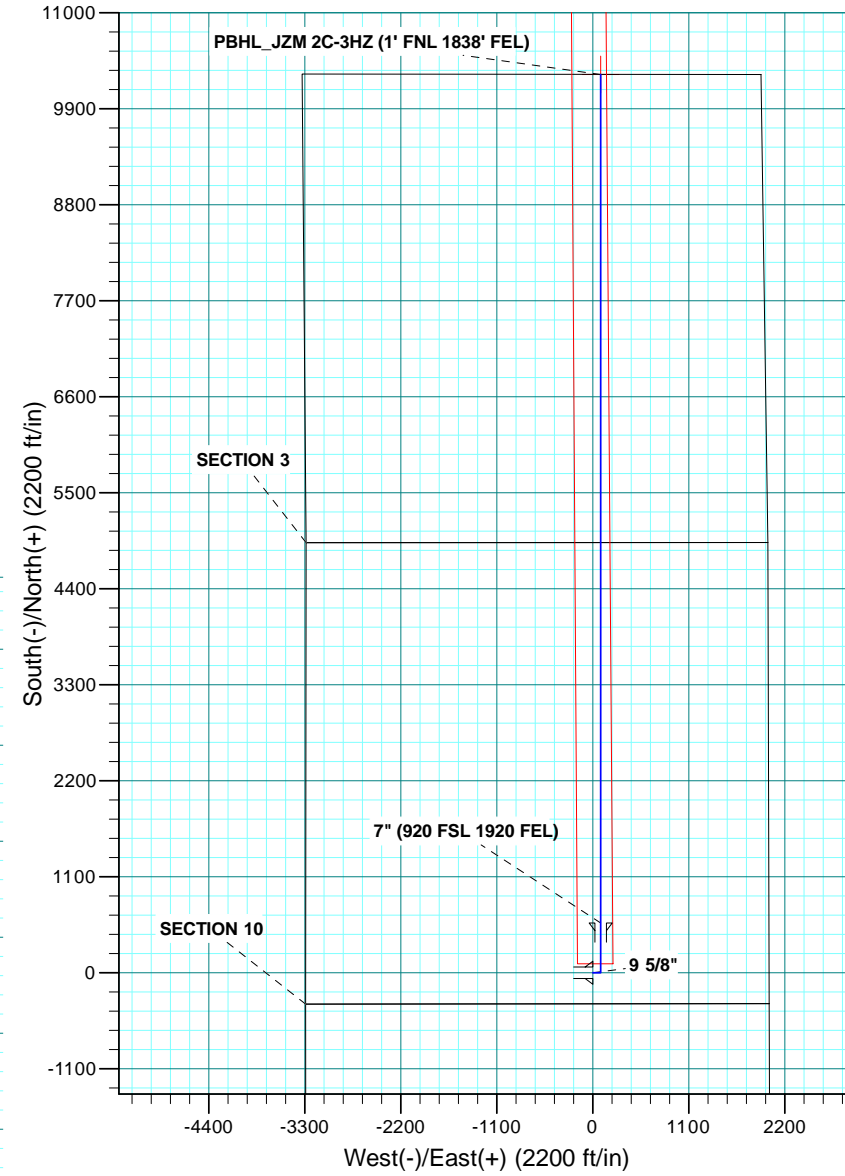
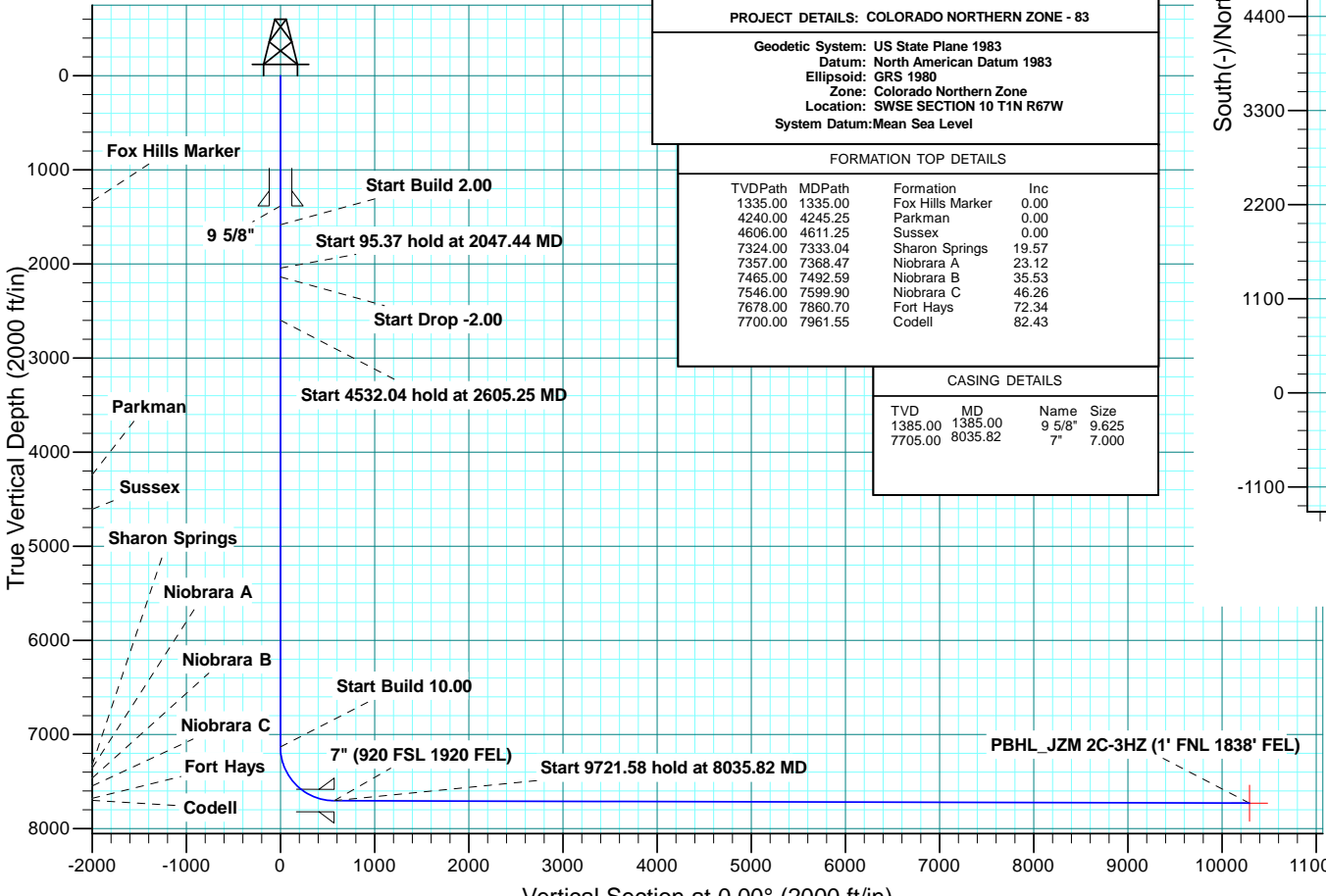


WELL DETAILS: JZM 2C-3HZ										
GL 5058 & KB 17 @ 5075.00ft (ASSUMED)										
		+N/-S	+E/-W	Northing	Easting	Latitude	Longitude			
		0.00	0.00	1265048.23	3175064.74	40.0592520	-104.8745630			
SECTION DETAILS										
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
1585.00	0.00	0.00	1585.00	0.00	0.00	0.00	0.00	0.00		Start Build 2.00
2047.44	9.25	90.00	2045.43	0.00	37.24	2.00	90.00	0.00		Start 95.37 hold at 2047.44 MD
2142.81	9.25	90.00	2139.57	0.00	52.57	0.00	0.00	0.00		Start Drop -2.00
2605.25	0.00	0.00	2600.00	0.00	89.81	2.00	180.00	0.00		Start 4532.04 hold at 2605.25 MD
7137.29	0.00	0.00	7132.04	0.00	89.81	0.00	0.00	0.00		Start Build 10.00
8035.82	89.85	0.00	7705.00	571.49	89.81	10.00	0.00	571.49		Start 9721.58 hold at 8035.82 MD
17757.40	89.85	0.00	7730.00	10293.03	89.81	0.00	0.00	10293.03	PBHL_JZM 2C-3HZ	
DESIGN TARGET DETAILS										
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape		
PBHL	7730.00	10293.03	89.81	1275341.62	3175081.95	40.0875080	-104.8742420	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
4240.00	4245.25	Parkman	0.00
4606.00	4611.25	Sussex	0.00
7324.00	7333.04	Sharon Springs	19.57
7357.00	7368.47	Niobrara A	23.12
7465.00	7492.59	Niobrara B	35.53
7546.00	7599.90	Niobrara C	46.26
7678.00	7860.70	Fort Hays	72.34
7700.00	7961.55	Codell	82.43

CASING DETAILS			
TVD	MD	NAME	SIZE
1385.00	1385.00	9 5/8"	9.625
7705.00	8035.82	7"	7.000





**Scientific Drilling**

# **US ROCKIES REGION PLANNING**

**COLORADO NORTHERN ZONE - 83**

**JZM 15-10HZ PAD**

**JZM 2C-3HZ**

**OH**

**Plan: PLAN #1 PRELIMINARY**

## **Standard Planning Report**

**06 January, 2014**

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

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

<b>Site</b>	JZM 15-10HZ PAD, SWSE SECTION 10 T1N R67W				
<b>Site Position:</b>	<b>Northing:</b>	1,265,047.23 usft	<b>Latitude:</b>	40.0592510	
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,174,974.89 usft	<b>Longitude:</b>	-104.8748840
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b>	0.40 °

<b>Well</b>	JZM 2C-3HZ, 355' FSL 2019' FEL					
<b>Well Position</b>	<b>+N/-S</b>	0.36 ft	<b>Northing:</b>	1,265,048.22 usft	<b>Latitude:</b>	40.0592520
	<b>+E/-W</b>	89.85 ft	<b>Easting:</b>	3,175,064.74 usft	<b>Longitude:</b>	-104.8745630
<b>Position Uncertainty</b>		0.00 ft	<b>Wellhead Elevation:</b>	0.00 ft	<b>Ground Level:</b>	5,058.00 ft

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

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

<b>Plan Sections</b>										
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	
2,047.44	9.25	90.00	2,045.43	0.00	37.24	2.00	2.00	0.00	90.00	
2,142.81	9.25	90.00	2,139.57	0.00	52.57	0.00	0.00	0.00	0.00	
2,605.25	0.00	0.00	2,600.00	0.00	89.81	2.00	-2.00	0.00	180.00	
7,137.29	0.00	0.00	7,132.04	0.00	89.81	0.00	0.00	0.00	0.00	
8,035.82	89.85	0.00	7,705.00	571.49	89.81	10.00	10.00	0.00	0.00	
17,757.40	89.85	0.00	7,730.00	10,293.03	89.81	0.00	0.00	0.00	0.00	PBHL_JZM 2C-3HZ (

<b>Database:</b>	Denver Sales Office	<b>Local Co-ordinate Reference:</b>	Well JZM 2C-3HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 5058 & KB 17 @ 5075.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 5058 & KB 17 @ 5075.00ft (ASSUMED)
<b>Site:</b>	JZM 15-10HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	JZM 2C-3HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	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
<b>Fox Hills Marker</b>										
1,385.00	0.00	0.00	1,385.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>9 5/8"</b>										
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
<b>Start Build 2.00</b>										
1,600.00	0.30	90.00	1,600.00	0.00	0.04	0.00	2.00	2.00	0.00	0.00
1,700.00	2.30	90.00	1,699.97	0.00	2.31	0.00	2.00	2.00	0.00	0.00
1,800.00	4.30	90.00	1,799.80	0.00	8.06	0.00	2.00	2.00	0.00	0.00
1,900.00	6.30	90.00	1,899.37	0.00	17.30	0.00	2.00	2.00	0.00	0.00
2,000.00	8.30	90.00	1,998.55	0.00	30.01	0.00	2.00	2.00	0.00	0.00
2,047.44	9.25	90.00	2,045.43	0.00	37.24	0.00	2.00	2.00	0.00	0.00
<b>Start 95.37 hold at 2047.44 MD</b>										
2,100.00	9.25	90.00	2,097.31	0.00	45.69	0.00	0.00	0.00	0.00	0.00
2,142.81	9.25	90.00	2,139.57	0.00	52.57	0.00	0.00	0.00	0.00	0.00
<b>Start Drop -2.00</b>										
2,200.00	8.11	90.00	2,196.10	0.00	61.20	0.00	2.00	-2.00	0.00	0.00
2,300.00	6.11	90.00	2,295.33	0.00	73.57	0.00	2.00	-2.00	0.00	0.00
2,400.00	4.11	90.00	2,394.92	0.00	82.46	0.00	2.00	-2.00	0.00	0.00
2,500.00	2.11	90.00	2,494.77	0.00	87.88	0.00	2.00	-2.00	0.00	0.00
2,600.00	0.11	90.00	2,594.75	0.00	89.81	0.00	2.00	-2.00	0.00	0.00
2,605.25	0.00	0.00	2,600.00	0.00	89.81	0.00	2.00	-2.00	0.00	0.00
<b>Start 4532.04 hold at 2605.25 MD</b>										
2,700.00	0.00	0.00	2,694.75	0.00	89.81	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,794.75	0.00	89.81	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,894.75	0.00	89.81	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	2,994.75	0.00	89.81	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,094.75	0.00	89.81	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,194.75	0.00	89.81	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,294.75	0.00	89.81	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,394.75	0.00	89.81	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,494.75	0.00	89.81	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,594.75	0.00	89.81	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,694.75	0.00	89.81	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,794.75	0.00	89.81	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,894.75	0.00	89.81	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	3,994.75	0.00	89.81	0.00	0.00	0.00	0.00	0.00

<b>Database:</b>	Denver Sales Office	<b>Local Co-ordinate Reference:</b>	Well JZM 2C-3HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 5058 & KB 17 @ 5075.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 5058 & KB 17 @ 5075.00ft (ASSUMED)
<b>Site:</b>	JZM 15-10HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	JZM 2C-3HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	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	4,094.75	0.00	89.81	0.00	0.00	0.00	0.00	
4,200.00	0.00	0.00	4,194.75	0.00	89.81	0.00	0.00	0.00	0.00	
4,245.25	0.00	0.00	4,240.00	0.00	89.81	0.00	0.00	0.00	0.00	
<b>Parkman</b>										
4,300.00	0.00	0.00	4,294.75	0.00	89.81	0.00	0.00	0.00	0.00	
4,400.00	0.00	0.00	4,394.75	0.00	89.81	0.00	0.00	0.00	0.00	
4,500.00	0.00	0.00	4,494.75	0.00	89.81	0.00	0.00	0.00	0.00	
4,600.00	0.00	0.00	4,594.75	0.00	89.81	0.00	0.00	0.00	0.00	
4,611.25	0.00	0.00	4,606.00	0.00	89.81	0.00	0.00	0.00	0.00	
<b>Sussex</b>										
4,700.00	0.00	0.00	4,694.75	0.00	89.81	0.00	0.00	0.00	0.00	
4,800.00	0.00	0.00	4,794.75	0.00	89.81	0.00	0.00	0.00	0.00	
4,900.00	0.00	0.00	4,894.75	0.00	89.81	0.00	0.00	0.00	0.00	
5,000.00	0.00	0.00	4,994.75	0.00	89.81	0.00	0.00	0.00	0.00	
5,100.00	0.00	0.00	5,094.75	0.00	89.81	0.00	0.00	0.00	0.00	
5,200.00	0.00	0.00	5,194.75	0.00	89.81	0.00	0.00	0.00	0.00	
5,300.00	0.00	0.00	5,294.75	0.00	89.81	0.00	0.00	0.00	0.00	
5,400.00	0.00	0.00	5,394.75	0.00	89.81	0.00	0.00	0.00	0.00	
5,500.00	0.00	0.00	5,494.75	0.00	89.81	0.00	0.00	0.00	0.00	
5,600.00	0.00	0.00	5,594.75	0.00	89.81	0.00	0.00	0.00	0.00	
5,700.00	0.00	0.00	5,694.75	0.00	89.81	0.00	0.00	0.00	0.00	
5,800.00	0.00	0.00	5,794.75	0.00	89.81	0.00	0.00	0.00	0.00	
5,900.00	0.00	0.00	5,894.75	0.00	89.81	0.00	0.00	0.00	0.00	
6,000.00	0.00	0.00	5,994.75	0.00	89.81	0.00	0.00	0.00	0.00	
6,100.00	0.00	0.00	6,094.75	0.00	89.81	0.00	0.00	0.00	0.00	
6,200.00	0.00	0.00	6,194.75	0.00	89.81	0.00	0.00	0.00	0.00	
6,300.00	0.00	0.00	6,294.75	0.00	89.81	0.00	0.00	0.00	0.00	
6,400.00	0.00	0.00	6,394.75	0.00	89.81	0.00	0.00	0.00	0.00	
6,500.00	0.00	0.00	6,494.75	0.00	89.81	0.00	0.00	0.00	0.00	
6,600.00	0.00	0.00	6,594.75	0.00	89.81	0.00	0.00	0.00	0.00	
6,700.00	0.00	0.00	6,694.75	0.00	89.81	0.00	0.00	0.00	0.00	
6,800.00	0.00	0.00	6,794.75	0.00	89.81	0.00	0.00	0.00	0.00	
6,900.00	0.00	0.00	6,894.75	0.00	89.81	0.00	0.00	0.00	0.00	
7,000.00	0.00	0.00	6,994.75	0.00	89.81	0.00	0.00	0.00	0.00	
7,100.00	0.00	0.00	7,094.75	0.00	89.81	0.00	0.00	0.00	0.00	
7,137.29	0.00	0.00	7,132.04	0.00	89.81	0.00	0.00	0.00	0.00	
<b>Start Build 10.00</b>										
7,200.00	6.27	0.00	7,194.62	3.43	89.81	3.43	10.00	10.00	0.00	
7,300.00	16.27	0.00	7,292.57	22.95	89.81	22.95	10.00	10.00	0.00	
7,333.04	19.57	0.00	7,324.00	33.11	89.81	33.11	10.00	10.00	0.00	
<b>Sharon Springs</b>										
7,368.47	23.12	0.00	7,357.00	46.01	89.81	46.01	10.00	10.00	0.00	
<b>Niobrara A</b>										
7,400.00	26.27	0.00	7,385.64	59.18	89.81	59.18	10.00	10.00	0.00	
7,492.59	35.53	0.00	7,465.00	106.68	89.81	106.68	10.00	10.00	0.00	
<b>Niobrara B</b>										
7,500.00	36.27	0.00	7,471.00	111.02	89.81	111.02	10.00	10.00	0.00	
7,599.90	46.26	0.00	7,546.00	176.83	89.81	176.83	10.00	10.00	0.00	
<b>Niobrara C</b>										
7,600.00	46.27	0.00	7,546.07	176.90	89.81	176.90	10.00	10.00	0.00	
7,700.00	56.27	0.00	7,608.55	254.81	89.81	254.81	10.00	10.00	0.00	
7,800.00	66.27	0.00	7,656.56	342.39	89.81	342.39	10.00	10.00	0.00	
7,860.70	72.34	0.00	7,678.00	399.15	89.81	399.15	10.00	10.00	0.00	

<b>Database:</b>	Denver Sales Office	<b>Local Co-ordinate Reference:</b>	Well JZM 2C-3HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 5058 & KB 17 @ 5075.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 5058 & KB 17 @ 5075.00ft (ASSUMED)
<b>Site:</b>	JZM 15-10HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	JZM 2C-3HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	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)
<b>Fort Hays</b>									
7,900.00	76.27	0.00	7,688.63	436.98	89.81	436.98	10.00	10.00	0.00
7,961.55	82.43	0.00	7,700.00	497.44	89.81	497.44	10.00	10.00	0.00
<b>Codell</b>									
8,000.00	86.27	0.00	7,703.79	535.69	89.81	535.69	10.00	10.00	0.00
8,035.82	89.85	0.00	7,705.00	571.49	89.81	571.49	10.00	10.00	0.00
<b>Start 9721.58 hold at 8035.82 MD - 7" (920 FSL 1920 FEL)</b>									
8,100.00	89.85	0.00	7,705.16	635.67	89.81	635.67	0.00	0.00	0.00
8,200.00	89.85	0.00	7,705.42	735.67	89.81	735.67	0.00	0.00	0.00
8,300.00	89.85	0.00	7,705.68	835.66	89.81	835.66	0.00	0.00	0.00
8,400.00	89.85	0.00	7,705.93	935.66	89.81	935.66	0.00	0.00	0.00
8,500.00	89.85	0.00	7,706.19	1,035.66	89.81	1,035.66	0.00	0.00	0.00
8,600.00	89.85	0.00	7,706.45	1,135.66	89.81	1,135.66	0.00	0.00	0.00
8,700.00	89.85	0.00	7,706.71	1,235.66	89.81	1,235.66	0.00	0.00	0.00
8,800.00	89.85	0.00	7,706.96	1,335.66	89.81	1,335.66	0.00	0.00	0.00
8,900.00	89.85	0.00	7,707.22	1,435.66	89.81	1,435.66	0.00	0.00	0.00
9,000.00	89.85	0.00	7,707.48	1,535.66	89.81	1,535.66	0.00	0.00	0.00
9,100.00	89.85	0.00	7,707.73	1,635.66	89.81	1,635.66	0.00	0.00	0.00
9,200.00	89.85	0.00	7,707.99	1,735.66	89.81	1,735.66	0.00	0.00	0.00
9,300.00	89.85	0.00	7,708.25	1,835.66	89.81	1,835.66	0.00	0.00	0.00
9,400.00	89.85	0.00	7,708.51	1,935.66	89.81	1,935.66	0.00	0.00	0.00
9,500.00	89.85	0.00	7,708.76	2,035.66	89.81	2,035.66	0.00	0.00	0.00
9,600.00	89.85	0.00	7,709.02	2,135.66	89.81	2,135.66	0.00	0.00	0.00
9,700.00	89.85	0.00	7,709.28	2,235.66	89.81	2,235.66	0.00	0.00	0.00
9,800.00	89.85	0.00	7,709.53	2,335.66	89.81	2,335.66	0.00	0.00	0.00
9,900.00	89.85	0.00	7,709.79	2,435.66	89.81	2,435.66	0.00	0.00	0.00
10,000.00	89.85	0.00	7,710.05	2,535.66	89.81	2,535.66	0.00	0.00	0.00
10,100.00	89.85	0.00	7,710.31	2,635.66	89.81	2,635.66	0.00	0.00	0.00
10,200.00	89.85	0.00	7,710.56	2,735.66	89.81	2,735.66	0.00	0.00	0.00
10,300.00	89.85	0.00	7,710.82	2,835.66	89.81	2,835.66	0.00	0.00	0.00
10,400.00	89.85	0.00	7,711.08	2,935.66	89.81	2,935.66	0.00	0.00	0.00
10,500.00	89.85	0.00	7,711.33	3,035.66	89.81	3,035.66	0.00	0.00	0.00
10,600.00	89.85	0.00	7,711.59	3,135.66	89.81	3,135.66	0.00	0.00	0.00
10,700.00	89.85	0.00	7,711.85	3,235.66	89.81	3,235.66	0.00	0.00	0.00
10,800.00	89.85	0.00	7,712.11	3,335.66	89.81	3,335.66	0.00	0.00	0.00
10,900.00	89.85	0.00	7,712.36	3,435.66	89.81	3,435.66	0.00	0.00	0.00
11,000.00	89.85	0.00	7,712.62	3,535.66	89.81	3,535.66	0.00	0.00	0.00
11,100.00	89.85	0.00	7,712.88	3,635.66	89.81	3,635.66	0.00	0.00	0.00
11,200.00	89.85	0.00	7,713.14	3,735.66	89.81	3,735.66	0.00	0.00	0.00
11,300.00	89.85	0.00	7,713.39	3,835.66	89.81	3,835.66	0.00	0.00	0.00
11,400.00	89.85	0.00	7,713.65	3,935.65	89.81	3,935.65	0.00	0.00	0.00
11,500.00	89.85	0.00	7,713.91	4,035.65	89.81	4,035.65	0.00	0.00	0.00
11,600.00	89.85	0.00	7,714.16	4,135.65	89.81	4,135.65	0.00	0.00	0.00
11,700.00	89.85	0.00	7,714.42	4,235.65	89.81	4,235.65	0.00	0.00	0.00
11,800.00	89.85	0.00	7,714.68	4,335.65	89.81	4,335.65	0.00	0.00	0.00
11,900.00	89.85	0.00	7,714.94	4,435.65	89.81	4,435.65	0.00	0.00	0.00
12,000.00	89.85	0.00	7,715.19	4,535.65	89.81	4,535.65	0.00	0.00	0.00
12,100.00	89.85	0.00	7,715.45	4,635.65	89.81	4,635.65	0.00	0.00	0.00
12,200.00	89.85	0.00	7,715.71	4,735.65	89.81	4,735.65	0.00	0.00	0.00
12,300.00	89.85	0.00	7,715.96	4,835.65	89.81	4,835.65	0.00	0.00	0.00
12,400.00	89.85	0.00	7,716.22	4,935.65	89.81	4,935.65	0.00	0.00	0.00
12,500.00	89.85	0.00	7,716.48	5,035.65	89.81	5,035.65	0.00	0.00	0.00
12,600.00	89.85	0.00	7,716.74	5,135.65	89.81	5,135.65	0.00	0.00	0.00

<b>Database:</b>	Denver Sales Office	<b>Local Co-ordinate Reference:</b>	Well JZM 2C-3HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 5058 & KB 17 @ 5075.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 5058 & KB 17 @ 5075.00ft (ASSUMED)
<b>Site:</b>	JZM 15-10HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	JZM 2C-3HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	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)
12,700.00	89.85	0.00	7,716.99	5,235.65	89.81	5,235.65	0.00	0.00	0.00
12,800.00	89.85	0.00	7,717.25	5,335.65	89.81	5,335.65	0.00	0.00	0.00
12,900.00	89.85	0.00	7,717.51	5,435.65	89.81	5,435.65	0.00	0.00	0.00
13,000.00	89.85	0.00	7,717.76	5,535.65	89.81	5,535.65	0.00	0.00	0.00
13,100.00	89.85	0.00	7,718.02	5,635.65	89.81	5,635.65	0.00	0.00	0.00
13,200.00	89.85	0.00	7,718.28	5,735.65	89.81	5,735.65	0.00	0.00	0.00
13,300.00	89.85	0.00	7,718.54	5,835.65	89.81	5,835.65	0.00	0.00	0.00
13,400.00	89.85	0.00	7,718.79	5,935.65	89.81	5,935.65	0.00	0.00	0.00
13,500.00	89.85	0.00	7,719.05	6,035.65	89.81	6,035.65	0.00	0.00	0.00
13,600.00	89.85	0.00	7,719.31	6,135.65	89.81	6,135.65	0.00	0.00	0.00
13,700.00	89.85	0.00	7,719.56	6,235.65	89.81	6,235.65	0.00	0.00	0.00
13,800.00	89.85	0.00	7,719.82	6,335.65	89.81	6,335.65	0.00	0.00	0.00
13,900.00	89.85	0.00	7,720.08	6,435.65	89.81	6,435.65	0.00	0.00	0.00
14,000.00	89.85	0.00	7,720.34	6,535.65	89.81	6,535.65	0.00	0.00	0.00
14,100.00	89.85	0.00	7,720.59	6,635.65	89.81	6,635.65	0.00	0.00	0.00
14,200.00	89.85	0.00	7,720.85	6,735.65	89.81	6,735.65	0.00	0.00	0.00
14,300.00	89.85	0.00	7,721.11	6,835.65	89.81	6,835.65	0.00	0.00	0.00
14,400.00	89.85	0.00	7,721.37	6,935.64	89.81	6,935.64	0.00	0.00	0.00
14,500.00	89.85	0.00	7,721.62	7,035.64	89.81	7,035.64	0.00	0.00	0.00
14,600.00	89.85	0.00	7,721.88	7,135.64	89.81	7,135.64	0.00	0.00	0.00
14,700.00	89.85	0.00	7,722.14	7,235.64	89.81	7,235.64	0.00	0.00	0.00
14,800.00	89.85	0.00	7,722.39	7,335.64	89.81	7,335.64	0.00	0.00	0.00
14,900.00	89.85	0.00	7,722.65	7,435.64	89.81	7,435.64	0.00	0.00	0.00
15,000.00	89.85	0.00	7,722.91	7,535.64	89.81	7,535.64	0.00	0.00	0.00
15,100.00	89.85	0.00	7,723.17	7,635.64	89.81	7,635.64	0.00	0.00	0.00
15,200.00	89.85	0.00	7,723.42	7,735.64	89.81	7,735.64	0.00	0.00	0.00
15,300.00	89.85	0.00	7,723.68	7,835.64	89.81	7,835.64	0.00	0.00	0.00
15,400.00	89.85	0.00	7,723.94	7,935.64	89.81	7,935.64	0.00	0.00	0.00
15,500.00	89.85	0.00	7,724.19	8,035.64	89.81	8,035.64	0.00	0.00	0.00
15,600.00	89.85	0.00	7,724.45	8,135.64	89.81	8,135.64	0.00	0.00	0.00
15,700.00	89.85	0.00	7,724.71	8,235.64	89.81	8,235.64	0.00	0.00	0.00
15,800.00	89.85	0.00	7,724.97	8,335.64	89.81	8,335.64	0.00	0.00	0.00
15,900.00	89.85	0.00	7,725.22	8,435.64	89.81	8,435.64	0.00	0.00	0.00
16,000.00	89.85	0.00	7,725.48	8,535.64	89.81	8,535.64	0.00	0.00	0.00
16,100.00	89.85	0.00	7,725.74	8,635.64	89.81	8,635.64	0.00	0.00	0.00
16,200.00	89.85	0.00	7,725.99	8,735.64	89.81	8,735.64	0.00	0.00	0.00
16,300.00	89.85	0.00	7,726.25	8,835.64	89.81	8,835.64	0.00	0.00	0.00
16,400.00	89.85	0.00	7,726.51	8,935.64	89.81	8,935.64	0.00	0.00	0.00
16,500.00	89.85	0.00	7,726.77	9,035.64	89.81	9,035.64	0.00	0.00	0.00
16,600.00	89.85	0.00	7,727.02	9,135.64	89.81	9,135.64	0.00	0.00	0.00
16,700.00	89.85	0.00	7,727.28	9,235.64	89.81	9,235.64	0.00	0.00	0.00
16,800.00	89.85	0.00	7,727.54	9,335.64	89.81	9,335.64	0.00	0.00	0.00
16,900.00	89.85	0.00	7,727.80	9,435.64	89.81	9,435.64	0.00	0.00	0.00
17,000.00	89.85	0.00	7,728.05	9,535.64	89.81	9,535.64	0.00	0.00	0.00
17,100.00	89.85	0.00	7,728.31	9,635.64	89.81	9,635.64	0.00	0.00	0.00
17,200.00	89.85	0.00	7,728.57	9,735.64	89.81	9,735.64	0.00	0.00	0.00
17,300.00	89.85	0.00	7,728.82	9,835.64	89.81	9,835.64	0.00	0.00	0.00
17,400.00	89.85	0.00	7,729.08	9,935.64	89.81	9,935.64	0.00	0.00	0.00
17,500.00	89.85	0.00	7,729.34	10,035.63	89.81	10,035.63	0.00	0.00	0.00
17,600.00	89.85	0.00	7,729.60	10,135.63	89.81	10,135.63	0.00	0.00	0.00
17,700.00	89.85	0.00	7,729.85	10,235.63	89.81	10,235.63	0.00	0.00	0.00
17,757.40	89.85	0.00	7,730.00	10,293.03	89.81	10,293.03	0.00	0.00	0.00
TD at 17757.40 - PBHL_JZM 2C-3HZ (1' FNL 1838' FEL)									

<b>Database:</b>	Denver Sales Office	<b>Local Co-ordinate Reference:</b>	Well JZM 2C-3HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 5058 & KB 17 @ 5075.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 5058 & KB 17 @ 5075.00ft (ASSUMED)
<b>Site:</b>	JZM 15-10HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	JZM 2C-3HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	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 2C-3HZ (1' F - hit/miss target - Shape - Point	0.00	0.00	7,730.00	10,293.03	89.81	1,275,341.61	3,175,081.95	40.0875080	-104.8742420

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	
8,035.82	7,705.00	7" (920 FSL 1920 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			
4,245.25	4,240.00	Parkman			
4,611.25	4,606.00	Sussex			
7,333.04	7,324.00	Sharon Springs			
7,368.47	7,357.00	Niobrara A			
7,492.59	7,465.00	Niobrara B			
7,599.90	7,546.00	Niobrara C			
7,860.70	7,678.00	Fort Hays			
7,961.55	7,700.00	Codell			

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	
2,047.44	2,045.43	0.00	37.24	Start 95.37 hold at 2047.44 MD	
2,142.81	2,139.57	0.00	52.57	Start Drop -2.00	
2,605.25	2,600.00	0.00	89.81	Start 4532.04 hold at 2605.25 MD	
7,137.29	7,132.04	0.00	89.81	Start Build 10.00	
8,035.82	7,705.00	571.49	89.81	Start 9721.58 hold at 8035.82 MD	
17,757.40	7,730.00	10,293.03	89.81	TD at 17757.40	