



Petroleum Development Corp.

Mesa

NWNW Sec 24-T6S-R97W

Puckett 21B-24D

DD

Survey: Production

Standard Survey Report

12 November, 2010



Company:	Petroleum Development Corp.	Local Co-ordinate Reference:	Well Puckett 21B-24D
Project:	Mesa	TVD Reference:	Puckett 21B-24D KBE @ 8399.0ft (Original Well Elev)
Site:	NWNW Sec 24-T6S-R97W	MD Reference:	Puckett 21B-24D KBE @ 8399.0ft (Original Well Elev)
Well:	Puckett 21B-24D	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	Database:	Local

Project	Mesa		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		

Site	NWNW Sec 24-T6S-R97W		
Site Position:	Northing:	Latitude:	
From:	Lat/Long	Easting:	Longitude:
Position Uncertainty:	0.0 ft	Slot Radius:	Grid Convergence: 1.00

Well	Puckett 21B-24D				
Well Position	+N/-S	0.0 ft	Northing:	1,622,931.67 ft	Latitude: 39.513249
	+E/-W	0.0 ft	Easting:	2,245,694.50 ft	Longitude: -108.173984
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level: 8,381.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010-14	06/01/10	10.57	65.75	52,321

Design	DD				
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		61.11

Survey Program	Date	11/12/10			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
149.0	2,550.0	Surface (DD)	MWD	Geolink MWD	
2,692.0	9,341.0	Production (DD)	MWD	Geolink MWD	

Survey											
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	Subsea Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
2,550.0	11.90	55.70	2,520.3	-5,878.7	175.6	286.7	335.8	0.00	0.00	0.00	
2,692.0	12.90	56.60	2,659.0	-5,740.0	192.5	312.0	366.2	0.72	0.70	0.63	
2,786.0	12.20	59.00	2,750.8	-5,648.3	203.4	329.3	386.6	0.93	-0.74	2.55	
2,880.0	11.00	59.30	2,842.8	-5,556.2	213.1	345.5	405.5	1.28	-1.28	0.32	
2,974.0	9.60	62.70	2,935.3	-5,463.7	221.3	360.2	422.3	1.62	-1.49	3.62	
3,069.0	9.10	61.50	3,029.1	-5,370.0	228.5	373.8	437.7	0.56	-0.53	-1.26	
3,163.0	8.90	59.70	3,121.9	-5,277.1	235.7	386.6	452.4	0.37	-0.21	-1.91	
3,257.0	9.20	58.60	3,214.7	-5,184.3	243.3	399.3	467.2	0.37	0.32	-1.17	

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Site:	NWNW Sec 24-T6S-R97W	MD Reference:	Puckett 21B-24D KBE @ 8399.0ft (Original Well Elev)
Well:	Puckett 21B-24D	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	Database:	Local

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	Subsea Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
3,351.0	8.90	64.10	3,307.6	-5,091.4	250.4	412.3	481.9	0.97	-0.32	5.85
3,445.0	8.60	64.50	3,400.5	-4,998.5	256.6	425.1	496.2	0.33	-0.32	0.43
3,538.0	9.30	64.20	3,492.3	-4,906.7	262.9	438.2	510.7	0.75	0.75	-0.32
3,633.0	8.80	62.80	3,586.2	-4,812.9	269.5	451.6	525.6	0.58	-0.53	-1.47
3,727.0	8.70	62.80	3,679.1	-4,720.0	276.1	464.3	539.9	0.11	-0.11	0.00
3,821.0	8.90	61.10	3,772.0	-4,627.1	282.8	477.0	554.3	0.35	0.21	-1.81
3,915.0	9.20	61.40	3,864.8	-4,534.2	290.0	489.9	569.0	0.32	0.32	0.32
4,009.0	8.90	58.80	3,957.6	-4,441.4	297.3	502.7	583.8	0.54	-0.32	-2.77
4,103.0	8.10	63.50	4,050.6	-4,348.4	304.0	514.9	597.7	1.13	-0.85	5.00
4,198.0	8.30	61.80	4,144.6	-4,254.4	310.3	526.9	611.2	0.33	0.21	-1.79
4,292.0	8.40	61.80	4,237.6	-4,161.4	316.7	539.0	624.9	0.11	0.11	0.00
4,386.0	8.60	58.70	4,330.6	-4,068.4	323.6	551.0	638.8	0.53	0.21	-3.30
4,481.0	7.90	64.50	4,424.6	-3,974.4	330.1	563.0	652.4	1.14	-0.74	6.11
4,575.0	8.20	63.30	4,517.7	-3,881.3	335.9	574.8	665.5	0.37	0.32	-1.28
4,669.0	7.80	61.80	4,610.8	-3,788.3	341.9	586.4	678.6	0.48	-0.43	-1.60
4,764.0	8.10	60.00	4,704.9	-3,694.2	348.3	597.9	691.8	0.41	0.32	-1.89
4,858.0	7.60	59.70	4,798.0	-3,601.0	354.8	609.0	704.6	0.53	-0.53	-0.32
4,952.0	7.40	58.00	4,891.2	-3,507.9	361.1	619.5	716.9	0.32	-0.21	-1.81
5,047.0	6.00	64.50	4,985.5	-3,413.5	366.5	629.2	727.9	1.67	-1.47	6.84
5,141.0	5.70	66.40	5,079.0	-3,320.0	370.5	637.9	737.5	0.38	-0.32	2.02
5,235.0	6.00	62.10	5,172.5	-3,226.5	374.6	646.5	747.0	0.56	0.32	-4.57
5,330.0	8.30	61.70	5,266.8	-3,132.2	380.2	656.9	758.9	2.42	2.42	-0.42
5,424.0	8.70	62.50	5,359.8	-3,039.3	386.7	669.2	772.7	0.44	0.43	0.85
5,519.0	8.90	60.70	5,453.6	-2,945.4	393.6	682.0	787.3	0.36	0.21	-1.89
5,613.0	8.90	60.00	5,546.5	-2,852.5	400.8	694.6	801.8	0.12	0.00	-0.74
5,707.0	9.10	59.20	5,639.4	-2,759.7	408.3	707.3	816.5	0.25	0.21	-0.85
5,801.0	8.40	61.90	5,732.3	-2,666.8	415.3	719.7	830.8	0.86	-0.74	2.87
5,895.0	7.80	63.70	5,825.3	-2,573.7	421.4	731.5	844.0	0.69	-0.64	1.91
5,990.0	7.40	60.90	5,919.5	-2,479.5	427.2	742.6	856.6	0.57	-0.42	-2.95
6,084.0	7.60	59.60	6,012.7	-2,386.3	433.3	753.3	868.9	0.28	0.21	-1.38
6,178.0	7.60	60.50	6,105.9	-2,293.2	439.5	764.1	881.3	0.13	0.00	0.96
6,273.0	7.00	61.00	6,200.1	-2,198.9	445.4	774.6	893.4	0.64	-0.63	0.53
6,367.0	6.70	61.50	6,293.4	-2,105.6	450.8	784.4	904.6	0.33	-0.32	0.53
6,461.0	4.90	66.30	6,386.9	-2,012.1	455.0	792.9	914.1	1.98	-1.91	5.11
6,556.0	3.70	71.50	6,481.7	-1,917.4	457.6	799.5	921.1	1.33	-1.26	5.47
6,650.0	3.50	72.70	6,575.5	-1,823.5	459.4	805.1	926.9	0.23	-0.21	1.28
6,744.0	2.30	68.50	6,669.4	-1,729.7	461.0	809.6	931.6	1.30	-1.28	-4.47
6,838.0	1.90	73.50	6,763.3	-1,635.7	462.1	812.9	935.0	0.47	-0.43	5.32
6,932.0	1.80	58.20	6,857.2	-1,541.8	463.3	815.6	938.0	0.53	-0.11	-16.28
7,027.0	1.60	58.00	6,952.2	-1,446.8	464.8	818.0	940.8	0.21	-0.21	-0.21
7,121.0	1.80	57.60	7,046.2	-1,352.9	466.3	820.4	943.6	0.21	0.21	-0.43
7,216.0	2.10	54.80	7,141.1	-1,257.9	468.1	823.1	946.8	0.33	0.32	-2.95

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7,310.0	1.70	57.50	7,235.1	-1,164.0	469.9	825.7	949.9	0.44	-0.43	2.87
7,404.0	0.60	31.20	7,329.0	-1,070.0	471.0	827.1	951.7	1.27	-1.17	-27.98
7,499.0	0.40	271.50	7,424.0	-975.0	471.5	827.0	951.9	0.92	-0.21	-126.00
7,593.0	0.40	258.70	7,518.0	-881.0	471.4	826.4	951.3	0.09	0.00	-13.62
7,687.0	0.50	126.80	7,612.0	-787.0	471.1	826.4	951.1	0.88	0.11	-140.32
7,782.0	0.10	77.10	7,707.0	-692.0	470.9	826.8	951.4	0.47	-0.42	-52.32
7,876.0	0.30	45.20	7,801.0	-598.0	471.1	827.0	951.7	0.24	0.21	-33.94
7,970.0	0.30	49.60	7,895.0	-504.0	471.4	827.4	952.2	0.02	0.00	4.68
8,065.0	0.40	244.70	7,990.0	-409.0	471.4	827.3	952.1	0.73	0.11	-173.58
8,159.0	0.80	248.00	8,084.0	-315.0	471.0	826.4	951.1	0.43	0.43	3.51
8,253.0	1.30	236.90	8,178.0	-221.0	470.2	824.9	949.4	0.57	0.53	-11.81
8,348.0	1.70	242.60	8,273.0	-126.0	469.0	822.7	946.9	0.45	0.42	6.00
8,442.0	2.70	243.00	8,366.9	-32.1	467.3	819.5	943.3	1.06	1.06	0.43
8,631.0	3.20	247.20	8,555.6	156.6	463.3	810.7	933.6	0.29	0.26	2.22
8,725.0	4.30	246.20	8,649.4	250.4	460.8	805.0	927.5	1.17	1.17	-1.06
8,820.0	5.00	241.20	8,744.1	345.1	457.4	798.2	919.8	0.85	0.74	-5.26
8,914.0	4.70	236.10	8,837.8	438.8	453.3	791.4	911.9	0.56	-0.32	-5.43
9,009.0	4.30	236.30	8,932.5	533.5	449.1	785.2	904.4	0.42	-0.42	0.21
9,103.0	5.10	245.70	9,026.2	627.2	445.4	778.4	896.8	1.18	0.85	10.00
9,197.0	5.70	242.10	9,119.8	720.8	441.5	770.5	887.9	0.73	0.64	-3.83
Projection to Bit										
9,341.0	5.70	242.10	9,263.1	864.0	434.8	757.9	873.6	0.00	0.00	0.00

Survey Annotations					
Measured Depth (')	Vertical Depth (')	Local Coordinates		Comment	
		+N/-S (')	+E/-W (')		
9,341.0	9,263.1	434.8	757.9	Projection to Bit	

Checked By: _____ Approved By: _____ Date: _____