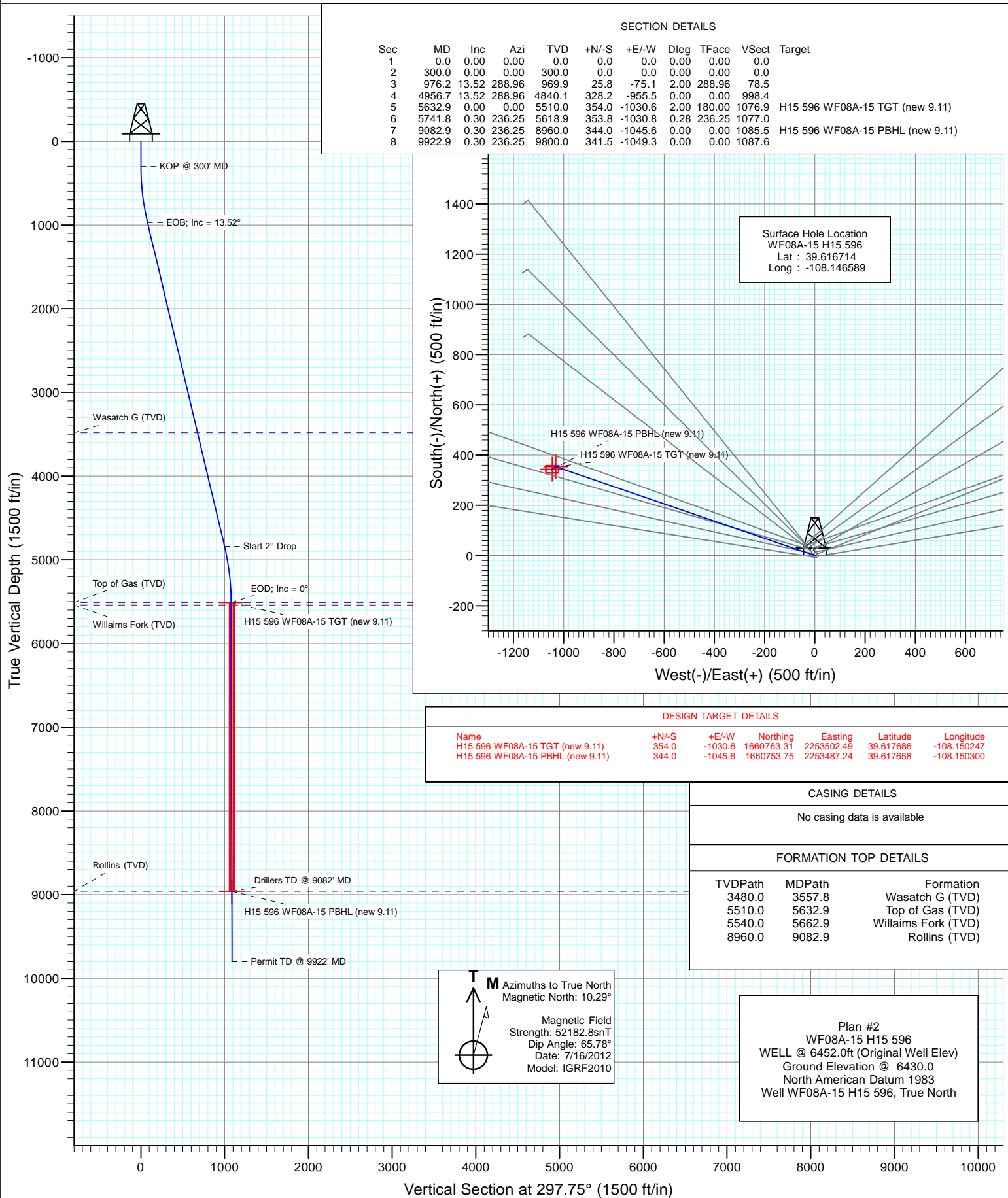




Project: North Piceance
Site: H15 596 (S15-T5S-R96W)
Well: WF08A-15 H15 596
Wellbore: DD
Design: Plan #2



Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well WF08A-15 H15 596
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 6452.0ft (Original Well Elev)
Project:	North Piceance	MD Reference:	WELL @ 6452.0ft (Original Well Elev)
Site:	H15 596 (S15-T5S-R96W)	North Reference:	True
Well:	WF08A-15 H15 596	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #2		

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

Site		H15 596 (S15-T5S-R96W)			
Site Position:		Northing:	1,660,385.37 ft	Latitude:	39.616731
From:	Lat/Long	Easting:	2,254,530.40 ft	Longitude:	-108.146561
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.67 °

Well	WF08A-15 H15 596					
Well Position	+N/-S	0.0 ft	Northing:	1,660,379.44 ft	Latitude:	39.616714
	+E/-W	0.0 ft	Easting:	2,254,522.34 ft	Longitude:	-108.146589
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	6,430.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/16/2012	10.30	65.78	52,183

Design	Plan #2			
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	297.75

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	
300.0	0.00	0.00	300.0	0.0	0.0	0.00	0.00	0.00	0.00	
976.2	13.52	288.96	969.9	25.8	-75.1	2.00	2.00	0.00	288.96	
4,956.7	13.52	288.96	4,840.1	328.2	-955.5	0.00	0.00	0.00	0.00	
5,632.9	0.00	0.00	5,510.0	354.0	-1,030.6	2.00	-2.00	0.00	180.00	H15 596 WF08A-15 T
5,741.8	0.30	236.25	5,618.9	353.8	-1,030.8	0.28	0.28	-113.67	236.25	
9,082.9	0.30	236.25	8,960.0	344.0	-1,045.6	0.00	0.00	0.00	0.00	H15 596 WF08A-15 F
9,922.9	0.30	236.25	9,800.0	341.5	-1,049.3	0.00	0.00	0.00	0.00	

Cathedral Energy Services

Planning Report

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Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 6452.0ft (Original Well Elev)
Project:	North Piceance	MD Reference:	WELL @ 6452.0ft (Original Well Elev)
Site:	H15 596 (S15-T5S-R96W)	North Reference:	True
Well:	WF08A-15 H15 596	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #2		

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	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	
400.0	2.00	288.96	400.0	0.6	-1.7	1.7	2.00	2.00	
500.0	4.00	288.96	499.8	2.3	-6.6	6.9	2.00	2.00	
600.0	6.00	288.96	599.5	5.1	-14.8	15.5	2.00	2.00	
700.0	8.00	288.96	698.7	9.1	-26.4	27.6	2.00	2.00	
800.0	10.00	288.96	797.5	14.1	-41.2	43.0	2.00	2.00	
900.0	12.00	288.96	895.6	20.3	-59.2	61.9	2.00	2.00	
976.2	13.52	288.96	969.9	25.8	-75.1	78.5	2.00	2.00	
1,000.0	13.52	288.96	993.1	27.6	-80.4	84.0	0.00	0.00	
1,100.0	13.52	288.96	1,090.3	35.2	-102.5	107.1	0.00	0.00	
1,200.0	13.52	288.96	1,187.5	42.8	-124.6	130.2	0.00	0.00	
1,300.0	13.52	288.96	1,284.8	50.4	-146.7	153.3	0.00	0.00	
1,400.0	13.52	288.96	1,382.0	58.0	-168.9	176.4	0.00	0.00	
1,500.0	13.52	288.96	1,479.2	65.6	-191.0	199.6	0.00	0.00	
1,600.0	13.52	288.96	1,576.4	73.2	-213.1	222.7	0.00	0.00	
1,700.0	13.52	288.96	1,673.7	80.8	-235.2	245.8	0.00	0.00	
1,800.0	13.52	288.96	1,770.9	88.4	-257.3	268.9	0.00	0.00	
1,900.0	13.52	288.96	1,868.1	96.0	-279.4	292.0	0.00	0.00	
2,000.0	13.52	288.96	1,965.4	103.6	-301.6	315.1	0.00	0.00	
2,100.0	13.52	288.96	2,062.6	111.2	-323.7	338.2	0.00	0.00	
2,200.0	13.52	288.96	2,159.8	118.8	-345.8	361.3	0.00	0.00	
2,300.0	13.52	288.96	2,257.0	126.4	-367.9	384.4	0.00	0.00	
2,400.0	13.52	288.96	2,354.3	134.0	-390.0	407.5	0.00	0.00	
2,500.0	13.52	288.96	2,451.5	141.6	-412.1	430.6	0.00	0.00	
2,600.0	13.52	288.96	2,548.7	149.2	-434.3	453.8	0.00	0.00	
2,700.0	13.52	288.96	2,645.9	156.8	-456.4	476.9	0.00	0.00	
2,800.0	13.52	288.96	2,743.2	164.4	-478.5	500.0	0.00	0.00	
2,900.0	13.52	288.96	2,840.4	172.0	-500.6	523.1	0.00	0.00	
3,000.0	13.52	288.96	2,937.6	179.5	-522.7	546.2	0.00	0.00	
3,100.0	13.52	288.96	3,034.9	187.1	-544.8	569.3	0.00	0.00	
3,200.0	13.52	288.96	3,132.1	194.7	-567.0	592.4	0.00	0.00	
3,300.0	13.52	288.96	3,229.3	202.3	-589.1	615.5	0.00	0.00	
3,400.0	13.52	288.96	3,326.5	209.9	-611.2	638.6	0.00	0.00	
3,500.0	13.52	288.96	3,423.8	217.5	-633.3	661.7	0.00	0.00	
3,600.0	13.52	288.96	3,521.0	225.1	-655.4	684.9	0.00	0.00	
3,700.0	13.52	288.96	3,618.2	232.7	-677.5	708.0	0.00	0.00	
3,800.0	13.52	288.96	3,715.4	240.3	-699.7	731.1	0.00	0.00	
3,900.0	13.52	288.96	3,812.7	247.9	-721.8	754.2	0.00	0.00	
4,000.0	13.52	288.96	3,909.9	255.5	-743.9	777.3	0.00	0.00	
4,100.0	13.52	288.96	4,007.1	263.1	-766.0	800.4	0.00	0.00	
4,200.0	13.52	288.96	4,104.4	270.7	-788.1	823.5	0.00	0.00	
4,300.0	13.52	288.96	4,201.6	278.3	-810.2	846.6	0.00	0.00	
4,400.0	13.52	288.96	4,298.8	285.9	-832.4	869.7	0.00	0.00	
4,500.0	13.52	288.96	4,396.0	293.5	-854.5	892.8	0.00	0.00	
4,600.0	13.52	288.96	4,493.3	301.1	-876.6	916.0	0.00	0.00	
4,700.0	13.52	288.96	4,590.5	308.7	-898.7	939.1	0.00	0.00	
4,800.0	13.52	288.96	4,687.7	316.3	-920.8	962.2	0.00	0.00	
4,900.0	13.52	288.96	4,784.9	323.9	-942.9	985.3	0.00	0.00	
4,956.7	13.52	288.96	4,840.1	328.2	-955.5	998.4	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well WF08A-15 H15 596
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 6452.0ft (Original Well Elev)
Project:	North Piceance	MD Reference:	WELL @ 6452.0ft (Original Well Elev)
Site:	H15 596 (S15-T5S-R96W)	North Reference:	True
Well:	WF08A-15 H15 596	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #2		

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
5,000.0	12.66	288.96	4,882.2	331.4	-964.8	1,008.1	2.00	-2.00	
5,100.0	10.66	288.96	4,980.2	337.9	-983.9	1,028.1	2.00	-2.00	
5,200.0	8.66	288.96	5,078.8	343.4	-999.7	1,044.6	2.00	-2.00	
5,300.0	6.66	288.96	5,177.9	347.7	-1,012.3	1,057.8	2.00	-2.00	
5,400.0	4.66	288.96	5,277.4	350.9	-1,021.7	1,067.5	2.00	-2.00	
5,500.0	2.66	288.96	5,377.2	353.0	-1,027.7	1,073.8	2.00	-2.00	
5,600.0	0.66	288.96	5,477.1	353.9	-1,030.4	1,076.7	2.00	-2.00	
5,632.9	0.00	0.00	5,510.0	354.0	-1,030.6	1,076.9	2.00	-2.00	
5,700.0	0.19	236.25	5,577.1	353.9	-1,030.7	1,076.9	0.28	0.28	
5,741.8	0.30	236.25	5,618.9	353.8	-1,030.8	1,077.0	0.28	0.28	
5,800.0	0.30	236.25	5,677.1	353.7	-1,031.1	1,077.2	0.00	0.00	
5,900.0	0.30	236.25	5,777.1	353.4	-1,031.5	1,077.4	0.00	0.00	
6,000.0	0.30	236.25	5,877.1	353.1	-1,032.0	1,077.7	0.00	0.00	
6,100.0	0.30	236.25	5,977.1	352.8	-1,032.4	1,077.9	0.00	0.00	
6,200.0	0.30	236.25	6,077.1	352.5	-1,032.9	1,078.2	0.00	0.00	
6,300.0	0.30	236.25	6,177.1	352.2	-1,033.3	1,078.4	0.00	0.00	
6,400.0	0.30	236.25	6,277.1	351.9	-1,033.7	1,078.7	0.00	0.00	
6,500.0	0.30	236.25	6,377.1	351.6	-1,034.2	1,078.9	0.00	0.00	
6,600.0	0.30	236.25	6,477.1	351.3	-1,034.6	1,079.2	0.00	0.00	
6,700.0	0.30	236.25	6,577.1	351.0	-1,035.1	1,079.5	0.00	0.00	
6,800.0	0.30	236.25	6,677.1	350.7	-1,035.5	1,079.7	0.00	0.00	
6,900.0	0.30	236.25	6,777.1	350.4	-1,035.9	1,080.0	0.00	0.00	
7,000.0	0.30	236.25	6,877.1	350.1	-1,036.4	1,080.2	0.00	0.00	
7,100.0	0.30	236.25	6,977.1	349.8	-1,036.8	1,080.5	0.00	0.00	
7,200.0	0.30	236.25	7,077.1	349.5	-1,037.3	1,080.7	0.00	0.00	
7,300.0	0.30	236.25	7,177.1	349.3	-1,037.7	1,081.0	0.00	0.00	
7,400.0	0.30	236.25	7,277.1	349.0	-1,038.1	1,081.2	0.00	0.00	
7,500.0	0.30	236.25	7,377.1	348.7	-1,038.6	1,081.5	0.00	0.00	
7,600.0	0.30	236.25	7,477.1	348.4	-1,039.0	1,081.7	0.00	0.00	
7,700.0	0.30	236.25	7,577.1	348.1	-1,039.5	1,082.0	0.00	0.00	
7,800.0	0.30	236.25	7,677.1	347.8	-1,039.9	1,082.2	0.00	0.00	
7,900.0	0.30	236.25	7,777.1	347.5	-1,040.4	1,082.5	0.00	0.00	
8,000.0	0.30	236.25	7,877.1	347.2	-1,040.8	1,082.7	0.00	0.00	
8,100.0	0.30	236.25	7,977.1	346.9	-1,041.2	1,083.0	0.00	0.00	
8,200.0	0.30	236.25	8,077.1	346.6	-1,041.7	1,083.2	0.00	0.00	
8,300.0	0.30	236.25	8,177.1	346.3	-1,042.1	1,083.5	0.00	0.00	
8,400.0	0.30	236.25	8,277.1	346.0	-1,042.6	1,083.8	0.00	0.00	
8,500.0	0.30	236.25	8,377.1	345.7	-1,043.0	1,084.0	0.00	0.00	
8,600.0	0.30	236.25	8,477.1	345.4	-1,043.4	1,084.3	0.00	0.00	
8,700.0	0.30	236.25	8,577.1	345.1	-1,043.9	1,084.5	0.00	0.00	
8,800.0	0.30	236.25	8,677.1	344.8	-1,044.3	1,084.8	0.00	0.00	
8,900.0	0.30	236.25	8,777.1	344.5	-1,044.8	1,085.0	0.00	0.00	
9,000.0	0.30	236.25	8,877.1	344.2	-1,045.2	1,085.3	0.00	0.00	
9,082.9	0.30	236.25	8,960.0	344.0	-1,045.6	1,085.5	0.00	0.00	
9,100.0	0.30	236.25	8,977.1	344.0	-1,045.6	1,085.5	0.00	0.00	
9,200.0	0.30	236.25	9,077.1	343.7	-1,046.1	1,085.8	0.00	0.00	
9,300.0	0.30	236.25	9,177.1	343.4	-1,046.5	1,086.0	0.00	0.00	
9,400.0	0.30	236.25	9,277.1	343.1	-1,047.0	1,086.3	0.00	0.00	
9,500.0	0.30	236.25	9,377.1	342.8	-1,047.4	1,086.5	0.00	0.00	
9,600.0	0.30	236.25	9,477.1	342.5	-1,047.8	1,086.8	0.00	0.00	
9,700.0	0.30	236.25	9,577.1	342.2	-1,048.3	1,087.0	0.00	0.00	
9,800.0	0.30	236.25	9,677.1	341.9	-1,048.7	1,087.3	0.00	0.00	

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Well:	WF08A-15 H15 596	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #2		

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
9,900.0	0.30	236.25	9,777.1	341.6	-1,049.2	1,087.5	0.00	0.00	
9,922.9	0.30	236.25	9,800.0	341.5	-1,049.3	1,087.6	0.00	0.00	

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
H15 596 WF08A-15 TG ⁺ - hit/miss target - Shape - Point	0.00	0.00	5,510.0	619.6	-1,143.5	1,661,032.08	2,253,397.37	39.618415	-108.150648
- plan misses target center by 288.6ft at 5632.9ft MD (5510.0 TVD, 354.0 N, -1030.6 E)									
H15 596 WF08A-15 TG ⁺ - plan hits target center - Point	0.00	0.00	5,510.0	354.0	-1,030.6	1,660,763.31	2,253,502.49	39.617686	-108.150247
H15 596 WF08A-15 PB ⁺ - plan misses target center by 288.6ft at 9082.7ft MD (8959.7 TVD, 344.0 N, -1045.6 E) - Rectangle (sides W30.0 H50.0 D0.0)	0.00	0.00	8,960.0	609.6	-1,158.5	1,661,022.51	2,253,382.08	39.618387	-108.150701
H15 596 WF08A-15 PB ⁺ - plan hits target center - Rectangle (sides W30.0 H50.0 D0.0)	0.00	0.00	8,960.0	344.0	-1,045.6	1,660,753.75	2,253,487.24	39.617658	-108.150300

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,557.8	3,480.0	Wasatch G (TVD)				
5,632.9	5,510.0	Top of Gas (TVD)				
5,662.9	5,540.0	Willaims Fork (TVD)				
9,082.9	8,960.0	Rollins (TVD)				

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
300.0	300.0	0.0	0.0	KOP @ 300' MD
976.2	969.9	25.8	-75.1	EOB; Inc = 13.52°
4,956.7	4,840.1	328.2	-955.5	Start 2° Drop
5,632.9	5,510.0	354.0	-1,030.6	EOD; Inc = 0°
9,082.9	8,960.0	353.8	-1,030.8	Drillers TD @ 9082' MD
9,922.9	9,800.0	344.0	-1,045.6	Permit TD @ 9922' MD