

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well Federal 25-5A (PE-25)
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KBE @ 5410.0ft (Original Well Elev)
Project:	S. Piceance (Parachute)	MD Reference:	KBE @ 5410.0ft (Original Well Elev)
Site:	SWNW Sec 25-T7S-R96W (PE-25 Pad)	North Reference:	True
Well:	Federal 25-5A (PE-25)	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Project	S. Piceance (Parachute), Garfield County, CO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		

Site	SWNW Sec 25-T7S-R96W (PE-25 Pad)				
Site Position:		Northing:	1,584,438.30 ft	Latitude:	39.409900
From:	Lat/Long	Easting:	2,274,718.76 ft	Longitude:	-108.067310
Position Uncertainty:	0.0 ft	Slot Radius:	13.200in	Grid Convergence:	-1.62 °

Well	Federal 25-5A (PE-25)					
Well Position	+N/-S	0.0 ft	Northing:	1,584,420.17 ft	Latitude:	39.409850
	+E/-W	0.0 ft	Easting:	2,274,715.42 ft	Longitude:	-108.067320
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	5,388.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	12/22/2010	10.41	65.68	52,278

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	48.52

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	
846.4	19.39	48.52	834.2	71.8	81.2	3.00	3.00	0.00	48.52	
3,392.5	19.39	48.52	3,235.8	631.8	714.5	0.00	0.00	0.00	0.00	
4,362.1	0.00	0.00	4,187.0	739.4	836.3	2.00	-2.00	0.00	180.00	Federal 25-5A (PE-25)
5,924.1	0.00	0.00	5,749.0	739.4	836.3	0.00	0.00	0.00	0.00	Federal 25-5A (PE-25)
6,024.1	0.00	0.00	5,849.0	739.4	836.3	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: SWNW Sec 25-T7S-R96W (PE-25 Pad)
Well: Federal 25-5A (PE-25)
Wellbore: DD
Design: Plan #1

Local Co-ordinate Reference: Well Federal 25-5A (PE-25)
TVD Reference: KBE @ 5410.0ft (Original Well Elev)
MD Reference: KBE @ 5410.0ft (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	48.52	300.0	1.7	2.0	2.6	3.00	3.00	
400.0	6.00	48.52	399.6	6.9	7.8	10.5	3.00	3.00	
500.0	9.00	48.52	498.8	15.6	17.6	23.5	3.00	3.00	
600.0	12.00	48.52	597.1	27.6	31.3	41.7	3.00	3.00	
700.0	15.00	48.52	694.3	43.1	48.8	65.1	3.00	3.00	
800.0	18.00	48.52	790.2	61.9	70.0	93.5	3.00	3.00	
846.4	19.39	48.52	834.2	71.8	81.2	108.4	3.00	3.00	EOB; Inc=19.39°
900.0	19.39	48.52	884.7	83.6	94.5	126.1	0.00	0.00	
1,000.0	19.39	48.52	979.0	105.5	119.4	159.4	0.00	0.00	
1,100.0	19.39	48.52	1,073.3	127.5	144.3	192.6	0.00	0.00	
1,120.0	19.39	48.52	1,092.2	131.9	149.2	199.2	0.00	0.00	Surface Casing
1,200.0	19.39	48.52	1,167.7	149.5	169.1	225.8	0.00	0.00	
1,300.0	19.39	48.52	1,262.0	171.5	194.0	259.0	0.00	0.00	
1,400.0	19.39	48.52	1,356.3	193.5	218.9	292.2	0.00	0.00	
1,500.0	19.39	48.52	1,450.6	215.5	243.8	325.4	0.00	0.00	
1,600.0	19.39	48.52	1,545.0	237.5	268.6	358.6	0.00	0.00	
1,700.0	19.39	48.52	1,639.3	259.5	293.5	391.8	0.00	0.00	
1,800.0	19.39	48.52	1,733.6	281.5	318.4	425.0	0.00	0.00	
1,900.0	19.39	48.52	1,828.0	303.5	343.3	458.2	0.00	0.00	
2,000.0	19.39	48.52	1,922.3	325.5	368.1	491.4	0.00	0.00	
2,100.0	19.39	48.52	2,016.6	347.5	393.0	524.6	0.00	0.00	
2,200.0	19.39	48.52	2,110.9	369.5	417.9	557.8	0.00	0.00	
2,300.0	19.39	48.52	2,205.3	391.5	442.8	591.0	0.00	0.00	
2,400.0	19.39	48.52	2,299.6	413.5	467.6	624.2	0.00	0.00	
2,500.0	19.39	48.52	2,393.9	435.5	492.5	657.4	0.00	0.00	
2,600.0	19.39	48.52	2,488.2	457.5	517.4	690.6	0.00	0.00	
2,700.0	19.39	48.52	2,582.6	479.4	542.3	723.8	0.00	0.00	
2,800.0	19.39	48.52	2,676.9	501.4	567.2	757.0	0.00	0.00	
2,855.2	19.39	48.52	2,729.0	513.6	580.9	775.4	0.00	0.00	Mesaverde
2,900.0	19.39	48.52	2,771.2	523.4	592.0	790.2	0.00	0.00	
3,000.0	19.39	48.52	2,865.5	545.4	616.9	823.4	0.00	0.00	
3,100.0	19.39	48.52	2,959.9	567.4	641.8	856.7	0.00	0.00	
3,200.0	19.39	48.52	3,054.2	589.4	666.7	889.9	0.00	0.00	
3,300.0	19.39	48.52	3,148.5	611.4	691.5	923.1	0.00	0.00	
3,392.5	19.39	48.52	3,235.8	631.8	714.5	953.8	0.00	0.00	Start Drop -2.00
3,400.0	19.24	48.52	3,242.8	633.4	716.4	956.3	2.00	-2.00	
3,462.4	17.99	48.52	3,302.0	646.6	731.3	976.2	2.00	-2.00	Williams Fork
3,500.0	17.24	48.52	3,337.8	654.1	739.9	987.6	2.00	-2.00	
3,600.0	15.24	48.52	3,433.8	672.7	760.8	1,015.5	2.00	-2.00	
3,700.0	13.24	48.52	3,530.7	689.0	779.2	1,040.1	2.00	-2.00	
3,800.0	11.24	48.52	3,628.5	703.0	795.1	1,061.3	2.00	-2.00	
3,900.0	9.24	48.52	3,726.9	714.8	808.4	1,079.1	2.00	-2.00	
4,000.0	7.24	48.52	3,825.8	724.3	819.2	1,093.5	2.00	-2.00	
4,100.0	5.24	48.52	3,925.2	731.5	827.3	1,104.3	2.00	-2.00	
4,200.0	3.24	48.52	4,024.9	736.4	832.9	1,111.7	2.00	-2.00	
4,300.0	1.24	48.52	4,124.9	739.0	835.8	1,115.6	2.00	-2.00	
4,362.1	0.00	0.00	4,187.0	739.4	836.3	1,116.3	2.00	-2.00	EOD; Inc=0° - Top of Gas - Federal 25-5A (PE-
4,400.0	0.00	0.00	4,224.9	739.4	836.3	1,116.3	0.00	0.00	
4,500.0	0.00	0.00	4,324.9	739.4	836.3	1,116.3	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: SWNW Sec 25-T7S-R96W (PE-25 Pad)
Well: Federal 25-5A (PE-25)
Wellbore: DD
Design: Plan #1

Local Co-ordinate Reference: Well Federal 25-5A (PE-25)
TVD Reference: KBE @ 5410.0ft (Original Well Elev)
MD Reference: KBE @ 5410.0ft (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
4,600.0	0.00	0.00	4,424.9	739.4	836.3	1,116.3	0.00	0.00	
4,700.0	0.00	0.00	4,524.9	739.4	836.3	1,116.3	0.00	0.00	
4,800.0	0.00	0.00	4,624.9	739.4	836.3	1,116.3	0.00	0.00	
4,900.0	0.00	0.00	4,724.9	739.4	836.3	1,116.3	0.00	0.00	
5,000.0	0.00	0.00	4,824.9	739.4	836.3	1,116.3	0.00	0.00	
5,100.0	0.00	0.00	4,924.9	739.4	836.3	1,116.3	0.00	0.00	
5,200.0	0.00	0.00	5,024.9	739.4	836.3	1,116.3	0.00	0.00	
5,300.0	0.00	0.00	5,124.9	739.4	836.3	1,116.3	0.00	0.00	
5,376.1	0.00	0.00	5,201.0	739.4	836.3	1,116.3	0.00	0.00	Coal Ridge
5,400.0	0.00	0.00	5,224.9	739.4	836.3	1,116.3	0.00	0.00	
5,500.0	0.00	0.00	5,324.9	739.4	836.3	1,116.3	0.00	0.00	
5,600.0	0.00	0.00	5,424.9	739.4	836.3	1,116.3	0.00	0.00	
5,700.0	0.00	0.00	5,524.9	739.4	836.3	1,116.3	0.00	0.00	
5,724.1	0.00	0.00	5,549.0	739.4	836.3	1,116.3	0.00	0.00	Rollins SS
5,800.0	0.00	0.00	5,624.9	739.4	836.3	1,116.3	0.00	0.00	
5,900.0	0.00	0.00	5,724.9	739.4	836.3	1,116.3	0.00	0.00	
5,924.1	0.00	0.00	5,749.0	739.4	836.3	1,116.3	0.00	0.00	TD @ 5924.1' MD - Federal 25-5A (PE-25) BHL
6,000.0	0.00	0.00	5,824.9	739.4	836.3	1,116.3	0.00	0.00	
6,024.1	0.00	0.00	5,849.0	739.4	836.3	1,116.3	0.00	0.00	Permit TD @ 6024.1' MD

Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
Federal 25-5A (PE-25) E	0.00	0.00	5,749.0	739.4	836.3	1,585,135.66	2,275,572.29	39.411880	-108.064360
- plan hits target center									
- Circle (radius 25.0)									
Federal 25-5A (PE-25) T	0.00	0.00	4,187.0	739.4	836.3	1,585,135.66	2,275,572.29	39.411880	-108.064360
- plan hits target center									
- Circle (radius 25.0)									

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
1,120.0	1,092.2	Surface Casing	0.000	0.000

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,855.2	2,729.0	Mesaverde		0.00	
3,462.4	3,302.0	Williams Fork		0.00	
4,362.1	4,187.0	Top of Gas		0.00	
5,376.1	5,201.0	Coal Ridge		0.00	
5,724.1	5,549.0	Rollins SS		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: SWNW Sec 25-T7S-R96W (PE-25 Pad)
Well: Federal 25-5A (PE-25)
Wellbore: DD
Design: Plan #1

Local Co-ordinate Reference: Well Federal 25-5A (PE-25)
TVD Reference: KBE @ 5410.0ft (Original Well Elev)
MD Reference: KBE @ 5410.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

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
846.4	834.2	71.8	81.2	EOB; Inc=19.39°
3,392.5	3,235.8	631.8	714.5	Start Drop -2.00
4,362.1	4,187.0	739.4	836.3	EOD; Inc=0°
5,924.1	5,749.0	739.4	836.3	TD @ 5924.1' MD
6,024.1	5,849.0	739.4	836.3	Permit TD @ 6024.1' MD