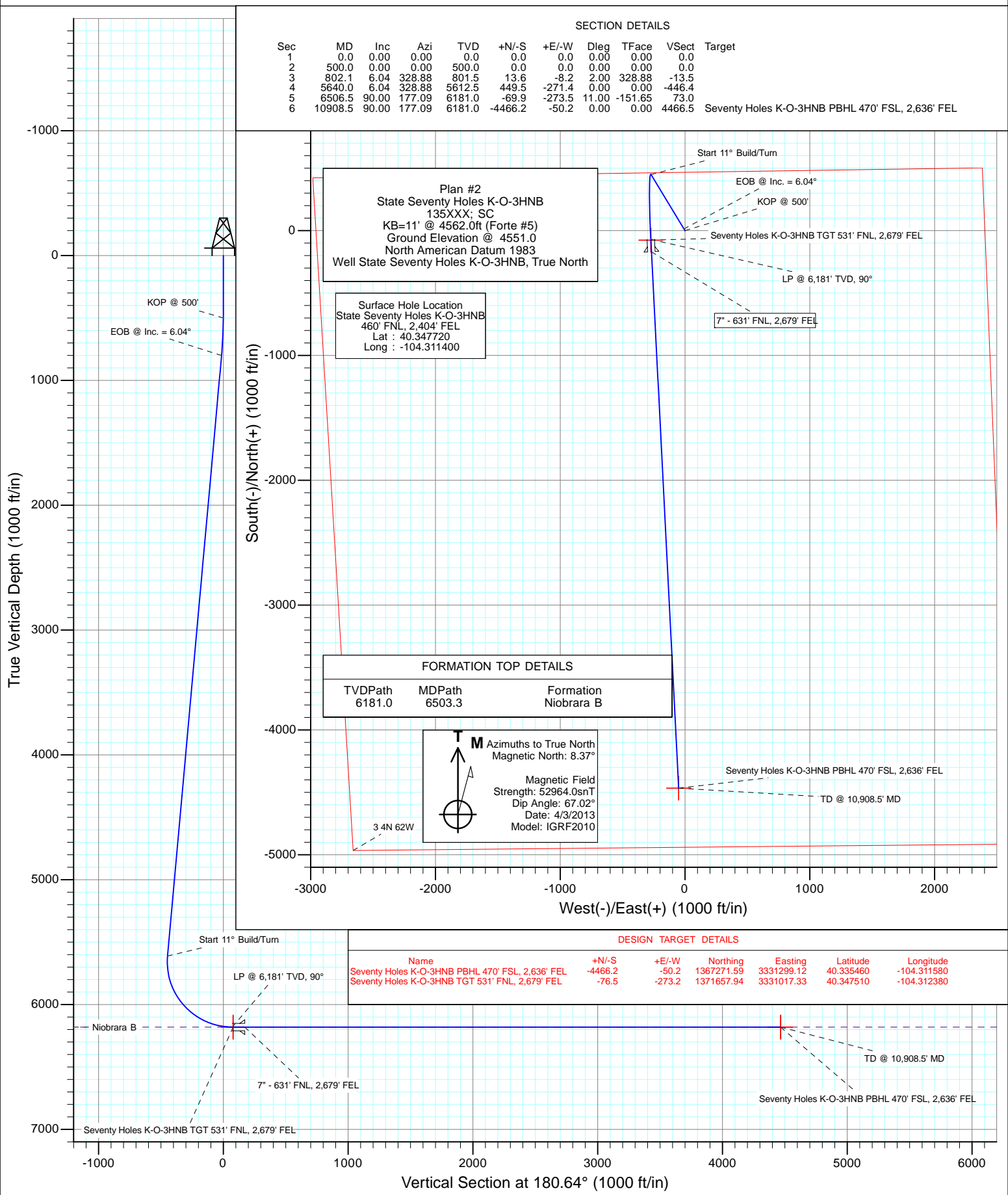




Project: Weld County
Site: Seventy Holes K-3 Pad
Well: State Seventy Holes K-O-3HNB
Wellbore: OH
Design: Plan #2



Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well State Seventy Holes K-O-3HNB
Company:	Bonanza Creek Energy Operating Company, LLC	TVD Reference:	KB=11' @ 4562.0ft (Forte #5)
Project:	Weld County	MD Reference:	KB=11' @ 4562.0ft (Forte #5)
Site:	Seventy Holes K-3 Pad	North Reference:	True
Well:	State Seventy Holes K-O-3HNB	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

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

Site		Seventy Holes K-3 Pad			
Site Position:		Northing:	1,371,738.10 ft	Latitude:	40.347720
From:	Lat/Long	Easting:	3,331,289.44 ft	Longitude:	-104.311400
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	0.77 °

Well	State Seventy Holes K-O-3HNB					
Well Position	+N/-S	0.0 ft	Northing:	1,371,738.09 ft	Latitude:	40.347720
	+E/-W	0.0 ft	Easting:	3,331,289.44 ft	Longitude:	-104.311400
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,551.0 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	IGRF2010	4/3/2013	8.37	67.02	52,964

Design	Plan #2			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(ft)	(ft)	(ft)	(°)
	6,181.0	0.0	0.0	180.64

Plan Sections										
Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Dogleg Rate	Build Rate	Turn Rate	TFO	Target
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(°/100ft)	(°/100ft)	(°/100ft)	(°)	
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.00	0.00	0.00	0.00	
802.1	6.04	328.88	801.5	13.6	-8.2	2.00	2.00	0.00	328.88	
5,640.0	6.04	328.88	5,612.5	449.5	-271.4	0.00	0.00	0.00	0.00	
6,506.5	90.00	177.09	6,181.0	-69.9	-273.5	11.00	9.69	-17.52	-151.65	
10,908.5	90.00	177.09	6,181.0	-4,466.2	-50.2	0.00	0.00	0.00	0.00	Seventy Holes K-O-3I

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well State Seventy Holes K-O-3HNB
Company:	Bonanza Creek Energy Operating Company, LLC	TVD Reference:	KB=11' @ 4562.0ft (Forte #5)
Project:	Weld County	MD Reference:	KB=11' @ 4562.0ft (Forte #5)
Site:	Seventy Holes K-3 Pad	North Reference:	True
Well:	State Seventy Holes K-O-3HNB	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
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	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	KOP @ 500'
600.0	2.00	328.88	600.0	1.5	-0.9	-1.5	2.00	2.00	
700.0	4.00	328.88	699.8	6.0	-3.6	-5.9	2.00	2.00	
802.1	6.04	328.88	801.5	13.6	-8.2	-13.5	2.00	2.00	EOB @ Inc. = 6.04°
900.0	6.04	328.88	898.9	22.4	-13.6	-22.3	0.00	0.00	
1,000.0	6.04	328.88	998.3	31.5	-19.0	-31.2	0.00	0.00	
1,100.0	6.04	328.88	1,097.8	40.5	-24.4	-40.2	0.00	0.00	
1,200.0	6.04	328.88	1,197.2	49.5	-29.9	-49.1	0.00	0.00	
1,300.0	6.04	328.88	1,296.7	58.5	-35.3	-58.1	0.00	0.00	
1,400.0	6.04	328.88	1,396.1	67.5	-40.7	-67.0	0.00	0.00	
1,500.0	6.04	328.88	1,495.6	76.5	-46.2	-76.0	0.00	0.00	
1,600.0	6.04	328.88	1,595.0	85.5	-51.6	-84.9	0.00	0.00	
1,700.0	6.04	328.88	1,694.5	94.5	-57.1	-93.9	0.00	0.00	
1,800.0	6.04	328.88	1,793.9	103.5	-62.5	-102.8	0.00	0.00	
1,900.0	6.04	328.88	1,893.3	112.5	-67.9	-111.8	0.00	0.00	
2,000.0	6.04	328.88	1,992.8	121.6	-73.4	-120.7	0.00	0.00	
2,100.0	6.04	328.88	2,092.2	130.6	-78.8	-129.7	0.00	0.00	
2,200.0	6.04	328.88	2,191.7	139.6	-84.3	-138.6	0.00	0.00	
2,300.0	6.04	328.88	2,291.1	148.6	-89.7	-147.6	0.00	0.00	
2,400.0	6.04	328.88	2,390.6	157.6	-95.1	-156.5	0.00	0.00	
2,500.0	6.04	328.88	2,490.0	166.6	-100.6	-165.5	0.00	0.00	
2,600.0	6.04	328.88	2,589.5	175.6	-106.0	-174.4	0.00	0.00	
2,700.0	6.04	328.88	2,688.9	184.6	-111.5	-183.4	0.00	0.00	
2,800.0	6.04	328.88	2,788.3	193.6	-116.9	-192.3	0.00	0.00	
2,900.0	6.04	328.88	2,887.8	202.6	-122.3	-201.3	0.00	0.00	
3,000.0	6.04	328.88	2,987.2	211.6	-127.8	-210.2	0.00	0.00	
3,100.0	6.04	328.88	3,086.7	220.7	-133.2	-219.1	0.00	0.00	
3,200.0	6.04	328.88	3,186.1	229.7	-138.7	-228.1	0.00	0.00	
3,300.0	6.04	328.88	3,285.6	238.7	-144.1	-237.0	0.00	0.00	
3,400.0	6.04	328.88	3,385.0	247.7	-149.5	-246.0	0.00	0.00	
3,500.0	6.04	328.88	3,484.5	256.7	-155.0	-254.9	0.00	0.00	
3,600.0	6.04	328.88	3,583.9	265.7	-160.4	-263.9	0.00	0.00	
3,700.0	6.04	328.88	3,683.3	274.7	-165.9	-272.8	0.00	0.00	
3,800.0	6.04	328.88	3,782.8	283.7	-171.3	-281.8	0.00	0.00	
3,900.0	6.04	328.88	3,882.2	292.7	-176.7	-290.7	0.00	0.00	
4,000.0	6.04	328.88	3,981.7	301.7	-182.2	-299.7	0.00	0.00	
4,100.0	6.04	328.88	4,081.1	310.8	-187.6	-308.6	0.00	0.00	
4,200.0	6.04	328.88	4,180.6	319.8	-193.1	-317.6	0.00	0.00	
4,300.0	6.04	328.88	4,280.0	328.8	-198.5	-326.5	0.00	0.00	
4,400.0	6.04	328.88	4,379.5	337.8	-203.9	-335.5	0.00	0.00	
4,500.0	6.04	328.88	4,478.9	346.8	-209.4	-344.4	0.00	0.00	
4,600.0	6.04	328.88	4,578.3	355.8	-214.8	-353.4	0.00	0.00	
4,700.0	6.04	328.88	4,677.8	364.8	-220.3	-362.3	0.00	0.00	
4,800.0	6.04	328.88	4,777.2	373.8	-225.7	-371.3	0.00	0.00	
4,900.0	6.04	328.88	4,876.7	382.8	-231.1	-380.2	0.00	0.00	
5,000.0	6.04	328.88	4,976.1	391.8	-236.6	-389.2	0.00	0.00	
5,100.0	6.04	328.88	5,075.6	400.9	-242.0	-398.1	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well State Seventy Holes K-O-3HNB
Company:	Bonanza Creek Energy Operating Company, LLC	TVD Reference:	KB=11' @ 4562.0ft (Forte #5)
Project:	Weld County	MD Reference:	KB=11' @ 4562.0ft (Forte #5)
Site:	Seventy Holes K-3 Pad	North Reference:	True
Well:	State Seventy Holes K-O-3HNB	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
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
5,200.0	6.04	328.88	5,175.0	409.9	-247.5	-407.1	0.00	0.00	
5,300.0	6.04	328.88	5,274.5	418.9	-252.9	-416.0	0.00	0.00	
5,400.0	6.04	328.88	5,373.9	427.9	-258.3	-425.0	0.00	0.00	
5,500.0	6.04	328.88	5,473.3	436.9	-263.8	-433.9	0.00	0.00	
5,600.0	6.04	328.88	5,572.8	445.9	-269.2	-442.9	0.00	0.00	
5,640.0	6.04	328.88	5,612.6	449.5	-271.4	-446.4	0.00	0.00	Start 11° Build/Turn
5,650.0	5.10	322.97	5,622.5	450.3	-271.9	-447.2	11.04	-9.45	
5,700.0	3.14	242.95	5,672.4	451.5	-274.5	-448.4	11.00	-3.92	
5,750.0	7.36	199.88	5,722.2	447.8	-276.8	-444.7	11.00	8.44	
5,800.0	12.61	190.02	5,771.5	439.4	-278.8	-436.3	11.00	10.49	
5,850.0	18.00	185.95	5,819.7	426.4	-280.6	-423.2	11.00	10.79	
5,900.0	23.45	183.72	5,866.4	408.7	-282.0	-405.5	11.00	10.89	
5,950.0	28.91	182.29	5,911.3	386.7	-283.2	-383.5	11.00	10.93	
6,000.0	34.39	181.28	5,953.8	360.5	-284.0	-357.3	11.00	10.95	
6,050.0	39.87	180.53	5,993.7	330.3	-284.4	-327.1	11.00	10.96	
6,100.0	45.35	179.92	6,030.4	296.5	-284.6	-293.3	11.00	10.97	
6,150.0	50.84	179.43	6,063.8	259.3	-284.3	-256.1	11.00	10.98	
6,200.0	56.33	179.00	6,093.5	219.1	-283.8	-215.9	11.00	10.98	
6,250.0	61.82	178.63	6,119.2	176.2	-282.9	-173.0	11.00	10.98	
6,300.0	67.31	178.29	6,140.6	131.1	-281.7	-127.9	11.00	10.98	
6,350.0	72.81	177.98	6,157.7	84.1	-280.1	-81.0	11.00	10.98	
6,400.0	78.30	177.69	6,170.2	35.8	-278.3	-32.6	11.00	10.99	
6,450.0	83.79	177.40	6,177.9	-13.6	-276.2	16.7	11.00	10.99	
6,500.0	89.28	177.13	6,181.0	-63.4	-273.8	66.5	11.00	10.99	
6,503.3	89.28	177.13	6,181.0	-66.6	-273.7	69.7	0.00	0.00	Niobrara B
6,506.5	90.00	177.09	6,181.0	-69.9	-273.5	72.9	22.07	22.04	LP @ 6,181' TVD, 90°
6,600.0	90.00	177.09	6,181.0	-163.3	-268.7	166.3	0.00	0.00	
6,606.5	90.00	177.09	6,181.0	-169.7	-268.4	172.8	0.00	0.00	7" - 631' FNL, 2,679' FEL
6,700.0	90.00	177.09	6,181.0	-263.1	-263.7	266.1	0.00	0.00	
6,800.0	90.00	177.09	6,181.0	-363.0	-258.6	365.9	0.00	0.00	
6,900.0	90.00	177.09	6,181.0	-462.9	-253.5	465.7	0.00	0.00	
7,000.0	90.00	177.09	6,181.0	-562.7	-248.5	565.5	0.00	0.00	
7,100.0	90.00	177.09	6,181.0	-662.6	-243.4	665.3	0.00	0.00	
7,200.0	90.00	177.09	6,181.0	-762.5	-238.3	765.1	0.00	0.00	
7,300.0	90.00	177.09	6,181.0	-862.4	-233.2	864.9	0.00	0.00	
7,400.0	90.00	177.09	6,181.0	-962.2	-228.2	964.7	0.00	0.00	
7,500.0	90.00	177.09	6,181.0	-1,062.1	-223.1	1,064.5	0.00	0.00	
7,600.0	90.00	177.09	6,181.0	-1,162.0	-218.0	1,164.3	0.00	0.00	
7,700.0	90.00	177.09	6,181.0	-1,261.8	-212.9	1,264.2	0.00	0.00	
7,800.0	90.00	177.09	6,181.0	-1,361.7	-207.9	1,364.0	0.00	0.00	
7,900.0	90.00	177.09	6,181.0	-1,461.6	-202.8	1,463.8	0.00	0.00	
8,000.0	90.00	177.09	6,181.0	-1,561.5	-197.7	1,563.6	0.00	0.00	
8,100.0	90.00	177.09	6,181.0	-1,661.3	-192.7	1,663.4	0.00	0.00	
8,200.0	90.00	177.09	6,181.0	-1,761.2	-187.6	1,763.2	0.00	0.00	
8,300.0	90.00	177.09	6,181.0	-1,861.1	-182.5	1,863.0	0.00	0.00	
8,400.0	90.00	177.09	6,181.0	-1,960.9	-177.4	1,962.8	0.00	0.00	
8,500.0	90.00	177.09	6,181.0	-2,060.8	-172.4	2,062.6	0.00	0.00	
8,600.0	90.00	177.09	6,181.0	-2,160.7	-167.3	2,162.4	0.00	0.00	
8,700.0	90.00	177.09	6,181.0	-2,260.6	-162.2	2,262.2	0.00	0.00	
8,800.0	90.00	177.09	6,181.0	-2,360.4	-157.1	2,362.0	0.00	0.00	
8,900.0	90.00	177.09	6,181.0	-2,460.3	-152.1	2,461.8	0.00	0.00	
9,000.0	90.00	177.09	6,181.0	-2,560.2	-147.0	2,561.7	0.00	0.00	

Cathedral Energy Services

Planning Report

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Company:	Bonanza Creek Energy Operating Company, LLC	TVD Reference:	KB=11' @ 4562.0ft (Forte #5)
Project:	Weld County	MD Reference:	KB=11' @ 4562.0ft (Forte #5)
Site:	Seventy Holes K-3 Pad	North Reference:	True
Well:	State Seventy Holes K-O-3HNB	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
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
9,100.0	90.00	177.09	6,181.0	-2,660.0	-141.9	2,661.5	0.00	0.00	
9,200.0	90.00	177.09	6,181.0	-2,759.9	-136.9	2,761.3	0.00	0.00	
9,300.0	90.00	177.09	6,181.0	-2,859.8	-131.8	2,861.1	0.00	0.00	
9,400.0	90.00	177.09	6,181.0	-2,959.7	-126.7	2,960.9	0.00	0.00	
9,500.0	90.00	177.09	6,181.0	-3,059.5	-121.6	3,060.7	0.00	0.00	
9,600.0	90.00	177.09	6,181.0	-3,159.4	-116.6	3,160.5	0.00	0.00	
9,700.0	90.00	177.09	6,181.0	-3,259.3	-111.5	3,260.3	0.00	0.00	
9,800.0	90.00	177.09	6,181.0	-3,359.1	-106.4	3,360.1	0.00	0.00	
9,900.0	90.00	177.09	6,181.0	-3,459.0	-101.3	3,459.9	0.00	0.00	
10,000.0	90.00	177.09	6,181.0	-3,558.9	-96.3	3,559.7	0.00	0.00	
10,100.0	90.00	177.09	6,181.0	-3,658.8	-91.2	3,659.5	0.00	0.00	
10,200.0	90.00	177.09	6,181.0	-3,758.6	-86.1	3,759.4	0.00	0.00	
10,300.0	90.00	177.09	6,181.0	-3,858.5	-81.0	3,859.2	0.00	0.00	
10,400.0	90.00	177.09	6,181.0	-3,958.4	-76.0	3,959.0	0.00	0.00	
10,500.0	90.00	177.09	6,181.0	-4,058.2	-70.9	4,058.8	0.00	0.00	
10,600.0	90.00	177.09	6,181.0	-4,158.1	-65.8	4,158.6	0.00	0.00	
10,700.0	90.00	177.09	6,181.0	-4,258.0	-60.8	4,258.4	0.00	0.00	
10,800.0	90.00	177.09	6,181.0	-4,357.9	-55.7	4,358.2	0.00	0.00	
10,908.5	90.00	177.09	6,181.0	-4,466.2	-50.2	4,466.5	0.00	0.00	TD @ 10,908.5' MD

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
Seventy Holes K-O-3HN	0.00	0.00	6,181.0	-4,466.2	-50.2	1,367,271.59	3,331,299.12	40.335460	-104.311580
- plan hits target center									
- Point									
Seventy Holes K-O-3HN	0.00	0.00	6,181.0	-76.5	-273.2	1,371,657.94	3,331,017.33	40.347510	-104.312380
- plan hits target center									
- Point									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
6,606.5	6,181.0	7" - 631' FNL, 2,679' FEL			

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
6,503.3	6,181.0	Niobrara B		0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well State Seventy Holes K-O-3HNB
Company:	Bonanza Creek Energy Operating Company, LLC	TVD Reference:	KB=11' @ 4562.0ft (Forte #5)
Project:	Weld County	MD Reference:	KB=11' @ 4562.0ft (Forte #5)
Site:	Seventy Holes K-3 Pad	North Reference:	True
Well:	State Seventy Holes K-O-3HNB	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
500.0	500.0	0.0	0.0	KOP @ 500'
802.1	801.5	13.6	-8.2	EOB @ Inc. = 6.04°
5,640.0	5,612.6	449.5	-271.4	Start 11° Build/Turn
6,506.5	6,181.0	-69.9	-273.5	LP @ 6,181' TVD, 90°
10,908.5	6,181.0	-4,466.2	-50.2	TD @ 10,908.5' MD