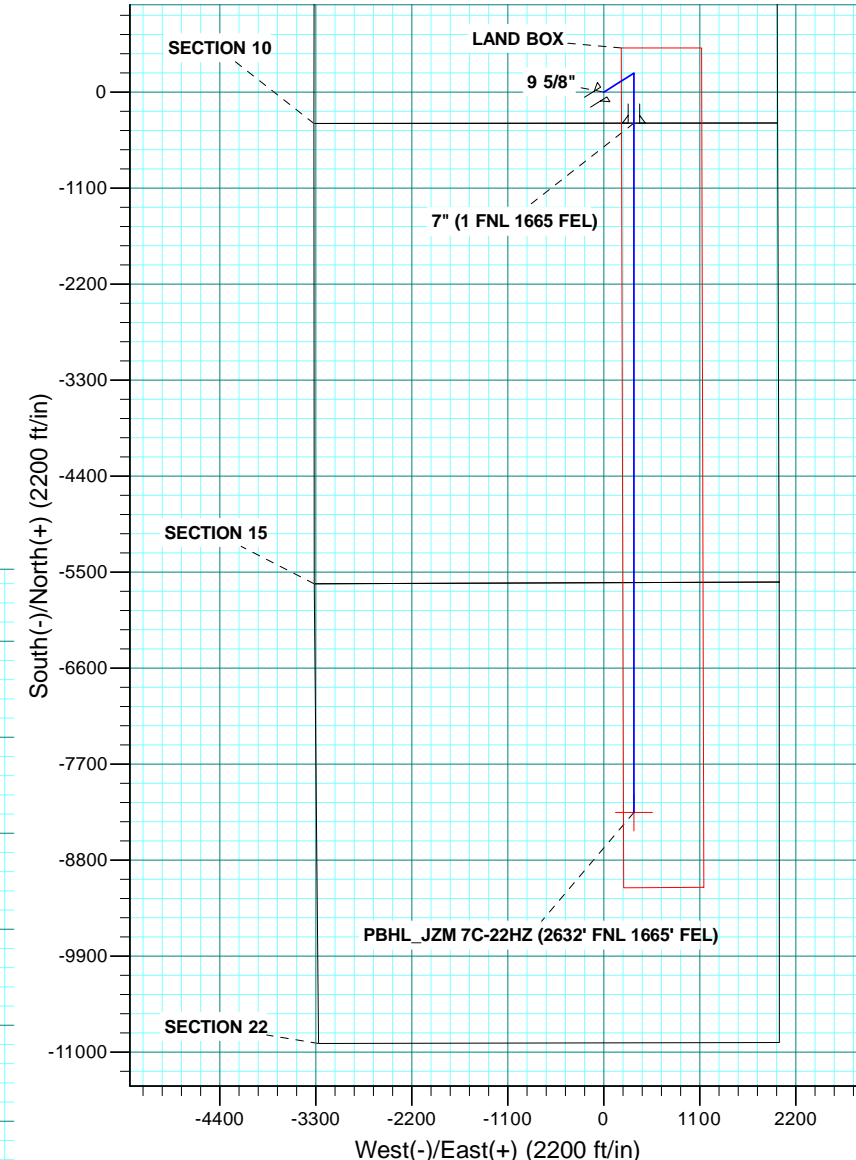
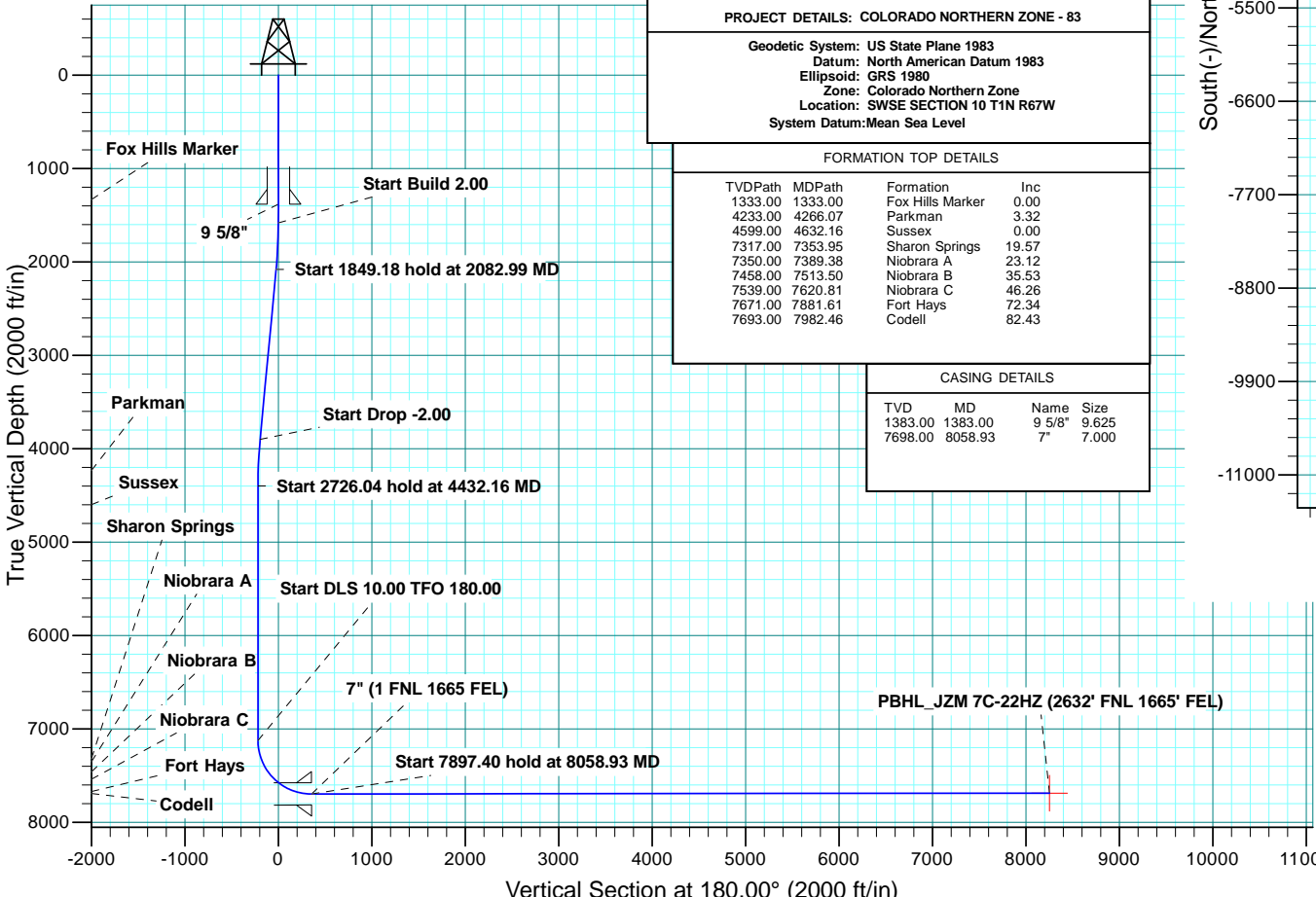


WELL DETAILS: JZM 7C-22HZ										
GL 5056 & KB 17 @ 5073.00ft (ASSUMED)										
		+N/-S	+E/-W	Northing	Easting	Latitude	Longitude			
		0.00	0.00	1265048.80	3175094.96	40.0592530	-104.8744550			
SECTION DETAILS										
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
1583.00	0.00	0.00	1583.00	0.00	0.00	0.00	0.00	0.00		Start Build 2.00
2082.99	10.00	57.77	2080.45	23.21	36.81	2.00	57.77	-23.21		Start 1849.18 hold at 2082.99 MD
3932.17	10.00	57.77	3901.55	194.47	308.43	0.00	0.00	-194.47		Start Drop -2.00
4432.16	0.00	0.00	4399.00	217.68	345.24	2.00	180.00	-217.68		Start 2726.04 hold at 4432.16 MD
7158.20	0.00	0.00	7125.04	217.68	345.24	0.00	0.00	-217.68		Start DLS 10.00 TFO 180.00
8058.93	90.07	180.00	7698.00	-356.00	345.24	10.00	180.00	356.00		Start 7897.40 hold at 8058.93 MD
15956.33	90.07	180.00	7688.00	-8253.40	345.24	0.00	0.00	8253.40	PBHL_JZM 7C-22HZ	TD at 15956.33
DESIGN TARGET DETAILS										
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape		
PBHL 7688.00		-8253.40	345.24	1256798.06	3175498.42	40.0365960	-104.8732220	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	
1333.00	1333.00	Fox Hills Marker	0.00	
4233.00	4266.07	Parkman	3.32	
4599.00	4632.16	Sussex	0.00	
7317.00	7353.95	Sharon Springs	19.57	
7350.00	7389.38	Niobrara A	23.12	
7458.00	7513.50	Niobrara B	35.53	
7539.00	7620.81	Niobrara C	46.26	
7671.00	7881.61	Fort Hays	72.34	
7693.00	7982.46	Codell	82.43	

CASING DETAILS				
TVD	MD	Name	Size	
1383.00	1383.00	9 5/8"	9.625	
7698.00	8058.93	7"	7.000	





Scientific Drilling

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

JZM 15-10HZ PAD

JZM 7C-22HZ

OH

Plan: PLAN #1 PRELIMINARY

Standard Planning Report

06 January, 2014

Database:	Denver Sales Office	Local Co-ordinate Reference:	Well JZM 7C-22HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 5056 & KB 17 @ 5073.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 5056 & KB 17 @ 5073.00ft (ASSUMED)
Site:	JZM 15-10HZ PAD	North Reference:	True
Well:	JZM 7C-22HZ	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 7C-22HZ, 355' FSL 1989' FEL					
Well Position	+N/-S	0.72 ft	Northing:	1,265,048.80 usft	Latitude:	40.0592530
	+E/-W	120.08 ft	Easting:	3,175,094.96 usft	Longitude:	-104.8744550
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	5,056.00 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	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	
1,583.00	0.00	0.00	1,583.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,082.99	10.00	57.77	2,080.45	23.21	36.81	2.00	2.00	0.00	57.77	
3,932.17	10.00	57.77	3,901.55	194.47	308.43	0.00	0.00	0.00	0.00	
4,432.16	0.00	0.00	4,399.00	217.68	345.24	2.00	-2.00	0.00	180.00	
7,158.20	0.00	0.00	7,125.04	217.68	345.24	0.00	0.00	0.00	0.00	
8,058.93	90.07	180.00	7,698.00	-356.00	345.24	10.00	10.00	19.98	180.00	
15,956.33	90.07	180.00	7,688.00	-8,253.40	345.24	0.00	0.00	0.00	0.00	PBHL_JZM 7C-22HZ

Database:	Denver Sales Office	Local Co-ordinate Reference:	Well JZM 7C-22HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 5056 & KB 17 @ 5073.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 5056 & KB 17 @ 5073.00ft (ASSUMED)
Site:	JZM 15-10HZ PAD	North Reference:	True
Well:	JZM 7C-22HZ	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
1,333.00	0.00	0.00	1,333.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fox Hills Marker										
1,383.00	0.00	0.00	1,383.00	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
1,583.00	0.00	0.00	1,583.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00										
1,600.00	0.34	57.77	1,600.00	0.03	0.04	-0.03	2.00	2.00	0.00	0.00
1,700.00	2.34	57.77	1,699.97	1.27	2.02	-1.27	2.00	2.00	0.00	0.00
1,800.00	4.34	57.77	1,799.79	4.38	6.95	-4.38	2.00	2.00	0.00	0.00
1,900.00	6.34	57.77	1,899.35	9.34	14.82	-9.34	2.00	2.00	0.00	0.00
2,000.00	8.34	57.77	1,998.53	16.16	25.63	-16.16	2.00	2.00	0.00	0.00
2,082.99	10.00	57.77	2,080.45	23.21	36.81	-23.21	2.00	2.00	0.00	0.00
Start 1849.18 hold at 2082.99 MD										
2,100.00	10.00	57.77	2,097.21	24.79	39.31	-24.79	0.00	0.00	0.00	0.00
2,200.00	10.00	57.77	2,195.69	34.05	54.00	-34.05	0.00	0.00	0.00	0.00
2,300.00	10.00	57.77	2,294.17	43.31	68.69	-43.31	0.00	0.00	0.00	0.00
2,400.00	10.00	57.77	2,392.65	52.57	83.38	-52.57	0.00	0.00	0.00	0.00
2,500.00	10.00	57.77	2,491.13	61.83	98.07	-61.83	0.00	0.00	0.00	0.00
2,600.00	10.00	57.77	2,589.61	71.09	112.75	-71.09	0.00	0.00	0.00	0.00
2,700.00	10.00	57.77	2,688.09	80.35	127.44	-80.35	0.00	0.00	0.00	0.00
2,800.00	10.00	57.77	2,786.57	89.62	142.13	-89.62	0.00	0.00	0.00	0.00
2,900.00	10.00	57.77	2,885.05	98.88	156.82	-98.88	0.00	0.00	0.00	0.00
3,000.00	10.00	57.77	2,983.53	108.14	171.51	-108.14	0.00	0.00	0.00	0.00
3,100.00	10.00	57.77	3,082.02	117.40	186.20	-117.40	0.00	0.00	0.00	0.00
3,200.00	10.00	57.77	3,180.50	126.66	200.89	-126.66	0.00	0.00	0.00	0.00
3,300.00	10.00	57.77	3,278.98	135.92	215.57	-135.92	0.00	0.00	0.00	0.00
3,400.00	10.00	57.77	3,377.46	145.18	230.26	-145.18	0.00	0.00	0.00	0.00
3,500.00	10.00	57.77	3,475.94	154.44	244.95	-154.44	0.00	0.00	0.00	0.00
3,600.00	10.00	57.77	3,574.42	163.71	259.64	-163.71	0.00	0.00	0.00	0.00
3,700.00	10.00	57.77	3,672.90	172.97	274.33	-172.97	0.00	0.00	0.00	0.00
3,800.00	10.00	57.77	3,771.38	182.23	289.02	-182.23	0.00	0.00	0.00	0.00
3,900.00	10.00	57.77	3,869.86	191.49	303.71	-191.49	0.00	0.00	0.00	0.00
3,932.17	10.00	57.77	3,901.55	194.47	308.43	-194.47	0.00	0.00	0.00	0.00
Start Drop -2.00										
4,000.00	8.64	57.77	3,968.48	200.33	317.72	-200.33	2.00	-2.00	0.00	0.00
4,100.00	6.64	57.77	4,067.58	207.42	328.97	-207.42	2.00	-2.00	0.00	0.00
4,200.00	4.64	57.77	4,167.09	212.67	337.29	-212.67	2.00	-2.00	0.00	0.00
4,266.07	3.32	57.77	4,233.00	215.11	341.17	-215.11	2.00	-2.00	0.00	0.00

Database:	Denver Sales Office	Local Co-ordinate Reference:	Well JZM 7C-22HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 5056 & KB 17 @ 5073.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 5056 & KB 17 @ 5073.00ft (ASSUMED)
Site:	JZM 15-10HZ PAD	North Reference:	True
Well:	JZM 7C-22HZ	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)	
Parkman										
4,300.00	2.64	57.77	4,266.89	216.05	342.67	-216.05	2.00	-2.00	0.00	
4,400.00	0.64	57.77	4,366.84	217.58	345.09	-217.58	2.00	-2.00	0.00	
4,432.16	0.00	0.00	4,399.00	217.68	345.24	-217.68	2.00	-2.00	-179.62	
Start 2726.04 hold at 4432.16 MD										
4,500.00	0.00	0.00	4,466.84	217.68	345.24	-217.68	0.00	0.00	0.00	
4,600.00	0.00	0.00	4,566.84	217.68	345.24	-217.68	0.00	0.00	0.00	
4,632.16	0.00	0.00	4,599.00	217.68	345.24	-217.68	0.00	0.00	0.00	
Sussex										
4,700.00	0.00	0.00	4,666.84	217.68	345.24	-217.68	0.00	0.00	0.00	
4,800.00	0.00	0.00	4,766.84	217.68	345.24	-217.68	0.00	0.00	0.00	
4,900.00	0.00	0.00	4,866.84	217.68	345.24	-217.68	0.00	0.00	0.00	
5,000.00	0.00	0.00	4,966.84	217.68	345.24	-217.68	0.00	0.00	0.00	
5,100.00	0.00	0.00	5,066.84	217.68	345.24	-217.68	0.00	0.00	0.00	
5,200.00	0.00	0.00	5,166.84	217.68	345.24	-217.68	0.00	0.00	0.00	
5,300.00	0.00	0.00	5,266.84	217.68	345.24	-217.68	0.00	0.00	0.00	
5,400.00	0.00	0.00	5,366.84	217.68	345.24	-217.68	0.00	0.00	0.00	
5,500.00	0.00	0.00	5,466.84	217.68	345.24	-217.68	0.00	0.00	0.00	
5,600.00	0.00	0.00	5,566.84	217.68	345.24	-217.68	0.00	0.00	0.00	
5,700.00	0.00	0.00	5,666.84	217.68	345.24	-217.68	0.00	0.00	0.00	
5,800.00	0.00	0.00	5,766.84	217.68	345.24	-217.68	0.00	0.00	0.00	
5,900.00	0.00	0.00	5,866.84	217.68	345.24	-217.68	0.00	0.00	0.00	
6,000.00	0.00	0.00	5,966.84	217.68	345.24	-217.68	0.00	0.00	0.00	
6,100.00	0.00	0.00	6,066.84	217.68	345.24	-217.68	0.00	0.00	0.00	
6,200.00	0.00	0.00	6,166.84	217.68	345.24	-217.68	0.00	0.00	0.00	
6,300.00	0.00	0.00	6,266.84	217.68	345.24	-217.68	0.00	0.00	0.00	
6,400.00	0.00	0.00	6,366.84	217.68	345.24	-217.68	0.00	0.00	0.00	
6,500.00	0.00	0.00	6,466.84	217.68	345.24	-217.68	0.00	0.00	0.00	
6,600.00	0.00	0.00	6,566.84	217.68	345.24	-217.68	0.00	0.00	0.00	
6,700.00	0.00	0.00	6,666.84	217.68	345.24	-217.68	0.00	0.00	0.00	
6,800.00	0.00	0.00	6,766.84	217.68	345.24	-217.68	0.00	0.00	0.00	
6,900.00	0.00	0.00	6,866.84	217.68	345.24	-217.68	0.00	0.00	0.00	
7,000.00	0.00	0.00	6,966.84	217.68	345.24	-217.68	0.00	0.00	0.00	
7,100.00	0.00	0.00	7,066.84	217.68	345.24	-217.68	0.00	0.00	0.00	
7,158.20	0.00	0.00	7,125.04	217.68	345.24	-217.68	0.00	0.00	0.00	
Start DLS 10.00 TFO 180.00										
7,200.00	4.18	180.00	7,166.80	216.16	345.24	-216.16	10.00	10.00	0.00	
7,300.00	14.18	180.00	7,265.40	200.22	345.24	-200.22	10.00	10.00	0.00	
7,353.95	19.57	180.00	7,317.00	184.57	345.24	-184.57	10.00	10.00	0.00	
Sharon Springs										
7,389.38	23.12	180.00	7,350.00	171.67	345.24	-171.67	10.00	10.00	0.00	
Niobrara A										
7,400.00	24.18	180.00	7,359.73	167.41	345.24	-167.41	10.00	10.00	0.00	
7,500.00	34.18	180.00	7,446.92	118.72	345.24	-118.72	10.00	10.00	0.00	
7,513.50	35.53	180.00	7,458.00	111.00	345.24	-111.00	10.00	10.00	0.00	
Niobrara B										
7,600.00	44.18	180.00	7,524.34	55.62	345.24	-55.62	10.00	10.00	0.00	
7,620.81	46.26	180.00	7,539.00	40.85	345.24	-40.85	10.00	10.00	0.00	
Niobrara C										
7,700.00	54.18	180.00	7,589.63	-19.96	345.24	19.96	10.00	10.00	0.00	
7,800.00	64.18	180.00	7,640.80	-105.73	345.24	105.73	10.00	10.00	0.00	
7,881.61	72.34	180.00	7,671.00	-181.47	345.24	181.47	10.00	10.00	0.00	
Fort Hays										

Database:	Denver Sales Office	Local Co-ordinate Reference:	Well JZM 7C-22HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 5056 & KB 17 @ 5073.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 5056 & KB 17 @ 5073.00ft (ASSUMED)
Site:	JZM 15-10HZ PAD	North Reference:	True
Well:	JZM 7C-22HZ	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)
7,900.00	74.18	180.00	7,676.30	-199.08	345.24	199.08	10.00	10.00	0.00
7,982.46	82.43	180.00	7,693.00	-279.76	345.24	279.76	10.00	10.00	0.00
Codell									
8,000.00	84.18	180.00	7,695.05	-297.18	345.24	297.18	10.00	10.00	0.00
8,058.93	90.07	180.00	7,698.00	-356.01	345.24	356.01	10.00	10.00	0.00
Start 7897.40 hold at 8058.93 MD - 7" (1 FNL 1665 FEL)									
8,100.00	90.07	180.00	7,697.95	-397.08	345.24	397.08	0.00	0.00	0.00
8,200.00	90.07	180.00	7,697.82	-497.08	345.24	497.08	0.00	0.00	0.00
8,300.00	90.07	180.00	7,697.69	-597.08	345.24	597.08	0.00	0.00	0.00
8,400.00	90.07	180.00	7,697.57	-697.08	345.24	697.08	0.00	0.00	0.00
8,500.00	90.07	180.00	7,697.44	-797.08	345.24	797.08	0.00	0.00	0.00
8,600.00	90.07	180.00	7,697.31	-897.08	345.24	897.08	0.00	0.00	0.00
8,700.00	90.07	180.00	7,697.19	-997.08	345.24	997.08	0.00	0.00	0.00
8,800.00	90.07	180.00	7,697.06	-1,097.08	345.24	1,097.08	0.00	0.00	0.00
8,900.00	90.07	180.00	7,696.93	-1,197.08	345.24	1,197.08	0.00	0.00	0.00
9,000.00	90.07	180.00	7,696.81	-1,297.08	345.24	1,297.08	0.00	0.00	0.00
9,100.00	90.07	180.00	7,696.68	-1,397.08	345.24	1,397.08	0.00	0.00	0.00
9,200.00	90.07	180.00	7,696.55	-1,497.08	345.24	1,497.08	0.00	0.00	0.00
9,300.00	90.07	180.00	7,696.43	-1,597.08	345.24	1,597.08	0.00	0.00	0.00
9,400.00	90.07	180.00	7,696.30	-1,697.08	345.24	1,697.08	0.00	0.00	0.00
9,500.00	90.07	180.00	7,696.17	-1,797.08	345.24	1,797.08	0.00	0.00	0.00
9,600.00	90.07	180.00	7,696.05	-1,897.08	345.24	1,897.08	0.00	0.00	0.00
9,700.00	90.07	180.00	7,695.92	-1,997.08	345.24	1,997.08	0.00	0.00	0.00
9,800.00	90.07	180.00	7,695.79	-2,097.08	345.24	2,097.08	0.00	0.00	0.00
9,900.00	90.07	180.00	7,695.67	-2,197.07	345.24	2,197.07	0.00	0.00	0.00
10,000.00	90.07	180.00	7,695.54	-2,297.07	345.24	2,297.07	0.00	0.00	0.00
10,100.00	90.07	180.00	7,695.41	-2,397.07	345.24	2,397.07	0.00	0.00	0.00
10,200.00	90.07	180.00	7,695.29	-2,497.07	345.24	2,497.07	0.00	0.00	0.00
10,300.00	90.07	180.00	7,695.16	-2,597.07	345.24	2,597.07	0.00	0.00	0.00
10,400.00	90.07	180.00	7,695.03	-2,697.07	345.24	2,697.07	0.00	0.00	0.00
10,500.00	90.07	180.00	7,694.91	-2,797.07	345.24	2,797.07	0.00	0.00	0.00
10,600.00	90.07	180.00	7,694.78	-2,897.07	345.24	2,897.07	0.00	0.00	0.00
10,700.00	90.07	180.00	7,694.65	-2,997.07	345.24	2,997.07	0.00	0.00	0.00
10,800.00	90.07	180.00	7,694.53	-3,097.07	345.24	3,097.07	0.00	0.00	0.00
10,900.00	90.07	180.00	7,694.40	-3,197.07	345.24	3,197.07	0.00	0.00	0.00
11,000.00	90.07	180.00	7,694.28	-3,297.07	345.24	3,297.07	0.00	0.00	0.00
11,100.00	90.07	180.00	7,694.15	-3,397.07	345.24	3,397.07	0.00	0.00	0.00
11,200.00	90.07	180.00	7,694.02	-3,497.07	345.24	3,497.07	0.00	0.00	0.00
11,300.00	90.07	180.00	7,693.90	-3,597.07	345.24	3,597.07	0.00	0.00	0.00
11,400.00	90.07	180.00	7,693.77	-3,697.07	345.24	3,697.07	0.00	0.00	0.00
11,500.00	90.07	180.00	7,693.64	-3,797.07	345.24	3,797.07	0.00	0.00	0.00
11,600.00	90.07	180.00	7,693.52	-3,897.07	345.24	3,897.07	0.00	0.00	0.00
11,700.00	90.07	180.00	7,693.39	-3,997.07	345.24	3,997.07	0.00	0.00	0.00
11,800.00	90.07	180.00	7,693.26	-4,097.07	345.24	4,097.07	0.00	0.00	0.00
11,900.00	90.07	180.00	7,693.14	-4,197.07	345.24	4,197.07	0.00	0.00	0.00
12,000.00	90.07	180.00	7,693.01	-4,297.07	345.24	4,297.07	0.00	0.00	0.00
12,100.00	90.07	180.00	7,692.88	-4,397.07	345.24	4,397.07	0.00	0.00	0.00
12,200.00	90.07	180.00	7,692.76	-4,497.07	345.24	4,497.07	0.00	0.00	0.00
12,300.00	90.07	180.00	7,692.63	-4,597.07	345.24	4,597.07	0.00	0.00	0.00
12,400.00	90.07	180.00	7,692.50	-4,697.07	345.24	4,697.07	0.00	0.00	0.00
12,500.00	90.07	180.00	7,692.38	-4,797.07	345.24	4,797.07	0.00	0.00	0.00
12,600.00	90.07	180.00	7,692.25	-4,897.07	345.24	4,897.07	0.00	0.00	0.00
12,700.00	90.07	180.00	7,692.12	-4,997.07	345.24	4,997.07	0.00	0.00	0.00
12,800.00	90.07	180.00	7,692.00	-5,097.07	345.24	5,097.07	0.00	0.00	0.00

Database:	Denver Sales Office	Local Co-ordinate Reference:	Well JZM 7C-22HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 5056 & KB 17 @ 5073.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 5056 & KB 17 @ 5073.00ft (ASSUMED)
Site:	JZM 15-10HZ PAD	North Reference:	True
Well:	JZM 7C-22HZ	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)	
12,900.00	90.07	180.00	7,691.87	-5,197.07	345.24	5,197.07	0.00	0.00	0.00	
13,000.00	90.07	180.00	7,691.74	-5,297.07	345.24	5,297.07	0.00	0.00	0.00	
13,100.00	90.07	180.00	7,691.62	-5,397.07	345.24	5,397.07	0.00	0.00	0.00	
13,200.00	90.07	180.00	7,691.49	-5,497.07	345.24	5,497.07	0.00	0.00	0.00	
13,300.00	90.07	180.00	7,691.36	-5,597.07	345.24	5,597.07	0.00	0.00	0.00	
13,400.00	90.07	180.00	7,691.24	-5,697.07	345.24	5,697.07	0.00	0.00	0.00	
13,500.00	90.07	180.00	7,691.11	-5,797.07	345.24	5,797.07	0.00	0.00	0.00	
13,600.00	90.07	180.00	7,690.98	-5,897.07	345.24	5,897.07	0.00	0.00	0.00	
13,700.00	90.07	180.00	7,690.86	-5,997.07	345.24	5,997.07	0.00	0.00	0.00	
13,800.00	90.07	180.00	7,690.73	-6,097.07	345.24	6,097.07	0.00	0.00	0.00	
13,900.00	90.07	180.00	7,690.60	-6,197.07	345.24	6,197.07	0.00	0.00	0.00	
14,000.00	90.07	180.00	7,690.48	-6,297.07	345.24	6,297.07	0.00	0.00	0.00	
14,100.00	90.07	180.00	7,690.35	-6,397.07	345.24	6,397.07	0.00	0.00	0.00	
14,200.00	90.07	180.00	7,690.22	-6,497.07	345.24	6,497.07	0.00	0.00	0.00	
14,300.00	90.07	180.00	7,690.10	-6,597.07	345.24	6,597.07	0.00	0.00	0.00	
14,400.00	90.07	180.00	7,689.97	-6,697.07	345.24	6,697.07	0.00	0.00	0.00	
14,500.00	90.07	180.00	7,689.84	-6,797.07	345.24	6,797.07	0.00	0.00	0.00	
14,600.00	90.07	180.00	7,689.72	-6,897.07	345.24	6,897.07	0.00	0.00	0.00	
14,700.00	90.07	180.00	7,689.59	-6,997.07	345.24	6,997.07	0.00	0.00	0.00	
14,800.00	90.07	180.00	7,689.46	-7,097.07	345.24	7,097.07	0.00	0.00	0.00	
14,900.00	90.07	180.00	7,689.34	-7,197.07	345.24	7,197.07	0.00	0.00	0.00	
15,000.00	90.07	180.00	7,689.21	-7,297.07	345.24	7,297.07	0.00	0.00	0.00	
15,100.00	90.07	180.00	7,689.08	-7,397.07	345.24	7,397.07	0.00	0.00	0.00	
15,200.00	90.07	180.00	7,688.96	-7,497.07	345.24	7,497.07	0.00	0.00	0.00	
15,300.00	90.07	180.00	7,688.83	-7,597.07	345.24	7,597.07	0.00	0.00	0.00	
15,400.00	90.07	180.00	7,688.70	-7,697.07	345.24	7,697.07	0.00	0.00	0.00	
15,500.00	90.07	180.00	7,688.58	-7,797.07	345.24	7,797.07	0.00	0.00	0.00	
15,600.00	90.07	180.00	7,688.45	-7,897.07	345.24	7,897.07	0.00	0.00	0.00	
15,700.00	90.07	180.00	7,688.32	-7,997.07	345.24	7,997.07	0.00	0.00	0.00	
15,800.00	90.07	180.00	7,688.20	-8,097.07	345.24	8,097.07	0.00	0.00	0.00	
15,900.00	90.07	180.00	7,688.07	-8,197.07	345.24	8,197.07	0.00	0.00	0.00	
15,956.33	90.07	180.00	7,688.00	-8,253.40	345.24	8,253.40	0.00	0.00	0.00	
TD at 15956.33 - PBHL_JZM 7C-22HZ (2632' FNL 1665' 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 7C-22HZ (2632' FNL 1665' FEL) - hit/miss target - Shape - Point	0.00	0.00	7,688.00	-8,253.40	345.24	1,256,798.06	3,175,498.42	40.0365960	-104.8732220	

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,383.00	1,383.00	9 5/8"	9.625	12.250	
8,058.93	7,698.00	7" (1 FNL 1665 FEL)	7.000	7.500	

Database:	Denver Sales Office	Local Co-ordinate Reference:	Well JZM 7C-22HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 5056 & KB 17 @ 5073.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 5056 & KB 17 @ 5073.00ft (ASSUMED)
Site:	JZM 15-10HZ PAD	North Reference:	True
Well:	JZM 7C-22HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1 PRELIMINARY		

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,333.00	1,333.00	Fox Hills Marker			
4,266.07	4,233.00	Parkman			
4,632.16	4,599.00	Sussex			
7,353.95	7,317.00	Sharon Springs			
7,389.38	7,350.00	Niobrara A			
7,513.50	7,458.00	Niobrara B			
7,620.81	7,539.00	Niobrara C			
7,881.61	7,671.00	Fort Hays			
7,982.46	7,693.00	Codell			

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
1,583.00	1,583.00	0.00	0.00	Start Build 2.00	
2,082.99	2,080.45	23.21	36.81	Start 1849.18 hold at 2082.99 MD	
3,932.17	3,901.55	194.47	308.43	Start Drop -2.00	
4,432.16	4,399.00	217.68	345.24	Start 2726.04 hold at 4432.16 MD	
7,158.20	7,125.04	217.68	345.24	Start DLS 10.00 TFO 180.00	
8,058.93	7,698.00	-356.00	345.24	Start 7897.40 hold at 8058.93 MD	
15,956.33	7,688.00	-8,253.40	345.24	TD at 15956.33	