

PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Tracy 14P-432**

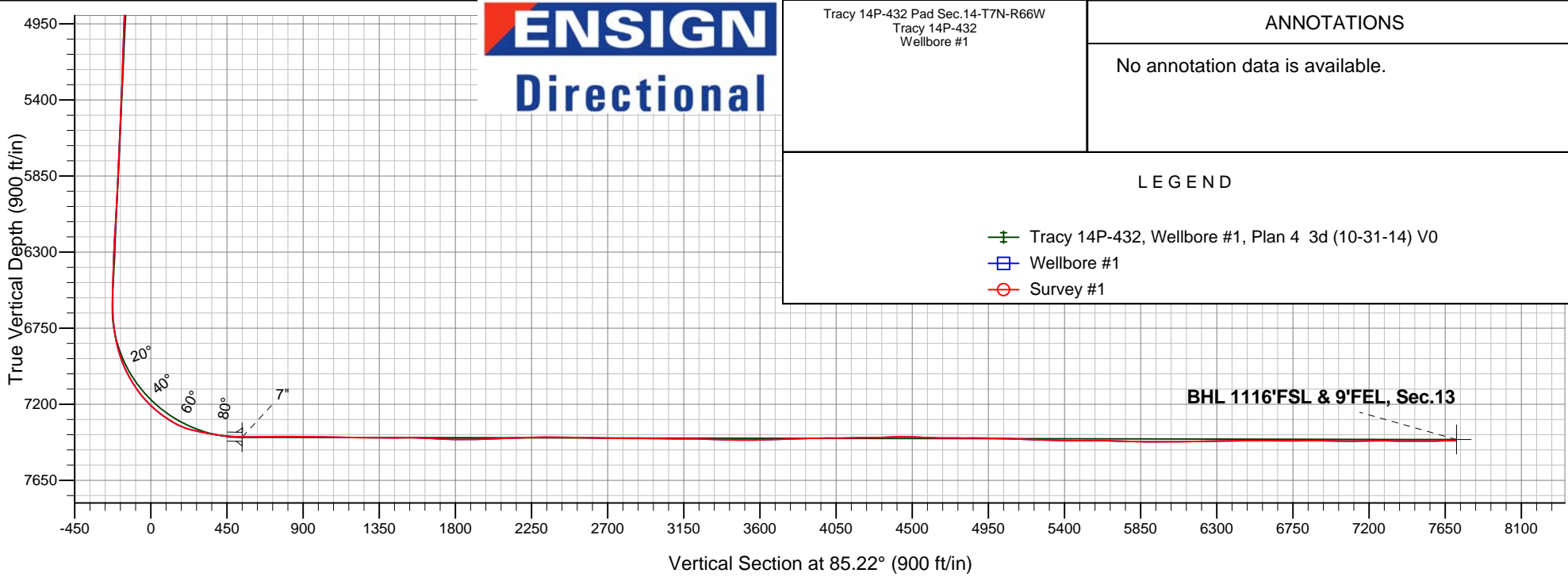
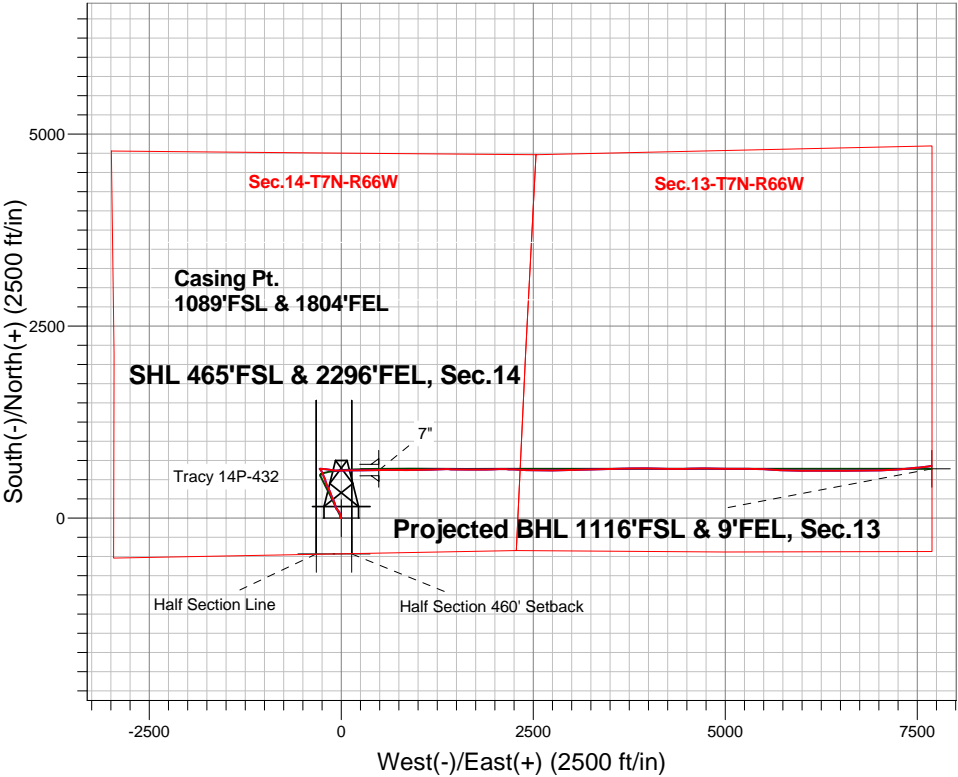
Surface Location: Tracy 14P-432 Pad Sec.14-T7N-R66W  
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

Ground Elevation: 4900.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1451173.52	3210152.91	40.569410	-104.743540	
Ensign Rig #136 - RKB - 12.5 WELL @ 4913 ft (Ensign Rig #136 - RKB - 13')						

FINAL SURVEY

Projected Bottom Hole Location  
15109'MD 7413.7'TVD 678'N & 7686'E of  
SHL 91.7 degree Incl @ 82.6 degree AZM



Tracy 14P-432 Pad Sec.14-T7N-R66W Tracy 14P-432 Wellbore #1	ANNOTATIONS
	No annotation data is available.
LEGEND	
Tracy 14P-432, Wellbore #1, Plan 4 3d (10-31-14) V0	
Wellbore #1	
Survey #1	



# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.14-T7N-R66W**

**Tracy 14P-432 Pad Sec.14-T7N-R66W**

**Tracy 14P-432**

**Wellbore #1**

**Survey: Survey #1**

## **Standard Survey Report**

**21 November, 2014**

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Tracy 14P-432
<b>Project:</b>	SEC.14-T7N-R66W	<b>TVD Reference:</b>	WELL @ 4912.5ft (Ensign Rig #136 - RKB - 12.5)
<b>Site:</b>	Tracy 14P-432 Pad Sec.14-T7N-R66W	<b>MD Reference:</b>	WELL @ 4912.5ft (Ensign Rig #136 - RKB - 12.5)
<b>Well:</b>	Tracy 14P-432	<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

<b>Project</b>	SEC.14-T7N-R66W, Weld County, CO		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		Using Well Reference Point
<b>Map Zone:</b>	Colorado Northern Zone		Using geodetic scale factor

Site	Tracy 14P-432 Pad Sec.14-T7N-R66W				
Site Position:		Northing:	1,451,173.54ft	Latitude:	40.569410
From:	Lat/Long	Easting:	3,210,152.91ft	Longitude:	-104.743540
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.49 °

Well	Tracy 14P-432					
Well Position	+N-S	0.0 ft	Northing:	1,451,173.52 ft	Latitude:	40.569410
	+E-W	0.0 ft	Easting:	3,210,152.91 ft	Longitude:	-104.743540
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,900.0 ft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	10/27/2014	8.41	67.07	52,867

<b>Design</b>	Wellbore #1				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>	
	0.0	0.0	0.0	85.22	

<b>Survey Program</b>	<b>Date</b>	11/21/2014			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
128.0	15,109.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard	

<b>Survey</b>										
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Vertical Section (ft)</b>	<b>Dogleg Rate (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Turn Rate (°/100ft)</b>	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
<b>Half Section 460' Setback</b>										
1.0	0.00	358.00	1.0	0.0	0.0	0.0	0.39	0.39	0.00	
<b>SHL 465'FSL &amp; 2296'FEL, Sec.14 - Half Section Line</b>										
128.0	0.50	358.00	128.0	0.6	0.0	0.0	0.39	0.39	0.00	
215.0	0.90	10.00	215.0	1.6	0.1	0.2	0.49	0.46	13.79	
313.0	0.90	4.50	313.0	3.1	0.3	0.5	0.09	0.00	-5.61	
407.0	1.10	11.40	407.0	4.8	0.5	0.9	0.25	0.21	7.34	
500.0	0.50	323.10	500.0	6.0	0.4	0.9	0.92	-0.65	-51.94	
594.0	1.10	303.00	593.9	6.8	-0.6	0.0	0.70	0.64	-21.38	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Tracy 14P-432
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<b>Site:</b>	Tracy 14P-432 Pad Sec.14-T7N-R66W	<b>MD Reference:</b>	WELL @ 4912.5ft (Ensign Rig #136 - RKB - 12.5)
<b>Well:</b>	Tracy 14P-432	<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)	
687.0	1.20	277.40	686.9	7.4	-2.3	-1.6	0.56	0.11	-27.53	
781.0	1.70	280.00	780.9	7.8	-4.6	-4.0	0.54	0.53	2.77	
875.0	0.50	316.90	874.9	8.3	-6.3	-5.6	1.42	-1.28	39.26	
895.0	0.40	298.80	894.9	8.4	-6.4	-5.7	0.86	-0.50	-90.50	
969.0	0.70	319.40	968.9	8.9	-6.9	-6.2	0.48	0.41	27.84	
1,065.0	1.80	181.60	1,064.9	7.8	-7.3	-6.7	2.46	1.15	-143.54	
1,160.0	1.80	185.90	1,159.8	4.8	-7.5	-7.1	0.14	0.00	4.53	
1,254.0	1.30	177.50	1,253.8	2.3	-7.6	-7.4	0.58	-0.53	-8.94	
1,351.0	1.80	189.10	1,350.7	-0.3	-7.8	-7.8	0.61	0.52	11.96	
1,445.0	0.90	3.10	1,444.7	-1.0	-8.0	-8.1	2.87	-0.96	185.11	
1,539.0	2.10	357.00	1,538.7	1.4	-8.1	-7.9	1.29	1.28	-6.49	
1,632.0	4.00	347.00	1,631.6	6.3	-8.9	-8.3	2.11	2.04	-10.75	
1,726.0	5.80	354.20	1,725.2	14.2	-10.1	-8.9	2.02	1.91	7.66	
1,819.0	7.60	354.30	1,817.6	25.0	-11.2	-9.1	1.94	1.94	0.11	
1,913.0	7.30	346.80	1,910.8	37.0	-13.2	-10.1	1.08	-0.32	-7.98	
2,007.0	9.20	345.70	2,003.8	50.1	-16.4	-12.2	2.03	2.02	-1.17	
2,100.0	9.50	337.30	2,095.6	64.4	-21.2	-15.8	1.50	0.32	-9.03	
2,194.0	8.80	329.90	2,188.4	77.8	-27.8	-21.2	1.46	-0.74	-7.87	
2,288.0	8.80	322.70	2,281.3	89.7	-35.8	-28.2	1.17	0.00	-7.66	
2,381.0	8.50	318.80	2,373.2	100.5	-44.6	-36.1	0.71	-0.32	-4.19	
2,475.0	8.40	315.00	2,466.2	110.6	-54.0	-44.6	0.60	-0.11	-4.04	
2,569.0	7.50	320.90	2,559.3	120.2	-62.8	-52.5	1.29	-0.96	6.28	
2,659.0	7.70	331.70	2,648.5	130.1	-69.3	-58.2	1.60	0.22	12.00	
2,749.0	7.50	348.20	2,737.7	141.2	-73.4	-61.4	2.43	-0.22	18.33	
2,840.0	7.60	349.40	2,827.9	152.9	-75.7	-62.7	0.21	0.11	1.32	
2,930.0	8.40	344.30	2,917.1	165.1	-78.6	-64.6	1.19	0.89	-5.67	
3,020.0	8.10	343.60	3,006.1	177.5	-82.1	-67.1	0.35	-0.33	-0.78	
3,111.0	8.60	341.00	3,096.2	190.1	-86.2	-70.0	0.69	0.55	-2.86	
3,201.0	8.40	339.40	3,185.2	202.6	-90.7	-73.5	0.34	-0.22	-1.78	
3,292.0	9.50	338.40	3,275.1	215.8	-95.8	-77.5	1.22	1.21	-1.10	
3,382.0	9.50	338.40	3,363.8	229.6	-101.2	-81.8	0.00	0.00	0.00	
3,472.0	7.90	336.10	3,452.8	242.2	-106.5	-86.0	1.82	-1.78	-2.56	
3,563.0	8.10	333.60	3,542.9	253.6	-111.9	-90.4	0.44	0.22	-2.75	
3,653.0	7.80	328.00	3,632.1	264.5	-117.9	-95.5	0.92	-0.33	-6.22	
3,743.0	8.40	338.70	3,721.2	275.8	-123.5	-100.2	1.80	0.67	11.89	
3,833.0	9.10	340.60	3,810.1	288.6	-128.3	-103.8	0.84	0.78	2.11	
3,924.0	8.50	339.80	3,900.0	301.7	-133.0	-107.4	0.67	-0.66	-0.88	
4,014.0	9.80	341.30	3,988.9	315.2	-137.8	-111.0	1.47	1.44	1.67	
4,105.0	9.80	342.00	4,078.6	329.9	-142.6	-114.7	0.13	0.00	0.77	
4,195.0	8.80	336.20	4,167.4	343.5	-147.8	-118.7	1.52	-1.11	-6.44	
4,286.0	8.60	332.00	4,257.3	355.9	-153.8	-123.6	0.73	-0.22	-4.62	
4,376.0	8.40	332.40	4,346.4	367.6	-160.0	-128.8	0.23	-0.22	0.44	
4,467.0	8.40	334.00	4,436.4	379.5	-166.0	-133.8	0.26	0.00	1.76	
4,557.0	8.50	336.20	4,525.4	391.5	-171.6	-138.4	0.38	0.11	2.44	
4,647.0	9.10	334.80	4,614.3	404.0	-177.3	-143.0	0.71	0.67	-1.56	
4,737.0	8.90	339.40	4,703.2	417.0	-182.7	-147.4	0.83	-0.22	5.11	
4,828.0	8.40	335.20	4,793.2	429.6	-188.0	-151.6	0.88	-0.55	-4.62	
4,918.0	8.30	342.20	4,882.2	441.8	-192.8	-155.3	1.13	-0.11	7.78	
5,009.0	8.20	340.30	4,972.3	454.1	-196.9	-158.5	0.32	-0.11	-2.09	
5,099.0	9.10	343.60	5,061.3	467.0	-201.1	-161.5	1.14	1.00	3.67	
5,190.0	8.40	343.10	5,151.2	480.3	-205.1	-164.4	0.77	-0.77	-0.55	
5,280.0	9.50	343.30	5,240.1	493.7	-209.1	-167.3	1.22	1.22	0.22	

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<b>Site:</b>	Tracy 14P-432 Pad Sec.14-T7N-R66W	<b>MD Reference:</b>	WELL @ 4912.5ft (Ensign Rig #136 - RKB - 12.5)
<b>Well:</b>	Tracy 14P-432	<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)
5,370.0	8.30	336.60	5,329.0	506.7	-213.8	-170.9	1.76	-1.33	-7.44
5,461.0	7.70	335.50	5,419.2	518.3	-219.0	-175.1	0.68	-0.66	-1.21
5,552.0	7.80	338.20	5,509.3	529.6	-223.8	-178.9	0.41	0.11	2.97
5,642.0	8.80	342.90	5,598.4	541.8	-228.1	-182.2	1.34	1.11	5.22
5,732.0	8.90	342.00	5,687.3	555.0	-232.3	-185.3	0.19	0.11	-1.00
5,822.0	9.10	335.20	5,776.2	568.1	-237.4	-189.3	1.20	0.22	-7.56
5,913.0	8.90	332.60	5,866.1	580.9	-243.7	-194.5	0.50	-0.22	-2.86
6,003.0	8.60	334.50	5,955.0	593.2	-249.8	-199.5	0.46	-0.33	2.11
6,094.0	8.40	335.40	6,045.0	605.3	-255.5	-204.2	0.26	-0.22	0.99
6,185.0	7.00	330.30	6,135.2	616.2	-261.0	-208.8	1.71	-1.54	-5.60
6,275.0	5.80	323.10	6,224.7	624.6	-266.4	-213.5	1.60	-1.33	-8.00
6,365.0	4.40	317.80	6,314.3	630.8	-271.5	-218.0	1.64	-1.56	-5.89
6,455.0	3.10	319.50	6,404.1	635.2	-275.4	-221.5	1.45	-1.44	1.89
6,546.0	2.20	323.10	6,495.0	638.5	-278.0	-223.9	1.01	-0.99	3.96
6,636.0	1.00	326.60	6,585.0	640.5	-279.5	-225.2	1.34	-1.33	3.89
6,682.0	0.90	31.10	6,631.0	641.2	-279.5	-225.2	2.21	-0.22	140.22
6,727.0	3.00	85.60	6,675.9	641.6	-278.2	-223.8	5.74	4.67	121.11
6,772.0	6.00	84.70	6,720.8	641.9	-274.7	-220.3	6.67	6.67	-2.00
6,817.0	8.10	84.00	6,765.5	642.4	-269.2	-214.7	4.67	4.67	-1.56
6,862.0	11.00	91.20	6,809.8	642.7	-261.7	-207.3	6.96	6.44	16.00
6,908.0	13.70	99.30	6,854.8	641.7	-251.9	-197.6	6.96	5.87	17.61
6,953.0	17.20	98.90	6,898.1	639.8	-240.1	-186.0	7.78	7.78	-0.89
6,998.0	20.80	97.00	6,940.7	637.8	-225.6	-171.7	8.12	8.00	-4.22
7,043.0	24.20	95.80	6,982.2	635.9	-208.5	-154.8	7.62	7.56	-2.67
7,089.0	27.60	96.70	7,023.6	633.7	-188.5	-135.1	7.44	7.39	1.96
7,134.0	31.80	97.50	7,062.7	630.9	-166.4	-113.3	9.37	9.33	1.78
7,179.0	35.00	98.80	7,100.3	627.4	-141.9	-89.2	7.29	7.11	2.89
7,224.0	37.90	98.10	7,136.4	623.5	-115.4	-63.1	6.51	6.44	-1.56
7,270.0	41.70	93.10	7,171.8	620.7	-86.2	-34.2	10.80	8.26	-10.87
7,315.0	46.40	90.00	7,204.1	619.8	-54.9	-3.1	11.49	10.44	-6.89
7,360.0	50.20	90.90	7,234.1	619.6	-21.3	30.3	8.58	8.44	2.00
7,405.0	53.10	89.10	7,262.0	619.6	14.0	65.5	7.17	6.44	-4.00
7,451.0	56.70	87.70	7,288.4	620.6	51.6	103.1	8.21	7.83	-3.04
7,496.0	61.10	87.90	7,311.7	622.1	90.1	141.6	9.79	9.78	0.44
7,541.0	67.00	90.00	7,331.3	622.8	130.5	181.9	13.77	13.11	4.67
7,586.0	73.60	90.30	7,346.5	622.7	172.9	224.1	14.68	14.67	0.67
7,631.0	77.70	90.10	7,357.7	622.6	216.4	267.5	9.12	9.11	-0.44
7,676.0	78.90	89.80	7,366.8	622.6	260.5	311.4	2.75	2.67	-0.67
7,721.0	79.60	89.40	7,375.2	622.9	304.7	355.5	1.78	1.56	-0.89
7,767.0	82.10	89.60	7,382.5	623.3	350.1	400.8	5.45	5.43	0.43
7,812.0	84.50	89.80	7,387.7	623.6	394.8	445.4	5.35	5.33	0.44
7,857.0	87.00	89.40	7,391.1	623.9	439.7	490.1	5.63	5.56	-0.89
7,871.0	88.00	90.00	7,391.7	623.9	453.7	504.0	8.33	7.14	4.29
7,909.0	88.93	89.57	7,392.7	624.1	491.7	541.9	2.70	2.45	-1.13
7"									
7,924.0	89.30	89.40	7,392.9	624.2	506.7	556.9	2.70	2.45	-1.13
8,015.0	91.30	89.40	7,392.5	625.2	597.6	647.6	2.20	2.20	0.00
8,105.0	90.50	89.80	7,391.0	625.8	687.6	737.3	0.99	-0.89	0.44
8,196.0	89.40	90.70	7,391.1	625.4	778.6	828.0	1.56	-1.21	0.99
8,286.0	89.90	89.40	7,391.7	625.3	868.6	917.7	1.55	0.56	-1.44
8,376.0	88.70	90.00	7,392.8	625.8	958.6	1,007.4	1.49	-1.33	0.67

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<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)	
8,470.0	88.50	87.70	7,395.1	627.7	1,052.6	1,101.2	2.46	-0.21	-2.45	
8,563.0	89.00	87.90	7,397.1	631.3	1,145.5	1,194.0	0.58	0.54	0.22	
8,657.0	90.10	89.10	7,397.8	633.7	1,239.4	1,287.9	1.73	1.17	1.28	
8,751.0	90.40	88.90	7,397.4	635.4	1,333.4	1,381.7	0.38	0.32	-0.21	
8,844.0	90.50	91.00	7,396.7	635.4	1,426.4	1,474.4	2.26	0.11	2.26	
8,938.0	87.90	91.40	7,398.0	633.5	1,520.4	1,567.8	2.80	-2.77	0.43	
9,031.0	87.40	89.80	7,401.8	632.5	1,613.3	1,660.3	1.80	-0.54	-1.72	
9,125.0	88.20	90.30	7,405.4	632.4	1,707.2	1,753.9	1.00	0.85	0.53	
9,219.0	89.30	90.10	7,407.5	632.1	1,801.2	1,847.6	1.19	1.17	-0.21	
9,295.0	91.40	88.60	7,407.0	632.9	1,877.2	1,923.4	3.40	2.76	-1.97	
9,386.0	92.20	88.70	7,404.2	635.1	1,968.1	2,014.1	0.89	0.88	0.11	
9,476.0	92.30	89.40	7,400.6	636.6	2,058.0	2,103.9	0.79	0.11	0.78	
9,566.0	92.40	91.20	7,396.9	636.1	2,147.9	2,193.4	2.00	0.11	2.00	
9,657.0	90.70	92.40	7,394.5	633.2	2,238.9	2,283.8	2.29	-1.87	1.32	
9,747.0	89.80	92.60	7,394.1	629.3	2,328.8	2,373.1	1.02	-1.00	0.22	
9,837.0	88.90	92.30	7,395.1	625.5	2,418.7	2,462.4	1.05	-1.00	-0.33	
9,928.0	89.20	91.90	7,396.6	622.1	2,509.6	2,552.7	0.55	0.33	-0.44	
10,018.0	88.50	90.70	7,398.4	620.1	2,599.6	2,642.2	1.54	-0.78	-1.33	
10,109.0	89.00	89.80	7,400.4	619.7	2,690.5	2,732.8	1.13	0.55	-0.99	
10,199.0	89.90	88.40	7,401.3	621.1	2,780.5	2,822.6	1.85	1.00	-1.56	
10,289.0	89.80	89.10	7,401.5	623.1	2,870.5	2,912.4	0.79	-0.11	0.78	
10,379.0	89.50	89.10	7,402.1	624.5	2,960.5	3,002.2	0.33	-0.33	0.00	
10,470.0	89.30	88.00	7,403.0	626.8	3,051.5	3,093.0	1.23	-0.22	-1.21	
10,560.0	90.00	89.10	7,403.6	629.1	3,141.4	3,182.9	1.45	0.78	1.22	
10,650.0	87.60	88.70	7,405.4	630.8	3,231.4	3,272.7	2.70	-2.67	-0.44	
10,741.0	88.60	88.60	7,408.5	632.9	3,322.3	3,363.5	1.10	1.10	-0.11	
10,831.0	89.20	88.00	7,410.2	635.6	3,412.2	3,453.3	0.94	0.67	-0.67	
10,922.0	89.70	88.00	7,411.1	638.8	3,503.2	3,544.2	0.55	0.55	0.00	
11,012.0	93.10	88.60	7,408.9	641.5	3,593.1	3,634.0	3.84	3.78	0.67	
11,103.0	90.30	88.60	7,406.2	643.7	3,684.0	3,724.8	3.08	-3.08	0.00	
11,193.0	92.90	89.10	7,403.6	645.5	3,774.0	3,814.6	2.94	2.89	0.56	
11,284.0	90.90	89.30	7,400.6	646.8	3,864.9	3,905.3	2.21	-2.20	0.22	
11,374.0	89.90	89.60	7,400.0	647.6	3,954.9	3,995.1	1.16	-1.11	0.33	
11,464.0	90.90	92.30	7,399.4	646.1	4,044.9	4,084.6	3.20	1.11	3.00	
11,554.0	90.80	91.00	7,398.0	643.5	4,134.8	4,174.0	1.45	-0.11	-1.44	
11,645.0	90.80	91.90	7,396.8	641.2	4,225.8	4,264.5	0.99	0.00	0.99	
11,735.0	92.20	91.20	7,394.4	638.8	4,315.7	4,353.9	1.74	1.56	-0.78	
11,826.0	90.40	89.40	7,392.3	638.3	4,406.7	4,444.5	2.80	-1.98	-1.98	
11,916.0	86.80	86.50	7,394.5	641.5	4,496.6	4,534.4	5.14	-4.00	-3.22	
12,006.0	88.40	88.90	7,398.3	645.1	4,586.4	4,624.2	3.20	1.78	2.67	
12,097.0	90.50	89.60	7,399.2	646.3	4,677.4	4,715.0	2.43	2.31	0.77	
12,188.0	89.00	90.70	7,399.6	646.1	4,768.4	4,805.6	2.04	-1.65	1.21	
12,278.0	90.80	91.40	7,399.7	644.5	4,858.4	4,895.2	2.15	2.00	0.78	
12,369.0	88.60	90.70	7,400.2	642.8	4,949.4	4,985.7	2.54	-2.42	-0.77	
12,459.0	87.30	90.30	7,403.4	642.0	5,039.3	5,075.2	1.51	-1.44	-0.44	
12,549.0	87.70	90.30	7,407.4	641.5	5,129.2	5,164.8	0.44	0.44	0.00	
12,640.0	88.10	90.30	7,410.7	641.1	5,220.1	5,255.4	0.44	0.44	0.00	
12,730.0	89.50	90.50	7,412.6	640.4	5,310.1	5,345.0	1.57	1.56	0.22	
12,821.0	89.30	91.20	7,413.5	639.1	5,401.1	5,435.6	0.80	-0.22	0.77	
12,911.0	90.10	92.80	7,414.0	635.9	5,491.0	5,524.9	1.99	0.89	1.78	
12,996.0	89.40	92.80	7,414.4	631.8	5,575.9	5,609.2	0.82	-0.82	0.00	
13,087.0	87.70	93.10	7,416.7	627.1	5,666.8	5,699.3	1.90	-1.87	0.33	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Tracy 14P-432
<b>Project:</b>	SEC.14-T7N-R66W	<b>TVD Reference:</b>	WELL @ 4912.5ft (Ensign Rig #136 - RKB - 12.5)
<b>Site:</b>	Tracy 14P-432 Pad Sec.14-T7N-R66W	<b>MD Reference:</b>	WELL @ 4912.5ft (Ensign Rig #136 - RKB - 12.5)
<b>Well:</b>	Tracy 14P-432	<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)
13,177.0	88.50	92.30	7,419.7	622.9	5,756.6	5,788.5	1.26	0.89	-0.89
13,268.0	89.40	91.90	7,421.3	619.5	5,847.6	5,878.8	1.08	0.99	-0.44
13,358.0	90.20	90.30	7,421.6	617.8	5,937.5	5,968.4	1.99	0.89	-1.78
13,449.0	90.90	90.90	7,420.8	616.8	6,028.5	6,059.0	1.01	0.77	0.66
13,539.0	90.70	89.60	7,419.5	616.5	6,118.5	6,148.6	1.46	-0.22	-1.44
13,629.0	89.90	90.10	7,419.0	616.7	6,208.5	6,238.3	1.05	-0.89	0.56
13,720.0	91.80	91.40	7,417.7	615.5	6,299.5	6,328.9	2.53	2.09	1.43
13,810.0	91.50	90.50	7,415.1	614.0	6,389.4	6,418.4	1.05	-0.33	-1.00
13,901.0	89.30	90.00	7,414.5	613.6	6,480.4	6,509.0	2.48	-2.42	-0.55
13,991.0	90.00	88.60	7,415.0	614.7	6,570.4	6,598.8	1.74	0.78	-1.56
14,081.0	89.30	88.70	7,415.6	616.8	6,660.4	6,688.6	0.79	-0.78	0.11
14,172.0	90.60	89.80	7,415.6	618.0	6,751.4	6,779.4	1.87	1.43	1.21
14,263.0	90.00	88.90	7,415.2	619.1	6,842.4	6,870.2	1.19	-0.66	-0.99
14,353.0	88.70	88.40	7,416.2	621.2	6,932.3	6,960.0	1.55	-1.44	-0.56
14,444.0	89.50	88.70	7,417.6	623.5	7,023.3	7,050.8	0.94	0.88	0.33
14,534.0	91.10	88.60	7,417.2	625.6	7,113.3	7,140.7	1.78	1.78	-0.11
14,625.0	90.50	87.70	7,415.9	628.5	7,204.2	7,231.5	1.19	-0.66	-0.99
14,715.0	89.00	84.20	7,416.3	634.9	7,294.0	7,321.5	4.23	-1.67	-3.89
14,805.0	90.10	84.20	7,417.0	644.0	7,383.5	7,411.5	1.22	1.22	0.00
14,895.0	89.80	84.30	7,417.1	653.0	7,473.0	7,501.5	0.35	-0.33	0.11
14,986.0	90.70	83.30	7,416.7	662.8	7,563.5	7,592.4	1.48	0.99	-1.10
15,061.0	91.70	82.60	7,415.1	672.0	7,637.9	7,667.4	1.63	1.33	-0.93
15,108.9	91.70	82.60	7,413.7	678.2	7,685.5	7,715.2	0.00	0.00	0.00
<b>BHL 1080°FSL &amp; 5°FEL, Sec.13</b>									
15,109.0	91.70	82.60	7,413.7	678.2	7,685.5	7,715.3	0.00	0.00	0.00

Casing Points				
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,909.0	7,392.7	7"	7	7-1/2

Checked By: _____	Approved By: _____	Date: _____
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