

# Verdad Oil & Gas Corporation

Well Name: **Pastelak 01N-64W-02-3N**

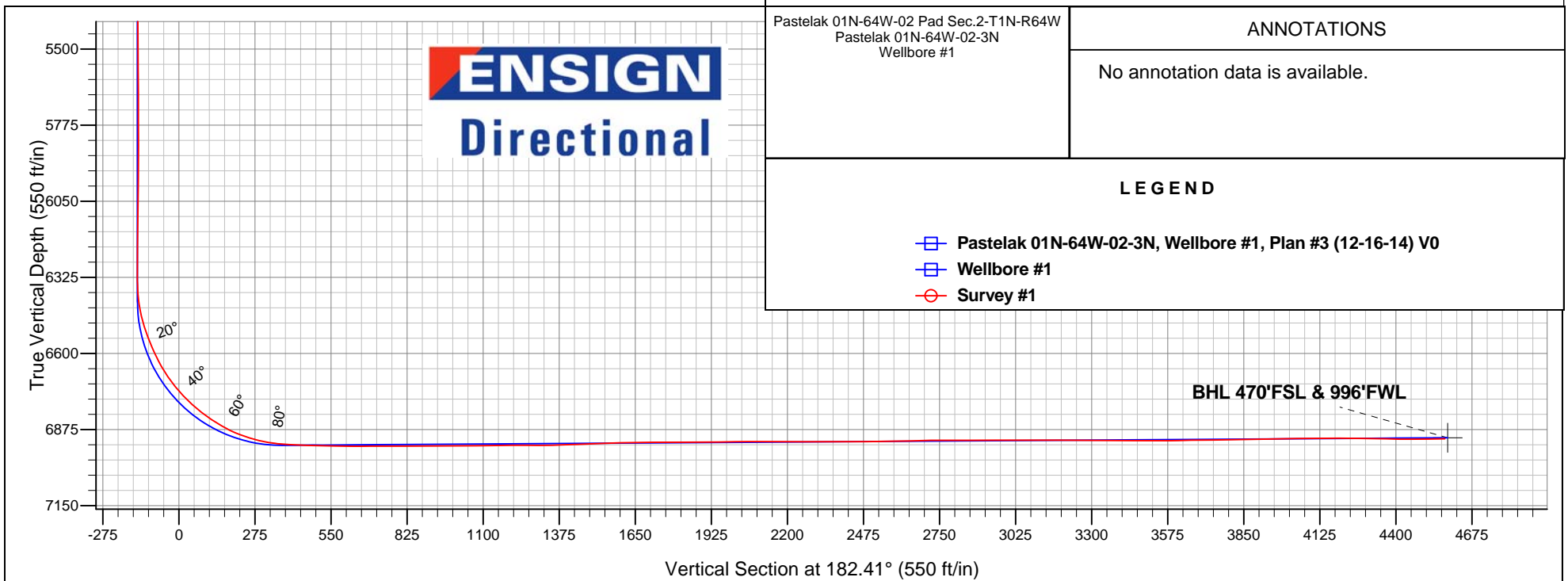
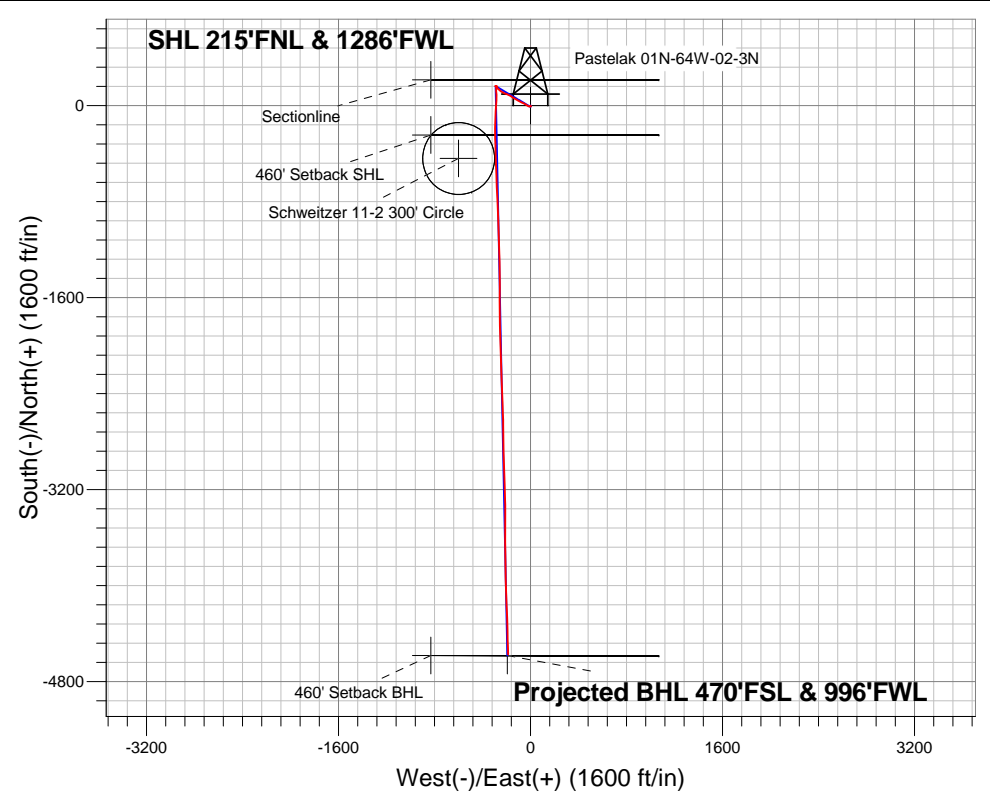
Surface Location: Pastelak 01N-64W-02 Pad Sec.2-T1N-R64W  
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

Ground Elevation: 5013.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1276065.90	3273299.16	40.087060	-104.523200	
RKB - 16.5' WELL @ 5029.5ft (RKB - 16.5')						

## FINAL SURVEY

Projected Bottom Hole Location  
11438'MD 6908.54'TVD 4573'N & 187'W of  
SHL 90.5 degree Incl @ 178.4 degree AZM





# **Verdad Oil & Gas Corporation**

**SEC.2-T1N-R64W**

**Pastelak 01N-64W-02 Pad Sec.2-T1N-R64W**

**Pastelak 01N-64W-02-3N**

**Wellbore #1**

**Survey: Survey #1**

## **Standard Survey Report**

**29 December, 2014**



<b>Company:</b>	Verdad Oil & Gas Corporation	<b>Local Co-ordinate Reference:</b>	Well Pastelak 01N-64W-02-3N
<b>Project:</b>	SEC.2-T1N-R64W	<b>TVD Reference:</b>	WELL @ 5029.5ft (RKB - 16.5')
<b>Site:</b>	Pastelak 01N-64W-02 Pad Sec.2-T1N-R64W	<b>MD Reference:</b>	WELL @ 5029.5ft (RKB - 16.5')
<b>Well:</b>	Pastelak 01N-64W-02-3N	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	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)	
1,250.0	0.30	302.20	1,249.8	-5.8	-7.6	6.1	0.29	-0.26	-17.76	
1,358.0	0.00	36.20	1,357.8	-5.7	-7.8	6.0	0.28	-0.28	0.00	
1,450.0	0.10	161.90	1,449.8	-5.7	-7.8	6.1	0.11	0.11	0.00	
1,541.0	0.90	181.60	1,540.8	-6.5	-7.8	6.8	0.89	0.88	21.65	
1,633.0	1.90	286.30	1,632.8	-6.8	-9.3	7.2	2.50	1.09	113.80	
1,724.0	2.80	272.40	1,723.7	-6.3	-12.9	6.8	1.16	0.99	-15.27	
1,816.0	3.60	294.10	1,815.6	-5.0	-17.8	5.8	1.56	0.87	23.59	
1,907.0	4.30	304.30	1,906.4	-1.9	-23.3	2.9	1.09	0.77	11.21	
1,999.0	4.00	302.90	1,998.1	1.7	-28.8	-0.5	0.34	-0.33	-1.52	
2,091.0	4.90	310.90	2,089.9	6.1	-34.5	-4.6	1.19	0.98	8.70	
2,185.0	5.30	300.20	2,183.5	10.9	-41.2	-9.1	1.10	0.43	-11.38	
2,279.0	5.40	297.20	2,277.1	15.1	-48.9	-13.0	0.32	0.11	-3.19	
2,373.0	6.40	296.20	2,370.6	19.4	-57.6	-17.0	1.07	1.06	-1.06	
2,468.0	6.90	291.10	2,465.0	23.8	-67.6	-20.9	0.81	0.53	-5.37	
2,563.0	8.00	293.20	2,559.1	28.5	-79.0	-25.1	1.19	1.16	2.21	
2,656.0	9.40	300.20	2,651.1	34.8	-91.6	-31.0	1.88	1.51	7.53	
2,751.0	9.50	303.00	2,744.8	43.0	-104.8	-38.6	0.50	0.11	2.95	
2,846.0	9.10	299.00	2,838.5	50.9	-118.0	-45.9	0.80	-0.42	-4.21	
2,941.0	9.10	297.90	2,932.3	58.1	-131.2	-52.5	0.18	0.00	-1.16	
3,036.0	9.00	302.90	3,026.2	65.6	-144.1	-59.5	0.83	-0.11	5.26	
3,130.0	8.70	305.30	3,119.0	73.7	-156.0	-67.1	0.51	-0.32	2.55	
3,224.0	7.80	298.30	3,212.1	80.9	-167.5	-73.7	1.43	-0.96	-7.45	
3,319.0	8.60	296.50	3,306.1	87.1	-179.5	-79.5	0.88	0.84	-1.89	
3,413.0	8.30	287.70	3,399.1	92.3	-192.3	-84.1	1.41	-0.32	-9.36	
3,508.0	8.40	294.20	3,493.1	97.2	-205.1	-88.5	1.00	0.11	6.84	
3,603.0	8.40	292.10	3,587.1	102.7	-217.9	-93.4	0.32	0.00	-2.21	
3,698.0	7.10	304.60	3,681.2	108.6	-229.1	-98.9	2.23	-1.37	13.16	
3,792.0	7.20	302.00	3,774.5	115.0	-238.9	-104.9	0.36	0.11	-2.77	
3,886.0	7.60	307.80	3,867.7	122.0	-248.8	-111.4	0.90	0.43	6.17	
3,981.0	7.30	306.60	3,961.9	129.4	-258.6	-118.4	0.36	-0.32	-1.26	
4,076.0	6.00	316.90	4,056.2	136.6	-266.9	-125.3	1.85	-1.37	10.84	
4,170.0	6.00	316.90	4,149.7	143.8	-273.6	-132.2	0.00	0.00	0.00	
4,265.0	4.80	325.40	4,244.3	150.7	-279.2	-138.8	1.51	-1.26	8.95	
4,360.0	3.30	319.20	4,339.1	156.1	-283.3	-144.0	1.64	-1.58	-6.53	
4,454.0	2.60	321.80	4,432.9	159.8	-286.4	-147.6	0.76	-0.74	2.77	
4,548.0	1.50	299.50	4,526.9	162.1	-288.8	-149.8	1.42	-1.17	-23.72	
4,643.0	0.50	320.30	4,621.9	163.0	-290.1	-150.6	1.10	-1.05	21.89	
4,738.0	0.50	287.40	4,716.9	163.4	-290.8	-151.1	0.30	0.00	-34.63	
4,832.0	0.40	272.80	4,810.9	163.6	-291.5	-151.2	0.16	-0.11	-15.53	
4,927.0	0.10	133.60	4,905.9	163.5	-291.7	-151.1	0.51	-0.32	-146.53	
5,022.0	0.40	163.30	5,000.9	163.2	-291.6	-150.7	0.33	0.32	31.26	
5,116.0	0.40	124.60	5,094.9	162.7	-291.2	-150.3	0.28	0.00	-41.17	
5,210.0	0.80	116.40	5,188.9	162.2	-290.4	-149.8	0.43	0.43	-8.72	
5,304.0	1.00	133.60	5,282.8	161.3	-289.2	-149.0	0.36	0.21	18.30	
5,399.0	0.60	107.60	5,377.8	160.6	-288.1	-148.3	0.56	-0.42	-27.37	
5,492.0	1.10	113.90	5,470.8	160.1	-286.8	-147.9	0.55	0.54	6.77	
5,586.0	0.60	105.50	5,564.8	159.6	-285.5	-147.4	0.55	-0.53	-8.94	
5,681.0	0.70	115.30	5,659.8	159.2	-284.5	-147.1	0.16	0.11	10.32	
5,775.0	0.40	114.80	5,753.8	158.8	-283.7	-146.7	0.32	-0.32	-0.53	
5,869.0	1.10	111.40	5,847.8	158.4	-282.6	-146.3	0.75	0.74	-3.62	
5,964.0	0.60	18.80	5,942.8	158.5	-281.6	-146.5	1.34	-0.53	-97.47	
6,058.0	0.90	348.40	6,036.8	159.7	-281.6	-147.7	0.52	0.32	-32.34	
6,153.0	0.50	36.90	6,131.8	160.8	-281.5	-148.8	0.72	-0.42	51.05	
6,247.0	1.10	60.10	6,225.8	161.5	-280.4	-149.6	0.71	0.64	24.68	

<b>Company:</b>	Verdad Oil & Gas Corporation	<b>Local Co-ordinate Reference:</b>	Well Pastelak 01N-64W-02-3N
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<b>Site:</b>	Pastelak 01N-64W-02 Pad Sec.2-T1N-R64W	<b>MD Reference:</b>	WELL @ 5029.5ft (RKB - 16.5')
<b>Well:</b>	Pastelak 01N-64W-02-3N	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	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)
6,342.0	0.20	282.50	6,320.8	162.0	-279.8	-150.1	1.32	-0.95	-144.84
6,389.0	2.60	202.70	6,367.7	161.1	-280.3	-149.1	5.47	5.11	-169.79
6,436.0	7.80	195.30	6,414.5	157.0	-281.5	-145.0	11.13	11.06	-15.74
6,483.0	13.20	192.60	6,460.7	148.7	-283.6	-136.6	11.53	11.49	-5.74
6,531.0	18.00	186.00	6,507.0	135.9	-285.5	-123.8	10.65	10.00	-13.75
6,578.0	21.40	177.00	6,551.2	120.1	-285.8	-108.0	9.68	7.23	-19.15
6,625.0	25.00	176.80	6,594.4	101.7	-284.8	-89.6	7.66	7.66	-0.43
6,672.0	28.60	178.60	6,636.3	80.5	-284.0	-68.5	7.85	7.66	3.83
6,720.0	33.20	181.20	6,677.5	55.9	-284.0	-43.9	9.98	9.58	5.42
6,767.0	37.90	183.30	6,715.7	28.6	-285.1	-16.5	10.33	10.00	4.47
6,815.0	43.60	182.60	6,752.1	-2.7	-286.7	14.8	11.91	11.88	-1.46
6,862.0	49.10	185.10	6,784.5	-36.6	-289.0	48.8	12.32	11.70	5.32
6,909.0	51.80	183.50	6,814.5	-72.8	-291.7	85.0	6.32	5.74	-3.40
6,956.0	55.70	181.40	6,842.2	-110.6	-293.3	122.9	9.05	8.30	-4.47
7,003.0	61.60	180.50	6,866.7	-150.7	-294.0	163.0	12.66	12.55	-1.91
7,050.0	67.60	180.50	6,886.8	-193.2	-294.4	205.4	12.77	12.77	0.00
7,097.0	71.60	179.60	6,903.2	-237.2	-294.4	249.4	8.70	8.51	-1.91
7,144.0	77.40	178.90	6,915.8	-282.5	-293.8	294.6	12.42	12.34	-1.49
7,191.0	82.60	178.20	6,923.9	-328.7	-292.6	340.8	11.16	11.06	-1.49
7,215.0	85.50	178.10	6,926.4	-352.6	-291.9	364.6	12.09	12.08	-0.42
7,353.0	89.10	178.60	6,932.9	-490.4	-287.9	502.0	2.63	2.61	0.36
7,447.0	88.80	177.70	6,934.6	-584.3	-284.8	595.8	1.01	-0.32	-0.96
7,541.0	91.10	177.50	6,934.7	-678.2	-280.9	689.4	2.46	2.45	-0.21
7,635.0	89.30	177.70	6,934.4	-772.1	-277.0	783.1	1.93	-1.91	0.21
7,729.0	90.10	177.70	6,934.9	-866.0	-273.2	876.8	0.85	0.85	0.00
7,824.0	90.80	176.80	6,934.1	-960.9	-268.6	971.4	1.20	0.74	-0.95
7,919.0	90.70	178.60	6,932.9	-1,055.8	-264.8	1,066.0	1.90	-0.11	1.89
8,013.0	90.60	178.90	6,931.8	-1,149.8	-262.8	1,159.8	0.34	-0.11	0.32
8,108.0	89.50	178.40	6,931.7	-1,244.8	-260.5	1,254.6	1.27	-1.16	-0.53
8,202.0	91.10	178.40	6,931.3	-1,338.7	-257.9	1,348.4	1.70	1.70	0.00
8,296.0	92.40	179.30	6,928.4	-1,432.7	-256.0	1,442.2	1.68	1.38	0.96
8,391.0	91.90	180.50	6,924.8	-1,527.6	-255.9	1,537.0	1.37	-0.53	1.26
8,485.0	91.50	180.20	6,922.0	-1,621.6	-256.4	1,630.9	0.53	-0.43	-0.32
8,580.0	90.00	179.60	6,920.8	-1,716.5	-256.3	1,725.8	1.70	-1.58	-0.63
8,674.0	90.20	178.90	6,920.6	-1,810.5	-255.0	1,819.7	0.77	0.21	-0.74
8,769.0	90.70	178.60	6,919.9	-1,905.5	-253.0	1,914.5	0.61	0.53	-0.32
8,864.0	90.70	178.20	6,918.7	-2,000.5	-250.3	2,009.2	0.42	0.00	-0.42
8,959.0	89.60	178.20	6,918.5	-2,095.4	-247.3	2,104.0	1.16	-1.16	0.00
9,054.0	90.10	178.00	6,918.7	-2,190.4	-244.2	2,198.7	0.57	0.53	-0.21
9,148.0	89.90	177.70	6,918.7	-2,284.3	-240.7	2,292.4	0.38	-0.21	-0.32
9,244.0	90.00	177.70	6,918.8	-2,380.2	-236.8	2,388.1	0.10	0.10	0.00
9,339.0	90.70	178.40	6,918.2	-2,475.2	-233.6	2,482.8	1.04	0.74	0.74
9,433.0	90.80	178.00	6,917.0	-2,569.1	-230.6	2,576.5	0.44	0.11	-0.43
9,529.0	91.60	179.10	6,915.0	-2,665.1	-228.2	2,672.3	1.42	0.83	1.15
9,624.0	90.00	179.30	6,913.7	-2,760.0	-226.9	2,767.1	1.70	-1.68	0.21
9,718.0	90.00	178.90	6,913.7	-2,854.0	-225.4	2,861.0	0.43	0.00	-0.43
9,812.0	90.10	178.00	6,913.6	-2,948.0	-222.9	2,954.8	0.96	0.11	-0.96
9,906.0	90.50	177.50	6,913.1	-3,041.9	-219.2	3,048.4	0.68	0.43	-0.53
10,001.0	89.50	178.90	6,913.1	-3,136.9	-216.2	3,143.2	1.81	-1.05	1.47
10,095.0	89.70	177.70	6,913.7	-3,230.8	-213.4	3,236.9	1.29	0.21	-1.28
10,189.0	90.00	179.80	6,914.0	-3,324.8	-211.3	3,330.7	2.26	0.32	2.23
10,283.0	89.50	179.60	6,914.4	-3,418.8	-210.8	3,424.6	0.57	-0.53	-0.21
10,378.0	89.50	180.30	6,915.2	-3,513.8	-210.8	3,519.5	0.74	0.00	0.74
10,472.0	91.50	179.50	6,914.4	-3,607.8	-210.6	3,613.4	2.29	2.13	-0.85

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<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	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)
10,566.0	90.40	179.80	6,912.8	-3,701.8	-210.0	3,707.3	1.21	-1.17	0.32
10,660.0	90.80	179.50	6,911.9	-3,795.7	-209.5	3,801.2	0.53	0.43	-0.32
10,755.0	91.30	179.10	6,910.1	-3,890.7	-208.3	3,896.0	0.67	0.53	-0.42
10,849.0	91.20	177.70	6,908.1	-3,984.7	-205.7	3,989.8	1.49	-0.11	-1.49
10,943.0	90.60	177.20	6,906.6	-4,078.6	-201.5	4,083.4	0.83	-0.64	-0.53
11,038.0	89.90	177.90	6,906.2	-4,173.5	-197.4	4,178.1	1.04	-0.74	0.74
11,132.0	89.30	178.20	6,906.8	-4,267.4	-194.2	4,271.8	0.71	-0.64	0.32
11,226.0	88.60	178.90	6,908.6	-4,361.4	-191.8	4,365.6	1.05	-0.74	0.74
11,320.0	90.30	178.70	6,909.5	-4,455.3	-189.9	4,459.4	1.82	1.81	-0.21
11,383.0	90.50	178.40	6,909.0	-4,518.3	-188.3	4,522.2	0.57	0.32	-0.48
11,438.0	90.50	178.40	6,908.5	-4,573.3	-186.8	4,577.1	0.00	0.00	0.00
BHL 460'FSL & 990'FWL									

Checked By: _____	Approved By: _____	Date: _____
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