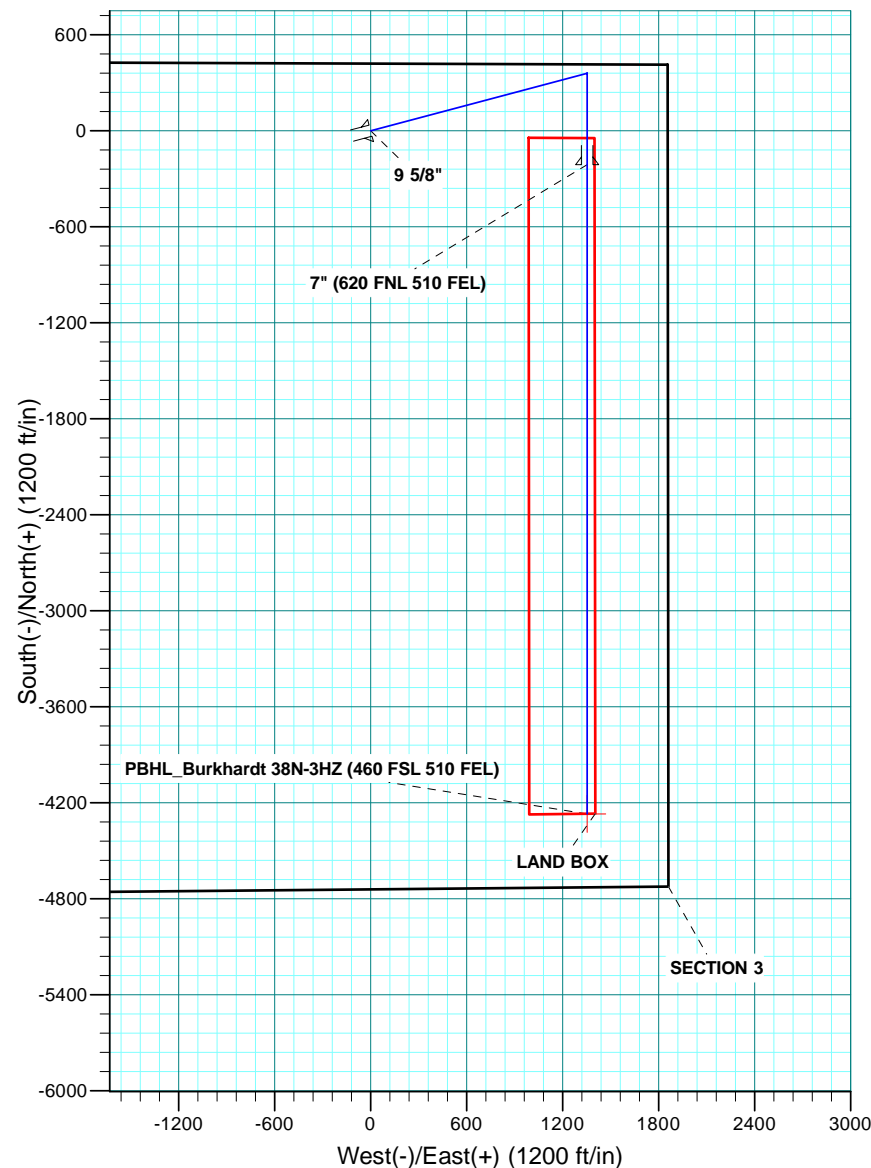
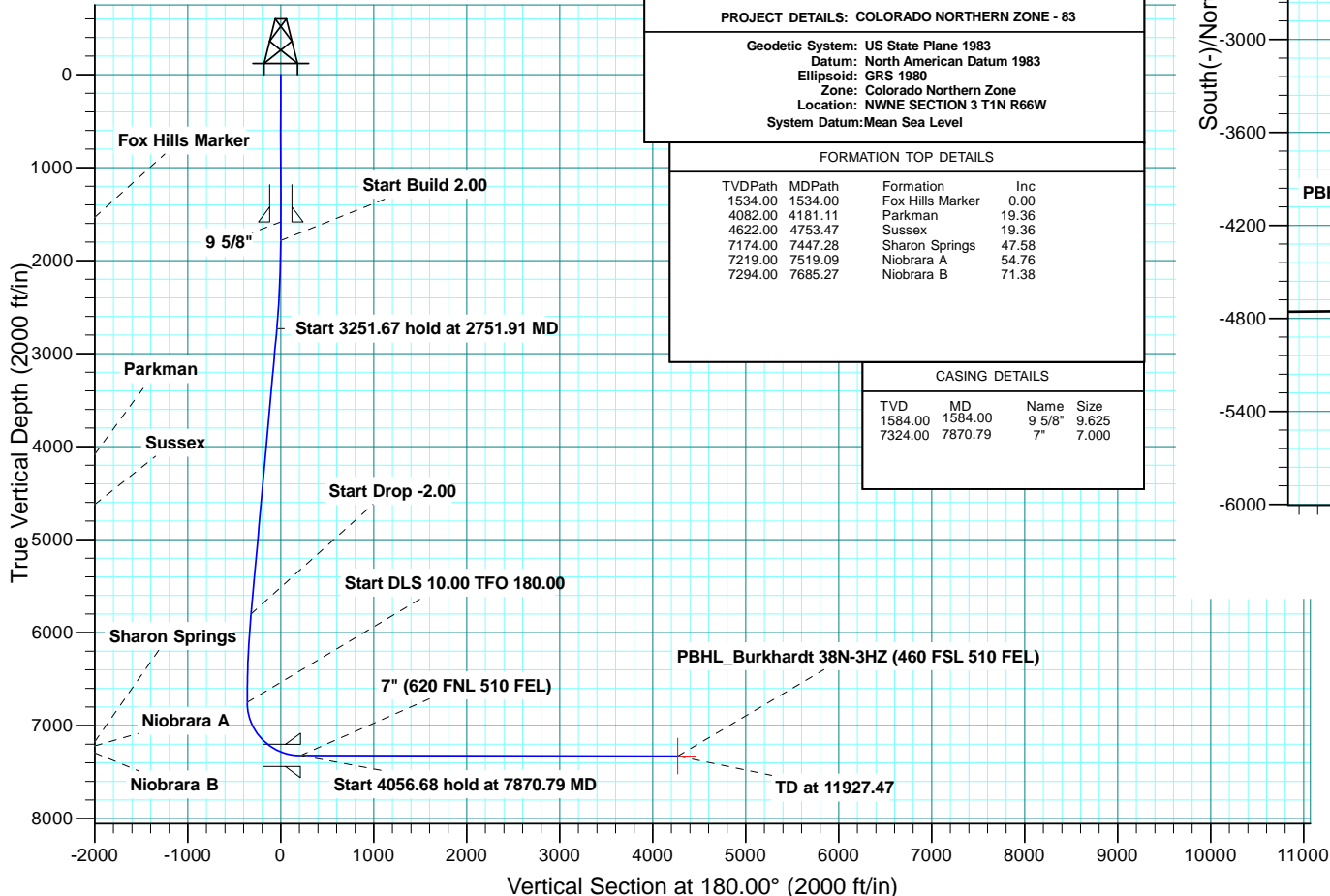


WELL DETAILS: BURKHARDT 38N-3HZ										
GL 5063 & KB 17 @ 5080.00ft (ASSUMED)										
		+N/-S 0.00	+E/-W 0.00	Northing 1275090.41	Easting 3206946.98	Latitude 40.0861450	Longitude -104.7603660			
SECTION DETAILS										
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
1784.00	0.00	0.00	1784.00	0.00	0.00	0.00	0.00	0.00		Start Build 2.00
2751.91	19.36	75.12	2733.60	41.59	156.53	2.00	75.12	-41.59		Start 3251.67 hold at 2751.91 MD
6003.58	19.36	75.12	5801.44	318.41	1198.22	0.00	0.00	-318.41		Start Drop -2.00
6971.49	0.00	0.00	6751.04	360.00	1354.75	2.00	180.00	-360.00		Start DLS 10.00 TFO 180.00
7870.79	89.93	180.00	7324.00	-212.25	1354.75	10.00	180.00	212.25		Start 4056.68 hold at 7870.79 MD
11927.47	89.93	180.00	7329.00	-4268.93	1354.75	0.00	0.00	4268.93	PBHL_Burkhardt 38N-3HZ	
DESIGN TARGET DETAILS										
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape		
PBHL	7329.00	-4268.93	1354.75	1270832.94	3208337.28	40.0744260	-104.7555250	Point		

PROJECT DETAILS: COLORADO NORTHERN ZONE - 83										
Geodetic System: US State Plane 1983										
Datum: North American Datum 1983										
Ellipsoid: GRS 1980										
Zone: Colorado Northern Zone										
Location: NWNE SECTION 3 T1N R66W										
System Datum: Mean Sea Level										

FORMATION TOP DETAILS				
TVDPATH	MDPATH	FORMATION	INC	
1534.00	1534.00	Fox Hills Marker	0.00	
4082.00	4181.11	Parkman	19.36	
4622.00	4753.47	Sussex	19.36	
7174.00	7447.28	Sharon Springs	47.58	
7219.00	7519.09	Niobrara A	54.76	
7294.00	7685.27	Niobrara B	71.38	

CASING DETAILS				
TVD	MD	NAME	SIZE	
1584.00	1584.00	9 5/8"	9.625	
7324.00	7870.79	7"	7.000	





Scientific Drilling

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

BURKHARDT 2-3HZ PAD

BURKHARDT 38N-3HZ

OH

Plan: PLAN #1 PRELIMINARY

Standard Planning Report

19 December, 2013

Database:	Denver Sales Office	Local Co-ordinate Reference:	Well BURKHARDT 38N-3HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 5063 & KB 17 @ 5080.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 5063 & KB 17 @ 5080.00ft (ASSUMED)
Site:	BURKHARDT 2-3HZ PAD	North Reference:	True
Well:	BURKHARDT 38N-3HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1 PRELIMINARY		

Project	COLORADO NORTHERN ZONE - 83, KERR MCGEE OIL & GAS ONSHORE LP		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		BURKHARDT 2-3HZ PAD, NWNE SECTION 3 T1N R66W			
Site Position:		Northing:	1,275,089.69 usft	Latitude:	40.0861450
From:	Lat/Long	Easting:	3,206,859.13 usft	Longitude:	-104.7606800
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.48 °

Well	BURKHARDT 38N-3HZ					
Well Position	+N/-S	-0.01 ft	Northing:	1,275,090.41 usft	Latitude:	40.0861450
	+E/-W	87.86 ft	Easting:	3,206,946.98 usft	Longitude:	-104.7603660
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	5,063.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2013	12/19/2013	8.54	66.70	52,623

Design	PLAN #1 PRELIMINARY			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	180.00

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,784.00	0.00	0.00	1,784.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,751.91	19.36	75.12	2,733.60	41.59	156.53	2.00	2.00	0.00	75.12	
6,003.58	19.36	75.12	5,801.44	318.41	1,198.22	0.00	0.00	0.00	0.00	
6,971.49	0.00	0.00	6,751.04	360.00	1,354.75	2.00	-2.00	0.00	180.00	
7,870.79	89.93	180.00	7,324.00	-212.25	1,354.75	10.00	10.00	20.02	180.00	
11,927.47	89.93	180.00	7,329.00	-4,268.93	1,354.75	0.00	0.00	0.00	0.00	PBHL_Burkhardt 38N

Database:	Denver Sales Office	Local Co-ordinate Reference:	Well BURKHARDT 38N-3HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 5063 & KB 17 @ 5080.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 5063 & KB 17 @ 5080.00ft (ASSUMED)
Site:	BURKHARDT 2-3HZ PAD	North Reference:	True
Well:	BURKHARDT 38N-3HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1 PRELIMINARY		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	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	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,534.00	0.00	0.00	1,534.00	0.00	0.00	0.00	0.00	0.00	0.00
Fox Hills Marker									
1,584.00	0.00	0.00	1,584.00	0.00	0.00	0.00	0.00	0.00	0.00
9 5/8"									
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,784.00	0.00	0.00	1,784.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
1,800.00	0.32	75.12	1,800.00	0.01	0.04	-0.01	2.00	2.00	0.00
1,900.00	2.32	75.12	1,899.97	0.60	2.27	-0.60	2.00	2.00	0.00
2,000.00	4.32	75.12	1,999.80	2.09	7.87	-2.09	2.00	2.00	0.00
2,100.00	6.32	75.12	2,099.36	4.47	16.83	-4.47	2.00	2.00	0.00
2,200.00	8.32	75.12	2,198.54	7.74	29.14	-7.74	2.00	2.00	0.00
2,300.00	10.32	75.12	2,297.21	11.90	44.79	-11.90	2.00	2.00	0.00
2,400.00	12.32	75.12	2,395.26	16.94	63.76	-16.94	2.00	2.00	0.00
2,500.00	14.32	75.12	2,492.57	22.86	86.02	-22.86	2.00	2.00	0.00
2,600.00	16.32	75.12	2,589.01	29.64	111.56	-29.64	2.00	2.00	0.00
2,700.00	18.32	75.12	2,684.47	37.29	140.33	-37.29	2.00	2.00	0.00
2,751.91	19.36	75.12	2,733.60	41.59	156.53	-41.59	2.00	2.00	0.00
Start 3251.67 hold at 2751.91 MD									
2,800.00	19.36	75.12	2,778.97	45.69	171.93	-45.69	0.00	0.00	0.00
2,900.00	19.36	75.12	2,873.32	54.20	203.97	-54.20	0.00	0.00	0.00
3,000.00	19.36	75.12	2,967.66	62.71	236.01	-62.71	0.00	0.00	0.00
3,100.00	19.36	75.12	3,062.01	71.23	268.04	-71.23	0.00	0.00	0.00
3,200.00	19.36	75.12	3,156.36	79.74	300.08	-79.74	0.00	0.00	0.00
3,300.00	19.36	75.12	3,250.70	88.25	332.11	-88.25	0.00	0.00	0.00
3,400.00	19.36	75.12	3,345.05	96.77	364.15	-96.77	0.00	0.00	0.00
3,500.00	19.36	75.12	3,439.40	105.28	396.18	-105.28	0.00	0.00	0.00
3,600.00	19.36	75.12	3,533.74	113.79	428.22	-113.79	0.00	0.00	0.00
3,700.00	19.36	75.12	3,628.09	122.30	460.25	-122.30	0.00	0.00	0.00
3,800.00	19.36	75.12	3,722.44	130.82	492.29	-130.82	0.00	0.00	0.00
3,900.00	19.36	75.12	3,816.78	139.33	524.32	-139.33	0.00	0.00	0.00
4,000.00	19.36	75.12	3,911.13	147.84	556.36	-147.84	0.00	0.00	0.00
4,100.00	19.36	75.12	4,005.48	156.36	588.40	-156.36	0.00	0.00	0.00
4,181.11	19.36	75.12	4,082.00	163.26	614.38	-163.26	0.00	0.00	0.00
Parkman									
4,200.00	19.36	75.12	4,099.82	164.87	620.43	-164.87	0.00	0.00	0.00
4,300.00	19.36	75.12	4,194.17	173.38	652.47	-173.38	0.00	0.00	0.00

Database:	Denver Sales Office	Local Co-ordinate Reference:	Well BURKHARDT 38N-3HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 5063 & KB 17 @ 5080.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 5063 & KB 17 @ 5080.00ft (ASSUMED)
Site:	BURKHARDT 2-3HZ PAD	North Reference:	True
Well:	BURKHARDT 38N-3HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1 PRELIMINARY		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,400.00	19.36	75.12	4,288.52	181.89	684.50	-181.89	0.00	0.00	0.00
4,500.00	19.36	75.12	4,382.86	190.41	716.54	-190.41	0.00	0.00	0.00
4,600.00	19.36	75.12	4,477.21	198.92	748.57	-198.92	0.00	0.00	0.00
4,700.00	19.36	75.12	4,571.55	207.43	780.61	-207.43	0.00	0.00	0.00
4,753.47	19.36	75.12	4,622.00	211.98	797.74	-211.98	0.00	0.00	0.00
Sussex									
4,800.00	19.36	75.12	4,665.90	215.95	812.64	-215.95	0.00	0.00	0.00
4,900.00	19.36	75.12	4,760.25	224.46	844.68	-224.46	0.00	0.00	0.00
5,000.00	19.36	75.12	4,854.59	232.97	876.71	-232.97	0.00	0.00	0.00
5,100.00	19.36	75.12	4,948.94	241.48	908.75	-241.48	0.00	0.00	0.00
5,200.00	19.36	75.12	5,043.29	250.00	940.79	-250.00	0.00	0.00	0.00
5,300.00	19.36	75.12	5,137.63	258.51	972.82	-258.51	0.00	0.00	0.00
5,400.00	19.36	75.12	5,231.98	267.02	1,004.86	-267.02	0.00	0.00	0.00
5,500.00	19.36	75.12	5,326.33	275.54	1,036.89	-275.54	0.00	0.00	0.00
5,600.00	19.36	75.12	5,420.67	284.05	1,068.93	-284.05	0.00	0.00	0.00
5,700.00	19.36	75.12	5,515.02	292.56	1,100.96	-292.56	0.00	0.00	0.00
5,800.00	19.36	75.12	5,609.37	301.07	1,133.00	-301.07	0.00	0.00	0.00
5,900.00	19.36	75.12	5,703.71	309.59	1,165.03	-309.59	0.00	0.00	0.00
6,000.00	19.36	75.12	5,798.06	318.10	1,197.07	-318.10	0.00	0.00	0.00
6,003.58	19.36	75.12	5,801.44	318.41	1,198.22	-318.41	0.00	0.00	0.00
Start Drop -2.00									
6,100.00	17.43	75.12	5,892.93	326.22	1,227.62	-326.22	2.00	-2.00	0.00
6,200.00	15.43	75.12	5,988.84	333.48	1,254.95	-333.48	2.00	-2.00	0.00
6,300.00	13.43	75.12	6,085.68	339.88	1,279.04	-339.88	2.00	-2.00	0.00
6,400.00	11.43	75.12	6,183.33	345.41	1,299.84	-345.41	2.00	-2.00	0.00
6,500.00	9.43	75.12	6,281.67	350.06	1,317.33	-350.06	2.00	-2.00	0.00
6,600.00	7.43	75.12	6,380.59	353.82	1,331.50	-353.82	2.00	-2.00	0.00
6,700.00	5.43	75.12	6,479.95	356.70	1,342.32	-356.70	2.00	-2.00	0.00
6,800.00	3.43	75.12	6,579.65	358.68	1,349.79	-358.68	2.00	-2.00	0.00
6,900.00	1.43	75.12	6,679.55	359.77	1,353.88	-359.77	2.00	-2.00	0.00
6,971.49	0.00	0.00	6,751.04	360.00	1,354.75	-360.00	2.00	-2.00	0.00
Start DLS 10.00 TFO 180.00									
7,000.00	2.85	180.00	6,779.53	359.29	1,354.75	-359.29	10.00	10.00	0.00
7,100.00	12.85	180.00	6,878.47	345.65	1,354.75	-345.65	10.00	10.00	0.00
7,200.00	22.85	180.00	6,973.54	315.03	1,354.75	-315.03	10.00	10.00	0.00
7,300.00	32.85	180.00	7,061.84	268.38	1,354.75	-268.38	10.00	10.00	0.00
7,400.00	42.85	180.00	7,140.70	207.09	1,354.75	-207.09	10.00	10.00	0.00
7,447.28	47.58	180.00	7,174.00	173.55	1,354.75	-173.55	10.00	10.00	0.00
Sharon Springs									
7,500.00	52.85	180.00	7,207.72	133.05	1,354.75	-133.05	10.00	10.00	0.00
7,519.10	54.76	180.00	7,219.00	117.64	1,354.75	-117.64	10.00	10.00	0.00
Niobrara A									
7,600.00	62.85	180.00	7,260.87	48.49	1,354.75	-48.49	10.00	10.00	0.00
7,685.27	71.38	180.00	7,294.00	-29.99	1,354.75	29.99	10.00	10.00	0.00
Niobrara B									
7,700.00	72.85	180.00	7,298.52	-44.01	1,354.75	44.01	10.00	10.00	0.00
7,800.00	82.85	180.00	7,319.54	-141.65	1,354.75	141.65	10.00	10.00	0.00
7,870.79	89.93	180.00	7,324.00	-212.25	1,354.75	212.25	10.00	10.00	0.00
Start 4056.68 hold at 7870.79 MD - 7" (620 FNL 510 FEL)									
7,900.00	89.93	180.00	7,324.03	-241.46	1,354.75	241.46	0.00	0.00	0.00
8,000.00	89.93	180.00	7,324.16	-341.46	1,354.75	341.46	0.00	0.00	0.00
8,100.00	89.93	180.00	7,324.28	-441.46	1,354.75	441.46	0.00	0.00	0.00
8,200.00	89.93	180.00	7,324.40	-541.46	1,354.75	541.46	0.00	0.00	0.00

Database:	Denver Sales Office	Local Co-ordinate Reference:	Well BURKHARDT 38N-3HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 5063 & KB 17 @ 5080.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 5063 & KB 17 @ 5080.00ft (ASSUMED)
Site:	BURKHARDT 2-3HZ PAD	North Reference:	True
Well:	BURKHARDT 38N-3HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1 PRELIMINARY		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,300.00	89.93	180.00	7,324.53	-641.46	1,354.75	641.46	0.00	0.00	0.00
8,400.00	89.93	180.00	7,324.65	-741.46	1,354.75	741.46	0.00	0.00	0.00
8,500.00	89.93	180.00	7,324.77	-841.46	1,354.75	841.46	0.00	0.00	0.00
8,600.00	89.93	180.00	7,324.90	-941.46	1,354.75	941.46	0.00	0.00	0.00
8,700.00	89.93	180.00	7,325.02	-1,041.46	1,354.75	1,041.46	0.00	0.00	0.00
8,800.00	89.93	180.00	7,325.14	-1,141.46	1,354.75	1,141.46	0.00	0.00	0.00
8,900.00	89.93	180.00	7,325.27	-1,241.46	1,354.75	1,241.46	0.00	0.00	0.00
9,000.00	89.93	180.00	7,325.39	-1,341.46	1,354.75	1,341.46	0.00	0.00	0.00
9,100.00	89.93	180.00	7,325.51	-1,441.46	1,354.75	1,441.46	0.00	0.00	0.00
9,200.00	89.93	180.00	7,325.64	-1,541.46	1,354.75	1,541.46	0.00	0.00	0.00
9,300.00	89.93	180.00	7,325.76	-1,641.46	1,354.75	1,641.46	0.00	0.00	0.00
9,400.00	89.93	180.00	7,325.88	-1,741.46	1,354.75	1,741.46	0.00	0.00	0.00
9,500.00	89.93	180.00	7,326.01	-1,841.46	1,354.75	1,841.46	0.00	0.00	0.00
9,600.00	89.93	180.00	7,326.13	-1,941.46	1,354.75	1,941.46	0.00	0.00	0.00
9,700.00	89.93	180.00	7,326.25	-2,041.46	1,354.75	2,041.46	0.00	0.00	0.00
9,800.00	89.93	180.00	7,326.38	-2,141.46	1,354.75	2,141.46	0.00	0.00	0.00
9,900.00	89.93	180.00	7,326.50	-2,241.46	1,354.75	2,241.46	0.00	0.00	0.00
10,000.00	89.93	180.00	7,326.62	-2,341.46	1,354.75	2,341.46	0.00	0.00	0.00
10,100.00	89.93	180.00	7,326.75	-2,441.46	1,354.75	2,441.46	0.00	0.00	0.00
10,200.00	89.93	180.00	7,326.87	-2,541.46	1,354.75	2,541.46	0.00	0.00	0.00
10,300.00	89.93	180.00	7,326.99	-2,641.46	1,354.75	2,641.46	0.00	0.00	0.00
10,400.00	89.93	180.00	7,327.12	-2,741.46	1,354.75	2,741.46	0.00	0.00	0.00
10,500.00	89.93	180.00	7,327.24	-2,841.46	1,354.75	2,841.46	0.00	0.00	0.00
10,600.00	89.93	180.00	7,327.36	-2,941.46	1,354.75	2,941.46	0.00	0.00	0.00
10,700.00	89.93	180.00	7,327.49	-3,041.46	1,354.75	3,041.46	0.00	0.00	0.00
10,800.00	89.93	180.00	7,327.61	-3,141.46	1,354.75	3,141.46	0.00	0.00	0.00
10,900.00	89.93	180.00	7,327.73	-3,241.46	1,354.75	3,241.46	0.00	0.00	0.00
11,000.00	89.93	180.00	7,327.86	-3,341.46	1,354.75	3,341.46	0.00	0.00	0.00
11,100.00	89.93	180.00	7,327.98	-3,441.46	1,354.75	3,441.46	0.00	0.00	0.00
11,200.00	89.93	180.00	7,328.10	-3,541.46	1,354.75	3,541.46	0.00	0.00	0.00
11,300.00	89.93	180.00	7,328.23	-3,641.46	1,354.75	3,641.46	0.00	0.00	0.00
11,400.00	89.93	180.00	7,328.35	-3,741.46	1,354.75	3,741.46	0.00	0.00	0.00
11,500.00	89.93	180.00	7,328.47	-3,841.46	1,354.75	3,841.46	0.00	0.00	0.00
11,600.00	89.93	180.00	7,328.60	-3,941.46	1,354.75	3,941.46	0.00	0.00	0.00
11,700.00	89.93	180.00	7,328.72	-4,041.46	1,354.75	4,041.46	0.00	0.00	0.00
11,800.00	89.93	180.00	7,328.84	-4,141.46	1,354.75	4,141.46	0.00	0.00	0.00
11,900.00	89.93	180.00	7,328.97	-4,241.46	1,354.75	4,241.46	0.00	0.00	0.00
11,927.47	89.93	180.00	7,329.00	-4,268.93	1,354.75	4,268.93	0.00	0.00	0.00
TD at 11927.47 - PBHL_Burkhardt 38N-3HZ (460 FSL 510 FEL)									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
PBHL_Burkhardt 38N-3H	0.00	0.00	7,329.00	-4,268.93	1,354.75	1,270,832.94	3,208,337.28	40.0744260	-104.7555250
- plan hits target center									
- Point									

Database:	Denver Sales Office	Local Co-ordinate Reference:	Well BURKHARDT 38N-3HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 5063 & KB 17 @ 5080.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 5063 & KB 17 @ 5080.00ft (ASSUMED)
Site:	BURKHARDT 2-3HZ PAD	North Reference:	True
Well:	BURKHARDT 38N-3HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1 PRELIMINARY		

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,584.00	1,584.00	9 5/8"	9.625	12.250	
7,870.79	7,324.00	7" (620 FNL 510 FEL)	7.000	7.500	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,534.00	1,534.00	Fox Hills Marker				
4,181.11	4,082.00	Parkman				
4,753.47	4,622.00	Sussex				
7,447.28	7,174.00	Sharon Springs				
7,519.10	7,219.00	Niobrara A				
7,685.27	7,294.00	Niobrara B				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
1,784.00	1,784.00	0.00	0.00	Start Build 2.00	
2,751.91	2,733.60	41.59	156.53	Start 3251.67 hold at 2751.91 MD	
6,003.58	5,801.44	318.41	1,198.22	Start Drop -2.00	
6,971.49	6,751.04	360.00	1,354.75	Start DLS 10.00 TFO 180.00	
7,870.79	7,324.00	-212.25	1,354.75	Start 4056.68 hold at 7870.79 MD	
11,927.47	7,329.00	-4,268.93	1,354.75	TD at 11927.47	