

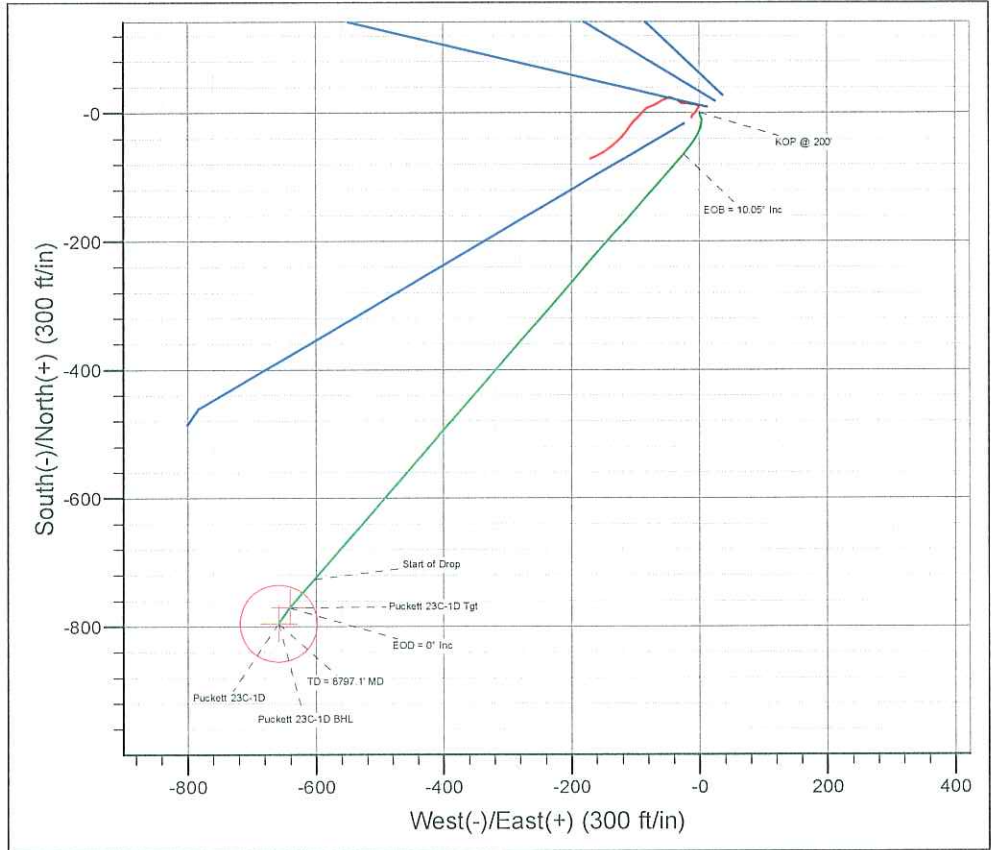
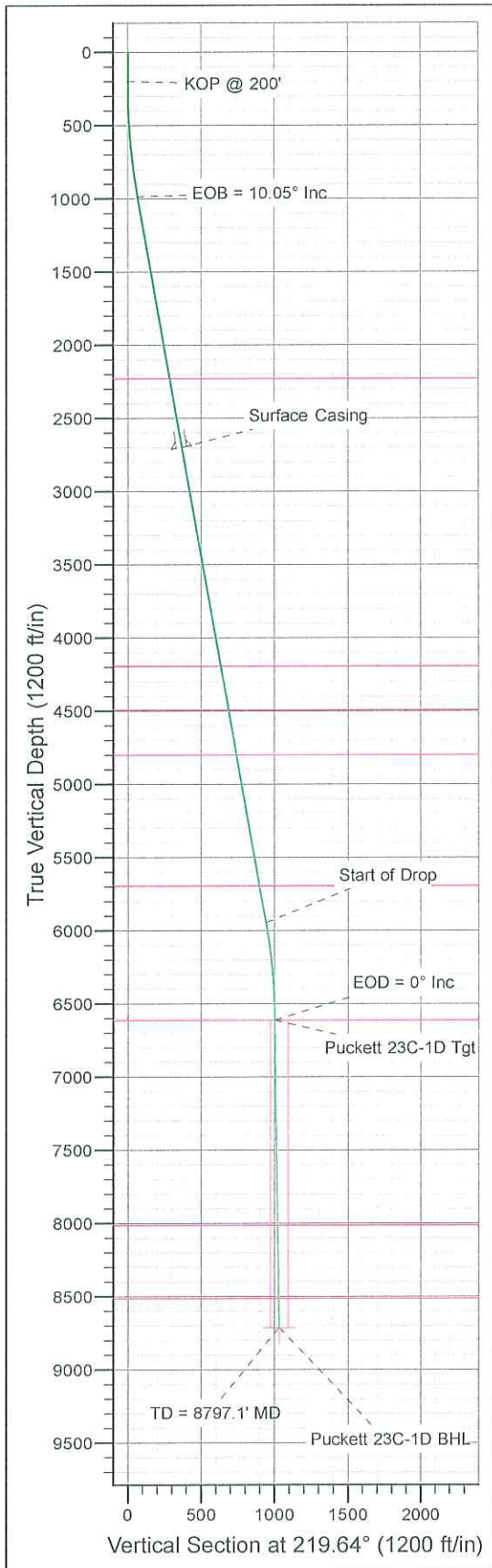


Azimuths to True North
 Magnetic North: 10.55°

Magnetic Field
 Strength: 52296.6snT
 Dip Angle: 65.72°
 Date: 2010/05/21
 Model: IGRF2010-14

WELL DETAILS: Puckett 23C-1D

+N/-S	+E/-W	Northing	Ground Level:	8218.0	Longitude	Slot
0.0	0.0	1608845.96	Easting	2246519.93	-108.169592	
			Latitude	39.474661		



ANNOTATIONS

TVD	MD	Annotation
200.0	200.0	KOP @ 200'
984.7	988.9	EOB = 10.05° Inc
5945.7	6027.2	Start of Drop
6612.0	6696.9	EOD = 0° Inc
8712.0	8797.1	TD = 8797.1' MD

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
2227.0	2250.6	Wasatch
4192.0	4246.2	Wasatch "G" Sand
4492.0	4550.9	Fort Union
4797.0	4860.6	Base Fort Union
5692.0	5769.5	Mesaverde/Williams Fk
6612.0	6696.9	Top Gas Cell
8012.0	8097.1	Cameo
8512.0	8597.1	Rollins

ON DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.0	
3	400.0	4.00	160.00	399.8	-6.6	2.4	2.00	160.00	3.5	
4	988.9	10.05	221.16	984.7	-64.6	-24.4	1.50	84.29	65.4	
5	6027.2	10.05	221.16	5945.7	-726.4	-602.9	0.00	0.00	944.0	
6	6696.9	0.00	0.00	6612.0	-770.5	-641.4	1.50	180.00	1002.5	Puckett 23C-1D Tgt
7	7055.1	0.90	214.94	6970.2	-772.8	-643.0	0.25	214.94	1005.3	
8	8797.1	0.90	214.94	8712.0	-795.1	-658.6	0.00	0.00	1032.5	Puckett 23C-1D BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Puckett 23C-1D Tgt	6612.0	-770.5	-641.4	39.472546	-108.171864	Point
Puckett 23C-1D BHL	8712.0	-795.1	-658.6	39.472478	-108.171925	Circle (Radius: 60.0)

CASING DETAILS

TVD	MD	Name	Size
2700.0	2730.9	Surface Casing	

Plan: Plan #2 (Puckett 23C-1D/DD)

Created By: Jon Schweigert Date: 9:36, June 22 2010
 Checked: _____ Date: _____
 Reviewed: _____ Date: _____
 Approved: _____ Date: _____



Database:	RMR1 Database	Local Co-ordinate Reference:	Well Puckett 23C-1D
Company:	Petroleum Development Corp.	TVD Reference:	Puckett 23C-1D KBE @ 8242.0ft (H&P 318)
Project:	Mesa	MD Reference:	Puckett 23C-1D KBE @ 8242.0ft (H&P 318)
Site:	SENW Sec 1-T7S-R97W	North Reference:	True
Well:	Puckett 23C-1D	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #2		

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	SENW Sec 1-T7S-R97W				
Site Position:		Northing:	1,608,829.52 ft	Latitude:	39.474614
From:	Lat/Long	Easting:	2,246,495.22 ft	Longitude:	-108.169678
Position Uncertainty:	0.0 ft	Slot Radius:		Grid Convergence:	-1.68 °

Well	Puckett 23C-1D					
Well Position	+N/-S	17.2 ft	Northing:	1,608,845.95 ft	Latitude:	39.474661
	+E/-W	24.2 ft	Easting:	2,246,519.93 ft	Longitude:	-108.169592
Position Uncertainty		0.0 ft	Wellhead Elevation:		Ground Level:	8,218.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010-14	2010/06/21	10.55	65.72	52,297

Design	Plan #2				
Audit Notes:					
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0	
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.0	0.0	0.0	219.64	

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.00	0.00	
400.0	4.00	160.00	399.8	-6.6	2.4	2.00	2.00	0.00	160.00	
988.9	10.05	221.16	984.7	-64.6	-24.4	1.50	1.03	10.38	84.29	
6,027.2	10.05	221.16	5,945.7	-726.4	-602.9	0.00	0.00	0.00	0.00	
6,696.9	0.00	0.00	6,612.0	-770.5	-641.4	1.50	-1.50	0.00	180.00	Puckett 23C-1D Tgt
7,055.1	0.90	214.94	6,970.2	-772.8	-643.0	0.25	0.25	-40.50	214.94	
8,797.1	0.90	214.94	8,712.0	-795.1	-658.6	0.00	0.00	0.00	0.00	Puckett 23C-1D BHL

Database:	RMR1 Database	Local Co-ordinate Reference:	Well Puckett 23C-1D
Company:	Petroleum Development Corp.	TVD Reference:	Puckett 23C-1D KBE @ 8242.0ft (H&P 318)
Project:	Mesa	MD Reference:	Puckett 23C-1D KBE @ 8242.0ft (H&P 318)
Site:	SENV Sec 1-T7S-R97W	North Reference:	True
Well:	Puckett 23C-1D	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #2		

Planned 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)
0.0	0.00	0.00	0.0	-8,242.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	-8,142.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP @ 200'										
200.0	0.00	0.00	200.0	-8,042.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	2.00	160.00	300.0	-7,942.0	-1.6	0.6	0.9	2.00	2.00	0.00
400.0	4.00	160.00	399.8	-7,842.2	-6.6	2.4	3.5	2.00	2.00	0.00
500.0	4.41	179.81	499.6	-7,742.4	-13.7	3.6	8.2	1.50	0.41	19.81
600.0	5.23	194.83	599.2	-7,642.8	-21.9	2.4	15.3	1.50	0.82	15.02
700.0	6.31	205.28	698.7	-7,543.3	-31.3	-1.1	24.8	1.50	1.08	10.45
800.0	7.53	212.52	798.0	-7,444.0	-41.8	-6.9	36.6	1.50	1.22	7.25
900.0	8.84	217.70	897.0	-7,345.0	-53.4	-15.2	50.8	1.50	1.31	5.18
EOB = 10.05° Inc										
988.9	10.05	221.16	984.7	-7,257.3	-64.6	-24.4	65.4	1.50	1.36	3.89
1,000.0	10.05	221.16	995.6	-7,246.4	-66.1	-25.7	67.3	0.00	0.00	0.00
1,100.0	10.05	221.16	1,094.1	-7,147.9	-79.2	-37.2	84.8	0.00	0.00	0.00
1,200.0	10.05	221.16	1,192.5	-7,049.5	-92.4	-48.7	102.2	0.00	0.00	0.00
1,300.0	10.05	221.16	1,291.0	-6,951.0	-105.5	-60.2	119.6	0.00	0.00	0.00
1,400.0	10.05	221.16	1,389.5	-6,852.5	-118.6	-71.6	137.1	0.00	0.00	0.00
1,500.0	10.05	221.16	1,487.9	-6,754.1	-131.8	-83.1	154.5	0.00	0.00	0.00
1,600.0	10.05	221.16	1,586.4	-6,655.6	-144.9	-94.6	171.9	0.00	0.00	0.00
1,700.0	10.05	221.16	1,684.9	-6,557.1	-158.0	-106.1	189.4	0.00	0.00	0.00
1,800.0	10.05	221.16	1,783.3	-6,458.7	-171.2	-117.6	206.8	0.00	0.00	0.00
1,900.0	10.05	221.16	1,881.8	-6,360.2	-184.3	-129.0	224.3	0.00	0.00	0.00
2,000.0	10.05	221.16	1,980.3	-6,261.7	-197.5	-140.5	241.7	0.00	0.00	0.00
2,100.0	10.05	221.16	2,078.7	-6,163.3	-210.6	-152.0	259.1	0.00	0.00	0.00
2,200.0	10.05	221.16	2,177.2	-6,064.8	-223.7	-163.5	276.6	0.00	0.00	0.00
Wasatch										
2,250.6	10.05	221.16	2,227.0	-6,015.0	-230.4	-169.3	285.4	0.00	0.00	0.00
2,300.0	10.05	221.16	2,275.7	-5,966.3	-236.9	-175.0	294.0	0.00	0.00	0.00
2,400.0	10.05	221.16	2,374.1	-5,867.9	-250.0	-186.4	311.5	0.00	0.00	0.00
2,500.0	10.05	221.16	2,472.6	-5,769.4	-263.1	-197.9	328.9	0.00	0.00	0.00
2,600.0	10.05	221.16	2,571.1	-5,670.9	-276.3	-209.4	346.3	0.00	0.00	0.00
2,700.0	10.05	221.16	2,669.5	-5,572.5	-289.4	-220.9	363.8	0.00	0.00	0.00
Surface Casing										
2,730.9	10.05	221.16	2,700.0	-5,542.0	-293.5	-224.4	369.2	0.00	0.00	0.00
2,800.0	10.05	221.16	2,768.0	-5,474.0	-302.5	-232.4	381.2	0.00	0.00	0.00
2,900.0	10.05	221.16	2,866.5	-5,375.5	-315.7	-243.8	398.6	0.00	0.00	0.00
3,000.0	10.05	221.16	2,964.9	-5,277.1	-328.8	-255.3	416.1	0.00	0.00	0.00
3,100.0	10.05	221.16	3,063.4	-5,178.6	-341.9	-266.8	433.5	0.00	0.00	0.00
3,200.0	10.05	221.16	3,161.9	-5,080.1	-355.1	-278.3	451.0	0.00	0.00	0.00
3,300.0	10.05	221.16	3,260.3	-4,981.7	-368.2	-289.8	468.4	0.00	0.00	0.00
3,400.0	10.05	221.16	3,358.8	-4,883.2	-381.3	-301.2	485.8	0.00	0.00	0.00
3,500.0	10.05	221.16	3,457.3	-4,784.7	-394.5	-312.7	503.3	0.00	0.00	0.00
3,600.0	10.05	221.16	3,555.7	-4,686.3	-407.6	-324.2	520.7	0.00	0.00	0.00
3,700.0	10.05	221.16	3,654.2	-4,587.8	-420.7	-335.7	538.2	0.00	0.00	0.00
3,800.0	10.05	221.16	3,752.7	-4,489.3	-433.9	-347.2	555.6	0.00	0.00	0.00
3,900.0	10.05	221.16	3,851.1	-4,390.9	-447.0	-358.7	573.0	0.00	0.00	0.00
4,000.0	10.05	221.16	3,949.6	-4,292.4	-460.1	-370.1	590.5	0.00	0.00	0.00
4,100.0	10.05	221.16	4,048.1	-4,193.9	-473.3	-381.6	607.9	0.00	0.00	0.00
4,200.0	10.05	221.16	4,146.5	-4,095.5	-486.4	-393.1	625.3	0.00	0.00	0.00
Wasatch "G" Sand										
4,246.2	10.05	221.16	4,192.0	-4,050.0	-492.5	-398.4	633.4	0.00	0.00	0.00
4,300.0	10.05	221.16	4,245.0	-3,997.0	-499.5	-404.6	642.8	0.00	0.00	0.00
4,400.0	10.05	221.16	4,343.5	-3,898.5	-512.7	-416.1	660.2	0.00	0.00	0.00

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Project:	Mesa	MD Reference:	Puckett 23C-1D KBE @ 8242.0ft (H&P 318)
Site:	SENW Sec 1-T7S-R97W	North Reference:	True
Well:	Puckett 23C-1D	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #2		

Planned 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)
4,500.0	10.05	221.16	4,441.9	-3,800.1	-525.8	-427.5	677.7	0.00	0.00	0.00
Fort Union										
4,550.9	10.05	221.16	4,492.0	-3,750.0	-532.5	-433.4	686.5	0.00	0.00	0.00
4,600.0	10.05	221.16	4,540.4	-3,701.6	-539.0	-439.0	695.1	0.00	0.00	0.00
4,700.0	10.05	221.16	4,638.9	-3,603.1	-552.1	-450.5	712.5	0.00	0.00	0.00
4,800.0	10.05	221.16	4,737.3	-3,504.7	-565.2	-462.0	730.0	0.00	0.00	0.00
Base Fort Union										
4,860.6	10.05	221.16	4,797.0	-3,445.0	-573.2	-468.9	740.5	0.00	0.00	0.00
4,900.0	10.05	221.16	4,835.8	-3,406.2	-578.4	-473.5	747.4	0.00	0.00	0.00
5,000.0	10.05	221.16	4,934.3	-3,307.7	-591.5	-484.9	764.9	0.00	0.00	0.00
5,100.0	10.05	221.16	5,032.7	-3,209.3	-604.6	-496.4	782.3	0.00	0.00	0.00
5,200.0	10.05	221.16	5,131.2	-3,110.8	-617.8	-507.9	799.7	0.00	0.00	0.00
5,300.0	10.05	221.16	5,229.7	-3,012.3	-630.9	-519.4	817.2	0.00	0.00	0.00
5,400.0	10.05	221.16	5,328.1	-2,913.9	-644.0	-530.9	834.6	0.00	0.00	0.00
5,500.0	10.05	221.16	5,426.6	-2,815.4	-657.2	-542.3	852.0	0.00	0.00	0.00
5,600.0	10.05	221.16	5,525.1	-2,716.9	-670.3	-553.8	869.5	0.00	0.00	0.00
5,700.0	10.05	221.16	5,623.5	-2,618.5	-683.4	-565.3	886.9	0.00	0.00	0.00
Mesaverde/Williams Fk *										
5,769.5	10.05	221.16	5,692.0	-2,550.0	-692.6	-573.3	899.1	0.00	0.00	0.00
5,800.0	10.05	221.16	5,722.0	-2,520.0	-696.6	-576.8	904.4	0.00	0.00	0.00
5,900.0	10.05	221.16	5,820.5	-2,421.5	-709.7	-588.3	921.8	0.00	0.00	0.00
6,000.0	10.05	221.16	5,918.9	-2,323.1	-722.8	-599.7	939.2	0.00	0.00	0.00
Start of Drop										
6,027.2	10.05	221.16	5,945.7	-2,296.3	-726.4	-602.9	944.0	0.00	0.00	0.00
6,100.0	8.95	221.16	6,017.5	-2,224.5	-735.5	-610.8	956.0	1.50	-1.50	0.00
6,200.0	7.45	221.16	6,116.5	-2,125.5	-746.2	-620.2	970.3	1.50	-1.50	0.00
6,300.0	5.95	221.16	6,215.8	-2,026.2	-755.0	-627.8	981.9	1.50	-1.50	0.00
6,400.0	4.45	221.16	6,315.4	-1,926.6	-761.8	-633.8	991.0	1.50	-1.50	0.00
6,500.0	2.95	221.16	6,415.2	-1,826.8	-766.7	-638.1	997.5	1.50	-1.50	0.00
6,600.0	1.45	221.16	6,515.1	-1,726.9	-769.6	-640.6	1,001.3	1.50	-1.50	0.00
EOD = 0° Inc - Top Gas Cell - Puckett 23C-1D Tgt										
6,696.9	0.00	0.00	6,612.0	-1,630.0	-770.5	-641.4	1,002.5	1.50	-1.50	0.00
6,700.0	0.01	214.94	6,615.1	-1,626.9	-770.5	-641.4	1,002.5	0.25	0.25	0.00
6,800.0	0.26	214.94	6,715.1	-1,526.9	-770.7	-641.5	1,002.8	0.25	0.25	0.00
6,900.0	0.51	214.94	6,815.1	-1,426.9	-771.2	-641.9	1,003.4	0.25	0.25	0.00
7,000.0	0.76	214.94	6,915.1	-1,326.9	-772.1	-642.5	1,004.5	0.25	0.25	0.00
7,055.1	0.90	214.94	6,970.2	-1,271.8	-772.8	-643.0	1,005.3	0.25	0.25	0.00
7,100.0	0.90	214.94	7,015.1	-1,226.9	-773.4	-643.4	1,006.0	0.00	0.00	0.00
7,200.0	0.90	214.94	7,115.1	-1,126.9	-774.7	-644.3	1,007.6	0.00	0.00	0.00
7,300.0	0.90	214.94	7,215.0	-1,027.0	-775.9	-645.2	1,009.1	0.00	0.00	0.00
7,400.0	0.90	214.94	7,315.0	-927.0	-777.2	-646.1	1,010.7	0.00	0.00	0.00
7,500.0	0.90	214.94	7,415.0	-827.0	-778.5	-647.0	1,012.2	0.00	0.00	0.00
7,600.0	0.90	214.94	7,515.0	-727.0	-779.8	-647.9	1,013.8	0.00	0.00	0.00
7,700.0	0.90	214.94	7,615.0	-627.0	-781.1	-648.8	1,015.4	0.00	0.00	0.00
7,800.0	0.90	214.94	7,715.0	-527.0	-782.3	-649.7	1,016.9	0.00	0.00	0.00
7,900.0	0.90	214.94	7,815.0	-427.0	-783.6	-650.6	1,018.5	0.00	0.00	0.00
8,000.0	0.90	214.94	7,915.0	-327.0	-784.9	-651.5	1,020.0	0.00	0.00	0.00
Cameo										
8,097.1	0.90	214.94	8,012.0	-230.0	-786.1	-652.3	1,021.5	0.00	0.00	0.00
8,100.0	0.90	214.94	8,014.9	-227.1	-786.2	-652.4	1,021.6	0.00	0.00	0.00
8,200.0	0.90	214.94	8,114.9	-127.1	-787.5	-653.3	1,023.1	0.00	0.00	0.00
8,300.0	0.90	214.94	8,214.9	-27.1	-788.7	-654.1	1,024.7	0.00	0.00	0.00
8,400.0	0.90	214.94	8,314.9	72.9	-790.0	-655.0	1,026.3	0.00	0.00	0.00

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Company:	Petroleum Development Corp.	TVD Reference:	Puckett 23C-1D KBE @ 8242.0ft (H&P 318)
Project:	Mesa	MD Reference:	Puckett 23C-1D KBE @ 8242.0ft (H&P 318)
Site:	SENW Sec 1-T7S-R97W	North Reference:	True
Well:	Puckett 23C-1D	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #2		

Planned 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)	
8,500.0	0.90	214.94	8,414.9	172.9	-791.3	-655.9	1,027.8	0.00	0.00	0.00	
Rollins											
8,597.1	0.90	214.94	8,512.0	270.0	-792.6	-656.8	1,029.3	0.00	0.00	0.00	
8,600.0	0.90	214.94	8,514.9	272.9	-792.6	-656.8	1,029.4	0.00	0.00	0.00	
8,700.0	0.90	214.94	8,614.9	372.9	-793.9	-657.7	1,030.9	0.00	0.00	0.00	
TD = 8797.1' MD - Puckett 23C-1D BHL											
8,797.1	0.90	214.94	8,712.0	470.0	-795.1	-658.6	1,032.4	0.00	0.00	0.00	

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude	
Puckett 23C-1D Tgt - hit/miss target - Shape - Point	0.00	0.00	6,612.0	-770.5	-641.4	1,608,094.63	2,245,856.17	39.472546	-108.171864	
Puckett 23C-1D BHL - plan hits target center - Circle (radius 60.0)	0.00	0.00	8,712.0	-795.1	-658.6	1,608,070.53	2,245,838.26	39.472478	-108.171925	

Casing Points						
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")		
2,730.9	2,700.0	Surface Casing				

Formations							
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)		
2,250.6	2,227.0	Wasatch					
4,246.2	4,192.0	Wasatch "G" Sand					
4,550.9	4,492.0	Fort Union					
4,860.6	4,797.0	Base Fort Union					
5,769.5	5,692.0	Mesaverde/Williams Fk *					
6,696.9	6,612.0	Top Gas Cell					
8,097.1	8,012.0	Cameo					
8,597.1	8,512.0	Rollins					

Database:	RMR1 Database	Local Co-ordinate Reference:	Well Puckett 23C-1D
Company:	Petroleum Development Corp.	TVD Reference:	Puckett 23C-1D KBE @ 8242.0ft (H&P 318)
Project:	Mesa	MD Reference:	Puckett 23C-1D KBE @ 8242.0ft (H&P 318)
Site:	SENW Sec 1-T7S-R97W	North Reference:	True
Well:	Puckett 23C-1D	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #2		

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
200.0	200.0	0.0	0.0	KOP @ 200'
988.9	984.7	-64.6	-24.4	EOB = 10.05° Inc
6,027.2	5,945.7	-726.4	-602.9	Start of Drop
6,696.9	6,612.0	-770.5	-641.4	EOD = 0° Inc
8,797.1	8,712.0	-795.1	-658.6	TD = 8797.1' MD