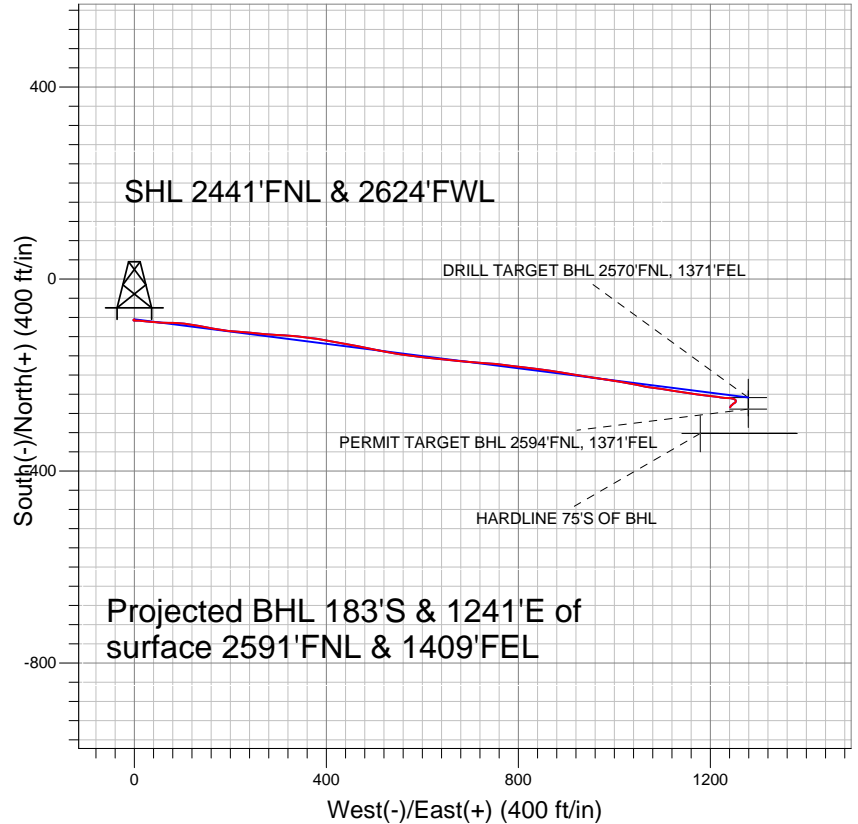
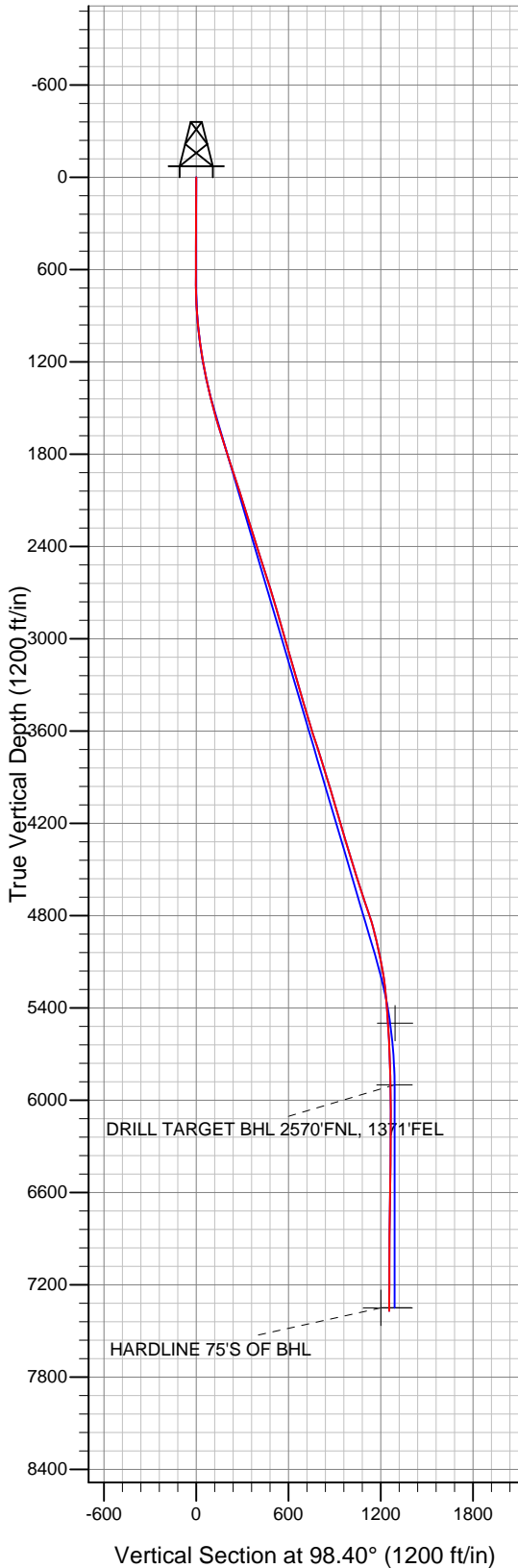


PETROLEUM DEVELOPMENT CORP Weld County CO



LEGEND

- △ Binder 10-SDU, Wellbore #1, Plan #2 (9-23-10) V0
- Wellbore #1
- Survey #1

Final Survey Plot

Projected Final Survey -
 7547'MD & 7370'TVD @ 1255' VS
 0.9 deg Inc 215.1 deg AZ

Project: SEC.10-T4N-R67W
 Site: Binder 10-NDU Pad Sec.10-T4N-R67W
 Well: Binder 10-SDU
 Plan: Wellbore #1



Directional

PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.10-T4N-R67W

Binder 10-NDU Pad Sec.10-T4N-R67W

Binder 10-SDU

Wellbore #1

Survey: Survey #1

Standard Survey Report

23 December, 2010

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Site Binder 10-NDU Pad Sec.10-T4N-R67W
Project:	SEC.10-T4N-R67W	TVD Reference:	WELL @ 4793.0ft (Original Well Elev)
Site:	Binder 10-NDU Pad Sec.10-T4N-R67W	MD Reference:	WELL @ 4793.0ft (Original Well Elev)
Well:	Binder 10-SDU	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Project	SEC.10-T4N-R67W, Weld County, Colorado		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site	Binder 10-NDU Pad Sec.10-T4N-R67W				
Site Position:		Northing:	1,362,813.51 ft	Latitude:	40° 19' 39.540 N
From:	Lat/Long	Easting:	3,173,642.72 ft	Longitude:	104° 52' 37.884 W
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.40 °

Well	Binder 10-SDU					
Well Position	+N-S	-83.8 ft	Northing:	1,362,729.71 ft	Latitude:	40° 19' 38.712 N
	+E-W	0.0 ft	Easting:	3,173,643.31 ft	Longitude:	104° 52' 37.884 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,780.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	11/17/2010	9.00	66.99	53,142

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	-83.8	0.0	98.40	

Survey Program	Date	12/23/2010			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
454.0	7,547.0	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	-83.8	0.0	0.0	0.00	0.00	0.00	
454.0	0.30	239.10	454.0	-84.4	-1.0	-0.9	0.07	0.07	0.00	
548.0	0.40	225.00	548.0	-84.8	-1.5	-1.3	0.14	0.11	-15.00	
641.0	0.30	240.20	641.0	-85.1	-1.9	-1.7	0.15	-0.11	16.34	
735.0	1.00	133.50	735.0	-85.8	-1.5	-1.2	1.20	0.74	-113.51	
828.0	2.70	89.20	827.9	-86.3	1.3	1.6	2.26	1.83	-47.63	
922.0	4.80	88.50	921.7	-86.2	7.4	7.7	2.23	2.23	-0.74	
1,015.0	6.70	99.40	1,014.3	-87.0	16.6	16.9	2.35	2.04	11.72	
1,109.0	8.70	94.90	1,107.4	-88.5	29.1	29.5	2.22	2.13	-4.79	
1,203.0	10.30	94.70	1,200.1	-89.8	44.6	45.0	1.70	1.70	-0.21	
1,296.0	11.20	92.00	1,291.5	-90.8	61.9	62.3	1.11	0.97	-2.90	
1,389.0	13.00	90.30	1,382.4	-91.1	81.4	81.6	1.97	1.94	-1.83	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Site Binder 10-NDU Pad Sec.10-T4N-R67W
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Site:	Binder 10-NDU Pad Sec.10-T4N-R67W	MD Reference:	WELL @ 4793.0ft (Original Well Elev)
Well:	Binder 10-SDU	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)
1,483.0	14.60	96.60	1,473.7	-92.6	103.7	103.9	2.33	1.70	6.70
1,577.0	16.40	99.70	1,564.3	-96.2	128.6	129.0	2.11	1.91	3.30
1,670.0	17.40	101.50	1,653.3	-101.1	155.2	156.0	1.21	1.08	1.94
1,764.0	17.90	98.60	1,742.8	-106.1	183.2	184.5	1.08	0.53	-3.09
1,857.0	17.60	94.00	1,831.4	-109.2	211.4	212.8	1.54	-0.32	-4.95
1,951.0	18.20	95.10	1,920.9	-111.5	240.2	241.7	0.73	0.64	1.17
2,045.0	18.50	95.00	2,010.1	-114.1	269.7	271.2	0.32	0.32	-0.11
2,138.0	17.70	92.80	2,098.5	-116.1	298.5	300.0	1.13	-0.86	-2.37
2,231.0	17.10	94.00	2,187.2	-117.8	326.2	327.7	0.75	-0.65	1.29
2,325.0	17.40	96.50	2,277.0	-120.3	354.0	355.5	0.85	0.32	2.66
2,418.0	17.40	100.70	2,365.8	-124.5	381.5	383.3	1.35	0.00	4.52
2,512.0	17.90	100.10	2,455.3	-129.6	409.5	411.8	0.57	0.53	-0.64
2,605.0	18.00	100.30	2,543.8	-134.7	437.7	440.4	0.13	0.11	0.22
2,699.0	17.80	99.90	2,633.3	-139.7	466.2	469.3	0.25	-0.21	-0.43
2,793.0	16.40	101.30	2,723.1	-144.8	493.3	496.9	1.55	-1.49	1.49
2,886.0	16.40	102.00	2,812.3	-150.1	519.0	523.2	0.21	0.00	0.75
2,980.0	16.20	99.70	2,902.5	-155.1	544.9	549.5	0.72	-0.21	-2.45
3,073.0	15.80	95.50	2,991.9	-158.5	570.3	575.1	1.32	-0.43	-4.52
3,167.0	15.80	97.60	3,082.4	-161.4	595.8	600.7	0.61	0.00	2.23
3,260.0	16.30	96.90	3,171.8	-164.7	621.3	626.4	0.58	0.54	-0.75
3,354.0	16.40	97.80	3,262.0	-168.0	647.5	652.9	0.29	0.11	0.96
3,448.0	16.40	93.60	3,352.1	-170.7	673.9	679.4	1.26	0.00	-4.47
3,541.0	16.30	93.40	3,441.4	-172.3	700.0	705.4	0.12	-0.11	-0.22
3,635.0	16.60	94.40	3,531.5	-174.1	726.6	732.0	0.44	0.32	1.06
3,728.0	18.20	96.90	3,620.3	-176.8	754.3	759.8	1.90	1.72	2.69
3,822.0	17.90	96.90	3,709.6	-180.3	783.2	788.9	0.32	-0.32	0.00
3,915.0	17.70	97.00	3,798.2	-183.8	811.4	817.3	0.22	-0.22	0.11
4,008.0	17.20	96.70	3,886.9	-187.1	839.1	845.2	0.55	-0.54	-0.32
4,102.0	16.50	98.60	3,976.9	-190.7	866.1	872.4	0.95	-0.74	2.02
4,195.0	16.00	98.90	4,066.2	-194.7	891.8	898.4	0.55	-0.54	0.32
4,289.0	16.60	99.30	4,156.4	-198.9	917.9	924.8	0.65	0.64	0.43
4,383.0	17.00	100.80	4,246.4	-203.6	944.6	952.0	0.63	0.43	1.60
4,476.0	16.60	96.20	4,335.4	-207.6	971.2	978.8	1.49	-0.43	-4.95
4,570.0	16.30	99.60	4,425.6	-211.2	997.5	1,005.4	1.07	-0.32	3.62
4,663.0	17.90	101.30	4,514.4	-216.2	1,024.4	1,032.8	1.80	1.72	1.83
4,756.0	17.70	100.50	4,603.0	-221.6	1,052.3	1,061.2	0.34	-0.22	-0.86
4,850.0	19.20	97.80	4,692.2	-226.3	1,081.7	1,090.9	1.84	1.60	-2.87
4,944.0	18.20	98.80	4,781.2	-230.6	1,111.5	1,121.0	1.12	-1.06	1.06
5,037.0	15.60	99.80	4,870.2	-235.0	1,138.2	1,148.1	2.81	-2.80	1.08
5,131.0	13.30	97.90	4,961.2	-238.6	1,161.4	1,171.5	2.50	-2.45	-2.02
5,224.0	12.00	96.50	5,051.9	-241.2	1,181.6	1,191.9	1.44	-1.40	-1.51
5,318.0	10.00	96.80	5,144.2	-243.3	1,199.4	1,209.8	2.13	-2.13	0.32
5,412.0	7.60	97.60	5,237.1	-245.1	1,213.6	1,224.2	2.56	-2.55	0.85
5,505.0	5.60	99.20	5,329.5	-246.6	1,224.2	1,234.9	2.16	-2.15	1.72
5,599.0	4.60	95.40	5,423.1	-247.7	1,232.5	1,243.2	1.12	-1.06	-4.04
5,679.1	3.74	90.01	5,503.0	-248.0	1,238.3	1,249.0	1.18	-1.08	-6.73
PERMIT TARGET BHL 2594'FNL, 1371'FEL									
5,692.0	3.60	88.90	5,515.9	-248.0	1,239.1	1,249.8	1.18	-1.05	-8.59
5,786.0	2.50	97.90	5,609.7	-248.2	1,244.1	1,254.8	1.27	-1.17	9.57
5,879.0	1.50	109.50	5,702.7	-248.9	1,247.3	1,258.0	1.15	-1.08	12.47
5,973.0	1.40	114.90	5,796.6	-249.8	1,249.5	1,260.3	0.18	-0.11	5.74
6,066.0	1.20	120.90	5,889.6	-250.8	1,251.3	1,262.3	0.26	-0.22	6.45
6,076.7	1.17	123.15	5,900.3	-250.9	1,251.5	1,262.5	0.52	-0.29	20.97

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Well:	Binder 10-SDU	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)
DRILL TARGET BHL 2570'FNL, 1371'FEL									
6,160.0	1.00	144.60	5,983.6	-251.9	1,252.7	1,263.8	0.52	-0.20	25.76
6,254.0	0.70	170.30	6,077.6	-253.2	1,253.2	1,264.5	0.51	-0.32	27.34
6,347.0	0.70	182.00	6,170.6	-254.3	1,253.3	1,264.8	0.15	0.00	12.58
6,440.0	0.70	200.00	6,263.6	-255.4	1,253.1	1,264.7	0.24	0.00	19.35
6,534.0	0.80	216.20	6,357.6	-256.5	1,252.5	1,264.3	0.25	0.11	17.23
6,627.0	0.90	234.90	6,450.6	-257.4	1,251.5	1,263.5	0.32	0.11	20.11
6,721.0	1.00	246.20	6,544.5	-258.2	1,250.2	1,262.2	0.23	0.11	12.02
6,814.0	1.10	241.20	6,637.5	-258.9	1,248.6	1,260.8	0.15	0.11	-5.38
6,908.0	1.00	219.00	6,731.5	-260.0	1,247.3	1,259.7	0.44	-0.11	-23.62
7,002.0	1.10	223.90	6,825.5	-261.3	1,246.2	1,258.8	0.14	0.11	5.21
7,095.0	1.20	229.90	6,918.5	-262.6	1,244.8	1,257.6	0.17	0.11	6.45
7,189.0	0.90	235.60	7,012.5	-263.6	1,243.5	1,256.4	0.34	-0.32	6.06
7,282.0	0.40	197.20	7,105.5	-264.3	1,242.8	1,255.8	0.68	-0.54	-41.29
7,376.0	0.60	191.20	7,199.5	-265.1	1,242.6	1,255.7	0.22	0.21	-6.38
7,500.0	0.90	215.10	7,323.4	-266.6	1,241.9	1,255.3	0.34	0.24	19.27
7,527.8	0.90	215.10	7,351.3	-266.9	1,241.6	1,255.1	0.00	0.00	0.00
HARDLINE 75'S OF BHL									
7,547.0	0.90	215.10	7,370.4	-267.2	1,241.5	1,254.9	0.00	0.00	0.00

Checked By: _____ Approved By: _____ Date: _____