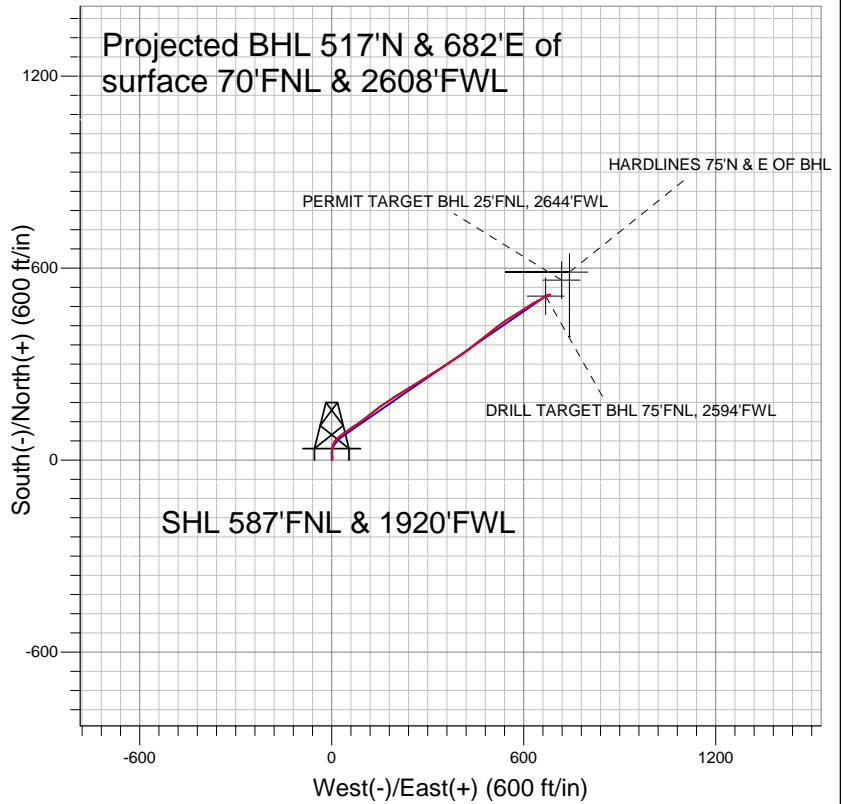


PETROLEUM DEVELOPMENT CORP Weld County CO



LEGEND

- ◆ Bauer Debus 22MD, Wellbore #1, Plan #1 (5-15-10) V0
- Wellbore #1
- Survey #1

Final Survey Plot

Projected Final Survey -
 6972'MD & 6883'TVD @ 856' VS
 0.3 deg Inc 79.8 deg AZ

Project: SEC.22-T5N-R64W
 Site: Bauer Debus 22AD Pad Sec.22-T5N-R64W
 Well: Bauer Debus 22MD
 Plan: Wellbore #1



Directional

PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.22-T5N-R64W

Bauer Debus 22AD Pad Sec.22-T5N-R64W

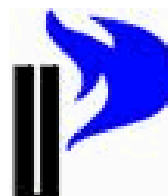
Bauer Debus 22MD

Wellbore #1

Survey: Survey #1

Standard Survey Report

13 October, 2010





Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Bauer Debus 22MD
Project:	SEC.22-T5N-R64W	TVD Reference:	WELL @ 4588.0ft (Original Well Elev)
Site:	Bauer Debus 22AD Pad Sec.22-T5N-R64W	MD Reference:	WELL @ 4588.0ft (Original Well Elev)
Well:	Bauer Debus 22MD	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Project	SEC.22-T5N-R64W, 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		Bauer Debus 22AD Pad Sec.22-T5N-R64W			
Site Position:		Northing:	1,386,514.33ft	Latitude:	40° 23' 25.440 N
From:	Lat/Long	Easting:	3,267,745.18ft	Longitude:	104° 32' 19.572 W
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.62 °

Well	Bauer Debus 22MD					
Well Position	+N-S	0.0 ft	Northing:	1,386,551.38 ft	Latitude:	40° 23' 25.800 N
	+E-W	0.0 ft	Easting:	3,267,803.27 ft	Longitude:	104° 32' 18.816 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,575.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	10/7/2010	8.83	67.10	53,226

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	52.83	

Survey Program	Date	10/13/2010			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
148.0	6,972.0	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	
148.0	0.80	51.10	148.0	0.6	0.8	1.0	0.54	0.54	0.00	
239.0	2.10	15.10	239.0	2.7	1.7	3.0	1.68	1.43	-39.56	
329.0	3.60	359.00	328.9	7.1	2.1	6.0	1.87	1.67	-17.89	
419.0	5.70	351.40	418.6	14.3	1.4	9.8	2.43	2.33	-8.44	
508.0	7.00	0.50	507.0	24.1	0.8	15.2	1.84	1.46	10.22	
605.0	7.90	10.50	603.2	36.6	2.0	23.7	1.62	0.93	10.31	
636.0	8.10	15.70	633.9	40.8	3.0	27.1	2.42	0.65	16.77	
701.0	8.00	16.70	698.2	49.5	5.6	34.4	0.26	-0.15	1.54	
795.0	9.10	40.00	791.2	61.5	12.2	46.9	3.84	1.17	24.79	
890.0	9.40	49.10	885.0	72.3	22.9	62.0	1.57	0.32	9.58	
985.0	10.30	55.30	978.6	82.2	35.8	78.2	1.46	0.95	6.53	



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Bauer Debus 22MD
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Site:	Bauer Debus 22AD Pad Sec.22-T5N-R64W	MD Reference:	WELL @ 4588.0ft (Original Well Elev)
Well:	Bauer Debus 22MD	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)
1,080.0	11.30	55.80	1,071.9	92.3	50.4	96.0	1.06	1.05	0.53
1,174.0	11.70	55.60	1,164.0	102.9	65.9	114.7	0.43	0.43	-0.21
1,269.0	11.70	55.60	1,257.1	113.7	81.8	133.9	0.00	0.00	0.00
1,364.0	12.10	55.20	1,350.0	124.9	97.9	153.5	0.43	0.42	-0.42
1,460.0	12.20	49.30	1,443.9	137.2	113.9	173.7	1.30	0.10	-6.15
1,555.0	12.20	51.10	1,536.7	150.1	129.3	193.7	0.40	0.00	1.89
1,649.0	12.50	53.70	1,628.5	162.3	145.3	213.8	0.67	0.32	2.77
1,744.0	12.70	55.70	1,721.3	174.3	162.2	234.5	0.51	0.21	2.11
1,837.0	12.30	57.80	1,812.1	185.3	179.0	254.6	0.65	-0.43	2.26
1,932.0	12.50	56.10	1,904.8	196.5	196.1	275.0	0.44	0.21	-1.79
2,026.0	12.60	58.60	1,996.6	207.5	213.3	295.3	0.59	0.11	2.66
2,121.0	12.80	58.40	2,089.3	218.4	231.1	316.1	0.22	0.21	-0.21
2,216.0	12.70	58.60	2,181.9	229.4	249.0	337.0	0.12	-0.11	0.21
2,311.0	12.70	58.80	2,274.6	240.2	266.8	357.7	0.05	0.00	0.21
2,407.0	13.40	58.00	2,368.1	251.6	285.3	379.3	0.75	0.73	-0.83
2,502.0	12.80	55.90	2,460.7	263.3	303.3	400.8	0.81	-0.63	-2.21
2,596.0	13.60	57.90	2,552.2	275.0	321.3	422.2	0.98	0.85	2.13
2,691.0	14.40	59.70	2,644.3	286.9	341.0	445.0	0.96	0.84	1.89
2,786.0	13.40	53.80	2,736.6	299.4	360.1	467.8	1.82	-1.05	-6.21
2,881.0	14.00	57.50	2,828.9	312.0	378.6	490.2	1.12	0.63	3.89
2,975.0	13.60	56.80	2,920.2	324.2	397.5	512.6	0.46	-0.43	-0.74
3,069.0	13.50	54.40	3,011.5	336.6	415.6	534.6	0.61	-0.11	-2.55
3,164.0	13.80	52.00	3,103.9	350.1	433.6	557.0	0.67	0.32	-2.53
3,259.0	13.40	52.10	3,196.2	363.8	451.2	579.3	0.42	-0.42	0.11
3,354.0	12.60	52.70	3,288.8	376.9	468.1	600.7	0.85	-0.84	0.63
3,448.0	11.60	49.00	3,380.7	389.3	483.4	620.4	1.35	-1.06	-3.94
3,543.0	12.20	50.40	3,473.6	401.9	498.4	640.0	0.70	0.63	1.47
3,638.0	12.80	53.90	3,566.4	414.5	514.6	660.5	1.02	0.63	3.68
3,732.0	13.10	54.80	3,658.0	426.8	531.7	681.6	0.38	0.32	0.96
3,827.0	13.40	58.70	3,750.5	438.7	549.9	703.3	0.99	0.32	4.11
3,921.0	12.00	56.40	3,842.2	449.8	567.4	723.9	1.58	-1.49	-2.45
4,017.0	11.10	56.70	3,936.2	460.4	583.4	743.0	0.94	-0.94	0.31
4,110.0	11.40	59.20	4,027.4	470.0	598.8	761.1	0.62	0.32	2.69
4,204.0	11.90	56.80	4,119.5	480.1	614.9	780.0	0.74	0.53	-2.55
4,299.0	10.50	60.40	4,212.7	489.7	630.6	798.4	1.65	-1.47	3.79
4,393.0	9.10	60.70	4,305.3	497.6	644.5	814.2	1.49	-1.49	0.32
4,487.0	6.00	59.60	4,398.5	503.7	655.2	826.5	3.30	-3.30	-1.17
4,580.0	4.70	50.60	4,491.1	508.6	662.4	835.1	1.66	-1.40	-9.68
4,675.0	2.50	52.20	4,585.9	512.3	667.0	841.1	2.32	-2.32	1.68
4,770.0	1.10	67.90	4,680.8	513.9	669.5	844.0	1.55	-1.47	16.53
4,865.0	0.50	76.30	4,775.8	514.4	670.8	845.3	0.64	-0.63	8.84
4,961.0	0.60	63.30	4,871.8	514.7	671.6	846.1	0.17	0.10	-13.54
5,056.0	0.60	72.20	4,966.8	515.1	672.5	847.1	0.10	0.00	9.37
5,150.0	0.30	61.60	5,060.8	515.4	673.2	847.8	0.33	-0.32	-11.28
5,246.0	0.10	117.60	5,156.8	515.4	673.5	848.1	0.27	-0.21	58.33
5,341.0	0.10	165.80	5,251.8	515.3	673.6	848.1	0.09	0.00	50.74
5,437.0	0.10	166.50	5,347.8	515.2	673.6	848.0	0.00	0.00	0.73
5,531.0	0.40	114.90	5,441.8	514.9	674.0	848.2	0.37	0.32	-54.89
5,626.0	0.60	109.50	5,536.8	514.6	674.7	848.6	0.22	0.21	-5.68
5,721.0	0.60	114.40	5,631.8	514.3	675.6	849.1	0.05	0.00	5.16
5,816.0	0.70	108.00	5,726.8	513.9	676.7	849.7	0.13	0.11	-6.74
5,910.0	0.40	88.80	5,820.8	513.7	677.5	850.3	0.37	-0.32	-20.43
6,004.0	0.70	76.10	5,914.8	513.8	678.4	851.0	0.34	0.32	-13.51



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6,099.0	0.80	65.40	6,009.8	514.3	679.6	852.2	0.18	0.11	-11.26
6,291.0	0.70	43.50	6,201.8	515.7	681.6	854.7	0.16	-0.05	-11.41
6,475.0	0.20	200.10	6,385.8	516.2	682.3	855.5	0.48	-0.27	85.11
6,664.0	0.40	316.30	6,574.8	516.4	681.7	855.2	0.28	0.11	61.48
6,853.0	0.20	50.00	6,763.8	517.0	681.5	855.4	0.24	-0.11	49.58
6,924.0	0.30	79.80	6,834.7	517.2	681.8	855.7	0.23	0.14	41.97
6,972.0	0.30	79.80	6,882.7	517.2	682.0	855.9	0.00	0.00	0.00

Checked By: _____	Approved By: _____	Date: _____
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