

# BONANZA CREEK ENERGY OPERATING

Well Name: **SEVENTY HOLES 41-11-18HZ**

Surface Location: SEVENTY HOLES PAD SEC.18-T4N-R62W  
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

Ground Elevation: 4509.0

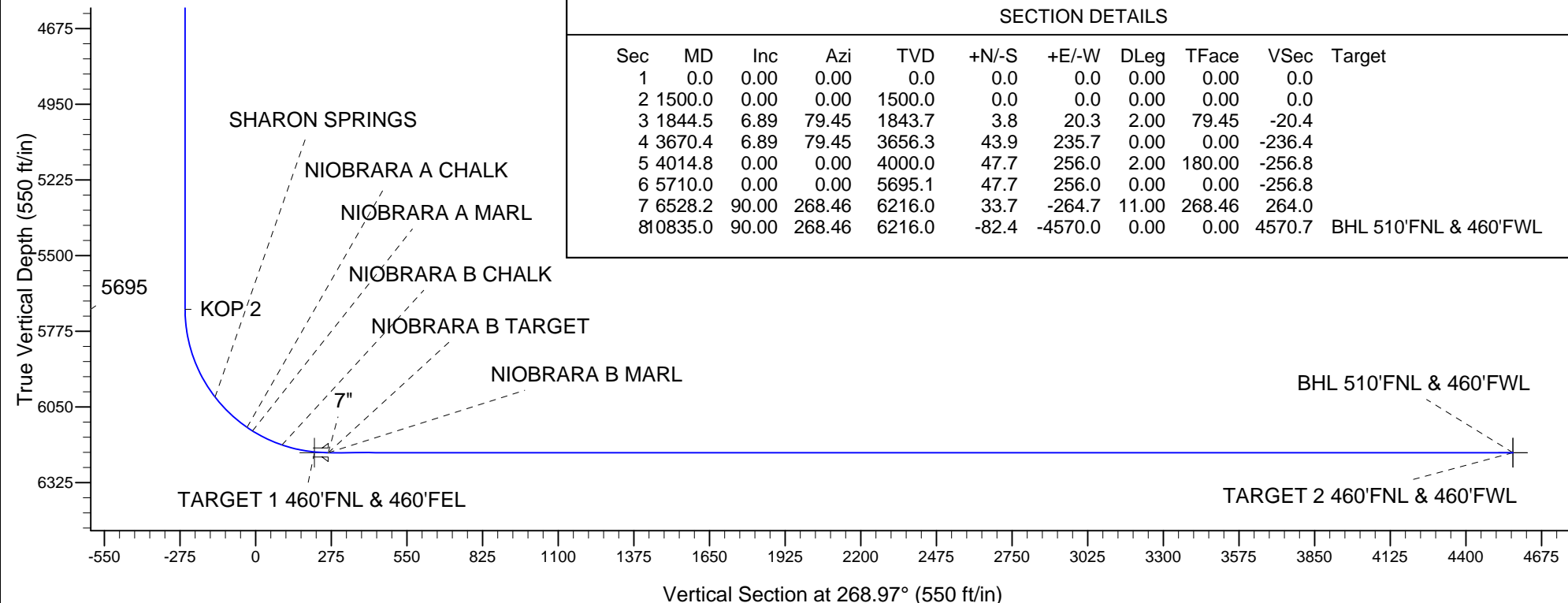
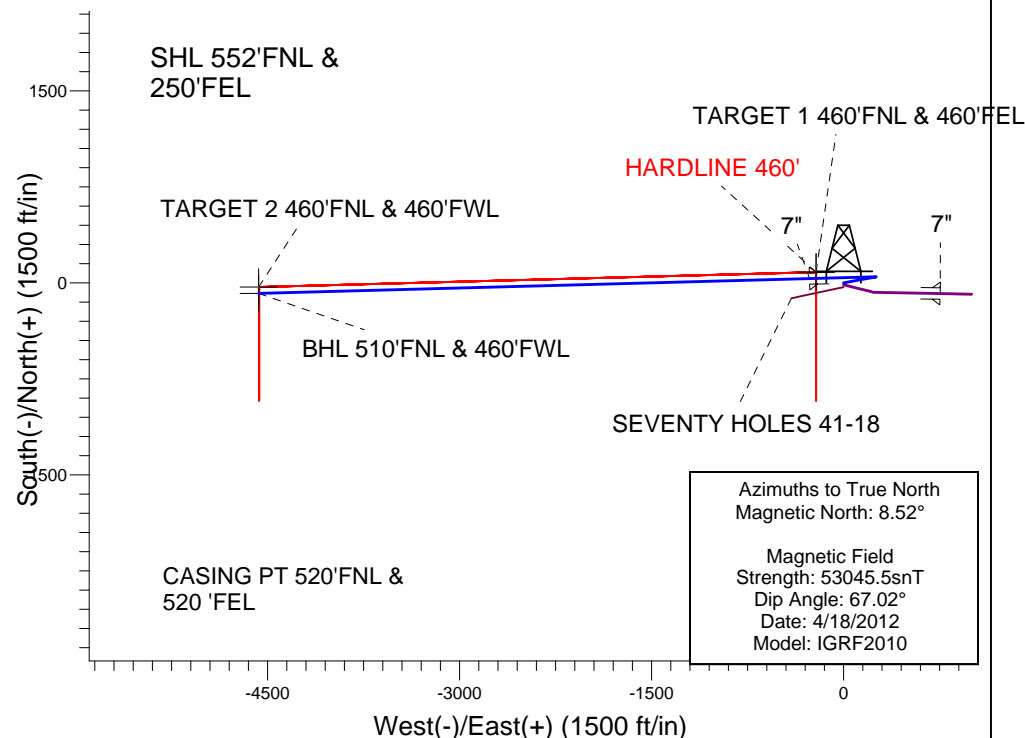
+N/-S+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0 0.0	1360940.21	3318231.35	40.318560	-104.358720	

Original Well Elev WELL @ 4524.0ft (Original Well Elev)

## WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
HARDLINE 460'	0.0	83.8	-214.7	40.318790	-104.359490	Polygon
BHL 510'FNL & 460'FWL	6216.0	-82.4	-4570.0	40.318333	-104.375108	Point
TARGET 1 460'FNL & 460'FEL	6216.0	83.8	-214.7	40.318790	-104.359490	Point
TARGET 2 460'FNL & 460'FWL	6216.0	-32.4	-4570.5	40.318470	-104.375110	Point

SEVENTY HOLES PAD SEC.18-T4N-R62W  
SEVENTY HOLES 41-11-18HZ  
PLAN 1 (APRIL 18, 2012)  
12:19, April 23 2012





**Directional**

## **BONANZA CREEK ENERGY OPERATING**

**SEC.18-T4N-R62W**

**SEVENTY HOLES PAD SEC.18-T4N-R62W**

**SEVENTY HOLES 41-11-18HZ**

**Wellbore #1**

**Plan: PLAN 1 (APRIL 18, 2012)**

## **Standard Planning Report**

**23 April, 2012**

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	
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,844.5	6.89	79.45	1,843.7	3.8	20.3	2.00	2.00	0.00	79.45	
3,670.4	6.89	79.45	3,656.3	43.9	235.7	0.00	0.00	0.00	0.00	
4,014.8	0.00	0.00	4,000.0	47.7	256.0	2.00	-2.00	0.00	180.00	
5,710.0	0.00	0.00	5,695.1	47.7	256.0	0.00	0.00	0.00	0.00	
6,528.2	90.00	268.46	6,216.0	33.7	-264.7	11.00	11.00	0.00	268.46	
10,835.0	90.00	268.46	6,216.0	-82.4	-4,570.0	0.00	0.00	0.00	0.00	BHL 510'FNL & 460'

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well SEVENTY HOLES 41-11-18HZ
<b>Company:</b>	BONANZA CREEK ENERGY OPERATING	<b>TVD Reference:</b>	WELL @ 4524.0ft (Original Well Elev)
<b>Project:</b>	SEC.18-T4N-R62W	<b>MD Reference:</b>	WELL @ 4524.0ft (Original Well Elev)
<b>Site:</b>	SEVENTY HOLES PAD SEC.18-T4N-R62W	<b>North Reference:</b>	True
<b>Well:</b>	SEVENTY HOLES 41-11-18HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	PLAN 1 (APRIL 18, 2012)		

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
<b>KOP 1</b>									
1,600.0	2.00	79.45	1,600.0	0.3	1.7	-1.7	2.00	2.00	0.00
1,700.0	4.00	79.45	1,699.8	1.3	6.9	-6.9	2.00	2.00	0.00
1,800.0	6.00	79.45	1,799.5	2.9	15.4	-15.5	2.00	2.00	0.00
1,844.5	6.89	79.45	1,843.7	3.8	20.3	-20.4	2.00	2.00	0.00
1,900.0	6.89	79.45	1,898.8	5.0	26.9	-27.0	0.00	0.00	0.00
2,000.0	6.89	79.45	1,998.0	7.2	38.7	-38.8	0.00	0.00	0.00
2,100.0	6.89	79.45	2,097.3	9.4	50.5	-50.6	0.00	0.00	0.00
2,200.0	6.89	79.45	2,196.6	11.6	62.3	-62.5	0.00	0.00	0.00
2,300.0	6.89	79.45	2,295.9	13.8	74.1	-74.3	0.00	0.00	0.00
2,400.0	6.89	79.45	2,395.2	16.0	85.8	-86.1	0.00	0.00	0.00
2,500.0	6.89	79.45	2,494.4	18.2	97.6	-98.0	0.00	0.00	0.00
2,600.0	6.89	79.45	2,593.7	20.4	109.4	-109.8	0.00	0.00	0.00
2,700.0	6.89	79.45	2,693.0	22.6	121.2	-121.6	0.00	0.00	0.00
2,800.0	6.89	79.45	2,792.3	24.8	133.0	-133.4	0.00	0.00	0.00
2,900.0	6.89	79.45	2,891.5	27.0	144.8	-145.3	0.00	0.00	0.00
3,000.0	6.89	79.45	2,990.8	29.2	156.6	-157.1	0.00	0.00	0.00
3,100.0	6.89	79.45	3,090.1	31.4	168.4	-168.9	0.00	0.00	0.00
3,200.0	6.89	79.45	3,189.4	33.6	180.2	-180.8	0.00	0.00	0.00
3,260.1	6.89	79.45	3,249.0	34.9	187.3	-187.9	0.00	0.00	0.00
<b>PARKMAN</b>									
3,300.0	6.89	79.45	3,288.7	35.8	192.0	-192.6	0.00	0.00	0.00
3,400.0	6.89	79.45	3,387.9	38.0	203.8	-204.4	0.00	0.00	0.00
3,500.0	6.89	79.45	3,487.2	40.2	215.6	-216.3	0.00	0.00	0.00
3,600.0	6.89	79.45	3,586.5	42.4	227.4	-228.1	0.00	0.00	0.00
3,670.4	6.89	79.45	3,656.3	43.9	235.7	-236.4	0.00	0.00	0.00
3,700.0	6.30	79.45	3,685.8	44.5	239.0	-239.8	2.00	-2.00	0.00
3,800.0	4.30	79.45	3,785.4	46.2	248.1	-248.9	2.00	-2.00	0.00
3,900.0	2.30	79.45	3,885.2	47.3	253.7	-254.5	2.00	-2.00	0.00
4,000.0	0.30	79.45	3,985.2	47.7	256.0	-256.8	2.00	-2.00	0.00
4,014.8	0.00	0.00	4,000.0	47.7	256.0	-256.8	2.00	-2.00	0.00
4,100.0	0.00	0.00	4,085.2	47.7	256.0	-256.8	0.00	0.00	0.00
4,200.0	0.00	0.00	4,185.2	47.7	256.0	-256.8	0.00	0.00	0.00
4,300.0	0.00	0.00	4,285.2	47.7	256.0	-256.8	0.00	0.00	0.00
4,400.0	0.00	0.00	4,385.2	47.7	256.0	-256.8	0.00	0.00	0.00
4,500.0	0.00	0.00	4,485.2	47.7	256.0	-256.8	0.00	0.00	0.00
4,600.0	0.00	0.00	4,585.2	47.7	256.0	-256.8	0.00	0.00	0.00
4,700.0	0.00	0.00	4,685.2	47.7	256.0	-256.8	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well SEVENTY HOLES 41-11-18HZ
<b>Company:</b>	BONANZA CREEK ENERGY OPERATING	<b>TVD Reference:</b>	WELL @ 4524.0ft (Original Well Elev)
<b>Project:</b>	SEC.18-T4N-R62W	<b>MD Reference:</b>	WELL @ 4524.0ft (Original Well Elev)
<b>Site:</b>	SEVENTY HOLES PAD SEC.18-T4N-R62W	<b>North Reference:</b>	True
<b>Well:</b>	SEVENTY HOLES 41-11-18HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	PLAN 1 (APRIL 18, 2012)		

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)
4,800.0	0.00	0.00	4,785.2	47.7	256.0	-256.8	0.00	0.00	0.00
4,900.0	0.00	0.00	4,885.2	47.7	256.0	-256.8	0.00	0.00	0.00
5,000.0	0.00	0.00	4,985.2	47.7	256.0	-256.8	0.00	0.00	0.00
5,100.0	0.00	0.00	5,085.2	47.7	256.0	-256.8	0.00	0.00	0.00
5,200.0	0.00	0.00	5,185.2	47.7	256.0	-256.8	0.00	0.00	0.00
5,300.0	0.00	0.00	5,285.2	47.7	256.0	-256.8	0.00	0.00	0.00
5,400.0	0.00	0.00	5,385.2	47.7	256.0	-256.8	0.00	0.00	0.00
5,500.0	0.00	0.00	5,485.2	47.7	256.0	-256.8	0.00	0.00	0.00
5,600.0	0.00	0.00	5,585.2	47.7	256.0	-256.8	0.00	0.00	0.00
5,700.0	0.00	0.00	5,685.2	47.7	256.0	-256.8	0.00	0.00	0.00
5,710.0	0.00	0.00	5,695.2	47.7	256.0	-256.8	0.00	0.00	0.00
<b>KOP 2</b>									
5,800.0	9.90	268.46	5,784.7	47.5	248.2	-249.1	11.00	11.00	0.00
5,900.0	20.90	268.46	5,881.0	46.8	221.7	-222.5	11.00	11.00	0.00
6,000.0	31.90	268.46	5,970.4	45.6	177.3	-178.1	11.00	11.00	0.00
6,053.1	37.75	268.46	6,014.0	44.8	147.0	-147.8	11.00	11.00	0.00
<b>SHARON SPRINGS</b>									
6,100.0	42.90	268.46	6,049.7	43.9	116.7	-117.5	11.00	11.00	0.00
6,200.0	53.90	268.46	6,116.0	41.9	42.1	-42.8	11.00	11.00	0.00
6,213.8	55.42	268.46	6,124.0	41.6	30.8	-31.6	11.00	11.00	0.00
<b>NIOBRARA A CHALK</b>									
6,237.5	58.03	268.46	6,137.0	41.1	11.0	-11.7	11.00	11.00	0.00
<b>NIOBRARA A MARL</b>									
6,300.0	64.90	268.46	6,166.8	39.6	-43.8	43.1	11.00	11.00	0.00
6,356.6	71.13	268.46	6,188.0	38.2	-96.3	95.6	11.00	11.00	0.00
<b>NIOBRARA B CHALK</b>									
6,400.0	75.90	268.46	6,200.3	37.1	-137.9	137.2	11.00	11.00	0.00
6,500.0	86.90	268.46	6,215.2	34.4	-236.6	235.9	11.00	11.00	0.00
6,528.0	89.98	268.46	6,216.0	33.7	-264.5	263.9	11.00	11.00	0.00
<b>7"</b>									
6,528.2	90.00	268.46	6,216.0	33.7	-264.7	264.0	11.00	11.00	0.00
<b>NIOBRARA B TARGET - NIOBRARA B MARL</b>									
6,600.0	90.00	268.46	6,216.0	31.7	-336.5	335.9	0.00	0.00	0.00
6,700.0	90.00	268.46	6,216.0	29.0	-436.5	435.9	0.00	0.00	0.00
6,800.0	90.00	268.46	6,216.0	26.3	-536.4	535.9	0.00	0.00	0.00
6,900.0	90.00	268.46	6,216.0	23.6	-636.4	635.9	0.00	0.00	0.00
7,000.0	90.00	268.46	6,216.0	20.9	-736.4	735.9	0.00	0.00	0.00
7,100.0	90.00	268.46	6,216.0	18.3	-836.3	835.9	0.00	0.00	0.00
7,200.0	90.00	268.46	6,216.0	15.6	-936.3	935.8	0.00	0.00	0.00
7,300.0	90.00	268.46	6,216.0	12.9	-1,036.2	1,035.8	0.00	0.00	0.00
7,400.0	90.00	268.46	6,216.0	10.2	-1,136.2	1,135.8	0.00	0.00	0.00
7,500.0	90.00	268.46	6,216.0	7.5	-1,236.2	1,235.8	0.00	0.00	0.00
7,600.0	90.00	268.46	6,216.0	4.8	-1,336.1	1,335.8	0.00	0.00	0.00
7,700.0	90.00	268.46	6,216.0	2.1	-1,436.1	1,435.8	0.00	0.00	0.00
7,800.0	90.00	268.46	6,216.0	-0.6	-1,536.1	1,535.8	0.00	0.00	0.00
7,900.0	90.00	268.46	6,216.0	-3.3	-1,636.0	1,635.8	0.00	0.00	0.00
8,000.0	90.00	268.46	6,216.0	-6.0	-1,736.0	1,735.8	0.00	0.00	0.00
8,100.0	90.00	268.46	6,216.0	-8.7	-1,836.0	1,835.8	0.00	0.00	0.00
8,200.0	90.00	268.46	6,216.0	-11.4	-1,935.9	1,935.8	0.00	0.00	0.00
8,300.0	90.00	268.46	6,216.0	-14.1	-2,035.9	2,035.8	0.00	0.00	0.00
8,400.0	90.00	268.46	6,216.0	-16.8	-2,135.8	2,135.8	0.00	0.00	0.00
8,500.0	90.00	268.46	6,216.0	-19.5	-2,235.8	2,235.8	0.00	0.00	0.00
8,600.0	90.00	268.46	6,216.0	-22.2	-2,335.8	2,335.8	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well SEVENTY HOLES 41-11-18HZ
<b>Company:</b>	BONANZA CREEK ENERGY OPERATING	<b>TVD Reference:</b>	WELL @ 4524.0ft (Original Well Elev)
<b>Project:</b>	SEC.18-T4N-R62W	<b>MD Reference:</b>	WELL @ 4524.0ft (Original Well Elev)
<b>Site:</b>	SEVENTY HOLES PAD SEC.18-T4N-R62W	<b>North Reference:</b>	True
<b>Well:</b>	SEVENTY HOLES 41-11-18HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	PLAN 1 (APRIL 18, 2012)		

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)	
8,700.0	90.00	268.46	6,216.0	-24.9	-2,435.7	2,435.8	0.00	0.00	0.00	
8,800.0	90.00	268.46	6,216.0	-27.6	-2,535.7	2,535.8	0.00	0.00	0.00	
8,900.0	90.00	268.46	6,216.0	-30.3	-2,635.7	2,635.8	0.00	0.00	0.00	
9,000.0	90.00	268.46	6,216.0	-32.9	-2,735.6	2,735.8	0.00	0.00	0.00	
9,100.0	90.00	268.46	6,216.0	-35.6	-2,835.6	2,835.8	0.00	0.00	0.00	
9,200.0	90.00	268.46	6,216.0	-38.3	-2,935.6	2,935.8	0.00	0.00	0.00	
9,300.0	90.00	268.46	6,216.0	-41.0	-3,035.5	3,035.8	0.00	0.00	0.00	
9,400.0	90.00	268.46	6,216.0	-43.7	-3,135.5	3,135.8	0.00	0.00	0.00	
9,500.0	90.00	268.46	6,216.0	-46.4	-3,235.4	3,235.8	0.00	0.00	0.00	
9,600.0	90.00	268.46	6,216.0	-49.1	-3,335.4	3,335.8	0.00	0.00	0.00	
9,700.0	90.00	268.46	6,216.0	-51.8	-3,435.4	3,435.8	0.00	0.00	0.00	
9,800.0	90.00	268.46	6,216.0	-54.5	-3,535.3	3,535.7	0.00	0.00	0.00	
9,900.0	90.00	268.46	6,216.0	-57.2	-3,635.3	3,635.7	0.00	0.00	0.00	
10,000.0	90.00	268.46	6,216.0	-59.9	-3,735.3	3,735.7	0.00	0.00	0.00	
10,100.0	90.00	268.46	6,216.0	-62.6	-3,835.2	3,835.7	0.00	0.00	0.00	
10,200.0	90.00	268.46	6,216.0	-65.3	-3,935.2	3,935.7	0.00	0.00	0.00	
10,300.0	90.00	268.46	6,216.0	-68.0	-4,035.2	4,035.7	0.00	0.00	0.00	
10,400.0	90.00	268.46	6,216.0	-70.7	-4,135.1	4,135.7	0.00	0.00	0.00	
10,500.0	90.00	268.46	6,216.0	-73.4	-4,235.1	4,235.7	0.00	0.00	0.00	
10,600.0	90.00	268.46	6,216.0	-76.1	-4,335.0	4,335.7	0.00	0.00	0.00	
10,700.0	90.00	268.46	6,216.0	-78.8	-4,435.0	4,435.7	0.00	0.00	0.00	
10,800.0	90.00	268.46	6,216.0	-81.5	-4,535.0	4,535.7	0.00	0.00	0.00	
10,835.0	90.00	268.46	6,216.0	-82.4	-4,570.0	4,570.7	0.00	0.00	0.00	

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name		Casing Diameter (")	Hole Diameter (")
6,528.0	6,216.0	7"		7	8-3/4

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
1,500.0	1,500.0	0.0	0.0	KOP 1	
5,710.0	5,695.2	47.7	256.0	KOP 2	



## **Directional**

# **BONANZA CREEK ENERGY OPERATING**

**SEC.18-T4N-R62W**

**SEVENTY HOLES PAD SEC.18-T4N-R62W**

**SEVENTY HOLES 41-11-18HZ**

**Wellbore #1**

**PLAN 1 (APRIL 18, 2012)**

## **Anticollision Report**

**23 April, 2012**

<b>Company:</b>	BONANZA CREEK ENERGY OPERATING	<b>Local Co-ordinate Reference:</b>	Well SEVENTY HOLES 41-11-18HZ
<b>Project:</b>	SEC.18-T4N-R62W	<b>TVD Reference:</b>	WELL @ 4524.0ft (Original Well Elev)
<b>Reference Site:</b>	SEVENTY HOLES PAD SEC.18-T4N-R62W	<b>MD Reference:</b>	WELL @ 4524.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	SEVENTY HOLES 41-11-18HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	PLAN 1 (APRIL 18, 2012)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	PLAN 1 (APRIL 18, 2012)		
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
<b>Interpolation Method:</b>	MD Interval 100.0ft	<b>Error Model:</b>	ISCWSA
<b>Depth Range:</b>	Unlimited	<b>Scan Method:</b>	Closest Approach 3D
<b>Results Limited by:</b>	Maximum center-center distance of 300.0ft	<b>Error Surface:</b>	Elliptical Conic
<b>Warning Levels Evaluated at:</b>	2.00 Sigma		

<b>Survey Tool Program</b>	<b>Date</b> 4/23/2012			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.0	10,835.0	PLAN 1 (APRIL 18, 2012) (Wellbore #1)	MWD	MWD - Standard

<b>Summary</b>						
<b>Site Name</b>	<b>Reference Measured Depth (ft)</b>	<b>Offset Measured Depth (ft)</b>	<b>Distance Between Centres (ft)</b>	<b>Distance Between Ellipses (ft)</b>	<b>Separation Factor</b>	<b>Warning</b>
<b>Offset Well - Wellbore - Design</b>						
SEVENTY HOLES PAD SEC.18-T4N-R62W						
SEVENTY HOLES 11-41-17HZ - Wellbore #1 - PLAN 1 (	800.0	800.0	14.6	11.2	4.322	CC, ES
SEVENTY HOLES 11-41-17HZ - Wellbore #1 - PLAN 1 (	900.0	899.8	15.1	11.3	3.967	SF
SEVENTY HOLES 41-18 - Wellbore #1 - PLAN 1 (APRIL	1,500.0	1,500.0	32.8	26.3	5.031	CC
SEVENTY HOLES 41-18 - Wellbore #1 - PLAN 1 (APRIL	1,600.0	1,600.0	33.2	26.2	4.766	ES
SEVENTY HOLES 41-18 - Wellbore #1 - PLAN 1 (APRIL	6,674.7	6,256.8	150.0	114.3	4.200	SF

<b>Offset Design</b> SEVENTY HOLES PAD SEC.18-T4N-R62W - SEVENTY HOLES 11-41-17HZ - Wellbore #1 - PLAN 1 (													<b>Offset Site Error:</b>	0.0ft
Survey Program: 0-MWD													<b>Offset Well Error:</b>	0.0ft
<b>Reference Measured Depth (ft)</b>	<b>Vertical Depth (ft)</b>	<b>Offset Measured Depth (ft)</b>	<b>Vertical Depth (ft)</b>	<b>Semi Major Axis Reference (ft)</b>	<b>Semi Major Axis Offset (ft)</b>	<b>Highside Toolface (°)</b>	<b>Offset Wellbore Centre +N/-S (ft)</b>	<b>Offset Wellbore Centre +E/-W (ft)</b>	<b>Distance Between Centres (ft)</b>	<b>Distance Between Ellipses (ft)</b>	<b>Minimum Separation (ft)</b>	<b>Separation Factor</b>	<b>Warning</b>	
0.0	0.0	0.0	0.0	0.0	0.0	180.00	-14.6	0.0	14.6	14.6	0.00	N/A		
100.0	100.0	100.0	100.0	0.1	0.1	180.00	-14.6	0.0	14.6	14.3	0.22	64.833		
200.0	200.0	200.0	200.0	0.3	0.3	180.00	-14.6	0.0	14.6	13.9	0.67	21.611		
300.0	300.0	300.0	300.0	0.6	0.6	180.00	-14.6	0.0	14.6	13.4	1.12	12.967		
400.0	400.0	400.0	400.0	0.8	0.8	180.00	-14.6	0.0	14.6	13.0	1.57	9.262		
500.0	500.0	500.0	500.0	1.0	1.0	180.00	-14.6	0.0	14.6	12.5	2.02	7.204		
600.0	600.0	600.0	600.0	1.2	1.2	180.00	-14.6	0.0	14.6	12.1	2.47	5.894		
700.0	700.0	700.0	700.0	1.5	1.5	180.00	-14.6	0.0	14.6	11.7	2.92	4.987		
800.0	800.0	800.0	800.0	1.7	1.7	180.00	-14.6	0.0	14.6	11.2	3.37	4.322	CC, ES	
900.0	900.0	899.8	899.8	1.9	1.9	173.58	-15.0	1.7	15.1	11.3	3.80	3.967	SF	
1,000.0	1,000.0	999.4	999.3	2.1	2.1	157.52	-16.3	6.7	17.6	13.4	4.23	4.166		
1,100.0	1,100.0	1,098.5	1,098.0	2.4	2.3	140.60	-18.4	15.1	23.8	19.2	4.66	5.110		
1,200.0	1,200.0	1,197.1	1,195.9	2.6	2.6	128.61	-21.2	26.6	34.3	29.2	5.12	6.692		
1,300.0	1,300.0	1,296.3	1,294.1	2.8	2.8	121.87	-24.4	39.3	46.6	41.0	5.61	8.320		
1,400.0	1,400.0	1,395.4	1,392.4	3.0	3.1	117.97	-27.6	52.0	59.4	53.3	6.10	9.725		
1,500.0	1,500.0	1,494.5	1,490.6	3.3	3.4	115.46	-30.8	64.7	72.3	65.6	6.61	10.925		
1,600.0	1,600.0	1,593.8	1,589.1	3.5	3.7	34.80	-34.0	77.4	83.8	77.0	6.85	12.237		
1,700.0	1,699.8	1,693.4	1,687.8	3.7	4.0	35.10	-37.2	90.2	92.6	85.3	7.28	12.720		
1,800.0	1,799.5	1,793.2	1,786.7	3.9	4.3	36.55	-40.4	103.0	98.5	90.8	7.71	12.771		
1,900.0	1,898.8	1,893.1	1,885.7	4.1	4.6	38.88	-43.6	115.8	102.1	94.0	8.17	12.508		
2,000.0	1,998.0	1,992.9	1,984.7	4.4	4.9	41.19	-46.8	128.5	105.7	97.1	8.64	12.233		
2,100.0	2,097.3	2,092.8	2,083.7	4.6	5.2	43.35	-50.0	141.3	109.4	100.3	9.13	11.987		

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



<b>Company:</b>	BONANZA CREEK ENERGY OPERATING	<b>Local Co-ordinate Reference:</b>	Well SEVENTY HOLES 41-11-18HZ
<b>Project:</b>	SEC.18-T4N-R62W	<b>TVD Reference:</b>	WELL @ 4524.0ft (Original Well Elev)
<b>Reference Site:</b>	SEVENTY HOLES PAD SEC.18-T4N-R62W	<b>MD Reference:</b>	WELL @ 4524.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	SEVENTY HOLES 41-11-18HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	PLAN 1 (APRIL 18, 2012)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design SEVENTY HOLES PAD SEC.18-T4N-R62W - SEVENTY HOLES 11-41-17HZ - Wellbore #1 - PLAN 1 (												Offset Site Error:	0.0 ft
Survey Program: 0-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
2,200.0	2,196.6	2,192.6	2,182.6	4.9	5.6	45.37	-53.2	154.1	113.3	103.7	9.63	11.764	
2,300.0	2,295.9	2,292.5	2,281.6	5.2	5.9	47.25	-56.4	166.9	117.3	107.2	10.15	11.563	
2,400.0	2,395.2	2,392.3	2,380.6	5.4	6.2	49.00	-59.7	179.7	121.4	110.8	10.67	11.380	
2,500.0	2,494.4	2,492.2	2,479.6	5.7	6.5	50.64	-62.9	192.5	125.7	114.4	11.21	11.213	
2,600.0	2,593.7	2,592.0	2,578.5	6.0	6.9	52.17	-66.1	205.3	130.0	118.2	11.75	11.060	
2,700.0	2,693.0	2,694.3	2,680.0	6.3	7.2	53.75	-69.2	217.8	133.9	121.6	12.30	10.883	
2,800.0	2,792.3	2,798.3	2,783.6	6.6	7.4	56.02	-71.6	227.3	135.1	122.2	12.85	10.512	
2,900.0	2,891.5	2,902.2	2,887.2	6.9	7.6	59.13	-73.0	233.0	133.4	120.0	13.42	9.947	
3,000.0	2,990.8	3,005.5	2,990.5	7.1	7.8	63.30	-73.6	235.2	129.4	115.3	14.01	9.232	
3,100.0	3,090.1	3,105.1	3,090.1	7.4	8.0	68.22	-73.6	235.2	124.4	109.8	14.63	8.505	
3,200.0	3,189.4	3,204.4	3,189.4	7.7	8.1	73.49	-73.6	235.2	120.4	105.2	15.26	7.893	
3,300.0	3,288.7	3,303.6	3,288.7	8.0	8.3	79.07	-73.6	235.2	117.6	101.7	15.89	7.398	
3,400.0	3,387.9	3,402.9	3,387.9	8.3	8.5	84.86	-73.6	235.2	115.9	99.4	16.52	7.017	
3,487.2	3,474.5	3,489.5	3,474.5	8.6	8.6	90.00	-73.6	235.2	115.4	98.4	17.04	6.774	
3,500.0	3,487.2	3,502.2	3,487.2	8.6	8.7	90.76	-73.6	235.2	115.4	98.3	17.11	6.745	
3,600.0	3,586.5	3,601.5	3,586.5	8.9	8.9	96.64	-73.6	235.2	116.2	98.5	17.68	6.574	
3,700.0	3,685.8	3,700.8	3,685.8	9.2	9.0	102.33	-73.6	235.2	118.2	100.0	18.19	6.497	
3,800.0	3,785.4	3,800.3	3,785.4	9.5	9.2	106.65	-73.6	235.2	120.5	101.9	18.59	6.480	
3,900.0	3,885.2	3,900.2	3,885.2	9.7	9.4	109.26	-73.6	235.2	122.3	103.3	18.97	6.445	
4,000.0	3,985.2	4,000.1	3,985.2	9.8	9.6	110.27	-73.6	235.2	123.0	103.7	19.33	6.365	
4,100.0	4,085.2	4,100.1	4,085.2	10.0	9.8	-170.27	-73.6	235.2	123.0	105.3	17.79	6.917	
4,200.0	4,185.2	4,200.1	4,185.2	10.2	10.0	-170.27	-73.6	235.2	123.0	104.8	18.21	6.757	
4,300.0	4,285.2	4,300.1	4,285.2	10.4	10.2	-170.27	-73.6	235.2	123.0	104.4	18.63	6.603	
4,400.0	4,385.2	4,400.1	4,385.2	10.6	10.4	-170.27	-73.6	235.2	123.0	104.0	19.06	6.456	
4,500.0	4,485.2	4,500.1	4,485.2	10.8	10.6	-170.27	-73.6	235.2	123.0	103.6	19.48	6.316	
4,600.0	4,585.2	4,600.1	4,585.2	11.0	10.8	-170.27	-73.6	235.2	123.0	103.1	19.91	6.180	
4,700.0	4,685.2	4,700.1	4,685.2	11.2	11.0	-170.27	-73.6	235.2	123.0	102.7	20.34	6.050	
4,800.0	4,785.2	4,800.1	4,785.2	11.4	11.2	-170.27	-73.6	235.2	123.0	102.3	20.76	5.926	
4,900.0	4,885.2	4,900.1	4,885.2	11.6	11.4	-170.27	-73.6	235.2	123.0	101.8	21.19	5.806	
5,000.0	4,985.2	5,000.1	4,985.2	11.8	11.6	-170.27	-73.6	235.2	123.0	101.4	21.62	5.690	
5,100.0	5,085.2	5,100.1	5,085.2	12.0	11.8	-170.27	-73.6	235.2	123.0	101.0	22.05	5.579	
5,200.0	5,185.2	5,200.1	5,185.2	12.2	12.0	-170.27	-73.6	235.2	123.0	100.6	22.49	5.472	
5,300.0	5,285.2	5,300.1	5,285.2	12.4	12.2	-170.27	-73.6	235.2	123.0	100.1	22.92	5.369	
5,400.0	5,385.2	5,400.1	5,385.2	12.6	12.4	-170.27	-73.6	235.2	123.0	99.7	23.35	5.269	
5,500.0	5,485.2	5,500.1	5,485.2	12.8	12.6	-170.27	-73.6	235.2	123.0	99.3	23.78	5.173	
5,600.0	5,585.2	5,600.1	5,585.2	13.0	12.8	-170.27	-73.6	235.2	123.0	98.8	24.22	5.081	
5,700.0	5,685.2	5,700.1	5,685.2	13.2	13.0	-170.27	-73.6	235.2	123.0	98.4	24.65	4.991	
5,800.0	5,784.7	5,800.5	5,785.0	13.4	13.3	-86.83	-73.8	244.7	121.3	94.7	26.59	4.562	
5,810.8	5,795.3	5,810.5	5,794.7	13.4	13.3	-88.60	-73.8	246.6	121.2	94.6	26.63	4.552	
5,900.0	5,881.0	5,882.5	5,863.9	13.4	13.6	-104.96	-74.2	266.5	130.1	103.4	26.70	4.871	
6,000.0	5,970.4	5,938.1	5,915.0	13.5	13.9	-116.75	-74.6	288.2	172.6	146.4	26.22	6.582	
6,100.0	6,049.7	5,969.6	5,942.9	13.6	14.1	-116.34	-74.9	302.9	245.3	219.1	26.17	9.374	

SEVENTY HOLES PAD SEC.18-T4N-R62W - SEVENTY HOLES 41-18 - Wellbore #1 - PLAN 1 (APRIL													Offset Site Error: 0.0 ft	
Survey Program: 0-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	
0.0	0.0	0.0	0.0	0.0	0.0	180.00	-32.8	0.0	32.8					
100.0	100.0	100.0	100.0	0.1	0.1	180.00	-32.8	0.0	32.8	32.6	0.22	145.893		
200.0	200.0	200.0	200.0	0.3	0.3	180.00	-32.8	0.0	32.8	32.1	0.67	48.631		
300.0	300.0	300.0	300.0	0.6	0.6	180.00	-32.8	0.0	32.8	31.7	1.12	29.179		
400.0	400.0	400.0	400.0	0.8	0.8	180.00	-32.8	0.0	32.8	31.2	1.57	20.842		
500.0	500.0	500.0	500.0	1.0	1.0	180.00	-32.8	0.0	32.8	30.8	2.02	16.210		
600.0	600.0	600.0	600.0	1.2	1.2	180.00	-32.8	0.0	32.8	30.3	2.47	13.263		
700.0	700.0	700.0	700.0	1.5	1.5	180.00	-32.8	0.0	32.8	29.9	2.92	11.223		
800.0	800.0	800.0	800.0	1.7	1.7	180.00	-32.8	0.0	32.8	29.4	3.37	9.726		
900.0	900.0	900.0	900.0	1.9	1.9	180.00	-32.8	0.0	32.8	29.0	3.82	8.582		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	180.00	-32.8	0.0	32.8	28.5	4.27	7.679		
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	180.00	-32.8	0.0	32.8	28.1	4.72	6.947		
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	180.00	-32.8	0.0	32.8	27.6	5.17	6.343		
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	180.00	-32.8	0.0	32.8	27.2	5.62	5.836		
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	180.00	-32.8	0.0	32.8	26.7	6.07	5.403		
1,500.0	1,500.0	1,500.0	1,500.0	3.3	3.3	180.00	-32.8	0.0	32.8	26.3	6.52	5.031 CC		
1,600.0	1,600.0	1,600.0	1,600.0	3.5	3.5	103.51	-32.8	0.0	33.2	26.2	6.96	4.766 ES		
1,700.0	1,699.8	1,699.8	1,699.8	3.7	3.7	111.89	-32.8	0.0	34.8	27.4	7.39	4.704		
1,800.0	1,799.5	1,799.5	1,799.5	3.9	3.9	123.80	-32.8	0.0	38.9	31.0	7.82	4.969		
1,900.0	1,898.8	1,898.8	1,898.8	4.1	4.2	135.77	-32.8	0.0	46.4	38.1	8.25	5.621		
2,000.0	1,998.0	1,998.0	1,998.0	4.4	4.4	144.40	-32.8	0.0	55.6	47.0	8.69	6.405		
2,100.0	2,097.3	2,097.3	2,097.3	4.6	4.6	150.48	-32.8	0.0	65.8	56.7	9.12	7.210		
2,200.0	2,196.6	2,196.6	2,196.6	4.9	4.8	154.91	-32.8	0.0	76.5	66.9	9.56	7.996		
2,300.0	2,295.9	2,295.9	2,295.9	5.2	5.0	158.24	-32.8	0.0	87.5	77.5	10.00	8.745		
2,400.0	2,395.2	2,395.2	2,395.2	5.4	5.3	160.82	-32.8	0.0	98.7	88.3	10.45	9.452		
2,500.0	2,494.4	2,494.4	2,494.4	5.7	5.5	162.87	-32.8	0.0	110.2	99.3	10.89	10.114		
2,600.0	2,593.7	2,593.7	2,593.7	6.0	5.7	164.53	-32.8	0.0	121.7	110.3	11.34	10.733		
2,700.0	2,693.0	2,693.0	2,693.0	6.3	5.9	165.90	-32.8	0.0	133.3	121.5	11.78	11.311		
2,800.0	2,792.3	2,792.3	2,792.3	6.6	6.2	167.06	-32.8	0.0	144.9	132.7	12.23	11.851		
2,900.0	2,891.5	2,891.5	2,891.5	6.9	6.4	168.04	-32.8	0.0	156.7	144.0	12.68	12.355		
3,000.0	2,990.8	2,990.8	2,990.8	7.1	6.6	168.89	-32.8	0.0	168.4	155.3	13.13	12.827		
3,100.0	3,090.1	3,084.8	3,084.8	7.4	6.8	169.65	-33.1	-1.2	181.5	168.0	13.56	13.392		
3,200.0	3,189.4	3,177.4	3,177.3	7.7	7.0	170.42	-33.9	-5.4	197.8	183.9	13.97	14.166		
3,300.0	3,288.7	3,268.8	3,268.5	8.0	7.2	171.18	-35.4	-12.3	217.3	202.9	14.37	15.120		
3,400.0	3,387.9	3,359.1	3,358.1	8.3	7.4	171.89	-37.5	-22.0	239.9	225.1	14.78	16.232		
3,500.0	3,487.2	3,447.9	3,446.1	8.6	7.6	172.54	-40.1	-34.2	265.5	250.3	15.18	17.488		
3,600.0	3,586.5	3,535.2	3,532.1	8.9	7.8	173.12	-43.3	-48.7	294.1	278.6	15.59	18.870		
6,500.0	6,215.2	6,256.0	6,215.2	17.1	15.5	-86.40	-120.2	-407.1	230.2	197.8	32.48	7.088		
6,600.0	6,216.0	6,256.8	6,216.0	18.8	15.5	-90.00	-120.2	-407.1	167.6	133.3	34.26	4.891		
6,674.7	6,216.0	6,256.8	6,216.0	20.3	15.5	-90.00	-120.2	-407.1	150.0	114.3	35.71	4.200 SF		
6,700.0	6,216.0	6,256.8	6,216.0	20.7	15.5	-90.00	-120.2	-407.1	152.1	115.9	36.20	4.202		
6,800.0	6,216.0	6,256.8	6,216.0	22.9	15.5	-90.00	-120.2	-407.1	195.4	157.1	38.32	5.100		
6,900.0	6,216.0	6,256.8	6,216.0	25.1	15.5	-90.00	-120.2	-407.1	270.7	230.1	40.58	6.670		

<b>Company:</b>	BONANZA CREEK ENERGY OPERATING	<b>Local Co-ordinate Reference:</b>	Well SEVENTY HOLES 41-11-18HZ
<b>Project:</b>	SEC.18-T4N-R62W	<b>TVD Reference:</b>	WELL @ 4524.0ft (Original Well Elev)
<b>Reference Site:</b>	SEVENTY HOLES PAD SEC.18-T4N-R62W	<b>MD Reference:</b>	WELL @ 4524.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	SEVENTY HOLES 41-11-18HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	PLAN 1 (APRIL 18, 2012)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4524.0ft (Original Well Elev) Coordinates are relative to: SEVENTY HOLES 41-11-18HZ  
 Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Northern Zone  
 Central Meridian is -105.500000 ° Grid Convergence at Surface is: 0.74°



<b>Company:</b>	BONANZA CREEK ENERGY OPERATING	<b>Local Co-ordinate Reference:</b>	Well SEVENTY HOLES 41-11-18HZ
<b>Project:</b>	SEC.18-T4N-R62W	<b>TVD Reference:</b>	WELL @ 4524.0ft (Original Well Elev)
<b>Reference Site:</b>	SEVENTY HOLES PAD SEC.18-T4N-R62W	<b>MD Reference:</b>	WELL @ 4524.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	SEVENTY HOLES 41-11-18HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	PLAN 1 (APRIL 18, 2012)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4524.0ft (Original Well Elev) Coordinates are relative to: SEVENTY HOLES 41-11-18HZ  
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