

PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Leffler 11-204**

Surface Location: Leffler 11-HZ Pad Sec.1-T6N-R66W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

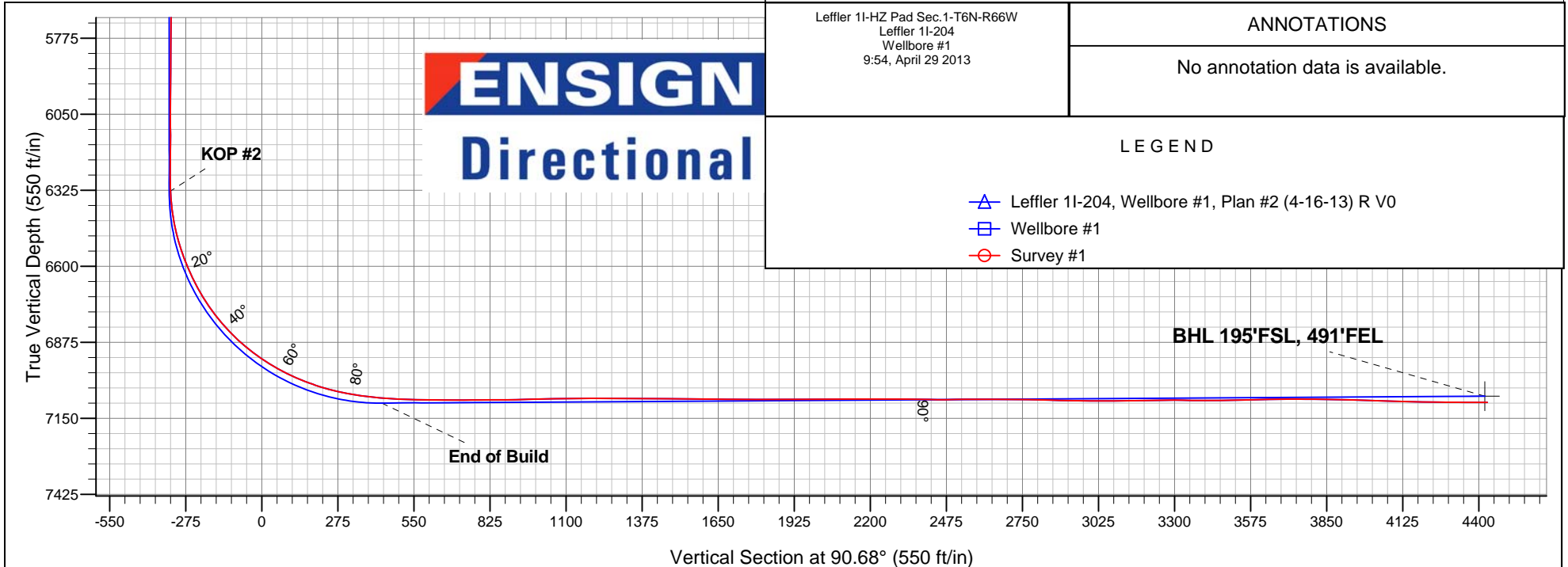
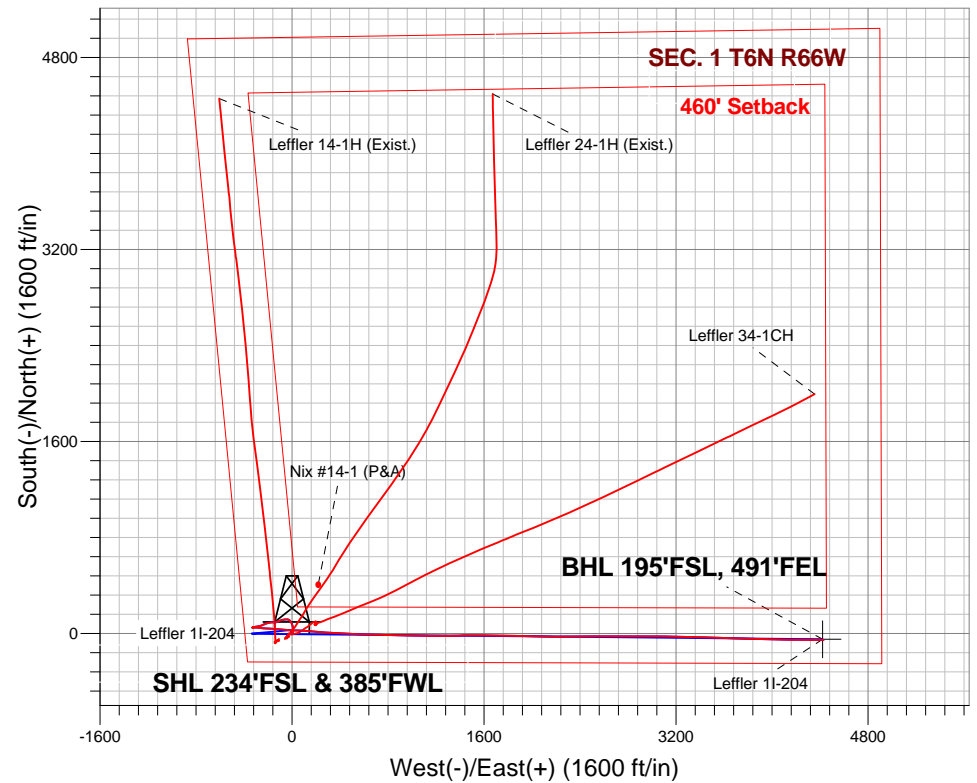
Ground Elevation: 4815.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1429853.34	3213118.22	40.510820	-104.733530	

Original Well Elev WELL @ 4830.0ft (Original Well Elev)

FINAL SURVEY

Projected Bottom Hole Location
11525' MD 7093' TVD 52' S & 4430' E of SHL
89.8 degree Incl @ 89.6 degree AZM



Leffler 11-HZ Pad Sec.1-T6N-R66W
Leffler 11-204
Wellbore #1
9:54, April 29 2013

ANNOTATIONS

No annotation data is available.

LEGEND

- Leffler 11-204, Wellbore #1, Plan #2 (4-16-13) R V0
- Wellbore #1
- Survey #1



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.1-T6N-R66W

Leffler 1I-HZ Pad Sec.1-T6N-R66W

Leffler 1I-204

Wellbore #1

Survey: Survey #1

Standard Survey Report

29 April, 2013

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)
Main Survey	0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
	147.0	1.10	141.90	147.0	-1.1	0.9	0.9	0.75	0.75	0.00
	236.0	0.60	106.00	236.0	-1.9	1.8	1.9	0.80	-0.56	-40.34
	326.0	1.40	33.70	326.0	-1.1	2.9	2.9	1.49	0.89	-80.33
	417.0	3.40	19.60	416.9	2.3	4.4	4.4	2.28	2.20	-15.49
	508.0	5.40	11.90	507.6	9.1	6.2	6.1	2.29	2.20	-8.46
	600.0	6.20	6.20	599.1	18.2	7.6	7.4	1.07	0.87	-6.20
	691.0	6.50	3.70	689.6	28.3	8.5	8.2	0.45	0.33	-2.75
	783.0	6.80	357.10	781.0	38.9	8.6	8.1	0.89	0.33	-7.17
	876.0	6.90	352.30	873.3	49.9	7.5	7.0	0.62	0.11	-5.16
	971.0	7.10	349.90	967.6	61.4	5.8	5.0	0.37	0.21	-2.53
	1,062.0	7.10	343.20	1,057.9	72.3	3.1	2.3	0.91	0.00	-7.36

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Leffler 11-204
Project:	SEC.1-T6N-R66W	TVD Reference:	WELL @ 4830.0ft (Original Well Elev)
Site:	Leffler 11-HZ Pad Sec.1-T6N-R66W	MD Reference:	WELL @ 4830.0ft (Original Well Elev)
Well:	Leffler 11-204	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)
1,154.0	7.10	337.30	1,149.2	83.0	-0.7	-1.7	0.79	0.00	-6.41
1,246.0	6.80	329.70	1,240.5	92.9	-5.6	-6.7	1.05	-0.33	-8.26
1,341.0	6.00	321.10	1,334.9	101.7	-11.6	-12.8	1.31	-0.84	-9.05
1,437.0	5.80	312.50	1,430.4	108.8	-18.3	-19.6	0.94	-0.21	-8.96
1,532.0	5.70	303.10	1,524.9	114.7	-25.8	-27.2	1.00	-0.11	-9.89
1,627.0	5.20	284.90	1,619.5	118.3	-33.9	-35.3	1.89	-0.53	-19.16
1,723.0	4.60	270.10	1,715.2	119.5	-42.0	-43.4	1.45	-0.63	-15.42
1,818.0	4.40	260.70	1,809.9	118.9	-49.4	-50.8	0.80	-0.21	-9.89
1,913.0	4.50	264.50	1,904.6	117.9	-56.7	-58.1	0.33	0.11	4.00
2,007.0	4.50	262.90	1,998.3	117.1	-64.0	-65.4	0.13	0.00	-1.70
2,103.0	4.60	258.30	2,094.0	115.9	-71.5	-72.9	0.39	0.10	-4.79
2,198.0	3.50	264.00	2,188.8	114.8	-78.1	-79.5	1.23	-1.16	6.00
2,293.0	3.40	258.00	2,283.6	113.9	-83.8	-85.1	0.39	-0.11	-6.32
2,389.0	3.80	247.50	2,379.4	112.1	-89.5	-90.8	0.80	0.42	-10.94
2,485.0	3.70	242.90	2,475.2	109.5	-95.2	-96.5	0.33	-0.10	-4.79
2,580.0	3.50	243.50	2,570.0	106.8	-100.5	-101.8	0.21	-0.21	0.63
2,674.0	3.90	246.40	2,663.8	104.2	-106.0	-107.2	0.47	0.43	3.09
2,769.0	3.90	255.80	2,758.6	102.1	-112.1	-113.3	0.67	0.00	9.89
2,866.0	4.60	251.10	2,855.3	100.1	-119.0	-120.2	0.81	0.72	-4.85
2,962.0	5.10	250.80	2,951.0	97.4	-126.7	-127.8	0.52	0.52	-0.31
3,057.0	4.30	253.00	3,045.7	95.0	-134.1	-135.2	0.86	-0.84	2.32
3,153.0	4.30	262.80	3,141.4	93.5	-141.1	-142.2	0.76	0.00	10.21
3,247.0	4.40	266.40	3,235.1	92.8	-148.2	-149.3	0.31	0.11	3.83
3,343.0	4.00	276.40	3,330.9	93.0	-155.2	-156.3	0.87	-0.42	10.42
3,438.0	3.90	279.80	3,425.6	93.9	-161.6	-162.7	0.27	-0.11	3.58
3,533.0	4.00	271.20	3,520.4	94.5	-168.1	-169.2	0.63	0.11	-9.05
3,629.0	3.90	263.50	3,616.2	94.2	-174.7	-175.8	0.56	-0.10	-8.02
3,724.0	3.70	260.40	3,711.0	93.3	-181.0	-182.1	0.30	-0.21	-3.26
3,819.0	4.10	253.60	3,805.8	91.9	-187.2	-188.3	0.64	0.42	-7.16
3,915.0	4.80	255.20	3,901.5	89.9	-194.4	-195.5	0.74	0.73	1.67
4,010.0	5.30	252.40	3,996.1	87.5	-202.4	-203.5	0.59	0.53	-2.95
4,106.0	6.20	251.50	4,091.6	84.5	-211.6	-212.6	0.94	0.94	-0.94
4,200.0	6.40	249.30	4,185.1	81.1	-221.3	-222.2	0.33	0.21	-2.34
4,295.0	5.50	247.90	4,279.5	77.5	-230.5	-231.4	0.96	-0.95	-1.47
4,391.0	5.50	248.90	4,375.1	74.1	-239.0	-239.9	0.10	0.00	1.04
4,486.0	5.80	248.00	4,469.6	70.7	-247.7	-248.5	0.33	0.32	-0.95
4,581.0	6.20	249.30	4,564.1	67.1	-257.0	-257.8	0.44	0.42	1.37
4,676.0	6.20	253.70	4,658.6	63.8	-266.7	-267.4	0.50	0.00	4.63
4,771.0	5.80	258.10	4,753.0	61.4	-276.3	-277.0	0.64	-0.42	4.63
4,865.0	5.70	260.20	4,846.6	59.6	-285.6	-286.3	0.25	-0.11	2.23
4,960.0	4.50	261.60	4,941.2	58.2	-293.9	-294.6	1.27	-1.26	1.47
5,056.0	5.00	259.50	5,036.9	56.9	-301.7	-302.4	0.55	0.52	-2.19
5,151.0	4.90	259.70	5,131.5	55.5	-309.8	-310.4	0.11	-0.11	0.21
5,246.0	3.80	256.60	5,226.2	54.0	-316.9	-317.5	1.18	-1.16	-3.26
5,341.0	2.70	248.40	5,321.1	52.4	-322.0	-322.6	1.25	-1.16	-8.63
5,438.0	1.60	258.90	5,418.0	51.3	-325.5	-326.0	1.20	-1.13	10.82
5,533.0	0.80	259.20	5,513.0	51.0	-327.4	-328.0	0.84	-0.84	0.32
5,629.0	0.10	328.60	5,609.0	50.9	-328.1	-328.7	0.80	-0.73	72.29
5,724.0	0.30	23.60	5,704.0	51.2	-328.1	-328.6	0.27	0.21	57.89
5,819.0	0.40	253.00	5,799.0	51.3	-328.3	-328.9	0.67	0.11	-137.47
5,914.0	0.70	256.80	5,894.0	51.1	-329.2	-329.7	0.32	0.32	4.00
6,010.0	0.40	245.60	5,990.0	50.8	-330.0	-330.6	0.33	-0.31	-11.67
6,105.0	0.40	208.10	6,085.0	50.4	-330.5	-331.1	0.27	0.00	-39.47

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6,201.0	0.60	215.00	6,181.0	49.7	-330.9	-331.5	0.22	0.21	7.19
6,297.0	0.70	140.30	6,277.0	48.8	-330.9	-331.4	0.83	0.10	-77.81
6,329.0	1.20	116.00	6,309.0	48.5	-330.4	-331.0	1.97	1.56	-75.94
6,360.0	3.00	95.30	6,339.9	48.3	-329.3	-329.9	6.21	5.81	-66.77
6,392.0	5.50	80.90	6,371.9	48.5	-327.0	-327.5	8.43	7.81	-45.00
6,424.0	8.20	79.90	6,403.6	49.1	-323.2	-323.8	8.45	8.44	-3.13
6,456.0	10.40	83.10	6,435.2	49.9	-318.1	-318.7	7.06	6.88	10.00
6,487.0	12.60	87.00	6,465.6	50.4	-311.9	-312.5	7.52	7.10	12.58
6,519.0	14.90	91.00	6,496.7	50.5	-304.3	-304.9	7.77	7.19	12.50
6,551.0	17.40	93.60	6,527.4	50.1	-295.5	-296.0	8.13	7.81	8.13
6,582.0	19.60	95.50	6,556.8	49.3	-285.7	-286.2	7.36	7.10	6.13
6,614.0	22.00	96.30	6,586.7	48.2	-274.4	-274.9	7.55	7.50	2.50
6,646.0	24.10	96.10	6,616.1	46.8	-261.9	-262.4	6.57	6.56	-0.63
6,677.0	25.70	96.60	6,644.3	45.4	-248.9	-249.4	5.21	5.16	1.61
6,709.0	28.00	94.80	6,672.8	43.9	-234.5	-235.0	7.62	7.19	-5.63
6,741.0	30.50	93.80	6,700.7	42.8	-219.0	-219.4	7.96	7.81	-3.13
6,773.0	32.90	92.10	6,728.0	41.9	-202.2	-202.6	8.00	7.50	-5.31
6,804.0	35.30	92.50	6,753.6	41.2	-184.8	-185.3	7.78	7.74	1.29
6,836.0	37.80	92.70	6,779.3	40.4	-165.8	-166.2	7.82	7.81	0.63
6,868.0	40.70	93.30	6,804.1	39.3	-145.5	-146.0	9.14	9.06	1.88
6,900.0	42.80	94.50	6,828.0	37.8	-124.3	-124.7	7.02	6.56	3.75
6,932.0	45.50	94.70	6,850.9	36.1	-102.1	-102.5	8.45	8.44	0.63
6,964.0	47.70	95.40	6,872.9	34.0	-78.9	-79.3	7.06	6.88	2.19
6,995.0	50.80	95.00	6,893.2	31.9	-55.5	-55.9	10.05	10.00	-1.29
7,028.0	53.40	94.00	6,913.4	29.8	-29.6	-29.9	8.23	7.88	-3.03
7,059.0	55.50	93.20	6,931.4	28.3	-4.4	-4.7	7.09	6.77	-2.58
7,091.0	57.50	92.50	6,949.1	26.9	22.2	21.9	6.51	6.25	-2.19
7,123.0	59.80	92.30	6,965.8	25.8	49.5	49.2	7.21	7.19	-0.63
7,154.0	62.40	92.50	6,980.7	24.7	76.7	76.4	8.41	8.39	0.65
7,186.0	64.90	92.90	6,994.9	23.3	105.3	105.0	7.89	7.81	1.25
7,218.0	67.50	93.20	7,007.8	21.7	134.5	134.3	8.17	8.13	0.94
7,250.0	69.50	94.00	7,019.6	19.9	164.2	164.0	6.67	6.25	2.50
7,281.0	71.50	94.50	7,029.9	17.7	193.4	193.2	6.63	6.45	1.61
7,313.0	73.60	94.70	7,039.5	15.3	223.8	223.6	6.59	6.56	0.63
7,345.0	75.60	95.10	7,048.0	12.6	254.6	254.4	6.37	6.25	1.25
7,376.0	77.50	95.20	7,055.2	9.9	284.6	284.4	6.14	6.13	0.32
7,408.0	79.60	95.00	7,061.6	7.1	315.8	315.7	6.59	6.56	-0.63
7,440.0	81.50	94.60	7,066.8	4.5	347.3	347.2	6.06	5.94	-1.25
7,471.0	83.10	94.00	7,071.0	2.2	377.9	377.9	5.51	5.16	-1.94
7,507.0	84.90	91.70	7,074.7	0.4	413.7	413.6	8.09	5.00	-6.39
7,539.0	86.40	91.70	7,077.2	-0.5	445.6	445.5	4.69	4.69	0.00
7,570.0	86.70	91.90	7,079.0	-1.5	476.5	476.5	1.16	0.97	0.65
7,602.0	87.40	92.30	7,080.7	-2.7	508.4	508.4	2.52	2.19	1.25
7,634.0	88.00	92.00	7,082.0	-3.9	540.4	540.4	2.10	1.88	-0.94
7,665.0	88.60	91.80	7,082.9	-4.9	571.3	571.4	2.04	1.94	-0.65
7,697.0	88.80	91.20	7,083.6	-5.7	603.3	603.3	1.98	0.63	-1.88
7,729.0	89.40	91.30	7,084.1	-6.4	635.3	635.3	1.90	1.88	0.31
7,760.0	89.80	91.50	7,084.3	-7.2	666.3	666.3	1.44	1.29	0.65
7,792.0	90.30	91.70	7,084.3	-8.1	698.3	698.3	1.68	1.56	0.63
7,824.0	90.50	91.40	7,084.1	-9.0	730.3	730.3	1.13	0.63	-0.94
7,856.0	90.70	91.70	7,083.8	-9.8	762.3	762.3	1.13	0.63	0.94
7,887.0	90.80	91.80	7,083.3	-10.8	793.2	793.3	0.46	0.32	0.32
7,919.0	89.90	91.50	7,083.1	-11.7	825.2	825.3	2.96	-2.81	-0.94
7,951.0	89.90	91.40	7,083.2	-12.5	857.2	857.3	0.31	0.00	-0.31

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Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
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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)
7,982.0	90.50	91.50	7,083.1	-13.3	888.2	888.3	1.96	1.94	0.32
8,014.0	91.20	91.50	7,082.6	-14.1	920.2	920.3	2.19	2.19	0.00
8,046.0	91.60	91.50	7,081.8	-15.0	952.2	952.3	1.25	1.25	0.00
8,077.0	91.30	90.80	7,081.1	-15.6	983.2	983.3	2.46	-0.97	-2.26
8,109.0	91.60	90.90	7,080.2	-16.1	1,015.1	1,015.3	0.99	0.94	0.31
8,141.0	91.10	91.10	7,079.5	-16.6	1,047.1	1,047.2	1.68	-1.56	0.63
8,173.0	91.20	91.50	7,078.9	-17.3	1,079.1	1,079.2	1.29	0.31	1.25
8,204.0	90.90	91.20	7,078.3	-18.1	1,110.1	1,110.2	1.37	-0.97	-0.97
8,236.0	90.30	90.40	7,077.9	-18.5	1,142.1	1,142.2	3.12	-1.88	-2.50
8,268.0	90.20	90.40	7,077.8	-18.7	1,174.1	1,174.2	0.31	-0.31	0.00
8,299.0	90.50	90.30	7,077.6	-18.9	1,205.1	1,205.2	1.02	0.97	-0.32
8,331.0	90.00	89.60	7,077.5	-18.9	1,237.1	1,237.2	2.69	-1.56	-2.19
8,363.0	90.20	89.30	7,077.4	-18.6	1,269.1	1,269.2	1.13	0.63	-0.94
8,394.0	89.20	88.60	7,077.6	-18.0	1,300.1	1,300.2	3.94	-3.23	-2.26
8,426.0	89.30	88.90	7,078.0	-17.3	1,332.1	1,332.2	0.99	0.31	0.94
8,458.0	89.80	89.00	7,078.3	-16.7	1,364.1	1,364.2	1.59	1.56	0.31
8,490.0	90.50	88.90	7,078.2	-16.2	1,396.1	1,396.2	2.21	2.19	-0.31
8,522.0	88.80	88.90	7,078.4	-15.5	1,428.1	1,428.1	5.31	-5.31	0.00
8,553.0	88.70	89.40	7,079.0	-15.1	1,459.0	1,459.1	1.64	-0.32	1.61
8,585.0	88.50	89.40	7,079.8	-14.8	1,491.0	1,491.1	0.63	-0.63	0.00
8,617.0	90.00	90.30	7,080.2	-14.7	1,523.0	1,523.1	5.47	4.69	2.81
8,649.0	91.00	90.60	7,080.0	-14.9	1,555.0	1,555.1	3.26	3.13	0.94
8,681.0	89.20	90.40	7,079.9	-15.2	1,587.0	1,587.1	5.66	-5.63	-0.63
8,712.0	89.30	90.70	7,080.3	-15.5	1,618.0	1,618.1	1.02	0.32	0.97
8,744.0	89.10	90.30	7,080.8	-15.8	1,650.0	1,650.1	1.40	-0.63	-1.25
8,776.0	89.00	90.80	7,081.3	-16.1	1,682.0	1,682.1	1.59	-0.31	1.56
8,808.0	90.00	91.00	7,081.6	-16.6	1,714.0	1,714.1	3.19	3.13	0.63
8,839.0	90.90	90.90	7,081.3	-17.1	1,745.0	1,745.1	2.92	2.90	-0.32
8,871.0	89.90	90.70	7,081.1	-17.5	1,777.0	1,777.1	3.19	-3.13	-0.63
8,903.0	90.10	91.20	7,081.1	-18.1	1,809.0	1,809.1	1.68	0.63	1.56
8,935.0	89.70	90.90	7,081.2	-18.7	1,841.0	1,841.1	1.56	-1.25	-0.94
8,967.0	89.20	91.00	7,081.5	-19.2	1,873.0	1,873.1	1.59	-1.56	0.31
8,998.0	89.60	90.80	7,081.8	-19.7	1,904.0	1,904.1	1.44	1.29	-0.65
9,030.0	90.00	91.00	7,081.9	-20.2	1,936.0	1,936.1	1.40	1.25	0.63
9,062.0	90.20	91.20	7,081.8	-20.8	1,968.0	1,968.1	0.88	0.63	0.63
9,093.0	90.60	91.30	7,081.6	-21.5	1,998.9	1,999.1	1.33	1.29	0.32
9,125.0	91.20	91.50	7,081.1	-22.3	2,030.9	2,031.1	1.98	1.88	0.63
9,157.0	90.60	91.10	7,080.6	-23.0	2,062.9	2,063.1	2.25	-1.88	-1.25
9,188.0	89.60	91.20	7,080.6	-23.6	2,093.9	2,094.0	3.24	-3.23	0.32
9,220.0	90.00	90.70	7,080.7	-24.1	2,125.9	2,126.0	2.00	1.25	-1.56
9,252.0	91.00	91.10	7,080.4	-24.6	2,157.9	2,158.0	3.37	3.13	1.25
9,284.0	90.80	90.70	7,079.9	-25.1	2,189.9	2,190.0	1.40	-0.63	-1.25
9,315.0	89.10	89.40	7,079.9	-25.2	2,220.9	2,221.0	6.90	-5.48	-4.19
9,347.0	89.70	89.60	7,080.3	-24.9	2,252.9	2,253.0	1.98	1.88	0.63
9,379.0	90.50	89.70	7,080.2	-24.7	2,284.9	2,285.0	2.52	2.50	0.31
9,410.0	89.90	89.10	7,080.1	-24.4	2,315.9	2,316.0	2.74	-1.94	-1.94
9,442.0	88.60	89.60	7,080.5	-24.0	2,347.9	2,348.0	4.35	-4.06	1.56
9,474.0	88.70	89.70	7,081.3	-23.8	2,379.9	2,380.0	0.44	0.31	0.31
9,506.0	89.30	89.30	7,081.8	-23.5	2,411.9	2,412.0	2.25	1.88	-1.25
9,537.0	89.50	89.80	7,082.2	-23.3	2,442.9	2,443.0	1.74	0.65	1.61
9,569.0	90.20	89.80	7,082.2	-23.2	2,474.9	2,475.0	2.19	2.19	0.00
9,601.0	90.90	89.60	7,081.9	-23.0	2,506.9	2,507.0	2.28	2.19	-0.63
9,633.0	90.50	89.80	7,081.5	-22.8	2,538.9	2,539.0	1.40	-1.25	0.63

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Leffler 11-204
Project:	SEC.1-T6N-R66W	TVD Reference:	WELL @ 4830.0ft (Original Well Elev)
Site:	Leffler 11-HZ Pad Sec.1-T6N-R66W	MD Reference:	WELL @ 4830.0ft (Original Well Elev)
Well:	Leffler 11-204	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)
9,664.0	90.50	90.40	7,081.3	-22.9	2,569.9	2,570.0	1.94	0.00	1.94
9,696.0	89.70	90.20	7,081.2	-23.1	2,601.9	2,601.9	2.58	-2.50	-0.63
9,728.0	89.40	90.40	7,081.5	-23.2	2,633.9	2,633.9	1.13	-0.94	0.63
9,759.0	89.90	90.20	7,081.7	-23.4	2,664.9	2,664.9	1.74	1.61	-0.65
9,791.0	90.40	89.70	7,081.6	-23.4	2,696.9	2,696.9	2.21	1.56	-1.56
9,823.0	89.10	89.80	7,081.7	-23.2	2,728.9	2,728.9	4.07	-4.06	0.31
9,854.0	89.10	90.10	7,082.2	-23.2	2,759.8	2,759.9	0.97	0.00	0.97
9,886.0	89.50	89.90	7,082.6	-23.2	2,791.8	2,791.9	1.40	1.25	-0.63
9,918.0	88.50	90.30	7,083.1	-23.3	2,823.8	2,823.9	3.37	-3.13	1.25
9,950.0	88.30	90.40	7,084.0	-23.4	2,855.8	2,855.9	0.70	-0.63	0.31
9,981.0	88.40	90.10	7,084.9	-23.6	2,886.8	2,886.9	1.02	0.32	-0.97
10,013.0	88.70	90.10	7,085.7	-23.6	2,918.8	2,918.9	0.94	0.94	0.00
10,045.0	89.20	90.00	7,086.3	-23.7	2,950.8	2,950.9	1.59	1.56	-0.31
10,076.0	89.50	90.20	7,086.7	-23.7	2,981.8	2,981.9	1.16	0.97	0.65
10,108.0	89.80	90.20	7,086.9	-23.8	3,013.8	3,013.9	0.94	0.94	0.00
10,140.0	89.70	90.70	7,087.0	-24.1	3,045.8	3,045.9	1.59	-0.31	1.56
10,171.0	89.90	91.00	7,087.1	-24.5	3,076.8	3,076.9	1.16	0.65	0.97
10,203.0	90.50	90.80	7,087.0	-25.0	3,108.8	3,108.9	1.98	1.88	-0.63
10,234.0	90.80	90.90	7,086.7	-25.5	3,139.8	3,139.9	1.02	0.97	0.32
10,266.0	91.30	90.40	7,086.1	-25.9	3,171.8	3,171.9	2.21	1.56	-1.56
10,298.0	91.40	90.50	7,085.3	-26.1	3,203.8	3,203.8	0.44	0.31	0.31
10,329.0	90.70	91.30	7,084.8	-26.6	3,234.8	3,234.8	3.43	-2.26	2.58
10,361.0	90.70	91.10	7,084.4	-27.3	3,266.7	3,266.8	0.62	0.00	-0.63
10,393.0	89.60	91.00	7,084.3	-27.9	3,298.7	3,298.8	3.45	-3.44	-0.31
10,424.0	89.30	91.10	7,084.6	-28.4	3,329.7	3,329.8	1.02	-0.97	0.32
10,456.0	89.40	91.10	7,084.9	-29.0	3,361.7	3,361.8	0.31	0.31	0.00
10,487.0	89.60	91.00	7,085.2	-29.6	3,392.7	3,392.8	0.72	0.65	-0.32
10,519.0	89.60	91.10	7,085.4	-30.2	3,424.7	3,424.8	0.31	0.00	0.31
10,551.0	90.20	91.50	7,085.5	-30.9	3,456.7	3,456.8	2.25	1.88	1.25
10,583.0	90.90	91.60	7,085.2	-31.8	3,488.7	3,488.8	2.21	2.19	0.31
10,614.0	91.50	91.80	7,084.5	-32.7	3,519.7	3,519.8	2.04	1.94	0.65
10,645.0	92.20	91.50	7,083.5	-33.6	3,550.6	3,550.8	2.46	2.26	-0.97
10,677.0	91.80	91.50	7,082.4	-34.4	3,582.6	3,582.8	1.25	-1.25	0.00
10,709.0	90.50	91.40	7,081.8	-35.2	3,614.6	3,614.8	4.07	-4.06	-0.31
10,741.0	90.80	91.60	7,081.4	-36.1	3,646.6	3,646.8	1.13	0.94	0.63
10,772.0	90.40	91.90	7,081.1	-37.0	3,677.6	3,677.7	1.61	-1.29	0.97
10,804.0	90.20	92.20	7,080.9	-38.2	3,709.5	3,709.7	1.13	-0.63	0.94
10,836.0	90.50	92.30	7,080.7	-39.4	3,741.5	3,741.7	0.99	0.94	0.31
10,867.0	89.70	92.00	7,080.7	-40.6	3,772.5	3,772.7	2.76	-2.58	-0.97
10,899.0	89.10	92.60	7,081.0	-41.9	3,804.5	3,804.7	2.65	-1.88	1.88
10,931.0	89.60	92.30	7,081.4	-43.2	3,836.4	3,836.7	1.82	1.56	-0.94
10,962.0	89.30	92.20	7,081.7	-44.5	3,867.4	3,867.7	1.02	-0.97	-0.32
10,994.0	88.70	91.70	7,082.2	-45.6	3,899.4	3,899.7	2.44	-1.88	-1.56
11,026.0	88.20	91.60	7,083.1	-46.5	3,931.4	3,931.6	1.59	-1.56	-0.31
11,058.0	88.20	91.80	7,084.1	-47.4	3,963.3	3,963.6	0.62	0.00	0.63
11,089.0	88.20	91.50	7,085.1	-48.3	3,994.3	3,994.6	0.97	0.00	-0.97
11,121.0	88.40	91.10	7,086.0	-49.0	4,026.3	4,026.6	1.40	0.63	-1.25
11,153.0	88.40	91.00	7,086.9	-49.6	4,058.3	4,058.6	0.31	0.00	-0.31
11,185.0	88.20	91.10	7,087.9	-50.2	4,090.2	4,090.6	0.70	-0.63	0.31
11,216.0	88.20	90.90	7,088.8	-50.8	4,121.2	4,121.5	0.64	0.00	-0.65
11,248.0	88.50	90.70	7,089.8	-51.2	4,153.2	4,153.5	1.13	0.94	-0.63
11,280.0	88.70	90.70	7,090.5	-51.6	4,185.2	4,185.5	0.63	0.63	0.00
11,311.0	89.20	90.50	7,091.1	-51.9	4,216.2	4,216.5	1.74	1.61	-0.65

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Leffler 11-204
Project:	SEC.1-T6N-R66W	TVD Reference:	WELL @ 4830.0ft (Original Well Elev)
Site:	Leffler 11-HZ Pad Sec.1-T6N-R66W	MD Reference:	WELL @ 4830.0ft (Original Well Elev)
Well:	Leffler 11-204	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)
11,343.0	89.40	90.40	7,091.5	-52.2	4,248.2	4,248.5	0.70	0.63	-0.31
11,375.0	89.50	90.50	7,091.8	-52.4	4,280.2	4,280.5	0.44	0.31	0.31
11,406.0	89.60	90.20	7,092.0	-52.6	4,311.2	4,311.5	1.02	0.32	-0.97
11,438.0	89.80	90.10	7,092.2	-52.7	4,343.2	4,343.5	0.70	0.63	-0.31
11,469.0	89.80	89.60	7,092.3	-52.6	4,374.2	4,374.5	1.61	0.00	-1.61
11,516.0	89.80	89.60	7,092.5	-52.3	4,421.2	4,421.5	0.00	0.00	0.00
BHL 200'FSL, 500'FEL									
11,525.0	89.80	89.60	7,092.5	-52.2	4,430.2	4,430.5	0.00	0.00	0.00

Checked By: _____	Approved By: _____	Date: _____
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