





# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well 8515D-27 L27 496
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	WELL @ 8136.0ft (Original Well Elev)
<b>Project:</b>	Story Gulch	<b>MD Reference:</b>	WELL @ 8136.0ft (Original Well Elev)
<b>Site:</b>	S27-T4S-R96W (L27 496)	<b>North Reference:</b>	True
<b>Well:</b>	8515D-27 L27 496	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	DD		
<b>Design:</b>	Plan #1		

<b>Project</b>	Story Gulch		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Central Zone		

Site		S27-T4S-R96W (L27 496)			
Site Position:		Northing:	1,680,404.44 ft	Latitude:	39° 40' 17.06 N
From:	Lat/Long	Easting:	2,251,282.88 ft	Longitude:	108° 9' 36.59 W
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.68 °

Well	8515D-27 L27 496					
Well Position	+N/-S	0.0 ft	Northing:	1,680,248.66 ft	Latitude:	39° 40' 15.51 N
	+E/-W	0.0 ft	Easting:	2,251,243.90 ft	Longitude:	108° 9' 37.03 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	8,104.0 ft

<b>Wellbore</b>	DD				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	9/25/2012	10.28	65.82	52,177

<b>Design</b>	Plan #1				
<b>Audit Notes:</b>					
<b>Version:</b>	<b>Phase:</b>	PLAN		<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>	
	0.0	0.0	0.0	118.48	

<b>Plan Sections</b>										
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	
300.0	0.00	0.00	300.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,161.1	25.83	118.17	1,132.3	-90.1	168.3	3.00	3.00	0.00	118.17	
7,450.2	25.83	118.17	6,792.7	-1,384.1	2,584.1	0.00	0.00	0.00	0.00	
8,311.3	0.00	0.00	7,625.0	-1,474.2	2,752.4	3.00	-3.00	0.00	180.00	L27 496 8515D-27 TC
8,410.9	0.25	239.54	7,724.5	-1,474.3	2,752.2	0.25	0.25	-121.02	239.54	
12,903.4	0.25	239.54	12,217.0	-1,484.2	2,735.4	0.00	0.00	0.00	0.00	L27 496 8515D-27 PE
13,053.4	0.25	239.54	12,367.0	-1,484.5	2,734.8	0.00	0.00	0.00	0.00	

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<b>Project:</b>	Story Gulch	<b>MD Reference:</b>	WELL @ 8136.0ft (Original Well Elev)
<b>Site:</b>	S27-T4S-R96W (L27 496)	<b>North Reference:</b>	True
<b>Well:</b>	8515D-27 L27 496	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	DD		
<b>Design:</b>	Plan #1		

### 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	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	KOP @ 300' MD
400.0	3.00	118.17	400.0	-1.2	2.3	2.6	3.00	3.00	
500.0	6.00	118.17	499.6	-4.9	9.2	10.5	3.00	3.00	
600.0	9.00	118.17	598.8	-11.1	20.7	23.5	3.00	3.00	
700.0	12.00	118.17	697.1	-19.7	36.8	41.7	3.00	3.00	
800.0	15.00	118.17	794.3	-30.7	57.4	65.1	3.00	3.00	
900.0	18.00	118.17	890.2	-44.1	82.4	93.5	3.00	3.00	
1,000.0	21.00	118.17	984.4	-59.9	111.8	126.9	3.00	3.00	
1,094.7	23.84	118.17	1,072.0	-77.0	143.7	163.0	3.00	3.00	A_GROOVE_TVD
1,100.0	24.00	118.17	1,076.8	-78.0	145.6	165.1	3.00	3.00	
1,161.1	25.83	118.17	1,132.3	-90.1	168.3	190.9	3.00	3.00	EOB; Inc=25.83°
1,200.0	25.83	118.17	1,167.2	-98.1	183.2	207.8	0.00	0.00	
1,259.7	25.83	118.17	1,221.0	-110.4	206.1	233.8	0.00	0.00	B_GROOVE_TVD
1,273.1	25.83	118.17	1,233.0	-113.1	211.3	239.6	0.00	0.00	B_GROOVE_BASE_TVD
1,300.0	25.83	118.17	1,257.2	-118.7	221.6	251.4	0.00	0.00	
1,400.0	25.83	118.17	1,347.2	-139.3	260.0	295.0	0.00	0.00	
1,500.0	25.83	118.17	1,437.2	-159.8	298.4	338.5	0.00	0.00	
1,600.0	25.83	118.17	1,527.3	-180.4	336.8	382.1	0.00	0.00	
1,700.0	25.83	118.17	1,617.3	-201.0	375.3	425.7	0.00	0.00	
1,800.0	25.83	118.17	1,707.3	-221.6	413.7	469.3	0.00	0.00	
1,900.0	25.83	118.17	1,797.3	-242.1	452.1	512.8	0.00	0.00	
2,000.0	25.83	118.17	1,887.3	-262.7	490.5	556.4	0.00	0.00	
2,100.0	25.83	118.17	1,977.3	-283.3	528.9	600.0	0.00	0.00	
2,200.0	25.83	118.17	2,067.3	-303.9	567.3	643.6	0.00	0.00	
2,300.0	25.83	118.17	2,157.3	-324.4	605.7	687.1	0.00	0.00	
2,343.0	25.83	118.17	2,196.0	-333.3	622.3	705.9	0.00	0.00	GARDEN_GULCH_TVD.
2,400.0	25.83	118.17	2,247.3	-345.0	644.2	730.7	0.00	0.00	
2,500.0	25.83	118.17	2,337.3	-365.6	682.6	774.3	0.00	0.00	
2,600.0	25.83	118.17	2,427.3	-386.2	721.0	817.9	0.00	0.00	
2,700.0	25.83	118.17	2,517.3	-406.7	759.4	861.5	0.00	0.00	
2,800.0	25.83	118.17	2,607.3	-427.3	797.8	905.0	0.00	0.00	
2,900.0	25.83	118.17	2,697.3	-447.9	836.2	948.6	0.00	0.00	
3,000.0	25.83	118.17	2,787.3	-468.5	874.6	992.2	0.00	0.00	
3,100.0	25.83	118.17	2,877.3	-489.0	913.1	1,035.8	0.00	0.00	
3,200.0	25.83	118.17	2,967.3	-509.6	951.5	1,079.3	0.00	0.00	
3,300.0	25.83	118.17	3,057.4	-530.2	989.9	1,122.9	0.00	0.00	
3,400.0	25.83	118.17	3,147.4	-550.8	1,028.3	1,166.5	0.00	0.00	
3,458.5	25.83	118.17	3,200.0	-562.8	1,050.8	1,192.0	0.00	0.00	WASATCH_FM_TVD
3,500.0	25.83	118.17	3,237.4	-571.3	1,066.7	1,210.1	0.00	0.00	
3,600.0	25.83	118.17	3,327.4	-591.9	1,105.1	1,253.6	0.00	0.00	
3,700.0	25.83	118.17	3,417.4	-612.5	1,143.5	1,297.2	0.00	0.00	
3,800.0	25.83	118.17	3,507.4	-633.1	1,182.0	1,340.8	0.00	0.00	
3,900.0	25.83	118.17	3,597.4	-653.6	1,220.4	1,384.4	0.00	0.00	
4,000.0	25.83	118.17	3,687.4	-674.2	1,258.8	1,427.9	0.00	0.00	
4,100.0	25.83	118.17	3,777.4	-694.8	1,297.2	1,471.5	0.00	0.00	
4,200.0	25.83	118.17	3,867.4	-715.4	1,335.6	1,515.1	0.00	0.00	
4,300.0	25.83	118.17	3,957.4	-735.9	1,374.0	1,558.7	0.00	0.00	
4,400.0	25.83	118.17	4,047.4	-756.5	1,412.4	1,602.3	0.00	0.00	
4,500.0	25.83	118.17	4,137.4	-777.1	1,450.9	1,645.8	0.00	0.00	

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<b>Project:</b>	Story Gulch	<b>MD Reference:</b>	WELL @ 8136.0ft (Original Well Elev)
<b>Site:</b>	S27-T4S-R96W (L27 496)	<b>North Reference:</b>	True
<b>Well:</b>	8515D-27 L27 496	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	DD		
<b>Design:</b>	Plan #1		

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
4,600.0	25.83	118.17	4,227.4	-797.7	1,489.3	1,689.4	0.00	0.00	
4,700.0	25.83	118.17	4,317.4	-818.2	1,527.7	1,733.0	0.00	0.00	
4,800.0	25.83	118.17	4,407.4	-838.8	1,566.1	1,776.6	0.00	0.00	
4,900.0	25.83	118.17	4,497.4	-859.4	1,604.5	1,820.1	0.00	0.00	
5,000.0	25.83	118.17	4,587.4	-880.0	1,642.9	1,863.7	0.00	0.00	
5,100.0	25.83	118.17	4,677.5	-900.5	1,681.3	1,907.3	0.00	0.00	
5,200.0	25.83	118.17	4,767.5	-921.1	1,719.8	1,950.9	0.00	0.00	
5,300.0	25.83	118.17	4,857.5	-941.7	1,758.2	1,994.4	0.00	0.00	
5,400.0	25.83	118.17	4,947.5	-962.3	1,796.6	2,038.0	0.00	0.00	
5,500.0	25.83	118.17	5,037.5	-982.8	1,835.0	2,081.6	0.00	0.00	
5,600.0	25.83	118.17	5,127.5	-1,003.4	1,873.4	2,125.2	0.00	0.00	
5,700.0	25.83	118.17	5,217.5	-1,024.0	1,911.8	2,168.8	0.00	0.00	
5,800.0	25.83	118.17	5,307.5	-1,044.6	1,950.2	2,212.3	0.00	0.00	
5,900.0	25.83	118.17	5,397.5	-1,065.1	1,988.7	2,255.9	0.00	0.00	
5,926.1	25.83	118.17	5,421.0	-1,070.5	1,998.7	2,267.3	0.00	0.00	WASATCH_G_TVD
6,000.0	25.83	118.17	5,487.5	-1,085.7	2,027.1	2,299.5	0.00	0.00	
6,100.0	25.83	118.17	5,577.5	-1,106.3	2,065.5	2,343.1	0.00	0.00	
6,200.0	25.83	118.17	5,667.5	-1,126.9	2,103.9	2,386.6	0.00	0.00	
6,300.0	25.83	118.17	5,757.5	-1,147.4	2,142.3	2,430.2	0.00	0.00	
6,400.0	25.83	118.17	5,847.5	-1,168.0	2,180.7	2,473.8	0.00	0.00	
6,500.0	25.83	118.17	5,937.5	-1,188.6	2,219.1	2,517.4	0.00	0.00	
6,600.0	25.83	118.17	6,027.5	-1,209.2	2,257.6	2,560.9	0.00	0.00	
6,700.0	25.83	118.17	6,117.5	-1,229.7	2,296.0	2,604.5	0.00	0.00	
6,800.0	25.83	118.17	6,207.6	-1,250.3	2,334.4	2,648.1	0.00	0.00	
6,900.0	25.83	118.17	6,297.6	-1,270.9	2,372.8	2,691.7	0.00	0.00	
7,000.0	25.83	118.17	6,387.6	-1,291.5	2,411.2	2,735.2	0.00	0.00	
7,100.0	25.83	118.17	6,477.6	-1,312.0	2,449.6	2,778.8	0.00	0.00	
7,200.0	25.83	118.17	6,567.6	-1,332.6	2,488.0	2,822.4	0.00	0.00	
7,300.0	25.83	118.17	6,657.6	-1,353.2	2,526.5	2,866.0	0.00	0.00	
7,400.0	25.83	118.17	6,747.6	-1,373.8	2,564.9	2,909.6	0.00	0.00	
7,450.2	25.83	118.17	6,792.7	-1,384.1	2,584.1	2,931.4	0.00	0.00	Start 3° Drop @ 7450.2' MD
7,500.0	24.34	118.17	6,837.9	-1,394.1	2,602.8	2,952.5	3.00	-3.00	
7,600.0	21.34	118.17	6,930.0	-1,412.4	2,637.0	2,991.4	3.00	-3.00	
7,700.0	18.34	118.17	7,024.1	-1,428.4	2,666.9	3,025.3	3.00	-3.00	
7,800.0	15.34	118.17	7,119.8	-1,442.1	2,692.4	3,054.3	3.00	-3.00	
7,900.0	12.34	118.17	7,216.9	-1,453.4	2,713.5	3,078.2	3.00	-3.00	
8,000.0	9.34	118.17	7,315.1	-1,462.2	2,730.1	3,097.0	3.00	-3.00	
8,100.0	6.34	118.17	7,414.1	-1,468.7	2,742.1	3,110.6	3.00	-3.00	
8,200.0	3.34	118.17	7,513.8	-1,472.7	2,749.5	3,119.0	3.00	-3.00	
8,271.3	1.20	118.17	7,585.0	-1,474.0	2,752.0	3,121.9	3.00	-3.00	WILLIAMS_FORK_TVD
8,300.0	0.34	118.17	7,613.7	-1,474.2	2,752.4	3,122.3	3.00	-3.00	
8,311.3	0.00	0.00	7,625.0	-1,474.2	2,752.4	3,122.3	3.00	-3.00	EOD @ 8311.3' MD - TOG TVD
8,400.0	0.22	239.54	7,713.7	-1,474.3	2,752.3	3,122.2	0.25	0.25	
8,410.9	0.25	239.54	7,724.5	-1,474.3	2,752.2	3,122.2	0.25	0.25	
8,500.0	0.25	239.54	7,813.7	-1,474.5	2,751.9	3,122.0	0.00	0.00	
8,600.0	0.25	239.54	7,913.7	-1,474.7	2,751.5	3,121.8	0.00	0.00	
8,700.0	0.25	239.54	8,013.7	-1,474.9	2,751.1	3,121.5	0.00	0.00	
8,800.0	0.25	239.54	8,113.7	-1,475.2	2,750.8	3,121.3	0.00	0.00	
8,900.0	0.25	239.54	8,213.7	-1,475.4	2,750.4	3,121.1	0.00	0.00	
9,000.0	0.25	239.54	8,313.7	-1,475.6	2,750.0	3,120.9	0.00	0.00	
9,100.0	0.25	239.54	8,413.7	-1,475.8	2,749.6	3,120.6	0.00	0.00	
9,200.0	0.25	239.54	8,513.7	-1,476.0	2,749.3	3,120.4	0.00	0.00	

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<b>Project:</b>	Story Gulch	<b>MD Reference:</b>	WELL @ 8136.0ft (Original Well Elev)
<b>Site:</b>	S27-T4S-R96W (L27 496)	<b>North Reference:</b>	True
<b>Well:</b>	8515D-27 L27 496	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	DD		
<b>Design:</b>	Plan #1		

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
9,300.0	0.25	239.54	8,613.7	-1,476.3	2,748.9	3,120.2	0.00	0.00	
9,400.0	0.25	239.54	8,713.7	-1,476.5	2,748.5	3,120.0	0.00	0.00	
9,500.0	0.25	239.54	8,813.7	-1,476.7	2,748.1	3,119.7	0.00	0.00	
9,600.0	0.25	239.54	8,913.7	-1,476.9	2,747.8	3,119.5	0.00	0.00	
9,700.0	0.25	239.54	9,013.7	-1,477.1	2,747.4	3,119.3	0.00	0.00	
9,800.0	0.25	239.54	9,113.7	-1,477.4	2,747.0	3,119.1	0.00	0.00	
9,900.0	0.25	239.54	9,213.7	-1,477.6	2,746.6	3,118.8	0.00	0.00	
10,000.0	0.25	239.54	9,313.7	-1,477.8	2,746.3	3,118.6	0.00	0.00	
10,100.0	0.25	239.54	9,413.7	-1,478.0	2,745.9	3,118.4	0.00	0.00	
10,200.0	0.25	239.54	9,513.7	-1,478.2	2,745.5	3,118.2	0.00	0.00	
10,300.0	0.25	239.54	9,613.7	-1,478.5	2,745.1	3,117.9	0.00	0.00	
10,400.0	0.25	239.54	9,713.7	-1,478.7	2,744.8	3,117.7	0.00	0.00	
10,500.0	0.25	239.54	9,813.7	-1,478.9	2,744.4	3,117.5	0.00	0.00	
10,600.0	0.25	239.54	9,913.7	-1,479.1	2,744.0	3,117.3	0.00	0.00	
10,700.0	0.25	239.54	10,013.7	-1,479.4	2,743.6	3,117.0	0.00	0.00	
10,800.0	0.25	239.54	10,113.7	-1,479.6	2,743.3	3,116.8	0.00	0.00	
10,900.0	0.25	239.54	10,213.7	-1,479.8	2,742.9	3,116.6	0.00	0.00	
11,000.0	0.25	239.54	10,313.7	-1,480.0	2,742.5	3,116.4	0.00	0.00	
11,100.0	0.25	239.54	10,413.7	-1,480.2	2,742.1	3,116.2	0.00	0.00	
11,200.0	0.25	239.54	10,513.7	-1,480.5	2,741.8	3,115.9	0.00	0.00	
11,300.0	0.25	239.54	10,613.7	-1,480.7	2,741.4	3,115.7	0.00	0.00	
11,400.0	0.25	239.54	10,713.7	-1,480.9	2,741.0	3,115.5	0.00	0.00	
11,500.0	0.25	239.54	10,813.7	-1,481.1	2,740.6	3,115.3	0.00	0.00	
11,600.0	0.25	239.54	10,913.7	-1,481.3	2,740.3	3,115.0	0.00	0.00	
11,700.0	0.25	239.54	11,013.7	-1,481.6	2,739.9	3,114.8	0.00	0.00	
11,704.3	0.25	239.54	11,018.0	-1,481.6	2,739.9	3,114.8	0.00	0.00	CAMEO_TVD
11,800.0	0.25	239.54	11,113.7	-1,481.8	2,739.5	3,114.6	0.00	0.00	
11,900.0	0.25	239.54	11,213.7	-1,482.0	2,739.2	3,114.4	0.00	0.00	
12,000.0	0.25	239.54	11,313.7	-1,482.2	2,738.8	3,114.1	0.00	0.00	
12,036.3	0.25	239.54	11,350.0	-1,482.3	2,738.6	3,114.1	0.00	0.00	ROLLINS_TVD
12,100.0	0.25	239.54	11,413.7	-1,482.4	2,738.4	3,113.9	0.00	0.00	
12,200.0	0.25	239.54	11,513.7	-1,482.7	2,738.0	3,113.7	0.00	0.00	
12,275.3	0.25	239.54	11,589.0	-1,482.8	2,737.7	3,113.5	0.00	0.00	COZZETTE_TVD
12,300.0	0.25	239.54	11,613.7	-1,482.9	2,737.7	3,113.5	0.00	0.00	
12,400.0	0.25	239.54	11,713.6	-1,483.1	2,737.3	3,113.2	0.00	0.00	
12,463.4	0.25	239.54	11,777.0	-1,483.2	2,737.0	3,113.1	0.00	0.00	CORCORAN_TVD
12,500.0	0.25	239.54	11,813.6	-1,483.3	2,736.9	3,113.0	0.00	0.00	
12,600.0	0.25	239.54	11,913.6	-1,483.5	2,736.5	3,112.8	0.00	0.00	
12,700.0	0.25	239.54	12,013.6	-1,483.8	2,736.2	3,112.6	0.00	0.00	
12,753.4	0.25	239.54	12,067.0	-1,483.9	2,736.0	3,112.4	0.00	0.00	UPPER_SEGO_TVD
12,800.0	0.25	239.54	12,113.6	-1,484.0	2,735.8	3,112.3	0.00	0.00	
12,900.0	0.25	239.54	12,213.6	-1,484.2	2,735.4	3,112.1	0.00	0.00	
12,903.4	0.25	239.54	12,217.0	-1,484.2	2,735.4	3,112.1	0.00	0.00	TD @ 12903.4' MD - SEGO_BASE_TARGET_1
13,000.0	0.25	239.54	12,313.6	-1,484.4	2,735.0	3,111.9	0.00	0.00	
13,053.4	0.25	239.54	12,367.0	-1,484.5	2,734.8	3,111.8	0.00	0.00	Permit TD @ 13053.4' MD

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well 8515D-27 L27 496
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	WELL @ 8136.0ft (Original Well Elev)
<b>Project:</b>	Story Gulch	<b>MD Reference:</b>	WELL @ 8136.0ft (Original Well Elev)
<b>Site:</b>	S27-T4S-R96W (L27 496)	<b>North Reference:</b>	True
<b>Well:</b>	8515D-27 L27 496	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	DD		
<b>Design:</b>	Plan #1		

Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
L27 496 8515D-27 PBHI	0.00	0.00	12,217.0	-1,484.2	2,735.4	1,678,685.01	2,253,934.66	39° 40' 0.84 N	108° 9' 2.05 W
- plan hits target center									
- Rectangle (sides W30.0 H50.0 D0.0)									
L27 496 8515D-27 TGT	0.00	0.00	7,625.0	-1,474.2	2,752.4	1,678,694.51	2,253,951.95	39° 40' 0.94 N	108° 9' 1.83 W
- plan hits target center									
- Point									

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(ft)	(ft)			(°)	(°)	
1,094.7	1,072.0	A_GROOVE_TVD				
1,259.7	1,221.0	B_GROOVE_TVD				
1,273.1	1,233.0	B_GROOVE_BASE_TVD				
2,343.0	2,196.0	GARDEN_GULCH_TVD.				
3,458.5	3,200.0	WASATCH_FM_TVD				
5,926.1	5,421.0	WASATCH_G_TVD				
8,271.3	7,585.0	WILLIAMS_FORK_TVD				
8,311.3	7,625.0	TOG TVD				
11,704.3	11,018.0	CAMEO_TVD				
12,036.3	11,350.0	ROLLINS_TVD				
12,275.3	11,589.0	COZZETTE_TVD				
12,463.4	11,777.0	CORCORAN_TVD				
12,753.4	12,067.0	UPPER_SEGO_TVD				
12,903.4	12,217.0	SEGO_BASE_TARGET_TVD				

Plan Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)	
300.0	300.0	0.0	0.0	KOP @ 300' MD
1,161.1	1,132.3	-90.1	168.3	EOB; Inc=25.83°
7,450.2	6,792.7	-1,384.1	2,584.1	Start 3° Drop @ 7450.2' MD
8,311.3	7,625.0	-1,474.2	2,752.4	EOD @ 8311.3' MD
12,903.4	12,217.0	-1,474.3	2,752.2	TD @ 12903.4' MD
13,053.4	12,367.0	-1,484.2	2,735.4	Permit TD @ 13053.4' MD