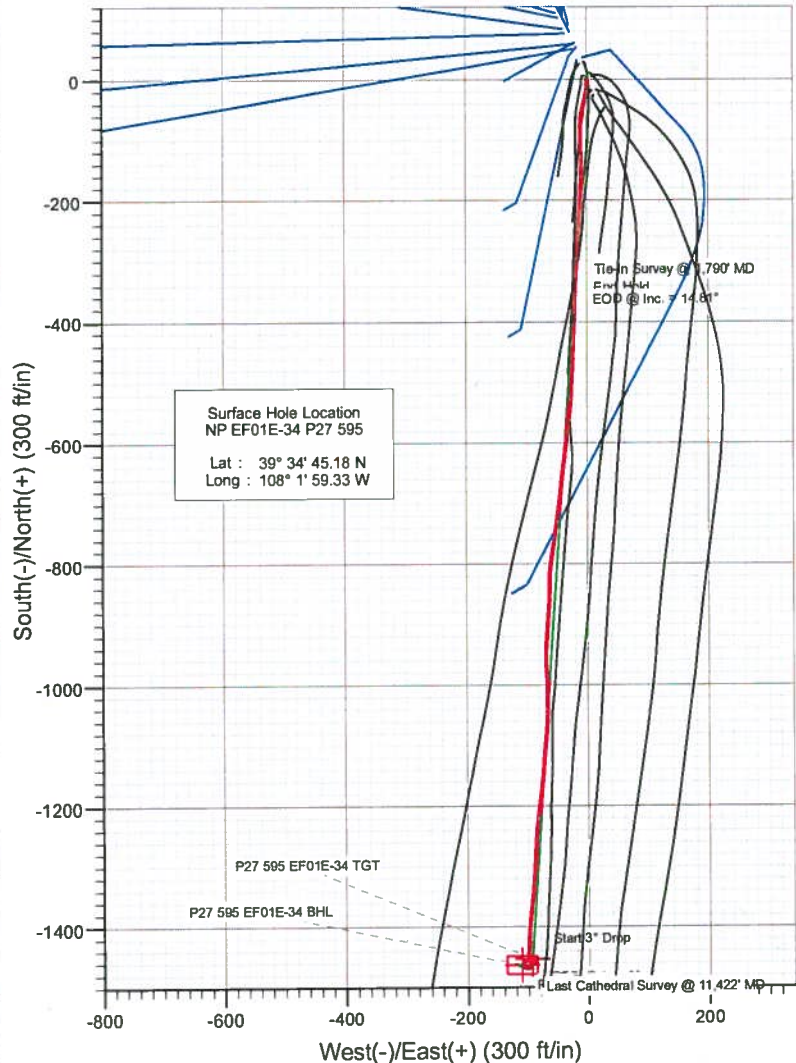
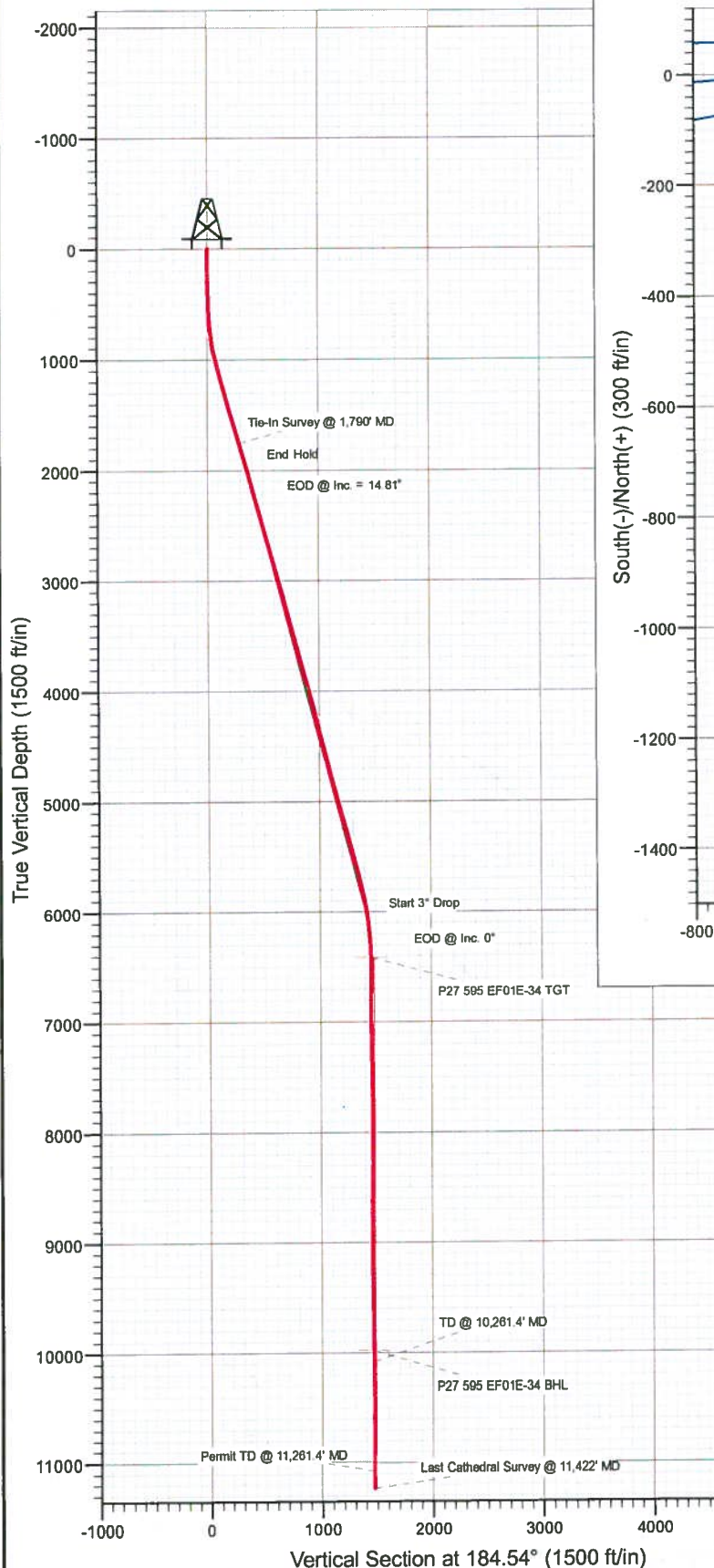




Project: North Piceance
 Site: P27 595 (S27-T5S-R95W)
 Well: NP EF01E-34 P27 595
 Wellbore: DD
 Design: Final Survey



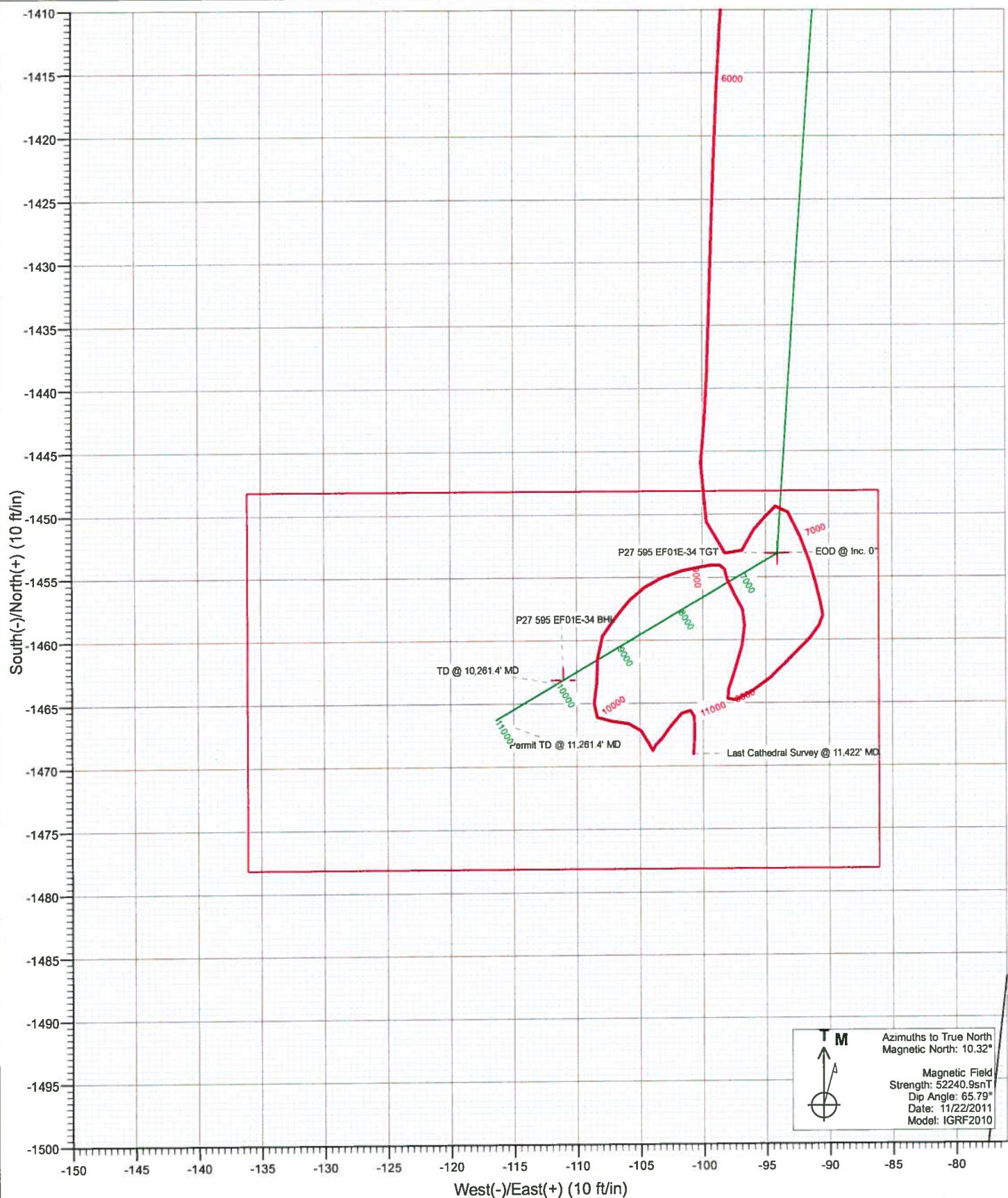
Azimuths to True North
 Magnetic North: 10.32°

Magnetic Field
 Strength: 52240.9nT
 Dip Angle: 65.79°
 Date: 11/22/2011
 Model: IGRF2010

DD NP EF01E-34 P27 595 115538/124555 (SH) 125038/131055 (MH); LR WELL @ 6671.0ft (Patterson 303) North American Datum 1983 Well NP EF01E-34 P27 595, True North						
User	Type Target	No Target (Freehand)	Azimuth	Origin Type	N/S	E/W From TVD
			184.54	Slot	0.0	0.0
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	
P27 595 EF01E-34 TGT	6416.0	-1453.1	-94.1	39° 34' 30.82 N	108° 2' 0.53 W	
P27 595 EF01E-34 BHL	9976.0	-1483.1	-111.1	39° 34' 30.72 N	108° 2' 0.75 W	



Project: North Piceance
Site: P27 595 (S27-T5S-R95W)
Well: NP EF01E-34 P27 595
Wellbore: DD
Design: DD



Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well NP EF01E-34 P27 595
Project:	North Piceance	TVD Reference:	WELL @ 6671.0ft (Patterson 303)
Site:	P27 595 (S27-T5S-R95W)	MD Reference:	WELL @ 6671.0ft (Patterson 303)
Well:	NP EF01E-34 P27 595	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	Database:	USA EDM 5000 Multi Users DB

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	Spot Radius:	0.000 in	Grid Convergence:	-1.60 °

Well	NP EF01E-34 P27 595					
Well Position	+N/-S	0.0 ft	Northing:	1,645,815.15 ft	Latitude:	39° 34' 45.18 N
	+E/-W	0.0 ft	Easting:	2,286,086.81 ft	Longitude:	108° 1' 59.33 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	11/22/2011	10.32	65.79	52,241

Design	DD				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.0	0.0	0.0	184.54	

Survey Program	Date	1/21/2012			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
150.0	1,790.0	Survey #1 (DD)	MWD	Geolink MWD	
1,893.0	11,422.0	Survey #2 (DD)	MWD	Geolink MWD	

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Formations / Comments	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00		
100.0	0.40	130.20	100.0	-0.2	0.3	0.2	0.40	0.40		
200.0	0.99	141.44	200.0	-1.1	1.0	1.0	0.60	0.59		
300.0	1.03	194.74	300.0	-2.6	1.2	2.5	0.91	0.04		
400.0	1.23	192.84	400.0	-4.2	0.8	4.2	0.20	0.20		
500.0	2.16	182.50	499.9	-7.2	0.1	7.1	0.98	0.93		
600.0	3.32	179.59	599.8	-11.7	0.3	11.6	1.16	1.16		
700.0	5.25	192.11	699.5	-18.9	-0.4	18.9	2.14	1.94		
800.0	8.25	191.78	798.8	-30.4	-2.9	30.5	3.00	3.00		
900.0	11.30	192.44	897.4	-46.8	-6.6	47.2	3.05	3.05		
1,000.0	14.27	183.55	994.8	-69.0	-10.1	69.6	3.55	2.97		
1,100.0	15.87	179.70	1,091.3	-95.2	-10.7	95.8	1.89	1.60		

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well NP EF01E-34 P27 595
Project:	North Piceance	TVD Reference:	WELL @ 6671.0ft (Patterson 303)
Site:	P27 595 (S27-T5S-R95W)	MD Reference:	WELL @ 6671.0ft (Patterson 303)
Well:	NP EF01E-34 P27 595	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	Database:	USA EDM 5000 Multi Users DB

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Formations / Comments
1,200.0	15.54	177.71	1,187.5	-122.6	-10.1	123.0	0.63	-0.33	
1,300.0	14.58	179.40	1,284.1	-148.5	-9.0	148.8	1.06	-0.97	
1,400.0	15.11	182.35	1,380.8	-173.8	-9.6	174.0	0.92	0.53	
1,500.0	16.06	183.47	1,477.1	-200.6	-11.0	200.9	1.00	0.95	
1,600.0	17.03	184.90	1,573.0	-229.0	-13.0	229.3	1.05	0.97	
1,700.0	16.21	182.81	1,668.8	-257.6	-15.0	258.0	1.02	-0.82	
1,800.0	16.97	183.70	1,764.6	-286.2	-16.7	286.7	0.80	0.76	
1,900.0	16.65	183.58	1,860.3	-315.1	-18.6	315.6	0.33	-0.32	
2,000.0	15.82	181.97	1,956.3	-343.1	-19.9	343.6	0.94	-0.83	
2,100.0	15.19	181.96	2,052.8	-369.4	-20.7	369.9	0.63	-0.63	
2,200.0	15.44	182.10	2,149.1	-396.4	-21.8	396.8	0.25	0.25	
2,300.0	14.75	182.28	2,245.8	-421.9	-22.6	422.3	0.68	-0.68	
2,400.0	15.89	182.59	2,342.2	-448.1	-23.9	448.6	1.14	1.14	
2,500.0	16.00	181.67	2,438.3	-476.1	-24.9	476.5	0.28	0.11	
2,600.0	14.97	181.90	2,534.6	-502.8	-25.7	503.2	1.03	-1.02	
2,700.0	16.24	185.93	2,631.1	-529.1	-27.3	529.6	1.67	1.27	
2,800.0	15.60	186.43	2,727.1	-556.8	-30.5	557.4	0.66	-0.65	
2,900.0	14.30	185.40	2,823.7	-582.4	-33.2	583.2	1.32	-1.30	
3,000.0	15.87	187.84	2,920.3	-608.2	-36.3	609.2	1.69	1.57	
3,100.0	17.12	186.55	3,016.1	-636.8	-39.8	638.0	1.31	1.25	
3,200.0	15.45	186.38	3,112.0	-664.7	-43.0	666.0	1.67	-1.67	
3,300.0	15.00	186.20	3,208.7	-690.1	-45.6	691.5	0.45	-0.45	
3,400.0	15.65	188.19	3,305.0	-717.0	-49.1	718.6	0.83	0.65	
3,500.0	14.22	188.80	3,401.6	-742.5	-53.0	744.4	1.43	-1.42	
3,600.0	14.44	188.53	3,498.6	-766.4	-56.6	768.5	0.23	0.22	
3,700.0	15.71	187.05	3,595.2	-792.2	-60.2	794.5	1.33	1.27	
3,800.0	16.24	182.54	3,691.3	-819.7	-62.7	822.1	1.35	0.53	
3,900.0	14.64	180.79	3,787.6	-846.6	-63.3	849.0	1.67	-1.60	
4,000.0	15.78	184.50	3,884.1	-872.6	-64.5	875.0	1.50	1.14	
4,100.0	14.29	184.36	3,980.7	-898.3	-66.5	900.8	1.49	-1.49	
4,200.0	14.86	183.26	4,077.4	-923.7	-68.2	926.2	0.64	0.57	
4,300.0	14.12	181.49	4,174.4	-948.3	-69.5	950.9	0.87	-0.75	
4,400.0	14.43	176.79	4,271.2	-973.3	-68.8	975.7	1.20	0.32	
4,500.0	14.56	177.73	4,368.1	-997.9	-67.5	1,000.1	0.27	0.13	
4,600.0	14.41	179.44	4,464.8	-1,023.5	-66.9	1,025.5	0.45	-0.16	
4,700.0	13.73	181.81	4,561.8	-1,047.5	-67.1	1,049.5	0.89	-0.68	
4,800.0	13.62	184.82	4,659.0	-1,071.1	-68.4	1,073.1	0.72	-0.11	
4,900.0	14.60	184.99	4,756.0	-1,095.2	-70.6	1,097.3	0.98	0.98	
5,000.0	16.01	184.34	4,852.5	-1,121.5	-72.8	1,123.7	1.42	1.41	
5,100.0	14.74	184.92	4,948.9	-1,148.0	-74.9	1,150.3	1.28	-1.27	
5,200.0	16.60	186.04	5,045.1	-1,175.1	-77.5	1,177.6	1.88	1.86	
5,300.0	15.66	187.20	5,141.1	-1,202.7	-80.7	1,205.4	1.00	-0.94	
5,400.0	15.23	186.55	5,237.7	-1,228.7	-84.1	1,231.5	0.47	-0.44	
5,500.0	15.75	184.09	5,333.9	-1,255.8	-86.4	1,258.7	0.84	0.53	
5,600.0	14.59	183.06	5,430.4	-1,281.9	-88.1	1,284.9	1.19	-1.16	
5,700.0	14.58	183.60	5,527.3	-1,306.7	-89.4	1,309.6	0.14	-0.02	
5,800.0	14.41	185.19	5,624.0	-1,332.0	-91.3	1,335.0	0.43	-0.16	
5,900.0	13.65	185.29	5,721.0	-1,356.1	-93.6	1,359.2	0.77	-0.77	
6,000.0	12.71	186.07	5,818.4	-1,378.8	-95.8	1,382.1	0.96	-0.94	
6,100.0	11.62	184.25	5,916.1	-1,399.8	-97.8	1,403.1	1.15	-1.09	
6,200.0	9.02	182.54	6,014.5	-1,417.7	-98.9	1,421.1	2.62	-2.60	
6,300.0	6.52	181.70	6,113.6	-1,431.1	-99.4	1,434.5	2.50	-2.50	
6,400.0	4.76	183.15	6,213.1	-1,440.9	-99.7	1,444.2	1.77	-1.76	

Survey Report

Company: EnCana Oil & Gas (USA) Inc
Project: North Piceance
Site: P27 595 (S27-T5S-R95W)
Well: NP EF01E-34 P27 595
Wellbore: DD
Design: DD

Local Co-ordinate Reference: Well NP EF01E-34 P27 595
TVD Reference: WELL @ 6671.0ft (Patterson 303)
MD Reference: WELL @ 6671.0ft (Patterson 303)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: USA EDM 5000 Multi Users DB

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Formations / Comments
6,500.0	3.19	178.67	6,312.9	-1,447.9	-100.2	1,451.3	1.60	-1.57	P27 595 EF01E-34 TGT
6,600.0	1.88	150.13	6,412.8	-1,451.9	-99.0	1,455.2	1.78	-1.31	
6,603.3	1.82	149.27	6,416.1	-1,452.0	-99.0	1,455.3	1.87	-1.67	
6,700.0	0.84	73.78	6,512.7	-1,453.4	-97.5	1,456.6	1.87	-1.01	
6,800.0	1.12	30.76	6,612.7	-1,451.7	-96.2	1,454.8	0.76	0.27	
6,900.0	0.82	45.39	6,712.7	-1,450.5	-95.3	1,453.4	0.38	-0.30	
7,000.0	0.71	40.38	6,812.7	-1,449.5	-94.3	1,452.4	0.12	-0.10	
7,100.0	1.28	142.79	6,912.7	-1,449.7	-93.3	1,452.6	1.59	0.56	
7,200.0	1.30	162.44	7,012.7	-1,451.8	-92.3	1,454.5	0.44	0.02	
7,300.0	1.35	158.41	7,112.6	-1,454.0	-91.5	1,456.7	0.10	0.05	
7,400.0	0.91	171.27	7,212.6	-1,455.8	-91.0	1,458.5	0.50	-0.43	
7,500.0	0.81	164.37	7,312.6	-1,457.4	-90.6	1,460.0	0.15	-0.10	
7,600.0	0.51	199.48	7,412.6	-1,458.3	-90.6	1,460.9	0.49	-0.30	
7,700.0	0.74	215.51	7,512.6	-1,459.3	-91.1	1,462.0	0.28	0.23	
7,800.0	1.37	224.28	7,612.6	-1,460.5	-92.2	1,463.2	0.65	0.63	
7,900.0	1.40	225.91	7,712.5	-1,462.5	-94.1	1,465.4	0.06	0.04	
8,000.0	1.04	237.98	7,812.5	-1,463.8	-95.7	1,466.8	0.44	-0.36	
8,100.0	0.92	239.79	7,912.5	-1,464.6	-97.2	1,467.7	0.13	-0.13	
8,200.0	0.54	352.15	8,012.5	-1,464.7	-98.0	1,467.9	1.22	-0.38	
8,300.0	0.48	15.63	8,112.5	-1,463.8	-98.0	1,467.0	0.21	-0.05	
8,400.0	1.45	18.35	8,212.5	-1,462.1	-97.4	1,465.2	0.97	0.97	
8,500.0	1.09	9.96	8,312.4	-1,459.9	-96.8	1,463.0	0.40	-0.36	
8,600.0	0.79	354.80	8,412.4	-1,458.4	-96.7	1,461.4	0.39	-0.30	
8,700.0	0.83	333.89	8,512.4	-1,457.0	-97.1	1,460.1	0.30	0.03	
8,800.0	0.82	334.71	8,612.4	-1,455.8	-97.9	1,458.9	0.01	0.00	
8,900.0	0.48	345.10	8,712.4	-1,454.6	-98.2	1,457.8	0.36	-0.34	
9,000.0	0.34	296.34	8,812.4	-1,454.1	-98.5	1,457.3	0.36	-0.14	
9,100.0	0.48	261.65	8,912.4	-1,454.0	-99.2	1,457.3	0.28	0.13	
9,200.0	0.68	262.99	9,012.4	-1,454.2	-100.2	1,457.6	0.21	0.21	
9,300.0	1.00	254.72	9,112.4	-1,454.5	-101.6	1,458.0	0.34	0.32	
9,400.0	1.09	246.68	9,212.4	-1,455.1	-103.4	1,458.7	0.17	0.08	P27 595 EF01E-34 BHL
9,500.0	0.98	231.17	9,312.3	-1,456.0	-104.9	1,459.7	0.30	-0.11	
9,600.0	0.77	222.80	9,412.3	-1,457.1	-106.1	1,460.9	0.24	-0.21	
9,700.0	0.64	216.47	9,512.3	-1,458.0	-106.7	1,461.8	0.15	-0.13	
9,800.0	0.88	214.54	9,612.3	-1,459.0	-107.6	1,463.0	0.23	0.23	
9,900.0	1.18	190.78	9,712.3	-1,460.6	-108.2	1,464.6	0.52	0.31	
10,000.0	1.13	180.69	9,812.3	-1,462.8	-108.4	1,466.8	0.21	-0.05	
10,100.0	1.07	192.06	9,912.3	-1,464.6	-108.5	1,468.6	0.23	-0.06	
10,163.7	0.70	160.71	9,976.0	-1,465.5	-108.5	1,469.5	0.93	-0.58	
10,200.0	0.66	131.93	10,012.2	-1,466.0	-108.5	1,470.0	0.93	-0.11	
10,300.0	0.89	95.04	10,112.2	-1,466.4	-107.2	1,470.3	0.54	0.23	
10,400.0	0.70	105.25	10,212.2	-1,466.6	-105.8	1,470.4	0.24	-0.19	
10,500.0	0.81	139.74	10,312.2	-1,467.3	-104.8	1,471.0	0.46	0.11	
10,600.0	0.61	156.32	10,412.2	-1,468.6	-104.1	1,472.2	0.28	-0.20	
10,700.0	0.28	14.26	10,512.2	-1,468.6	-104.0	1,472.2	0.85	-0.33	
10,800.0	0.44	45.50	10,612.2	-1,468.1	-103.6	1,471.7	0.24	0.15	
10,900.0	0.76	35.72	10,712.2	-1,467.4	-103.0	1,470.9	0.34	0.33	
11,000.0	0.81	42.00	10,812.2	-1,466.1	-102.0	1,469.6	0.10	0.05	
11,100.0	0.40	89.78	10,912.2	-1,465.6	-101.2	1,469.0	0.62	-0.41	
11,200.0	0.37	166.55	11,012.2	-1,465.9	-100.7	1,469.3	0.48	-0.03	
11,300.0	0.76	178.33	11,112.2	-1,466.9	-100.7	1,470.3	0.41	0.39	
11,400.0	1.10	183.40	11,212.2	-1,468.6	-100.7	1,472.0	0.35	0.34	

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well NP EF01E-34 P27 595
Project:	North Piceance	TVD Reference:	WELL @ 6671.0ft (Patterson 303)
Site:	P27 595 (S27-T5S-R95W)	MD Reference:	WELL @ 6671.0ft (Patterson 303)
Well:	NP EF01E-34 P27 595	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	Database:	USA EDM 5000 Multi Users DB

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
P27 595 EF01E-34 TGT - actual wellpath misses target center by 5.0ft at 6603.3ft MD (6416.1 TVD, -1452.0 N, -99.0 E) - Point	0.00	0.00	6,416.0	-1,453.1	-94.1	1,644,365.24	2,285,952.23	39° 34' 30.82 N	108° 2' 0.53 W
P27 595 EF01E-34 BHL - actual wellpath misses target center by 3.5ft at 10163.7ft MD (9976.0 TVD, -1465.5 N, -108.5 E) - Rectangle (sides W30.0 H50.0 D0.0)	0.00	0.00	9,976.0	-1,463.1	-111.1	1,644,355.68	2,285,935.00	39° 34' 30.72 N	108° 2' 0.75 W

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
11,422.0	11,234.2	-1,469.0	-100.8	Last Cathedral Survey @ 11,422' MD

Checked By: _____	Approved By: _____	Date: _____
-------------------	--------------------	-------------