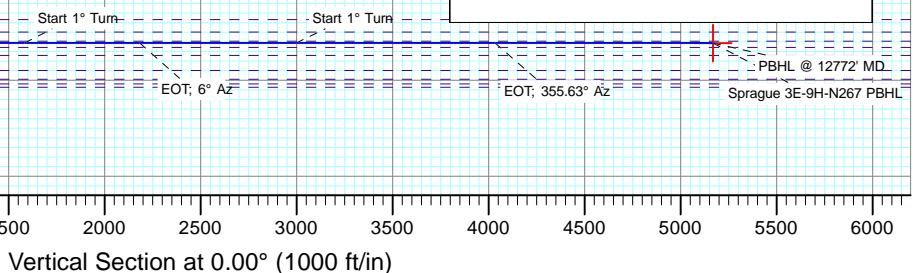


FORMATION TOP DETAILS		
TVDPPath	MDPath	Formation
461.0	461.1	Fox Hills - BASE
4418.0	4460.7	Sussex
4665.0	4707.7	Sussex Marker
4963.0	5005.7	Shannon
6311.0	6353.7	Teepee Buttes ("if present)
7184.0	7294.3	Sharon Springs
7249.0	7416.7	Niobrara
7297.0	7569.6	B Chalk

Plan #1
Sprague 3E-9H-N267
13xxx; LR
WELL @ 5011.0ft (Original Well Elev)
Ground Elevation @ 4981.0
North American Datum 1983
Well Sprague 3E-9H-N267, True North





Cathedral Energy Services

Planning Report

Database: USA EDM 5000 Multi Users DB
Company: EnCana Oil & Gas (USA) Inc
Project: DJ Wattenberg
Site: S9-T2N-R67W (Sprague)
Well: Sprague 3E-9H-N267
Wellbore: Hz
Design: Plan #1

Local Co-ordinate Reference: Well Sprague 3E-9H-N267
TVD Reference: WELL @ 5011.0ft (Original Well Elev)
MD Reference: WELL @ 5011.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

Project DJ Wattenberg

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

Site S9-T2N-R67W (Sprague)

Site Position:
From: Lat/Long
Position Uncertainty: 0.0 ft
Northing: 1,298,443.90 ft
Easting: 3,167,093.12 ft
Slot Radius: 13.200 in
Latitude: 40.151070
Longitude: -104.902260
Grid Convergence: 0.39 °

Well Sprague 3E-9H-N267

Well Position **+N/-S** 0.0 ft **Northing:** 1,296,975.68 ft **Latitude:** 40.147020
+E/-W 0.0 ft **Easting:** 3,168,156.95 ft **Longitude:** -104.898490
Position Uncertainty 0.0 ft **Wellhead Elevation:** ft **Ground Level:** 4,981.0 ft

Wellbore Hz

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	11/5/2013	8.59	66.74	52,731

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	0.00

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	
1,250.0	10.50	202.42	1,244.1	-88.7	-36.6	1.00	1.00	0.00	202.42	
3,100.0	10.50	202.42	3,063.2	-400.3	-165.2	0.00	0.00	0.00	0.00	
4,150.0	0.00	0.00	4,107.3	-489.0	-201.8	1.00	-1.00	0.00	180.00	
6,776.8	0.00	0.00	6,734.0	-489.0	-201.8	0.00	0.00	0.00	0.00	
7,676.8	90.00	0.01	7,307.0	83.9	-201.7	10.00	10.00	0.00	0.01	
7,677.6	90.00	0.01	7,307.0	84.8	-201.7	0.00	0.00	0.00	0.00	Sprague 3E-9H-N267
9,177.6	90.00	0.01	7,307.0	1,584.8	-201.5	0.00	0.00	0.00	0.00	
9,777.0	90.00	6.00	7,307.0	2,183.1	-170.1	1.00	0.00	1.00	90.00	
10,597.0	90.00	6.00	7,307.0	2,998.6	-84.4	0.00	0.00	0.00	0.00	
11,634.3	90.00	355.63	7,307.0	4,034.4	-69.7	1.00	0.00	-1.00	-90.00	
12,772.4	90.00	355.63	7,307.0	5,169.2	-156.5	0.00	0.00	0.00	0.00	Sprague 3E-9H-N267



Cathedral Energy Services

Planning Report

Database: USA EDM 5000 Multi Users DB
Company: EnCana Oil & Gas (USA) Inc
Project: DJ Wattenberg
Site: S9-T2N-R67W (Sprague)
Well: Sprague 3E-9H-N267
Wellbore: Hz
Design: Plan #1

Local Co-ordinate Reference: Well Sprague 3E-9H-N267
TVD Reference: WELL @ 5011.0ft (Original Well Elev)
MD Reference: WELL @ 5011.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

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' MD
300.0	1.00	202.42	300.0	-0.8	-0.3	-0.8	1.00	1.00	
400.0	2.00	202.42	400.0	-3.2	-1.3	-3.2	1.00	1.00	
461.1	2.61	202.42	461.0	-5.5	-2.3	-5.5	1.00	1.00	Fox Hills - BASE
500.0	3.00	202.42	499.9	-7.3	-3.0	-7.3	1.00	1.00	
600.0	4.00	202.42	599.7	-12.9	-5.3	-12.9	1.00	1.00	
700.0	5.00	202.42	699.4	-20.2	-8.3	-20.2	1.00	1.00	
800.0	6.00	202.42	798.9	-29.0	-12.0	-29.0	1.00	1.00	
900.0	7.00	202.42	898.3	-39.5	-16.3	-39.5	1.00	1.00	
1,000.0	8.00	202.42	997.4	-51.5	-21.3	-51.5	1.00	1.00	
1,100.0	9.00	202.42	1,096.3	-65.2	-26.9	-65.2	1.00	1.00	
1,200.0	10.00	202.42	1,194.9	-80.5	-33.2	-80.5	1.00	1.00	
1,250.0	10.50	202.42	1,244.1	-88.7	-36.6	-88.7	1.00	1.00	EOB; 10.5°
1,300.0	10.50	202.42	1,293.3	-97.1	-40.1	-97.1	0.00	0.00	
1,400.0	10.50	202.42	1,391.6	-114.0	-47.0	-114.0	0.00	0.00	
1,500.0	10.50	202.42	1,489.9	-130.8	-54.0	-130.8	0.00	0.00	
1,600.0	10.50	202.42	1,588.3	-147.7	-60.9	-147.7	0.00	0.00	
1,700.0	10.50	202.42	1,686.6	-164.5	-67.9	-164.5	0.00	0.00	
1,800.0	10.50	202.42	1,784.9	-181.3	-74.8	-181.3	0.00	0.00	
1,900.0	10.50	202.42	1,883.2	-198.2	-81.8	-198.2	0.00	0.00	
2,000.0	10.50	202.42	1,981.6	-215.0	-88.7	-215.0	0.00	0.00	
2,100.0	10.50	202.42	2,079.9	-231.9	-95.7	-231.9	0.00	0.00	
2,200.0	10.50	202.42	2,178.2	-248.7	-102.6	-248.7	0.00	0.00	
2,300.0	10.50	202.42	2,276.6	-265.6	-109.6	-265.6	0.00	0.00	
2,400.0	10.50	202.42	2,374.9	-282.4	-116.5	-282.4	0.00	0.00	
2,500.0	10.50	202.42	2,473.2	-299.3	-123.5	-299.3	0.00	0.00	
2,600.0	10.50	202.42	2,571.5	-316.1	-130.4	-316.1	0.00	0.00	
2,700.0	10.50	202.42	2,669.9	-333.0	-137.4	-333.0	0.00	0.00	
2,800.0	10.50	202.42	2,768.2	-349.8	-144.3	-349.8	0.00	0.00	
2,900.0	10.50	202.42	2,866.5	-366.7	-151.3	-366.7	0.00	0.00	
3,000.0	10.50	202.42	2,964.8	-383.5	-158.2	-383.5	0.00	0.00	
3,100.0	10.50	202.42	3,063.2	-400.3	-165.2	-400.3	0.00	0.00	Start 1° Drop
3,200.0	9.50	202.42	3,161.6	-416.4	-171.8	-416.4	1.00	-1.00	
3,300.0	8.50	202.42	3,260.4	-430.9	-177.8	-430.9	1.00	-1.00	
3,400.0	7.50	202.42	3,359.4	-443.7	-183.1	-443.7	1.00	-1.00	
3,500.0	6.50	202.42	3,458.7	-455.0	-187.7	-455.0	1.00	-1.00	
3,600.0	5.50	202.42	3,558.1	-464.6	-191.7	-464.6	1.00	-1.00	
3,700.0	4.50	202.42	3,657.7	-472.7	-195.0	-472.7	1.00	-1.00	
3,800.0	3.50	202.42	3,757.5	-479.2	-197.7	-479.2	1.00	-1.00	
3,900.0	2.50	202.42	3,857.4	-484.0	-199.7	-484.0	1.00	-1.00	
4,000.0	1.50	202.42	3,957.3	-487.2	-201.0	-487.2	1.00	-1.00	
4,100.0	0.50	202.42	4,057.3	-488.8	-201.7	-488.8	1.00	-1.00	
4,150.0	0.00	0.00	4,107.3	-489.0	-201.8	-489.0	1.00	-1.00	EOD; Vertical
4,200.0	0.00	0.00	4,157.3	-489.0	-201.8	-489.0	0.00	0.00	
4,300.0	0.00	0.00	4,257.3	-489.0	-201.8	-489.0	0.00	0.00	
4,400.0	0.00	0.00	4,357.3	-489.0	-201.8	-489.0	0.00	0.00	
4,460.7	0.00	0.00	4,418.0	-489.0	-201.8	-489.0	0.00	0.00	Sussex
4,500.0	0.00	0.00	4,457.3	-489.0	-201.8	-489.0	0.00	0.00	
4,600.0	0.00	0.00	4,557.3	-489.0	-201.8	-489.0	0.00	0.00	
4,700.0	0.00	0.00	4,657.3	-489.0	-201.8	-489.0	0.00	0.00	



Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Sprague 3E-9H-N267
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Project:	DJ Wattenberg	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site:	S9-T2N-R67W (Sprague)	North Reference:	True
Well:	Sprague 3E-9H-N267	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
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
4,707.7	0.00	0.00	4,665.0	-489.0	-201.8	-489.0	0.00	0.00	Sussex Marker
4,800.0	0.00	0.00	4,757.3	-489.0	-201.8	-489.0	0.00	0.00	
4,900.0	0.00	0.00	4,857.3	-489.0	-201.8	-489.0	0.00	0.00	
5,000.0	0.00	0.00	4,957.3	-489.0	-201.8	-489.0	0.00	0.00	Shannon
5,005.7	0.00	0.00	4,963.0	-489.0	-201.8	-489.0	0.00	0.00	
5,100.0	0.00	0.00	5,057.3	-489.0	-201.8	-489.0	0.00	0.00	
5,200.0	0.00	0.00	5,157.3	-489.0	-201.8	-489.0	0.00	0.00	
5,300.0	0.00	0.00	5,257.3	-489.0	-201.8	-489.0	0.00	0.00	
5,400.0	0.00	0.00	5,357.3	-489.0	-201.8	-489.0	0.00	0.00	
5,500.0	0.00	0.00	5,457.3	-489.0	-201.8	-489.0	0.00	0.00	
5,600.0	0.00	0.00	5,557.3	-489.0	-201.8	-489.0	0.00	0.00	
5,700.0	0.00	0.00	5,657.3	-489.0	-201.8	-489.0	0.00	0.00	
5,800.0	0.00	0.00	5,757.3	-489.0	-201.8	-489.0	0.00	0.00	
5,900.0	0.00	0.00	5,857.3	-489.0	-201.8	-489.0	0.00	0.00	
6,000.0	0.00	0.00	5,957.3	-489.0	-201.8	-489.0	0.00	0.00	
6,100.0	0.00	0.00	6,057.3	-489.0	-201.8	-489.0	0.00	0.00	
6,200.0	0.00	0.00	6,157.3	-489.0	-201.8	-489.0	0.00	0.00	
6,300.0	0.00	0.00	6,257.3	-489.0	-201.8	-489.0	0.00	0.00	
6,353.7	0.00	0.00	6,311.0	-489.0	-201.8	-489.0	0.00	0.00	Teepee Buttes (*if present)
6,400.0	0.00	0.00	6,357.3	-489.0	-201.8	-489.0	0.00	0.00	
6,500.0	0.00	0.00	6,457.3	-489.0	-201.8	-489.0	0.00	0.00	
6,600.0	0.00	0.00	6,557.3	-489.0	-201.8	-489.0	0.00	0.00	
6,700.0	0.00	0.00	6,657.3	-489.0	-201.8	-489.0	0.00	0.00	
6,776.8	0.00	0.00	6,734.0	-489.0	-201.8	-489.0	0.00	0.00	
6,800.0	2.32	0.01	6,757.3	-488.6	-201.8	-488.6	10.00	10.00	Curve KOP @ 6776' MD
6,850.0	7.32	0.01	6,807.1	-484.4	-201.8	-484.4	10.00	10.00	
6,900.0	12.32	0.01	6,856.3	-475.8	-201.8	-475.8	10.00	10.00	
6,950.0	17.32	0.01	6,904.7	-463.0	-201.8	-463.0	10.00	10.00	
7,000.0	22.32	0.01	6,951.7	-446.1	-201.8	-446.1	10.00	10.00	
7,050.0	27.32	0.01	6,997.0	-425.1	-201.8	-425.1	10.00	10.00	
7,100.0	32.32	0.01	7,040.4	-400.2	-201.8	-400.2	10.00	10.00	
7,150.0	37.32	0.01	7,081.4	-371.7	-201.8	-371.7	10.00	10.00	
7,200.0	42.32	0.01	7,119.8	-339.7	-201.7	-339.7	10.00	10.00	
7,250.0	47.32	0.01	7,155.3	-304.5	-201.7	-304.5	10.00	10.00	Sharon Springs
7,294.3	51.75	0.01	7,184.0	-270.8	-201.7	-270.8	10.00	10.00	
7,300.0	52.32	0.01	7,187.5	-266.3	-201.7	-266.3	10.00	10.00	
7,350.0	57.32	0.01	7,216.3	-225.4	-201.7	-225.4	10.00	10.00	
7,400.0	62.32	0.01	7,241.4	-182.2	-201.7	-182.2	10.00	10.00	
7,416.7	64.00	0.01	7,249.0	-167.3	-201.7	-167.3	10.00	10.00	
7,450.0	67.32	0.01	7,262.7	-137.0	-201.7	-137.0	10.00	10.00	Niobrara
7,500.0	72.32	0.01	7,280.0	-90.0	-201.7	-90.0	10.00	10.00	
7,550.0	77.32	0.01	7,293.0	-41.8	-201.7	-41.8	10.00	10.00	
7,569.6	79.28	0.01	7,297.0	-22.7	-201.7	-22.7	10.00	10.00	B Chalk
7,600.0	82.32	0.01	7,301.9	7.4	-201.7	7.4	10.00	10.00	
7,650.0	87.32	0.01	7,306.4	57.2	-201.7	57.2	10.00	10.00	
7,676.8	90.00	0.01	7,307.0	83.9	-201.7	83.9	10.00	10.00	LP @ 7307' TVD; 90°
7,677.6	90.00	0.01	7,307.0	84.8	-201.7	84.8	0.00	0.00	
7,700.0	90.00	0.01	7,307.0	107.2	-201.7	107.2	0.00	0.00	
7,800.0	90.00	0.01	7,307.0	207.2	-201.7	207.2	0.00	0.00	
7,900.0	90.00	0.01	7,307.0	307.2	-201.7	307.2	0.00	0.00	
8,000.0	90.00	0.01	7,307.0	407.2	-201.7	407.2	0.00	0.00	
8,100.0	90.00	0.01	7,307.0	507.2	-201.7	507.2	0.00	0.00	



Cathedral Energy Services

Planning Report

Database: USA EDM 5000 Multi Users DB
Company: EnCana Oil & Gas (USA) Inc
Project: DJ Wattenberg
Site: S9-T2N-R67W (Sprague)
Well: Sprague 3E-9H-N267
Wellbore: Hz
Design: Plan #1

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:

Well Sprague 3E-9H-N267
 WELL @ 5011.0ft (Original Well Elev)
 WELL @ 5011.0ft (Original Well Elev)
 True
 Minimum Curvature

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
8,200.0	90.00	0.01	7,307.0	607.2	-201.6	607.2	0.00	0.00	
8,300.0	90.00	0.01	7,307.0	707.2	-201.6	707.2	0.00	0.00	
8,400.0	90.00	0.01	7,307.0	807.2	-201.6	807.2	0.00	0.00	
8,500.0	90.00	0.01	7,307.0	907.2	-201.6	907.2	0.00	0.00	
8,600.0	90.00	0.01	7,307.0	1,007.2	-201.6	1,007.2	0.00	0.00	
8,700.0	90.00	0.01	7,307.0	1,107.2	-201.6	1,107.2	0.00	0.00	
8,800.0	90.00	0.01	7,307.0	1,207.2	-201.6	1,207.2	0.00	0.00	
8,900.0	90.00	0.01	7,307.0	1,307.2	-201.6	1,307.2	0.00	0.00	
9,000.0	90.00	0.01	7,307.0	1,407.2	-201.6	1,407.2	0.00	0.00	
9,100.0	90.00	0.01	7,307.0	1,507.2	-201.5	1,507.2	0.00	0.00	
9,177.6	90.00	0.01	7,307.0	1,584.8	-201.5	1,584.8	0.00	0.00	Start 1° Turn
9,200.0	90.00	0.23	7,307.0	1,607.2	-201.5	1,607.2	1.00	0.00	
9,300.0	90.00	1.23	7,307.0	1,707.2	-200.2	1,707.2	1.00	0.00	
9,400.0	90.00	2.23	7,307.0	1,807.1	-197.2	1,807.1	1.00	0.00	
9,500.0	90.00	3.23	7,307.0	1,907.0	-192.4	1,907.0	1.00	0.00	
9,600.0	90.00	4.23	7,307.0	2,006.8	-185.9	2,006.8	1.00	0.00	
9,700.0	90.00	5.23	7,307.0	2,106.4	-177.7	2,106.4	1.00	0.00	
9,777.0	90.00	6.00	7,307.0	2,183.1	-170.1	2,183.1	1.00	0.00	EOT; 6° Az
9,800.0	90.00	6.00	7,307.0	2,205.9	-167.7	2,205.9	0.00	0.00	
9,900.0	90.00	6.00	7,307.0	2,305.4	-157.3	2,305.4	0.00	0.00	
10,000.0	90.00	6.00	7,307.0	2,404.9	-146.8	2,404.9	0.00	0.00	
10,100.0	90.00	6.00	7,307.0	2,504.3	-136.4	2,504.3	0.00	0.00	
10,200.0	90.00	6.00	7,307.0	2,603.8	-125.9	2,603.8	0.00	0.00	
10,300.0	90.00	6.00	7,307.0	2,703.2	-115.5	2,703.2	0.00	0.00	
10,400.0	90.00	6.00	7,307.0	2,802.7	-105.0	2,802.7	0.00	0.00	
10,500.0	90.00	6.00	7,307.0	2,902.1	-94.6	2,902.1	0.00	0.00	
10,597.0	90.00	6.00	7,307.0	2,998.6	-84.4	2,998.6	0.00	0.00	Start 1° Turn
10,600.0	90.00	5.97	7,307.0	3,001.6	-84.1	3,001.6	1.01	0.00	
10,700.0	90.00	4.97	7,307.0	3,101.1	-74.6	3,101.1	1.00	0.00	
10,800.0	90.00	3.97	7,307.0	3,200.8	-66.8	3,200.8	1.00	0.00	
10,900.0	90.00	2.97	7,307.0	3,300.6	-60.7	3,300.6	1.00	0.00	
11,000.0	90.00	1.97	7,307.0	3,400.5	-56.4	3,400.5	1.00	0.00	
11,100.0	90.00	0.97	7,307.0	3,500.5	-53.9	3,500.5	1.00	0.00	
11,200.0	90.00	359.97	7,307.0	3,600.5	-53.0	3,600.5	1.00	0.00	
11,300.0	90.00	358.97	7,307.0	3,700.5	-54.0	3,700.5	1.00	0.00	
11,400.0	90.00	357.97	7,307.0	3,800.4	-56.6	3,800.4	1.00	0.00	
11,500.0	90.00	356.97	7,307.0	3,900.3	-61.1	3,900.3	1.00	0.00	
11,600.0	90.00	355.97	7,307.0	4,000.2	-67.2	4,000.2	1.00	0.00	
11,634.3	90.00	355.63	7,307.0	4,034.4	-69.7	4,034.4	1.00	0.00	EOT; 355.63° Az
11,700.0	90.00	355.63	7,307.0	4,099.9	-74.7	4,099.9	0.00	0.00	
11,800.0	90.00	355.63	7,307.0	4,199.6	-82.4	4,199.6	0.00	0.00	
11,900.0	90.00	355.63	7,307.0	4,299.3	-90.0	4,299.3	0.00	0.00	
12,000.0	90.00	355.63	7,307.0	4,399.0	-97.6	4,399.0	0.00	0.00	
12,100.0	90.00	355.63	7,307.0	4,498.7	-105.2	4,498.7	0.00	0.00	
12,200.0	90.00	355.63	7,307.0	4,598.4	-112.9	4,598.4	0.00	0.00	
12,300.0	90.00	355.63	7,307.0	4,698.1	-120.5	4,698.1	0.00	0.00	
12,400.0	90.00	355.63	7,307.0	4,797.8	-128.1	4,797.8	0.00	0.00	
12,500.0	90.00	355.63	7,307.0	4,897.5	-135.7	4,897.5	0.00	0.00	
12,600.0	90.00	355.63	7,307.0	4,997.2	-143.4	4,997.2	0.00	0.00	
12,700.0	90.00	355.63	7,307.0	5,097.0	-151.0	5,097.0	0.00	0.00	
12,772.4	90.00	355.63	7,307.0	5,169.1	-156.5	5,169.1	0.00	0.00	PBHL @ 12772' MD



Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Sprague 3E-9H-N267
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Project:	DJ Wattenberg	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site:	S9-T2N-R67W (Sprague)	North Reference:	True
Well:	Sprague 3E-9H-N267	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
Sprague 3E-9H-N267 PI	0.00	0.00	7,307.0	5,169.2	-156.5	1,302,143.70	3,167,965.37	40.161210	-104.899050
- plan hits target center									
- Point									
Sprague 3E-9H-N267 T(0.00	0.00	7,307.0	84.8	-201.7	1,297,059.11	3,167,954.68	40.147253	-104.899212
- plan hits target center									
- Point									

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(ft)	(ft)			(°)	(°)	
461.1	461.0	Fox Hills - BASE				
4,460.7	4,418.0	Sussex				
4,707.7	4,665.0	Sussex Marker				
5,005.7	4,963.0	Shannon				
6,353.7	6,311.0	Teepee Buttes (*if present)				
7,294.3	7,184.0	Sharon Springs				
7,416.7	7,249.0	Niobrara				
7,569.6	7,297.0	B Chalk				

Plan Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)	
200.0	200.0	0.0	0.0	KOP @ 200' MD
1,250.0	1,244.1	-88.7	-36.6	EOB; 10.5°
3,100.0	3,063.2	-400.3	-165.2	Start 1° Drop
4,150.0	4,107.3	-489.0	-201.8	EOD; Vertical
6,776.8	6,734.0	-489.0	-201.8	Curve KOP @ 6776' MD
7,676.8	7,307.0	83.9	-201.7	LP @ 7307' TVD; 90°
9,177.6	7,307.0	84.8	-201.7	Start 1° Turn
9,777.0	7,307.0	1,584.8	-201.5	EOT; 6° Az
10,597.0	7,307.0	2,183.1	-170.1	Start 1° Turn
11,634.3	7,307.0	2,998.6	-84.4	EOT; 355.63° Az
12,772.4	7,307.0	4,034.4	-69.7	PBHL @ 12772' MD



EnCana Oil & Gas (USA) Inc

DJ Wattenberg

S9-T2N-R67W (Sprague)

Sprague 3E-9H-N267

Hz

Plan #1

Anticollision Report

21 November, 2013



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3E-9H-N267
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Reference Site:	S9-T2N-R67W (Sprague)	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Sprague 3E-9H-N267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference	Plan #1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	Systematic Ellipse
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,550.0ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program		Date	11/21/2013		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	12,772.4	Plan #1 (Hz)	Geolink MWD	Geolink MWD	

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
S9-T2N-R67W (Sprague)						
Sprague 21-9 - DD - Plan #1	11,676.0	7,250.0	339.4	252.5	3.904	CC, ES
Sprague 21-9 - DD - Plan #1	11,700.0	7,250.0	340.3	252.9	3.895	SF
SPRAGUE 2-4-9 (EXISTING) - ENCANA WELL - SURVE	9,601.1	7,344.8	295.8	240.4	5.341	CC, ES, SF
Sprague 3A-9H-N267 - Hz - Plan #1	200.0	200.0	39.1	38.5	65.953	CC, ES
Sprague 3A-9H-N267 - Hz - Plan #1	12,772.4	12,897.6	1,397.5	1,209.0	7.417	SF
Sprague 3B-9H-N267 - Hz - Plan #1	323.7	323.4	27.6	26.5	26.842	CC, ES
Sprague 3B-9H-N267 - Hz - Plan #1	12,772.4	13,039.9	1,071.3	887.2	5.819	SF
Sprague 3C-9H-N267 - Hz - Plan #1	446.1	446.0	18.3	16.9	12.526	CC, ES
Sprague 3C-9H-N267 - Hz - Plan #1	12,772.4	12,782.2	698.7	511.2	3.727	SF
Sprague 3D-9H-N267 - Hz - Plan #1	391.1	391.1	7.8	6.5	6.124	CC
Sprague 3D-9H-N267 - Hz - Plan #1	400.0	400.0	7.8	6.5	5.980	ES
Sprague 3D-9H-N267 - Hz - Plan #1	12,772.4	12,876.7	413.9	254.6	2.598	SF
Sprague 3F-9H-N267 - Hz - Plan #1	200.0	200.0	11.2	10.6	18.844	CC, ES
Sprague 3F-9H-N267 - Hz - Plan #1	12,772.4	12,967.3	416.4	257.7	2.624	SF
Sprague 3G-9H-N267 - Hz - Plan #1	200.0	200.0	22.4	21.8	37.687	CC
Sprague 3G-9H-N267 - Hz - Plan #1	300.0	300.0	22.7	21.8	24.076	ES
Sprague 3G-9H-N267 - Hz - Plan #1	12,772.4	12,772.4	701.6	516.0	3.781	SF
Sprague 3H-9H-N267 - Hz - Plan #1	200.0	200.0	30.8	30.2	51.820	CC
Sprague 3H-9H-N267 - Hz - Plan #1	300.0	300.0	31.1	30.1	32.963	ES
Sprague 3H-9H-N267 - Hz - Plan #1	12,772.4	12,974.1	1,111.8	931.3	6.160	SF
Sprague 3I-9H-N267 - Hz - Plan #1	200.0	200.0	42.1	41.5	70.925	CC
Sprague 3I-9H-N267 - Hz - Plan #1	300.0	300.0	42.4	41.4	44.902	ES
Sprague 3I-9H-N267 - Hz - Plan #1	12,772.4	12,774.2	1,438.6	1,255.1	7.838	SF
Sprague 3J-9H-N267 - Hz - Plan #1	200.0	200.0	50.4	49.9	85.015	CC, ES
Sprague 3J-9H-N267 - Hz - Plan #1	600.0	590.5	81.4	79.4	40.108	SF

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3E-9H-N267
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Reference Site:	S9-T2N-R67W (Sprague)	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Sprague 3E-9H-N267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design		S9-T2N-R67W (Sprague) - Sprague 21-9 - DD - Plan #1										Offset Site Error:		0.0 ft
Survey Program: 0-MWD												Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
10,200.0	7,307.0	7,250.0	7,250.0	49.2	12.6	90.00	4,101.8	265.5	1,548.4	1,487.0	61.37	25.232		
10,300.0	7,307.0	7,250.0	7,250.0	50.9	12.6	90.00	4,101.8	265.5	1,449.6	1,386.5	63.06	22.988		
10,400.0	7,307.0	7,250.0	7,250.0	52.6	12.6	90.00	4,101.8	265.5	1,351.0	1,286.2	64.76	20.862		
10,500.0	7,307.0	7,250.0	7,250.0	54.3	12.6	90.00	4,101.8	265.5	1,252.6	1,186.1	66.46	18.847		
10,597.0	7,307.0	7,250.0	7,250.0	55.9	12.6	90.00	4,101.8	265.5	1,157.5	1,089.3	68.12	16.992		
10,600.0	7,307.0	7,250.0	7,250.0	56.0	12.6	90.00	4,101.8	265.5	1,154.5	1,086.3	68.17	16.935		
10,700.0	7,307.0	7,250.0	7,250.0	57.7	12.6	90.00	4,101.8	265.5	1,057.0	987.0	69.99	15.102		
10,800.0	7,307.0	7,250.0	7,250.0	59.4	12.6	90.00	4,101.8	265.5	960.4	888.6	71.79	13.377		
10,900.0	7,307.0	7,250.0	7,250.0	61.1	12.6	90.00	4,101.8	265.5	865.1	791.5	73.58	11.757		
11,000.0	7,307.0	7,250.0	7,250.0	62.8	12.6	90.00	4,101.8	265.5	771.7	696.3	75.36	10.241		
11,100.0	7,307.0	7,250.0	7,250.0	64.5	12.6	90.00	4,101.8	265.5	680.9	603.8	77.11	8.830		
11,200.0	7,307.0	7,250.0	7,250.0	66.2	12.6	90.00	4,101.8	265.5	594.0	515.2	78.85	7.533		
11,300.0	7,307.0	7,250.0	7,250.0	68.0	12.6	90.00	4,101.8	265.5	513.0	432.4	80.58	6.366		
11,400.0	7,307.0	7,250.0	7,250.0	69.7	12.6	90.00	4,101.8	265.5	441.2	358.9	82.29	5.361		
11,500.0	7,307.0	7,250.0	7,250.0	71.4	12.6	90.00	4,101.8	265.5	383.7	299.8	83.98	4.569		
11,600.0	7,307.0	7,250.0	7,250.0	73.1	12.6	90.00	4,101.8	265.5	347.9	262.3	85.66	4.062		
11,634.3	7,307.0	7,250.0	7,250.0	73.7	12.6	90.00	4,101.8	265.5	342.0	255.7	86.23	3.966		
11,676.0	7,307.0	7,250.0	7,250.0	74.4	12.6	90.00	4,101.8	265.5	339.4	252.5	86.95	3.904 CC, ES		
11,700.0	7,307.0	7,250.0	7,250.0	74.9	12.6	90.00	4,101.8	265.5	340.3	252.9	87.37	3.895 SF		
11,800.0	7,307.0	7,250.0	7,250.0	76.6	12.6	90.00	4,101.8	265.5	361.4	272.3	89.10	4.056		
11,900.0	7,307.0	7,250.0	7,250.0	78.3	12.6	90.00	4,101.8	265.5	406.7	315.8	90.83	4.477		
12,000.0	7,307.0	7,250.0	7,250.0	80.0	12.6	90.00	4,101.8	265.5	469.2	376.7	92.56	5.069		
12,100.0	7,307.0	7,250.0	7,250.0	81.8	12.6	90.00	4,101.8	265.5	543.1	448.8	94.30	5.760		
12,200.0	7,307.0	7,250.0	7,250.0	83.5	12.6	90.00	4,101.8	265.5	624.3	528.3	96.03	6.501		
12,300.0	7,307.0	7,250.0	7,250.0	85.2	12.6	90.00	4,101.8	265.5	710.3	612.6	97.77	7.265		
12,400.0	7,307.0	7,250.0	7,250.0	87.0	12.6	90.00	4,101.8	265.5	799.6	700.1	99.51	8.036		
12,500.0	7,307.0	7,250.0	7,250.0	88.7	12.6	90.00	4,101.8	265.5	891.1	789.9	101.24	8.802		
12,600.0	7,307.0	7,250.0	7,250.0	90.5	12.6	90.00	4,101.8	265.5	984.3	881.4	102.98	9.558		
12,700.0	7,307.0	7,250.0	7,250.0	92.2	12.6	90.00	4,101.8	265.5	1,078.8	974.0	104.72	10.301		
12,772.4	7,307.0	7,250.0	7,250.0	93.5	12.6	90.00	4,101.8	265.5	1,147.8	1,041.8	105.98	10.830		



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3E-9H-N267
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Reference Site:	S9-T2N-R67W (Sprague)	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Sprague 3E-9H-N267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - SPRAGUE 2-4-9 (EXISTING) - ENCANA WELL - SURVEYS												Offset Site Error:	0.0 ft
Survey Program: 488-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)			
8,100.0	7,307.0	7,307.4	7,240.7	17.2	18.9	-80.95	2,028.8	-480.0	1,547.5	1,515.0	32.51	47.596	
8,200.0	7,307.0	7,309.9	7,243.2	18.4	18.9	-81.46	2,028.8	-480.0	1,449.3	1,415.6	33.69	43.012	
8,300.0	7,307.0	7,312.5	7,245.7	19.6	18.9	-81.97	2,028.9	-480.1	1,351.3	1,316.3	34.97	38.646	
8,400.0	7,307.0	7,315.0	7,248.3	20.9	18.9	-82.48	2,029.0	-480.1	1,253.7	1,217.4	36.31	34.523	
8,500.0	7,307.0	7,317.5	7,250.8	22.3	18.9	-83.00	2,029.0	-480.2	1,156.4	1,118.7	37.72	30.656	
8,600.0	7,307.0	7,320.0	7,253.3	23.7	18.9	-83.51	2,029.1	-480.2	1,059.7	1,020.5	39.18	27.046	
8,700.0	7,307.0	7,322.6	7,255.8	25.1	18.9	-84.02	2,029.2	-480.3	963.6	922.9	40.68	23.686	
8,800.0	7,307.0	7,325.1	7,258.3	26.6	18.9	-84.54	2,029.2	-480.3	868.4	826.2	42.22	20.569	
8,900.0	7,307.0	7,327.6	7,260.8	28.1	18.9	-85.05	2,029.3	-480.4	774.4	730.7	43.79	17.687	
9,000.0	7,307.0	7,330.1	7,263.4	29.7	18.9	-85.56	2,029.4	-480.4	682.2	636.8	45.37	15.034	
9,100.0	7,307.0	7,332.6	7,265.9	31.3	18.9	-86.08	2,029.4	-480.5	592.4	545.4	46.98	12.608	
9,177.6	7,307.0	7,334.6	7,267.8	32.5	18.9	-86.47	2,029.5	-480.5	525.2	477.0	48.24	10.886	
9,200.0	7,307.0	7,335.1	7,268.4	32.9	18.9	-86.61	2,029.5	-480.5	506.4	457.8	48.62	10.416	
9,300.0	7,307.0	7,337.6	7,270.9	34.5	18.9	-87.18	2,029.6	-480.6	427.5	377.2	50.31	8.497	
9,400.0	7,307.0	7,340.1	7,273.3	36.1	18.9	-87.70	2,029.6	-480.6	360.5	308.5	52.00	6.933	
9,500.0	7,307.0	7,342.5	7,275.7	37.7	18.9	-88.19	2,029.7	-480.7	313.4	259.7	53.68	5.838	
9,600.0	7,307.0	7,344.8	7,278.1	39.3	18.9	-88.65	2,029.7	-480.7	295.8	240.4	55.36	5.342	
9,601.1	7,307.0	7,344.8	7,278.1	39.3	18.9	-88.66	2,029.7	-480.7	295.8	240.4	55.38	5.341	CC, ES, SF
9,700.0	7,307.0	7,347.1	7,280.4	40.9	18.9	-89.10	2,029.8	-480.8	312.7	255.6	57.03	5.482	
9,777.0	7,307.0	7,348.9	7,282.1	42.2	18.9	-89.43	2,029.8	-480.8	346.4	288.1	58.32	5.940	
9,800.0	7,307.0	7,349.4	7,282.6	42.6	18.9	-89.53	2,029.9	-480.8	359.2	300.5	58.70	6.119	
9,900.0	7,307.0	7,351.6	7,284.9	44.2	18.9	-89.97	2,029.9	-480.9	425.0	364.6	60.38	7.038	
10,000.0	7,307.0	7,353.9	7,287.1	45.9	18.9	-90.41	2,030.0	-480.9	502.1	440.1	62.06	8.091	
10,100.0	7,307.0	7,356.1	7,289.3	47.6	18.9	-90.84	2,030.0	-481.0	586.2	522.5	63.75	9.196	
10,200.0	7,307.0	7,358.3	7,291.5	49.2	18.9	-91.27	2,030.1	-481.0	674.7	609.3	65.44	10.311	
10,300.0	7,307.0	7,360.5	7,293.7	50.9	18.9	-91.70	2,030.2	-481.1	766.0	698.9	67.13	11.411	
10,400.0	7,307.0	7,362.7	7,295.9	52.6	19.0	-92.13	2,030.2	-481.1	859.2	790.4	68.81	12.486	
10,500.0	7,307.0	7,364.9	7,298.1	54.3	19.0	-92.56	2,030.3	-481.2	953.8	883.3	70.50	13.529	
10,597.0	7,307.0	7,367.0	7,300.2	55.9	19.0	-92.97	2,030.3	-481.2	1,046.5	974.4	72.14	14.506	
10,600.0	7,307.0	7,367.1	7,300.3	56.0	19.0	-92.98	2,030.3	-481.2	1,049.4	977.2	72.19	14.536	
10,700.0	7,307.0	7,369.3	7,302.5	57.7	19.0	-93.20	2,030.4	-481.3	1,145.5	1,071.6	73.90	15.501	
10,800.0	7,307.0	7,371.5	7,304.7	59.4	19.0	-93.39	2,030.4	-481.3	1,241.8	1,166.2	75.59	16.428	
10,900.0	7,307.0	7,373.8	7,307.0	61.1	19.0	-93.55	2,030.5	-481.4	1,338.2	1,260.9	77.27	17.318	
11,000.0	7,307.0	7,376.1	7,309.3	62.8	19.0	-93.68	2,030.6	-481.5	1,434.6	1,355.7	78.93	18.175	
11,100.0	7,307.0	7,378.4	7,311.6	64.5	19.0	-93.78	2,030.6	-481.5	1,531.1	1,450.5	80.58	19.001	



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3E-9H-N267
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Reference Site:	S9-T2N-R67W (Sprague)	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Sprague 3E-9H-N267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 3A-9H-N267 - Hz - Plan #1													Offset Site Error:	0.0 ft
Survey Program:		0-Geolink MWD											Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-89.95	0.0	-39.1	39.1					
100.0	100.0	100.0	100.0	0.1	0.1	-89.95	0.0	-39.1	39.1	38.9	0.24	160.170		
200.0	200.0	200.0	200.0	0.3	0.3	-89.95	0.0	-39.1	39.1	38.5	0.59	65.953	CC, ES	
300.0	300.0	298.7	298.7	0.5	0.5	67.95	-0.5	-40.7	40.4	39.5	0.94	42.943		
400.0	400.0	397.3	397.1	0.7	0.7	68.79	-2.2	-45.5	44.3	43.0	1.30	34.209		
500.0	499.9	495.5	495.0	0.8	0.9	69.90	-5.0	-53.5	50.8	49.1	1.66	30.578		
600.0	599.7	593.4	592.1	1.0	1.1	71.03	-8.9	-64.6	59.9	57.8	2.05	29.269		
700.0	699.4	690.6	688.2	1.3	1.5	72.05	-13.8	-78.7	71.5	69.1	2.46	29.134		
800.0	798.9	787.2	783.1	1.5	1.8	72.89	-19.8	-95.7	85.7	82.9	2.90	29.608		
900.0	898.3	883.5	877.0	1.7	2.2	73.57	-26.7	-115.7	102.4	99.1	3.37	30.395		
1,000.0	997.4	982.0	972.8	2.0	2.6	74.59	-34.2	-137.1	119.7	115.8	3.89	30.783		
1,100.0	1,096.3	1,080.5	1,068.7	2.3	3.1	76.03	-41.7	-158.6	136.6	132.1	4.45	30.674		
1,200.0	1,194.9	1,179.0	1,164.5	2.6	3.5	77.77	-49.2	-180.0	153.1	148.1	5.07	30.231		
1,250.0	1,244.1	1,228.2	1,212.5	2.8	3.7	78.72	-53.0	-190.7	161.3	156.0	5.39	29.937		
1,300.0	1,293.3	1,277.4	1,260.4	3.0	3.9	79.73	-56.7	-201.4	169.6	163.8	5.72	29.636		
1,400.0	1,391.6	1,375.9	1,356.2	3.3	4.3	81.47	-64.2	-222.9	186.1	179.8	6.40	29.105		
1,500.0	1,489.9	1,474.4	1,452.0	3.7	4.8	82.93	-71.7	-244.3	202.9	195.8	7.08	28.656		
1,600.0	1,588.3	1,572.8	1,547.8	4.0	5.2	84.17	-79.2	-265.7	219.7	211.9	7.77	28.275		
1,700.0	1,686.6	1,671.3	1,643.6	4.4	5.7	85.23	-86.7	-287.2	236.6	228.1	8.47	27.950		
1,800.0	1,784.9	1,769.8	1,739.4	4.7	6.1	86.15	-94.2	-308.6	253.6	244.4	9.16	27.670		
1,900.0	1,883.2	1,868.3	1,835.3	5.1	6.5	86.95	-101.7	-330.0	270.6	260.8	9.87	27.428		
2,000.0	1,981.6	1,966.7	1,931.1	5.4	7.0	87.66	-109.2	-351.5	287.7	277.1	10.57	27.216		
2,100.0	2,079.9	2,065.2	2,026.9	5.8	7.4	88.29	-116.7	-372.9	304.8	293.6	11.28	27.029		
2,200.0	2,178.2	2,163.7	2,122.7	6.2	7.8	88.85	-124.2	-394.3	322.0	310.0	11.99	26.865		
2,300.0	2,276.6	2,262.1	2,218.5	6.5	8.3	89.36	-131.7	-415.8	339.2	326.5	12.69	26.718		
2,400.0	2,374.9	2,360.6	2,314.4	6.9	8.7	89.82	-139.2	-437.2	356.4	343.0	13.40	26.587		
2,500.0	2,473.2	2,459.1	2,410.2	7.2	9.2	90.23	-146.7	-458.6	373.6	359.5	14.11	26.469		
2,600.0	2,571.5	2,557.6	2,506.0	7.6	9.6	90.61	-154.2	-480.1	390.8	376.0	14.83	26.362		
2,700.0	2,669.9	2,656.0	2,601.8	8.0	10.0	90.95	-161.7	-501.5	408.1	392.6	15.54	26.265		
2,800.0	2,768.2	2,754.5	2,697.6	8.3	10.5	91.27	-169.2	-522.9	425.4	409.1	16.25	26.177		
2,900.0	2,866.5	2,853.0	2,793.4	8.7	10.9	91.57	-176.7	-544.4	442.6	425.7	16.96	26.096		
3,000.0	2,964.8	2,951.4	2,889.3	9.0	11.4	91.84	-184.2	-565.8	459.9	442.3	17.67	26.022		
3,100.0	3,063.2	3,049.9	2,985.1	9.4	11.8	92.09	-191.7	-587.2	477.2	458.8	18.39	25.953		
3,200.0	3,161.6	3,148.4	3,080.9	9.7	12.2	92.40	-199.2	-608.7	494.5	475.4	19.09	25.910		
3,300.0	3,260.4	3,246.9	3,176.8	10.1	12.7	92.49	-206.7	-630.1	511.7	492.0	19.74	25.925		
3,400.0	3,359.4	3,345.4	3,272.6	10.3	13.1	92.41	-214.2	-651.5	528.8	508.5	20.34	25.994		
3,500.0	3,458.7	3,443.8	3,368.4	10.6	13.6	92.15	-221.7	-673.0	545.9	525.0	20.91	26.114		
3,600.0	3,558.1	3,542.2	3,464.1	10.8	14.0	91.74	-229.2	-694.4	563.0	541.6	21.42	26.284		
3,700.0	3,657.7	3,640.5	3,559.7	11.1	14.4	91.19	-236.7	-715.8	580.1	558.2	21.89	26.504		
3,800.0	3,757.5	3,738.6	3,655.2	11.2	14.9	90.51	-244.2	-737.1	597.2	574.9	22.30	26.777		
3,900.0	3,857.4	3,836.6	3,750.6	11.4	15.3	89.72	-251.6	-758.5	614.5	591.8	22.67	27.103		
4,000.0	3,957.3	3,934.4	3,845.7	11.5	15.7	88.83	-259.1	-779.7	632.0	609.0	22.99	27.488		
4,100.0	4,057.3	4,031.9	3,940.6	11.7	16.2	87.84	-266.5	-801.0	649.8	626.5	23.26	27.932		
4,150.0	4,107.3	4,080.6	3,988.0	11.7	16.4	-70.26	-270.2	-811.6	658.8	635.4	23.38	28.176		
4,200.0	4,157.3	4,129.3	4,035.3	11.8	16.6	-70.88	-273.9	-822.2	667.9	644.4	23.48	28.443		
4,300.0	4,257.3	4,226.6	4,130.0	11.9	17.1	-72.06	-281.3	-843.3	686.3	662.6	23.68	28.981		
4,400.0	4,357.3	4,323.9	4,224.7	12.0	17.5	-73.18	-288.7	-864.5	704.9	681.1	23.88	29.524		
4,500.0	4,457.3	4,421.2	4,319.4	12.1	17.9	-74.25	-296.1	-885.7	723.9	699.8	24.07	30.069		
4,600.0	4,557.3	4,518.5	4,414.1	12.2	18.4	-75.26	-303.5	-906.9	743.0	718.8	24.27	30.616		
4,700.0	4,657.3	4,615.8	4,508.8	12.3	18.8	-76.22	-310.9	-928.1	762.4	737.9	24.47	31.162		
4,800.0	4,757.3	4,713.1	4,603.4	12.4	19.2	-77.14	-318.4	-949.2	782.0	757.3	24.66	31.706		
4,900.0	4,857.3	4,810.4	4,698.1	12.6	19.7	-78.01	-325.8	-970.4	801.8	776.9	24.86	32.248		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3E-9H-N267
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Reference Site:	S9-T2N-R67W (Sprague)	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Sprague 3E-9H-N267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 3A-9H-N267 - Hz - Plan #1													Offset Site Error:	0.0 ft
Survey Program: O-Geolink MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
5,000.0	4,957.3	4,907.7	4,792.8	12.7	20.1	-78.84	-333.2	-991.6	821.7	796.6	25.06	32.785		
5,100.0	5,057.3	5,005.0	4,887.5	12.8	20.5	-79.63	-340.6	-1,012.8	841.8	816.5	25.27	33.317		
5,200.0	5,157.3	5,102.3	4,982.2	12.9	21.0	-80.38	-348.0	-1,033.9	862.0	836.6	25.47	33.844		
5,300.0	5,257.3	5,199.6	5,076.9	13.0	21.4	-81.10	-355.4	-1,055.1	882.4	856.7	25.68	34.365		
5,400.0	5,357.3	5,296.9	5,171.5	13.2	21.8	-81.79	-362.8	-1,076.3	902.9	877.0	25.89	34.879		
5,500.0	5,457.3	5,394.2	5,266.2	13.3	22.3	-82.44	-370.2	-1,097.5	923.5	897.4	26.10	35.385		
5,600.0	5,557.3	5,491.5	5,360.9	13.4	22.7	-83.07	-377.6	-1,118.7	944.3	918.0	26.31	35.884		
5,700.0	5,657.3	5,588.9	5,455.6	13.5	23.1	-83.67	-385.0	-1,139.8	965.1	938.6	26.53	36.375		
5,800.0	5,757.3	5,686.2	5,550.3	13.7	23.6	-84.25	-392.5	-1,161.0	986.1	959.3	26.75	36.858		
5,900.0	5,857.3	5,783.5	5,645.0	13.8	24.0	-84.80	-399.9	-1,182.2	1,007.1	980.1	26.98	37.333		
6,000.0	5,957.3	5,880.8	5,739.6	13.9	24.4	-85.33	-407.3	-1,203.4	1,028.2	1,001.0	27.20	37.799		
6,100.0	6,057.3	5,978.1	5,834.3	14.1	24.9	-85.84	-414.7	-1,224.6	1,049.5	1,022.0	27.43	38.256		
6,200.0	6,157.3	6,075.4	5,929.0	14.2	25.3	-86.33	-422.1	-1,245.7	1,070.7	1,043.1	27.66	38.705		
6,300.0	6,257.3	6,172.7	6,023.7	14.3	25.8	-86.80	-429.5	-1,266.9	1,092.1	1,064.2	27.90	39.145		
6,400.0	6,357.3	6,270.0	6,118.4	14.5	26.2	-87.25	-436.9	-1,288.1	1,113.5	1,085.4	28.14	39.576		
6,500.0	6,457.3	6,367.3	6,213.1	14.6	26.6	-87.69	-444.3	-1,309.3	1,135.0	1,106.6	28.38	39.999		
6,600.0	6,557.3	6,464.6	6,307.7	14.7	27.1	-88.11	-451.7	-1,330.5	1,156.6	1,127.9	28.62	40.413		
6,700.0	6,657.3	6,561.9	6,402.4	14.9	27.5	-88.51	-459.1	-1,351.6	1,178.2	1,149.3	28.86	40.819		
6,776.8	6,734.0	6,636.6	6,475.1	15.0	27.8	-88.81	-464.8	-1,367.9	1,194.8	1,165.7	29.05	41.124		
6,800.0	6,757.3	6,659.2	6,497.1	15.0	27.9	-88.41	-466.5	-1,372.8	1,199.8	1,170.6	29.25	41.023		
6,850.0	6,807.1	6,707.3	6,543.9	15.0	28.1	-87.70	-470.2	-1,383.3	1,210.6	1,181.0	29.57	40.935		
6,900.0	6,856.3	6,754.6	6,589.9	15.0	28.4	-87.18	-473.8	-1,393.6	1,221.2	1,191.4	29.79	40.991		
6,950.0	6,904.7	6,800.6	6,634.7	14.9	28.6	-86.83	-477.3	-1,403.6	1,231.9	1,201.9	29.91	41.181		
7,000.0	6,951.7	6,845.1	6,678.0	14.8	28.8	-86.61	-480.7	-1,413.3	1,242.5	1,212.6	29.95	41.491		
7,050.0	6,997.0	6,889.3	6,721.0	14.7	29.0	-86.51	-483.8	-1,422.9	1,253.3	1,223.4	29.90	41.922		
7,100.0	7,040.4	6,937.5	6,768.0	14.5	29.1	-86.53	-484.1	-1,433.4	1,264.2	1,234.5	29.74	42.509		
7,150.0	7,081.4	6,988.3	6,817.4	14.4	29.3	-86.60	-480.1	-1,444.5	1,275.1	1,245.6	29.51	43.215		
7,200.0	7,119.8	7,042.1	6,869.1	14.2	29.5	-86.73	-470.9	-1,456.0	1,285.8	1,256.6	29.20	44.038		
7,250.0	7,155.3	7,099.5	6,923.2	14.0	29.6	-86.92	-455.6	-1,468.1	1,296.3	1,267.5	28.83	44.970		
7,300.0	7,187.5	7,161.2	6,979.2	13.9	29.7	-87.19	-433.2	-1,480.7	1,306.5	1,278.1	28.40	46.007		
7,350.0	7,216.3	7,227.8	7,036.6	13.7	29.8	-87.53	-402.2	-1,493.5	1,316.1	1,288.2	27.94	47.113		
7,400.0	7,241.4	7,299.9	7,094.5	13.6	29.9	-87.94	-361.1	-1,506.4	1,325.1	1,297.6	27.47	48.242		
7,450.0	7,262.7	7,378.2	7,151.0	13.6	30.0	-88.40	-308.6	-1,519.1	1,333.2	1,306.1	27.03	49.324		
7,500.0	7,280.0	7,463.1	7,203.8	13.6	30.0	-88.88	-243.3	-1,530.9	1,340.1	1,313.5	26.67	50.242		
7,550.0	7,293.0	7,554.3	7,249.3	13.6	30.1	-89.33	-164.9	-1,541.1	1,345.7	1,319.3	26.47	50.844		
7,600.0	7,301.9	7,651.3	7,283.8	13.7	30.2	-89.71	-74.8	-1,548.8	1,349.7	1,323.2	26.49	50.956		
7,650.0	7,306.4	7,752.4	7,303.5	13.8	30.3	-89.94	24.2	-1,553.2	1,351.9	1,325.1	26.79	50.454		
7,676.8	7,307.0	7,807.5	7,306.9	13.9	30.4	-90.00	79.1	-1,554.0	1,352.3	1,325.2	27.08	49.930		
7,677.6	7,307.0	7,809.3	7,307.0	13.9	30.4	-90.00	80.9	-1,554.0	1,352.3	1,325.2	27.09	49.910		
7,700.0	7,307.0	7,835.5	7,307.0	14.0	30.4	-90.00	107.2	-1,554.0	1,352.3	1,325.0	27.32	49.501		
7,800.0	7,307.0	7,935.5	7,307.0	14.6	30.6	-90.00	207.2	-1,554.0	1,352.3	1,323.8	28.46	47.523		
7,900.0	7,307.0	8,035.5	7,307.0	15.3	31.0	-90.00	307.2	-1,554.0	1,352.3	1,322.4	29.95	45.149		
8,000.0	7,307.0	8,135.5	7,307.0	16.2	31.4	-90.00	407.2	-1,554.0	1,352.3	1,320.5	31.77	42.570		
8,100.0	7,307.0	8,235.5	7,307.0	17.2	31.9	-90.00	507.2	-1,554.0	1,352.3	1,318.5	33.85	39.952		
8,200.0	7,307.0	8,335.5	7,307.0	18.4	32.5	-90.00	607.2	-1,554.0	1,352.3	1,316.2	36.15	37.406		
8,300.0	7,307.0	8,435.5	7,307.0	19.6	33.2	-90.00	707.2	-1,554.0	1,352.3	1,313.7	38.64	35.000		
8,400.0	7,307.0	8,535.5	7,307.0	20.9	34.0	-90.00	807.2	-1,554.0	1,352.4	1,311.1	41.27	32.767		
8,500.0	7,307.0	8,635.5	7,307.0	22.3	34.8	-90.00	907.2	-1,554.0	1,352.4	1,308.3	44.03	30.716		
8,600.0	7,307.0	8,735.5	7,307.0	23.7	35.7	-90.00	1,007.2	-1,554.0	1,352.4	1,305.5	46.89	28.844		
8,700.0	7,307.0	8,835.5	7,307.0	25.1	36.7	-90.00	1,107.2	-1,554.0	1,352.4	1,302.6	49.83	27.142		
8,800.0	7,307.0	8,935.5	7,307.0	26.6	37.7	-90.00	1,207.2	-1,554.0	1,352.4	1,299.6	52.84	25.596		
8,900.0	7,307.0	9,035.5	7,307.0	28.1	38.8	-90.00	1,307.2	-1,554.0	1,352.4	1,296.5	55.90	24.192		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3E-9H-N267
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Reference Site:	S9-T2N-R67W (Sprague)	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Sprague 3E-9H-N267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 3A-9H-N267 - Hz - Plan #1												Offset Site Error:	0.0 ft
Survey Program: 0-Geolink MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)			
9,000.0	7,307.0	9,135.5	7,307.0	29.7	39.9	-90.00	1,407.2	-1,554.0	1,352.4	1,293.4	59.02	22.914	
9,100.0	7,307.0	9,235.5	7,307.0	31.3	41.1	-90.00	1,507.2	-1,554.0	1,352.4	1,290.3	62.18	21.750	
9,177.6	7,307.0	9,313.2	7,307.0	32.5	42.0	-90.00	1,584.8	-1,554.0	1,352.4	1,287.8	64.66	20.917	
9,200.0	7,307.0	9,335.5	7,307.0	32.9	42.3	-90.00	1,607.2	-1,554.0	1,352.5	1,287.2	65.27	20.721	
9,300.0	7,307.0	9,435.5	7,307.0	34.5	43.5	-90.00	1,707.2	-1,554.0	1,353.8	1,285.7	68.02	19.902	
9,400.0	7,307.0	9,535.5	7,307.0	36.1	44.8	-90.00	1,807.1	-1,554.0	1,356.8	1,286.0	70.77	19.171	
9,500.0	7,307.0	9,635.4	7,307.0	37.7	46.1	-90.00	1,907.0	-1,554.0	1,361.5	1,288.0	73.52	18.519	
9,600.0	7,307.0	9,735.2	7,307.0	39.3	47.5	-90.00	2,006.8	-1,554.0	1,368.1	1,291.8	76.26	17.940	
9,700.0	7,307.0	9,834.8	7,307.0	40.9	48.8	-90.00	2,106.4	-1,554.0	1,376.3	1,297.3	78.99	17.425	
9,777.0	7,307.0	9,911.4	7,307.0	42.2	49.9	-90.00	2,183.1	-1,554.0	1,383.8	1,302.8	81.07	17.069	
9,800.0	7,307.0	9,934.3	7,307.0	42.6	50.2	-90.00	2,205.9	-1,554.0	1,386.2	1,304.4	81.83	16.940	
9,900.0	7,307.0	10,033.8	7,307.0	44.2	51.6	-90.00	2,305.4	-1,554.0	1,396.7	1,311.6	85.14	16.405	
10,000.0	7,307.0	10,133.2	7,307.0	45.9	53.1	-90.00	2,404.9	-1,554.0	1,407.1	1,318.7	88.46	15.907	
10,100.0	7,307.0	10,232.7	7,307.0	47.6	54.5	-90.00	2,504.3	-1,554.0	1,417.6	1,325.8	91.79	15.443	
10,200.0	7,307.0	10,332.1	7,307.0	49.2	56.0	-90.00	2,603.8	-1,554.0	1,428.0	1,332.9	95.14	15.010	
10,300.0	7,307.0	10,431.6	7,307.0	50.9	57.5	-90.00	2,703.2	-1,554.0	1,438.5	1,340.0	98.49	14.605	
10,400.0	7,307.0	10,531.0	7,307.0	52.6	59.0	-90.00	2,802.7	-1,554.0	1,449.0	1,347.1	101.86	14.225	
10,500.0	7,307.0	10,630.5	7,307.0	54.3	60.5	-90.00	2,902.1	-1,554.0	1,459.4	1,354.2	105.23	13.868	
10,597.0	7,307.0	10,726.9	7,307.0	55.9	61.9	-90.00	2,998.6	-1,554.0	1,469.5	1,361.0	108.52	13.542	
10,600.0	7,307.0	10,729.9	7,307.0	56.0	62.0	-90.00	3,001.6	-1,554.0	1,469.9	1,361.2	108.64	13.530	
10,700.0	7,307.0	10,829.5	7,307.0	57.7	63.5	-90.00	3,101.1	-1,554.0	1,479.4	1,366.7	112.65	13.132	
10,800.0	7,307.0	10,929.2	7,307.0	59.4	65.1	-90.00	3,200.8	-1,554.0	1,487.2	1,370.5	116.66	12.748	
10,900.0	7,307.0	11,029.0	7,307.0	61.1	66.6	-90.00	3,300.6	-1,554.0	1,493.2	1,372.6	120.64	12.377	
11,000.0	7,307.0	11,128.9	7,307.0	62.8	68.2	-90.00	3,400.5	-1,554.0	1,497.5	1,372.9	124.61	12.018	
11,100.0	7,307.0	11,228.9	7,307.0	64.5	69.8	-90.00	3,500.5	-1,554.0	1,500.1	1,371.6	128.55	11.670	
11,200.0	7,307.0	11,328.9	7,307.0	66.2	71.4	-90.00	3,600.5	-1,554.0	1,500.9	1,368.5	132.46	11.331	
11,300.0	7,307.0	11,428.9	7,307.0	68.0	73.0	-90.00	3,700.5	-1,554.0	1,500.0	1,363.7	136.34	11.002	
11,400.0	7,307.0	11,528.8	7,307.0	69.7	74.6	-90.00	3,800.4	-1,554.0	1,497.3	1,357.1	140.18	10.681	
11,500.0	7,307.0	11,628.7	7,307.0	71.4	76.2	-90.00	3,900.3	-1,554.0	1,492.9	1,348.9	143.99	10.368	
11,600.0	7,307.0	11,728.5	7,307.0	73.1	77.8	-90.00	4,000.2	-1,554.0	1,486.8	1,339.0	147.76	10.062	
11,634.3	7,307.0	11,762.8	7,307.0	73.7	78.4	-90.00	4,034.4	-1,554.0	1,484.2	1,335.2	149.05	9.958	
11,700.0	7,307.0	11,828.2	7,307.0	74.9	79.4	-90.00	4,099.9	-1,554.0	1,479.2	1,327.9	151.31	9.776	
11,800.0	7,307.0	11,928.0	7,307.0	76.6	81.0	-90.00	4,199.6	-1,554.0	1,471.6	1,316.9	154.76	9.509	
11,900.0	7,307.0	12,027.7	7,307.0	78.3	82.7	-90.00	4,299.3	-1,554.0	1,464.0	1,305.8	158.21	9.253	
12,000.0	7,307.0	12,127.4	7,307.0	80.0	84.3	-90.00	4,399.0	-1,554.0	1,456.4	1,294.7	161.67	9.008	
12,100.0	7,307.0	12,227.1	7,307.0	81.8	85.9	-90.00	4,498.7	-1,554.0	1,448.7	1,283.6	165.13	8.774	
12,200.0	7,307.0	12,326.8	7,307.0	83.5	87.6	-90.00	4,598.4	-1,554.0	1,441.1	1,272.5	168.58	8.548	
12,300.0	7,307.0	12,426.5	7,307.0	85.2	89.2	-90.00	4,698.1	-1,554.0	1,433.5	1,261.4	172.04	8.332	
12,400.0	7,307.0	12,526.2	7,307.0	87.0	90.9	-90.00	4,797.8	-1,554.0	1,425.9	1,250.4	175.51	8.124	
12,500.0	7,307.0	12,625.9	7,307.0	88.7	92.5	-90.00	4,897.5	-1,554.0	1,418.2	1,239.3	178.97	7.924	
12,600.0	7,307.0	12,725.6	7,307.0	90.5	94.2	-90.00	4,997.3	-1,554.0	1,410.6	1,228.2	182.43	7.732	
12,700.0	7,307.0	12,825.3	7,307.0	92.2	95.9	-90.00	5,097.0	-1,554.0	1,403.0	1,217.1	185.90	7.547	
12,772.4	7,307.0	12,897.6	7,307.0	93.5	97.1	-90.00	5,169.2	-1,554.0	1,397.5	1,209.0	188.41	7.417 SF	



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3E-9H-N267
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Reference Site:	S9-T2N-R67W (Sprague)	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Sprague 3E-9H-N267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 3B-9H-N267 - Hz - Plan #1													Offset Site Error:	0.0 ft
Survey Program:		0-Geolink MWD											Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-89.95	0.0	-28.0	28.0					
100.0	100.0	100.0	100.0	0.1	0.1	-89.95	0.0	-28.0	28.0	27.7	0.24	114.407		
200.0	200.0	200.0	200.0	0.3	0.3	-89.95	0.0	-28.0	28.0	27.4	0.59	47.109		
300.0	300.0	300.0	300.0	0.5	0.5	69.31	0.0	-28.0	27.6	26.7	0.94	29.295		
323.7	323.7	323.4	323.4	0.5	0.5	70.11	0.0	-28.0	27.6	26.5	1.03	26.842	CC, ES	
400.0	400.0	399.1	399.1	0.7	0.6	72.72	-0.7	-29.5	28.3	27.0	1.30	21.845		
500.0	499.9	498.2	498.0	0.8	0.8	75.68	-2.7	-34.2	31.6	30.0	1.66	19.024		
600.0	599.7	597.0	596.5	1.0	1.1	77.68	-6.2	-42.0	37.5	35.4	2.05	18.292		
700.0	699.4	695.5	694.2	1.3	1.3	78.75	-10.9	-52.9	45.8	43.4	2.46	18.602		
800.0	798.9	793.5	791.0	1.5	1.6	79.16	-17.0	-66.8	56.7	53.7	2.91	19.443		
900.0	898.3	892.2	888.1	1.7	1.9	79.56	-24.2	-83.0	69.2	65.8	3.40	20.374		
1,000.0	997.4	991.4	985.7	2.0	2.3	80.96	-31.4	-99.5	81.6	77.7	3.93	20.800		
1,100.0	1,096.3	1,090.6	1,083.2	2.3	2.6	83.02	-38.6	-116.0	93.9	89.4	4.50	20.868		
1,200.0	1,194.9	1,189.7	1,180.7	2.6	3.0	85.51	-45.9	-132.5	106.1	101.0	5.12	20.713		
1,250.0	1,244.1	1,239.3	1,229.5	2.8	3.1	86.88	-49.5	-140.7	112.2	106.8	5.45	20.596		
1,300.0	1,293.3	1,288.8	1,278.2	3.0	3.3	88.27	-53.1	-148.9	118.4	112.6	5.78	20.481		
1,400.0	1,391.6	1,387.9	1,375.6	3.3	3.7	90.65	-60.3	-165.4	130.9	124.5	6.45	20.295		
1,500.0	1,489.9	1,487.0	1,473.0	3.7	4.0	92.61	-67.5	-181.8	143.7	136.5	7.13	20.156		
1,600.0	1,588.3	1,586.0	1,570.5	4.0	4.4	94.25	-74.8	-198.3	156.5	148.7	7.81	20.049		
1,700.0	1,686.6	1,685.1	1,667.9	4.4	4.7	95.64	-82.0	-214.7	169.5	161.0	8.49	19.968		
1,800.0	1,784.9	1,784.2	1,765.3	4.7	5.1	96.84	-89.2	-231.2	182.6	173.4	9.17	19.905		
1,900.0	1,883.2	1,883.3	1,862.8	5.1	5.5	97.87	-96.4	-247.6	195.7	185.8	9.85	19.856		
2,000.0	1,981.6	1,982.3	1,960.2	5.4	5.8	98.77	-103.7	-264.1	208.9	198.3	10.54	19.817		
2,100.0	2,079.9	2,081.4	2,057.6	5.8	6.2	99.57	-110.9	-280.6	222.1	210.9	11.22	19.786		
2,200.0	2,178.2	2,180.5	2,155.1	6.2	6.5	100.28	-118.1	-297.0	235.3	223.4	11.91	19.762		
2,300.0	2,276.6	2,279.6	2,252.5	6.5	6.9	100.91	-125.3	-313.5	248.6	236.0	12.59	19.743		
2,400.0	2,374.9	2,378.7	2,349.9	6.9	7.3	101.48	-132.6	-329.9	262.0	248.7	13.28	19.728		
2,500.0	2,473.2	2,477.7	2,447.4	7.2	7.6	101.99	-139.8	-346.4	275.3	261.3	13.96	19.715		
2,600.0	2,571.5	2,576.8	2,544.8	7.6	8.0	102.45	-147.0	-362.8	288.7	274.0	14.65	19.705		
2,700.0	2,669.9	2,675.9	2,642.2	8.0	8.3	102.88	-154.2	-379.3	302.0	286.7	15.33	19.698		
2,800.0	2,768.2	2,775.0	2,739.7	8.3	8.7	103.26	-161.5	-395.7	315.4	299.4	16.02	19.692		
2,900.0	2,866.5	2,874.0	2,837.1	8.7	9.1	103.62	-168.7	-412.2	328.8	312.1	16.70	19.687		
3,000.0	2,964.8	2,973.1	2,934.5	9.0	9.4	103.95	-175.9	-428.7	342.3	324.9	17.39	19.683		
3,100.0	3,063.2	3,072.2	3,032.0	9.4	9.8	104.25	-183.1	-445.1	355.7	337.6	18.07	19.680		
3,200.0	3,161.6	3,171.3	3,129.5	9.7	10.1	104.53	-190.4	-461.6	368.9	350.2	18.74	19.686		
3,300.0	3,260.4	3,270.5	3,227.0	10.1	10.5	104.54	-197.6	-478.0	381.7	362.3	19.37	19.702		
3,400.0	3,359.4	3,369.7	3,324.5	10.3	10.9	104.30	-204.8	-494.5	394.1	374.1	19.98	19.726		
3,500.0	3,458.7	3,468.9	3,422.1	10.6	11.2	103.84	-212.1	-511.0	406.0	385.5	20.55	19.761		
3,600.0	3,558.1	3,568.1	3,519.6	10.8	11.6	103.18	-219.3	-527.5	417.6	396.6	21.08	19.811		
3,700.0	3,657.7	3,667.2	3,617.1	11.1	11.9	102.33	-226.5	-543.9	428.9	407.4	21.58	19.878		
3,800.0	3,757.5	3,766.2	3,714.4	11.2	12.3	101.31	-233.7	-560.4	440.0	418.0	22.04	19.969		
3,900.0	3,857.4	3,865.1	3,811.7	11.4	12.7	100.12	-240.9	-576.8	451.0	428.5	22.45	20.089		
4,000.0	3,957.3	3,963.8	3,908.8	11.5	13.0	98.79	-248.1	-593.2	461.9	439.0	22.82	20.242		
4,100.0	4,057.3	4,062.4	4,005.7	11.7	13.4	97.32	-255.3	-609.6	472.8	449.7	23.14	20.437		
4,150.0	4,107.3	4,111.6	4,054.1	11.7	13.6	-61.05	-258.9	-617.7	478.3	455.1	23.28	20.549		
4,200.0	4,157.3	4,160.7	4,102.5	11.8	13.7	-61.89	-262.5	-625.9	484.0	460.5	23.41	20.672		
4,300.0	4,257.3	4,259.1	4,199.2	11.9	14.1	-63.53	-269.7	-642.2	495.5	471.8	23.67	20.935		
4,400.0	4,357.3	4,357.4	4,295.9	12.0	14.5	-65.08	-276.8	-658.6	507.4	483.5	23.92	21.217		
4,500.0	4,457.3	4,455.7	4,392.6	12.1	14.8	-66.57	-284.0	-674.9	519.7	495.5	24.15	21.516		
4,600.0	4,557.3	4,554.1	4,489.3	12.2	15.2	-67.99	-291.2	-691.2	532.3	507.9	24.38	21.829		
4,700.0	4,657.3	4,652.4	4,586.0	12.3	15.5	-69.34	-298.4	-707.6	545.2	520.6	24.61	22.155		
4,800.0	4,757.3	4,750.8	4,682.7	12.4	15.9	-70.64	-305.5	-723.9	558.4	533.6	24.83	22.490		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3E-9H-N267
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Reference Site:	S9-T2N-R67W (Sprague)	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Sprague 3E-9H-N267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 3B-9H-N267 - Hz - Plan #1													Offset Site Error:	0.0 ft
Survey Program: O-Geolink MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
4,900.0	4,857.3	4,849.1	4,779.4	12.6	16.3	-71.87	-312.7	-740.2	571.9	546.9	25.05	22.833		
5,000.0	4,957.3	4,947.5	4,876.1	12.7	16.6	-73.04	-319.9	-756.6	585.7	560.4	25.26	23.182		
5,100.0	5,057.3	5,045.8	4,972.8	12.8	17.0	-74.17	-327.0	-772.9	599.6	574.2	25.48	23.536		
5,200.0	5,157.3	5,144.1	5,069.5	12.9	17.3	-75.24	-334.2	-789.2	613.8	588.1	25.69	23.894		
5,300.0	5,257.3	5,242.5	5,166.3	13.0	17.7	-76.26	-341.4	-805.6	628.2	602.3	25.90	24.253		
5,400.0	5,357.3	5,340.8	5,263.0	13.2	18.1	-77.24	-348.6	-821.9	642.8	616.7	26.12	24.614		
5,500.0	5,457.3	5,439.2	5,359.7	13.3	18.4	-78.17	-355.7	-838.2	657.6	631.2	26.33	24.975		
5,600.0	5,557.3	5,537.5	5,456.4	13.4	18.8	-79.06	-362.9	-854.6	672.5	645.9	26.54	25.335		
5,700.0	5,657.3	5,635.8	5,553.1	13.5	19.1	-79.92	-370.1	-870.9	687.6	660.8	26.76	25.694		
5,800.0	5,757.3	5,734.2	5,649.8	13.7	19.5	-80.74	-377.2	-887.2	702.8	675.8	26.98	26.051		
5,900.0	5,857.3	5,832.5	5,746.5	13.8	19.8	-81.52	-384.4	-903.6	718.2	691.0	27.20	26.405		
6,000.0	5,957.3	5,930.9	5,843.2	13.9	20.2	-82.27	-391.6	-919.9	733.6	706.2	27.42	26.756		
6,100.0	6,057.3	6,029.2	5,939.9	14.1	20.6	-82.99	-398.8	-936.2	749.2	721.6	27.64	27.103		
6,200.0	6,157.3	6,127.5	6,036.6	14.2	20.9	-83.68	-405.9	-952.6	765.0	737.1	27.87	27.447		
6,300.0	6,257.3	6,225.9	6,133.4	14.3	21.3	-84.35	-413.1	-968.9	780.8	752.7	28.10	27.786		
6,400.0	6,357.3	6,324.2	6,230.1	14.5	21.6	-84.98	-420.3	-985.2	796.7	768.4	28.33	28.121		
6,500.0	6,457.3	6,422.6	6,326.8	14.6	22.0	-85.60	-427.4	-1,001.6	812.7	784.2	28.56	28.452		
6,600.0	6,557.3	6,520.9	6,423.5	14.7	22.4	-86.18	-434.6	-1,017.9	828.8	800.0	28.80	28.777		
6,700.0	6,657.3	6,619.2	6,520.2	14.9	22.7	-86.75	-441.8	-1,034.2	845.0	816.0	29.04	29.098		
6,776.8	6,734.0	6,694.7	6,594.4	15.0	23.0	-87.17	-447.3	-1,046.8	857.5	828.3	29.23	29.341		
6,800.0	6,757.3	6,717.5	6,616.9	15.0	23.1	-86.95	-448.9	-1,050.6	861.2	831.9	29.35	29.342		
6,850.0	6,807.1	6,766.2	6,664.7	15.0	23.3	-86.68	-452.5	-1,058.6	869.2	839.7	29.53	29.438		
6,900.0	6,856.3	6,814.0	6,711.7	15.0	23.4	-86.68	-456.0	-1,066.6	877.1	847.5	29.59	29.637		
6,950.0	6,904.7	6,860.6	6,757.6	14.9	23.6	-86.90	-459.4	-1,074.3	884.9	855.3	29.56	29.933		
7,000.0	6,951.7	6,905.6	6,801.8	14.8	23.8	-87.30	-462.7	-1,081.8	892.9	863.4	29.45	30.315		
7,050.0	6,997.0	6,948.7	6,844.2	14.7	23.9	-87.81	-465.8	-1,089.0	901.2	871.9	29.29	30.769		
7,100.0	7,040.4	6,989.5	6,884.3	14.5	24.1	-88.37	-468.8	-1,095.7	910.1	881.0	29.09	31.282		
7,150.0	7,081.4	7,027.8	6,922.0	14.4	24.2	-88.91	-471.6	-1,102.1	919.8	890.9	28.89	31.837		
7,200.0	7,119.8	7,073.8	6,967.2	14.2	24.4	-89.75	-473.2	-1,109.7	930.3	901.7	28.62	32.508		
7,250.0	7,155.3	7,123.4	7,016.2	14.0	24.5	-90.66	-470.7	-1,118.0	941.6	913.2	28.32	33.242		
7,300.0	7,187.5	7,177.6	7,069.1	13.9	24.6	-91.65	-463.2	-1,126.9	953.3	925.3	28.01	34.032		
7,350.0	7,216.3	7,237.6	7,126.5	13.7	24.7	-92.76	-449.0	-1,136.6	965.4	937.8	27.68	34.873		
7,400.0	7,241.4	7,305.2	7,189.0	13.6	24.8	-94.04	-425.8	-1,147.2	977.7	950.4	27.34	35.760		
7,450.0	7,262.7	7,382.5	7,256.7	13.6	24.8	-95.50	-390.3	-1,158.6	989.9	962.9	26.98	36.685		
7,500.0	7,280.0	7,472.4	7,328.6	13.6	24.8	-97.16	-337.9	-1,170.8	1,001.4	974.8	26.63	37.610		
7,550.0	7,293.0	7,578.0	7,401.5	13.6	24.8	-98.94	-262.8	-1,183.1	1,011.8	985.5	26.31	38.453		
7,600.0	7,301.9	7,701.3	7,467.8	13.7	24.8	-100.66	-159.6	-1,194.3	1,020.1	994.0	26.14	39.031		
7,650.0	7,306.4	7,841.8	7,514.8	13.8	24.9	-101.97	-27.9	-1,202.2	1,025.5	999.2	26.28	39.023		
7,676.8	7,307.0	7,922.0	7,527.0	13.9	25.0	-102.38	51.4	-1,204.3	1,026.9	1,000.4	26.55	38.684		
7,677.6	7,307.0	7,924.7	7,527.2	13.9	25.0	-102.39	54.0	-1,204.3	1,027.0	1,000.4	26.56	38.668		
7,700.0	7,307.0	7,977.9	7,529.0	14.0	25.2	-102.48	107.2	-1,204.6	1,027.2	1,000.3	26.86	38.248		
7,800.0	7,307.0	8,077.9	7,529.0	14.6	25.5	-102.48	207.2	-1,204.6	1,027.2	999.2	27.98	36.709		
7,900.0	7,307.0	8,177.9	7,529.0	15.3	25.9	-102.48	307.2	-1,204.6	1,027.2	997.8	29.45	34.878		
8,000.0	7,307.0	8,277.9	7,529.0	16.2	26.4	-102.48	407.2	-1,204.6	1,027.2	996.0	31.23	32.893		
8,100.0	7,307.0	8,377.9	7,529.0	17.2	27.0	-102.48	507.2	-1,204.6	1,027.2	994.0	33.27	30.880		
8,200.0	7,307.0	8,477.9	7,529.0	18.4	27.8	-102.48	607.2	-1,204.6	1,027.2	991.7	35.52	28.923		
8,300.0	7,307.0	8,577.9	7,529.0	19.6	28.6	-102.48	707.2	-1,204.6	1,027.3	989.3	37.94	27.073		
8,400.0	7,307.0	8,677.9	7,529.0	20.9	29.5	-102.48	807.2	-1,204.6	1,027.3	986.8	40.52	25.355		
8,500.0	7,307.0	8,777.9	7,529.0	22.3	30.4	-102.48	907.2	-1,204.6	1,027.3	984.1	43.21	23.776		
8,600.0	7,307.0	8,877.9	7,529.0	23.7	31.5	-102.48	1,007.2	-1,204.6	1,027.3	981.3	45.99	22.335		
8,700.0	7,307.0	8,977.9	7,529.0	25.1	32.6	-102.48	1,107.2	-1,204.6	1,027.3	978.4	48.86	21.023		
8,800.0	7,307.0	9,077.9	7,529.0	26.6	33.7	-102.48	1,207.2	-1,204.6	1,027.3	975.5	51.80	19.831		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



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Reference Site:	S9-T2N-R67W (Sprague)	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Sprague 3E-9H-N267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 3B-9H-N267 - Hz - Plan #1												Offset Site Error:	0.0 ft
Survey Program: 0-Geolink MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)			
8,900.0	7,307.0	9,177.9	7,529.0	28.1	35.0	-102.48	1,307.2	-1,204.6	1,027.3	972.5	54.80	18.748	
9,000.0	7,307.0	9,277.9	7,529.0	29.7	36.2	-102.48	1,407.2	-1,204.6	1,027.3	969.5	57.84	17.762	
9,100.0	7,307.0	9,377.9	7,529.0	31.3	37.5	-102.48	1,507.2	-1,204.6	1,027.3	966.4	60.92	16.863	
9,177.6	7,307.0	9,455.5	7,529.0	32.5	38.5	-102.48	1,584.8	-1,204.6	1,027.4	964.0	63.34	16.219	
9,200.0	7,307.0	9,477.9	7,529.0	32.9	38.8	-102.48	1,607.2	-1,204.6	1,027.4	963.4	63.96	16.063	
9,300.0	7,307.0	9,577.9	7,529.0	34.5	40.2	-102.47	1,707.2	-1,204.6	1,028.6	961.9	66.73	15.415	
9,400.0	7,307.0	9,677.8	7,529.0	36.1	41.6	-102.44	1,807.1	-1,204.6	1,031.6	962.1	69.51	14.841	
9,500.0	7,307.0	9,777.7	7,529.0	37.7	43.0	-102.39	1,907.0	-1,204.6	1,036.2	964.0	72.29	14.335	
9,600.0	7,307.0	9,877.5	7,529.0	39.3	44.5	-102.33	2,006.8	-1,204.6	1,042.6	967.5	75.07	13.889	
9,700.0	7,307.0	9,977.2	7,529.0	40.9	45.9	-102.25	2,106.4	-1,204.6	1,050.7	972.8	77.84	13.498	
9,777.0	7,307.0	10,053.8	7,529.0	42.2	47.1	-102.18	2,183.1	-1,204.6	1,058.0	978.1	79.97	13.231	
9,800.0	7,307.0	10,076.7	7,529.0	42.6	47.4	-102.15	2,205.9	-1,204.6	1,060.4	979.7	80.72	13.137	
9,900.0	7,307.0	10,176.1	7,529.0	44.2	48.9	-102.03	2,305.4	-1,204.6	1,070.6	986.6	83.99	12.747	
10,000.0	7,307.0	10,275.6	7,529.0	45.9	50.4	-101.92	2,404.9	-1,204.6	1,080.8	993.6	87.27	12.385	
10,100.0	7,307.0	10,375.0	7,529.0	47.6	51.9	-101.80	2,504.3	-1,204.6	1,091.1	1,000.5	90.57	12.046	
10,200.0	7,307.0	10,474.5	7,529.0	49.2	53.5	-101.69	2,603.8	-1,204.6	1,101.3	1,007.4	93.88	11.730	
10,300.0	7,307.0	10,573.9	7,529.0	50.9	55.0	-101.58	2,703.2	-1,204.6	1,111.5	1,014.3	97.21	11.434	
10,400.0	7,307.0	10,673.4	7,529.0	52.6	56.6	-101.48	2,802.7	-1,204.6	1,121.8	1,021.2	100.55	11.157	
10,500.0	7,307.0	10,772.8	7,529.0	54.3	58.2	-101.37	2,902.1	-1,204.6	1,132.0	1,028.1	103.89	10.896	
10,597.0	7,307.0	10,869.3	7,529.0	55.9	59.7	-101.27	2,998.6	-1,204.6	1,142.0	1,034.8	107.14	10.658	
10,600.0	7,307.0	10,872.3	7,529.0	56.0	59.7	-101.27	3,001.6	-1,204.6	1,142.3	1,035.0	107.26	10.649	
10,700.0	7,307.0	10,971.8	7,529.0	57.7	61.3	-101.16	3,101.1	-1,204.6	1,151.6	1,040.5	111.15	10.361	
10,800.0	7,307.0	11,071.5	7,529.0	59.4	62.9	-101.07	3,200.8	-1,204.6	1,159.3	1,044.2	115.03	10.078	
10,900.0	7,307.0	11,171.3	7,529.0	61.1	64.6	-101.00	3,300.6	-1,204.6	1,165.2	1,046.3	118.88	9.802	
11,000.0	7,307.0	11,271.2	7,529.0	62.8	66.2	-100.95	3,400.5	-1,204.6	1,169.4	1,046.7	122.70	9.531	
11,100.0	7,307.0	11,371.2	7,529.0	64.5	67.8	-100.92	3,500.5	-1,204.6	1,172.0	1,045.5	126.48	9.266	
11,200.0	7,307.0	11,471.2	7,529.0	66.2	69.4	-100.91	3,600.5	-1,204.6	1,172.8	1,042.5	130.23	9.005	
11,300.0	7,307.0	11,571.2	7,529.0	68.0	71.1	-100.92	3,700.5	-1,204.6	1,171.9	1,037.9	133.95	8.749	
11,400.0	7,307.0	11,671.2	7,529.0	69.7	72.7	-100.95	3,800.4	-1,204.6	1,169.2	1,031.6	137.62	8.496	
11,500.0	7,307.0	11,771.1	7,529.0	71.4	74.4	-101.00	3,900.3	-1,204.6	1,164.9	1,023.7	141.24	8.247	
11,600.0	7,307.0	11,870.9	7,529.0	73.1	76.0	-101.07	4,000.2	-1,204.6	1,158.9	1,014.0	144.82	8.002	
11,634.3	7,307.0	11,905.1	7,529.0	73.7	76.6	-101.10	4,034.4	-1,204.6	1,156.4	1,010.4	146.03	7.919	
11,700.0	7,307.0	11,970.6	7,529.0	74.9	77.7	-101.15	4,099.9	-1,204.6	1,151.5	1,003.2	148.23	7.768	
11,800.0	7,307.0	12,070.3	7,529.0	76.6	79.4	-101.22	4,199.6	-1,204.6	1,144.0	992.4	151.58	7.547	
11,900.0	7,307.0	12,170.0	7,529.0	78.3	81.0	-101.30	4,299.3	-1,204.6	1,136.5	981.6	154.93	7.336	
12,000.0	7,307.0	12,269.7	7,529.0	80.0	82.7	-101.37	4,399.0	-1,204.6	1,129.0	970.8	158.28	7.133	
12,100.0	7,307.0	12,369.4	7,529.0	81.8	84.4	-101.45	4,498.7	-1,204.6	1,121.6	959.9	161.62	6.939	
12,200.0	7,307.0	12,469.1	7,529.0	83.5	86.0	-101.53	4,598.4	-1,204.6	1,114.1	949.1	164.97	6.753	
12,300.0	7,307.0	12,568.8	7,529.0	85.2	87.7	-101.61	4,698.1	-1,204.6	1,106.6	938.3	168.31	6.575	
12,400.0	7,307.0	12,668.5	7,529.0	87.0	89.4	-101.69	4,797.8	-1,204.6	1,099.1	927.5	171.66	6.403	
12,500.0	7,307.0	12,768.3	7,529.0	88.7	91.1	-101.77	4,897.5	-1,204.6	1,091.7	916.7	175.00	6.238	
12,600.0	7,307.0	12,868.0	7,529.0	90.5	92.8	-101.85	4,997.2	-1,204.6	1,084.2	905.9	178.34	6.079	
12,700.0	7,307.0	12,967.7	7,529.0	92.2	94.4	-101.93	5,097.0	-1,204.6	1,076.8	895.1	181.68	5.927	
12,772.4	7,307.0	13,039.9	7,529.0	93.5	95.7	-101.99	5,169.2	-1,204.6	1,071.3	887.2	184.10	5.819 SF	



Cathedral Energy Services

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Reference Site:	S9-T2N-R67W (Sprague)	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Sprague 3E-9H-N267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 3C-9H-N267 - Hz - Plan #1													Offset Site Error:	0.0 ft
Survey Program: O-Geolink MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance					Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis			
0.0	0.0	0.0	0.0	0.0	0.0	-89.95	0.0	-19.6	19.6					
100.0	100.0	100.0	100.0	0.1	0.1	-89.95	0.0	-19.6	19.6	19.3	0.24	80.085		
200.0	200.0	200.0	200.0	0.3	0.3	-89.95	0.0	-19.6	19.6	19.0	0.59	32.976		
300.0	300.0	300.0	300.0	0.5	0.5	70.03	0.0	-19.6	19.3	18.3	0.94	20.410		
400.0	400.0	400.0	400.0	0.7	0.6	77.67	0.0	-19.6	18.5	17.2	1.30	14.275		
446.1	446.1	446.0	446.0	0.7	0.7	82.75	-0.1	-19.7	18.3	16.9	1.46	12.526	CC, ES	
500.0	499.9	499.7	499.7	0.8	0.8	89.03	-0.4	-20.3	18.6	16.9	1.66	11.201		
600.0	599.7	599.4	599.4	1.0	1.0	100.28	-1.8	-22.5	20.4	18.4	2.04	10.036		
700.0	699.4	699.2	699.0	1.3	1.2	109.31	-4.2	-26.2	24.0	21.5	2.43	9.878		
800.0	798.9	798.9	798.6	1.5	1.4	115.59	-7.4	-31.3	29.0	26.2	2.84	10.224		
900.0	898.3	898.6	898.0	1.7	1.6	119.60	-11.6	-37.9	35.3	32.0	3.27	10.795		
1,000.0	997.4	998.3	997.2	2.0	1.8	122.01	-16.7	-45.9	42.7	39.0	3.73	11.446		
1,100.0	1,096.3	1,097.9	1,096.1	2.3	2.0	123.37	-22.7	-55.4	51.2	47.0	4.23	12.105		
1,200.0	1,194.9	1,197.4	1,194.8	2.6	2.3	124.04	-29.6	-66.4	60.7	56.0	4.77	12.732		
1,250.0	1,244.1	1,247.1	1,244.0	2.8	2.5	124.19	-33.4	-72.4	65.9	60.8	5.05	13.033		
1,300.0	1,293.3	1,296.8	1,293.2	3.0	2.6	124.21	-37.4	-78.7	71.1	65.8	5.34	13.312		
1,400.0	1,391.6	1,396.3	1,391.5	3.3	2.9	124.19	-45.4	-91.4	81.6	75.7	5.93	13.767		
1,500.0	1,489.9	1,495.7	1,489.8	3.7	3.2	124.17	-53.5	-104.1	92.2	85.6	6.53	14.122		
1,600.0	1,588.3	1,595.2	1,588.1	4.0	3.5	124.15	-61.5	-116.8	102.7	95.6	7.13	14.405		
1,700.0	1,686.6	1,694.6	1,686.4	4.4	3.8	124.14	-69.5	-129.5	113.2	105.5	7.73	14.636		
1,800.0	1,784.9	1,794.1	1,784.7	4.7	4.1	124.13	-77.6	-142.2	123.7	115.4	8.35	14.826		
1,900.0	1,883.2	1,893.5	1,883.0	5.1	4.4	124.12	-85.6	-154.9	134.2	125.3	8.96	14.985		
2,000.0	1,981.6	1,992.9	1,981.3	5.4	4.7	124.12	-93.6	-167.6	144.8	135.2	9.57	15.120		
2,100.0	2,079.9	2,092.4	2,079.6	5.8	5.0	124.11	-101.7	-180.3	155.3	145.1	10.19	15.236		
2,200.0	2,178.2	2,191.8	2,177.9	6.2	5.3	124.10	-109.7	-192.9	165.8	155.0	10.81	15.337		
2,300.0	2,276.6	2,291.3	2,276.2	6.5	5.6	124.10	-117.7	-205.6	176.3	164.9	11.43	15.424		
2,400.0	2,374.9	2,390.7	2,374.5	6.9	5.9	124.09	-125.8	-218.3	186.8	174.8	12.05	15.502		
2,500.0	2,473.2	2,490.2	2,472.8	7.2	6.2	124.09	-133.8	-231.0	197.4	184.7	12.68	15.570		
2,600.0	2,571.5	2,589.6	2,571.1	7.6	6.6	124.09	-141.8	-243.7	207.9	194.6	13.30	15.631		
2,700.0	2,669.9	2,689.1	2,669.4	8.0	6.9	124.08	-149.9	-256.4	218.4	204.5	13.92	15.686		
2,800.0	2,768.2	2,788.5	2,767.7	8.3	7.2	124.08	-157.9	-269.1	228.9	214.4	14.55	15.736		
2,900.0	2,866.5	2,888.0	2,866.0	8.7	7.5	124.08	-165.9	-281.8	239.4	224.3	15.17	15.780		
3,000.0	2,964.8	2,987.4	2,964.4	9.0	7.8	124.08	-173.9	-294.5	250.0	234.2	15.80	15.821		
3,100.0	3,063.2	3,086.8	3,062.7	9.4	8.1	124.07	-182.0	-307.2	260.5	244.1	16.43	15.858		
3,200.0	3,161.6	3,186.3	3,161.0	9.7	8.4	124.00	-190.0	-319.9	270.5	253.5	17.04	15.871		
3,300.0	3,260.4	3,285.9	3,259.4	10.1	8.7	123.63	-198.1	-332.6	279.6	261.9	17.66	15.829		
3,400.0	3,359.4	3,385.5	3,357.9	10.3	9.1	123.00	-206.1	-345.3	287.7	269.5	18.28	15.742		
3,500.0	3,458.7	3,485.1	3,456.4	10.6	9.4	122.10	-214.1	-358.0	295.0	276.1	18.89	15.618		
3,600.0	3,558.1	3,584.7	3,554.8	10.8	9.7	120.97	-222.2	-370.7	301.4	281.9	19.49	15.465		
3,700.0	3,657.7	3,684.3	3,653.2	11.1	10.0	119.60	-230.2	-383.4	307.1	287.0	20.08	15.294		
3,800.0	3,757.5	3,783.7	3,751.6	11.2	10.3	117.99	-238.3	-396.1	312.2	291.5	20.65	15.115		
3,900.0	3,857.4	3,883.1	3,849.8	11.4	10.6	116.16	-246.3	-408.8	316.7	295.5	21.20	14.936		
4,000.0	3,957.3	3,982.3	3,947.9	11.5	10.9	114.10	-254.3	-421.5	320.9	299.1	21.73	14.768		
4,100.0	4,057.3	4,081.4	4,045.8	11.7	11.3	111.82	-262.3	-434.1	324.8	302.6	22.21	14.623		
4,150.0	4,107.3	4,130.8	4,094.7	11.7	11.4	-46.98	-266.3	-440.4	326.7	304.3	22.44	14.560		
4,200.0	4,157.3	4,180.3	4,143.5	11.8	11.6	-48.24	-270.3	-446.8	328.7	306.1	22.66	14.506		
4,300.0	4,257.3	4,279.1	4,241.2	11.9	11.9	-50.71	-278.3	-459.4	333.2	310.1	23.08	14.436		
4,400.0	4,357.3	4,378.0	4,339.0	12.0	12.2	-53.12	-286.3	-472.0	338.3	314.9	23.47	14.413		
4,500.0	4,457.3	4,476.8	4,436.7	12.1	12.5	-55.45	-294.2	-484.6	344.0	320.2	23.84	14.432		
4,600.0	4,557.3	4,575.7	4,534.4	12.2	12.8	-57.70	-302.2	-497.2	350.3	326.1	24.18	14.489		
4,700.0	4,657.3	4,674.5	4,632.1	12.3	13.1	-59.87	-310.2	-509.8	357.1	332.6	24.49	14.579		
4,800.0	4,757.3	4,773.4	4,729.8	12.4	13.4	-61.96	-318.2	-522.5	364.4	339.6	24.79	14.699		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3E-9H-N267
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Reference Site:	S9-T2N-R67W (Sprague)	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Sprague 3E-9H-N267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 3C-9H-N267 - Hz - Plan #1													Offset Site Error:	0.0 ft
Survey Program: O-Geolink MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
4,900.0	4,857.3	4,872.2	4,827.6	12.6	13.8	-63.96	-326.2	-535.1	372.2	347.1	25.07	14.846		
5,000.0	4,957.3	4,971.1	4,925.3	12.7	14.1	-65.88	-334.2	-547.7	380.4	355.0	25.33	15.016		
5,100.0	5,057.3	5,069.9	5,023.0	12.8	14.4	-67.72	-342.2	-560.3	389.0	363.4	25.58	15.207		
5,200.0	5,157.3	5,168.8	5,120.7	12.9	14.7	-69.48	-350.1	-572.9	398.0	372.2	25.82	15.416		
5,300.0	5,257.3	5,267.6	5,218.4	13.0	15.0	-71.17	-358.1	-585.6	407.4	381.3	26.05	15.640		
5,400.0	5,357.3	5,366.5	5,316.1	13.2	15.3	-72.77	-366.1	-598.2	417.1	390.8	26.27	15.878		
5,500.0	5,457.3	5,465.3	5,413.9	13.3	15.6	-74.30	-374.1	-610.8	427.1	400.6	26.48	16.127		
5,600.0	5,557.3	5,564.2	5,511.6	13.4	16.0	-75.77	-382.1	-623.4	437.4	410.7	26.69	16.386		
5,700.0	5,657.3	5,663.0	5,609.3	13.5	16.3	-77.16	-390.1	-636.0	448.0	421.1	26.90	16.652		
5,800.0	5,757.3	5,761.9	5,707.0	13.7	16.6	-78.49	-398.0	-648.6	458.8	431.7	27.11	16.925		
5,900.0	5,857.3	5,860.8	5,804.7	13.8	16.9	-79.76	-406.0	-661.3	469.9	442.6	27.31	17.203		
6,000.0	5,957.3	5,959.6	5,902.5	13.9	17.2	-80.97	-414.0	-673.9	481.2	453.7	27.52	17.485		
6,100.0	6,057.3	6,058.5	6,000.2	14.1	17.5	-82.13	-422.0	-686.5	492.7	464.9	27.73	17.769		
6,200.0	6,157.3	6,157.3	6,097.9	14.2	17.8	-83.23	-430.0	-699.1	504.4	476.4	27.93	18.056		
6,300.0	6,257.3	6,256.2	6,195.6	14.3	18.1	-84.28	-438.0	-711.7	516.2	488.1	28.14	18.343		
6,400.0	6,357.3	6,355.0	6,293.3	14.5	18.5	-85.29	-445.9	-724.4	528.3	499.9	28.35	18.631		
6,500.0	6,457.3	6,453.9	6,391.0	14.6	18.8	-86.25	-453.9	-737.0	540.4	511.9	28.57	18.919		
6,600.0	6,557.3	6,552.7	6,488.8	14.7	19.1	-87.17	-461.9	-749.6	552.8	524.0	28.78	19.205		
6,700.0	6,657.3	6,651.6	6,586.5	14.9	19.4	-88.04	-469.9	-762.2	565.2	536.2	29.00	19.490		
6,776.8	6,734.0	6,727.4	6,661.5	15.0	19.6	-88.69	-476.0	-771.9	574.9	545.7	29.17	19.708		
6,800.0	6,757.3	6,750.4	6,684.2	15.0	19.7	-88.64	-477.9	-774.8	577.8	548.5	29.26	19.749		
6,850.0	6,807.1	6,799.0	6,732.3	15.0	19.9	-88.68	-480.4	-781.0	584.1	554.8	29.34	19.910		
6,900.0	6,856.3	6,848.1	6,781.0	15.0	19.9	-88.72	-478.9	-787.3	590.4	561.1	29.32	20.134		
6,950.0	6,904.7	6,897.8	6,829.9	14.9	20.0	-88.78	-473.1	-793.6	596.7	567.4	29.23	20.415		
7,000.0	6,951.7	6,948.1	6,878.7	14.8	20.1	-88.83	-462.8	-799.9	602.9	573.8	29.05	20.750		
7,050.0	6,997.0	6,999.1	6,927.1	14.7	20.1	-88.90	-448.1	-806.2	608.9	580.1	28.81	21.134		
7,100.0	7,040.4	7,050.8	6,974.7	14.5	20.1	-88.97	-428.7	-812.3	614.8	586.3	28.51	21.562		
7,150.0	7,081.4	7,103.3	7,020.9	14.4	20.0	-89.04	-404.8	-818.3	620.4	592.2	28.17	22.024		
7,200.0	7,119.8	7,156.4	7,065.4	14.2	20.0	-89.13	-376.3	-824.1	625.8	598.0	27.80	22.509		
7,250.0	7,155.3	7,210.3	7,107.7	14.0	19.9	-89.21	-343.3	-829.5	630.8	603.3	27.42	23.000		
7,300.0	7,187.5	7,265.0	7,147.1	13.9	19.8	-89.30	-305.9	-834.6	635.4	608.3	27.06	23.478		
7,350.0	7,216.3	7,320.3	7,183.3	13.7	19.8	-89.40	-264.4	-839.3	639.6	612.8	26.74	23.920		
7,400.0	7,241.4	7,376.3	7,215.8	13.6	19.7	-89.49	-218.9	-843.5	643.3	616.8	26.48	24.298		
7,450.0	7,262.7	7,432.9	7,243.9	13.6	19.7	-89.59	-169.9	-847.1	646.5	620.2	26.29	24.586		
7,500.0	7,280.0	7,490.1	7,267.3	13.6	19.7	-89.68	-117.9	-850.1	649.1	622.9	26.22	24.760		
7,550.0	7,293.0	7,547.8	7,285.6	13.6	19.7	-89.78	-63.3	-852.5	651.2	624.9	26.26	24.799		
7,600.0	7,301.9	7,605.8	7,298.4	13.7	19.8	-89.87	-6.7	-854.1	652.6	626.2	26.43	24.687		
7,650.0	7,306.4	7,664.2	7,305.5	13.8	19.9	-89.95	51.2	-855.1	653.4	626.6	26.75	24.428		
7,676.8	7,307.0	7,695.5	7,306.9	13.9	20.0	-89.99	82.5	-855.2	653.5	626.6	26.96	24.237		
7,677.6	7,307.0	7,696.5	7,306.9	13.9	20.0	-89.99	83.5	-855.2	653.5	626.6	26.97	24.231		
7,700.0	7,307.0	7,720.2	7,307.0	14.0	20.1	-90.00	107.2	-855.2	653.5	626.4	27.18	24.041		
7,800.0	7,307.0	7,820.2	7,307.0	14.6	20.4	-90.00	207.2	-855.2	653.6	625.2	28.32	23.079		
7,900.0	7,307.0	7,920.2	7,307.0	15.3	21.0	-90.00	307.2	-855.2	653.6	623.8	29.82	21.917		
8,000.0	7,307.0	8,020.2	7,307.0	16.2	21.6	-90.00	407.2	-855.2	653.6	621.9	31.64	20.656		
8,100.0	7,307.0	8,120.2	7,307.0	17.2	22.4	-90.00	507.2	-855.2	653.6	619.9	33.73	19.377		
8,200.0	7,307.0	8,220.2	7,307.0	18.4	23.3	-90.00	607.2	-855.2	653.6	617.6	36.04	18.135		
8,300.0	7,307.0	8,320.2	7,307.0	19.6	24.2	-90.00	707.2	-855.2	653.6	615.1	38.53	16.963		
8,400.0	7,307.0	8,420.2	7,307.0	20.9	25.3	-90.00	807.2	-855.2	653.6	612.5	41.17	15.876		
8,500.0	7,307.0	8,520.2	7,307.0	22.3	26.4	-90.00	907.2	-855.2	653.6	609.7	43.93	14.878		
8,600.0	7,307.0	8,620.2	7,307.0	23.7	27.6	-90.00	1,007.2	-855.2	653.7	606.9	46.80	13.968		
8,700.0	7,307.0	8,720.2	7,307.0	25.1	28.9	-90.00	1,107.2	-855.2	653.7	603.9	49.74	13.142		
8,800.0	7,307.0	8,820.2	7,307.0	26.6	30.2	-90.00	1,207.2	-855.2	653.7	600.9	52.75	12.391		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3E-9H-N267
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Reference Site:	S9-T2N-R67W (Sprague)	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Sprague 3E-9H-N267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 3C-9H-N267 - Hz - Plan #1												Offset Site Error:	0.0 ft
Survey Program: 0-Geolink MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)			
8,900.0	7,307.0	8,920.2	7,307.0	28.1	31.5	-90.00	1,307.2	-855.2	653.7	597.9	55.83	11.709	
9,000.0	7,307.0	9,020.2	7,307.0	29.7	32.9	-90.00	1,407.2	-855.2	653.7	594.7	58.95	11.090	
9,100.0	7,307.0	9,120.2	7,307.0	31.3	34.3	-90.00	1,507.2	-855.2	653.7	591.6	62.11	10.525	
9,177.6	7,307.0	9,197.8	7,307.0	32.5	35.5	-90.00	1,584.8	-855.2	653.7	589.1	64.59	10.122	
9,200.0	7,307.0	9,220.2	7,307.0	32.9	35.8	-90.00	1,607.2	-855.2	653.8	588.5	65.24	10.021	
9,300.0	7,307.0	9,320.2	7,307.0	34.5	37.3	-90.00	1,707.2	-855.2	655.0	586.9	68.18	9.608	
9,400.0	7,307.0	9,420.1	7,307.0	36.1	38.8	-90.00	1,807.1	-855.2	658.1	586.9	71.11	9.254	
9,500.0	7,307.0	9,520.0	7,307.0	37.7	40.3	-90.00	1,907.0	-855.2	662.8	588.8	74.05	8.951	
9,600.0	7,307.0	9,619.8	7,307.0	39.3	41.8	-90.00	2,006.8	-855.2	669.3	592.3	76.98	8.695	
9,700.0	7,307.0	9,719.5	7,307.0	40.9	43.4	-90.00	2,106.4	-855.2	677.6	597.7	79.89	8.481	
9,777.0	7,307.0	9,796.1	7,307.0	42.2	44.6	-90.00	2,183.1	-855.2	685.1	603.0	82.13	8.342	
9,800.0	7,307.0	9,819.0	7,307.0	42.6	44.9	-90.00	2,205.9	-855.2	687.5	604.6	82.89	8.294	
9,900.0	7,307.0	9,918.4	7,307.0	44.2	46.5	-90.00	2,305.4	-855.2	698.0	611.8	86.21	8.096	
10,000.0	7,307.0	10,017.9	7,307.0	45.9	48.1	-90.00	2,404.9	-855.2	708.4	618.9	89.53	7.912	
10,100.0	7,307.0	10,117.3	7,307.0	47.6	49.7	-90.00	2,504.3	-855.2	718.9	626.0	92.88	7.740	
10,200.0	7,307.0	10,216.8	7,307.0	49.2	51.3	-90.00	2,603.8	-855.2	729.3	633.1	96.23	7.579	
10,300.0	7,307.0	10,316.2	7,307.0	50.9	52.9	-90.00	2,703.2	-855.2	739.8	640.2	99.59	7.428	
10,400.0	7,307.0	10,415.7	7,307.0	52.6	54.5	-90.00	2,802.7	-855.2	750.2	647.3	102.96	7.286	
10,500.0	7,307.0	10,515.1	7,307.0	54.3	56.2	-90.00	2,902.1	-855.2	760.7	654.3	106.34	7.153	
10,597.0	7,307.0	10,611.6	7,307.0	55.9	57.8	-90.00	2,998.6	-855.2	770.8	661.2	109.63	7.031	
10,600.0	7,307.0	10,614.6	7,307.0	56.0	57.8	-90.00	3,001.6	-855.2	771.1	661.4	109.74	7.027	
10,700.0	7,307.0	10,714.1	7,307.0	57.7	59.5	-90.00	3,101.1	-855.2	780.7	667.1	113.57	6.874	
10,800.0	7,307.0	10,813.8	7,307.0	59.4	61.1	-90.00	3,200.8	-855.2	788.5	671.1	117.39	6.717	
10,900.0	7,307.0	10,913.6	7,307.0	61.1	62.8	-90.00	3,300.6	-855.2	794.5	673.3	121.18	6.556	
11,000.0	7,307.0	11,013.5	7,307.0	62.8	64.4	-90.00	3,400.5	-855.2	798.8	673.9	124.95	6.393	
11,100.0	7,307.0	11,113.5	7,307.0	64.5	66.1	-90.00	3,500.5	-855.2	801.4	672.7	128.69	6.227	
11,200.0	7,307.0	11,213.5	7,307.0	66.2	67.8	-90.00	3,600.5	-855.2	802.2	669.8	132.41	6.059	
11,300.0	7,307.0	11,313.5	7,307.0	68.0	69.5	-90.00	3,700.5	-855.2	801.3	665.2	136.09	5.888	
11,400.0	7,307.0	11,413.5	7,307.0	69.7	71.1	-90.00	3,800.4	-855.2	798.6	658.9	139.74	5.715	
11,500.0	7,307.0	11,513.4	7,307.0	71.4	72.8	-90.00	3,900.3	-855.2	794.2	650.8	143.35	5.540	
11,600.0	7,307.0	11,613.2	7,307.0	73.1	74.5	-90.00	4,000.2	-855.2	788.0	641.1	146.91	5.364	
11,634.3	7,307.0	11,647.4	7,307.0	73.7	75.1	-90.00	4,034.4	-855.2	785.5	637.4	148.13	5.303	
11,700.0	7,307.0	11,712.9	7,307.0	74.9	76.2	-90.00	4,099.9	-855.2	780.5	630.1	150.39	5.190	
11,800.0	7,307.0	11,812.6	7,307.0	76.6	77.9	-90.00	4,199.6	-855.2	772.9	619.0	153.84	5.024	
11,900.0	7,307.0	11,912.3	7,307.0	78.3	79.6	-90.00	4,299.3	-855.2	765.3	608.0	157.30	4.865	
12,000.0	7,307.0	12,012.0	7,307.0	80.0	81.3	-90.00	4,399.0	-855.2	757.6	596.9	160.75	4.713	
12,100.0	7,307.0	12,111.7	7,307.0	81.8	83.0	-90.00	4,498.7	-855.2	750.0	585.8	164.21	4.567	
12,200.0	7,307.0	12,211.4	7,307.0	83.5	84.7	-90.00	4,598.4	-855.2	742.4	574.7	167.66	4.428	
12,300.0	7,307.0	12,311.1	7,307.0	85.2	86.4	-90.00	4,698.1	-855.2	734.8	563.6	171.12	4.294	
12,400.0	7,307.0	12,410.9	7,307.0	87.0	88.1	-90.00	4,797.8	-855.2	727.1	552.5	174.59	4.165	
12,500.0	7,307.0	12,510.6	7,307.0	88.7	89.8	-90.00	4,897.5	-855.2	719.5	541.5	178.05	4.041	
12,600.0	7,307.0	12,610.3	7,307.0	90.5	91.5	-90.00	4,997.2	-855.2	711.9	530.4	181.51	3.922	
12,700.0	7,307.0	12,710.0	7,307.0	92.2	93.2	-90.00	5,097.0	-855.2	704.3	519.3	184.98	3.807	
12,772.4	7,307.0	12,782.2	7,307.0	93.5	94.4	-90.00	5,169.2	-855.2	698.7	511.2	187.49	3.727 SF	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3E-9H-N267
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Reference Site:	S9-T2N-R67W (Sprague)	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Sprague 3E-9H-N267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 3D-9H-N267 - Hz - Plan #1													Offset Site Error:	0.0 ft
Survey Program: O-Geolink MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
0.0	0.0	0.0	0.0	0.0	0.0	-89.94	0.0	-8.4	8.4					
100.0	100.0	100.0	100.0	0.1	0.1	-89.94	0.0	-8.4	8.4	8.1	0.24	34.322		
200.0	200.0	200.0	200.0	0.3	0.3	-89.94	0.0	-8.4	8.4	7.8	0.59	14.133		
300.0	300.0	300.0	300.0	0.5	0.5	73.36	0.0	-8.4	8.1	7.2	0.94	8.581		
391.1	391.1	391.1	391.1	0.6	0.6	89.98	0.0	-8.4	7.8	6.5	1.27	6.124 CC		
400.0	400.0	400.0	400.0	0.7	0.6	92.21	0.0	-8.4	7.8	6.5	1.30	5.980 ES		
500.0	499.9	499.9	499.9	0.8	0.8	120.97	0.0	-8.4	9.0	7.4	1.65	5.468		
600.0	599.7	599.7	599.7	1.0	1.0	140.52	-0.4	-9.1	13.0	11.0	2.01	6.501		
700.0	699.4	699.6	699.6	1.3	1.2	148.02	-1.7	-11.4	18.7	16.3	2.36	7.905		
800.0	798.9	799.6	799.4	1.5	1.4	150.25	-3.9	-15.2	25.3	22.6	2.73	9.274		
900.0	898.3	899.5	899.1	1.7	1.5	150.21	-7.0	-20.4	32.8	29.7	3.11	10.539		
1,000.0	997.4	999.4	998.7	2.0	1.8	149.14	-10.9	-27.2	41.1	37.6	3.52	11.692		
1,100.0	1,096.3	1,099.2	1,098.1	2.3	2.0	147.60	-15.6	-35.5	50.3	46.4	3.95	12.732		
1,200.0	1,194.9	1,199.0	1,197.3	2.6	2.2	145.86	-21.3	-45.3	60.4	56.0	4.43	13.660		
1,250.0	1,244.1	1,248.9	1,246.7	2.8	2.3	144.98	-24.4	-50.7	65.8	61.2	4.68	14.078		
1,300.0	1,293.3	1,298.7	1,296.2	3.0	2.5	144.02	-27.8	-56.5	71.3	66.4	4.94	14.442		
1,400.0	1,391.6	1,398.1	1,394.6	3.3	2.7	142.18	-34.7	-68.5	82.2	76.7	5.48	15.006		
1,500.0	1,489.9	1,497.5	1,493.0	3.7	3.0	140.77	-41.6	-80.5	93.1	87.1	6.03	15.451		
1,600.0	1,588.3	1,596.9	1,591.4	4.0	3.3	139.66	-48.5	-92.5	104.1	97.5	6.58	15.807		
1,700.0	1,686.6	1,696.3	1,689.8	4.4	3.6	138.76	-55.4	-104.4	115.1	107.9	7.15	16.098		
1,800.0	1,784.9	1,795.6	1,788.2	4.7	3.9	138.01	-62.4	-116.4	126.1	118.4	7.72	16.339		
1,900.0	1,883.2	1,895.0	1,886.6	5.1	4.1	137.39	-69.3	-128.4	137.1	128.8	8.29	16.541		
2,000.0	1,981.6	1,994.4	1,985.0	5.4	4.4	136.86	-76.2	-140.4	148.2	139.3	8.87	16.713		
2,100.0	2,079.9	2,093.8	2,083.5	5.8	4.7	136.40	-83.1	-152.3	159.2	149.8	9.44	16.860		
2,200.0	2,178.2	2,193.2	2,181.9	6.2	5.0	136.01	-90.0	-164.3	170.3	160.3	10.03	16.988		
2,300.0	2,276.6	2,292.5	2,280.3	6.5	5.3	135.66	-96.9	-176.3	181.4	170.8	10.61	17.100		
2,400.0	2,374.9	2,391.9	2,378.7	6.9	5.6	135.35	-103.9	-188.3	192.5	181.3	11.19	17.198		
2,500.0	2,473.2	2,491.3	2,477.1	7.2	5.9	135.07	-110.8	-200.3	203.6	191.8	11.78	17.285		
2,600.0	2,571.5	2,590.7	2,575.5	7.6	6.2	134.83	-117.7	-212.2	214.7	202.3	12.36	17.363		
2,700.0	2,669.9	2,690.0	2,673.9	8.0	6.5	134.61	-124.6	-224.2	225.8	212.8	12.95	17.432		
2,800.0	2,768.2	2,789.4	2,772.3	8.3	6.8	134.40	-131.5	-236.2	236.9	223.3	13.54	17.495		
2,900.0	2,866.5	2,888.8	2,870.7	8.7	7.1	134.22	-138.4	-248.2	248.0	233.8	14.13	17.552		
3,000.0	2,964.8	2,988.2	2,969.2	9.0	7.3	134.05	-145.3	-260.1	259.1	244.4	14.72	17.604		
3,100.0	3,063.2	3,087.6	3,067.6	9.4	7.6	133.90	-152.3	-272.1	270.2	254.9	15.31	17.651		
3,200.0	3,161.6	3,187.0	3,166.0	9.7	7.9	133.70	-159.2	-284.1	280.7	264.8	15.90	17.659		
3,300.0	3,260.4	3,286.5	3,264.6	10.1	8.2	133.27	-166.1	-296.1	290.0	273.5	16.49	17.590		
3,400.0	3,359.4	3,386.1	3,363.2	10.3	8.5	132.61	-173.0	-308.1	298.2	281.1	17.08	17.455		
3,500.0	3,458.7	3,485.8	3,461.9	10.6	8.8	131.74	-180.0	-320.1	305.2	287.6	17.68	17.265		
3,600.0	3,558.1	3,585.4	3,560.6	10.8	9.1	130.66	-186.9	-332.1	311.2	293.0	18.28	17.028		
3,700.0	3,657.7	3,685.0	3,659.2	11.1	9.4	129.38	-193.8	-344.1	316.2	297.4	18.87	16.756		
3,800.0	3,757.5	3,784.6	3,757.8	11.2	9.7	127.88	-200.8	-356.1	320.3	300.9	19.46	16.459		
3,900.0	3,857.4	3,884.0	3,856.3	11.4	10.0	126.18	-207.7	-368.1	323.6	303.6	20.04	16.146		
4,000.0	3,957.3	3,983.4	3,954.7	11.5	10.3	124.26	-214.6	-380.1	326.2	305.6	20.61	15.829		
4,100.0	4,057.3	4,082.6	4,052.9	11.7	10.6	122.12	-221.5	-392.1	328.2	307.1	21.15	15.517		
4,150.0	4,107.3	4,132.1	4,102.0	11.7	10.8	-36.62	-224.9	-398.0	329.1	307.7	21.42	15.364		
4,200.0	4,157.3	4,181.6	4,151.0	11.8	10.9	-37.81	-228.4	-404.0	330.0	308.3	21.68	15.219		
4,300.0	4,257.3	4,280.7	4,249.1	11.9	11.2	-40.16	-235.3	-415.9	332.1	310.0	22.19	14.970		
4,400.0	4,357.3	4,379.7	4,347.1	12.0	11.5	-42.49	-242.2	-427.9	334.9	312.2	22.67	14.774		
4,500.0	4,457.3	4,478.7	4,445.2	12.1	11.8	-44.77	-249.1	-439.8	338.2	315.1	23.13	14.624		
4,600.0	4,557.3	4,577.7	4,543.2	12.2	12.1	-47.00	-256.0	-451.7	342.1	318.5	23.56	14.518		
4,700.0	4,657.3	4,676.8	4,641.3	12.3	12.4	-49.19	-262.8	-463.7	346.4	322.5	23.97	14.451		
4,800.0	4,757.3	4,775.8	4,739.4	12.4	12.7	-51.31	-269.7	-475.6	351.3	326.9	24.36	14.420		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3E-9H-N267
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Reference Site:	S9-T2N-R67W (Sprague)	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Sprague 3E-9H-N267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 3D-9H-N267 - Hz - Plan #1													Offset Site Error:	0.0 ft
Survey Program: O-Geolink MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
4,900.0	4,857.3	4,874.8	4,837.4	12.6	13.0	-53.38	-276.6	-487.5	356.6	331.9	24.73	14.422		
5,000.0	4,957.3	4,973.8	4,935.5	12.7	13.3	-55.38	-283.5	-499.5	362.4	337.3	25.08	14.453		
5,100.0	5,057.3	5,072.9	5,033.6	12.8	13.6	-57.32	-290.4	-511.4	368.6	343.2	25.41	14.510		
5,200.0	5,157.3	5,171.9	5,131.6	12.9	13.9	-59.20	-297.3	-523.3	375.3	349.6	25.72	14.591		
5,300.0	5,257.3	5,270.9	5,229.7	13.0	14.2	-61.00	-304.2	-535.3	382.3	356.3	26.02	14.694		
5,400.0	5,357.3	5,370.0	5,327.7	13.2	14.5	-62.75	-311.1	-547.2	389.7	363.4	26.30	14.815		
5,500.0	5,457.3	5,469.0	5,425.8	13.3	14.8	-64.42	-318.0	-559.2	397.5	370.9	26.58	14.954		
5,600.0	5,557.3	5,568.0	5,523.9	13.4	15.1	-66.03	-324.9	-571.1	405.5	378.7	26.85	15.107		
5,700.0	5,657.3	5,667.0	5,621.9	13.5	15.3	-67.58	-331.8	-583.0	413.9	386.8	27.10	15.273		
5,800.0	5,757.3	5,766.1	5,720.0	13.7	15.6	-69.07	-338.6	-595.0	422.6	395.3	27.35	15.451		
5,900.0	5,857.3	5,868.4	5,821.4	13.8	15.9	-70.50	-345.6	-606.9	431.3	403.7	27.59	15.632		
6,000.0	5,957.3	5,973.0	5,925.3	13.9	16.2	-71.73	-351.8	-617.7	439.1	411.3	27.83	15.777		
6,100.0	6,057.3	6,078.0	6,029.7	14.1	16.5	-72.74	-357.0	-626.8	445.9	417.8	28.08	15.881		
6,200.0	6,157.3	6,183.3	6,134.7	14.2	16.7	-73.55	-361.3	-634.2	451.5	423.2	28.32	15.940		
6,300.0	6,257.3	6,288.9	6,240.0	14.3	16.9	-74.16	-364.7	-640.0	455.9	427.3	28.58	15.954		
6,400.0	6,357.3	6,394.7	6,345.7	14.5	17.0	-74.58	-367.1	-644.2	459.0	430.2	28.83	15.920		
6,500.0	6,457.3	6,500.6	6,451.7	14.6	17.2	-74.83	-368.5	-646.6	460.9	431.8	29.10	15.840		
6,600.0	6,557.3	6,606.3	6,557.3	14.7	17.3	-74.91	-368.9	-647.3	461.5	432.1	29.37	15.713		
6,700.0	6,657.3	6,706.3	6,657.3	14.9	17.4	-74.91	-368.9	-647.3	461.5	431.8	29.64	15.568		
6,776.8	6,734.0	6,783.0	6,734.0	15.0	17.5	-74.91	-368.9	-647.3	461.5	431.6	29.85	15.458		
6,800.0	6,757.3	6,806.3	6,757.3	15.0	17.5	-74.98	-368.9	-647.3	461.4	431.5	29.90	15.428		
6,850.0	6,807.1	6,856.1	6,807.1	15.0	17.6	-75.59	-368.9	-647.3	460.3	430.4	29.90	15.394		
6,900.0	6,856.3	6,905.3	6,856.3	15.0	17.7	-76.81	-368.9	-647.3	458.2	428.5	29.77	15.394		
6,950.0	6,904.7	6,953.6	6,904.7	14.9	17.7	-78.60	-368.9	-647.3	455.4	425.9	29.52	15.427		
7,000.0	6,951.7	7,000.7	6,951.7	14.8	17.8	-80.90	-368.9	-647.3	452.2	423.0	29.18	15.496		
7,050.0	6,997.0	7,042.6	6,993.6	14.7	17.8	-83.27	-367.7	-647.3	449.3	420.5	28.79	15.607		
7,100.0	7,040.4	7,085.2	7,035.9	14.5	17.8	-85.69	-363.3	-647.3	447.1	418.7	28.35	15.767		
7,150.0	7,081.4	7,129.0	7,079.0	14.4	17.8	-88.16	-355.5	-647.2	445.7	417.8	27.91	15.972		
7,195.3	7,116.3	7,169.9	7,118.6	14.2	17.8	-90.44	-345.3	-647.1	445.3	417.8	27.50	16.193		
7,200.0	7,119.8	7,174.2	7,122.8	14.2	17.8	-90.68	-344.1	-647.0	445.3	417.9	27.46	16.218		
7,250.0	7,155.3	7,221.0	7,166.9	14.0	17.7	-93.22	-328.7	-646.9	445.9	418.9	27.02	16.502		
7,300.0	7,187.5	7,269.6	7,211.3	13.9	17.7	-95.77	-308.9	-646.6	447.6	421.0	26.61	16.818		
7,350.0	7,216.3	7,320.3	7,255.7	13.7	17.6	-98.31	-284.3	-646.3	450.2	424.0	26.23	17.162		
7,400.0	7,241.4	7,373.4	7,299.5	13.6	17.5	-100.84	-254.5	-646.0	453.9	428.0	25.90	17.525		
7,450.0	7,262.7	7,429.0	7,342.4	13.6	17.5	-103.33	-219.0	-645.6	458.4	432.8	25.61	17.897		
7,500.0	7,280.0	7,487.7	7,383.6	13.6	17.4	-105.78	-177.3	-645.1	463.6	438.2	25.38	18.268		
7,550.0	7,293.0	7,549.7	7,422.3	13.6	17.3	-108.16	-128.9	-644.5	469.5	444.2	25.21	18.622		
7,600.0	7,301.9	7,615.3	7,457.3	13.7	17.3	-110.45	-73.5	-643.9	475.6	450.5	25.13	18.929		
7,650.0	7,306.4	7,684.8	7,487.2	13.8	17.4	-112.61	-10.8	-643.1	481.9	456.7	25.12	19.179		
7,676.8	7,307.0	7,723.7	7,500.5	13.9	17.5	-113.69	25.7	-642.7	485.1	460.0	25.17	19.275		
7,677.6	7,307.0	7,725.0	7,500.9	13.9	17.5	-113.74	26.9	-642.7	485.2	460.1	25.17	19.278		
7,700.0	7,307.0	7,758.6	7,510.4	14.0	17.5	-114.78	59.2	-642.3	487.7	462.4	25.23	19.329		
7,800.0	7,307.0	7,913.3	7,529.0	14.6	18.1	-116.83	212.3	-640.5	491.8	465.6	26.23	18.754		
7,900.0	7,307.0	8,013.3	7,529.0	15.3	18.7	-116.89	312.3	-639.4	490.8	463.2	27.60	17.784		
8,000.0	7,307.0	8,113.3	7,529.0	16.2	19.5	-116.96	412.3	-638.2	489.8	460.5	29.24	16.751		
8,100.0	7,307.0	8,213.3	7,529.0	17.2	20.3	-117.02	512.3	-637.0	488.7	457.6	31.10	15.713		
8,200.0	7,307.0	8,313.3	7,529.0	18.4	21.3	-117.08	612.3	-635.8	487.7	454.5	33.16	14.709		
8,300.0	7,307.0	8,413.3	7,529.0	19.6	22.3	-117.14	712.2	-634.7	486.7	451.3	35.37	13.761		
8,400.0	7,307.0	8,513.3	7,529.0	20.9	23.5	-117.20	812.2	-633.5	485.6	447.9	37.70	12.882		
8,500.0	7,307.0	8,613.3	7,529.0	22.3	24.7	-117.27	912.2	-632.3	484.6	444.5	40.14	12.074		
8,600.0	7,307.0	8,713.3	7,529.0	23.7	26.0	-117.33	1,012.2	-631.2	483.6	440.9	42.66	11.336		
8,700.0	7,307.0	8,813.3	7,529.0	25.1	27.3	-117.39	1,112.2	-630.0	482.5	437.3	45.25	10.664		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3E-9H-N267
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Reference Site:	S9-T2N-R67W (Sprague)	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Sprague 3E-9H-N267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 3D-9H-N267 - Hz - Plan #1												Offset Site Error:	0.0 ft
Survey Program: 0-Geolink MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)			
8,800.0	7,307.0	8,913.2	7,529.0	26.6	28.7	-117.46	1,212.2	-628.8	481.5	433.6	47.90	10.053	
8,900.0	7,307.0	9,013.2	7,529.0	28.1	30.1	-117.52	1,312.2	-627.7	480.5	429.9	50.60	9.496	
9,000.0	7,307.0	9,113.2	7,529.0	29.7	31.6	-117.58	1,412.1	-626.5	479.5	426.1	53.33	8.990	
9,100.0	7,307.0	9,213.2	7,529.0	31.3	33.0	-117.65	1,512.1	-625.3	478.4	422.3	56.10	8.527	
9,177.6	7,307.0	9,290.8	7,529.0	32.5	34.2	-117.70	1,589.8	-624.4	477.6	419.4	58.27	8.196	
9,200.0	7,307.0	9,313.2	7,529.0	32.9	34.6	-117.71	1,612.1	-624.1	477.4	418.6	58.86	8.111	
9,244.1	7,307.0	9,357.3	7,529.0	33.6	35.2	-117.72	1,656.2	-623.6	477.3	417.3	60.02	7.952	
9,300.0	7,307.0	9,413.2	7,529.0	34.5	36.1	-117.70	1,712.1	-623.0	477.5	416.0	61.50	7.765	
9,400.0	7,307.0	9,513.2	7,529.0	36.1	37.6	-117.61	1,812.1	-621.8	479.2	415.0	64.19	7.464	
9,500.0	7,307.0	9,613.1	7,529.0	37.7	39.2	-117.43	1,912.0	-620.6	482.4	415.4	66.94	7.206	
9,600.0	7,307.0	9,713.0	7,529.0	39.3	40.8	-117.16	2,011.9	-619.5	487.1	417.4	69.73	6.986	
9,700.0	7,307.0	9,812.7	7,529.0	40.9	42.4	-116.81	2,111.6	-618.3	493.4	420.8	72.57	6.799	
9,777.0	7,307.0	9,889.4	7,529.0	42.2	43.6	-116.50	2,188.3	-617.4	499.3	424.6	74.79	6.677	
9,800.0	7,307.0	9,912.3	7,529.0	42.6	44.0	-116.39	2,211.2	-617.1	501.3	425.7	75.53	6.636	
9,900.0	7,307.0	10,011.9	7,529.0	44.2	45.6	-115.92	2,310.8	-616.0	509.6	430.8	78.79	6.468	
10,000.0	7,307.0	10,111.5	7,529.0	45.9	47.2	-115.47	2,410.3	-614.8	518.0	435.9	82.06	6.312	
10,100.0	7,307.0	10,211.1	7,529.0	47.6	48.8	-115.04	2,509.9	-613.6	526.4	441.0	85.36	6.167	
10,200.0	7,307.0	10,310.6	7,529.0	49.2	50.5	-114.62	2,609.5	-612.5	534.8	446.1	88.67	6.031	
10,300.0	7,307.0	10,410.2	7,529.0	50.9	52.1	-114.21	2,709.0	-611.3	543.3	451.3	92.00	5.905	
10,400.0	7,307.0	10,509.8	7,529.0	52.6	53.8	-113.82	2,808.6	-610.1	551.8	456.4	95.35	5.787	
10,500.0	7,307.0	10,609.3	7,529.0	54.3	55.4	-113.43	2,908.1	-609.0	560.3	461.6	98.71	5.676	
10,597.0	7,307.0	10,705.9	7,529.0	55.9	57.0	-113.07	3,004.7	-607.8	568.6	466.6	101.99	5.575	
10,600.0	7,307.0	10,708.9	7,529.0	56.0	57.1	-113.06	3,007.7	-607.8	568.8	466.7	102.10	5.571	
10,700.0	7,307.0	10,808.5	7,529.0	57.7	58.7	-112.70	3,107.3	-606.6	576.5	470.7	105.83	5.448	
10,800.0	7,307.0	10,908.3	7,529.0	59.4	60.4	-112.43	3,207.1	-605.5	582.7	473.2	109.50	5.321	
10,900.0	7,307.0	11,014.4	7,529.0	61.1	62.2	-112.24	3,313.2	-603.8	586.9	473.7	113.20	5.185	
11,000.0	7,307.0	11,124.9	7,529.0	62.8	64.1	-112.19	3,423.6	-600.2	587.8	471.0	116.84	5.031	
11,100.0	7,307.0	11,231.2	7,529.0	64.5	65.8	-112.29	3,529.8	-594.9	585.5	465.3	120.26	4.869	
11,200.0	7,307.0	11,331.1	7,529.0	66.2	67.5	-112.48	3,629.5	-589.5	581.3	457.8	123.48	4.707	
11,300.0	7,307.0	11,430.9	7,529.0	68.0	69.2	-112.75	3,729.2	-584.1	575.4	448.8	126.60	4.545	
11,400.0	7,307.0	11,530.6	7,529.0	69.7	70.9	-113.09	3,828.7	-578.7	568.0	438.4	129.58	4.383	
11,500.0	7,307.0	11,630.1	7,529.0	71.4	72.6	-113.52	3,928.1	-573.3	559.0	426.5	132.43	4.221	
11,600.0	7,307.0	11,729.4	7,529.0	73.1	74.3	-114.04	4,027.3	-567.9	548.4	413.3	135.12	4.059	
11,634.3	7,307.0	11,763.5	7,529.0	73.7	74.8	-114.25	4,061.3	-566.1	544.4	408.4	136.00	4.003	
11,700.0	7,307.0	11,828.6	7,529.0	74.9	75.9	-114.62	4,126.3	-562.6	536.6	398.9	137.67	3.898	
11,800.0	7,307.0	11,927.7	7,529.0	76.6	77.6	-115.21	4,225.3	-557.2	524.8	384.6	140.17	3.744	
11,900.0	7,307.0	12,026.9	7,529.0	78.3	79.3	-115.83	4,324.3	-551.8	513.0	370.5	142.59	3.598	
12,000.0	7,307.0	12,126.0	7,529.0	80.0	81.0	-116.48	4,423.3	-546.5	501.4	356.4	144.93	3.459	
12,100.0	7,307.0	12,225.2	7,529.0	81.8	82.7	-117.15	4,522.3	-541.1	489.7	342.5	147.19	3.327	
12,200.0	7,307.0	12,324.3	7,529.0	83.5	84.4	-117.86	4,621.3	-535.8	478.2	328.8	149.34	3.202	
12,300.0	7,307.0	12,423.5	7,529.0	85.2	86.1	-118.61	4,720.3	-530.4	466.7	315.3	151.40	3.083	
12,400.0	7,307.0	12,522.6	7,529.0	87.0	87.8	-119.39	4,819.3	-525.0	455.3	302.0	153.33	2.969	
12,500.0	7,307.0	12,621.8	7,529.0	88.7	89.5	-120.21	4,918.3	-519.7	444.0	288.8	155.14	2.862	
12,600.0	7,307.0	12,720.9	7,529.0	90.5	91.2	-121.08	5,017.3	-514.3	432.8	276.0	156.80	2.760	
12,700.0	7,307.0	12,820.1	7,529.0	92.2	92.9	-121.99	5,116.3	-508.9	421.6	263.3	158.31	2.663	
12,772.4	7,307.0	12,876.7	7,529.0	93.5	93.9	-122.53	5,172.8	-505.9	413.9	254.6	159.32	2.598 SF	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3E-9H-N267
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Reference Site:	S9-T2N-R67W (Sprague)	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Sprague 3E-9H-N267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 3F-9H-N267 - Hz - Plan #1													Offset Site Error:	0.0 ft
Survey Program: O-Geolink MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	90.04	0.0	11.2	11.2					
100.0	100.0	100.0	100.0	0.1	0.1	90.04	0.0	11.2	11.2	10.9	0.24	45.763		
200.0	200.0	200.0	200.0	0.3	0.3	90.04	0.0	11.2	11.2	10.6	0.59	18.844 CC, ES		
300.0	300.0	300.0	300.0	0.5	0.5	-116.38	0.0	11.2	11.5	10.6	0.94	12.237		
400.0	400.0	400.0	400.0	0.7	0.6	-126.83	0.0	11.2	12.9	11.6	1.30	9.974		
500.0	499.9	499.9	499.9	0.8	0.8	-139.47	0.0	11.2	15.9	14.3	1.65	9.660		
600.0	599.7	599.8	599.8	1.0	1.0	-148.07	-0.8	11.5	20.7	18.7	2.00	10.346		
700.0	699.4	699.7	699.7	1.3	1.2	-151.53	-3.3	12.4	26.7	24.4	2.36	11.338		
800.0	798.9	799.6	799.5	1.5	1.4	-152.25	-7.3	14.0	33.8	31.1	2.73	12.399		
900.0	898.3	899.5	899.2	1.7	1.5	-151.55	-13.0	16.1	41.8	38.7	3.11	13.453		
1,000.0	997.4	999.3	998.7	2.0	1.8	-150.14	-20.4	18.9	50.8	47.3	3.52	14.464		
1,100.0	1,096.3	1,099.1	1,098.0	2.3	2.0	-148.40	-29.3	22.2	60.9	57.0	3.95	15.413		
1,200.0	1,194.9	1,198.7	1,197.0	2.6	2.2	-146.55	-39.8	26.2	72.0	67.6	4.42	16.284		
1,250.0	1,244.1	1,248.5	1,246.4	2.8	2.3	-145.62	-45.7	28.4	78.0	73.3	4.68	16.684		
1,300.0	1,293.3	1,298.3	1,295.7	3.0	2.5	-144.65	-51.9	30.8	84.1	79.1	4.94	17.036		
1,400.0	1,391.6	1,397.5	1,394.0	3.3	2.7	-142.80	-64.9	35.7	96.2	90.7	5.47	17.583		
1,500.0	1,489.9	1,496.7	1,492.2	3.7	3.0	-141.37	-77.8	40.6	108.4	102.4	6.02	18.011		
1,600.0	1,588.3	1,596.0	1,590.5	4.0	3.3	-140.23	-90.7	45.5	120.7	114.1	6.58	18.351		
1,700.0	1,686.6	1,695.2	1,688.7	4.4	3.6	-139.30	-103.6	50.3	133.0	125.8	7.14	18.628		
1,800.0	1,784.9	1,794.4	1,787.0	4.7	3.8	-138.53	-116.5	55.2	145.3	137.6	7.71	18.855		
1,900.0	1,883.2	1,893.6	1,885.2	5.1	4.1	-137.88	-129.5	60.1	157.7	149.4	8.28	19.046		
2,000.0	1,981.6	1,992.8	1,983.5	5.4	4.4	-137.32	-142.4	65.0	170.0	161.2	8.85	19.206		
2,100.0	2,079.9	2,092.1	2,081.7	5.8	4.7	-136.84	-155.3	69.9	182.4	173.0	9.43	19.344		
2,200.0	2,178.2	2,191.3	2,180.0	6.2	5.0	-136.42	-168.2	74.7	194.8	184.8	10.01	19.462		
2,300.0	2,276.6	2,290.5	2,278.3	6.5	5.3	-136.05	-181.1	79.6	207.2	196.6	10.59	19.566		
2,400.0	2,374.9	2,389.7	2,376.5	6.9	5.6	-135.73	-194.0	84.5	219.6	208.4	11.17	19.656		
2,500.0	2,473.2	2,488.9	2,474.8	7.2	5.9	-135.43	-207.0	89.4	232.0	220.3	11.76	19.736		
2,600.0	2,571.5	2,588.2	2,573.0	7.6	6.1	-135.17	-219.9	94.3	244.4	232.1	12.34	19.808		
2,700.0	2,669.9	2,687.4	2,671.3	8.0	6.4	-134.93	-232.8	99.1	256.9	243.9	12.93	19.872		
2,800.0	2,768.2	2,786.6	2,769.5	8.3	6.7	-134.72	-245.7	104.0	269.3	255.8	13.51	19.929		
2,900.0	2,866.5	2,885.8	2,867.8	8.7	7.0	-134.52	-258.6	108.9	281.7	267.6	14.10	19.981		
3,000.0	2,964.8	2,985.0	2,966.0	9.0	7.3	-134.34	-271.5	113.8	294.1	279.5	14.69	20.028		
3,100.0	3,063.2	3,084.3	3,064.3	9.4	7.6	-134.17	-284.5	118.7	306.6	291.3	15.27	20.071		
3,200.0	3,161.6	3,183.5	3,162.6	9.7	7.9	-133.99	-297.4	123.6	318.4	302.6	15.86	20.077		
3,300.0	3,260.4	3,282.9	3,261.0	10.1	8.2	-133.60	-310.3	128.4	329.1	312.6	16.45	20.009		
3,400.0	3,359.4	3,382.4	3,359.5	10.3	8.5	-133.02	-323.3	133.3	338.6	321.5	17.03	19.878		
3,500.0	3,458.7	3,481.9	3,458.1	10.6	8.8	-132.25	-336.2	138.2	346.9	329.3	17.61	19.695		
3,600.0	3,558.1	3,581.5	3,556.7	10.8	9.1	-131.30	-349.2	143.1	354.2	336.0	18.19	19.467		
3,700.0	3,657.7	3,681.0	3,655.2	11.1	9.4	-130.17	-362.1	148.0	360.4	341.7	18.77	19.205		
3,800.0	3,757.5	3,780.5	3,753.8	11.2	9.7	-128.87	-375.1	152.9	365.7	346.4	19.33	18.918		
3,900.0	3,857.4	3,879.9	3,852.2	11.4	10.0	-127.39	-388.0	157.8	370.2	350.3	19.89	18.614		
4,000.0	3,957.3	3,979.2	3,950.6	11.5	10.3	-125.73	-401.0	162.7	373.9	353.4	20.43	18.303		
4,100.0	4,057.3	4,078.4	4,048.8	11.7	10.6	-123.88	-413.9	167.6	376.9	355.9	20.94	17.995		
4,150.0	4,107.3	4,128.0	4,097.8	11.7	10.7	79.53	-420.3	170.0	378.2	357.0	21.20	17.842		
4,200.0	4,157.3	4,177.5	4,146.9	11.8	10.9	80.56	-426.8	172.4	379.5	358.1	21.45	17.695		
4,300.0	4,257.3	4,276.9	4,245.4	11.9	11.2	82.58	-439.7	177.3	382.5	360.5	21.93	17.439		
4,400.0	4,357.3	4,377.8	4,345.4	12.0	11.4	84.42	-451.5	181.8	385.6	363.2	22.37	17.234		
4,500.0	4,457.3	4,479.1	4,446.1	12.1	11.7	85.98	-461.8	185.7	388.6	365.8	22.77	17.061		
4,600.0	4,557.3	4,580.8	4,547.4	12.2	11.9	87.27	-470.4	188.9	391.3	368.1	23.14	16.909		
4,700.0	4,657.3	4,682.7	4,649.1	12.3	12.1	88.30	-477.4	191.6	393.6	370.1	23.48	16.766		
4,800.0	4,757.3	4,784.9	4,751.1	12.4	12.3	89.07	-482.6	193.6	395.4	371.6	23.78	16.625		
4,900.0	4,857.3	4,887.3	4,853.4	12.6	12.4	89.59	-486.2	194.9	396.7	372.6	24.07	16.481		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3E-9H-N267
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Reference Site:	S9-T2N-R67W (Sprague)	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Sprague 3E-9H-N267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 3F-9H-N267 - Hz - Plan #1													Offset Site Error: 0.0 ft			
Survey Program: 0-Geolink MWD															Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor				
5,000.0	4,957.3	4,989.7	4,955.8	12.7	12.6	89.86	-488.1	195.6	397.4	373.0	24.33	16.330				
5,100.0	5,057.3	5,091.2	5,057.3	12.8	12.7	89.91	-488.4	195.7	397.5	372.9	24.59	16.166				
5,200.0	5,157.3	5,191.2	5,157.3	12.9	12.8	89.91	-488.4	195.7	397.5	372.6	24.84	16.002				
5,300.0	5,257.3	5,291.2	5,257.3	13.0	12.9	89.91	-488.4	195.7	397.5	372.4	25.09	15.840				
5,400.0	5,357.3	5,391.2	5,357.3	13.2	13.1	89.91	-488.4	195.7	397.5	372.1	25.35	15.679				
5,500.0	5,457.3	5,491.2	5,457.3	13.3	13.2	89.91	-488.4	195.7	397.5	371.9	25.61	15.521				
5,600.0	5,557.3	5,591.2	5,557.3	13.4	13.3	89.91	-488.4	195.7	397.5	371.6	25.87	15.364				
5,700.0	5,657.3	5,691.2	5,657.3	13.5	13.5	89.91	-488.4	195.7	397.5	371.4	26.13	15.209				
5,800.0	5,757.3	5,791.2	5,757.3	13.7	13.6	89.91	-488.4	195.7	397.5	371.1	26.40	15.057				
5,900.0	5,857.3	5,891.2	5,857.3	13.8	13.7	89.91	-488.4	195.7	397.5	370.8	26.67	14.906				
6,000.0	5,957.3	5,991.2	5,957.3	13.9	13.8	89.91	-488.4	195.7	397.5	370.6	26.94	14.757				
6,100.0	6,057.3	6,091.2	6,057.3	14.1	14.0	89.91	-488.4	195.7	397.5	370.3	27.21	14.610				
6,200.0	6,157.3	6,191.2	6,157.3	14.2	14.1	89.91	-488.4	195.7	397.5	370.0	27.48	14.465				
6,300.0	6,257.3	6,291.2	6,257.3	14.3	14.2	89.91	-488.4	195.7	397.5	369.7	27.75	14.322				
6,400.0	6,357.3	6,391.2	6,357.3	14.5	14.4	89.91	-488.4	195.7	397.5	369.5	28.03	14.181				
6,500.0	6,457.3	6,491.2	6,457.3	14.6	14.5	89.91	-488.4	195.7	397.5	369.2	28.31	14.042				
6,600.0	6,557.3	6,591.2	6,557.3	14.7	14.6	89.91	-488.4	195.7	397.5	368.9	28.59	13.905				
6,700.0	6,657.3	6,691.2	6,657.3	14.9	14.8	89.91	-488.4	195.7	397.5	368.6	28.87	13.770				
6,776.8	6,734.0	6,767.9	6,734.0	15.0	14.9	89.91	-488.4	195.7	397.5	368.4	29.08	13.668				
6,800.0	6,757.3	6,791.2	6,757.3	15.0	14.9	89.97	-488.4	195.7	397.5	368.4	29.14	13.641				
6,804.9	6,762.2	6,796.1	6,762.2	15.0	14.9	90.00	-488.4	195.7	397.5	368.3	29.15	13.638				
6,850.0	6,807.1	6,841.0	6,807.1	15.0	15.0	90.57	-488.4	195.7	397.5	368.3	29.22	13.605				
6,900.0	6,856.3	6,890.2	6,856.3	15.0	15.1	91.76	-488.4	195.7	397.7	368.4	29.25	13.596				
6,950.0	6,904.7	6,938.6	6,904.7	14.9	15.1	93.48	-488.4	195.7	398.3	369.1	29.23	13.624				
7,000.0	6,951.7	6,985.6	6,951.7	14.8	15.2	95.62	-488.4	195.7	399.7	370.6	29.16	13.708				
7,050.0	6,997.0	7,035.9	7,002.0	14.7	15.2	98.13	-486.5	195.7	402.2	373.2	28.99	13.875				
7,100.0	7,040.4	7,088.7	7,054.3	14.5	15.2	100.64	-479.9	195.7	405.6	376.9	28.72	14.122				
7,150.0	7,081.4	7,143.6	7,107.9	14.4	15.2	103.10	-467.9	195.7	409.8	381.4	28.36	14.448				
7,200.0	7,119.8	7,201.0	7,162.4	14.2	15.1	105.49	-449.9	195.7	414.7	386.7	27.92	14.850				
7,250.0	7,155.3	7,261.1	7,217.2	14.0	14.9	107.78	-425.4	195.7	420.1	392.6	27.41	15.322				
7,300.0	7,187.5	7,324.1	7,271.6	13.9	14.7	109.96	-393.7	195.7	425.8	398.9	26.86	15.850				
7,350.0	7,216.3	7,390.1	7,324.5	13.7	14.5	112.00	-354.2	195.7	431.6	405.3	26.30	16.412				
7,400.0	7,241.4	7,459.3	7,374.6	13.6	14.3	113.85	-306.7	195.7	437.3	411.5	25.76	16.977				
7,450.0	7,262.7	7,531.5	7,420.5	13.6	14.1	115.49	-250.9	195.7	442.5	417.3	25.29	17.502				
7,500.0	7,280.0	7,606.7	7,460.4	13.6	13.9	116.88	-187.3	195.7	447.2	422.3	24.93	17.938				
7,550.0	7,293.0	7,684.4	7,492.5	13.6	13.8	117.97	-116.6	195.7	450.9	426.2	24.75	18.223				
7,600.0	7,301.9	7,764.2	7,515.2	13.7	13.9	118.73	-40.2	195.7	453.6	428.8	24.77	18.313				
7,650.0	7,306.4	7,845.2	7,527.3	13.8	14.1	119.13	39.9	195.7	455.0	430.0	25.02	18.187				
7,676.8	7,307.0	7,888.9	7,529.0	13.9	14.2	119.19	83.5	195.7	455.2	430.0	25.25	18.027				
7,677.6	7,307.0	7,890.2	7,529.0	13.9	14.2	119.19	84.8	195.7	455.2	430.0	25.26	18.021				
7,700.0	7,307.0	7,912.5	7,529.0	14.0	14.3	119.19	107.2	195.7	455.2	429.8	25.45	17.885				
7,800.0	7,307.0	8,012.5	7,529.0	14.6	14.9	119.19	207.2	195.7	455.2	428.7	26.47	17.198				
7,900.0	7,307.0	8,112.5	7,529.0	15.3	15.6	119.19	307.2	195.7	455.2	427.4	27.79	16.381				
8,000.0	7,307.0	8,212.5	7,529.0	16.2	16.5	119.19	407.2	195.7	455.2	425.8	29.37	15.498				
8,100.0	7,307.0	8,312.5	7,529.0	17.2	17.5	119.19	507.2	195.7	455.2	424.0	31.17	14.601				
8,200.0	7,307.0	8,412.5	7,529.0	18.4	18.6	119.19	607.2	195.7	455.2	422.0	33.17	13.724				
8,300.0	7,307.0	8,512.5	7,529.0	19.6	19.8	119.19	707.2	195.7	455.1	419.8	35.31	12.890				
8,400.0	7,307.0	8,612.5	7,529.0	20.9	21.1	119.19	807.2	195.7	455.1	417.6	37.58	12.110				
8,500.0	7,307.0	8,712.5	7,529.0	22.3	22.5	119.19	907.2	195.7	455.1	415.2	39.96	11.388				
8,600.0	7,307.0	8,812.5	7,529.0	23.7	23.9	119.20	1,007.2	195.7	455.1	412.7	42.43	10.725				
8,700.0	7,307.0	8,912.5	7,529.0	25.1	25.3	119.20	1,107.2	195.7	455.1	410.1	44.98	10.119				
8,800.0	7,307.0	9,012.5	7,529.0	26.6	26.8	119.20	1,207.2	195.7	455.1	407.5	47.58	9.565				

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3E-9H-N267
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Reference Site:	S9-T2N-R67W (Sprague)	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Sprague 3E-9H-N267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 3F-9H-N267 - Hz - Plan #1												Offset Site Error:	0.0 ft
Survey Program: 0-Geolink MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)			
8,900.0	7,307.0	9,112.5	7,529.0	28.1	28.3	119.20	1,307.2	195.7	455.1	404.8	50.24	9.059	
9,000.0	7,307.0	9,212.5	7,529.0	29.7	29.9	119.20	1,407.2	195.7	455.1	402.1	52.94	8.596	
9,100.0	7,307.0	9,312.5	7,529.0	31.3	31.4	119.20	1,507.2	195.7	455.1	399.4	55.68	8.173	
9,177.6	7,307.0	9,390.2	7,529.0	32.5	32.6	119.20	1,584.8	195.7	455.1	397.2	57.83	7.869	
9,200.0	7,307.0	9,412.5	7,529.0	32.9	33.0	119.20	1,607.2	195.7	455.0	396.6	58.45	7.785	
9,300.0	7,307.0	9,512.5	7,529.0	34.5	34.6	119.29	1,707.2	195.7	453.9	392.7	61.21	7.416	
9,400.0	7,307.0	9,612.5	7,529.0	36.1	36.2	119.49	1,807.1	195.7	451.3	387.4	63.90	7.062	
9,500.0	7,307.0	9,712.4	7,529.0	37.7	37.8	119.81	1,907.0	195.7	447.1	380.6	66.53	6.721	
9,600.0	7,307.0	9,812.2	7,529.0	39.3	39.5	120.26	2,006.8	195.7	441.5	372.4	69.05	6.393	
9,700.0	7,307.0	9,911.8	7,529.0	40.9	41.1	120.84	2,106.4	195.7	434.4	362.9	71.46	6.079	
9,777.0	7,307.0	9,988.4	7,529.0	42.2	42.4	121.39	2,183.1	195.7	427.9	354.7	73.21	5.845	
9,800.0	7,307.0	10,011.3	7,529.0	42.6	42.8	121.56	2,206.0	195.7	425.9	352.1	73.75	5.775	
9,900.0	7,307.0	10,110.8	7,529.0	44.2	44.4	122.31	2,305.4	195.7	417.0	340.9	76.03	5.484	
10,000.0	7,307.0	10,210.2	7,529.0	45.9	46.1	123.09	2,404.9	195.7	408.2	329.9	78.25	5.216	
10,100.0	7,307.0	10,309.7	7,529.0	47.6	47.7	123.91	2,504.3	195.7	399.4	319.1	80.38	4.969	
10,200.0	7,307.0	10,409.1	7,529.0	49.2	49.4	124.76	2,603.8	195.7	390.8	308.4	82.43	4.741	
10,300.0	7,307.0	10,508.6	7,529.0	50.9	51.1	125.66	2,703.2	195.7	382.2	297.9	84.37	4.530	
10,400.0	7,307.0	10,608.0	7,529.0	52.6	52.8	126.59	2,802.7	195.7	373.8	287.6	86.21	4.336	
10,500.0	7,307.0	10,707.5	7,529.0	54.3	54.5	127.56	2,902.1	195.7	365.4	277.5	87.93	4.156	
10,597.0	7,307.0	10,803.9	7,529.0	55.9	56.1	128.55	2,998.6	195.7	357.4	267.9	89.46	3.995	
10,600.0	7,307.0	10,806.9	7,529.0	56.0	56.1	128.58	3,001.6	195.7	357.2	267.7	89.51	3.990	
10,700.0	7,307.0	10,906.5	7,529.0	57.7	57.8	129.51	3,101.1	195.7	349.7	258.5	91.20	3.835	
10,800.0	7,307.0	11,006.2	7,529.0	59.4	59.5	130.29	3,200.8	195.7	343.8	250.8	92.95	3.698	
10,900.0	7,307.0	11,106.0	7,529.0	61.1	61.2	130.92	3,300.6	195.7	339.2	244.4	94.80	3.578	
11,000.0	7,307.0	11,205.9	7,529.0	62.8	63.0	131.38	3,400.5	195.7	335.9	239.1	96.80	3.470	
11,100.0	7,307.0	11,305.9	7,529.0	64.5	64.7	131.66	3,500.5	195.7	334.0	235.0	98.99	3.374	
11,197.1	7,307.0	11,402.9	7,529.0	66.2	66.3	131.75	3,597.6	195.7	333.4	232.1	101.32	3.290	
11,200.0	7,307.0	11,405.9	7,529.0	66.2	66.4	131.75	3,600.5	195.7	333.4	232.0	101.40	3.288	
11,300.0	7,307.0	11,505.9	7,529.0	68.0	68.1	131.65	3,700.5	195.7	334.1	230.0	104.05	3.211	
11,400.0	7,307.0	11,605.8	7,529.0	69.7	69.8	131.36	3,800.4	195.7	336.1	229.1	106.96	3.142	
11,500.0	7,307.0	11,705.7	7,529.0	71.4	71.5	130.89	3,900.3	195.7	339.4	229.3	110.14	3.082	
11,600.0	7,307.0	11,805.5	7,529.0	73.1	73.3	130.25	4,000.2	195.7	344.1	230.5	113.57	3.030	
11,634.3	7,307.0	11,839.8	7,529.0	73.7	73.8	130.00	4,034.4	195.7	346.0	231.2	114.81	3.014	
11,700.0	7,307.0	11,905.2	7,529.0	74.9	75.0	129.47	4,099.9	195.7	349.9	232.5	117.35	2.981	
11,800.0	7,307.0	12,005.0	7,529.0	76.6	76.7	128.69	4,199.6	195.7	355.8	234.5	121.23	2.935	
11,900.0	7,307.0	12,104.7	7,529.0	78.3	78.4	127.94	4,299.3	195.7	361.8	236.7	125.11	2.892	
12,000.0	7,307.0	12,204.4	7,529.0	80.0	80.1	127.21	4,399.0	195.7	367.8	238.8	128.99	2.852	
12,100.0	7,307.0	12,304.1	7,529.0	81.8	81.9	126.50	4,498.7	195.7	373.9	241.1	132.87	2.814	
12,200.0	7,307.0	12,403.8	7,529.0	83.5	83.6	125.82	4,598.4	195.7	380.1	243.3	136.74	2.780	
12,300.0	7,307.0	12,503.5	7,529.0	85.2	85.3	125.16	4,698.1	195.7	386.3	245.7	140.62	2.747	
12,400.0	7,307.0	12,603.2	7,529.0	87.0	87.0	124.52	4,797.8	195.6	392.6	248.1	144.49	2.717	
12,500.0	7,307.0	12,702.9	7,529.0	88.7	88.8	123.90	4,897.5	195.6	398.9	250.5	148.36	2.689	
12,600.0	7,307.0	12,802.6	7,529.0	90.5	90.5	123.30	4,997.3	195.6	405.2	253.0	152.22	2.662	
12,700.0	7,307.0	12,902.3	7,529.0	92.2	92.2	122.71	5,097.0	195.6	411.6	255.6	156.08	2.637	
12,772.4	7,307.0	12,967.3	7,529.0	93.5	93.3	122.34	5,161.9	195.6	416.4	257.7	158.70	2.624 SF	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3E-9H-N267
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Reference Site:	S9-T2N-R67W (Sprague)	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Sprague 3E-9H-N267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 3G-9H-N267 - Hz - Plan #1													Offset Site Error:	0.0 ft
Survey Program:		0-Geolink MWD											Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	90.04	0.0	22.4	22.4					
100.0	100.0	100.0	100.0	0.1	0.1	90.04	0.0	22.4	22.4	22.1	0.24	91.526		
200.0	200.0	200.0	200.0	0.3	0.3	90.04	0.0	22.4	22.4	21.8	0.59	37.687 CC		
300.0	300.0	300.0	300.0	0.5	0.5	-114.41	0.0	22.4	22.7	21.8	0.94	24.076 ES		
400.0	400.0	400.0	400.0	0.7	0.6	-120.12	0.0	22.4	23.9	22.6	1.30	18.448		
500.0	499.9	499.6	499.6	0.8	0.8	-126.70	-0.6	23.0	26.8	25.2	1.65	16.224		
600.0	599.7	599.2	599.2	1.0	1.0	-131.45	-2.4	24.9	31.9	29.9	2.02	15.845		
700.0	699.4	698.7	698.5	1.3	1.2	-134.34	-5.4	28.0	39.2	36.8	2.39	16.382		
800.0	798.9	797.9	797.6	1.5	1.4	-135.82	-9.6	32.3	48.4	45.6	2.78	17.387		
900.0	898.3	897.0	896.4	1.7	1.6	-136.40	-15.0	37.9	59.5	56.3	3.19	18.628		
1,000.0	997.4	995.7	994.6	2.0	1.8	-136.44	-21.5	44.6	72.5	68.8	3.63	19.970		
1,100.0	1,096.3	1,094.1	1,092.4	2.3	2.0	-136.17	-29.2	52.6	87.3	83.2	4.09	21.334		
1,200.0	1,194.9	1,192.1	1,189.5	2.6	2.3	-135.74	-38.0	61.7	104.1	99.5	4.59	22.670		
1,250.0	1,244.1	1,241.2	1,238.2	2.8	2.4	-135.56	-42.7	66.6	113.1	108.3	4.85	23.332		
1,300.0	1,293.3	1,290.3	1,286.9	3.0	2.6	-135.53	-47.5	71.5	122.3	117.2	5.11	23.943		
1,400.0	1,391.6	1,388.6	1,384.2	3.3	2.8	-135.48	-57.0	81.4	140.6	135.0	5.63	24.968		
1,500.0	1,489.9	1,486.9	1,481.5	3.7	3.1	-135.44	-66.5	91.2	159.0	152.8	6.16	25.792		
1,600.0	1,588.3	1,585.2	1,578.9	4.0	3.4	-135.41	-76.0	101.0	177.4	170.7	6.70	26.466		
1,700.0	1,686.6	1,683.5	1,676.2	4.4	3.7	-135.39	-85.5	110.9	195.7	188.5	7.24	27.026		
1,800.0	1,784.9	1,781.8	1,773.6	4.7	4.0	-135.37	-95.0	120.7	214.1	206.3	7.78	27.498		
1,900.0	1,883.2	1,880.1	1,870.9	5.1	4.2	-135.35	-104.5	130.6	232.4	224.1	8.33	27.901		
2,000.0	1,981.6	1,978.4	1,968.3	5.4	4.5	-135.34	-114.0	140.4	250.8	241.9	8.88	28.248		
2,100.0	2,079.9	2,076.7	2,065.6	5.8	4.8	-135.32	-123.5	150.2	269.1	259.7	9.43	28.550		
2,200.0	2,178.2	2,175.0	2,163.0	6.2	5.1	-135.31	-133.0	160.1	287.5	277.5	9.98	28.814		
2,300.0	2,276.6	2,273.3	2,260.3	6.5	5.4	-135.30	-142.5	169.9	305.8	295.3	10.53	29.048		
2,400.0	2,374.9	2,371.7	2,357.7	6.9	5.7	-135.30	-152.0	179.8	324.2	313.1	11.08	29.256		
2,500.0	2,473.2	2,470.0	2,455.0	7.2	6.0	-135.29	-161.5	189.6	342.5	330.9	11.63	29.443		
2,600.0	2,571.5	2,568.3	2,552.3	7.6	6.3	-135.28	-171.0	199.5	360.9	348.7	12.19	29.610		
2,700.0	2,669.9	2,666.6	2,649.7	8.0	6.6	-135.28	-180.5	209.3	379.2	366.5	12.74	29.762		
2,800.0	2,768.2	2,764.9	2,747.0	8.3	6.9	-135.27	-190.0	219.1	397.6	384.3	13.30	29.900		
2,900.0	2,866.5	2,863.2	2,844.4	8.7	7.1	-135.27	-199.5	229.0	415.9	402.1	13.85	30.026		
3,000.0	2,964.8	2,961.5	2,941.7	9.0	7.4	-135.26	-209.0	238.8	434.3	419.9	14.41	30.141		
3,100.0	3,063.2	3,059.8	3,039.1	9.4	7.7	-135.26	-218.5	248.7	452.6	437.7	14.97	30.247		
3,200.0	3,161.6	3,158.2	3,136.5	9.7	8.0	-135.30	-228.1	258.5	470.4	454.9	15.52	30.311		
3,300.0	3,260.4	3,256.8	3,234.2	10.1	8.3	-135.20	-237.6	268.4	486.9	470.8	16.06	30.311		
3,400.0	3,359.4	3,355.6	3,332.0	10.3	8.6	-134.96	-247.1	278.3	502.2	485.6	16.60	30.255		
3,500.0	3,458.7	3,454.5	3,429.9	10.6	8.9	-134.60	-256.7	288.2	516.3	499.2	17.13	30.150		
3,600.0	3,558.1	3,553.5	3,528.0	10.8	9.2	-134.11	-266.3	298.1	529.3	511.7	17.64	30.005		
3,700.0	3,657.7	3,652.6	3,626.1	11.1	9.5	-133.51	-275.9	308.0	541.1	523.0	18.14	29.826		
3,800.0	3,757.5	3,751.7	3,724.3	11.2	9.8	-132.80	-285.4	317.9	551.8	533.2	18.63	29.620		
3,900.0	3,857.4	3,850.9	3,822.5	11.4	10.1	-131.98	-295.0	327.9	561.5	542.4	19.10	29.393		
4,000.0	3,957.3	3,950.0	3,920.7	11.5	10.4	-131.06	-304.6	337.8	570.1	550.5	19.56	29.151		
4,100.0	4,057.3	4,049.1	4,018.8	11.7	10.7	-130.03	-314.2	347.7	577.8	557.8	19.99	28.902		
4,150.0	4,107.3	4,098.6	4,067.8	11.7	10.8	72.95	-319.0	352.7	581.3	561.1	20.20	28.773		
4,200.0	4,157.3	4,148.2	4,116.9	11.8	11.0	73.54	-323.8	357.6	584.7	564.3	20.41	28.643		
4,300.0	4,257.3	4,247.2	4,214.9	11.9	11.3	74.71	-333.3	367.5	591.7	570.9	20.83	28.410		
4,400.0	4,357.3	4,346.2	4,313.0	12.0	11.6	75.84	-342.9	377.5	599.0	577.8	21.24	28.207		
4,500.0	4,457.3	4,445.2	4,411.1	12.1	11.9	76.95	-352.5	387.4	606.5	584.9	21.64	28.032		
4,600.0	4,557.3	4,544.3	4,509.1	12.2	12.2	78.03	-362.1	397.3	614.2	592.2	22.03	27.883		
4,700.0	4,657.3	4,643.3	4,607.2	12.3	12.5	79.09	-371.6	407.2	622.2	599.8	22.42	27.757		
4,800.0	4,757.3	4,742.3	4,705.2	12.4	12.8	80.12	-381.2	417.1	630.3	607.5	22.80	27.652		
4,900.0	4,857.3	4,841.3	4,803.3	12.6	13.0	81.12	-390.8	427.0	638.7	615.5	23.17	27.567		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3E-9H-N267
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Reference Site:	S9-T2N-R67W (Sprague)	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Sprague 3E-9H-N267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 3G-9H-N267 - Hz - Plan #1												Offset Site Error:	0.0 ft
Survey Program: O-Geolink MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
5,000.0	4,957.3	4,940.4	4,901.4	12.7	13.3	82.10	-400.4	436.9	647.2	623.7	23.54	27.499	
5,100.0	5,057.3	5,039.4	4,999.4	12.8	13.6	83.05	-409.9	446.8	656.0	632.1	23.90	27.448	
5,200.0	5,157.3	5,138.4	5,097.5	12.9	13.9	83.97	-419.5	456.8	664.9	640.6	24.26	27.411	
5,300.0	5,257.3	5,237.5	5,195.6	13.0	14.2	84.87	-429.1	466.7	674.0	649.3	24.61	27.387	
5,400.0	5,357.3	5,336.5	5,293.6	13.2	14.5	85.75	-438.7	476.6	683.2	658.2	24.96	27.376	
5,500.0	5,457.3	5,435.5	5,391.7	13.3	14.8	86.61	-448.2	486.5	692.6	667.3	25.30	27.375	
5,600.0	5,557.3	5,534.5	5,489.8	13.4	15.1	87.44	-457.8	496.4	702.1	676.5	25.64	27.384	
5,700.0	5,657.3	5,634.9	5,589.1	13.5	15.4	88.26	-467.5	506.4	711.8	685.8	25.98	27.402	
5,800.0	5,757.3	5,743.6	5,697.0	13.7	15.7	89.05	-477.1	516.4	720.8	694.5	26.32	27.391	
5,900.0	5,857.3	5,852.9	5,805.6	13.8	16.0	89.71	-485.3	524.9	728.5	701.9	26.64	27.345	
6,000.0	5,957.3	5,962.6	5,914.9	13.9	16.2	90.24	-492.1	532.0	735.0	708.0	26.96	27.261	
6,100.0	6,057.3	6,072.6	6,024.7	14.1	16.4	90.66	-497.5	537.5	740.0	712.8	27.27	27.139	
6,200.0	6,157.3	6,182.9	6,134.8	14.2	16.6	90.95	-501.4	541.6	743.8	716.2	27.57	26.978	
6,300.0	6,257.3	6,293.4	6,245.2	14.3	16.8	91.14	-503.8	544.1	746.1	718.2	27.86	26.776	
6,400.0	6,357.3	6,404.0	6,355.8	14.5	16.9	91.21	-504.8	545.1	747.0	718.8	28.15	26.534	
6,500.0	6,457.3	6,505.5	6,457.3	14.6	17.0	91.21	-504.8	545.1	747.0	718.6	28.43	26.274	
6,600.0	6,557.3	6,605.5	6,557.3	14.7	17.2	91.21	-504.8	545.1	747.0	718.3	28.71	26.020	
6,700.0	6,657.3	6,705.5	6,657.3	14.9	17.3	91.21	-504.8	545.1	747.0	718.0	28.99	25.769	
6,776.8	6,734.0	6,782.3	6,734.0	15.0	17.4	91.21	-504.8	545.1	747.0	717.8	29.20	25.578	
6,800.0	6,757.3	6,806.2	6,757.9	15.0	17.4	91.20	-504.3	545.1	747.0	717.8	29.25	25.541	
6,850.0	6,807.1	6,857.6	6,809.1	15.0	17.4	91.19	-499.9	545.1	747.0	717.8	29.26	25.531	
6,900.0	6,856.3	6,909.0	6,859.7	15.0	17.3	91.17	-490.8	545.1	747.0	717.8	29.19	25.595	
6,950.0	6,904.7	6,960.3	6,909.3	14.9	17.3	91.15	-477.4	545.1	747.0	718.0	29.04	25.727	
7,000.0	6,951.7	7,011.6	6,957.4	14.8	17.2	91.11	-459.5	545.1	747.0	718.2	28.82	25.921	
7,050.0	6,997.0	7,062.9	7,003.6	14.7	17.0	91.07	-437.4	545.1	747.0	718.4	28.54	26.169	
7,100.0	7,040.4	7,114.1	7,047.7	14.5	16.9	91.01	-411.3	545.1	747.0	718.7	28.23	26.461	
7,150.0	7,081.4	7,165.3	7,089.2	14.4	16.8	90.95	-381.5	545.1	746.9	719.1	27.88	26.787	
7,200.0	7,119.8	7,216.3	7,127.8	14.2	16.6	90.88	-348.1	545.1	746.9	719.4	27.53	27.130	
7,250.0	7,155.3	7,267.3	7,163.2	14.0	16.4	90.81	-311.4	545.1	746.9	719.7	27.19	27.473	
7,300.0	7,187.5	7,318.2	7,195.2	13.9	16.3	90.72	-271.9	545.1	746.9	720.0	26.87	27.797	
7,350.0	7,216.3	7,369.0	7,223.5	13.7	16.2	90.64	-229.7	545.1	746.9	720.3	26.60	28.079	
7,400.0	7,241.4	7,419.6	7,247.9	13.6	16.1	90.55	-185.3	545.1	746.8	720.5	26.39	28.297	
7,450.0	7,262.7	7,470.2	7,268.2	13.6	16.0	90.45	-139.1	545.1	746.8	720.6	26.27	28.429	
7,500.0	7,280.0	7,520.7	7,284.4	13.6	16.0	90.35	-91.3	545.1	746.8	720.6	26.24	28.458	
7,550.0	7,293.0	7,571.0	7,296.2	13.6	16.0	90.25	-42.4	545.1	746.8	720.5	26.32	28.373	
7,600.0	7,301.9	7,621.2	7,303.7	13.7	16.1	90.14	7.2	545.1	746.8	720.3	26.51	28.169	
7,650.0	7,306.4	7,671.3	7,306.9	13.8	16.2	90.04	57.2	545.1	746.8	720.0	26.81	27.855	
7,676.8	7,307.0	7,698.0	7,307.0	13.9	16.3	90.00	83.9	545.1	746.8	719.8	27.02	27.643	
7,677.6	7,307.0	7,698.9	7,307.0	13.9	16.3	90.00	84.8	545.1	746.8	719.8	27.02	27.636	
7,700.0	7,307.0	7,721.3	7,307.0	14.0	16.4	90.00	107.2	545.1	746.8	719.5	27.24	27.418	
7,800.0	7,307.0	7,821.3	7,307.0	14.6	16.9	90.00	207.2	545.1	746.8	718.4	28.37	26.324	
7,900.0	7,307.0	7,921.3	7,307.0	15.3	17.5	90.00	307.2	545.1	746.7	716.9	29.87	24.999	
8,000.0	7,307.0	8,021.3	7,307.0	16.2	18.3	90.00	407.2	545.1	746.7	715.0	31.69	23.562	
8,100.0	7,307.0	8,121.3	7,307.0	17.2	19.2	90.00	507.2	545.1	746.7	712.9	33.78	22.104	
8,200.0	7,307.0	8,221.3	7,307.0	18.4	20.2	90.00	607.2	545.1	746.7	710.6	36.09	20.690	
8,300.0	7,307.0	8,321.3	7,307.0	19.6	21.4	90.00	707.2	545.1	746.7	708.1	38.58	19.353	
8,400.0	7,307.0	8,421.3	7,307.0	20.9	22.6	90.00	807.2	545.1	746.7	705.5	41.22	18.114	
8,500.0	7,307.0	8,521.3	7,307.0	22.3	23.8	90.00	907.2	545.1	746.7	702.7	43.98	16.977	
8,600.0	7,307.0	8,621.3	7,307.0	23.7	25.1	90.00	1,007.2	545.1	746.7	699.8	46.84	15.939	
8,700.0	7,307.0	8,721.3	7,307.0	25.1	26.5	90.00	1,107.2	545.1	746.6	696.9	49.79	14.997	
8,800.0	7,307.0	8,821.3	7,307.0	26.6	27.9	90.00	1,207.2	545.1	746.6	693.8	52.80	14.141	
8,900.0	7,307.0	8,921.3	7,307.0	28.1	29.4	90.00	1,307.2	545.1	746.6	690.8	55.87	13.363	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3E-9H-N267
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Reference Site:	S9-T2N-R67W (Sprague)	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Sprague 3E-9H-N267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 3G-9H-N267 - Hz - Plan #1												Offset Site Error:	0.0 ft
Survey Program: 0-Geolink MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)			
9,000.0	7,307.0	9,021.3	7,307.0	29.7	30.9	90.00	1,407.2	545.1	746.6	687.6	58.99	12.656	
9,100.0	7,307.0	9,121.3	7,307.0	31.3	32.4	90.00	1,507.2	545.1	746.6	684.4	62.15	12.012	
9,177.6	7,307.0	9,198.9	7,307.0	32.5	33.6	90.00	1,584.8	545.1	746.6	682.0	64.63	11.552	
9,200.0	7,307.0	9,221.3	7,307.0	32.9	33.9	90.00	1,607.2	545.1	746.5	681.2	65.37	11.421	
9,300.0	7,307.0	9,321.3	7,307.0	34.5	35.5	90.00	1,707.2	545.1	745.3	676.6	68.67	10.853	
9,400.0	7,307.0	9,421.2	7,307.0	36.1	37.1	90.00	1,807.1	545.1	742.2	670.3	71.98	10.312	
9,500.0	7,307.0	9,521.1	7,307.0	37.7	38.7	90.00	1,907.0	545.1	737.5	662.2	75.29	9.795	
9,600.0	7,307.0	9,620.9	7,307.0	39.3	40.3	90.00	2,006.8	545.1	731.0	652.4	78.61	9.299	
9,700.0	7,307.0	9,720.5	7,307.0	40.9	41.9	90.00	2,106.5	545.0	722.7	640.8	81.91	8.823	
9,777.0	7,307.0	9,797.2	7,307.0	42.2	43.1	90.00	2,183.1	545.0	715.2	630.7	84.45	8.469	
9,800.0	7,307.0	9,820.0	7,307.0	42.6	43.5	90.00	2,206.0	545.0	712.8	627.6	85.21	8.365	
9,900.0	7,307.0	9,919.5	7,307.0	44.2	45.1	90.00	2,305.4	545.0	702.3	613.8	88.54	7.933	
10,000.0	7,307.0	10,019.0	7,307.0	45.9	46.7	90.00	2,404.9	545.0	691.9	600.0	91.88	7.530	
10,100.0	7,307.0	10,118.4	7,307.0	47.6	48.4	90.00	2,504.3	545.0	681.4	586.2	95.23	7.156	
10,200.0	7,307.0	10,217.9	7,307.0	49.2	50.0	90.00	2,603.8	545.0	671.0	572.4	98.59	6.806	
10,300.0	7,307.0	10,317.3	7,307.0	50.9	51.7	90.00	2,703.2	545.0	660.5	558.6	101.96	6.478	
10,400.0	7,307.0	10,416.8	7,307.0	52.6	53.4	90.00	2,802.7	545.0	650.1	544.7	105.34	6.171	
10,500.0	7,307.0	10,516.2	7,307.0	54.3	55.0	90.00	2,902.1	545.0	639.6	530.9	108.73	5.883	
10,597.0	7,307.0	10,612.7	7,307.0	55.9	56.6	90.00	2,998.6	545.0	629.5	517.4	112.02	5.619	
10,600.0	7,307.0	10,615.7	7,307.0	56.0	56.7	90.00	3,001.6	545.0	629.2	517.0	112.12	5.611	
10,700.0	7,307.0	10,715.2	7,307.0	57.7	58.4	90.00	3,101.1	545.0	619.6	504.1	115.57	5.362	
10,800.0	7,307.0	10,814.9	7,307.0	59.4	60.1	90.00	3,200.8	545.0	611.8	492.8	118.99	5.142	
10,900.0	7,307.0	10,914.7	7,307.0	61.1	61.7	90.00	3,300.6	545.0	605.8	483.4	122.39	4.949	
11,000.0	7,307.0	11,014.6	7,307.0	62.8	63.4	90.00	3,400.5	545.0	601.5	475.7	125.77	4.782	
11,100.0	7,307.0	11,114.6	7,307.0	64.5	65.1	90.00	3,500.5	545.0	598.9	469.8	129.11	4.639	
11,197.1	7,307.0	11,211.6	7,307.0	66.2	66.8	90.00	3,597.6	545.0	598.1	465.7	132.33	4.519	
11,200.0	7,307.0	11,214.6	7,307.0	66.2	66.8	90.00	3,600.5	545.0	598.1	465.6	132.43	4.516	
11,300.0	7,307.0	11,314.6	7,307.0	68.0	68.5	90.00	3,700.5	545.0	599.0	463.3	135.71	4.414	
11,400.0	7,307.0	11,414.5	7,307.0	69.7	70.2	90.00	3,800.5	545.0	601.7	462.7	138.96	4.330	
11,500.0	7,307.0	11,514.4	7,307.0	71.4	72.0	90.00	3,900.4	545.0	606.1	463.9	142.17	4.263	
11,600.0	7,307.0	11,614.3	7,307.0	73.1	73.7	90.00	4,000.2	545.0	612.2	466.9	145.34	4.213	
11,634.3	7,307.0	11,648.5	7,307.0	73.7	74.2	90.00	4,034.4	545.0	614.8	468.3	146.41	4.199	
11,700.0	7,307.0	11,714.0	7,307.0	74.9	75.4	90.00	4,099.9	545.0	619.8	471.1	148.67	4.169	
11,800.0	7,307.0	11,813.7	7,307.0	76.6	77.1	90.00	4,199.6	545.0	627.4	475.3	152.12	4.124	
11,900.0	7,307.0	11,913.4	7,307.0	78.3	78.8	90.00	4,299.3	545.0	635.0	479.4	155.57	4.082	
12,000.0	7,307.0	12,013.1	7,307.0	80.0	80.5	90.00	4,399.0	545.0	642.6	483.6	159.02	4.041	
12,100.0	7,307.0	12,112.8	7,307.0	81.8	82.2	90.00	4,498.7	545.0	650.3	487.8	162.48	4.002	
12,200.0	7,307.0	12,212.5	7,307.0	83.5	83.9	90.00	4,598.4	545.0	657.9	491.9	165.93	3.965	
12,300.0	7,307.0	12,312.2	7,307.0	85.2	85.7	90.00	4,698.1	545.0	665.5	496.1	169.39	3.929	
12,400.0	7,307.0	12,411.9	7,307.0	87.0	87.4	90.00	4,797.8	545.0	673.1	500.3	172.85	3.894	
12,500.0	7,307.0	12,511.6	7,307.0	88.7	89.1	90.00	4,897.5	545.0	680.8	504.4	176.31	3.861	
12,600.0	7,307.0	12,611.4	7,307.0	90.5	90.8	90.00	4,997.3	545.0	688.4	508.6	179.78	3.829	
12,700.0	7,307.0	12,711.1	7,307.0	92.2	92.5	90.00	5,097.0	545.0	696.0	512.8	183.24	3.798	
12,772.4	7,307.0	12,772.4	7,307.0	93.5	93.6	90.00	5,158.3	545.0	701.6	516.0	185.56	3.781 SF	



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3E-9H-N267
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Reference Site:	S9-T2N-R67W (Sprague)	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Sprague 3E-9H-N267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 3H-9H-N267 - Hz - Plan #1													Offset Site Error:	0.0 ft
Survey Program:		0-Geolink MWD											Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	90.05	0.0	30.8	30.8					
100.0	100.0	100.0	100.0	0.1	0.1	90.05	0.0	30.8	30.8	30.5	0.24	125.848		
200.0	200.0	200.0	200.0	0.3	0.3	90.05	0.0	30.8	30.8	30.2	0.59	51.820 CC		
300.0	300.0	300.0	300.0	0.5	0.5	-113.86	0.0	30.8	31.1	30.1	0.94	32.963 ES		
400.0	400.0	400.0	400.0	0.7	0.6	-118.10	0.0	30.8	32.2	30.9	1.30	24.870		
500.0	499.9	499.0	498.9	0.8	0.8	-122.51	-0.9	32.2	35.8	34.1	1.65	21.630		
600.0	599.7	597.7	597.6	1.0	1.0	-124.68	-3.6	36.5	42.9	40.9	2.02	21.212		
700.0	699.4	696.0	695.4	1.3	1.2	-125.06	-8.1	43.7	53.6	51.1	2.42	22.173		
800.0	798.9	793.5	792.3	1.5	1.5	-124.42	-14.3	53.7	67.6	64.7	2.84	23.836		
900.0	898.3	891.3	889.0	1.7	1.7	-123.59	-22.0	66.0	84.6	81.3	3.28	25.776		
1,000.0	997.4	989.6	986.2	2.0	2.0	-123.67	-29.9	78.6	102.8	99.1	3.75	27.395		
1,100.0	1,096.3	1,087.7	1,083.1	2.3	2.3	-124.37	-37.7	91.3	122.0	117.8	4.25	28.735		
1,200.0	1,194.9	1,185.6	1,179.9	2.6	2.6	-125.41	-45.6	103.9	142.2	137.5	4.76	29.881		
1,250.0	1,244.1	1,234.5	1,228.2	2.8	2.7	-126.01	-49.5	110.1	152.7	147.7	5.02	30.413		
1,300.0	1,293.3	1,283.3	1,276.5	3.0	2.9	-126.67	-53.4	116.4	163.4	158.1	5.29	30.900		
1,400.0	1,391.6	1,381.0	1,373.0	3.3	3.2	-127.77	-61.3	129.0	184.7	178.9	5.82	31.733		
1,500.0	1,489.9	1,478.6	1,469.5	3.7	3.5	-128.64	-69.1	141.6	206.1	199.7	6.36	32.416		
1,600.0	1,588.3	1,576.3	1,566.0	4.0	3.8	-129.35	-76.9	154.1	227.5	220.6	6.90	32.986		
1,700.0	1,686.6	1,673.9	1,662.5	4.4	4.1	-129.93	-84.8	166.7	248.9	241.5	7.44	33.468		
1,800.0	1,784.9	1,771.5	1,759.0	4.7	4.4	-130.42	-92.6	179.3	270.4	262.4	7.98	33.881		
1,900.0	1,883.2	1,869.2	1,855.5	5.1	4.7	-130.84	-100.4	191.9	291.9	283.4	8.52	34.238		
2,000.0	1,981.6	1,966.8	1,952.1	5.4	5.0	-131.20	-108.3	204.4	313.4	304.3	9.07	34.550		
2,100.0	2,079.9	2,064.5	2,048.6	5.8	5.3	-131.52	-116.1	217.0	334.9	325.3	9.62	34.825		
2,200.0	2,178.2	2,162.1	2,145.1	6.2	5.6	-131.80	-123.9	229.6	356.4	346.2	10.16	35.068		
2,300.0	2,276.6	2,259.8	2,241.6	6.5	6.0	-132.04	-131.8	242.1	377.9	367.2	10.71	35.285		
2,400.0	2,374.9	2,357.4	2,338.1	6.9	6.3	-132.26	-139.6	254.7	399.4	388.2	11.26	35.481		
2,500.0	2,473.2	2,455.1	2,434.6	7.2	6.6	-132.46	-147.4	267.3	421.0	409.2	11.81	35.657		
2,600.0	2,571.5	2,552.7	2,531.2	7.6	6.9	-132.64	-155.3	279.8	442.5	430.2	12.35	35.817		
2,700.0	2,669.9	2,650.3	2,627.7	8.0	7.2	-132.80	-163.1	292.4	464.0	451.1	12.90	35.962		
2,800.0	2,768.2	2,748.0	2,724.2	8.3	7.5	-132.94	-170.9	305.0	485.6	472.1	13.45	36.095		
2,900.0	2,866.5	2,845.6	2,820.7	8.7	7.8	-133.08	-178.8	317.5	507.1	493.1	14.00	36.218		
3,000.0	2,964.8	2,943.3	2,917.2	9.0	8.1	-133.20	-186.6	330.1	528.7	514.1	14.55	36.330		
3,100.0	3,063.2	3,040.9	3,013.7	9.4	8.4	-133.32	-194.4	342.7	550.2	535.1	15.10	36.435		
3,200.0	3,161.6	3,138.7	3,110.4	9.7	8.7	-133.51	-202.3	355.3	571.2	555.5	15.65	36.496		
3,300.0	3,260.4	3,236.7	3,207.3	10.1	9.1	-133.57	-210.1	367.9	591.0	574.8	16.19	36.510		
3,400.0	3,359.4	3,334.9	3,304.3	10.3	9.4	-133.50	-218.0	380.5	609.6	592.9	16.71	36.482		
3,500.0	3,458.7	3,433.4	3,401.6	10.6	9.7	-133.32	-225.9	393.2	627.0	609.8	17.22	36.418		
3,600.0	3,558.1	3,531.9	3,499.0	10.8	10.0	-133.04	-233.8	405.9	643.3	625.6	17.71	36.324		
3,700.0	3,657.7	3,630.6	3,596.6	11.1	10.3	-132.65	-241.7	418.6	658.5	640.3	18.19	36.205		
3,800.0	3,757.5	3,729.4	3,694.2	11.2	10.6	-132.17	-249.7	431.3	672.5	653.9	18.65	36.066		
3,900.0	3,857.4	3,828.2	3,791.9	11.4	10.9	-131.59	-257.6	444.0	685.5	666.4	19.09	35.911		
4,000.0	3,957.3	3,927.1	3,889.6	11.5	11.2	-130.93	-265.5	456.8	697.4	677.9	19.51	35.747		
4,100.0	4,057.3	4,026.0	3,987.4	11.7	11.6	-130.17	-273.5	469.5	708.3	688.4	19.91	35.578		
4,150.0	4,107.3	4,075.4	4,036.2	11.7	11.7	72.66	-277.4	475.8	713.4	693.3	20.10	35.489		
4,200.0	4,157.3	4,124.8	4,085.1	11.8	11.9	73.11	-281.4	482.2	718.4	698.1	20.29	35.401		
4,300.0	4,257.3	4,223.6	4,182.8	11.9	12.2	74.00	-289.3	494.9	728.6	707.9	20.67	35.242		
4,400.0	4,357.3	4,322.5	4,280.5	12.0	12.5	74.87	-297.3	507.7	738.9	717.8	21.05	35.107		
4,500.0	4,457.3	4,421.3	4,378.2	12.1	12.8	75.72	-305.2	520.4	749.4	728.0	21.42	34.992		
4,600.0	4,557.3	4,520.2	4,475.9	12.2	13.1	76.54	-313.1	533.1	760.0	738.2	21.78	34.895		
4,700.0	4,657.3	4,619.0	4,573.6	12.3	13.4	77.34	-321.0	545.8	770.8	748.7	22.14	34.816		
4,800.0	4,757.3	4,717.9	4,671.3	12.4	13.8	78.11	-329.0	558.5	781.7	759.2	22.49	34.753		
4,900.0	4,857.3	4,816.7	4,769.0	12.6	14.1	78.87	-336.9	571.3	792.8	770.0	22.85	34.703		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3E-9H-N267
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Reference Site:	S9-T2N-R67W (Sprague)	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Sprague 3E-9H-N267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 3H-9H-N267 - Hz - Plan #1													Offset Site Error: 0.0 ft	
Survey Program: 0-Geolink MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
5,000.0	4,957.3	4,915.5	4,866.7	12.7	14.4	79.60	-344.8	584.0	804.0	780.8	23.19	34.666		
5,100.0	5,057.3	5,014.4	4,964.4	12.8	14.7	80.32	-352.8	596.7	815.3	791.8	23.54	34.641		
5,200.0	5,157.3	5,113.2	5,062.1	12.9	15.0	81.01	-360.7	609.4	826.8	802.9	23.88	34.626		
5,300.0	5,257.3	5,212.1	5,159.8	13.0	15.3	81.69	-368.6	622.2	838.4	814.2	24.22	34.620		
5,400.0	5,357.3	5,310.9	5,257.5	13.2	15.7	82.34	-376.6	634.9	850.1	825.5	24.55	34.623		
5,500.0	5,457.3	5,409.8	5,355.2	13.3	16.0	82.98	-384.5	647.6	861.9	837.0	24.88	34.634		
5,600.0	5,557.3	5,508.6	5,452.9	13.4	16.3	83.61	-392.4	660.3	873.8	848.5	25.22	34.652		
5,700.0	5,657.3	5,607.4	5,550.6	13.5	16.6	84.21	-400.3	673.1	885.8	860.2	25.54	34.676		
5,800.0	5,757.3	5,706.3	5,648.3	13.7	16.9	84.80	-408.3	685.8	897.9	872.0	25.87	34.706		
5,900.0	5,857.3	5,805.1	5,746.0	13.8	17.2	85.37	-416.2	698.5	910.0	883.9	26.20	34.741		
6,000.0	5,957.3	5,904.0	5,843.7	13.9	17.5	85.93	-424.1	711.2	922.3	895.8	26.52	34.781		
6,100.0	6,057.3	6,002.8	5,941.4	14.1	17.9	86.48	-432.1	724.0	934.7	907.8	26.84	34.824		
6,200.0	6,157.3	6,101.7	6,039.1	14.2	18.2	87.01	-440.0	736.7	947.1	920.0	27.16	34.872		
6,300.0	6,257.3	6,200.5	6,136.8	14.3	18.5	87.53	-447.9	749.4	959.7	932.2	27.48	34.923		
6,400.0	6,357.3	6,299.3	6,234.5	14.5	18.8	88.03	-455.9	762.1	972.3	944.5	27.80	34.977		
6,500.0	6,457.3	6,398.2	6,332.1	14.6	19.1	88.52	-463.8	774.8	984.9	956.8	28.11	35.033		
6,600.0	6,557.3	6,497.0	6,429.8	14.7	19.4	89.00	-471.7	787.6	997.7	969.2	28.43	35.092		
6,700.0	6,657.3	6,595.9	6,527.5	14.9	19.7	89.46	-479.6	800.3	1,010.5	981.7	28.74	35.153		
6,776.8	6,734.0	6,671.7	6,602.5	15.0	20.0	89.81	-485.7	810.1	1,020.3	991.4	28.99	35.201		
6,800.0	6,757.3	6,694.7	6,625.2	15.0	20.1	89.64	-487.6	813.0	1,023.3	994.3	29.08	35.192		
6,850.0	6,807.1	6,743.6	6,673.5	15.0	20.2	89.44	-491.5	819.3	1,029.8	1,000.6	29.22	35.246		
6,900.0	6,856.3	6,791.6	6,721.0	15.0	20.4	89.45	-495.3	825.5	1,036.3	1,007.0	29.29	35.382		
6,950.0	6,904.7	6,838.3	6,767.2	14.9	20.5	89.63	-499.1	831.5	1,043.0	1,013.7	29.30	35.596		
7,000.0	6,951.7	6,883.4	6,811.8	14.8	20.7	89.95	-502.7	837.3	1,050.0	1,020.7	29.26	35.884		
7,050.0	6,997.0	6,926.6	6,854.4	14.7	20.8	90.35	-506.2	842.9	1,057.4	1,028.2	29.18	36.240		
7,100.0	7,040.4	6,967.4	6,894.8	14.5	20.9	90.78	-509.5	848.1	1,065.5	1,036.5	29.07	36.656		
7,150.0	7,081.4	7,011.5	6,938.4	14.4	21.1	91.36	-512.5	853.8	1,074.5	1,045.5	28.92	37.150		
7,200.0	7,119.8	7,064.2	6,990.6	14.2	21.2	92.18	-512.2	860.6	1,084.0	1,055.3	28.71	37.751		
7,250.0	7,155.3	7,121.7	7,047.3	14.0	21.3	93.07	-506.3	868.0	1,093.9	1,065.5	28.46	38.441		
7,300.0	7,187.5	7,185.2	7,109.0	13.9	21.3	94.06	-493.1	876.0	1,104.2	1,076.0	28.15	39.218		
7,350.0	7,216.3	7,256.5	7,175.8	13.7	21.3	95.16	-470.4	884.7	1,114.5	1,086.7	27.80	40.084		
7,400.0	7,241.4	7,337.2	7,247.6	13.6	21.3	96.38	-434.7	894.1	1,124.5	1,097.1	27.40	41.036		
7,450.0	7,262.7	7,429.7	7,322.6	13.6	21.2	97.71	-381.8	903.8	1,133.9	1,107.0	26.98	42.035		
7,500.0	7,280.0	7,535.6	7,397.0	13.6	21.0	99.04	-307.2	913.5	1,142.2	1,115.6	26.57	42.988		
7,550.0	7,293.0	7,655.7	7,463.2	13.6	20.9	100.21	-207.6	922.2	1,148.7	1,122.4	26.29	43.689		
7,600.0	7,301.9	7,787.8	7,510.6	13.7	20.9	100.97	-84.7	928.3	1,152.8	1,126.5	26.31	43.818		
7,650.0	7,306.4	7,926.3	7,528.9	13.8	21.1	101.12	52.2	930.7	1,154.1	1,127.3	26.74	43.153		
7,676.8	7,307.0	7,958.1	7,529.0	13.9	21.1	101.09	83.9	930.7	1,154.0	1,127.0	26.96	42.797		
7,677.6	7,307.0	7,958.9	7,529.0	13.9	21.1	101.09	84.8	930.7	1,154.0	1,127.0	26.97	42.785		
7,700.0	7,307.0	7,981.3	7,529.0	14.0	21.2	101.09	107.2	930.7	1,154.0	1,126.8	27.16	42.482		
7,800.0	7,307.0	8,081.3	7,529.0	14.6	21.6	101.09	207.2	930.7	1,154.0	1,125.7	28.28	40.807		
7,900.0	7,307.0	8,181.3	7,529.0	15.3	22.1	101.09	307.2	930.7	1,153.9	1,124.2	29.75	38.794		
8,000.0	7,307.0	8,281.3	7,529.0	16.2	22.7	101.09	407.2	930.7	1,153.9	1,122.4	31.52	36.607		
8,100.0	7,307.0	8,381.3	7,529.0	17.2	23.4	101.09	507.2	930.7	1,153.9	1,120.4	33.56	34.385		
8,200.0	7,307.0	8,481.3	7,529.0	18.4	24.3	101.09	607.2	930.7	1,153.9	1,118.1	35.81	32.222		
8,300.0	7,307.0	8,581.3	7,529.0	19.6	25.2	101.09	707.2	930.7	1,153.9	1,115.7	38.24	30.173		
8,400.0	7,307.0	8,681.3	7,529.0	20.9	26.2	101.09	807.2	930.7	1,153.9	1,113.1	40.82	28.268		
8,500.0	7,307.0	8,781.3	7,529.0	22.3	27.3	101.09	907.2	930.7	1,153.9	1,110.4	43.52	26.516		
8,600.0	7,307.0	8,881.3	7,529.0	23.7	28.5	101.09	1,007.2	930.7	1,153.9	1,107.6	46.31	24.915		
8,700.0	7,307.0	8,981.3	7,529.0	25.1	29.7	101.09	1,107.2	930.7	1,153.9	1,104.7	49.19	23.457		
8,800.0	7,307.0	9,081.3	7,529.0	26.6	31.0	101.09	1,207.2	930.7	1,153.8	1,101.7	52.14	22.131		
8,900.0	7,307.0	9,181.3	7,529.0	28.1	32.3	101.09	1,307.2	930.7	1,153.8	1,098.7	55.14	20.925		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3E-9H-N267
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Reference Site:	S9-T2N-R67W (Sprague)	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Sprague 3E-9H-N267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 3H-9H-N267 - Hz - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-Geolink MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total		Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Separation Factor		
9,000.0	7,307.0	9,281.3	7,529.0	29.7	33.7	101.09	1,407.2	930.7	1,153.8	1,095.6	58.19	19.827		
9,100.0	7,307.0	9,381.3	7,529.0	31.3	35.0	101.09	1,507.2	930.7	1,153.8	1,092.5	61.29	18.826		
9,177.6	7,307.0	9,458.9	7,529.0	32.5	36.2	101.09	1,584.8	930.7	1,153.8	1,090.1	63.72	18.108		
9,200.0	7,307.0	9,481.3	7,529.0	32.9	36.5	101.09	1,607.2	930.7	1,153.8	1,089.3	64.46	17.899		
9,300.0	7,307.0	9,581.3	7,529.0	34.5	37.9	101.11	1,707.2	930.7	1,152.5	1,084.7	67.80	17.000		
9,400.0	7,307.0	9,681.3	7,529.0	36.1	39.4	101.14	1,807.1	930.7	1,149.5	1,078.4	71.14	16.159		
9,500.0	7,307.0	9,781.1	7,529.0	37.7	40.9	101.20	1,907.0	930.7	1,144.9	1,070.4	74.48	15.371		
9,600.0	7,307.0	9,880.9	7,529.0	39.3	42.4	101.27	2,006.8	930.7	1,138.5	1,060.7	77.82	14.630		
9,700.0	7,307.0	9,980.6	7,529.0	40.9	43.9	101.37	2,106.4	930.7	1,130.4	1,049.3	81.14	13.931		
9,777.0	7,307.0	10,057.2	7,529.0	42.2	45.1	101.46	2,183.1	930.7	1,123.0	1,039.3	83.69	13.419		
9,800.0	7,307.0	10,080.1	7,529.0	42.6	45.5	101.49	2,205.9	930.7	1,120.7	1,036.2	84.43	13.274		
9,900.0	7,307.0	10,179.5	7,529.0	44.2	47.0	101.59	2,305.4	930.7	1,110.4	1,022.8	87.66	12.668		
10,000.0	7,307.0	10,279.0	7,529.0	45.9	48.6	101.70	2,404.9	930.7	1,100.2	1,009.3	90.90	12.104		
10,100.0	7,307.0	10,378.4	7,529.0	47.6	50.2	101.82	2,504.3	930.7	1,089.9	995.8	94.14	11.578		
10,200.0	7,307.0	10,477.9	7,529.0	49.2	51.8	101.93	2,603.8	930.7	1,079.7	982.3	97.39	11.086		
10,300.0	7,307.0	10,577.3	7,529.0	50.9	53.4	102.04	2,703.2	930.7	1,069.5	968.8	100.65	10.625		
10,400.0	7,307.0	10,676.8	7,529.0	52.6	55.0	102.16	2,802.7	930.7	1,059.3	955.3	103.92	10.194		
10,500.0	7,307.0	10,776.3	7,529.0	54.3	56.6	102.28	2,902.1	930.7	1,049.0	941.9	107.18	9.788		
10,597.0	7,307.0	10,872.7	7,529.0	55.9	58.2	102.40	2,998.6	930.7	1,039.1	928.8	110.35	9.417		
10,600.0	7,307.0	10,875.7	7,529.0	56.0	58.2	102.40	3,001.6	930.7	1,038.8	928.4	110.45	9.406		
10,700.0	7,307.0	10,975.2	7,529.0	57.7	59.9	102.50	3,101.1	930.7	1,029.5	915.9	113.66	9.058		
10,800.0	7,307.0	11,074.9	7,529.0	59.4	61.5	102.58	3,200.8	930.7	1,021.9	905.1	116.85	8.745		
10,900.0	7,307.0	11,174.8	7,529.0	61.1	63.2	102.64	3,300.6	930.7	1,016.0	896.0	120.03	8.464		
11,000.0	7,307.0	11,274.7	7,529.0	62.8	64.8	102.68	3,400.5	930.7	1,011.8	888.6	123.19	8.213		
11,100.0	7,307.0	11,374.6	7,529.0	64.5	66.5	102.71	3,500.5	930.7	1,009.3	883.0	126.33	7.989		
11,197.0	7,307.0	11,471.6	7,529.0	66.2	68.1	102.72	3,597.5	930.7	1,008.5	879.1	129.35	7.797		
11,200.0	7,307.0	11,474.6	7,529.0	66.2	68.2	102.72	3,600.5	930.7	1,008.5	879.1	129.44	7.791		
11,300.0	7,307.0	11,574.6	7,529.0	68.0	69.8	102.71	3,700.5	930.7	1,009.4	876.9	132.54	7.616		
11,400.0	7,307.0	11,674.6	7,529.0	69.7	71.5	102.68	3,800.4	930.7	1,012.0	876.4	135.60	7.463		
11,500.0	7,307.0	11,774.5	7,529.0	71.4	73.2	102.63	3,900.3	930.7	1,016.3	877.7	138.64	7.331		
11,600.0	7,307.0	11,874.3	7,529.0	73.1	74.9	102.57	4,000.2	930.7	1,022.3	880.7	141.65	7.217		
11,634.3	7,307.0	11,908.5	7,529.0	73.7	75.4	102.55	4,034.4	930.7	1,024.8	882.1	142.67	7.183		
11,700.0	7,307.0	11,974.0	7,529.0	74.9	76.6	102.49	4,099.9	930.7	1,029.7	884.7	144.91	7.105		
11,800.0	7,307.0	12,073.7	7,529.0	76.6	78.2	102.40	4,199.6	930.7	1,037.1	888.8	148.33	6.992		
11,900.0	7,307.0	12,173.4	7,529.0	78.3	79.9	102.31	4,299.3	930.7	1,044.6	892.8	151.75	6.884		
12,000.0	7,307.0	12,273.1	7,529.0	80.0	81.6	102.22	4,399.0	930.7	1,052.0	896.8	155.17	6.780		
12,100.0	7,307.0	12,372.8	7,529.0	81.8	83.3	102.13	4,498.7	930.7	1,059.5	900.9	158.59	6.680		
12,200.0	7,307.0	12,472.6	7,529.0	83.5	85.0	102.04	4,598.4	930.7	1,066.9	904.9	162.02	6.585		
12,300.0	7,307.0	12,572.3	7,529.0	85.2	86.7	101.96	4,698.1	930.7	1,074.4	908.9	165.45	6.494		
12,400.0	7,307.0	12,672.0	7,529.0	87.0	88.4	101.88	4,797.8	930.7	1,081.8	913.0	168.89	6.406		
12,500.0	7,307.0	12,771.7	7,529.0	88.7	90.1	101.79	4,897.5	930.7	1,089.3	917.0	172.32	6.321		
12,600.0	7,307.0	12,871.4	7,529.0	90.5	91.8	101.71	4,997.3	930.7	1,096.8	921.0	175.76	6.240		
12,700.0	7,307.0	12,971.1	7,529.0	92.2	93.5	101.63	5,097.0	930.7	1,104.2	925.0	179.20	6.162		
12,772.4	7,307.0	12,974.1	7,529.0	93.5	93.6	101.63	5,100.0	930.7	1,111.8	931.3	180.49	6.160 SF		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3E-9H-N267
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Reference Site:	S9-T2N-R67W (Sprague)	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Sprague 3E-9H-N267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 3I-9H-N267 - Hz - Plan #1													Offset Site Error:	0.0 ft
Survey Program: O-Geolink MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	94.92	-3.6	41.9	42.1					
100.0	100.0	100.0	100.0	0.1	0.1	94.92	-3.6	41.9	42.1	41.8	0.24	172.246		
200.0	200.0	200.0	200.0	0.3	0.3	94.92	-3.6	41.9	42.1	41.5	0.59	70.925 CC		
300.0	300.0	300.0	300.0	0.5	0.5	-108.62	-3.6	41.9	42.4	41.4	0.94	44.902 ES		
400.0	400.0	398.5	398.5	0.7	0.6	-111.00	-4.3	43.5	44.9	43.6	1.29	34.639		
500.0	499.9	496.8	496.7	0.8	0.8	-113.31	-6.3	48.1	51.2	49.6	1.66	30.962		
600.0	599.7	594.5	594.0	1.0	1.0	-115.13	-9.6	55.8	61.5	59.5	2.03	30.309		
700.0	699.4	691.5	690.2	1.3	1.3	-116.36	-14.2	66.5	75.6	73.1	2.42	31.192		
800.0	798.9	787.4	785.0	1.5	1.6	-117.11	-20.0	79.9	93.4	90.5	2.84	32.873		
900.0	898.3	882.6	878.6	1.7	1.9	-117.53	-26.9	96.1	114.8	111.5	3.28	34.961		
1,000.0	997.4	979.8	973.9	2.0	2.3	-118.16	-34.5	113.7	138.0	134.3	3.76	36.738		
1,100.0	1,096.3	1,076.8	1,069.0	2.3	2.6	-119.11	-42.0	131.2	162.1	157.8	4.26	38.092		
1,200.0	1,194.9	1,173.6	1,163.9	2.6	3.0	-120.22	-49.6	148.7	187.1	182.3	4.78	39.146		
1,250.0	1,244.1	1,221.8	1,211.2	2.8	3.2	-120.81	-53.3	157.4	199.9	194.9	5.05	39.606		
1,300.0	1,293.3	1,270.1	1,258.5	3.0	3.3	-121.49	-57.1	166.1	212.9	207.6	5.32	40.008		
1,400.0	1,391.6	1,366.5	1,353.1	3.3	3.7	-122.62	-64.6	183.5	238.9	233.0	5.87	40.683		
1,500.0	1,489.9	1,463.0	1,447.7	3.7	4.1	-123.53	-72.1	200.9	265.0	258.5	6.43	41.226		
1,600.0	1,588.3	1,559.4	1,542.2	4.0	4.5	-124.27	-79.6	218.3	291.1	284.1	6.99	41.671		
1,700.0	1,686.6	1,655.9	1,636.8	4.4	4.8	-124.90	-87.1	235.8	317.3	309.7	7.55	42.043		
1,800.0	1,784.9	1,752.4	1,731.4	4.7	5.2	-125.42	-94.6	253.2	343.5	335.4	8.11	42.356		
1,900.0	1,883.2	1,848.8	1,826.0	5.1	5.6	-125.88	-102.1	270.6	369.7	361.0	8.67	42.625		
2,000.0	1,981.6	1,945.3	1,920.6	5.4	5.9	-126.27	-109.6	288.0	396.0	386.7	9.24	42.857		
2,100.0	2,079.9	2,041.8	2,015.1	5.8	6.3	-126.62	-117.1	305.4	422.2	412.4	9.81	43.060		
2,200.0	2,178.2	2,138.2	2,109.7	6.2	6.7	-126.92	-124.6	322.9	448.5	438.1	10.37	43.239		
2,300.0	2,276.6	2,234.7	2,204.3	6.5	7.1	-127.19	-132.1	340.3	474.8	463.8	10.94	43.397		
2,400.0	2,374.9	2,331.1	2,298.9	6.9	7.4	-127.43	-139.6	357.7	501.1	489.6	11.51	43.538		
2,500.0	2,473.2	2,427.6	2,393.4	7.2	7.8	-127.65	-147.0	375.1	527.4	515.3	12.08	43.665		
2,600.0	2,571.5	2,524.1	2,488.0	7.6	8.2	-127.85	-154.5	392.5	553.7	541.0	12.65	43.779		
2,700.0	2,669.9	2,620.5	2,582.6	8.0	8.6	-128.03	-162.0	410.0	580.0	566.8	13.22	43.883		
2,800.0	2,768.2	2,717.0	2,677.2	8.3	8.9	-128.19	-169.5	427.4	606.3	592.5	13.79	43.978		
2,900.0	2,866.5	2,813.4	2,771.8	8.7	9.3	-128.34	-177.0	444.8	632.6	618.3	14.36	44.064		
3,000.0	2,964.8	2,909.9	2,866.3	9.0	9.7	-128.48	-184.5	462.2	659.0	644.0	14.93	44.144		
3,100.0	3,063.2	3,006.4	2,960.9	9.4	10.1	-128.61	-192.0	479.6	685.3	669.8	15.50	44.217		
3,200.0	3,161.6	3,103.0	3,055.6	9.7	10.4	-128.88	-199.6	497.1	711.1	695.0	16.07	44.238		
3,300.0	3,260.4	3,199.9	3,150.6	10.1	10.8	-129.02	-207.1	514.6	735.8	719.2	16.63	44.246		
3,400.0	3,359.4	3,297.0	3,245.9	10.3	11.2	-129.06	-214.6	532.1	759.5	742.3	17.17	44.241		
3,500.0	3,458.7	3,394.3	3,341.3	10.6	11.6	-128.99	-222.2	549.7	782.1	764.5	17.68	44.227		
3,600.0	3,558.1	3,491.9	3,437.0	10.8	11.9	-128.83	-229.8	567.3	803.7	785.5	18.18	44.208		
3,700.0	3,657.7	3,589.6	3,532.8	11.1	12.3	-128.58	-237.4	585.0	824.2	805.6	18.65	44.186		
3,800.0	3,757.5	3,687.4	3,628.7	11.2	12.7	-128.25	-245.0	602.6	843.8	824.7	19.10	44.165		
3,900.0	3,857.4	3,785.3	3,724.7	11.4	13.1	-127.84	-252.6	620.3	862.3	842.7	19.53	44.148		
4,000.0	3,957.3	3,883.3	3,820.8	11.5	13.5	-127.36	-260.2	638.0	879.8	859.9	19.93	44.139		
4,100.0	4,057.3	3,981.4	3,916.9	11.7	13.8	-126.81	-267.8	655.7	896.5	876.2	20.31	44.141		
4,150.0	4,107.3	4,030.4	3,965.0	11.7	14.0	75.91	-271.7	664.6	904.4	884.0	20.49	44.142		
4,200.0	4,157.3	4,079.4	4,013.0	11.8	14.2	76.29	-275.5	673.4	912.3	891.7	20.66	44.153		
4,300.0	4,257.3	4,177.5	4,109.2	11.9	14.6	77.01	-283.1	691.1	928.2	907.2	21.01	44.186		
4,400.0	4,357.3	4,275.5	4,205.3	12.0	15.0	77.71	-290.7	708.8	944.2	922.9	21.35	44.232		
4,500.0	4,457.3	4,373.6	4,301.4	12.1	15.4	78.39	-298.3	726.5	960.4	938.7	21.68	44.292		
4,600.0	4,557.3	4,471.6	4,397.6	12.2	15.8	79.05	-306.0	744.2	976.7	954.7	22.02	44.362		
4,700.0	4,657.3	4,569.7	4,493.7	12.3	16.1	79.68	-313.6	761.9	993.1	970.8	22.35	44.442		
4,800.0	4,757.3	4,667.7	4,589.8	12.4	16.5	80.30	-321.2	779.6	1,009.6	987.0	22.67	44.530		
4,900.0	4,857.3	4,765.8	4,686.0	12.6	16.9	80.89	-328.8	797.4	1,026.3	1,003.3	23.00	44.626		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3E-9H-N267
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Reference Site:	S9-T2N-R67W (Sprague)	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Sprague 3E-9H-N267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 3I-9H-N267 - Hz - Plan #1													Offset Site Error: 0.0 ft			
Survey Program: 0-Geolink MWD															Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor				
5,000.0	4,957.3	4,863.8	4,782.1	12.7	17.3	81.47	-336.4	815.1	1,043.0	1,019.7	23.32	44.728				
5,100.0	5,057.3	4,961.9	4,878.2	12.8	17.7	82.02	-344.1	832.8	1,059.9	1,036.2	23.64	44.836				
5,200.0	5,157.3	5,059.9	4,974.4	12.9	18.0	82.56	-351.7	850.5	1,076.8	1,052.9	23.96	44.948				
5,300.0	5,257.3	5,158.0	5,070.5	13.0	18.4	83.09	-359.3	868.2	1,093.8	1,069.6	24.27	45.065				
5,400.0	5,357.3	5,256.0	5,166.6	13.2	18.8	83.60	-366.9	885.9	1,111.0	1,086.4	24.59	45.185				
5,500.0	5,457.3	5,354.1	5,262.8	13.3	19.2	84.09	-374.6	903.6	1,128.2	1,103.3	24.90	45.307				
5,600.0	5,557.3	5,452.1	5,358.9	13.4	19.6	84.57	-382.2	921.3	1,145.4	1,120.2	25.21	45.433				
5,700.0	5,657.3	5,550.1	5,455.1	13.5	20.0	85.03	-389.8	939.0	1,162.8	1,137.3	25.52	45.560				
5,800.0	5,757.3	5,648.2	5,551.2	13.7	20.3	85.48	-397.4	956.7	1,180.2	1,154.4	25.83	45.688				
5,900.0	5,857.3	5,746.2	5,647.3	13.8	20.7	85.92	-405.1	974.4	1,197.7	1,171.6	26.14	45.818				
6,000.0	5,957.3	5,844.3	5,743.5	13.9	21.1	86.34	-412.7	992.1	1,215.3	1,188.8	26.45	45.949				
6,100.0	6,057.3	5,942.3	5,839.6	14.1	21.5	86.75	-420.3	1,009.8	1,232.9	1,206.2	26.76	46.080				
6,200.0	6,157.3	6,040.4	5,935.7	14.2	21.9	87.15	-427.9	1,027.5	1,250.6	1,223.5	27.06	46.211				
6,300.0	6,257.3	6,138.4	6,031.9	14.3	22.3	87.54	-435.5	1,045.2	1,268.3	1,241.0	27.37	46.342				
6,400.0	6,357.3	6,236.5	6,128.0	14.5	22.6	87.92	-443.2	1,062.9	1,286.1	1,258.5	27.67	46.474				
6,500.0	6,457.3	6,334.5	6,224.1	14.6	23.0	88.29	-450.8	1,080.6	1,304.0	1,276.0	27.98	46.604				
6,600.0	6,557.3	6,432.6	6,320.3	14.7	23.4	88.65	-458.4	1,098.4	1,321.9	1,293.6	28.29	46.735				
6,700.0	6,657.3	6,530.6	6,416.4	14.9	23.8	89.00	-466.0	1,116.1	1,339.9	1,311.3	28.59	46.864				
6,776.8	6,734.0	6,605.9	6,490.2	15.0	24.1	89.26	-471.9	1,129.6	1,353.7	1,324.8	28.82	46.963				
6,800.0	6,757.3	6,628.6	6,512.5	15.0	24.2	88.93	-473.7	1,133.8	1,357.9	1,328.9	28.95	46.899				
6,850.0	6,807.1	6,677.1	6,560.1	15.0	24.4	88.36	-477.4	1,142.5	1,366.8	1,337.6	29.17	46.862				
6,900.0	6,856.3	6,724.8	6,606.7	15.0	24.5	87.96	-481.1	1,151.1	1,375.7	1,346.4	29.31	46.940				
6,950.0	6,904.7	6,771.2	6,652.2	14.9	24.7	87.70	-484.7	1,159.5	1,384.6	1,355.3	29.38	47.127				
7,000.0	6,951.7	6,815.9	6,696.1	14.8	24.9	87.56	-488.2	1,167.6	1,393.6	1,364.2	29.39	47.413				
7,050.0	6,997.0	6,863.9	6,743.2	14.7	25.1	87.56	-490.2	1,176.2	1,402.7	1,373.4	29.32	47.841				
7,100.0	7,040.4	6,914.3	6,792.8	14.5	25.2	87.59	-488.0	1,185.4	1,411.8	1,382.6	29.17	48.399				
7,150.0	7,081.4	6,967.3	6,844.4	14.4	25.3	87.67	-481.0	1,194.9	1,420.8	1,391.9	28.95	49.080				
7,200.0	7,119.8	7,023.4	6,898.1	14.2	25.4	87.79	-468.3	1,204.8	1,429.7	1,401.0	28.66	49.879				
7,250.0	7,155.3	7,082.8	6,953.3	14.0	25.5	87.96	-449.0	1,215.0	1,438.3	1,410.0	28.32	50.785				
7,300.0	7,187.5	7,146.1	7,009.7	13.9	25.6	88.17	-422.3	1,225.3	1,446.5	1,418.6	27.94	51.779				
7,350.0	7,216.3	7,213.7	7,066.3	13.7	25.6	88.44	-386.9	1,235.8	1,454.3	1,426.8	27.52	52.836				
7,400.0	7,241.4	7,286.0	7,121.9	13.6	25.6	88.74	-341.8	1,246.0	1,461.4	1,434.3	27.12	53.894				
7,450.0	7,262.7	7,363.3	7,174.6	13.6	25.6	89.06	-286.2	1,255.7	1,467.7	1,440.9	26.75	54.868				
7,500.0	7,280.0	7,445.5	7,222.1	13.6	25.6	89.38	-219.7	1,264.4	1,473.0	1,446.6	26.47	55.642				
7,550.0	7,293.0	7,532.4	7,261.5	13.6	25.6	89.66	-142.8	1,271.7	1,477.2	1,450.9	26.35	56.051				
7,600.0	7,301.9	7,623.0	7,290.0	13.7	25.7	89.88	-57.0	1,277.0	1,480.1	1,453.7	26.44	55.969				
7,650.0	7,306.4	7,716.1	7,305.0	13.8	25.8	89.99	34.7	1,279.7	1,481.6	1,454.8	26.78	55.316				
7,676.8	7,307.0	7,765.4	7,307.0	13.9	25.9	90.00	83.9	1,280.1	1,481.8	1,454.7	27.06	54.754				
7,677.6	7,307.0	7,766.3	7,307.0	13.9	25.9	90.00	84.8	1,280.1	1,481.8	1,454.7	27.07	54.738				
7,700.0	7,307.0	7,788.6	7,307.0	14.0	25.9	90.00	107.2	1,280.1	1,481.8	1,454.5	27.27	54.335				
7,800.0	7,307.0	7,888.6	7,307.0	14.6	26.2	90.00	207.2	1,280.1	1,481.8	1,453.4	28.42	52.147				
7,900.0	7,307.0	7,988.6	7,307.0	15.3	26.6	90.00	307.2	1,280.1	1,481.8	1,451.8	29.92	49.520				
8,000.0	7,307.0	8,088.6	7,307.0	16.2	27.1	90.00	407.2	1,280.1	1,481.7	1,450.0	31.75	46.674				
8,100.0	7,307.0	8,188.6	7,307.0	17.2	27.8	90.00	507.2	1,280.1	1,481.7	1,447.9	33.84	43.790				
8,200.0	7,307.0	8,288.6	7,307.0	18.4	28.5	90.00	607.2	1,280.1	1,481.7	1,445.6	36.15	40.990				
8,300.0	7,307.0	8,388.6	7,307.0	19.6	29.3	90.00	707.2	1,280.1	1,481.7	1,443.1	38.64	38.347				
8,400.0	7,307.0	8,488.6	7,307.0	20.9	30.1	90.00	807.2	1,280.1	1,481.7	1,440.4	41.28	35.894				
8,500.0	7,307.0	8,588.6	7,307.0	22.3	31.1	90.00	907.2	1,280.1	1,481.7	1,437.7	44.04	33.643				
8,600.0	7,307.0	8,688.6	7,307.0	23.7	32.1	90.00	1,007.2	1,280.1	1,481.7	1,434.8	46.90	31.591				
8,700.0	7,307.0	8,788.6	7,307.0	25.1	33.2	90.00	1,107.2	1,280.1	1,481.7	1,431.8	49.85	29.725				
8,800.0	7,307.0	8,888.6	7,307.0	26.6	34.3	90.00	1,207.2	1,280.1	1,481.7	1,428.8	52.86	28.030				
8,900.0	7,307.0	8,988.6	7,307.0	28.1	35.5	90.00	1,307.2	1,280.1	1,481.6	1,425.7	55.93	26.491				

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3E-9H-N267
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Reference Site:	S9-T2N-R67W (Sprague)	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Sprague 3E-9H-N267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 3I--9H-N267 - Hz - Plan #1													Offset Site Error:	0.0 ft
Survey Program: O-Geolink MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
9,000.0	7,307.0	9,088.6	7,307.0	29.7	36.8	90.00	1,407.2	1,280.1	1,481.6	1,422.6	59.05	25.091		
9,100.0	7,307.0	9,188.6	7,307.0	31.3	38.0	90.00	1,507.2	1,280.1	1,481.6	1,419.4	62.21	23.816		
9,177.6	7,307.0	9,266.3	7,307.0	32.5	39.0	90.00	1,584.8	1,280.1	1,481.6	1,416.9	64.69	22.903		
9,200.0	7,307.0	9,288.6	7,307.0	32.9	39.3	90.00	1,607.2	1,280.1	1,481.6	1,416.1	65.47	22.630		
9,300.0	7,307.0	9,388.6	7,307.0	34.5	40.7	90.00	1,707.2	1,280.1	1,480.3	1,411.3	68.96	21.465		
9,400.0	7,307.0	9,488.6	7,307.0	36.1	42.1	90.00	1,807.1	1,280.1	1,477.3	1,404.8	72.47	20.384		
9,500.0	7,307.0	9,588.4	7,307.0	37.7	43.5	90.00	1,907.0	1,280.1	1,472.5	1,396.5	75.99	19.378		
9,600.0	7,307.0	9,688.2	7,307.0	39.3	44.9	90.00	2,006.8	1,280.1	1,466.0	1,386.5	79.51	18.439		
9,700.0	7,307.0	9,787.9	7,307.0	40.9	46.3	90.00	2,106.4	1,280.1	1,457.8	1,374.7	83.02	17.560		
9,777.0	7,307.0	9,864.5	7,307.0	42.2	47.5	90.00	2,183.1	1,280.1	1,450.2	1,364.5	85.71	16.919		
9,800.0	7,307.0	9,887.4	7,307.0	42.6	47.8	90.00	2,205.9	1,280.1	1,447.8	1,361.3	86.48	16.742		
9,900.0	7,307.0	9,986.8	7,307.0	44.2	49.3	90.00	2,305.4	1,280.1	1,437.4	1,347.6	89.81	16.004		
10,000.0	7,307.0	10,086.3	7,307.0	45.9	50.8	90.00	2,404.9	1,280.1	1,426.9	1,333.8	93.16	15.317		
10,100.0	7,307.0	10,185.8	7,307.0	47.6	52.3	90.00	2,504.3	1,280.1	1,416.5	1,319.9	96.51	14.676		
10,200.0	7,307.0	10,285.2	7,307.0	49.2	53.8	90.00	2,603.8	1,280.1	1,406.0	1,306.1	99.88	14.077		
10,300.0	7,307.0	10,384.7	7,307.0	50.9	55.4	90.00	2,703.2	1,280.1	1,395.6	1,292.3	103.25	13.516		
10,400.0	7,307.0	10,484.1	7,307.0	52.6	56.9	90.00	2,802.7	1,280.1	1,385.1	1,278.5	106.64	12.989		
10,500.0	7,307.0	10,583.6	7,307.0	54.3	58.5	90.00	2,902.1	1,280.1	1,374.6	1,264.6	110.03	12.494		
10,597.0	7,307.0	10,680.0	7,307.0	55.9	60.0	90.00	2,998.6	1,280.1	1,364.5	1,251.2	113.32	12.041		
10,600.0	7,307.0	10,683.0	7,307.0	56.0	60.1	90.00	3,001.6	1,280.1	1,364.2	1,250.8	113.42	12.028		
10,700.0	7,307.0	10,782.6	7,307.0	57.7	61.7	90.00	3,101.1	1,280.1	1,354.7	1,238.0	116.66	11.612		
10,800.0	7,307.0	10,882.3	7,307.0	59.4	63.3	90.00	3,200.8	1,280.1	1,346.9	1,227.0	119.87	11.236		
10,900.0	7,307.0	10,982.1	7,307.0	61.1	64.9	90.00	3,300.6	1,280.1	1,340.8	1,217.8	123.07	10.895		
11,000.0	7,307.0	11,082.0	7,307.0	62.8	66.5	90.00	3,400.5	1,280.1	1,336.5	1,210.3	126.23	10.588		
11,100.0	7,307.0	11,181.9	7,307.0	64.5	68.1	90.00	3,500.5	1,280.1	1,333.9	1,204.6	129.37	10.311		
11,197.0	7,307.0	11,278.9	7,307.0	66.2	69.7	90.00	3,597.5	1,280.1	1,333.1	1,200.7	132.38	10.070		
11,200.0	7,307.0	11,281.9	7,307.0	66.2	69.7	90.00	3,600.5	1,280.1	1,333.1	1,200.6	132.48	10.063		
11,300.0	7,307.0	11,381.9	7,307.0	68.0	71.4	90.00	3,700.5	1,280.1	1,334.0	1,198.5	135.55	9.842		
11,400.0	7,307.0	11,481.9	7,307.0	69.7	73.0	90.00	3,800.4	1,280.1	1,336.7	1,198.1	138.58	9.646		
11,500.0	7,307.0	11,581.8	7,307.0	71.4	74.7	90.00	3,900.3	1,280.1	1,341.1	1,199.6	141.58	9.473		
11,600.0	7,307.0	11,681.6	7,307.0	73.1	76.3	90.00	4,000.2	1,280.1	1,347.3	1,202.8	144.54	9.321		
11,634.3	7,307.0	11,715.8	7,307.0	73.7	76.9	90.00	4,034.4	1,280.1	1,349.8	1,204.3	145.54	9.274		
11,700.0	7,307.0	11,781.3	7,307.0	74.9	78.0	90.00	4,099.9	1,280.1	1,354.8	1,207.0	147.80	9.166		
11,800.0	7,307.0	11,881.0	7,307.0	76.6	79.6	90.00	4,199.6	1,280.1	1,362.4	1,211.2	151.25	9.008		
11,900.0	7,307.0	11,980.7	7,307.0	78.3	81.3	90.00	4,299.3	1,280.1	1,370.1	1,215.4	154.70	8.856		
12,000.0	7,307.0	12,080.4	7,307.0	80.0	82.9	90.00	4,399.0	1,280.1	1,377.7	1,219.5	158.15	8.711		
12,100.0	7,307.0	12,180.2	7,307.0	81.8	84.6	90.00	4,498.7	1,280.1	1,385.3	1,223.7	161.60	8.572		
12,200.0	7,307.0	12,279.9	7,307.0	83.5	86.3	90.00	4,598.4	1,280.1	1,392.9	1,227.9	165.06	8.439		
12,300.0	7,307.0	12,379.6	7,307.0	85.2	87.9	90.00	4,698.1	1,280.1	1,400.6	1,232.1	168.51	8.311		
12,400.0	7,307.0	12,479.3	7,307.0	87.0	89.6	90.00	4,797.8	1,280.1	1,408.2	1,236.2	171.97	8.188		
12,500.0	7,307.0	12,579.0	7,307.0	88.7	91.3	90.00	4,897.5	1,280.1	1,415.8	1,240.4	175.43	8.070		
12,600.0	7,307.0	12,678.7	7,307.0	90.5	93.0	90.00	4,997.3	1,280.1	1,423.4	1,244.5	178.90	7.957		
12,700.0	7,307.0	12,774.2	7,307.0	92.2	94.6	90.00	5,092.7	1,280.1	1,431.1	1,248.8	182.29	7.851		
12,772.4	7,307.0	12,774.2	7,307.0	93.5	94.6	90.00	5,092.7	1,280.1	1,438.6	1,255.1	183.55	7.838 SF		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3E-9H-N267
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Reference Site:	S9-T2N-R67W (Sprague)	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Sprague 3E-9H-N267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 3J-9H-N267 - Hz - Plan #1													Offset Site Error:	0.0 ft
Survey Program: O-Geolink MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	94.11	-3.6	50.3	50.4					
100.0	100.0	100.0	100.0	0.1	0.1	94.11	-3.6	50.3	50.4	50.2	0.24	206.465		
200.0	200.0	200.0	200.0	0.3	0.3	94.11	-3.6	50.3	50.4	49.9	0.59	85.015 CC, ES		
300.0	300.0	298.3	298.3	0.5	0.5	-108.70	-4.2	51.9	52.4	51.4	0.94	55.687		
400.0	400.0	396.3	396.1	0.7	0.7	-109.72	-5.8	56.7	58.2	56.9	1.29	45.008		
500.0	499.9	493.8	493.3	0.8	0.9	-111.01	-8.6	64.5	67.9	66.2	1.65	41.026		
600.0	599.7	590.5	589.2	1.0	1.1	-112.28	-12.3	75.4	81.4	79.4	2.03	40.108 SF		
700.0	699.4	686.1	683.8	1.3	1.4	-113.38	-17.1	89.2	98.8	96.4	2.42	40.752		
800.0	798.9	780.5	776.5	1.5	1.8	-114.24	-22.9	105.7	119.9	117.1	2.84	42.216		
900.0	898.3	873.4	867.2	1.7	2.2	-114.90	-29.5	124.7	144.7	141.5	3.28	44.124		
1,000.0	997.4	969.6	960.8	2.0	2.6	-115.64	-36.9	145.9	171.7	168.0	3.75	45.750		
1,100.0	1,096.3	1,065.6	1,054.2	2.3	3.0	-116.57	-44.2	167.0	199.5	195.2	4.25	46.905		
1,200.0	1,194.9	1,161.3	1,147.2	2.6	3.4	-117.61	-51.5	188.0	228.1	223.3	4.78	47.726		
1,250.0	1,244.1	1,209.1	1,193.7	2.8	3.6	-118.15	-55.2	198.5	242.7	237.7	5.05	48.063		
1,300.0	1,293.3	1,256.8	1,240.1	3.0	3.8	-118.80	-58.8	208.9	257.5	252.2	5.33	48.331		
1,400.0	1,391.6	1,352.1	1,332.8	3.3	4.3	-119.89	-66.1	229.9	287.1	281.2	5.89	48.767		
1,500.0	1,489.9	1,447.5	1,425.6	3.7	4.7	-120.77	-73.4	250.9	316.8	310.3	6.45	49.104		
1,600.0	1,588.3	1,542.9	1,518.4	4.0	5.1	-121.51	-80.7	271.8	346.5	339.5	7.02	49.371		
1,700.0	1,686.6	1,638.3	1,611.2	4.4	5.5	-122.13	-88.0	292.8	376.3	368.7	7.59	49.587		
1,800.0	1,784.9	1,733.7	1,703.9	4.7	6.0	-122.66	-95.3	313.7	406.1	398.0	8.16	49.765		
1,900.0	1,883.2	1,829.1	1,796.7	5.1	6.4	-123.12	-102.6	334.7	436.0	427.2	8.73	49.913		
2,000.0	1,981.6	1,924.5	1,889.5	5.4	6.8	-123.51	-109.9	355.6	465.8	456.5	9.31	50.039		
2,100.0	2,079.9	2,019.9	1,982.2	5.8	7.2	-123.86	-117.1	376.6	495.7	485.8	9.89	50.146		
2,200.0	2,178.2	2,115.3	2,075.0	6.2	7.7	-124.17	-124.4	397.5	525.6	515.1	10.46	50.240		
2,300.0	2,276.6	2,210.7	2,167.8	6.5	8.1	-124.45	-131.7	418.5	555.5	544.5	11.04	50.321		
2,400.0	2,374.9	2,306.0	2,260.6	6.9	8.5	-124.70	-139.0	439.4	585.4	573.8	11.62	50.392		
2,500.0	2,473.2	2,401.4	2,353.3	7.2	9.0	-124.92	-146.3	460.4	615.4	603.2	12.20	50.456		
2,600.0	2,571.5	2,496.8	2,446.1	7.6	9.4	-125.13	-153.6	481.4	645.3	632.5	12.78	50.512		
2,700.0	2,669.9	2,592.2	2,538.9	8.0	9.8	-125.31	-160.9	502.3	675.2	661.9	13.35	50.563		
2,800.0	2,768.2	2,687.6	2,631.7	8.3	10.2	-125.48	-168.2	523.3	705.2	691.3	13.93	50.609		
2,900.0	2,866.5	2,783.0	2,724.4	8.7	10.7	-125.64	-175.5	544.2	735.1	720.6	14.51	50.650		
3,000.0	2,964.8	2,878.4	2,817.2	9.0	11.1	-125.78	-182.8	565.2	765.1	750.0	15.09	50.688		
3,100.0	3,063.2	2,973.8	2,910.0	9.4	11.5	-125.92	-190.1	586.1	795.1	779.4	15.68	50.722		
3,200.0	3,161.6	3,069.3	3,002.9	9.7	12.0	-126.24	-197.4	607.1	824.6	808.3	16.27	50.683		
3,300.0	3,260.4	3,165.2	3,096.1	10.1	12.4	-126.45	-204.7	628.2	853.0	836.2	16.84	50.656		
3,400.0	3,359.4	3,261.3	3,189.6	10.3	12.8	-126.55	-212.0	649.3	880.5	863.1	17.39	50.640		
3,500.0	3,458.7	3,357.7	3,283.4	10.6	13.3	-126.56	-219.4	670.5	907.0	889.1	17.91	50.636		
3,600.0	3,558.1	3,454.3	3,377.3	10.8	13.7	-126.49	-226.8	691.7	932.6	914.1	18.41	50.645		
3,700.0	3,657.7	3,551.0	3,471.4	11.1	14.1	-126.33	-234.2	712.9	957.1	938.2	18.89	50.669		
3,800.0	3,757.5	3,648.0	3,565.7	11.2	14.6	-126.11	-241.6	734.2	980.7	961.3	19.34	50.710		
3,900.0	3,857.4	3,745.0	3,660.1	11.4	15.0	-125.81	-249.0	755.6	1,003.3	983.5	19.76	50.770		
4,000.0	3,957.3	3,842.2	3,754.6	11.5	15.4	-125.44	-256.4	776.9	1,025.0	1,004.9	20.16	50.851		
4,100.0	4,057.3	3,939.4	3,849.1	11.7	15.9	-125.01	-263.9	798.3	1,045.9	1,025.3	20.52	50.957		
4,150.0	4,107.3	3,988.0	3,896.4	11.7	16.1	77.64	-267.6	808.9	1,056.0	1,035.3	20.70	51.012		
4,200.0	4,157.3	4,036.6	3,943.7	11.8	16.3	77.97	-271.3	819.6	1,066.0	1,045.1	20.86	51.091		
4,300.0	4,257.3	4,133.9	4,038.3	11.9	16.7	78.60	-278.7	841.0	1,086.1	1,064.9	21.19	51.257		
4,400.0	4,357.3	4,231.2	4,132.9	12.0	17.2	79.21	-286.2	862.4	1,106.3	1,084.8	21.51	51.431		
4,500.0	4,457.3	4,328.4	4,227.5	12.1	17.6	79.79	-293.6	883.7	1,126.6	1,104.8	21.83	51.612		
4,600.0	4,557.3	4,425.7	4,322.1	12.2	18.1	80.36	-301.0	905.1	1,147.1	1,124.9	22.14	51.800		
4,700.0	4,657.3	4,522.9	4,416.6	12.3	18.5	80.91	-308.5	926.5	1,167.6	1,145.2	22.46	51.992		
4,800.0	4,757.3	4,620.2	4,511.2	12.4	18.9	81.44	-315.9	947.8	1,188.3	1,165.5	22.77	52.188		
4,900.0	4,857.3	4,717.4	4,605.8	12.6	19.4	81.95	-323.4	969.2	1,209.0	1,186.0	23.08	52.387		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3E-9H-N267
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Reference Site:	S9-T2N-R67W (Sprague)	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Sprague 3E-9H-N267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 3J-9H-N267 - Hz - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-Geolink MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
5,000.0	4,957.3	4,814.7	4,700.4	12.7	19.8	82.44	-330.8	990.5	1,229.9	1,206.5	23.39	52.589		
5,100.0	5,057.3	4,912.0	4,795.0	12.8	20.3	82.92	-338.2	1,011.9	1,250.8	1,227.1	23.69	52.792		
5,200.0	5,157.3	5,009.2	4,889.6	12.9	20.7	83.38	-345.7	1,033.3	1,271.8	1,247.8	24.00	52.996		
5,300.0	5,257.3	5,106.5	4,984.2	13.0	21.1	83.82	-353.1	1,054.6	1,292.9	1,268.6	24.30	53.201		
5,400.0	5,357.3	5,203.7	5,078.8	13.2	21.6	84.26	-360.5	1,076.0	1,314.1	1,289.5	24.61	53.406		
5,500.0	5,457.3	5,301.0	5,173.4	13.3	22.0	84.68	-368.0	1,097.4	1,335.3	1,310.4	24.91	53.610		
5,600.0	5,557.3	5,398.2	5,267.9	13.4	22.4	85.08	-375.4	1,118.7	1,356.6	1,331.4	25.21	53.814		
5,700.0	5,657.3	5,495.5	5,362.5	13.5	22.9	85.47	-382.8	1,140.1	1,378.0	1,352.4	25.51	54.017		
5,800.0	5,757.3	5,592.8	5,457.1	13.7	23.3	85.86	-390.3	1,161.5	1,399.4	1,373.6	25.81	54.219		
5,900.0	5,857.3	5,690.0	5,551.7	13.8	23.8	86.23	-397.7	1,182.8	1,420.9	1,394.7	26.11	54.419		
6,000.0	5,957.3	5,787.3	5,646.3	13.9	24.2	86.58	-405.1	1,204.2	1,442.4	1,416.0	26.41	54.618		
6,100.0	6,057.3	5,884.5	5,740.9	14.1	24.6	86.93	-412.6	1,225.6	1,464.0	1,437.3	26.71	54.815		
6,200.0	6,157.3	5,981.8	5,835.5	14.2	25.1	87.27	-420.0	1,246.9	1,485.6	1,458.6	27.01	55.009		
6,300.0	6,257.3	6,079.0	5,930.1	14.3	25.5	87.60	-427.4	1,268.3	1,507.3	1,480.0	27.31	55.202		
6,400.0	6,357.3	6,176.3	6,024.7	14.5	26.0	87.92	-434.9	1,289.7	1,529.0	1,501.4	27.60	55.392		



Cathedral Energy Services

Anticollision Report

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Reference Site:	S9-T2N-R67W (Sprague)	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Sprague 3E-9H-N267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 5011.0ft (Original Well Elev)

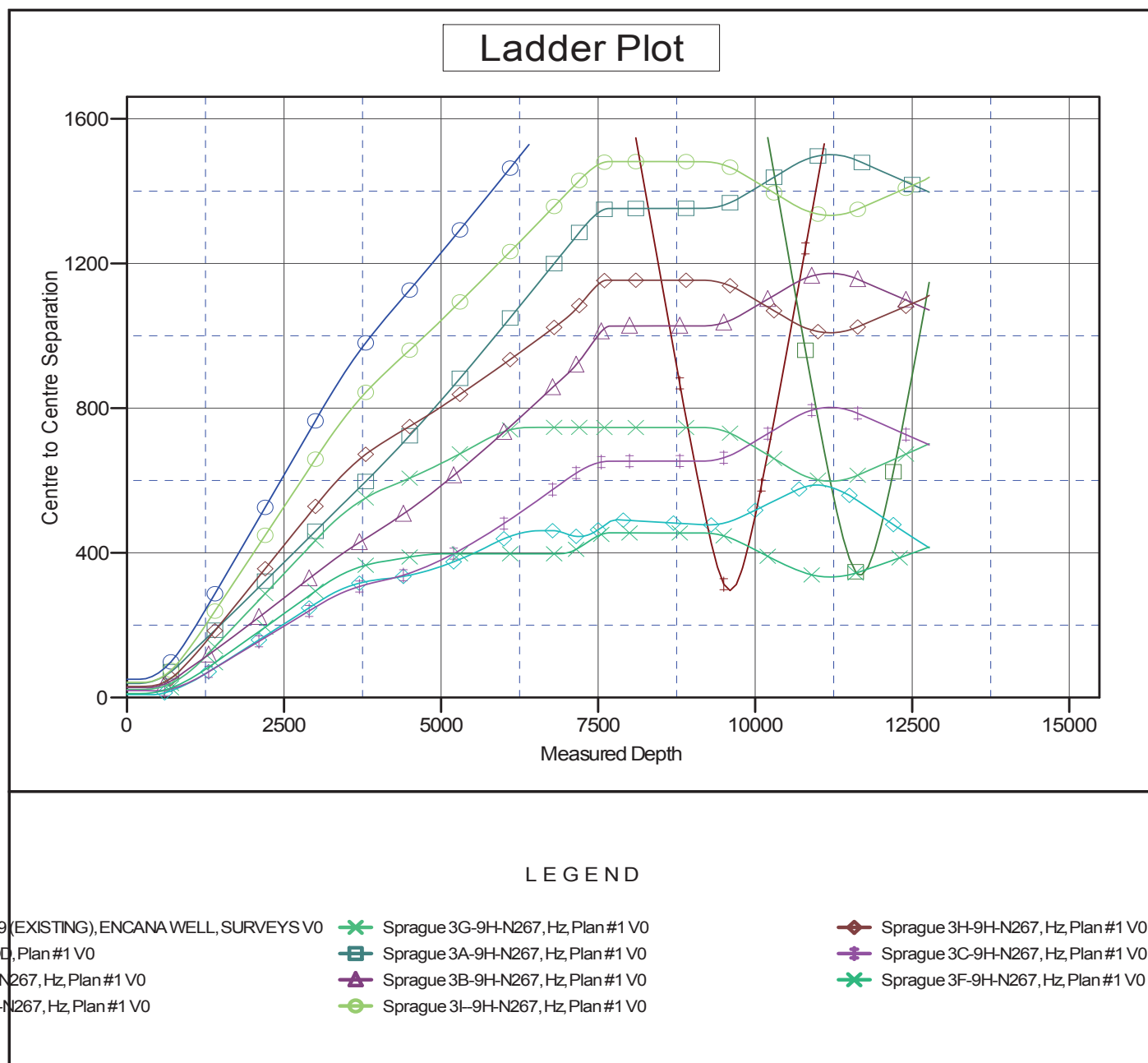
Offset Depths are relative to Offset Datum

Central Meridian is -105.500000 °

Coordinates are relative to: Sprague 3E-9H-N267

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.39°



CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation