

PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Guttersen 6R-323**

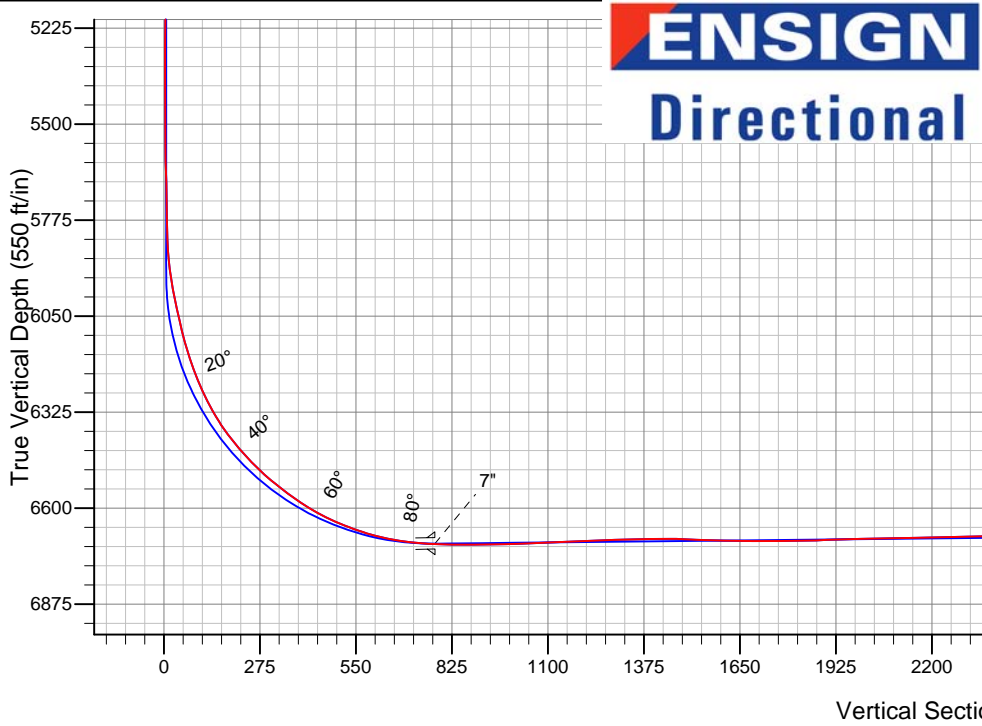
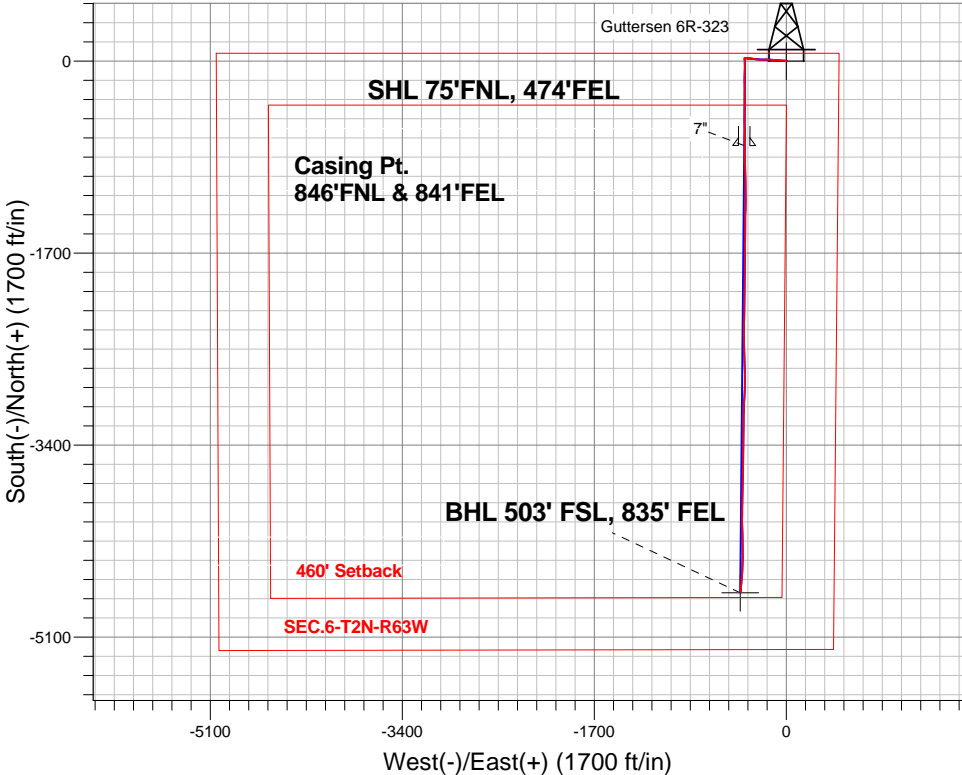
Surface Location: Guttersen 6R-403 Pad Sec.6-T2N-R63W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

Ground Elevation: 4836.0

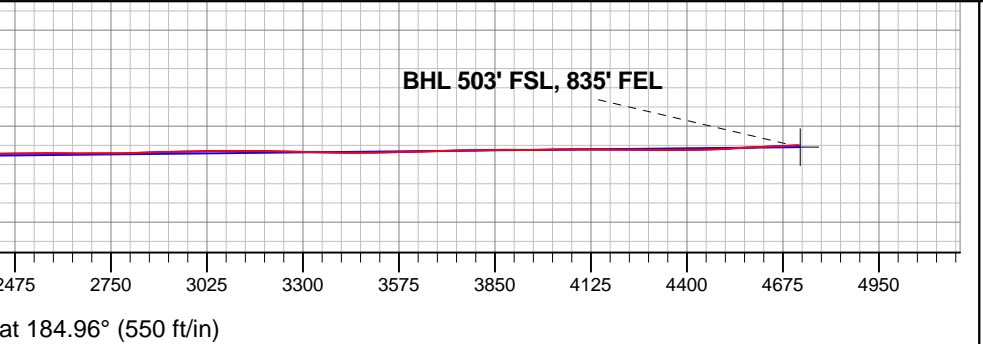
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1308061.75	3287084.26	40.174460	-104.472610	
Ensign Rig #136 - RKB - 12.5' WELL @ 4848.5ft (Ensign Rig #136 - RKB - 12.5')						

FINAL SURVEY

Projected Bottom Hole Location
11098'MD 6655'TVD 4704'S & 403'W of SHL
92.4 degree Incl @ 181.98 degree AZM



Guttersen 6R-403 Pad Sec.6-T2N-R63W Guttersen 6R-323 Wellbore #1 13:12, April 21 2014	ANNOTATIONS
	No annotation data is available.
LEGEND	
Guttersen 6R-323, Wellbore #1, Plan #3 (4-07-14) V0	
Wellbore #1	
Survey #1	





PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.6-T2N-R63W

Guttersen 6R-403 Pad Sec.6-T2N-R63W

Guttersen 6R-323

Wellbore #1

Survey: Survey #1

Standard Survey Report

21 April, 2014

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Gutteresen 6R-323
Project:	SEC.6-T2N-R63W	TVD Reference:	WELL @ 4848.5ft (Ensign Rig #136 - RKB - 12.5')
Site:	Gutteresen 6R-403 Pad Sec.6-T2N-R63W	MD Reference:	WELL @ 4848.5ft (Ensign Rig #136 - RKB - 12.5')
Well:	Gutteresen 6R-323	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Project	SEC.6-T2N-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		Guttersen 6R-403 Pad Sec.6-T2N-R63W			
Site Position:		Northing:	1,308,061.43ft	Latitude:	40.174460
From:	Lat/Long	Easting:	3,287,053.52ft	Longitude:	-104.472720
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.66 °

Well	Gutteresen 6R-323					
Well Position	+N-S	0.0 ft	Northing:	1,308,061.75 ft	Latitude:	40.174460
	+E-W	0.0 ft	Easting:	3,287,084.26 ft	Longitude:	-104.472610
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,836.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	4/7/2014	8.31	66.82	52,747

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	184.96

Survey Program	Date	4/21/2014			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
135.0	11,098.0	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	
1.0	0.01	77.70	1.0	0.0	0.0	0.0	0.52	0.52	0.00	
SHL 75'FNL, 474'FEL										
135.0	0.70	77.70	135.0	0.2	0.8	-0.2	0.52	0.52	0.00	
225.0	0.40	104.10	225.0	0.2	1.6	-0.4	0.43	-0.33	29.33	
320.0	0.60	119.80	320.0	-0.1	2.4	-0.1	0.25	0.21	16.53	
410.0	0.90	115.90	410.0	-0.7	3.4	0.4	0.34	0.33	-4.33	
501.0	1.00	117.50	501.0	-1.3	4.8	0.9	0.11	0.11	1.76	
592.0	0.40	89.30	592.0	-1.7	5.8	1.2	0.74	-0.66	-30.99	
683.0	0.40	305.90	683.0	-1.5	5.9	1.0	0.83	0.00	-157.58	

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Well:	Gutteresen 6R-323	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)
774.0	0.40	311.20	774.0	-1.1	5.4	0.6	0.04	0.00	5.82
854.0	0.50	323.00	854.0	-0.6	5.0	0.2	0.17	0.13	14.75
967.0	0.40	301.20	967.0	0.0	4.3	-0.3	0.17	-0.09	-19.29
1,058.0	2.90	289.90	1,057.9	0.9	1.9	-1.1	2.76	2.75	-12.42
1,149.0	5.50	290.60	1,148.7	3.2	-4.4	-2.8	2.86	2.86	0.77
1,240.0	6.60	271.80	1,239.2	4.9	-13.7	-3.7	2.47	1.21	-20.66
1,331.0	6.90	272.20	1,329.5	5.3	-24.4	-3.2	0.33	0.33	0.44
1,422.0	7.10	272.90	1,419.8	5.8	-35.4	-2.7	0.24	0.22	0.77
1,512.0	6.90	273.70	1,509.2	6.4	-46.4	-2.4	0.25	-0.22	0.89
1,603.0	6.90	275.80	1,599.5	7.3	-57.3	-2.3	0.28	0.00	2.31
1,694.0	6.20	279.00	1,689.9	8.6	-67.6	-2.8	0.87	-0.77	3.52
1,785.0	5.90	275.00	1,780.4	9.8	-77.1	-3.1	0.57	-0.33	-4.40
1,875.0	5.30	271.60	1,870.0	10.3	-85.8	-2.9	0.76	-0.67	-3.78
1,966.0	5.00	267.20	1,960.6	10.3	-94.0	-2.1	0.54	-0.33	-4.84
2,057.0	4.40	265.10	2,051.3	9.8	-101.5	-1.0	0.69	-0.66	-2.31
2,148.0	5.70	279.90	2,142.0	10.2	-109.4	-0.8	2.01	1.43	16.26
2,242.0	5.00	269.90	2,235.6	11.0	-118.1	-0.8	1.24	-0.74	-10.64
2,337.0	7.40	278.70	2,330.0	12.0	-128.3	-0.8	2.71	2.53	9.26
2,432.0	6.50	272.70	2,424.3	13.1	-139.7	-1.0	1.22	-0.95	-6.32
2,527.0	6.10	273.70	2,518.7	13.7	-150.1	-0.7	0.44	-0.42	1.05
2,623.0	6.00	273.00	2,614.2	14.3	-160.2	-0.4	0.13	-0.10	-0.73
2,718.0	6.40	272.30	2,708.6	14.8	-170.4	0.0	0.43	0.42	-0.74
2,813.0	6.20	267.80	2,803.1	14.8	-180.9	0.9	0.56	-0.21	-4.74
2,908.0	6.20	266.20	2,897.5	14.3	-191.1	2.3	0.18	0.00	-1.68
3,003.0	6.40	264.80	2,991.9	13.4	-201.5	4.0	0.27	0.21	-1.47
3,099.0	6.60	273.60	3,087.3	13.3	-212.3	5.1	1.06	0.21	9.17
3,194.0	6.00	270.20	3,181.7	13.7	-222.7	5.6	0.74	-0.63	-3.58
3,289.0	5.70	269.50	3,276.2	13.6	-232.4	6.5	0.32	-0.32	-0.74
3,384.0	6.20	278.80	3,370.7	14.4	-242.2	6.6	1.14	0.53	9.79
3,479.0	6.00	275.70	3,465.2	15.7	-252.2	6.2	0.41	-0.21	-3.26
3,575.0	5.70	275.80	3,560.7	16.6	-262.0	6.0	0.31	-0.31	0.10
3,670.0	5.40	274.40	3,655.3	17.5	-271.1	6.0	0.35	-0.32	-1.47
3,765.0	6.20	283.10	3,749.8	19.0	-280.6	5.3	1.25	0.84	9.16
3,860.0	6.30	280.20	3,844.2	21.1	-290.7	4.1	0.35	0.11	-3.05
3,956.0	6.50	280.20	3,939.6	22.9	-301.2	3.2	0.21	0.21	0.00
4,051.0	5.60	276.90	4,034.1	24.5	-311.1	2.5	1.02	-0.95	-3.47
4,146.0	5.40	276.00	4,128.6	25.5	-320.2	2.3	0.23	-0.21	-0.95
4,241.0	5.20	270.80	4,223.2	26.0	-328.9	2.5	0.55	-0.21	-5.47
4,337.0	5.00	271.50	4,318.9	26.2	-337.4	3.1	0.22	-0.21	0.73
4,432.0	4.70	273.70	4,413.5	26.5	-345.5	3.4	0.37	-0.32	2.32
4,527.0	4.70	272.20	4,508.2	26.9	-353.2	3.7	0.13	0.00	-1.58
4,622.0	3.10	259.00	4,603.0	26.6	-359.7	4.6	1.92	-1.68	-13.89
4,717.0	1.80	285.30	4,697.9	26.5	-363.6	5.0	1.78	-1.37	27.68
4,813.0	0.40	18.20	4,793.9	27.2	-365.0	4.4	1.94	-1.46	96.77
4,908.0	0.40	318.40	4,888.9	27.8	-365.1	3.9	0.42	0.00	-62.95
5,003.0	0.30	251.40	4,983.9	27.9	-365.5	3.7	0.42	-0.11	-70.53
5,098.0	0.30	199.00	5,078.9	27.6	-365.9	4.1	0.28	0.00	-55.16
5,194.0	0.40	323.70	5,174.9	27.7	-366.1	4.1	0.65	0.10	129.90
5,289.0	0.60	320.80	5,269.9	28.3	-366.6	3.5	0.21	0.21	-3.05
5,384.0	0.30	186.70	5,364.9	28.5	-367.0	3.3	0.88	-0.32	-141.16
5,479.0	0.40	215.70	5,459.9	27.9	-367.2	3.9	0.21	0.11	30.53

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Well:	Gutteresen 6R-323	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)	
5,575.0	0.50	218.90	5,555.9	27.3	-367.7	4.5	0.11	0.10	3.33	
5,670.0	1.50	200.10	5,650.8	25.9	-368.4	6.1	1.09	1.05	-19.79	
5,765.0	1.10	211.50	5,745.8	23.9	-369.3	8.1	0.50	-0.42	12.00	
5,797.0	1.40	195.00	5,777.8	23.3	-369.5	8.7	1.46	0.94	-51.56	
5,829.0	1.20	190.80	5,809.8	22.6	-369.7	9.5	0.69	-0.63	-13.13	
5,861.0	2.60	182.00	5,841.8	21.5	-369.8	10.5	4.46	4.38	-27.50	
5,892.0	4.70	178.60	5,872.7	19.5	-369.8	12.5	6.81	6.77	-10.97	
5,924.0	6.40	177.60	5,904.6	16.4	-369.7	15.6	5.32	5.31	-3.13	
5,956.0	8.40	174.40	5,936.3	12.3	-369.4	19.6	6.38	6.25	-10.00	
5,988.0	10.20	175.80	5,967.9	7.2	-368.9	24.7	5.67	5.63	4.38	
6,019.0	12.00	177.90	5,998.3	1.2	-368.6	30.6	5.95	5.81	6.77	
6,051.0	12.60	179.00	6,029.6	-5.6	-368.4	37.4	2.01	1.88	3.44	
6,083.0	13.00	180.80	6,060.8	-12.7	-368.4	44.5	1.76	1.25	5.63	
6,115.0	13.90	179.90	6,091.9	-20.1	-368.5	51.9	2.89	2.81	-2.81	
6,146.0	15.20	179.50	6,121.9	-27.9	-368.4	59.6	4.21	4.19	-1.29	
6,178.0	16.80	179.00	6,152.6	-36.7	-368.3	68.4	5.02	5.00	-1.56	
6,210.0	19.00	178.10	6,183.1	-46.6	-368.0	78.2	6.93	6.88	-2.81	
6,242.0	21.40	178.30	6,213.1	-57.6	-367.7	89.1	7.50	7.50	0.63	
6,274.0	23.10	180.20	6,242.7	-69.7	-367.5	101.2	5.77	5.31	5.94	
6,305.0	25.40	182.70	6,271.0	-82.4	-367.9	113.9	8.12	7.42	8.06	
6,337.0	27.30	183.90	6,299.7	-96.6	-368.7	128.1	6.17	5.94	3.75	
6,369.0	29.70	182.50	6,327.8	-111.9	-369.5	143.4	7.78	7.50	-4.38	
6,400.0	32.50	181.10	6,354.3	-127.9	-370.0	159.4	9.33	9.03	-4.52	
6,432.0	35.70	179.50	6,380.8	-145.8	-370.1	177.2	10.38	10.00	-5.00	
6,464.0	39.20	178.80	6,406.2	-165.3	-369.8	196.6	11.02	10.94	-2.19	
6,496.0	41.30	179.50	6,430.7	-185.9	-369.5	217.2	6.71	6.56	2.19	
6,527.0	42.70	179.90	6,453.7	-206.7	-369.4	237.8	4.60	4.52	1.29	
6,559.0	44.50	179.70	6,476.9	-228.7	-369.3	259.8	5.64	5.63	-0.63	
6,591.0	47.20	179.30	6,499.2	-251.7	-369.1	282.6	8.49	8.44	-1.25	
6,623.0	51.00	179.30	6,520.1	-275.9	-368.8	306.7	11.88	11.88	0.00	
6,654.0	52.20	179.30	6,539.4	-300.2	-368.5	330.9	3.87	3.87	0.00	
6,686.0	53.60	180.00	6,558.7	-325.7	-368.4	356.3	4.71	4.38	2.19	
6,718.0	55.20	180.40	6,577.3	-351.7	-368.5	382.2	5.10	5.00	1.25	
6,750.0	57.90	180.40	6,594.9	-378.4	-368.7	408.8	8.44	8.44	0.00	
6,781.0	60.70	180.80	6,610.8	-405.1	-368.9	435.4	9.10	9.03	1.29	
6,813.0	63.80	181.50	6,625.7	-433.4	-369.5	463.7	9.88	9.69	2.19	
6,845.0	66.50	180.80	6,639.1	-462.4	-370.1	492.6	8.67	8.44	-2.19	
6,877.0	68.70	179.90	6,651.3	-492.0	-370.3	522.1	7.35	6.88	-2.81	
6,908.0	70.70	178.50	6,662.0	-521.0	-369.9	551.0	7.72	6.45	-4.52	
6,940.0	73.40	177.90	6,671.9	-551.5	-368.9	581.3	8.62	8.44	-1.88	
6,972.0	76.10	177.90	6,680.3	-582.3	-367.8	611.9	8.44	8.44	0.00	
7,004.0	78.50	179.20	6,687.4	-613.5	-367.0	642.9	8.48	7.50	4.06	
7,035.0	80.50	179.70	6,693.0	-644.0	-366.7	673.3	6.64	6.45	1.61	
7,067.0	83.30	180.40	6,697.5	-675.7	-366.7	704.8	9.01	8.75	2.19	
7,099.0	85.90	180.40	6,700.5	-707.5	-367.0	736.6	8.13	8.13	0.00	
7,163.0	88.50	180.20	6,703.7	-771.5	-367.3	800.3	4.07	4.06	-0.31	
7,193.0	89.00	180.00	6,704.3	-801.4	-367.3	830.2	1.79	1.67	-0.67	
7,223.0	90.20	179.90	6,704.5	-831.4	-367.3	860.1	4.01	4.00	-0.33	
7,253.0	90.60	179.30	6,704.3	-861.4	-367.1	889.9	2.40	1.33	-2.00	
7,344.0	91.10	178.80	6,703.0	-952.4	-365.6	980.4	0.78	0.55	-0.55	
7,435.0	92.50	178.30	6,700.1	-1,043.3	-363.3	1,070.8	1.63	1.54	-0.55	
7,526.0	93.00	178.60	6,695.7	-1,134.2	-360.8	1,161.1	0.64	0.55	0.33	

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7,617.0	92.10	180.20	6,691.7	-1,225.1	-359.9	1,251.6	2.02	-0.99	1.76	
7,708.0	90.70	182.00	6,689.5	-1,316.1	-361.6	1,342.4	2.51	-1.54	1.98	
7,798.0	91.00	180.90	6,688.1	-1,406.0	-363.9	1,432.2	1.27	0.33	-1.22	
7,889.0	86.80	179.70	6,689.9	-1,497.0	-364.4	1,522.9	4.80	-4.62	-1.32	
7,982.0	88.90	180.40	6,693.4	-1,589.9	-364.5	1,615.4	2.38	2.26	0.75	
8,077.0	90.60	181.50	6,693.8	-1,684.9	-366.0	1,710.2	2.13	1.79	1.16	
8,172.0	90.00	180.60	6,693.3	-1,779.9	-367.8	1,805.0	1.14	-0.63	-0.95	
8,267.0	92.90	181.10	6,690.9	-1,874.8	-369.2	1,899.7	3.10	3.05	0.53	
8,362.0	90.80	179.70	6,687.8	-1,969.8	-369.9	1,994.3	2.66	-2.21	-1.47	
8,458.0	90.90	180.20	6,686.4	-2,065.7	-369.8	2,090.0	0.53	0.10	0.52	
8,553.0	91.50	180.90	6,684.4	-2,160.7	-370.7	2,184.7	0.97	0.63	0.74	
8,648.0	91.70	181.80	6,681.7	-2,255.7	-372.9	2,279.4	0.97	0.21	0.95	
8,743.0	91.10	180.60	6,679.4	-2,350.6	-374.9	2,374.2	1.41	-0.63	-1.26	
8,839.0	90.10	180.80	6,678.4	-2,446.6	-376.1	2,469.9	1.06	-1.04	0.21	
8,934.0	90.10	177.80	6,678.3	-2,541.6	-374.9	2,564.5	3.16	0.00	-3.16	
9,029.0	90.00	176.50	6,678.2	-2,636.4	-370.2	2,658.6	1.37	-0.11	-1.37	
9,124.0	90.50	179.20	6,677.8	-2,731.4	-366.6	2,752.8	2.89	0.53	2.84	
9,219.0	92.00	181.60	6,675.7	-2,826.3	-367.3	2,847.5	2.98	1.58	2.53	
9,315.0	91.40	182.20	6,672.8	-2,922.2	-370.5	2,943.3	0.88	-0.63	0.63	
9,410.0	90.40	182.20	6,671.3	-3,017.2	-374.1	3,038.2	1.05	-1.05	0.00	
9,505.0	90.20	182.30	6,670.8	-3,112.1	-377.9	3,133.1	0.24	-0.21	0.11	
9,600.0	88.20	179.50	6,672.2	-3,207.0	-379.3	3,227.8	3.62	-2.11	-2.95	
9,696.0	89.30	181.10	6,674.3	-3,303.0	-379.8	3,323.5	2.02	1.15	1.67	
9,791.0	89.00	180.00	6,675.7	-3,398.0	-380.8	3,418.2	1.20	-0.32	-1.16	
9,886.0	91.50	181.30	6,675.3	-3,493.0	-381.8	3,512.9	2.97	2.63	1.37	
9,981.0	91.00	181.50	6,673.2	-3,587.9	-384.2	3,607.7	0.57	-0.53	0.21	
10,077.0	91.90	180.90	6,670.8	-3,683.9	-386.2	3,703.5	1.13	0.94	-0.63	
10,172.0	90.20	180.40	6,669.0	-3,778.9	-387.2	3,798.2	1.87	-1.79	-0.53	
10,267.0	90.10	181.50	6,668.8	-3,873.8	-388.8	3,892.9	1.16	-0.11	1.16	
10,362.0	91.30	181.10	6,667.6	-3,968.8	-391.0	3,987.7	1.33	1.26	-0.42	
10,457.0	90.20	179.90	6,666.4	-4,063.8	-391.8	4,082.4	1.71	-1.16	-1.26	
10,553.0	89.30	178.10	6,666.8	-4,159.8	-390.1	4,177.9	2.10	-0.94	-1.88	
10,648.0	89.50	177.80	6,667.8	-4,254.7	-386.7	4,272.2	0.38	0.21	-0.32	
10,743.0	90.00	180.60	6,668.2	-4,349.7	-385.4	4,366.7	2.99	0.53	2.95	
10,838.0	91.80	181.30	6,666.7	-4,444.7	-387.0	4,461.5	2.03	1.89	0.74	
10,934.0	93.30	185.10	6,662.4	-4,540.4	-392.3	4,557.3	4.25	1.56	3.96	
11,029.0	92.40	183.70	6,657.7	-4,635.0	-399.6	4,652.2	1.75	-0.95	-1.47	
11,041.0	92.40	183.40	6,657.2	-4,647.0	-400.4	4,664.2	2.50	0.00	-2.50	
11,098.0	92.40	181.98	6,654.8	-4,703.8	-403.0	4,721.1	2.49	0.00	-2.49	
BHL 500' FSL, 840' FEL										

Checked By: _____ Approved By: _____ Date: _____