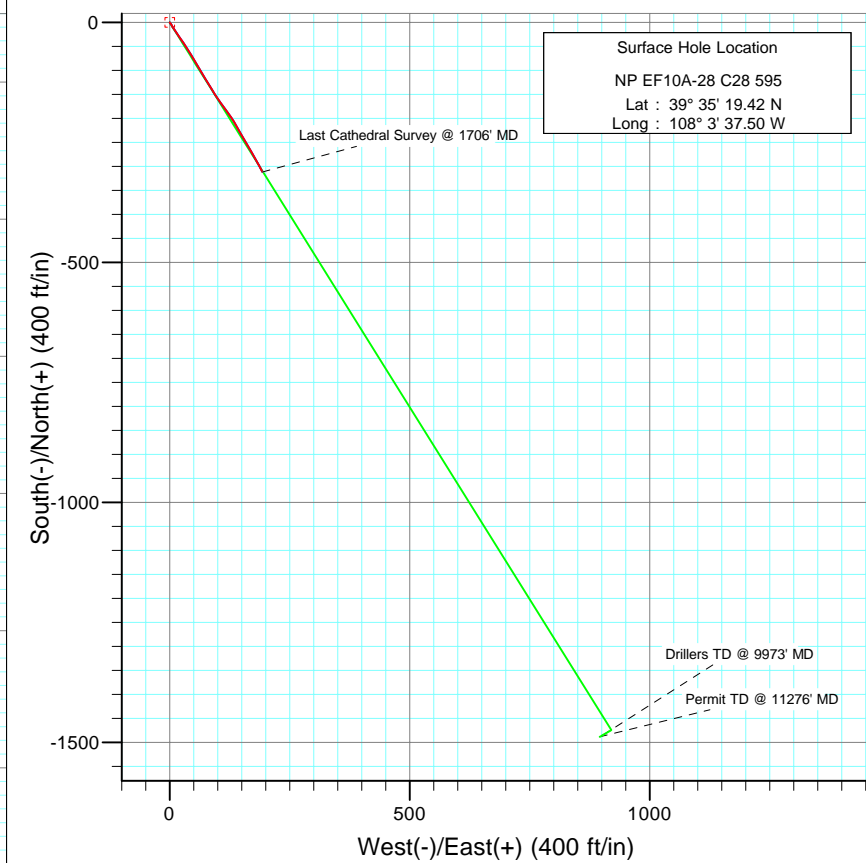
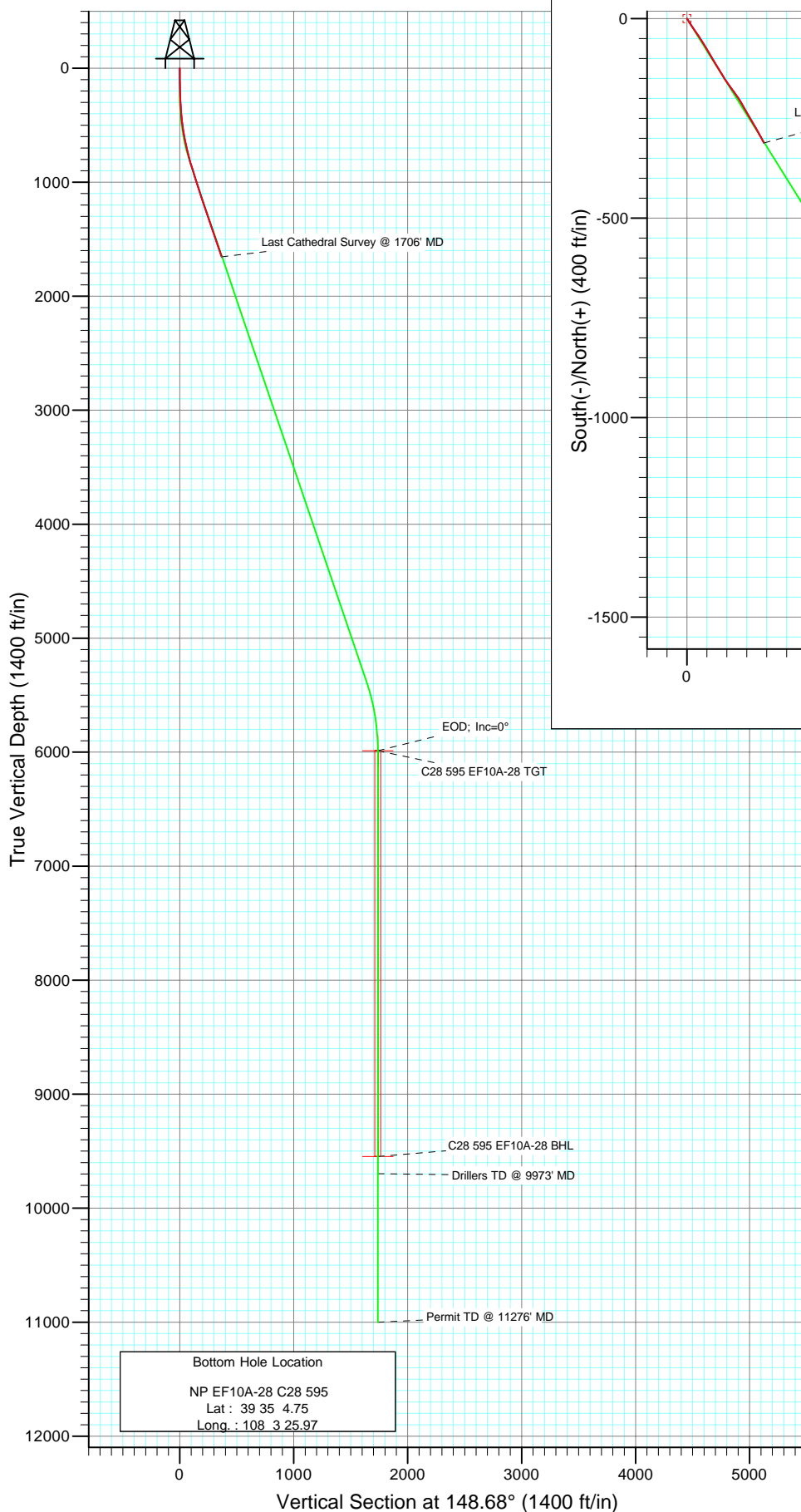




Project: North Piceance
Site: C28 595 (S28-T5S-R95W)
Well: NP EF10A-28 C28 595
Wellbore: Final
Design: DD



Azimuths to True North
Magnetic North: 10.55°

Magnetic Field
Strength: 52414.7snT
Dip Angle: 65.84°
Date: 3/23/2010
Model: IGRF2010

DESIGN DETAILS: DD

105112; LR
KBE @ 6197.0ft (Nabors M13)

Target	Azimuth	Origin	N/S	E/W	From TVD
C28 595 EF10A-28 BHL	148.68	Slot	0.0	0.0	0.0

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well NP EF10A-28 C28 595
Project:	North Piceance	TVD Reference:	KBE @ 6197.0ft (Nabors M13)
Site:	C28 595 (S28-T5S-R95W)	MD Reference:	KBE @ 6197.0ft (Nabors M13)
Well:	NP EF10A-28 C28 595	North Reference:	True
Wellbore:	Final	Survey Calculation Method:	Minimum Curvature
Design:	DD	Database:	EDM 5000.1 US 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	C28 595 (S28-T5S-R95W)			
Site Position:		Northing:	1,649,466.64 ft	Latitude: 39° 35' 19.10 N
From:	Lat/Long	Easting:	2,278,319.64 ft	Longitude: 108° 3' 39.81 W
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence: -1.62 °

Well	NP EF10A-28 C28 595			
Well Position	+N/-S	0.0 ft	Northing:	1,649,493.68 ft
	+E/-W	0.0 ft	Easting:	2,278,500.90 ft
Position Uncertainty	0.0 ft	Wellhead Elevation:	ft	Ground Level: 6,175.0 ft

Wellbore	Final				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/23/2010	10.55	65.84	52,415

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	148.68

Survey Program	Date	3/24/2010		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
172.0	1,706.0	Survey #1 (Final)	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	
172.0	0.70	141.90	172.0	-0.8	0.6	1.0	0.41	0.41	
203.0	1.60	144.70	203.0	-1.3	1.0	1.7	2.91	2.90	
233.0	2.00	136.20	233.0	-2.0	1.6	2.6	1.60	1.33	
264.0	2.00	147.00	264.0	-2.9	2.3	3.7	1.21	0.00	
295.0	2.70	145.70	294.9	-3.9	3.0	4.9	2.26	2.26	
326.0	3.60	149.80	325.9	-5.4	3.9	6.6	2.99	2.90	
356.0	4.40	147.10	355.8	-7.2	5.0	8.7	2.74	2.67	
387.0	5.30	149.10	386.7	-9.4	6.4	11.3	2.95	2.90	
418.0	5.90	147.90	417.5	-12.0	8.0	14.4	1.97	1.94	
448.0	6.30	144.90	447.4	-14.6	9.7	17.6	1.70	1.33	
479.0	7.20	144.00	478.2	-17.6	11.8	21.2	2.92	2.90	
510.0	8.00	150.90	508.9	-21.1	14.0	25.3	3.91	2.58	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well NP EF10A-28 C28 595
Project:	North Piceance	TVD Reference:	KBE @ 6197.0ft (Nabors M13)
Site:	C28 595 (S28-T5S-R95W)	MD Reference:	KBE @ 6197.0ft (Nabors M13)
Well:	NP EF10A-28 C28 595	North Reference:	True
Wellbore:	Final	Survey Calculation Method:	Minimum Curvature
Design:	DD	Database:	EDM 5000.1 US 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
541.0	8.20	144.40	539.6	-24.7	16.4	29.6	3.02	0.65	
571.0	9.30	143.10	569.2	-28.4	19.1	34.2	3.73	3.67	
602.0	10.10	149.60	599.8	-32.8	22.0	39.4	4.37	2.58	
633.0	11.30	145.00	630.3	-37.6	25.1	45.1	4.75	3.87	
666.0	12.10	145.70	662.6	-43.1	28.9	51.8	2.46	2.42	
697.0	12.60	149.70	692.9	-48.7	32.4	58.5	3.20	1.61	
729.0	13.50	145.00	724.0	-54.8	36.3	65.7	4.35	2.81	
761.0	14.40	145.70	755.1	-61.1	40.7	73.4	2.86	2.81	
793.0	14.90	149.40	786.0	-68.0	45.0	81.5	3.31	1.56	
825.0	16.00	149.10	816.9	-75.3	49.4	90.0	3.45	3.44	
889.0	18.10	149.90	878.1	-91.4	58.9	108.7	3.30	3.28	
985.0	17.80	149.10	969.4	-116.9	73.9	138.3	0.40	-0.31	
1,080.0	17.40	148.20	1,059.9	-141.5	88.9	167.1	0.51	-0.42	
1,176.0	17.80	145.20	1,151.5	-165.7	104.8	196.1	1.03	0.42	
1,271.0	19.00	142.60	1,241.6	-189.9	122.5	225.9	1.53	1.26	
1,366.0	18.80	151.30	1,331.5	-215.6	139.2	256.6	2.97	-0.21	
1,462.0	19.30	149.40	1,422.2	-242.9	154.7	287.9	0.83	0.52	
1,557.0	19.00	149.80	1,512.0	-269.8	170.5	319.1	0.34	-0.32	
1,653.0	18.30	152.80	1,602.9	-296.7	185.3	349.7	1.24	-0.73	
1,706.0	18.10	152.50	1,653.3	-311.4	192.9	366.2	0.42	-0.38	

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
C28 595 EF10A-28 BHL - survey misses target center by 8011.9ft at 1706.0ft MD (1653.3 TVD, -311.4 N, 192.9 E) - Rectangle (sides W30.0 H50.0 D0.0)	0.00	0.00	9,547.0	-1,484.1	903.0	1,647,984.71	2,279,361.73	39° 35' 4.75 N	108° 3' 25.97 W
C28 595 EF10A-28 TGT - survey misses target center by 4545.5ft at 1706.0ft MD (1653.3 TVD, -311.4 N, 192.9 E) - Point	0.00	0.00	5,987.0	-1,474.1	920.0	1,647,994.27	2,279,379.02	39° 35' 4.85 N	108° 3' 25.75 W

Survey Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	+E/-W (ft)	Comment
1,706.0	1,653.3	-311.4	192.9	Last Cathedral Survey @ 1706' MD

Checked By: _____ Approved By: _____ Date: _____