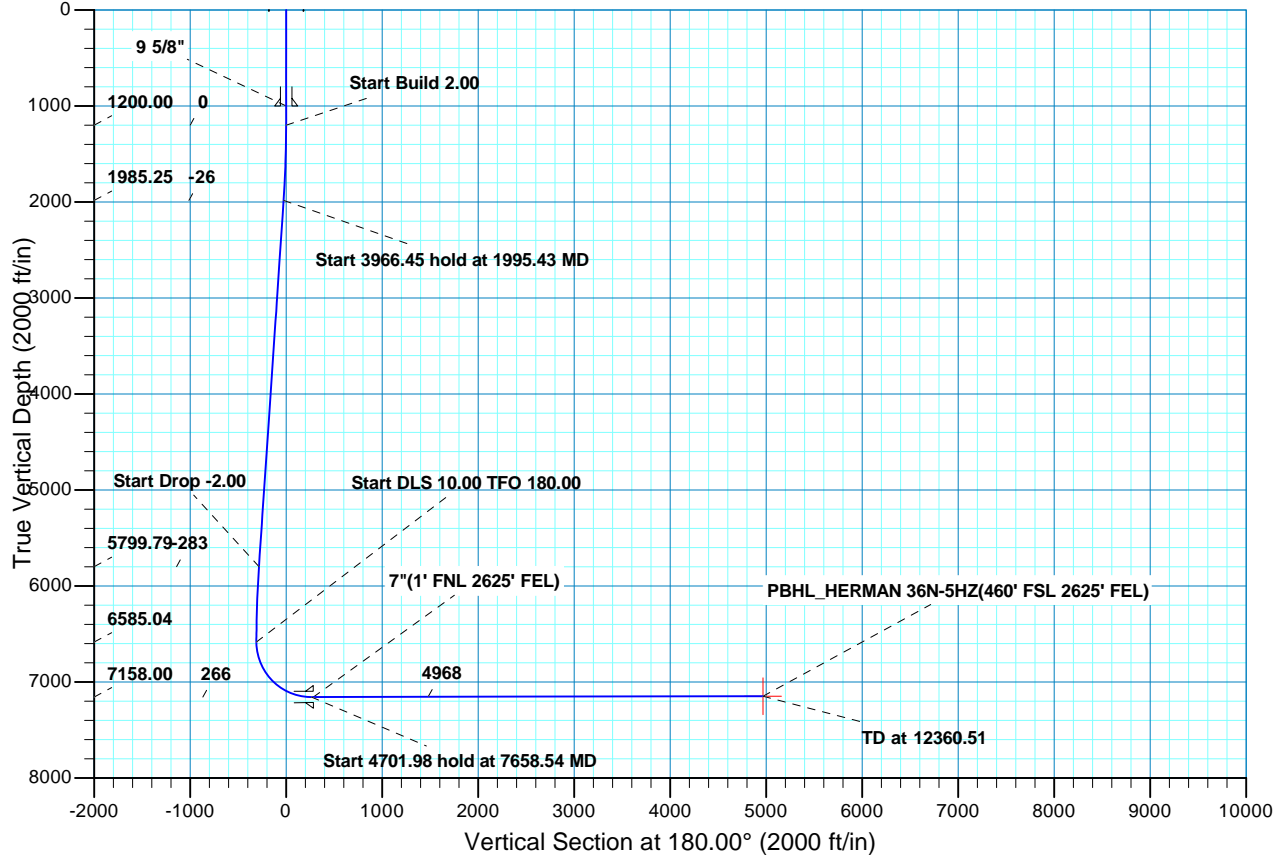
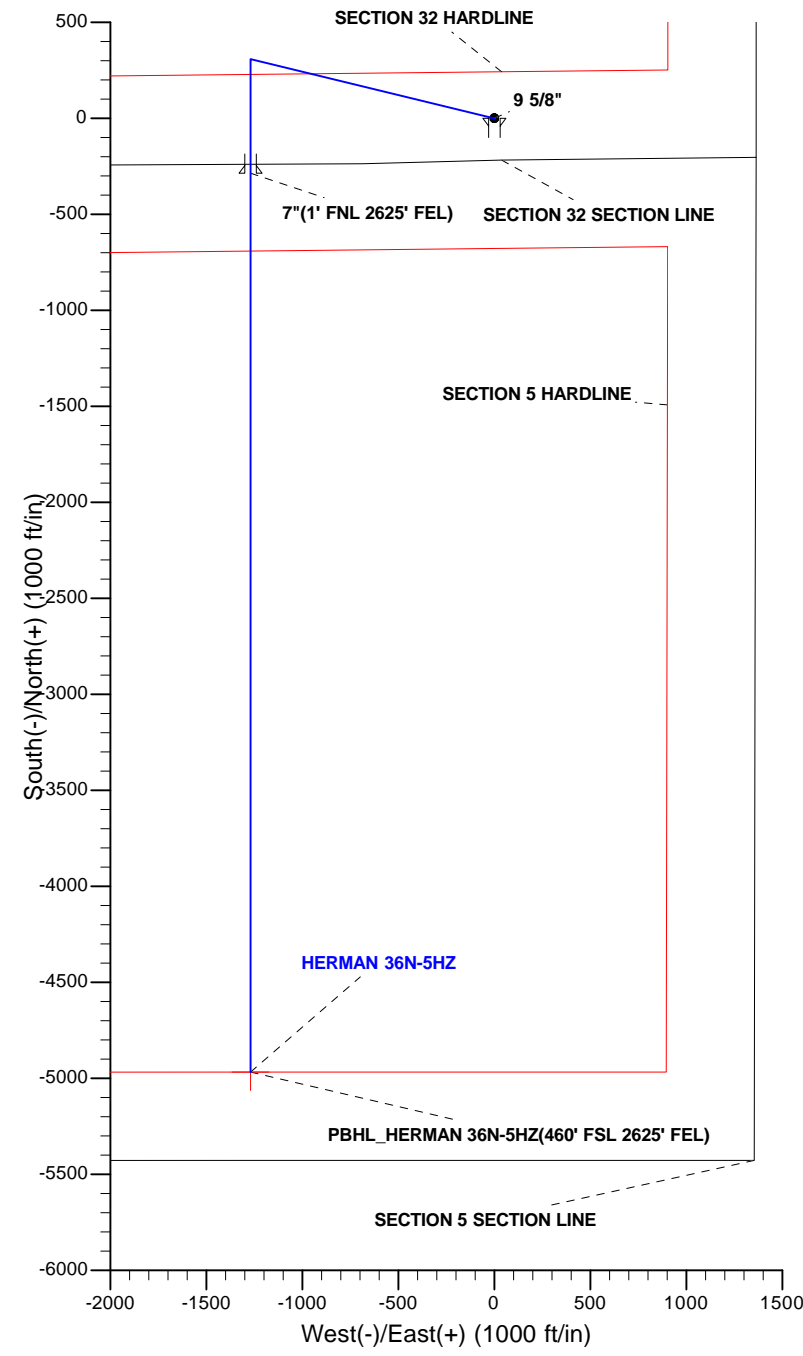


WELL DETAILS: HERMAN 36N-5HZ										
GL 4871' & KB 17' @ 4888.00ft (ASSUMED)										
	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude				
	0.00	0.00	1307281.91	3196577.63	40.1747440	-104.7965120				
SECTION DETAILS										
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1200.00	0.00	0.00	1200.00	0.00	0.00	0.00	0.00	0.00	0.00	
1995.43	15.91	283.65	1985.25	25.90	-106.62	2.00	283.65	-25.90		
5961.89	15.91	283.65	5799.79	282.56	-1163.11	0.00	0.00	-282.56		
6757.32	0.00	0.00	6585.04	308.46	-1269.73	2.00	180.00	-308.46		
7658.54	90.12	180.00	7158.00	-265.72	-1269.73	10.00	180.00	265.72		
12360.51	90.12	180.00	7148.00	-4967.68	-1269.73	0.00	0.00	4967.68	PBHL_HERMAN 36N-5HZ(460' FSL 2625' FEL)	
FORMATION TOP DETAILS					CASING DETAILS					
TVDPath	MDPath	Formation	Inc	TVD	MD	Name	Size			
706.00	706.00	Fox Hills	0.00	1000.00	1000.00	9 5/8"	9.625			
4024.00	4115.37	Parkman	15.91	7157.95	7678.09	7"	7.000			
4413.00	4519.87	Sussex	15.91							
7025.00	7258.95	Sharon Springs	50.16							
7103.00	7404.22	Niobrara A	64.69							
7126.00	7464.93	Niobrara B	70.76							





Scientific Drilling

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

HERMAN 37N-5HZ PAD

HERMAN 36N-5HZ

OH

Plan: PLAN #1 PRELIMINARY

Standard Planning Report

15 April, 2013

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well HERMAN 36N-5HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4871' & KB 17' @ 4888.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4871' & KB 17' @ 4888.00ft (ASSUMED)
Site:	HERMAN 37N-5HZ PAD	North Reference:	True
Well:	HERMAN 36N-5HZ	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	HERMAN 37N-5HZ PAD, SECTION 32 T3N R66W				
Site Position:	Northing:	1,307,281.91 usft	Latitude:	40.1747440	
From:	Lat/Long	Easting:	3,196,577.63 usft	Longitude:	-104.7965120
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.45 °

Well	HERMAN 36N-5HZ, 218 FSL 1364 FEL					
Well Position	+N/-S	0.00 ft	Northing:	1,307,281.91 usft	Latitude:	40.1747440
	+E/-W	0.00 ft	Easting:	3,196,577.63 usft	Longitude:	-104.7965120
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,871.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2012	2013/04/15	8.67	66.77	52,720

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 (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	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	
1,995.43	15.91	283.65	1,985.25	25.90	-106.62	2.00	2.00	0.00	283.65	
5,961.89	15.91	283.65	5,799.79	282.56	-1,163.11	0.00	0.00	0.00	0.00	
6,757.32	0.00	0.00	6,585.04	308.46	-1,269.73	2.00	-2.00	0.00	180.00	
7,658.54	90.12	180.00	7,158.00	-265.72	-1,269.73	10.00	10.00	19.97	180.00	
12,360.51	90.12	180.00	7,148.00	-4,967.68	-1,269.73	0.00	0.00	0.00	0.00	PBHL_HERMAN 36N

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well HERMAN 36N-5HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4871' & KB 17' @ 4888.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4871' & KB 17' @ 4888.00ft (ASSUMED)
Site:	HERMAN 37N-5HZ PAD	North Reference:	True
Well:	HERMAN 36N-5HZ	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 (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
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
706.00	0.00	0.00	706.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fox Hills										
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
9 5/8"										
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
Start Build 2.00										
1,300.00	2.00	283.65	1,299.98	0.41	-1.70	-0.41	2.00	2.00	0.00	0.00
1,400.00	4.00	283.65	1,399.84	1.65	-6.78	-1.65	2.00	2.00	0.00	0.00
1,500.00	6.00	283.65	1,499.45	3.70	-15.25	-3.70	2.00	2.00	0.00	0.00
1,600.00	8.00	283.65	1,598.70	6.58	-27.09	-6.58	2.00	2.00	0.00	0.00
1,700.00	10.00	283.65	1,697.47	10.27	-42.29	-10.27	2.00	2.00	0.00	0.00
1,800.00	12.00	283.65	1,795.62	14.78	-60.83	-14.78	2.00	2.00	0.00	0.00
1,900.00	14.00	283.65	1,893.06	20.09	-82.69	-20.09	2.00	2.00	0.00	0.00
1,995.43	15.91	283.65	1,985.25	25.90	-106.62	-25.90	2.00	2.00	0.00	0.00
Start 3966.45 hold at 1995.43 MD										
2,000.00	15.91	283.65	1,989.64	26.20	-107.84	-26.20	0.00	0.00	0.00	0.00
2,100.00	15.91	283.65	2,085.81	32.67	-134.47	-32.67	0.00	0.00	0.00	0.00
2,200.00	15.91	283.65	2,181.98	39.14	-161.11	-39.14	0.00	0.00	0.00	0.00
2,300.00	15.91	283.65	2,278.15	45.61	-187.74	-45.61	0.00	0.00	0.00	0.00
2,400.00	15.91	283.65	2,374.32	52.08	-214.38	-52.08	0.00	0.00	0.00	0.00
2,500.00	15.91	283.65	2,470.49	58.55	-241.02	-58.55	0.00	0.00	0.00	0.00
2,600.00	15.91	283.65	2,566.66	65.02	-267.65	-65.02	0.00	0.00	0.00	0.00
2,700.00	15.91	283.65	2,662.83	71.49	-294.29	-71.49	0.00	0.00	0.00	0.00
2,800.00	15.91	283.65	2,759.00	77.96	-320.92	-77.96	0.00	0.00	0.00	0.00
2,900.00	15.91	283.65	2,855.17	84.43	-347.56	-84.43	0.00	0.00	0.00	0.00
3,000.00	15.91	283.65	2,951.34	90.90	-374.19	-90.90	0.00	0.00	0.00	0.00
3,100.00	15.91	283.65	3,047.51	97.37	-400.83	-97.37	0.00	0.00	0.00	0.00
3,200.00	15.91	283.65	3,143.68	103.85	-427.47	-103.85	0.00	0.00	0.00	0.00
3,300.00	15.91	283.65	3,239.85	110.32	-454.10	-110.32	0.00	0.00	0.00	0.00
3,400.00	15.91	283.65	3,336.02	116.79	-480.74	-116.79	0.00	0.00	0.00	0.00
3,500.00	15.91	283.65	3,432.19	123.26	-507.37	-123.26	0.00	0.00	0.00	0.00
3,600.00	15.91	283.65	3,528.36	129.73	-534.01	-129.73	0.00	0.00	0.00	0.00
3,700.00	15.91	283.65	3,624.53	136.20	-560.64	-136.20	0.00	0.00	0.00	0.00
3,800.00	15.91	283.65	3,720.70	142.67	-587.28	-142.67	0.00	0.00	0.00	0.00
3,900.00	15.91	283.65	3,816.87	149.14	-613.92	-149.14	0.00	0.00	0.00	0.00
4,000.00	15.91	283.65	3,913.04	155.61	-640.55	-155.61	0.00	0.00	0.00	0.00
4,100.00	15.91	283.65	4,009.21	162.08	-667.19	-162.08	0.00	0.00	0.00	0.00
4,115.38	15.91	283.65	4,024.00	163.08	-671.28	-163.08	0.00	0.00	0.00	0.00
Parkman										
4,200.00	15.91	283.65	4,105.38	168.55	-693.82	-168.55	0.00	0.00	0.00	0.00
4,300.00	15.91	283.65	4,201.55	175.02	-720.46	-175.02	0.00	0.00	0.00	0.00
4,400.00	15.91	283.65	4,297.72	181.49	-747.09	-181.49	0.00	0.00	0.00	0.00
4,500.00	15.91	283.65	4,393.89	187.96	-773.73	-187.96	0.00	0.00	0.00	0.00

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well HERMAN 36N-5HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4871' & KB 17' @ 4888.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4871' & KB 17' @ 4888.00ft (ASSUMED)
Site:	HERMAN 37N-5HZ PAD	North Reference:	True
Well:	HERMAN 36N-5HZ	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 (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
4,519.87	15.91	283.65	4,413.00	189.25	-779.02	-189.25	0.00	0.00	0.00	
Sussex										
4,600.00	15.91	283.65	4,490.06	194.44	-800.37	-194.44	0.00	0.00	0.00	
4,700.00	15.91	283.65	4,586.23	200.91	-827.00	-200.91	0.00	0.00	0.00	
4,800.00	15.91	283.65	4,682.40	207.38	-853.64	-207.38	0.00	0.00	0.00	
4,900.00	15.91	283.65	4,778.57	213.85	-880.27	-213.85	0.00	0.00	0.00	
5,000.00	15.91	283.65	4,874.74	220.32	-906.91	-220.32	0.00	0.00	0.00	
5,100.00	15.91	283.65	4,970.91	226.79	-933.54	-226.79	0.00	0.00	0.00	
5,200.00	15.91	283.65	5,067.08	233.26	-960.18	-233.26	0.00	0.00	0.00	
5,300.00	15.91	283.65	5,163.25	239.73	-986.82	-239.73	0.00	0.00	0.00	
5,400.00	15.91	283.65	5,259.42	246.20	-1,013.45	-246.20	0.00	0.00	0.00	
5,500.00	15.91	283.65	5,355.59	252.67	-1,040.09	-252.67	0.00	0.00	0.00	
5,600.00	15.91	283.65	5,451.76	259.14	-1,066.72	-259.14	0.00	0.00	0.00	
5,700.00	15.91	283.65	5,547.93	265.61	-1,093.36	-265.61	0.00	0.00	0.00	
5,800.00	15.91	283.65	5,644.10	272.08	-1,119.99	-272.08	0.00	0.00	0.00	
5,900.00	15.91	283.65	5,740.27	278.55	-1,146.63	-278.55	0.00	0.00	0.00	
5,961.89	15.91	283.65	5,799.79	282.56	-1,163.11	-282.56	0.00	0.00	0.00	
Start Drop -2.00										
6,000.00	15.15	283.65	5,836.51	284.97	-1,173.03	-284.97	2.00	-2.00	0.00	
6,100.00	13.15	283.65	5,933.47	290.74	-1,196.78	-290.74	2.00	-2.00	0.00	
6,200.00	11.15	283.65	6,031.23	295.70	-1,217.22	-295.70	2.00	-2.00	0.00	
6,300.00	9.15	283.65	6,129.66	299.86	-1,234.34	-299.86	2.00	-2.00	0.00	
6,400.00	7.15	283.65	6,228.65	303.21	-1,248.11	-303.21	2.00	-2.00	0.00	
6,500.00	5.15	283.65	6,328.07	305.73	-1,258.51	-305.73	2.00	-2.00	0.00	
6,600.00	3.15	283.65	6,427.80	307.44	-1,265.54	-307.44	2.00	-2.00	0.00	
6,700.00	1.15	283.65	6,527.73	308.32	-1,269.18	-308.32	2.00	-2.00	0.00	
6,757.32	0.00	0.00	6,585.04	308.46	-1,269.73	-308.46	2.00	-2.00	0.00	
Start DLS 10.00 TFO 180.00										
6,800.00	4.27	180.00	6,627.68	306.87	-1,269.73	-306.87	10.00	10.00	0.00	
6,900.00	14.27	180.00	6,726.25	290.79	-1,269.73	-290.79	10.00	10.00	0.00	
7,000.00	24.27	180.00	6,820.53	257.83	-1,269.73	-257.83	10.00	10.00	0.00	
7,100.00	34.27	180.00	6,907.65	209.00	-1,269.73	-209.00	10.00	10.00	0.00	
7,200.00	44.27	180.00	6,984.98	145.79	-1,269.73	-145.79	10.00	10.00	0.00	
7,258.95	50.16	180.00	7,025.00	102.54	-1,269.73	-102.54	10.00	10.00	0.00	
Sharon Springs										
7,300.00	54.27	180.00	7,050.14	70.10	-1,269.73	-70.10	10.00	10.00	0.00	
7,400.00	64.27	180.00	7,101.18	-15.74	-1,269.73	15.74	10.00	10.00	0.00	
7,404.22	64.69	180.00	7,103.00	-19.55	-1,269.73	19.55	10.00	10.00	0.00	
Niobrara A										
7,464.93	70.76	180.00	7,126.00	-75.70	-1,269.73	75.70	10.00	10.00	0.00	
Niobrara B										
7,500.00	74.27	180.00	7,136.54	-109.15	-1,269.73	109.15	10.00	10.00	0.00	
7,600.00	84.27	180.00	7,155.13	-207.28	-1,269.73	207.28	10.00	10.00	0.00	
7,658.54	90.12	180.00	7,158.00	-265.72	-1,269.73	265.72	10.00	10.00	0.00	
Start 4701.98 hold at 7658.54 MD										
7,678.09	90.12	180.00	7,157.96	-285.27	-1,269.73	285.27	0.00	0.00	0.00	
7"(1' FNL 2625' FEL)										
7,700.00	90.12	180.00	7,157.91	-307.18	-1,269.73	307.18	0.00	0.00	0.00	
7,800.00	90.12	180.00	7,157.70	-407.18	-1,269.73	407.18	0.00	0.00	0.00	
7,900.00	90.12	180.00	7,157.48	-507.18	-1,269.73	507.18	0.00	0.00	0.00	
8,000.00	90.12	180.00	7,157.27	-607.18	-1,269.73	607.18	0.00	0.00	0.00	
8,100.00	90.12	180.00	7,157.06	-707.18	-1,269.73	707.18	0.00	0.00	0.00	
8,200.00	90.12	180.00	7,156.85	-807.18	-1,269.73	807.18	0.00	0.00	0.00	

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well HERMAN 36N-5HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4871' & KB 17' @ 4888.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4871' & KB 17' @ 4888.00ft (ASSUMED)
Site:	HERMAN 37N-5HZ PAD	North Reference:	True
Well:	HERMAN 36N-5HZ	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 (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
8,300.00	90.12	180.00	7,156.63	-907.18	-1,269.73	907.18	0.00	0.00	0.00
8,400.00	90.12	180.00	7,156.42	-1,007.18	-1,269.73	1,007.18	0.00	0.00	0.00
8,500.00	90.12	180.00	7,156.21	-1,107.18	-1,269.73	1,107.18	0.00	0.00	0.00
8,600.00	90.12	180.00	7,156.00	-1,207.18	-1,269.73	1,207.18	0.00	0.00	0.00
8,700.00	90.12	180.00	7,155.78	-1,307.18	-1,269.73	1,307.18	0.00	0.00	0.00
8,800.00	90.12	180.00	7,155.57	-1,407.18	-1,269.73	1,407.18	0.00	0.00	0.00
8,900.00	90.12	180.00	7,155.36	-1,507.18	-1,269.73	1,507.18	0.00	0.00	0.00
9,000.00	90.12	180.00	7,155.14	-1,607.18	-1,269.73	1,607.18	0.00	0.00	0.00
9,100.00	90.12	180.00	7,154.93	-1,707.18	-1,269.73	1,707.18	0.00	0.00	0.00
9,200.00	90.12	180.00	7,154.72	-1,807.18	-1,269.73	1,807.18	0.00	0.00	0.00
9,300.00	90.12	180.00	7,154.51	-1,907.18	-1,269.73	1,907.18	0.00	0.00	0.00
9,400.00	90.12	180.00	7,154.29	-2,007.18	-1,269.73	2,007.18	0.00	0.00	0.00
9,500.00	90.12	180.00	7,154.08	-2,107.18	-1,269.73	2,107.18	0.00	0.00	0.00
9,600.00	90.12	180.00	7,153.87	-2,207.18	-1,269.73	2,207.18	0.00	0.00	0.00
9,700.00	90.12	180.00	7,153.66	-2,307.18	-1,269.73	2,307.18	0.00	0.00	0.00
9,800.00	90.12	180.00	7,153.44	-2,407.18	-1,269.73	2,407.18	0.00	0.00	0.00
9,900.00	90.12	180.00	7,153.23	-2,507.18	-1,269.73	2,507.18	0.00	0.00	0.00
10,000.00	90.12	180.00	7,153.02	-2,607.18	-1,269.73	2,607.18	0.00	0.00	0.00
10,100.00	90.12	180.00	7,152.81	-2,707.17	-1,269.73	2,707.17	0.00	0.00	0.00
10,200.00	90.12	180.00	7,152.59	-2,807.17	-1,269.73	2,807.17	0.00	0.00	0.00
10,300.00	90.12	180.00	7,152.38	-2,907.17	-1,269.73	2,907.17	0.00	0.00	0.00
10,400.00	90.12	180.00	7,152.17	-3,007.17	-1,269.73	3,007.17	0.00	0.00	0.00
10,500.00	90.12	180.00	7,151.96	-3,107.17	-1,269.73	3,107.17	0.00	0.00	0.00
10,600.00	90.12	180.00	7,151.74	-3,207.17	-1,269.73	3,207.17	0.00	0.00	0.00
10,700.00	90.12	180.00	7,151.53	-3,307.17	-1,269.73	3,307.17	0.00	0.00	0.00
10,800.00	90.12	180.00	7,151.32	-3,407.17	-1,269.73	3,407.17	0.00	0.00	0.00
10,900.00	90.12	180.00	7,151.11	-3,507.17	-1,269.73	3,507.17	0.00	0.00	0.00
11,000.00	90.12	180.00	7,150.89	-3,607.17	-1,269.73	3,607.17	0.00	0.00	0.00
11,100.00	90.12	180.00	7,150.68	-3,707.17	-1,269.73	3,707.17	0.00	0.00	0.00
11,200.00	90.12	180.00	7,150.47	-3,807.17	-1,269.73	3,807.17	0.00	0.00	0.00
11,300.00	90.12	180.00	7,150.25	-3,907.17	-1,269.73	3,907.17	0.00	0.00	0.00
11,400.00	90.12	180.00	7,150.04	-4,007.17	-1,269.73	4,007.17	0.00	0.00	0.00
11,500.00	90.12	180.00	7,149.83	-4,107.17	-1,269.73	4,107.17	0.00	0.00	0.00
11,600.00	90.12	180.00	7,149.62	-4,207.17	-1,269.73	4,207.17	0.00	0.00	0.00
11,700.00	90.12	180.00	7,149.40	-4,307.17	-1,269.73	4,307.17	0.00	0.00	0.00
11,800.00	90.12	180.00	7,149.19	-4,407.17	-1,269.73	4,407.17	0.00	0.00	0.00
11,900.00	90.12	180.00	7,148.98	-4,507.17	-1,269.73	4,507.17	0.00	0.00	0.00
12,000.00	90.12	180.00	7,148.77	-4,607.17	-1,269.73	4,607.17	0.00	0.00	0.00
12,100.00	90.12	180.00	7,148.55	-4,707.17	-1,269.73	4,707.17	0.00	0.00	0.00
12,200.00	90.12	180.00	7,148.34	-4,807.17	-1,269.73	4,807.17	0.00	0.00	0.00
12,300.00	90.12	180.00	7,148.13	-4,907.17	-1,269.73	4,907.17	0.00	0.00	0.00
12,360.51	90.12	180.00	7,148.00	-4,967.68	-1,269.73	4,967.68	0.00	0.00	0.00
TD at 12360.51 - PBHL_HERMAN 36N-5HZ(460' FSL 2625' FEL)									

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well HERMAN 36N-5HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4871' & KB 17' @ 4888.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4871' & KB 17' @ 4888.00ft (ASSUMED)
Site:	HERMAN 37N-5HZ PAD	North Reference:	True
Well:	HERMAN 36N-5HZ	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
PBHL_HERMAN 36N-5H - hit/miss target - Shape - plan hits target center - Point	0.00	0.00	7,148.00	-4,967.68	-1,269.73	1,302,304.32	3,195,347.35	40.1611070	-104.8010550

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,000.00	1,000.00	9 5/8"	9.625	12.250	
7,678.09	7,157.96	7"(1' FNL 2625' FEL)	7.000	7.500	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
706.00	706.00	Fox Hills				
4,115.38	4,024.00	Parkman				
4,519.87	4,413.00	Sussex				
7,258.95	7,025.00	Sharon Springs				
7,404.22	7,103.00	Niobrara A				
7,464.93	7,126.00	Niobrara B				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
1,200.00	1,200.00	0.00	0.00	Start Build 2.00	
1,995.43	1,985.25	25.90	-106.62	Start 3966.45 hold at 1995.43 MD	
5,961.89	5,799.79	282.56	-1,163.11	Start Drop -2.00	
6,757.32	6,585.04	308.46	-1,269.73	Start DLS 10.00 TFO 180.00	
7,658.54	7,158.00	-265.72	-1,269.73	Start 4701.98 hold at 7658.54 MD	
12,360.51	7,148.00	-4,967.68	-1,269.73	TD at 12360.51	