

# **BONANZA CREEK ENERGY INC.**

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

**NW NW SEC. 16 T5N R61W 6th P.M.**

**STATE PRONGHORN A-E-16HNB**

**JOB #: 2009-347**

**20 July, 2014**

**Survey: FINAL SURVEYS**





Project: WELD COUNTY, COLORADO (NAD 83)  
Site: NW NW SEC. 16 T5N R61W 6th P.M.  
Well: STATE PRONGHORN A-E-16HNB  
Wellbore: JOB #: 2009-347  
Design: FINAL SURVEYS

ANNOTATIONS

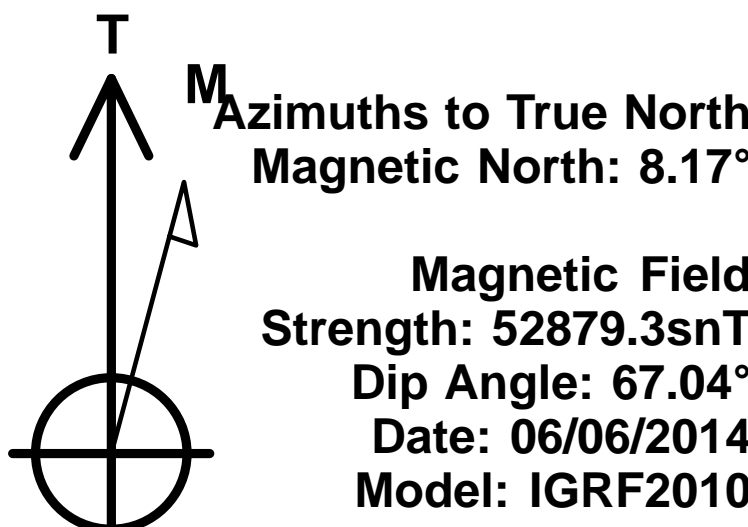
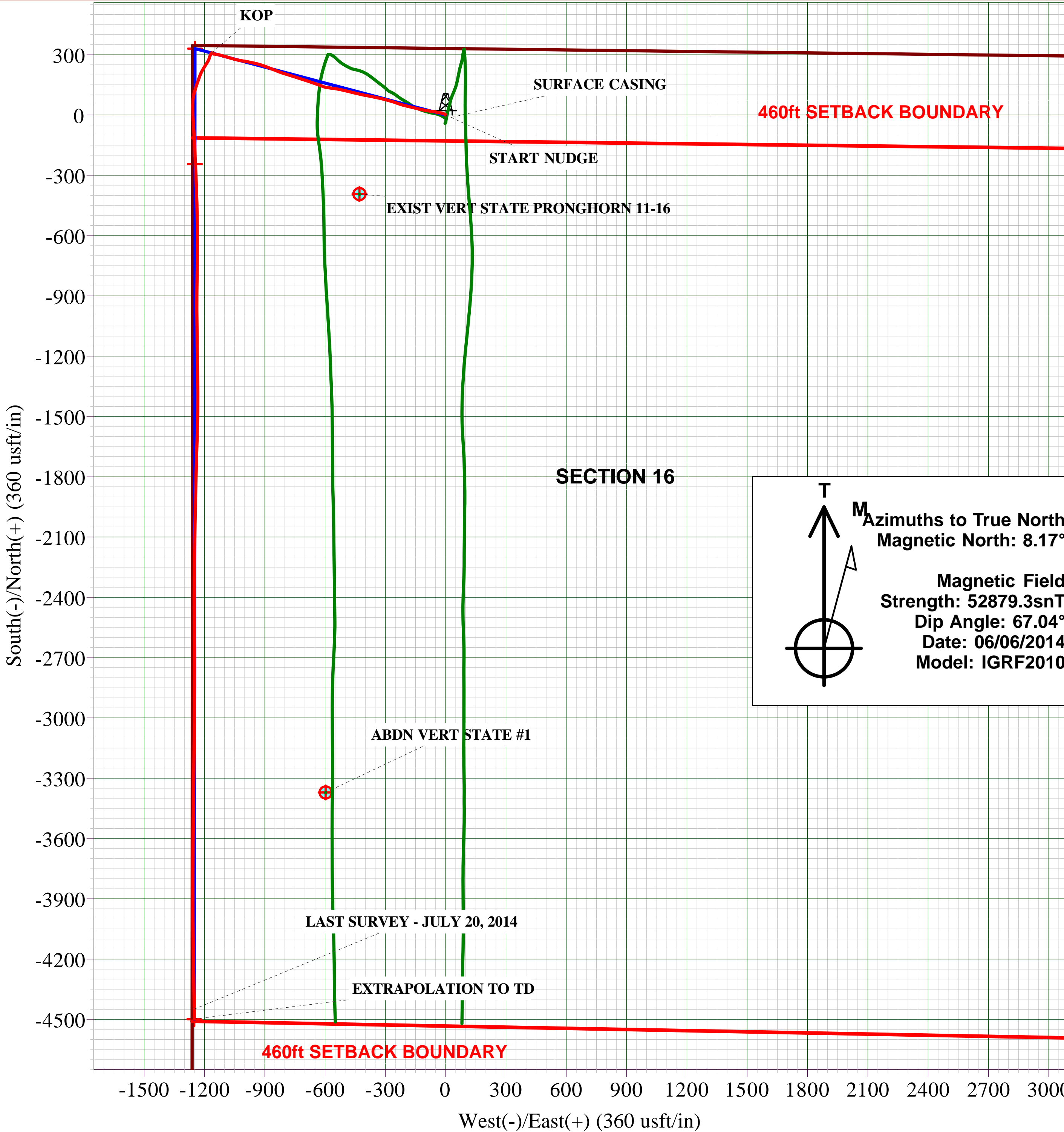
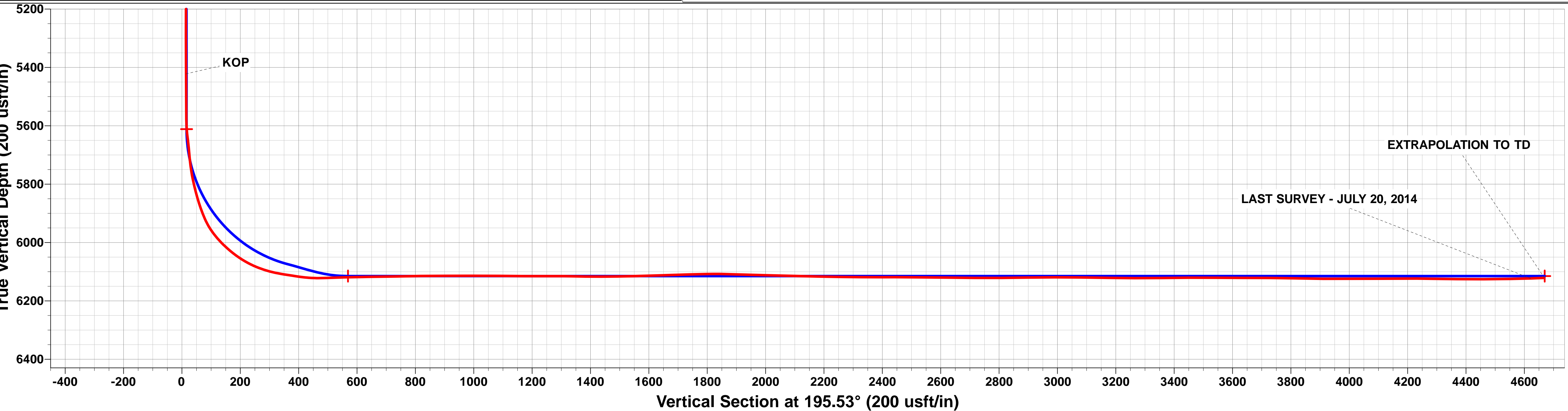
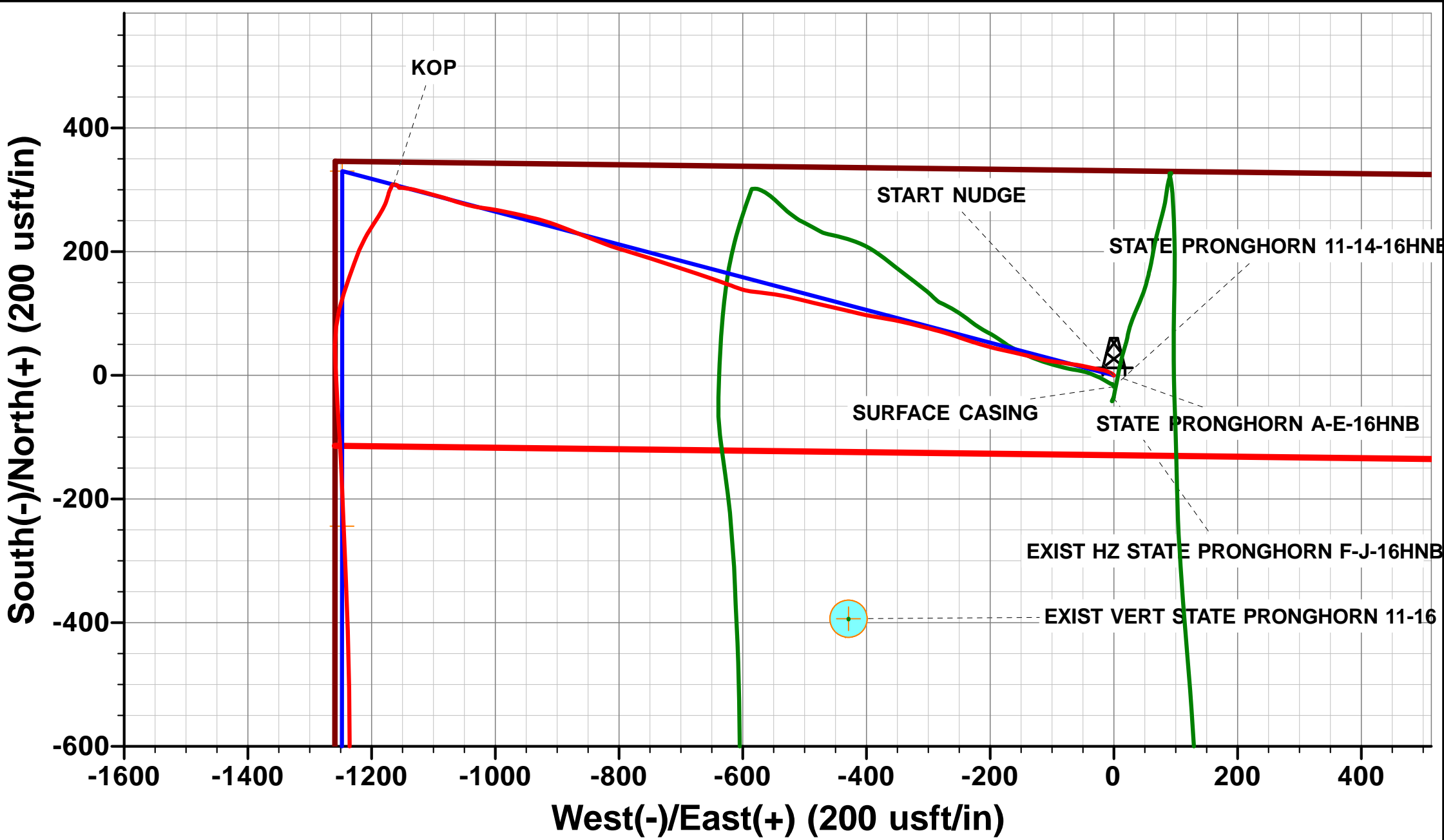
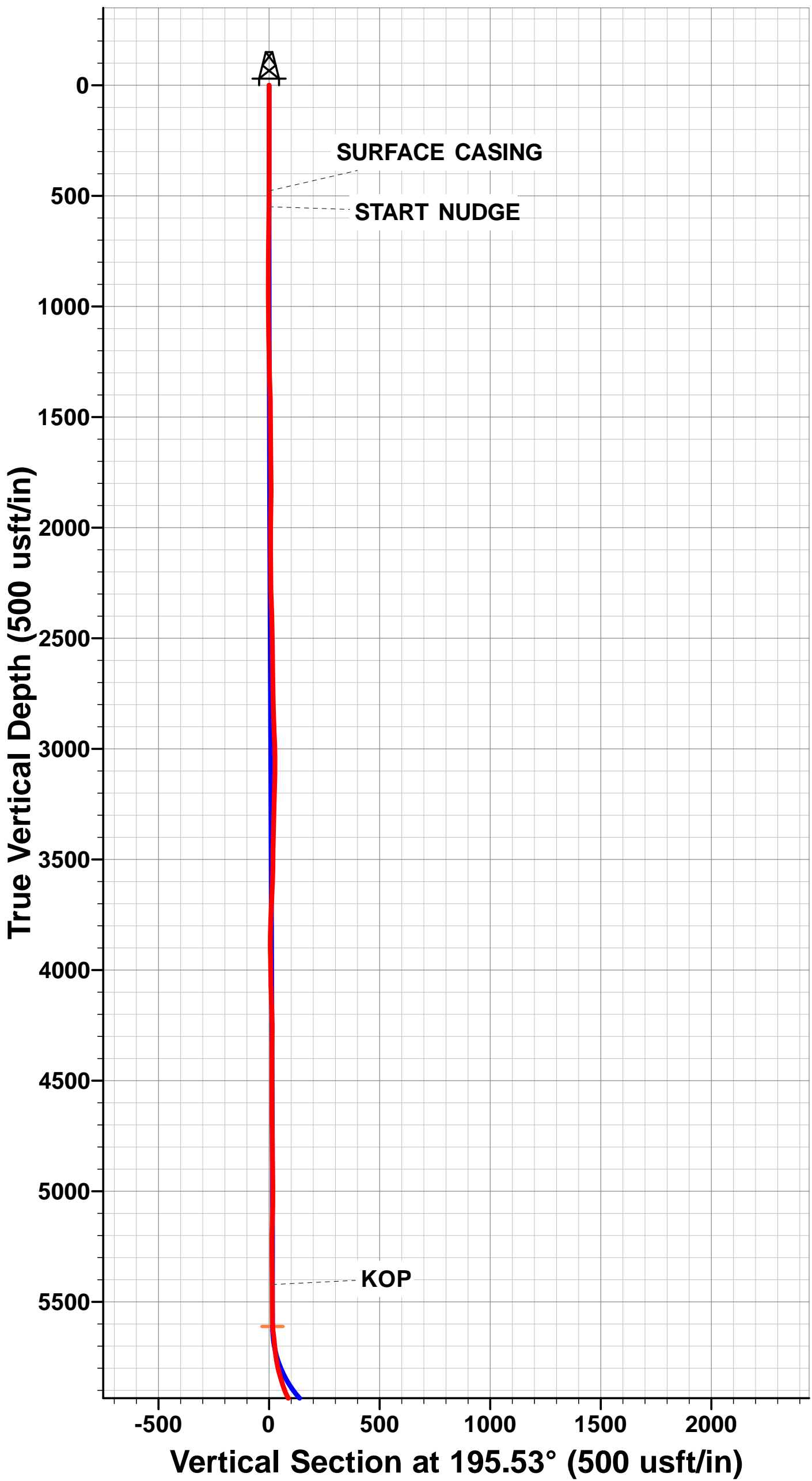
TVD	MD	Inc	Azi	+N/-S	+E/-W	VSec	Dep	Annotation
478.0	478.0	0.10	243.90	0.0	0.0	0.0	0.0	SURFACE CASING
550.0	550.0	0.84	314.01	0.2	-0.5	0.0	0.7	START NUDGE
5422.2	5611.7	1.04	271.76	308.8	-1164.1	14.2	1210.2	KOP
6123.1	10904.0	92.00	179.40	-4449.1	-1251.1	4621.7	5990.1	LAST SURVEY - JULY 20, 2014
6121.4	10953.0	92.00	179.40	-4498.1	-1250.6	4668.7	6039.0	EXTRAPOLATION TO TD

PROPOSED LOCAL COORDINATES:

SHL: 330ft FNL & 1259ft FWL Sec 16  
7" ICP \*NEW\*: 589.1ft FNL & 10ft FWL Sec 16  
BHL: 470ft FSL & 10ft FWL Sec 16

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
KOP - STATE PRONGHORN A-E-16HNB (P2)	5611.7	330.2	-1247.2	40.408406	-104.223628	Point
7" ICP - STATE PRONGHORN A-E-16HNB *NEW* (P2)	6115.0	-243.9	-1247.6	40.406830	-104.223630	Point
BHL - STATE PRONGHORN A-E-16HNB (P2)	6115.0	-4499.2	-1250.7	40.395150	-104.223640	Point



## Survey Report



<b>Company:</b>	BONANZA CREEK ENERGY INC.	<b>Local Co-ordinate Reference:</b>	Well STATE PRONGHORN A-E-16HNB
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>TVD Reference:</b>	KB-EST @ 4659.0usft (Original Well Elev)
<b>Site:</b>	NW NW SEC. 16 T5N R61W 6th P.M.	<b>MD Reference:</b>	KB-EST @ 4659.0usft (Original Well Elev)
<b>Well:</b>	STATE PRONGHORN A-E-16HNB	<b>North Reference:</b>	True
<b>Wellbore:</b>	JOB #: 2009-347	<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

Site	NW NW SEC. 16 T5N R61W 6th P.M.				
Site Position:		Northing:	1,393,850.44 usft	Latitude:	40.407450
From:	Lat/Long	Easting:	3,356,678.38 usft	Longitude:	-104.219150
Position Uncertainty:	0.0 usft	Slot Radius:	1.10000 ft	Grid Convergence:	0.83 °

Well	STATE PRONGHORN A-E-16HNB					
Well Position	+N/-S	0.0 usft	Northing:	1,393,868.64 usft	Latitude:	40.407500
	+E/-W	0.0 usft	Easting:	3,356,678.12 usft	Longitude:	-104.219150
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	4,642.0 usft

<b>Wellbore</b>	JOB #: 2009-347				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	06/06/2014	8.17	67.04	52,879

Design	FINAL SURVEYS			
Audit Notes:				
Version:	1.0	Phase:	ACTUAL	Tie On Depth: 0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	195.53

<b>Survey Program</b>	<b>Date</b>	20/07/2014		
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
468.0	10,953.0	FINAL SURVEYS (JOB #: 2009-347)	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	-4,659.0	0.0	0.0	0.0	0.00	0.00	0.00
468.0	0.00	0.00	468.0	-4,191.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>SURFACE CASING</b>										
478.0	0.10	243.90	478.0	-4,181.0	0.0	0.0	0.0	0.97	0.97	0.00
499.0	0.30	243.90	499.0	-4,160.0	0.0	-0.1	0.1	0.97	0.97	0.00
<b>START NUDGE</b>										
550.0	0.84	314.01	550.0	-4,109.0	0.2	-0.5	0.0	1.55	1.06	137.47
561.0	1.00	317.50	561.0	-4,098.0	0.3	-0.6	-0.1	1.55	1.46	31.72
654.0	1.50	319.00	654.0	-4,005.0	1.8	-1.9	-1.2	0.54	0.54	1.61
747.0	3.70	297.40	746.9	-3,912.1	4.1	-5.4	-2.5	2.55	2.37	-23.23
840.0	4.10	290.90	839.7	-3,819.3	6.7	-11.2	-3.4	0.64	0.43	-6.99
933.0	6.40	282.40	932.3	-3,726.7	9.0	-19.3	-3.5	2.60	2.47	-9.14

# Survey Report



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<b>Site:</b>	NW NW SEC. 16 T5N R61W 6th P.M.	<b>MD Reference:</b>	KB-EST @ 4659.0usft (Original Well Elev)
<b>Well:</b>	STATE PRONGHORN A-E-16HNB	<b>North Reference:</b>	True
<b>Wellbore:</b>	JOB #: 2009-347	<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)
1,025.0	9.00	280.50	1,023.4	-3,635.6	11.4	-31.4	-2.6	2.84	2.83	-2.07
1,118.0	8.50	282.10	1,115.3	-3,543.7	14.2	-45.3	-1.5	0.60	-0.54	1.72
1,211.0	10.50	279.80	1,207.1	-3,451.9	17.0	-60.4	-0.2	2.19	2.15	-2.47
1,303.0	12.90	278.50	1,297.1	-3,361.9	20.0	-78.8	1.8	2.62	2.61	-1.41
1,395.0	12.30	276.20	1,386.9	-3,272.1	22.6	-98.7	4.7	0.85	-0.65	-2.50
1,486.0	13.40	285.60	1,475.7	-3,183.3	26.4	-118.5	6.3	2.59	1.21	10.33
1,579.0	13.60	283.40	1,566.1	-3,092.9	31.9	-139.5	6.6	0.59	0.22	-2.37
1,672.0	15.60	282.70	1,656.1	-3,002.9	37.2	-162.3	7.7	2.16	2.15	-0.75
1,766.0	17.00	282.80	1,746.3	-2,912.7	43.0	-188.1	9.0	1.49	1.49	0.11
1,859.0	17.50	286.10	1,835.1	-2,823.9	49.9	-214.8	9.5	1.18	0.54	3.55
1,953.0	18.80	290.10	1,924.4	-2,734.6	59.0	-242.6	8.1	1.91	1.38	4.26
2,047.0	19.30	286.20	2,013.3	-2,645.7	68.5	-271.7	6.7	1.45	0.53	-4.15
2,142.0	16.80	284.00	2,103.6	-2,555.4	76.2	-300.1	6.9	2.73	-2.63	-2.32
2,239.0	17.60	284.30	2,196.3	-2,462.7	83.3	-327.9	7.6	0.83	0.82	0.31
2,334.0	16.30	280.90	2,287.2	-2,371.8	89.3	-354.9	9.0	1.72	-1.37	-3.58
2,429.0	17.70	279.20	2,378.0	-2,281.0	94.2	-382.3	11.7	1.56	1.47	-1.79
2,525.0	19.50	283.20	2,469.0	-2,190.0	100.1	-412.3	13.9	2.30	1.87	4.17
2,620.0	21.40	283.50	2,558.0	-2,101.0	107.8	-444.6	15.2	2.00	2.00	0.32
2,716.0	19.80	282.50	2,647.9	-2,011.1	115.4	-477.5	16.7	1.71	-1.67	-1.04
2,810.0	21.10	284.20	2,735.9	-1,923.1	123.0	-509.4	17.9	1.52	1.38	1.81
2,907.0	17.00	279.40	2,827.6	-1,831.4	129.6	-540.4	19.8	4.52	-4.23	-4.95
3,000.0	14.10	276.90	2,917.2	-1,741.8	133.2	-565.0	23.0	3.20	-3.12	-2.69
3,096.0	12.70	277.30	3,010.6	-1,648.4	135.9	-587.1	26.3	1.46	-1.46	0.42
3,191.0	16.10	290.70	3,102.6	-1,556.4	141.9	-609.8	26.6	4.99	3.58	14.11
3,287.0	21.60	289.50	3,193.4	-1,465.6	152.5	-638.9	24.1	5.74	5.73	-1.25
3,382.0	23.30	288.20	3,281.2	-1,377.8	164.3	-673.3	22.1	1.86	1.79	-1.37
3,477.0	25.10	288.50	3,367.9	-1,291.1	176.5	-710.2	20.1	1.90	1.89	0.32
3,571.8	26.80	287.50	3,453.1	-1,205.9	189.3	-749.7	18.4	1.85	1.79	-1.05
3,667.0	28.00	286.90	3,537.6	-1,121.4	202.3	-791.5	17.1	1.29	1.26	-0.63
3,763.0	24.80	291.00	3,623.6	-1,035.4	216.0	-831.9	14.6	3.83	-3.33	4.27
3,859.0	23.90	292.00	3,711.1	-947.9	230.5	-868.7	10.5	1.03	-0.94	1.04
3,954.0	22.30	289.90	3,798.4	-860.6	243.9	-903.5	7.0	1.89	-1.68	-2.21
4,050.0	18.50	283.70	3,888.4	-770.6	253.7	-935.5	6.1	4.55	-3.96	-6.46
4,145.0	15.90	282.40	3,979.2	-679.8	260.1	-962.8	7.3	2.77	-2.74	-1.37
4,240.0	17.60	281.70	4,070.1	-588.9	265.8	-989.6	9.0	1.80	1.79	-0.74
4,336.0	14.40	276.90	4,162.4	-496.6	270.2	-1,015.7	11.7	3.60	-3.33	-5.00
4,432.0	15.20	282.80	4,255.2	-403.8	274.4	-1,039.8	14.1	1.78	0.83	6.15
4,529.0	16.90	288.70	4,348.4	-310.6	281.7	-1,065.5	14.0	2.43	1.75	6.08
4,624.0	14.90	284.80	4,439.8	-219.2	289.3	-1,090.4	13.3	2.39	-2.11	-4.11
4,720.0	11.70	285.50	4,533.2	-125.8	295.0	-1,111.8	13.5	3.34	-3.33	0.73
4,814.0	8.00	285.40	4,625.8	-33.2	299.3	-1,127.3	13.5	3.94	-3.94	-0.11
4,911.0	5.50	278.10	4,722.1	63.1	301.7	-1,138.4	14.1	2.72	-2.58	-7.53
5,005.0	3.60	277.60	4,815.8	156.8	302.8	-1,145.8	15.1	2.02	-2.02	-0.53
5,101.0	2.70	271.00	4,911.7	252.7	303.2	-1,151.0	16.1	1.01	-0.94	-6.87
5,195.0	1.60	269.30	5,005.6	346.6	303.2	-1,154.5	17.0	1.17	-1.17	-1.81
5,289.0	2.30	340.00	5,099.6	440.6	305.0	-1,156.5	15.9	2.48	0.74	75.21
5,386.0	1.80	299.30	5,196.5	537.5	307.6	-1,158.5	13.9	1.55	-0.52	-41.96
5,480.0	1.60	278.10	5,290.5	631.5	308.5	-1,161.1	13.7	0.70	-0.21	-22.55
5,576.0	1.20	275.70	5,386.5	727.5	308.8	-1,163.4	14.1	0.42	-0.42	-2.50
<b>KOP</b>										
<b>5,611.7</b>	<b>1.04</b>	<b>271.76</b>	<b>5,422.2</b>	<b>763.2</b>	<b>308.8</b>	<b>-1,164.1</b>	<b>14.2</b>	<b>0.49</b>	<b>-0.44</b>	<b>-11.04</b>
5,671.0	0.80	261.90	5,481.4	822.4	308.8	-1,165.0	14.5	0.49	-0.41	-16.63
5,735.0	0.60	243.50	5,545.4	886.4	308.6	-1,165.8	14.9	0.47	-0.31	-28.75

# Survey Report



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<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>TVD Reference:</b>	KB-EST @ 4659.0usft (Original Well Elev)
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<b>Well:</b>	STATE PRONGHORN A-E-16HNB	<b>North Reference:</b>	True
<b>Wellbore:</b>	JOB #: 2009-347	<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)
5,767.0	0.60	219.40	5,577.4	918.4	308.4	-1,166.0	15.2	0.78	0.00	-75.31
5,798.0	3.50	211.20	5,608.4	949.4	307.4	-1,166.6	16.3	9.38	9.35	-26.45
5,830.0	7.60	201.20	5,640.3	981.3	304.6	-1,167.9	19.3	13.12	12.81	-31.25
5,862.0	5.60	210.90	5,672.0	1,013.0	301.3	-1,169.5	22.9	7.13	-6.25	30.31
5,887.0	5.10	200.20	5,696.9	1,037.9	299.2	-1,170.5	25.2	4.45	-2.00	-42.80
5,919.0	6.80	201.40	5,728.8	1,069.8	296.1	-1,171.7	28.5	5.33	5.31	3.75
5,950.0	9.30	193.70	5,759.5	1,100.5	292.0	-1,172.9	32.8	8.77	8.06	-24.84
5,981.0	12.10	197.10	5,789.9	1,130.9	286.4	-1,174.5	38.6	9.26	9.03	10.97
6,013.0	14.60	200.90	5,821.1	1,162.1	279.4	-1,176.9	46.0	8.28	7.81	11.87
6,045.0	16.90	206.40	5,851.8	1,192.8	271.5	-1,180.4	54.5	8.56	7.19	17.19
6,085.0	20.00	211.90	5,889.8	1,230.8	260.5	-1,186.6	66.8	8.88	7.75	13.75
6,117.0	25.50	212.30	5,919.3	1,260.3	250.0	-1,193.2	78.7	17.19	17.19	1.25
6,149.0	32.10	212.50	5,947.3	1,288.3	237.0	-1,201.4	93.4	20.63	20.62	0.62
6,181.0	38.80	209.20	5,973.4	1,314.4	221.1	-1,210.9	111.3	21.77	20.94	-10.31
6,212.0	43.70	203.20	5,996.7	1,337.7	202.7	-1,219.9	131.4	20.30	15.81	-19.35
6,244.0	48.00	198.40	6,019.0	1,360.0	181.3	-1,228.0	154.2	17.21	13.44	-15.00
6,276.0	52.50	199.70	6,039.4	1,380.4	158.0	-1,236.0	178.8	14.40	14.06	4.06
6,308.0	57.60	198.10	6,057.8	1,398.8	133.2	-1,244.5	205.0	16.46	15.94	-5.00
6,340.0	63.20	193.30	6,073.6	1,414.6	106.4	-1,252.0	232.8	21.82	17.50	-15.00
6,371.0	69.00	187.40	6,086.1	1,427.1	78.6	-1,257.1	260.9	25.54	18.71	-19.03
6,402.0	73.70	180.50	6,096.0	1,437.0	49.3	-1,259.1	289.7	25.97	15.16	-22.26
6,434.0	78.60	177.00	6,103.7	1,444.7	18.3	-1,258.4	319.4	18.63	15.31	-10.94
6,467.0	81.50	177.00	6,109.4	1,450.4	-14.2	-1,256.7	350.2	8.79	8.79	0.00
6,498.0	81.50	176.80	6,114.0	1,455.0	-44.8	-1,255.0	379.3	0.64	0.00	-0.65
6,529.0	82.90	176.00	6,118.2	1,459.2	-75.5	-1,253.1	408.3	5.19	4.52	-2.58
6,560.0	86.20	176.80	6,121.1	1,462.1	-106.3	-1,251.1	437.5	10.95	10.65	2.58
6,591.0	90.40	177.30	6,122.1	1,463.1	-137.2	-1,249.6	466.8	13.64	13.55	1.61
6,622.0	91.90	177.70	6,121.4	1,462.4	-168.2	-1,248.2	496.3	5.01	4.84	1.29
6,683.0	91.60	177.70	6,119.6	1,460.6	-229.1	-1,245.8	554.3	0.49	-0.49	0.00
6,774.0	90.70	177.40	6,117.7	1,458.7	-320.0	-1,241.9	640.9	1.04	-0.99	-0.33
6,867.0	90.90	178.30	6,116.5	1,457.5	-412.9	-1,238.4	729.5	0.99	0.22	0.97
6,960.0	90.90	178.90	6,115.0	1,456.0	-505.9	-1,236.1	818.4	0.65	0.00	0.65
7,053.0	90.00	180.10	6,114.3	1,455.3	-598.9	-1,235.3	907.8	1.61	-0.97	1.29
7,146.0	90.20	180.40	6,114.1	1,455.1	-691.9	-1,235.7	997.5	0.39	0.22	0.32
7,239.0	89.40	180.60	6,114.4	1,455.4	-784.8	-1,236.5	1,087.3	0.89	-0.86	0.22
7,331.0	89.60	180.70	6,115.2	1,456.2	-876.8	-1,237.6	1,176.2	0.24	0.22	0.11
7,423.0	90.30	179.70	6,115.3	1,456.3	-968.8	-1,237.9	1,265.0	1.33	0.76	-1.09
7,515.0	88.80	179.50	6,116.0	1,457.0	-1,060.8	-1,237.2	1,353.4	1.64	-1.63	-0.22
7,608.0	90.20	179.50	6,116.8	1,457.8	-1,153.8	-1,236.4	1,442.8	1.51	1.51	0.00
7,700.0	90.90	178.90	6,116.0	1,457.0	-1,245.8	-1,235.1	1,531.1	1.00	0.76	-0.65
7,792.0	92.20	179.40	6,113.5	1,454.5	-1,337.8	-1,233.8	1,619.3	1.51	1.41	0.54
7,884.0	91.70	180.30	6,110.3	1,451.3	-1,429.7	-1,233.5	1,707.8	1.12	-0.54	0.98
7,946.0	91.30	180.60	6,108.7	1,449.7	-1,491.7	-1,234.0	1,767.7	0.81	-0.65	0.48
7,977.0	91.00	181.30	6,108.1	1,449.1	-1,522.7	-1,234.5	1,797.7	2.46	-0.97	2.26
8,069.0	88.00	181.50	6,108.9	1,449.9	-1,614.6	-1,236.8	1,886.9	3.27	-3.26	0.22
8,162.0	88.50	181.70	6,111.7	1,452.7	-1,707.5	-1,239.4	1,977.1	0.58	0.54	0.22
8,258.0	88.60	181.40	6,114.2	1,455.2	-1,803.5	-1,242.0	2,070.2	0.33	0.10	-0.31
8,353.0	89.00	181.40	6,116.2	1,457.2	-1,898.4	-1,244.3	2,162.3	0.42	0.42	0.00
8,449.0	88.70	180.90	6,118.1	1,459.1	-1,994.4	-1,246.2	2,255.3	0.61	-0.31	-0.52
8,545.0	90.60	181.10	6,118.7	1,459.7	-2,090.4	-1,247.9	2,348.2	1.99	1.98	0.21
8,641.0	89.20	181.00	6,118.8	1,459.8	-2,186.4	-1,249.6	2,441.2	1.46	-1.46	-0.10
8,737.0	90.00	180.20	6,119.5	1,460.5	-2,282.3	-1,250.7	2,533.9	1.18	0.83	-0.83
8,832.0	89.10	180.40	6,120.3	1,461.3	-2,377.3	-1,251.2	2,625.6	0.97	-0.95	0.21

# Survey Report



<b>Company:</b>	BONANZA CREEK ENERGY INC.	<b>Local Co-ordinate Reference:</b>	Well STATE PRONGHORN A-E-16HNB
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>TVD Reference:</b>	KB-EST @ 4659.0usft (Original Well Elev)
<b>Site:</b>	NW NW SEC. 16 T5N R61W 6th P.M.	<b>MD Reference:</b>	KB-EST @ 4659.0usft (Original Well Elev)
<b>Well:</b>	STATE PRONGHORN A-E-16HNB	<b>North Reference:</b>	True
<b>Wellbore:</b>	JOB #: 2009-347	<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)
8,926.0	89.60	179.70	6,121.3	1,462.3	-2,471.3	-1,251.2	2,716.2	0.92	0.53	-0.74
9,022.0	90.40	179.50	6,121.3	1,462.3	-2,567.3	-1,250.6	2,808.5	0.86	0.83	-0.21
9,115.0	91.10	179.30	6,120.1	1,461.1	-2,660.3	-1,249.6	2,897.8	0.78	0.75	-0.22
9,211.0	89.90	180.50	6,119.3	1,460.3	-2,756.3	-1,249.4	2,990.2	1.77	-1.25	1.25
9,306.0	89.40	180.10	6,119.8	1,460.8	-2,851.3	-1,249.9	3,081.9	0.67	-0.53	-0.42
9,400.0	89.00	180.40	6,121.2	1,462.2	-2,945.3	-1,250.3	3,172.6	0.53	-0.43	0.32
9,496.0	89.80	180.40	6,122.2	1,463.2	-3,041.3	-1,251.0	3,265.2	0.83	0.83	0.00
9,591.0	90.80	180.20	6,121.7	1,462.7	-3,136.3	-1,251.5	3,356.9	1.07	1.05	-0.21
9,687.0	90.30	180.90	6,120.7	1,461.7	-3,232.3	-1,252.4	3,449.6	0.90	-0.52	0.73
9,782.0	89.40	180.60	6,121.0	1,462.0	-3,327.3	-1,253.7	3,541.5	1.00	-0.95	-0.32
9,878.0	90.30	180.50	6,121.2	1,462.2	-3,423.3	-1,254.6	3,634.2	0.94	0.94	-0.10
9,973.0	89.40	180.40	6,121.5	1,462.5	-3,518.3	-1,255.3	3,725.9	0.95	-0.95	-0.11
10,068.0	88.80	180.40	6,123.0	1,464.0	-3,613.2	-1,256.0	3,817.6	0.63	-0.63	0.00
10,165.0	89.50	180.30	6,124.4	1,465.4	-3,710.2	-1,256.6	3,911.2	0.73	0.72	-0.10
10,260.0	90.60	180.10	6,124.3	1,465.3	-3,805.2	-1,256.9	4,002.8	1.18	1.16	-0.21
10,355.0	89.70	180.30	6,124.1	1,465.1	-3,900.2	-1,257.2	4,094.5	0.97	-0.95	0.21
10,450.0	90.50	179.80	6,123.9	1,464.9	-3,995.2	-1,257.3	4,186.0	0.99	0.84	-0.53
10,546.0	89.10	179.40	6,124.3	1,465.3	-4,091.2	-1,256.7	4,278.3	1.52	-1.46	-0.42
10,641.0	89.30	178.90	6,125.6	1,466.6	-4,186.2	-1,255.3	4,369.4	0.57	0.21	-0.53
10,736.0	90.20	179.00	6,126.0	1,467.0	-4,281.2	-1,253.5	4,460.5	0.95	0.95	0.11
10,832.0	91.00	179.20	6,125.0	1,466.0	-4,377.2	-1,252.0	4,552.6	0.86	0.83	0.21
LAST SURVEY - JULY 20, 2014										
10,904.0	92.00	179.40	6,123.1	1,464.1	-4,449.1	-1,251.1	4,621.7	1.42	1.39	0.28
EXTRAPOLATION TO TD										
10,953.0	92.00	179.40	6,121.4	1,462.4	-4,498.1	-1,250.6	4,668.7	0.00	0.00	0.00



# Survey Report



<b>Company:</b>	BONANZA CREEK ENERGY INC.	<b>Local Co-ordinate Reference:</b>	Well STATE PRONGHORN A-E-16HNB
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>TVD Reference:</b>	KB-EST @ 4659.0usft (Original Well Elev)
<b>Site:</b>	NW NW SEC. 16 T5N R61W 6th P.M.	<b>MD Reference:</b>	KB-EST @ 4659.0usft (Original Well Elev)
<b>Well:</b>	STATE PRONGHORN A-E-16HNB	<b>North Reference:</b>	True
<b>Wellbore:</b>	JOB #: 2009-347	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	FINAL SURVEYS	<b>Database:</b>	EDM 5000.1 Single User Db

Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
EXIST VERT STATE PR	0.00	0.00	6,875.0	-393.4	-428.9	1,393,469.06	3,356,254.98	40.406420	-104.220690
- survey misses target center by 1109.5usft at 6867.0usft MD (6116.5 TVD, -412.9 N, -1238.4 E)									
- Circle (radius 30.0)									
ABDN VERT STATE #1	0.00	0.00	6,844.0	-3,371.0	-597.2	1,390,489.54	3,356,129.73	40.398247	-104.221294
- survey misses target center by 976.7usft at 9821.3usft MD (6121.3 TVD, -3366.5 N, -1254.1 E)									
- Circle (radius 30.0)									
BHL - STATE PRONGH	0.00	0.00	6,114.0	-4,499.2	-1,250.7	1,389,352.03	3,355,492.63	40.395150	-104.223640
- survey misses target center by 7.5usft at 10953.0usft MD (6121.4 TVD, -4498.1 N, -1250.6 E)									
- Point									
KOP - STATE PRONGH	0.00	0.00	5,611.7	330.2	-1,247.2	1,394,180.79	3,355,426.33	40.408406	-104.223628
- survey misses target center by 83.7usft at 5802.5usft MD (5612.9 TVD, 307.2 N, -1166.8 E)									
- Point									
KOP - STATE PRONGH	0.00	0.00	5,610.7	330.2	-1,247.2	1,394,180.79	3,355,426.33	40.408406	-104.223628
- survey misses target center by 83.7usft at 5801.5usft MD (5611.9 TVD, 307.2 N, -1166.7 E)									
- Point									
7" ICP - STATE PRONG	0.00	0.00	6,114.0	-243.9	-1,247.6	1,393,606.76	3,355,434.18	40.406830	-104.223630
- survey misses target center by 5.8usft at 6697.8usft MD (6119.2 TVD, -243.9 N, -1245.1 E)									
- Point									
7" ICP - STATE PRONG	0.00	0.00	6,115.0	-243.9	-1,247.6	1,393,606.76	3,355,434.18	40.406830	-104.223630
- survey misses target center by 4.9usft at 6697.8usft MD (6119.2 TVD, -243.9 N, -1245.2 E)									
- Point									
BHL - STATE PRONGH	0.00	0.00	6,115.0	-4,499.2	-1,250.7	1,389,352.03	3,355,492.63	40.395150	-104.223640
- survey misses target center by 6.5usft at 10953.0usft MD (6121.4 TVD, -4498.1 N, -1250.6 E)									
- Point									

Survey Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
478.0	478.0	0.0	0.0	SURFACE CASING
550.0	550.0	0.2	-0.5	START NUDGE
5,611.7	5,422.2	308.8	-1,164.1	KOP
10,904.0	6,123.1	-4,449.1	-1,251.1	LAST SURVEY - JULY 20, 2014
10,953.0	6,121.4	-4,498.1	-1,250.6	EXTRAPOLATION TO TD

Checked By: _____	Approved By: _____	Date: _____
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