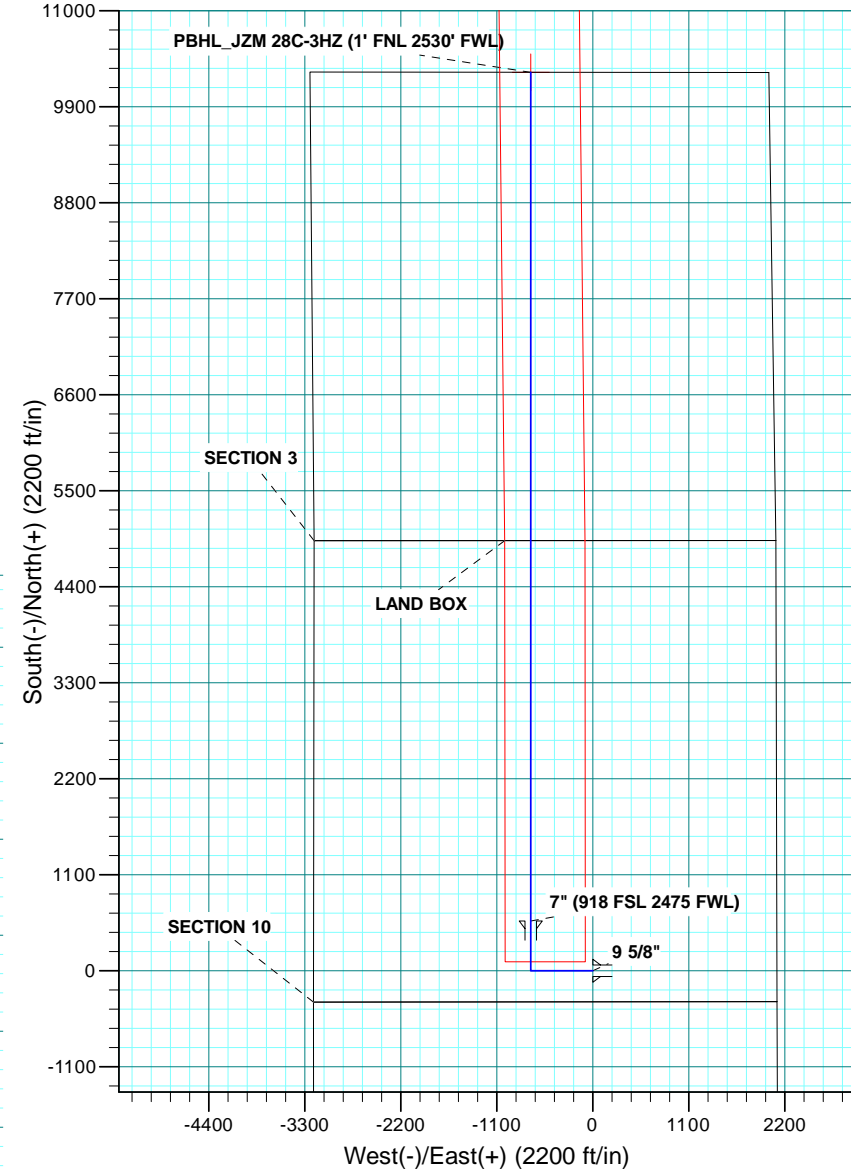
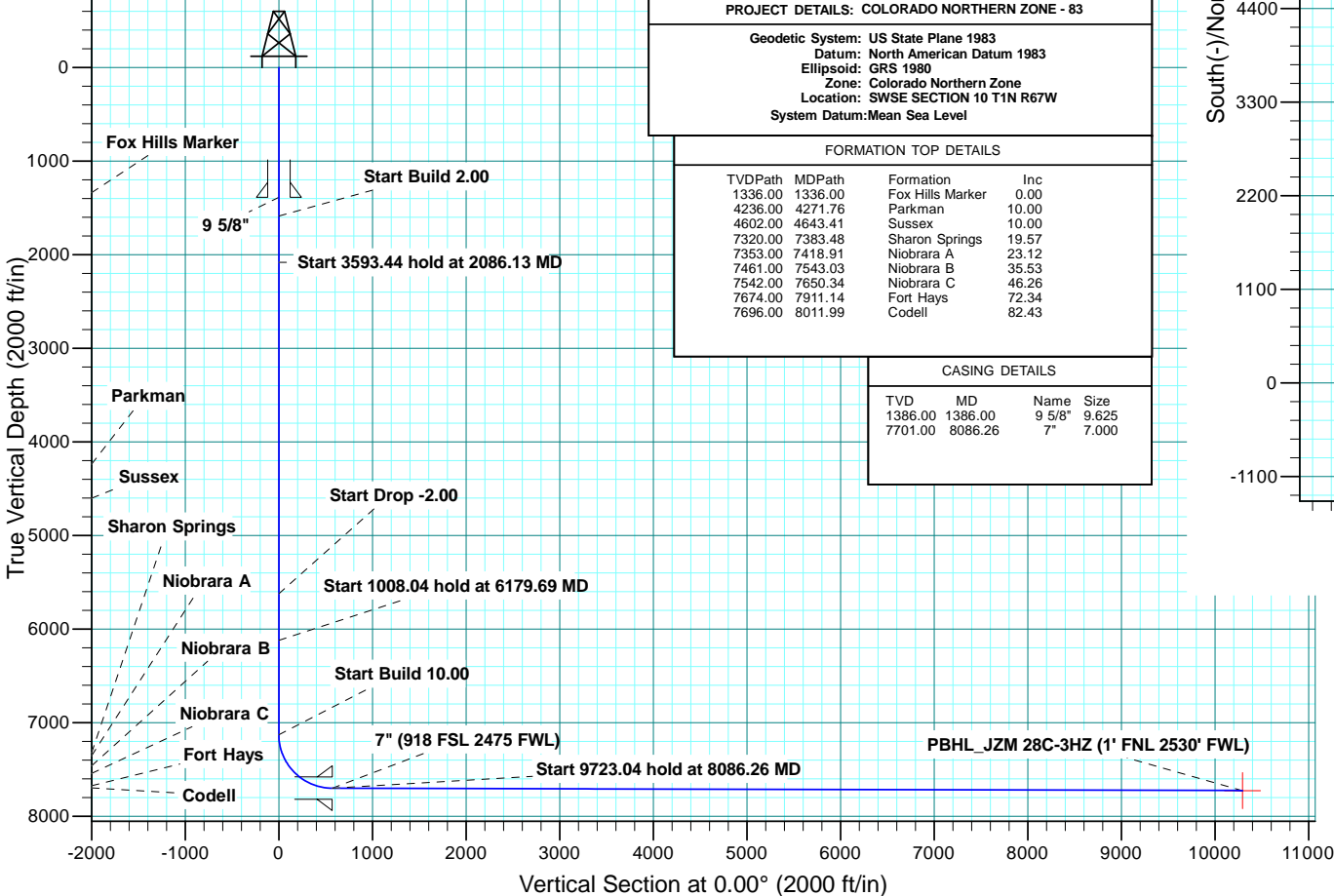


WELL DETAILS: JZM 28C-3HZ										
GL 5059 & KB 17 @ 5076.00ft (ASSUMED)										
		+N/-S	+E/-W	Northing	Easting	Latitude	Longitude			
		0.00	0.00	1265047.23	3174974.89	40.0592510	-104.8748840			
SECTION DETAILS										
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	V Sect	Target	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
1586.00	0.00	0.00	1586.00	0.00	0.00	0.00	0.00	0.00		Start Build 2.00
2086.13	10.00	270.00	2083.59	0.00	-43.54	2.00	270.00	0.00		Start 3593.44 hold at 2086.13 MD
5679.57	10.00	270.00	5622.41	0.00	-667.69	0.00	0.00	0.00		Start Drop -2.00
6179.69	0.00	0.00	6120.00	0.00	-711.24	2.00	180.00	0.00		Start 1008.04 hold at 6179.69 MD
7187.73	0.00	0.00	7128.04	0.00	-711.24	0.00	0.00	0.00		Start Build 10.00
8086.26	89.85	0.00	7701.00	571.49	-711.24	10.00	0.00	571.49		Start 9723.04 hold at 8086.26 MD
17809.30	89.85	0.00	7726.00	10294.50	-711.24	0.00	0.00	10294.50	PBHL_JZM 28C-3HZ	
DESIGN TARGET DETAILS										
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape		
PBHL	7726.00	10294.50	-711.24	1275336.44	3174191.10	40.0875110	-104.8774260	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
1336.00	1336.00	Fox Hills Marker	0.00
4236.00	4271.76	Parkman	10.00
4602.00	4643.41	Sussex	10.00
7320.00	7383.48	Sharon Springs	19.57
7353.00	7418.91	Niobrara A	23.12
7461.00	7543.03	Niobrara B	35.53
7542.00	7650.34	Niobrara C	46.26
7674.00	7911.14	Fort Hays	72.34
7696.00	8011.99	Codell	82.43

CASING DETAILS			
TVD	MD	Name	Size
1386.00	1386.00	9 5/8"	9.625
7701.00	8086.26	7"	7.000





Scientific Drilling

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

JZM 15-10HZ PAD

JZM 28C-3HZ

OH

Plan: PLAN #1 PRELIMINARY

Standard Planning Report

06 January, 2014

Database:	Denver Sales Office	Local Co-ordinate Reference:	Well JZM 28C-3HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 5059 & KB 17 @ 5076.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 5059 & KB 17 @ 5076.00ft (ASSUMED)
Site:	JZM 15-10HZ PAD	North Reference:	True
Well:	JZM 28C-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 28C-3HZ, 355' FSL 2109' FEL					
Well Position	+N/-S	0.00 ft	Northing:	1,265,047.23 usft	Latitude:	40.0592510
	+E/-W	0.00 ft	Easting:	3,174,974.89 usft	Longitude:	-104.8748840
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	5,059.00 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	
1,586.00	0.00	0.00	1,586.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,086.13	10.00	270.00	2,083.59	0.00	-43.54	2.00	2.00	0.00	270.00	
5,679.57	10.00	270.00	5,622.41	0.00	-667.69	0.00	0.00	0.00	0.00	
6,179.69	0.00	0.00	6,120.00	0.00	-711.24	2.00	-2.00	0.00	180.00	
7,187.73	0.00	0.00	7,128.04	0.00	-711.24	0.00	0.00	0.00	0.00	
8,086.26	89.85	0.00	7,701.00	571.49	-711.24	10.00	10.00	0.00	0.00	
17,809.30	89.85	0.00	7,726.00	10,294.50	-711.24	0.00	0.00	0.00	0.00	PBHL_JZM 28C-3HZ

Database:	Denver Sales Office	Local Co-ordinate Reference:	Well JZM 28C-3HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 5059 & KB 17 @ 5076.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 5059 & KB 17 @ 5076.00ft (ASSUMED)
Site:	JZM 15-10HZ PAD	North Reference:	True
Well:	JZM 28C-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
1,336.00	0.00	0.00	1,336.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fox Hills Marker										
1,386.00	0.00	0.00	1,386.00	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
1,586.00	0.00	0.00	1,586.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00										
1,600.00	0.28	270.00	1,600.00	0.00	-0.03	0.00	2.00	2.00	0.00	0.00
1,700.00	2.28	270.00	1,699.97	0.00	-2.27	0.00	2.00	2.00	0.00	0.00
1,800.00	4.28	270.00	1,799.80	0.00	-7.99	0.00	2.00	2.00	0.00	0.00
1,900.00	6.28	270.00	1,899.37	0.00	-17.19	0.00	2.00	2.00	0.00	0.00
2,000.00	8.28	270.00	1,998.56	0.00	-29.86	0.00	2.00	2.00	0.00	0.00
2,086.13	10.00	270.00	2,083.59	0.00	-43.54	0.00	2.00	2.00	0.00	0.00
Start 3593.44 hold at 2086.13 MD										
2,100.00	10.00	270.00	2,097.25	0.00	-45.95	0.00	0.00	0.00	0.00	0.00
2,200.00	10.00	270.00	2,195.73	0.00	-63.32	0.00	0.00	0.00	0.00	0.00
2,300.00	10.00	270.00	2,294.21	0.00	-80.69	0.00	0.00	0.00	0.00	0.00
2,400.00	10.00	270.00	2,392.69	0.00	-98.06	0.00	0.00	0.00	0.00	0.00
2,500.00	10.00	270.00	2,491.17	0.00	-115.43	0.00	0.00	0.00	0.00	0.00
2,600.00	10.00	270.00	2,589.65	0.00	-132.80	0.00	0.00	0.00	0.00	0.00
2,700.00	10.00	270.00	2,688.13	0.00	-150.17	0.00	0.00	0.00	0.00	0.00
2,800.00	10.00	270.00	2,786.61	0.00	-167.54	0.00	0.00	0.00	0.00	0.00
2,900.00	10.00	270.00	2,885.09	0.00	-184.91	0.00	0.00	0.00	0.00	0.00
3,000.00	10.00	270.00	2,983.57	0.00	-202.28	0.00	0.00	0.00	0.00	0.00
3,100.00	10.00	270.00	3,082.05	0.00	-219.65	0.00	0.00	0.00	0.00	0.00
3,200.00	10.00	270.00	3,180.53	0.00	-237.01	0.00	0.00	0.00	0.00	0.00
3,300.00	10.00	270.00	3,279.01	0.00	-254.38	0.00	0.00	0.00	0.00	0.00
3,400.00	10.00	270.00	3,377.49	0.00	-271.75	0.00	0.00	0.00	0.00	0.00
3,500.00	10.00	270.00	3,475.97	0.00	-289.12	0.00	0.00	0.00	0.00	0.00
3,600.00	10.00	270.00	3,574.45	0.00	-306.49	0.00	0.00	0.00	0.00	0.00
3,700.00	10.00	270.00	3,672.93	0.00	-323.86	0.00	0.00	0.00	0.00	0.00
3,800.00	10.00	270.00	3,771.41	0.00	-341.23	0.00	0.00	0.00	0.00	0.00
3,900.00	10.00	270.00	3,869.89	0.00	-358.60	0.00	0.00	0.00	0.00	0.00
4,000.00	10.00	270.00	3,968.37	0.00	-375.97	0.00	0.00	0.00	0.00	0.00
4,100.00	10.00	270.00	4,066.85	0.00	-393.34	0.00	0.00	0.00	0.00	0.00
4,200.00	10.00	270.00	4,165.33	0.00	-410.71	0.00	0.00	0.00	0.00	0.00
4,271.76	10.00	270.00	4,236.00	0.00	-423.17	0.00	0.00	0.00	0.00	0.00
Parkman										
4,300.00	10.00	270.00	4,263.81	0.00	-428.07	0.00	0.00	0.00	0.00	0.00

Database:	Denver Sales Office	Local Co-ordinate Reference:	Well JZM 28C-3HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 5059 & KB 17 @ 5076.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 5059 & KB 17 @ 5076.00ft (ASSUMED)
Site:	JZM 15-10HZ PAD	North Reference:	True
Well:	JZM 28C-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	10.00	270.00	4,362.29	0.00	-445.44	0.00	0.00	0.00	0.00	0.00
4,500.00	10.00	270.00	4,460.77	0.00	-462.81	0.00	0.00	0.00	0.00	0.00
4,600.00	10.00	270.00	4,559.25	0.00	-480.18	0.00	0.00	0.00	0.00	0.00
4,643.41	10.00	270.00	4,602.00	0.00	-487.72	0.00	0.00	0.00	0.00	0.00
Sussex										
4,700.00	10.00	270.00	4,657.73	0.00	-497.55	0.00	0.00	0.00	0.00	0.00
4,800.00	10.00	270.00	4,756.21	0.00	-514.92	0.00	0.00	0.00	0.00	0.00
4,900.00	10.00	270.00	4,854.69	0.00	-532.29	0.00	0.00	0.00	0.00	0.00
5,000.00	10.00	270.00	4,953.17	0.00	-549.66	0.00	0.00	0.00	0.00	0.00
5,100.00	10.00	270.00	5,051.65	0.00	-567.03	0.00	0.00	0.00	0.00	0.00
5,200.00	10.00	270.00	5,150.13	0.00	-584.40	0.00	0.00	0.00	0.00	0.00
5,300.00	10.00	270.00	5,248.61	0.00	-601.77	0.00	0.00	0.00	0.00	0.00
5,400.00	10.00	270.00	5,347.09	0.00	-619.14	0.00	0.00	0.00	0.00	0.00
5,500.00	10.00	270.00	5,445.57	0.00	-636.50	0.00	0.00	0.00	0.00	0.00
5,600.00	10.00	270.00	5,544.05	0.00	-653.87	0.00	0.00	0.00	0.00	0.00
5,679.57	10.00	270.00	5,622.41	0.00	-667.69	0.00	0.00	0.00	0.00	0.00
Start Drop -2.00										
5,700.00	9.59	270.00	5,642.55	0.00	-671.17	0.00	2.00	-2.00	0.00	0.00
5,800.00	7.59	270.00	5,741.42	0.00	-686.11	0.00	2.00	-2.00	0.00	0.00
5,900.00	5.59	270.00	5,840.75	0.00	-697.60	0.00	2.00	-2.00	0.00	0.00
6,000.00	3.59	270.00	5,940.43	0.00	-705.60	0.00	2.00	-2.00	0.00	0.00
6,100.00	1.59	270.00	6,040.32	0.00	-710.13	0.00	2.00	-2.00	0.00	0.00
6,179.69	0.00	0.00	6,120.00	0.00	-711.24	0.00	2.00	-2.00	0.00	0.00
Start 1008.04 hold at 6179.69 MD										
6,200.00	0.00	0.00	6,140.31	0.00	-711.24	0.00	0.00	0.00	0.00	0.00
6,300.00	0.00	0.00	6,240.31	0.00	-711.24	0.00	0.00	0.00	0.00	0.00
6,400.00	0.00	0.00	6,340.31	0.00	-711.24	0.00	0.00	0.00	0.00	0.00
6,500.00	0.00	0.00	6,440.31	0.00	-711.24	0.00	0.00	0.00	0.00	0.00
6,600.00	0.00	0.00	6,540.31	0.00	-711.24	0.00	0.00	0.00	0.00	0.00
6,700.00	0.00	0.00	6,640.31	0.00	-711.24	0.00	0.00	0.00	0.00	0.00
6,800.00	0.00	0.00	6,740.31	0.00	-711.24	0.00	0.00	0.00	0.00	0.00
6,900.00	0.00	0.00	6,840.31	0.00	-711.24	0.00	0.00	0.00	0.00	0.00
7,000.00	0.00	0.00	6,940.31	0.00	-711.24	0.00	0.00	0.00	0.00	0.00
7,100.00	0.00	0.00	7,040.31	0.00	-711.24	0.00	0.00	0.00	0.00	0.00
7,187.73	0.00	0.00	7,128.04	0.00	-711.24	0.00	0.00	0.00	0.00	0.00
Start Build 10.00										
7,200.00	1.23	0.00	7,140.31	0.13	-711.24	0.13	10.00	10.00	0.00	0.00
7,300.00	11.23	0.00	7,239.59	10.96	-711.24	10.96	10.00	10.00	0.00	0.00
7,383.48	19.57	0.00	7,320.00	33.11	-711.24	33.11	10.00	10.00	0.00	0.00
Sharon Springs										
7,400.00	21.23	0.00	7,335.48	38.87	-711.24	38.87	10.00	10.00	0.00	0.00
7,418.91	23.12	0.00	7,353.00	46.01	-711.24	46.01	10.00	10.00	0.00	0.00
Niobrara A										
7,500.00	31.23	0.00	7,425.08	83.01	-711.24	83.01	10.00	10.00	0.00	0.00
7,543.03	35.53	0.00	7,461.00	106.68	-711.24	106.68	10.00	10.00	0.00	0.00
Niobrara B										
7,600.00	41.23	0.00	7,505.64	142.03	-711.24	142.03	10.00	10.00	0.00	0.00
7,650.34	46.26	0.00	7,542.00	176.83	-711.24	176.83	10.00	10.00	0.00	0.00
Niobrara C										
7,700.00	51.23	0.00	7,574.74	214.15	-711.24	214.15	10.00	10.00	0.00	0.00
7,800.00	61.23	0.00	7,630.26	297.17	-711.24	297.17	10.00	10.00	0.00	0.00
7,900.00	71.23	0.00	7,670.52	388.57	-711.24	388.57	10.00	10.00	0.00	0.00
7,911.14	72.34	0.00	7,674.00	399.15	-711.24	399.15	10.00	10.00	0.00	0.00

Database:	Denver Sales Office	Local Co-ordinate Reference:	Well JZM 28C-3HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 5059 & KB 17 @ 5076.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 5059 & KB 17 @ 5076.00ft (ASSUMED)
Site:	JZM 15-10HZ PAD	North Reference:	True
Well:	JZM 28C-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)
Fort Hays									
8,000.00	81.23	0.00	7,694.30	485.57	-711.24	485.57	10.00	10.00	0.00
8,011.99	82.43	0.00	7,696.00	497.44	-711.24	497.44	10.00	10.00	0.00
Codell									
8,086.26	89.85	0.00	7,701.00	571.48	-711.24	571.48	10.00	10.00	0.00
Start 9723.04 hold at 8086.26 MD - 7" (918 FSL 2475 FWL)									
8,100.00	89.85	0.00	7,701.03	585.22	-711.24	585.22	0.00	0.00	0.00
8,200.00	89.85	0.00	7,701.29	685.22	-711.24	685.22	0.00	0.00	0.00
8,300.00	89.85	0.00	7,701.55	785.22	-711.24	785.22	0.00	0.00	0.00
8,400.00	89.85	0.00	7,701.80	885.22	-711.24	885.22	0.00	0.00	0.00
8,500.00	89.85	0.00	7,702.06	985.22	-711.24	985.22	0.00	0.00	0.00
8,600.00	89.85	0.00	7,702.32	1,085.22	-711.24	1,085.22	0.00	0.00	0.00
8,700.00	89.85	0.00	7,702.58	1,185.22	-711.24	1,185.22	0.00	0.00	0.00
8,800.00	89.85	0.00	7,702.83	1,285.22	-711.24	1,285.22	0.00	0.00	0.00
8,900.00	89.85	0.00	7,703.09	1,385.22	-711.24	1,385.22	0.00	0.00	0.00
9,000.00	89.85	0.00	7,703.35	1,485.22	-711.24	1,485.22	0.00	0.00	0.00
9,100.00	89.85	0.00	7,703.60	1,585.22	-711.24	1,585.22	0.00	0.00	0.00
9,200.00	89.85	0.00	7,703.86	1,685.22	-711.24	1,685.22	0.00	0.00	0.00
9,300.00	89.85	0.00	7,704.12	1,785.22	-711.24	1,785.22	0.00	0.00	0.00
9,400.00	89.85	0.00	7,704.38	1,885.22	-711.24	1,885.22	0.00	0.00	0.00
9,500.00	89.85	0.00	7,704.63	1,985.22	-711.24	1,985.22	0.00	0.00	0.00
9,600.00	89.85	0.00	7,704.89	2,085.22	-711.24	2,085.22	0.00	0.00	0.00
9,700.00	89.85	0.00	7,705.15	2,185.22	-711.24	2,185.22	0.00	0.00	0.00
9,800.00	89.85	0.00	7,705.40	2,285.22	-711.24	2,285.22	0.00	0.00	0.00
9,900.00	89.85	0.00	7,705.66	2,385.22	-711.24	2,385.22	0.00	0.00	0.00
10,000.00	89.85	0.00	7,705.92	2,485.22	-711.24	2,485.22	0.00	0.00	0.00
10,100.00	89.85	0.00	7,706.18	2,585.22	-711.24	2,585.22	0.00	0.00	0.00
10,200.00	89.85	0.00	7,706.43	2,685.22	-711.24	2,685.22	0.00	0.00	0.00
10,300.00	89.85	0.00	7,706.69	2,785.22	-711.24	2,785.22	0.00	0.00	0.00
10,400.00	89.85	0.00	7,706.95	2,885.22	-711.24	2,885.22	0.00	0.00	0.00
10,500.00	89.85	0.00	7,707.20	2,985.22	-711.24	2,985.22	0.00	0.00	0.00
10,600.00	89.85	0.00	7,707.46	3,085.22	-711.24	3,085.22	0.00	0.00	0.00
10,700.00	89.85	0.00	7,707.72	3,185.22	-711.24	3,185.22	0.00	0.00	0.00
10,800.00	89.85	0.00	7,707.98	3,285.22	-711.24	3,285.22	0.00	0.00	0.00
10,900.00	89.85	0.00	7,708.23	3,385.22	-711.24	3,385.22	0.00	0.00	0.00
11,000.00	89.85	0.00	7,708.49	3,485.21	-711.24	3,485.21	0.00	0.00	0.00
11,100.00	89.85	0.00	7,708.75	3,585.21	-711.24	3,585.21	0.00	0.00	0.00
11,200.00	89.85	0.00	7,709.00	3,685.21	-711.24	3,685.21	0.00	0.00	0.00
11,300.00	89.85	0.00	7,709.26	3,785.21	-711.24	3,785.21	0.00	0.00	0.00
11,400.00	89.85	0.00	7,709.52	3,885.21	-711.24	3,885.21	0.00	0.00	0.00
11,500.00	89.85	0.00	7,709.78	3,985.21	-711.24	3,985.21	0.00	0.00	0.00
11,600.00	89.85	0.00	7,710.03	4,085.21	-711.24	4,085.21	0.00	0.00	0.00
11,700.00	89.85	0.00	7,710.29	4,185.21	-711.24	4,185.21	0.00	0.00	0.00
11,800.00	89.85	0.00	7,710.55	4,285.21	-711.24	4,285.21	0.00	0.00	0.00
11,900.00	89.85	0.00	7,710.80	4,385.21	-711.24	4,385.21	0.00	0.00	0.00
12,000.00	89.85	0.00	7,711.06	4,485.21	-711.24	4,485.21	0.00	0.00	0.00
12,100.00	89.85	0.00	7,711.32	4,585.21	-711.24	4,585.21	0.00	0.00	0.00
12,200.00	89.85	0.00	7,711.58	4,685.21	-711.24	4,685.21	0.00	0.00	0.00
12,300.00	89.85	0.00	7,711.83	4,785.21	-711.24	4,785.21	0.00	0.00	0.00
12,400.00	89.85	0.00	7,712.09	4,885.21	-711.24	4,885.21	0.00	0.00	0.00
12,500.00	89.85	0.00	7,712.35	4,985.21	-711.24	4,985.21	0.00	0.00	0.00
12,600.00	89.85	0.00	7,712.60	5,085.21	-711.24	5,085.21	0.00	0.00	0.00
12,700.00	89.85	0.00	7,712.86	5,185.21	-711.24	5,185.21	0.00	0.00	0.00

Database:	Denver Sales Office	Local Co-ordinate Reference:	Well JZM 28C-3HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 5059 & KB 17 @ 5076.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 5059 & KB 17 @ 5076.00ft (ASSUMED)
Site:	JZM 15-10HZ PAD	North Reference:	True
Well:	JZM 28C-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)
12,800.00	89.85	0.00	7,713.12	5,285.21	-711.24	5,285.21	0.00	0.00	0.00
12,900.00	89.85	0.00	7,713.38	5,385.21	-711.24	5,385.21	0.00	0.00	0.00
13,000.00	89.85	0.00	7,713.63	5,485.21	-711.24	5,485.21	0.00	0.00	0.00
13,100.00	89.85	0.00	7,713.89	5,585.21	-711.24	5,585.21	0.00	0.00	0.00
13,200.00	89.85	0.00	7,714.15	5,685.21	-711.24	5,685.21	0.00	0.00	0.00
13,300.00	89.85	0.00	7,714.40	5,785.21	-711.24	5,785.21	0.00	0.00	0.00
13,400.00	89.85	0.00	7,714.66	5,885.21	-711.24	5,885.21	0.00	0.00	0.00
13,500.00	89.85	0.00	7,714.92	5,985.21	-711.24	5,985.21	0.00	0.00	0.00
13,600.00	89.85	0.00	7,715.18	6,085.21	-711.24	6,085.21	0.00	0.00	0.00
13,700.00	89.85	0.00	7,715.43	6,185.21	-711.24	6,185.21	0.00	0.00	0.00
13,800.00	89.85	0.00	7,715.69	6,285.21	-711.24	6,285.21	0.00	0.00	0.00
13,900.00	89.85	0.00	7,715.95	6,385.21	-711.24	6,385.21	0.00	0.00	0.00
14,000.00	89.85	0.00	7,716.20	6,485.20	-711.24	6,485.20	0.00	0.00	0.00
14,100.00	89.85	0.00	7,716.46	6,585.20	-711.24	6,585.20	0.00	0.00	0.00
14,200.00	89.85	0.00	7,716.72	6,685.20	-711.24	6,685.20	0.00	0.00	0.00
14,300.00	89.85	0.00	7,716.98	6,785.20	-711.24	6,785.20	0.00	0.00	0.00
14,400.00	89.85	0.00	7,717.23	6,885.20	-711.24	6,885.20	0.00	0.00	0.00
14,500.00	89.85	0.00	7,717.49	6,985.20	-711.24	6,985.20	0.00	0.00	0.00
14,600.00	89.85	0.00	7,717.75	7,085.20	-711.24	7,085.20	0.00	0.00	0.00
14,700.00	89.85	0.00	7,718.00	7,185.20	-711.24	7,185.20	0.00	0.00	0.00
14,800.00	89.85	0.00	7,718.26	7,285.20	-711.24	7,285.20	0.00	0.00	0.00
14,900.00	89.85	0.00	7,718.52	7,385.20	-711.24	7,385.20	0.00	0.00	0.00
15,000.00	89.85	0.00	7,718.78	7,485.20	-711.24	7,485.20	0.00	0.00	0.00
15,100.00	89.85	0.00	7,719.03	7,585.20	-711.24	7,585.20	0.00	0.00	0.00
15,200.00	89.85	0.00	7,719.29	7,685.20	-711.24	7,685.20	0.00	0.00	0.00
15,300.00	89.85	0.00	7,719.55	7,785.20	-711.24	7,785.20	0.00	0.00	0.00
15,400.00	89.85	0.00	7,719.80	7,885.20	-711.24	7,885.20	0.00	0.00	0.00
15,500.00	89.85	0.00	7,720.06	7,985.20	-711.24	7,985.20	0.00	0.00	0.00
15,600.00	89.85	0.00	7,720.32	8,085.20	-711.24	8,085.20	0.00	0.00	0.00
15,700.00	89.85	0.00	7,720.58	8,185.20	-711.24	8,185.20	0.00	0.00	0.00
15,800.00	89.85	0.00	7,720.83	8,285.20	-711.24	8,285.20	0.00	0.00	0.00
15,900.00	89.85	0.00	7,721.09	8,385.20	-711.24	8,385.20	0.00	0.00	0.00
16,000.00	89.85	0.00	7,721.35	8,485.20	-711.24	8,485.20	0.00	0.00	0.00
16,100.00	89.85	0.00	7,721.60	8,585.20	-711.24	8,585.20	0.00	0.00	0.00
16,200.00	89.85	0.00	7,721.86	8,685.20	-711.24	8,685.20	0.00	0.00	0.00
16,300.00	89.85	0.00	7,722.12	8,785.20	-711.24	8,785.20	0.00	0.00	0.00
16,400.00	89.85	0.00	7,722.38	8,885.20	-711.24	8,885.20	0.00	0.00	0.00
16,500.00	89.85	0.00	7,722.63	8,985.20	-711.24	8,985.20	0.00	0.00	0.00
16,600.00	89.85	0.00	7,722.89	9,085.20	-711.24	9,085.20	0.00	0.00	0.00
16,700.00	89.85	0.00	7,723.15	9,185.20	-711.24	9,185.20	0.00	0.00	0.00
16,800.00	89.85	0.00	7,723.40	9,285.20	-711.24	9,285.20	0.00	0.00	0.00
16,900.00	89.85	0.00	7,723.66	9,385.20	-711.24	9,385.20	0.00	0.00	0.00
17,000.00	89.85	0.00	7,723.92	9,485.20	-711.24	9,485.20	0.00	0.00	0.00
17,100.00	89.85	0.00	7,724.18	9,585.19	-711.24	9,585.19	0.00	0.00	0.00
17,200.00	89.85	0.00	7,724.43	9,685.19	-711.24	9,685.19	0.00	0.00	0.00
17,300.00	89.85	0.00	7,724.69	9,785.19	-711.24	9,785.19	0.00	0.00	0.00
17,400.00	89.85	0.00	7,724.95	9,885.19	-711.24	9,885.19	0.00	0.00	0.00
17,500.00	89.85	0.00	7,725.20	9,985.19	-711.24	9,985.19	0.00	0.00	0.00
17,600.00	89.85	0.00	7,725.46	10,085.19	-711.24	10,085.19	0.00	0.00	0.00
17,700.00	89.85	0.00	7,725.72	10,185.19	-711.24	10,185.19	0.00	0.00	0.00
17,800.00	89.85	0.00	7,725.98	10,285.19	-711.24	10,285.19	0.00	0.00	0.00
17,809.30	89.85	0.00	7,726.00	10,294.50	-711.24	10,294.50	0.00	0.00	0.00
TD at 17809.30 - PBHL_JZM 28C-3HZ (1' FNL 2530' FWL)									

Database:	Denver Sales Office	Local Co-ordinate Reference:	Well JZM 28C-3HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 5059 & KB 17 @ 5076.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 5059 & KB 17 @ 5076.00ft (ASSUMED)
Site:	JZM 15-10HZ PAD	North Reference:	True
Well:	JZM 28C-3HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1 PRELIMINARY		

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)		
- Shape									
PBHL_JZM 28C-3HZ (1' - plan hits target center - Point	0.00	0.00	7,726.00	10,294.50	-711.24	1,275,336.44	3,174,191.10	40.0875110	-104.8774260

Casing Points					
Measured Depth	Vertical Depth	Name	Casing Diameter	Hole Diameter	
(ft)	(ft)		(in)	(in)	
1,386.00	1,386.00	9 5/8"	9.625	12.250	
8,086.26	7,701.00	7" (918 FSL 2475 FWL)	7.000	7.500	

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(ft)	(ft)			(°)	(°)	
1,336.00	1,336.00	Fox Hills Marker				
4,271.76	4,236.00	Parkman				
4,643.41	4,602.00	Sussex				
7,383.48	7,320.00	Sharon Springs				
7,418.91	7,353.00	Niobrara A				
7,543.03	7,461.00	Niobrara B				
7,650.34	7,542.00	Niobrara C				
7,911.14	7,674.00	Fort Hays				
8,011.99	7,696.00	Codell				

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates		Comment	
(ft)	(ft)	+N/-S	+E/-W		
		(ft)	(ft)		
1,586.00	1,586.00	0.00	0.00	Start Build 2.00	
2,086.13	2,083.59	0.00	-43.54	Start 3593.44 hold at 2086.13 MD	
5,679.57	5,622.41	0.00	-667.69	Start Drop -2.00	
6,179.69	6,120.00	0.00	-711.24	Start 1008.04 hold at 6179.69 MD	
7,187.73	7,128.04	0.00	-711.24	Start Build 10.00	
8,086.26	7,701.00	571.49	-711.24	Start 9723.04 hold at 8086.26 MD	
17,809.30	7,726.00	10,294.50	-711.24	TD at 17809.30	