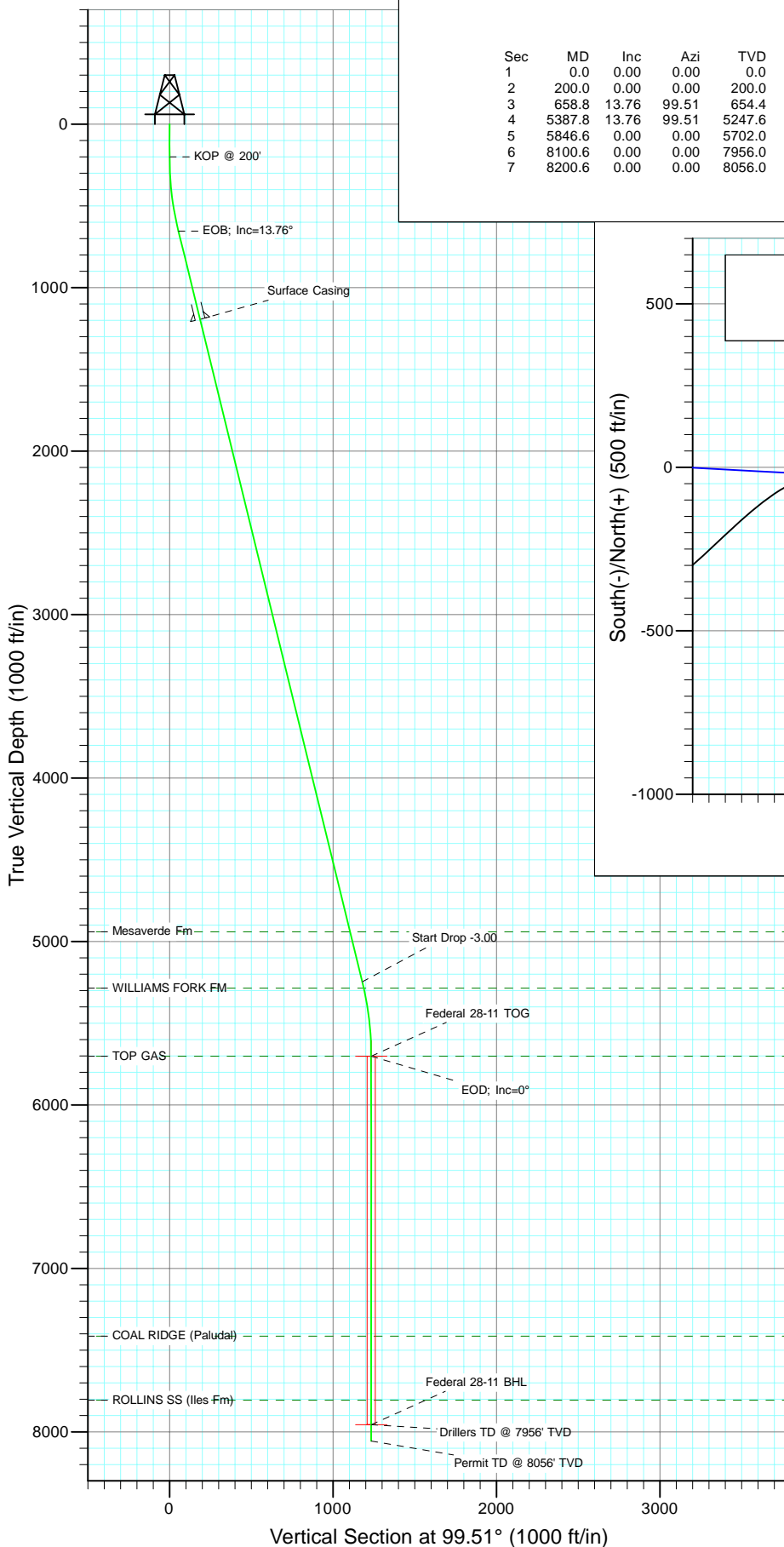


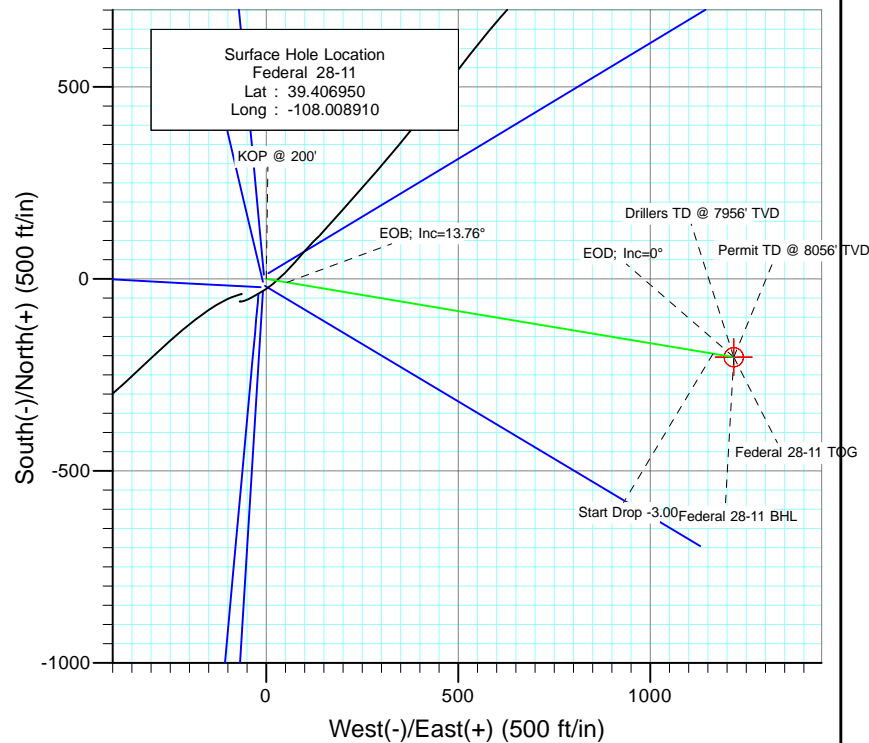


Project: S. Piceance
Site: PL 28 Pad (S28-T7S-R95W)
Well: Federal 28-11
Wellbore: DD
Design: Plan #1



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	V Sect	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	658.8	13.76	99.51	654.4	-9.1	54.1	3.00	99.51	54.8	
4	5387.8	13.76	99.51	5247.6	-194.9	1163.7	0.00	0.00	1180.0	
5	5846.6	0.00	0.00	5702.0	-203.9	1217.8	3.00	180.00	1234.8	Federal 28-11 TOG
6	8100.6	0.00	0.00	7956.0	-203.9	1217.8	0.00	0.00	1234.8	Federal 28-11 BHL
7	8200.6	0.00	0.00	8056.0	-203.9	1217.8	0.00	0.00	1234.8	



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
4941.0	5072.1	Mesaverde Fm
5285.0	5426.2	WILLIAMS FORK FM
5702.0	5846.6	TOP GAS
7414.0	7558.6	COAL RIDGE (Paludal)
7806.0	7950.6	ROLLINS SS (Iles Fm)



Azimuths to True North
Magnetic North: 10.45°

Magnetic Field
Strength: 52321.9snT
Dip Angle: 65.70°
Date: 6/11/2010
Model: IGRF200510

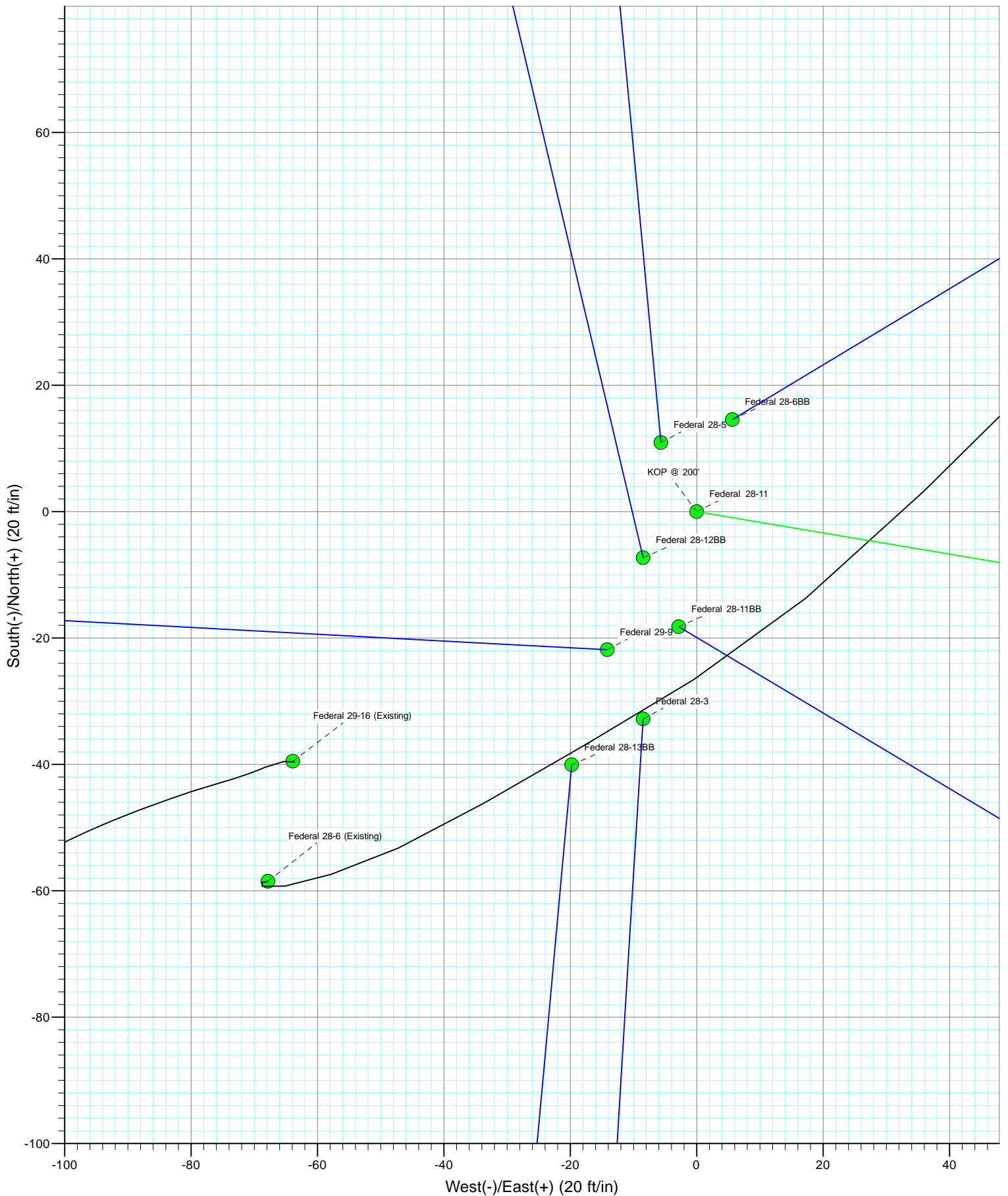
Plan #1
Federal 28-11
Job #1052xx; LR

WELL @ 7186.0ft (Original Well Elev)
North American Datum 1983
Well Federal 28-11, True North

Type	Target	Azimuth	Origin	Type	N/S	E/W	From	TVD
Target	Federal 28-11 BHL	99.51	Slot		0.0	0.0		0.0
Name	TVD	+N/-S	+E/-W	Latitude	Longitude			
Federal 28-11 BHL	7956.0	-203.9	1217.8	39.406390	-108.004600			



Project: S. Piceance
Site: PL 28 Pad (S28-T7S-R95W)
Well: Federal 28-11
Wellbore: DD
Design: Plan #1



Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well Federal 28-11
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 7186.0ft (Original Well Elev)
Project:	S. Piceance	MD Reference:	WELL @ 7186.0ft (Original Well Elev)
Site:	PL 28 Pad (S28-T7S-R95W)	North Reference:	True
Well:	Federal 28-11	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Project	S. Piceance, 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		PL 28 Pad (S28-T7S-R95W)			
Site Position:		Northing:	1,582,914.36 ft	Latitude:	39.406980
From:	Lat/Long	Easting:	2,291,178.00 ft	Longitude:	-108.008930
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.58 °

Well	Federal 28-11					
Well Position	+N/-S	0.0 ft	Northing:	1,582,903.27 ft	Latitude:	39.406950
	+E/-W	0.0 ft	Easting:	2,291,183.35 ft	Longitude:	-108.008910
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	7,164.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	6/11/2010	10.45	65.70	52,322

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	99.51	

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	
658.8	13.76	99.51	654.4	-9.1	54.1	3.00	3.00	0.00	99.51	
5,387.8	13.76	99.51	5,247.6	-194.9	1,163.7	0.00	0.00	0.00	0.00	
5,846.6	0.00	0.00	5,702.0	-203.9	1,217.8	3.00	-3.00	0.00	180.00	Federal 28-11 TOG
8,100.6	0.00	0.00	7,956.0	-203.9	1,217.8	0.00	0.00	0.00	0.00	Federal 28-11 BHL
8,200.6	0.00	0.00	8,056.0	-203.9	1,217.8	0.00	0.00	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well Federal 28-11
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 7186.0ft (Original Well Elev)
Project:	S. Piceance	MD Reference:	WELL @ 7186.0ft (Original Well Elev)
Site:	PL 28 Pad (S28-T7S-R95W)	North Reference:	True
Well:	Federal 28-11	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	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	KOP @ 200'
300.0	3.00	99.51	300.0	-0.4	2.6	2.6	3.00	3.00	
400.0	6.00	99.51	399.6	-1.7	10.3	10.5	3.00	3.00	
500.0	9.00	99.51	498.8	-3.9	23.2	23.5	3.00	3.00	
600.0	12.00	99.51	597.1	-6.9	41.2	41.7	3.00	3.00	
658.8	13.76	99.51	654.4	-9.1	54.1	54.8	3.00	3.00	EOB; Inc=13.76°
700.0	13.76	99.51	694.4	-10.7	63.8	64.6	0.00	0.00	
800.0	13.76	99.51	791.5	-14.6	87.2	88.4	0.00	0.00	
900.0	13.76	99.51	888.7	-18.5	110.7	112.2	0.00	0.00	
1,000.0	13.76	99.51	985.8	-22.5	134.2	136.0	0.00	0.00	
1,100.0	13.76	99.51	1,082.9	-26.4	157.6	159.8	0.00	0.00	
1,200.0	13.76	99.51	1,180.1	-30.3	181.1	183.6	0.00	0.00	
1,215.0	13.76	99.51	1,194.6	-30.9	184.6	187.2	0.00	0.00	Surface Casing
1,300.0	13.76	99.51	1,277.2	-34.3	204.5	207.4	0.00	0.00	
1,400.0	13.76	99.51	1,374.3	-38.2	228.0	231.2	0.00	0.00	
1,500.0	13.76	99.51	1,471.4	-42.1	251.5	255.0	0.00	0.00	
1,600.0	13.76	99.51	1,568.6	-46.0	274.9	278.8	0.00	0.00	
1,700.0	13.76	99.51	1,665.7	-50.0	298.4	302.6	0.00	0.00	
1,800.0	13.76	99.51	1,762.8	-53.9	321.9	326.4	0.00	0.00	
1,900.0	13.76	99.51	1,860.0	-57.8	345.3	350.1	0.00	0.00	
2,000.0	13.76	99.51	1,957.1	-61.8	368.8	373.9	0.00	0.00	
2,100.0	13.76	99.51	2,054.2	-65.7	392.3	397.7	0.00	0.00	
2,200.0	13.76	99.51	2,151.3	-69.6	415.7	421.5	0.00	0.00	
2,300.0	13.76	99.51	2,248.5	-73.5	439.2	445.3	0.00	0.00	
2,400.0	13.76	99.51	2,345.6	-77.5	462.7	469.1	0.00	0.00	
2,500.0	13.76	99.51	2,442.7	-81.4	486.1	492.9	0.00	0.00	
2,600.0	13.76	99.51	2,539.9	-85.3	509.6	516.7	0.00	0.00	
2,700.0	13.76	99.51	2,637.0	-89.3	533.1	540.5	0.00	0.00	
2,800.0	13.76	99.51	2,734.1	-93.2	556.5	564.3	0.00	0.00	
2,900.0	13.76	99.51	2,831.2	-97.1	580.0	588.1	0.00	0.00	
3,000.0	13.76	99.51	2,928.4	-101.1	603.5	611.9	0.00	0.00	
3,100.0	13.76	99.51	3,025.5	-105.0	626.9	635.6	0.00	0.00	
3,200.0	13.76	99.51	3,122.6	-108.9	650.4	659.4	0.00	0.00	
3,300.0	13.76	99.51	3,219.8	-112.8	673.8	683.2	0.00	0.00	
3,400.0	13.76	99.51	3,316.9	-116.8	697.3	707.0	0.00	0.00	
3,500.0	13.76	99.51	3,414.0	-120.7	720.8	730.8	0.00	0.00	
3,600.0	13.76	99.51	3,511.1	-124.6	744.2	754.6	0.00	0.00	
3,700.0	13.76	99.51	3,608.3	-128.6	767.7	778.4	0.00	0.00	
3,800.0	13.76	99.51	3,705.4	-132.5	791.2	802.2	0.00	0.00	
3,900.0	13.76	99.51	3,802.5	-136.4	814.6	826.0	0.00	0.00	
4,000.0	13.76	99.51	3,899.7	-140.3	838.1	849.8	0.00	0.00	
4,100.0	13.76	99.51	3,996.8	-144.3	861.6	873.6	0.00	0.00	
4,200.0	13.76	99.51	4,093.9	-148.2	885.0	897.4	0.00	0.00	
4,300.0	13.76	99.51	4,191.0	-152.1	908.5	921.1	0.00	0.00	
4,400.0	13.76	99.51	4,288.2	-156.1	932.0	944.9	0.00	0.00	
4,500.0	13.76	99.51	4,385.3	-160.0	955.4	968.7	0.00	0.00	
4,600.0	13.76	99.51	4,482.4	-163.9	978.9	992.5	0.00	0.00	
4,700.0	13.76	99.51	4,579.6	-167.8	1,002.4	1,016.3	0.00	0.00	
4,800.0	13.76	99.51	4,676.7	-171.8	1,025.8	1,040.1	0.00	0.00	
4,900.0	13.76	99.51	4,773.8	-175.7	1,049.3	1,063.9	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well Federal 28-11
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 7186.0ft (Original Well Elev)
Project:	S. Piceance	MD Reference:	WELL @ 7186.0ft (Original Well Elev)
Site:	PL 28 Pad (S28-T7S-R95W)	North Reference:	True
Well:	Federal 28-11	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	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
5,000.0	13.76	99.51	4,870.9	-179.6	1,072.7	1,087.7	0.00	0.00	
5,072.1	13.76	99.51	4,941.0	-182.5	1,089.7	1,104.8	0.00	0.00	Mesaverde Fm
5,100.0	13.76	99.51	4,968.1	-183.6	1,096.2	1,111.5	0.00	0.00	
5,200.0	13.76	99.51	5,065.2	-187.5	1,119.7	1,135.3	0.00	0.00	
5,300.0	13.76	99.51	5,162.3	-191.4	1,143.1	1,159.1	0.00	0.00	
5,387.8	13.76	99.51	5,247.6	-194.9	1,163.7	1,180.0	0.00	0.00	Start Drop -3.00
5,400.0	13.40	99.51	5,259.5	-195.3	1,166.6	1,182.8	3.00	-3.00	
5,426.2	12.61	99.51	5,285.0	-196.3	1,172.4	1,188.7	3.00	-3.00	WILLIAMS FORK FM
5,500.0	10.40	99.51	5,357.3	-198.8	1,186.9	1,203.4	3.00	-3.00	
5,600.0	7.40	99.51	5,456.1	-201.3	1,202.2	1,218.9	3.00	-3.00	
5,700.0	4.40	99.51	5,555.6	-203.0	1,212.3	1,229.2	3.00	-3.00	
5,800.0	1.40	99.51	5,655.4	-203.8	1,217.3	1,234.2	3.00	-3.00	
5,846.6	0.00	0.00	5,702.0	-203.9	1,217.8	1,234.8	3.00	-3.00	EOD; Inc=0° - TOP GAS - Federal 28-11 TOG
5,900.0	0.00	0.00	5,755.4	-203.9	1,217.8	1,234.8	0.00	0.00	
6,000.0	0.00	0.00	5,855.4	-203.9	1,217.8	1,234.8	0.00	0.00	
6,100.0	0.00	0.00	5,955.4	-203.9	1,217.8	1,234.8	0.00	0.00	
6,200.0	0.00	0.00	6,055.4	-203.9	1,217.8	1,234.8	0.00	0.00	
6,300.0	0.00	0.00	6,155.4	-203.9	1,217.8	1,234.8	0.00	0.00	
6,400.0	0.00	0.00	6,255.4	-203.9	1,217.8	1,234.8	0.00	0.00	
6,500.0	0.00	0.00	6,355.4	-203.9	1,217.8	1,234.8	0.00	0.00	
6,600.0	0.00	0.00	6,455.4	-203.9	1,217.8	1,234.8	0.00	0.00	
6,700.0	0.00	0.00	6,555.4	-203.9	1,217.8	1,234.8	0.00	0.00	
6,800.0	0.00	0.00	6,655.4	-203.9	1,217.8	1,234.8	0.00	0.00	
6,900.0	0.00	0.00	6,755.4	-203.9	1,217.8	1,234.8	0.00	0.00	
7,000.0	0.00	0.00	6,855.4	-203.9	1,217.8	1,234.8	0.00	0.00	
7,100.0	0.00	0.00	6,955.4	-203.9	1,217.8	1,234.8	0.00	0.00	
7,200.0	0.00	0.00	7,055.4	-203.9	1,217.8	1,234.8	0.00	0.00	
7,300.0	0.00	0.00	7,155.4	-203.9	1,217.8	1,234.8	0.00	0.00	
7,400.0	0.00	0.00	7,255.4	-203.9	1,217.8	1,234.8	0.00	0.00	
7,500.0	0.00	0.00	7,355.4	-203.9	1,217.8	1,234.8	0.00	0.00	
7,558.6	0.00	0.00	7,414.0	-203.9	1,217.8	1,234.8	0.00	0.00	COAL RIDGE (Paludal)
7,600.0	0.00	0.00	7,455.4	-203.9	1,217.8	1,234.8	0.00	0.00	
7,700.0	0.00	0.00	7,555.4	-203.9	1,217.8	1,234.8	0.00	0.00	
7,800.0	0.00	0.00	7,655.4	-203.9	1,217.8	1,234.8	0.00	0.00	
7,900.0	0.00	0.00	7,755.4	-203.9	1,217.8	1,234.8	0.00	0.00	
7,950.6	0.00	0.00	7,806.0	-203.9	1,217.8	1,234.8	0.00	0.00	ROLLINS SS (Iles Fm)
8,000.0	0.00	0.00	7,855.4	-203.9	1,217.8	1,234.8	0.00	0.00	
8,100.0	0.00	0.00	7,955.4	-203.9	1,217.8	1,234.8	0.00	0.00	
8,100.6	0.00	0.00	7,956.0	-203.9	1,217.8	1,234.8	0.00	0.00	Drillers TD @ 7956' TVD - Federal 28-11 BHL
8,200.0	0.00	0.00	8,055.4	-203.9	1,217.8	1,234.8	0.00	0.00	
8,200.6	0.00	0.00	8,056.0	-203.9	1,217.8	1,234.8	0.00	0.00	Permit TD @ 8056' TVD

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well Federal 28-11
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 7186.0ft (Original Well Elev)
Project:	S. Piceance	MD Reference:	WELL @ 7186.0ft (Original Well Elev)
Site:	PL 28 Pad (S28-T7S-R95W)	North Reference:	True
Well:	Federal 28-11	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
- Shape									
Federal 28-11 TOG	0.00	0.00	5,702.0	-203.9	1,217.8	1,582,665.79	2,292,395.08	39.406390	-108.004600
- plan hits target center									
- Point									
Federal 28-11 BHL	0.00	0.00	7,956.0	-203.9	1,217.8	1,582,665.79	2,292,395.08	39.406390	-108.004600
- plan hits target center									
- Circle (radius 25.0)									

Casing Points					
Measured Depth	Vertical Depth	Name		Casing Diameter	Hole Diameter
(ft)	(ft)			(in)	(in)
1,215.0	1,194.6	Surface Casing		0.000	0.000

Formations					
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction
(ft)	(ft)			(°)	(°)
5,072.1	4,941.0	Mesaverde Fm			
5,426.2	5,285.0	WILLIAMS FORK FM			
5,846.6	5,702.0	TOP GAS			
7,558.6	7,414.0	COAL RIDGE (Paludal)			
7,950.6	7,806.0	ROLLINS SS (Iles Fm)			

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates		Comment	
(ft)	(ft)	+N/-S	+E/-W		
(ft)	(ft)	(ft)	(ft)		
200.0	200.0	0.0	0.0	KOP @ 200'	
658.8	654.4	-9.1	54.1	EOB; Inc=13.76°	
5,387.8	5,247.6	-194.9	1,163.7	Start Drop -3.00	
5,846.6	5,702.0	-203.9	1,217.8	EOD; Inc=0°	
8,100.6	7,956.0	-203.9	1,217.8	Drillers TD @ 7956' TVD	
8,200.6	8,056.0	-203.9	1,217.8	Permit TD @ 8056' TVD	

EnCana Oil & Gas (USA) Inc

S. Piceance

PL 28 Pad (S28-T7S-R95W)

Federal 28-11

DD

Plan #1

Anticollision Report

26 July, 2010

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Federal 28-11
Project:	S. Piceance	TVD Reference:	WELL @ 7186.0ft (Original Well Elev)
Reference Site:	PL 28 Pad (S28-T7S-R95W)	MD Reference:	WELL @ 7186.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Federal 28-11	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference	Plan #1		
Filter type:	GLOBAL FILTER APPLIED: All wellpaths within 200'+ 100/1000 of reference		
Interpolation Method:	MD Interval 100.0ft	Error Model:	Systematic Ellipse
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 100.0ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program		Date	7/26/2010		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	8,200.6	Plan #1 (DD)	MWD	Geolink MWD	

Summary						
Site Name Offset Well - Wellbore - Design	Reference	Offset	Distance		Separation Factor	Warning
	Measured	Measured	Between	Between		
	Depth	Depth	Centres	Ellipses		
	(ft)	(ft)	(ft)	(ft)		
PL 28 Pad (S28-T7S-R95W)						
Federal 28-11BB - DD - Plan #1	200.0	200.0	18.4	17.8	29.661	CC, ES
Federal 28-11BB - DD - Plan #1	1,300.0	1,294.2	99.5	90.5	11.101	SF
Federal 28-12BB - DD - Plan #1	200.0	200.0	11.2	10.6	17.988	CC
Federal 28-12BB - DD - Plan #1	201.7	201.8	11.2	10.5	17.809	ES
Federal 28-12BB - DD - Plan #1	300.0	300.1	12.4	11.4	12.676	SF
Federal 28-13BB - DD - Plan #1	200.0	200.0	44.7	44.1	71.918	CC, ES
Federal 28-13BB - DD - Plan #1	500.0	498.8	56.2	54.4	31.867	SF
Federal 28-3 - DD - Plan #1	200.0	200.0	33.9	33.2	54.494	CC, ES
Federal 28-3 - DD - Plan #1	400.0	395.6	45.6	44.2	33.296	SF
Federal 28-5 - DD - Plan #1	200.0	200.0	12.3	11.7	19.812	CC, ES
Federal 28-5 - DD - Plan #1	300.0	299.2	16.3	15.4	16.740	SF
Federal 28-6 (Existing) - DD - Schlumberger Surveys	690.2	707.0	80.4	77.9	32.118	CC, ES
Federal 28-6 (Existing) - DD - Schlumberger Surveys	1,000.0	1,012.9	94.5	89.9	20.416	SF
Federal 28-6BB - DD - Plan #1	200.0	200.0	15.6	15.0	25.150	CC, ES
Federal 28-6BB - DD - Plan #1	400.0	398.5	22.1	20.7	15.739	SF
Federal 29-16 (Existing) - DD - Schlumberger surveys	172.2	172.2	74.9	74.4	142.768	CC
Federal 29-16 (Existing) - DD - Schlumberger surveys	200.0	199.9	74.9	74.3	120.564	ES
Federal 29-16 (Existing) - DD - Schlumberger surveys	500.0	495.3	99.1	97.4	58.222	SF
Federal 29-9 - DD - Plan #1	200.0	200.0	26.0	25.4	41.888	CC, ES
Federal 29-9 - DD - Plan #1	300.0	299.1	28.7	27.8	29.327	SF

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Federal 28-11
Project:	S. Piceance	TVD Reference:	WELL @ 7186.0ft (Original Well Elev)
Reference Site:	PL 28 Pad (S28-T7S-R95W)	MD Reference:	WELL @ 7186.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Federal 28-11	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design PL 28 Pad (S28-T7S-R95W) - Federal 28-11BB - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance					Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis			
0.0	0.0	0.0	0.0	0.0	0.0	-171.18	-18.2	-2.8	18.4					
100.0	100.0	100.0	100.0	0.1	0.1	-171.18	-18.2	-2.8	18.4	18.2	0.27	67.688		
200.0	200.0	200.0	200.0	0.3	0.3	-171.18	-18.2	-2.8	18.4	17.8	0.62	29.661 CC, ES		
300.0	300.0	299.6	299.6	0.5	0.5	89.87	-19.5	-0.6	19.4	18.4	0.99	19.660		
400.0	399.6	399.2	398.8	0.7	0.7	91.26	-23.5	6.1	22.2	20.8	1.42	15.642		
500.0	498.8	498.7	497.5	1.0	1.0	92.90	-30.2	17.2	27.0	25.0	1.98	13.640		
600.0	597.1	598.0	595.1	1.4	1.4	94.37	-39.4	32.6	33.7	31.0	2.69	12.504		
700.0	694.4	697.1	691.5	1.8	1.8	95.05	-51.2	52.4	42.2	38.7	3.56	11.872		
800.0	791.5	796.5	787.5	2.2	2.3	93.25	-64.6	74.8	51.7	47.3	4.44	11.644		
900.0	888.7	896.1	883.5	2.7	2.8	91.99	-78.0	97.2	61.2	55.9	5.34	11.474		
1,000.0	985.8	995.6	979.5	3.1	3.3	91.07	-91.5	119.7	70.8	64.5	6.24	11.345		
1,100.0	1,082.9	1,095.2	1,075.6	3.6	3.7	90.37	-104.9	142.1	80.3	73.2	7.14	11.245		
1,200.0	1,180.1	1,194.7	1,171.6	4.0	4.2	89.81	-118.3	164.6	89.9	81.8	8.05	11.165		
1,300.0	1,277.2	1,294.2	1,267.7	4.5	4.7	89.37	-131.7	187.0	99.5	90.5	8.96	11.101 SF		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Federal 28-11
Project:	S. Piceance	TVD Reference:	WELL @ 7186.0ft (Original Well Elev)
Reference Site:	PL 28 Pad (S28-T7S-R95W)	MD Reference:	WELL @ 7186.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Federal 28-11	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design PL 28 Pad (S28-T7S-R95W) - Federal 28-12BB - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-130.67	-7.3	-8.5	11.2					
100.0	100.0	100.0	100.0	0.1	0.1	-130.67	-7.3	-8.5	11.2	10.9	0.27	41.050		
200.0	200.0	200.0	200.0	0.3	0.3	-130.67	-7.3	-8.5	11.2	10.6	0.62	17.988 CC		
201.7	201.7	201.8	201.8	0.3	0.3	129.83	-7.3	-8.5	11.2	10.5	0.63	17.809 ES		
300.0	300.0	300.1	300.0	0.5	0.5	150.22	-4.7	-9.1	12.4	11.4	0.98	12.676 SF		
400.0	399.6	399.2	398.9	0.7	0.7	-178.12	2.5	-10.8	21.5	20.2	1.35	15.971		
500.0	498.8	497.5	496.8	1.0	0.9	-167.07	10.8	-12.7	38.8	37.1	1.72	22.601		
600.0	597.1	594.9	593.8	1.4	1.1	-164.18	18.9	-14.7	61.6	59.5	2.10	29.362		
700.0	694.4	691.1	689.6	1.8	1.4	-163.73	27.0	-16.6	88.9	86.4	2.49	35.742		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Federal 28-11
Project:	S. Piceance	TVD Reference:	WELL @ 7186.0ft (Original Well Elev)
Reference Site:	PL 28 Pad (S28-T7S-R95W)	MD Reference:	WELL @ 7186.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Federal 28-11	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													PL 28 Pad (S28-T7S-R95W) - Federal 28-13BB - DD - Plan #1		Offset Site Error:		0.0 ft
Survey Program: 0-MWD													Offset Well Error:		0.0 ft		
Reference		Offset		Semi Major Axis			Distance							Warning			
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Total Uncertainty Axis	Separation Factor					
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)							
0.0	0.0	0.0	0.0	0.0	0.0	-153.73	-40.1	-19.8	44.7								
100.0	100.0	100.0	100.0	0.1	0.1	-153.73	-40.1	-19.8	44.7	44.4	0.27	164.122					
200.0	200.0	200.0	200.0	0.3	0.3	-153.73	-40.1	-19.8	44.7	44.1	0.62	71.918 CC, ES					
300.0	300.0	300.0	300.0	0.5	0.5	109.90	-40.1	-19.8	45.5	44.5	0.98	46.543					
400.0	399.6	399.6	399.6	0.7	0.7	118.49	-40.1	-19.8	48.7	47.4	1.36	35.820					
500.0	498.8	498.8	498.8	1.0	0.8	130.04	-40.1	-19.8	56.2	54.4	1.76	31.867 SF					
600.0	597.1	597.1	597.1	1.4	1.0	141.31	-40.1	-19.8	69.4	67.2	2.15	32.229					
700.0	694.4	694.4	694.4	1.8	1.2	150.40	-40.1	-19.8	88.6	86.0	2.51	35.293					

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Federal 28-11
Project:	S. Piceance	TVD Reference:	WELL @ 7186.0ft (Original Well Elev)
Reference Site:	PL 28 Pad (S28-T7S-R95W)	MD Reference:	WELL @ 7186.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Federal 28-11	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design PL 28 Pad (S28-T7S-R95W) - Federal 28-3 - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	-165.50	-32.8	-8.5	33.9					
100.0	100.0	100.0	100.0	0.1	0.1	-165.50	-32.8	-8.5	33.9	33.6	0.27	124.358		
200.0	200.0	200.0	200.0	0.3	0.3	-165.50	-32.8	-8.5	33.9	33.2	0.62	54.494 CC, ES		
300.0	300.0	298.2	298.1	0.5	0.5	98.16	-35.3	-8.6	36.7	35.7	0.98	37.569		
400.0	399.6	395.6	395.3	0.7	0.7	105.17	-42.8	-9.1	45.6	44.2	1.37	33.296 SF		
500.0	498.8	491.7	490.6	1.0	1.0	112.00	-55.0	-9.8	61.4	59.6	1.83	33.519		
600.0	597.1	585.8	583.2	1.4	1.3	116.99	-71.5	-10.9	84.1	81.8	2.38	35.352		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Federal 28-11
Project:	S. Piceance	TVD Reference:	WELL @ 7186.0ft (Original Well Elev)
Reference Site:	PL 28 Pad (S28-T7S-R95W)	MD Reference:	WELL @ 7186.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Federal 28-11	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design PL 28 Pad (S28-T7S-R95W) - Federal 28-5 - DD - Plan #1												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-27.33	10.9	-5.7	12.3				
100.0	100.0	100.0	100.0	0.1	0.1	-27.33	10.9	-5.7	12.3	12.0	0.27	45.211	
200.0	200.0	200.0	200.0	0.3	0.3	-27.33	10.9	-5.7	12.3	11.7	0.62	19.812 CC, ES	
300.0	300.0	299.2	299.2	0.5	0.5	-130.66	13.5	-5.9	16.3	15.4	0.98	16.740 SF	
400.0	399.6	397.5	397.1	0.7	0.7	-135.54	21.1	-6.6	28.5	27.2	1.35	21.059	
500.0	498.8	493.7	492.6	1.0	1.0	-138.09	33.4	-7.8	48.8	47.1	1.78	27.491	
600.0	597.1	587.1	584.5	1.4	1.3	-139.22	49.9	-9.3	77.0	74.7	2.25	34.157	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Federal 28-11
Project:	S. Piceance	TVD Reference:	WELL @ 7186.0ft (Original Well Elev)
Reference Site:	PL 28 Pad (S28-T7S-R95W)	MD Reference:	WELL @ 7186.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Federal 28-11	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design PL 28 Pad (S28-T7S-R95W) - Federal 28-6 (Existing) - DD - Schlumberger Surveys													Offset Site Error:	0.0 ft
Survey Program: 141-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-130.77	-58.5	-67.8	89.5					
100.0	100.0	99.2	99.2	0.1	0.1	-130.62	-58.6	-68.3	90.0	89.7	0.28	317.762		
200.0	200.0	199.9	199.9	0.3	0.3	-130.50	-59.0	-69.1	90.8	90.2	0.62	146.051		
300.0	300.0	303.7	303.7	0.5	0.5	130.04	-59.5	-66.5	90.9	90.0	0.98	92.351		
400.0	399.6	408.4	408.0	0.7	0.7	131.76	-57.7	-58.8	89.3	87.9	1.38	64.921		
500.0	498.8	512.8	511.6	1.0	1.0	135.96	-52.9	-46.5	86.2	84.4	1.79	48.275		
600.0	597.1	616.5	613.6	1.4	1.4	143.79	-44.1	-30.1	82.1	79.9	2.18	37.660		
690.2	685.1	707.0	702.1	1.8	1.7	153.03	-34.6	-13.8	80.4	77.9	2.50	32.118 CC, ES		
700.0	694.4	716.7	711.6	1.8	1.7	154.31	-33.6	-11.9	80.9	78.4	2.53	31.928		
800.0	791.5	816.5	808.7	2.2	2.2	165.96	-21.4	7.3	82.1	79.1	2.94	27.926		
900.0	888.7	915.4	904.2	2.7	2.7	179.63	-5.1	27.1	86.0	82.4	3.59	23.991		
1,000.0	985.8	1,012.9	997.2	3.1	3.2	-165.73	15.4	48.3	94.5	89.9	4.63	20.416 SF		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Federal 28-11
Project:	S. Piceance	TVD Reference:	WELL @ 7186.0ft (Original Well Elev)
Reference Site:	PL 28 Pad (S28-T7S-R95W)	MD Reference:	WELL @ 7186.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Federal 28-11	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design PL 28 Pad (S28-T7S-R95W) - Federal 28-6BB - DD - Plan #1												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	
0.0	0.0	0.0	0.0	0.0	0.0	21.20	14.6	5.7	15.6				
100.0	100.0	100.0	100.0	0.1	0.1	21.20	14.6	5.7	15.6	15.4	0.27	57.394	
200.0	200.0	200.0	200.0	0.3	0.3	21.20	14.6	5.7	15.6	15.0	0.62	25.150 CC, ES	
300.0	300.0	299.3	299.3	0.5	0.5	-81.48	15.9	7.9	17.2	16.2	0.98	17.508	
400.0	399.6	398.5	398.1	0.7	0.7	-88.21	19.9	14.5	22.1	20.7	1.40	15.739 SF	
500.0	498.8	497.2	496.0	1.0	1.0	-94.44	26.5	25.4	30.6	28.6	1.94	15.786	
600.0	597.1	595.4	592.6	1.4	1.3	-98.82	35.6	40.6	42.8	40.1	2.62	16.338	
700.0	694.4	692.9	687.4	1.8	1.8	-101.41	47.2	59.8	58.4	55.0	3.43	17.055	
800.0	791.5	791.0	782.0	2.2	2.3	-101.29	60.7	82.2	76.1	71.8	4.27	17.799	
900.0	888.7	889.4	876.8	2.7	2.7	-101.13	74.3	104.7	93.7	88.6	5.14	18.248	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Federal 28-11
Project:	S. Piceance	TVD Reference:	WELL @ 7186.0ft (Original Well Elev)
Reference Site:	PL 28 Pad (S28-T7S-R95W)	MD Reference:	WELL @ 7186.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Federal 28-11	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design PL 28 Pad (S28-T7S-R95W) - Federal 29-16 (Existing) - DD - Schlumberger surveys													Offset Site Error: 0.0 ft
Survey Program: 110-MWD													Offset Well Error: 0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	
0.0	0.0	0.0	0.0	0.0	0.0	-121.72	-39.5	-63.9	75.1				
100.0	100.0	100.2	100.2	0.1	0.1	-121.87	-39.6	-63.7	75.0	74.7	0.28	271.649	
172.2	172.2	172.2	172.2	0.3	0.3	-122.00	-39.7	-63.5	74.9	74.4	0.52	142.768 CC	
200.0	200.0	199.9	199.9	0.3	0.3	-121.98	-39.7	-63.5	74.9	74.3	0.62	120.564 ES	
300.0	300.0	299.1	299.1	0.5	0.5	140.10	-39.5	-64.2	77.4	76.4	0.97	79.629	
400.0	399.6	397.7	397.6	0.7	0.7	143.87	-39.7	-66.1	85.4	84.0	1.33	64.050	
500.0	498.8	495.3	495.3	1.0	0.8	148.21	-40.7	-68.7	99.1	97.4	1.70	58.222 SF	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Federal 28-11
Project:	S. Piceance	TVD Reference:	WELL @ 7186.0ft (Original Well Elev)
Reference Site:	PL 28 Pad (S28-T7S-R95W)	MD Reference:	WELL @ 7186.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Federal 28-11	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design PL 28 Pad (S28-T7S-R95W) - Federal 29-9 - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance					Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis			
0.0	0.0	0.0	0.0	0.0	0.0	-147.12	-21.9	-14.1	26.0					
100.0	100.0	100.0	100.0	0.1	0.1	-147.12	-21.9	-14.1	26.0	25.8	0.27	95.591		
200.0	200.0	200.0	200.0	0.3	0.3	-147.12	-21.9	-14.1	26.0	25.4	0.62	41.888 CC, ES		
300.0	300.0	299.1	299.0	0.5	0.5	122.53	-21.7	-16.7	28.7	27.8	0.98	29.327 SF		
400.0	399.6	396.5	396.2	0.7	0.7	140.44	-21.3	-24.2	39.9	38.5	1.35	29.524		
500.0	498.8	490.9	489.8	1.0	1.0	153.85	-20.7	-36.2	62.4	60.7	1.70	36.781		
600.0	597.1	580.9	578.4	1.4	1.3	161.45	-19.8	-51.9	95.8	93.8	2.02	47.505		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Federal 28-11
Project:	S. Piceance	TVD Reference:	WELL @ 7186.0ft (Original Well Elev)
Reference Site:	PL 28 Pad (S28-T7S-R95W)	MD Reference:	WELL @ 7186.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Federal 28-11	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 7186.0ft (Original Well Elev)
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Federal 28-11
Coordinate System is US State Plane 1983, Colorado Central Zone
Grid Convergence at Surface is: -1.58°

