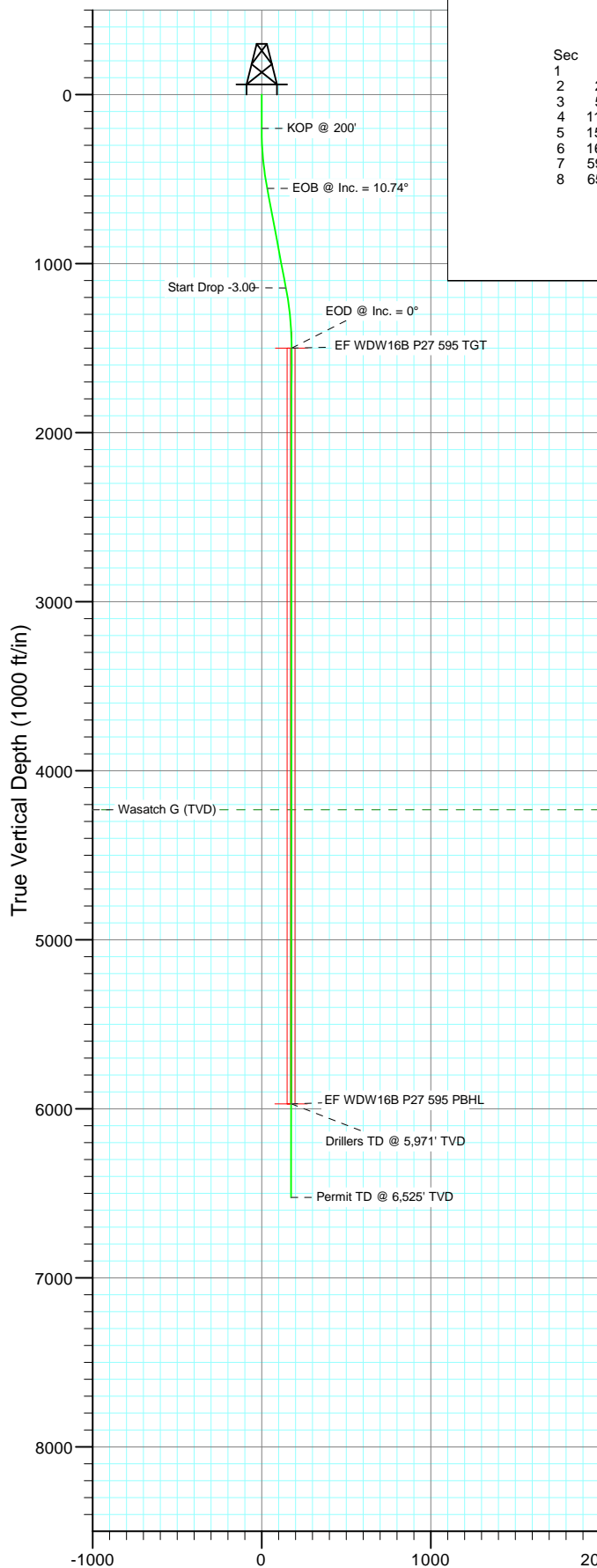




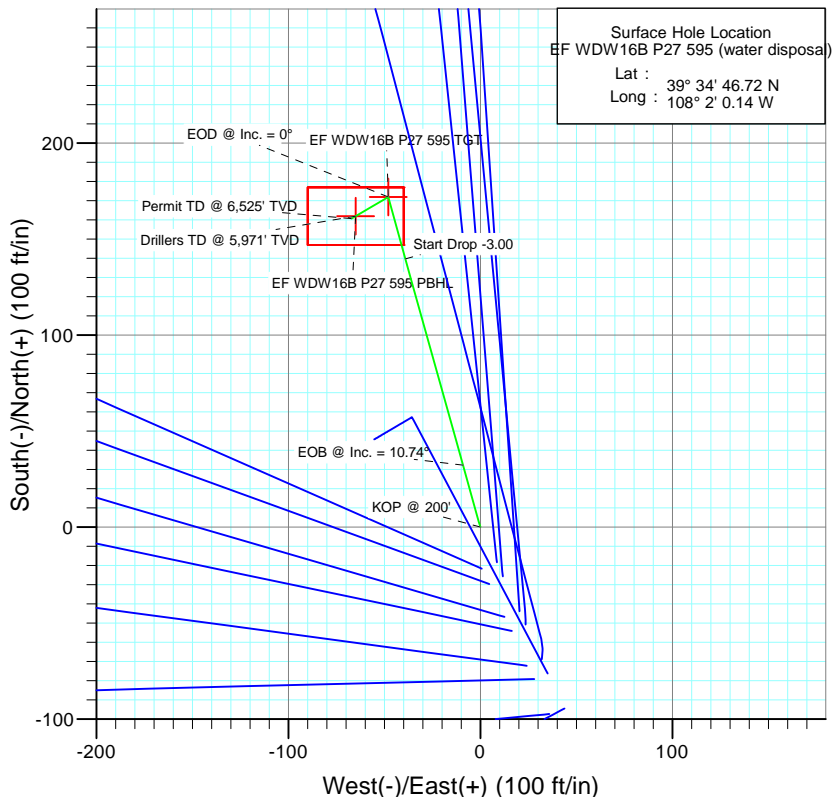
Project: North Piceance
Site: P27 595 (S27-T5S-R95W)
Well: EF WDW16B P27 595 (water disposal)
Wellbore: DD
Design: Plan #1



Vertical Section at 337.33° (1000 ft/in)

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSection	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	558.0	10.74	344.40	555.9	32.2	-9.0	3.00	344.40	33.2	
4	1156.7	10.74	344.40	1144.1	139.7	-39.0	0.00	0.00	143.9	
5	1514.7	0.00	0.00	1500.0	171.9	-48.0	3.00	180.00	177.1	EF WDW16B P27 595 TGT
6	1616.9	0.26	239.52	1602.2	171.8	-48.2	0.25	239.52	177.1	
7	5985.7	0.26	239.52	5971.0	161.9	-65.0	0.00	0.00	174.4	EF WDW16B P27 595 PBHL
8	6539.7	0.26	239.52	6525.0	160.6	-67.1	0.00	0.00	174.1	



Azimuths to True North
Magnetic North: 10.43°

Magnetic Field
Strength: 52322.4nT
Dip Angle: 65.81°
Date: 2/1/2011
Model: IGRF2010

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
4231.0	4245.7	Wasatch G (TVD)

Plan #1 EF WDW16B P27 595 (water disposal) WELL @ 6671.0ft (Original Well Elev) North American Datum 1983 Well EF WDW16B P27 595 (water disposal), True North						
Type TD	Target No Target (Freehand)	Azimuth 337.33	Origin Type Slot	N/S 0.0	E/W 0.0	From TVD 0.0
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	
EF WDW16B P27 595 TGT	1500.0	171.9	-48.0	39° 34' 48.42 N	108° 2' 0.75 W	
EF WDW16B P27 595 PBHL	5971.0	161.9	-65.0	39° 34' 48.32 N	108° 2' 0.97 W	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well EF WDW16B P27 595 (water disposal)
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 6671.0ft (Original Well Elev)
Project:	North Piceance	MD Reference:	WELL @ 6671.0ft (Original Well Elev)
Site:	P27 595 (S27-T5S-R95W)	North Reference:	True
Well:	EF WDW16B P27 595 (water disposal)	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

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

Site		P27 595 (S27-T5S-R95W)			
Site Position:		Northing:	1,645,842.89 ft	Latitude:	39° 34' 45.45 N
From:	Lat/Long	Easting:	2,286,079.88 ft	Longitude:	108° 1' 59.43 W
Position Uncertainty:	0.0 ft	Slot Radius:	0.000 in	Grid Convergence:	-1.60 °

Well	EF WDW16B P27 595 (water disposal)					
Well Position	+N/-S	0.0 ft	Northing:	1,645,972.88 ft	Latitude:	39° 34' 46.72 N
	+E/-W	0.0 ft	Easting:	2,286,027.90 ft	Longitude:	108° 2' 0.14 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	6,649.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2/1/2011	10.43	65.81	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	337.33

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	
558.0	10.74	344.40	555.9	32.2	-9.0	3.00	3.00	0.00	344.40	
1,156.7	10.74	344.40	1,144.1	139.7	-39.0	0.00	0.00	0.00	0.00	
1,514.7	0.00	0.00	1,500.0	171.9	-48.0	3.00	-3.00	0.00	180.00	EF WDW16B P27 595
1,616.9	0.26	239.52	1,602.2	171.8	-48.2	0.25	0.25	-117.89	239.52	
5,985.7	0.26	239.52	5,971.0	161.9	-65.0	0.00	0.00	0.00	0.00	EF WDW16B P27 595
6,539.7	0.26	239.52	6,525.0	160.6	-67.1	0.00	0.00	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well EF WDW16B P27 595 (water disposal)
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 6671.0ft (Original Well Elev)
Project:	North Piceance	MD Reference:	WELL @ 6671.0ft (Original Well Elev)
Site:	P27 595 (S27-T5S-R95W)	North Reference:	True
Well:	EF WDW16B P27 595 (water disposal)	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	344.40	300.0	2.5	-0.7	2.6	3.00	3.00	
400.0	6.00	344.40	399.6	10.1	-2.8	10.4	3.00	3.00	
500.0	9.00	344.40	498.8	22.6	-6.3	23.3	3.00	3.00	
558.0	10.74	344.40	555.9	32.2	-9.0	33.2	3.00	3.00	EOB @ Inc. = 10.74°
600.0	10.74	344.40	597.2	39.8	-11.1	41.0	0.00	0.00	
700.0	10.74	344.40	695.4	57.7	-16.1	59.5	0.00	0.00	
800.0	10.74	344.40	793.7	75.7	-21.1	78.0	0.00	0.00	
900.0	10.74	344.40	891.9	93.6	-26.1	96.4	0.00	0.00	
1,000.0	10.74	344.40	990.2	111.6	-31.2	114.9	0.00	0.00	
1,100.0	10.74	344.40	1,088.4	129.5	-36.2	133.4	0.00	0.00	
1,156.7	10.74	344.40	1,144.1	139.7	-39.0	143.9	0.00	0.00	Start Drop -3.00
1,200.0	9.44	344.40	1,186.7	147.0	-41.0	151.5	3.00	-3.00	
1,300.0	6.44	344.40	1,285.8	160.3	-44.8	165.2	3.00	-3.00	
1,400.0	3.44	344.40	1,385.4	168.6	-47.1	173.7	3.00	-3.00	
1,500.0	0.44	344.40	1,485.3	171.8	-48.0	177.1	3.00	-3.00	
1,514.7	0.00	0.00	1,500.0	171.9	-48.0	177.1	3.00	-3.00	EOD @ Inc. = 0° - EF WDW16B P27 595 TGT
1,600.0	0.21	239.52	1,585.3	171.8	-48.1	177.1	0.25	0.25	
1,616.9	0.26	239.52	1,602.2	171.8	-48.2	177.1	0.25	0.25	
1,700.0	0.26	239.52	1,685.3	171.6	-48.5	177.0	0.00	0.00	
1,800.0	0.26	239.52	1,785.3	171.4	-48.9	177.0	0.00	0.00	
1,900.0	0.26	239.52	1,885.3	171.1	-49.3	176.9	0.00	0.00	
2,000.0	0.26	239.52	1,985.3	170.9	-49.7	176.9	0.00	0.00	
2,100.0	0.26	239.52	2,085.3	170.7	-50.1	176.8	0.00	0.00	
2,200.0	0.26	239.52	2,185.3	170.5	-50.4	176.7	0.00	0.00	
2,300.0	0.26	239.52	2,285.3	170.2	-50.8	176.7	0.00	0.00	
2,400.0	0.26	239.52	2,385.3	170.0	-51.2	176.6	0.00	0.00	
2,500.0	0.26	239.52	2,485.3	169.8	-51.6	176.6	0.00	0.00	
2,600.0	0.26	239.52	2,585.3	169.6	-52.0	176.5	0.00	0.00	
2,700.0	0.26	239.52	2,685.3	169.3	-52.4	176.4	0.00	0.00	
2,800.0	0.26	239.52	2,785.3	169.1	-52.7	176.4	0.00	0.00	
2,900.0	0.26	239.52	2,885.3	168.9	-53.1	176.3	0.00	0.00	
3,000.0	0.26	239.52	2,985.3	168.7	-53.5	176.2	0.00	0.00	
3,100.0	0.26	239.52	3,085.3	168.4	-53.9	176.2	0.00	0.00	
3,200.0	0.26	239.52	3,185.3	168.2	-54.3	176.1	0.00	0.00	
3,300.0	0.26	239.52	3,285.3	168.0	-54.7	176.1	0.00	0.00	
3,400.0	0.26	239.52	3,385.3	167.8	-55.0	176.0	0.00	0.00	
3,500.0	0.26	239.52	3,485.3	167.5	-55.4	175.9	0.00	0.00	
3,600.0	0.26	239.52	3,585.3	167.3	-55.8	175.9	0.00	0.00	
3,700.0	0.26	239.52	3,685.3	167.1	-56.2	175.8	0.00	0.00	
3,800.0	0.26	239.52	3,785.3	166.8	-56.6	175.8	0.00	0.00	
3,900.0	0.26	239.52	3,885.3	166.6	-57.0	175.7	0.00	0.00	
4,000.0	0.26	239.52	3,985.3	166.4	-57.4	175.6	0.00	0.00	
4,100.0	0.26	239.52	4,085.3	166.2	-57.7	175.6	0.00	0.00	
4,200.0	0.26	239.52	4,185.3	165.9	-58.1	175.5	0.00	0.00	
4,245.7	0.26	239.52	4,231.0	165.8	-58.3	175.5	0.00	0.00	Wasatch G (TVD)
4,300.0	0.26	239.52	4,285.3	165.7	-58.5	175.5	0.00	0.00	
4,400.0	0.26	239.52	4,385.3	165.5	-58.9	175.4	0.00	0.00	
4,500.0	0.26	239.52	4,485.3	165.3	-59.3	175.3	0.00	0.00	
4,600.0	0.26	239.52	4,585.3	165.0	-59.7	175.3	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well EF WDW16B P27 595 (water disposal)
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 6671.0ft (Original Well Elev)
Project:	North Piceance	MD Reference:	WELL @ 6671.0ft (Original Well Elev)
Site:	P27 595 (S27-T5S-R95W)	North Reference:	True
Well:	EF WDW16B P27 595 (water disposal)	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
4,700.0	0.26	239.52	4,685.3	164.8	-60.0	175.2	0.00	0.00	
4,800.0	0.26	239.52	4,785.3	164.6	-60.4	175.2	0.00	0.00	
4,900.0	0.26	239.52	4,885.3	164.4	-60.8	175.1	0.00	0.00	
5,000.0	0.26	239.52	4,985.3	164.1	-61.2	175.0	0.00	0.00	
5,100.0	0.26	239.52	5,085.3	163.9	-61.6	175.0	0.00	0.00	
5,200.0	0.26	239.52	5,185.3	163.7	-62.0	174.9	0.00	0.00	
5,300.0	0.26	239.52	5,285.3	163.5	-62.4	174.9	0.00	0.00	
5,400.0	0.26	239.52	5,385.3	163.2	-62.7	174.8	0.00	0.00	
5,500.0	0.26	239.52	5,485.3	163.0	-63.1	174.7	0.00	0.00	
5,600.0	0.26	239.52	5,585.3	162.8	-63.5	174.7	0.00	0.00	
5,700.0	0.26	239.52	5,685.3	162.5	-63.9	174.6	0.00	0.00	
5,800.0	0.26	239.52	5,785.3	162.3	-64.3	174.6	0.00	0.00	
5,900.0	0.26	239.52	5,885.3	162.1	-64.7	174.5	0.00	0.00	
5,985.7	0.26	239.52	5,971.0	161.9	-65.0	174.4	0.00	0.00	Drillers TD @ 5,971' TVD - EF WDW16B P27 5
6,000.0	0.26	239.52	5,985.3	161.9	-65.0	174.4	0.00	0.00	
6,100.0	0.26	239.52	6,085.3	161.6	-65.4	174.4	0.00	0.00	
6,200.0	0.26	239.52	6,185.3	161.4	-65.8	174.3	0.00	0.00	
6,300.0	0.26	239.52	6,285.3	161.2	-66.2	174.2	0.00	0.00	
6,400.0	0.26	239.52	6,385.3	161.0	-66.6	174.2	0.00	0.00	
6,500.0	0.26	239.52	6,485.3	160.7	-67.0	174.1	0.00	0.00	
6,539.7	0.26	239.52	6,525.0	160.6	-67.1	174.1	0.00	0.00	Permit TD @ 6,525' TVD

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
EF WDW16B P27 595 T - hit/miss target - Shape	0.00	0.00	1,500.0	171.9	-48.0	1,646,146.05	2,285,984.71	39° 34' 48.42 N	108° 2' 0.75 W
EF WDW16B P27 595 P - plan hits target center - Rectangle (sides W30.0 H50.0 D0.0)	0.00	0.00	5,971.0	161.9	-65.0	1,646,136.53	2,285,967.45	39° 34' 48.32 N	108° 2' 0.97 W

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,245.7	4,231.0	Wasatch G (TVD)		0.00	

Cathedral Energy Services

Planning Report

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Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 6671.0ft (Original Well Elev)
Project:	North Piceance	MD Reference:	WELL @ 6671.0ft (Original Well Elev)
Site:	P27 595 (S27-T5S-R95W)	North Reference:	True
Well:	EF WDW16B P27 595 (water disposal)	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

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'	
558.0	555.9	32.2	-9.0	EOB @ Inc. = 10.74°	
1,156.7	1,144.1	139.7	-39.0	Start Drop -3.00	
1,514.7	1,500.0	171.9	-48.0	EOD @ Inc. = 0°	
5,985.7	5,971.0	161.9	-65.0	Drillers TD @ 5,971' TVD	
6,539.7	6,525.0	160.6	-67.1	Permit TD @ 6,525' TVD	