

BONANZA CREEK ENERGY OPERATING

Well Name: **State Pronghorn 31-34-16HNB**

Surface Location: State Pronghorn P-16 Pad Sec.16-T5N-R61W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

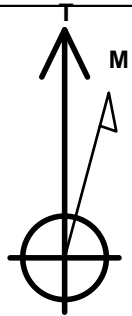
Ground Elevation: 4629.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1394030.27	3360031.80	40.407810	-104.207100	

RKB - 15' WELL @ 4644.0ft (RKB - 15')

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
BHL 470'FSL & 2011'FEL	6097.0	-4674.1	-1261.8	Point
T1 470'FNL & 2030'FEL	6097.0	-276.8	-1236.5	Point



Azimuths to True North
Magnetic North: 8.37°

Magnetic Field
Strength: 53044.6nT
Dip Angle: 67.10°
Date: 11/19/2012
Model: IGRF2010

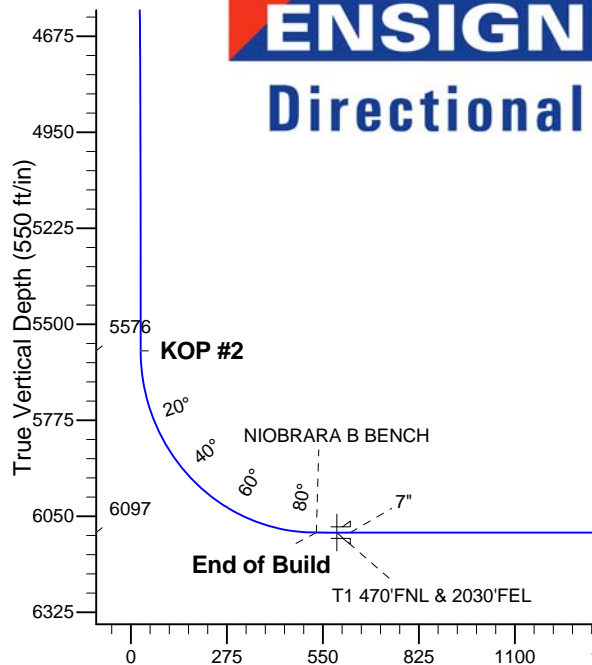
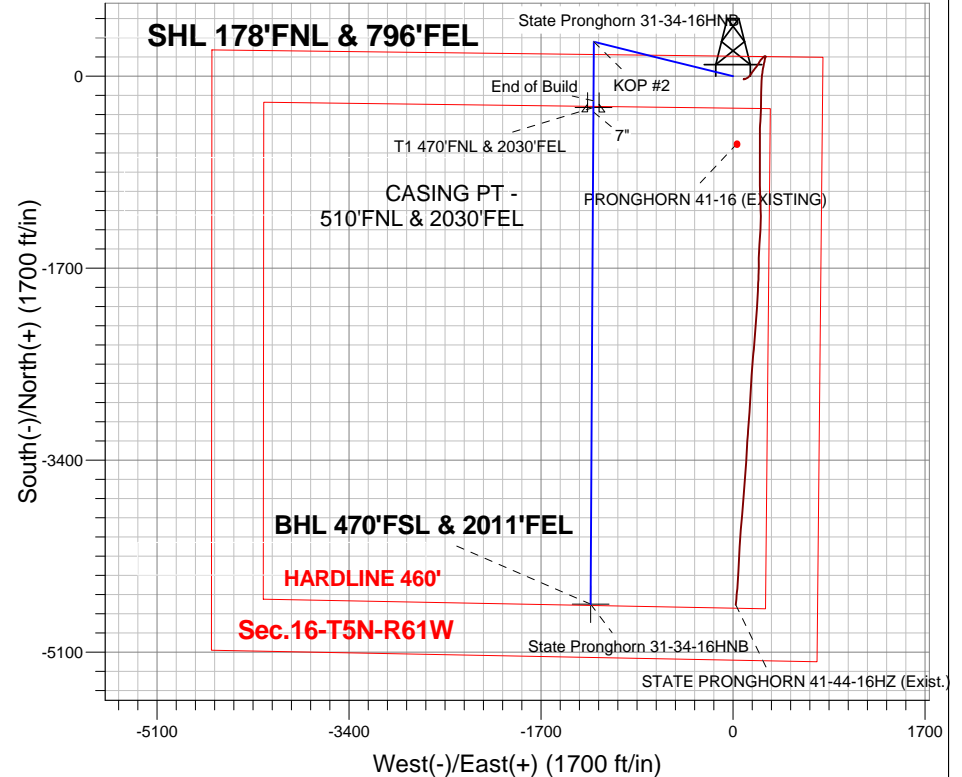
State Pronghorn P-16 Pad Sec.16-T5N-R61W
State Pronghorn 31-34-16HNB
Plan #1 (11-19-12)
14:17, November 19 2012

ANNOTATIONS

TVD	MD	Annotation
200.0	200.0	KOP #1
5576.2	5745.5	KOP #2
6097.0	6563.6	End of Build

South(-)/North(+) (1700 ft/in)

SHL 178'FNL & 796'FEL



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.0	
3	1007.2	16.14	283.85	996.5	27.0	-109.7	2.00	283.85	2.5	
4	4762.2	16.14	283.85	4603.5	277.1	-1123.3	0.00	0.00	25.3	
5	5569.3	0.00	0.00	5400.0	304.1	-1233.0	2.00	180.00	27.8	
6	5745.5	0.00	0.00	5576.1	304.1	-1233.0	0.00	0.00	27.8	
7	6563.6	90.00	180.32	6097.0	-216.8	-1235.9	11.00	180.32	531.4	
8	6663.7	90.00	180.32	6097.0	-316.8	-1236.5	0.00	0.00	628.1	
9	6664.6	90.00	180.33	6097.0	-317.8	-1236.5	1.00	90.00	629.1	
10	11021.0	90.00	180.33	6097.0	-4674.1	-1261.8	0.00	0.00	4841.4	BHL 470'FSL & 2011'FEL

BHL 470'FSL & 2011'FEL

Vertical Section at 195.11° (550 ft/in)



BONANZA CREEK ENERGY OPERATING

SEC.16-T5N-R61W

State Pronghorn P-16 Pad Sec.16-T5N-R61W

State Pronghorn 31-34-16HNB

Wellbore #1

Plan: Plan #1 (11-19-12)

Standard Planning Report

19 November, 2012

Database:	Landmark	Local Co-ordinate Reference:	Well State Pronghorn 31-34-16HNB
Company:	BONANZA CREEK ENERGY OPERATING	TVD Reference:	WELL @ 4644.0ft (RKB - 15')
Project:	SEC.16-T5N-R61W	MD Reference:	WELL @ 4644.0ft (RKB - 15')
Site:	State Pronghorn P-16 Pad Sec.16-T5N-R61W	North Reference:	True
Well:	State Pronghorn 31-34-16HNB	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (11-19-12)		

Project	SEC.16-T5N-R61W		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site						State Pronghorn P-16 Pad Sec.16-T5N-R61W											
Site Position:						Northing:			1,394,009.88 ft			Latitude:			40.407750		
From:			Lat/Long			Easting:			3,360,132.36 ft			Longitude:			-104.206740		
Position Uncertainty:			0.0 ft			Slot Radius:			"			Grid Convergence:			0.84 °		

Well	State Pronghorn 31-34-16HNB					
Well Position	+N/-S	21.9 ft	Northing:	1,394,030.27 ft	Latitude:	40.407810
	+E/-W	-100.3 ft	Easting:	3,360,031.80 ft	Longitude:	-104.207100
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,629.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	11/19/2012	8.37	67.10	53,045

Design	Plan #1 (11-19-12)			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	195.11

Plan Sections										
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
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,007.2	16.14	283.85	996.5	27.0	-109.7	2.00	2.00	0.00	283.85	
4,762.2	16.14	283.85	4,603.5	277.1	-1,123.3	0.00	0.00	0.00	0.00	
5,569.3	0.00	0.00	5,400.0	304.1	-1,233.0	2.00	-2.00	0.00	180.00	
5,745.5	0.00	0.00	5,576.1	304.1	-1,233.0	0.00	0.00	0.00	0.00	
6,563.6	90.00	180.32	6,097.0	-216.8	-1,235.9	11.00	11.00	0.00	180.32	
6,663.7	90.00	180.32	6,097.0	-316.8	-1,236.5	0.00	0.00	0.00	0.00	
6,664.6	90.00	180.33	6,097.0	-317.8	-1,236.5	1.00	0.00	1.00	90.00	
11,021.0	90.00	180.33	6,097.0	-4,674.1	-1,261.8	0.00	0.00	0.00	0.00	BHL 470'FSL & 201

Database:	Landmark	Local Co-ordinate Reference:	Well State Pronghorn 31-34-16HNB
Company:	BONANZA CREEK ENERGY OPERATING	TVD Reference:	WELL @ 4644.0ft (RKB - 15')
Project:	SEC.16-T5N-R61W	MD Reference:	WELL @ 4644.0ft (RKB - 15')
Site:	State Pronghorn P-16 Pad Sec.16-T5N-R61W	North Reference:	True
Well:	State Pronghorn 31-34-16HNB	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (11-19-12)		

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)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP #1									
300.0	2.00	283.85	300.0	0.4	-1.7	0.0	2.00	2.00	0.00
400.0	4.00	283.85	399.8	1.7	-6.8	0.2	2.00	2.00	0.00
500.0	6.00	283.85	499.5	3.8	-15.2	0.3	2.00	2.00	0.00
600.0	8.00	283.85	598.7	6.7	-27.1	0.6	2.00	2.00	0.00
700.0	10.00	283.85	697.5	10.4	-42.3	1.0	2.00	2.00	0.00
800.0	12.00	283.85	795.6	15.0	-60.8	1.4	2.00	2.00	0.00
900.0	14.00	283.85	893.1	20.4	-82.6	1.9	2.00	2.00	0.00
1,000.0	16.00	283.85	989.6	26.6	-107.7	2.4	2.00	2.00	0.00
1,007.2	16.14	283.85	996.5	27.0	-109.7	2.5	2.00	2.00	0.00
1,100.0	16.14	283.85	1,085.7	33.2	-134.7	3.0	0.00	0.00	0.00
1,200.0	16.14	283.85	1,181.8	39.9	-161.7	3.6	0.00	0.00	0.00
1,300.0	16.14	283.85	1,277.8	46.5	-188.7	4.2	0.00	0.00	0.00
1,400.0	16.14	283.85	1,373.9	53.2	-215.7	4.9	0.00	0.00	0.00
1,500.0	16.14	283.85	1,469.9	59.9	-242.7	5.5	0.00	0.00	0.00
1,600.0	16.14	283.85	1,566.0	66.5	-269.7	6.1	0.00	0.00	0.00
1,700.0	16.14	283.85	1,662.0	73.2	-296.7	6.7	0.00	0.00	0.00
1,800.0	16.14	283.85	1,758.1	79.8	-323.7	7.3	0.00	0.00	0.00
1,900.0	16.14	283.85	1,854.2	86.5	-350.7	7.9	0.00	0.00	0.00
2,000.0	16.14	283.85	1,950.2	93.2	-377.7	8.5	0.00	0.00	0.00
2,100.0	16.14	283.85	2,046.3	99.8	-404.7	9.1	0.00	0.00	0.00
2,200.0	16.14	283.85	2,142.3	106.5	-431.7	9.7	0.00	0.00	0.00
2,300.0	16.14	283.85	2,238.4	113.1	-458.7	10.3	0.00	0.00	0.00
2,400.0	16.14	283.85	2,334.4	119.8	-485.7	10.9	0.00	0.00	0.00
2,500.0	16.14	283.85	2,430.5	126.4	-512.7	11.5	0.00	0.00	0.00
2,600.0	16.14	283.85	2,526.6	133.1	-539.7	12.2	0.00	0.00	0.00
2,700.0	16.14	283.85	2,622.6	139.8	-566.6	12.8	0.00	0.00	0.00
2,800.0	16.14	283.85	2,718.7	146.4	-593.6	13.4	0.00	0.00	0.00
2,900.0	16.14	283.85	2,814.7	153.1	-620.6	14.0	0.00	0.00	0.00
3,000.0	16.14	283.85	2,910.8	159.7	-647.6	14.6	0.00	0.00	0.00
3,100.0	16.14	283.85	3,006.8	166.4	-674.6	15.2	0.00	0.00	0.00
3,200.0	16.14	283.85	3,102.9	173.0	-701.6	15.8	0.00	0.00	0.00
3,300.0	16.14	283.85	3,199.0	179.7	-728.6	16.4	0.00	0.00	0.00
3,400.0	16.14	283.85	3,295.0	186.4	-755.6	17.0	0.00	0.00	0.00
3,500.0	16.14	283.85	3,391.1	193.0	-782.6	17.6	0.00	0.00	0.00
3,600.0	16.14	283.85	3,487.1	199.7	-809.6	18.2	0.00	0.00	0.00
3,700.0	16.14	283.85	3,583.2	206.3	-836.6	18.8	0.00	0.00	0.00
3,800.0	16.14	283.85	3,679.2	213.0	-863.6	19.4	0.00	0.00	0.00
3,900.0	16.14	283.85	3,775.3	219.6	-890.6	20.1	0.00	0.00	0.00
4,000.0	16.14	283.85	3,871.4	226.3	-917.6	20.7	0.00	0.00	0.00
4,100.0	16.14	283.85	3,967.4	233.0	-944.6	21.3	0.00	0.00	0.00
4,200.0	16.14	283.85	4,063.5	239.6	-971.6	21.9	0.00	0.00	0.00
4,300.0	16.14	283.85	4,159.5	246.3	-998.6	22.5	0.00	0.00	0.00
4,400.0	16.14	283.85	4,255.6	252.9	-1,025.6	23.1	0.00	0.00	0.00
4,500.0	16.14	283.85	4,351.6	259.6	-1,052.6	23.7	0.00	0.00	0.00
4,600.0	16.14	283.85	4,447.7	266.3	-1,079.5	24.3	0.00	0.00	0.00
4,700.0	16.14	283.85	4,543.8	272.9	-1,106.5	24.9	0.00	0.00	0.00
4,762.2	16.14	283.85	4,603.5	277.1	-1,123.3	25.3	0.00	0.00	0.00
4,800.0	15.39	283.85	4,639.9	279.5	-1,133.3	25.5	2.00	-2.00	0.00
4,900.0	13.39	283.85	4,736.7	285.5	-1,157.4	26.1	2.00	-2.00	0.00
5,000.0	11.39	283.85	4,834.4	290.6	-1,178.3	26.5	2.00	-2.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well State Pronghorn 31-34-16HNB
Company:	BONANZA CREEK ENERGY OPERATING	TVD Reference:	WELL @ 4644.0ft (RKB - 15')
Project:	SEC.16-T5N-R61W	MD Reference:	WELL @ 4644.0ft (RKB - 15')
Site:	State Pronghorn P-16 Pad Sec.16-T5N-R61W	North Reference:	True
Well:	State Pronghorn 31-34-16HNB	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (11-19-12)		

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)
5,100.0	9.39	283.85	4,932.8	294.9	-1,195.8	26.9	2.00	-2.00	0.00
5,200.0	7.39	283.85	5,031.7	298.4	-1,209.9	27.2	2.00	-2.00	0.00
5,300.0	5.39	283.85	5,131.1	301.1	-1,220.7	27.5	2.00	-2.00	0.00
5,400.0	3.39	283.85	5,230.8	302.9	-1,228.1	27.7	2.00	-2.00	0.00
5,500.0	1.39	283.85	5,330.7	303.9	-1,232.2	27.7	2.00	-2.00	0.00
5,569.3	0.00	0.00	5,400.0	304.1	-1,233.0	27.8	2.00	-2.00	0.00
5,600.0	0.00	0.00	5,430.7	304.1	-1,233.0	27.8	0.00	0.00	0.00
5,700.0	0.00	0.00	5,530.7	304.1	-1,233.0	27.8	0.00	0.00	0.00
5,745.5	0.00	0.00	5,576.2	304.1	-1,233.0	27.8	0.00	0.00	0.00
KOP #2									
5,800.0	6.00	180.32	5,630.6	301.2	-1,233.0	30.5	11.01	11.01	0.00
5,900.0	17.00	180.32	5,728.4	281.3	-1,233.1	49.8	11.00	11.00	0.00
6,000.0	28.00	180.32	5,820.7	243.1	-1,233.3	86.7	11.00	11.00	0.00
6,100.0	39.00	180.32	5,903.9	188.0	-1,233.7	140.0	11.00	11.00	0.00
6,200.0	50.00	180.32	5,975.1	118.0	-1,234.0	207.7	11.00	11.00	0.00
6,300.0	61.00	180.32	6,031.7	35.8	-1,234.5	287.2	11.00	11.00	0.00
6,400.0	72.00	180.32	6,071.5	-55.8	-1,235.0	375.8	11.00	11.00	0.00
6,500.0	83.00	180.32	6,093.1	-153.3	-1,235.6	470.0	11.00	11.00	0.00
6,563.6	90.00	180.32	6,097.0	-216.8	-1,235.9	531.4	11.00	11.00	0.00
End of Build - NIOBRARA B BENCH									
6,600.0	90.00	180.32	6,097.0	-253.1	-1,236.1	566.5	0.00	0.00	0.00
6,623.7	90.00	180.32	6,097.0	-276.8	-1,236.3	589.5	0.00	0.00	0.00
T1 470'FNL & 2030'FEL									
6,663.7	90.00	180.32	6,097.0	-316.8	-1,236.5	628.1	0.00	0.00	0.00
7"									
6,664.6	90.00	180.33	6,097.0	-317.8	-1,236.5	629.1	1.02	0.00	1.02
6,700.0	90.00	180.33	6,097.0	-353.1	-1,236.7	663.2	0.00	0.00	0.00
6,800.0	90.00	180.33	6,097.0	-453.1	-1,237.3	759.9	0.00	0.00	0.00
6,900.0	90.00	180.33	6,097.0	-553.1	-1,237.9	856.6	0.00	0.00	0.00
7,000.0	90.00	180.33	6,097.0	-653.1	-1,238.5	953.3	0.00	0.00	0.00
7,100.0	90.00	180.33	6,097.0	-753.1	-1,239.0	1,050.0	0.00	0.00	0.00
7,200.0	90.00	180.33	6,097.0	-853.1	-1,239.6	1,146.7	0.00	0.00	0.00
7,300.0	90.00	180.33	6,097.0	-953.1	-1,240.2	1,243.4	0.00	0.00	0.00
7,400.0	90.00	180.33	6,097.0	-1,053.1	-1,240.8	1,340.1	0.00	0.00	0.00
7,500.0	90.00	180.33	6,097.0	-1,153.1	-1,241.4	1,436.8	0.00	0.00	0.00
7,600.0	90.00	180.33	6,097.0	-1,253.1	-1,241.9	1,533.5	0.00	0.00	0.00
7,700.0	90.00	180.33	6,097.0	-1,353.1	-1,242.5	1,630.2	0.00	0.00	0.00
7,800.0	90.00	180.33	6,097.0	-1,453.1	-1,243.1	1,726.9	0.00	0.00	0.00
7,900.0	90.00	180.33	6,097.0	-1,553.1	-1,243.7	1,823.6	0.00	0.00	0.00
8,000.0	90.00	180.33	6,097.0	-1,653.1	-1,244.3	1,920.3	0.00	0.00	0.00
8,100.0	90.00	180.33	6,097.0	-1,753.1	-1,244.8	2,016.9	0.00	0.00	0.00
8,200.0	90.00	180.33	6,097.0	-1,853.1	-1,245.4	2,113.6	0.00	0.00	0.00
8,300.0	90.00	180.33	6,097.0	-1,953.1	-1,246.0	2,210.3	0.00	0.00	0.00
8,400.0	90.00	180.33	6,097.0	-2,053.1	-1,246.6	2,307.0	0.00	0.00	0.00
8,500.0	90.00	180.33	6,097.0	-2,153.1	-1,247.2	2,403.7	0.00	0.00	0.00
8,600.0	90.00	180.33	6,097.0	-2,253.1	-1,247.7	2,500.4	0.00	0.00	0.00
8,700.0	90.00	180.33	6,097.0	-2,353.1	-1,248.3	2,597.1	0.00	0.00	0.00
8,800.0	90.00	180.33	6,097.0	-2,453.1	-1,248.9	2,693.8	0.00	0.00	0.00
8,900.0	90.00	180.33	6,097.0	-2,553.1	-1,249.5	2,790.5	0.00	0.00	0.00
9,000.0	90.00	180.33	6,097.0	-2,653.1	-1,250.1	2,887.2	0.00	0.00	0.00
9,100.0	90.00	180.33	6,097.0	-2,753.1	-1,250.6	2,983.9	0.00	0.00	0.00
9,200.0	90.00	180.33	6,097.0	-2,853.1	-1,251.2	3,080.6	0.00	0.00	0.00
9,300.0	90.00	180.33	6,097.0	-2,953.1	-1,251.8	3,177.3	0.00	0.00	0.00

Formations						
	Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
	6,563.6	6,097.0	NIORARA B BENCH		0.00	

Database:	Landmark	Local Co-ordinate Reference:	Well State Pronghorn 31-34-16HNB
Company:	BONANZA CREEK ENERGY OPERATING	TVD Reference:	WELL @ 4644.0ft (RKB - 15')
Project:	SEC.16-T5N-R61W	MD Reference:	WELL @ 4644.0ft (RKB - 15')
Site:	State Pronghorn P-16 Pad Sec.16-T5N-R61W	North Reference:	True
Well:	State Pronghorn 31-34-16HNB	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (11-19-12)		

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
200.0	200.0	0.0	0.0	KOP #1
5,745.5	5,576.2	304.1	-1,233.0	KOP #2
6,563.6	6,097.0	-216.7	-1,235.9	End of Build



BONANZA CREEK ENERGY OPERATING

SEC.16-T5N-R61W

State Pronghorn P-16 Pad Sec.16-T5N-R61W

State Pronghorn 31-34-16HNB

Wellbore #1

Plan #1 (11-19-12)

Anticollision Report

19 November, 2012

Company:	BONANZA CREEK ENERGY OPERATING	Local Co-ordinate Reference:	Well State Pronghorn 31-34-16HNB
Project:	SEC.16-T5N-R61W	TVD Reference:	WELL @ 4644.0ft (RKB - 15')
Reference Site:	State Pronghorn P-16 Pad Sec.16-T5N-R61W	MD Reference:	WELL @ 4644.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	State Pronghorn 31-34-16HNB	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (11-19-12)	Offset TVD Reference:	Offset Datum

Offset Design PRONGHORN 41-16 - PRONGHORN 41-16 (EXISTING) - Wellbore #1 - Design #1 EXISTING													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
2,100.0	2,046.3	2,053.3	2,053.3	9.4	4.5	-135.01	-597.5	36.2	825.0	812.8	12.20	67.635		
2,200.0	2,142.3	2,149.3	2,149.3	10.0	4.7	-136.32	-597.5	36.2	845.2	832.5	12.78	66.115		
2,300.0	2,238.4	2,245.4	2,245.4	10.6	4.9	-137.56	-597.5	36.2	865.9	852.6	13.36	64.804		
2,400.0	2,334.4	2,341.4	2,341.4	11.2	5.2	-138.76	-597.5	36.2	887.0	873.1	13.93	63.668		
2,500.0	2,430.5	2,437.5	2,437.5	11.8	5.4	-139.89	-597.5	36.2	908.5	894.0	14.49	62.679		
2,600.0	2,526.6	2,533.6	2,533.6	12.4	5.6	-140.98	-597.5	36.2	930.2	915.2	15.05	61.815		
2,700.0	2,622.6	2,629.6	2,629.6	13.0	5.8	-142.02	-597.5	36.2	952.3	936.7	15.60	61.059		
2,800.0	2,718.7	2,725.7	2,725.7	13.5	6.0	-143.01	-597.5	36.2	974.7	958.6	16.14	60.394		
2,900.0	2,814.7	2,821.7	2,821.7	14.1	6.2	-143.96	-597.5	36.2	997.4	980.7	16.68	59.809		
3,000.0	2,910.8	2,917.8	2,917.8	14.7	6.4	-144.86	-597.5	36.2	1,020.3	1,003.1	17.21	59.292		
3,100.0	3,006.8	3,013.8	3,013.8	15.3	6.7	-145.73	-597.5	36.2	1,043.4	1,025.7	17.74	58.834		
3,200.0	3,102.9	3,109.9	3,109.9	15.9	6.9	-146.56	-597.5	36.2	1,066.8	1,048.5	18.26	58.428		
3,300.0	3,199.0	3,206.0	3,206.0	16.5	7.1	-147.36	-597.5	36.2	1,090.4	1,071.6	18.78	58.067		
3,400.0	3,295.0	3,302.0	3,302.0	17.1	7.3	-148.12	-597.5	36.2	1,114.2	1,094.9	19.29	57.745		
3,500.0	3,391.1	3,398.1	3,398.1	17.7	7.5	-148.85	-597.5	36.2	1,138.1	1,118.3	19.81	57.459		
3,600.0	3,487.1	3,494.1	3,494.1	18.3	7.7	-149.55	-597.5	36.2	1,162.2	1,141.9	20.32	57.202		
3,700.0	3,583.2	3,590.2	3,590.2	18.9	8.0	-150.23	-597.5	36.2	1,186.5	1,165.7	20.83	56.973		
3,800.0	3,679.2	3,686.2	3,686.2	19.5	8.2	-150.88	-597.5	36.2	1,211.0	1,189.6	21.33	56.767		
3,900.0	3,775.3	3,782.3	3,782.3	20.1	8.4	-151.50	-597.5	36.2	1,235.6	1,213.7	21.84	56.583		
4,000.0	3,871.4	3,878.4	3,878.4	20.7	8.6	-152.10	-597.5	36.2	1,260.3	1,237.9	22.34	56.417		
4,100.0	3,967.4	3,974.4	3,974.4	21.3	8.8	-152.67	-597.5	36.2	1,285.1	1,262.3	22.84	56.268		
4,200.0	4,063.5	4,070.5	4,070.5	21.9	9.0	-153.22	-597.5	36.2	1,310.1	1,286.7	23.34	56.134		
4,300.0	4,159.5	4,166.5	4,166.5	22.5	9.3	-153.76	-597.5	36.2	1,335.2	1,311.3	23.84	56.013		
4,400.0	4,255.6	4,262.6	4,262.6	23.1	9.5	-154.27	-597.5	36.2	1,360.3	1,336.0	24.33	55.903		
4,500.0	4,351.6	4,358.6	4,358.6	23.7	9.7	-154.77	-597.5	36.2	1,385.6	1,360.8	24.83	55.804		
4,600.0	4,447.7	4,454.7	4,454.7	24.3	9.9	-155.25	-597.5	36.2	1,411.0	1,385.7	25.33	55.715		
4,700.0	4,543.8	4,550.8	4,550.8	24.9	10.1	-155.71	-597.5	36.2	1,436.5	1,410.6	25.82	55.634		
4,762.2	4,603.5	4,610.5	4,610.5	25.2	10.3	-155.99	-597.5	36.2	1,452.3	1,426.2	26.13	55.588		
4,800.0	4,639.9	4,646.9	4,646.9	25.4	10.3	-156.23	-597.5	36.2	1,461.8	1,435.5	26.31	55.561		
4,900.0	4,736.7	4,743.7	4,743.7	25.8	10.5	-156.80	-597.5	36.2	1,484.7	1,458.0	26.74	55.523		
5,000.0	4,834.4	4,841.4	4,841.4	26.2	10.8	-157.28	-597.5	36.2	1,504.5	1,477.4	27.15	55.411		
5,100.0	4,932.8	4,939.8	4,939.8	26.5	11.0	-157.67	-597.5	36.2	1,521.2	1,493.7	27.54	55.232		
5,200.0	5,031.7	5,038.7	5,038.7	26.8	11.2	-157.98	-597.5	36.2	1,534.7	1,506.8	27.91	54.990		
5,300.0	5,131.1	5,138.1	5,138.1	27.0	11.4	-158.21	-597.5	36.2	1,545.1	1,516.8	28.25	54.690		
5,400.0	5,230.8	5,237.8	5,237.8	27.2	11.7	-158.36	-597.5	36.2	1,552.2	1,523.6	28.57	54.334		
5,500.0	5,330.7	5,337.7	5,337.7	27.3	11.9	-158.45	-597.5	36.2	1,556.0	1,527.2	28.86	53.924		
5,569.3	5,400.0	5,407.0	5,407.0	27.4	12.0	125.39	-597.5	36.2	1,556.8	1,527.8	28.98	53.718		
5,600.0	5,430.7	5,437.7	5,437.7	27.4	12.1	125.39	-597.5	36.2	1,556.8	1,527.7	29.09	53.514		
5,700.0	5,530.7	5,537.7	5,537.7	27.5	12.3	125.39	-597.5	36.2	1,556.8	1,527.4	29.46	52.848		
5,745.5	5,576.1	5,583.1	5,583.1	27.5	12.4	125.39	-597.5	36.2	1,556.8	1,527.2	29.63	52.549		
5,750.0	5,580.7	5,587.7	5,587.7	27.6	12.4	-54.94	-597.5	36.2	1,556.8	1,527.1	29.69	52.435		
5,800.0	5,630.6	5,637.6	5,637.6	27.6	12.6	-55.17	-597.5	36.2	1,555.2	1,525.6	29.62	52.509		
5,850.0	5,680.0	5,687.0	5,687.0	27.6	12.7	-55.79	-597.5	36.2	1,550.8	1,521.5	29.38	52.788		
5,900.0	5,728.4	5,735.4	5,735.4	27.6	12.8	-56.81	-597.5	36.2	1,543.9	1,514.9	29.00	53.229		
5,950.0	5,775.5	5,782.5	5,782.5	27.6	12.9	-58.21	-597.5	36.2	1,534.4	1,505.8	28.54	53.759		
6,000.0	5,820.7	5,827.7	5,827.7	27.6	13.0	-59.99	-597.5	36.2	1,522.6	1,494.6	28.06	54.270		
6,050.0	5,863.6	5,870.6	5,870.6	27.6	13.1	-62.14	-597.5	36.2	1,508.8	1,481.2	27.62	54.626		
6,100.0	5,903.9	5,910.9	5,910.9	27.5	13.2	-64.61	-597.5	36.2	1,493.2	1,465.9	27.31	54.683		
6,150.0	5,941.2	5,948.2	5,948.2	27.5	13.3	-67.36	-597.5	36.2	1,476.1	1,448.9	27.17	54.331		
6,200.0	5,975.1	5,982.1	5,982.1	27.5	13.3	-70.34	-597.5	36.2	1,457.9	1,430.7	27.23	53.538		
6,250.0	6,005.4	6,012.4	6,012.4	27.4	13.4	-73.45	-597.5	36.2	1,439.0	1,411.5	27.48	52.370		
6,300.0	6,031.7	6,038.7	6,038.7	27.4	13.5	-76.60	-597.5	36.2	1,419.8	1,391.9	27.86	50.959		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	BONANZA CREEK ENERGY OPERATING	Local Co-ordinate Reference:	Well State Pronghorn 31-34-16HNB
Project:	SEC.16-T5N-R61W	TVD Reference:	WELL @ 4644.0ft (RKB - 15')
Reference Site:	State Pronghorn P-16 Pad Sec.16-T5N-R61W	MD Reference:	WELL @ 4644.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	State Pronghorn 31-34-16HNB	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (11-19-12)	Offset TVD Reference:	Offset Datum

Offset Design PRONGHORN 41-16 - PRONGHORN 41-16 (EXISTING) - Wellbore #1 - Design #1 EXISTING													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
6,350.0	6,053.8	6,060.8	6,060.8	27.4	13.5	-79.69	-597.5	36.2	1,400.6	1,372.2	28.32	49.454		
6,400.0	6,071.5	6,078.5	6,078.5	27.4	13.6	-82.61	-597.5	36.2	1,381.8	1,353.0	28.80	47.975		
6,450.0	6,084.7	6,091.7	6,091.7	27.4	13.6	-85.28	-597.5	36.2	1,363.9	1,334.6	29.28	46.587		
6,500.0	6,093.1	6,100.1	6,100.1	27.5	13.6	-87.61	-597.5	36.2	1,347.1	1,317.4	29.73	45.312		
6,550.0	6,096.8	6,103.8	6,103.8	27.5	13.6	-89.54	-597.5	36.2	1,331.8	1,301.6	30.17	44.143		
6,563.6	6,097.0	6,104.0	6,104.0	27.5	13.6	-90.00	-597.5	36.2	1,327.9	1,297.6	30.29	43.841		
6,600.0	6,097.0	6,104.0	6,104.0	27.6	13.6	-90.00	-597.5	36.2	1,318.1	1,287.6	30.53	43.179		
6,663.7	6,097.0	6,104.0	6,104.0	27.8	13.6	-90.00	-597.5	36.2	1,303.3	1,272.3	31.00	42.035		
6,664.6	6,097.0	6,104.0	6,104.0	27.8	13.6	-90.00	-597.5	36.2	1,303.1	1,272.1	31.01	42.018		
6,700.0	6,097.0	6,104.0	6,104.0	27.9	13.6	-90.00	-597.5	36.2	1,296.2	1,264.9	31.27	41.452		
6,800.0	6,097.0	6,104.0	6,104.0	28.2	13.6	-90.00	-597.5	36.2	1,281.7	1,249.4	32.21	39.786		
6,900.0	6,097.0	6,104.0	6,104.0	28.7	13.6	-90.00	-597.5	36.2	1,274.8	1,241.5	33.30	38.282		
6,937.0	6,097.0	6,104.0	6,104.0	28.9	13.6	-90.00	-597.5	36.2	1,274.3	1,240.6	33.75	37.760		
7,000.0	6,097.0	6,104.0	6,104.0	29.3	13.6	-90.00	-597.5	36.2	1,275.9	1,241.4	34.51	36.972		
7,100.0	6,097.0	6,104.0	6,104.0	30.1	13.6	-90.00	-597.5	36.2	1,284.7	1,248.9	35.82	35.869		
7,200.0	6,097.0	6,104.0	6,104.0	30.9	13.6	-90.00	-597.5	36.2	1,301.2	1,264.0	37.21	34.970		
7,300.0	6,097.0	6,104.0	6,104.0	31.9	13.6	-90.00	-597.5	36.2	1,325.0	1,286.3	38.67	34.264		
7,400.0	6,097.0	6,104.0	6,104.0	33.0	13.6	-90.00	-597.5	36.2	1,355.8	1,315.6	40.19	33.735		
7,500.0	6,097.0	6,104.0	6,104.0	34.2	13.6	-90.00	-597.5	36.2	1,393.2	1,351.4	41.76	33.362		
7,600.0	6,097.0	6,104.0	6,104.0	35.4	13.6	-90.00	-597.5	36.2	1,436.5	1,393.1	43.37	33.122		
7,700.0	6,097.0	6,104.0	6,104.0	36.8	13.6	-90.00	-597.5	36.2	1,485.3	1,440.3	45.01	32.996		
7,800.0	6,097.0	6,104.0	6,104.0	38.2	13.6	-90.00	-597.5	36.2	1,539.1	1,492.4	46.69	32.964 SF		
7,900.0	6,097.0	6,104.0	6,104.0	39.6	13.6	-90.00	-597.5	36.2	1,597.3	1,548.9	48.39	33.009		
8,000.0	6,097.0	6,104.0	6,104.0	41.1	13.6	-90.00	-597.5	36.2	1,659.5	1,609.4	50.11	33.116		
8,100.0	6,097.0	6,104.0	6,104.0	42.6	13.6	-90.00	-597.5	36.2	1,725.3	1,673.4	51.85	33.273		
8,200.0	6,097.0	6,104.0	6,104.0	44.2	13.6	-90.00	-597.5	36.2	1,794.2	1,740.6	53.61	33.468		
8,300.0	6,097.0	6,104.0	6,104.0	45.8	13.6	-90.00	-597.5	36.2	1,866.0	1,810.6	55.38	33.693		
8,400.0	6,097.0	6,104.0	6,104.0	47.4	13.6	-90.00	-597.5	36.2	1,940.2	1,883.0	57.16	33.941		
8,500.0	6,097.0	6,104.0	6,104.0	49.0	13.6	-90.00	-597.5	36.2	2,016.7	1,957.7	58.96	34.204		
8,600.0	6,097.0	6,104.0	6,104.0	50.7	13.6	-90.00	-597.5	36.2	2,095.1	2,034.4	60.76	34.479		
8,700.0	6,097.0	6,104.0	6,104.0	52.4	13.6	-90.00	-597.5	36.2	2,175.4	2,112.8	62.58	34.762		
8,800.0	6,097.0	6,104.0	6,104.0	54.1	13.6	-90.00	-597.5	36.2	2,257.2	2,192.8	64.40	35.049		
8,900.0	6,097.0	6,104.0	6,104.0	55.8	13.6	-90.00	-597.5	36.2	2,340.4	2,274.2	66.23	35.338		
9,000.0	6,097.0	6,104.0	6,104.0	57.5	13.6	-90.00	-597.5	36.2	2,424.9	2,356.8	68.06	35.627		
9,100.0	6,097.0	6,104.0	6,104.0	59.3	13.6	-90.00	-597.5	36.2	2,510.5	2,440.6	69.90	35.914		
9,200.0	6,097.0	6,104.0	6,104.0	61.0	13.6	-90.00	-597.5	36.2	2,597.2	2,525.4	71.75	36.198		
9,300.0	6,097.0	6,104.0	6,104.0	62.8	13.6	-90.00	-597.5	36.2	2,684.7	2,611.1	73.60	36.478		
9,400.0	6,097.0	6,104.0	6,104.0	64.6	13.6	-90.00	-597.5	36.2	2,773.2	2,697.7	75.45	36.753		
9,500.0	6,097.0	6,104.0	6,104.0	66.3	13.6	-90.00	-597.5	36.2	2,862.4	2,785.0	77.31	37.023		
9,600.0	6,097.0	6,104.0	6,104.0	68.1	13.6	-90.00	-597.5	36.2	2,952.2	2,873.1	79.17	37.287		
9,700.0	6,097.0	6,104.0	6,104.0	69.9	13.6	-90.00	-597.5	36.2	3,042.7	2,961.7	81.04	37.546		
9,800.0	6,097.0	6,104.0	6,104.0	71.7	13.6	-90.00	-597.5	36.2	3,133.8	3,050.9	82.91	37.799		
9,900.0	6,097.0	6,104.0	6,104.0	73.5	13.6	-90.00	-597.5	36.2	3,225.4	3,140.7	84.78	38.045		
10,000.0	6,097.0	6,104.0	6,104.0	75.4	13.6	-90.00	-597.5	36.2	3,317.5	3,230.9	86.65	38.285		
10,100.0	6,097.0	6,104.0	6,104.0	77.2	13.6	-90.00	-597.5	36.2	3,410.1	3,321.6	88.53	38.520		
10,200.0	6,097.0	6,104.0	6,104.0	79.0	13.6	-90.00	-597.5	36.2	3,503.0	3,412.6	90.41	38.748		
10,300.0	6,097.0	6,104.0	6,104.0	80.8	13.6	-90.00	-597.5	36.2	3,596.4	3,504.1	92.29	38.970		
10,400.0	6,097.0	6,104.0	6,104.0	82.7	13.6	-90.00	-597.5	36.2	3,690.1	3,595.9	94.17	39.186		
10,500.0	6,097.0	6,104.0	6,104.0	84.5	13.6	-90.00	-597.5	36.2	3,784.1	3,688.0	96.05	39.396		
10,600.0	6,097.0	6,104.0	6,104.0	86.3	13.6	-90.00	-597.5	36.2	3,878.4	3,780.4	97.94	39.600		
10,700.0	6,097.0	6,104.0	6,104.0	88.2	13.6	-90.00	-597.5	36.2	3,973.0	3,873.1	99.82	39.799		
10,800.0	6,097.0	6,104.0	6,104.0	90.0	13.6	-90.00	-597.5	36.2	4,067.8	3,966.1	101.71	39.993		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	BONANZA CREEK ENERGY OPERATING	Local Co-ordinate Reference:	Well State Pronghorn 31-34-16HNB
Project:	SEC.16-T5N-R61W	TVD Reference:	WELL @ 4644.0ft (RKB - 15')
Reference Site:	State Pronghorn P-16 Pad Sec.16-T5N-R61W	MD Reference:	WELL @ 4644.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	State Pronghorn 31-34-16HNB	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (11-19-12)	Offset TVD Reference:	Offset Datum

Offset Design PRONGHORN 41-16 - PRONGHORN 41-16 (EXISTING) - Wellbore #1 - Design #1 EXISTING													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference	Offset	Semi Major Axis			Distance								Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
10,900.0	6,097.0	6,104.0	6,104.0	91.9	13.6	-90.00	-597.5	36.2	4,162.9	4,059.3	103.60	40.181		
11,000.0	6,097.0	6,104.0	6,104.0	93.7	13.6	-90.00	-597.5	36.2	4,258.2	4,152.7	105.49	40.364		
11,021.0	6,097.0	6,104.0	6,104.0	94.1	13.6	-90.00	-597.5	36.2	4,278.3	4,172.4	105.89	40.402		

Company:	BONANZA CREEK ENERGY OPERATING	Local Co-ordinate Reference:	Well State Pronghorn 31-34-16HNB
Project:	SEC.16-T5N-R61W	TVD Reference:	WELL @ 4644.0ft (RKB - 15')
Reference Site:	State Pronghorn P-16 Pad Sec.16-T5N-R61W	MD Reference:	WELL @ 4644.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	State Pronghorn 31-34-16HNB	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (11-19-12)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 483-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	102.30	-21.9	100.3	102.6					
100.0	100.0	100.1	100.1	0.1	0.1	102.31	-21.9	100.2	102.6	102.3	0.23	455.501		
200.0	200.0	200.2	200.2	0.3	0.2	102.36	-21.9	100.0	102.4	101.9	0.56	182.077		
205.6	205.6	205.8	205.8	0.3	0.2	178.51	-21.9	100.0	102.4	101.8	0.58	176.267 CC, ES		
300.0	300.0	300.3	300.3	0.6	0.3	178.60	-22.0	99.8	103.9	103.0	0.90	115.923		
400.0	399.8	400.3	400.2	0.8	0.5	178.76	-22.1	99.4	108.8	107.6	1.24	87.688		
500.0	499.5	500.0	500.0	1.0	0.6	178.97	-22.3	99.0	117.1	115.5	1.62	72.273		
600.0	598.7	599.2	599.2	1.3	0.8	179.40	-22.9	98.4	128.9	126.8	2.07	62.127		
700.0	697.5	698.4	698.4	1.7	1.0	179.98	-24.0	97.6	144.0	141.5	2.54	56.810		
800.0	795.6	797.1	797.1	2.0	1.2	-179.48	-25.3	96.5	162.3	159.3	3.00	54.184		
900.0	893.1	894.9	894.8	2.5	1.4	-179.07	-26.5	95.2	183.9	180.4	3.46	53.198		
1,007.2	996.5	997.5	997.4	3.0	1.7	-178.69	-27.9	93.9	210.9	206.9	3.95	53.357		
1,100.0	1,085.7	1,082.1	1,082.0	3.6	1.8	-178.77	-28.3	94.3	237.2	232.8	4.37	54.318		
1,200.0	1,181.8	1,176.1	1,176.0	4.1	2.0	-179.17	-27.6	96.4	266.9	262.1	4.82	55.361		
1,300.0	1,277.8	1,270.6	1,270.4	4.7	2.2	-179.51	-26.9	98.9	296.9	291.6	5.28	56.247		
1,400.0	1,373.9	1,364.7	1,364.5	5.3	2.4	-179.82	-26.1	101.7	327.3	321.5	5.74	57.029		
1,500.0	1,469.9	1,460.2	1,459.9	5.9	2.6	179.91	-25.3	104.7	357.8	351.6	6.21	57.601		
1,600.0	1,566.0	1,552.4	1,552.1	6.4	2.8	179.65	-24.3	107.9	388.6	381.9	6.68	58.158		
1,700.0	1,662.0	1,641.7	1,641.3	7.0	3.0	179.29	-22.6	112.1	420.3	413.2	7.15	58.808		
1,800.0	1,758.1	1,729.1	1,728.4	7.6	3.1	178.81	-20.0	117.9	453.7	446.1	7.61	59.599		
1,900.0	1,854.2	1,822.7	1,821.7	8.2	3.3	178.23	-16.3	125.0	487.8	479.7	8.09	60.267		
2,000.0	1,950.2	1,914.5	1,913.0	8.8	3.6	177.54	-11.0	132.5	522.1	513.5	8.58	60.870		
2,100.0	2,046.3	2,010.3	2,008.1	9.4	3.8	176.57	-2.6	141.2	556.7	547.6	9.08	61.325		
2,200.0	2,142.3	2,109.8	2,106.8	10.0	4.1	175.61	7.0	149.3	590.5	580.9	9.60	61.528		
2,300.0	2,238.4	2,203.3	2,199.6	10.6	4.3	174.80	16.2	156.5	624.0	613.9	10.11	61.710		
2,400.0	2,334.4	2,306.7	2,302.2	11.2	4.6	174.00	26.5	163.9	657.0	646.3	10.66	61.647		
2,500.0	2,430.5	2,397.6	2,392.4	11.8	4.8	173.34	35.9	169.7	689.4	678.2	11.18	61.646		
2,600.0	2,526.6	2,487.4	2,481.4	12.4	5.0	172.68	45.9	176.4	722.8	711.1	11.72	61.692		
2,700.0	2,622.6	2,581.6	2,574.8	13.0	5.3	172.05	56.2	183.5	756.3	744.0	12.27	61.655		
2,800.0	2,718.7	2,666.5	2,658.9	13.5	5.5	171.53	65.5	190.4	790.4	777.7	12.80	61.769		
2,900.0	2,814.7	2,758.5	2,750.0	14.1	5.8	171.03	75.2	198.6	825.4	812.1	13.35	61.846		
3,000.0	2,910.8	2,858.2	2,848.9	14.7	6.1	170.60	84.9	207.1	860.2	846.3	13.91	61.818		
3,100.0	3,006.8	2,963.6	2,953.4	15.3	6.4	170.16	95.4	214.8	893.9	879.4	14.50	61.659		
3,200.0	3,102.9	3,064.4	3,053.5	15.9	6.7	169.81	105.1	221.2	926.7	911.6	15.07	61.504		
3,300.0	3,199.0	3,154.0	3,142.5	16.5	6.9	169.50	114.0	226.8	959.4	943.8	15.62	61.427		
3,400.0	3,295.0	3,249.0	3,236.6	17.1	7.2	169.08	125.3	233.3	992.5	976.3	16.20	61.280		
3,500.0	3,391.1	3,342.9	3,329.7	17.7	7.5	168.70	136.3	239.2	1,025.2	1,008.5	16.78	61.117		
3,600.0	3,487.1	3,417.4	3,403.6	18.3	7.7	168.46	144.2	244.8	1,059.2	1,041.9	17.29	61.245		
3,700.0	3,583.2	3,515.0	3,500.4	18.9	8.0	168.24	153.1	253.2	1,094.2	1,076.3	17.86	61.249		
3,800.0	3,679.2	3,618.9	3,603.7	19.5	8.3	168.09	161.4	260.8	1,128.1	1,109.6	18.44	61.175		
3,900.0	3,775.3	3,717.0	3,701.4	20.1	8.5	168.02	168.2	267.6	1,161.7	1,142.7	18.99	61.179		
4,000.0	3,871.4	3,832.5	3,816.5	20.7	8.8	168.05	173.9	274.1	1,194.1	1,174.5	19.56	61.061		
4,100.0	3,967.4	3,935.9	3,919.7	21.3	9.0	168.19	177.0	278.6	1,225.4	1,205.3	20.07	61.044		
4,200.0	4,063.5	4,063.6	4,047.4	21.9	9.3	168.51	177.4	282.0	1,255.3	1,234.7	20.61	60.918		
4,300.0	4,159.5	4,159.4	4,143.1	22.5	9.5	168.78	176.7	283.2	1,283.7	1,262.6	21.07	60.917		
4,400.0	4,255.6	4,258.4	4,242.2	23.1	9.7	168.97	177.8	284.4	1,312.2	1,290.7	21.56	60.874		
4,500.0	4,351.6	4,351.1	4,334.9	23.7	9.9	169.18	177.9	285.3	1,340.4	1,318.4	22.03	60.855		
4,600.0	4,447.7	4,426.4	4,410.1	24.3	10.0	169.40	176.8	286.7	1,369.7	1,347.2	22.46	60.990		
4,700.0	4,543.8	4,535.5	4,519.2	24.9	10.2	169.76	173.9	289.3	1,399.6	1,376.6	22.93	61.026		
4,762.2	4,603.5	4,610.9	4,594.5	25.2	10.3	169.97	172.6	290.1	1,417.3	1,394.1	23.24	60.976		
4,800.0	4,639.9	4,656.0	4,639.6	25.4	10.4	170.12	172.0	290.2	1,427.6	1,404.1	23.46	60.859		
4,900.0	4,736.7	4,763.2	4,746.8	25.8	10.6	170.42	171.2	289.6	1,451.6	1,427.6	23.97	60.570		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	BONANZA CREEK ENERGY OPERATING	Local Co-ordinate Reference:	Well State Pronghorn 31-34-16HNB
Project:	SEC.16-T5N-R61W	TVD Reference:	WELL @ 4644.0ft (RKB - 15')
Reference Site:	State Pronghorn P-16 Pad Sec.16-T5N-R61W	MD Reference:	WELL @ 4644.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	State Pronghorn 31-34-16HNB	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (11-19-12)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Survey Program: 483-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
5,000.0	4,834.4	4,861.8	4,845.4	26.2	10.8	170.66	170.4	288.8	1,472.0	1,447.6	24.43	60.261	
5,100.0	4,932.8	4,958.3	4,941.9	26.5	11.0	170.86	169.6	288.1	1,489.2	1,464.3	24.85	59.931	
5,200.0	5,031.7	5,060.7	5,044.3	26.8	11.1	171.02	168.9	287.3	1,502.9	1,477.6	25.24	59.540	
5,300.0	5,131.1	5,164.0	5,147.6	27.0	11.3	171.14	168.5	286.3	1,512.9	1,487.3	25.60	59.090	
5,400.0	5,230.8	5,261.1	5,244.7	27.2	11.5	171.22	168.3	285.2	1,519.4	1,493.5	25.92	58.627	
5,500.0	5,330.7	5,357.3	5,340.9	27.3	11.7	171.25	168.3	284.5	1,522.7	1,496.5	26.19	58.144	
5,569.3	5,400.0	5,425.9	5,409.5	27.4	11.8	95.12	168.1	284.0	1,523.1	1,496.7	26.39	57.724	
5,600.0	5,430.7	5,454.2	5,437.8	27.4	11.9	95.13	167.9	283.8	1,522.9	1,496.4	26.49	57.496	
5,662.3	5,493.0	5,511.0	5,494.6	27.5	12.0	95.14	167.6	283.7	1,522.8	1,496.1	26.69	57.046	
5,700.0	5,530.7	5,537.5	5,521.1	27.5	12.0	95.16	167.2	283.7	1,522.9	1,496.1	26.80	56.818	
5,745.5	5,576.1	5,593.4	5,576.9	27.5	12.1	95.28	163.8	283.7	1,523.2	1,496.2	26.96	56.498	
5,750.0	5,580.7	5,601.8	5,585.2	27.6	12.1	-85.01	162.9	283.6	1,523.2	1,496.2	26.95	56.514	
5,800.0	5,630.6	5,673.1	5,655.3	27.6	12.2	-84.77	150.5	281.6	1,522.3	1,495.3	27.05	56.269	
5,850.0	5,680.0	5,757.6	5,736.2	27.6	12.2	-84.55	126.4	277.1	1,520.4	1,493.3	27.12	56.067	
5,900.0	5,728.4	5,821.4	5,794.5	27.6	12.3	-84.51	101.3	271.7	1,517.0	1,489.9	27.15	55.877	
5,950.0	5,775.5	5,869.9	5,836.5	27.6	12.3	-84.61	77.5	266.9	1,513.0	1,485.8	27.17	55.685	
6,000.0	5,820.7	5,907.3	5,867.2	27.6	12.3	-84.83	56.5	263.2	1,508.9	1,481.7	27.20	55.482	
6,050.0	5,863.6	5,937.7	5,891.0	27.6	12.3	-85.12	37.9	260.3	1,504.8	1,477.6	27.23	55.269	
6,100.0	5,903.9	5,970.8	5,915.8	27.5	12.3	-85.42	16.1	257.5	1,501.0	1,473.8	27.27	55.034	
6,150.0	5,941.2	6,009.0	5,942.6	27.5	12.3	-85.73	-11.0	254.3	1,497.3	1,470.0	27.35	54.741	
6,200.0	5,975.1	6,028.4	5,955.5	27.5	12.3	-86.08	-25.4	252.9	1,493.9	1,466.5	27.43	54.458	
6,250.0	6,005.4	6,041.0	5,963.6	27.4	12.3	-86.39	-35.0	252.1	1,491.3	1,463.8	27.52	54.191	
6,300.0	6,031.7	6,072.0	5,982.9	27.4	12.4	-86.74	-59.2	251.0	1,489.3	1,461.6	27.69	53.792	
6,350.0	6,053.8	6,091.8	5,994.4	27.4	12.4	-87.01	-75.3	250.6	1,488.0	1,460.2	27.87	53.395	
6,400.0	6,071.5	6,139.7	6,020.4	27.4	12.6	-87.51	-115.5	250.0	1,487.1	1,458.9	28.22	52.706	
6,450.0	6,084.7	6,187.3	6,042.7	27.4	12.8	-88.04	-157.6	249.1	1,485.9	1,457.3	28.65	51.862	
6,500.0	6,093.1	6,227.0	6,058.2	27.5	13.0	-88.51	-194.1	248.4	1,484.9	1,455.8	29.13	50.977	
6,550.0	6,096.8	6,265.8	6,070.3	27.5	13.3	-88.96	-231.0	247.8	1,484.2	1,454.5	29.68	50.001	
6,563.6	6,097.0	6,283.9	6,074.8	27.5	13.4	-89.14	-248.5	247.6	1,484.0	1,454.1	29.90	49.624	
6,600.0	6,097.0	6,363.3	6,085.9	27.6	14.0	-89.57	-327.0	244.7	1,482.7	1,451.9	30.81	48.126	
6,663.7	6,097.0	6,423.3	6,087.9	27.8	14.6	-89.65	-386.9	241.7	1,479.8	1,448.0	31.83	46.492	
6,664.6	6,097.0	6,424.0	6,087.9	27.8	14.6	-89.65	-387.5	241.6	1,479.8	1,448.0	31.84	46.470	
6,700.0	6,097.0	6,451.5	6,087.9	27.9	14.9	-89.65	-415.0	240.4	1,478.5	1,446.1	32.38	45.665	
6,800.0	6,097.0	6,519.6	6,085.9	28.2	15.6	-89.57	-483.0	238.3	1,475.9	1,441.9	34.06	43.337	
6,900.0	6,097.0	6,603.4	6,081.2	28.7	16.6	-89.38	-566.7	237.0	1,475.0	1,438.9	36.13	40.831	
6,925.9	6,097.0	6,623.8	6,079.9	28.9	16.8	-89.34	-587.0	236.9	1,475.0	1,438.4	36.64	40.251	
7,000.0	6,097.0	6,674.2	6,078.0	29.3	17.3	-89.26	-637.4	236.9	1,475.6	1,437.6	38.00	38.832	
7,100.0	6,097.0	6,790.2	6,079.2	30.1	18.6	-89.31	-753.4	237.5	1,476.7	1,436.0	40.65	36.324	
7,200.0	6,097.0	6,882.6	6,078.8	30.9	19.9	-89.29	-845.8	237.3	1,477.0	1,433.7	43.32	34.098	
7,300.0	6,097.0	6,984.3	6,078.4	31.9	21.3	-89.28	-947.5	237.6	1,477.9	1,431.8	46.16	32.020	
7,400.0	6,097.0	7,057.0	6,076.7	33.0	22.4	-89.21	-1,020.1	238.3	1,479.6	1,430.8	48.80	30.321	
7,500.0	6,097.0	7,125.2	6,075.5	34.2	23.4	-89.17	-1,088.3	240.7	1,483.7	1,432.3	51.33	28.906	
7,600.0	6,097.0	7,260.0	6,080.5	35.4	25.3	-89.36	-1,223.0	244.8	1,487.1	1,432.2	54.89	27.094	
7,700.0	6,097.0	7,496.9	6,079.8	36.8	29.0	-89.33	-1,459.4	235.4	1,481.8	1,421.6	60.24	24.598	
7,800.0	6,097.0	7,555.0	6,078.9	38.2	29.9	-89.30	-1,517.4	231.5	1,476.1	1,413.3	62.81	23.501	
7,900.0	6,097.0	7,624.2	6,078.5	39.6	30.9	-89.28	-1,586.6	229.1	1,473.3	1,407.7	65.59	22.463	
8,000.0	6,097.0	7,707.1	6,079.2	41.1	32.3	-89.31	-1,669.4	227.8	1,472.2	1,403.6	68.67	21.440	
8,100.0	6,097.0	7,851.2	6,079.6	42.6	34.6	-89.32	-1,813.4	223.1	1,469.2	1,396.5	72.73	20.201	
8,200.0	6,097.0	7,942.1	6,081.0	44.2	36.2	-89.37	-1,904.3	219.5	1,465.9	1,389.8	76.05	19.276	
8,300.0	6,097.0	8,102.0	6,081.6	45.8	38.8	-89.39	-2,063.9	210.6	1,460.9	1,380.4	80.47	18.155	
8,400.0	6,097.0	8,203.1	6,080.9	47.4	40.5	-89.36	-2,164.7	202.8	1,453.8	1,369.9	83.94	17.320	
8,500.0	6,097.0	8,283.3	6,081.3	49.0	41.8	-89.38	-2,244.7	197.3	1,447.4	1,360.4	87.08	16.623	

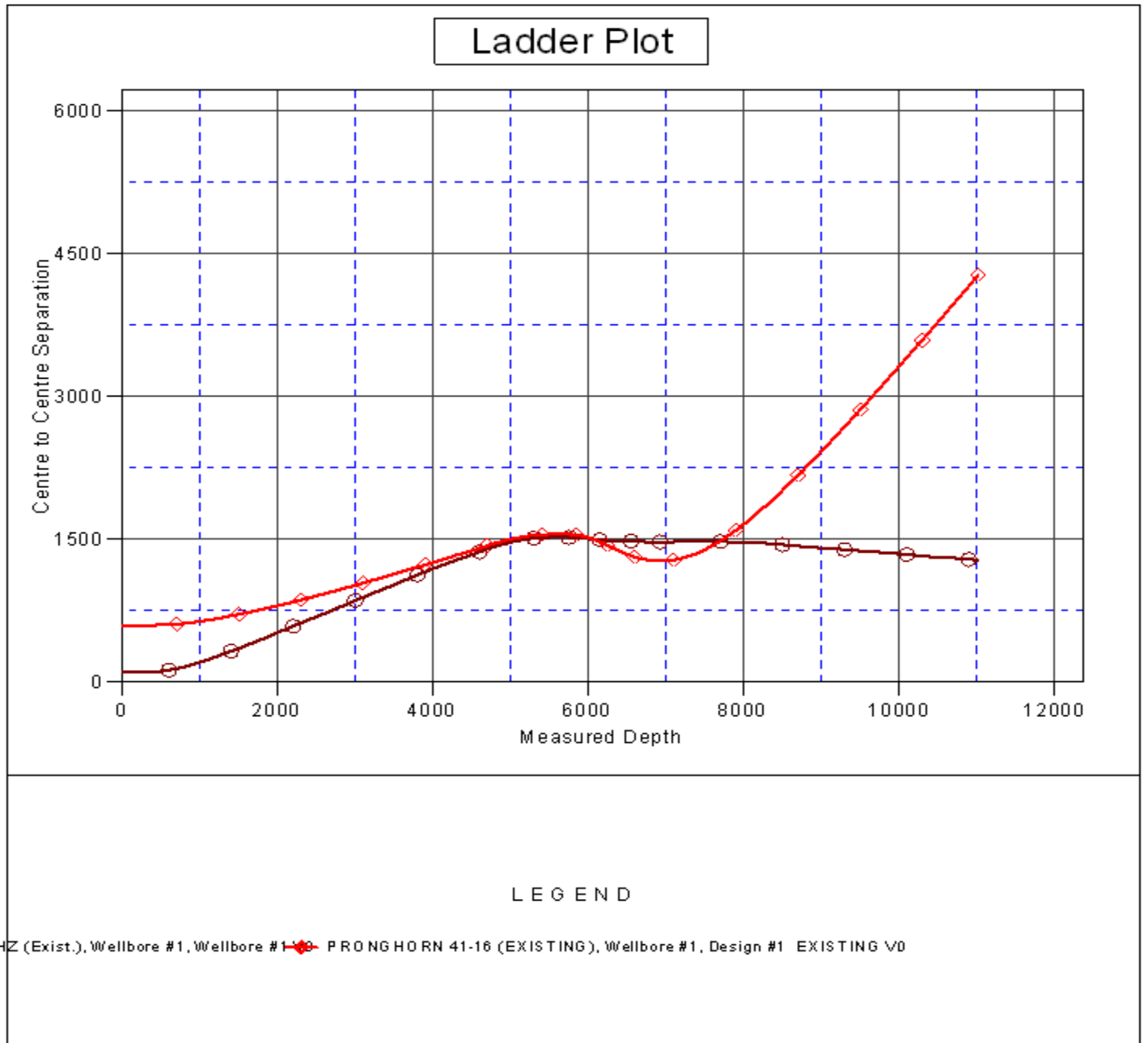
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 483-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
8,600.0	6,097.0	8,419.5	6,081.3	50.7	44.1	-89.38	-2,380.5	187.2	1,440.7	1,349.6	91.14	15.807		
8,700.0	6,097.0	8,528.0	6,080.1	52.4	45.9	-89.33	-2,488.5	177.1	1,432.0	1,337.2	94.81	15.104		
8,800.0	6,097.0	8,612.9	6,080.0	54.1	47.3	-89.32	-2,573.1	169.6	1,423.6	1,325.6	98.01	14.525		
8,900.0	6,097.0	8,684.4	6,079.9	55.8	48.5	-89.31	-2,644.4	164.5	1,417.0	1,315.9	101.06	14.022		
9,000.0	6,097.0	8,776.3	6,079.9	57.5	50.1	-89.30	-2,736.1	159.1	1,411.7	1,307.2	104.45	13.515		
9,100.0	6,097.0	8,877.1	6,080.2	59.3	51.8	-89.32	-2,836.8	153.0	1,406.2	1,298.2	108.01	13.019		
9,200.0	6,097.0	8,972.7	6,079.8	61.0	53.4	-89.30	-2,932.2	148.0	1,401.5	1,290.0	111.50	12.570		
9,300.0	6,097.0	9,090.6	6,078.2	62.8	55.4	-89.23	-3,049.9	140.6	1,395.9	1,280.6	115.37	12.100		
9,400.0	6,097.0	9,210.0	6,078.7	64.6	57.4	-89.24	-3,168.9	130.9	1,388.2	1,269.0	119.22	11.644		
9,500.0	6,097.0	9,284.2	6,079.1	66.3	58.7	-89.26	-3,242.9	125.6	1,381.6	1,259.3	122.36	11.291		
9,600.0	6,097.0	9,366.9	6,080.3	68.1	60.1	-89.30	-3,325.4	121.2	1,376.7	1,251.1	125.63	10.958		
9,700.0	6,097.0	9,488.2	6,083.0	69.9	62.2	-89.41	-3,446.5	113.8	1,371.2	1,241.6	129.60	10.581		
9,800.0	6,097.0	9,585.0	6,082.9	71.7	63.9	-89.41	-3,543.0	106.8	1,364.6	1,231.4	133.18	10.246		
9,900.0	6,097.0	9,715.7	6,079.6	73.5	66.2	-89.26	-3,673.4	97.3	1,358.0	1,220.7	137.32	9.889		
10,000.0	6,097.0	9,804.2	6,079.2	75.4	67.7	-89.24	-3,761.6	89.8	1,350.2	1,209.5	140.68	9.598		
10,100.0	6,097.0	9,895.0	6,079.6	77.2	69.3	-89.26	-3,852.1	82.8	1,343.0	1,198.9	144.16	9.316		
10,200.0	6,097.0	10,003.4	6,079.2	79.0	71.2	-89.23	-3,960.1	74.3	1,335.8	1,187.9	147.90	9.031		
10,300.0	6,097.0	10,105.6	6,079.8	80.8	72.9	-89.26	-4,062.0	65.8	1,328.0	1,176.5	151.54	8.763		
10,400.0	6,097.0	10,199.2	6,080.1	82.7	74.6	-89.27	-4,155.2	58.1	1,320.4	1,165.3	155.07	8.515		
10,500.0	6,097.0	10,265.0	6,080.9	84.5	75.7	-89.30	-4,220.9	54.0	1,314.6	1,156.6	158.08	8.316		
10,600.0	6,097.0	10,346.8	6,081.6	86.3	77.1	-89.33	-4,302.6	50.4	1,310.8	1,149.4	161.43	8.120		
10,700.0	6,097.0	10,497.7	6,080.5	88.2	79.8	-89.28	-4,453.3	43.6	1,307.5	1,141.6	165.96	7.878		
10,800.0	6,097.0	10,607.4	6,080.5	90.0	81.7	-89.27	-4,562.7	34.6	1,299.9	1,130.1	169.75	7.657		
10,900.0	6,097.0	10,705.9	6,079.8	91.9	83.4	-89.24	-4,660.8	26.2	1,291.9	1,118.6	173.37	7.452		
11,000.0	6,097.0	10,725.0	6,079.4	93.7	83.8	-89.22	-4,679.8	24.6	1,286.7	1,111.1	175.60	7.327		
11,019.3	6,097.0	10,725.0	6,079.4	94.1	83.8	-89.22	-4,679.8	24.6	1,286.5	1,110.6	175.97	7.311		
11,021.0	6,097.0	10,725.0	6,079.4	94.1	83.8	-89.22	-4,679.8	24.6	1,286.5	1,110.5	176.00	7.310	SF	

Company:	BONANZA CREEK ENERGY OPERATING	Local Co-ordinate Reference:	Well State Pronghorn 31-34-16HNB
Project:	SEC.16-T5N-R61W	TVD Reference:	WELL @ 4644.0ft (RKB - 15')
Reference Site:	State Pronghorn P-16 Pad Sec.16-T5N-R61W	MD Reference:	WELL @ 4644.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	State Pronghorn 31-34-16HNB	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (11-19-12)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4644.0ft (RKB - 15')
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: State Pronghorn 31-34-16HNB
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.84°



Company:	BONANZA CREEK ENERGY OPERATING	Local Co-ordinate Reference:	Well State Pronghorn 31-34-16HNB
Project:	SEC.16-T5N-R61W	TVD Reference:	WELL @ 4644.0ft (RKB - 15')
Reference Site:	State Pronghorn P-16 Pad Sec.16-T5N-R61W	MD Reference:	WELL @ 4644.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	State Pronghorn 31-34-16HNB	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (11-19-12)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4644.0ft (RKB - 15')
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: State Pronghorn 31-34-16HNB
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.84°

