

Well Name: **Binder 10-CDU**

Surface Location: Binder 10-NDU Pad Sec.10-T4N-R67W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

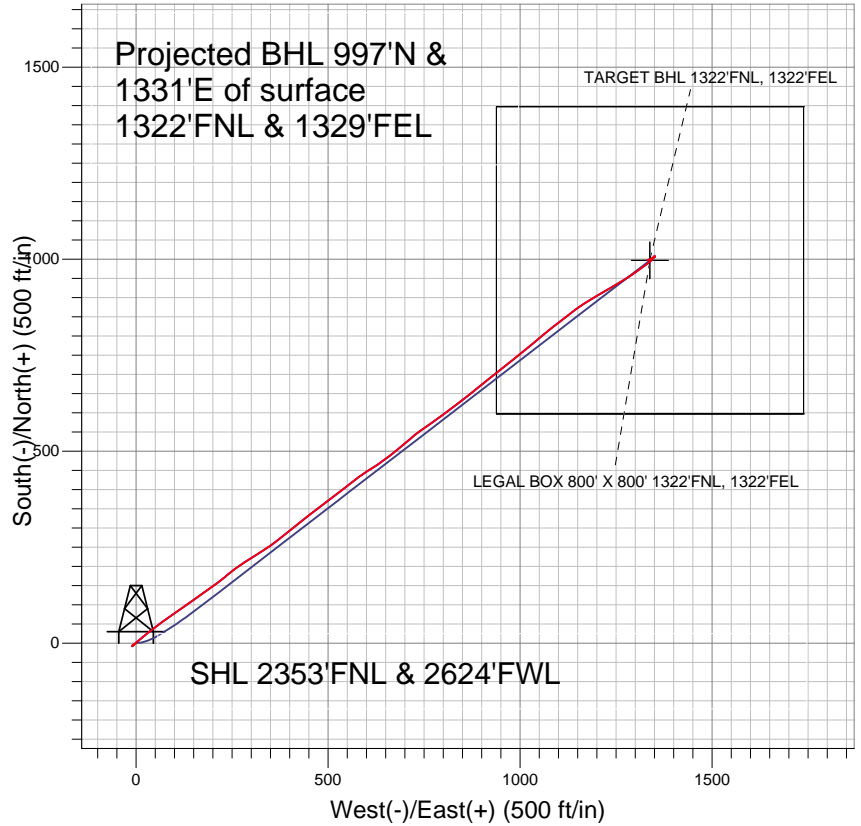
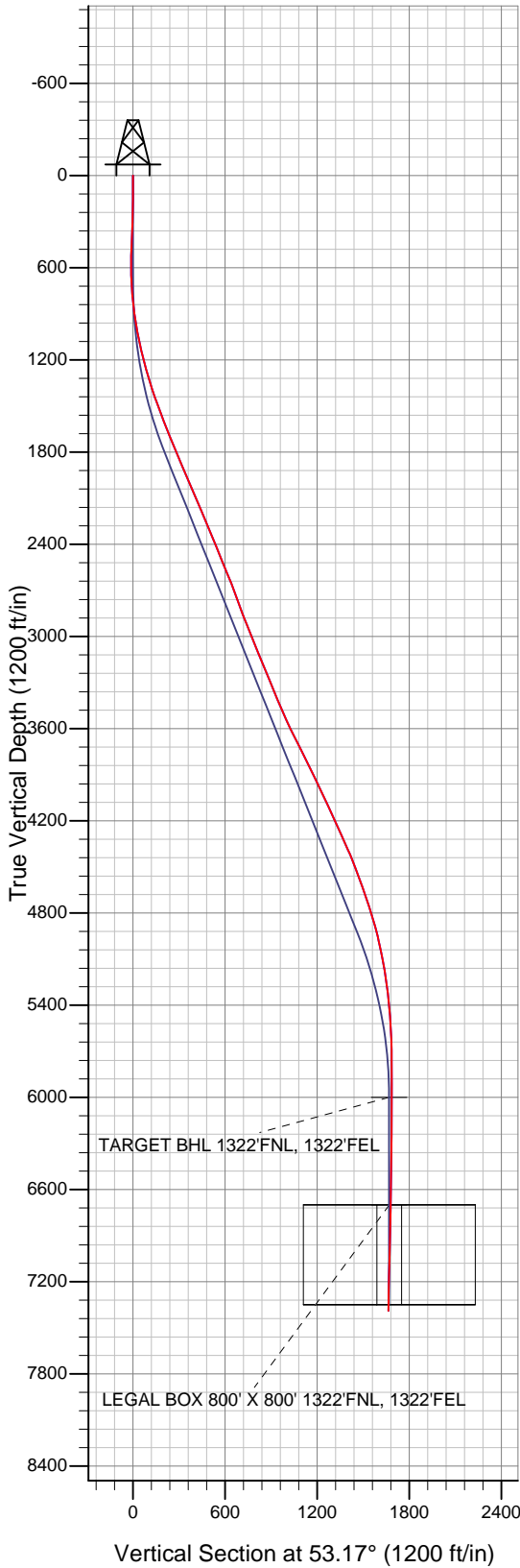
Ground Elevation: 4780.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	1362813.50	3173642.72	40° 19' 39.540 N	104° 52' 37.884 W

Original Well Elev WELL @ 4793.0ft (Original Well Elev)

Slot

PETROLEUM DEVELOPMENT CORP Weld County CO



LEGEND

- ✕ Binder 10-CDU, Wellbore #1, Plan #2 (9-24-10) V0
- Wellbore #1
- Survey #1

Final Survey Plot

Projected Final Survey -
7708'MD & 7390'TVD @ 1663'VS
1.1 deg Inc 246.5 deg AZ

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



Directional

PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.10-T4N-R67W

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

Binder 10-CDU

Wellbore #1

Design: Wellbore #1

Standard Survey Report

03 December, 2010



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Binder 10-CDU
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-CDU	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-CDU					
Well Position	+N/-S	0.0 ft	Northing:	1,362,813.50 ft	Latitude:	40° 19' 39.540 N
	+E/-W	0.0 ft	Easting:	3,173,642.72 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	11/23/2010	8.99	66.99	53,141

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	53.17

Survey Program	Date	12/3/2010			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
458.0	7,708.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard	

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
458.0	2.50	235.80	457.9	-5.6	-8.3	-10.0	0.55	0.55	0.00
552.0	1.50	203.00	551.8	-7.9	-10.4	-13.1	1.58	-1.06	-34.89
645.0	2.50	49.60	644.8	-7.7	-9.4	-12.1	4.19	1.08	-164.95
738.0	3.60	40.20	737.6	-4.2	-5.9	-7.2	1.30	1.18	-10.11
832.0	5.80	49.00	831.3	1.2	-0.5	0.4	2.46	2.34	9.36
926.0	8.30	51.00	924.6	8.6	8.4	11.9	2.67	2.66	2.13
1,019.0	10.60	52.80	1,016.3	18.0	20.4	27.1	2.49	2.47	1.94
1,113.0	12.80	52.20	1,108.4	29.6	35.6	46.2	2.34	2.34	-0.64
1,207.0	14.90	52.60	1,199.6	43.3	53.4	68.7	2.24	2.23	0.43
1,300.0	16.00	51.30	1,289.3	58.6	72.9	93.5	1.24	1.18	-1.40
1,394.0	17.10	56.90	1,379.4	74.3	94.6	120.2	2.06	1.17	5.96

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Binder 10-CDU
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-CDU	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)
1,487.0	20.70	56.50	1,467.4	90.8	119.7	150.3	3.87	3.87	-0.43
1,580.0	20.10	52.80	1,554.5	109.5	146.2	182.7	1.53	-0.65	-3.98
1,674.0	21.40	53.80	1,642.4	129.4	172.9	216.0	1.43	1.38	1.06
1,768.0	23.10	55.70	1,729.4	149.9	202.0	251.5	1.96	1.81	2.02
1,861.0	23.10	50.60	1,815.0	171.8	231.1	288.0	2.15	0.00	-5.48
1,955.0	22.50	52.70	1,901.6	194.4	259.7	324.4	1.08	-0.64	2.23
2,049.0	23.70	58.10	1,988.1	215.3	290.0	361.2	2.59	1.28	5.74
2,142.0	23.10	58.00	2,073.5	234.8	321.4	398.0	0.65	-0.65	-0.11
2,235.0	22.30	54.40	2,159.3	254.8	351.2	433.8	1.72	-0.86	-3.87
2,329.0	22.80	51.10	2,246.1	276.6	379.9	469.9	1.45	0.53	-3.51
2,423.0	23.40	50.60	2,332.5	299.9	408.5	506.7	0.67	0.64	-0.53
2,516.0	22.20	52.10	2,418.3	322.4	436.6	542.7	1.43	-1.29	1.61
2,610.0	22.00	53.10	2,505.4	343.9	464.7	578.1	0.45	-0.21	1.06
2,703.0	22.00	52.50	2,591.6	365.0	492.5	612.9	0.24	0.00	-0.65
2,797.0	22.10	52.70	2,678.7	386.4	520.5	648.2	0.13	0.11	0.21
2,890.0	19.60	51.40	2,765.6	406.7	546.6	681.3	2.73	-2.69	-1.40
2,984.0	20.50	52.80	2,853.9	426.5	572.0	713.5	1.09	0.96	1.49
3,077.0	22.20	57.70	2,940.5	445.7	599.9	747.3	2.65	1.83	5.27
3,171.0	21.80	56.00	3,027.7	465.0	629.3	782.5	0.80	-0.43	-1.81
3,265.0	22.50	52.40	3,114.8	485.7	658.1	817.9	1.62	0.74	-3.83
3,359.0	22.60	49.70	3,201.6	508.4	686.1	853.9	1.11	0.11	-2.87
3,453.0	22.20	50.10	3,288.5	531.5	713.5	889.7	0.46	-0.43	0.43
3,546.0	22.50	54.00	3,374.5	553.2	741.4	925.0	1.63	0.32	4.19
3,640.0	23.80	54.70	3,460.9	574.7	771.4	962.0	1.41	1.38	0.74
3,733.0	24.00	54.00	3,546.0	596.7	802.0	999.6	0.37	0.22	-0.75
3,826.0	26.20	52.40	3,630.2	620.3	833.6	1,039.1	2.48	2.37	-1.72
3,920.0	26.80	52.50	3,714.3	645.9	866.8	1,081.0	0.64	0.64	0.11
4,014.0	26.70	51.10	3,798.2	672.1	900.1	1,123.3	0.68	-0.11	-1.49
4,107.0	26.20	49.90	3,881.5	698.4	932.0	1,164.7	0.79	-0.54	-1.29
4,201.0	26.00	51.50	3,965.9	724.6	964.0	1,206.0	0.78	-0.21	1.70
4,295.0	24.30	53.00	4,051.0	749.1	995.6	1,245.9	1.93	-1.81	1.60
4,388.0	25.60	49.00	4,135.3	773.8	1,026.1	1,285.1	2.29	1.40	-4.30
4,482.0	24.20	50.30	4,220.6	799.4	1,056.2	1,324.6	1.60	-1.49	1.38
4,575.0	23.90	51.80	4,305.5	823.2	1,085.7	1,362.5	0.73	-0.32	1.61
4,668.0	23.90	52.80	4,390.5	846.3	1,115.5	1,400.2	0.44	0.00	1.08
4,762.0	21.50	52.00	4,477.3	868.4	1,144.2	1,436.4	2.57	-2.55	-0.85
4,855.0	20.20	59.90	4,564.2	886.9	1,171.6	1,469.4	3.33	-1.40	8.49
4,949.0	19.60	59.20	4,652.6	903.1	1,199.2	1,501.2	0.69	-0.64	-0.74
5,043.0	18.60	58.80	4,741.4	919.0	1,225.5	1,531.8	1.07	-1.06	-0.43
5,136.0	16.90	59.40	4,830.0	933.5	1,249.8	1,560.0	1.84	-1.83	0.65
5,230.0	14.20	59.30	4,920.5	946.4	1,271.5	1,585.1	2.87	-2.87	-0.11
5,323.0	12.40	55.00	5,011.0	957.9	1,289.5	1,606.4	2.21	-1.94	-4.62
5,417.0	10.70	54.50	5,103.1	968.8	1,304.9	1,625.2	1.81	-1.81	-0.53
5,511.0	9.10	53.90	5,195.7	978.2	1,318.0	1,641.4	1.71	-1.70	-0.64
5,604.0	7.90	53.60	5,287.7	986.4	1,329.1	1,655.1	1.29	-1.29	-0.32
5,698.0	5.30	52.30	5,381.1	992.9	1,337.7	1,665.9	2.77	-2.77	-1.38
5,791.0	4.70	40.10	5,473.7	998.4	1,343.6	1,673.9	1.31	-0.65	-13.12
5,885.0	2.30	37.00	5,567.5	1,002.9	1,347.2	1,679.5	2.56	-2.55	-3.30
5,978.0	2.10	68.70	5,660.5	1,005.0	1,349.9	1,682.9	1.31	-0.22	34.09
6,071.0	0.40	340.90	5,753.4	1,005.9	1,351.4	1,684.6	2.28	-1.83	-94.41
6,165.0	0.40	323.70	5,847.4	1,006.5	1,351.1	1,684.7	0.13	0.00	-18.30
6,259.0	0.50	350.10	5,941.4	1,007.1	1,350.8	1,684.9	0.24	0.11	28.09
6,317.5	0.41	325.93	6,000.0	1,007.6	1,350.7	1,685.1	0.36	-0.16	-41.28

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Survey									
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TARGET BHL 1322'FNL, 1322'FEL									
6,352.0	0.40	308.40	6,034.4	1,007.7	1,350.5	1,685.0	0.36	-0.03	-50.88
6,446.0	0.40	260.80	6,128.4	1,007.9	1,349.9	1,684.7	0.34	0.00	-50.64
6,539.0	0.60	208.20	6,221.4	1,007.4	1,349.4	1,683.9	0.51	0.22	-56.56
6,633.0	0.60	204.30	6,315.4	1,006.5	1,348.9	1,683.1	0.04	0.00	-4.15
6,727.0	0.50	223.70	6,409.4	1,005.8	1,348.4	1,682.2	0.22	-0.11	20.64
6,820.0	0.70	235.10	6,502.4	1,005.2	1,347.7	1,681.3	0.25	0.22	12.26
6,914.0	0.90	220.30	6,596.4	1,004.3	1,346.7	1,680.0	0.30	0.21	-15.74
7,007.0	1.10	238.90	6,689.4	1,003.3	1,345.5	1,678.4	0.41	0.22	20.00
7,017.8	1.12	239.66	6,700.2	1,003.1	1,345.3	1,678.2	0.25	0.21	7.01
LEGAL BOX 800' X 800' 1322'FNL, 1322'FEL									
7,101.0	1.30	244.60	6,783.4	1,002.3	1,343.8	1,676.4	0.25	0.21	5.94
7,194.0	1.40	244.20	6,876.3	1,001.4	1,341.8	1,674.3	0.11	0.11	-0.43
7,288.0	1.40	244.20	6,970.3	1,000.4	1,339.7	1,672.0	0.00	0.00	0.00
7,382.0	1.40	247.80	7,064.3	999.4	1,337.6	1,669.8	0.09	0.00	3.83
7,475.0	1.30	249.60	7,157.3	998.7	1,335.6	1,667.7	0.12	-0.11	1.94
7,569.0	1.30	246.20	7,251.2	997.8	1,333.6	1,665.6	0.08	0.00	-3.62
7,662.0	1.10	246.50	7,344.2	997.1	1,331.8	1,663.7	0.22	-0.22	0.32
7,708.0	1.10	246.50	7,390.2	996.7	1,331.0	1,662.8	0.00	0.00	0.00

Checked By: _____ Approved By: _____ Date: _____