

Well Name: **Purvis 10WD**

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

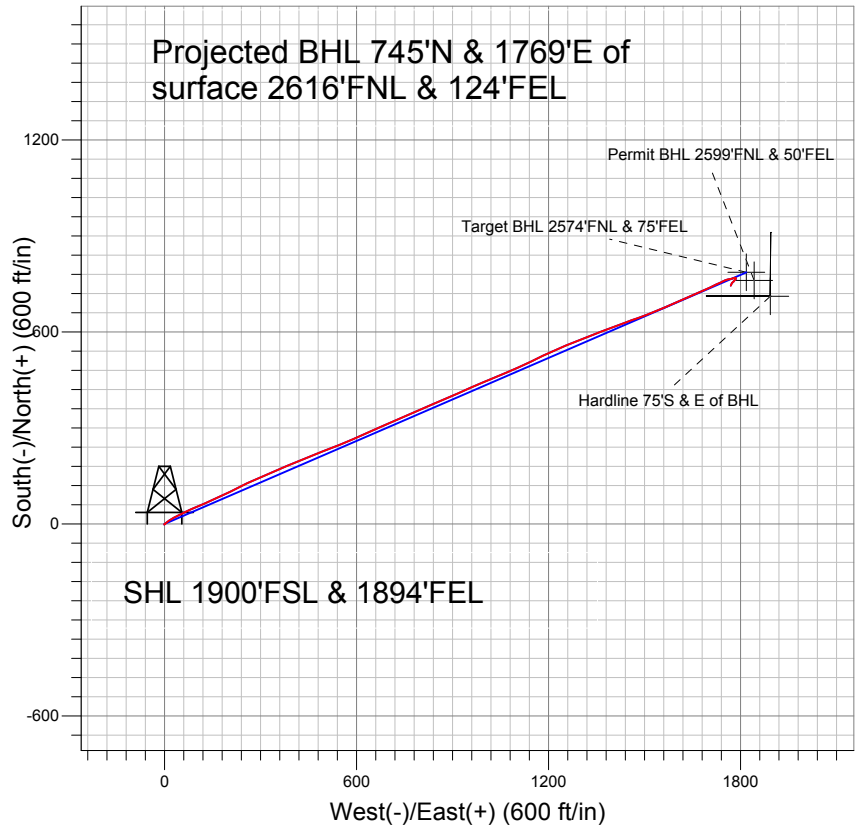
Ground Elevation: 4793.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	1361758.79	3174411.33	40° 19' 29.064 N	104° 52' 28.056 W

Original Well Elev WELL @ 4806.0ft (Original Well Elev)

Slot

PETROLEUM DEVELOPMENT CORP Weld County CO

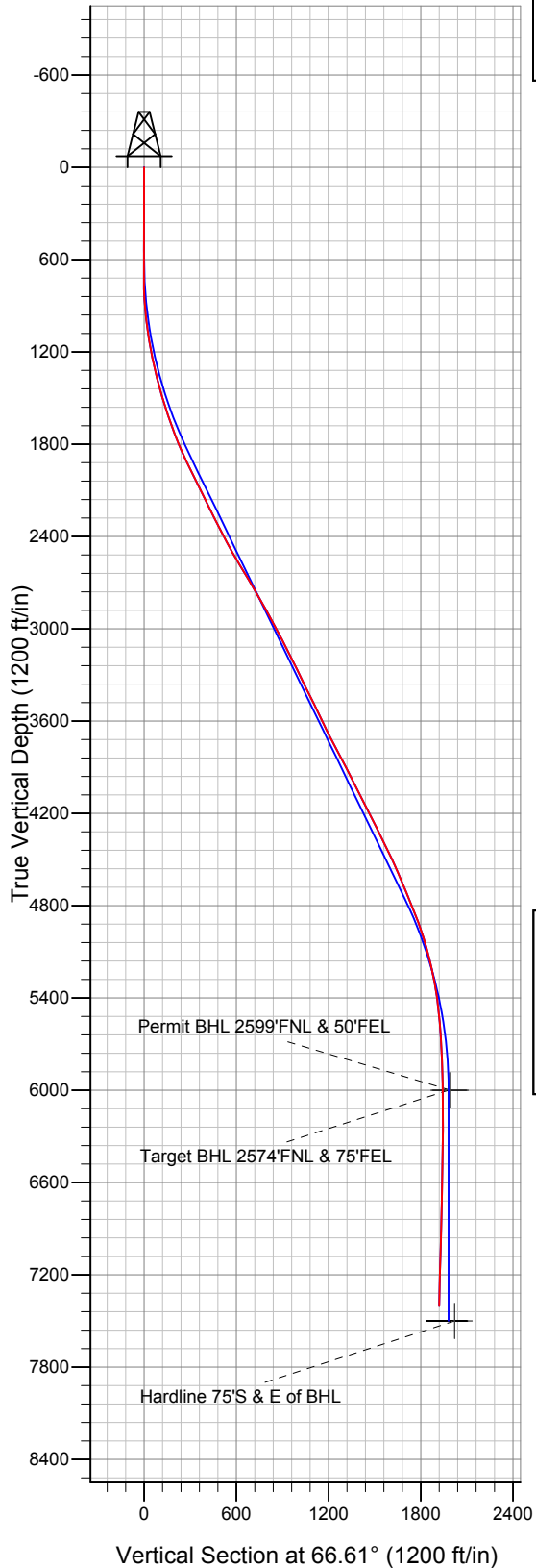


LEGEND

- Purvis 10WD, Wellbore #1, Plan#1 (7-14-10) V0
- Wellbore #1
- Survey #1

Final Survey Plot

Projected Final Survey -
 7817'MD & 7397'TVD @ 1920' VS
 1.7 deg Inc 205.0 deg AZ



Project: SEC.10-T4N-R67W
 Site: Purvis 10TD Pad Sec. 10-T4N-R67W
 Well: Purvis 10WD
 Plan: Wellbore #1



Directional

PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.10-T4N-R67W

Purvis 10TD Pad Sec. 10-T4N-R67W

Purvis 10WD

Wellbore #1

Survey: Survey #1

Standard Survey Report

03 March, 2011

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Purvis 10WD
Project:	SEC.10-T4N-R67W	TVD Reference:	WELL @ 4806.0ft (Original Well Elev)
Site:	Purvis 10TD Pad Sec. 10-T4N-R67W	MD Reference:	WELL @ 4806.0ft (Original Well Elev)
Well:	Purvis 10WD	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	Purvis 10TD Pad Sec. 10-T4N-R67W		
Site Position:		Northing:	1,361,747.58 ft
From:	Lat/Long	Easting:	3,174,369.58 ft
Position Uncertainty:	0.0 ft	Slot Radius:	"
		Latitude:	40° 19' 28.956 N
		Longitude:	104° 52' 28.596 W
		Grid Convergence:	0.40 °

Well	Purvis 10WD		
Well Position	+N/-S	0.0 ft	Northing: 1,361,758.79 ft
	+E/-W	0.0 ft	Easting: 3,174,411.33 ft
Position Uncertainty	0.0 ft	Wellhead Elevation:	ft
		Latitude:	40° 19' 29.064 N
		Longitude:	104° 52' 28.056 W
		Ground Level:	4,793.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	1/13/2010	9.07	67.03	53,249

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	66.61	

Survey Program	Date 3/3/2011				
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
701.0	7,817.0	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
701.0	0.30	208.70	701.0	-1.6	-0.9	-1.4	0.04	0.04	0.00
795.0	1.40	48.60	795.0	-1.1	-0.1	-0.6	1.79	1.17	-170.32
888.0	4.20	47.70	887.9	2.0	3.2	3.8	3.01	3.01	-0.97
982.0	6.80	52.10	981.4	7.7	10.2	12.4	2.80	2.77	4.68
1,075.0	8.70	58.50	1,073.6	14.8	20.5	24.7	2.24	2.04	6.88
1,169.0	10.70	61.90	1,166.2	22.6	34.3	40.4	2.21	2.13	3.62
1,263.0	12.20	64.20	1,258.4	31.0	50.9	59.1	1.67	1.60	2.45
1,356.0	13.10	64.50	1,349.1	39.8	69.3	79.4	0.97	0.97	0.32
1,449.0	15.40	66.70	1,439.2	49.3	90.1	102.3	2.54	2.47	2.37
1,544.0	17.40	66.30	1,530.4	60.0	114.7	129.1	2.11	2.11	-0.42
1,637.0	18.30	68.00	1,618.9	71.0	141.0	157.6	1.12	0.97	1.83

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Purvis 10WD
Project:	SEC.10-T4N-R67W	TVD Reference:	WELL @ 4806.0ft (Original Well Elev)
Site:	Purvis 10TD Pad Sec. 10-T4N-R67W	MD Reference:	WELL @ 4806.0ft (Original Well Elev)
Well:	Purvis 10WD	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)
1,731.0	20.20	64.20	1,707.6	83.6	169.3	188.6	2.42	2.02	-4.04
1,825.0	23.00	63.30	1,795.0	98.9	200.3	223.1	3.00	2.98	-0.96
1,918.0	24.40	63.90	1,880.2	115.6	233.8	260.5	1.53	1.51	0.65
2,012.0	26.50	65.30	1,965.0	132.9	270.3	300.8	2.32	2.23	1.49
2,105.0	26.70	66.80	2,048.2	149.8	308.4	342.5	0.75	0.22	1.61
2,199.0	25.60	68.40	2,132.6	165.6	346.6	383.9	1.39	-1.17	1.70
2,293.0	26.30	65.50	2,217.1	181.7	384.5	425.0	1.54	0.74	-3.09
2,386.0	27.60	66.90	2,300.0	198.7	423.0	467.1	1.56	1.40	1.51
2,480.0	27.10	69.10	2,383.5	214.8	463.1	510.3	1.20	-0.53	2.34
2,573.0	28.80	69.70	2,465.7	230.2	503.9	553.9	1.85	1.83	0.65
2,667.0	30.10	67.40	2,547.5	247.1	546.9	600.0	1.83	1.38	-2.45
2,760.0	31.30	66.30	2,627.5	265.8	590.5	647.5	1.42	1.29	-1.18
2,854.0	30.30	66.70	2,708.2	285.0	634.7	695.6	1.09	-1.06	0.43
2,947.0	29.60	65.90	2,788.8	303.6	677.2	742.1	0.87	-0.75	-0.86
3,041.0	29.60	64.90	2,870.5	322.9	719.4	788.5	0.53	0.00	-1.06
3,135.0	29.00	66.80	2,952.5	341.8	761.4	834.5	1.18	-0.64	2.02
3,228.0	26.90	67.10	3,034.6	358.8	801.5	878.1	2.26	-2.26	0.32
3,321.0	26.90	67.90	3,117.6	374.9	840.3	920.1	0.39	0.00	0.86
3,415.0	26.80	67.10	3,201.5	391.2	879.6	962.6	0.40	-0.11	-0.85
3,508.0	25.80	64.50	3,284.8	408.1	917.1	1,003.8	1.64	-1.08	-2.80
3,602.0	26.40	66.00	3,369.2	425.4	954.7	1,045.1	0.95	0.64	1.60
3,695.0	27.10	67.40	3,452.3	441.9	993.2	1,087.0	1.01	0.75	1.51
3,789.0	25.30	68.00	3,536.6	457.7	1,031.5	1,128.5	1.94	-1.91	0.64
3,883.0	25.70	66.60	3,621.5	473.3	1,068.9	1,168.9	0.77	0.43	-1.49
3,976.0	27.00	65.80	3,704.8	490.0	1,106.6	1,210.2	1.45	1.40	-0.86
4,070.0	27.50	65.40	3,788.4	507.7	1,145.8	1,253.2	0.57	0.53	-0.43
4,164.0	28.00	63.80	3,871.6	526.5	1,185.4	1,297.0	0.95	0.53	-1.70
4,257.0	28.10	65.40	3,953.6	545.3	1,224.9	1,340.7	0.82	0.11	1.72
4,351.0	26.20	68.50	4,037.3	562.1	1,264.3	1,383.6	2.52	-2.02	3.30
4,445.0	26.50	68.80	4,121.5	577.3	1,303.2	1,425.2	0.35	0.32	0.32
4,538.0	26.50	68.90	4,204.7	592.3	1,341.9	1,466.7	0.05	0.00	0.11
4,632.0	26.50	69.60	4,288.9	607.1	1,381.1	1,508.6	0.33	0.00	0.74
4,725.0	26.90	68.90	4,372.0	621.9	1,420.2	1,550.4	0.55	0.43	-0.75
4,819.0	26.00	70.20	4,456.1	636.6	1,459.4	1,592.2	1.14	-0.96	1.38
4,913.0	24.30	69.10	4,541.2	650.4	1,496.8	1,632.1	1.88	-1.81	-1.17
5,006.0	22.50	68.90	4,626.6	663.7	1,531.3	1,669.0	1.94	-1.94	-0.22
5,100.0	22.90	66.20	4,713.3	677.5	1,564.8	1,705.2	1.19	0.43	-2.87
5,193.0	22.50	65.90	4,799.1	692.1	1,597.6	1,741.1	0.45	-0.43	-0.32
5,286.0	21.10	66.20	4,885.4	706.1	1,629.2	1,775.6	1.51	-1.51	0.32
5,380.0	17.40	66.90	4,974.1	718.5	1,657.6	1,806.6	3.94	-3.94	0.74
5,473.0	15.60	66.80	5,063.3	728.8	1,681.9	1,833.0	1.94	-1.94	-0.11
5,567.0	14.50	64.10	5,154.1	739.0	1,704.1	1,857.4	1.39	-1.17	-2.87
5,660.0	12.00	64.70	5,244.6	748.2	1,723.3	1,878.7	2.69	-2.69	0.65
5,754.0	9.50	64.70	5,336.9	755.7	1,739.2	1,896.3	2.66	-2.66	0.00
5,848.0	7.20	66.20	5,429.9	761.4	1,751.6	1,909.9	2.46	-2.45	1.60
5,941.0	5.50	76.20	5,522.4	764.8	1,761.2	1,920.1	2.17	-1.83	10.75
6,035.0	4.20	83.50	5,616.0	766.2	1,769.0	1,927.9	1.53	-1.38	7.77
6,128.0	3.10	76.90	5,708.8	767.2	1,774.9	1,933.6	1.26	-1.18	-7.10
6,222.0	2.20	66.30	5,802.7	768.5	1,779.0	1,937.9	1.09	-0.96	-11.28
6,316.0	1.60	84.90	5,896.7	769.3	1,782.0	1,940.9	0.91	-0.64	19.79
6,409.0	1.00	96.40	5,989.7	769.4	1,784.1	1,942.9	0.70	-0.65	12.37
6,419.8	0.95	96.68	6,000.4	769.3	1,784.2	1,943.0	0.43	-0.43	2.61

Target BHL 2574'FNL & 75'FEL

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Purvis 10WD
Project:	SEC.10-T4N-R67W	TVD Reference:	WELL @ 4806.0ft (Original Well Elev)
Site:	Purvis 10TD Pad Sec. 10-T4N-R67W	MD Reference:	WELL @ 4806.0ft (Original Well Elev)
Well:	Purvis 10WD	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)
6,420.1	0.95	96.68	6,000.8	769.3	1,784.2	1,943.0	0.00	0.00	0.00
Permit BHL 2599'FNL & 50'FEL									
6,503.0	0.60	100.30	6,083.7	769.2	1,785.4	1,944.0	0.43	-0.43	4.37
6,596.0	0.60	156.90	6,176.7	768.7	1,786.0	1,944.4	0.61	0.00	60.86
6,690.0	0.80	199.00	6,270.6	767.6	1,786.0	1,944.0	0.57	0.21	44.79
6,783.0	1.00	209.40	6,363.6	766.3	1,785.4	1,942.9	0.28	0.22	11.18
6,877.0	1.00	205.30	6,457.6	764.8	1,784.6	1,941.6	0.08	0.00	-4.36
6,970.0	1.00	224.40	6,550.6	763.5	1,783.7	1,940.2	0.36	0.00	20.54
7,064.0	1.50	228.60	6,644.6	762.1	1,782.2	1,938.3	0.54	0.53	4.47
7,158.0	1.30	221.30	6,738.6	760.5	1,780.6	1,936.2	0.28	-0.21	-7.77
7,251.0	1.40	220.80	6,831.5	758.8	1,779.2	1,934.2	0.11	0.11	-0.54
7,345.0	1.50	230.20	6,925.5	757.2	1,777.5	1,932.0	0.27	0.11	10.00
7,438.0	1.80	224.40	7,018.5	755.3	1,775.5	1,929.5	0.37	0.32	-6.24
7,532.0	1.80	219.00	7,112.4	753.1	1,773.6	1,926.8	0.18	0.00	-5.74
7,625.0	2.00	203.40	7,205.4	750.5	1,772.0	1,924.3	0.59	0.22	-16.77
7,770.0	1.70	205.00	7,350.3	746.2	1,770.1	1,920.9	0.21	-0.21	1.10
7,817.0	1.70	205.00	7,397.3	745.0	1,769.5	1,919.8	0.00	0.00	0.00
Hardline 75'S & E of BHL									

Checked By: _____ Approved By: _____ Date: _____