

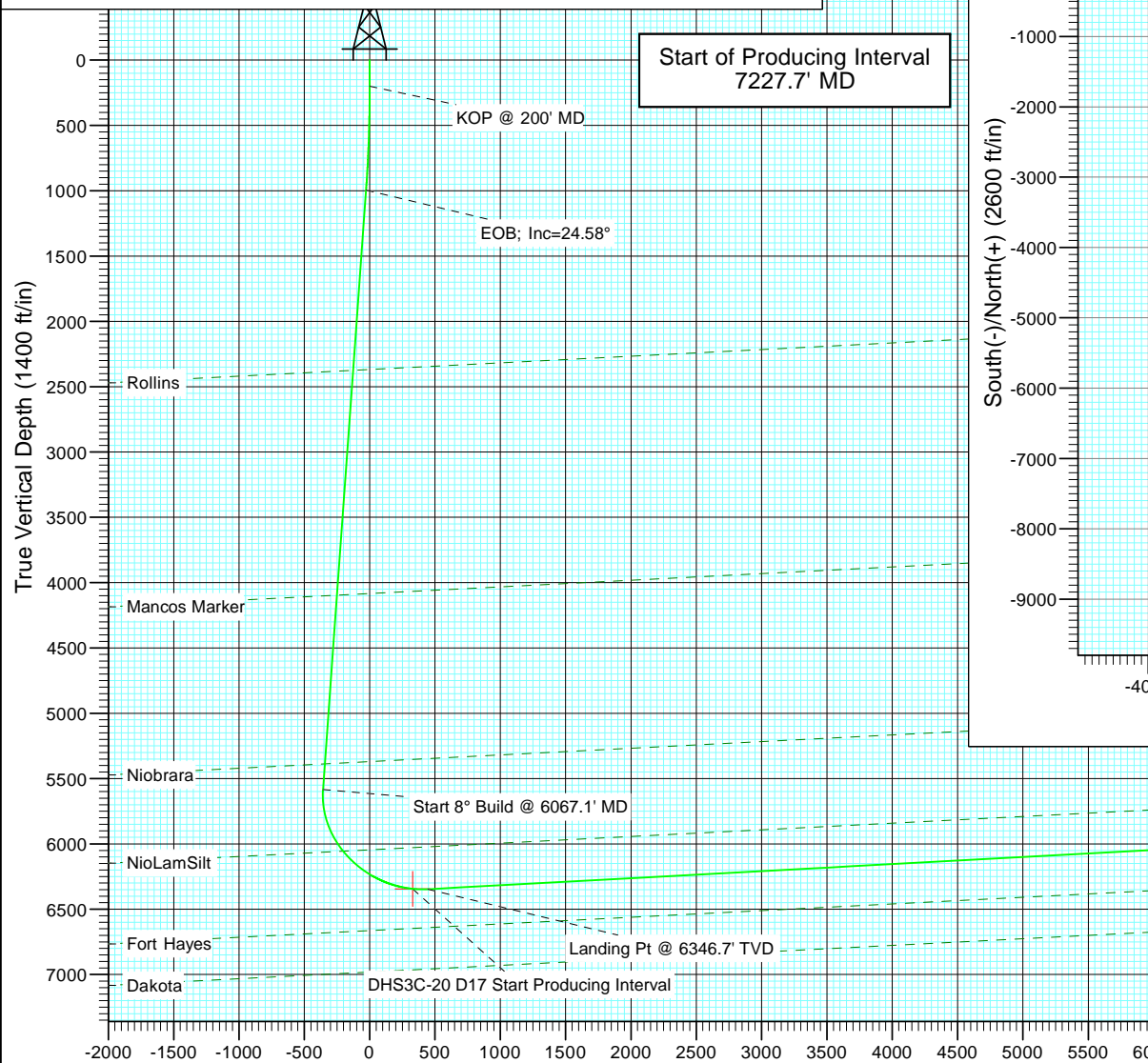


Project: North Piceance  
Site: D17 998  
Well: DHS3C-20 D17  
Wellbore: HZ  
Design: Plan #2

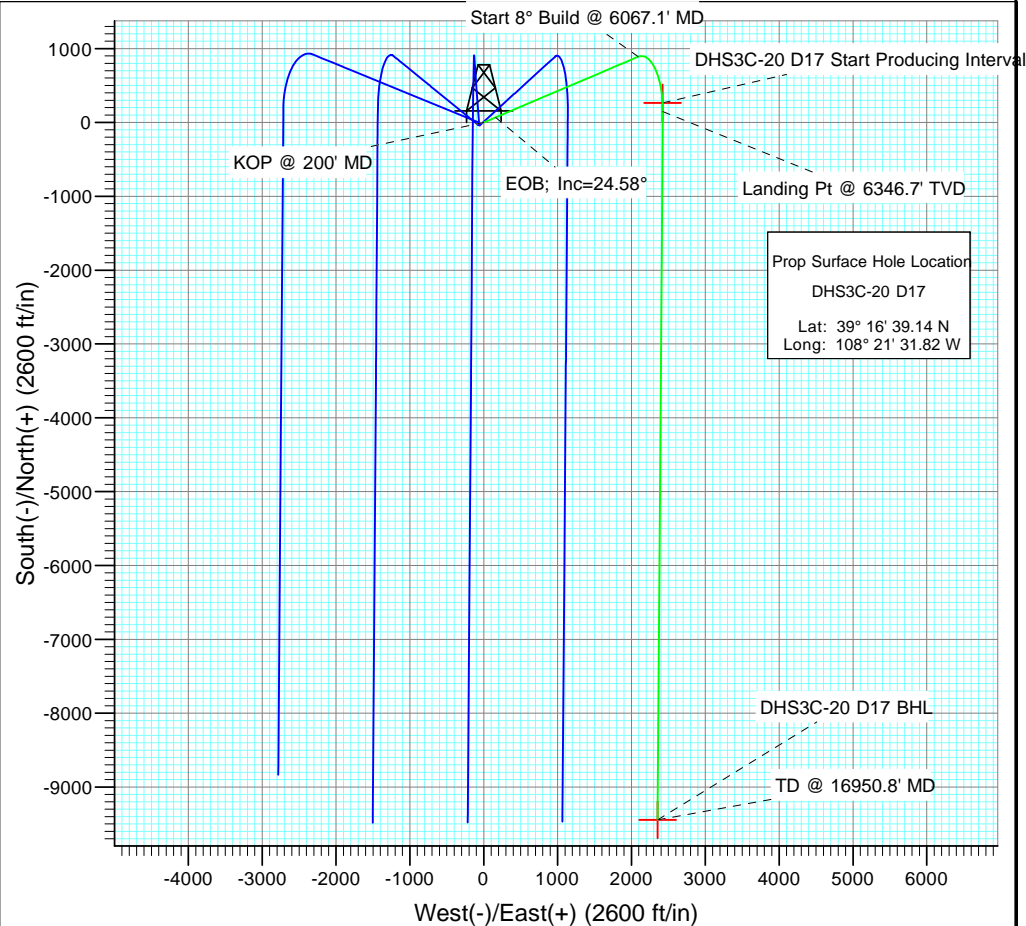


#### SECTION DETAILS

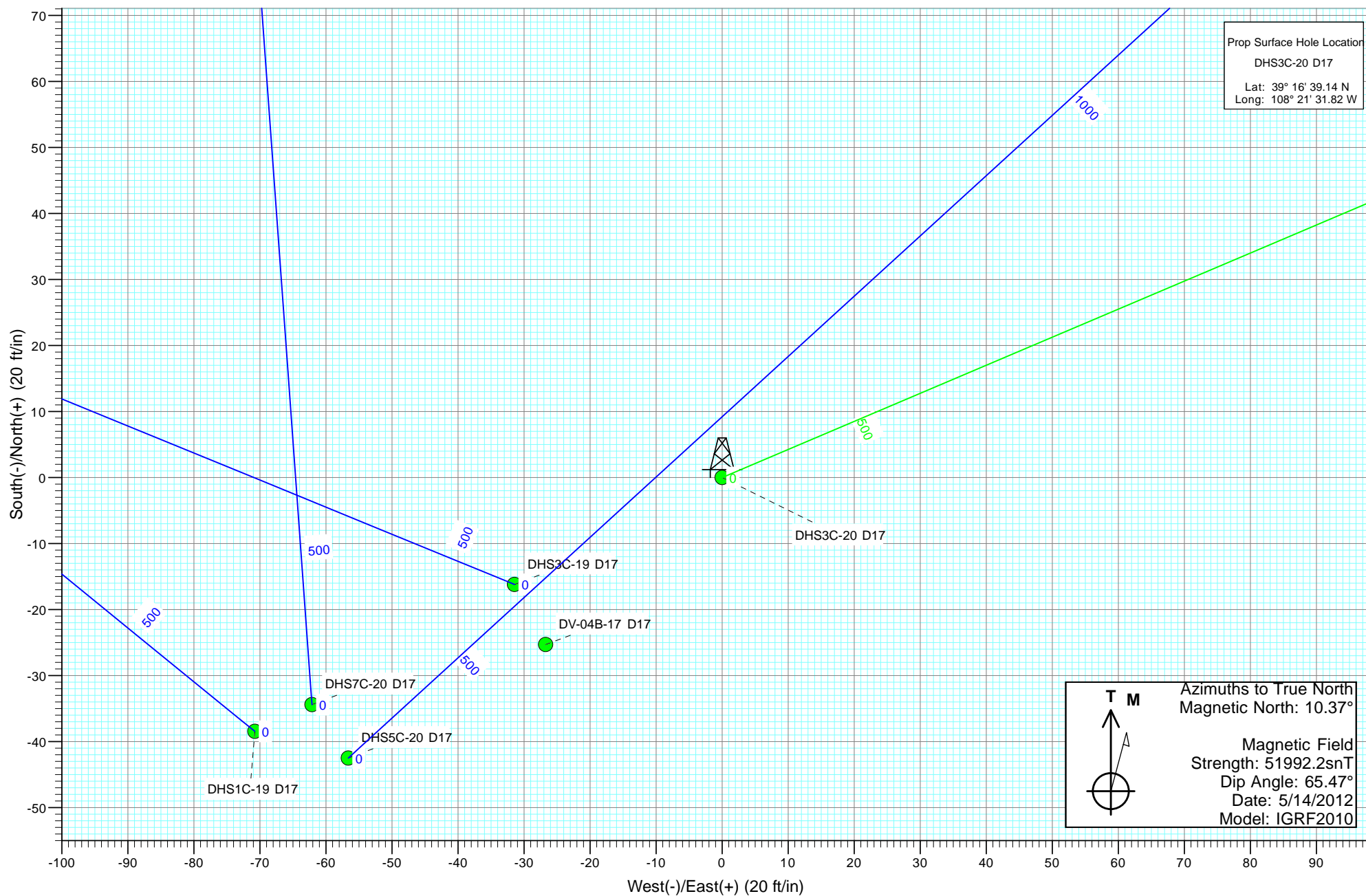
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSection	Annotation
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.0	KOP @ 200' MD
3	1019.5	24.58	66.96	994.5	67.7	159.3	3.00	66.96	-27.2	EOB; Inc=24.58°
4	6067.1	24.58	66.96	5584.6	889.5	2091.8	0.00	0.00	-357.3	Start 8° Build @ 6067.1' MD
5	7345.8	93.00	180.43	6346.7	146.3	2425.5	8.00	110.35	444.5	Landing Pt @ 6346.7' TVD
6	16950.8	93.00	180.43	5844.0	-9445.3	2353.5	0.00	0.00	9734.1	TD @ 16950.8' MD



Vertical Section at 166.01° (1400 ft/in)

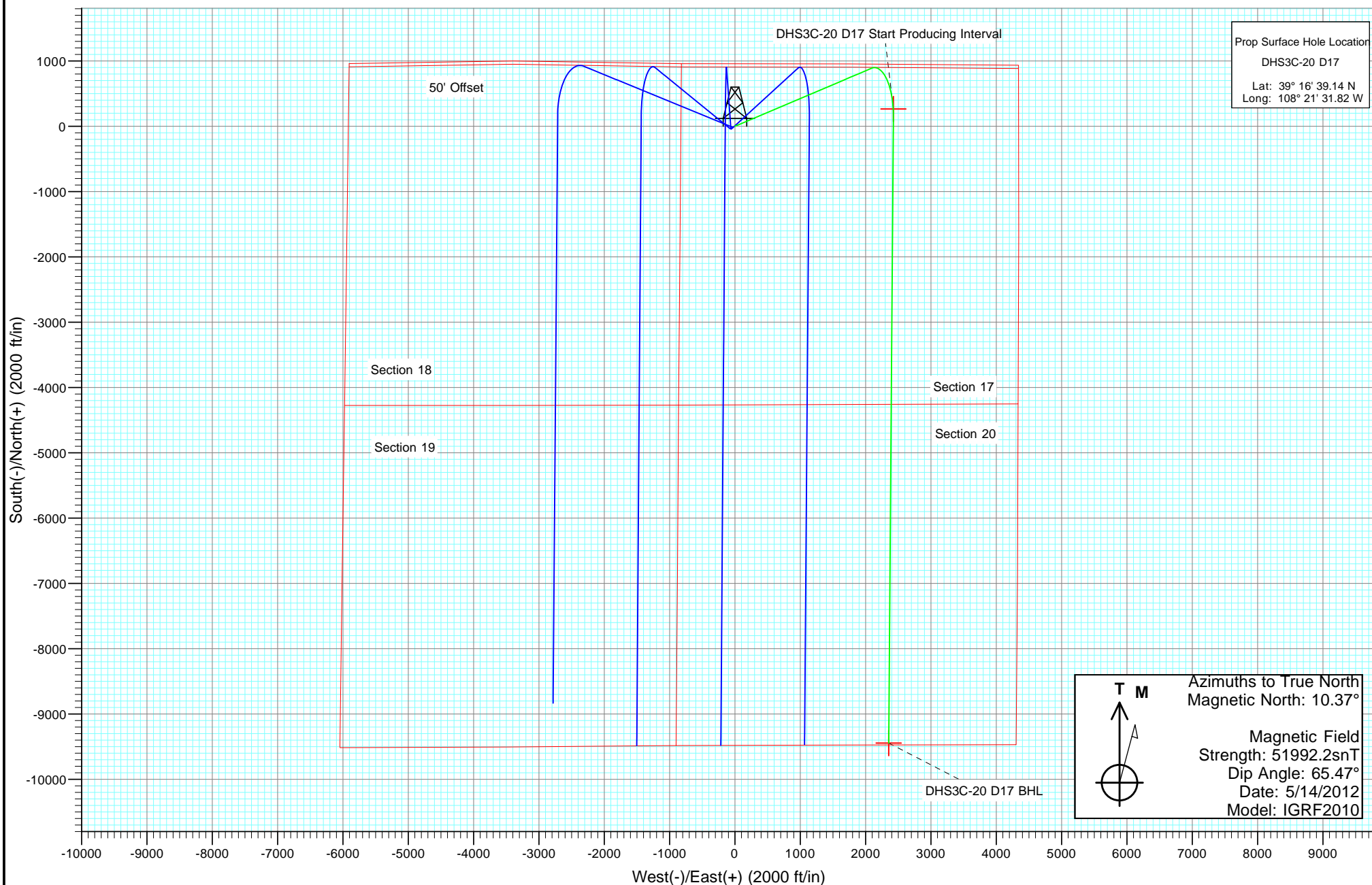


Plan #2 DHS3C-20 D17 12XXXX; DN WELL @ 5805.0ft (Original Well Elev) North American Datum 1983 Well DHS3C-20 D17, True North						
Type	Target	Azimuth	Origin	Type	N/S	E/W
TD	No Target (Freehand)	166.01	Slot		0.0	0.0
						From TVD
						0.0
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	
DHS3C-20 D17 BHL	5844.0	-9445.3	2353.5	39° 15' 5.78 N	108° 21' 1.90 W	
DHS3C-20 D17 Start Producing Interval	6343.9	264.2	2422.6	39° 16' 41.75 N	108° 21' 1.01 W	





Project: North Piceance  
Site: D17 998  
Well: DHS3C-20 D17  
Wellbore: HZ  
Design: Plan #2



# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well DHS3C-20 D17
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	WELL @ 5805.0ft (Original Well Elev)
<b>Project:</b>	North Piceance	<b>MD Reference:</b>	WELL @ 5805.0ft (Original Well Elev)
<b>Site:</b>	D17 998	<b>North Reference:</b>	True
<b>Well:</b>	DHS3C-20 D17	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	HZ		
<b>Design:</b>	Plan #2		

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

Site		D17 998			
Site Position:		Northing:	1,538,697.26 ft	Latitude:	39° 16' 38.98 N
From:	Lat/Long	Easting:	2,190,836.33 ft	Longitude:	108° 21' 32.22 W
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.80 °

Well	DHS3C-20 D17					
Well Position	+N/-S	0.0 ft	Northing:	1,538,712.43 ft	Latitude:	39° 16' 39.14 N
	+E/-W	0.0 ft	Easting:	2,190,868.28 ft	Longitude:	108° 21' 31.82 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	5,773.0 ft

<b>Wellbore</b>	HZ				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	5/14/2012	10.37	65.47	51,992

<b>Design</b>	Plan #2			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	166.01

<b>Plan Sections</b>										
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	
1,019.5	24.58	66.96	994.5	67.7	159.3	3.00	3.00	0.00	66.96	
6,067.1	24.58	66.96	5,584.6	889.5	2,091.8	0.00	0.00	0.00	0.00	
7,345.8	93.00	180.43	6,346.7	146.3	2,425.5	8.00	5.35	8.87	110.35	
16,950.8	93.00	180.43	5,844.0	-9,445.3	2,353.5	0.00	0.00	0.00	0.00	DHS3C-20 D17 BHL

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well DHS3C-20 D17
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	WELL @ 5805.0ft (Original Well Elev)
<b>Project:</b>	North Piceance	<b>MD Reference:</b>	WELL @ 5805.0ft (Original Well Elev)
<b>Site:</b>	D17 998	<b>North Reference:</b>	True
<b>Well:</b>	DHS3C-20 D17	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	HZ		
<b>Design:</b>	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	KOP @ 200' MD
300.0	3.00	66.96	300.0	1.0	2.4	-0.4	3.00	3.00	
400.0	6.00	66.96	399.6	4.1	9.6	-1.6	3.00	3.00	
500.0	9.00	66.96	498.8	9.2	21.6	-3.7	3.00	3.00	
600.0	12.00	66.96	597.1	16.3	38.4	-6.6	3.00	3.00	
700.0	15.00	66.96	694.3	25.5	59.9	-10.2	3.00	3.00	
800.0	18.00	66.96	790.2	36.6	86.0	-14.7	3.00	3.00	
900.0	21.00	66.96	884.4	49.6	116.7	-19.9	3.00	3.00	
1,000.0	24.00	66.96	976.8	64.6	151.9	-26.0	3.00	3.00	
1,019.5	24.58	66.96	994.5	67.7	159.3	-27.2	3.00	3.00	EOB; Inc=24.58°
1,100.0	24.58	66.96	1,067.8	80.9	190.2	-32.5	0.00	0.00	
1,200.0	24.58	66.96	1,158.7	97.1	228.4	-39.0	0.00	0.00	
1,300.0	24.58	66.96	1,249.7	113.4	266.7	-45.6	0.00	0.00	
1,400.0	24.58	66.96	1,340.6	129.7	305.0	-52.1	0.00	0.00	
1,500.0	24.58	66.96	1,431.5	146.0	343.3	-58.6	0.00	0.00	
1,600.0	24.58	66.96	1,522.5	162.3	381.6	-65.2	0.00	0.00	
1,700.0	24.58	66.96	1,613.4	178.5	419.9	-71.7	0.00	0.00	
1,800.0	24.58	66.96	1,704.3	194.8	458.1	-78.3	0.00	0.00	
1,900.0	24.58	66.96	1,795.3	211.1	496.4	-84.8	0.00	0.00	
2,000.0	24.58	66.96	1,886.2	227.4	534.7	-91.3	0.00	0.00	
2,100.0	24.58	66.96	1,977.1	243.6	573.0	-97.9	0.00	0.00	
2,200.0	24.58	66.96	2,068.1	259.9	611.3	-104.4	0.00	0.00	
2,300.0	24.58	66.96	2,159.0	276.2	649.6	-111.0	0.00	0.00	
2,400.0	24.58	66.96	2,249.9	292.5	687.8	-117.5	0.00	0.00	
2,500.0	24.58	66.96	2,340.9	308.8	726.1	-124.0	0.00	0.00	
2,549.2	24.58	66.96	2,385.7	316.8	745.0	-127.3	0.00	0.00	Rollins
2,600.0	24.58	66.96	2,431.8	325.0	764.4	-130.6	0.00	0.00	
2,700.0	24.58	66.96	2,522.8	341.3	802.7	-137.1	0.00	0.00	
2,800.0	24.58	66.96	2,613.7	357.6	841.0	-143.7	0.00	0.00	
2,900.0	24.58	66.96	2,704.6	373.9	879.3	-150.2	0.00	0.00	
3,000.0	24.58	66.96	2,795.6	390.2	917.6	-156.7	0.00	0.00	
3,100.0	24.58	66.96	2,886.5	406.4	955.8	-163.3	0.00	0.00	
3,200.0	24.58	66.96	2,977.4	422.7	994.1	-169.8	0.00	0.00	
3,300.0	24.58	66.96	3,068.4	439.0	1,032.4	-176.4	0.00	0.00	
3,400.0	24.58	66.96	3,159.3	455.3	1,070.7	-182.9	0.00	0.00	
3,500.0	24.58	66.96	3,250.2	471.6	1,109.0	-189.4	0.00	0.00	
3,600.0	24.58	66.96	3,341.2	487.8	1,147.3	-196.0	0.00	0.00	
3,700.0	24.58	66.96	3,432.1	504.1	1,185.5	-202.5	0.00	0.00	
3,800.0	24.58	66.96	3,523.0	520.4	1,223.8	-209.1	0.00	0.00	
3,900.0	24.58	66.96	3,614.0	536.7	1,262.1	-215.6	0.00	0.00	
4,000.0	24.58	66.96	3,704.9	553.0	1,300.4	-222.1	0.00	0.00	
4,100.0	24.58	66.96	3,795.9	569.2	1,338.7	-228.7	0.00	0.00	
4,200.0	24.58	66.96	3,886.8	585.5	1,377.0	-235.2	0.00	0.00	
4,300.0	24.58	66.96	3,977.7	601.8	1,415.3	-241.8	0.00	0.00	
4,400.0	24.58	66.96	4,068.7	618.1	1,453.5	-248.3	0.00	0.00	
4,453.1	24.58	66.96	4,117.0	626.7	1,473.9	-251.8	0.00	0.00	Mancos Marker
4,500.0	24.58	66.96	4,159.6	634.4	1,491.8	-254.8	0.00	0.00	
4,600.0	24.58	66.96	4,250.5	650.6	1,530.1	-261.4	0.00	0.00	
4,700.0	24.58	66.96	4,341.5	666.9	1,568.4	-267.9	0.00	0.00	
4,800.0	24.58	66.96	4,432.4	683.2	1,606.7	-274.5	0.00	0.00	

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well DHS3C-20 D17
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	WELL @ 5805.0ft (Original Well Elev)
<b>Project:</b>	North Piceance	<b>MD Reference:</b>	WELL @ 5805.0ft (Original Well Elev)
<b>Site:</b>	D17 998	<b>North Reference:</b>	True
<b>Well:</b>	DHS3C-20 D17	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	HZ		
<b>Design:</b>	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
4,900.0	24.58	66.96	4,523.3	699.5	1,645.0	-281.0	0.00	0.00	
5,000.0	24.58	66.96	4,614.3	715.8	1,683.2	-287.5	0.00	0.00	
5,100.0	24.58	66.96	4,705.2	732.0	1,721.5	-294.1	0.00	0.00	
5,200.0	24.58	66.96	4,796.1	748.3	1,759.8	-300.6	0.00	0.00	
5,300.0	24.58	66.96	4,887.1	764.6	1,798.1	-307.2	0.00	0.00	
5,400.0	24.58	66.96	4,978.0	780.9	1,836.4	-313.7	0.00	0.00	
5,500.0	24.58	66.96	5,069.0	797.1	1,874.7	-320.2	0.00	0.00	
5,600.0	24.58	66.96	5,159.9	813.4	1,913.0	-326.8	0.00	0.00	
5,700.0	24.58	66.96	5,250.8	829.7	1,951.2	-333.3	0.00	0.00	
5,800.0	24.58	66.96	5,341.8	846.0	1,989.5	-339.8	0.00	0.00	
5,880.7	24.58	66.96	5,415.2	859.1	2,020.4	-345.1	0.00	0.00	Niobrara
5,900.0	24.58	66.96	5,432.7	862.3	2,027.8	-346.4	0.00	0.00	
6,000.0	24.58	66.96	5,523.6	878.5	2,066.1	-352.9	0.00	0.00	
6,067.1	24.58	66.96	5,584.6	889.5	2,091.8	-357.3	0.00	0.00	Start 8° Build @ 6067.1' MD
6,100.0	23.79	73.09	5,614.7	894.1	2,104.4	-358.7	8.00	-2.42	
6,200.0	23.01	93.23	5,706.6	898.8	2,143.3	-354.0	8.00	-0.78	
6,300.0	24.78	112.58	5,798.2	889.7	2,182.2	-335.7	8.00	1.77	
6,400.0	28.63	128.26	5,887.6	866.8	2,220.4	-304.2	8.00	3.85	
6,500.0	33.85	140.00	5,973.1	830.5	2,257.2	-260.1	8.00	5.22	
6,600.0	39.91	148.73	6,053.1	781.7	2,291.8	-204.4	8.00	6.06	
6,642.2	42.63	151.76	6,084.8	757.5	2,305.6	-177.6	8.00	6.45	NioLamSilt
6,700.0	46.48	155.43	6,126.0	721.2	2,323.6	-138.0	8.00	6.65	
6,800.0	53.35	160.79	6,190.4	650.2	2,351.9	-62.3	8.00	6.88	
6,900.0	60.43	165.25	6,245.0	570.2	2,376.2	21.3	8.00	7.08	
7,000.0	67.63	169.12	6,288.8	482.6	2,396.1	111.1	8.00	7.21	
7,100.0	74.92	172.61	6,320.9	389.1	2,411.0	205.4	8.00	7.29	
7,200.0	82.26	175.86	6,340.7	291.7	2,420.8	302.3	8.00	7.34	
7,227.7	84.30	176.73	6,343.9	264.2	2,422.6	329.4	8.00	7.36	Start of Producing Interval
7,300.0	89.62	179.00	6,347.7	192.1	2,425.3	400.0	8.00	7.36	
7,345.8	93.00	180.43	6,346.7	146.3	2,425.5	444.5	8.00	7.37	Landing Pt @ 6346.7' TVD
7,400.0	93.00	180.43	6,343.9	92.2	2,425.1	496.9	0.00	0.00	
7,500.0	93.00	180.43	6,338.6	-7.7	2,424.4	593.6	0.00	0.00	
7,600.0	93.00	180.43	6,333.4	-107.5	2,423.6	690.3	0.00	0.00	
7,700.0	93.00	180.43	6,328.2	-207.4	2,422.9	787.0	0.00	0.00	
7,800.0	93.00	180.43	6,322.9	-307.2	2,422.1	883.8	0.00	0.00	
7,900.0	93.00	180.43	6,317.7	-407.1	2,421.4	980.5	0.00	0.00	
8,000.0	93.00	180.43	6,312.5	-507.0	2,420.6	1,077.2	0.00	0.00	
8,100.0	93.00	180.43	6,307.2	-606.8	2,419.9	1,173.9	0.00	0.00	
8,200.0	93.00	180.43	6,302.0	-706.7	2,419.1	1,270.6	0.00	0.00	
8,300.0	93.00	180.43	6,296.8	-806.5	2,418.4	1,367.3	0.00	0.00	
8,400.0	93.00	180.43	6,291.5	-906.4	2,417.6	1,464.0	0.00	0.00	
8,500.0	93.00	180.43	6,286.3	-1,006.3	2,416.9	1,560.8	0.00	0.00	
8,600.0	93.00	180.43	6,281.0	-1,106.1	2,416.1	1,657.5	0.00	0.00	
8,700.0	93.00	180.43	6,275.8	-1,206.0	2,415.4	1,754.2	0.00	0.00	
8,800.0	93.00	180.43	6,270.6	-1,305.8	2,414.6	1,850.9	0.00	0.00	
8,900.0	93.00	180.43	6,265.3	-1,405.7	2,413.9	1,947.6	0.00	0.00	
9,000.0	93.00	180.43	6,260.1	-1,505.6	2,413.1	2,044.3	0.00	0.00	
9,100.0	93.00	180.43	6,254.9	-1,605.4	2,412.4	2,141.1	0.00	0.00	
9,200.0	93.00	180.43	6,249.6	-1,705.3	2,411.6	2,237.8	0.00	0.00	
9,300.0	93.00	180.43	6,244.4	-1,805.1	2,410.9	2,334.5	0.00	0.00	
9,400.0	93.00	180.43	6,239.2	-1,905.0	2,410.1	2,431.2	0.00	0.00	
9,500.0	93.00	180.43	6,233.9	-2,004.9	2,409.4	2,527.9	0.00	0.00	

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well DHS3C-20 D17
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	WELL @ 5805.0ft (Original Well Elev)
<b>Project:</b>	North Piceance	<b>MD Reference:</b>	WELL @ 5805.0ft (Original Well Elev)
<b>Site:</b>	D17 998	<b>North Reference:</b>	True
<b>Well:</b>	DHS3C-20 D17	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	HZ		
<b>Design:</b>	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
9,600.0	93.00	180.43	6,228.7	-2,104.7	2,408.6	2,624.6	0.00	0.00	
9,700.0	93.00	180.43	6,223.5	-2,204.6	2,407.9	2,721.4	0.00	0.00	
9,800.0	93.00	180.43	6,218.2	-2,304.4	2,407.1	2,818.1	0.00	0.00	
9,900.0	93.00	180.43	6,213.0	-2,404.3	2,406.4	2,914.8	0.00	0.00	
10,000.0	93.00	180.43	6,207.8	-2,504.2	2,405.6	3,011.5	0.00	0.00	
10,100.0	93.00	180.43	6,202.5	-2,604.0	2,404.9	3,108.2	0.00	0.00	
10,200.0	93.00	180.43	6,197.3	-2,703.9	2,404.1	3,204.9	0.00	0.00	
10,300.0	93.00	180.43	6,192.1	-2,803.7	2,403.4	3,301.7	0.00	0.00	
10,400.0	93.00	180.43	6,186.8	-2,903.6	2,402.6	3,398.4	0.00	0.00	
10,500.0	93.00	180.43	6,181.6	-3,003.5	2,401.9	3,495.1	0.00	0.00	
10,600.0	93.00	180.43	6,176.4	-3,103.3	2,401.1	3,591.8	0.00	0.00	
10,700.0	93.00	180.43	6,171.1	-3,203.2	2,400.4	3,688.5	0.00	0.00	
10,800.0	93.00	180.43	6,165.9	-3,303.0	2,399.6	3,785.2	0.00	0.00	
10,900.0	93.00	180.43	6,160.7	-3,402.9	2,398.9	3,881.9	0.00	0.00	
11,000.0	93.00	180.43	6,155.4	-3,502.8	2,398.1	3,978.7	0.00	0.00	
11,100.0	93.00	180.43	6,150.2	-3,602.6	2,397.4	4,075.4	0.00	0.00	
11,200.0	93.00	180.43	6,145.0	-3,702.5	2,396.6	4,172.1	0.00	0.00	
11,300.0	93.00	180.43	6,139.7	-3,802.3	2,395.9	4,268.8	0.00	0.00	
11,400.0	93.00	180.43	6,134.5	-3,902.2	2,395.1	4,365.5	0.00	0.00	
11,500.0	93.00	180.43	6,129.3	-4,002.1	2,394.4	4,462.2	0.00	0.00	
11,600.0	93.00	180.43	6,124.0	-4,101.9	2,393.7	4,559.0	0.00	0.00	
11,700.0	93.00	180.43	6,118.8	-4,201.8	2,392.9	4,655.7	0.00	0.00	
11,800.0	93.00	180.43	6,113.6	-4,301.6	2,392.2	4,752.4	0.00	0.00	
11,900.0	93.00	180.43	6,108.3	-4,401.5	2,391.4	4,849.1	0.00	0.00	
12,000.0	93.00	180.43	6,103.1	-4,501.4	2,390.7	4,945.8	0.00	0.00	
12,100.0	93.00	180.43	6,097.9	-4,601.2	2,389.9	5,042.5	0.00	0.00	
12,200.0	93.00	180.43	6,092.6	-4,701.1	2,389.2	5,139.3	0.00	0.00	
12,300.0	93.00	180.43	6,087.4	-4,800.9	2,388.4	5,236.0	0.00	0.00	
12,400.0	93.00	180.43	6,082.2	-4,900.8	2,387.7	5,332.7	0.00	0.00	
12,500.0	93.00	180.43	6,076.9	-5,000.7	2,386.9	5,429.4	0.00	0.00	
12,600.0	93.00	180.43	6,071.7	-5,100.5	2,386.2	5,526.1	0.00	0.00	
12,700.0	93.00	180.43	6,066.5	-5,200.4	2,385.4	5,622.8	0.00	0.00	
12,800.0	93.00	180.43	6,061.2	-5,300.2	2,384.7	5,719.6	0.00	0.00	
12,900.0	93.00	180.43	6,056.0	-5,400.1	2,383.9	5,816.3	0.00	0.00	
13,000.0	93.00	180.43	6,050.8	-5,500.0	2,383.2	5,913.0	0.00	0.00	
13,100.0	93.00	180.43	6,045.5	-5,599.8	2,382.4	6,009.7	0.00	0.00	
13,200.0	93.00	180.43	6,040.3	-5,699.7	2,381.7	6,106.4	0.00	0.00	
13,300.0	93.00	180.43	6,035.1	-5,799.5	2,380.9	6,203.1	0.00	0.00	
13,400.0	93.00	180.43	6,029.8	-5,899.4	2,380.2	6,299.9	0.00	0.00	
13,500.0	93.00	180.43	6,024.6	-5,999.3	2,379.4	6,396.6	0.00	0.00	
13,600.0	93.00	180.43	6,019.4	-6,099.1	2,378.7	6,493.3	0.00	0.00	
13,700.0	93.00	180.43	6,014.1	-6,199.0	2,377.9	6,590.0	0.00	0.00	
13,800.0	93.00	180.43	6,008.9	-6,298.8	2,377.2	6,686.7	0.00	0.00	
13,900.0	93.00	180.43	6,003.7	-6,398.7	2,376.4	6,783.4	0.00	0.00	
14,000.0	93.00	180.43	5,998.4	-6,498.6	2,375.7	6,880.1	0.00	0.00	
14,100.0	93.00	180.43	5,993.2	-6,598.4	2,374.9	6,976.9	0.00	0.00	
14,200.0	93.00	180.43	5,988.0	-6,698.3	2,374.2	7,073.6	0.00	0.00	
14,300.0	93.00	180.43	5,982.7	-6,798.1	2,373.4	7,170.3	0.00	0.00	
14,400.0	93.00	180.43	5,977.5	-6,898.0	2,372.7	7,267.0	0.00	0.00	
14,500.0	93.00	180.43	5,972.3	-6,997.9	2,371.9	7,363.7	0.00	0.00	
14,600.0	93.00	180.43	5,967.0	-7,097.7	2,371.2	7,460.4	0.00	0.00	
14,700.0	93.00	180.43	5,961.8	-7,197.6	2,370.4	7,557.2	0.00	0.00	

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well DHS3C-20 D17
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	WELL @ 5805.0ft (Original Well Elev)
<b>Project:</b>	North Piceance	<b>MD Reference:</b>	WELL @ 5805.0ft (Original Well Elev)
<b>Site:</b>	D17 998	<b>North Reference:</b>	True
<b>Well:</b>	DHS3C-20 D17	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	HZ		
<b>Design:</b>	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
14,800.0	93.00	180.43	5,956.6	-7,297.4	2,369.7	7,653.9	0.00	0.00	
14,900.0	93.00	180.43	5,951.3	-7,397.3	2,368.9	7,750.6	0.00	0.00	
15,000.0	93.00	180.43	5,946.1	-7,497.2	2,368.2	7,847.3	0.00	0.00	
15,100.0	93.00	180.43	5,940.9	-7,597.0	2,367.4	7,944.0	0.00	0.00	
15,200.0	93.00	180.43	5,935.6	-7,696.9	2,366.7	8,040.7	0.00	0.00	
15,300.0	93.00	180.43	5,930.4	-7,796.7	2,365.9	8,137.5	0.00	0.00	
15,400.0	93.00	180.43	5,925.2	-7,896.6	2,365.2	8,234.2	0.00	0.00	
15,500.0	93.00	180.43	5,919.9	-7,996.5	2,364.4	8,330.9	0.00	0.00	
15,600.0	93.00	180.43	5,914.7	-8,096.3	2,363.7	8,427.6	0.00	0.00	
15,700.0	93.00	180.43	5,909.5	-8,196.2	2,362.9	8,524.3	0.00	0.00	
15,800.0	93.00	180.43	5,904.2	-8,296.0	2,362.2	8,621.0	0.00	0.00	
15,900.0	93.00	180.43	5,899.0	-8,395.9	2,361.4	8,717.8	0.00	0.00	
16,000.0	93.00	180.43	5,893.8	-8,495.8	2,360.7	8,814.5	0.00	0.00	
16,100.0	93.00	180.43	5,888.5	-8,595.6	2,359.9	8,911.2	0.00	0.00	
16,200.0	93.00	180.43	5,883.3	-8,695.5	2,359.2	9,007.9	0.00	0.00	
16,300.0	93.00	180.43	5,878.1	-8,795.3	2,358.4	9,104.6	0.00	0.00	
16,400.0	93.00	180.43	5,872.8	-8,895.2	2,357.7	9,201.3	0.00	0.00	
16,500.0	93.00	180.43	5,867.6	-8,995.1	2,356.9	9,298.1	0.00	0.00	
16,600.0	93.00	180.43	5,862.4	-9,094.9	2,356.2	9,394.8	0.00	0.00	
16,700.0	93.00	180.43	5,857.1	-9,194.8	2,355.4	9,491.5	0.00	0.00	
16,800.0	93.00	180.43	5,851.9	-9,294.6	2,354.7	9,588.2	0.00	0.00	
16,900.0	93.00	180.43	5,846.7	-9,394.5	2,353.9	9,684.9	0.00	0.00	
16,950.8	93.00	180.43	5,844.0	-9,445.3	2,353.5	9,734.1	0.00	0.00	TD @ 16950.8' MD

### Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
DHS3C-20 D17 Start Pr - plan hits target center - Point	0.00	0.00	6,343.9	264.2	2,422.6	1,538,900.27	2,193,297.99	39° 16' 41.75 N	108° 21' 1.01 W
DHS3C-20 D17 BHL - plan hits target center - Point	0.00	0.00	5,844.0	-9,445.3	2,353.5	1,529,197.78	2,192,923.48	39° 15' 5.78 N	108° 21' 1.90 W

### Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,549.2	2,369.0	Rollins		3.01	
4,453.1	4,084.0	Mancos Marker		3.01	
5,880.7	5,370.0	Niobrara		3.01	
6,642.2	6,045.0	NioLamSilt		3.01	



# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well DHS3C-20 D17
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<b>Project:</b>	North Piceance	<b>MD Reference:</b>	WELL @ 5805.0ft (Original Well Elev)
<b>Site:</b>	D17 998	<b>North Reference:</b>	True
<b>Well:</b>	DHS3C-20 D17	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	HZ		
<b>Design:</b>	Plan #2		

### Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
200.0	200.0	0.0	0.0	KOP @ 200' MD
1,019.5	994.5	67.7	159.3	EOB; Inc=24.58°
6,067.1	5,584.6	889.5	2,091.8	Start 8° Build @ 6067.1' MD
7,227.7	6,343.9	264.2	2,422.6	Start of Producing Interval
7,345.8	6,346.7	146.3	2,425.5	Landing Pt @ 6346.7' TVD
16,950.8	5,844.0	-9,445.3	2,353.5	TD @ 16950.8' MD