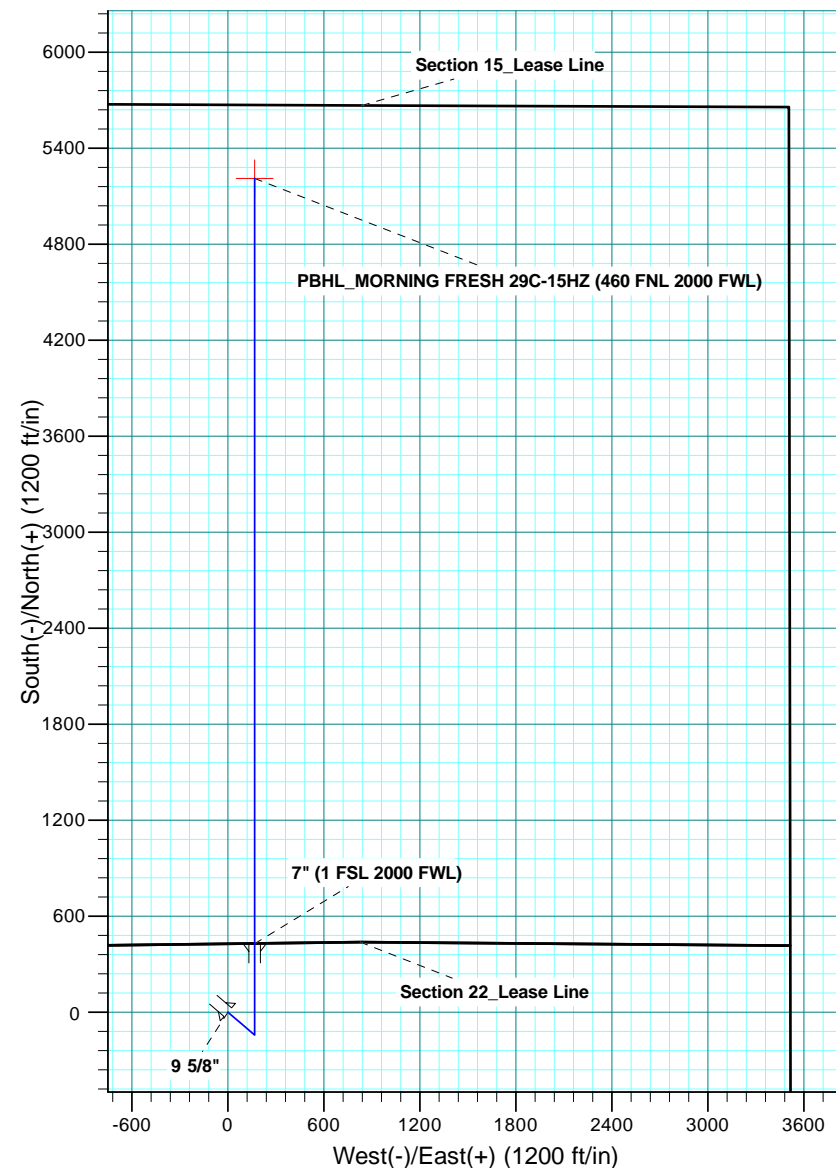
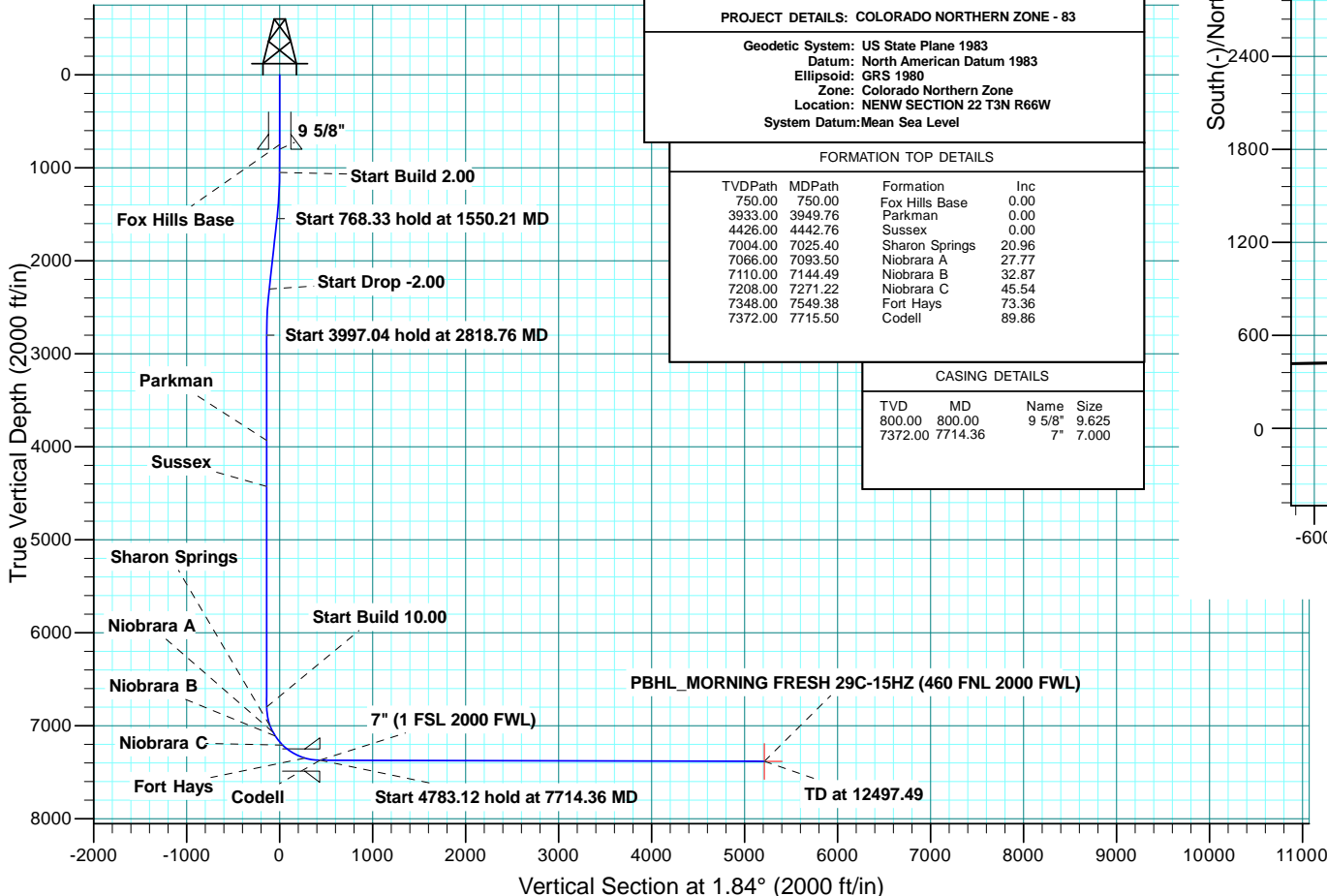


WELL DETAILS: MORNING FRESH 29C-15HZ										
GL 4884 & KB 17 @ 4901.00ft (ASSUMED)										
		+N-S 0.00	+E-W 0.00	Northing 1322619.95	Easting 3204867.91	Latitude 40.2166630	Longitude -104.7663910			
SECTION DETAILS										
MD	Inc	Azi	TVD	+N-S	+E-W	Dleg	TFace	VSect	Target	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
1050.00	0.00	0.00	1050.00	0.00	0.00	0.00	0.00	0.00		Start Build 2.00
1550.21	10.00	130.59	1547.68	-28.34	33.08	2.00	130.59	-27.26		Start 768.33 hold at 1550.21 MD
2318.54	10.00	130.59	2304.32	-115.18	134.44	0.00	0.00	-110.80		Start Drop -2.00
2818.76	0.00	0.00	2802.00	-143.52	167.52	2.00	180.00	-138.06		Start 3997.04 hold at 2818.76 MD
6815.80	0.00	0.00	6799.04	-143.52	167.52	0.00	0.00	-138.06		Start Build 10.00
7714.36	89.86	0.00	7372.00	428.00	167.52	10.00	0.00	433.16		Start 4783.12 hold at 7714.36 MD
12497.49	89.86	0.00	7384.00	5211.11	167.52	0.00	0.00	5213.80	PBHL_MORNING FRESH 29C-15HZ	
DESIGN TARGET DETAILS										
Name	TVD	+N-S	+E-W	Northing	Easting	Latitude	Longitude	Shape		
PBHL 7384.00		5211.11	167.52	1327832.26	3204992.31	40.2309680	-104.7657910	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: NENW SECTION 22 T3N R66W			
System Datum: Mean Sea Level			
FORMATION TOP DETAILS			
TVDPath	MDPath	Formation	Inc
750.00	750.00	Fox Hills Base	0.00
3933.00	3949.76	Parkman	0.00
4426.00	4442.76	Sussex	0.00
7004.00	7025.40	Sharon Springs	20.96
7066.00	7093.50	Niobrara A	27.77
7110.00	7144.49	Niobrara B	32.87
7208.00	7271.22	Niobrara C	45.54
7348.00	7549.38	Fort Hays	73.36
7372.00	7715.50	Codell	89.86
CASING DETAILS			
TVD	MD	Name	Size
800.00	800.00	9 5/8"	9.625
7372.00	7714.36	7"	7.000





Scientific Drilling

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

MORNING FRESH 3W-22HZ PAD

MORNING FRESH 29C-15HZ

OH

Plan: PLAN #1 PRELIMINARY

Standard Planning Report

08 October, 2013

Database:	Denver Sales Office	Local Co-ordinate Reference:	Well MORNING FRESH 29C-15HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4884 & KB 17 @ 4901.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4884 & KB 17 @ 4901.00ft (ASSUMED)
Site:	MORNING FRESH 3W-22HZ PAD	North Reference:	True
Well:	MORNING FRESH 29C-15HZ	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		MORNING FRESH 3W-22HZ PAD, NENW SECTION 22 T3N R66W			
Site Position:		Northing:	1,322,591.13 usft	Latitude:	40.2165840
From:	Lat/Long	Easting:	3,204,861.16 usft	Longitude:	-104.7664160
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.47 °

Well	MORNING FRESH 29C-15HZ					
Well Position	+N/-S	28.77 ft	Northing:	1,322,619.95 usft	Latitude:	40.2166630
	+E/-W	6.98 ft	Easting:	3,204,867.91 usft	Longitude:	-104.7663910
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	4,884.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2013	10/7/2013	8.57	66.81	52,718

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	1.84

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	
1,050.00	0.00	0.00	1,050.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,550.21	10.00	130.59	1,547.68	-28.34	33.08	2.00	2.00	0.00	130.59	
2,318.54	10.00	130.59	2,304.32	-115.18	134.44	0.00	0.00	0.00	0.00	
2,818.76	0.00	0.00	2,802.00	-143.52	167.52	2.00	-2.00	0.00	180.00	
6,815.80	0.00	0.00	6,799.04	-143.52	167.52	0.00	0.00	0.00	0.00	
7,714.36	89.86	0.00	7,372.00	428.00	167.52	10.00	10.00	0.00	0.00	
12,497.49	89.86	0.00	7,384.00	5,211.11	167.52	0.00	0.00	0.00	0.00	PBHL_MORNING FR

Database:	Denver Sales Office	Local Co-ordinate Reference:	Well MORNING FRESH 29C-15HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4884 & KB 17 @ 4901.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4884 & KB 17 @ 4901.00ft (ASSUMED)
Site:	MORNING FRESH 3W-22HZ PAD	North Reference:	True
Well:	MORNING FRESH 29C-15HZ	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
100.00	0.00	0.00	100.00	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
300.00	0.00	0.00	300.00	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
500.00	0.00	0.00	500.00	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
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
750.00	0.00	0.00	750.00	0.00	0.00	0.00	0.00	0.00	0.00
Fox Hills Base									
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
9 5/8"									
900.00	0.00	0.00	900.00	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
1,050.00	0.00	0.00	1,050.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
1,100.00	1.00	130.59	1,100.00	-0.28	0.33	-0.27	2.00	2.00	0.00
1,200.00	3.00	130.59	1,199.93	-2.55	2.98	-2.46	2.00	2.00	0.00
1,300.00	5.00	130.59	1,299.68	-7.09	8.28	-6.82	2.00	2.00	0.00
1,400.00	7.00	130.59	1,399.13	-13.89	16.22	-13.36	2.00	2.00	0.00
1,500.00	9.00	130.59	1,498.15	-22.95	26.78	-22.07	2.00	2.00	0.00
1,550.21	10.00	130.59	1,547.68	-28.34	33.08	-27.26	2.00	2.00	0.00
Start 768.33 hold at 1550.21 MD									
1,600.00	10.00	130.59	1,596.71	-33.97	39.65	-32.68	0.00	0.00	0.00
1,700.00	10.00	130.59	1,695.18	-45.27	52.84	-43.55	0.00	0.00	0.00
1,800.00	10.00	130.59	1,793.66	-56.57	66.03	-54.42	0.00	0.00	0.00
1,900.00	10.00	130.59	1,892.14	-67.87	79.23	-65.29	0.00	0.00	0.00
2,000.00	10.00	130.59	1,990.62	-79.18	92.42	-76.17	0.00	0.00	0.00
2,100.00	10.00	130.59	2,089.10	-90.48	105.61	-87.04	0.00	0.00	0.00
2,200.00	10.00	130.59	2,187.58	-101.78	118.80	-97.91	0.00	0.00	0.00
2,300.00	10.00	130.59	2,286.06	-113.08	132.00	-108.78	0.00	0.00	0.00
2,318.54	10.00	130.59	2,304.32	-115.18	134.44	-110.80	0.00	0.00	0.00
Start Drop -2.00									
2,400.00	8.38	130.59	2,384.73	-123.64	144.32	-118.94	2.00	-2.00	0.00
2,500.00	6.38	130.59	2,483.90	-131.99	154.07	-126.98	2.00	-2.00	0.00
2,600.00	4.38	130.59	2,583.45	-138.09	161.18	-132.84	2.00	-2.00	0.00
2,700.00	2.38	130.59	2,683.28	-141.92	165.65	-136.52	2.00	-2.00	0.00
2,800.00	0.38	130.59	2,783.24	-143.48	167.48	-138.02	2.00	-2.00	0.00
2,818.76	0.00	0.00	2,802.00	-143.52	167.52	-138.06	2.00	-2.00	0.00
Start 3997.04 hold at 2818.76 MD									
2,900.00	0.00	0.00	2,883.24	-143.52	167.52	-138.06	0.00	0.00	0.00
3,000.00	0.00	0.00	2,983.24	-143.52	167.52	-138.06	0.00	0.00	0.00
3,100.00	0.00	0.00	3,083.24	-143.52	167.52	-138.06	0.00	0.00	0.00
3,200.00	0.00	0.00	3,183.24	-143.52	167.52	-138.06	0.00	0.00	0.00
3,300.00	0.00	0.00	3,283.24	-143.52	167.52	-138.06	0.00	0.00	0.00
3,400.00	0.00	0.00	3,383.24	-143.52	167.52	-138.06	0.00	0.00	0.00
3,500.00	0.00	0.00	3,483.24	-143.52	167.52	-138.06	0.00	0.00	0.00
3,600.00	0.00	0.00	3,583.24	-143.52	167.52	-138.06	0.00	0.00	0.00
3,700.00	0.00	0.00	3,683.24	-143.52	167.52	-138.06	0.00	0.00	0.00
3,800.00	0.00	0.00	3,783.24	-143.52	167.52	-138.06	0.00	0.00	0.00
3,900.00	0.00	0.00	3,883.24	-143.52	167.52	-138.06	0.00	0.00	0.00
3,949.76	0.00	0.00	3,933.00	-143.52	167.52	-138.06	0.00	0.00	0.00
Parkman									

Database:	Denver Sales Office	Local Co-ordinate Reference:	Well MORNING FRESH 29C-15HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4884 & KB 17 @ 4901.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4884 & KB 17 @ 4901.00ft (ASSUMED)
Site:	MORNING FRESH 3W-22HZ PAD	North Reference:	True
Well:	MORNING FRESH 29C-15HZ	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)
4,000.00	0.00	0.00	3,983.24	-143.52	167.52	-138.06	0.00	0.00	0.00
4,100.00	0.00	0.00	4,083.24	-143.52	167.52	-138.06	0.00	0.00	0.00
4,200.00	0.00	0.00	4,183.24	-143.52	167.52	-138.06	0.00	0.00	0.00
4,300.00	0.00	0.00	4,283.24	-143.52	167.52	-138.06	0.00	0.00	0.00
4,400.00	0.00	0.00	4,383.24	-143.52	167.52	-138.06	0.00	0.00	0.00
4,442.76	0.00	0.00	4,426.00	-143.52	167.52	-138.06	0.00	0.00	0.00
Sussex									
4,500.00	0.00	0.00	4,483.24	-143.52	167.52	-138.06	0.00	0.00	0.00
4,600.00	0.00	0.00	4,583.24	-143.52	167.52	-138.06	0.00	0.00	0.00
4,700.00	0.00	0.00	4,683.24	-143.52	167.52	-138.06	0.00	0.00	0.00
4,800.00	0.00	0.00	4,783.24	-143.52	167.52	-138.06	0.00	0.00	0.00
4,900.00	0.00	0.00	4,883.24	-143.52	167.52	-138.06	0.00	0.00	0.00
5,000.00	0.00	0.00	4,983.24	-143.52	167.52	-138.06	0.00	0.00	0.00
5,100.00	0.00	0.00	5,083.24	-143.52	167.52	-138.06	0.00	0.00	0.00
5,200.00	0.00	0.00	5,183.24	-143.52	167.52	-138.06	0.00	0.00	0.00
5,300.00	0.00	0.00	5,283.24	-143.52	167.52	-138.06	0.00	0.00	0.00
5,400.00	0.00	0.00	5,383.24	-143.52	167.52	-138.06	0.00	0.00	0.00
5,500.00	0.00	0.00	5,483.24	-143.52	167.52	-138.06	0.00	0.00	0.00
5,600.00	0.00	0.00	5,583.24	-143.52	167.52	-138.06	0.00	0.00	0.00
5,700.00	0.00	0.00	5,683.24	-143.52	167.52	-138.06	0.00	0.00	0.00
5,800.00	0.00	0.00	5,783.24	-143.52	167.52	-138.06	0.00	0.00	0.00
5,900.00	0.00	0.00	5,883.24	-143.52	167.52	-138.06	0.00	0.00	0.00
6,000.00	0.00	0.00	5,983.24	-143.52	167.52	-138.06	0.00	0.00	0.00
6,100.00	0.00	0.00	6,083.24	-143.52	167.52	-138.06	0.00	0.00	0.00
6,200.00	0.00	0.00	6,183.24	-143.52	167.52	-138.06	0.00	0.00	0.00
6,300.00	0.00	0.00	6,283.24	-143.52	167.52	-138.06	0.00	0.00	0.00
6,400.00	0.00	0.00	6,383.24	-143.52	167.52	-138.06	0.00	0.00	0.00
6,500.00	0.00	0.00	6,483.24	-143.52	167.52	-138.06	0.00	0.00	0.00
6,600.00	0.00	0.00	6,583.24	-143.52	167.52	-138.06	0.00	0.00	0.00
6,700.00	0.00	0.00	6,683.24	-143.52	167.52	-138.06	0.00	0.00	0.00
6,800.00	0.00	0.00	6,783.24	-143.52	167.52	-138.06	0.00	0.00	0.00
6,815.80	0.00	0.00	6,799.04	-143.52	167.52	-138.06	0.00	0.00	0.00
Start Build 10.00									
6,900.00	8.42	0.00	6,882.94	-137.34	167.52	-131.89	10.00	10.00	0.00
7,000.00	18.42	0.00	6,980.09	-114.16	167.52	-108.72	10.00	10.00	0.00
7,025.40	20.96	0.00	7,004.00	-105.61	167.52	-100.17	10.00	10.00	0.00
Sharon Springs									
7,093.50	27.77	0.00	7,066.00	-77.53	167.52	-72.10	10.00	10.00	0.00
Niobrara A									
7,100.00	28.42	0.00	7,071.73	-74.47	167.52	-69.05	10.00	10.00	0.00
7,144.49	32.87	0.00	7,110.00	-51.79	167.52	-46.39	10.00	10.00	0.00
Niobrara B									
7,200.00	38.42	0.00	7,155.09	-19.46	167.52	-14.07	10.00	10.00	0.00
7,271.22	45.54	0.00	7,208.00	28.15	167.52	33.52	10.00	10.00	0.00
Niobrara C									
7,300.00	48.42	0.00	7,227.63	49.19	167.52	54.54	10.00	10.00	0.00
7,400.00	58.42	0.00	7,287.15	129.39	167.52	134.70	10.00	10.00	0.00
7,500.00	68.42	0.00	7,331.84	218.70	167.52	223.97	10.00	10.00	0.00
7,549.38	73.36	0.00	7,348.00	265.35	167.52	270.60	10.00	10.00	0.00
Fort Hays									
7,600.00	78.42	0.00	7,360.34	314.43	167.52	319.65	10.00	10.00	0.00
7,700.00	88.42	0.00	7,371.78	413.64	167.52	418.81	10.00	10.00	0.00
7,714.36	89.86	0.00	7,372.00	428.00	167.52	433.16	10.00	10.00	0.00

Database:	Denver Sales Office	Local Co-ordinate Reference:	Well MORNING FRESH 29C-15HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4884 & KB 17 @ 4901.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4884 & KB 17 @ 4901.00ft (ASSUMED)
Site:	MORNING FRESH 3W-22HZ PAD	North Reference:	True
Well:	MORNING FRESH 29C-15HZ	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)
Start 4783.12 hold at 7714.36 MD - 7" (1 FSL 2000 FWL)									
7,715.50	89.86	0.00	7,372.00	429.14	167.52	434.30	0.02	0.02	0.00
Codell									
7,800.00	89.86	0.00	7,372.21	513.64	167.52	518.76	0.00	0.00	0.00
7,900.00	89.86	0.00	7,372.46	613.64	167.52	618.70	0.00	0.00	0.00
8,000.00	89.86	0.00	7,372.71	713.64	167.52	718.65	0.00	0.00	0.00
8,100.00	89.86	0.00	7,372.97	813.64	167.52	818.60	0.00	0.00	0.00
8,200.00	89.86	0.00	7,373.22	913.64	167.52	918.55	0.00	0.00	0.00
8,300.00	89.86	0.00	7,373.47	1,013.64	167.52	1,018.50	0.00	0.00	0.00
8,400.00	89.86	0.00	7,373.72	1,113.64	167.52	1,118.44	0.00	0.00	0.00
8,500.00	89.86	0.00	7,373.97	1,213.64	167.52	1,218.39	0.00	0.00	0.00
8,600.00	89.86	0.00	7,374.22	1,313.64	167.52	1,318.34	0.00	0.00	0.00
8,700.00	89.86	0.00	7,374.47	1,413.64	167.52	1,418.29	0.00	0.00	0.00
8,800.00	89.86	0.00	7,374.72	1,513.64	167.52	1,518.24	0.00	0.00	0.00
8,900.00	89.86	0.00	7,374.97	1,613.64	167.52	1,618.18	0.00	0.00	0.00
9,000.00	89.86	0.00	7,375.22	1,713.63	167.52	1,718.13	0.00	0.00	0.00
9,100.00	89.86	0.00	7,375.47	1,813.63	167.52	1,818.08	0.00	0.00	0.00
9,200.00	89.86	0.00	7,375.73	1,913.63	167.52	1,918.03	0.00	0.00	0.00
9,300.00	89.86	0.00	7,375.98	2,013.63	167.52	2,017.98	0.00	0.00	0.00
9,400.00	89.86	0.00	7,376.23	2,113.63	167.52	2,117.92	0.00	0.00	0.00
9,500.00	89.86	0.00	7,376.48	2,213.63	167.52	2,217.87	0.00	0.00	0.00
9,600.00	89.86	0.00	7,376.73	2,313.63	167.52	2,317.82	0.00	0.00	0.00
9,700.00	89.86	0.00	7,376.98	2,413.63	167.52	2,417.77	0.00	0.00	0.00
9,800.00	89.86	0.00	7,377.23	2,513.63	167.52	2,517.72	0.00	0.00	0.00
9,900.00	89.86	0.00	7,377.48	2,613.63	167.52	2,617.67	0.00	0.00	0.00
10,000.00	89.86	0.00	7,377.73	2,713.63	167.52	2,717.61	0.00	0.00	0.00
10,100.00	89.86	0.00	7,377.98	2,813.63	167.52	2,817.56	0.00	0.00	0.00
10,200.00	89.86	0.00	7,378.23	2,913.63	167.52	2,917.51	0.00	0.00	0.00
10,300.00	89.86	0.00	7,378.49	3,013.63	167.52	3,017.46	0.00	0.00	0.00
10,400.00	89.86	0.00	7,378.74	3,113.63	167.52	3,117.41	0.00	0.00	0.00
10,500.00	89.86	0.00	7,378.99	3,213.63	167.52	3,217.35	0.00	0.00	0.00
10,600.00	89.86	0.00	7,379.24	3,313.63	167.52	3,317.30	0.00	0.00	0.00
10,700.00	89.86	0.00	7,379.49	3,413.63	167.52	3,417.25	0.00	0.00	0.00
10,800.00	89.86	0.00	7,379.74	3,513.63	167.52	3,517.20	0.00	0.00	0.00
10,900.00	89.86	0.00	7,379.99	3,613.63	167.52	3,617.15	0.00	0.00	0.00
11,000.00	89.86	0.00	7,380.24	3,713.63	167.52	3,717.09	0.00	0.00	0.00
11,100.00	89.86	0.00	7,380.49	3,813.63	167.52	3,817.04	0.00	0.00	0.00
11,200.00	89.86	0.00	7,380.74	3,913.63	167.52	3,916.99	0.00	0.00	0.00
11,300.00	89.86	0.00	7,381.00	4,013.63	167.52	4,016.94	0.00	0.00	0.00
11,400.00	89.86	0.00	7,381.25	4,113.63	167.52	4,116.89	0.00	0.00	0.00
11,500.00	89.86	0.00	7,381.50	4,213.63	167.52	4,216.83	0.00	0.00	0.00
11,600.00	89.86	0.00	7,381.75	4,313.63	167.52	4,316.78	0.00	0.00	0.00
11,700.00	89.86	0.00	7,382.00	4,413.63	167.52	4,416.73	0.00	0.00	0.00
11,800.00	89.86	0.00	7,382.25	4,513.63	167.52	4,516.68	0.00	0.00	0.00
11,900.00	89.86	0.00	7,382.50	4,613.63	167.52	4,616.63	0.00	0.00	0.00
12,000.00	89.86	0.00	7,382.75	4,713.63	167.52	4,716.57	0.00	0.00	0.00
12,100.00	89.86	0.00	7,383.00	4,813.63	167.52	4,816.52	0.00	0.00	0.00
12,200.00	89.86	0.00	7,383.25	4,913.62	167.52	4,916.47	0.00	0.00	0.00
12,300.00	89.86	0.00	7,383.50	5,013.62	167.52	5,016.42	0.00	0.00	0.00
12,400.00	89.86	0.00	7,383.76	5,113.62	167.52	5,116.37	0.00	0.00	0.00
12,497.49	89.86	0.00	7,384.00	5,211.11	167.52	5,213.80	0.00	0.00	0.00
TD at 12497.49 - PBHL_MORNING FRESH 29C-15HZ (460 FNL 2000 FWL)									

Database:	Denver Sales Office	Local Co-ordinate Reference:	Well MORNING FRESH 29C-15HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4884 & KB 17 @ 4901.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4884 & KB 17 @ 4901.00ft (ASSUMED)
Site:	MORNING FRESH 3W-22HZ PAD	North Reference:	True
Well:	MORNING FRESH 29C-15HZ	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_MORNING FRES	0.00	0.00	7,384.00	5,211.11	167.52	1,327,832.26	3,204,992.31	40.2309680	-104.7657910
- plan hits target center									
- Point									

Casing Points					
Measured Depth	Vertical Depth	Name		Casing Diameter	Hole Diameter
(ft)	(ft)			(in)	(in)
800.00	800.00	9 5/8"		9.625	12.250
7,714.36	7,372.00	7" (1 FSL 2000 FWL)		7.000	7.500

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(ft)	(ft)			(°)	(°)	
750.00	750.00	Fox Hills Base				
3,949.76	3,933.00	Parkman				
4,442.76	4,426.00	Sussex				
7,025.40	7,004.00	Sharon Springs				
7,093.50	7,066.00	Niobrara A				
7,144.49	7,110.00	Niobrara B				
7,271.22	7,208.00	Niobrara C				
7,549.38	7,348.00	Fort Hays				
7,715.50	7,372.00	Codell				

Plan Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)	
1,050.00	1,050.00	0.00	0.00	Start Build 2.00
1,550.21	1,547.68	-28.34	33.08	Start 768.33 hold at 1550.21 MD
2,318.54	2,304.32	-115.18	134.44	Start Drop -2.00
2,818.76	2,802.00	-143.52	167.52	Start 3997.04 hold at 2818.76 MD
6,815.80	6,799.04	-143.52	167.52	Start Build 10.00
7,714.36	7,372.00	428.00	167.52	Start 4783.12 hold at 7714.36 MD
12,497.49	7,384.00	5,211.11	167.52	TD at 12497.49