

# BONANZA CREEK ENERGY OPERATING

Well Name: **Latham O-K-2HNB**

Surface Location: Latham 34-2 Pad Sec. 2-T4N-R63W  
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

Ground Elevation: 4521.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1366829.46	3305673.69	40.335160	-104.403490	

RKB - 15' WELL @ 4536.0ft (RKB - 15')

## WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
BHL 470'FNL & 2558'FWL	6285.0	4521.1	-459.9	Point
T1 531'FSL & 2705'FWL	6285.0	215.0	-546.4	Point



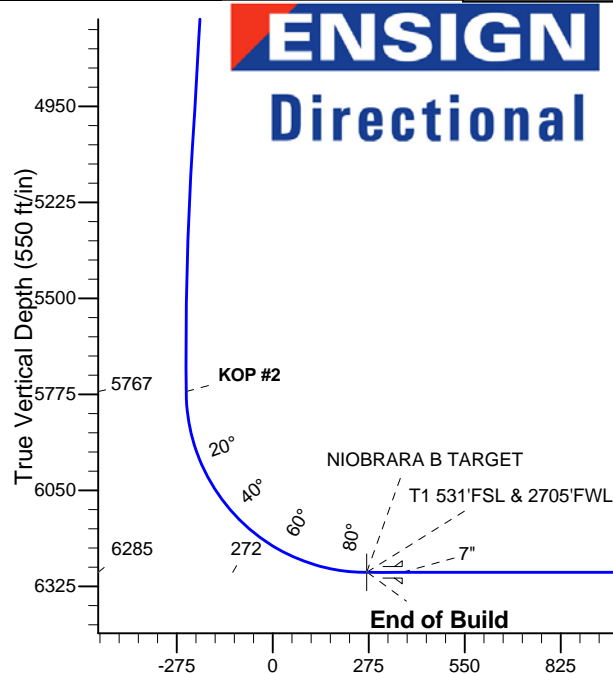
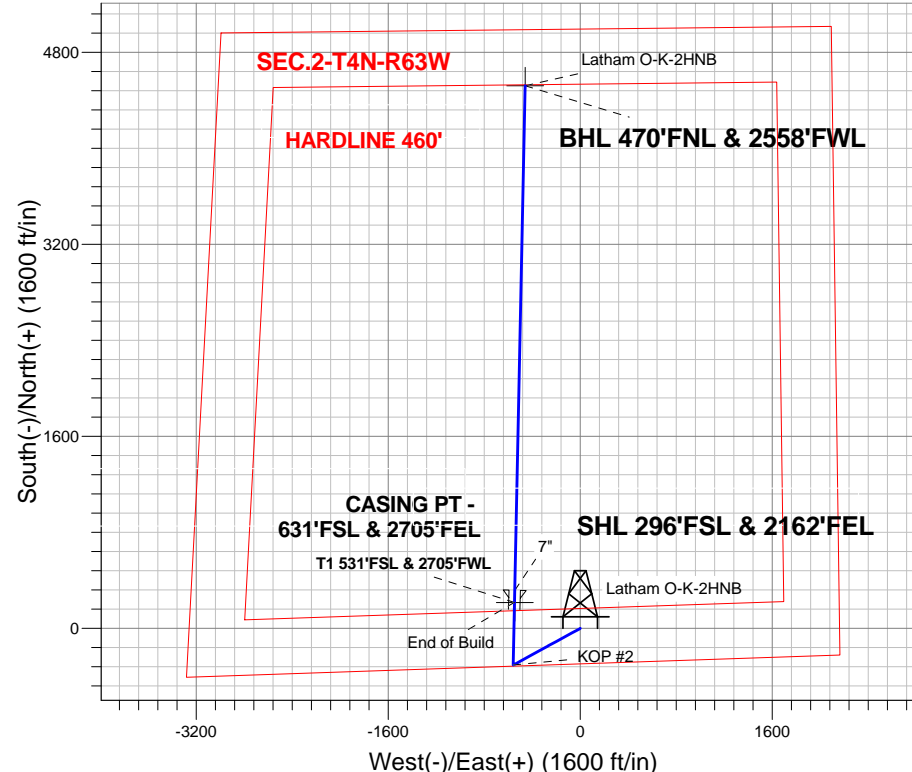
Azimuths to True North  
Magnetic North: 8.43°

Magnetic Field  
Strength: 52952.5srT  
Dip Angle: 67.00°  
Date: 3/19/2013  
Model: IGRF2010

Latham 34-2 Pad Sec. 2-T4N-R63W  
Latham O-K-2HNB  
Plan #2 (3-19-13)

## ANNOTATIONS

TVD	MD	Annotation
800.0	800.0	KOP #1
5766.7	5811.3	KOP #2
6285.0	6629.4	End of Build



## 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	800.0	0.00	0.00	800.0	0.0	0.0	0.00	0.00	0.0	
3	1213.5	8.27	241.31	1212.1	-14.3	-26.1	2.00	241.31	-11.6	
4	5231.2	8.27	241.31	5187.9	-291.7	-533.1	0.00	0.00	-236.3	
5	5644.6	0.00	0.00	5600.0	-306.0	-559.2	2.00	180.00	-247.8	
6	5808.8	0.00	0.00	5764.1	-306.0	-559.2	0.00	0.00	-247.8	
7	6627.0	90.00	1.18	6285.0	214.8	-548.5	11.00	1.18	269.2	
8	6727.2	90.00	1.18	6285.0	315.0	-546.4	0.00	0.00	368.7	
9	6727.5	90.00	1.18	6285.0	315.3	-546.4	1.00	-90.00	369.0	
10	10934.2	90.00	1.18	6285.0	4521.1	-459.9	0.00	0.00	4544.4	BHL 470'FNL & 2558'FWL

BHL 470'FNL & 2558'FWL

Vertical Section at 354.19° (550 ft/in)



## **Directional**

# **BONANZA CREEK ENERGY OPERATING**

**SEC.2-T4N-R63W**

**Latham 34-2 Pad Sec. 2-T4N-R63W**

**Latham O-K-2HNB**

**Wellbore #1**

**Plan: Plan #2 (3-19-13)**

## **Standard Planning Report**

**19 March, 2013**

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Latham O-K-2HNB
<b>Company:</b>	BONANZA CREEK ENERGY OPERATING	<b>TVD Reference:</b>	WELL @ 4536.0ft (RKB - 15')
<b>Project:</b>	SEC.2-T4N-R63W	<b>MD Reference:</b>	WELL @ 4536.0ft (RKB - 15')
<b>Site:</b>	Latham 34-2 Pad Sec. 2-T4N-R63W	<b>North Reference:</b>	True
<b>Well:</b>	Latham O-K-2HNB	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (3-19-13)		

<b>Project</b>	SEC.2-T4N-R63W, Weld County, Colorado		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		Using Well Reference Point
<b>Map Zone:</b>	Colorado Northern Zone		Using geodetic scale factor

Site						Latham 34-2 Pad Sec. 2-T4N-R63W											
<b>Site Position:</b>						<b>Northing:</b>			1,366,829.47 ft			<b>Latitude:</b>			40.335160		
<b>From:</b>			Lat/Long			<b>Easting:</b>			3,305,673.68 ft			<b>Longitude:</b>			-104.403490		
<b>Position Uncertainty:</b>			0.0 ft			<b>Slot Radius:</b>			"			<b>Grid Convergence:</b>			0.71 °		

Well	Latham O-K-2HNB					
Well Position	+N/-S	0.0 ft	Northing:	1,366,829.46 ft	Latitude:	40.335160
	+E/-W	0.0 ft	Easting:	3,305,673.69 ft	Longitude:	-104.403490
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,521.0 ft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	3/19/2013	8.43	67.00	52,952

<b>Design</b>	Plan #2 (3-19-13)			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	354.19

<b>Plan Sections</b>										
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	
800.0	0.00	0.00	800.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,213.5	8.27	241.31	1,212.1	-14.3	-26.1	2.00	2.00	0.00	241.31	
5,231.2	8.27	241.31	5,187.9	-291.7	-533.1	0.00	0.00	0.00	0.00	
5,644.6	0.00	0.00	5,600.0	-306.0	-559.2	2.00	-2.00	0.00	180.00	
5,808.8	0.00	0.00	5,764.1	-306.0	-559.2	0.00	0.00	0.00	0.00	
6,627.0	90.00	1.18	6,285.0	214.8	-548.5	11.00	11.00	0.00	1.18	
6,727.2	90.00	1.18	6,285.0	315.0	-546.4	0.00	0.00	0.00	0.00	
6,727.5	90.00	1.18	6,285.0	315.3	-546.4	1.00	0.00	-1.00	-90.00	
10,934.2	90.00	1.18	6,285.0	4,521.1	-459.9	0.00	0.00	0.00	0.00	BHL 470'FNL & 25°

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Latham O-K-2HNB
<b>Company:</b>	BONANZA CREEK ENERGY OPERATING	<b>TVD Reference:</b>	WELL @ 4536.0ft (RKB - 15')
<b>Project:</b>	SEC.2-T4N-R63W	<b>MD Reference:</b>	WELL @ 4536.0ft (RKB - 15')
<b>Site:</b>	Latham 34-2 Pad Sec. 2-T4N-R63W	<b>North Reference:</b>	True
<b>Well:</b>	Latham O-K-2HNB	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (3-19-13)		

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
40.0	0.00	0.00	40.0	0.0	0.0	0.0	0.00	0.00	0.00
80.0	0.00	0.00	80.0	0.0	0.0	0.0	0.00	0.00	0.00
120.0	0.00	0.00	120.0	0.0	0.0	0.0	0.00	0.00	0.00
160.0	0.00	0.00	160.0	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
240.0	0.00	0.00	240.0	0.0	0.0	0.0	0.00	0.00	0.00
280.0	0.00	0.00	280.0	0.0	0.0	0.0	0.00	0.00	0.00
320.0	0.00	0.00	320.0	0.0	0.0	0.0	0.00	0.00	0.00
360.0	0.00	0.00	360.0	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
440.0	0.00	0.00	440.0	0.0	0.0	0.0	0.00	0.00	0.00
480.0	0.00	0.00	480.0	0.0	0.0	0.0	0.00	0.00	0.00
520.0	0.00	0.00	520.0	0.0	0.0	0.0	0.00	0.00	0.00
560.0	0.00	0.00	560.0	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
640.0	0.00	0.00	640.0	0.0	0.0	0.0	0.00	0.00	0.00
680.0	0.00	0.00	680.0	0.0	0.0	0.0	0.00	0.00	0.00
720.0	0.00	0.00	720.0	0.0	0.0	0.0	0.00	0.00	0.00
760.0	0.00	0.00	760.0	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
<b>KOP #1</b>									
840.0	0.80	241.31	840.0	-0.1	-0.2	-0.1	2.00	2.00	0.00
880.0	1.60	241.31	880.0	-0.5	-1.0	-0.4	2.00	2.00	0.00
920.0	2.40	241.31	920.0	-1.2	-2.2	-1.0	2.00	2.00	0.00
960.0	3.20	241.31	959.9	-2.1	-3.9	-1.7	2.00	2.00	0.00
1,000.0	4.00	241.31	999.8	-3.3	-6.1	-2.7	2.00	2.00	0.00
1,040.0	4.80	241.31	1,039.7	-4.8	-8.8	-3.9	2.00	2.00	0.00
1,080.0	5.60	241.31	1,079.6	-6.6	-12.0	-5.3	2.00	2.00	0.00
1,120.0	6.40	241.31	1,119.3	-8.6	-15.7	-6.9	2.00	2.00	0.00
1,160.0	7.20	241.31	1,159.1	-10.8	-19.8	-8.8	2.00	2.00	0.00
1,200.0	8.00	241.31	1,198.7	-13.4	-24.5	-10.8	2.00	2.00	0.00
1,213.5	8.27	241.31	1,212.1	-14.3	-26.1	-11.6	2.00	2.00	0.00
1,240.0	8.27	241.31	1,238.3	-16.1	-29.5	-13.1	0.00	0.00	0.00
1,280.0	8.27	241.31	1,277.9	-18.9	-34.5	-15.3	0.00	0.00	0.00
1,320.0	8.27	241.31	1,317.5	-21.7	-39.6	-17.5	0.00	0.00	0.00
1,360.0	8.27	241.31	1,357.0	-24.4	-44.6	-19.8	0.00	0.00	0.00
1,400.0	8.27	241.31	1,396.6	-27.2	-49.7	-22.0	0.00	0.00	0.00
1,440.0	8.27	241.31	1,436.2	-29.9	-54.7	-24.2	0.00	0.00	0.00
1,480.0	8.27	241.31	1,475.8	-32.7	-59.8	-26.5	0.00	0.00	0.00
1,520.0	8.27	241.31	1,515.4	-35.5	-64.8	-28.7	0.00	0.00	0.00
1,560.0	8.27	241.31	1,555.0	-38.2	-69.9	-31.0	0.00	0.00	0.00
1,600.0	8.27	241.31	1,594.5	-41.0	-74.9	-33.2	0.00	0.00	0.00
1,640.0	8.27	241.31	1,634.1	-43.7	-79.9	-35.4	0.00	0.00	0.00
1,680.0	8.27	241.31	1,673.7	-46.5	-85.0	-37.7	0.00	0.00	0.00
1,720.0	8.27	241.31	1,713.3	-49.3	-90.0	-39.9	0.00	0.00	0.00
1,760.0	8.27	241.31	1,752.9	-52.0	-95.1	-42.1	0.00	0.00	0.00
1,800.0	8.27	241.31	1,792.5	-54.8	-100.1	-44.4	0.00	0.00	0.00
1,840.0	8.27	241.31	1,832.1	-57.6	-105.2	-46.6	0.00	0.00	0.00
1,880.0	8.27	241.31	1,871.6	-60.3	-110.2	-48.9	0.00	0.00	0.00
1,920.0	8.27	241.31	1,911.2	-63.1	-115.3	-51.1	0.00	0.00	0.00
1,960.0	8.27	241.31	1,950.8	-65.8	-120.3	-53.3	0.00	0.00	0.00
2,000.0	8.27	241.31	1,990.4	-68.6	-125.4	-55.6	0.00	0.00	0.00
2,040.0	8.27	241.31	2,030.0	-71.4	-130.4	-57.8	0.00	0.00	0.00

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<b>Well:</b>	Latham O-K-2HNB	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (3-19-13)		

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)
2,080.0	8.27	241.31	2,069.6	-74.1	-135.5	-60.0	0.00	0.00	0.00
2,120.0	8.27	241.31	2,109.1	-76.9	-140.5	-62.3	0.00	0.00	0.00
2,160.0	8.27	241.31	2,148.7	-79.7	-145.6	-64.5	0.00	0.00	0.00
2,200.0	8.27	241.31	2,188.3	-82.4	-150.6	-66.7	0.00	0.00	0.00
2,240.0	8.27	241.31	2,227.9	-85.2	-155.7	-69.0	0.00	0.00	0.00
2,280.0	8.27	241.31	2,267.5	-87.9	-160.7	-71.2	0.00	0.00	0.00
2,320.0	8.27	241.31	2,307.1	-90.7	-165.7	-73.5	0.00	0.00	0.00
2,360.0	8.27	241.31	2,346.6	-93.5	-170.8	-75.7	0.00	0.00	0.00
2,400.0	8.27	241.31	2,386.2	-96.2	-175.8	-77.9	0.00	0.00	0.00
2,440.0	8.27	241.31	2,425.8	-99.0	-180.9	-80.2	0.00	0.00	0.00
2,480.0	8.27	241.31	2,465.4	-101.7	-185.9	-82.4	0.00	0.00	0.00
2,520.0	8.27	241.31	2,505.0	-104.5	-191.0	-84.6	0.00	0.00	0.00
2,560.0	8.27	241.31	2,544.6	-107.3	-196.0	-86.9	0.00	0.00	0.00
2,600.0	8.27	241.31	2,584.1	-110.0	-201.1	-89.1	0.00	0.00	0.00
2,640.0	8.27	241.31	2,623.7	-112.8	-206.1	-91.4	0.00	0.00	0.00
2,680.0	8.27	241.31	2,663.3	-115.6	-211.2	-93.6	0.00	0.00	0.00
2,720.0	8.27	241.31	2,702.9	-118.3	-216.2	-95.8	0.00	0.00	0.00
2,760.0	8.27	241.31	2,742.5	-121.1	-221.3	-98.1	0.00	0.00	0.00
2,800.0	8.27	241.31	2,782.1	-123.8	-226.3	-100.3	0.00	0.00	0.00
2,840.0	8.27	241.31	2,821.7	-126.6	-231.4	-102.5	0.00	0.00	0.00
2,880.0	8.27	241.31	2,861.2	-129.4	-236.4	-104.8	0.00	0.00	0.00
2,920.0	8.27	241.31	2,900.8	-132.1	-241.5	-107.0	0.00	0.00	0.00
2,960.0	8.27	241.31	2,940.4	-134.9	-246.5	-109.2	0.00	0.00	0.00
3,000.0	8.27	241.31	2,980.0	-137.6	-251.5	-111.5	0.00	0.00	0.00
3,040.0	8.27	241.31	3,019.6	-140.4	-256.6	-113.7	0.00	0.00	0.00
3,080.0	8.27	241.31	3,059.2	-143.2	-261.6	-116.0	0.00	0.00	0.00
3,120.0	8.27	241.31	3,098.7	-145.9	-266.7	-118.2	0.00	0.00	0.00
3,160.0	8.27	241.31	3,138.3	-148.7	-271.7	-120.4	0.00	0.00	0.00
3,200.0	8.27	241.31	3,177.9	-151.5	-276.8	-122.7	0.00	0.00	0.00
3,240.0	8.27	241.31	3,217.5	-154.2	-281.8	-124.9	0.00	0.00	0.00
3,280.0	8.27	241.31	3,257.1	-157.0	-286.9	-127.1	0.00	0.00	0.00
3,320.0	8.27	241.31	3,296.7	-159.7	-291.9	-129.4	0.00	0.00	0.00
3,360.0	8.27	241.31	3,336.2	-162.5	-297.0	-131.6	0.00	0.00	0.00
3,400.0	8.27	241.31	3,375.8	-165.3	-302.0	-133.9	0.00	0.00	0.00
3,440.0	8.27	241.31	3,415.4	-168.0	-307.1	-136.1	0.00	0.00	0.00
3,480.0	8.27	241.31	3,455.0	-170.8	-312.1	-138.3	0.00	0.00	0.00
3,520.0	8.27	241.31	3,494.6	-173.6	-317.2	-140.6	0.00	0.00	0.00
3,560.0	8.27	241.31	3,534.2	-176.3	-322.2	-142.8	0.00	0.00	0.00
3,600.0	8.27	241.31	3,573.8	-179.1	-327.3	-145.0	0.00	0.00	0.00
3,640.0	8.27	241.31	3,613.3	-181.8	-332.3	-147.3	0.00	0.00	0.00
3,680.0	8.27	241.31	3,652.9	-184.6	-337.3	-149.5	0.00	0.00	0.00
3,720.0	8.27	241.31	3,692.5	-187.4	-342.4	-151.7	0.00	0.00	0.00
3,760.0	8.27	241.31	3,732.1	-190.1	-347.4	-154.0	0.00	0.00	0.00
3,800.0	8.27	241.31	3,771.7	-192.9	-352.5	-156.2	0.00	0.00	0.00
3,840.0	8.27	241.31	3,811.3	-195.6	-357.5	-158.5	0.00	0.00	0.00
3,880.0	8.27	241.31	3,850.8	-198.4	-362.6	-160.7	0.00	0.00	0.00
3,920.0	8.27	241.31	3,890.4	-201.2	-367.6	-162.9	0.00	0.00	0.00
3,960.0	8.27	241.31	3,930.0	-203.9	-372.7	-165.2	0.00	0.00	0.00
4,000.0	8.27	241.31	3,969.6	-206.7	-377.7	-167.4	0.00	0.00	0.00
4,040.0	8.27	241.31	4,009.2	-209.5	-382.8	-169.6	0.00	0.00	0.00
4,080.0	8.27	241.31	4,048.8	-212.2	-387.8	-171.9	0.00	0.00	0.00
4,120.0	8.27	241.31	4,088.3	-215.0	-392.9	-174.1	0.00	0.00	0.00
4,160.0	8.27	241.31	4,127.9	-217.7	-397.9	-176.4	0.00	0.00	0.00
4,200.0	8.27	241.31	4,167.5	-220.5	-403.0	-178.6	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Latham O-K-2HNB
<b>Company:</b>	BONANZA CREEK ENERGY OPERATING	<b>TVD Reference:</b>	WELL @ 4536.0ft (RKB - 15')
<b>Project:</b>	SEC.2-T4N-R63W	<b>MD Reference:</b>	WELL @ 4536.0ft (RKB - 15')
<b>Site:</b>	Latham 34-2 Pad Sec. 2-T4N-R63W	<b>North Reference:</b>	True
<b>Well:</b>	Latham O-K-2HNB	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (3-19-13)		

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)
4,240.0	8.27	241.31	4,207.1	-223.3	-408.0	-180.8	0.00	0.00	0.00
4,280.0	8.27	241.31	4,246.7	-226.0	-413.1	-183.1	0.00	0.00	0.00
4,320.0	8.27	241.31	4,286.3	-228.8	-418.1	-185.3	0.00	0.00	0.00
4,360.0	8.27	241.31	4,325.8	-231.6	-423.1	-187.5	0.00	0.00	0.00
4,400.0	8.27	241.31	4,365.4	-234.3	-428.2	-189.8	0.00	0.00	0.00
4,440.0	8.27	241.31	4,405.0	-237.1	-433.2	-192.0	0.00	0.00	0.00
4,480.0	8.27	241.31	4,444.6	-239.8	-438.3	-194.2	0.00	0.00	0.00
4,520.0	8.27	241.31	4,484.2	-242.6	-443.3	-196.5	0.00	0.00	0.00
4,560.0	8.27	241.31	4,523.8	-245.4	-448.4	-198.7	0.00	0.00	0.00
4,600.0	8.27	241.31	4,563.4	-248.1	-453.4	-201.0	0.00	0.00	0.00
4,640.0	8.27	241.31	4,602.9	-250.9	-458.5	-203.2	0.00	0.00	0.00
4,680.0	8.27	241.31	4,642.5	-253.6	-463.5	-205.4	0.00	0.00	0.00
4,720.0	8.27	241.31	4,682.1	-256.4	-468.6	-207.7	0.00	0.00	0.00
4,760.0	8.27	241.31	4,721.7	-259.2	-473.6	-209.9	0.00	0.00	0.00
4,800.0	8.27	241.31	4,761.3	-261.9	-478.7	-212.1	0.00	0.00	0.00
4,840.0	8.27	241.31	4,800.9	-264.7	-483.7	-214.4	0.00	0.00	0.00
4,880.0	8.27	241.31	4,840.4	-267.5	-488.8	-216.6	0.00	0.00	0.00
4,920.0	8.27	241.31	4,880.0	-270.2	-493.8	-218.9	0.00	0.00	0.00
4,960.0	8.27	241.31	4,919.6	-273.0	-498.9	-221.1	0.00	0.00	0.00
5,000.0	8.27	241.31	4,959.2	-275.7	-503.9	-223.3	0.00	0.00	0.00
5,040.0	8.27	241.31	4,998.8	-278.5	-508.9	-225.6	0.00	0.00	0.00
5,080.0	8.27	241.31	5,038.4	-281.3	-514.0	-227.8	0.00	0.00	0.00
5,120.0	8.27	241.31	5,077.9	-284.0	-519.0	-230.0	0.00	0.00	0.00
5,160.0	8.27	241.31	5,117.5	-286.8	-524.1	-232.3	0.00	0.00	0.00
5,200.0	8.27	241.31	5,157.1	-289.5	-529.1	-234.5	0.00	0.00	0.00
5,231.2	8.27	241.31	5,187.9	-291.7	-533.1	-236.3	0.00	0.00	0.00
5,240.0	8.09	241.31	5,196.7	-292.3	-534.2	-236.7	2.00	-2.00	0.00
5,280.0	7.29	241.31	5,236.3	-294.9	-538.9	-238.8	2.00	-2.00	0.00
5,320.0	6.49	241.31	5,276.1	-297.2	-543.1	-240.7	2.00	-2.00	0.00
5,360.0	5.69	241.31	5,315.8	-299.2	-546.8	-242.3	2.00	-2.00	0.00
5,400.0	4.89	241.31	5,355.7	-301.0	-550.0	-243.8	2.00	-2.00	0.00
5,440.0	4.09	241.31	5,395.5	-302.5	-552.8	-245.0	2.00	-2.00	0.00
5,480.0	3.29	241.31	5,435.4	-303.7	-555.1	-246.0	2.00	-2.00	0.00
5,520.0	2.49	241.31	5,475.4	-304.7	-556.8	-246.8	2.00	-2.00	0.00
5,560.0	1.69	241.31	5,515.4	-305.4	-558.1	-247.3	2.00	-2.00	0.00
5,600.0	0.89	241.31	5,555.4	-305.8	-558.9	-247.7	2.00	-2.00	0.00
5,640.0	0.09	241.31	5,595.4	-306.0	-559.2	-247.8	2.00	-2.00	0.00
5,644.6	0.00	0.00	5,600.0	-306.0	-559.2	-247.8	2.00	-2.00	0.00
5,680.0	0.00	0.00	5,635.4	-306.0	-559.2	-247.8	0.00	0.00	0.00
5,720.0	0.00	0.00	5,675.4	-306.0	-559.2	-247.8	0.00	0.00	0.00
5,760.0	0.00	0.00	5,715.4	-306.0	-559.2	-247.8	0.00	0.00	0.00
5,800.0	0.00	0.00	5,755.4	-306.0	-559.2	-247.8	0.00	0.00	0.00
5,808.8	0.00	0.00	5,764.1	-306.0	-559.2	-247.8	0.00	0.00	0.00
5,811.3	0.28	1.18	5,766.7	-306.0	-559.2	-247.8	11.00	11.00	0.00
<b>KOP #2</b>									
5,840.0	3.44	1.18	5,795.3	-305.1	-559.2	-246.9	11.00	11.00	0.00
5,880.0	7.84	1.18	5,835.1	-301.1	-559.1	-243.0	11.00	11.00	0.00
5,920.0	12.24	1.18	5,874.5	-294.2	-559.0	-236.1	11.00	11.00	0.00
5,960.0	16.64	1.18	5,913.2	-284.2	-558.8	-226.2	11.00	11.00	0.00
6,000.0	21.04	1.18	5,951.1	-271.3	-558.5	-213.4	11.00	11.00	0.00
6,040.0	25.44	1.18	5,987.8	-255.5	-558.2	-197.7	11.00	11.00	0.00
6,080.0	29.84	1.18	6,023.3	-237.0	-557.8	-179.3	11.00	11.00	0.00
6,120.0	34.23	1.18	6,057.2	-215.8	-557.3	-158.3	11.00	11.00	0.00
6,160.0	38.63	1.18	6,089.3	-192.0	-556.9	-134.7	11.00	11.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Latham O-K-2HNB
<b>Company:</b>	BONANZA CREEK ENERGY OPERATING	<b>TVD Reference:</b>	WELL @ 4536.0ft (RKB - 15')
<b>Project:</b>	SEC.2-T4N-R63W	<b>MD Reference:</b>	WELL @ 4536.0ft (RKB - 15')
<b>Site:</b>	Latham 34-2 Pad Sec. 2-T4N-R63W	<b>North Reference:</b>	True
<b>Well:</b>	Latham O-K-2HNB	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (3-19-13)		

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)
6,200.0	43.03	1.18	6,119.6	-165.9	-556.3	-108.7	11.00	11.00	0.00
6,240.0	47.43	1.18	6,147.8	-137.5	-555.7	-80.5	11.00	11.00	0.00
6,280.0	51.83	1.18	6,173.7	-107.0	-555.1	-50.3	11.00	11.00	0.00
6,320.0	56.23	1.18	6,197.1	-74.7	-554.4	-18.2	11.00	11.00	0.00
6,360.0	60.63	1.18	6,218.1	-40.6	-553.7	15.6	11.00	11.00	0.00
6,400.0	65.03	1.18	6,236.3	-5.0	-553.0	51.0	11.00	11.00	0.00
6,440.0	69.43	1.18	6,251.8	31.8	-552.2	87.6	11.00	11.00	0.00
6,480.0	73.83	1.18	6,264.4	69.8	-551.5	125.2	11.00	11.00	0.00
6,520.0	78.23	1.18	6,274.1	108.6	-550.7	163.7	11.00	11.00	0.00
6,560.0	82.63	1.18	6,280.7	148.0	-549.8	202.9	11.00	11.00	0.00
6,600.0	87.03	1.18	6,284.3	187.8	-549.0	242.4	11.00	11.00	0.00
6,627.0	90.00	1.18	6,285.0	214.8	-548.5	269.2	11.00	11.00	0.00
<b>NIORARA B TARGET</b>									
6,629.4	90.00	1.18	6,285.0	217.2	-548.4	271.6	0.00	0.00	0.00
<b>End of Build</b>									
6,640.0	90.00	1.18	6,285.0	227.8	-548.2	282.1	0.00	0.00	0.00
6,680.0	90.00	1.18	6,285.0	267.8	-547.4	321.8	0.00	0.00	0.00
6,720.0	90.00	1.18	6,285.0	307.8	-546.5	361.5	0.00	0.00	0.00
6,727.2	90.00	1.18	6,285.0	315.0	-546.4	368.7	0.00	0.00	0.00
6,727.5	90.00	1.18	6,285.0	315.3	-546.4	369.0	1.00	0.00	-1.00
6,729.7	90.00	1.18	6,285.0	317.5	-546.3	371.1	0.00	0.00	0.00
<b>7"</b>									
6,760.0	90.00	1.18	6,285.0	347.8	-545.7	401.2	0.00	0.00	0.00
6,800.0	90.00	1.18	6,285.0	387.8	-544.9	440.9	0.00	0.00	0.00
6,840.0	90.00	1.18	6,285.0	427.8	-544.1	480.6	0.00	0.00	0.00
6,880.0	90.00	1.18	6,285.0	467.8	-543.3	520.3	0.00	0.00	0.00
6,920.0	90.00	1.18	6,285.0	507.7	-542.4	560.0	0.00	0.00	0.00
6,960.0	90.00	1.18	6,285.0	547.7	-541.6	599.7	0.00	0.00	0.00
7,000.0	90.00	1.18	6,285.0	587.7	-540.8	639.4	0.00	0.00	0.00
7,040.0	90.00	1.18	6,285.0	627.7	-540.0	679.1	0.00	0.00	0.00
7,080.0	90.00	1.18	6,285.0	667.7	-539.1	718.8	0.00	0.00	0.00
7,120.0	90.00	1.18	6,285.0	707.7	-538.3	758.5	0.00	0.00	0.00
7,160.0	90.00	1.18	6,285.0	747.7	-537.5	798.3	0.00	0.00	0.00
7,200.0	90.00	1.18	6,285.0	787.7	-536.7	838.0	0.00	0.00	0.00
7,240.0	90.00	1.18	6,285.0	827.7	-535.9	877.7	0.00	0.00	0.00
7,280.0	90.00	1.18	6,285.0	867.7	-535.0	917.4	0.00	0.00	0.00
7,320.0	90.00	1.18	6,285.0	907.7	-534.2	957.1	0.00	0.00	0.00
7,360.0	90.00	1.18	6,285.0	947.7	-533.4	996.8	0.00	0.00	0.00
7,400.0	90.00	1.18	6,285.0	987.6	-532.6	1,036.5	0.00	0.00	0.00
7,440.0	90.00	1.18	6,285.0	1,027.6	-531.7	1,076.2	0.00	0.00	0.00
7,480.0	90.00	1.18	6,285.0	1,067.6	-530.9	1,115.9	0.00	0.00	0.00
7,520.0	90.00	1.18	6,285.0	1,107.6	-530.1	1,155.6	0.00	0.00	0.00
7,560.0	90.00	1.18	6,285.0	1,147.6	-529.3	1,195.3	0.00	0.00	0.00
7,600.0	90.00	1.18	6,285.0	1,187.6	-528.5	1,235.0	0.00	0.00	0.00
7,640.0	90.00	1.18	6,285.0	1,227.6	-527.6	1,274.7	0.00	0.00	0.00
7,680.0	90.00	1.18	6,285.0	1,267.6	-526.8	1,314.4	0.00	0.00	0.00
7,720.0	90.00	1.18	6,285.0	1,307.6	-526.0	1,354.1	0.00	0.00	0.00
7,760.0	90.00	1.18	6,285.0	1,347.6	-525.2	1,393.8	0.00	0.00	0.00
7,800.0	90.00	1.18	6,285.0	1,387.6	-524.3	1,433.5	0.00	0.00	0.00
7,840.0	90.00	1.18	6,285.0	1,427.5	-523.5	1,473.2	0.00	0.00	0.00
7,880.0	90.00	1.18	6,285.0	1,467.5	-522.7	1,512.9	0.00	0.00	0.00
7,920.0	90.00	1.18	6,285.0	1,507.5	-521.9	1,552.6	0.00	0.00	0.00
7,960.0	90.00	1.18	6,285.0	1,547.5	-521.1	1,592.3	0.00	0.00	0.00



<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Latham O-K-2HNB
<b>Company:</b>	BONANZA CREEK ENERGY OPERATING	<b>TVD Reference:</b>	WELL @ 4536.0ft (RKB - 15')
<b>Project:</b>	SEC.2-T4N-R63W	<b>MD Reference:</b>	WELL @ 4536.0ft (RKB - 15')
<b>Site:</b>	Latham 34-2 Pad Sec. 2-T4N-R63W	<b>North Reference:</b>	True
<b>Well:</b>	Latham O-K-2HNB	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (3-19-13)		

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)
8,000.0	90.00	1.18	6,285.0	1,587.5	-520.2	1,632.0	0.00	0.00	0.00
8,040.0	90.00	1.18	6,285.0	1,627.5	-519.4	1,671.7	0.00	0.00	0.00
8,080.0	90.00	1.18	6,285.0	1,667.5	-518.6	1,711.4	0.00	0.00	0.00
8,120.0	90.00	1.18	6,285.0	1,707.5	-517.8	1,751.1	0.00	0.00	0.00
8,160.0	90.00	1.18	6,285.0	1,747.5	-516.9	1,790.8	0.00	0.00	0.00
8,200.0	90.00	1.18	6,285.0	1,787.5	-516.1	1,830.5	0.00	0.00	0.00
8,240.0	90.00	1.18	6,285.0	1,827.5	-515.3	1,870.2	0.00	0.00	0.00
8,280.0	90.00	1.18	6,285.0	1,867.5	-514.5	1,909.9	0.00	0.00	0.00
8,320.0	90.00	1.18	6,285.0	1,907.4	-513.7	1,949.6	0.00	0.00	0.00
8,360.0	90.00	1.18	6,285.0	1,947.4	-512.8	1,989.3	0.00	0.00	0.00
8,400.0	90.00	1.18	6,285.0	1,987.4	-512.0	2,029.0	0.00	0.00	0.00
8,440.0	90.00	1.18	6,285.0	2,027.4	-511.2	2,068.7	0.00	0.00	0.00
8,480.0	90.00	1.18	6,285.0	2,067.4	-510.4	2,108.5	0.00	0.00	0.00
8,520.0	90.00	1.18	6,285.0	2,107.4	-509.5	2,148.2	0.00	0.00	0.00
8,560.0	90.00	1.18	6,285.0	2,147.4	-508.7	2,187.9	0.00	0.00	0.00
8,600.0	90.00	1.18	6,285.0	2,187.4	-507.9	2,227.6	0.00	0.00	0.00
8,640.0	90.00	1.18	6,285.0	2,227.4	-507.1	2,267.3	0.00	0.00	0.00
8,680.0	90.00	1.18	6,285.0	2,267.4	-506.3	2,307.0	0.00	0.00	0.00
8,720.0	90.00	1.18	6,285.0	2,307.4	-505.4	2,346.7	0.00	0.00	0.00
8,760.0	90.00	1.18	6,285.0	2,347.4	-504.6	2,386.4	0.00	0.00	0.00
8,800.0	90.00	1.18	6,285.0	2,387.3	-503.8	2,426.1	0.00	0.00	0.00
8,840.0	90.00	1.18	6,285.0	2,427.3	-503.0	2,465.8	0.00	0.00	0.00
8,880.0	90.00	1.18	6,285.0	2,467.3	-502.1	2,505.5	0.00	0.00	0.00
8,920.0	90.00	1.18	6,285.0	2,507.3	-501.3	2,545.2	0.00	0.00	0.00
8,960.0	90.00	1.18	6,285.0	2,547.3	-500.5	2,584.9	0.00	0.00	0.00
9,000.0	90.00	1.18	6,285.0	2,587.3	-499.7	2,624.6	0.00	0.00	0.00
9,040.0	90.00	1.18	6,285.0	2,627.3	-498.9	2,664.3	0.00	0.00	0.00
9,080.0	90.00	1.18	6,285.0	2,667.3	-498.0	2,704.0	0.00	0.00	0.00
9,120.0	90.00	1.18	6,285.0	2,707.3	-497.2	2,743.7	0.00	0.00	0.00
9,160.0	90.00	1.18	6,285.0	2,747.3	-496.4	2,783.4	0.00	0.00	0.00
9,200.0	90.00	1.18	6,285.0	2,787.3	-495.6	2,823.1	0.00	0.00	0.00
9,240.0	90.00	1.18	6,285.0	2,827.3	-494.7	2,862.8	0.00	0.00	0.00
9,280.0	90.00	1.18	6,285.0	2,867.2	-493.9	2,902.5	0.00	0.00	0.00
9,320.0	90.00	1.18	6,285.0	2,907.2	-493.1	2,942.2	0.00	0.00	0.00
9,360.0	90.00	1.18	6,285.0	2,947.2	-492.3	2,981.9	0.00	0.00	0.00
9,400.0	90.00	1.18	6,285.0	2,987.2	-491.5	3,021.6	0.00	0.00	0.00
9,440.0	90.00	1.18	6,285.0	3,027.2	-490.6	3,061.3	0.00	0.00	0.00
9,480.0	90.00	1.18	6,285.0	3,067.2	-489.8	3,101.0	0.00	0.00	0.00
9,520.0	90.00	1.18	6,285.0	3,107.2	-489.0	3,140.7	0.00	0.00	0.00
9,560.0	90.00	1.18	6,285.0	3,147.2	-488.2	3,180.4	0.00	0.00	0.00
9,600.0	90.00	1.18	6,285.0	3,187.2	-487.3	3,220.1	0.00	0.00	0.00
9,640.0	90.00	1.18	6,285.0	3,227.2	-486.5	3,259.8	0.00	0.00	0.00
9,680.0	90.00	1.18	6,285.0	3,267.2	-485.7	3,299.5	0.00	0.00	0.00
9,720.0	90.00	1.18	6,285.0	3,307.2	-484.9	3,339.2	0.00	0.00	0.00
9,760.0	90.00	1.18	6,285.0	3,347.1	-484.1	3,378.9	0.00	0.00	0.00
9,800.0	90.00	1.18	6,285.0	3,387.1	-483.2	3,418.6	0.00	0.00	0.00
9,840.0	90.00	1.18	6,285.0	3,427.1	-482.4	3,458.4	0.00	0.00	0.00
9,880.0	90.00	1.18	6,285.0	3,467.1	-481.6	3,498.1	0.00	0.00	0.00
9,920.0	90.00	1.18	6,285.0	3,507.1	-480.8	3,537.8	0.00	0.00	0.00
9,960.0	90.00	1.18	6,285.0	3,547.1	-479.9	3,577.5	0.00	0.00	0.00
10,000.0	90.00	1.18	6,285.0	3,587.1	-479.1	3,617.2	0.00	0.00	0.00
10,040.0	90.00	1.18	6,285.0	3,627.1	-478.3	3,656.9	0.00	0.00	0.00
10,080.0	90.00	1.18	6,285.0	3,667.1	-477.5	3,696.6	0.00	0.00	0.00
10,120.0	90.00	1.18	6,285.0	3,707.1	-476.7	3,736.3	0.00	0.00	0.00



Plan Annotations					
	Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
			+N/-S (ft)	+E/-W (ft)	
	800.0	800.0	0.0	0.0	
	5,811.3	5,766.7	-306.0	-558.9	
	6,629.4	6,285.0	217.2	-548.4	



## **Directional**

# **BONANZA CREEK ENERGY OPERATING**

**SEC.2-T4N-R63W**

**Latham 34-2 Pad Sec. 2-T4N-R63W**

**Latham O-K-2HNB**

**Wellbore #1**

**Plan #2 (3-19-13)**

## **Anticollision Report**

**19 March, 2013**

<b>Company:</b>	BONANZA CREEK ENERGY OPERATING	<b>Local Co-ordinate Reference:</b>	Well Latham O-K-2HNB
<b>Project:</b>	SEC.2-T4N-R63W	<b>TVD Reference:</b>	WELL @ 4536.0ft (RKB - 15')
<b>Reference Site:</b>	Latham 34-2 Pad Sec. 2-T4N-R63W	<b>MD Reference:</b>	WELL @ 4536.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Latham O-K-2HNB	<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 #2 (3-19-13)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	Plan #2 (3-19-13)		
<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 10,000.0ft	<b>Error Surface:</b>	Elliptical Conic
<b>Warning Levels Evaluated at:</b>	2.00 Sigma		

<b>Survey Tool Program</b>	<b>Date</b> 3/19/2013			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.0	10,934.1	Plan #2 (3-19-13) (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>						
Latham 34-2 Pad Sec. 2-T4N-R63W						
Latham 44-41-2HNB - Wellbore #1 - Plan #1 (1-8-13)	200.0	200.0	13.8	13.1	20.405	CC, ES
Latham 44-41-2HNB - Wellbore #1 - Plan #1 (1-8-13)	10,934.2	11,053.9	1,912.2	1,733.4	10.692	SF

Offset Design												Latham 34-2 Pad Sec. 2-T4N-R63W - Latham 44-41-2HNB - Wellbore #1 - Plan #1 (1-8-13)		Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft		
Reference		Offset		Semi Major Axis			Distance								
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)				
0.0	0.0	0.0	0.0	0.0	0.0	142.56	-10.9	8.4	13.8	13.8	0.00	N/A			
100.0	100.0	100.0	100.0	0.1	0.1	142.56	-10.9	8.4	13.8	13.5	0.22	61.215			
200.0	200.0	200.0	200.0	0.3	0.3	142.56	-10.9	8.4	13.8	13.1	0.67	20.405 CC, ES			
300.0	300.0	299.6	299.6	0.6	0.5	137.98	-11.2	10.1	15.1	13.9	1.11	13.541			
400.0	400.0	399.0	398.8	0.8	0.8	128.20	-12.0	15.2	19.4	17.8	1.56	12.437			
500.0	500.0	497.9	497.4	1.0	1.0	119.21	-13.2	23.7	27.2	25.2	2.02	13.480			
600.0	600.0	596.1	594.8	1.2	1.3	112.97	-15.0	35.4	38.8	36.3	2.51	15.450			
700.0	700.0	693.3	690.9	1.5	1.6	108.93	-17.2	50.3	53.9	50.9	3.03	17.765			
800.0	800.0	789.5	785.3	1.7	2.0	106.31	-19.9	68.1	72.5	68.9	3.60	20.145			
900.0	900.0	883.9	877.5	1.9	2.4	-137.14	-23.0	88.7	95.6	91.8	3.87	24.725			
1,000.0	999.8	976.0	966.5	2.1	2.9	-139.40	-26.5	111.7	124.6	120.2	4.31	28.887			
1,100.0	1,099.5	1,065.2	1,052.1	2.3	3.4	-141.40	-30.3	136.6	159.2	154.5	4.76	33.445			
1,200.0	1,198.7	1,154.1	1,136.7	2.5	3.9	-143.11	-34.3	163.7	199.2	194.0	5.22	38.176			
1,300.0	1,297.7	1,244.6	1,222.7	2.8	4.5	-144.91	-38.5	191.5	241.3	235.6	5.68	42.461			
1,400.0	1,396.6	1,335.1	1,308.7	3.1	5.1	-146.22	-42.7	219.4	283.5	277.3	6.17	45.981			
1,500.0	1,495.6	1,425.6	1,394.6	3.4	5.7	-147.20	-46.9	247.3	325.8	319.2	6.65	48.963			
1,600.0	1,594.5	1,516.0	1,480.6	3.7	6.2	-147.95	-51.1	275.1	368.2	361.1	7.16	51.466			
1,700.0	1,693.5	1,606.5	1,566.6	4.0	6.8	-148.55	-55.3	303.0	410.7	403.0	7.66	53.592			
1,800.0	1,792.5	1,697.0	1,652.6	4.4	7.4	-149.04	-59.6	330.9	453.2	445.0	8.18	55.413			
1,900.0	1,891.4	1,787.4	1,738.5	4.7	8.0	-149.44	-63.8	358.7	495.6	486.9	8.70	56.986			
2,000.0	1,990.4	1,877.9	1,824.5	5.0	8.6	-149.78	-68.0	386.6	538.2	528.9	9.22	58.356			
2,100.0	2,089.3	1,968.4	1,910.5	5.4	9.2	-150.07	-72.2	414.4	580.7	570.9	9.75	59.558			
2,200.0	2,188.3	2,058.9	1,996.4	5.7	9.8	-150.32	-76.4	442.3	623.2	612.9	10.28	60.619			
2,300.0	2,287.3	2,149.3	2,082.4	6.1	10.4	-150.53	-80.6	470.2	665.8	654.9	10.81	61.563			
2,400.0	2,386.2	2,239.8	2,168.4	6.4	11.0	-150.73	-84.8	498.0	708.3	697.0	11.35	62.406			

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

Latham 34-2 Pad Sec. 2-T4N-R63W - Latham 44-41-2HNB - Wellbore #1 - Plan #1 (1-8-13)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
2,500.0	2,485.2	2,330.3	2,254.4	6.7	11.6	-150.90	-89.0	525.9	750.9	739.0	11.89	63.163		
2,600.0	2,584.1	2,420.8	2,340.3	7.1	12.2	-151.05	-93.2	553.8	793.4	781.0	12.43	63.846		
2,700.0	2,683.1	2,511.2	2,426.3	7.4	12.8	-151.18	-97.4	581.6	836.0	823.0	12.97	64.465		
2,800.0	2,782.1	2,601.7	2,512.3	7.8	13.4	-151.31	-101.6	609.5	878.5	865.0	13.51	65.029		
2,900.0	2,881.0	2,692.2	2,598.3	8.1	14.0	-151.42	-105.8	637.3	921.1	907.1	14.05	65.543		
3,000.0	2,980.0	2,782.6	2,684.2	8.5	14.6	-151.52	-110.0	665.2	963.7	949.1	14.60	66.015		
3,100.0	3,078.9	2,873.1	2,770.2	8.8	15.2	-151.61	-114.2	693.1	1,006.3	991.1	15.14	66.448		
3,200.0	3,177.9	2,963.6	2,856.2	9.2	15.8	-151.70	-118.4	720.9	1,048.8	1,033.1	15.69	66.848		
3,300.0	3,276.9	3,054.1	2,942.1	9.6	16.4	-151.78	-122.6	748.8	1,091.4	1,075.2	16.24	67.218		
3,400.0	3,375.8	3,144.5	3,028.1	9.9	17.0	-151.85	-126.8	776.7	1,134.0	1,117.2	16.78	67.561		
3,500.0	3,474.8	3,235.0	3,114.1	10.3	17.6	-151.92	-131.0	804.5	1,176.6	1,159.2	17.33	67.880		
3,600.0	3,573.8	3,325.5	3,200.1	10.6	18.2	-151.98	-135.2	832.4	1,219.2	1,201.3	17.88	68.177		
3,700.0	3,672.7	3,416.0	3,286.0	11.0	18.8	-152.04	-139.4	860.3	1,261.7	1,243.3	18.43	68.454		
3,800.0	3,771.7	3,506.4	3,372.0	11.3	19.4	-152.10	-143.6	888.1	1,304.3	1,285.3	18.98	68.714		
3,900.0	3,870.6	3,596.9	3,458.0	11.7	20.0	-152.15	-147.8	916.0	1,346.9	1,327.4	19.53	68.957		
4,000.0	3,969.6	3,687.4	3,544.0	12.0	20.6	-152.20	-152.0	943.8	1,389.5	1,369.4	20.08	69.185		
4,100.0	4,068.6	3,777.8	3,629.9	12.4	21.2	-152.24	-156.2	971.7	1,432.1	1,411.4	20.64	69.399		
4,200.0	4,167.5	3,868.3	3,715.9	12.7	21.8	-152.29	-160.4	999.6	1,474.7	1,453.5	21.19	69.602		
4,300.0	4,266.5	3,958.8	3,801.9	13.1	22.4	-152.33	-164.6	1,027.4	1,517.3	1,495.5	21.74	69.792		
4,400.0	4,365.4	4,049.3	3,887.8	13.5	23.0	-152.36	-168.8	1,055.3	1,559.8	1,537.6	22.29	69.973		
4,500.0	4,464.4	4,139.7	3,973.8	13.8	23.7	-152.40	-173.0	1,083.2	1,602.4	1,579.6	22.85	70.143		
4,600.0	4,563.4	4,230.2	4,059.8	14.2	24.3	-152.43	-177.2	1,111.0	1,645.0	1,621.6	23.40	70.304		
4,700.0	4,662.3	4,320.7	4,145.8	14.5	24.9	-152.47	-181.4	1,138.9	1,687.6	1,663.7	23.95	70.457		
4,800.0	4,761.3	4,411.2	4,231.7	14.9	25.5	-152.50	-185.6	1,166.7	1,730.2	1,705.7	24.51	70.603		
4,900.0	4,860.2	4,501.6	4,317.7	15.2	26.1	-152.53	-189.8	1,194.6	1,772.8	1,747.7	25.06	70.741		
5,000.0	4,959.2	4,592.1	4,403.7	15.6	26.7	-152.56	-194.0	1,222.5	1,815.4	1,789.8	25.62	70.872		
5,100.0	5,058.2	4,682.6	4,489.7	16.0	27.3	-152.58	-198.2	1,250.3	1,858.0	1,831.8	26.17	70.997		
5,200.0	5,157.1	4,773.0	4,575.6	16.3	27.9	-152.61	-202.4	1,278.2	1,900.6	1,873.9	26.73	71.116		
5,300.0	5,256.2	4,863.8	4,661.9	16.6	28.5	-152.91	-206.6	1,306.2	1,942.5	1,915.1	27.39	70.916		
5,400.0	5,355.7	4,955.8	4,749.3	16.9	29.1	-153.26	-210.9	1,334.5	1,981.7	1,953.7	28.05	70.648		
5,500.0	5,455.4	5,214.1	4,997.6	17.0	30.3	-153.40	-221.5	1,404.6	2,015.0	1,986.0	29.03	69.408		
5,600.0	5,555.4	5,535.0	5,313.3	17.2	31.3	-153.42	-229.9	1,460.5	2,035.3	2,005.3	29.98	67.896		
5,700.0	5,655.4	5,867.1	5,644.5	17.3	31.8	87.95	-233.0	1,481.3	2,041.9	2,011.0	30.82	66.249		
5,800.0	5,755.4	5,977.9	5,755.4	17.5	31.9	87.95	-233.0	1,481.4	2,041.9	2,010.7	31.15	65.560		
5,900.0	5,854.9	6,068.9	5,846.1	17.6	32.0	86.84	-227.2	1,481.3	2,041.6	2,010.3	31.27	65.281		
6,000.0	5,951.1	6,158.9	5,933.4	17.6	32.0	87.01	-206.1	1,481.2	2,040.8	2,009.5	31.33	65.133		
6,100.0	6,040.4	6,250.0	6,016.9	17.5	32.0	87.29	-169.8	1,481.0	2,039.5	2,008.2	31.27	65.221		
6,200.0	6,119.6	6,341.1	6,092.7	17.4	32.0	87.67	-119.6	1,480.7	2,037.7	2,006.5	31.19	65.331		
6,300.0	6,185.7	6,433.7	6,159.6	17.3	32.0	88.13	-55.7	1,480.3	2,035.5	2,004.3	31.22	65.201		
6,400.0	6,236.3	6,527.8	6,215.0	17.2	32.0	88.66	20.2	1,479.8	2,033.1	2,001.6	31.48	64.578		
6,500.0	6,269.6	6,623.6	6,256.4	17.1	32.0	89.23	106.4	1,479.3	2,030.5	1,998.4	32.07	63.306		
6,600.0	6,284.3	6,721.3	6,281.7	17.1	32.0	89.85	200.7	1,478.7	2,027.8	1,994.7	33.04	61.371		
6,700.0	6,285.0	6,821.2	6,289.0	17.5	32.1	90.11	300.2	1,478.1	2,025.1	1,990.7	34.40	58.866		
6,800.0	6,285.0	6,921.2	6,289.0	18.1	32.3	90.11	400.1	1,477.5	2,022.4	1,986.5	35.98	56.215		
6,900.0	6,285.0	7,021.1	6,289.0	19.0	32.6	90.11	500.1	1,476.9	2,019.8	1,981.8	37.92	53.261		
7,000.0	6,285.0	7,121.1	6,289.0	20.1	33.0	90.11	600.0	1,476.3	2,017.1	1,976.9	40.21	50.166		
7,100.0	6,285.0	7,221.0	6,289.0	21.3	33.5	90.11	700.0	1,475.7	2,014.4	1,971.7	42.72	47.157		
7,200.0	6,285.0	7,321.0	6,289.0	22.7	34.1	90.11	799.9	1,475.0	2,011.8	1,966.4	45.41	44.299		
7,300.0	6,285.0	7,421.0	6,289.0	24.1	34.7	90.11	899.9	1,474.4	2,009.1	1,960.8	48.26	41.628		
7,400.0	6,285.0	7,520.9	6,289.0	25.5	35.5	90.11	999.9	1,473.8	2,006.4	1,955.2	51.24	39.157		
7,500.0	6,285.0	7,620.9	6,289.0	27.1	36.4	90.11	1,099.8	1,473.2	2,003.8	1,949.4	54.33	36.884		
7,600.0	6,285.0	7,720.9	6,289.0	28.7	37.5	90.11	1,199.8	1,472.6	2,001.1	1,943.6	57.50	34.800		

<b>Company:</b>	BONANZA CREEK ENERGY OPERATING	<b>Local Co-ordinate Reference:</b>	Well Latham O-K-2HNB
<b>Project:</b>	SEC.2-T4N-R63W	<b>TVD Reference:</b>	WELL @ 4536.0ft (RKB - 15')
<b>Reference Site:</b>	Latham 34-2 Pad Sec. 2-T4N-R63W	<b>MD Reference:</b>	WELL @ 4536.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Latham O-K-2HNB	<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 #2 (3-19-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Latham 34-2 Pad Sec. 2-T4N-R63W - Latham 44-41-2HNB - Wellbore #1 - Plan #1 (1-8-13)													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		
7,700.0	6,285.0	7,820.8	6,289.0	30.3	38.5	90.11	1,299.8	1,472.0	1,998.4	1,937.7	60.75	32.894		
7,800.0	6,285.0	7,920.8	6,289.0	31.9	39.7	90.11	1,399.7	1,471.4	1,995.8	1,931.7	64.07	31.150		
7,900.0	6,285.0	8,020.8	6,289.0	33.6	41.0	90.12	1,499.7	1,470.8	1,993.1	1,925.7	67.44	29.553		
8,000.0	6,285.0	8,120.7	6,289.0	35.3	42.3	90.12	1,599.7	1,470.2	1,990.4	1,919.6	70.86	28.090		
8,100.0	6,285.0	8,220.7	6,289.0	37.0	43.7	90.12	1,699.6	1,469.6	1,987.8	1,913.5	74.32	26.746		
8,200.0	6,285.0	8,320.6	6,289.0	38.7	45.1	90.12	1,799.6	1,469.0	1,985.1	1,907.3	77.81	25.511		
8,300.0	6,285.0	8,420.6	6,289.0	40.5	46.6	90.12	1,899.5	1,468.3	1,982.5	1,901.1	81.34	24.373		
8,400.0	6,285.0	8,520.6	6,289.0	42.3	48.1	90.12	1,999.5	1,467.7	1,979.8	1,894.9	84.89	23.322		
8,500.0	6,285.0	8,620.5	6,289.0	44.0	49.6	90.12	2,099.5	1,467.1	1,977.1	1,888.7	88.47	22.349		
8,600.0	6,285.0	8,720.5	6,289.0	45.8	51.2	90.12	2,199.4	1,466.5	1,974.5	1,882.4	92.06	21.447		
8,700.0	6,285.0	8,820.5	6,289.0	47.6	52.8	90.12	2,299.4	1,465.9	1,971.8	1,876.1	95.68	20.609		
8,800.0	6,285.0	8,920.4	6,289.0	49.4	54.4	90.12	2,399.4	1,465.3	1,969.1	1,869.8	99.31	19.828		
8,900.0	6,285.0	9,020.4	6,289.0	51.2	56.1	90.12	2,499.3	1,464.7	1,966.5	1,863.5	102.96	19.100		
9,000.0	6,285.0	9,120.4	6,289.0	53.1	57.8	90.12	2,599.3	1,464.1	1,963.8	1,857.2	106.62	18.419		
9,100.0	6,285.0	9,220.3	6,289.0	54.9	59.4	90.12	2,699.2	1,463.5	1,961.1	1,850.8	110.29	17.782		
9,200.0	6,285.0	9,320.3	6,289.0	56.7	61.1	90.12	2,799.2	1,462.9	1,958.5	1,844.5	113.97	17.184		
9,300.0	6,285.0	9,420.3	6,289.0	58.6	62.9	90.12	2,899.2	1,462.2	1,955.8	1,838.1	117.66	16.622		
9,400.0	6,285.0	9,520.2	6,289.0	60.4	64.6	90.12	2,999.1	1,461.6	1,953.1	1,831.8	121.36	16.093		
9,500.0	6,285.0	9,620.2	6,289.0	62.2	66.3	90.12	3,099.1	1,461.0	1,950.5	1,825.4	125.07	15.595		
9,600.0	6,285.0	9,720.2	6,289.0	64.1	68.1	90.12	3,199.1	1,460.4	1,947.8	1,819.0	128.79	15.124		
9,700.0	6,285.0	9,820.1	6,289.0	65.9	69.8	90.12	3,299.0	1,459.8	1,945.1	1,812.6	132.51	14.679		
9,800.0	6,285.0	9,920.1	6,289.0	67.8	71.6	90.12	3,399.0	1,459.2	1,942.5	1,806.2	136.24	14.258		
9,900.0	6,285.0	10,020.0	6,289.0	69.7	73.4	90.12	3,498.9	1,458.6	1,939.8	1,799.8	139.98	13.858		
10,000.0	6,285.0	10,120.0	6,289.0	71.5	75.2	90.12	3,598.9	1,458.0	1,937.1	1,793.4	143.72	13.479		
10,100.0	6,285.0	10,220.0	6,289.0	73.4	77.0	90.12	3,698.9	1,457.4	1,934.5	1,787.0	147.46	13.119		
10,200.0	6,285.0	10,319.9	6,289.0	75.3	78.8	90.12	3,798.8	1,456.8	1,931.8	1,780.6	151.21	12.776		
10,300.0	6,285.0	10,419.9	6,289.0	77.1	80.6	90.12	3,898.8	1,456.2	1,929.1	1,774.2	154.97	12.449		
10,400.0	6,285.0	10,519.9	6,289.0	79.0	82.4	90.12	3,998.8	1,455.5	1,926.5	1,767.8	158.72	12.137		
10,500.0	6,285.0	10,619.8	6,289.0	80.9	84.2	90.12	4,098.7	1,454.9	1,923.8	1,761.3	162.48	11.840		
10,600.0	6,285.0	10,719.8	6,289.0	82.8	86.0	90.12	4,198.7	1,454.3	1,921.2	1,754.9	166.25	11.556		
10,700.0	6,285.0	10,819.8	6,289.0	84.6	87.8	90.12	4,298.6	1,453.7	1,918.5	1,748.5	170.02	11.284		
10,800.0	6,285.0	10,919.7	6,289.0	86.5	89.7	90.12	4,398.6	1,453.1	1,915.8	1,742.0	173.79	11.024		
10,900.0	6,285.0	11,019.7	6,289.0	88.4	91.5	90.12	4,498.6	1,452.5	1,913.2	1,735.6	177.56	10.775		
10,934.2	6,285.0	11,053.9	6,289.0	89.0	92.1	90.12	4,532.7	1,452.3	1,912.2	1,733.4	178.85	10.692 SF		

<b>Company:</b>	BONANZA CREEK ENERGY OPERATING	<b>Local Co-ordinate Reference:</b>	Well Latham O-K-2HNB
<b>Project:</b>	SEC.2-T4N-R63W	<b>TVD Reference:</b>	WELL @ 4536.0ft (RKB - 15')
<b>Reference Site:</b>	Latham 34-2 Pad Sec. 2-T4N-R63W	<b>MD Reference:</b>	WELL @ 4536.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Latham O-K-2HNB	<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 #2 (3-19-13)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4536.0ft (RKB - 15')  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.500000 °

Coordinates are relative to: Latham O-K-2HNB  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 0.71°



<b>Company:</b>	BONANZA CREEK ENERGY OPERATING	<b>Local Co-ordinate Reference:</b>	Well Latham O-K-2HNB
<b>Project:</b>	SEC.2-T4N-R63W	<b>TVD Reference:</b>	WELL @ 4536.0ft (RKB - 15')
<b>Reference Site:</b>	Latham 34-2 Pad Sec. 2-T4N-R63W	<b>MD Reference:</b>	WELL @ 4536.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Latham O-K-2HNB	<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 #2 (3-19-13)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4536.0ft (RKB - 15')  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.500000 °

Coordinates are relative to: Latham O-K-2HNB  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 0.71°

