

PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Leffler 26T-421**

Surface Location: Leffler 26T-421 Pad Sec.26-T7N-R66W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

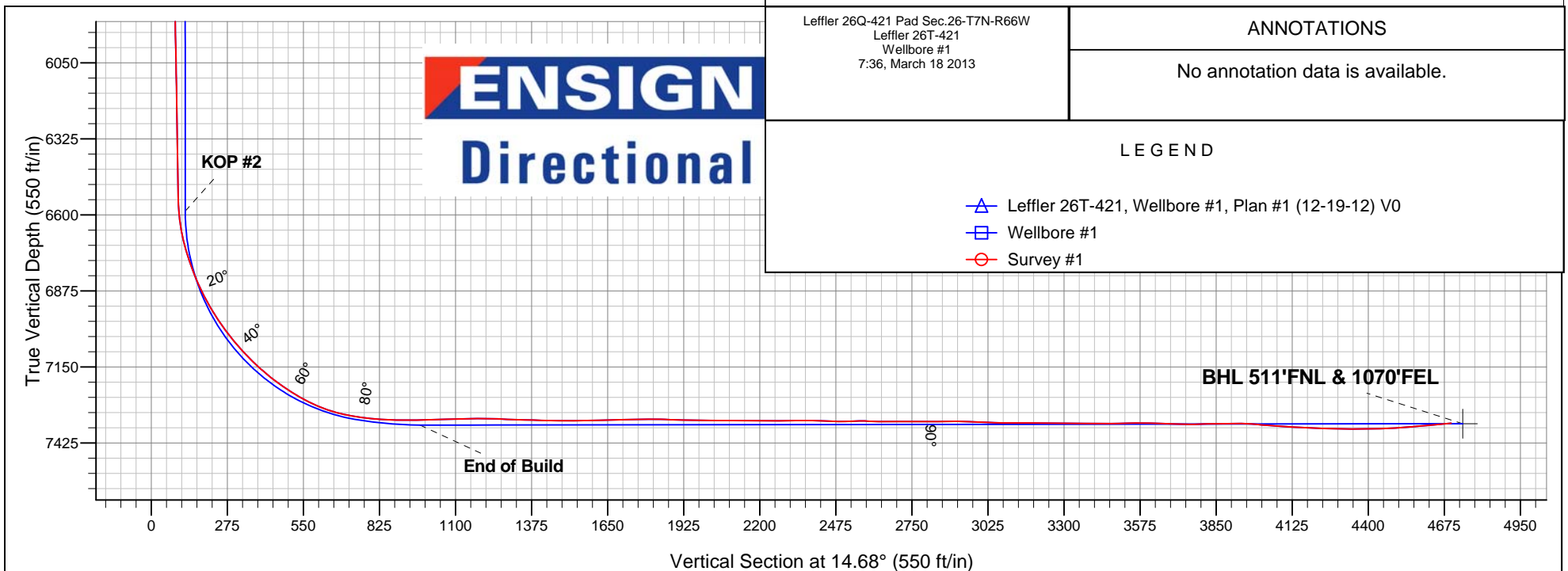
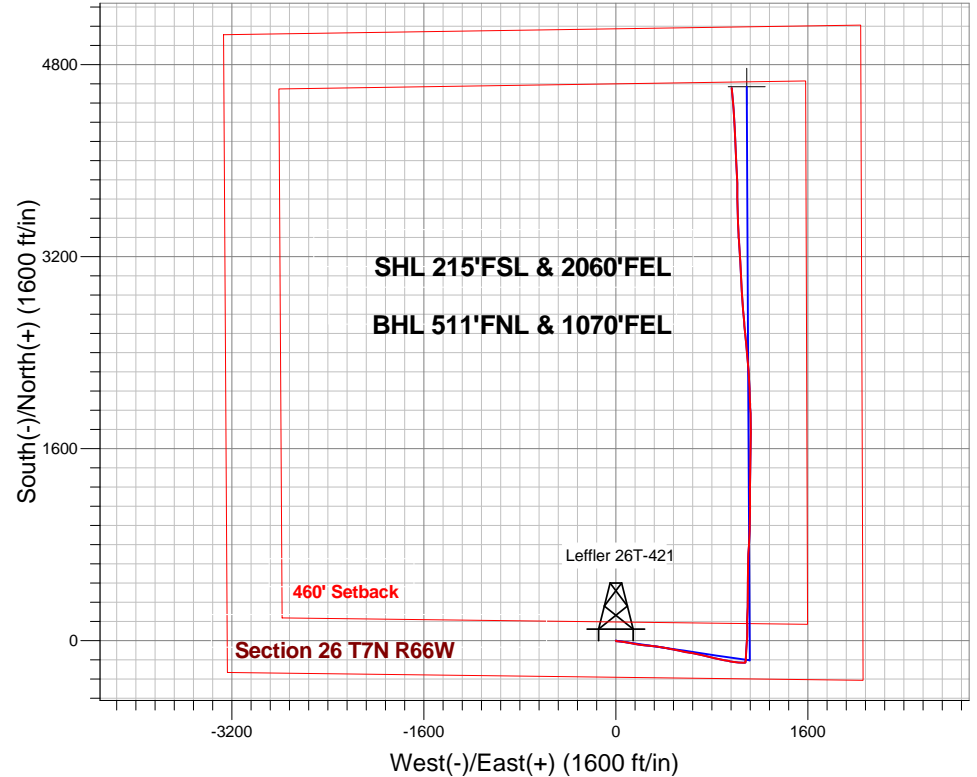
Ground Elevation: 4865.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1440279.84	3210532.13	40.539500	-104.742510	

RKB - 15' WELL @ 4880.0ft (RKB - 15')

FINAL SURVEY

Projected Bottom Hole Location
11891' MD 7354' TVD 4605' N & 965' E of SHL
94.8 degree Incl @ 354.7 degree AZM



Leffler 26Q-421 Pad Sec.26-T7N-R66W
Leffler 26T-421
Wellbore #1
7:36, March 18 2013

ANNOTATIONS

No annotation data is available.

LEGEND

- Leffler 26T-421, Wellbore #1, Plan #1 (12-19-12) V0
- Wellbore #1
- Survey #1



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.26-T7N-R66W

Leffler 26Q-421 Pad Sec.26-T7N-R66W

Leffler 26T-421

Wellbore #1

Survey: Survey #1

Standard Survey Report

18 March, 2013

Survey	Wellbore Data									
	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
	146.0	0.20	197.90	146.0	-0.2	-0.1	-0.3	0.14	0.14	0.00
	238.0	0.40	177.20	238.0	-0.7	-0.1	-0.7	0.24	0.22	-22.50
	329.0	1.00	138.70	329.0	-1.6	0.4	-1.5	0.80	0.66	-42.31
	421.0	1.90	129.00	421.0	-3.2	2.1	-2.5	1.01	0.98	-10.54
	513.0	3.30	93.10	512.9	-4.3	6.0	-2.6	2.26	1.52	-39.02
	605.0	6.30	95.50	604.5	-4.9	13.6	-1.3	3.27	3.26	2.61
	697.0	7.30	94.70	695.9	-5.9	24.5	0.5	1.09	1.09	-0.87
	789.0	8.40	96.30	787.0	-7.1	37.0	2.5	1.22	1.20	1.74
	881.0	8.90	96.00	878.0	-8.6	50.8	4.6	0.55	0.54	-0.33
	973.0	9.80	98.80	968.8	-10.5	65.6	6.4	1.10	0.98	3.04
	1,064.0	10.50	100.90	1,058.3	-13.3	81.4	7.8	0.87	0.77	2.31

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Leffler 26T-421
Project:	SEC.26-T7N-R66W	TVD Reference:	WELL @ 4880.0ft (RKB - 15')
Site:	Leffler 26Q-421 Pad Sec.26-T7N-R66W	MD Reference:	WELL @ 4880.0ft (RKB - 15')
Well:	Leffler 26T-421	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)
1,155.0	11.70	103.80	1,147.6	-17.0	98.5	8.5	1.45	1.32	3.19
1,251.0	12.70	99.90	1,241.5	-21.2	118.3	9.5	1.35	1.04	-4.06
1,346.0	13.10	99.60	1,334.1	-24.8	139.2	11.3	0.43	0.42	-0.32
1,441.0	12.00	98.20	1,426.8	-28.0	159.6	13.4	1.20	-1.16	-1.47
1,536.0	12.90	98.10	1,519.6	-30.9	179.9	15.7	0.95	0.95	-0.11
1,632.0	13.80	98.60	1,613.0	-34.1	201.8	18.1	0.95	0.94	0.52
1,727.0	13.10	97.20	1,705.4	-37.1	223.7	20.7	0.81	-0.74	-1.47
1,822.0	12.30	96.70	1,798.0	-39.7	244.4	23.6	0.85	-0.84	-0.53
1,917.0	11.60	96.30	1,891.0	-41.9	264.0	26.4	0.74	-0.74	-0.42
2,012.0	11.00	94.40	1,984.1	-43.6	282.5	29.4	0.74	-0.63	-2.00
2,107.0	11.20	93.60	2,077.4	-44.9	300.8	32.8	0.27	0.21	-0.84
2,202.0	10.90	97.10	2,170.6	-46.6	318.9	35.7	0.77	-0.32	3.68
2,296.0	11.00	97.80	2,262.9	-48.9	336.6	38.0	0.18	0.11	0.74
2,392.0	11.70	98.20	2,357.0	-51.6	355.3	40.1	0.73	0.73	0.42
2,487.0	11.70	100.70	2,450.0	-54.7	374.3	41.9	0.53	0.00	2.63
2,582.0	11.10	99.60	2,543.2	-58.0	392.8	43.4	0.67	-0.63	-1.16
2,677.0	11.00	98.40	2,636.4	-60.9	410.7	45.2	0.26	-0.11	-1.26
2,772.0	12.00	101.00	2,729.5	-64.1	429.4	46.8	1.19	1.05	2.74
2,868.0	12.70	101.40	2,823.3	-68.1	449.6	48.1	0.73	0.73	0.42
2,963.0	13.30	101.70	2,915.8	-72.4	470.5	49.2	0.64	0.63	0.32
3,058.0	13.60	101.40	3,008.2	-76.8	492.1	50.4	0.32	0.32	-0.32
3,154.0	12.00	99.50	3,101.8	-80.7	513.0	52.0	1.72	-1.67	-1.98
3,249.0	11.40	100.80	3,194.9	-84.1	532.0	53.5	0.69	-0.63	1.37
3,344.0	11.80	102.80	3,287.9	-88.0	550.7	54.4	0.60	0.42	2.11
3,439.0	11.90	103.80	3,380.9	-92.5	569.7	54.9	0.24	0.11	1.05
3,535.0	9.60	101.10	3,475.2	-96.4	587.2	55.6	2.45	-2.40	-2.81
3,630.0	9.50	98.80	3,568.9	-99.1	602.7	56.9	0.42	-0.11	-2.42
3,725.0	8.70	97.70	3,662.7	-101.2	617.5	58.5	0.86	-0.84	-1.16
3,820.0	8.00	98.00	3,756.7	-103.1	631.2	60.2	0.74	-0.74	0.32
3,915.0	8.30	101.30	3,850.7	-105.4	644.5	61.4	0.58	0.32	3.47
4,010.0	9.80	103.20	3,944.5	-108.6	659.1	62.0	1.61	1.58	2.00
4,106.0	11.20	102.00	4,038.9	-112.4	676.2	62.6	1.48	1.46	-1.25
4,201.0	12.40	100.90	4,131.9	-116.2	695.2	63.7	1.29	1.26	-1.16
4,296.0	12.50	102.80	4,224.7	-120.4	715.2	64.7	0.44	0.11	2.00
4,391.0	11.00	101.30	4,317.7	-124.5	734.2	65.6	1.61	-1.58	-1.58
4,485.0	10.90	102.60	4,410.0	-128.2	751.6	66.5	0.28	-0.11	1.38
4,580.0	10.80	104.90	4,503.3	-132.4	769.0	66.7	0.47	-0.11	2.42
4,675.0	10.90	106.60	4,596.6	-137.3	786.2	66.4	0.35	0.11	1.79
4,770.0	10.70	105.60	4,689.9	-142.2	803.3	66.0	0.29	-0.21	-1.05
4,865.0	11.40	103.40	4,783.1	-146.8	820.9	66.0	0.86	0.74	-2.32
4,960.0	10.80	99.80	4,876.4	-150.5	838.8	67.0	0.96	-0.63	-3.79
5,055.0	11.20	100.20	4,969.6	-153.6	856.7	68.5	0.43	0.42	0.42
5,150.0	11.80	100.90	5,062.7	-157.1	875.3	69.8	0.65	0.63	0.74
5,244.0	14.10	100.90	5,154.3	-161.1	896.0	71.2	2.45	2.45	0.00
5,339.0	14.60	101.80	5,246.4	-165.7	919.1	72.6	0.58	0.53	0.95
5,434.0	13.10	101.90	5,338.6	-170.4	941.3	73.7	1.58	-1.58	0.11
5,529.0	11.30	99.50	5,431.4	-174.1	961.0	75.1	1.97	-1.89	-2.53
5,623.0	10.70	100.20	5,523.7	-177.2	978.7	76.6	0.65	-0.64	0.74
5,718.0	10.40	96.80	5,617.1	-179.8	995.9	78.4	0.73	-0.32	-3.58
5,814.0	9.80	93.00	5,711.6	-181.2	1,012.7	81.3	0.93	-0.63	-3.96
5,909.0	9.10	94.40	5,805.3	-182.2	1,028.2	84.3	0.78	-0.74	1.47
6,004.0	7.40	95.00	5,899.3	-183.3	1,041.8	86.6	1.79	-1.79	0.63
6,099.0	5.70	93.80	5,993.7	-184.2	1,052.6	88.6	1.80	-1.79	-1.26

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Design:	Wellbore #1	Database:	Landmark

Survey									
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6,194.0	4.70	92.30	6,088.3	-184.7	1,061.2	90.3	1.06	-1.05	-1.58
6,289.0	3.20	89.60	6,183.1	-184.8	1,067.8	91.8	1.59	-1.58	-2.84
6,384.0	1.90	79.70	6,278.0	-184.5	1,072.0	93.2	1.44	-1.37	-10.42
6,479.0	1.70	75.60	6,373.0	-183.9	1,074.9	94.5	0.25	-0.21	-4.32
6,575.0	1.50	67.90	6,468.9	-183.0	1,077.4	96.0	0.31	-0.21	-8.02
6,608.0	1.50	60.20	6,501.9	-182.7	1,078.2	96.5	0.61	0.00	-23.33
6,639.0	1.60	35.00	6,532.9	-182.1	1,078.8	97.2	2.20	0.32	-81.29
6,671.0	3.00	10.70	6,564.9	-180.9	1,079.2	98.5	5.24	4.38	-75.94
6,703.0	5.10	5.10	6,596.8	-178.7	1,079.5	100.7	6.67	6.56	-17.50
6,735.0	7.80	5.80	6,628.6	-175.1	1,079.8	104.2	8.44	8.44	2.19
6,766.0	10.80	7.70	6,659.2	-170.1	1,080.4	109.2	9.73	9.68	6.13
6,798.0	13.50	5.90	6,690.5	-163.4	1,081.2	115.9	8.52	8.44	-5.63
6,830.0	15.80	4.10	6,721.4	-155.4	1,081.9	123.9	7.33	7.19	-5.63
6,862.0	18.00	2.40	6,752.0	-146.1	1,082.4	133.0	7.05	6.88	-5.31
6,893.0	20.00	2.40	6,781.3	-136.0	1,082.9	142.8	6.45	6.45	0.00
6,925.0	21.80	2.20	6,811.2	-124.6	1,083.3	154.0	5.63	5.63	-0.63
6,957.0	23.70	3.40	6,840.7	-112.2	1,083.9	166.1	6.11	5.94	3.75
6,988.0	25.80	3.40	6,868.9	-99.3	1,084.7	178.8	6.77	6.77	0.00
7,020.0	28.30	3.10	6,897.4	-84.8	1,085.5	193.1	7.82	7.81	-0.94
7,052.0	30.50	4.90	6,925.3	-69.1	1,086.6	208.5	7.41	6.88	5.63
7,083.0	32.30	5.30	6,951.7	-53.0	1,088.1	224.4	5.85	5.81	1.29
7,115.0	34.00	4.80	6,978.5	-35.6	1,089.6	241.7	5.38	5.31	-1.56
7,147.0	35.70	3.70	7,004.8	-17.3	1,090.9	259.7	5.66	5.31	-3.44
7,179.0	37.90	3.10	7,030.4	1.8	1,092.1	278.5	6.97	6.88	-1.88
7,210.0	39.80	2.20	7,054.5	21.2	1,093.0	297.5	6.39	6.13	-2.90
7,242.0	42.30	1.50	7,078.7	42.2	1,093.7	318.0	7.94	7.81	-2.19
7,274.0	44.40	0.30	7,101.9	64.2	1,094.0	339.3	7.05	6.56	-3.75
7,306.0	46.30	359.30	7,124.4	87.0	1,093.9	361.3	6.34	5.94	-3.13
7,337.0	48.40	359.10	7,145.4	109.7	1,093.6	383.3	6.79	6.77	-0.65
7,369.0	50.30	359.30	7,166.3	134.0	1,093.3	406.7	5.96	5.94	0.63
7,401.0	52.00	0.60	7,186.3	158.9	1,093.2	430.8	6.18	5.31	4.06
7,433.0	54.20	1.70	7,205.6	184.5	1,093.8	455.7	7.40	6.88	3.44
7,464.0	56.60	3.40	7,223.2	210.0	1,094.9	480.6	8.96	7.74	5.48
7,496.0	58.20	1.20	7,240.4	236.9	1,096.0	506.9	7.65	5.00	-6.88
7,528.0	60.30	1.70	7,256.8	264.4	1,096.7	533.7	6.70	6.56	1.56
7,559.0	63.30	2.30	7,271.4	291.7	1,097.6	560.3	9.83	9.68	1.94
7,591.0	66.20	1.00	7,285.1	320.7	1,098.5	588.5	9.78	9.06	-4.06
7,623.0	69.10	0.40	7,297.2	350.3	1,098.8	617.3	9.23	9.06	-1.88
7,654.0	72.20	0.01	7,307.5	379.5	1,098.9	645.6	10.07	10.00	-1.26
7,686.0	75.80	0.60	7,316.3	410.3	1,099.1	675.4	11.39	11.25	1.84
7,718.0	79.10	1.10	7,323.3	441.5	1,099.5	705.7	10.42	10.31	1.56
7,750.0	81.50	358.80	7,328.7	473.0	1,099.5	736.2	10.32	7.50	-7.19
7,782.0	82.50	359.60	7,333.1	504.7	1,099.1	766.7	3.99	3.13	2.50
7,813.0	83.90	1.10	7,336.8	535.5	1,099.3	796.6	6.59	4.52	4.84
7,849.0	86.90	1.00	7,339.7	571.4	1,099.9	831.4	8.34	8.33	-0.28
7,880.0	88.20	0.20	7,341.0	602.3	1,100.2	861.5	4.92	4.19	-2.58
7,910.0	89.10	1.40	7,341.7	632.3	1,100.7	890.6	5.00	3.00	4.00
7,941.0	90.10	2.30	7,341.9	663.3	1,101.7	920.8	4.34	3.23	2.90
7,971.0	90.90	2.60	7,341.7	693.3	1,102.9	950.1	2.85	2.67	1.00
8,002.0	91.30	2.50	7,341.1	724.2	1,104.3	980.4	1.33	1.29	-0.32
8,033.0	91.50	3.80	7,340.3	755.2	1,106.0	1,010.8	4.24	0.65	4.19
8,065.0	90.90	3.40	7,339.6	787.1	1,108.0	1,042.2	2.25	-1.88	-1.25
8,097.0	91.10	1.60	7,339.1	819.1	1,109.4	1,073.5	5.66	0.63	-5.63
8,128.0	91.30	3.60	7,338.4	850.0	1,110.8	1,103.8	6.48	0.65	6.45

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8,160.0	91.50	2.20	7,337.6	882.0	1,112.5	1,135.1	4.42	0.63	-4.38
8,192.0	91.60	3.70	7,336.8	913.9	1,114.1	1,166.4	4.70	0.31	4.69
8,223.0	89.80	1.90	7,336.4	944.9	1,115.6	1,196.7	8.21	-5.81	-5.81
8,255.0	87.70	0.50	7,337.1	976.9	1,116.3	1,227.8	7.89	-6.56	-4.38
8,287.0	87.80	359.50	7,338.4	1,008.8	1,116.3	1,258.8	3.14	0.31	-3.13
8,318.0	88.20	0.30	7,339.4	1,039.8	1,116.2	1,288.7	2.88	1.29	2.58
8,350.0	88.40	0.90	7,340.4	1,071.8	1,116.6	1,319.8	1.98	0.63	1.88
8,382.0	88.40	0.30	7,341.3	1,103.8	1,116.9	1,350.8	1.87	0.00	-1.88
8,414.0	88.80	0.70	7,342.1	1,135.8	1,117.2	1,381.8	1.77	1.25	1.25
8,445.0	88.90	0.20	7,342.7	1,166.8	1,117.4	1,411.8	1.64	0.32	-1.61
8,477.0	88.90	358.90	7,343.3	1,198.8	1,117.2	1,442.7	4.06	0.00	-4.06
8,509.0	89.00	358.90	7,343.9	1,230.8	1,116.6	1,473.5	0.31	0.31	0.00
8,540.0	90.00	1.00	7,344.2	1,261.7	1,116.5	1,503.5	7.50	3.23	6.77
8,572.0	90.90	1.00	7,343.9	1,293.7	1,117.1	1,534.6	2.81	2.81	0.00
8,604.0	90.80	0.01	7,343.4	1,325.7	1,117.4	1,565.6	3.11	-0.31	-3.09
8,635.0	90.90	0.60	7,343.0	1,356.7	1,117.5	1,595.6	1.93	0.32	1.90
8,667.0	91.10	1.80	7,342.4	1,388.7	1,118.2	1,626.7	3.80	0.63	3.75
8,699.0	91.20	1.70	7,341.8	1,420.7	1,119.2	1,657.9	0.44	0.31	-0.31
8,731.0	91.50	1.50	7,341.0	1,452.7	1,120.1	1,689.1	1.13	0.94	-0.63
8,762.0	91.60	1.20	7,340.2	1,483.7	1,120.8	1,719.2	1.02	0.32	-0.97
8,794.0	91.60	0.40	7,339.3	1,515.6	1,121.3	1,750.3	2.50	0.00	-2.50
8,825.0	90.10	1.10	7,338.8	1,546.6	1,121.7	1,780.4	5.34	-4.84	2.26
8,857.0	89.40	1.10	7,339.0	1,578.6	1,122.3	1,811.5	2.19	-2.19	0.00
8,889.0	89.40	1.30	7,339.3	1,610.6	1,122.9	1,842.6	0.62	0.00	0.63
8,921.0	88.30	0.70	7,339.9	1,642.6	1,123.5	1,873.7	3.92	-3.44	-1.88
8,953.0	87.90	359.70	7,341.0	1,674.6	1,123.6	1,904.7	3.36	-1.25	-3.13
8,984.0	88.30	358.30	7,342.0	1,705.6	1,123.1	1,934.5	4.69	1.29	-4.52
9,016.0	89.10	359.70	7,342.8	1,737.6	1,122.5	1,965.3	5.04	2.50	4.38
9,048.0	89.60	359.90	7,343.1	1,769.6	1,122.4	1,996.2	1.68	1.56	0.63
9,079.0	90.00	358.60	7,343.2	1,800.5	1,122.0	2,026.1	4.39	1.29	-4.19
9,111.0	90.20	0.00	7,343.2	1,832.5	1,121.6	2,056.9	4.42	0.63	4.38
9,143.0	90.00	359.80	7,343.1	1,864.5	1,121.6	2,087.9	0.88	-0.63	-0.63
9,175.0	88.80	358.00	7,343.5	1,896.5	1,120.9	2,118.7	6.76	-3.75	-5.63
9,206.0	88.80	357.10	7,344.1	1,927.5	1,119.6	2,148.3	2.90	0.00	-2.90
9,238.0	89.60	358.60	7,344.5	1,959.5	1,118.4	2,178.9	5.31	2.50	4.69
9,270.0	89.80	357.10	7,344.7	1,991.4	1,117.2	2,209.5	4.73	0.63	-4.69
9,301.0	90.20	356.90	7,344.7	2,022.4	1,115.6	2,239.1	1.44	1.29	-0.65
9,333.0	90.60	358.00	7,344.5	2,054.4	1,114.2	2,269.6	3.66	1.25	3.44
9,365.0	90.90	358.50	7,344.1	2,086.4	1,113.2	2,300.3	1.82	0.94	1.56
9,396.0	90.90	358.60	7,343.6	2,117.3	1,112.4	2,330.1	0.32	0.00	0.32
9,428.0	90.10	358.30	7,343.3	2,149.3	1,111.5	2,360.8	2.67	-2.50	-0.94
9,459.0	89.20	356.50	7,343.5	2,180.3	1,110.1	2,390.4	6.49	-2.90	-5.81
9,491.0	87.90	356.00	7,344.3	2,212.2	1,108.0	2,420.8	4.35	-4.06	-1.56
9,523.0	87.10	355.30	7,345.7	2,244.1	1,105.6	2,451.0	3.32	-2.50	-2.19
9,554.0	88.60	355.00	7,346.9	2,275.0	1,103.0	2,480.2	4.93	4.84	-0.97
9,586.0	91.40	354.80	7,346.9	2,306.8	1,100.2	2,510.3	8.77	8.75	-0.63
9,618.0	92.60	354.80	7,345.7	2,338.7	1,097.3	2,540.4	3.75	3.75	0.00
9,650.0	89.50	354.80	7,345.2	2,370.5	1,094.4	2,570.5	9.69	-9.69	0.00
9,681.0	87.40	354.10	7,346.0	2,401.4	1,091.4	2,599.5	7.14	-6.77	-2.26
9,713.0	88.30	355.40	7,347.2	2,433.2	1,088.4	2,629.6	4.94	2.81	4.06
9,745.0	91.10	354.60	7,347.4	2,465.1	1,085.6	2,659.7	9.10	8.75	-2.50
9,776.0	90.80	354.70	7,346.9	2,496.0	1,082.8	2,688.9	1.02	-0.97	0.32
9,809.0	89.90	355.90	7,346.7	2,528.8	1,080.0	2,720.0	4.55	-2.73	3.64

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Leffler 26T-421
Project:	SEC.26-T7N-R66W	TVD Reference:	WELL @ 4880.0ft (RKB - 15')
Site:	Leffler 26Q-421 Pad Sec.26-T7N-R66W	MD Reference:	WELL @ 4880.0ft (RKB - 15')
Well:	Leffler 26T-421	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)
9,840.0	88.50	354.80	7,347.1	2,559.7	1,077.5	2,749.2	5.74	-4.52	-3.55
9,872.0	89.30	353.60	7,347.7	2,591.6	1,074.3	2,779.2	4.51	2.50	-3.75
9,904.0	91.60	355.20	7,347.4	2,623.4	1,071.2	2,809.2	8.76	7.19	5.00
9,935.0	91.00	355.70	7,346.7	2,654.3	1,068.7	2,838.5	2.52	-1.94	1.61
9,967.0	90.20	353.90	7,346.4	2,686.2	1,065.8	2,868.6	6.16	-2.50	-5.63
9,998.0	90.20	356.40	7,346.3	2,717.1	1,063.2	2,897.8	8.06	0.00	8.06
10,030.0	88.40	355.70	7,346.7	2,749.0	1,061.0	2,928.1	6.04	-5.63	-2.19
10,062.0	87.80	355.90	7,347.8	2,780.9	1,058.7	2,958.4	1.98	-1.88	0.63
10,094.0	87.80	354.00	7,349.0	2,812.7	1,055.8	2,988.5	5.93	0.00	-5.94
10,126.0	87.80	355.50	7,350.2	2,844.6	1,052.9	3,018.5	4.68	0.00	4.69
10,157.0	88.10	355.70	7,351.3	2,875.5	1,050.5	3,047.8	1.16	0.97	0.65
10,189.0	88.60	355.70	7,352.2	2,907.3	1,048.1	3,078.1	1.56	1.56	0.00
10,221.0	89.30	356.50	7,352.8	2,939.3	1,046.0	3,108.4	3.32	2.19	2.50
10,252.0	89.80	357.50	7,353.1	2,970.2	1,044.3	3,137.9	3.61	1.61	3.23
10,284.0	90.20	357.50	7,353.1	3,002.2	1,042.9	3,168.5	1.25	1.25	0.00
10,316.0	90.30	357.80	7,352.9	3,034.2	1,041.6	3,199.1	0.99	0.31	0.94
10,347.0	90.60	358.60	7,352.7	3,065.1	1,040.7	3,228.8	2.76	0.97	2.58
10,379.0	90.00	358.30	7,352.5	3,097.1	1,039.8	3,259.5	2.10	-1.88	-0.94
10,410.0	89.10	357.20	7,352.8	3,128.1	1,038.6	3,289.2	4.58	-2.90	-3.55
10,442.0	89.10	356.10	7,353.3	3,160.1	1,036.7	3,319.6	3.44	0.00	-3.44
10,474.0	89.10	356.40	7,353.8	3,192.0	1,034.6	3,350.0	0.94	0.00	0.94
10,505.0	89.10	356.20	7,354.3	3,222.9	1,032.6	3,379.4	0.65	0.00	-0.65
10,537.0	89.20	355.70	7,354.7	3,254.8	1,030.4	3,409.7	1.59	0.31	-1.56
10,569.0	90.00	355.80	7,355.0	3,286.7	1,028.0	3,440.0	2.52	2.50	0.31
10,601.0	91.30	357.10	7,354.6	3,318.7	1,026.0	3,470.3	5.75	4.06	4.06
10,632.0	91.30	356.00	7,353.9	3,349.6	1,024.1	3,499.8	3.55	0.00	-3.55
10,664.0	91.00	357.30	7,353.2	3,381.5	1,022.3	3,530.2	4.17	-0.94	4.06
10,695.0	90.70	358.10	7,352.8	3,412.5	1,021.0	3,559.9	2.76	-0.97	2.58
10,727.0	89.70	357.00	7,352.7	3,444.5	1,019.7	3,590.4	4.65	-3.13	-3.44
10,759.0	88.50	357.10	7,353.2	3,476.4	1,018.0	3,620.9	3.76	-3.75	0.31
10,791.0	88.40	358.40	7,354.0	3,508.4	1,016.8	3,651.5	4.07	-0.31	4.06
10,822.0	88.10	357.90	7,355.0	3,539.4	1,015.8	3,681.2	1.88	-0.97	-1.61
10,854.0	86.90	356.10	7,356.4	3,571.3	1,014.1	3,711.7	6.76	-3.75	-5.63
10,886.0	89.50	359.00	7,357.4	3,603.2	1,012.7	3,742.3	12.17	8.13	9.06
10,917.0	92.10	0.30	7,357.0	3,634.2	1,012.5	3,772.2	9.38	8.39	4.19
10,949.0	91.30	359.30	7,356.0	3,666.2	1,012.4	3,803.1	4.00	-2.50	-3.13
10,981.0	89.80	358.00	7,355.7	3,698.2	1,011.7	3,833.9	6.20	-4.69	-4.06
11,012.0	91.60	0.00	7,355.3	3,729.2	1,011.1	3,863.7	8.68	5.81	6.45
11,044.0	92.30	0.70	7,354.2	3,761.2	1,011.3	3,894.7	3.09	2.19	2.19
11,076.0	89.70	359.80	7,353.7	3,793.2	1,011.5	3,925.7	8.60	-8.13	-2.81
11,106.0	86.90	358.80	7,354.6	3,823.2	1,011.1	3,954.6	9.91	-9.33	-3.33
11,138.0	85.60	356.60	7,356.7	3,855.1	1,009.8	3,985.1	7.97	-4.06	-6.88
11,170.0	85.30	356.40	7,359.2	3,886.9	1,007.9	4,015.4	1.13	-0.94	-0.63
11,202.0	85.40	356.20	7,361.8	3,918.7	1,005.8	4,045.7	0.70	0.31	-0.63
11,233.0	86.10	357.30	7,364.1	3,949.6	1,004.0	4,075.1	4.20	2.26	3.55
11,265.0	86.70	357.80	7,366.1	3,981.5	1,002.7	4,105.6	2.44	1.88	1.56
11,297.0	87.30	356.30	7,367.8	4,013.4	1,001.0	4,136.1	5.04	1.88	-4.69
11,328.0	87.70	356.60	7,369.1	4,044.3	999.1	4,165.5	1.61	1.29	0.97
11,360.0	87.90	358.50	7,370.4	4,076.3	997.8	4,196.1	5.97	0.63	5.94
11,392.0	88.10	358.60	7,371.5	4,108.2	996.9	4,226.8	0.70	0.63	0.31
11,423.0	88.40	356.80	7,372.4	4,139.2	995.7	4,256.4	5.88	0.97	-5.81
11,455.0	88.80	358.00	7,373.2	4,171.2	994.2	4,287.0	3.95	1.25	3.75
11,487.0	89.30	357.10	7,373.7	4,203.1	992.9	4,317.5	3.22	1.56	-2.81

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Leffler 26T-421
Project:	SEC.26-T7N-R66W	TVD Reference:	WELL @ 4880.0ft (RKB - 15')
Site:	Leffler 26Q-421 Pad Sec.26-T7N-R66W	MD Reference:	WELL @ 4880.0ft (RKB - 15')
Well:	Leffler 26T-421	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)
11,519.0	89.80	357.90	7,374.0	4,235.1	991.5	4,348.1	2.95	1.56	2.50
11,550.0	90.20	357.30	7,374.0	4,266.1	990.2	4,377.7	2.33	1.29	-1.94
11,582.0	90.70	355.80	7,373.7	4,298.0	988.3	4,408.1	4.94	1.56	-4.69
11,613.0	91.90	356.90	7,373.0	4,328.9	986.3	4,437.6	5.25	3.87	3.55
11,645.0	92.60	356.80	7,371.8	4,360.9	984.5	4,468.0	2.21	2.19	-0.31
11,677.0	93.10	356.50	7,370.2	4,392.8	982.7	4,498.4	1.82	1.56	-0.94
11,708.0	93.90	355.70	7,368.3	4,423.6	980.6	4,527.7	3.65	2.58	-2.58
11,740.0	94.40	354.80	7,366.0	4,455.4	977.9	4,557.8	3.21	1.56	-2.81
11,772.0	94.50	355.60	7,363.5	4,487.2	975.2	4,587.9	2.51	0.31	2.50
11,803.0	94.80	354.70	7,361.0	4,518.0	972.6	4,617.0	3.05	0.97	-2.90
11,890.0	94.80	354.70	7,353.7	4,604.3	964.6	4,698.5	0.00	0.00	0.00
BHL 500'FNL & 945'FEL									
11,891.0	94.80	354.70	7,353.6	4,605.3	964.5	4,699.4	0.00	0.00	0.00

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
- Shape									
BHL 500'FNL & 945'F	0.00	0.00	7,355.0	4,616.0	1,089.3	1,444,904.82	3,211,581.97	40.552170	-104.738590
- survey misses target center by 125.3ft at 11890.0ft MD (7353.7 TVD, 4604.3 N, 964.6 E)									
- Point									

Checked By: _____ Approved By: _____ Date: _____