

# BONANZA CREEK ENERGY OPERATING

Well Name: **LATHAM 14-11-2HZ**

Surface Location: LATHAM 14-11-2HZ

North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

Ground Elevation: 4539.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1367028.03	3303159.28	40.335790	-104.412500	
KB 15' RKB @ 4554.0ft (KB 15')						

## WELLBORE TARGET DETAILS (LAT/LONG)

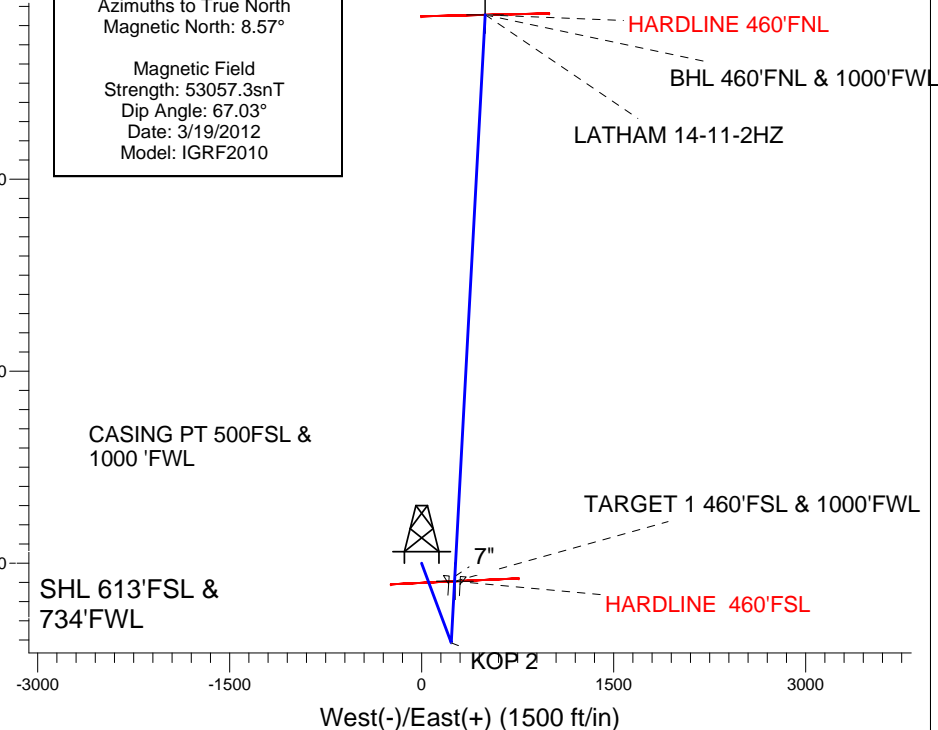
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
HARDLINE 460'FSL	2.0	-142.0	259.0	40.335400	-104.411571	Polygon
HARDLINE 460'FNL	2.0	4284.0	496.0	40.347549	-104.410721	Polygon
BHL 460'FNL & 1000'FWL	6308.0	4284.3	496.2	40.347550	-104.410720	Point
TARGET 1 460'FSL & 1000'FWL	6308.0	-142.1	259.3	40.335400	-104.411570	Point

LATHAM 14-11-2HZ  
LATHAM 14-11-2HZ  
PLAN 1 (MAR 19, 2012)  
8:01, March 20 2012



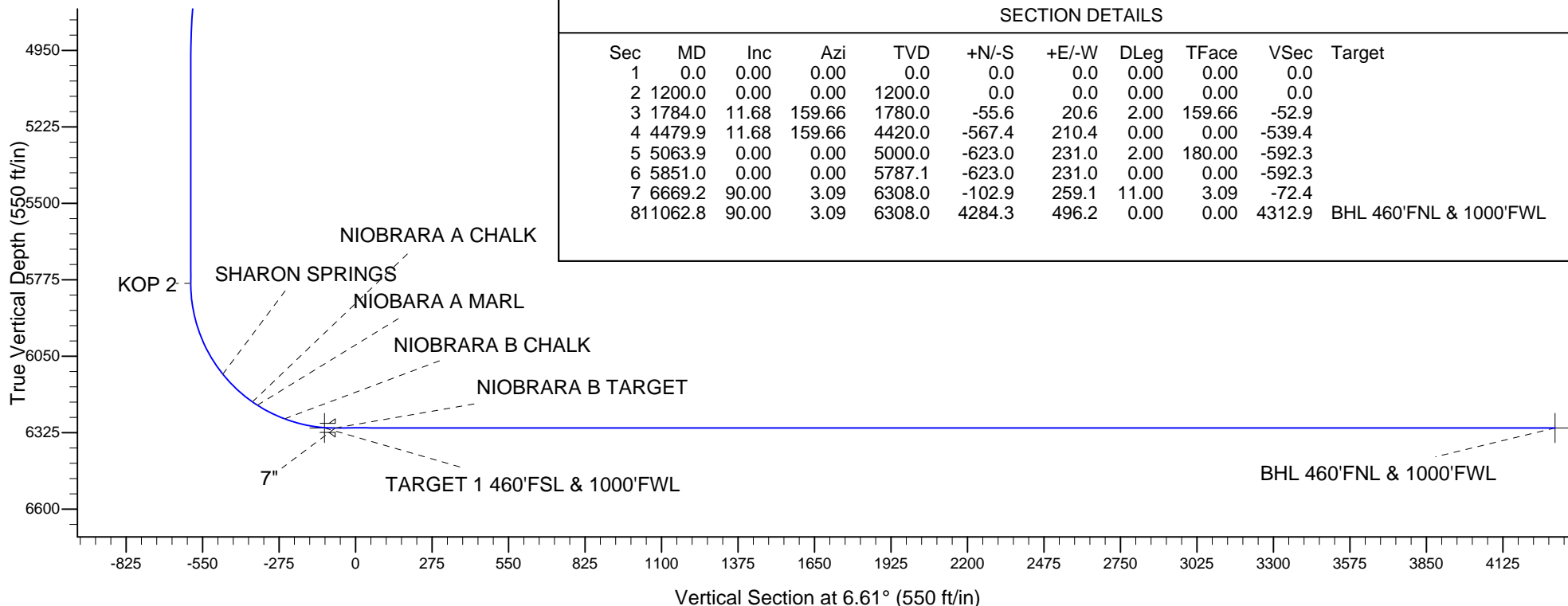
Azimuths to True North  
Magnetic North: 8.57°  
  
Magnetic Field  
Strength: 53057.3snT  
Dip Angle: 67.03°  
Date: 3/19/2012  
Model: IGRF2010

South(-)/North(+) (1500 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	1200.0	0.00	0.00	1200.0	0.0	0.0	0.00	0.00	0.0	
3	1784.0	11.68	159.66	1780.0	-55.6	20.6	2.00	159.66	-52.9	
4	4479.9	11.68	159.66	4420.0	-567.4	210.4	0.00	0.00	-539.4	
5	5063.9	0.00	0.00	5000.0	-623.0	231.0	2.00	180.00	-592.3	
6	5851.0	0.00	0.00	5787.1	-623.0	231.0	0.00	0.00	-592.3	
7	6669.2	90.00	3.09	6308.0	-102.9	259.1	11.00	3.09	-72.4	
8	11062.8	90.00	3.09	6308.0	4284.3	496.2	0.00	0.00	4312.9	BHL 460'FNL & 1000'FWL





**Directional**

# **BONANZA CREEK ENERGY OPERATING**

**SEC.36-T5N-R63W  
LATHAM 14-11-2HZ  
LATHAM 14-11-2HZ**

**Wellbore #1**

**Plan: PLAN 1 (MAR 19, 2012)**

## **Standard Planning Report**

**20 March, 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	
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,784.0	11.68	159.66	1,780.0	-55.6	20.6	2.00	2.00	0.00	159.66	
4,479.9	11.68	159.66	4,420.0	-567.4	210.4	0.00	0.00	0.00	0.00	
5,063.9	0.00	0.00	5,000.0	-623.0	231.0	2.00	-2.00	0.00	180.00	
5,851.0	0.00	0.00	5,787.1	-623.0	231.0	0.00	0.00	0.00	0.00	
6,669.2	90.00	3.09	6,308.0	-102.9	259.1	11.00	11.00	0.00	3.09	
11,062.8	90.00	3.09	6,308.0	4,284.3	496.2	0.00	0.00	0.00	0.00	BHL 460'FNL & 100'

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well LATHAM 14-11-2HZ
<b>Company:</b>	BONANZA CREEK ENERGY OPERATING	<b>TVD Reference:</b>	RKB @ 4554.0ft (KB 15')
<b>Project:</b>	SEC.36-T5N-R63W	<b>MD Reference:</b>	RKB @ 4554.0ft (KB 15')
<b>Site:</b>	LATHAM 14-11-2HZ	<b>North Reference:</b>	True
<b>Well:</b>	LATHAM 14-11-2HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	PLAN 1 (MAR 19, 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
<b>KOP 1</b>									
1,300.0	2.00	159.66	1,300.0	-1.6	0.6	-1.6	2.00	2.00	0.00
1,400.0	4.00	159.66	1,399.8	-6.5	2.4	-6.2	2.00	2.00	0.00
1,500.0	6.00	159.66	1,499.5	-14.7	5.5	-14.0	2.00	2.00	0.00
1,600.0	8.00	159.66	1,598.7	-26.1	9.7	-24.9	2.00	2.00	0.00
1,700.0	10.00	159.66	1,697.5	-40.8	15.1	-38.8	2.00	2.00	0.00
1,784.0	11.68	159.66	1,780.0	-55.6	20.6	-52.9	2.00	2.00	0.00
1,800.0	11.68	159.66	1,795.6	-58.7	21.7	-55.8	0.00	0.00	0.00
1,900.0	11.68	159.66	1,893.6	-77.6	28.8	-73.8	0.00	0.00	0.00
2,000.0	11.68	159.66	1,991.5	-96.6	35.8	-91.9	0.00	0.00	0.00
2,100.0	11.68	159.66	2,089.4	-115.6	42.9	-109.9	0.00	0.00	0.00
2,200.0	11.68	159.66	2,187.3	-134.6	49.9	-128.0	0.00	0.00	0.00
2,300.0	11.68	159.66	2,285.3	-153.6	56.9	-146.0	0.00	0.00	0.00
2,400.0	11.68	159.66	2,383.2	-172.6	64.0	-164.0	0.00	0.00	0.00
2,500.0	11.68	159.66	2,481.1	-191.5	71.0	-182.1	0.00	0.00	0.00
2,600.0	11.68	159.66	2,579.1	-210.5	78.1	-200.1	0.00	0.00	0.00
2,700.0	11.68	159.66	2,677.0	-229.5	85.1	-218.2	0.00	0.00	0.00
2,800.0	11.68	159.66	2,774.9	-248.5	92.1	-236.2	0.00	0.00	0.00
2,900.0	11.68	159.66	2,872.9	-267.5	99.2	-254.3	0.00	0.00	0.00
3,000.0	11.68	159.66	2,970.8	-286.5	106.2	-272.3	0.00	0.00	0.00
3,100.0	11.68	159.66	3,068.7	-305.4	113.3	-290.4	0.00	0.00	0.00
3,200.0	11.68	159.66	3,166.6	-324.4	120.3	-308.4	0.00	0.00	0.00
3,300.0	11.68	159.66	3,264.6	-343.4	127.3	-326.5	0.00	0.00	0.00
3,365.8	11.68	159.66	3,329.0	-355.9	132.0	-338.3	0.00	0.00	0.00
<b>PARKMAN</b>									
3,400.0	11.68	159.66	3,362.5	-362.4	134.4	-344.5	0.00	0.00	0.00
3,500.0	11.68	159.66	3,460.4	-381.4	141.4	-362.6	0.00	0.00	0.00
3,600.0	11.68	159.66	3,558.4	-400.3	148.4	-380.6	0.00	0.00	0.00
3,700.0	11.68	159.66	3,656.3	-419.3	155.5	-398.7	0.00	0.00	0.00
3,800.0	11.68	159.66	3,754.2	-438.3	162.5	-416.7	0.00	0.00	0.00
3,900.0	11.68	159.66	3,852.1	-457.3	169.6	-434.8	0.00	0.00	0.00
4,000.0	11.68	159.66	3,950.1	-476.3	176.6	-452.8	0.00	0.00	0.00
4,100.0	11.68	159.66	4,048.0	-495.3	183.6	-470.9	0.00	0.00	0.00
4,177.6	11.68	159.66	4,124.0	-510.0	189.1	-484.9	0.00	0.00	0.00
<b>SUSSEX</b>									
4,200.0	11.68	159.66	4,145.9	-514.2	190.7	-488.9	0.00	0.00	0.00
4,300.0	11.68	159.66	4,243.9	-533.2	197.7	-506.9	0.00	0.00	0.00
4,400.0	11.68	159.66	4,341.8	-552.2	204.8	-525.0	0.00	0.00	0.00
4,479.9	11.68	159.66	4,420.0	-567.4	210.4	-539.4	0.00	0.00	0.00
4,500.0	11.28	159.66	4,439.7	-571.1	211.8	-543.0	2.00	-2.00	0.00

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<b>Well:</b>	LATHAM 14-11-2HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	PLAN 1 (MAR 19, 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)
4,600.0	9.28	159.66	4,538.1	-587.9	218.0	-558.9	2.00	-2.00	0.00
4,700.0	7.28	159.66	4,637.1	-601.4	223.0	-571.7	2.00	-2.00	0.00
4,800.0	5.28	159.66	4,736.5	-611.6	226.8	-581.5	2.00	-2.00	0.00
4,900.0	3.28	159.66	4,836.2	-618.6	229.4	-588.1	2.00	-2.00	0.00
5,000.0	1.28	159.66	4,936.1	-622.3	230.8	-591.7	2.00	-2.00	0.00
5,063.9	0.00	0.00	5,000.0	-623.0	231.0	-592.3	2.00	-2.00	0.00
5,100.0	0.00	0.00	5,036.1	-623.0	231.0	-592.3	0.00	0.00	0.00
5,200.0	0.00	0.00	5,136.1	-623.0	231.0	-592.3	0.00	0.00	0.00
5,300.0	0.00	0.00	5,236.1	-623.0	231.0	-592.3	0.00	0.00	0.00
5,400.0	0.00	0.00	5,336.1	-623.0	231.0	-592.3	0.00	0.00	0.00
5,500.0	0.00	0.00	5,436.1	-623.0	231.0	-592.3	0.00	0.00	0.00
5,600.0	0.00	0.00	5,536.1	-623.0	231.0	-592.3	0.00	0.00	0.00
5,700.0	0.00	0.00	5,636.1	-623.0	231.0	-592.3	0.00	0.00	0.00
5,800.0	0.00	0.00	5,736.1	-623.0	231.0	-592.3	0.00	0.00	0.00
5,851.0	0.00	0.00	5,787.1	-623.0	231.0	-592.3	0.00	0.00	0.00
<b>KOP 2</b>									
5,900.0	5.39	3.09	5,836.0	-620.7	231.1	-590.0	10.99	10.99	0.00
6,000.0	16.39	3.09	5,934.1	-601.9	232.1	-571.2	11.00	11.00	0.00
6,100.0	27.39	3.09	6,026.7	-564.7	234.1	-534.0	11.00	11.00	0.00
6,200.0	38.39	3.09	6,110.6	-510.6	237.1	-479.9	11.00	11.00	0.00
6,204.4	38.87	3.09	6,114.0	-507.8	237.2	-477.2	11.00	11.00	0.00
<b>SHARON SPRINGS</b>									
6,300.0	49.39	3.09	6,182.5	-441.5	240.8	-410.8	11.00	11.00	0.00
6,351.4	55.04	3.09	6,214.0	-400.9	243.0	-370.3	11.00	11.00	0.00
<b>NIOBRARA A CHALK</b>									
6,373.0	57.41	3.09	6,226.0	-383.0	244.0	-352.4	11.00	11.00	0.00
<b>NIOBARA A MARL</b>									
6,400.0	60.39	3.09	6,240.0	-359.9	245.2	-329.3	11.00	11.00	0.00
6,482.8	69.50	3.09	6,275.0	-285.1	249.3	-254.5	11.00	11.00	0.00
<b>NIOBRARA B CHALK</b>									
6,500.0	71.39	3.09	6,280.8	-268.9	250.1	-238.3	11.00	11.00	0.00
6,600.0	82.39	3.09	6,303.4	-171.8	255.4	-141.3	11.00	11.00	0.00
6,669.0	89.98	3.09	6,308.0	-103.1	259.1	-72.6	11.00	11.00	0.00
<b>7"</b>									
6,669.2	90.00	3.09	6,308.0	-102.9	259.1	-72.4	11.00	11.00	0.00
<b>NIOBRARA B TARGET - NIOBRARA B MARL</b>									
6,700.0	90.00	3.09	6,308.0	-72.1	260.8	-41.7	0.00	0.00	0.00
6,800.0	90.00	3.09	6,308.0	27.7	266.2	58.1	0.00	0.00	0.00
6,900.0	90.00	3.09	6,308.0	127.6	271.6	158.0	0.00	0.00	0.00
7,000.0	90.00	3.09	6,308.0	227.4	277.0	257.8	0.00	0.00	0.00
7,100.0	90.00	3.09	6,308.0	327.3	282.3	357.6	0.00	0.00	0.00
7,200.0	90.00	3.09	6,308.0	427.1	287.7	457.4	0.00	0.00	0.00
7,300.0	90.00	3.09	6,308.0	527.0	293.1	557.2	0.00	0.00	0.00
7,400.0	90.00	3.09	6,308.0	626.8	298.5	657.0	0.00	0.00	0.00
7,500.0	90.00	3.09	6,308.0	726.7	303.9	756.8	0.00	0.00	0.00
7,600.0	90.00	3.09	6,308.0	826.5	309.3	856.6	0.00	0.00	0.00
7,700.0	90.00	3.09	6,308.0	926.4	314.7	956.4	0.00	0.00	0.00
7,800.0	90.00	3.09	6,308.0	1,026.3	320.1	1,056.3	0.00	0.00	0.00
7,900.0	90.00	3.09	6,308.0	1,126.1	325.5	1,156.1	0.00	0.00	0.00
8,000.0	90.00	3.09	6,308.0	1,226.0	330.9	1,255.9	0.00	0.00	0.00
8,100.0	90.00	3.09	6,308.0	1,325.8	336.3	1,355.7	0.00	0.00	0.00
8,200.0	90.00	3.09	6,308.0	1,425.7	341.7	1,455.5	0.00	0.00	0.00
8,300.0	90.00	3.09	6,308.0	1,525.5	347.1	1,555.3	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well LATHAM 14-11-2HZ
<b>Company:</b>	BONANZA CREEK ENERGY OPERATING	<b>TVD Reference:</b>	RKB @ 4554.0ft (KB 15')
<b>Project:</b>	SEC.36-T5N-R63W	<b>MD Reference:</b>	RKB @ 4554.0ft (KB 15')
<b>Site:</b>	LATHAM 14-11-2HZ	<b>North Reference:</b>	True
<b>Well:</b>	LATHAM 14-11-2HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	PLAN 1 (MAR 19, 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)
8,400.0	90.00	3.09	6,308.0	1,625.4	352.5	1,655.1	0.00	0.00	0.00
8,500.0	90.00	3.09	6,308.0	1,725.2	357.9	1,754.9	0.00	0.00	0.00
8,600.0	90.00	3.09	6,308.0	1,825.1	363.3	1,854.8	0.00	0.00	0.00
8,700.0	90.00	3.09	6,308.0	1,924.9	368.7	1,954.6	0.00	0.00	0.00
8,800.0	90.00	3.09	6,308.0	2,024.8	374.1	2,054.4	0.00	0.00	0.00
8,900.0	90.00	3.09	6,308.0	2,124.6	379.5	2,154.2	0.00	0.00	0.00
9,000.0	90.00	3.09	6,308.0	2,224.5	384.9	2,254.0	0.00	0.00	0.00
9,100.0	90.00	3.09	6,308.0	2,324.4	390.3	2,353.8	0.00	0.00	0.00
9,200.0	90.00	3.09	6,308.0	2,424.2	395.6	2,453.6	0.00	0.00	0.00
9,300.0	90.00	3.09	6,308.0	2,524.1	401.0	2,553.4	0.00	0.00	0.00
9,400.0	90.00	3.09	6,308.0	2,623.9	406.4	2,653.3	0.00	0.00	0.00
9,500.0	90.00	3.09	6,308.0	2,723.8	411.8	2,753.1	0.00	0.00	0.00
9,600.0	90.00	3.09	6,308.0	2,823.6	417.2	2,852.9	0.00	0.00	0.00
9,700.0	90.00	3.09	6,308.0	2,923.5	422.6	2,952.7	0.00	0.00	0.00
9,800.0	90.00	3.09	6,308.0	3,023.3	428.0	3,052.5	0.00	0.00	0.00
9,900.0	90.00	3.09	6,308.0	3,123.2	433.4	3,152.3	0.00	0.00	0.00
10,000.0	90.00	3.09	6,308.0	3,223.0	438.8	3,252.1	0.00	0.00	0.00
10,100.0	90.00	3.09	6,308.0	3,322.9	444.2	3,351.9	0.00	0.00	0.00
10,200.0	90.00	3.09	6,308.0	3,422.8	449.6	3,451.8	0.00	0.00	0.00
10,300.0	90.00	3.09	6,308.0	3,522.6	455.0	3,551.6	0.00	0.00	0.00
10,400.0	90.00	3.09	6,308.0	3,622.5	460.4	3,651.4	0.00	0.00	0.00
10,500.0	90.00	3.09	6,308.0	3,722.3	465.8	3,751.2	0.00	0.00	0.00
10,600.0	90.00	3.09	6,308.0	3,822.2	471.2	3,851.0	0.00	0.00	0.00
10,700.0	90.00	3.09	6,308.0	3,922.0	476.6	3,950.8	0.00	0.00	0.00
10,800.0	90.00	3.09	6,308.0	4,021.9	482.0	4,050.6	0.00	0.00	0.00
10,900.0	90.00	3.09	6,308.0	4,121.7	487.4	4,150.4	0.00	0.00	0.00
11,000.0	90.00	3.09	6,308.0	4,221.6	492.8	4,250.3	0.00	0.00	0.00
11,062.8	90.00	3.09	6,308.0	4,284.3	496.2	4,312.9	0.00	0.00	0.00

Casing Points				
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
6,669.0	6,308.0	7"	7	8-3/4

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,365.8	3,329.0	PARKMAN		0.00	
4,177.6	4,124.0	SUSSEX		0.00	
6,204.4	6,114.0	SHARON SPRINGS		0.00	
6,351.4	6,214.0	NIOBRARA A CHALK		0.00	
6,373.0	6,226.0	NIOBARA A MARL		0.00	
6,482.8	6,275.0	NIOBRARA B CHALK		0.00	
6,669.2	6,308.0	NIOBRARA B TARGET		0.00	
6,669.2	6,308.0	NIOBRARA B MARL		0.00	
	6,350.0	NIOBRARA C CHALK		0.00	

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well LATHAM 14-11-2HZ
<b>Company:</b>	BONANZA CREEK ENERGY OPERATING	<b>TVD Reference:</b>	RKB @ 4554.0ft (KB 15')
<b>Project:</b>	SEC.36-T5N-R63W	<b>MD Reference:</b>	RKB @ 4554.0ft (KB 15')
<b>Site:</b>	LATHAM 14-11-2HZ	<b>North Reference:</b>	True
<b>Well:</b>	LATHAM 14-11-2HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	PLAN 1 (MAR 19, 2012)		

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
1,200.0	1,200.0	0.0	0.0	KOP 1	
5,851.0	5,787.1	-623.0	231.0	KOP 2	