

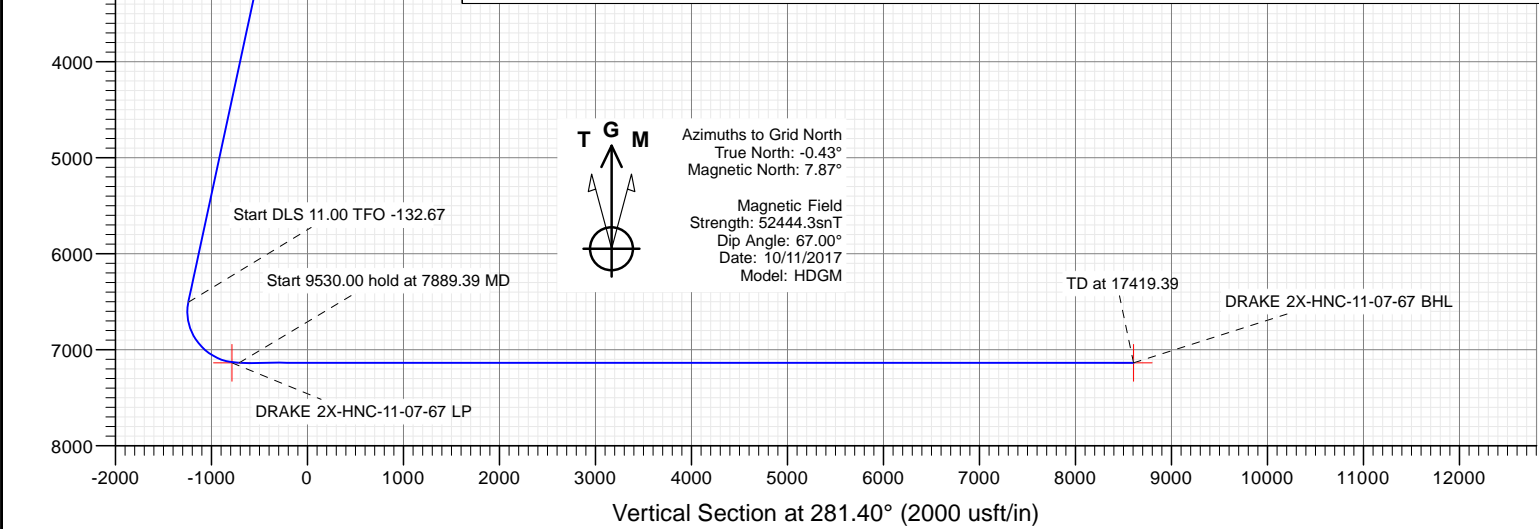
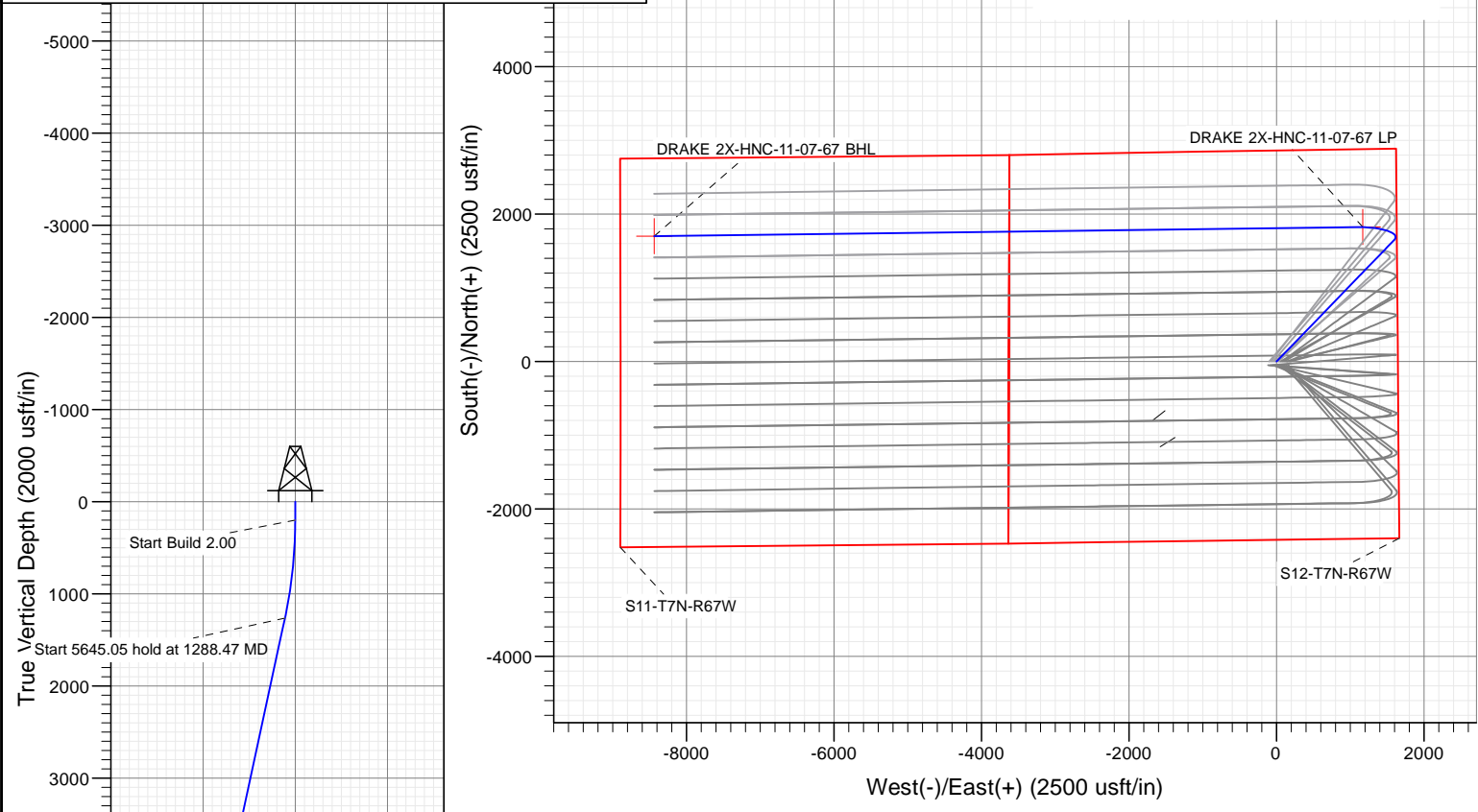
Nickel Road Operating LLC

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	
3	1288.47	21.77	44.05	1262.47	146.85	142.04	2.00	44.05	-110.21	
4	6933.52	21.77	44.05	6504.94	1651.68	1597.59	0.00	0.00	-1239.62	
5	7889.39	90.00	269.26	7137.00	1824.31	1092.54	11.00	-132.67	-710.42	
6	17419.39	90.00	269.26	7137.00	1701.05	-8436.66	0.00	0.00	8606.44	DRAKE 2X-HNC-11-07-67 BHL

PLAN #1 DRAKE 2X-HNC-11-07-67 20' KB @ 5220.00usft Ground Level @ 5200.00 North American Datum 1983 Well DRAKE 2X-HNC-11-07-67, Grid North							
Type TD	Target No Target (Freehand)	Azimuth 281.40	Origin Slot	Type S	N/S 0.00	E/W 0.00	From TVD 0.00
Name		TVD	+N/-S	+E/-W	Latitude	Longitude	
DRAKE 2X-HNC-11-07-67 BHL		7137.00	1701.05	-8436.66	40.593011	-104.868065	
DRAKE 2X-HNC-11-07-67 LP		7137.00	1825.31	-1168.75	40.593159	-104.853472	

Project: WELD COUNTY, CO
Site: S12-T7N-R67W
Well: DRAKE 2X-HNC-11-07-67
Wellbore: OH
Design: PLAN #1



Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well DRAKE 2X-HNC-11-07-67
Company:	Nickel Road Operating LLC	TVD Reference:	20' KB @ 5220.00usft
Project:	WELD COUNTY, CO	MD Reference:	20' KB @ 5220.00usft
Site:	S12-T7N-R67W	North Reference:	Grid
Well:	DRAKE 2X-HNC-11-07-67	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1		

Project	WELD COUNTY, CO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		S12-T7N-R67W			
Site Position:		Northing:	1,457,799.97 usft	Latitude:	40.588176
From:	Lat/Long	Easting:	3,183,834.54 usft	Longitude:	-104.838093
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.43 °

Well	DRAKE 2X-HNC-11-07-67					
Well Position	+N/-S	0.00 usft	Northing:	1,457,799.60 usft	Latitude:	40.588173
	+E/-W	0.00 usft	Easting:	3,183,934.53 usft	Longitude:	-104.837733
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	5,200.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	HDGM	10/11/2017	8.30	67.00	52,444.30000000

Design	PLAN #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(usft)	(usft)	(usft)	(°)
	0.00	0.00	0.00	281.40

Plan Sections										
Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Dogleg Rate	Build Rate	Turn Rate	TFO	Target
(usft)	(°)	(°)	(usft)	(usft)	(usft)	(°/100usft)	(°/100usft)	(°/100usft)	(°)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,288.47	21.77	44.05	1,262.47	146.85	142.04	2.00	2.00	0.00	44.05	
6,933.52	21.77	44.05	6,504.94	1,651.68	1,597.59	0.00	0.00	0.00	0.00	
7,889.39	90.00	269.26	7,137.00	1,824.31	1,092.54	11.00	7.14	-14.10	-132.67	
17,419.39	90.00	269.26	7,137.00	1,701.05	-8,436.66	0.00	0.00	0.00	0.00	DRAKE 2X-HNC-11-0

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well DRAKE 2X-HNC-11-07-67
Company:	Nickel Road Operating LLC	TVD Reference:	20' KB @ 5220.00usft
Project:	WELD COUNTY, CO	MD Reference:	20' KB @ 5220.00usft
Site:	S12-T7N-R67W	North Reference:	Grid
Well:	DRAKE 2X-HNC-11-07-67	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	
300.00	2.00	44.05	299.98	1.25	1.21	-0.94	2.00	2.00	
400.00	4.00	44.05	399.84	5.02	4.85	-3.76	2.00	2.00	
500.00	6.00	44.05	499.45	11.28	10.91	-8.47	2.00	2.00	
600.00	8.00	44.05	598.70	20.04	19.38	-15.04	2.00	2.00	
700.00	10.00	44.05	697.47	31.28	30.26	-23.48	2.00	2.00	
800.00	12.00	44.05	795.62	45.00	43.52	-33.77	2.00	2.00	
900.00	14.00	44.05	893.06	61.17	59.16	-45.91	2.00	2.00	
1,000.00	16.00	44.05	989.64	79.77	77.16	-59.87	2.00	2.00	
1,100.00	18.00	44.05	1,085.27	100.78	97.48	-75.64	2.00	2.00	
1,200.00	20.00	44.05	1,179.82	124.18	120.12	-93.20	2.00	2.00	
1,288.47	21.77	44.05	1,262.47	146.85	142.04	-110.21	2.00	2.00	
1,300.00	21.77	44.05	1,273.18	149.92	145.01	-112.52	0.00	0.00	
1,400.00	21.77	44.05	1,366.05	176.58	170.80	-132.53	0.00	0.00	
1,500.00	21.77	44.05	1,458.91	203.24	196.58	-152.54	0.00	0.00	
1,600.00	21.77	44.05	1,551.78	229.90	222.37	-172.54	0.00	0.00	
1,700.00	21.77	44.05	1,644.65	256.55	248.15	-192.55	0.00	0.00	
1,800.00	21.77	44.05	1,737.52	283.21	273.94	-212.56	0.00	0.00	
1,900.00	21.77	44.05	1,830.39	309.87	299.72	-232.56	0.00	0.00	
2,000.00	21.77	44.05	1,923.26	336.53	325.51	-252.57	0.00	0.00	
2,100.00	21.77	44.05	2,016.12	363.18	351.29	-272.58	0.00	0.00	
2,200.00	21.77	44.05	2,108.99	389.84	377.08	-292.59	0.00	0.00	
2,300.00	21.77	44.05	2,201.86	416.50	402.86	-312.59	0.00	0.00	
2,400.00	21.77	44.05	2,294.73	443.16	428.64	-332.60	0.00	0.00	
2,500.00	21.77	44.05	2,387.60	469.81	454.43	-352.61	0.00	0.00	
2,600.00	21.77	44.05	2,480.47	496.47	480.21	-372.61	0.00	0.00	
2,700.00	21.77	44.05	2,573.33	523.13	506.00	-392.62	0.00	0.00	
2,800.00	21.77	44.05	2,666.20	549.79	531.78	-412.63	0.00	0.00	
2,900.00	21.77	44.05	2,759.07	576.44	557.57	-432.63	0.00	0.00	
3,000.00	21.77	44.05	2,851.94	603.10	583.35	-452.64	0.00	0.00	
3,100.00	21.77	44.05	2,944.81	629.76	609.14	-472.65	0.00	0.00	
3,200.00	21.77	44.05	3,037.68	656.42	634.92	-492.66	0.00	0.00	
3,300.00	21.77	44.05	3,130.54	683.07	660.71	-512.66	0.00	0.00	
3,400.00	21.77	44.05	3,223.41	709.73	686.49	-532.67	0.00	0.00	
3,500.00	21.77	44.05	3,316.28	736.39	712.27	-552.68	0.00	0.00	
3,600.00	21.77	44.05	3,409.15	763.05	738.06	-572.68	0.00	0.00	
3,700.00	21.77	44.05	3,502.02	789.70	763.84	-592.69	0.00	0.00	
3,800.00	21.77	44.05	3,594.89	816.36	789.63	-612.70	0.00	0.00	
3,900.00	21.77	44.05	3,687.76	843.02	815.41	-632.71	0.00	0.00	
4,000.00	21.77	44.05	3,780.62	869.68	841.20	-652.71	0.00	0.00	
4,100.00	21.77	44.05	3,873.49	896.33	866.98	-672.72	0.00	0.00	
4,200.00	21.77	44.05	3,966.36	922.99	892.77	-692.73	0.00	0.00	
4,300.00	21.77	44.05	4,059.23	949.65	918.55	-712.73	0.00	0.00	
4,400.00	21.77	44.05	4,152.10	976.31	944.34	-732.74	0.00	0.00	
4,500.00	21.77	44.05	4,244.97	1,002.96	970.12	-752.75	0.00	0.00	
4,600.00	21.77	44.05	4,337.83	1,029.62	995.90	-772.76	0.00	0.00	
4,700.00	21.77	44.05	4,430.70	1,056.28	1,021.69	-792.76	0.00	0.00	
4,800.00	21.77	44.05	4,523.57	1,082.94	1,047.47	-812.77	0.00	0.00	
4,900.00	21.77	44.05	4,616.44	1,109.59	1,073.26	-832.78	0.00	0.00	
5,000.00	21.77	44.05	4,709.31	1,136.25	1,099.04	-852.78	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well DRAKE 2X-HNC-11-07-67
Company:	Nickel Road Operating LLC	TVD Reference:	20' KB @ 5220.00usft
Project:	WELD COUNTY, CO	MD Reference:	20' KB @ 5220.00usft
Site:	S12-T7N-R67W	North Reference:	Grid
Well:	DRAKE 2X-HNC-11-07-67	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
5,100.00	21.77	44.05	4,802.18	1,162.91	1,124.83	-872.79	0.00	0.00	
5,200.00	21.77	44.05	4,895.04	1,189.57	1,150.61	-892.80	0.00	0.00	
5,300.00	21.77	44.05	4,987.91	1,216.22	1,176.40	-912.80	0.00	0.00	
5,400.00	21.77	44.05	5,080.78	1,242.88	1,202.18	-932.81	0.00	0.00	
5,500.00	21.77	44.05	5,173.65	1,269.54	1,227.97	-952.82	0.00	0.00	
5,600.00	21.77	44.05	5,266.52	1,296.20	1,253.75	-972.83	0.00	0.00	
5,700.00	21.77	44.05	5,359.39	1,322.85	1,279.53	-992.83	0.00	0.00	
5,800.00	21.77	44.05	5,452.25	1,349.51	1,305.32	-1,012.84	0.00	0.00	
5,900.00	21.77	44.05	5,545.12	1,376.17	1,331.10	-1,032.85	0.00	0.00	
6,000.00	21.77	44.05	5,637.99	1,402.83	1,356.89	-1,052.85	0.00	0.00	
6,100.00	21.77	44.05	5,730.86	1,429.48	1,382.67	-1,072.86	0.00	0.00	
6,200.00	21.77	44.05	5,823.73	1,456.14	1,408.46	-1,092.87	0.00	0.00	
6,300.00	21.77	44.05	5,916.60	1,482.80	1,434.24	-1,112.88	0.00	0.00	
6,400.00	21.77	44.05	6,009.46	1,509.46	1,460.03	-1,132.88	0.00	0.00	
6,500.00	21.77	44.05	6,102.33	1,536.11	1,485.81	-1,152.89	0.00	0.00	
6,600.00	21.77	44.05	6,195.20	1,562.77	1,511.60	-1,172.90	0.00	0.00	
6,700.00	21.77	44.05	6,288.07	1,589.43	1,537.38	-1,192.90	0.00	0.00	
6,800.00	21.77	44.05	6,380.94	1,616.09	1,563.16	-1,212.91	0.00	0.00	
6,900.00	21.77	44.05	6,473.81	1,642.74	1,588.95	-1,232.92	0.00	0.00	
6,933.52	21.77	44.05	6,504.94	1,651.68	1,597.59	-1,239.62	0.00	0.00	
7,000.00	17.61	26.03	6,567.57	1,669.60	1,610.59	-1,248.83	11.00	-6.25	
7,100.00	16.13	347.79	6,663.56	1,696.86	1,614.31	-1,247.08	11.00	-1.48	
7,200.00	21.12	316.47	6,758.52	1,723.58	1,598.91	-1,226.71	11.00	4.99	
7,300.00	29.45	299.39	6,848.98	1,748.78	1,564.98	-1,188.47	11.00	8.33	
7,400.00	39.04	289.72	6,931.61	1,771.54	1,513.76	-1,133.75	11.00	9.59	
7,500.00	49.15	283.45	7,003.37	1,791.01	1,447.12	-1,064.58	11.00	10.11	
7,600.00	59.51	278.87	7,061.62	1,806.50	1,367.52	-983.49	11.00	10.36	
7,700.00	69.99	275.18	7,104.24	1,817.42	1,277.89	-893.47	11.00	10.49	
7,800.00	80.54	271.96	7,129.64	1,823.37	1,181.51	-797.82	11.00	10.55	
7,889.39	90.00	269.26	7,137.00	1,824.31	1,092.54	-710.42	11.00	10.58	
7,900.00	90.00	269.26	7,137.00	1,824.17	1,081.93	-700.04	0.00	0.00	
8,000.00	90.00	269.26	7,137.00	1,822.88	981.94	-602.28	0.00	0.00	
8,100.00	90.00	269.26	7,137.00	1,821.58	881.95	-504.52	0.00	0.00	
8,200.00	90.00	269.26	7,137.00	1,820.29	781.96	-406.75	0.00	0.00	
8,300.00	90.00	269.26	7,137.00	1,819.00	681.96	-308.99	0.00	0.00	
8,400.00	90.00	269.26	7,137.00	1,817.70	581.97	-211.23	0.00	0.00	
8,500.00	90.00	269.26	7,137.00	1,816.41	481.98	-113.46	0.00	0.00	
8,600.00	90.00	269.26	7,137.00	1,815.12	381.99	-15.70	0.00	0.00	
8,700.00	90.00	269.26	7,137.00	1,813.82	282.00	82.06	0.00	0.00	
8,800.00	90.00	269.26	7,137.00	1,812.53	182.01	179.83	0.00	0.00	
8,900.00	90.00	269.26	7,137.00	1,811.24	82.01	277.59	0.00	0.00	
9,000.00	90.00	269.26	7,137.00	1,809.94	-17.98	375.36	0.00	0.00	
9,100.00	90.00	269.26	7,137.00	1,808.65	-117.97	473.12	0.00	0.00	
9,200.00	90.00	269.26	7,137.00	1,807.36	-217.96	570.88	0.00	0.00	
9,300.00	90.00	269.26	7,137.00	1,806.06	-317.95	668.65	0.00	0.00	
9,400.00	90.00	269.26	7,137.00	1,804.77	-417.94	766.41	0.00	0.00	
9,500.00	90.00	269.26	7,137.00	1,803.48	-517.94	864.17	0.00	0.00	
9,600.00	90.00	269.26	7,137.00	1,802.18	-617.93	961.94	0.00	0.00	
9,700.00	90.00	269.26	7,137.00	1,800.89	-717.92	1,059.70	0.00	0.00	
9,800.00	90.00	269.26	7,137.00	1,799.60	-817.91	1,157.46	0.00	0.00	
9,900.00	90.00	269.26	7,137.00	1,798.30	-917.90	1,255.23	0.00	0.00	
10,000.00	90.00	269.26	7,137.00	1,797.01	-1,017.89	1,352.99	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well DRAKE 2X-HNC-11-07-67
Company:	Nickel Road Operating LLC	TVD Reference:	20' KB @ 5220.00usft
Project:	WELD COUNTY, CO	MD Reference:	20' KB @ 5220.00usft
Site:	S12-T7N-R67W	North Reference:	Grid
Well:	DRAKE 2X-HNC-11-07-67	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
10,100.00	90.00	269.26	7,137.00	1,795.72	-1,117.89	1,450.75	0.00	0.00	
10,200.00	90.00	269.26	7,137.00	1,794.42	-1,217.88	1,548.52	0.00	0.00	
10,300.00	90.00	269.26	7,137.00	1,793.13	-1,317.87	1,646.28	0.00	0.00	
10,400.00	90.00	269.26	7,137.00	1,791.84	-1,417.86	1,744.04	0.00	0.00	
10,500.00	90.00	269.26	7,137.00	1,790.54	-1,517.85	1,841.81	0.00	0.00	
10,600.00	90.00	269.26	7,137.00	1,789.25	-1,617.84	1,939.57	0.00	0.00	
10,700.00	90.00	269.26	7,137.00	1,787.96	-1,717.84	2,037.33	0.00	0.00	
10,800.00	90.00	269.26	7,137.00	1,786.66	-1,817.83	2,135.10	0.00	0.00	
10,900.00	90.00	269.26	7,137.00	1,785.37	-1,917.82	2,232.86	0.00	0.00	
11,000.00	90.00	269.26	7,137.00	1,784.08	-2,017.81	2,330.62	0.00	0.00	
11,100.00	90.00	269.26	7,137.00	1,782.78	-2,117.80	2,428.39	0.00	0.00	
11,200.00	90.00	269.26	7,137.00	1,781.49	-2,217.79	2,526.15	0.00	0.00	
11,300.00	90.00	269.26	7,137.00	1,780.20	-2,317.78	2,623.92	0.00	0.00	
11,400.00	90.00	269.26	7,137.00	1,778.90	-2,417.78	2,721.68	0.00	0.00	
11,500.00	90.00	269.26	7,137.00	1,777.61	-2,517.77	2,819.44	0.00	0.00	
11,600.00	90.00	269.26	7,137.00	1,776.32	-2,617.76	2,917.21	0.00	0.00	
11,700.00	90.00	269.26	7,137.00	1,775.02	-2,717.75	3,014.97	0.00	0.00	
11,800.00	90.00	269.26	7,137.00	1,773.73	-2,817.74	3,112.73	0.00	0.00	
11,900.00	90.00	269.26	7,137.00	1,772.44	-2,917.73	3,210.50	0.00	0.00	
12,000.00	90.00	269.26	7,137.00	1,771.14	-3,017.73	3,308.26	0.00	0.00	
12,100.00	90.00	269.26	7,137.00	1,769.85	-3,117.72	3,406.02	0.00	0.00	
12,200.00	90.00	269.26	7,137.00	1,768.56	-3,217.71	3,503.79	0.00	0.00	
12,300.00	90.00	269.26	7,137.00	1,767.26	-3,317.70	3,601.55	0.00	0.00	
12,400.00	90.00	269.26	7,137.00	1,765.97	-3,417.69	3,699.31	0.00	0.00	
12,500.00	90.00	269.26	7,137.00	1,764.68	-3,517.68	3,797.08	0.00	0.00	
12,600.00	90.00	269.26	7,137.00	1,763.38	-3,617.68	3,894.84	0.00	0.00	
12,700.00	90.00	269.26	7,137.00	1,762.09	-3,717.67	3,992.60	0.00	0.00	
12,800.00	90.00	269.26	7,137.00	1,760.80	-3,817.66	4,090.37	0.00	0.00	
12,900.00	90.00	269.26	7,137.00	1,759.50	-3,917.65	4,188.13	0.00	0.00	
13,000.00	90.00	269.26	7,137.00	1,758.21	-4,017.64	4,285.89	0.00	0.00	
13,100.00	90.00	269.26	7,137.00	1,756.92	-4,117.63	4,383.66	0.00	0.00	
13,200.00	90.00	269.26	7,137.00	1,755.62	-4,217.63	4,481.42	0.00	0.00	
13,300.00	90.00	269.26	7,137.00	1,754.33	-4,317.62	4,579.18	0.00	0.00	
13,400.00	90.00	269.26	7,137.00	1,753.04	-4,417.61	4,676.95	0.00	0.00	
13,500.00	90.00	269.26	7,137.00	1,751.74	-4,517.60	4,774.71	0.00	0.00	
13,600.00	90.00	269.26	7,137.00	1,750.45	-4,617.59	4,872.47	0.00	0.00	
13,700.00	90.00	269.26	7,137.00	1,749.16	-4,717.58	4,970.24	0.00	0.00	
13,800.00	90.00	269.26	7,137.00	1,747.86	-4,817.58	5,068.00	0.00	0.00	
13,900.00	90.00	269.26	7,137.00	1,746.57	-4,917.57	5,165.77	0.00	0.00	
14,000.00	90.00	269.26	7,137.00	1,745.28	-5,017.56	5,263.53	0.00	0.00	
14,100.00	90.00	269.26	7,137.00	1,743.98	-5,117.55	5,361.29	0.00	0.00	
14,200.00	90.00	269.26	7,137.00	1,742.69	-5,217.54	5,459.06	0.00	0.00	
14,300.00	90.00	269.26	7,137.00	1,741.40	-5,317.53	5,556.82	0.00	0.00	
14,400.00	90.00	269.26	7,137.00	1,740.10	-5,417.53	5,654.58	0.00	0.00	
14,500.00	90.00	269.26	7,137.00	1,738.81	-5,517.52	5,752.35	0.00	0.00	
14,600.00	90.00	269.26	7,137.00	1,737.52	-5,617.51	5,850.11	0.00	0.00	
14,700.00	90.00	269.26	7,137.00	1,736.22	-5,717.50	5,947.87	0.00	0.00	
14,800.00	90.00	269.26	7,137.00	1,734.93	-5,817.49	6,045.64	0.00	0.00	
14,900.00	90.00	269.26	7,137.00	1,733.64	-5,917.48	6,143.40	0.00	0.00	
15,000.00	90.00	269.26	7,137.00	1,732.34	-6,017.48	6,241.16	0.00	0.00	
15,100.00	90.00	269.26	7,137.00	1,731.05	-6,117.47	6,338.93	0.00	0.00	
15,200.00	90.00	269.26	7,137.00	1,729.76	-6,217.46	6,436.69	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well DRAKE 2X-HNC-11-07-67
Company:	Nickel Road Operating LLC	TVD Reference:	20' KB @ 5220.00usft
Project:	WELD COUNTY, CO	MD Reference:	20' KB @ 5220.00usft
Site:	S12-T7N-R67W	North Reference:	Grid
Well:	DRAKE 2X-HNC-11-07-67	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
15,300.00	90.00	269.26	7,137.00	1,728.46	-6,317.45	6,534.45	0.00	0.00	
15,400.00	90.00	269.26	7,137.00	1,727.17	-6,417.44	6,632.22	0.00	0.00	
15,500.00	90.00	269.26	7,137.00	1,725.88	-6,517.43	6,729.98	0.00	0.00	
15,600.00	90.00	269.26	7,137.00	1,724.58	-6,617.43	6,827.74	0.00	0.00	
15,700.00	90.00	269.26	7,137.00	1,723.29	-6,717.42	6,925.51	0.00	0.00	
15,800.00	90.00	269.26	7,137.00	1,722.00	-6,817.41	7,023.27	0.00	0.00	
15,900.00	90.00	269.26	7,137.00	1,720.70	-6,917.40	7,121.03	0.00	0.00	
16,000.00	90.00	269.26	7,137.00	1,719.41	-7,017.39	7,218.80	0.00	0.00	
16,100.00	90.00	269.26	7,137.00	1,718.12	-7,117.38	7,316.56	0.00	0.00	
16,200.00	90.00	269.26	7,137.00	1,716.82	-7,217.38	7,414.32	0.00	0.00	
16,300.00	90.00	269.26	7,137.00	1,715.53	-7,317.37	7,512.09	0.00	0.00	
16,400.00	90.00	269.26	7,137.00	1,714.24	-7,417.36	7,609.85	0.00	0.00	
16,500.00	90.00	269.26	7,137.00	1,712.94	-7,517.35	7,707.62	0.00	0.00	
16,600.00	90.00	269.26	7,137.00	1,711.65	-7,617.34	7,805.38	0.00	0.00	
16,700.00	90.00	269.26	7,137.00	1,710.36	-7,717.33	7,903.14	0.00	0.00	
16,800.00	90.00	269.26	7,137.00	1,709.06	-7,817.32	8,000.91	0.00	0.00	
16,900.00	90.00	269.26	7,137.00	1,707.77	-7,917.32	8,098.67	0.00	0.00	
17,000.00	90.00	269.26	7,137.00	1,706.48	-8,017.31	8,196.43	0.00	0.00	
17,100.00	90.00	269.26	7,137.00	1,705.18	-8,117.30	8,294.20	0.00	0.00	
17,200.00	90.00	269.26	7,137.00	1,703.89	-8,217.29	8,391.96	0.00	0.00	
17,300.00	90.00	269.26	7,137.00	1,702.60	-8,317.28	8,489.72	0.00	0.00	
17,400.00	90.00	269.26	7,137.00	1,701.30	-8,417.27	8,587.49	0.00	0.00	
17,419.39	90.00	269.26	7,137.00	1,701.05	-8,436.66	8,606.44	0.00	0.00	

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
DRAKE 2X-HNC-11-07-4	0.00	359.57	7,137.00	1,825.31	1,169.75	1,459,624.91	3,185,104.28	40.593159	-104.833472
- plan misses target center by 5.70usft at 7812.36usft MD (7131.53 TVD, 1823.75 N, 1169.30 E)									
- Point									
DRAKE 2X-HNC-11-07-4	0.00	359.59	7,137.00	1,701.05	-8,436.66	1,459,500.66	3,175,497.86	40.593011	-104.868065
- plan hits target center									
- Point									