

PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: Schaefer 10M-243

Surface Location: Schaefer Pad Sec.10-T6N-R63W
North American Datum 1983 , US State Plane 1983 Colorado Northern Zone

Ground Elevation: 4697.0

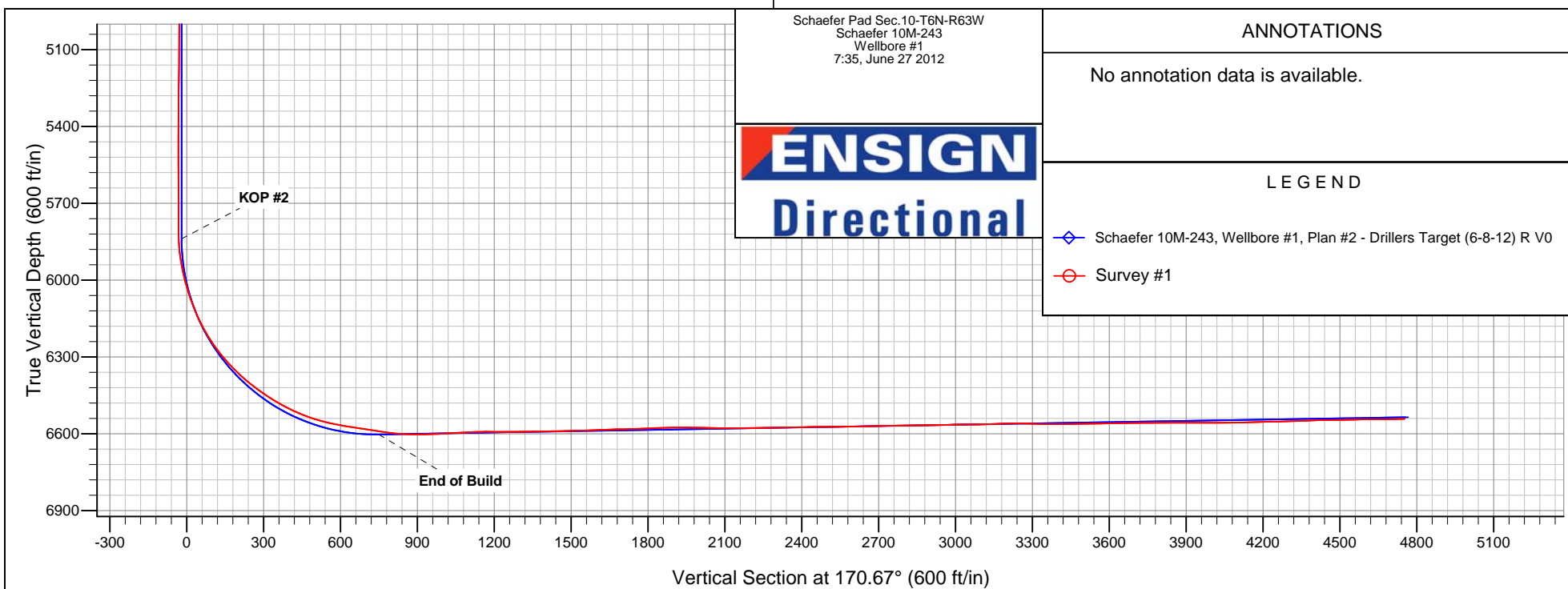
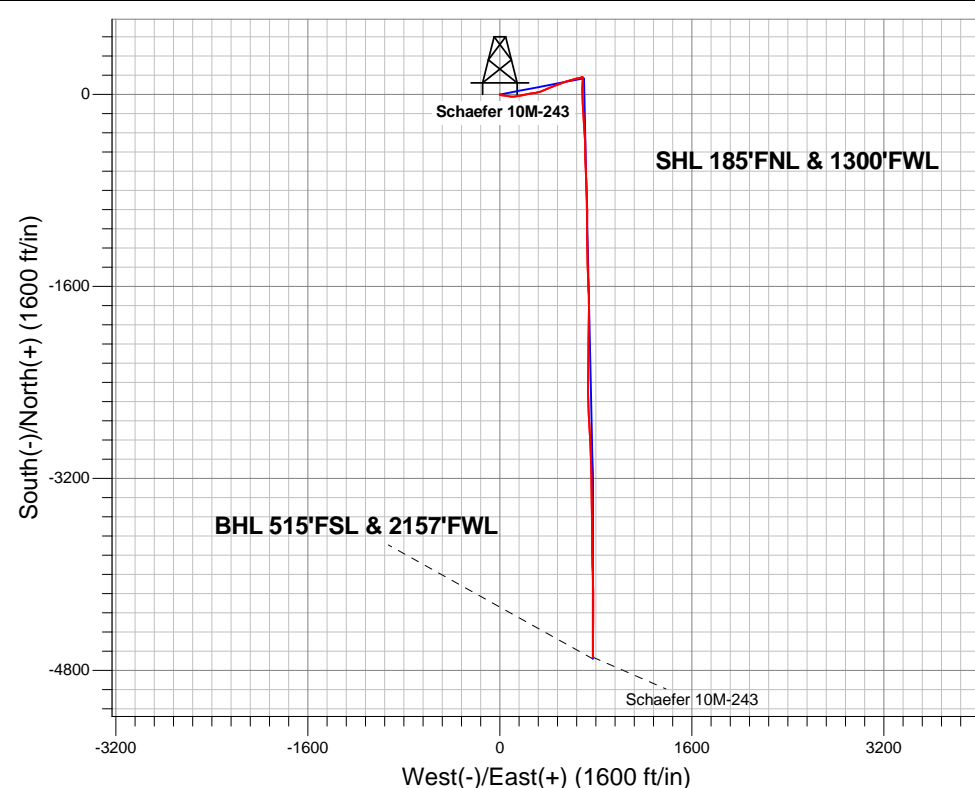
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1429770.27	3298212.91	40.508170	-104.427520	

RKB Ensign 32 - 15' WELL @ 4712.0ft (RKB Ensign 32 - 15')

FINAL SURVEY

Projected Bottom Hole Location
11144'MD 6542'TVD 4689'S & 775'E of SHL

91.30 degree Incl @ 180.70 degree AZM





PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.10-T6N-R63W

Schaefer Pad Sec.10-T6N-R63W

Schaefer 10M-243

Wellbore #1

Survey: Survey #1

Standard Survey Report

27 June, 2012

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Schaefer 10M-243
Project:	SEC.10-T6N-R63W	TVD Reference:	WELL @ 4712.0ft (RKB Ensign 32 - 15')
Site:	Schaefer Pad Sec.10-T6N-R63W	MD Reference:	WELL @ 4712.0ft (RKB Ensign 32 - 15')
Well:	Schaefer 10M-243	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Project	SEC.10-T6N-R63W, Weld County, CO		
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		Schaefer Pad Sec.10-T6N-R63W			
Site Position:		Northing:	1,429,803.09ft	Latitude:	40.508260
From:	Lat/Long	Easting:	3,298,215.30ft	Longitude:	-104.427510
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.69 °

Well	Schaefer 10M-243					
Well Position	+N-S	0.0 ft	Northing:	1,429,770.27 ft	Latitude:	40.508170
	+E-W	0.0 ft	Easting:	3,298,212.91 ft	Longitude:	-104.427520
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,697.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	6/18/2012	8.56	67.16	53,118

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	170.67	

Survey Program	Date 6/26/2012				
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
149.0	11,144.0	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	
SECTION LINE 185°N OF SHL										
1.0	0.00	202.10	1.0	0.0	0.0	0.0	0.47	0.47	0.00	
HARDLINE SHL 460°FNL										
5.4	0.03	202.10	5.4	0.0	0.0	0.0	0.47	0.47	0.00	
HARDLINE BHL 460°FSL										
26.0	0.12	202.10	26.0	0.0	0.0	0.0	0.47	0.47	0.00	
HARDLINE 2180°FWL										
149.0	0.70	202.10	149.0	-0.8	-0.3	0.8	0.47	0.47	0.00	
239.0	0.70	206.70	239.0	-1.8	-0.8	1.7	0.06	0.00	5.11	
331.0	0.80	152.90	331.0	-2.9	-0.8	2.8	0.74	0.11	-58.48	
423.0	2.80	103.10	422.9	-4.0	1.7	4.2	2.57	2.17	-54.13	

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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)
515.0	4.70	95.30	514.7	-4.9	7.7	6.0	2.13	2.07	-8.48
607.0	5.60	95.80	606.4	-5.7	15.9	8.2	0.98	0.98	0.54
698.0	6.80	98.20	696.8	-6.9	25.6	10.9	1.35	1.32	2.64
790.0	8.00	96.00	788.1	-8.3	37.4	14.3	1.34	1.30	-2.39
874.0	7.70	100.20	871.3	-9.9	48.7	17.7	0.77	-0.36	5.00
942.0	7.80	101.10	938.7	-11.6	57.8	20.8	0.23	0.15	1.32
1,035.0	8.40	101.10	1,030.7	-14.1	70.6	25.4	0.65	0.65	0.00
1,126.0	9.20	96.70	1,120.7	-16.3	84.4	29.7	1.15	0.88	-4.84
1,219.0	9.60	90.50	1,212.4	-17.2	99.5	33.1	1.17	0.43	-6.67
1,312.0	10.20	86.30	1,304.0	-16.7	115.5	35.3	1.01	0.65	-4.52
1,405.0	10.80	80.60	1,395.5	-14.8	132.3	36.1	1.29	0.65	-6.13
1,498.0	11.40	80.90	1,486.7	-11.9	150.0	36.1	0.65	0.65	0.32
1,591.0	12.00	79.70	1,577.8	-8.7	168.5	36.0	0.70	0.65	-1.29
1,683.0	10.70	80.90	1,668.0	-5.7	186.4	35.8	1.44	-1.41	1.30
1,776.0	9.20	81.40	1,759.6	-3.2	202.3	36.0	1.62	-1.61	0.54
1,869.0	9.20	75.60	1,851.4	-0.2	216.8	35.4	1.00	0.00	-6.24
1,962.0	9.00	74.80	1,943.2	3.5	231.0	34.0	0.25	-0.22	-0.86
2,055.0	8.50	78.90	2,035.1	6.8	244.8	33.0	0.86	-0.54	4.41
2,148.0	9.30	81.50	2,127.0	9.2	259.0	32.9	0.96	0.86	2.80
2,241.0	8.50	80.20	2,218.9	11.5	273.2	33.0	0.89	-0.86	-1.40
2,334.0	8.50	82.30	2,310.9	13.6	286.8	33.1	0.33	0.00	2.26
2,427.0	8.60	80.80	2,402.9	15.6	300.4	33.3	0.26	0.11	-1.61
2,520.0	9.20	76.70	2,494.7	18.4	314.5	32.8	0.94	0.65	-4.41
2,613.0	9.60	76.40	2,586.5	21.9	329.3	31.8	0.43	0.43	-0.32
2,707.0	9.90	72.50	2,679.1	26.2	344.6	30.0	0.77	0.32	-4.15
2,800.0	10.20	67.20	2,770.7	31.8	359.9	27.0	1.05	0.32	-5.70
2,893.0	10.90	64.00	2,862.1	38.9	375.4	22.5	0.98	0.75	-3.44
2,986.0	11.60	63.50	2,953.3	46.9	391.6	17.3	0.76	0.75	-0.54
3,079.0	11.00	67.50	3,044.5	54.5	408.2	12.5	1.06	-0.65	4.30
3,172.0	10.90	67.10	3,135.8	61.3	424.5	8.4	0.14	-0.11	-0.43
3,265.0	9.10	66.30	3,227.4	67.6	439.3	4.5	1.94	-1.94	-0.86
3,358.0	8.20	70.30	3,319.4	72.8	452.3	1.5	1.16	-0.97	4.30
3,451.0	7.90	71.90	3,411.5	77.1	464.6	-0.7	0.40	-0.32	1.72
3,543.0	8.40	70.80	3,502.5	81.2	477.0	-2.8	0.57	0.54	-1.20
3,637.0	9.30	72.80	3,595.4	85.7	490.7	-5.0	1.01	0.96	2.13
3,730.0	10.40	72.50	3,687.0	90.5	505.9	-7.2	1.18	1.18	-0.32
3,823.0	11.40	68.60	3,778.4	96.4	522.5	-10.3	1.34	1.08	-4.19
3,917.0	12.00	68.90	3,870.4	103.3	540.2	-14.3	0.64	0.64	0.32
4,011.0	11.60	70.30	3,962.4	110.0	558.2	-18.0	0.52	-0.43	1.49
4,102.0	10.80	70.30	4,051.7	115.9	574.9	-21.2	0.88	-0.88	0.00
4,195.0	9.60	70.40	4,143.2	121.5	590.4	-24.1	1.29	-1.29	0.11
4,288.0	8.20	73.70	4,235.1	125.9	604.1	-26.3	1.60	-1.51	3.55
4,381.0	7.30	78.00	4,327.2	129.0	616.2	-27.4	1.15	-0.97	4.62
4,475.0	6.90	82.10	4,420.5	131.0	627.6	-27.5	0.69	-0.43	4.36
4,568.0	6.50	80.40	4,512.9	132.7	638.4	-27.4	0.48	-0.43	-1.83
4,662.0	6.10	77.70	4,606.3	134.6	648.5	-27.7	0.53	-0.43	-2.87
4,756.0	4.60	83.30	4,699.9	136.1	657.1	-27.8	1.69	-1.60	5.96
4,848.0	3.90	77.10	4,791.7	137.3	663.8	-27.8	0.91	-0.76	-6.74
4,941.0	3.30	74.90	4,884.5	138.7	669.5	-28.2	0.66	-0.65	-2.37
5,035.0	2.90	74.30	4,978.3	140.0	674.4	-28.8	0.43	-0.43	-0.64
5,128.0	2.50	71.50	5,071.2	141.3	678.6	-29.4	0.45	-0.43	-3.01
5,221.0	1.60	60.10	5,164.2	142.6	681.6	-30.1	1.06	-0.97	-12.26
5,314.0	1.20	59.70	5,257.1	143.7	683.6	-31.0	0.43	-0.43	-0.43

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5,407.0	1.10	53.90	5,350.1	144.8	685.2	-31.7	0.16	-0.11	-6.24
5,500.0	1.10	55.30	5,443.1	145.8	686.6	-32.5	0.03	0.00	1.51
5,593.0	0.60	189.40	5,536.1	145.8	687.3	-32.4	1.70	-0.54	144.19
5,686.0	0.50	188.90	5,629.1	144.9	687.1	-31.6	0.11	-0.11	-0.54
5,779.0	0.40	280.30	5,722.1	144.6	686.8	-31.3	0.70	-0.11	98.28
5,845.0	0.30	315.50	5,788.1	144.8	686.4	-31.5	0.35	-0.15	53.33
5,876.0	0.40	133.50	5,819.1	144.7	686.4	-31.5	2.26	0.32	574.19
5,907.0	2.80	151.20	5,850.1	144.0	686.9	-30.7	7.81	7.74	57.10
5,937.0	5.70	162.20	5,880.0	141.9	687.7	-28.5	10.00	9.67	36.67
5,968.0	8.50	167.30	5,910.8	138.2	688.7	-24.7	9.25	9.03	16.45
5,999.0	10.60	173.20	5,941.3	133.2	689.5	-19.6	7.47	6.77	19.03
6,030.0	12.40	177.10	5,971.7	127.0	690.0	-13.4	6.32	5.81	12.58
6,061.0	14.50	180.30	6,001.8	119.8	690.2	-6.3	7.18	6.77	10.32
6,092.0	16.80	182.30	6,031.7	111.5	690.0	1.9	7.62	7.42	6.45
6,123.0	19.00	184.30	6,061.2	101.9	689.4	11.2	7.37	7.10	6.45
6,154.0	21.10	184.70	6,090.3	91.3	688.6	21.5	6.79	6.77	1.29
6,185.0	22.80	185.20	6,119.1	79.8	687.6	32.8	5.52	5.48	1.61
6,216.0	25.30	182.60	6,147.4	67.2	686.7	45.1	8.76	8.06	-8.39
6,247.0	27.60	180.80	6,175.1	53.4	686.3	58.6	7.86	7.42	-5.81
6,278.0	30.20	178.90	6,202.3	38.4	686.4	73.4	8.89	8.39	-6.13
6,309.0	32.70	177.90	6,228.7	22.3	686.8	89.4	8.24	8.06	-3.23
6,340.0	35.60	177.00	6,254.4	4.9	687.6	106.7	9.50	9.35	-2.90
6,371.0	37.80	178.40	6,279.2	-13.6	688.3	125.1	7.59	7.10	4.52
6,402.0	40.40	177.60	6,303.3	-33.2	689.0	144.5	8.54	8.39	-2.58
6,433.0	42.90	178.30	6,326.4	-53.8	689.8	164.9	8.20	8.06	2.26
6,464.0	45.30	179.00	6,348.7	-75.3	690.3	186.3	7.90	7.74	2.26
6,495.0	47.50	178.00	6,370.1	-97.8	690.8	208.5	7.47	7.10	-3.23
6,527.0	49.90	176.80	6,391.2	-121.8	691.9	232.4	8.01	7.50	-3.75
6,558.0	52.20	176.50	6,410.7	-145.8	693.4	256.4	7.46	7.42	-0.97
6,589.0	54.20	176.20	6,429.2	-170.6	694.9	281.1	6.50	6.45	-0.97
6,619.0	56.20	176.50	6,446.4	-195.2	696.5	305.6	6.72	6.67	1.00
6,651.0	57.80	176.00	6,463.8	-222.0	698.3	332.3	5.17	5.00	-1.56
6,681.0	59.90	176.50	6,479.3	-247.6	699.9	357.8	7.14	7.00	1.67
6,713.0	62.30	176.00	6,494.8	-275.5	701.8	385.7	7.62	7.50	-1.56
6,744.0	65.10	176.00	6,508.5	-303.3	703.7	413.4	9.03	9.03	0.00
6,775.0	67.50	176.20	6,521.0	-331.6	705.6	441.6	7.76	7.74	0.65
6,806.0	69.90	175.80	6,532.2	-360.4	707.7	470.4	7.83	7.74	-1.29
6,837.0	72.50	177.00	6,542.2	-389.7	709.5	499.6	9.15	8.39	3.87
6,868.0	75.20	178.70	6,550.8	-419.4	710.6	529.1	10.18	8.71	5.48
6,899.0	77.30	180.00	6,558.2	-449.5	710.9	558.9	7.90	6.77	4.19
6,930.0	79.00	180.10	6,564.6	-479.9	710.9	588.8	5.49	5.48	0.32
6,962.0	81.10	178.60	6,570.1	-511.4	711.3	620.0	8.02	6.56	-4.69
6,993.0	81.30	179.00	6,574.8	-542.0	711.9	650.3	1.43	0.65	1.29
7,040.0	81.30	179.00	6,582.0	-588.5	712.7	696.3	0.00	0.00	0.00
7,041.0	81.10	177.80	6,582.1	-589.5	712.8	697.3	120.26	-20.00	-120.00
7,072.0	81.00	178.00	6,586.9	-620.1	713.9	727.6	0.71	-0.32	0.65
7,104.0	81.80	177.30	6,591.7	-651.7	715.2	759.0	3.31	2.50	-2.19
7,136.0	83.50	176.50	6,595.8	-683.4	716.9	790.6	5.86	5.31	-2.50
7,168.0	84.80	176.90	6,599.1	-715.1	718.7	822.2	4.25	4.06	1.25
7,200.0	87.10	176.60	6,601.3	-747.0	720.5	854.0	7.25	7.19	-0.94
7,232.0	89.10	178.10	6,602.4	-779.0	722.0	885.8	7.81	6.25	4.69
7,263.0	90.80	178.00	6,602.4	-809.9	723.1	916.5	5.49	5.48	-0.32
7,295.0	92.20	178.20	6,601.6	-841.9	724.1	948.2	4.42	4.38	0.63
7,327.0	93.10	178.30	6,600.1	-873.9	725.1	979.9	2.83	2.81	0.31

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7,358.0	92.40	178.70	6,598.6	-904.8	725.9	1,010.6	2.60	-2.26	1.29
7,391.0	93.00	178.70	6,597.1	-937.8	726.7	1,043.2	1.82	1.82	0.00
7,423.0	93.00	179.40	6,595.4	-969.7	727.2	1,074.8	2.18	0.00	2.19
7,454.0	93.20	180.40	6,593.7	-1,000.7	727.2	1,105.4	3.29	0.65	3.23
7,486.0	91.80	180.50	6,592.3	-1,032.6	727.0	1,136.9	4.39	-4.38	0.31
7,518.0	90.20	180.30	6,591.8	-1,064.6	726.8	1,168.4	5.04	-5.00	-0.63
7,549.0	89.60	179.90	6,591.8	-1,095.6	726.7	1,199.0	2.33	-1.94	-1.29
7,581.0	89.80	180.40	6,592.0	-1,127.6	726.6	1,230.6	1.68	0.63	1.56
7,614.0	90.20	180.80	6,592.0	-1,160.6	726.3	1,263.1	1.71	1.21	1.21
7,646.0	90.50	180.70	6,591.8	-1,192.6	725.9	1,294.6	0.99	0.94	-0.31
7,677.0	90.30	179.50	6,591.6	-1,223.6	725.8	1,325.1	3.92	-0.65	-3.87
7,709.0	90.40	178.20	6,591.4	-1,255.6	726.5	1,356.8	4.07	0.31	-4.06
7,742.0	90.70	178.70	6,591.1	-1,288.6	727.4	1,389.5	1.77	0.91	1.52
7,773.0	91.10	178.00	6,590.6	-1,319.6	728.2	1,420.2	2.60	1.29	-2.26
7,805.0	91.40	178.70	6,589.9	-1,351.6	729.2	1,451.9	2.38	0.94	2.19
7,837.0	92.00	178.70	6,588.9	-1,383.5	729.9	1,483.6	1.88	1.88	0.00
7,870.0	92.40	178.60	6,587.6	-1,416.5	730.7	1,516.3	1.25	1.21	-0.30
7,902.0	91.70	177.40	6,586.5	-1,448.5	731.8	1,548.0	4.34	-2.19	-3.75
7,933.0	91.30	177.30	6,585.7	-1,479.4	733.2	1,578.8	1.33	-1.29	-0.32
7,965.0	91.80	177.80	6,584.8	-1,511.4	734.6	1,610.5	2.21	1.56	1.56
7,997.0	92.50	177.30	6,583.6	-1,543.3	736.0	1,642.3	2.69	2.19	-1.56
8,029.0	91.90	178.80	6,582.4	-1,575.3	737.0	1,674.0	5.05	-1.88	4.69
8,062.0	91.20	178.70	6,581.5	-1,608.3	737.8	1,706.6	2.14	-2.12	-0.30
8,093.0	91.40	177.90	6,580.8	-1,639.2	738.7	1,737.4	2.66	0.65	-2.58
8,125.0	91.30	178.80	6,580.0	-1,671.2	739.6	1,769.1	2.83	-0.31	2.81
8,157.0	91.60	178.80	6,579.2	-1,703.2	740.3	1,800.7	0.94	0.94	0.00
8,189.0	93.00	178.50	6,578.0	-1,735.2	741.0	1,832.4	4.47	4.38	-0.94
8,221.0	92.80	178.80	6,576.3	-1,767.1	741.8	1,864.0	1.13	-0.63	0.94
8,253.0	91.20	180.10	6,575.2	-1,799.1	742.1	1,895.6	6.44	-5.00	4.06
8,285.0	89.50	181.60	6,575.0	-1,831.1	741.6	1,927.1	7.08	-5.31	4.69
8,317.0	88.70	181.80	6,575.5	-1,863.1	740.7	1,958.5	2.58	-2.50	0.63
8,349.0	89.00	180.60	6,576.2	-1,895.1	740.0	1,990.0	3.86	0.94	-3.75
8,381.0	89.30	180.50	6,576.6	-1,927.1	739.7	2,021.5	0.99	0.94	-0.31
8,412.0	89.50	180.50	6,577.0	-1,958.1	739.4	2,052.1	0.65	0.65	0.00
8,444.0	90.10	180.90	6,577.1	-1,990.0	739.0	2,083.6	2.25	1.88	1.25
8,477.0	90.30	180.80	6,577.0	-2,023.0	738.5	2,116.0	0.68	0.61	-0.30
8,509.0	89.40	181.30	6,577.0	-2,055.0	737.9	2,147.5	3.22	-2.81	1.56
8,541.0	89.20	180.90	6,577.4	-2,087.0	737.3	2,179.0	1.40	-0.63	-1.25
8,573.0	89.70	180.20	6,577.7	-2,119.0	737.0	2,210.5	2.69	1.56	-2.19
8,605.0	91.60	180.50	6,577.4	-2,151.0	736.8	2,242.1	6.01	5.94	0.94
8,637.0	92.20	180.50	6,576.3	-2,183.0	736.5	2,273.6	1.88	1.88	0.00
8,669.0	91.50	180.30	6,575.3	-2,215.0	736.3	2,305.1	2.27	-2.19	-0.63
8,701.0	90.10	180.50	6,574.8	-2,247.0	736.1	2,336.6	4.42	-4.38	0.63
8,733.0	91.00	181.20	6,574.5	-2,279.0	735.6	2,368.1	3.56	2.81	2.19
8,765.0	91.30	180.40	6,573.9	-2,311.0	735.2	2,399.6	2.67	0.94	-2.50
8,797.0	90.60	180.10	6,573.4	-2,343.0	735.0	2,431.2	2.38	-2.19	-0.94
8,829.0	90.10	180.30	6,573.2	-2,375.0	734.9	2,462.7	1.68	-1.56	0.63
8,861.0	90.60	180.70	6,573.0	-2,407.0	734.7	2,494.2	2.00	1.56	1.25
8,892.0	90.90	180.40	6,572.6	-2,438.0	734.4	2,524.8	1.37	0.97	-0.97
8,924.0	91.20	179.80	6,572.0	-2,469.9	734.3	2,556.3	2.10	0.94	-1.88
8,956.0	90.70	178.70	6,571.4	-2,501.9	734.7	2,588.0	3.78	-1.56	-3.44
8,988.0	90.10	177.80	6,571.2	-2,533.9	735.7	2,619.7	3.38	-1.88	-2.81
9,020.0	91.30	177.90	6,570.8	-2,565.9	736.9	2,651.4	3.76	3.75	0.31

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Schaefer 10M-243
Project:	SEC.10-T6N-R63W	TVD Reference:	WELL @ 4712.0ft (RKB Ensign 32 - 15')
Site:	Schaefer Pad Sec.10-T6N-R63W	MD Reference:	WELL @ 4712.0ft (RKB Ensign 32 - 15')
Well:	Schaefer 10M-243	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)
9,052.0	91.90	178.60	6,569.9	-2,597.9	737.9	2,683.2	2.88	1.88	2.19
9,084.0	91.10	178.40	6,569.1	-2,629.9	738.7	2,714.8	2.58	-2.50	-0.63
9,116.0	91.40	178.60	6,568.4	-2,661.8	739.5	2,746.5	1.13	0.94	0.63
9,148.0	91.00	177.10	6,567.7	-2,693.8	740.7	2,778.3	4.85	-1.25	-4.69
9,180.0	90.50	176.80	6,567.3	-2,725.8	742.4	2,810.1	1.82	-1.56	-0.94
9,211.0	90.60	176.70	6,567.0	-2,756.7	744.2	2,840.9	0.46	0.32	-0.32
9,243.0	90.40	176.70	6,566.7	-2,788.6	746.0	2,872.7	0.63	-0.63	0.00
9,275.0	90.80	176.00	6,566.4	-2,820.6	748.1	2,904.6	2.52	1.25	-2.19
9,308.0	91.70	176.20	6,565.7	-2,853.5	750.3	2,937.4	2.79	2.73	0.61
9,340.0	91.40	176.50	6,564.8	-2,885.4	752.4	2,969.2	1.33	-0.94	0.94
9,371.0	91.20	177.20	6,564.1	-2,916.4	754.1	3,000.1	2.35	-0.65	2.26
9,404.0	90.60	178.10	6,563.6	-2,949.3	755.4	3,032.8	3.28	-1.82	2.73
9,435.0	89.50	178.20	6,563.6	-2,980.3	756.4	3,063.5	3.56	-3.55	0.32
9,467.0	90.70	178.00	6,563.5	-3,012.3	757.5	3,095.3	3.80	3.75	-0.63
9,499.0	92.60	178.00	6,562.6	-3,044.3	758.6	3,127.0	5.94	5.94	0.00
9,531.0	92.90	178.00	6,561.1	-3,076.2	759.7	3,158.7	0.94	0.94	0.00
9,563.0	92.40	177.90	6,559.6	-3,108.2	760.9	3,190.4	1.59	-1.56	-0.31
9,595.0	89.90	178.70	6,558.9	-3,140.1	761.8	3,222.1	8.20	-7.81	2.50
9,627.0	88.30	179.30	6,559.4	-3,172.1	762.4	3,253.8	5.34	-5.00	1.88
9,659.0	88.00	179.30	6,560.5	-3,204.1	762.8	3,285.4	0.94	-0.94	0.00
9,667.9	88.17	179.55	6,560.8	-3,213.0	762.8	3,294.2	3.38	1.87	2.81
Drill target 1									
9,691.0	88.60	180.20	6,561.4	-3,236.1	762.9	3,317.0	3.38	1.88	2.81
9,723.0	89.00	179.70	6,562.1	-3,268.1	762.9	3,348.5	2.00	1.25	-1.56
9,754.0	89.80	179.00	6,562.4	-3,299.1	763.3	3,379.2	3.43	2.58	-2.26
9,786.0	90.40	179.40	6,562.4	-3,331.1	763.7	3,410.8	2.25	1.88	1.25
9,818.0	91.80	178.50	6,561.7	-3,363.1	764.3	3,442.5	5.20	4.38	-2.81
9,850.0	90.10	179.70	6,561.2	-3,395.0	764.8	3,474.1	6.50	-5.31	3.75
9,882.0	90.30	179.90	6,561.1	-3,427.0	764.9	3,505.7	0.88	0.63	0.63
9,914.0	91.40	179.00	6,560.6	-3,459.0	765.2	3,537.4	4.44	3.44	-2.81
9,946.0	91.80	178.90	6,559.7	-3,491.0	765.8	3,569.0	1.29	1.25	-0.31
9,978.0	91.40	178.90	6,558.8	-3,523.0	766.4	3,600.7	1.25	-1.25	0.00
10,010.0	90.00	179.90	6,558.5	-3,555.0	766.8	3,632.3	5.38	-4.38	3.13
10,042.0	90.50	180.10	6,558.3	-3,587.0	766.8	3,663.9	1.68	1.56	0.63
10,074.0	90.80	179.70	6,557.9	-3,619.0	766.8	3,695.5	1.56	0.94	-1.25
10,106.0	90.50	179.30	6,557.6	-3,651.0	767.1	3,727.1	1.56	-0.94	-1.25
10,137.0	90.30	179.30	6,557.4	-3,682.0	767.5	3,757.7	0.65	-0.65	0.00
10,169.0	90.30	179.10	6,557.2	-3,714.0	767.9	3,789.4	0.62	0.00	-0.63
10,201.0	90.50	179.70	6,557.0	-3,746.0	768.3	3,821.0	1.98	0.63	1.88
10,233.0	90.20	179.50	6,556.8	-3,778.0	768.5	3,852.6	1.13	-0.94	-0.63
10,265.0	90.00	179.00	6,556.7	-3,810.0	768.9	3,884.2	1.68	-0.63	-1.56
10,296.0	90.20	178.70	6,556.7	-3,841.0	769.5	3,914.9	1.16	0.65	-0.97
10,328.0	90.20	178.70	6,556.6	-3,873.0	770.3	3,946.6	0.00	0.00	0.00
10,360.0	89.80	178.70	6,556.6	-3,905.0	771.0	3,978.3	1.25	-1.25	0.00
10,392.0	89.50	177.80	6,556.8	-3,936.9	772.0	4,010.0	2.96	-0.94	-2.81
10,424.0	90.10	177.90	6,556.9	-3,968.9	773.2	4,041.8	1.90	1.88	0.31
10,456.0	90.70	178.60	6,556.6	-4,000.9	774.1	4,073.5	2.88	1.88	2.19
10,487.0	91.10	178.60	6,556.2	-4,031.9	774.9	4,104.2	1.29	1.29	0.00
10,519.0	91.40	178.60	6,555.5	-4,063.9	775.7	4,135.9	0.94	0.94	0.00
10,551.0	92.30	177.50	6,554.4	-4,095.8	776.8	4,167.6	4.44	2.81	-3.44
10,583.0	91.40	179.70	6,553.4	-4,127.8	777.5	4,199.3	7.42	-2.81	6.88
10,615.0	90.80	180.20	6,552.8	-4,159.8	777.6	4,230.8	2.44	-1.88	1.56
10,647.0	91.20	180.70	6,552.2	-4,191.8	777.3	4,262.4	2.00	1.25	1.56

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Schaefer 10M-243
Project:	SEC.10-T6N-R63W	TVD Reference:	WELL @ 4712.0ft (RKB Ensign 32 - 15')
Site:	Schaefer Pad Sec.10-T6N-R63W	MD Reference:	WELL @ 4712.0ft (RKB Ensign 32 - 15')
Well:	Schaefer 10M-243	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)
10,679.0	92.00	180.50	6,551.3	-4,223.8	777.0	4,293.9	2.58	2.50	-0.63
10,711.0	92.60	180.20	6,550.0	-4,255.8	776.8	4,325.4	2.10	1.88	-0.94
10,743.0	92.40	180.30	6,548.6	-4,287.7	776.6	4,356.9	0.70	-0.63	0.31
10,775.0	91.80	179.50	6,547.5	-4,319.7	776.7	4,388.5	3.12	-1.88	-2.50
10,806.0	90.70	180.30	6,546.8	-4,350.7	776.8	4,419.1	4.39	-3.55	2.58
10,838.0	90.40	180.60	6,546.5	-4,382.7	776.5	4,450.6	1.33	-0.94	0.94
10,870.0	90.50	179.40	6,546.2	-4,414.7	776.5	4,482.2	3.76	0.31	-3.75
10,902.0	91.10	179.50	6,545.8	-4,446.7	776.8	4,513.8	1.90	1.88	0.31
10,934.0	91.90	180.20	6,545.0	-4,478.7	776.9	4,545.4	3.32	2.50	2.19
10,966.0	91.40	181.10	6,544.0	-4,510.7	776.5	4,576.9	3.22	-1.56	2.81
10,998.0	90.30	180.50	6,543.6	-4,542.6	776.1	4,608.4	3.92	-3.44	-1.88
11,030.0	90.10	180.80	6,543.4	-4,574.6	775.7	4,639.9	1.13	-0.63	0.94
11,061.0	90.20	180.00	6,543.4	-4,605.6	775.5	4,670.4	2.60	0.32	-2.58
11,093.0	91.30	180.70	6,542.9	-4,637.6	775.3	4,702.0	4.07	3.44	2.19
11,144.0	91.30	180.70	6,541.8	-4,688.6	774.7	4,752.2	0.00	0.00	0.00
BHL 500'FSL & 2080'FWL - BHL 500'FSL & 2155'FWL									

Checked By: _____	Approved By: _____	Date: _____
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