

Well Name: **Binder 32-10DU**

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

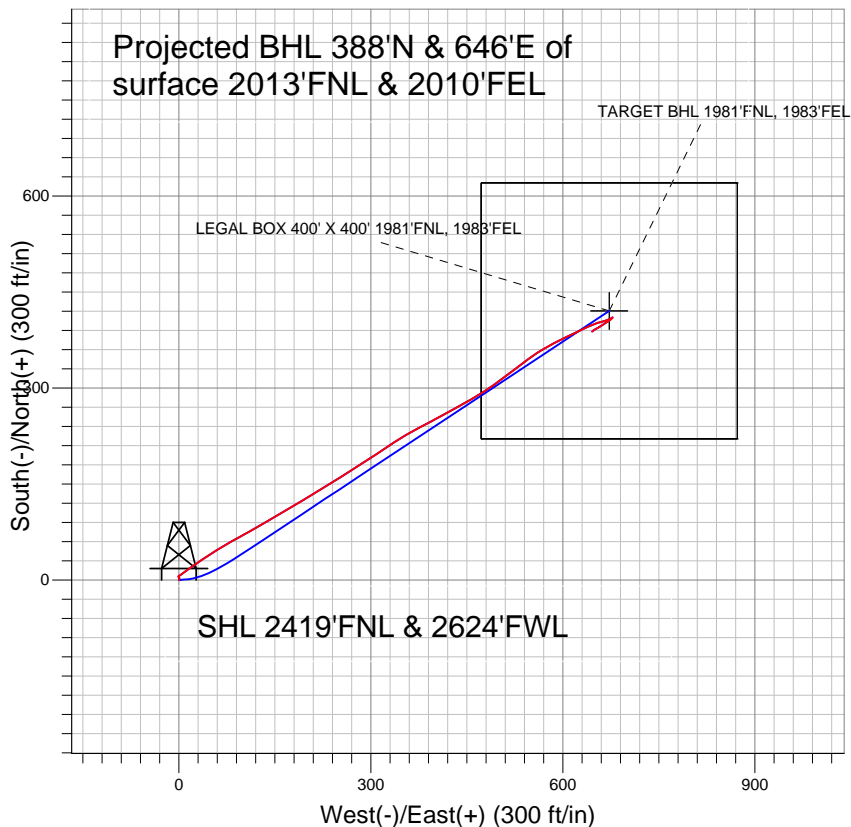
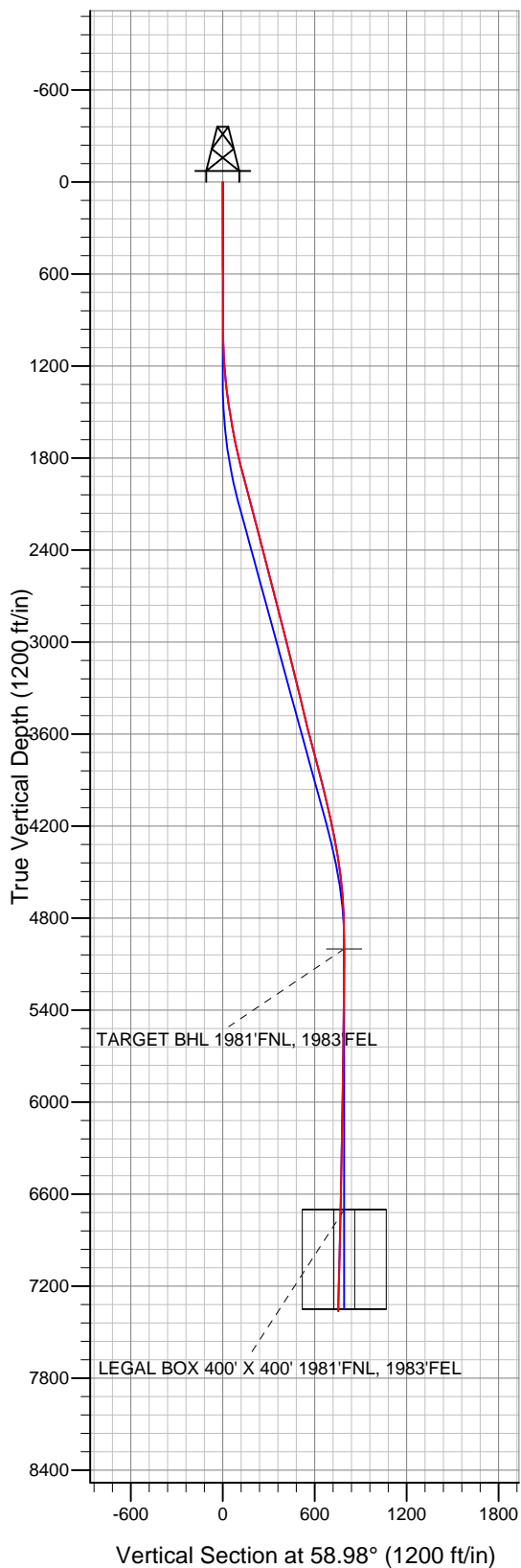
Ground Elevation: 4780.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	1362751.57	3173643.16	40° 19' 38.928 N	104° 52' 37.884 W

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

Slot

PETROLEUM DEVELOPMENT CORP Weld County CO



LEGEND

- △ Binder 32-10DU, Wellbore #1, Plan #2 (9-23-10) V0
- Wellbore #1
- Survey #1

Final Survey Plot

Projected Final Survey -
7453'MD & 7362'TVD @ 753' VS
1.5 deg Inc 231.3 deg AZ

Project: SEC.10-T4N-R67W
Site: Binder 10-NDU Pad Sec.10-T4N-R67W
Well: Binder 32-10DU
Plan: Wellbore #1



Directional

PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.10-T4N-R67W

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

Binder 32-10DU

Wellbore #1

Survey: Survey #1

Standard Survey Report

14 December, 2010

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Binder 32-10DU
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 32-10DU	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 32-10DU					
Well Position	+N-S	0.0 ft	Northing:	1,362,751.57 ft	Latitude:	40° 19' 38.928 N
	+E-W	0.0 ft	Easting:	3,173,643.16 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	12/8/2010	8.99	66.99	53,136

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	58.98	

Survey Program	Date	12/14/2010			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
452.0	7,453.0	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	
452.0	0.40	20.50	452.0	1.5	0.6	1.2	0.09	0.09	0.00	
546.0	0.60	2.40	546.0	2.3	0.7	1.8	0.27	0.21	-19.26	
639.0	0.50	352.30	639.0	3.2	0.7	2.2	0.15	-0.11	-10.86	
733.0	0.40	317.60	733.0	3.8	0.4	2.3	0.30	-0.11	-36.91	
827.0	0.50	320.90	827.0	4.4	-0.1	2.2	0.11	0.11	3.51	
920.0	0.50	315.90	920.0	5.0	-0.6	2.0	0.05	0.00	-5.38	
1,014.0	1.00	40.10	1,014.0	5.9	-0.4	2.7	1.14	0.53	89.57	
1,107.0	2.40	60.60	1,106.9	7.5	1.8	5.4	1.62	1.51	22.04	
1,201.0	4.40	54.90	1,200.8	10.5	6.5	11.0	2.16	2.13	-6.06	
1,294.0	5.70	50.20	1,293.4	15.5	13.0	19.1	1.47	1.40	-5.05	
1,388.0	7.20	57.10	1,386.8	21.7	21.5	29.6	1.79	1.60	7.34	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Binder 32-10DU
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Site:	Binder 10-NDU Pad Sec.10-T4N-R67W	MD Reference:	WELL @ 4793.0ft (Original Well Elev)
Well:	Binder 32-10DU	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)
1,481.0	8.90	56.20	1,478.9	28.9	32.4	42.6	1.83	1.83	-0.97
1,575.0	10.00	56.30	1,571.6	37.5	45.2	58.0	1.17	1.17	0.11
1,668.0	11.20	57.80	1,663.0	46.8	59.6	75.1	1.32	1.29	1.61
1,762.0	12.80	59.40	1,755.0	56.9	76.2	94.7	1.74	1.70	1.70
1,855.0	13.60	61.80	1,845.5	67.3	94.7	115.9	1.04	0.86	2.58
1,949.0	15.70	60.80	1,936.4	78.8	115.6	139.6	2.25	2.23	-1.06
2,042.0	15.20	60.00	2,026.1	91.0	137.1	164.4	0.58	-0.54	-0.86
2,136.0	14.60	58.70	2,116.9	103.3	157.9	188.6	0.73	-0.64	-1.38
2,229.0	14.50	58.10	2,206.9	115.5	177.8	211.9	0.19	-0.11	-0.65
2,323.0	14.10	59.70	2,298.0	127.5	197.7	235.2	0.60	-0.43	1.70
2,417.0	14.10	60.20	2,389.2	139.0	217.5	258.1	0.13	0.00	0.53
2,510.0	15.30	58.40	2,479.1	151.1	237.8	281.7	1.38	1.29	-1.94
2,604.0	15.30	57.60	2,569.8	164.2	258.8	306.5	0.22	0.00	-0.85
2,697.0	14.80	55.90	2,659.6	177.4	279.0	330.6	0.72	-0.54	-1.83
2,791.0	13.70	57.40	2,750.7	190.2	298.4	353.7	1.23	-1.17	1.60
2,884.0	14.30	55.80	2,841.0	202.6	317.1	376.2	0.77	0.65	-1.72
2,978.0	14.20	58.00	2,932.1	215.2	336.5	399.3	0.59	-0.11	2.34
3,071.0	13.70	59.20	3,022.3	226.9	355.6	421.7	0.62	-0.54	1.29
3,165.0	14.20	62.80	3,113.6	237.9	375.5	444.3	1.07	0.53	3.83
3,258.0	13.90	60.90	3,203.8	248.5	395.4	466.9	0.59	-0.32	-2.04
3,352.0	13.90	61.60	3,295.0	259.4	415.2	489.5	0.18	0.00	0.74
3,445.0	13.80	60.90	3,385.3	270.1	434.7	511.7	0.21	-0.11	-0.75
3,539.0	13.00	61.10	3,476.8	280.6	453.7	533.5	0.85	-0.85	0.21
3,633.0	13.60	57.60	3,568.2	291.7	472.3	555.1	1.07	0.64	-3.72
3,726.0	15.40	54.80	3,658.3	304.6	491.7	578.3	2.08	1.94	-3.01
3,820.0	15.10	53.30	3,749.0	319.2	511.7	603.0	0.53	-0.32	-1.60
3,913.0	14.60	52.40	3,838.9	333.5	530.7	626.7	0.59	-0.54	-0.97
4,007.0	14.40	53.70	3,929.9	347.7	549.5	650.1	0.41	-0.21	1.38
4,100.0	13.00	59.80	4,020.2	359.8	567.8	672.0	2.16	-1.51	6.56
4,194.0	12.40	62.30	4,111.9	369.8	585.9	692.7	0.87	-0.64	2.66
4,287.0	12.80	64.40	4,202.7	378.9	604.0	712.9	0.65	0.43	2.26
4,381.0	11.50	64.80	4,294.6	387.4	621.9	732.6	1.39	-1.38	0.43
4,474.0	9.80	64.80	4,386.0	394.7	637.5	749.7	1.83	-1.83	0.00
4,568.0	6.90	68.80	4,479.0	400.2	650.0	763.2	3.14	-3.09	4.26
4,661.0	5.90	77.60	4,571.4	403.2	659.8	773.3	1.50	-1.08	9.46
4,755.0	4.70	68.40	4,665.0	405.7	668.1	781.6	1.56	-1.28	-9.79
4,848.0	2.70	64.50	4,757.8	408.0	673.7	787.6	2.17	-2.15	-4.19
4,942.0	0.70	65.70	4,851.7	409.2	676.2	790.4	2.13	-2.13	1.28
5,036.0	0.50	51.40	4,945.7	409.7	677.0	791.3	0.26	-0.21	-15.21
5,090.3	0.32	59.97	5,000.0	409.9	677.3	791.7	0.35	-0.33	15.79
TARGET BHL 1981'FNL, 1983'FEL									
5,130.0	0.20	75.80	5,039.7	410.0	677.5	791.9	0.35	-0.30	39.84
5,223.0	0.10	8.60	5,132.7	410.1	677.7	792.1	0.20	-0.11	-72.26
5,317.0	0.20	242.90	5,226.7	410.1	677.5	792.0	0.29	0.11	-133.72
5,411.0	0.30	228.50	5,320.7	409.9	677.2	791.6	0.12	0.11	-15.32
5,504.0	0.60	213.60	5,413.7	409.3	676.8	790.9	0.34	0.32	-16.02
5,598.0	1.10	223.00	5,507.7	408.2	675.9	789.6	0.55	0.53	10.00
5,691.0	1.20	228.30	5,600.7	406.9	674.5	787.8	0.16	0.11	5.70
5,785.0	1.10	231.30	5,694.7	405.7	673.1	785.9	0.12	-0.11	3.19
5,878.0	1.10	246.20	5,787.7	404.8	671.6	784.2	0.31	0.00	16.02
5,972.0	0.90	231.00	5,881.7	404.0	670.2	782.5	0.35	-0.21	-16.17
6,066.0	0.90	239.40	5,975.6	403.1	669.0	781.1	0.14	0.00	8.94
6,159.0	0.70	230.10	6,068.6	402.4	667.9	779.8	0.26	-0.22	-10.00

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Survey									
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6,253.0	0.80	237.00	6,162.6	401.7	666.9	778.5	0.14	0.11	7.34
6,347.0	0.90	234.40	6,256.6	400.9	665.8	777.1	0.11	0.11	-2.77
6,440.0	0.90	241.40	6,349.6	400.1	664.5	775.7	0.12	0.00	7.53
6,534.0	0.90	244.40	6,443.6	399.4	663.2	774.2	0.05	0.00	3.19
6,628.0	1.10	232.70	6,537.6	398.6	661.8	772.6	0.30	0.21	-12.45
6,721.0	1.10	236.70	6,630.6	397.5	660.4	770.8	0.08	0.00	4.30
6,790.0	1.17	238.73	6,699.5	396.8	659.2	769.4	0.12	0.11	2.94
LEGAL BOX 400' X 400' 1981'FNL, 1983'FEL									
6,815.0	1.20	239.40	6,724.5	396.5	658.8	768.9	0.12	0.11	2.69
6,908.0	1.30	239.60	6,817.5	395.5	657.0	766.9	0.11	0.11	0.22
7,002.0	1.50	237.80	6,911.5	394.3	655.1	764.6	0.22	0.21	-1.91
7,095.0	1.50	241.10	7,004.5	393.1	653.0	762.2	0.09	0.00	3.55
7,189.0	1.30	239.40	7,098.4	391.9	651.0	759.9	0.22	-0.21	-1.81
7,283.0	1.30	239.20	7,192.4	390.9	649.1	757.7	0.00	0.00	-0.21
7,376.0	1.50	231.30	7,285.4	389.6	647.3	755.5	0.30	0.22	-8.49
7,453.0	1.50	231.30	7,362.4	388.3	645.7	753.5	0.00	0.00	0.00

Checked By: _____ Approved By: _____ Date: _____