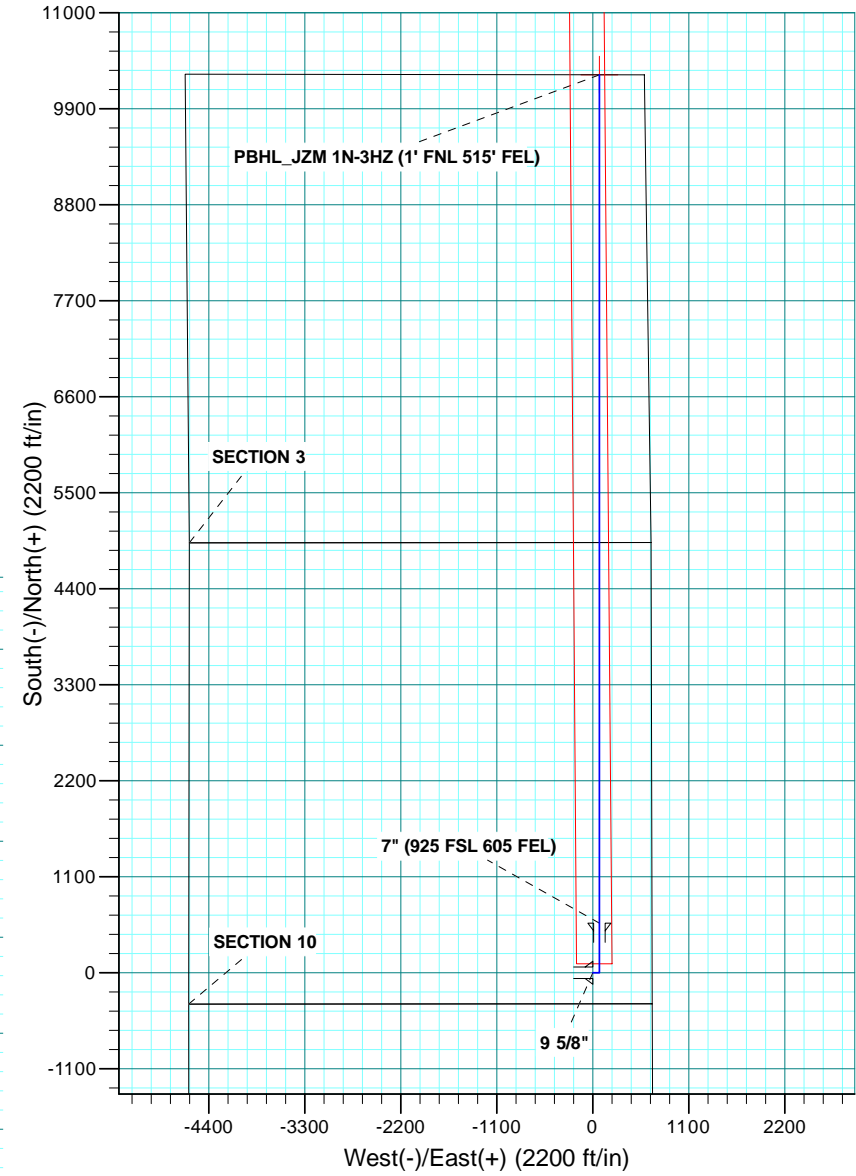
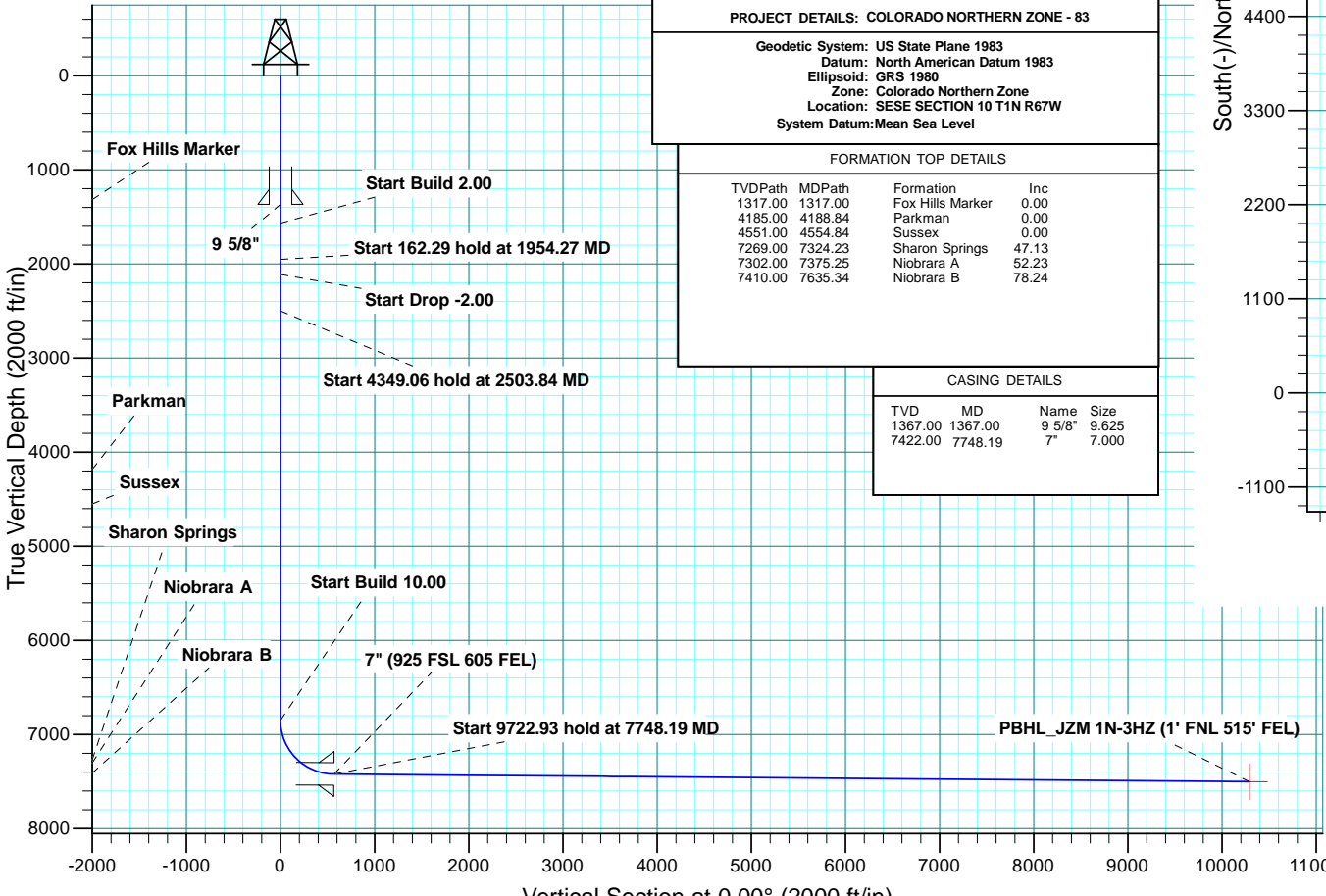


WELL DETAILS: JZM 1N-3HZ										
GL 5040 & KB 17 @ 5057.00ft (ASSUMED)										
		+N/-S	+E/-W	Northing	Easting	Latitude	Longitude			
		0.00	0.00	1265058.44	3176404.35	40.0592540	-104.8697770			
SECTION DETAILS										
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
1567.00	0.00	0.00	1567.00	0.00	0.00	0.00	0.00	0.00		Start Build 2.00
1954.27	7.75	90.00	1953.09	0.00	26.14	2.00	90.00	0.00		Start 162.29 hold at 1954.27 MD
2116.57	7.75	90.00	2113.91	0.00	48.01	0.00	0.00	0.00		Start Drop -2.00
2503.84	0.00	0.00	2500.00	0.00	74.15	2.00	180.00	0.00		Start 4349.06 hold at 2503.84 MD
6852.90	0.00	0.00	6849.06	0.00	74.15	0.00	0.00	0.00		Start Build 10.00
7748.19	89.53	0.00	7422.00	568.24	74.15	10.00	0.00	568.24		Start 9722.93 hold at 7748.19 MD
17471.12	89.53	0.00	7502.00	10290.85	74.15	0.00	0.00	10290.85	PBHL_JZM 1N-3HZ	
DESIGN TARGET DETAILS										
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape		
PBHL 7502.00		10290.85	74.15	1275349.53	3176405.35	40.0875040	-104.8695120	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: SESE SECTION 10 T1N R67W									
System Datum: Mean Sea Level									

FORMATION TOP DETAILS				
TVDPath	MDPath	Formation	Inc	
1317.00	1317.00	Fox Hills Marker	0.00	
4185.00	4188.84	Parkman	0.00	
4551.00	4554.84	Sussex	0.00	
7269.00	7324.23	Sharon Springs	47.13	
7302.00	7375.25	Niobrara A	52.23	
7410.00	7635.34	Niobrara B	78.24	

CASING DETAILS				
TVD	MD	Name	Size	
1367.00	1367.00	9 5/8"	9.625	
7422.00	7748.19	7"	7.000	





Scientific Drilling

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

JZM 16-10HZ PAD

JZM 1N-3HZ

OH

Plan: PLAN #1 PRELIMINARY

Standard Planning Report

06 January, 2014

Database:	Denver Sales Office	Local Co-ordinate Reference:	Well JZM 1N-3HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 5040 & KB 17 @ 5057.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 5040 & KB 17 @ 5057.00ft (ASSUMED)
Site:	JZM 16-10HZ PAD	North Reference:	True
Well:	JZM 1N-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	JZM 16-10HZ PAD, SESE SECTION 10 T1N R67W				
Site Position:	Northing:	1,265,058.02 usft	Latitude:	40.0592540	
From:	Lat/Long	Easting:	3,176,344.45 usft	Longitude:	-104.8699910
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.41 °

Well	JZM 1N-3HZ, 355' FSL 680' FEL					
Well Position	+N/-S	-0.01 ft	Northing:	1,265,058.44 usft	Latitude:	40.0592540
	+E/-W	59.90 ft	Easting:	3,176,404.35 usft	Longitude:	-104.8697770
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	5,040.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2013	1/6/2014	8.59	66.66	52,591

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	0.00

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	
1,567.00	0.00	0.00	1,567.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,954.27	7.75	90.00	1,953.09	0.00	26.14	2.00	2.00	0.00	90.00	
2,116.57	7.75	90.00	2,113.91	0.00	48.01	0.00	0.00	0.00	0.00	
2,503.84	0.00	0.00	2,500.00	0.00	74.15	2.00	-2.00	0.00	180.00	
6,852.90	0.00	0.00	6,849.06	0.00	74.15	0.00	0.00	0.00	0.00	
7,748.19	89.53	0.00	7,422.00	568.24	74.15	10.00	10.00	0.00	0.00	
17,471.12	89.53	0.00	7,502.00	10,290.85	74.15	0.00	0.00	0.00	0.00	PBHL_JZM 1N-3HZ (

Database:	Denver Sales Office	Local Co-ordinate Reference:	Well JZM 1N-3HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 5040 & KB 17 @ 5057.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 5040 & KB 17 @ 5057.00ft (ASSUMED)
Site:	JZM 16-10HZ PAD	North Reference:	True
Well:	JZM 1N-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	0.00
100.00	0.00	0.00	100.00	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	0.00
300.00	0.00	0.00	300.00	0.00	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	0.00
500.00	0.00	0.00	500.00	0.00	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	0.00
700.00	0.00	0.00	700.00	0.00	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	0.00
900.00	0.00	0.00	900.00	0.00	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	0.00
1,100.00	0.00	0.00	1,100.00	0.00	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	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,317.00	0.00	0.00	1,317.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fox Hills Marker										
1,367.00	0.00	0.00	1,367.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9 5/8"										
1,400.00	0.00	0.00	1,400.00	0.00	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	0.00
1,567.00	0.00	0.00	1,567.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00										
1,600.00	0.66	90.00	1,600.00	0.00	0.19	0.00	2.00	2.00	0.00	0.00
1,700.00	2.66	90.00	1,699.95	0.00	3.09	0.00	2.00	2.00	0.00	0.00
1,800.00	4.66	90.00	1,799.74	0.00	9.47	0.00	2.00	2.00	0.00	0.00
1,900.00	6.66	90.00	1,899.25	0.00	19.33	0.00	2.00	2.00	0.00	0.00
1,954.27	7.75	90.00	1,953.09	0.00	26.14	0.00	2.00	2.00	0.00	0.00
Start 162.29 hold at 1954.27 MD										
2,000.00	7.75	90.00	1,998.40	0.00	32.30	0.00	0.00	0.00	0.00	0.00
2,100.00	7.75	90.00	2,097.49	0.00	45.78	0.00	0.00	0.00	0.00	0.00
2,116.57	7.75	90.00	2,113.91	0.00	48.01	0.00	0.00	0.00	0.00	0.00
Start Drop -2.00										
2,200.00	6.08	90.00	2,196.73	0.00	58.05	0.00	2.00	-2.00	0.00	0.00
2,300.00	4.08	90.00	2,296.33	0.00	66.90	0.00	2.00	-2.00	0.00	0.00
2,400.00	2.08	90.00	2,396.19	0.00	72.26	0.00	2.00	-2.00	0.00	0.00
2,500.00	0.08	90.00	2,496.16	0.00	74.14	0.00	2.00	-2.00	0.00	0.00
2,503.84	0.00	0.00	2,500.00	0.00	74.15	0.00	2.00	-2.00	-2,345.19	0.00
Start 4349.06 hold at 2503.84 MD										
2,600.00	0.00	0.00	2,596.16	0.00	74.15	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,696.16	0.00	74.15	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,796.16	0.00	74.15	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,896.16	0.00	74.15	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	2,996.16	0.00	74.15	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,096.16	0.00	74.15	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,196.16	0.00	74.15	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,296.16	0.00	74.15	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,396.16	0.00	74.15	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,496.16	0.00	74.15	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,596.16	0.00	74.15	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,696.16	0.00	74.15	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,796.16	0.00	74.15	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,896.16	0.00	74.15	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	3,996.16	0.00	74.15	0.00	0.00	0.00	0.00	0.00

Database:	Denver Sales Office	Local Co-ordinate Reference:	Well JZM 1N-3HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 5040 & KB 17 @ 5057.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 5040 & KB 17 @ 5057.00ft (ASSUMED)
Site:	JZM 16-10HZ PAD	North Reference:	True
Well:	JZM 1N-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)	
4,100.00	0.00	0.00	4,096.16	0.00	74.15	0.00	0.00	0.00	0.00	
4,188.84	0.00	0.00	4,185.00	0.00	74.15	0.00	0.00	0.00	0.00	
Parkman										
4,200.00	0.00	0.00	4,196.16	0.00	74.15	0.00	0.00	0.00	0.00	
4,300.00	0.00	0.00	4,296.16	0.00	74.15	0.00	0.00	0.00	0.00	
4,400.00	0.00	0.00	4,396.16	0.00	74.15	0.00	0.00	0.00	0.00	
4,500.00	0.00	0.00	4,496.16	0.00	74.15	0.00	0.00	0.00	0.00	
4,554.84	0.00	0.00	4,551.00	0.00	74.15	0.00	0.00	0.00	0.00	
Sussex										
4,600.00	0.00	0.00	4,596.16	0.00	74.15	0.00	0.00	0.00	0.00	
4,700.00	0.00	0.00	4,696.16	0.00	74.15	0.00	0.00	0.00	0.00	
4,800.00	0.00	0.00	4,796.16	0.00	74.15	0.00	0.00	0.00	0.00	
4,900.00	0.00	0.00	4,896.16	0.00	74.15	0.00	0.00	0.00	0.00	
5,000.00	0.00	0.00	4,996.16	0.00	74.15	0.00	0.00	0.00	0.00	
5,100.00	0.00	0.00	5,096.16	0.00	74.15	0.00	0.00	0.00	0.00	
5,200.00	0.00	0.00	5,196.16	0.00	74.15	0.00	0.00	0.00	0.00	
5,300.00	0.00	0.00	5,296.16	0.00	74.15	0.00	0.00	0.00	0.00	
5,400.00	0.00	0.00	5,396.16	0.00	74.15	0.00	0.00	0.00	0.00	
5,500.00	0.00	0.00	5,496.16	0.00	74.15	0.00	0.00	0.00	0.00	
5,600.00	0.00	0.00	5,596.16	0.00	74.15	0.00	0.00	0.00	0.00	
5,700.00	0.00	0.00	5,696.16	0.00	74.15	0.00	0.00	0.00	0.00	
5,800.00	0.00	0.00	5,796.16	0.00	74.15	0.00	0.00	0.00	0.00	
5,900.00	0.00	0.00	5,896.16	0.00	74.15	0.00	0.00	0.00	0.00	
6,000.00	0.00	0.00	5,996.16	0.00	74.15	0.00	0.00	0.00	0.00	
6,100.00	0.00	0.00	6,096.16	0.00	74.15	0.00	0.00	0.00	0.00	
6,200.00	0.00	0.00	6,196.16	0.00	74.15	0.00	0.00	0.00	0.00	
6,300.00	0.00	0.00	6,296.16	0.00	74.15	0.00	0.00	0.00	0.00	
6,400.00	0.00	0.00	6,396.16	0.00	74.15	0.00	0.00	0.00	0.00	
6,500.00	0.00	0.00	6,496.16	0.00	74.15	0.00	0.00	0.00	0.00	
6,600.00	0.00	0.00	6,596.16	0.00	74.15	0.00	0.00	0.00	0.00	
6,700.00	0.00	0.00	6,696.16	0.00	74.15	0.00	0.00	0.00	0.00	
6,800.00	0.00	0.00	6,796.16	0.00	74.15	0.00	0.00	0.00	0.00	
6,852.90	0.00	0.00	6,849.06	0.00	74.15	0.00	0.00	0.00	0.00	
Start Build 10.00										
6,900.00	4.71	0.00	6,896.11	1.94	74.15	1.94	10.00	10.00	0.00	
7,000.00	14.71	0.00	6,994.55	18.78	74.15	18.78	10.00	10.00	0.00	
7,100.00	24.71	0.00	7,088.57	52.46	74.15	52.46	10.00	10.00	0.00	
7,200.00	34.71	0.00	7,175.32	101.96	74.15	101.96	10.00	10.00	0.00	
7,300.00	44.71	0.00	7,252.15	165.77	74.15	165.77	10.00	10.00	0.00	
7,324.23	47.13	0.00	7,269.00	183.17	74.15	183.17	10.00	10.00	0.00	
Sharon Springs										
7,375.25	52.23	0.00	7,302.00	222.06	74.15	222.06	10.00	10.00	0.00	
Niobrara A										
7,400.00	54.71	0.00	7,316.73	241.95	74.15	241.95	10.00	10.00	0.00	
7,500.00	64.71	0.00	7,367.11	328.19	74.15	328.19	10.00	10.00	0.00	
7,600.00	74.71	0.00	7,401.74	421.87	74.15	421.87	10.00	10.00	0.00	
7,635.34	78.24	0.00	7,410.00	456.22	74.15	456.22	10.00	10.00	0.00	
Niobrara B										
7,700.00	84.71	0.00	7,419.58	520.13	74.15	520.13	10.00	10.00	0.00	
7,748.19	89.53	0.00	7,422.00	568.25	74.15	568.25	10.00	10.00	0.00	
Start 9722.93 hold at 7748.19 MD - 7" (925 FSL 605 FEL)										
7,800.00	89.53	0.00	7,422.43	620.06	74.15	620.06	0.00	0.00	0.00	
7,900.00	89.53	0.00	7,423.25	720.05	74.15	720.05	0.00	0.00	0.00	

Database:	Denver Sales Office	Local Co-ordinate Reference:	Well JZM 1N-3HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 5040 & KB 17 @ 5057.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 5040 & KB 17 @ 5057.00ft (ASSUMED)
Site:	JZM 16-10HZ PAD	North Reference:	True
Well:	JZM 1N-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)
8,000.00	89.53	0.00	7,424.07	820.05	74.15	820.05	0.00	0.00	0.00
8,100.00	89.53	0.00	7,424.89	920.05	74.15	920.05	0.00	0.00	0.00
8,200.00	89.53	0.00	7,425.72	1,020.04	74.15	1,020.04	0.00	0.00	0.00
8,300.00	89.53	0.00	7,426.54	1,120.04	74.15	1,120.04	0.00	0.00	0.00
8,400.00	89.53	0.00	7,427.36	1,220.04	74.15	1,220.04	0.00	0.00	0.00
8,500.00	89.53	0.00	7,428.19	1,320.03	74.15	1,320.03	0.00	0.00	0.00
8,600.00	89.53	0.00	7,429.01	1,420.03	74.15	1,420.03	0.00	0.00	0.00
8,700.00	89.53	0.00	7,429.83	1,520.03	74.15	1,520.03	0.00	0.00	0.00
8,800.00	89.53	0.00	7,430.65	1,620.02	74.15	1,620.02	0.00	0.00	0.00
8,900.00	89.53	0.00	7,431.48	1,720.02	74.15	1,720.02	0.00	0.00	0.00
9,000.00	89.53	0.00	7,432.30	1,820.02	74.15	1,820.02	0.00	0.00	0.00
9,100.00	89.53	0.00	7,433.12	1,920.01	74.15	1,920.01	0.00	0.00	0.00
9,200.00	89.53	0.00	7,433.95	2,020.01	74.15	2,020.01	0.00	0.00	0.00
9,300.00	89.53	0.00	7,434.77	2,120.01	74.15	2,120.01	0.00	0.00	0.00
9,400.00	89.53	0.00	7,435.59	2,220.00	74.15	2,220.00	0.00	0.00	0.00
9,500.00	89.53	0.00	7,436.41	2,320.00	74.15	2,320.00	0.00	0.00	0.00
9,600.00	89.53	0.00	7,437.24	2,420.00	74.15	2,420.00	0.00	0.00	0.00
9,700.00	89.53	0.00	7,438.06	2,519.99	74.15	2,519.99	0.00	0.00	0.00
9,800.00	89.53	0.00	7,438.88	2,619.99	74.15	2,619.99	0.00	0.00	0.00
9,900.00	89.53	0.00	7,439.70	2,719.99	74.15	2,719.99	0.00	0.00	0.00
10,000.00	89.53	0.00	7,440.53	2,819.98	74.15	2,819.98	0.00	0.00	0.00
10,100.00	89.53	0.00	7,441.35	2,919.98	74.15	2,919.98	0.00	0.00	0.00
10,200.00	89.53	0.00	7,442.17	3,019.98	74.15	3,019.98	0.00	0.00	0.00
10,300.00	89.53	0.00	7,443.00	3,119.97	74.15	3,119.97	0.00	0.00	0.00
10,400.00	89.53	0.00	7,443.82	3,219.97	74.15	3,219.97	0.00	0.00	0.00
10,500.00	89.53	0.00	7,444.64	3,319.97	74.15	3,319.97	0.00	0.00	0.00
10,600.00	89.53	0.00	7,445.46	3,419.96	74.15	3,419.96	0.00	0.00	0.00
10,700.00	89.53	0.00	7,446.29	3,519.96	74.15	3,519.96	0.00	0.00	0.00
10,800.00	89.53	0.00	7,447.11	3,619.96	74.15	3,619.96	0.00	0.00	0.00
10,900.00	89.53	0.00	7,447.93	3,719.95	74.15	3,719.95	0.00	0.00	0.00
11,000.00	89.53	0.00	7,448.76	3,819.95	74.15	3,819.95	0.00	0.00	0.00
11,100.00	89.53	0.00	7,449.58	3,919.95	74.15	3,919.95	0.00	0.00	0.00
11,200.00	89.53	0.00	7,450.40	4,019.94	74.15	4,019.94	0.00	0.00	0.00
11,300.00	89.53	0.00	7,451.22	4,119.94	74.15	4,119.94	0.00	0.00	0.00
11,400.00	89.53	0.00	7,452.05	4,219.94	74.15	4,219.94	0.00	0.00	0.00
11,500.00	89.53	0.00	7,452.87	4,319.93	74.15	4,319.93	0.00	0.00	0.00
11,600.00	89.53	0.00	7,453.69	4,419.93	74.15	4,419.93	0.00	0.00	0.00
11,700.00	89.53	0.00	7,454.52	4,519.93	74.15	4,519.93	0.00	0.00	0.00
11,800.00	89.53	0.00	7,455.34	4,619.92	74.15	4,619.92	0.00	0.00	0.00
11,900.00	89.53	0.00	7,456.16	4,719.92	74.15	4,719.92	0.00	0.00	0.00
12,000.00	89.53	0.00	7,456.98	4,819.92	74.15	4,819.92	0.00	0.00	0.00
12,100.00	89.53	0.00	7,457.81	4,919.91	74.15	4,919.91	0.00	0.00	0.00
12,200.00	89.53	0.00	7,458.63	5,019.91	74.15	5,019.91	0.00	0.00	0.00
12,300.00	89.53	0.00	7,459.45	5,119.91	74.15	5,119.91	0.00	0.00	0.00
12,400.00	89.53	0.00	7,460.27	5,219.90	74.15	5,219.90	0.00	0.00	0.00
12,500.00	89.53	0.00	7,461.10	5,319.90	74.15	5,319.90	0.00	0.00	0.00
12,600.00	89.53	0.00	7,461.92	5,419.90	74.15	5,419.90	0.00	0.00	0.00
12,700.00	89.53	0.00	7,462.74	5,519.89	74.15	5,519.89	0.00	0.00	0.00
12,800.00	89.53	0.00	7,463.57	5,619.89	74.15	5,619.89	0.00	0.00	0.00
12,900.00	89.53	0.00	7,464.39	5,719.89	74.15	5,719.89	0.00	0.00	0.00
13,000.00	89.53	0.00	7,465.21	5,819.88	74.15	5,819.88	0.00	0.00	0.00
13,100.00	89.53	0.00	7,466.03	5,919.88	74.15	5,919.88	0.00	0.00	0.00
13,200.00	89.53	0.00	7,466.86	6,019.88	74.15	6,019.88	0.00	0.00	0.00
13,300.00	89.53	0.00	7,467.68	6,119.87	74.15	6,119.87	0.00	0.00	0.00

Database:	Denver Sales Office	Local Co-ordinate Reference:	Well JZM 1N-3HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 5040 & KB 17 @ 5057.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 5040 & KB 17 @ 5057.00ft (ASSUMED)
Site:	JZM 16-10HZ PAD	North Reference:	True
Well:	JZM 1N-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)	
13,400.00	89.53	0.00	7,468.50	6,219.87	74.15	6,219.87	0.00	0.00	0.00	
13,500.00	89.53	0.00	7,469.33	6,319.86	74.15	6,319.86	0.00	0.00	0.00	
13,600.00	89.53	0.00	7,470.15	6,419.86	74.15	6,419.86	0.00	0.00	0.00	
13,700.00	89.53	0.00	7,470.97	6,519.86	74.15	6,519.86	0.00	0.00	0.00	
13,800.00	89.53	0.00	7,471.79	6,619.85	74.15	6,619.85	0.00	0.00	0.00	
13,900.00	89.53	0.00	7,472.62	6,719.85	74.15	6,719.85	0.00	0.00	0.00	
14,000.00	89.53	0.00	7,473.44	6,819.85	74.15	6,819.85	0.00	0.00	0.00	
14,100.00	89.53	0.00	7,474.26	6,919.84	74.15	6,919.84	0.00	0.00	0.00	
14,200.00	89.53	0.00	7,475.09	7,019.84	74.15	7,019.84	0.00	0.00	0.00	
14,300.00	89.53	0.00	7,475.91	7,119.84	74.15	7,119.84	0.00	0.00	0.00	
14,400.00	89.53	0.00	7,476.73	7,219.83	74.15	7,219.83	0.00	0.00	0.00	
14,500.00	89.53	0.00	7,477.55	7,319.83	74.15	7,319.83	0.00	0.00	0.00	
14,600.00	89.53	0.00	7,478.38	7,419.83	74.15	7,419.83	0.00	0.00	0.00	
14,700.00	89.53	0.00	7,479.20	7,519.82	74.15	7,519.82	0.00	0.00	0.00	
14,800.00	89.53	0.00	7,480.02	7,619.82	74.15	7,619.82	0.00	0.00	0.00	
14,900.00	89.53	0.00	7,480.84	7,719.82	74.15	7,719.82	0.00	0.00	0.00	
15,000.00	89.53	0.00	7,481.67	7,819.81	74.15	7,819.81	0.00	0.00	0.00	
15,100.00	89.53	0.00	7,482.49	7,919.81	74.15	7,919.81	0.00	0.00	0.00	
15,200.00	89.53	0.00	7,483.31	8,019.81	74.15	8,019.81	0.00	0.00	0.00	
15,300.00	89.53	0.00	7,484.14	8,119.80	74.15	8,119.80	0.00	0.00	0.00	
15,400.00	89.53	0.00	7,484.96	8,219.80	74.15	8,219.80	0.00	0.00	0.00	
15,500.00	89.53	0.00	7,485.78	8,319.80	74.15	8,319.80	0.00	0.00	0.00	
15,600.00	89.53	0.00	7,486.60	8,419.79	74.15	8,419.79	0.00	0.00	0.00	
15,700.00	89.53	0.00	7,487.43	8,519.79	74.15	8,519.79	0.00	0.00	0.00	
15,800.00	89.53	0.00	7,488.25	8,619.79	74.15	8,619.79	0.00	0.00	0.00	
15,900.00	89.53	0.00	7,489.07	8,719.78	74.15	8,719.78	0.00	0.00	0.00	
16,000.00	89.53	0.00	7,489.90	8,819.78	74.15	8,819.78	0.00	0.00	0.00	
16,100.00	89.53	0.00	7,490.72	8,919.78	74.15	8,919.78	0.00	0.00	0.00	
16,200.00	89.53	0.00	7,491.54	9,019.77	74.15	9,019.77	0.00	0.00	0.00	
16,300.00	89.53	0.00	7,492.36	9,119.77	74.15	9,119.77	0.00	0.00	0.00	
16,400.00	89.53	0.00	7,493.19	9,219.77	74.15	9,219.77	0.00	0.00	0.00	
16,500.00	89.53	0.00	7,494.01	9,319.76	74.15	9,319.76	0.00	0.00	0.00	
16,600.00	89.53	0.00	7,494.83	9,419.76	74.15	9,419.76	0.00	0.00	0.00	
16,700.00	89.53	0.00	7,495.66	9,519.76	74.15	9,519.76	0.00	0.00	0.00	
16,800.00	89.53	0.00	7,496.48	9,619.75	74.15	9,619.75	0.00	0.00	0.00	
16,900.00	89.53	0.00	7,497.30	9,719.75	74.15	9,719.75	0.00	0.00	0.00	
17,000.00	89.53	0.00	7,498.12	9,819.75	74.15	9,819.75	0.00	0.00	0.00	
17,100.00	89.53	0.00	7,498.95	9,919.74	74.15	9,919.74	0.00	0.00	0.00	
17,200.00	89.53	0.00	7,499.77	10,019.74	74.15	10,019.74	0.00	0.00	0.00	
17,300.00	89.53	0.00	7,500.59	10,119.74	74.15	10,119.74	0.00	0.00	0.00	
17,400.00	89.53	0.00	7,501.42	10,219.73	74.15	10,219.73	0.00	0.00	0.00	
17,471.12	89.53	0.00	7,502.00	10,290.85	74.15	10,290.85	0.00	0.00	0.00	
TD at 17471.12 - PBHL_JZM 1N-3HZ (1' FNL 515' FEL)										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
PBHL_JZM 1N-3HZ (1' f - hit/miss target - Shape - Point	0.00	0.00	7,502.00	10,290.85	74.15	1,275,349.53	3,176,405.35	40.0875040	-104.8695120	

Database:	Denver Sales Office	Local Co-ordinate Reference:	Well JZM 1N-3HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 5040 & KB 17 @ 5057.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 5040 & KB 17 @ 5057.00ft (ASSUMED)
Site:	JZM 16-10HZ PAD	North Reference:	True
Well:	JZM 1N-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)	
1,367.00	1,367.00	9 5/8"	9.625	12.250	
7,748.19	7,422.00	7" (925 FSL 605 FEL)	7.000	7.500	

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,317.00	1,317.00	Fox Hills Marker			
4,188.84	4,185.00	Parkman			
4,554.84	4,551.00	Sussex			
7,324.23	7,269.00	Sharon Springs			
7,375.25	7,302.00	Niobrara A			
7,635.34	7,410.00	Niobrara B			

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
1,567.00	1,567.00	0.00	0.00	Start Build 2.00	
1,954.27	1,953.09	0.00	26.14	Start 162.29 hold at 1954.27 MD	
2,116.57	2,113.91	0.00	48.01	Start Drop -2.00	
2,503.84	2,500.00	0.00	74.15	Start 4349.06 hold at 2503.84 MD	
6,852.90	6,849.06	0.00	74.15	Start Build 10.00	
7,748.19	7,422.00	568.24	74.15	Start 9722.93 hold at 7748.19 MD	
17,471.12	7,502.00	10,290.85	74.15	TD at 17471.12	