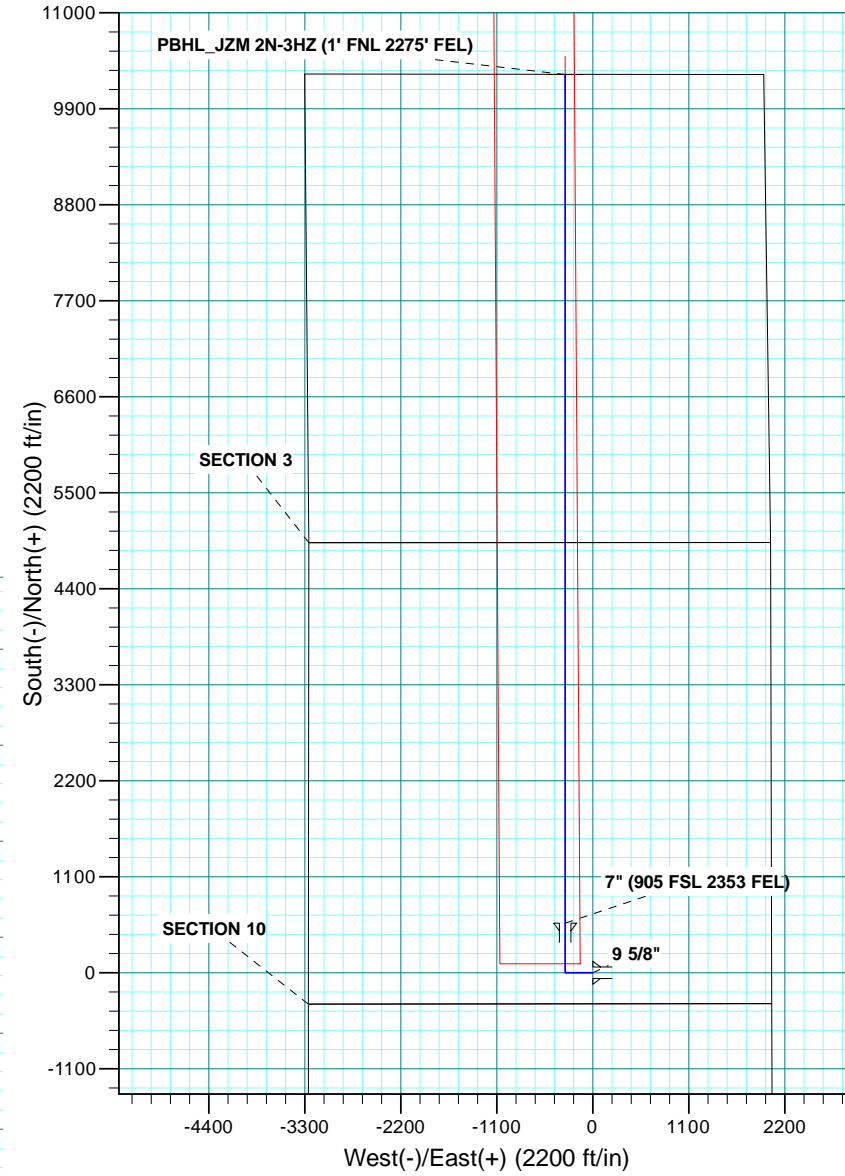
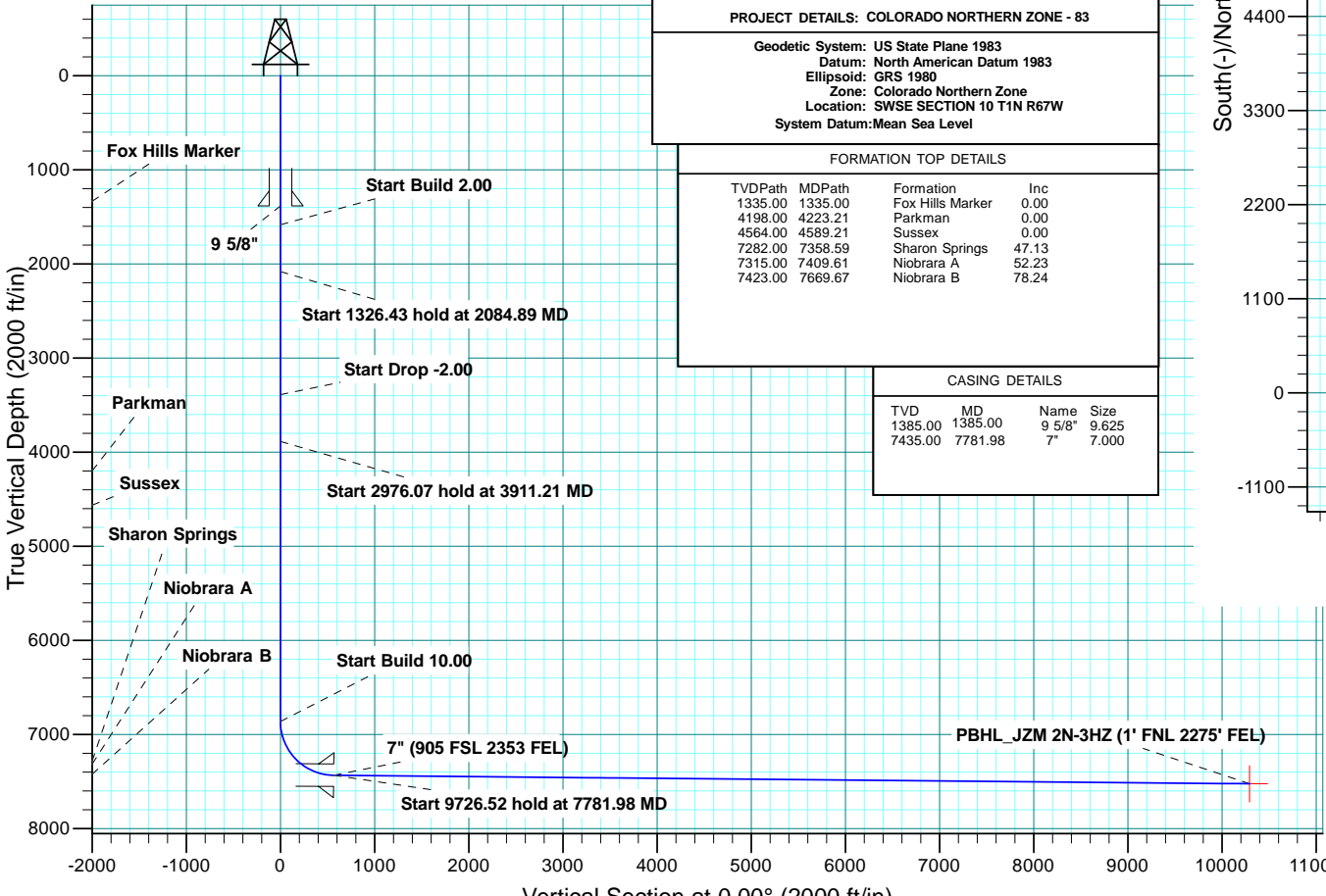


WELL DETAILS: JZM 2N-3HZ										
GL 5058 & KB 17 @ 5075.00ft (ASSUMED)										
		+N/-S	+E/-W	Northing	Easting	Latitude	Longitude			
		0.00	0.00	1265048.01	3175034.79	40.0592520	-104.8746700			
SECTION DETAILS										
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	V Sect	Target	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
1585.00	0.00	0.00	1585.00	0.00	0.00	0.00	0.00	0.00		Start Build 2.00
2084.89	10.00	270.00	2082.36	0.00	-43.50	2.00	270.00	0.00		Start 1326.43 hold at 2084.89 MD
3411.32	10.00	270.00	3388.64	0.00	-273.78	0.00	0.00	0.00		Start Drop -2.00
3911.21	0.00	0.00	3896.00	0.00	-317.29	2.00	180.00	0.00		Start 2976.07 hold at 3911.21 MD
6887.28	0.00	0.00	6862.07	0.00	-317.29	0.00	0.00	0.00		Start Build 10.00
7781.98	89.47	0.00	7435.00	567.66	-317.29	10.00	0.00	567.66		Start 9726.52 hold at 7781.98 MD
17508.50	89.47	0.00	7525.00	10293.76	-317.29	0.00	0.00	10293.76	PBHL_JZM 2N-3HZ	
DESIGN TARGET DETAILS										
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape		
PBHL	7525.00	10293.76	-317.29	1275339.26	3174644.92	40.0875100	-104.8758040	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: SWSE SECTION 10 T1N R67W
System Datum: Mean Sea Level

FORMATION TOP DETAILS				
TVDPath	MDPath	Formation	Inc	
1335.00	1335.00	Fox Hills Marker	0.00	
4198.00	4223.21	Parkman	0.00	
4564.00	4589.21	Sussex	0.00	
7282.00	7358.59	Sharon Springs	47.13	
7315.00	7409.61	Niobrara A	52.23	
7423.00	7669.67	Niobrara B	78.24	

CASING DETAILS				
TVD	MD	Name	Size	
1385.00	1385.00	9 5/8"	9.625	
7435.00	7781.98	7"	7.000	





Scientific Drilling

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

JZM 15-10HZ PAD

JZM 2N-3HZ

OH

Plan: PLAN #1 PRELIMINARY

Standard Planning Report

06 January, 2014

Database:	Denver Sales Office	Local Co-ordinate Reference:	Well JZM 2N-3HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 5058 & KB 17 @ 5075.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 5058 & KB 17 @ 5075.00ft (ASSUMED)
Site:	JZM 15-10HZ PAD	North Reference:	True
Well:	JZM 2N-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 15-10HZ PAD, SWSE SECTION 10 T1N R67W				
Site Position:	Northing:	1,265,047.23 usft	Latitude:	40.0592510	
From:	Lat/Long	Easting:	3,174,974.89 usft	Longitude:	-104.8748840
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.40 °

Well	JZM 2N-3HZ, 355' FSL 2049' FEL					
Well Position	+N/-S	0.36 ft	Northing:	1,265,048.01 usft	Latitude:	40.0592520
	+E/-W	59.90 ft	Easting:	3,175,034.79 usft	Longitude:	-104.8746700
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	5,058.00 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	
1,585.00	0.00	0.00	1,585.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,084.89	10.00	270.00	2,082.36	0.00	-43.50	2.00	2.00	0.00	270.00	
3,411.32	10.00	270.00	3,388.64	0.00	-273.78	0.00	0.00	0.00	0.00	
3,911.21	0.00	0.00	3,886.00	0.00	-317.29	2.00	-2.00	0.00	180.00	
6,887.28	0.00	0.00	6,862.07	0.00	-317.29	0.00	0.00	0.00	0.00	
7,781.98	89.47	0.00	7,435.00	567.66	-317.29	10.00	10.00	0.00	0.00	
17,508.50	89.47	0.00	7,525.00	10,293.76	-317.29	0.00	0.00	0.00	0.00	PBHL_JZM 2N-3HZ (

Database:	Denver Sales Office	Local Co-ordinate Reference:	Well JZM 2N-3HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 5058 & KB 17 @ 5075.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 5058 & KB 17 @ 5075.00ft (ASSUMED)
Site:	JZM 15-10HZ PAD	North Reference:	True
Well:	JZM 2N-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
1,335.00	0.00	0.00	1,335.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fox Hills Marker										
1,385.00	0.00	0.00	1,385.00	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
1,585.00	0.00	0.00	1,585.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00										
1,600.00	0.30	270.00	1,600.00	0.00	-0.04	0.00	2.00	2.00	0.00	0.00
1,700.00	2.30	270.00	1,699.97	0.00	-2.31	0.00	2.00	2.00	0.00	0.00
1,800.00	4.30	270.00	1,799.80	0.00	-8.06	0.00	2.00	2.00	0.00	0.00
1,900.00	6.30	270.00	1,899.37	0.00	-17.30	0.00	2.00	2.00	0.00	0.00
2,000.00	8.30	270.00	1,998.55	0.00	-30.01	0.00	2.00	2.00	0.00	0.00
2,084.89	10.00	270.00	2,082.36	0.00	-43.50	0.00	2.00	2.00	0.00	0.00
Start 1326.43 hold at 2084.89 MD										
2,100.00	10.00	270.00	2,097.24	0.00	-46.13	0.00	0.00	0.00	0.00	0.00
2,200.00	10.00	270.00	2,195.72	0.00	-63.49	0.00	0.00	0.00	0.00	0.00
2,300.00	10.00	270.00	2,294.20	0.00	-80.85	0.00	0.00	0.00	0.00	0.00
2,400.00	10.00	270.00	2,392.68	0.00	-98.21	0.00	0.00	0.00	0.00	0.00
2,500.00	10.00	270.00	2,491.16	0.00	-115.57	0.00	0.00	0.00	0.00	0.00
2,600.00	10.00	270.00	2,589.64	0.00	-132.93	0.00	0.00	0.00	0.00	0.00
2,700.00	10.00	270.00	2,688.13	0.00	-150.29	0.00	0.00	0.00	0.00	0.00
2,800.00	10.00	270.00	2,786.61	0.00	-167.65	0.00	0.00	0.00	0.00	0.00
2,900.00	10.00	270.00	2,885.09	0.00	-185.01	0.00	0.00	0.00	0.00	0.00
3,000.00	10.00	270.00	2,983.57	0.00	-202.38	0.00	0.00	0.00	0.00	0.00
3,100.00	10.00	270.00	3,082.05	0.00	-219.74	0.00	0.00	0.00	0.00	0.00
3,200.00	10.00	270.00	3,180.53	0.00	-237.10	0.00	0.00	0.00	0.00	0.00
3,300.00	10.00	270.00	3,279.02	0.00	-254.46	0.00	0.00	0.00	0.00	0.00
3,400.00	10.00	270.00	3,377.50	0.00	-271.82	0.00	0.00	0.00	0.00	0.00
3,411.32	10.00	270.00	3,388.64	0.00	-273.78	0.00	0.00	0.00	0.00	0.00
Start Drop -2.00										
3,500.00	8.22	270.00	3,476.20	0.00	-287.83	0.00	2.00	-2.00	0.00	0.00
3,600.00	6.22	270.00	3,575.40	0.00	-300.40	0.00	2.00	-2.00	0.00	0.00
3,700.00	4.22	270.00	3,674.98	0.00	-309.50	0.00	2.00	-2.00	0.00	0.00
3,800.00	2.22	270.00	3,774.82	0.00	-315.13	0.00	2.00	-2.00	0.00	0.00
3,900.00	0.22	270.00	3,874.79	0.00	-317.27	0.00	2.00	-2.00	0.00	0.00
3,911.21	0.00	0.00	3,886.00	0.00	-317.29	0.00	2.00	-2.00	0.00	0.00
Start 2976.07 hold at 3911.21 MD										
4,000.00	0.00	0.00	3,974.79	0.00	-317.29	0.00	0.00	0.00	0.00	0.00

Database:	Denver Sales Office	Local Co-ordinate Reference:	Well JZM 2N-3HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 5058 & KB 17 @ 5075.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 5058 & KB 17 @ 5075.00ft (ASSUMED)
Site:	JZM 15-10HZ PAD	North Reference:	True
Well:	JZM 2N-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	4,074.79	0.00	-317.29	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,174.79	0.00	-317.29	0.00	0.00	0.00	0.00	0.00
4,223.21	0.00	0.00	4,198.00	0.00	-317.29	0.00	0.00	0.00	0.00	0.00
Parkman										
4,300.00	0.00	0.00	4,274.79	0.00	-317.29	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,374.79	0.00	-317.29	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,474.79	0.00	-317.29	0.00	0.00	0.00	0.00	0.00
4,589.21	0.00	0.00	4,564.00	0.00	-317.29	0.00	0.00	0.00	0.00	0.00
Sussex										
4,600.00	0.00	0.00	4,574.79	0.00	-317.29	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,674.79	0.00	-317.29	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,774.79	0.00	-317.29	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,874.79	0.00	-317.29	0.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	4,974.79	0.00	-317.29	0.00	0.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,074.79	0.00	-317.29	0.00	0.00	0.00	0.00	0.00
5,200.00	0.00	0.00	5,174.79	0.00	-317.29	0.00	0.00	0.00	0.00	0.00
5,300.00	0.00	0.00	5,274.79	0.00	-317.29	0.00	0.00	0.00	0.00	0.00
5,400.00	0.00	0.00	5,374.79	0.00	-317.29	0.00	0.00	0.00	0.00	0.00
5,500.00	0.00	0.00	5,474.79	0.00	-317.29	0.00	0.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,574.79	0.00	-317.29	0.00	0.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,674.79	0.00	-317.29	0.00	0.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,774.79	0.00	-317.29	0.00	0.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,874.79	0.00	-317.29	0.00	0.00	0.00	0.00	0.00
6,000.00	0.00	0.00	5,974.79	0.00	-317.29	0.00	0.00	0.00	0.00	0.00
6,100.00	0.00	0.00	6,074.79	0.00	-317.29	0.00	0.00	0.00	0.00	0.00
6,200.00	0.00	0.00	6,174.79	0.00	-317.29	0.00	0.00	0.00	0.00	0.00
6,300.00	0.00	0.00	6,274.79	0.00	-317.29	0.00	0.00	0.00	0.00	0.00
6,400.00	0.00	0.00	6,374.79	0.00	-317.29	0.00	0.00	0.00	0.00	0.00
6,500.00	0.00	0.00	6,474.79	0.00	-317.29	0.00	0.00	0.00	0.00	0.00
6,600.00	0.00	0.00	6,574.79	0.00	-317.29	0.00	0.00	0.00	0.00	0.00
6,700.00	0.00	0.00	6,674.79	0.00	-317.29	0.00	0.00	0.00	0.00	0.00
6,800.00	0.00	0.00	6,774.79	0.00	-317.29	0.00	0.00	0.00	0.00	0.00
6,887.28	0.00	0.00	6,862.07	0.00	-317.29	0.00	0.00	0.00	0.00	0.00
Start Build 10.00										
6,900.00	1.27	0.00	6,874.79	0.14	-317.29	0.14	10.00	10.00	0.00	0.00
7,000.00	11.27	0.00	6,974.07	11.05	-317.29	11.05	10.00	10.00	0.00	0.00
7,100.00	21.27	0.00	7,069.94	39.04	-317.29	39.04	10.00	10.00	0.00	0.00
7,200.00	31.27	0.00	7,159.49	83.24	-317.29	83.24	10.00	10.00	0.00	0.00
7,300.00	41.27	0.00	7,240.01	142.33	-317.29	142.33	10.00	10.00	0.00	0.00
7,358.59	47.13	0.00	7,282.00	183.16	-317.29	183.16	10.00	10.00	0.00	0.00
Sharon Springs										
7,400.00	51.27	0.00	7,309.05	214.50	-317.29	214.50	10.00	10.00	0.00	0.00
7,409.61	52.23	0.00	7,315.00	222.05	-317.29	222.05	10.00	10.00	0.00	0.00
Niobrara A										
7,500.00	61.27	0.00	7,364.50	297.57	-317.29	297.57	10.00	10.00	0.00	0.00
7,600.00	71.27	0.00	7,404.69	389.00	-317.29	389.00	10.00	10.00	0.00	0.00
7,669.67	78.24	0.00	7,423.00	456.17	-317.29	456.17	10.00	10.00	0.00	0.00
Niobrara B										
7,700.00	81.27	0.00	7,428.39	486.02	-317.29	486.02	10.00	10.00	0.00	0.00
7,781.98	89.47	0.00	7,435.00	567.66	-317.29	567.66	10.00	10.00	0.00	0.00
Start 9726.52 hold at 7781.98 MD - 7" (905 FSL 2353 FEL)										
7,800.00	89.47	0.00	7,435.17	585.68	-317.29	585.68	0.00	0.00	0.00	0.00
7,900.00	89.47	0.00	7,436.10	685.67	-317.29	685.67	0.00	0.00	0.00	0.00

Database:	Denver Sales Office	Local Co-ordinate Reference:	Well JZM 2N-3HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 5058 & KB 17 @ 5075.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 5058 & KB 17 @ 5075.00ft (ASSUMED)
Site:	JZM 15-10HZ PAD	North Reference:	True
Well:	JZM 2N-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	89.47	0.00	7,437.02	785.67	-317.29	785.67	0.00	0.00	0.00
8,100.00	89.47	0.00	7,437.95	885.67	-317.29	885.67	0.00	0.00	0.00
8,200.00	89.47	0.00	7,438.87	985.66	-317.29	985.66	0.00	0.00	0.00
8,300.00	89.47	0.00	7,439.80	1,085.66	-317.29	1,085.66	0.00	0.00	0.00
8,400.00	89.47	0.00	7,440.72	1,185.65	-317.29	1,185.65	0.00	0.00	0.00
8,500.00	89.47	0.00	7,441.65	1,285.65	-317.29	1,285.65	0.00	0.00	0.00
8,600.00	89.47	0.00	7,442.57	1,385.64	-317.29	1,385.64	0.00	0.00	0.00
8,700.00	89.47	0.00	7,443.50	1,485.64	-317.29	1,485.64	0.00	0.00	0.00
8,800.00	89.47	0.00	7,444.42	1,585.64	-317.29	1,585.64	0.00	0.00	0.00
8,900.00	89.47	0.00	7,445.35	1,685.63	-317.29	1,685.63	0.00	0.00	0.00
9,000.00	89.47	0.00	7,446.27	1,785.63	-317.29	1,785.63	0.00	0.00	0.00
9,100.00	89.47	0.00	7,447.20	1,885.62	-317.29	1,885.62	0.00	0.00	0.00
9,200.00	89.47	0.00	7,448.12	1,985.62	-317.29	1,985.62	0.00	0.00	0.00
9,300.00	89.47	0.00	7,449.05	2,085.61	-317.29	2,085.61	0.00	0.00	0.00
9,400.00	89.47	0.00	7,449.98	2,185.61	-317.29	2,185.61	0.00	0.00	0.00
9,500.00	89.47	0.00	7,450.90	2,285.61	-317.29	2,285.61	0.00	0.00	0.00
9,600.00	89.47	0.00	7,451.83	2,385.60	-317.29	2,385.60	0.00	0.00	0.00
9,700.00	89.47	0.00	7,452.75	2,485.60	-317.29	2,485.60	0.00	0.00	0.00
9,800.00	89.47	0.00	7,453.68	2,585.59	-317.29	2,585.59	0.00	0.00	0.00
9,900.00	89.47	0.00	7,454.60	2,685.59	-317.29	2,685.59	0.00	0.00	0.00
10,000.00	89.47	0.00	7,455.53	2,785.58	-317.29	2,785.58	0.00	0.00	0.00
10,100.00	89.47	0.00	7,456.45	2,885.58	-317.29	2,885.58	0.00	0.00	0.00
10,200.00	89.47	0.00	7,457.38	2,985.58	-317.29	2,985.58	0.00	0.00	0.00
10,300.00	89.47	0.00	7,458.30	3,085.57	-317.29	3,085.57	0.00	0.00	0.00
10,400.00	89.47	0.00	7,459.23	3,185.57	-317.29	3,185.57	0.00	0.00	0.00
10,500.00	89.47	0.00	7,460.15	3,285.56	-317.29	3,285.56	0.00	0.00	0.00
10,600.00	89.47	0.00	7,461.08	3,385.56	-317.29	3,385.56	0.00	0.00	0.00
10,700.00	89.47	0.00	7,462.00	3,485.55	-317.29	3,485.55	0.00	0.00	0.00
10,800.00	89.47	0.00	7,462.93	3,585.55	-317.29	3,585.55	0.00	0.00	0.00
10,900.00	89.47	0.00	7,463.85	3,685.55	-317.29	3,685.55	0.00	0.00	0.00
11,000.00	89.47	0.00	7,464.78	3,785.54	-317.29	3,785.54	0.00	0.00	0.00
11,100.00	89.47	0.00	7,465.70	3,885.54	-317.29	3,885.54	0.00	0.00	0.00
11,200.00	89.47	0.00	7,466.63	3,985.53	-317.29	3,985.53	0.00	0.00	0.00
11,300.00	89.47	0.00	7,467.56	4,085.53	-317.29	4,085.53	0.00	0.00	0.00
11,400.00	89.47	0.00	7,468.48	4,185.52	-317.29	4,185.52	0.00	0.00	0.00
11,500.00	89.47	0.00	7,469.41	4,285.52	-317.29	4,285.52	0.00	0.00	0.00
11,600.00	89.47	0.00	7,470.33	4,385.52	-317.29	4,385.52	0.00	0.00	0.00
11,700.00	89.47	0.00	7,471.26	4,485.51	-317.29	4,485.51	0.00	0.00	0.00
11,800.00	89.47	0.00	7,472.18	4,585.51	-317.29	4,585.51	0.00	0.00	0.00
11,900.00	89.47	0.00	7,473.11	4,685.50	-317.29	4,685.50	0.00	0.00	0.00
12,000.00	89.47	0.00	7,474.03	4,785.50	-317.29	4,785.50	0.00	0.00	0.00
12,100.00	89.47	0.00	7,474.96	4,885.49	-317.29	4,885.49	0.00	0.00	0.00
12,200.00	89.47	0.00	7,475.88	4,985.49	-317.29	4,985.49	0.00	0.00	0.00
12,300.00	89.47	0.00	7,476.81	5,085.49	-317.29	5,085.49	0.00	0.00	0.00
12,400.00	89.47	0.00	7,477.73	5,185.48	-317.29	5,185.48	0.00	0.00	0.00
12,500.00	89.47	0.00	7,478.66	5,285.48	-317.29	5,285.48	0.00	0.00	0.00
12,600.00	89.47	0.00	7,479.58	5,385.47	-317.29	5,385.47	0.00	0.00	0.00
12,700.00	89.47	0.00	7,480.51	5,485.47	-317.29	5,485.47	0.00	0.00	0.00
12,800.00	89.47	0.00	7,481.43	5,585.46	-317.29	5,585.46	0.00	0.00	0.00
12,900.00	89.47	0.00	7,482.36	5,685.46	-317.29	5,685.46	0.00	0.00	0.00
13,000.00	89.47	0.00	7,483.28	5,785.46	-317.29	5,785.46	0.00	0.00	0.00
13,100.00	89.47	0.00	7,484.21	5,885.45	-317.29	5,885.45	0.00	0.00	0.00
13,200.00	89.47	0.00	7,485.14	5,985.45	-317.29	5,985.45	0.00	0.00	0.00
13,300.00	89.47	0.00	7,486.06	6,085.44	-317.29	6,085.44	0.00	0.00	0.00

Database:	Denver Sales Office	Local Co-ordinate Reference:	Well JZM 2N-3HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 5058 & KB 17 @ 5075.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 5058 & KB 17 @ 5075.00ft (ASSUMED)
Site:	JZM 15-10HZ PAD	North Reference:	True
Well:	JZM 2N-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	89.47	0.00	7,486.99	6,185.44	-317.29	6,185.44	0.00	0.00	0.00	
13,500.00	89.47	0.00	7,487.91	6,285.43	-317.29	6,285.43	0.00	0.00	0.00	
13,600.00	89.47	0.00	7,488.84	6,385.43	-317.29	6,385.43	0.00	0.00	0.00	
13,700.00	89.47	0.00	7,489.76	6,485.43	-317.29	6,485.43	0.00	0.00	0.00	
13,800.00	89.47	0.00	7,490.69	6,585.42	-317.29	6,585.42	0.00	0.00	0.00	
13,900.00	89.47	0.00	7,491.61	6,685.42	-317.29	6,685.42	0.00	0.00	0.00	
14,000.00	89.47	0.00	7,492.54	6,785.41	-317.29	6,785.41	0.00	0.00	0.00	
14,100.00	89.47	0.00	7,493.46	6,885.41	-317.29	6,885.41	0.00	0.00	0.00	
14,200.00	89.47	0.00	7,494.39	6,985.40	-317.29	6,985.40	0.00	0.00	0.00	
14,300.00	89.47	0.00	7,495.31	7,085.40	-317.29	7,085.40	0.00	0.00	0.00	
14,400.00	89.47	0.00	7,496.24	7,185.40	-317.29	7,185.40	0.00	0.00	0.00	
14,500.00	89.47	0.00	7,497.16	7,285.39	-317.29	7,285.39	0.00	0.00	0.00	
14,600.00	89.47	0.00	7,498.09	7,385.39	-317.29	7,385.39	0.00	0.00	0.00	
14,700.00	89.47	0.00	7,499.01	7,485.38	-317.29	7,485.38	0.00	0.00	0.00	
14,800.00	89.47	0.00	7,499.94	7,585.38	-317.29	7,585.38	0.00	0.00	0.00	
14,900.00	89.47	0.00	7,500.86	7,685.37	-317.29	7,685.37	0.00	0.00	0.00	
15,000.00	89.47	0.00	7,501.79	7,785.37	-317.29	7,785.37	0.00	0.00	0.00	
15,100.00	89.47	0.00	7,502.72	7,885.37	-317.29	7,885.37	0.00	0.00	0.00	
15,200.00	89.47	0.00	7,503.64	7,985.36	-317.29	7,985.36	0.00	0.00	0.00	
15,300.00	89.47	0.00	7,504.57	8,085.36	-317.29	8,085.36	0.00	0.00	0.00	
15,400.00	89.47	0.00	7,505.49	8,185.35	-317.29	8,185.35	0.00	0.00	0.00	
15,500.00	89.47	0.00	7,506.42	8,285.35	-317.29	8,285.35	0.00	0.00	0.00	
15,600.00	89.47	0.00	7,507.34	8,385.34	-317.29	8,385.34	0.00	0.00	0.00	
15,700.00	89.47	0.00	7,508.27	8,485.34	-317.29	8,485.34	0.00	0.00	0.00	
15,800.00	89.47	0.00	7,509.19	8,585.34	-317.29	8,585.34	0.00	0.00	0.00	
15,900.00	89.47	0.00	7,510.12	8,685.33	-317.29	8,685.33	0.00	0.00	0.00	
16,000.00	89.47	0.00	7,511.04	8,785.33	-317.29	8,785.33	0.00	0.00	0.00	
16,100.00	89.47	0.00	7,511.97	8,885.32	-317.29	8,885.32	0.00	0.00	0.00	
16,200.00	89.47	0.00	7,512.89	8,985.32	-317.29	8,985.32	0.00	0.00	0.00	
16,300.00	89.47	0.00	7,513.82	9,085.31	-317.29	9,085.31	0.00	0.00	0.00	
16,400.00	89.47	0.00	7,514.74	9,185.31	-317.29	9,185.31	0.00	0.00	0.00	
16,500.00	89.47	0.00	7,515.67	9,285.31	-317.29	9,285.31	0.00	0.00	0.00	
16,600.00	89.47	0.00	7,516.59	9,385.30	-317.29	9,385.30	0.00	0.00	0.00	
16,700.00	89.47	0.00	7,517.52	9,485.30	-317.29	9,485.30	0.00	0.00	0.00	
16,800.00	89.47	0.00	7,518.44	9,585.29	-317.29	9,585.29	0.00	0.00	0.00	
16,900.00	89.47	0.00	7,519.37	9,685.29	-317.29	9,685.29	0.00	0.00	0.00	
17,000.00	89.47	0.00	7,520.30	9,785.28	-317.29	9,785.28	0.00	0.00	0.00	
17,100.00	89.47	0.00	7,521.22	9,885.28	-317.29	9,885.28	0.00	0.00	0.00	
17,200.00	89.47	0.00	7,522.15	9,985.28	-317.29	9,985.28	0.00	0.00	0.00	
17,300.00	89.47	0.00	7,523.07	10,085.27	-317.29	10,085.27	0.00	0.00	0.00	
17,400.00	89.47	0.00	7,524.00	10,185.27	-317.29	10,185.27	0.00	0.00	0.00	
17,500.00	89.47	0.00	7,524.92	10,285.26	-317.29	10,285.26	0.00	0.00	0.00	
17,508.50	89.47	0.00	7,525.00	10,293.76	-317.29	10,293.76	0.00	0.00	0.00	
TD at 17508.50 - PBHL_JZM 2N-3HZ (1' FNL 2275' FEL)										

Database:	Denver Sales Office	Local Co-ordinate Reference:	Well JZM 2N-3HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 5058 & KB 17 @ 5075.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 5058 & KB 17 @ 5075.00ft (ASSUMED)
Site:	JZM 15-10HZ PAD	North Reference:	True
Well:	JZM 2N-3HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1 PRELIMINARY		

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
PBHL_JZM 2N-3HZ (1' f - hit/miss target - Shape - Point	0.00	0.00	7,525.00	10,293.76	-317.29	1,275,339.26	3,174,644.92	40.0875100	-104.8758040

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,385.00	1,385.00	9 5/8"	9.625	12.250	
7,781.98	7,435.00	7" (905 FSL 2353 FEL)	7.000	7.500	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,335.00	1,335.00	Fox Hills Marker				
4,223.21	4,198.00	Parkman				
4,589.21	4,564.00	Sussex				
7,358.59	7,282.00	Sharon Springs				
7,409.61	7,315.00	Niobrara A				
7,669.67	7,423.00	Niobrara B				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
1,585.00	1,585.00	0.00	0.00	Start Build 2.00	
2,084.89	2,082.36	0.00	-43.50	Start 1326.43 hold at 2084.89 MD	
3,411.32	3,388.64	0.00	-273.78	Start Drop -2.00	
3,911.21	3,886.00	0.00	-317.29	Start 2976.07 hold at 3911.21 MD	
6,887.28	6,862.07	0.00	-317.29	Start Build 10.00	
7,781.98	7,435.00	567.66	-317.29	Start 9726.52 hold at 7781.98 MD	
17,508.50	7,525.00	10,293.76	-317.29	TD at 17508.50	