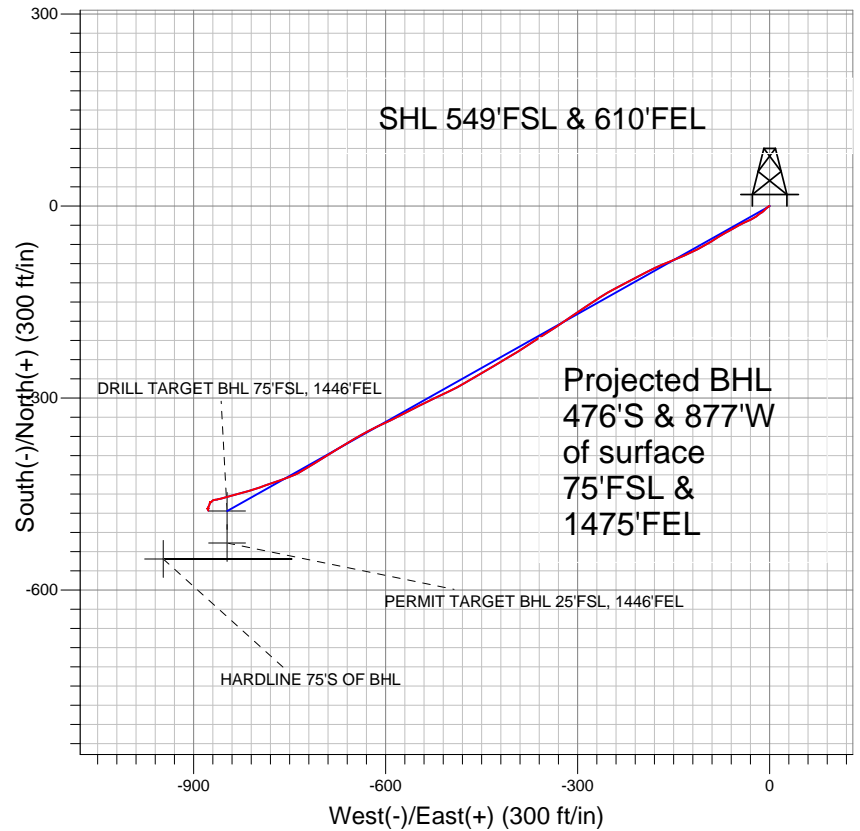
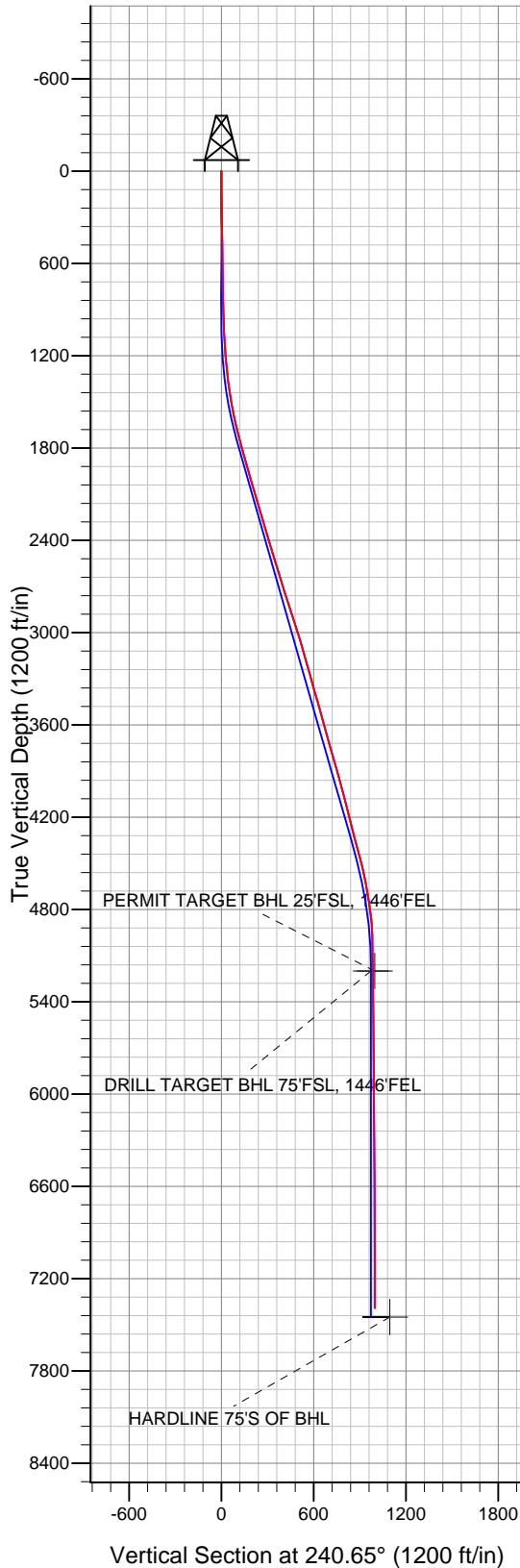


PETROLEUM DEVELOPMENT CORP Weld County CO



LEGEND

- Schaefer 7TD, Wellbore #1, Plan #1 (6-27-10) V0
- Wellbore #1
- Survey #1

Final Survey Plot

Projected Final Survey -
 7519'MD & 7391'TVD @ 998' VS
 0.9 deg Inc 164.9 deg AZ

Project: SEC.7-T6N-R66W
 Site: Schaefer 43-7D Pad Sec.7-T6N-R66W
 Well: Schaefer 7TD
 Plan: Wellbore #1



Directional

PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.7-T6N-R66W

Schaefer 43-7D Pad Sec.7-T6N-R66W

Schaefer 7TD

Wellbore #1

Design: Wellbore #1

Standard Survey Report

17 January, 2011

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Schaefer 7TD
Project:	SEC.7-T6N-R66W	TVD Reference:	WELL @ 4843.0ft (Original Well Elev)
Site:	Schaefer 43-7D Pad Sec.7-T6N-R66W	MD Reference:	WELL @ 4843.0ft (Original Well Elev)
Well:	Schaefer 7TD	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Project	SEC.7-T6N-R66W, Weld County, Colorado		
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 43-7D Pad Sec.7-T6N-R66W			
Site Position:		Northing:	1,424,501.32 ft	Latitude:	40° 29' 47.868 N
From:	Lat/Long	Easting:	3,190,856.18 ft	Longitude:	104° 48' 49.464 W
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.44 °

Well	Schaefer 7TD					
Well Position	+N-S	0.0 ft	Northing:	1,424,402.95 ft	Latitude:	40° 29' 46.896 N
	+E-W	0.0 ft	Easting:	3,190,856.94 ft	Longitude:	104° 48' 49.464 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,830.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	1/6/2011	8.96	67.14	53,223

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	240.65	

Survey Program	Date	1/16/2011			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
119.0	7,519.0	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	
119.0	0.90	252.10	119.0	-0.3	-0.9	0.9	0.76	0.76	0.00	
210.0	0.60	230.60	210.0	-0.8	-1.9	2.1	0.45	-0.33	-23.63	
301.0	0.70	230.70	301.0	-1.5	-2.7	3.1	0.11	0.11	0.11	
392.0	0.70	225.40	392.0	-2.2	-3.6	4.2	0.07	0.00	-5.82	
483.0	0.80	227.70	483.0	-3.0	-4.4	5.3	0.11	0.11	2.53	
576.0	1.10	230.30	576.0	-4.0	-5.6	6.9	0.33	0.32	2.80	
657.0	1.30	223.90	656.9	-5.2	-6.8	8.5	0.30	0.25	-7.90	
796.0	1.20	228.00	795.9	-7.3	-9.0	11.4	0.10	-0.07	2.95	
891.0	1.40	230.30	890.9	-8.7	-10.6	13.5	0.22	0.21	2.42	
986.0	1.50	235.00	985.8	-10.2	-12.5	15.9	0.16	0.11	4.95	
1,080.0	2.90	236.90	1,079.8	-12.2	-15.5	19.5	1.49	1.49	2.02	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Schaefer 7TD
Project:	SEC.7-T6N-R66W	TVD Reference:	WELL @ 4843.0ft (Original Well Elev)
Site:	Schaefer 43-7D Pad Sec.7-T6N-R66W	MD Reference:	WELL @ 4843.0ft (Original Well Elev)
Well:	Schaefer 7TD	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)
1,175.0	4.40	229.80	1,174.6	-15.8	-20.3	25.5	1.65	1.58	-7.47
1,270.0	5.50	243.40	1,269.2	-20.2	-27.2	33.6	1.69	1.16	14.32
1,365.0	7.60	245.70	1,363.6	-24.8	-37.0	44.4	2.23	2.21	2.42
1,460.0	8.70	241.60	1,457.6	-30.8	-49.0	57.9	1.31	1.16	-4.32
1,555.0	11.10	241.30	1,551.2	-38.7	-63.4	74.2	2.53	2.53	-0.32
1,650.0	13.10	239.10	1,644.1	-48.6	-80.6	94.1	2.16	2.11	-2.32
1,745.0	14.20	237.80	1,736.4	-60.3	-99.7	116.5	1.20	1.16	-1.37
1,838.0	16.00	245.70	1,826.2	-71.7	-121.1	140.7	2.94	1.94	8.49
1,933.0	15.90	247.00	1,917.6	-82.1	-145.0	166.6	0.39	-0.11	1.37
2,027.0	16.00	247.00	2,007.9	-92.2	-168.8	192.3	0.11	0.11	0.00
2,123.0	16.30	243.20	2,100.2	-103.5	-193.0	218.9	1.14	0.31	-3.96
2,218.0	16.90	241.40	2,191.2	-116.1	-217.0	246.1	0.83	0.63	-1.89
2,313.0	16.60	243.10	2,282.2	-128.9	-241.2	273.4	0.60	-0.32	1.79
2,408.0	16.80	236.70	2,373.2	-142.5	-264.8	300.7	1.95	0.21	-6.74
2,503.0	16.70	236.00	2,464.1	-157.7	-287.6	328.0	0.24	-0.11	-0.74
2,598.0	16.80	235.90	2,555.1	-173.0	-310.3	355.3	0.11	0.11	-0.11
2,692.0	17.30	236.10	2,645.0	-188.4	-333.1	382.7	0.54	0.53	0.21
2,787.0	17.90	238.00	2,735.5	-204.1	-357.2	411.4	0.87	0.63	2.00
2,882.0	17.90	236.20	2,825.9	-219.9	-381.8	440.5	0.58	0.00	-1.89
2,977.0	17.90	240.00	2,916.3	-235.3	-406.5	469.7	1.23	0.00	4.00
3,071.0	17.60	239.00	3,005.9	-249.9	-431.2	498.3	0.46	-0.32	-1.06
3,165.0	15.90	239.90	3,095.9	-263.7	-454.5	525.4	1.83	-1.81	0.96
3,261.0	16.00	239.60	3,188.2	-276.9	-477.3	551.8	0.14	0.10	-0.31
3,355.0	15.40	243.70	3,278.7	-289.0	-499.7	577.2	1.34	-0.64	4.36
3,450.0	16.20	245.40	3,370.1	-300.1	-523.1	603.0	0.97	0.84	1.79
3,545.0	15.90	242.70	3,461.4	-311.6	-546.7	629.2	0.85	-0.32	-2.84
3,639.0	15.30	242.10	3,551.9	-323.3	-569.1	654.5	0.66	-0.64	-0.64
3,734.0	15.40	244.90	3,643.5	-334.6	-591.6	679.6	0.79	0.11	2.95
3,828.0	16.10	244.10	3,734.0	-345.5	-614.6	705.1	0.78	0.74	-0.85
3,923.0	15.90	240.00	3,825.3	-357.8	-637.7	731.2	1.21	-0.21	-4.32
4,018.0	16.00	239.30	3,916.7	-371.0	-660.2	757.3	0.23	0.11	-0.74
4,111.0	15.00	239.20	4,006.3	-383.7	-681.6	782.2	1.08	-1.08	-0.11
4,206.0	14.50	238.60	4,098.1	-396.2	-702.3	806.4	0.55	-0.53	-0.63
4,300.0	13.70	235.00	4,189.3	-408.7	-721.5	829.2	1.26	-0.85	-3.83
4,395.0	14.80	247.10	4,281.4	-419.9	-741.9	852.5	3.33	1.16	12.74
4,488.0	15.60	251.00	4,371.2	-428.6	-764.6	876.6	1.40	0.86	4.19
4,582.0	14.80	251.60	4,461.9	-436.5	-788.0	900.8	0.87	-0.85	0.64
4,677.0	12.90	251.60	4,554.1	-443.7	-809.6	923.1	2.00	-2.00	0.00
4,772.0	11.00	254.30	4,647.0	-449.5	-828.4	942.3	2.08	-2.00	2.84
4,866.0	9.40	255.90	4,739.6	-453.8	-844.4	958.4	1.73	-1.70	1.70
4,961.0	7.30	254.70	4,833.5	-457.2	-857.8	971.8	2.22	-2.21	-1.26
5,057.0	3.10	264.90	4,929.1	-459.1	-866.3	980.1	4.46	-4.38	10.63
5,152.0	0.90	232.50	5,024.1	-459.8	-869.4	983.2	2.51	-2.32	-34.11
5,247.0	0.80	227.50	5,119.1	-460.7	-870.5	984.5	0.13	-0.11	-5.26
5,327.9	0.72	229.72	5,199.9	-461.4	-871.3	985.6	0.11	-0.10	2.75
DRILL TARGET BHL 75'FSL, 1446'FEL									
5,328.3	0.72	229.74	5,200.3	-461.4	-871.3	985.6	0.11	-0.10	3.08
PERMIT TARGET BHL 25'FSL, 1446'FEL									
5,343.0	0.70	230.20	5,215.0	-461.5	-871.4	985.8	0.11	-0.10	3.14
5,438.0	0.80	228.40	5,310.0	-462.3	-872.4	987.0	0.11	0.11	-1.89
5,533.0	0.70	236.90	5,405.0	-463.1	-873.4	988.2	0.16	-0.11	8.95
5,627.0	0.40	265.20	5,499.0	-463.4	-874.2	989.1	0.42	-0.32	30.11
5,723.0	0.40	343.00	5,595.0	-463.1	-874.6	989.3	0.52	0.00	81.04

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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)
5,817.0	0.10	100.80	5,689.0	-462.8	-874.6	989.2	0.48	-0.32	125.32
5,911.0	0.50	193.60	5,783.0	-463.2	-874.6	989.4	0.55	0.43	98.72
6,006.0	0.90	193.50	5,878.0	-464.4	-874.9	990.2	0.42	0.42	-0.11
6,101.0	1.00	196.70	5,973.0	-465.9	-875.3	991.3	0.12	0.11	3.37
6,195.0	1.00	200.60	6,067.0	-467.4	-875.8	992.5	0.07	0.00	4.15
6,290.0	0.70	206.00	6,162.0	-468.7	-876.4	993.6	0.33	-0.32	5.68
6,386.0	0.80	203.10	6,258.0	-469.9	-876.9	994.6	0.11	0.10	-3.02
6,480.0	0.90	198.40	6,352.0	-471.2	-877.4	995.7	0.13	0.11	-5.00
6,574.0	0.50	117.80	6,446.0	-472.1	-877.3	996.0	1.02	-0.43	-85.74
6,669.0	0.60	131.10	6,540.9	-472.6	-876.5	995.6	0.17	0.11	14.00
6,763.0	0.40	260.10	6,634.9	-473.0	-876.5	995.8	0.96	-0.21	137.23
6,858.0	0.80	261.50	6,729.9	-473.1	-877.5	996.7	0.42	0.42	1.47
6,953.0	0.50	300.00	6,824.9	-473.0	-878.5	997.5	0.54	-0.32	40.53
7,048.0	0.10	73.90	6,919.9	-472.8	-878.7	997.7	0.60	-0.42	140.95
7,143.0	0.30	128.70	7,014.9	-472.9	-878.5	997.5	0.27	0.21	57.68
7,238.0	0.50	139.00	7,109.9	-473.4	-878.0	997.3	0.22	0.21	10.84
7,333.0	0.50	168.10	7,204.9	-474.1	-877.6	997.4	0.26	0.00	30.63
7,428.0	0.70	166.50	7,299.9	-475.1	-877.4	997.7	0.21	0.21	-1.68
7,519.0	0.90	164.90	7,390.9	-476.3	-877.1	998.0	0.22	0.22	-1.76
HARDLINE 75'S OF BHL									

Checked By: _____	Approved By: _____	Date: _____
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