

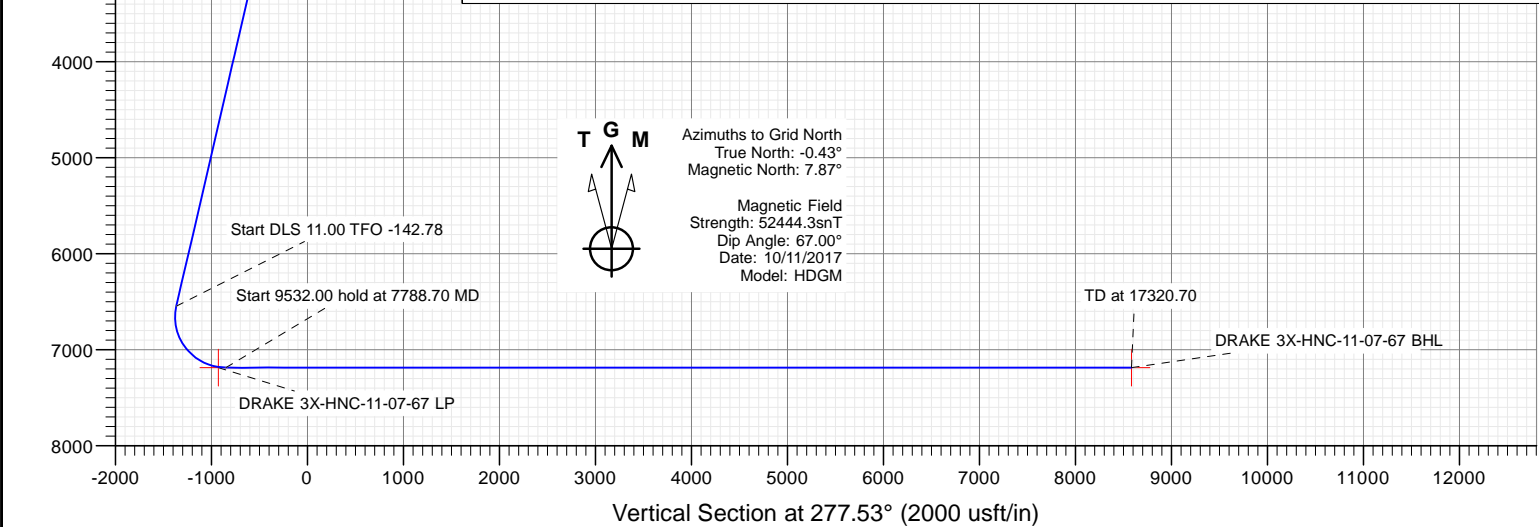
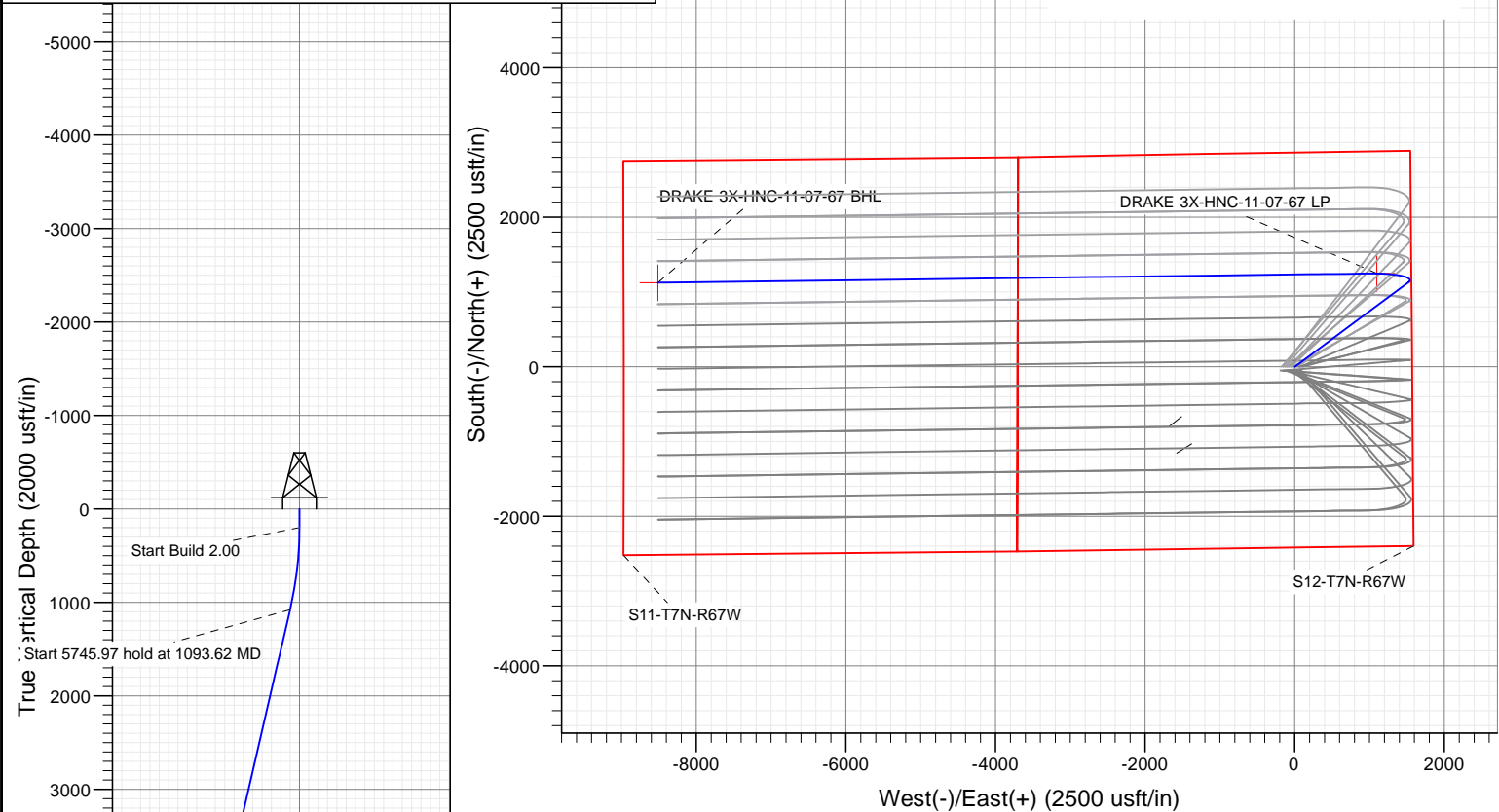
Nickel Road Operating LLC


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	1093.62	17.87	53.40	1079.20	82.43	110.98	2.00	53.40	-99.22	
4	6839.59	17.87	53.40	6547.88	1133.92	1526.62	0.00	0.00	-1364.88	
5	7788.70	90.00	269.26	7187.00	1248.12	1020.60	11.00	-142.78	-848.26	
6	17320.70	90.00	269.26	7187.00	1124.86	-8510.60	0.00	0.00	8584.62	DRAKE 3X-HNC-11-07-67 BHL

PLAN #1 DRAKE 3X-HNC-11-07-67 20' KB @ 5220.00usft Ground Level @ 5200.00 North American Datum 1983 Well DRAKE 3X-HNC-11-07-67, Grid North									
Type	Target	Azimuth	Origin	Type	N/S	E/W	From TVD		
TD	No Target (Freehand)	277.53	Slot		0.00	0.00	0.00		
Name		TVD	+N/-S	+E/-W	Latitude	Longitude			
DRAKE 3X-HNC-11-07-67 BHL		7187.00	1124.86	-8510.60	40.581430	-104.833470			
DRAKE 3X-HNC-11-07-67 LP		7187.00	1248.12	-1099.65	40.581579	-104.833470			


Project: WELD COUNTY, CO
Site: S12-T7N-R67W
Well: DRAKE 3X-HNC-11-07-67
Wellbore: OH
Design: PLAN #1





WELL DETAILS: DRAKE 3X-HNC-11-07-67

+N/-S	+E/-W	Northing	Easting	5200.00	Latitude	Longitude
0.00	0.00	1457799.80	3184009.52		40.588172	-104.837463



Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well DRAKE 3X-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 3X-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 3X-HNC-11-07-67					
Well Position	+N/-S	0.00 usft	Northing:	1,457,799.80 usft	Latitude:	40.588172
	+E/-W	0.00 usft	Easting:	3,184,009.52 usft	Longitude:	-104.837463
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	277.53

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	
1,093.62	17.87	53.40	1,079.20	82.43	110.98	2.00	2.00	0.00	53.40	
6,839.59	17.87	53.40	6,547.88	1,133.92	1,526.62	0.00	0.00	0.00	0.00	
7,788.70	90.00	269.26	7,187.00	1,248.12	1,020.60	11.00	7.60	-15.19	-142.78	
17,320.70	90.00	269.26	7,187.00	1,124.86	-8,510.60	0.00	0.00	0.00	0.00	DRAKE 3X-HNC-11-0

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well DRAKE 3X-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 3X-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	53.40	299.98	1.04	1.40	-1.25	2.00	2.00	
400.00	4.00	53.40	399.84	4.16	5.60	-5.01	2.00	2.00	
500.00	6.00	53.40	499.45	9.36	12.60	-11.26	2.00	2.00	
600.00	8.00	53.40	598.70	16.62	22.38	-20.01	2.00	2.00	
700.00	10.00	53.40	697.47	25.95	34.94	-31.24	2.00	2.00	
800.00	12.00	53.40	795.62	37.33	50.26	-44.93	2.00	2.00	
900.00	14.00	53.40	893.06	50.74	68.31	-61.08	2.00	2.00	
1,000.00	16.00	53.40	989.64	66.17	89.09	-79.65	2.00	2.00	
1,093.62	17.87	53.40	1,079.20	82.43	110.98	-99.22	2.00	2.00	
1,100.00	17.87	53.40	1,085.27	83.60	112.55	-100.63	0.00	0.00	
1,200.00	17.87	53.40	1,180.44	101.90	137.19	-122.66	0.00	0.00	
1,300.00	17.87	53.40	1,275.62	120.20	161.83	-144.68	0.00	0.00	
1,400.00	17.87	53.40	1,370.79	138.50	186.47	-166.71	0.00	0.00	
1,500.00	17.87	53.40	1,465.97	156.80	211.10	-188.74	0.00	0.00	
1,600.00	17.87	53.40	1,561.14	175.10	235.74	-210.76	0.00	0.00	
1,700.00	17.87	53.40	1,656.32	193.40	260.38	-232.79	0.00	0.00	
1,800.00	17.87	53.40	1,751.49	211.70	285.01	-254.82	0.00	0.00	
1,900.00	17.87	53.40	1,846.66	230.00	309.65	-276.84	0.00	0.00	
2,000.00	17.87	53.40	1,941.84	248.30	334.29	-298.87	0.00	0.00	
2,100.00	17.87	53.40	2,037.01	266.60	358.93	-320.90	0.00	0.00	
2,200.00	17.87	53.40	2,132.19	284.90	383.56	-342.92	0.00	0.00	
2,300.00	17.87	53.40	2,227.36	303.20	408.20	-364.95	0.00	0.00	
2,400.00	17.87	53.40	2,322.54	321.50	432.84	-386.98	0.00	0.00	
2,500.00	17.87	53.40	2,417.71	339.80	457.47	-409.00	0.00	0.00	
2,600.00	17.87	53.40	2,512.88	358.09	482.11	-431.03	0.00	0.00	
2,700.00	17.87	53.40	2,608.06	376.39	506.75	-453.06	0.00	0.00	
2,800.00	17.87	53.40	2,703.23	394.69	531.38	-475.09	0.00	0.00	
2,900.00	17.87	53.40	2,798.41	412.99	556.02	-497.11	0.00	0.00	
3,000.00	17.87	53.40	2,893.58	431.29	580.66	-519.14	0.00	0.00	
3,100.00	17.87	53.40	2,988.76	449.59	605.30	-541.17	0.00	0.00	
3,200.00	17.87	53.40	3,083.93	467.89	629.93	-563.19	0.00	0.00	
3,300.00	17.87	53.40	3,179.10	486.19	654.57	-585.22	0.00	0.00	
3,400.00	17.87	53.40	3,274.28	504.49	679.21	-607.25	0.00	0.00	
3,500.00	17.87	53.40	3,369.45	522.79	703.84	-629.27	0.00	0.00	
3,600.00	17.87	53.40	3,464.63	541.09	728.48	-651.30	0.00	0.00	
3,700.00	17.87	53.40	3,559.80	559.39	753.12	-673.33	0.00	0.00	
3,800.00	17.87	53.40	3,654.98	577.69	777.76	-695.35	0.00	0.00	
3,900.00	17.87	53.40	3,750.15	595.99	802.39	-717.38	0.00	0.00	
4,000.00	17.87	53.40	3,845.32	614.29	827.03	-739.41	0.00	0.00	
4,100.00	17.87	53.40	3,940.50	632.59	851.67	-761.43	0.00	0.00	
4,200.00	17.87	53.40	4,035.67	650.89	876.30	-783.46	0.00	0.00	
4,300.00	17.87	53.40	4,130.85	669.19	900.94	-805.49	0.00	0.00	
4,400.00	17.87	53.40	4,226.02	687.49	925.58	-827.51	0.00	0.00	
4,500.00	17.87	53.40	4,321.20	705.79	950.21	-849.54	0.00	0.00	
4,600.00	17.87	53.40	4,416.37	724.09	974.85	-871.57	0.00	0.00	
4,700.00	17.87	53.40	4,511.54	742.39	999.49	-893.59	0.00	0.00	
4,800.00	17.87	53.40	4,606.72	760.69	1,024.13	-915.62	0.00	0.00	
4,900.00	17.87	53.40	4,701.89	778.98	1,048.76	-937.65	0.00	0.00	
5,000.00	17.87	53.40	4,797.07	797.28	1,073.40	-959.68	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well DRAKE 3X-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 3X-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	17.87	53.40	4,892.24	815.58	1,098.04	-981.70	0.00	0.00	
5,200.00	17.87	53.40	4,987.42	833.88	1,122.67	-1,003.73	0.00	0.00	
5,300.00	17.87	53.40	5,082.59	852.18	1,147.31	-1,025.76	0.00	0.00	
5,400.00	17.87	53.40	5,177.76	870.48	1,171.95	-1,047.78	0.00	0.00	
5,500.00	17.87	53.40	5,272.94	888.78	1,196.59	-1,069.81	0.00	0.00	
5,600.00	17.87	53.40	5,368.11	907.08	1,221.22	-1,091.84	0.00	0.00	
5,700.00	17.87	53.40	5,463.29	925.38	1,245.86	-1,113.86	0.00	0.00	
5,800.00	17.87	53.40	5,558.46	943.68	1,270.50	-1,135.89	0.00	0.00	
5,900.00	17.87	53.40	5,653.64	961.98	1,295.13	-1,157.92	0.00	0.00	
6,000.00	17.87	53.40	5,748.81	980.28	1,319.77	-1,179.94	0.00	0.00	
6,100.00	17.87	53.40	5,843.98	998.58	1,344.41	-1,201.97	0.00	0.00	
6,200.00	17.87	53.40	5,939.16	1,016.88	1,369.05	-1,224.00	0.00	0.00	
6,300.00	17.87	53.40	6,034.33	1,035.18	1,393.68	-1,246.02	0.00	0.00	
6,400.00	17.87	53.40	6,129.51	1,053.48	1,418.32	-1,268.05	0.00	0.00	
6,500.00	17.87	53.40	6,224.68	1,071.78	1,442.96	-1,290.08	0.00	0.00	
6,600.00	17.87	53.40	6,319.86	1,090.08	1,467.59	-1,312.10	0.00	0.00	
6,700.00	17.87	53.40	6,415.03	1,108.38	1,492.23	-1,334.13	0.00	0.00	
6,800.00	17.87	53.40	6,510.20	1,126.68	1,516.87	-1,356.16	0.00	0.00	
6,839.59	17.87	53.40	6,547.88	1,133.92	1,526.62	-1,364.88	0.00	0.00	
6,900.00	13.19	35.53	6,606.10	1,145.07	1,538.08	-1,374.78	11.00	-7.76	
7,000.00	11.17	342.28	6,704.14	1,163.64	1,541.77	-1,376.00	11.00	-2.01	
7,100.00	17.75	305.44	6,801.11	1,181.76	1,526.36	-1,358.35	11.00	6.57	
7,200.00	27.28	290.75	6,893.45	1,198.77	1,492.41	-1,322.46	11.00	9.53	
7,300.00	37.58	283.47	6,977.78	1,214.03	1,441.16	-1,269.66	11.00	10.30	
7,400.00	48.16	279.00	7,050.98	1,227.00	1,374.51	-1,201.89	11.00	10.58	
7,500.00	58.86	275.81	7,110.38	1,237.19	1,294.90	-1,121.63	11.00	10.70	
7,600.00	69.62	273.28	7,153.78	1,244.24	1,205.26	-1,031.83	11.00	10.76	
7,700.00	80.41	271.09	7,179.60	1,247.87	1,108.88	-935.81	11.00	10.79	
7,788.70	90.00	269.26	7,187.00	1,248.12	1,020.60	-848.26	11.00	10.81	
7,800.00	90.00	269.26	7,187.00	1,247.98	1,009.30	-837.07	0.00	0.00	
7,900.00	90.00	269.26	7,187.00	1,246.68	909.31	-738.11	0.00	0.00	
8,000.00	90.00	269.26	7,187.00	1,245.39	809.31	-639.15	0.00	0.00	
8,100.00	90.00	269.26	7,187.00	1,244.10	709.32	-540.19	0.00	0.00	
8,200.00	90.00	269.26	7,187.00	1,242.80	609.33	-441.23	0.00	0.00	
8,300.00	90.00	269.26	7,187.00	1,241.51	509.34	-342.27	0.00	0.00	
8,400.00	90.00	269.26	7,187.00	1,240.22	409.35	-243.31	0.00	0.00	
8,500.00	90.00	269.26	7,187.00	1,238.93	309.36	-144.35	0.00	0.00	
8,600.00	90.00	269.26	7,187.00	1,237.63	209.36	-45.39	0.00	0.00	
8,700.00	90.00	269.26	7,187.00	1,236.34	109.37	53.57	0.00	0.00	
8,800.00	90.00	269.26	7,187.00	1,235.05	9.38	152.53	0.00	0.00	
8,900.00	90.00	269.26	7,187.00	1,233.75	-90.61	251.49	0.00	0.00	
9,000.00	90.00	269.26	7,187.00	1,232.46	-190.60	350.45	0.00	0.00	
9,100.00	90.00	269.26	7,187.00	1,231.17	-290.59	449.41	0.00	0.00	
9,200.00	90.00	269.26	7,187.00	1,229.87	-390.59	548.37	0.00	0.00	
9,300.00	90.00	269.26	7,187.00	1,228.58	-490.58	647.33	0.00	0.00	
9,400.00	90.00	269.26	7,187.00	1,227.29	-590.57	746.29	0.00	0.00	
9,500.00	90.00	269.26	7,187.00	1,225.99	-690.56	845.25	0.00	0.00	
9,600.00	90.00	269.26	7,187.00	1,224.70	-790.55	944.21	0.00	0.00	
9,700.00	90.00	269.26	7,187.00	1,223.41	-890.54	1,043.17	0.00	0.00	
9,800.00	90.00	269.26	7,187.00	1,222.11	-990.54	1,142.13	0.00	0.00	
9,900.00	90.00	269.26	7,187.00	1,220.82	-1,090.53	1,241.09	0.00	0.00	
10,000.00	90.00	269.26	7,187.00	1,219.53	-1,190.52	1,340.05	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well DRAKE 3X-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 3X-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	7,187.00	1,218.24	-1,290.51	1,439.01	0.00	0.00	
10,200.00	90.00	269.26	7,187.00	1,216.94	-1,390.50	1,537.97	0.00	0.00	
10,300.00	90.00	269.26	7,187.00	1,215.65	-1,490.49	1,636.93	0.00	0.00	
10,400.00	90.00	269.26	7,187.00	1,214.36	-1,590.49	1,735.89	0.00	0.00	
10,500.00	90.00	269.26	7,187.00	1,213.06	-1,690.48	1,834.85	0.00	0.00	
10,600.00	90.00	269.26	7,187.00	1,211.77	-1,790.47	1,933.81	0.00	0.00	
10,700.00	90.00	269.26	7,187.00	1,210.48	-1,890.46	2,032.77	0.00	0.00	
10,800.00	90.00	269.26	7,187.00	1,209.18	-1,990.45	2,131.73	0.00	0.00	
10,900.00	90.00	269.26	7,187.00	1,207.89	-2,090.44	2,230.69	0.00	0.00	
11,000.00	90.00	269.26	7,187.00	1,206.60	-2,190.44	2,329.65	0.00	0.00	
11,100.00	90.00	269.26	7,187.00	1,205.30	-2,290.43	2,428.61	0.00	0.00	
11,200.00	90.00	269.26	7,187.00	1,204.01	-2,390.42	2,527.57	0.00	0.00	
11,300.00	90.00	269.26	7,187.00	1,202.72	-2,490.41	2,626.53	0.00	0.00	
11,400.00	90.00	269.26	7,187.00	1,201.42	-2,590.40	2,725.49	0.00	0.00	
11,500.00	90.00	269.26	7,187.00	1,200.13	-2,690.39	2,824.45	0.00	0.00	
11,600.00	90.00	269.26	7,187.00	1,198.84	-2,790.39	2,923.41	0.00	0.00	
11,700.00	90.00	269.26	7,187.00	1,197.55	-2,890.38	3,022.37	0.00	0.00	
11,800.00	90.00	269.26	7,187.00	1,196.25	-2,990.37	3,121.33	0.00	0.00	
11,900.00	90.00	269.26	7,187.00	1,194.96	-3,090.36	3,220.29	0.00	0.00	
12,000.00	90.00	269.26	7,187.00	1,193.67	-3,190.35	3,319.25	0.00	0.00	
12,100.00	90.00	269.26	7,187.00	1,192.37	-3,290.34	3,418.21	0.00	0.00	
12,200.00	90.00	269.26	7,187.00	1,191.08	-3,390.34	3,517.17	0.00	0.00	
12,300.00	90.00	269.26	7,187.00	1,189.79	-3,490.33	3,616.13	0.00	0.00	
12,400.00	90.00	269.26	7,187.00	1,188.49	-3,590.32	3,715.09	0.00	0.00	
12,500.00	90.00	269.26	7,187.00	1,187.20	-3,690.31	3,814.05	0.00	0.00	
12,600.00	90.00	269.26	7,187.00	1,185.91	-3,790.30	3,913.01	0.00	0.00	
12,700.00	90.00	269.26	7,187.00	1,184.61	-3,890.29	4,011.97	0.00	0.00	
12,800.00	90.00	269.26	7,187.00	1,183.32	-3,990.29	4,110.93	0.00	0.00	
12,900.00	90.00	269.26	7,187.00	1,182.03	-4,090.28	4,209.89	0.00	0.00	
13,000.00	90.00	269.26	7,187.00	1,180.74	-4,190.27	4,308.85	0.00	0.00	
13,100.00	90.00	269.26	7,187.00	1,179.44	-4,290.26	4,407.81	0.00	0.00	
13,200.00	90.00	269.26	7,187.00	1,178.15	-4,390.25	4,506.78	0.00	0.00	
13,300.00	90.00	269.26	7,187.00	1,176.86	-4,490.24	4,605.74	0.00	0.00	
13,400.00	90.00	269.26	7,187.00	1,175.56	-4,590.23	4,704.70	0.00	0.00	
13,500.00	90.00	269.26	7,187.00	1,174.27	-4,690.23	4,803.66	0.00	0.00	
13,600.00	90.00	269.26	7,187.00	1,172.98	-4,790.22	4,902.62	0.00	0.00	
13,700.00	90.00	269.26	7,187.00	1,171.68	-4,890.21	5,001.58	0.00	0.00	
13,800.00	90.00	269.26	7,187.00	1,170.39	-4,990.20	5,100.54	0.00	0.00	
13,900.00	90.00	269.26	7,187.00	1,169.10	-5,090.19	5,199.50	0.00	0.00	
14,000.00	90.00	269.26	7,187.00	1,167.80	-5,190.18	5,298.46	0.00	0.00	
14,100.00	90.00	269.26	7,187.00	1,166.51	-5,290.18	5,397.42	0.00	0.00	
14,200.00	90.00	269.26	7,187.00	1,165.22	-5,390.17	5,496.38	0.00	0.00	
14,300.00	90.00	269.26	7,187.00	1,163.92	-5,490.16	5,595.34	0.00	0.00	
14,400.00	90.00	269.26	7,187.00	1,162.63	-5,590.15	5,694.30	0.00	0.00	
14,500.00	90.00	269.26	7,187.00	1,161.34	-5,690.14	5,793.26	0.00	0.00	
14,600.00	90.00	269.26	7,187.00	1,160.05	-5,790.13	5,892.22	0.00	0.00	
14,700.00	90.00	269.26	7,187.00	1,158.75	-5,890.13	5,991.18	0.00	0.00	
14,800.00	90.00	269.26	7,187.00	1,157.46	-5,990.12	6,090.14	0.00	0.00	
14,900.00	90.00	269.26	7,187.00	1,156.17	-6,090.11	6,189.10	0.00	0.00	
15,000.00	90.00	269.26	7,187.00	1,154.87	-6,190.10	6,288.06	0.00	0.00	
15,100.00	90.00	269.26	7,187.00	1,153.58	-6,290.09	6,387.02	0.00	0.00	
15,200.00	90.00	269.26	7,187.00	1,152.29	-6,390.08	6,485.98	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well DRAKE 3X-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 3X-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	7,187.00	1,150.99	-6,490.08	6,584.94	0.00	0.00	
15,400.00	90.00	269.26	7,187.00	1,149.70	-6,590.07	6,683.90	0.00	0.00	
15,500.00	90.00	269.26	7,187.00	1,148.41	-6,690.06	6,782.86	0.00	0.00	
15,600.00	90.00	269.26	7,187.00	1,147.11	-6,790.05	6,881.82	0.00	0.00	
15,700.00	90.00	269.26	7,187.00	1,145.82	-6,890.04	6,980.78	0.00	0.00	
15,800.00	90.00	269.26	7,187.00	1,144.53	-6,990.03	7,079.74	0.00	0.00	
15,900.00	90.00	269.26	7,187.00	1,143.23	-7,090.03	7,178.70	0.00	0.00	
16,000.00	90.00	269.26	7,187.00	1,141.94	-7,190.02	7,277.66	0.00	0.00	
16,100.00	90.00	269.26	7,187.00	1,140.65	-7,290.01	7,376.62	0.00	0.00	
16,200.00	90.00	269.26	7,187.00	1,139.36	-7,390.00	7,475.58	0.00	0.00	
16,300.00	90.00	269.26	7,187.00	1,138.06	-7,489.99	7,574.54	0.00	0.00	
16,400.00	90.00	269.26	7,187.00	1,136.77	-7,589.98	7,673.50	0.00	0.00	
16,500.00	90.00	269.26	7,187.00	1,135.48	-7,689.98	7,772.46	0.00	0.00	
16,600.00	90.00	269.26	7,187.00	1,134.18	-7,789.97	7,871.42	0.00	0.00	
16,700.00	90.00	269.26	7,187.00	1,132.89	-7,889.96	7,970.38	0.00	0.00	
16,800.00	90.00	269.26	7,187.00	1,131.60	-7,989.95	8,069.34	0.00	0.00	
16,900.00	90.00	269.26	7,187.00	1,130.30	-8,089.94	8,168.30	0.00	0.00	
17,000.00	90.00	269.26	7,187.00	1,129.01	-8,189.93	8,267.26	0.00	0.00	
17,100.00	90.00	269.26	7,187.00	1,127.72	-8,289.93	8,366.22	0.00	0.00	
17,200.00	90.00	269.26	7,187.00	1,126.42	-8,389.92	8,465.18	0.00	0.00	
17,300.00	90.00	269.26	7,187.00	1,125.13	-8,489.91	8,564.14	0.00	0.00	
17,320.70	90.00	269.26	7,187.00	1,124.86	-8,510.60	8,584.62	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 3X-HNC-11-07-4	0.00	359.59	7,187.00	1,124.86	-8,510.60	1,458,924.67	3,175,498.91	40.591430	-104.868076
- plan hits target center									
- Point									
DRAKE 3X-HNC-11-07-4	0.00	359.57	7,187.00	1,249.15	1,099.65	1,459,048.95	3,185,109.16	40.591578	-104.833470
- plan misses target center by 5.98usft at 7709.83usft MD (7181.14 TVD, 1248.03 N, 1099.17 E)									
- Point									