

BONANZA CREEK ENERGY OPERATING

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

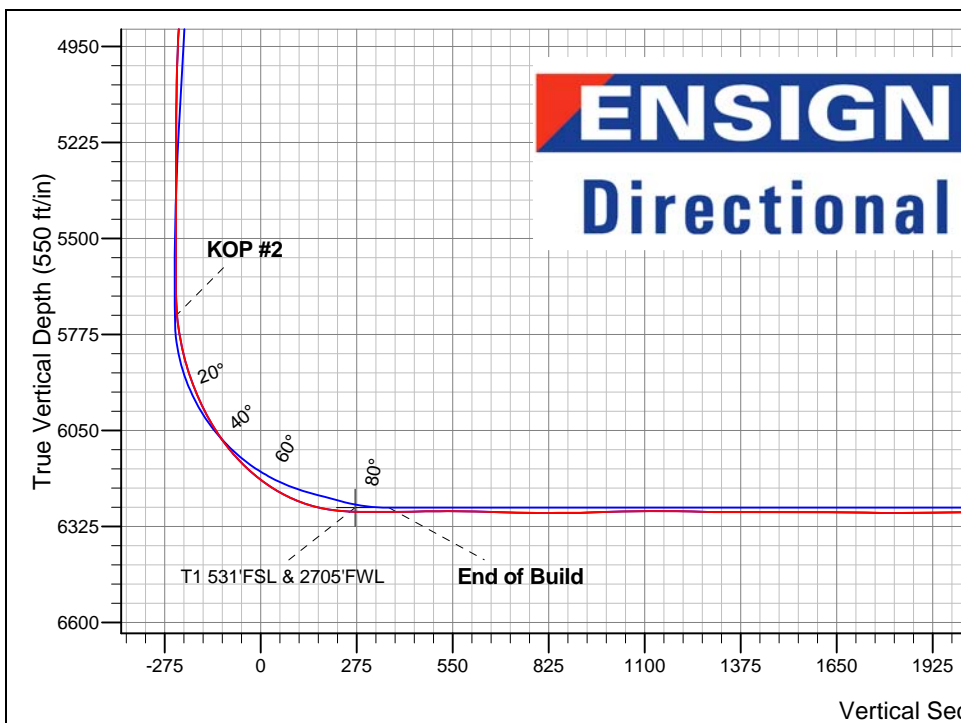
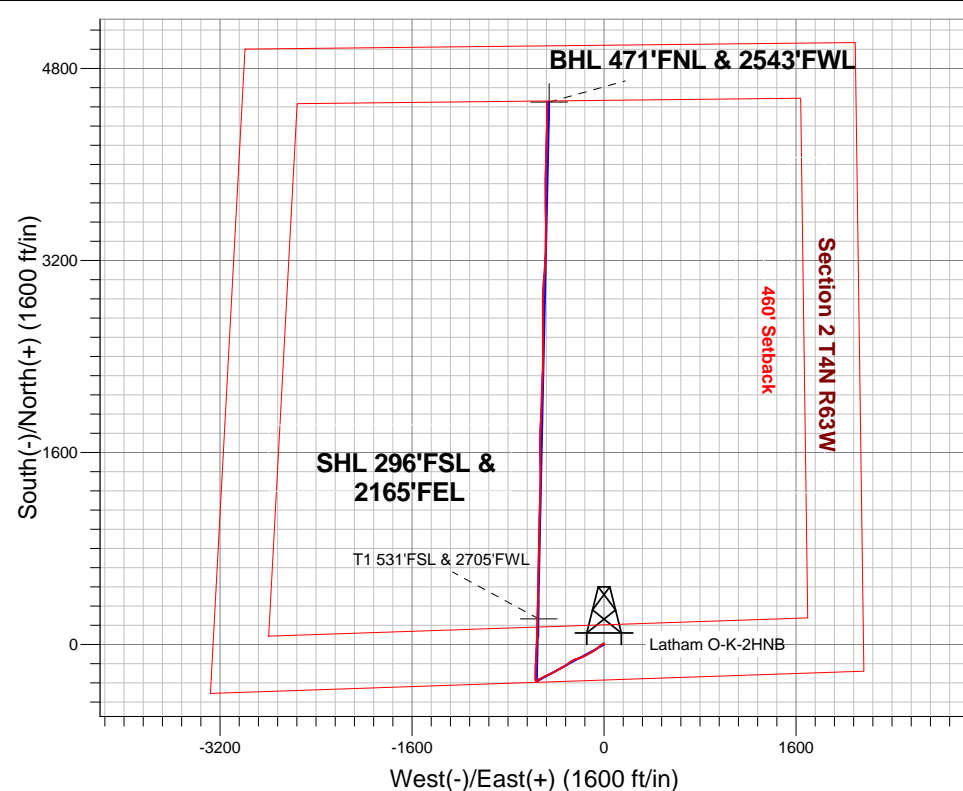
Surface Location: Latham 34-2 Pad Sec. 2-T4N-R63W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
Ground Elevation: 4521.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1366829.43	3305670.90	40.335160	-104.403500	

Enisgn 136 RKB - 12' WELL @ 4533.0ft (Enisgn 136 RKB - 12')

FINAL SURVEY

Projected Bottom Hole Location
10917' MD 6279' TVD 4520' N & 472' W of SHL
90.0 degree Incl @ 0.8 degree AZM



Latham 34-2 Pad Sec. 2-T4N-R63W
Latham O-K-2HNB
Wellbore #1
8:41, July 09 2013

ANNOTATIONS

TVD	MD	Annotation
880.9	881.0	KOP #1
5775.9	5827.0	KOP #2

LEGEND

- ✕ Latham O-K-2HNB, Wellbore #1, Plan #3 (5-20-13) V0
- Wellbore #1
- Survey #1



BONANZA CREEK ENERGY OPERATING

SEC.2-T4N-R63W

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

Latham O-K-2HNB

Wellbore #1

Survey: Survey #1

Standard Survey Report

09 July, 2013

Company:	BONANZA CREEK ENERGY OPERATING	Local Co-ordinate Reference:	Well Latham O-K-2HNB
Project:	SEC.2-T4N-R63W	TVD Reference:	WELL @ 4533.0ft (Enisgn 136 RKB - 12')
Site:	Latham 34-2 Pad Sec. 2-T4N-R63W	MD Reference:	WELL @ 4533.0ft (Enisgn 136 RKB - 12')
Well:	Latham O-K-2HNB	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

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

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

Well	Latham O-K-2HNB		
Well Position	+N/-S	0.0 ft	Northing: 1,366,829.43 ft
	+E/-W	0.0 ft	Easting: 3,305,670.90 ft
Position Uncertainty	0.0 ft	Wellhead Elevation:	ft
		Latitude:	40.335160
		Longitude:	-104.403500
		Ground Level:	4,521.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/20/2013	8.40	66.99	52,935

Design	Wellbore #1				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.0	0.0	0.0	354.04	

Survey Program	Date	7/9/2013		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
138.0	10,917.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard

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
138.0	0.90	319.50	138.0	0.8	-0.7	0.9	0.65	0.65	0.00
228.0	0.50	315.80	228.0	1.6	-1.4	1.8	0.45	-0.44	-4.11
330.0	0.60	299.50	330.0	2.2	-2.2	2.4	0.18	0.10	-15.98
457.0	1.00	335.50	457.0	3.6	-3.3	3.9	0.49	0.31	28.35
584.0	1.10	347.80	583.9	5.8	-4.0	6.1	0.19	0.08	9.69
700.0	1.00	355.00	699.9	7.9	-4.3	8.3	0.14	-0.09	6.21
755.0	1.08	43.85	754.9	8.7	-4.0	9.1	1.57	0.15	88.87
9 5/8"									
757.0	1.10	45.30	756.9	8.7	-3.9	9.1	1.57	0.79	71.36
881.0	1.00	251.90	880.9	9.2	-4.1	9.6	1.65	-0.08	-123.71
KOP #1									
1,005.0	3.20	236.40	1,004.8	7.0	-8.0	7.8	1.82	1.77	-12.50

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Well:	Latham O-K-2HNB	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

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)
1,127.0	5.60	228.10	1,126.5	1.1	-15.3	2.7	2.03	1.97	-6.80
1,249.0	8.50	233.40	1,247.5	-8.2	-27.0	-5.4	2.43	2.38	4.34
1,370.0	10.20	232.30	1,366.9	-20.1	-42.6	-15.6	1.41	1.40	-0.91
1,473.0	8.40	229.40	1,468.6	-30.6	-55.6	-24.6	1.81	-1.75	-2.82
1,600.0	8.70	234.10	1,594.1	-42.3	-70.4	-34.7	0.60	0.24	3.70
1,727.0	7.80	238.80	1,719.8	-52.4	-85.5	-43.2	0.88	-0.71	3.70
1,854.0	8.00	242.50	1,845.6	-60.9	-100.8	-50.1	0.43	0.16	2.91
1,981.0	8.40	240.40	1,971.3	-69.6	-116.7	-57.1	0.39	0.31	-1.65
2,108.0	7.70	243.20	2,097.1	-78.0	-132.3	-63.8	0.63	-0.55	2.20
2,235.0	7.50	237.80	2,223.0	-86.2	-146.9	-70.5	0.58	-0.16	-4.25
2,362.0	7.70	242.40	2,348.8	-94.6	-161.5	-77.3	0.50	0.16	3.62
2,490.0	9.70	246.40	2,475.4	-102.9	-179.0	-83.7	1.63	1.56	3.13
2,618.0	10.90	252.60	2,601.3	-110.8	-200.4	-89.4	1.28	0.94	4.84
2,746.0	10.20	251.30	2,727.1	-118.1	-222.7	-94.3	0.58	-0.55	-1.02
2,874.0	10.00	248.00	2,853.2	-125.9	-243.7	-99.9	0.48	-0.16	-2.58
3,003.0	9.10	240.40	2,980.4	-135.1	-263.0	-107.0	1.20	-0.70	-5.89
3,131.0	8.40	234.50	3,106.9	-145.5	-279.4	-115.7	0.89	-0.55	-4.61
3,259.0	8.90	232.00	3,233.4	-157.1	-294.8	-125.6	0.49	0.39	-1.95
3,388.0	9.80	236.70	3,360.7	-169.2	-311.8	-135.9	0.91	0.70	3.64
3,516.0	11.20	242.00	3,486.6	-181.0	-331.9	-145.6	1.33	1.09	4.14
3,644.0	11.00	239.90	3,612.2	-193.0	-353.5	-155.2	0.35	-0.16	-1.64
3,773.0	9.70	240.30	3,739.1	-204.6	-373.6	-164.6	1.01	-1.01	0.31
3,901.0	9.40	241.00	3,865.3	-215.0	-392.1	-173.1	0.25	-0.23	0.55
4,029.0	9.60	242.70	3,991.6	-224.9	-410.7	-181.0	0.27	0.16	1.33
4,158.0	10.60	241.30	4,118.5	-235.6	-430.7	-189.5	0.80	0.78	-1.09
4,286.0	9.90	242.40	4,244.5	-246.3	-450.7	-198.1	0.57	-0.55	0.86
4,414.0	9.30	249.70	4,370.7	-255.0	-470.2	-204.8	1.06	-0.47	5.70
4,543.0	9.30	242.50	4,498.0	-263.4	-489.2	-211.2	0.90	0.00	-5.58
4,676.0	10.20	242.50	4,629.1	-273.8	-509.2	-219.4	0.68	0.68	0.00
4,804.0	9.10	243.80	4,755.3	-283.5	-528.3	-227.1	0.88	-0.86	1.02
4,933.0	6.10	233.20	4,883.1	-292.1	-543.0	-234.1	2.56	-2.33	-8.22
5,061.0	3.50	235.30	5,010.7	-298.4	-551.6	-239.5	2.04	-2.03	1.64
5,189.0	1.60	253.80	5,138.6	-301.2	-556.6	-241.7	1.60	-1.48	14.45
5,318.0	1.40	256.60	5,267.5	-302.0	-559.8	-242.2	0.17	-0.16	2.17
5,446.0	1.20	254.30	5,395.5	-302.8	-562.6	-242.7	0.16	-0.16	-1.80
5,574.0	1.10	266.10	5,523.5	-303.2	-565.1	-242.8	0.20	-0.08	9.22
5,660.0	1.10	258.20	5,609.4	-303.4	-566.8	-242.9	0.18	0.00	-9.19
5,703.0	0.80	291.80	5,652.4	-303.4	-567.5	-242.8	1.44	-0.70	78.14
5,745.0	3.40	341.00	5,694.4	-302.1	-568.1	-241.4	7.00	6.19	117.14
5,788.0	6.40	350.80	5,737.2	-298.5	-568.9	-237.8	7.22	6.98	22.79
5,827.0	9.48	354.08	5,775.9	-293.2	-569.6	-232.4	7.99	7.90	8.41
KOP #2									
5,831.0	9.80	354.30	5,779.8	-292.5	-569.7	-231.8	7.99	7.93	5.51
5,874.0	13.10	355.90	5,821.9	-284.0	-570.4	-223.2	7.71	7.67	3.72
5,917.0	16.40	358.40	5,863.5	-273.1	-570.9	-212.3	7.81	7.67	5.81
5,959.0	19.60	1.00	5,903.5	-260.1	-571.0	-199.4	7.85	7.62	6.19
6,002.0	22.90	1.90	5,943.5	-244.6	-570.6	-183.9	7.71	7.67	2.09
6,045.0	26.30	2.10	5,982.6	-226.7	-569.9	-166.2	7.91	7.91	0.47
6,088.0	29.80	2.60	6,020.6	-206.5	-569.1	-146.2	8.16	8.14	1.16
6,130.0	33.80	2.20	6,056.3	-184.4	-568.2	-124.3	9.54	9.52	-0.95
6,173.0	37.70	2.20	6,091.1	-159.3	-567.2	-99.5	9.07	9.07	0.00
6,216.0	42.10	2.40	6,124.1	-131.7	-566.1	-72.2	10.24	10.23	0.47
6,259.0	46.60	2.40	6,154.9	-101.7	-564.8	-42.4	10.47	10.47	0.00
6,302.0	51.40	2.60	6,183.1	-69.3	-563.4	-10.3	11.17	11.16	0.47

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Well:	Latham O-K-2HNB	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

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)
6,344.0	56.40	2.80	6,207.8	-35.4	-561.8	23.2	11.91	11.90	0.48
6,387.0	61.60	3.30	6,229.9	1.4	-559.9	59.6	12.13	12.09	1.16
6,430.0	67.40	2.60	6,248.5	40.2	-557.9	97.9	13.57	13.49	-1.63
6,473.0	73.00	1.50	6,263.0	80.6	-556.4	138.0	13.24	13.02	-2.56
6,515.0	78.90	0.30	6,273.2	121.3	-555.8	178.4	14.32	14.05	-2.86
6,558.0	84.20	1.00	6,279.5	163.8	-555.3	220.6	12.43	12.33	1.63
6,601.0	88.40	1.00	6,282.3	206.7	-554.6	263.2	9.77	9.77	0.00
6,609.3	88.61	1.08	6,282.5	215.0	-554.4	271.4	2.72	2.56	0.93
T1 531'FSL & 2705'FWL									
6,638.9	89.37	1.35	6,283.0	244.6	-553.8	300.8	2.72	2.56	0.93
4-1/2"									
6,644.0	89.50	1.40	6,283.1	249.7	-553.7	305.9	2.72	2.56	0.93
6,680.0	90.10	1.90	6,283.2	285.7	-552.6	341.5	2.17	1.67	1.39
6,724.0	90.59	1.56	6,282.9	329.6	-551.3	385.2	1.36	1.11	-0.78
7"									
6,770.0	91.10	1.20	6,282.3	375.6	-550.2	430.8	1.36	1.11	-0.78
6,812.0	90.90	1.20	6,281.5	417.6	-549.3	472.4	0.48	-0.48	0.00
6,854.0	90.40	1.50	6,281.1	459.6	-548.3	514.1	1.39	-1.19	0.71
6,897.0	89.40	1.40	6,281.1	502.6	-547.2	556.7	2.34	-2.33	-0.23
6,939.0	89.20	1.70	6,281.6	544.6	-546.1	598.4	0.86	-0.48	0.71
6,982.0	88.50	1.70	6,282.5	587.5	-544.8	641.0	1.63	-1.63	0.00
7,024.0	88.20	1.40	6,283.7	629.5	-543.7	682.6	1.01	-0.71	-0.71
7,067.0	88.30	1.40	6,285.0	672.5	-542.6	725.2	0.23	0.23	0.00
7,109.0	89.30	0.80	6,285.9	714.5	-541.8	766.9	2.78	2.38	-1.43
7,152.0	90.50	0.10	6,286.0	757.4	-541.5	809.6	3.23	2.79	-1.63
7,195.0	90.00	359.10	6,285.8	800.4	-541.8	852.4	2.60	-1.16	-2.33
7,237.0	90.10	0.30	6,285.8	842.4	-542.0	894.2	2.87	0.24	2.86
7,280.0	91.50	1.20	6,285.2	885.4	-541.4	936.9	3.87	3.26	2.09
7,323.0	92.80	1.00	6,283.5	928.4	-540.6	979.6	3.06	3.02	-0.47
7,366.0	91.50	1.70	6,281.9	971.4	-539.6	1,022.2	3.43	-3.02	1.63
7,409.0	90.70	1.40	6,281.1	1,014.3	-538.4	1,064.8	1.99	-1.86	-0.70
7,451.0	90.30	1.70	6,280.7	1,056.3	-537.3	1,106.4	1.19	-0.95	0.71
7,494.0	89.30	2.80	6,280.9	1,099.3	-535.6	1,149.0	3.46	-2.33	2.56
7,537.0	89.40	2.80	6,281.4	1,142.2	-533.5	1,191.5	0.23	0.23	0.00
7,580.0	89.10	1.90	6,281.9	1,185.2	-531.8	1,234.0	2.21	-0.70	-2.09
7,622.0	88.50	1.00	6,282.8	1,227.2	-530.7	1,275.7	2.57	-1.43	-2.14
7,665.0	89.60	1.20	6,283.5	1,270.1	-529.9	1,318.3	2.60	2.56	0.47
7,708.0	90.00	0.50	6,283.7	1,313.1	-529.2	1,361.0	1.87	0.93	-1.63
7,751.0	90.00	0.30	6,283.7	1,356.1	-528.9	1,403.8	0.47	0.00	-0.47
7,793.0	90.00	359.80	6,283.7	1,398.1	-528.9	1,445.5	1.19	0.00	-1.19
7,836.0	90.00	0.00	6,283.7	1,441.1	-529.0	1,488.3	0.47	0.00	0.47
7,879.0	90.00	359.10	6,283.7	1,484.1	-529.3	1,531.1	2.09	0.00	-2.09
7,922.0	89.70	359.40	6,283.8	1,527.1	-529.9	1,573.9	0.99	-0.70	0.70
7,964.0	89.70	359.10	6,284.0	1,569.1	-530.4	1,615.8	0.71	0.00	-0.71
8,007.0	89.90	359.60	6,284.2	1,612.1	-530.9	1,658.6	1.25	0.47	1.16
8,050.0	89.20	359.40	6,284.5	1,655.1	-531.3	1,701.4	1.69	-1.63	-0.47
8,093.0	88.40	0.00	6,285.4	1,698.1	-531.5	1,744.2	2.33	-1.86	1.40
8,135.0	89.50	1.20	6,286.2	1,740.1	-531.1	1,785.9	3.88	2.62	2.86
8,178.0	90.60	3.10	6,286.1	1,783.1	-529.5	1,828.4	5.11	2.56	4.42
8,221.0	90.70	3.00	6,285.7	1,826.0	-527.2	1,870.9	0.33	0.23	-0.23
8,263.0	90.50	2.60	6,285.2	1,868.0	-525.1	1,912.4	1.06	-0.48	-0.95
8,306.0	90.50	2.60	6,284.8	1,910.9	-523.2	1,954.9	0.00	0.00	0.00
8,349.0	90.40	1.70	6,284.5	1,953.9	-521.6	1,997.5	2.11	-0.23	-2.09
8,392.0	90.70	1.50	6,284.1	1,996.9	-520.4	2,040.1	0.84	0.70	-0.47

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Survey									
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8,434.0	91.50	2.20	6,283.3	2,038.8	-519.0	2,081.7	2.53	1.90	1.67
8,477.0	91.60	2.10	6,282.1	2,081.8	-517.4	2,124.3	0.33	0.23	-0.23
8,520.0	91.90	1.70	6,280.8	2,124.7	-516.0	2,166.9	1.16	0.70	-0.93
8,563.0	91.70	1.90	6,279.5	2,167.7	-514.6	2,209.4	0.66	-0.47	0.47
8,605.0	92.20	1.70	6,278.0	2,209.6	-513.3	2,251.0	1.28	1.19	-0.48
8,648.0	90.90	2.10	6,276.9	2,252.6	-511.9	2,293.6	3.16	-3.02	0.93
8,691.0	90.00	2.80	6,276.5	2,295.6	-510.0	2,336.1	2.65	-2.09	1.63
8,734.0	89.30	1.50	6,276.8	2,338.5	-508.4	2,378.7	3.43	-1.63	-3.02
8,777.0	87.50	0.70	6,278.0	2,381.5	-507.6	2,421.4	4.58	-4.19	-1.86
8,819.0	87.60	0.70	6,279.8	2,423.5	-507.1	2,463.0	0.24	0.24	0.00
8,862.0	88.00	0.10	6,281.4	2,466.4	-506.8	2,505.7	1.68	0.93	-1.40
8,905.0	88.40	359.80	6,282.8	2,509.4	-506.8	2,548.5	1.16	0.93	-0.70
8,948.0	88.40	359.30	6,284.0	2,552.4	-507.2	2,591.3	1.16	0.00	-1.16
8,990.0	89.50	359.40	6,284.8	2,594.4	-507.6	2,633.1	2.63	2.62	0.24
9,033.0	90.20	0.10	6,284.9	2,637.4	-507.8	2,675.9	2.30	1.63	1.63
9,076.0	90.40	0.10	6,284.6	2,680.4	-507.7	2,718.6	0.47	0.47	0.00
9,119.0	90.50	0.10	6,284.3	2,723.4	-507.7	2,761.4	0.23	0.23	0.00
9,161.0	91.00	359.60	6,283.8	2,765.4	-507.8	2,803.2	1.68	1.19	-1.19
9,204.0	91.20	359.80	6,282.9	2,808.4	-508.0	2,846.0	0.66	0.47	0.47
9,247.0	90.70	0.50	6,282.2	2,851.4	-507.9	2,888.7	2.00	-1.16	1.63
9,290.0	91.10	1.00	6,281.5	2,894.4	-507.3	2,931.4	1.49	0.93	1.16
9,333.0	91.10	2.60	6,280.7	2,937.3	-506.0	2,974.0	3.72	0.00	3.72
9,375.0	90.30	3.30	6,280.2	2,979.3	-503.8	3,015.5	2.53	-1.90	1.67
9,418.0	90.30	4.00	6,280.0	3,022.2	-501.1	3,057.9	1.63	0.00	1.63
9,461.0	90.30	4.50	6,279.8	3,065.1	-497.9	3,100.2	1.16	0.00	1.16
9,504.0	89.30	3.80	6,279.9	3,107.9	-494.8	3,142.5	2.84	-2.33	-1.63
9,547.0	88.60	3.50	6,280.7	3,150.8	-492.0	3,184.9	1.77	-1.63	-0.70
9,589.0	88.20	3.70	6,281.9	3,192.7	-489.4	3,226.3	1.06	-0.95	0.48
9,632.0	88.60	3.00	6,283.1	3,235.7	-486.9	3,268.7	1.87	0.93	-1.63
9,675.0	88.50	2.10	6,284.2	3,278.6	-485.0	3,311.2	2.11	-0.23	-2.09
9,718.0	88.80	1.20	6,285.2	3,321.6	-483.7	3,353.9	2.21	0.70	-2.09
9,760.0	90.00	0.50	6,285.6	3,363.6	-483.1	3,395.6	3.31	2.86	-1.67
9,803.0	91.10	359.60	6,285.2	3,406.6	-483.1	3,438.3	3.31	2.56	-2.09
9,846.0	90.90	358.70	6,284.4	3,449.5	-483.7	3,481.1	2.14	-0.47	-2.09
9,889.0	91.30	359.10	6,283.6	3,492.5	-484.5	3,524.0	1.32	0.93	0.93
9,931.0	91.90	359.30	6,282.4	3,534.5	-485.1	3,565.8	1.51	1.43	0.48
9,974.0	92.30	359.40	6,280.9	3,577.5	-485.6	3,608.6	0.96	0.93	0.23
10,017.0	92.20	359.60	6,279.2	3,620.4	-486.0	3,651.3	0.52	-0.23	0.47
10,060.0	91.60	0.00	6,277.8	3,663.4	-486.1	3,694.1	1.68	-1.40	0.93
10,103.0	90.40	0.00	6,277.0	3,706.4	-486.1	3,736.9	2.79	-2.79	0.00
10,145.0	89.90	359.10	6,276.9	3,748.4	-486.5	3,778.7	2.45	-1.19	-2.14
10,188.0	89.10	359.60	6,277.3	3,791.4	-487.0	3,821.5	2.19	-1.86	1.16
10,231.0	88.80	0.70	6,278.1	3,834.4	-486.8	3,864.2	2.65	-0.70	2.56
10,274.0	89.60	1.20	6,278.7	3,877.4	-486.1	3,906.9	2.19	1.86	1.16
10,316.0	90.50	1.50	6,278.6	3,919.4	-485.1	3,948.6	2.26	2.14	0.71
10,359.0	90.80	1.50	6,278.1	3,962.4	-484.0	3,991.2	0.70	0.70	0.00
10,402.0	89.40	1.90	6,278.1	4,005.3	-482.7	4,033.8	3.39	-3.26	0.93
10,445.0	89.80	1.40	6,278.4	4,048.3	-481.5	4,076.4	1.49	0.93	-1.16
10,487.0	89.90	1.50	6,278.5	4,090.3	-480.4	4,118.1	0.34	0.24	0.24
10,530.0	89.80	1.00	6,278.6	4,133.3	-479.5	4,160.7	1.19	-0.23	-1.16
10,573.0	89.80	0.50	6,278.7	4,176.3	-478.9	4,203.4	1.16	0.00	-1.16
10,616.0	89.80	1.90	6,278.9	4,219.3	-478.0	4,246.1	3.26	0.00	3.26
10,661.0	90.00	1.20	6,279.0	4,264.3	-476.8	4,290.7	1.62	0.44	-1.56
10,705.0	89.90	1.50	6,279.0	4,308.2	-475.8	4,334.4	0.72	-0.23	0.68

Company:	BONANZA CREEK ENERGY OPERATING	Local Co-ordinate Reference:	Well Latham O-K-2HNB
Project:	SEC.2-T4N-R63W	TVD Reference:	WELL @ 4533.0ft (Enisgn 136 RKB - 12')
Site:	Latham 34-2 Pad Sec. 2-T4N-R63W	MD Reference:	WELL @ 4533.0ft (Enisgn 136 RKB - 12')
Well:	Latham O-K-2HNB	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

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)	
10,750.0	90.00	1.00	6,279.0	4,353.2	-474.8	4,379.0	1.13	0.22	-1.11	
10,795.0	90.20	1.00	6,279.0	4,398.2	-474.0	4,423.7	0.44	0.44	0.00	
10,840.0	90.00	0.70	6,278.9	4,443.2	-473.4	4,468.4	0.80	-0.44	-0.67	
10,862.0	90.00	0.80	6,278.9	4,465.2	-473.1	4,490.2	0.45	0.00	0.45	
10,912.0	90.00	0.80	6,278.9	4,515.2	-472.4	4,539.9	0.00	0.00	0.00	
4-1/2"										
10,917.0	90.00	0.80	6,278.9	4,520.2	-472.3	4,544.8	0.00	0.00	0.00	
TD at 10917.0' - BHL 470'FNL & 2558'FWL										

Design Targets										
Target Name	- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
BHL 470'FNL & 2558'	- survey misses target center by 17.1ft at 10917.0ft MD (6278.9 TVD, 4520.2 N, -472.3 E)	0.00	0.00	6,271.0	4,521.1	-457.1	1,371,344.31	3,305,157.92	40.347570	-104.405140
T1 531'FSL & 2705'FL	- survey misses target center by 15.8ft at 6609.2ft MD (6282.5 TVD, 214.9 N, -554.4 E)	0.00	0.00	6,271.0	215.0	-543.6	1,367,037.64	3,305,124.67	40.335750	-104.405450

Casing Points						
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")		
755.0	754.9	9 5/8"	9-5/8	12-1/4		
6,724.0	6,282.9	7"	7	7-1/2		
6,638.9	6,283.0	4-1/2"	4-1/2	6		
10,912.0	6,278.9	4-1/2"	4-1/2	6		

Survey Annotations					
Measured Depth (ft)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Comment	
881.0	880.9	9.2	-4.1	KOP #1	
5,827.0	5,775.9	-293.2	-569.6	KOP #2	
10,917.0	6,278.9	4,520.2	-472.3	TD at 10917.0'	

Checked By: _____	Approved By: _____	Date: _____
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