8,476.0	90.70	179.30	6,075.8	-1,489.8	-2,390.2	-644.9	2,453.8	2.05	1.87	-0.83
8,524.0	91.10	179.90	6,075.0	-1,489.0	-2,438.2	-644.6	2,501.4	1.50	0.83	1.25
8,571.0	90.90	179.50	6,074.2	-1,488.2	-2,485.2	-644.4	2,547.9	0.95	-0.43	-0.85
8,619.0	91.10	180.00	6,073.4	-1,487.4	-2,533.2	-644.2	2,595.5	1.12	0.42	1.04
8,667.0	90.80	179.90	6,072.6	-1,486.6	-2,581.2	-644.1	2,643.1	0.66	-0.62	-0.21
8,715.0	90.10	179.70	6,072.2	-1,486.2	-2,629.2	-643.9	2,690.6	1.52	-1.46	-0.42
8,763.0	89.00	180.20	6,072.6	-1,486.6	-2,677.2	-643.9	2,738.2	2.52	-2.29	1.04
8,811.0	89.20	179.70	6,073.4	-1,487.4	-2,725.2	-643.9	2,785.8	1.12	0.42	-1.04
8,859.0	89.90	179.60	6,073.7	-1,487.7	-2,773.2	-643.6	2,833.3	1.47	1.46	-0.21
8,907.0	90.00	179.50	6,073.8	-1,487.8	-2,821.2	-643.2	2,880.9	0.29	0.21	-0.21
8,954.0	89.90	178.80	6,073.8	-1,487.8	-2,868.2	-642.5	2,927.4	1.50	-0.21	-1.49
9,002.0	89.80	178.80	6,073.9	-1,487.9	-2,916.1	-641.5	2,974.8	0.21	-0.21	0.00
9,051.0	89.10	178.10	6,074.4	-1,488.4	-2,965.1	-640.2	3,023.2	2.02	-1.43	-1.43
9,099.0	89.00	177.90	6,075.2	-1,489.2	-3,013.1	-638.5	3,070.6	0.47	-0.21	-0.42
9,147.0	89.70	177.30	6,075.7	-1,489.7	-3,061.0	-636.5	3,117.8	1.92	1.46	-1.25
9,195.0	90.20	176.50	6,075.8	-1,489.8	-3,109.0	-633.9	3,165.0	1.97	1.04	-1.67
9,242.0	89.40	178.10	6,076.0	-1,490.0	-3,155.9	-631.7	3,211.3	3.81	-1.70	3.40
9,290.0	90.10	180.20	6,076.2	-1,490.2	-3,203.9	-631.0	3,258.8	4.61	1.46	4.37
9,337.0	90.80	179.40	6,075.8	-1,489.8	-3,250.9	-630.8	3,305.4	2.26	1.49	-1.70
9,385.0	91.10	178.90	6,075.0	-1,489.0	-3,298.9	-630.1	3,352.8	1.21	0.62	-1.04
9,434.0	89.90	180.10	6,074.6	-1,488.6	-3,347.9	-629.7	3,401.4	3.46	-2.45	2.45
9,482.0	90.70	181.20	6,074.3	-1,488.3	-3,395.9	-630.2	3,449.0	2.83	1.67	2.29
9,530.0	90.90	180.80	6,073.6	-1,487.6	-3,443.9	-631.0	3,496.7	0.93	0.42	-0.83
9,578.0	89.00	181.00	6,073.7	-1,487.7	-3,491.9	-631.8	3,544.4	3.98	-3.96	0.42
9,625.0	88.50	180.90	6,074.7	-1,488.7	-3,538.8	-632.6	3,591.1	1.08	-1.06	-0.21
9,673.0	88.60	180.80	6,075.9	-1,489.9	-3,586.8	-633.3	3,638.7	0.29	0.21	-0.21
9,721.0	88.20	179.40	6,077.3	-1,491.3	-3,634.8	-633.4	3,686.3	3.03	-0.83	-2.92
9,769.0	88.10	179.70	6,078.8	-1,492.8	-3,682.8	-633.0	3,733.8	0.66	-0.21	0.62
9,816.0	88.80	179.60	6,080.1	-1,494.1	-3,729.8	-632.7	3,780.4	1.50	1.49	-0.21
9,864.0	89.80	179.80	6,080.7	-1,494.7	-3,777.8	-632.4	3,827.9	2.12	2.08	0.42
9,913.0	90.60	180.30	6,080.5	-1,494.5	-3,826.8	-632.5	3,876.5	1.93	1.63	1.02
9,961.0	89.40	179.20	6,080.5	-1,494.5	-3,874.8	-632.3	3,924.1	3.39	-2.50	-2.29
10,009.0	87.40	179.50	6,081.8	-1,495.8	-3,922.7	-631.7	3,971.6	4.21	-4.17	0.62
10,057.0	87.40	179.90	6,084.0	-1,498.0	-3,970.7	-631.5	4,019.1	0.83	0.00	0.83
10,104.0	89.80	181.30	6,085.2	-1,499.2	-4,017.7	-632.0	4,065.7	5.91	5.11	2.98
10,152.0	89.80	180.90	6,085.3	-1,499.3	-4,065.6	-632.9	4,113.4	0.83	0.00	-0.83
10,199.0	89.30	179.50	6,085.7	-1,499.7	-4,112.6	-633.1	4,160.1	3.16	-1.06	-2.98
10,247.0	89.30	179.00	6,086.3	-1,500.3	-4,160.6	-632.4	4,207.6	1.04	0.00	-1.04
10,296.0	89.20	178.90	6,086.9	-1,500.9	-4,209.6	-631.5	4,256.0	0.29	-0.20	-0.20
10,344.0	89.30	178.10	6,087.6	-1,501.6	-4,257.6	-630.3	4,303.4	1.68	0.21	-1.67
10,392.0	90.30	179.20	6,087.7	-1,501.7	-4,305.6	-629.1	4,350.9	3.10	2.08	2.29
10,440.0	91.00	178.90	6,087.2	-1,501.2	-4,353.6	-628.4	4,398.3	1.59	1.46	-0.62
10,488.0	90.90	178.30	6,086.4	-1,500.4	-4,401.6	-627.2	4,445.7	1.27	-0.21	-1.25
10,536.0	91.20	178.00	6,085.5	-1,499.5	-4,449.5	-625.6	4,493.1	0.88	0.62	-0.62
10,583.0	91.70	177.60	6,084.3	-1,498.3	-4,496.5	-623.8	4,539.4	1.36	1.06	-0.85
10,631.0	92.10	176.20	6,082.7	-1,496.7	-4,544.4	-621.2	4,586.6	3.03	0.83	-2.92
10,678.0	92.40	178.30	6,080.9	-1,494.9	-4,591.3	-619.0	4,632.8	4.51	0.64	4.47
10,726.0	93.00	178.40	6,078.6	-1,492.6	-4,639.2	-617.6	4,680.1	1.27	1.25	0.21
LAST SURVEY - MAR 27, 2014										
10,771.0	93.70	177.70	6,076.0	-1,490.0	-4,684.1	-616.1	4,724.4	2.20	1.56	-1.56

## Survey Report



<b>Company:</b>	BONANZA CREEK ENERGY INC.	<b>Local Co-ordinate Reference:</b>	Well PRONGHORN 11-14-18HNB
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>TVD Reference:</b>	KB @ 4586.0usft (CADE 25)
<b>Site:</b>	NW NE SEC 18 T5N R61W 6th P.M.	<b>MD Reference:</b>	KB @ 4586.0usft (CADE 25)
<b>Well:</b>	PRONGHORN 11-14-18HNB	<b>North Reference:</b>	True
<b>Wellbore:</b>	JOB # 2009-296	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	FINAL SURVEYS	<b>Database:</b>	EDM 5000.1 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
EXTRAPOLATION TO TD										
10,822.0	93.70	177.70	6,072.7	-1,486.7	-4,735.0	-614.0	4,774.6	0.00	0.00	0.00

Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
ICP - PRONGHORN	0.00	0.00	6,088.0	-397.1	-646.6	1,393,475.67	3,345,442.59	40.406860	-104.259512	
- hit/miss target										
- Shape										
- survey misses target center by 21.1usft at 6481.3usft MD (6075.0 TVD, -396.5 N, -630.0 E)										
- Point										
ICP - PRONGHORN	0.00	0.00	6,088.0	-399.0	-646.6	1,393,473.77	3,345,442.62	40.406855	-104.259512	
- survey misses target center by 21.2usft at 6483.2usft MD (6075.1 TVD, -398.4 N, -629.8 E)										
- Point										
BHL - PRONGHORN	0.00	0.00	6,088.0	-4,732.4	-621.1	1,389,141.39	3,345,528.79	40.394960	-104.259420	
- survey misses target center by 16.6usft at 10818.2usft MD (6073.0 TVD, -4731.1 N, -614.2 E)										
- Point										

Survey Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
424.0	423.9	2.9	-5.1	SURFACE CASING	
5,999.0	5,912.1	40.0	-650.3	KOP	
6,451.0	6,073.1	-366.4	-632.5	ICP	
10,771.0	6,076.0	-4,684.1	-616.1	LAST SURVEY - MAR 27, 2014	
10,822.0	6,072.7	-4,735.0	-614.0	EXTRAPOLATION TO TD	

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