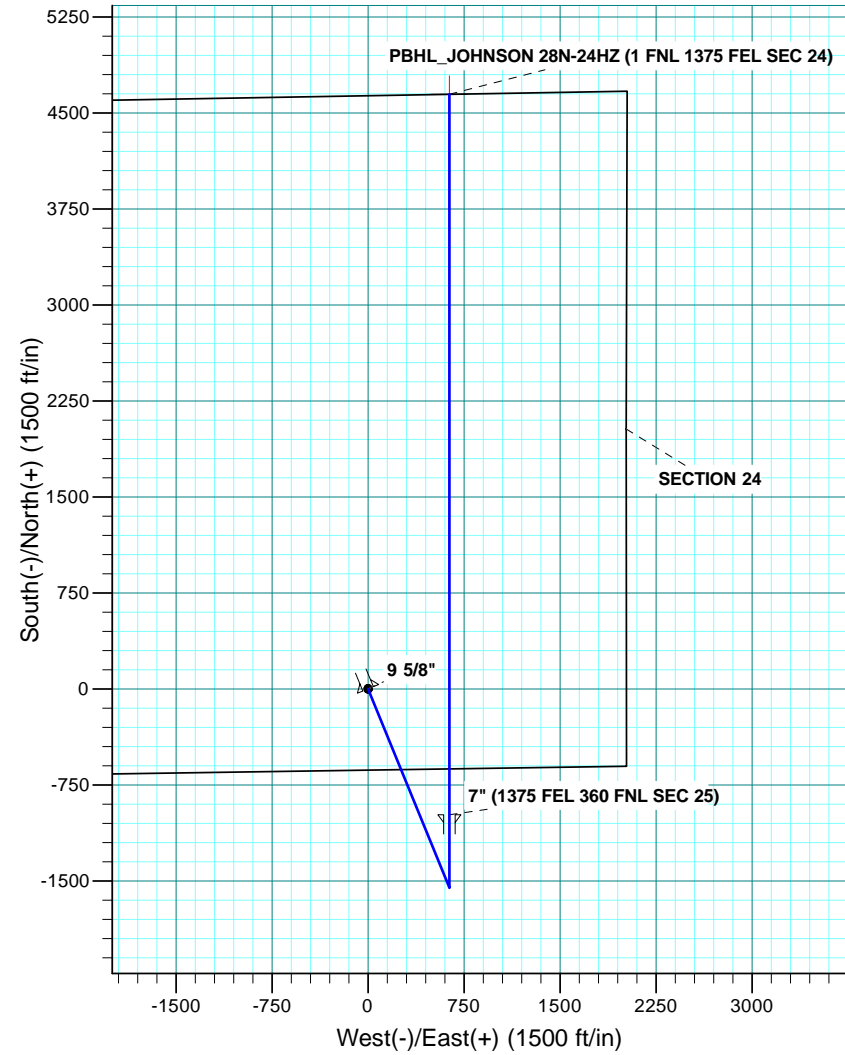
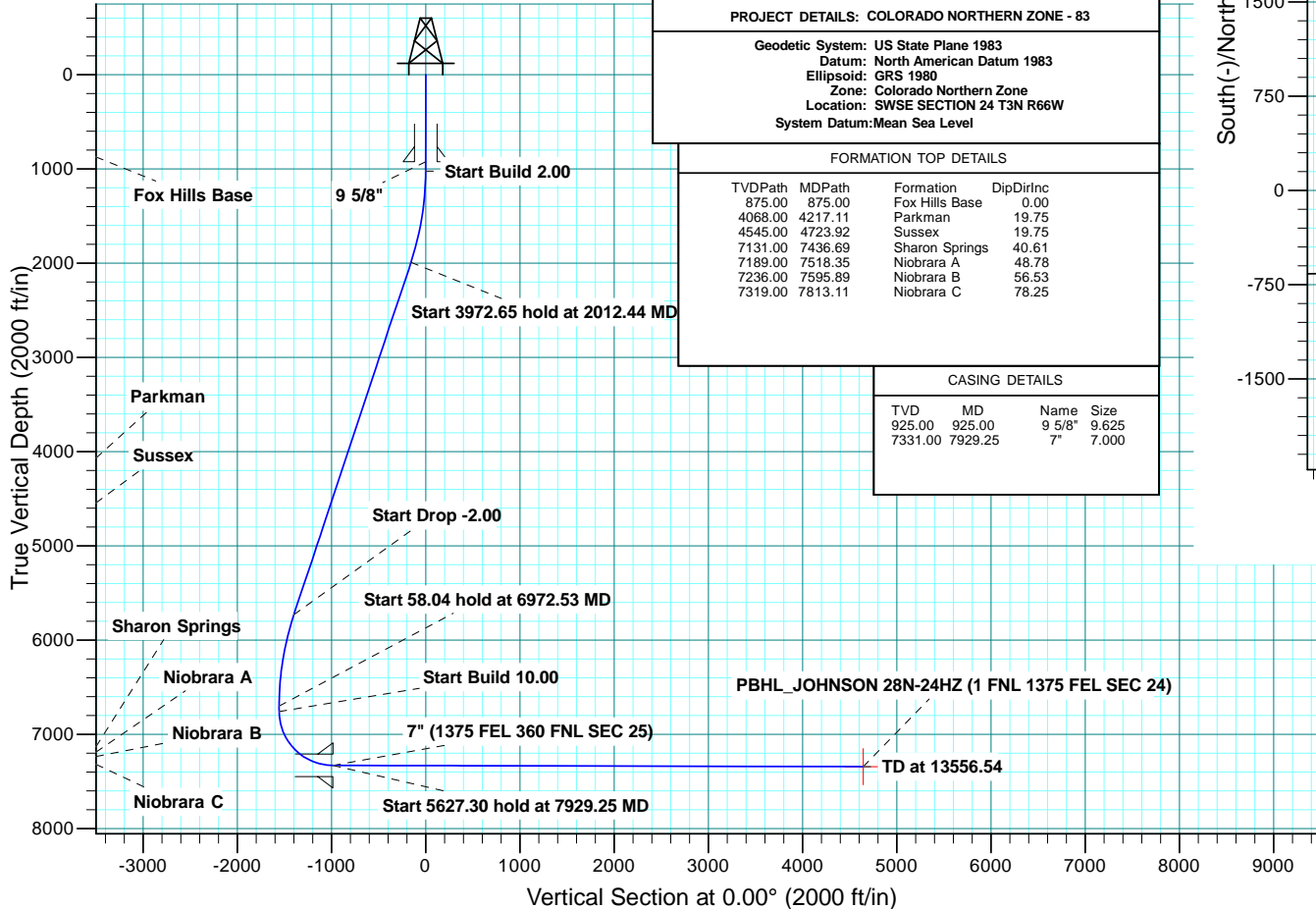


WELL DETAILS: JOHNSON 28N-24HZ										
GL 5037 & KB 17 @ 5054.00ft (ASSUMED)										
		+N/-S	+E/-W	Northing	Easting	Latitude	Longitude			
		0.00	0.00	1318598.67	3217035.38	40.2053400	-104.7229490			
SECTION DETAILS										
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	V Sect	Target	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
1025.00	0.00	0.00	1025.00	0.00	0.00	0.00	0.00	0.00		Start Build 2.00
2012.44	19.75	157.78	1993.00	-155.99	63.72	2.00	157.78	-155.99		Start 3972.65 hold at 2012.44 MD
5985.09	19.75	157.78	5732.00	-1398.65	571.32	0.00	0.00	-1398.65		Start Drop -2.00
6972.53	0.00	0.00	6700.00	-1554.64	635.03	2.00	180.00	-1554.64		Start 58.04 hold at 6972.53 MD
7030.57	0.00	0.00	6758.04	-1554.64	635.03	0.00	0.00	-1554.64		Start Build 10.00
7929.25	89.87	0.00	7331.00	-983.00	635.03	10.00	0.00	-983.00		Start 5627.30 hold at 7929.25 MD
13556.54	89.87	0.00	7344.00	4644.28	635.03	0.00	0.00	4644.28	PBHL_JOHNSON 28N-24HZ	TD at 13556.54
DESIGN TARGET DETAILS										
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape		
PBHL	7344.00	4644.28	635.03	1323248.32	3217629.69	40.2180890	-104.7206750	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 24 T3N R66W
System Datum:	Mean Sea Level

FORMATION TOP DETAILS			
TVDPath	MDPath	Formation	DipDirInc
875.00	875.00	Fox Hills Base	0.00
4068.00	4217.11	Parkman	19.75
4545.00	4723.92	Sussex	19.75
7131.00	7436.69	Sharon Springs	40.61
7189.00	7518.35	Niobrara A	48.78
7236.00	7595.89	Niobrara B	56.53
7319.00	7813.11	Niobrara C	78.25

CASING DETAILS			
TVD	MD	Name	Size
925.00	925.00	9 5/8"	9.625
7331.00	7929.25	7"	7.000





Scientific Drilling

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

JOHNSON 15-24HZ PAD

JOHNSON 28N-24HZ

OH

Plan: PLAN #1 PRELIMINARY

Standard Planning Report

13 March, 2014



Database:	Denver Sales Office	Local Co-ordinate Reference:	Well JOHNSON 28N-24HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 5037 & KB 17 @ 5054.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 5037 & KB 17 @ 5054.00ft (ASSUMED)
Site:	JOHNSON 15-24HZ PAD	North Reference:	True
Well:	JOHNSON 28N-24HZ	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	JOHNSON 15-24HZ PAD, SWSE SECTION 24 T3N R66W				
Site Position:	Northing:	1,318,598.67 usft	Latitude:	40.2053400	
From:	Lat/Long	Easting:	3,217,035.38 usft	Longitude:	-104.7229490
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.50 °

Well	JOHNSON 28N-24HZ					
Well Position	+N/-S	0.00 ft	Northing:	1,318,598.67 usft	Latitude:	40.2053400
	+E/-W	0.00 ft	Easting:	3,217,035.38 usft	Longitude:	-104.7229490
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	5,037.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2013	3/13/2014	8.50	66.79	52,662

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	
1,025.00	0.00	0.00	1,025.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,012.44	19.75	157.78	1,993.00	-155.99	63.72	2.00	2.00	0.00	157.78	
5,985.09	19.75	157.78	5,732.00	-1,398.65	571.32	0.00	0.00	0.00	0.00	
6,972.53	0.00	0.00	6,700.00	-1,554.64	635.03	2.00	-2.00	0.00	180.00	
7,030.57	0.00	0.00	6,758.04	-1,554.64	635.03	0.00	0.00	0.00	0.00	
7,929.25	89.87	0.00	7,331.00	-983.00	635.03	10.00	10.00	0.00	0.00	
13,556.54	89.87	0.00	7,344.00	4,644.28	635.03	0.00	0.00	0.00	0.00	PBHL_JOHNSON 28I

Database:	Denver Sales Office	Local Co-ordinate Reference:	Well JOHNSON 28N-24HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 5037 & KB 17 @ 5054.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 5037 & KB 17 @ 5054.00ft (ASSUMED)
Site:	JOHNSON 15-24HZ PAD	North Reference:	True
Well:	JOHNSON 28N-24HZ	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	
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00	
875.00	0.00	0.00	875.00	0.00	0.00	0.00	0.00	0.00	0.00	
Fox Hills Base										
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00	
925.00	0.00	0.00	925.00	0.00	0.00	0.00	0.00	0.00	0.00	
9 5/8"										
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,025.00	0.00	0.00	1,025.00	0.00	0.00	0.00	0.00	0.00	0.00	
Start Build 2.00										
1,100.00	1.50	157.78	1,099.99	-0.91	0.37	-0.91	2.00	2.00	0.00	
1,200.00	3.50	157.78	1,199.89	-4.95	2.02	-4.95	2.00	2.00	0.00	
1,300.00	5.50	157.78	1,299.58	-12.21	4.99	-12.21	2.00	2.00	0.00	
1,400.00	7.50	157.78	1,398.93	-22.69	9.27	-22.69	2.00	2.00	0.00	
1,500.00	9.50	157.78	1,497.83	-36.37	14.86	-36.37	2.00	2.00	0.00	
1,600.00	11.50	157.78	1,596.15	-53.24	21.75	-53.24	2.00	2.00	0.00	
1,700.00	13.50	157.78	1,693.77	-73.28	29.93	-73.28	2.00	2.00	0.00	
1,800.00	15.50	157.78	1,790.58	-96.45	39.40	-96.45	2.00	2.00	0.00	
1,900.00	17.50	157.78	1,886.46	-122.75	50.14	-122.75	2.00	2.00	0.00	
2,000.00	19.50	157.78	1,981.29	-152.12	62.14	-152.12	2.00	2.00	0.00	
2,012.44	19.75	157.78	1,993.00	-155.99	63.72	-155.99	2.00	2.00	0.00	
Start 3972.65 hold at 2012.44 MD										
2,100.00	19.75	157.78	2,075.41	-183.38	74.90	-183.38	0.00	0.00	0.00	
2,200.00	19.75	157.78	2,169.53	-214.66	87.68	-214.66	0.00	0.00	0.00	
2,300.00	19.75	157.78	2,263.65	-245.94	100.46	-245.94	0.00	0.00	0.00	
2,400.00	19.75	157.78	2,357.77	-277.22	113.24	-277.22	0.00	0.00	0.00	
2,500.00	19.75	157.78	2,451.89	-308.50	126.01	-308.50	0.00	0.00	0.00	
2,600.00	19.75	157.78	2,546.01	-339.78	138.79	-339.78	0.00	0.00	0.00	
2,700.00	19.75	157.78	2,640.12	-371.06	151.57	-371.06	0.00	0.00	0.00	
2,800.00	19.75	157.78	2,734.24	-402.34	164.35	-402.34	0.00	0.00	0.00	
2,900.00	19.75	157.78	2,828.36	-433.62	177.12	-433.62	0.00	0.00	0.00	
3,000.00	19.75	157.78	2,922.48	-464.90	189.90	-464.90	0.00	0.00	0.00	
3,100.00	19.75	157.78	3,016.60	-496.18	202.68	-496.18	0.00	0.00	0.00	
3,200.00	19.75	157.78	3,110.72	-527.46	215.46	-527.46	0.00	0.00	0.00	
3,300.00	19.75	157.78	3,204.83	-558.74	228.23	-558.74	0.00	0.00	0.00	
3,400.00	19.75	157.78	3,298.95	-590.02	241.01	-590.02	0.00	0.00	0.00	
3,500.00	19.75	157.78	3,393.07	-621.30	253.79	-621.30	0.00	0.00	0.00	
3,600.00	19.75	157.78	3,487.19	-652.58	266.56	-652.58	0.00	0.00	0.00	
3,700.00	19.75	157.78	3,581.31	-683.86	279.34	-683.86	0.00	0.00	0.00	
3,800.00	19.75	157.78	3,675.43	-715.15	292.12	-715.15	0.00	0.00	0.00	
3,900.00	19.75	157.78	3,769.54	-746.43	304.90	-746.43	0.00	0.00	0.00	
4,000.00	19.75	157.78	3,863.66	-777.71	317.67	-777.71	0.00	0.00	0.00	
4,100.00	19.75	157.78	3,957.78	-808.99	330.45	-808.99	0.00	0.00	0.00	
4,200.00	19.75	157.78	4,051.90	-840.27	343.23	-840.27	0.00	0.00	0.00	
4,217.11	19.75	157.78	4,068.00	-845.62	345.41	-845.62	0.00	0.00	0.00	
Parkman										
4,300.00	19.75	157.78	4,146.02	-871.55	356.01	-871.55	0.00	0.00	0.00	

Database:	Denver Sales Office	Local Co-ordinate Reference:	Well JOHNSON 28N-24HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 5037 & KB 17 @ 5054.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 5037 & KB 17 @ 5054.00ft (ASSUMED)
Site:	JOHNSON 15-24HZ PAD	North Reference:	True
Well:	JOHNSON 28N-24HZ	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	19.75	157.78	4,240.14	-902.83	368.78	-902.83	0.00	0.00	0.00
4,500.00	19.75	157.78	4,334.25	-934.11	381.56	-934.11	0.00	0.00	0.00
4,600.00	19.75	157.78	4,428.37	-965.39	394.34	-965.39	0.00	0.00	0.00
4,700.00	19.75	157.78	4,522.49	-996.67	407.12	-996.67	0.00	0.00	0.00
4,723.92	19.75	157.78	4,545.00	-1,004.15	410.17	-1,004.15	0.00	0.00	0.00
Sussex									
4,800.00	19.75	157.78	4,616.61	-1,027.95	419.89	-1,027.95	0.00	0.00	0.00
4,900.00	19.75	157.78	4,710.73	-1,059.23	432.67	-1,059.23	0.00	0.00	0.00
5,000.00	19.75	157.78	4,804.85	-1,090.51	445.45	-1,090.51	0.00	0.00	0.00
5,100.00	19.75	157.78	4,898.96	-1,121.79	458.23	-1,121.79	0.00	0.00	0.00
5,200.00	19.75	157.78	4,993.08	-1,153.07	471.00	-1,153.07	0.00	0.00	0.00
5,300.00	19.75	157.78	5,087.20	-1,184.35	483.78	-1,184.35	0.00	0.00	0.00
5,400.00	19.75	157.78	5,181.32	-1,215.63	496.56	-1,215.63	0.00	0.00	0.00
5,500.00	19.75	157.78	5,275.44	-1,246.92	509.33	-1,246.92	0.00	0.00	0.00
5,600.00	19.75	157.78	5,369.56	-1,278.20	522.11	-1,278.20	0.00	0.00	0.00
5,700.00	19.75	157.78	5,463.67	-1,309.48	534.89	-1,309.48	0.00	0.00	0.00
5,800.00	19.75	157.78	5,557.79	-1,340.76	547.67	-1,340.76	0.00	0.00	0.00
5,900.00	19.75	157.78	5,651.91	-1,372.04	560.44	-1,372.04	0.00	0.00	0.00
5,985.09	19.75	157.78	5,732.00	-1,398.65	571.32	-1,398.65	0.00	0.00	0.00
Start Drop -2.00									
6,000.00	19.45	157.78	5,746.04	-1,403.28	573.21	-1,403.28	2.00	-2.00	0.00
6,100.00	17.45	157.78	5,840.90	-1,432.58	585.18	-1,432.58	2.00	-2.00	0.00
6,200.00	15.45	157.78	5,936.80	-1,458.80	595.88	-1,458.80	2.00	-2.00	0.00
6,300.00	13.45	157.78	6,033.63	-1,481.90	605.32	-1,481.90	2.00	-2.00	0.00
6,400.00	11.45	157.78	6,131.27	-1,501.85	613.47	-1,501.85	2.00	-2.00	0.00
6,500.00	9.45	157.78	6,229.61	-1,518.65	620.33	-1,518.65	2.00	-2.00	0.00
6,600.00	7.45	157.78	6,328.52	-1,532.25	625.89	-1,532.25	2.00	-2.00	0.00
6,700.00	5.45	157.78	6,427.88	-1,542.65	630.14	-1,542.65	2.00	-2.00	0.00
6,800.00	3.45	157.78	6,527.57	-1,549.83	633.07	-1,549.83	2.00	-2.00	0.00
6,900.00	1.45	157.78	6,627.48	-1,553.79	634.69	-1,553.79	2.00	-2.00	0.00
6,972.53	0.00	0.00	6,700.00	-1,554.64	635.03	-1,554.64	2.00	-2.00	-217.54
Start 58.04 hold at 6972.53 MD									
7,000.00	0.00	0.00	6,727.47	-1,554.64	635.03	-1,554.64	0.00	0.00	0.00
7,030.57	0.00	0.00	6,758.04	-1,554.64	635.03	-1,554.64	0.00	0.00	0.00
Start Build 10.00									
7,100.00	6.94	0.00	6,827.30	-1,550.44	635.03	-1,550.44	10.00	10.00	0.00
7,200.00	16.94	0.00	6,925.01	-1,529.77	635.03	-1,529.77	10.00	10.00	0.00
7,300.00	26.94	0.00	7,017.65	-1,492.45	635.03	-1,492.45	10.00	10.00	0.00
7,400.00	36.94	0.00	7,102.40	-1,439.61	635.03	-1,439.61	10.00	10.00	0.00
7,436.69	40.61	0.00	7,131.00	-1,416.63	635.03	-1,416.63	10.00	10.00	0.00
Sharon Springs									
7,500.00	46.94	0.00	7,176.69	-1,372.86	635.03	-1,372.86	10.00	10.00	0.00
7,518.35	48.78	0.00	7,189.00	-1,359.25	635.03	-1,359.25	10.00	10.00	0.00
Niobrara A									
7,595.89	56.53	0.00	7,236.00	-1,297.65	635.03	-1,297.65	10.00	10.00	0.00
Niobrara B									
7,600.00	56.94	0.00	7,238.25	-1,294.22	635.03	-1,294.22	10.00	10.00	0.00
7,700.00	66.94	0.00	7,285.23	-1,206.08	635.03	-1,206.08	10.00	10.00	0.00
7,800.00	76.94	0.00	7,316.19	-1,111.13	635.03	-1,111.13	10.00	10.00	0.00
7,813.11	78.25	0.00	7,319.00	-1,098.33	635.03	-1,098.33	10.00	10.00	0.00
Niobrara C									
7,900.00	86.94	0.00	7,330.18	-1,012.24	635.03	-1,012.24	10.00	10.00	0.00
7,929.25	89.87	0.00	7,331.00	-983.00	635.03	-983.00	10.00	10.00	0.00

Database:	Denver Sales Office	Local Co-ordinate Reference:	Well JOHNSON 28N-24HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 5037 & KB 17 @ 5054.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 5037 & KB 17 @ 5054.00ft (ASSUMED)
Site:	JOHNSON 15-24HZ PAD	North Reference:	True
Well:	JOHNSON 28N-24HZ	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 5627.30 hold at 7929.25 MD - 7" (1375 FEL 360 FNL SEC 25)									
8,000.00	89.87	0.00	7,331.16	-912.25	635.03	-912.25	0.00	0.00	0.00
8,100.00	89.87	0.00	7,331.39	-812.25	635.03	-812.25	0.00	0.00	0.00
8,200.00	89.87	0.00	7,331.62	-712.25	635.03	-712.25	0.00	0.00	0.00
8,300.00	89.87	0.00	7,331.85	-612.25	635.03	-612.25	0.00	0.00	0.00
8,400.00	89.87	0.00	7,332.09	-512.25	635.03	-512.25	0.00	0.00	0.00
8,500.00	89.87	0.00	7,332.32	-412.25	635.03	-412.25	0.00	0.00	0.00
8,600.00	89.87	0.00	7,332.55	-312.25	635.03	-312.25	0.00	0.00	0.00
8,700.00	89.87	0.00	7,332.78	-212.25	635.03	-212.25	0.00	0.00	0.00
8,800.00	89.87	0.00	7,333.01	-112.26	635.03	-112.26	0.00	0.00	0.00
8,900.00	89.87	0.00	7,333.24	-12.26	635.03	-12.26	0.00	0.00	0.00
9,000.00	89.87	0.00	7,333.47	87.74	635.03	87.74	0.00	0.00	0.00
9,100.00	89.87	0.00	7,333.70	187.74	635.03	187.74	0.00	0.00	0.00
9,200.00	89.87	0.00	7,333.93	287.74	635.03	287.74	0.00	0.00	0.00
9,300.00	89.87	0.00	7,334.16	387.74	635.03	387.74	0.00	0.00	0.00
9,400.00	89.87	0.00	7,334.40	487.74	635.03	487.74	0.00	0.00	0.00
9,500.00	89.87	0.00	7,334.63	587.74	635.03	587.74	0.00	0.00	0.00
9,600.00	89.87	0.00	7,334.86	687.74	635.03	687.74	0.00	0.00	0.00
9,700.00	89.87	0.00	7,335.09	787.74	635.03	787.74	0.00	0.00	0.00
9,800.00	89.87	0.00	7,335.32	887.74	635.03	887.74	0.00	0.00	0.00
9,900.00	89.87	0.00	7,335.55	987.74	635.03	987.74	0.00	0.00	0.00
10,000.00	89.87	0.00	7,335.78	1,087.74	635.03	1,087.74	0.00	0.00	0.00
10,100.00	89.87	0.00	7,336.01	1,187.74	635.03	1,187.74	0.00	0.00	0.00
10,200.00	89.87	0.00	7,336.24	1,287.74	635.03	1,287.74	0.00	0.00	0.00
10,300.00	89.87	0.00	7,336.48	1,387.74	635.03	1,387.74	0.00	0.00	0.00
10,400.00	89.87	0.00	7,336.71	1,487.74	635.03	1,487.74	0.00	0.00	0.00
10,500.00	89.87	0.00	7,336.94	1,587.74	635.03	1,587.74	0.00	0.00	0.00
10,600.00	89.87	0.00	7,337.17	1,687.74	635.03	1,687.74	0.00	0.00	0.00
10,700.00	89.87	0.00	7,337.40	1,787.74	635.03	1,787.74	0.00	0.00	0.00
10,800.00	89.87	0.00	7,337.63	1,887.74	635.03	1,887.74	0.00	0.00	0.00
10,900.00	89.87	0.00	7,337.86	1,987.74	635.03	1,987.74	0.00	0.00	0.00
11,000.00	89.87	0.00	7,338.09	2,087.74	635.03	2,087.74	0.00	0.00	0.00
11,100.00	89.87	0.00	7,338.32	2,187.74	635.03	2,187.74	0.00	0.00	0.00
11,200.00	89.87	0.00	7,338.56	2,287.74	635.03	2,287.74	0.00	0.00	0.00
11,300.00	89.87	0.00	7,338.79	2,387.74	635.03	2,387.74	0.00	0.00	0.00
11,400.00	89.87	0.00	7,339.02	2,487.74	635.03	2,487.74	0.00	0.00	0.00
11,500.00	89.87	0.00	7,339.25	2,587.74	635.03	2,587.74	0.00	0.00	0.00
11,600.00	89.87	0.00	7,339.48	2,687.74	635.03	2,687.74	0.00	0.00	0.00
11,700.00	89.87	0.00	7,339.71	2,787.74	635.03	2,787.74	0.00	0.00	0.00
11,800.00	89.87	0.00	7,339.94	2,887.74	635.03	2,887.74	0.00	0.00	0.00
11,900.00	89.87	0.00	7,340.17	2,987.74	635.03	2,987.74	0.00	0.00	0.00
12,000.00	89.87	0.00	7,340.40	3,087.74	635.03	3,087.74	0.00	0.00	0.00
12,100.00	89.87	0.00	7,340.63	3,187.74	635.03	3,187.74	0.00	0.00	0.00
12,200.00	89.87	0.00	7,340.87	3,287.74	635.03	3,287.74	0.00	0.00	0.00
12,300.00	89.87	0.00	7,341.10	3,387.74	635.03	3,387.74	0.00	0.00	0.00
12,400.00	89.87	0.00	7,341.33	3,487.74	635.03	3,487.74	0.00	0.00	0.00
12,500.00	89.87	0.00	7,341.56	3,587.74	635.03	3,587.74	0.00	0.00	0.00
12,600.00	89.87	0.00	7,341.79	3,687.73	635.03	3,687.73	0.00	0.00	0.00
12,700.00	89.87	0.00	7,342.02	3,787.73	635.03	3,787.73	0.00	0.00	0.00
12,800.00	89.87	0.00	7,342.25	3,887.73	635.03	3,887.73	0.00	0.00	0.00
12,900.00	89.87	0.00	7,342.48	3,987.73	635.03	3,987.73	0.00	0.00	0.00
13,000.00	89.87	0.00	7,342.71	4,087.73	635.03	4,087.73	0.00	0.00	0.00
13,100.00	89.87	0.00	7,342.95	4,187.73	635.03	4,187.73	0.00	0.00	0.00

Database:	Denver Sales Office	Local Co-ordinate Reference:	Well JOHNSON 28N-24HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 5037 & KB 17 @ 5054.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 5037 & KB 17 @ 5054.00ft (ASSUMED)
Site:	JOHNSON 15-24HZ PAD	North Reference:	True
Well:	JOHNSON 28N-24HZ	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)	
13,200.00	89.87	0.00	7,343.18	4,287.73	635.03	4,287.73	0.00	0.00	0.00	
13,300.00	89.87	0.00	7,343.41	4,387.73	635.03	4,387.73	0.00	0.00	0.00	
13,400.00	89.87	0.00	7,343.64	4,487.73	635.03	4,487.73	0.00	0.00	0.00	
13,500.00	89.87	0.00	7,343.87	4,587.73	635.03	4,587.73	0.00	0.00	0.00	
13,556.54	89.87	0.00	7,344.00	4,644.28	635.03	4,644.28	0.00	0.00	0.00	
TD at 13556.54 - PBHL_JOHNSON 28N-24HZ (1 FNL 1375 FEL SEC 24)										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
PBHL_JOHNSON 28N-24HZ - hit/miss target - Shape - Point	0.00	0.00	7,344.00	4,644.28	635.03	1,323,248.32	3,217,629.69	40.2180890	-104.7206750	

Casing Points										
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)						
925.00	925.00	9 5/8"	9.625	12.250						
7,929.25	7,331.00	7" (1375 FEL 360 FNL SEC 25)	7.000	7.500						

Formations										
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)					
875.00	875.00	Fox Hills Base								
4,217.11	4,068.00	Parkman								
4,723.92	4,545.00	Sussex								
7,436.69	7,131.00	Sharon Springs								
7,518.35	7,189.00	Niobrara A								
7,595.89	7,236.00	Niobrara B								
7,813.11	7,319.00	Niobrara C								

Plan Annotations										
Measured Depth (ft)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Comment						
1,025.00	1,025.00	0.00	0.00	Start Build 2.00						
2,012.44	1,993.00	-155.99	63.72	Start 3972.65 hold at 2012.44 MD						
5,985.09	5,732.00	-1,398.65	571.32	Start Drop -2.00						
6,972.53	6,700.00	-1,554.64	635.03	Start 58.04 hold at 6972.53 MD						
7,030.57	6,758.04	-1,554.64	635.03	Start Build 10.00						
7,929.25	7,331.00	-983.00	635.03	Start 5627.30 hold at 7929.25 MD						
13,556.54	7,344.00	4,644.28	635.03	TD at 13556.54						