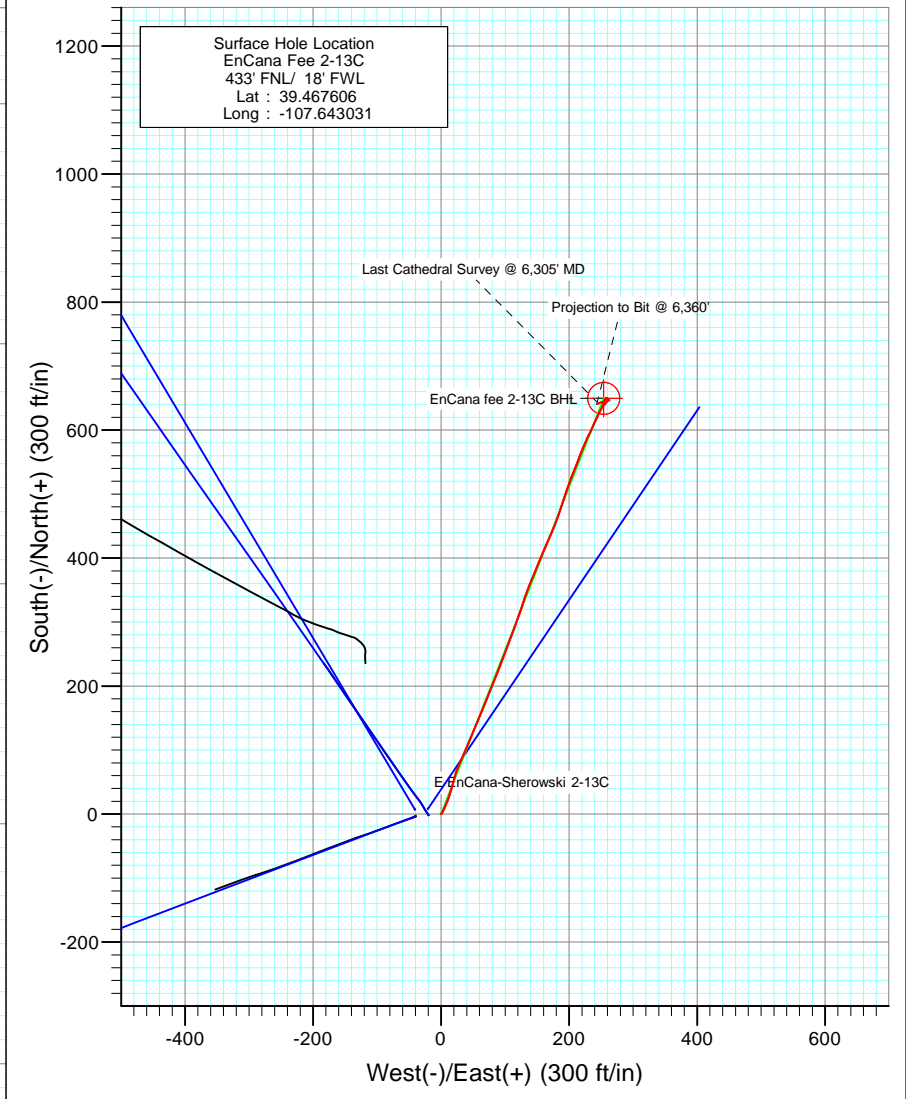
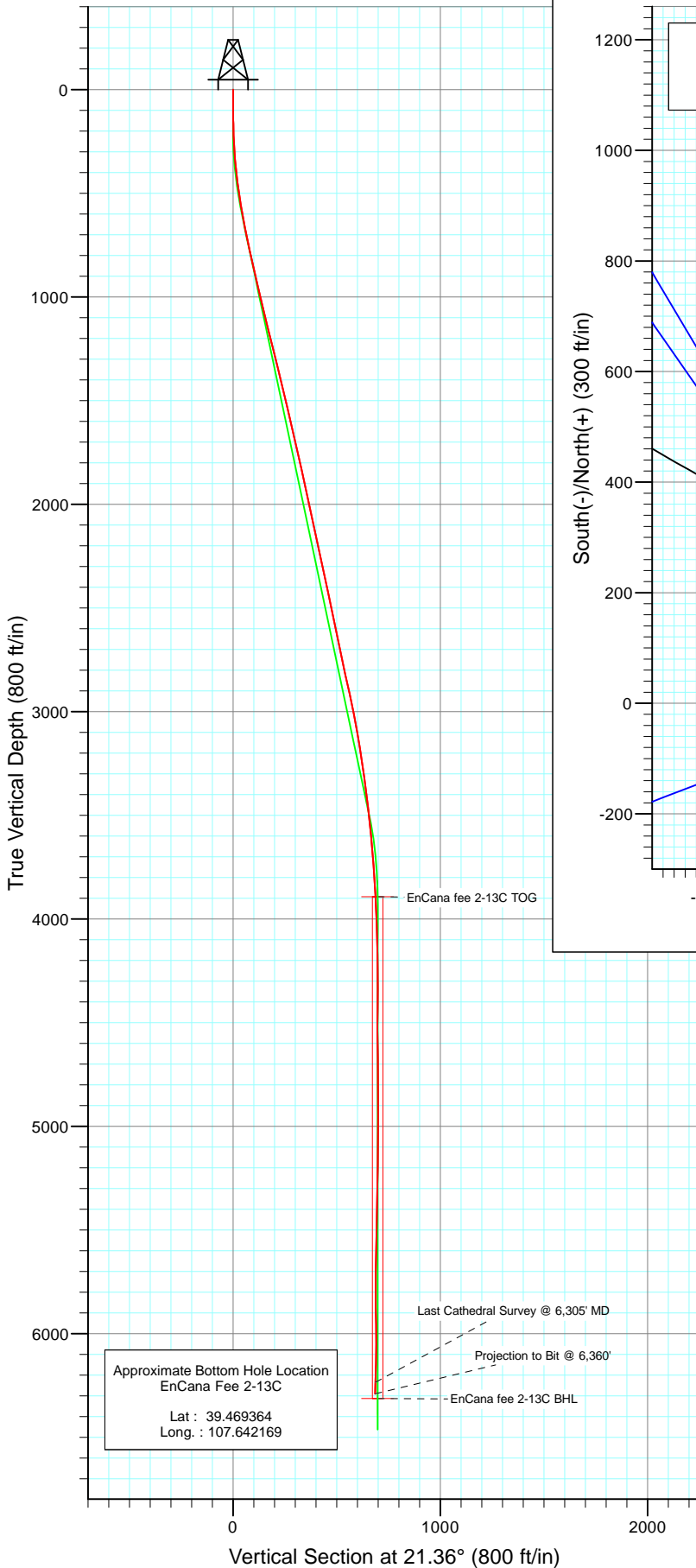




Project: Mamm Creek
 Site: NWNW S10-T7S-R92W (A10E Pad)
 Well: EnCana Fee 2-13C
 Wellbore: DD
 Design: FINAL



Azimuths to True North
 Magnetic North: 10.22°

Magnetic Field
 Strength: 52307.3snT
 Dip Angle: 65.79°
 Date: 3/9/2011
 Model: IGRF2010

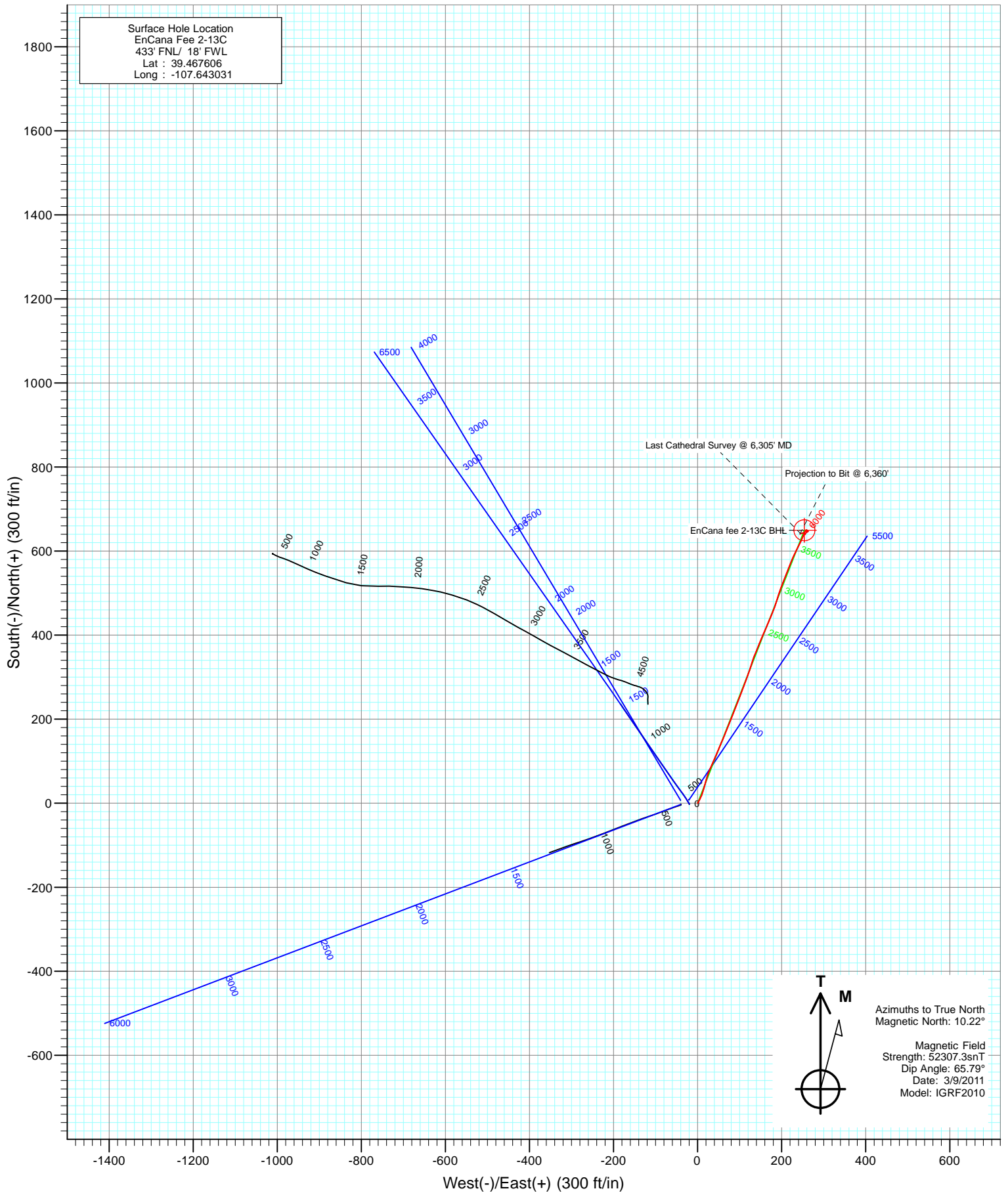
DESIGN DETAILS: DD

Job #115122: KR
 KBE @ 6068.0ft (Nabors M15)

Target	Azimuth	Origin Slot	N/S	E/W	From TVD
EnCana fee 2-13C BHL	21.36		0.0	0.0	0.0

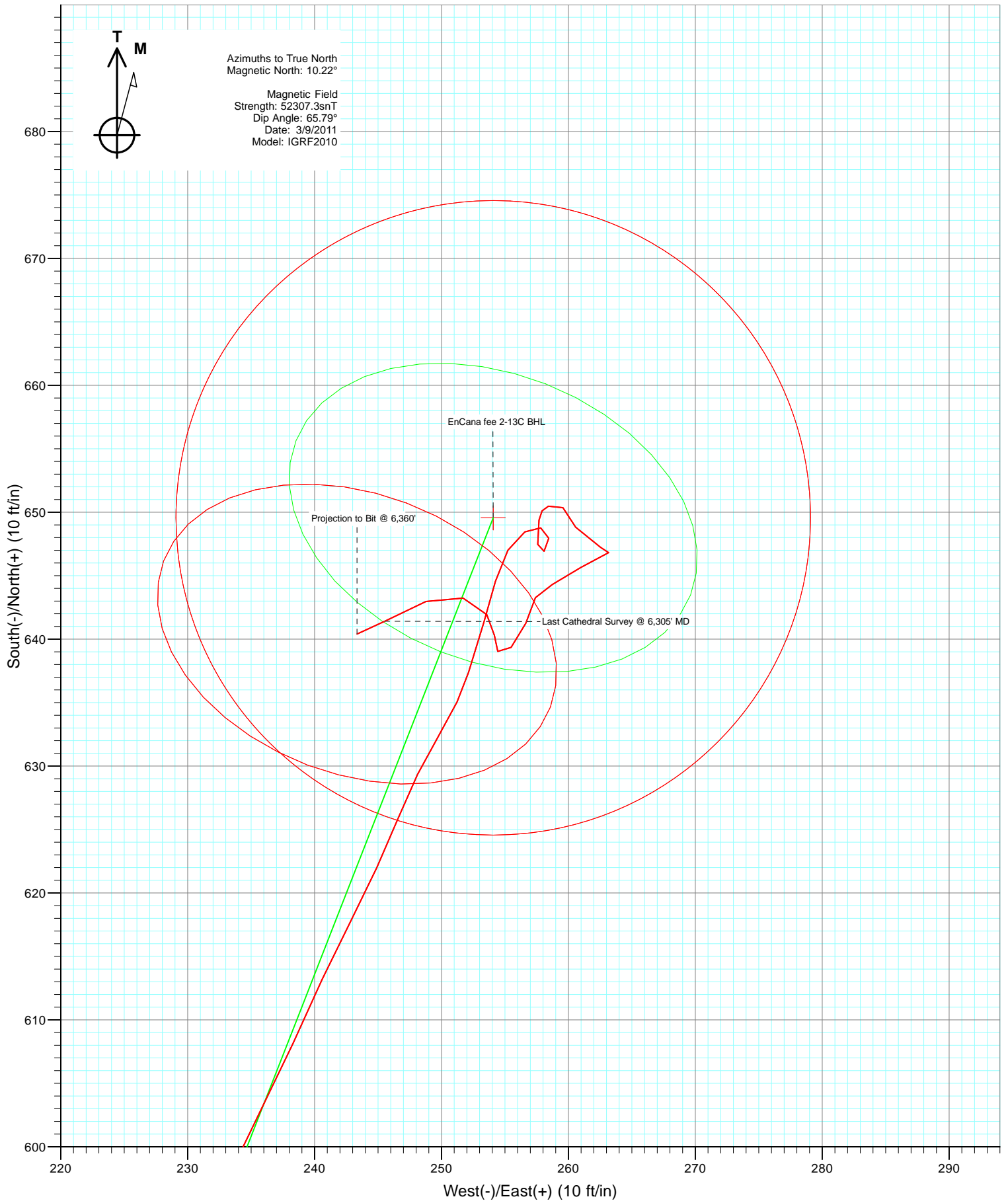


Project: Mamm Creek
Site: NWNW S10-T7S-R92W (A10E Pad)
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Project: Mamm Creek
Site: NWNW S10-T7S-R92W (A10E Pad)
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Design: FINAL



Cathedral Energy Services

Survey Report

Company: EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference: Well EnCana Fee 2-13C
Project: Mamm Creek	TVD Reference: KBE @ 6068.0ft (Nabors M15)
Site: NWNW S10-T7S-R92W (A10E Pad)	MD Reference: KBE @ 6068.0ft (Nabors M15)
Well: EnCana Fee 2-13C	North Reference: True
Wellbore: DD	Survey Calculation Method: Minimum Curvature
Design: DD	Database: USA EDM 5000 Multi Users DB

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

Site NWNW S10-T7S-R92W (A10E Pad)				
Site Position:	Northing: 1,602,351.99 ft	Latitude: 39.467628		
From: Lat/Long	Easting: 2,395,032.44 ft	Longitude: -107.643103		
Position Uncertainty: 0.0 ft	Slot Radius: 13.200 in	Grid Convergence: -1.35 °		

Well EnCana Fee 2-13C				
Well Position	+N/-S 0.0 ft	Northing: 1,602,343.32 ft	Latitude: 39.467606	
	+E/-W 0.0 ft	Easting: 2,395,052.70 ft	Longitude: -107.643031	
Position Uncertainty	0.0 ft	Wellhead Elevation: ft	Ground Level: 6,046.0 ft	

Wellbore DD					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/9/2011	10.22	65.79	52,307

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	21.36

Survey Program		Date 3/19/2011			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
110.0	6,360.0	Survey #1 (DD)	MWD	Geolink MWD	

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	
110.0	0.60	51.30	110.0	0.4	0.4	0.5	0.55	0.55	
141.0	0.30	61.90	141.0	0.5	0.6	0.7	1.00	-0.97	
233.0	3.30	23.30	232.9	3.0	1.9	3.5	3.34	3.26	
326.0	4.00	29.60	325.8	8.3	4.6	9.4	0.87	0.75	
418.0	5.70	24.70	417.4	15.3	8.1	17.2	1.90	1.85	
510.0	9.50	17.40	508.6	26.7	12.2	29.3	4.25	4.13	
603.0	10.20	16.20	600.2	41.9	16.8	45.2	0.78	0.75	
695.0	11.30	14.50	690.6	58.4	21.4	62.2	1.24	1.20	
787.0	12.30	23.00	780.7	76.2	27.5	81.0	2.18	1.09	
879.0	12.90	24.90	870.5	94.5	35.6	101.0	0.79	0.65	
972.0	13.40	22.00	961.0	113.9	44.0	122.1	0.89	0.54	
1,067.0	13.50	23.10	1,053.4	134.3	52.5	144.2	0.29	0.11	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well EnCana Fee 2-13C
Project:	Mamm Creek	TVD Reference:	KBE @ 6068.0ft (Nabors M15)
Site:	NWNW S10-T7S-R92W (A10E Pad)	MD Reference:	KBE @ 6068.0ft (Nabors M15)
Well:	EnCana Fee 2-13C	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
1,163.0	14.00	22.60	1,146.7	155.4	61.3	167.0	0.54	0.52	
1,258.0	14.00	22.00	1,238.8	176.6	70.1	190.0	0.15	0.00	
1,322.0	13.50	22.10	1,301.0	190.7	75.8	205.2	0.78	-0.78	
1,451.0	13.60	21.30	1,426.4	218.8	87.0	235.5	0.16	0.08	
1,546.0	13.40	21.00	1,518.8	239.5	95.0	257.6	0.22	-0.21	
1,640.0	13.30	21.50	1,610.3	259.7	102.8	279.3	0.16	-0.11	
1,735.0	13.20	20.50	1,702.7	280.1	110.6	301.1	0.26	-0.11	
1,831.0	12.60	19.70	1,796.3	300.2	118.0	322.5	0.65	-0.62	
1,926.0	12.30	18.30	1,889.1	319.5	124.7	343.0	0.45	-0.32	
2,022.0	12.30	18.10	1,982.9	339.0	131.0	363.4	0.04	0.00	
2,116.0	12.50	22.70	2,074.7	357.9	138.1	383.6	1.07	0.21	
2,212.0	11.60	21.80	2,168.6	376.4	145.7	403.6	0.96	-0.94	
2,307.0	12.40	22.80	2,261.5	394.7	153.2	423.4	0.87	0.84	
2,403.0	12.00	23.70	2,355.3	413.3	161.2	443.6	0.46	-0.42	
2,499.0	11.80	23.10	2,449.2	431.5	169.0	463.4	0.24	-0.21	
2,594.0	11.60	22.90	2,542.3	449.2	176.6	482.7	0.21	-0.21	
2,690.0	11.50	19.10	2,636.3	467.2	183.5	501.9	0.80	-0.10	
2,785.0	12.00	17.10	2,729.3	485.6	189.5	521.2	0.68	0.53	
2,880.0	12.80	19.10	2,822.1	504.9	195.8	541.6	0.96	0.84	
2,976.0	12.30	21.20	2,915.8	524.5	203.0	562.4	0.71	-0.52	
3,071.0	11.30	22.00	3,008.8	542.6	210.1	581.9	1.07	-1.05	
3,166.0	10.10	20.90	3,102.2	559.0	216.6	599.5	1.28	-1.26	
3,262.0	8.20	22.00	3,196.9	573.2	222.2	614.8	1.99	-1.98	
3,357.0	8.60	24.10	3,290.9	586.0	227.6	628.6	0.53	0.42	
3,452.0	7.00	27.80	3,385.0	597.6	233.2	641.5	1.76	-1.68	
3,548.0	7.00	23.70	3,480.3	608.1	238.3	653.1	0.52	0.00	
3,643.0	5.90	27.10	3,574.7	617.8	242.8	663.8	1.23	-1.16	
3,739.0	4.80	21.80	3,670.3	625.9	246.6	672.7	1.25	-1.15	
3,834.0	4.00	31.40	3,765.0	632.4	249.8	679.9	1.14	-0.84	
3,929.0	2.70	16.10	3,859.9	637.4	252.1	685.4	1.65	-1.37	
4,025.0	2.20	18.20	3,955.8	641.3	253.3	689.5	0.53	-0.52	
4,120.0	1.90	13.20	4,050.7	644.6	254.3	692.9	0.37	-0.32	
4,216.0	1.30	34.60	4,146.7	647.0	255.2	695.5	0.87	-0.62	
4,311.0	1.10	52.20	4,241.7	648.5	256.6	697.4	0.44	-0.21	
4,406.0	0.70	114.90	4,336.6	648.8	257.8	698.1	1.05	-0.42	
4,501.0	0.70	168.60	4,431.6	648.0	258.5	697.6	0.67	0.00	
4,596.0	0.80	226.60	4,526.6	646.9	258.1	696.5	0.77	0.11	
4,691.0	1.20	359.00	4,621.6	647.5	257.6	696.8	1.93	0.42	
4,787.0	1.10	6.90	4,717.6	649.4	257.7	698.6	0.20	-0.10	
4,882.0	0.80	73.90	4,812.6	650.5	258.4	699.9	1.13	-0.32	
4,977.0	0.70	121.40	4,907.6	650.4	259.6	700.2	0.64	-0.11	
5,072.0	1.60	157.70	5,002.6	648.8	260.6	699.2	1.17	0.95	
5,168.0	1.80	103.50	5,098.5	647.2	262.5	698.4	1.62	0.21	
5,263.0	1.00	265.00	5,193.5	646.8	263.2	698.2	2.91	-0.84	
5,358.0	2.10	231.00	5,288.5	645.7	261.0	696.4	1.46	1.16	
5,454.0	1.10	255.10	5,384.4	644.3	258.7	694.3	1.23	-1.04	
5,549.0	1.10	208.90	5,479.4	643.3	257.4	692.8	0.91	0.00	
5,645.0	1.50	194.40	5,575.4	641.3	256.6	690.7	0.54	0.42	
5,741.0	1.30	231.30	5,671.4	639.4	255.5	688.5	0.94	-0.21	
5,836.0	0.50	330.00	5,766.4	639.0	254.4	687.8	1.54	-0.84	
5,931.0	1.10	356.30	5,861.4	640.3	254.2	688.9	0.72	0.63	
6,026.0	1.10	323.20	5,956.3	641.9	253.6	690.2	0.66	0.00	
6,122.0	1.70	293.10	6,052.3	643.2	251.7	690.7	0.97	0.62	

Cathedral Energy Services

Survey Report

Company: EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference: Well EnCana Fee 2-13C
Project: Mamm Creek	TVD Reference: KBE @ 6068.0ft (Nabors M15)
Site: NWNW S10-T7S-R92W (A10E Pad)	MD Reference: KBE @ 6068.0ft (Nabors M15)
Well: EnCana Fee 2-13C	North Reference: True
Wellbore: DD	Survey Calculation Method: Minimum Curvature
Design: DD	Database: USA EDM 5000 Multi Users DB

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
6,217.0	2.20	243.30	6,147.3	643.0	248.8	689.4	1.79	0.53	
6,305.0	2.50	245.20	6,235.2	641.4	245.5	686.8	0.35	0.34	Last Cathedral Survey @ 6,305' MD
6,360.0	2.50	245.20	6,290.1	640.4	243.3	685.1	0.00	0.00	Projection to Bit @ 6,360'

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
EnCana fee 2-13C BHL - hit/miss target - Shape - Circle (radius 25.0)	0.00	0.00	6,313.0	649.6	254.1	1,602,986.72	2,395,322.02	39.469389	-107.642131
- survey misses target center by 26.9ft at 6360.0ft MD (6290.1 TVD, 640.4 N, 243.3 E)									
EnCana fee 2-13C TOG - survey misses target center by 10.8ft at 3962.6ft MD (3893.5 TVD, 638.8 N, 252.6 E) - Point	0.00	0.00	3,893.0	649.6	254.1	1,602,986.72	2,395,322.02	39.469389	-107.642131

Measured Depth (ft)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Comment
6,305.0	6,235.2	641.4	245.5	Last Cathedral Survey @ 6,305' MD
6,360.0	6,290.1	640.4	243.3	Projection to Bit @ 6,360'

Checked By: _____ Approved By: _____ Date: _____