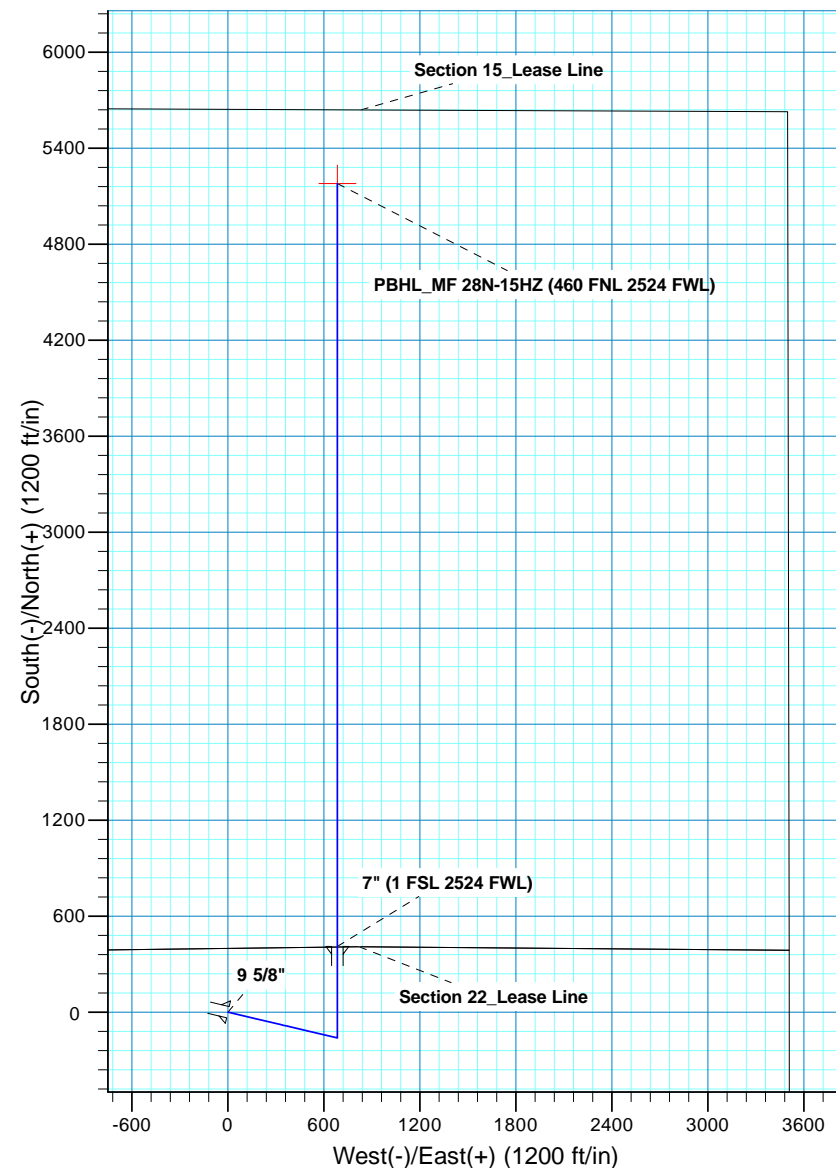
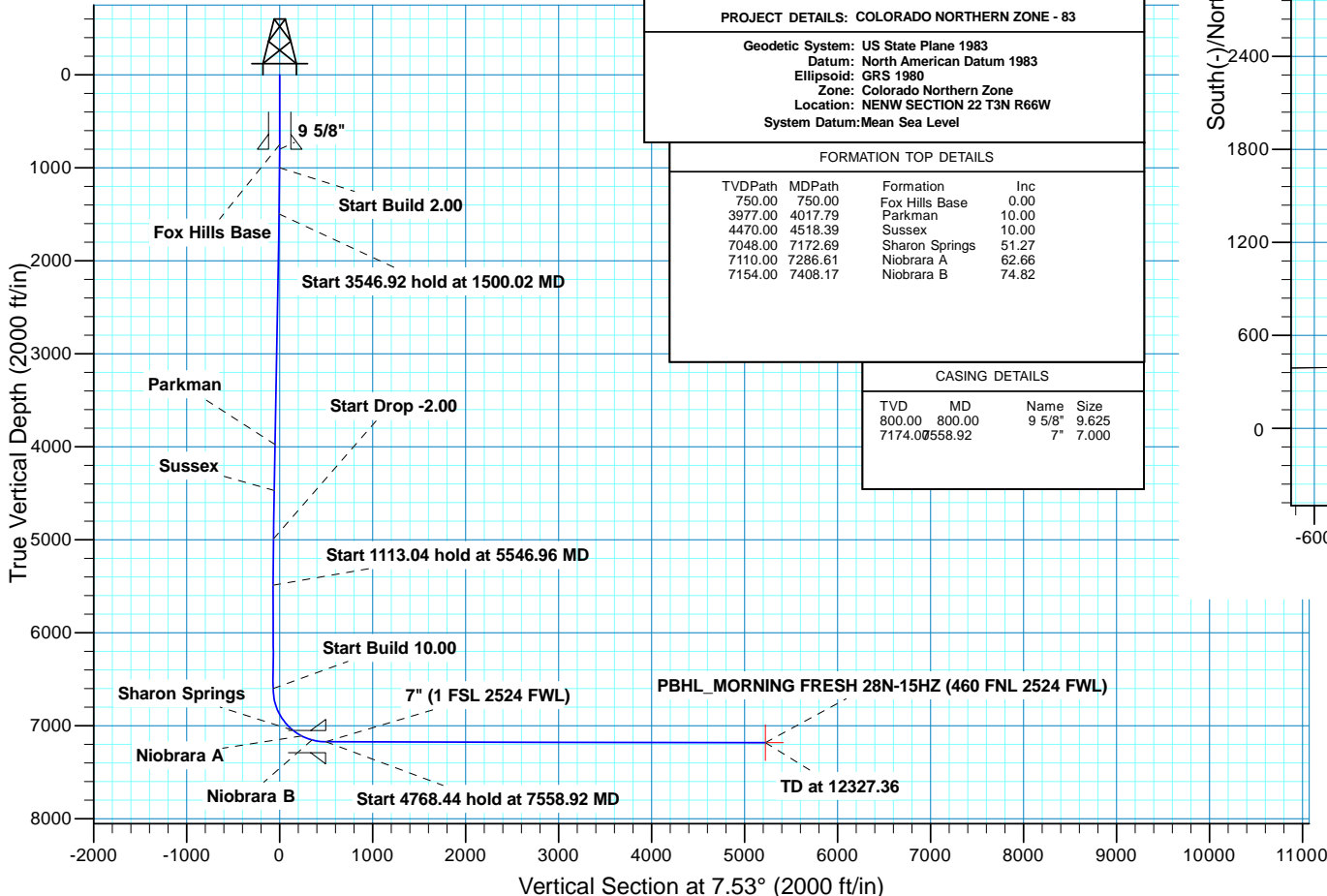


WELL DETAILS: MORNING FRESH 28N-15HZ										
GL 4884 & KB 17 @ 4901.00ft (ASSUMED)										
		+N/-S 0.00	+E/-W 0.00	Northing 1322649.16	Easting 3204874.92	Latitude 40.2167430	Longitude -104.7663650			
SECTION DETAILS										
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
1000.00	0.00	0.00	1000.00	0.00	0.00	0.00	0.00	0.00		Start Build 2.00
1500.02	10.00	103.23	1497.48	-9.96	42.37	2.00	103.23	-4.33		Start 3546.92 hold at 1500.02 MD
5046.94	10.00	103.23	4990.52	-150.92	641.96	0.00	0.00	-65.53		Start Drop -2.00
5546.96	0.00	0.00	5488.00	-160.88	684.33	2.00	180.00	-69.86		Start 1113.04 hold at 5546.96 MD
6660.00	0.00	0.00	6601.04	-160.88	684.33	0.00	0.00	-69.86		Start Build 10.00
7558.92	89.89	0.00	7174.00	411.00	684.33	10.00	0.00	497.09		Start 4768.44 hold at 7558.92 MD
12327.36	89.89	0.00	7183.00	5179.43	684.33	0.00	0.00	5224.44	PBHL_MORNING FRESH 28N-15HZ	
DESIGN TARGET DETAILS										
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape		
PBHL	7183.00	5179.43	684.33	1327834.06	3205516.38	40.2309610	-104.7639140	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
3977.00	4017.79	Parkman	10.00
4470.00	4518.39	Sussex	10.00
7048.00	7172.69	Sharon Springs	51.27
7110.00	7286.61	Niobrara A	62.66
7154.00	7408.17	Niobrara B	74.82
CASING DETAILS			
TVD	MD	Name	Size
800.00	800.00	9 5/8"	9.625
7174.00	558.92	7"	7.000





Scientific Drilling

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

MORNING FRESH 3W-22HZ PAD

MORNING FRESH 28N-15HZ

OH

Plan: PLAN #1 PRELIMINARY

Standard Planning Report

08 October, 2013

Database:	Denver Sales Office	Local Co-ordinate Reference:	Well MORNING FRESH 28N-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 28N-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 28N-15HZ			
Well Position	+N/-S	57.91 ft	Northing:	1,322,649.16 usft
	+E/-W	14.24 ft	Easting:	3,204,874.93 usft
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	7.53

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	
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,500.02	10.00	103.23	1,497.48	-9.96	42.37	2.00	2.00	0.00	103.23	
5,046.94	10.00	103.23	4,990.52	-150.92	641.96	0.00	0.00	0.00	0.00	
5,546.96	0.00	0.00	5,488.00	-160.88	684.33	2.00	-2.00	0.00	180.00	
6,660.00	0.00	0.00	6,601.04	-160.88	684.33	0.00	0.00	0.00	0.00	
7,558.92	89.89	0.00	7,174.00	411.00	684.33	10.00	10.00	0.00	0.00	
12,327.36	89.89	0.00	7,183.00	5,179.43	684.33	0.00	0.00	0.00	0.00	PBHL_MORNING FR

Database:	Denver Sales Office	Local Co-ordinate Reference:	Well MORNING FRESH 28N-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 28N-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
Start Build 2.00									
1,100.00	2.00	103.23	1,099.98	-0.40	1.70	-0.17	2.00	2.00	0.00
1,200.00	4.00	103.23	1,199.84	-1.60	6.79	-0.69	2.00	2.00	0.00
1,300.00	6.00	103.23	1,299.45	-3.59	15.28	-1.56	2.00	2.00	0.00
1,400.00	8.00	103.23	1,398.70	-6.38	27.14	-2.77	2.00	2.00	0.00
1,500.00	10.00	103.23	1,497.47	-9.96	42.37	-4.32	2.00	2.00	0.00
1,500.02	10.00	103.23	1,497.48	-9.96	42.37	-4.33	2.00	2.00	0.00
Start 3546.92 hold at 1500.02 MD									
1,600.00	10.00	103.23	1,595.95	-13.93	59.27	-6.05	0.00	0.00	0.00
1,700.00	10.00	103.23	1,694.43	-17.91	76.18	-7.78	0.00	0.00	0.00
1,800.00	10.00	103.23	1,792.91	-21.88	93.08	-9.50	0.00	0.00	0.00
1,900.00	10.00	103.23	1,891.39	-25.86	109.99	-11.23	0.00	0.00	0.00
2,000.00	10.00	103.23	1,989.87	-29.83	126.89	-12.95	0.00	0.00	0.00
2,100.00	10.00	103.23	2,088.35	-33.80	143.79	-14.68	0.00	0.00	0.00
2,200.00	10.00	103.23	2,186.83	-37.78	160.70	-16.40	0.00	0.00	0.00
2,300.00	10.00	103.23	2,285.31	-41.75	177.60	-18.13	0.00	0.00	0.00
2,400.00	10.00	103.23	2,383.79	-45.73	194.51	-19.86	0.00	0.00	0.00
2,500.00	10.00	103.23	2,482.27	-49.70	211.41	-21.58	0.00	0.00	0.00
2,600.00	10.00	103.23	2,580.75	-53.68	228.32	-23.31	0.00	0.00	0.00
2,700.00	10.00	103.23	2,679.23	-57.65	245.22	-25.03	0.00	0.00	0.00
2,800.00	10.00	103.23	2,777.71	-61.62	262.13	-26.76	0.00	0.00	0.00
2,900.00	10.00	103.23	2,876.19	-65.60	279.03	-28.48	0.00	0.00	0.00
3,000.00	10.00	103.23	2,974.68	-69.57	295.94	-30.21	0.00	0.00	0.00
3,100.00	10.00	103.23	3,073.16	-73.55	312.84	-31.93	0.00	0.00	0.00
3,200.00	10.00	103.23	3,171.64	-77.52	329.74	-33.66	0.00	0.00	0.00
3,300.00	10.00	103.23	3,270.12	-81.49	346.65	-35.39	0.00	0.00	0.00
3,400.00	10.00	103.23	3,368.60	-85.47	363.55	-37.11	0.00	0.00	0.00
3,500.00	10.00	103.23	3,467.08	-89.44	380.46	-38.84	0.00	0.00	0.00
3,600.00	10.00	103.23	3,565.56	-93.42	397.36	-40.56	0.00	0.00	0.00
3,700.00	10.00	103.23	3,664.04	-97.39	414.27	-42.29	0.00	0.00	0.00
3,800.00	10.00	103.23	3,762.52	-101.36	431.17	-44.01	0.00	0.00	0.00
3,900.00	10.00	103.23	3,861.00	-105.34	448.08	-45.74	0.00	0.00	0.00
4,000.00	10.00	103.23	3,959.48	-109.31	464.98	-47.46	0.00	0.00	0.00
4,017.79	10.00	103.23	3,977.00	-110.02	467.99	-47.77	0.00	0.00	0.00
Parkman									
4,100.00	10.00	103.23	4,057.96	-113.29	481.89	-49.19	0.00	0.00	0.00
4,200.00	10.00	103.23	4,156.44	-117.26	498.79	-50.92	0.00	0.00	0.00
4,300.00	10.00	103.23	4,254.92	-121.23	515.69	-52.64	0.00	0.00	0.00
4,400.00	10.00	103.23	4,353.40	-125.21	532.60	-54.37	0.00	0.00	0.00
4,500.00	10.00	103.23	4,451.89	-129.18	549.50	-56.09	0.00	0.00	0.00

Database:	Denver Sales Office	Local Co-ordinate Reference:	Well MORNING FRESH 28N-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 28N-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)
4,518.39	10.00	103.23	4,470.00	-129.91	552.61	-56.41	0.00	0.00	0.00
Sussex									
4,600.00	10.00	103.23	4,550.37	-133.16	566.41	-57.82	0.00	0.00	0.00
4,700.00	10.00	103.23	4,648.85	-137.13	583.31	-59.54	0.00	0.00	0.00
4,800.00	10.00	103.23	4,747.33	-141.11	600.22	-61.27	0.00	0.00	0.00
4,900.00	10.00	103.23	4,845.81	-145.08	617.12	-62.99	0.00	0.00	0.00
5,000.00	10.00	103.23	4,944.29	-149.05	634.03	-64.72	0.00	0.00	0.00
5,046.94	10.00	103.23	4,990.52	-150.92	641.96	-65.53	0.00	0.00	0.00
Start Drop -2.00									
5,100.00	8.94	103.23	5,042.85	-152.92	650.46	-66.40	2.00	-2.00	0.00
5,200.00	6.94	103.23	5,141.89	-156.08	663.90	-67.77	2.00	-2.00	0.00
5,300.00	4.94	103.23	5,241.35	-158.45	673.98	-68.80	2.00	-2.00	0.00
5,400.00	2.94	103.23	5,341.11	-160.02	680.66	-69.48	2.00	-2.00	0.00
5,500.00	0.94	103.23	5,441.04	-160.79	683.96	-69.82	2.00	-2.00	0.00
5,546.96	0.00	0.00	5,488.00	-160.88	684.33	-69.86	2.00	-2.00	0.00
Start 1113.04 hold at 5546.96 MD									
5,600.00	0.00	0.00	5,541.04	-160.88	684.33	-69.86	0.00	0.00	0.00
5,700.00	0.00	0.00	5,641.04	-160.88	684.33	-69.86	0.00	0.00	0.00
5,800.00	0.00	0.00	5,741.04	-160.88	684.33	-69.86	0.00	0.00	0.00
5,900.00	0.00	0.00	5,841.04	-160.88	684.33	-69.86	0.00	0.00	0.00
6,000.00	0.00	0.00	5,941.04	-160.88	684.33	-69.86	0.00	0.00	0.00
6,100.00	0.00	0.00	6,041.04	-160.88	684.33	-69.86	0.00	0.00	0.00
6,200.00	0.00	0.00	6,141.04	-160.88	684.33	-69.86	0.00	0.00	0.00
6,300.00	0.00	0.00	6,241.04	-160.88	684.33	-69.86	0.00	0.00	0.00
6,400.00	0.00	0.00	6,341.04	-160.88	684.33	-69.86	0.00	0.00	0.00
6,500.00	0.00	0.00	6,441.04	-160.88	684.33	-69.86	0.00	0.00	0.00
6,600.00	0.00	0.00	6,541.04	-160.88	684.33	-69.86	0.00	0.00	0.00
6,660.00	0.00	0.00	6,601.04	-160.88	684.33	-69.86	0.00	0.00	0.00
Start Build 10.00									
6,700.00	4.00	0.00	6,641.01	-159.48	684.33	-68.47	10.00	10.00	0.00
6,800.00	14.00	0.00	6,739.65	-143.86	684.33	-52.98	10.00	10.00	0.00
6,900.00	24.00	0.00	6,834.08	-111.34	684.33	-20.75	10.00	10.00	0.00
7,000.00	34.00	0.00	6,921.43	-62.93	684.33	27.26	10.00	10.00	0.00
7,100.00	44.00	0.00	6,999.05	-0.07	684.33	89.57	10.00	10.00	0.00
7,172.69	51.27	0.00	7,048.00	53.60	684.33	142.77	10.00	10.00	0.00
Sharon Springs									
7,200.00	54.00	0.00	7,064.57	75.30	684.33	164.29	10.00	10.00	0.00
7,286.61	62.66	0.00	7,110.00	148.94	684.33	237.30	10.00	10.00	0.00
Niobrara A									
7,300.00	64.00	0.00	7,116.01	160.91	684.33	249.16	10.00	10.00	0.00
7,400.00	74.00	0.00	7,151.80	254.15	684.33	341.60	10.00	10.00	0.00
7,408.17	74.82	0.00	7,154.00	262.02	684.33	349.40	10.00	10.00	0.00
Niobrara B									
7,500.00	84.00	0.00	7,170.86	352.19	684.33	438.79	10.00	10.00	0.00
7,558.92	89.89	0.00	7,174.00	411.00	684.33	497.10	10.00	10.00	0.00
Start 4768.44 hold at 7558.92 MD - 7" (1 FSL 2524 FWL)									
7,600.00	89.89	0.00	7,174.08	452.08	684.33	537.82	0.00	0.00	0.00
7,700.00	89.89	0.00	7,174.26	552.08	684.33	636.96	0.00	0.00	0.00
7,800.00	89.89	0.00	7,174.45	652.08	684.33	736.10	0.00	0.00	0.00
7,900.00	89.89	0.00	7,174.64	752.08	684.33	835.24	0.00	0.00	0.00
8,000.00	89.89	0.00	7,174.83	852.08	684.33	934.37	0.00	0.00	0.00
8,100.00	89.89	0.00	7,175.02	952.08	684.33	1,033.51	0.00	0.00	0.00
8,200.00	89.89	0.00	7,175.21	1,052.08	684.33	1,132.65	0.00	0.00	0.00

Database:	Denver Sales Office	Local Co-ordinate Reference:	Well MORNING FRESH 28N-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 28N-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)
8,300.00	89.89	0.00	7,175.40	1,152.08	684.33	1,231.79	0.00	0.00	0.00
8,400.00	89.89	0.00	7,175.59	1,252.08	684.33	1,330.93	0.00	0.00	0.00
8,500.00	89.89	0.00	7,175.77	1,352.08	684.33	1,430.07	0.00	0.00	0.00
8,600.00	89.89	0.00	7,175.96	1,452.08	684.33	1,529.20	0.00	0.00	0.00
8,700.00	89.89	0.00	7,176.15	1,552.08	684.33	1,628.34	0.00	0.00	0.00
8,800.00	89.89	0.00	7,176.34	1,652.08	684.33	1,727.48	0.00	0.00	0.00
8,900.00	89.89	0.00	7,176.53	1,752.08	684.33	1,826.62	0.00	0.00	0.00
9,000.00	89.89	0.00	7,176.72	1,852.08	684.33	1,925.76	0.00	0.00	0.00
9,100.00	89.89	0.00	7,176.91	1,952.08	684.33	2,024.89	0.00	0.00	0.00
9,200.00	89.89	0.00	7,177.10	2,052.08	684.33	2,124.03	0.00	0.00	0.00
9,300.00	89.89	0.00	7,177.28	2,152.07	684.33	2,223.17	0.00	0.00	0.00
9,400.00	89.89	0.00	7,177.47	2,252.07	684.33	2,322.31	0.00	0.00	0.00
9,500.00	89.89	0.00	7,177.66	2,352.07	684.33	2,421.45	0.00	0.00	0.00
9,600.00	89.89	0.00	7,177.85	2,452.07	684.33	2,520.59	0.00	0.00	0.00
9,700.00	89.89	0.00	7,178.04	2,552.07	684.33	2,619.72	0.00	0.00	0.00
9,800.00	89.89	0.00	7,178.23	2,652.07	684.33	2,718.86	0.00	0.00	0.00
9,900.00	89.89	0.00	7,178.42	2,752.07	684.33	2,818.00	0.00	0.00	0.00
10,000.00	89.89	0.00	7,178.61	2,852.07	684.33	2,917.14	0.00	0.00	0.00
10,100.00	89.89	0.00	7,178.80	2,952.07	684.33	3,016.28	0.00	0.00	0.00
10,200.00	89.89	0.00	7,178.98	3,052.07	684.33	3,115.42	0.00	0.00	0.00
10,300.00	89.89	0.00	7,179.17	3,152.07	684.33	3,214.55	0.00	0.00	0.00
10,400.00	89.89	0.00	7,179.36	3,252.07	684.33	3,313.69	0.00	0.00	0.00
10,500.00	89.89	0.00	7,179.55	3,352.07	684.33	3,412.83	0.00	0.00	0.00
10,600.00	89.89	0.00	7,179.74	3,452.07	684.33	3,511.97	0.00	0.00	0.00
10,700.00	89.89	0.00	7,179.93	3,552.07	684.33	3,611.11	0.00	0.00	0.00
10,800.00	89.89	0.00	7,180.12	3,652.07	684.33	3,710.24	0.00	0.00	0.00
10,900.00	89.89	0.00	7,180.31	3,752.07	684.33	3,809.38	0.00	0.00	0.00
11,000.00	89.89	0.00	7,180.49	3,852.07	684.33	3,908.52	0.00	0.00	0.00
11,100.00	89.89	0.00	7,180.68	3,952.07	684.33	4,007.66	0.00	0.00	0.00
11,200.00	89.89	0.00	7,180.87	4,052.07	684.33	4,106.80	0.00	0.00	0.00
11,300.00	89.89	0.00	7,181.06	4,152.07	684.33	4,205.94	0.00	0.00	0.00
11,400.00	89.89	0.00	7,181.25	4,252.07	684.33	4,305.07	0.00	0.00	0.00
11,500.00	89.89	0.00	7,181.44	4,352.07	684.33	4,404.21	0.00	0.00	0.00
11,600.00	89.89	0.00	7,181.63	4,452.07	684.33	4,503.35	0.00	0.00	0.00
11,700.00	89.89	0.00	7,181.82	4,552.07	684.33	4,602.49	0.00	0.00	0.00
11,800.00	89.89	0.00	7,182.00	4,652.07	684.33	4,701.63	0.00	0.00	0.00
11,900.00	89.89	0.00	7,182.19	4,752.07	684.33	4,800.77	0.00	0.00	0.00
12,000.00	89.89	0.00	7,182.38	4,852.07	684.33	4,899.90	0.00	0.00	0.00
12,100.00	89.89	0.00	7,182.57	4,952.07	684.33	4,999.04	0.00	0.00	0.00
12,200.00	89.89	0.00	7,182.76	5,052.07	684.33	5,098.18	0.00	0.00	0.00
12,300.00	89.89	0.00	7,182.95	5,152.07	684.33	5,197.32	0.00	0.00	0.00
12,327.36	89.89	0.00	7,183.00	5,179.43	684.33	5,224.44	0.00	0.00	0.00
TD at 12327.36 - PBHL_MORNING FRESH 28N-15HZ (460 FNL 2524 FWL)									

Database:	Denver Sales Office	Local Co-ordinate Reference:	Well MORNING FRESH 28N-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 28N-15HZ	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
- hit/miss target									
- Shape									
PBHL_MORNING FRES	0.00	0.00	7,183.00	5,179.43	684.33	1,327,834.06	3,205,516.38	40.2309610	-104.7639140
- plan hits target center									
- Point									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
800.00	800.00	9 5/8"	9.625	12.250	
7,558.92	7,174.00	7" (1 FSL 2524 FWL)	7.000	7.500	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
750.00	750.00	Fox Hills Base				
4,017.79	3,977.00	Parkman				
4,518.39	4,470.00	Sussex				
7,172.69	7,048.00	Sharon Springs				
7,286.61	7,110.00	Niobrara A				
7,408.17	7,154.00	Niobrara B				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
1,000.00	1,000.00	0.00	0.00	Start Build 2.00	
1,500.02	1,497.48	-9.96	42.37	Start 3546.92 hold at 1500.02 MD	
5,046.94	4,990.52	-150.92	641.96	Start Drop -2.00	
5,546.96	5,488.00	-160.88	684.33	Start 1113.04 hold at 5546.96 MD	
6,660.00	6,601.04	-160.88	684.33	Start Build 10.00	
7,558.92	7,174.00	411.00	684.33	Start 4768.44 hold at 7558.92 MD	
12,327.36	7,183.00	5,179.43	684.33	TD at 12327.36	