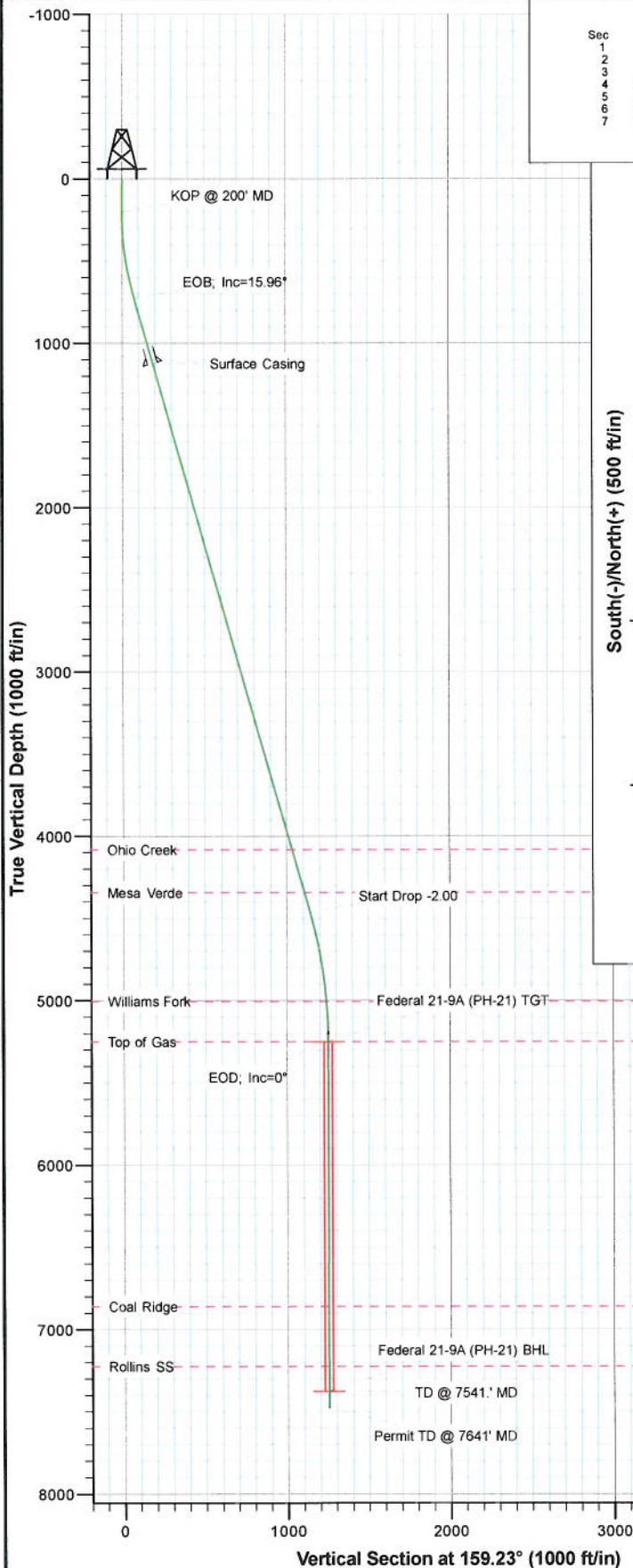
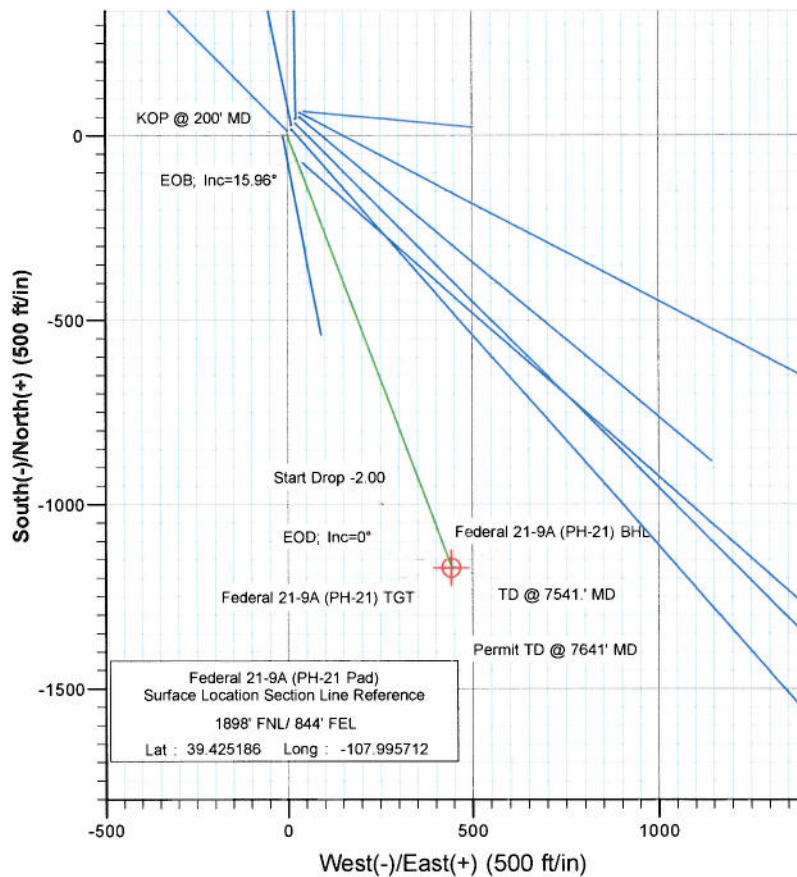




Project: S. Piceance (Parachute)
 Site: SENE S21-T7S-R95W (PH-21 Pad)
 Well: Federal 21-9A (PH-21 Pad)
 Wellbore: DD
 Plan: Plan #1



SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSecl	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	732.0	15.96	159.23	725.1	-68.8	26.1	3.00	159.23	73.6	
4	4619.0	15.96	159.23	4462.3	-1068.1	405.2	0.00	0.00	1142.4	
5	5417.0	0.00	0.00	5250.0	-1171.4	444.4	2.00	180.00	1252.8	Federal 21-9A (PH-21) TGT
6	7541.0	0.00	0.00	7374.0	-1171.4	444.4	0.00	0.00	1252.8	Federal 21-9A (PH-21) BHL
7	7641.0	0.00	0.00	7474.0	-1171.4	444.4	0.00	0.00	1252.8	



FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
4082.0	4223.4	Ohio Creek
4343.0	4494.9	Mesa Verde
5004.0	5170.7	Williams Fork
5250.0	5417.0	Top of Gas
6859.0	7026.0	Coal Ridge
7224.0	7391.0	Rollins SS



Azimuths to True North
 Magnetic North: 10.39°
 Magnetic Field
 Strength: 52248.0nT
 Dip Angle: 65.89°
 Date: 1/24/2011
 Model: IGRF2010

Plan #1 Federal 21-9A (PH-21 Pad) 115XXX; BH					
KBE @ 6342.0ft (Original Well Elev) North American Datum 1983 Well Federal 21-9A (PH-21 Pad), True North					
Target	MD	Azimuth	Origin Type	N/S	
Federal 21-9A (PH-21) BHL	7541.0	159.23	Spot	0.0	
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
Federal 21-9A (PH-21) TGT	5250.0	-1171.4	444.4	39.421970	-107.994139
Federal 21-9A (PH-21) BHL	7374.0	-1171.4	444.4	39.421970	-107.994139

Cathedral Energy Services

Planning Report

Database: EDM 5000.1 US Multi Users DB
Company: EnCana Oil & Gas (USA) Inc
Project: S. Piceance (Parachute)
Site: SENE S21-T7S-R95W (PH-21 Pad)
Well: Federal 21-9A (PH-21 Pad)
Wellbore: DD
Design: Plan #1

Local Co-ordinate Reference: Well Federal 21-9A (PH-21 Pad)
TVD Reference: KBE @ 6342.0ft (Original Well Elev)
MD Reference: KBE @ 6342.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

Project S. Piceance (Parachute), Garfield County, CO

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

Site SENE S21-T7S-R95W (PH-21 Pad)

Site Position: Northing: 1,589,456.28 ft Latitude: 39.425231
From: Lat/Long Easting: 2,295,105.61 ft Longitude: -107.995671
Position Uncertainty: 0.0 ft Slot Radius: 13.200 in Grid Convergence: -1.57 °

Well Federal 21-9A (PH-21 Pad)

Well Position +N/-S 0.0 ft Northing: 1,589,440.20 ft Latitude: 39.425186
 +E/-W 0.0 ft Easting: 2,295,093.58 ft Longitude: -107.995712
Position Uncertainty 0.0 ft Wellhead Elevation: ft Ground Level: 6,320.0 ft

Wellbore DD

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	1/24/2011	10.39	65.69	52,248

Design Plan #1

Audit Notes:

Version: Phase: PLAN Tie On Depth: 0.0

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	159.23

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	
732.0	15.96	159.23	725.1	-68.8	26.1	3.00	3.00	0.00	159.23	
4,619.0	15.96	159.23	4,462.3	-1,068.1	405.2	0.00	0.00	0.00	0.00	
5,417.0	0.00	0.00	5,250.0	-1,171.4	444.4	2.00	-2.00	0.00	180.00	Federal 21-9A (PH-21)
7,541.0	0.00	0.00	7,374.0	-1,171.4	444.4	0.00	0.00	0.00	0.00	Federal 21-9A (PH-21)
7,641.0	0.00	0.00	7,474.0	-1,171.4	444.4	0.00	0.00	0.00	0.00	

Cathedral Energy Services

Planning Report

Database: EDM 5000.1 US Multi Users DB
Company: EnCana Oil & Gas (USA) Inc
Project: S. Piceance (Parachute)
Site: SENE S21-T7S-R95W (PH-21 Pad)
Well: Federal 21-9A (PH-21 Pad)
Wellbore: DD
Design: Plan #1

Local Co-ordinate Reference: Well Federal 21-9A (PH-21 Pad)
TVD Reference: KBE @ 6342.0ft (Original Well Elev)
MD Reference: KBE @ 6342.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	KOP @ 200' MD
300.0	3.00	159.23	300.0	-2.4	0.9	2.6	3.00	3.00	
400.0	6.00	159.23	399.6	-9.8	3.7	10.5	3.00	3.00	
500.0	9.00	159.23	498.8	-22.0	8.3	23.5	3.00	3.00	
600.0	12.00	159.23	597.1	-39.0	14.8	41.7	3.00	3.00	
700.0	15.00	159.23	694.3	-60.8	23.1	65.1	3.00	3.00	
732.0	15.96	159.23	725.1	-68.8	26.1	73.6	3.00	3.00	EOB; Inc=15.96°
800.0	15.96	159.23	790.5	-86.3	32.7	92.3	0.00	0.00	
900.0	15.96	159.23	886.7	-112.0	42.5	119.8	0.00	0.00	
1,000.0	15.96	159.23	982.8	-137.7	52.2	147.3	0.00	0.00	
1,100.0	15.96	159.23	1,079.0	-163.4	62.0	174.8	0.00	0.00	
1,146.2	15.96	159.23	1,123.3	-175.3	66.5	187.5	0.00	0.00	Surface Casing
1,200.0	15.96	159.23	1,175.1	-189.1	71.8	202.3	0.00	0.00	
1,300.0	15.96	159.23	1,271.3	-214.9	81.5	229.8	0.00	0.00	
1,400.0	15.96	159.23	1,367.4	-240.6	91.3	257.3	0.00	0.00	
1,500.0	15.96	159.23	1,463.5	-266.3	101.0	284.8	0.00	0.00	
1,600.0	15.96	159.23	1,559.7	-292.0	110.8	312.3	0.00	0.00	
1,700.0	15.96	159.23	1,655.8	-317.7	120.5	339.8	0.00	0.00	
1,800.0	15.96	159.23	1,752.0	-343.4	130.3	367.3	0.00	0.00	
1,900.0	15.96	159.23	1,848.1	-369.1	140.0	394.8	0.00	0.00	
2,000.0	15.96	159.23	1,944.3	-394.8	149.8	422.3	0.00	0.00	
2,100.0	15.96	159.23	2,040.4	-420.5	159.5	449.8	0.00	0.00	
2,200.0	15.96	159.23	2,136.6	-446.2	169.3	477.3	0.00	0.00	
2,300.0	15.96	159.23	2,232.7	-471.9	179.0	504.8	0.00	0.00	
2,400.0	15.96	159.23	2,328.9	-497.7	188.8	532.3	0.00	0.00	
2,500.0	15.96	159.23	2,425.0	-523.4	198.5	559.8	0.00	0.00	
2,600.0	15.96	159.23	2,521.1	-549.1	208.3	587.3	0.00	0.00	
2,700.0	15.96	159.23	2,617.3	-574.8	218.0	614.7	0.00	0.00	
2,800.0	15.96	159.23	2,713.4	-600.5	227.8	642.2	0.00	0.00	
2,900.0	15.96	159.23	2,809.6	-626.2	237.6	669.7	0.00	0.00	
3,000.0	15.96	159.23	2,905.7	-651.9	247.3	697.2	0.00	0.00	
3,100.0	15.96	159.23	3,001.9	-677.6	257.1	724.7	0.00	0.00	
3,200.0	15.96	159.23	3,098.0	-703.3	266.8	752.2	0.00	0.00	
3,300.0	15.96	159.23	3,194.2	-729.0	276.6	779.7	0.00	0.00	
3,400.0	15.96	159.23	3,290.3	-754.7	286.3	807.2	0.00	0.00	
3,500.0	15.96	159.23	3,386.5	-780.4	296.1	834.7	0.00	0.00	
3,600.0	15.96	159.23	3,482.6	-806.2	305.8	862.2	0.00	0.00	
3,700.0	15.96	159.23	3,578.7	-831.9	315.6	889.7	0.00	0.00	
3,800.0	15.96	159.23	3,674.9	-857.6	325.3	917.2	0.00	0.00	
3,900.0	15.96	159.23	3,771.0	-883.3	335.1	944.7	0.00	0.00	
4,000.0	15.96	159.23	3,867.2	-909.0	344.8	972.2	0.00	0.00	
4,100.0	15.96	159.23	3,963.3	-934.7	354.6	999.7	0.00	0.00	
4,200.0	15.96	159.23	4,059.5	-960.4	364.3	1,027.2	0.00	0.00	
4,223.4	15.96	159.23	4,082.0	-966.4	366.6	1,033.6	0.00	0.00	Ohio Creek
4,300.0	15.96	159.23	4,155.6	-986.1	374.1	1,054.7	0.00	0.00	
4,400.0	15.96	159.23	4,251.8	-1,011.8	383.8	1,082.2	0.00	0.00	
4,494.9	15.96	159.23	4,343.0	-1,036.2	393.1	1,108.3	0.00	0.00	Mesa Verde
4,500.0	15.96	159.23	4,347.9	-1,037.5	393.6	1,109.7	0.00	0.00	
4,600.0	15.96	159.23	4,444.1	-1,063.2	403.4	1,137.2	0.00	0.00	
4,619.0	15.96	159.23	4,462.3	-1,068.1	405.2	1,142.4	0.00	0.00	Start Drop -2.00

Cathedral Energy Services

Planning Report

Database: EDM 5000.1 US Multi Users DB
 Company: EnCana Oil & Gas (USA) Inc
 Project: S. Piceance (Parachute)
 Site: SENE S21-T7S-R95W (PH-21 Pad)
 Well: Federal 21-9A (PH-21 Pad)
 Wellbore: DD
 Design: Plan #1

Local Co-ordinate Reference: Well Federal 21-9A (PH-21 Pad)
 TVD Reference: KBE @ 6342.0ft (Original Well Elev)
 MD Reference: KBE @ 6342.0ft (Original Well Elev)
 North Reference: True
 Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
4,700.0	14.34	159.23	4,540.5	-1,087.9	412.7	1,163.6	2.00	-2.00	
4,800.0	12.34	159.23	4,637.8	-1,109.5	420.9	1,186.6	2.00	-2.00	
4,900.0	10.34	159.23	4,735.8	-1,127.9	427.9	1,206.3	2.00	-2.00	
5,000.0	8.34	159.23	4,834.5	-1,143.0	433.6	1,222.5	2.00	-2.00	
5,100.0	6.34	159.23	4,933.7	-1,155.0	438.2	1,235.3	2.00	-2.00	
5,170.7	4.93	159.23	5,004.0	-1,161.5	440.6	1,242.2	2.00	-2.00	Williams Fork
5,200.0	4.34	159.23	5,033.2	-1,163.7	441.5	1,244.6	2.00	-2.00	
5,300.0	2.34	159.23	5,133.1	-1,169.1	443.5	1,250.4	2.00	-2.00	
5,400.0	0.34	159.23	5,233.0	-1,171.3	444.4	1,252.8	2.00	-2.00	
5,417.0	0.00	0.00	5,250.0	-1,171.4	444.4	1,252.8	2.00	-2.00	EOD; Inc=0° - Top of Gas - Federal 21-9A (PH-
5,500.0	0.00	0.00	5,333.0	-1,171.4	444.4	1,252.8	0.00	0.00	
5,600.0	0.00	0.00	5,433.0	-1,171.4	444.4	1,252.8	0.00	0.00	
5,700.0	0.00	0.00	5,533.0	-1,171.4	444.4	1,252.8	0.00	0.00	
5,800.0	0.00	0.00	5,633.0	-1,171.4	444.4	1,252.8	0.00	0.00	
5,900.0	0.00	0.00	5,733.0	-1,171.4	444.4	1,252.8	0.00	0.00	
6,000.0	0.00	0.00	5,833.0	-1,171.4	444.4	1,252.8	0.00	0.00	
6,100.0	0.00	0.00	5,933.0	-1,171.4	444.4	1,252.8	0.00	0.00	
6,200.0	0.00	0.00	6,033.0	-1,171.4	444.4	1,252.8	0.00	0.00	
6,300.0	0.00	0.00	6,133.0	-1,171.4	444.4	1,252.8	0.00	0.00	
6,400.0	0.00	0.00	6,233.0	-1,171.4	444.4	1,252.8	0.00	0.00	
6,500.0	0.00	0.00	6,333.0	-1,171.4	444.4	1,252.8	0.00	0.00	
6,600.0	0.00	0.00	6,433.0	-1,171.4	444.4	1,252.8	0.00	0.00	
6,700.0	0.00	0.00	6,533.0	-1,171.4	444.4	1,252.8	0.00	0.00	
6,800.0	0.00	0.00	6,633.0	-1,171.4	444.4	1,252.8	0.00	0.00	
6,900.0	0.00	0.00	6,733.0	-1,171.4	444.4	1,252.8	0.00	0.00	
7,000.0	0.00	0.00	6,833.0	-1,171.4	444.4	1,252.8	0.00	0.00	
7,026.0	0.00	0.00	6,859.0	-1,171.4	444.4	1,252.8	0.00	0.00	Coal Ridge
7,100.0	0.00	0.00	6,933.0	-1,171.4	444.4	1,252.8	0.00	0.00	
7,200.0	0.00	0.00	7,033.0	-1,171.4	444.4	1,252.8	0.00	0.00	
7,300.0	0.00	0.00	7,133.0	-1,171.4	444.4	1,252.8	0.00	0.00	
7,391.0	0.00	0.00	7,224.0	-1,171.4	444.4	1,252.8	0.00	0.00	Rollins SS
7,400.0	0.00	0.00	7,233.0	-1,171.4	444.4	1,252.8	0.00	0.00	
7,500.0	0.00	0.00	7,333.0	-1,171.4	444.4	1,252.8	0.00	0.00	
7,541.0	0.00	0.00	7,374.0	-1,171.4	444.4	1,252.8	0.00	0.00	TD @ 7541' MD - Federal 21-9A (PH-21) BHL
7,600.0	0.00	0.00	7,433.0	-1,171.4	444.4	1,252.8	0.00	0.00	
7,641.0	0.00	0.00	7,474.0	-1,171.4	444.4	1,252.8	0.00	0.00	Permit TD @ 7641' MD

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Federal 21-9A (PH-21) E - plan hits target center - Circle (radius 25.0)	0.00	0.00	7,374.0	-1,171.4	444.4	1,588,257.08	2,295,505.61	39.421970	-107.994139
Federal 21-9A (PH-21) T - plan hits target center - Circle (radius 25.0)	0.00	0.00	5,250.0	-1,171.4	444.4	1,588,257.08	2,295,505.61	39.421970	-107.994139

Cathedral Energy Services

Planning Report

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Company: EnCana Oil & Gas (USA) Inc
Project: S. Piceance (Parachute)
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Design: Plan #1

Local Co-ordinate Reference: Well Federal 21-9A (PH-21 Pad)
TVD Reference: KBE @ 6342.0ft (Original Well Elev)
MD Reference: KBE @ 6342.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
1,146.2	1,123.3	Surface Casing	0.000	0.000

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,223.4	4,082.0	Ohio Creek		0.00	
4,494.9	4,343.0	Mesa Verde		0.00	
5,170.7	5,004.0	Williams Fork		0.00	
5,417.0	5,250.0	Top of Gas		0.00	
7,026.0	6,859.0	Coal Ridge		0.00	
7,391.0	7,224.0	Rollins SS		0.00	

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' MD
732.0	725.1	-68.8	26.1	EOB; Inc=15.96°
4,619.0	4,462.3	-1,068.1	405.2	Start Drop -2.00
5,417.0	5,250.0	-1,171.4	444.4	EOD; Inc=0°
7,541.0	7,374.0	-1,171.4	444.4	TD @ 7541' MD
7,641.0	7,474.0	-1,171.4	444.4	Permit TD @ 7641' MD