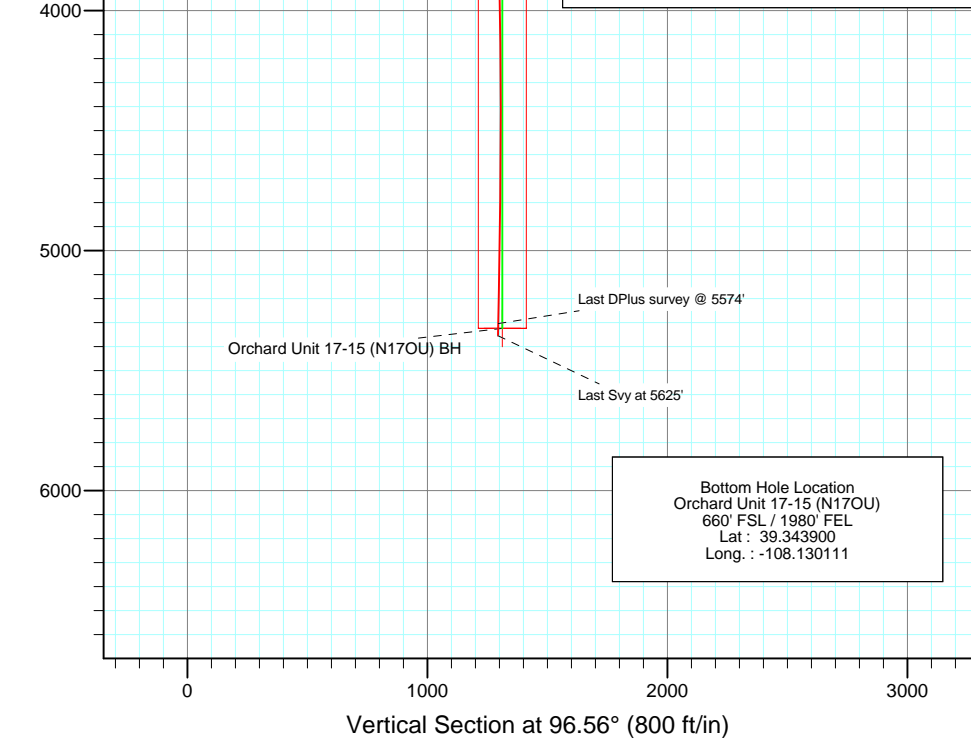
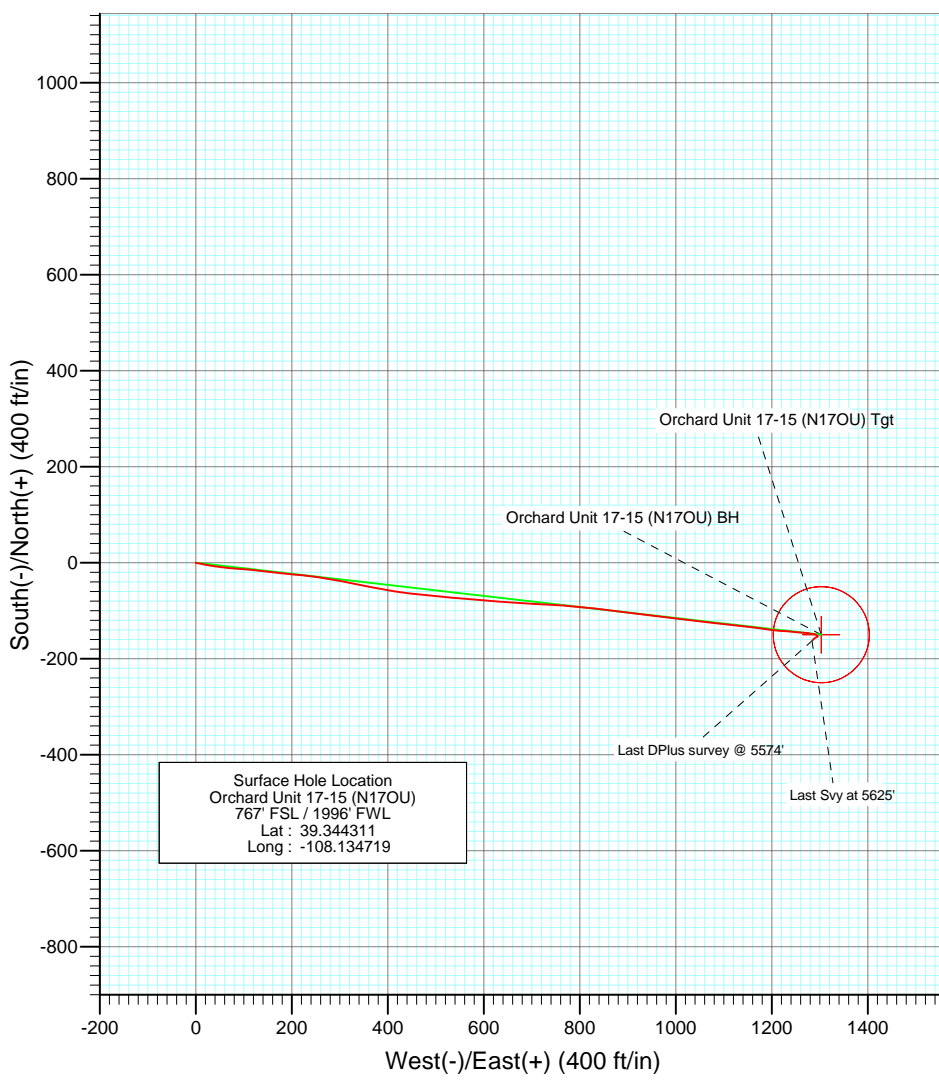
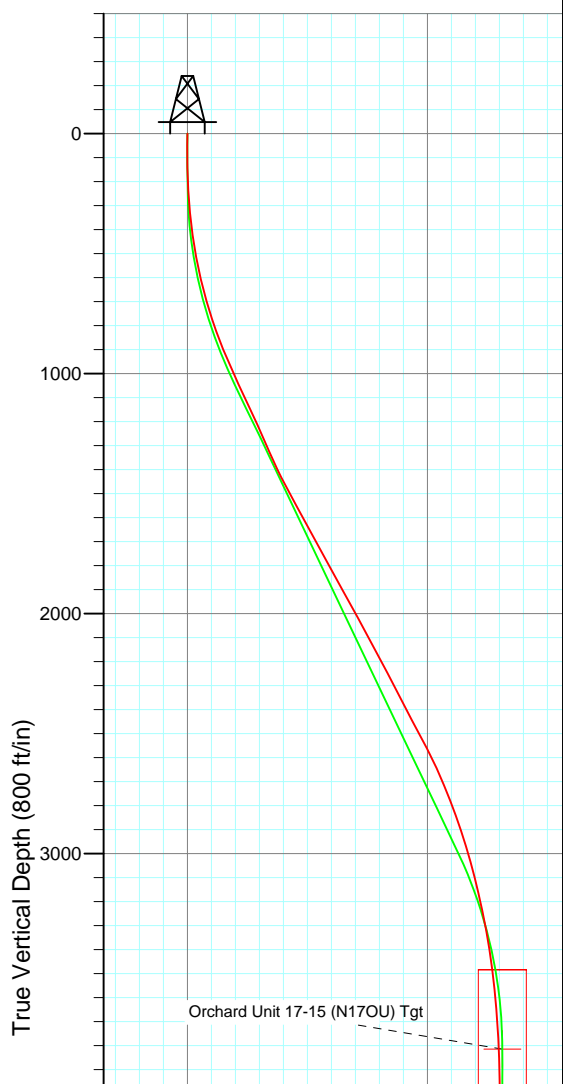




Project: Orchard  
 Site: N17OU Pad (SESW Sec17-T8S-R96W)  
 Well: Orchard Unit 17-15 (N17OU)  
 Wellbore: DD  
 Design: DD



Azimuths to True North  
 Magnetic North: 10.89°

Magnetic Field  
 Strength: 52573.5snT  
 Dip Angle: 65.70°  
 Date: 6/13/2007  
 Model: IGRF200510

DESIGN DETAILS: DD

Job#: 75250; DS  
 KBE @ 5764.0ft (SST#1)

Target	Azimuth	Origin	N/S	E/W	From TVD
Orchard Unit 17-15 (N17OU) BH	96.56	Slot	0.0	0.0	0.0

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Orchard Unit 17-15 (N17OU)
<b>Project:</b>	Orchard	<b>TVD Reference:</b>	KBE @ 5764.0ft (SST#1)
<b>Site:</b>	N17OU Pad (SESW Sec17-T8S-R96W)	<b>MD Reference:</b>	KBE @ 5764.0ft (SST#1)
<b>Well:</b>	Orchard Unit 17-15 (N17OU)	<b>North Reference:</b>	True
<b>Wellbore:</b>	DD	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	DD	<b>Database:</b>	EDM 2003.16 US Multi User Db

<b>Project</b>	Orchard		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Central Zone		

Site		N17OU Pad (SESW Sec17-T8S-R96W)			
Site Position:		Northing:	1,561,101.07 ft	Latitude:	39.344311
From:	Lat/Long	Easting:	2,254,983.15 ft	Longitude:	-108.134719
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	-1.66 °

Well	Orchard Unit 17-15 (N17OU)					
Well Position	+N/-S	0.0 ft	Northing:	1,561,101.07 ft	Latitude:	39.344311
	+E/-W	0.0 ft	Easting:	2,254,983.15 ft	Longitude:	-108.134719
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	5,750.0 ft

<b>Wellbore</b>	DD				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF200510	6/13/2007	10.89	65.70	52,574

<b>Design</b>	DD				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD)</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Direction</b>	
	(ft)	(ft)	(ft)	(°)	
	0.0	0.0	0.0	96.56	

<b>Survey Program</b>	<b>Date</b>	7/2/2007			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
88.0	5,574.0	Survey #1 (DD)	MWD	Geolink MWD	
5,625.0	5,625.0	Survey #2 (DD)	Gyro	Gyro	

<b>Survey</b>										
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Vertical Section (ft)</b>	<b>Dogleg Rate (°/100ft)</b>	<b>Dogleg Rate (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Formations / Comments</b>
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
88.0	0.20	186.60	88.0	-0.2	0.0	0.0	0.23	0.23	0.23	
118.0	0.40	43.80	118.0	-0.1	0.0	0.1	1.91	1.91	0.67	
147.0	0.70	86.40	147.0	0.0	0.3	0.3	1.68	1.68	1.03	
178.0	1.40	100.90	178.0	-0.1	0.9	0.9	2.40	2.40	2.26	
208.0	2.20	100.90	208.0	-0.3	1.8	1.8	2.67	2.67	2.67	
239.0	3.30	99.90	238.9	-0.5	3.2	3.3	3.55	3.55	3.55	
269.0	3.90	103.40	268.9	-0.9	5.1	5.2	2.13	2.13	2.00	
300.0	5.00	98.00	299.8	-1.4	7.5	7.6	3.79	3.79	3.55	
330.0	5.40	102.50	329.7	-1.9	10.1	10.3	1.90	1.90	1.33	
361.0	6.30	101.90	360.5	-2.5	13.2	13.4	2.91	2.91	2.90	
391.0	7.30	101.10	390.3	-3.2	16.7	17.0	3.35	3.35	3.33	

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Orchard Unit 17-15 (N17OU)
<b>Project:</b>	Orchard	<b>TVD Reference:</b>	KBE @ 5764.0ft (SST#1)
<b>Site:</b>	N17OU Pad (SESW Sec17-T8S-R96W)	<b>MD Reference:</b>	KBE @ 5764.0ft (SST#1)
<b>Well:</b>	Orchard Unit 17-15 (N17OU)	<b>North Reference:</b>	True
<b>Wellbore:</b>	DD	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	DD	<b>Database:</b>	EDM 2003.16 US Multi User Db

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Formations / Comments
421.0	8.00	102.10	420.0	-4.0	20.6	20.9	2.38	2.38	2.33	
452.0	8.70	101.70	450.7	-5.0	25.0	25.4	2.27	2.27	2.26	
482.0	9.70	96.90	480.3	-5.7	29.7	30.2	4.20	4.20	3.33	
513.0	10.30	100.30	510.8	-6.5	35.1	35.6	2.71	2.71	1.94	
542.0	11.30	97.70	539.3	-7.4	40.4	41.0	3.83	3.83	3.45	
573.0	12.30	96.00	569.7	-8.1	46.7	47.3	3.41	3.41	3.23	
603.0	13.00	97.60	598.9	-8.9	53.2	53.9	2.61	2.61	2.33	
634.0	13.80	98.30	629.1	-9.9	60.4	61.1	2.63	2.63	2.58	
664.0	14.50	96.00	658.2	-10.8	67.6	68.4	2.99	2.99	2.33	
695.0	15.50	95.20	688.1	-11.6	75.6	76.4	3.29	3.29	3.23	
725.0	16.60	94.30	717.0	-12.3	83.9	84.7	3.76	3.76	3.67	
755.0	17.40	94.40	745.6	-12.9	92.6	93.5	2.67	2.67	2.67	
786.0	18.30	93.10	775.2	-13.6	102.1	103.0	3.17	3.17	2.90	
816.0	19.00	95.20	803.6	-14.3	111.7	112.6	3.23	3.23	2.33	
847.0	19.90	95.70	832.8	-15.2	122.0	122.9	2.95	2.95	2.90	
877.0	20.70	97.60	860.9	-16.4	132.3	133.3	3.45	3.45	2.67	
908.0	21.80	95.80	889.8	-17.8	143.4	144.5	4.13	4.13	3.55	
938.0	22.70	96.80	917.6	-19.0	154.7	155.9	3.25	3.25	3.00	
999.0	24.00	95.70	973.6	-21.6	178.8	180.1	2.25	2.25	2.13	
1,061.0	25.20	96.80	1,030.0	-24.4	204.4	205.9	2.07	2.07	1.94	
1,124.0	25.10	96.40	1,087.0	-27.5	231.0	232.7	0.31	0.31	-0.16	
1,187.0	25.00	97.40	1,144.1	-30.7	257.5	259.3	0.69	0.69	-0.16	
1,285.0	24.00	100.70	1,233.3	-37.1	297.6	299.9	1.73	1.73	-1.02	
1,380.0	23.70	101.20	1,320.2	-44.4	335.3	338.2	0.38	0.38	-0.32	
1,443.0	25.00	102.30	1,377.5	-49.7	360.8	364.1	2.19	2.19	2.06	
1,506.0	26.60	100.50	1,434.3	-55.1	387.6	391.4	2.83	2.83	2.54	
1,569.0	28.30	98.30	1,490.2	-59.8	416.3	420.4	3.14	3.14	2.70	
1,665.0	28.90	95.90	1,574.5	-65.5	461.9	466.3	1.35	1.35	0.62	
1,759.0	28.70	95.60	1,656.8	-70.0	506.9	511.6	0.26	0.26	-0.21	
1,854.0	28.60	95.30	1,740.2	-74.4	552.3	557.2	0.18	0.18	-0.11	
1,949.0	28.60	94.60	1,823.6	-78.3	597.6	602.6	0.35	0.35	0.00	
2,043.0	28.90	93.90	1,906.0	-81.6	642.7	647.8	0.48	0.48	0.32	
2,138.0	29.00	93.50	1,989.2	-84.6	688.6	693.7	0.23	0.23	0.11	
2,232.0	28.80	92.70	2,071.4	-87.1	733.9	739.1	0.46	0.46	-0.21	
2,327.0	28.10	95.10	2,155.0	-90.1	779.1	784.3	1.41	1.41	-0.74	
2,421.0	27.60	96.60	2,238.1	-94.6	822.8	828.2	0.92	0.92	-0.53	
2,515.0	27.00	96.70	2,321.6	-99.6	865.6	871.3	0.64	0.64	-0.64	
2,609.0	28.10	97.00	2,405.0	-104.8	908.7	914.8	1.18	1.18	1.17	
2,703.0	27.60	97.00	2,488.1	-110.1	952.3	958.7	0.53	0.53	-0.53	
2,798.0	27.20	97.20	2,572.4	-115.5	995.7	1,002.4	0.43	0.43	-0.42	
2,892.0	24.40	96.50	2,657.0	-120.4	1,036.3	1,043.3	3.00	3.00	-2.98	
2,987.0	21.90	96.80	2,744.4	-124.7	1,073.4	1,080.6	2.63	2.63	-2.63	
3,082.0	19.80	96.60	2,833.2	-128.7	1,107.0	1,114.5	2.21	2.21	-2.21	
3,176.0	17.90	95.50	2,922.1	-131.9	1,137.2	1,144.8	2.06	2.06	-2.02	
3,271.0	16.30	97.50	3,012.9	-135.0	1,164.9	1,172.7	1.79	1.79	-1.68	
3,364.0	13.90	98.90	3,102.7	-138.5	1,188.9	1,197.0	2.61	2.61	-2.58	
3,461.0	12.70	94.60	3,197.1	-141.1	1,211.1	1,219.3	1.60	1.60	-1.24	
3,555.0	10.80	95.00	3,289.1	-142.7	1,230.1	1,238.4	2.02	2.02	-2.02	
3,651.0	9.30	94.40	3,383.6	-144.1	1,246.8	1,255.1	1.57	1.57	-1.56	
3,744.0	7.60	95.60	3,475.6	-145.3	1,260.5	1,268.8	1.84	1.84	-1.83	
3,839.0	5.80	94.60	3,570.0	-146.3	1,271.5	1,279.9	1.90	1.90	-1.89	
3,934.0	4.30	102.20	3,664.6	-147.4	1,279.8	1,288.2	1.73	1.73	-1.58	
4,028.0	3.20	95.20	3,758.4	-148.4	1,285.8	1,294.3	1.27	1.27	-1.17	

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Orchard Unit 17-15 (N17OU)
<b>Project:</b>	Orchard	<b>TVD Reference:</b>	KBE @ 5764.0ft (SST#1)
<b>Site:</b>	N17OU Pad (SESW Sec17-T8S-R96W)	<b>MD Reference:</b>	KBE @ 5764.0ft (SST#1)
<b>Well:</b>	Orchard Unit 17-15 (N17OU)	<b>North Reference:</b>	True
<b>Wellbore:</b>	DD	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	DD	<b>Database:</b>	EDM 2003.16 US Multi User Db

### Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Formations / Comments
4,123.0	1.80	100.80	3,853.3	-148.9	1,289.9	1,298.5	1.49	1.49	-1.47	
4,217.0	0.90	134.40	3,947.3	-149.7	1,291.9	1,300.5	1.24	1.24	-0.96	
4,311.0	0.80	121.50	4,041.3	-150.6	1,293.0	1,301.7	0.23	0.23	-0.11	
4,406.0	0.70	124.30	4,136.3	-151.2	1,294.0	1,302.8	0.11	0.11	-0.11	
4,532.0	0.50	138.30	4,262.3	-152.1	1,295.0	1,303.9	0.20	0.20	-0.16	
4,659.0	0.40	149.50	4,389.3	-152.9	1,295.6	1,304.6	0.10	0.10	-0.08	
4,784.0	0.30	162.50	4,514.2	-153.6	1,295.9	1,305.0	0.10	0.10	-0.08	
4,910.0	0.70	257.90	4,640.2	-154.0	1,295.3	1,304.4	0.62	0.62	0.32	
5,036.0	0.70	253.70	4,766.2	-154.4	1,293.8	1,303.0	0.04	0.04	0.00	
5,131.0	1.10	232.60	4,861.2	-155.1	1,292.5	1,301.8	0.54	0.54	0.42	
5,257.0	1.20	234.60	4,987.2	-156.6	1,290.5	1,299.9	0.09	0.09	0.08	
5,383.0	1.40	229.70	5,113.2	-158.4	1,288.2	1,297.9	0.18	0.18	0.16	
5,478.0	1.20	230.80	5,208.1	-159.8	1,286.6	1,296.4	0.21	0.21	-0.21	
5,574.0	1.70	223.80	5,304.1	-161.4	1,284.8	1,294.8	0.55	0.55	0.52	Last DPlus survey @ 5574'
5,625.0	1.96	220.15	5,355.1	-162.7	1,283.7	1,293.9	0.56	0.56	0.51	Last Svy at 5625'

### 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
Orchard Unit 17-15 (N17 - actual wellpath misses by 14.5ft at 4085.3ft MD (3815.6 TVD, -148.7 N, 1288.6 E) - Point	0.00	0.00	3,815.0	-149.7	1,303.1	1,560,913.62	2,256,281.33	39.343900	-108.130111
Orchard Unit 17-15 (N17 - actual wellpath misses by 29.4ft at 5574.0ft MD (5304.1 TVD, -161.4 N, 1284.8 E) - Circle (radius 100.0)	0.00	0.00	5,324.0	-149.7	1,303.1	1,560,913.62	2,256,281.33	39.343900	-108.130111

### Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Comment
5,574.0	5,304.1	-161.4	1,284.8	Last DPlus survey @ 5574'
5,625.0	5,355.1	-162.7	1,283.7	Last Svy at 5625'

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_