

# BONANZA CREEK ENERGY OPERATING

Well Name: **PRONGHORN 31-34-17HZ**

Surface Location: PRONGHORN31-34-17HZ PAD S17-5N-61W  
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

Ground Elevation: 4518.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1393977.92	3353228.63	40.407936	-104.231530	

ENSIGN RIG 14 15' KB RKB @ 4533.0ft (ENSIGN RIG 14 15' KB)

## WELLBORE TARGET DETAILS (LAT/LONG)

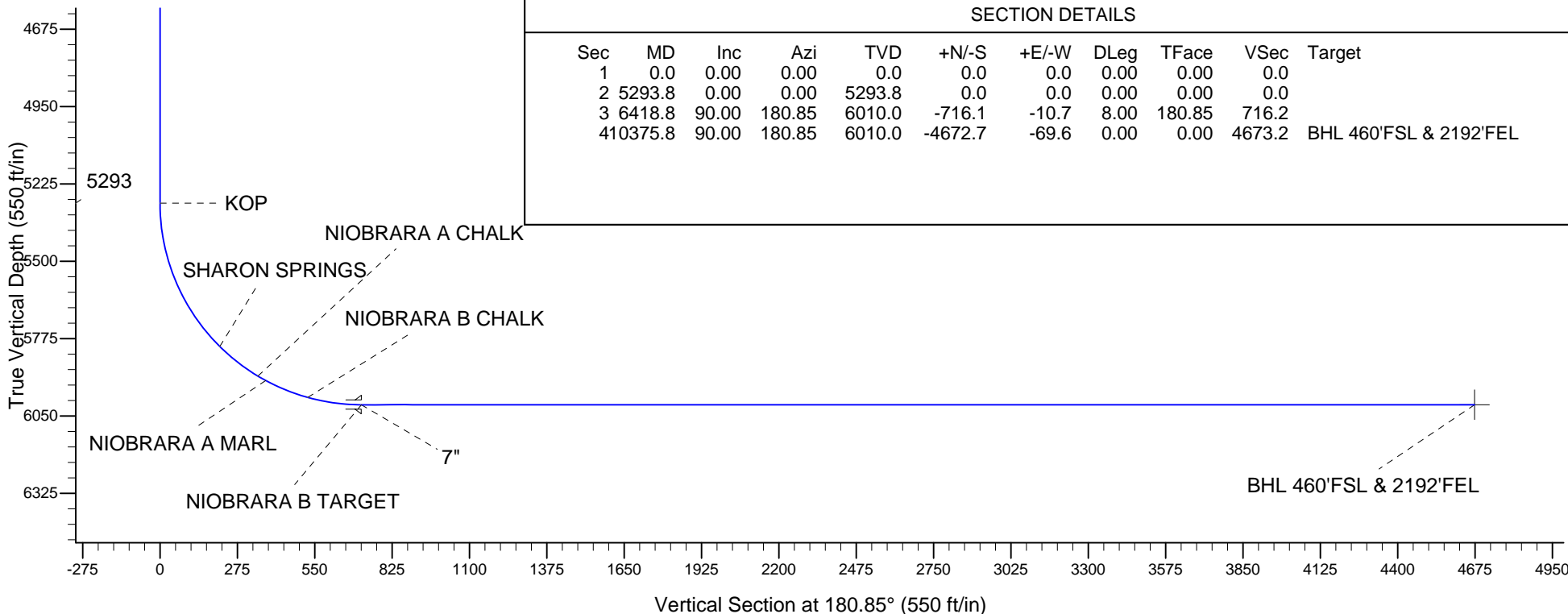
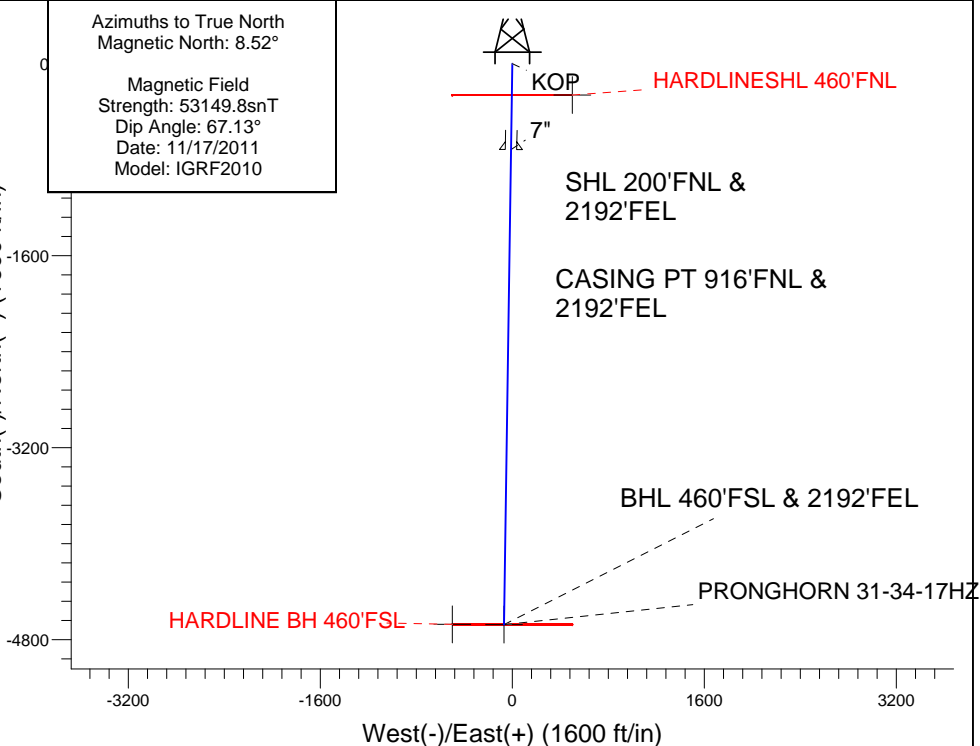
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
HARDLINE BH 460'FSL		-4672.0	-500.0	40.395112	-104.233325	Polygon
HARDLINESHL 460'FNL		-260.0	500.0	40.407222	-104.229735	Polygon
BHL 460'FSL & 2192'FEL	6010.0	-4672.7	-69.6	40.395110	-104.231780	Point

PRONGHORN31-34-17HZ PAD S17-5N-61W  
PRONGHORN 31-34-17HZ  
PLAN 1 (NOV 17, 2011)  
11:40, November 17 2011



Azimuths to True North  
Magnetic North: 8.52°  
  
Magnetic Field  
Strength: 53149.8snT  
Dip Angle: 67.13°  
Date: 11/17/2011  
Model: IGRF2010

South(-)/North(+) (1600 ft/in)



## 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	5293.8	0.00	0.00	5293.8	0.0	0.0	0.00	0.00	0.0	
3	6418.8	90.00	180.85	6010.0	-716.1	-10.7	8.00	180.85	716.2	
	410375.8	90.00	180.85	6010.0	-4672.7	-69.6	0.00	0.00	4673.2	BHL 460'FSL & 2192'FEL



## **Directional**

# **BONANZA CREEK ENERGY OPERATING**

**SEC.17-T5N-R61W**

**PRONGHORN31-34-17HZ PAD S17-5N-61W**

**PRONGHORN 31-34-17HZ**

**Wellbore #1**

**Plan: PLAN 1 (NOV 17, 2011)**

## **Standard Planning Report**

**17 November, 2011**

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	
5,293.8	0.00	0.00	5,293.8	0.0	0.0	0.00	0.00	0.00	0.00	
6,418.8	90.00	180.85	6,010.0	-716.1	-10.7	8.00	8.00	0.00	180.85	
10,375.8	90.00	180.85	6,010.0	-4,672.7	-69.6	0.00	0.00	0.00	0.00	BHL 460'FSL & 219

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well PRONGHORN 31-34-17HZ
<b>Company:</b>	BONANZA CREEK ENERGY OPERATING	<b>TVD Reference:</b>	RKB @ 4533.0ft (ENSIGN RIG 14 15' KB)
<b>Project:</b>	SEC.17-T5N-R61W	<b>MD Reference:</b>	RKB @ 4533.0ft (ENSIGN RIG 14 15' KB)
<b>Site:</b>	PRONGHORN31-34-17HZ PAD S17-5N-61W	<b>North Reference:</b>	True
<b>Well:</b>	PRONGHORN 31-34-17HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	PLAN 1 (NOV 17, 2011)		

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
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	0.00
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	0.00
3,087.0	0.00	0.00	3,087.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>PARKMAN</b>									
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	0.00
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	0.00
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	0.00
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	0.00
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	0.00
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	0.00
3,700.0	0.00	0.00	3,700.0	0.0	0.0	0.0	0.00	0.00	0.00
3,800.0	0.00	0.00	3,800.0	0.0	0.0	0.0	0.00	0.00	0.00
3,900.0	0.00	0.00	3,900.0	0.0	0.0	0.0	0.00	0.00	0.00
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.0	0.00	0.00	0.00
4,100.0	0.00	0.00	4,100.0	0.0	0.0	0.0	0.00	0.00	0.00
4,200.0	0.00	0.00	4,200.0	0.0	0.0	0.0	0.00	0.00	0.00
4,300.0	0.00	0.00	4,300.0	0.0	0.0	0.0	0.00	0.00	0.00
4,400.0	0.00	0.00	4,400.0	0.0	0.0	0.0	0.00	0.00	0.00
4,500.0	0.00	0.00	4,500.0	0.0	0.0	0.0	0.00	0.00	0.00
4,600.0	0.00	0.00	4,600.0	0.0	0.0	0.0	0.00	0.00	0.00
4,700.0	0.00	0.00	4,700.0	0.0	0.0	0.0	0.00	0.00	0.00
4,800.0	0.00	0.00	4,800.0	0.0	0.0	0.0	0.00	0.00	0.00
4,900.0	0.00	0.00	4,900.0	0.0	0.0	0.0	0.00	0.00	0.00
5,000.0	0.00	0.00	5,000.0	0.0	0.0	0.0	0.00	0.00	0.00
5,100.0	0.00	0.00	5,100.0	0.0	0.0	0.0	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well PRONGHORN 31-34-17HZ
<b>Company:</b>	BONANZA CREEK ENERGY OPERATING	<b>TVD Reference:</b>	RKB @ 4533.0ft (ENSIGN RIG 14 15' KB)
<b>Project:</b>	SEC.17-T5N-R61W	<b>MD Reference:</b>	RKB @ 4533.0ft (ENSIGN RIG 14 15' KB)
<b>Site:</b>	PRONGHORN31-34-17HZ PAD S17-5N-61W	<b>North Reference:</b>	True
<b>Well:</b>	PRONGHORN 31-34-17HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	PLAN 1 (NOV 17, 2011)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,200.0	0.00	0.00	5,200.0	0.0	0.0	0.0	0.00	0.00	0.00
5,293.0	0.00	0.00	5,293.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>KOP</b>									
5,293.8	0.00	0.00	5,293.8	0.0	0.0	0.0	0.00	0.00	0.00
5,300.0	0.50	180.85	5,300.0	0.0	0.0	0.0	8.00	8.00	0.00
5,400.0	8.50	180.85	5,399.6	-7.9	-0.1	7.9	8.00	8.00	0.00
5,500.0	16.50	180.85	5,497.2	-29.5	-0.4	29.5	8.00	8.00	0.00
5,600.0	24.50	180.85	5,590.8	-64.5	-1.0	64.5	8.00	8.00	0.00
5,700.0	32.50	180.85	5,678.6	-112.1	-1.7	112.1	8.00	8.00	0.00
5,800.0	40.50	180.85	5,758.9	-171.5	-2.6	171.6	8.00	8.00	0.00
5,860.2	45.31	180.85	5,803.0	-212.5	-3.2	212.6	8.00	8.00	0.00
<b>SHARON SPRINGS</b>									
5,900.0	48.50	180.85	5,830.2	-241.6	-3.6	241.6	8.00	8.00	0.00
6,000.0	56.50	180.85	5,891.0	-320.8	-4.8	320.9	8.00	8.00	0.00
6,031.9	59.05	180.85	5,908.0	-347.8	-5.2	347.8	8.00	8.00	0.00
<b>NIORARA A CHALK</b>									
6,064.2	61.63	180.85	5,924.0	-375.9	-5.6	375.9	8.00	8.00	0.00
<b>NIORARA A MARL</b>									
6,100.0	64.50	180.85	5,940.2	-407.8	-6.1	407.8	8.00	8.00	0.00
6,200.0	72.50	180.85	5,976.8	-500.7	-7.5	500.8	8.00	8.00	0.00
6,225.2	74.51	180.85	5,984.0	-524.9	-7.8	525.0	8.00	8.00	0.00
<b>NIORARA B CHALK</b>									
6,300.0	80.50	180.85	6,000.2	-597.9	-8.9	597.9	8.00	8.00	0.00
6,400.0	88.50	180.85	6,009.8	-697.3	-10.4	697.4	8.00	8.00	0.00
6,418.0	89.94	180.85	6,010.0	-715.3	-10.7	715.4	8.00	8.00	0.00
<b>7"</b>									
6,418.8	90.00	180.85	6,010.0	-716.1	-10.7	716.2	8.00	8.00	0.00
<b>NIORARA B TARGET</b>									
6,500.0	90.00	180.85	6,010.0	-797.3	-11.9	797.4	0.00	0.00	0.00
6,600.0	90.00	180.85	6,010.0	-897.3	-13.4	897.4	0.00	0.00	0.00
6,700.0	90.00	180.85	6,010.0	-997.3	-14.9	997.4	0.00	0.00	0.00
6,800.0	90.00	180.85	6,010.0	-1,097.3	-16.4	1,097.4	0.00	0.00	0.00
6,900.0	90.00	180.85	6,010.0	-1,197.3	-17.8	1,197.4	0.00	0.00	0.00
7,000.0	90.00	180.85	6,010.0	-1,297.3	-19.3	1,297.4	0.00	0.00	0.00
7,100.0	90.00	180.85	6,010.0	-1,397.2	-20.8	1,397.4	0.00	0.00	0.00
7,200.0	90.00	180.85	6,010.0	-1,497.2	-22.3	1,497.4	0.00	0.00	0.00
7,300.0	90.00	180.85	6,010.0	-1,597.2	-23.8	1,597.4	0.00	0.00	0.00
7,400.0	90.00	180.85	6,010.0	-1,697.2	-25.3	1,697.4	0.00	0.00	0.00
7,500.0	90.00	180.85	6,010.0	-1,797.2	-26.8	1,797.4	0.00	0.00	0.00
7,600.0	90.00	180.85	6,010.0	-1,897.2	-28.3	1,897.4	0.00	0.00	0.00
7,700.0	90.00	180.85	6,010.0	-1,997.2	-29.8	1,997.4	0.00	0.00	0.00
7,800.0	90.00	180.85	6,010.0	-2,097.2	-31.3	2,097.4	0.00	0.00	0.00
7,900.0	90.00	180.85	6,010.0	-2,197.2	-32.7	2,197.4	0.00	0.00	0.00
8,000.0	90.00	180.85	6,010.0	-2,297.1	-34.2	2,297.4	0.00	0.00	0.00
8,100.0	90.00	180.85	6,010.0	-2,397.1	-35.7	2,397.4	0.00	0.00	0.00
8,200.0	90.00	180.85	6,010.0	-2,497.1	-37.2	2,497.4	0.00	0.00	0.00
8,300.0	90.00	180.85	6,010.0	-2,597.1	-38.7	2,597.4	0.00	0.00	0.00
8,400.0	90.00	180.85	6,010.0	-2,697.1	-40.2	2,697.4	0.00	0.00	0.00
8,500.0	90.00	180.85	6,010.0	-2,797.1	-41.7	2,797.4	0.00	0.00	0.00
8,600.0	90.00	180.85	6,010.0	-2,897.1	-43.2	2,897.4	0.00	0.00	0.00
8,700.0	90.00	180.85	6,010.0	-2,997.1	-44.7	2,997.4	0.00	0.00	0.00
8,800.0	90.00	180.85	6,010.0	-3,097.1	-46.2	3,097.4	0.00	0.00	0.00
8,900.0	90.00	180.85	6,010.0	-3,197.0	-47.6	3,197.4	0.00	0.00	0.00

Casing Points					
	Measured Depth (ft)	Vertical Depth (ft)		Name	
				Casing Diameter (")	Hole Diameter (")
	6,418.0	6,010.0	7"	7	8-3/4

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well PRONGHORN 31-34-17HZ
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<b>Project:</b>	SEC.17-T5N-R61W	<b>MD Reference:</b>	RKB @ 4533.0ft (ENSIGN RIG 14 15' KB)
<b>Site:</b>	PRONGHORN31-34-17HZ PAD S17-5N-61W	<b>North Reference:</b>	True
<b>Well:</b>	PRONGHORN 31-34-17HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	PLAN 1 (NOV 17, 2011)		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,087.0	3,087.0	PARKMAN		0.00		
5,860.2	5,803.0	SHARON SPRINGS		0.00		
6,031.9	5,908.0	NIOBRARA A CHALK		0.00		
6,064.2	5,924.0	NIOBRARA A MARL		0.00		
6,225.2	5,984.0	NIOBRARA B CHALK		0.00		
6,418.8	6,010.0	NIOBRARA B TARGET		0.00		
	6,012.0	NIOBRARA B MARL		0.00		
	6,091.0	NIOBRARA C CHALK		0.00		

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
5,293.0	5,293.0	0.0	0.0	KOP	