



US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_NRC 5 PAD

P_NRC 40-8

P_NRC 40-8

Plan: PLAN #1 1-5-10 RHS

Standard Planning Report

05 January, 2010





P_NRC 40-8
 COLORADO NORTHERN ZONE - 83
 SECTION 8 T1N R67W
 1581 FNL 1495 FEL
 LAT: 40° 4' 6.456 N
 LONG: 104° 54' 37.631 W

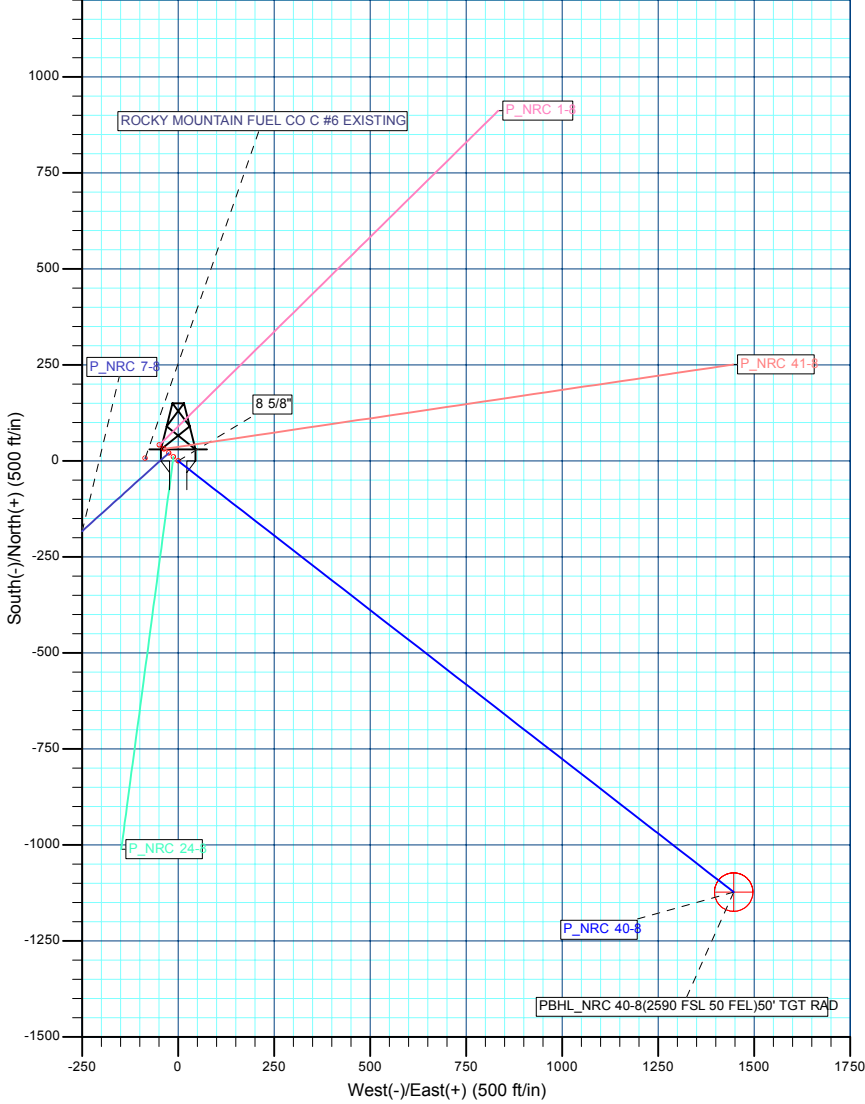
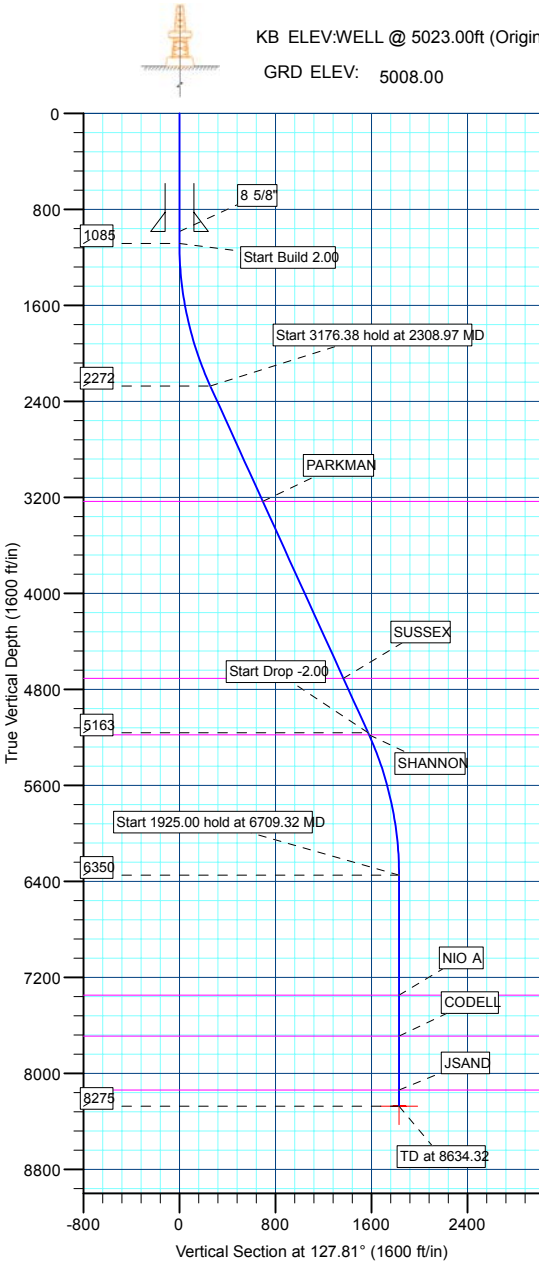


WELL DETAILS: P_NRC 40-8						
+N/-S	+E/-W	Northing	Easting	Ground Level:	Latitude	Longitude
0.00	0.00	1268333.58	3164996.69	5008.00	40° 4' 6.456 N	104° 54' 37.631 W

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
3235.00	3367.01	PARKMAN
4710.00	4987.69	SUSSEX
5180.00	5504.08	SHANNON
7350.00	7709.32	NIO A
7690.00	8049.32	CODELL
8140.00	8499.32	JSAND

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		
1085.00	0.00	0.00	1085.00	0.00	0.00	0.00	0.00	0.00		
2308.97	24.48	127.81	2272.07	-157.87	203.45	2.00	127.81	257.52		
5485.35	24.48	127.81	5162.93	-964.77	1243.28	0.00	0.00	1573.70		
6709.32	0.00	0.00	6350.00	-1122.65	1446.73	2.00	180.00	1831.22		
8634.32	0.00	0.00	8275.00	-1122.65	1446.73	0.00	0.00	1831.22	PBHL_NRC 40-8(2590 FSL 50 FEL)50' TGT RAD	

CASING DETAILS			
TVD	MD	Name	Size
985.00	985.00	8 5/8"	8.62



WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)									
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape	
PBHL	8275.00	-1122.65	1446.73	1267220.58	3166450.85	40° 3' 55.361 N	104° 54' 19.022 W	Circle (Radius: 50.00)	

Plan: PLAN #1 1-5-10 RHS (P_NRC 40-8/P_NRC 40-8)
 Created By: Robert H. Scott

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_NRC 40-8
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 5023.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 5023.00ft (Original Well Elev)
Site:	WELD_NRC 5 PAD	North Reference:	True
Well:	P_NRC 40-8	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_NRC 40-8		
Design:	PLAN #1 1-5-10 RHS		

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	WELD_NRC 5 PAD, SECTION 8 T1N R67W				
Site Position:		Northing:	1,268,375.16 ft	Latitude:	40° 4' 6.870 N
From:	Lat/Long	Easting:	3,164,947.72 ft	Longitude:	104° 54' 38.257 W
Position Uncertainty:	0.00 ft	Slot Radius:	in	Grid Convergence:	0.38 °

Well	P_NRC 40-8					
Well Position	+N/-S	-41.90 ft	Northing:	1,268,333.58 ft	Latitude:	40° 4' 6.456 N
	+E/-W	48.70 ft	Easting:	3,164,996.69 ft	Longitude:	104° 54' 37.631 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	5,008.00 ft

Wellbore	P_NRC 40-8				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	1/5/2010	9.07	66.81	53,111

Design	PLAN #1 1-5-10 RHS			
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	127.81

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	
1,085.00	0.00	0.00	1,085.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,308.97	24.48	127.81	2,272.07	-157.87	203.45	2.00	2.00	0.00	127.81	
5,485.35	24.48	127.81	5,162.93	-964.77	1,243.28	0.00	0.00	0.00	0.00	
6,709.32	0.00	0.00	6,350.00	-1,122.65	1,446.73	2.00	-2.00	0.00	180.00	
8,634.32	0.00	0.00	8,275.00	-1,122.65	1,446.73	0.00	0.00	0.00	0.00	PBHL_NRC 40-8(2)

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_NRC 40-8
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 5023.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 5023.00ft (Original Well Elev)
Site:	WELD_NRC 5 PAD	North Reference:	True
Well:	P_NRC 40-8	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_NRC 40-8		
Design:	PLAN #1 1-5-10 RHS		

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)
Start Build 2.00									
1,085.00	0.00	0.00	1,085.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.30	127.81	1,100.00	-0.02	0.03	0.04	2.00	2.00	0.00
1,200.00	2.30	127.81	1,199.97	-1.41	1.82	2.31	2.00	2.00	0.00
1,300.00	4.30	127.81	1,299.80	-4.94	6.37	8.06	2.00	2.00	0.00
1,400.00	6.30	127.81	1,399.37	-10.61	13.67	17.30	2.00	2.00	0.00
1,500.00	8.30	127.81	1,498.55	-18.40	23.71	30.01	2.00	2.00	0.00
1,600.00	10.30	127.81	1,597.23	-28.30	36.47	46.17	2.00	2.00	0.00
1,700.00	12.30	127.81	1,695.29	-40.31	51.95	65.76	2.00	2.00	0.00
1,800.00	14.30	127.81	1,792.60	-54.42	70.13	88.76	2.00	2.00	0.00
1,900.00	16.30	127.81	1,889.05	-70.59	90.97	115.15	2.00	2.00	0.00
2,000.00	18.30	127.81	1,984.52	-88.82	114.46	144.89	2.00	2.00	0.00
2,100.00	20.30	127.81	2,078.90	-109.08	140.58	177.94	2.00	2.00	0.00
2,200.00	22.30	127.81	2,172.06	-131.35	169.27	214.26	2.00	2.00	0.00
2,300.00	24.30	127.81	2,263.90	-155.60	200.52	253.81	2.00	2.00	0.00
Start 3176.38 hold at 2308.97 MD									
2,308.97	24.48	127.81	2,272.07	-157.87	203.45	257.52	2.00	2.00	0.00
2,400.00	24.48	127.81	2,354.92	-181.00	233.25	295.23	0.00	0.00	0.00
2,500.00	24.48	127.81	2,445.93	-206.40	265.98	336.67	0.00	0.00	0.00
2,600.00	24.48	127.81	2,536.94	-231.80	298.72	378.11	0.00	0.00	0.00
2,700.00	24.48	127.81	2,627.95	-257.21	331.46	419.54	0.00	0.00	0.00
2,800.00	24.48	127.81	2,718.96	-282.61	364.19	460.98	0.00	0.00	0.00
2,900.00	24.48	127.81	2,809.97	-308.01	396.93	502.42	0.00	0.00	0.00
3,000.00	24.48	127.81	2,900.98	-333.42	429.67	543.86	0.00	0.00	0.00
3,100.00	24.48	127.81	2,992.00	-358.82	462.40	585.29	0.00	0.00	0.00
3,200.00	24.48	127.81	3,083.01	-384.22	495.14	626.73	0.00	0.00	0.00
3,300.00	24.48	127.81	3,174.02	-409.63	527.87	668.17	0.00	0.00	0.00
PARKMAN									
3,367.01	24.48	127.81	3,235.00	-426.65	549.81	695.93	0.00	0.00	0.00
3,400.00	24.48	127.81	3,265.03	-435.03	560.61	709.60	0.00	0.00	0.00
3,500.00	24.48	127.81	3,356.04	-460.43	593.35	751.04	0.00	0.00	0.00
3,600.00	24.48	127.81	3,447.05	-485.84	626.08	792.48	0.00	0.00	0.00
3,700.00	24.48	127.81	3,538.06	-511.24	658.82	833.91	0.00	0.00	0.00
3,800.00	24.48	127.81	3,629.07	-536.64	691.56	875.35	0.00	0.00	0.00
3,900.00	24.48	127.81	3,720.08	-562.04	724.29	916.79	0.00	0.00	0.00
4,000.00	24.48	127.81	3,811.09	-587.45	757.03	958.22	0.00	0.00	0.00
4,100.00	24.48	127.81	3,902.11	-612.85	789.77	999.66	0.00	0.00	0.00
4,200.00	24.48	127.81	3,993.12	-638.25	822.50	1,041.10	0.00	0.00	0.00
4,300.00	24.48	127.81	4,084.13	-663.66	855.24	1,082.53	0.00	0.00	0.00
4,400.00	24.48	127.81	4,175.14	-689.06	887.98	1,123.97	0.00	0.00	0.00
4,500.00	24.48	127.81	4,266.15	-714.46	920.71	1,165.41	0.00	0.00	0.00
4,600.00	24.48	127.81	4,357.16	-739.87	953.45	1,206.84	0.00	0.00	0.00
4,700.00	24.48	127.81	4,448.17	-765.27	986.19	1,248.28	0.00	0.00	0.00
4,800.00	24.48	127.81	4,539.18	-790.67	1,018.92	1,289.72	0.00	0.00	0.00
4,900.00	24.48	127.81	4,630.19	-816.08	1,051.66	1,331.15	0.00	0.00	0.00
SUSSEX									
4,987.69	24.48	127.81	4,710.00	-838.35	1,080.36	1,367.49	0.00	0.00	0.00
5,000.00	24.48	127.81	4,721.20	-841.48	1,084.39	1,372.59	0.00	0.00	0.00
5,100.00	24.48	127.81	4,812.22	-866.88	1,117.13	1,414.03	0.00	0.00	0.00
5,200.00	24.48	127.81	4,903.23	-892.29	1,149.87	1,455.46	0.00	0.00	0.00
5,300.00	24.48	127.81	4,994.24	-917.69	1,182.60	1,496.90	0.00	0.00	0.00
5,400.00	24.48	127.81	5,085.25	-943.09	1,215.34	1,538.34	0.00	0.00	0.00
Start Drop -2.00									

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Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 5023.00ft (Original Well Elev)
Site:	WELD_NRC 5 PAD	North Reference:	True
Well:	P_NRC 40-8	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_NRC 40-8		
Design:	PLAN #1 1-5-10 RHS		

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)
5,485.35	24.48	127.81	5,162.93	-964.77	1,243.28	1,573.70	0.00	0.00	0.00
5,500.00	24.19	127.81	5,176.27	-968.48	1,248.05	1,579.74	2.00	-2.00	0.00
SHANNON									
5,504.08	24.10	127.81	5,180.00	-969.50	1,249.37	1,581.41	2.00	-2.00	0.00
5,600.00	22.19	127.81	5,268.19	-992.61	1,279.15	1,619.11	2.00	-2.00	0.00
5,700.00	20.19	127.81	5,361.43	-1,014.77	1,307.71	1,655.25	2.00	-2.00	0.00
5,800.00	18.19	127.81	5,455.87	-1,034.91	1,333.67	1,688.11	2.00	-2.00	0.00
5,900.00	16.19	127.81	5,551.40	-1,053.03	1,357.01	1,717.66	2.00	-2.00	0.00
6,000.00	14.19	127.81	5,647.90	-1,069.09	1,377.71	1,743.85	2.00	-2.00	0.00
6,100.00	12.19	127.81	5,745.26	-1,083.07	1,395.73	1,766.66	2.00	-2.00	0.00
6,200.00	10.19	127.81	5,843.36	-1,094.96	1,411.05	1,786.06	2.00	-2.00	0.00
6,300.00	8.19	127.81	5,942.07	-1,104.75	1,423.67	1,802.03	2.00	-2.00	0.00
6,400.00	6.19	127.81	6,041.28	-1,112.42	1,433.55	1,814.54	2.00	-2.00	0.00
6,500.00	4.19	127.81	6,140.86	-1,117.96	1,440.69	1,823.57	2.00	-2.00	0.00
6,600.00	2.19	127.81	6,240.70	-1,121.37	1,445.08	1,829.13	2.00	-2.00	0.00
6,700.00	0.19	127.81	6,340.68	-1,122.64	1,446.72	1,831.20	2.00	-2.00	0.00
Start 1925.00 hold at 6709.32 MD									
6,709.32	0.00	0.00	6,350.00	-1,122.65	1,446.73	1,831.22	2.00	-2.00	0.00
6,800.00	0.00	0.00	6,440.68	-1,122.65	1,446.73	1,831.22	0.00	0.00	0.00
6,900.00	0.00	0.00	6,540.68	-1,122.65	1,446.73	1,831.22	0.00	0.00	0.00
7,000.00	0.00	0.00	6,640.68	-1,122.65	1,446.73	1,831.22	0.00	0.00	0.00
7,100.00	0.00	0.00	6,740.68	-1,122.65	1,446.73	1,831.22	0.00	0.00	0.00
7,200.00	0.00	0.00	6,840.68	-1,122.65	1,446.73	1,831.22	0.00	0.00	0.00
7,300.00	0.00	0.00	6,940.68	-1,122.65	1,446.73	1,831.22	0.00	0.00	0.00
7,400.00	0.00	0.00	7,040.68	-1,122.65	1,446.73	1,831.22	0.00	0.00	0.00
7,500.00	0.00	0.00	7,140.68	-1,122.65	1,446.73	1,831.22	0.00	0.00	0.00
7,600.00	0.00	0.00	7,240.68	-1,122.65	1,446.73	1,831.22	0.00	0.00	0.00
7,700.00	0.00	0.00	7,340.68	-1,122.65	1,446.73	1,831.22	0.00	0.00	0.00
NIO A									
7,709.32	0.00	0.00	7,350.00	-1,122.65	1,446.73	1,831.22	0.00	0.00	0.00
7,800.00	0.00	0.00	7,440.68	-1,122.65	1,446.73	1,831.22	0.00	0.00	0.00
7,900.00	0.00	0.00	7,540.68	-1,122.65	1,446.73	1,831.22	0.00	0.00	0.00
8,000.00	0.00	0.00	7,640.68	-1,122.65	1,446.73	1,831.22	0.00	0.00	0.00
CODELL									
8,049.32	0.00	0.00	7,690.00	-1,122.65	1,446.73	1,831.22	0.00	0.00	0.00
8,100.00	0.00	0.00	7,740.68	-1,122.65	1,446.73	1,831.22	0.00	0.00	0.00
8,200.00	0.00	0.00	7,840.68	-1,122.65	1,446.73	1,831.22	0.00	0.00	0.00
8,300.00	0.00	0.00	7,940.68	-1,122.65	1,446.73	1,831.22	0.00	0.00	0.00
8,400.00	0.00	0.00	8,040.68	-1,122.65	1,446.73	1,831.22	0.00	0.00	0.00
JSAND									
8,499.32	0.00	0.00	8,140.00	-1,122.65	1,446.73	1,831.22	0.00	0.00	0.00
8,500.00	0.00	0.00	8,140.68	-1,122.65	1,446.73	1,831.22	0.00	0.00	0.00
8,600.00	0.00	0.00	8,240.68	-1,122.65	1,446.73	1,831.22	0.00	0.00	0.00
TD at 8634.32 - PBHL_NRC 40-8(2590 FSL 50 FEL)50' TGT RAD									
8,634.32	0.00	0.00	8,275.00	-1,122.65	1,446.73	1,831.22	0.00	0.00	0.00

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_NRC 40-8
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 5023.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 5023.00ft (Original Well Elev)
Site:	WELD_NRC 5 PAD	North Reference:	True
Well:	P_NRC 40-8	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_NRC 40-8		
Design:	PLAN #1 1-5-10 RHS		

Design Targets

Target Name

- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- Shape									
PBHL_NRC 40-8(259)	0.00	0.00	8,275.00	-1,122.65	1,446.73	1,267,220.58	3,166,450.85	40° 3' 55.361 N	104° 54' 19.022 W
- plan hits target center									
- Circle (radius 50.00)									

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
985.00	985.00	8 5/8"	8.62	11.00

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,367.01	3,235.00	PARKMAN			
4,987.69	4,710.00	SUSSEX			
5,504.08	5,180.00	SHANNON			
7,709.32	7,350.00	NIO A			
8,049.32	7,690.00	CODELL			
8,499.32	8,140.00	JSAND			

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,085.00	1,085.00	0.00	0.00	Start Build 2.00
2,308.97	2,272.07	-157.87	203.45	Start 3176.38 hold at 2308.97 MD
5,485.35	5,162.93	-964.77	1,243.28	Start Drop -2.00
6,709.32	6,350.00	-1,122.65	1,446.73	Start 1925.00 hold at 6709.32 MD
8,634.32	8,275.00	-1,122.65	1,446.73	TD at 8634.32



US ROCKIES REGION PLANNING

**COLORADO NORTHERN ZONE - 83
WELD_NRC 5 PAD
P_NRC 40-8**

**P_NRC 40-8
PLAN #1 1-5-10 RHS**

Anticollision Report

05 January, 2010



Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_NRC 40-8
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5023.00ft (Original Well Elev)
Reference Site:	WELD_NRC 5 PAD	MD Reference:	WELL @ 5023.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_NRC 40-8	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_NRC 40-8	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-5-10 RHS	Offset TVD Reference:	Offset Datum

Reference	PLAN #1 1-5-10 RHS		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	0.00 to 20,000.00ft	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.00ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program	Date	1/5/2010		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	8,634.32	PLAN #1 1-5-10 RHS (P_NRC 40-8)	MWD	MWD - Standard

Site Name Offset Well - Wellbore - Design	Reference	Offset	Distance		Separation Factor	Warning
	Measured Depth (ft)	Measured Depth (ft)	Between Centres (ft)	Between Ellipses (ft)		
WELD_NRC 5 PAD						
P_NRC 1-8 - P_NRC 1-8 - PLAN #1 1-5-10 RHS	1,085.00	1,085.00	64.25	59.63	13.909	CC
P_NRC 1-8 - P_NRC 1-8 - PLAN #1 1-5-10 RHS	1,100.00	1,100.03	64.28	59.60	13.729	ES
P_NRC 1-8 - P_NRC 1-8 - PLAN #1 1-5-10 RHS	1,200.00	1,200.13	66.40	61.32	13.079	SF
P_NRC 24-8 - P_NRC 24-8 - PLAN #1 1-5-10 RHS	1,085.00	1,085.00	16.22	11.60	3.511	CC
P_NRC 24-8 - P_NRC 24-8 - PLAN #1 1-5-10 RHS	1,100.00	1,100.05	16.24	11.56	3.471	ES
P_NRC 24-8 - P_NRC 24-8 - PLAN #1 1-5-10 RHS	1,200.00	1,200.31	17.38	12.36	3.458	SF
P_NRC 41-8 - P_NRC 41-8 - PLAN #1 1-5-10 RHS	1,085.00	1,085.00	48.22	43.60	10.440	CC
P_NRC 41-8 - P_NRC 41-8 - PLAN #1 1-5-10 RHS	1,100.00	1,100.17	48.24	43.55	10.304	ES
P_NRC 41-8 - P_NRC 41-8 - PLAN #1 1-5-10 RHS	1,300.00	1,302.21	51.25	45.80	9.396	SF
P_NRC 7-8 - P_NRC 7-8 - PLAN #1 1-5-10 RHS	1,085.00	1,085.00	32.00	27.38	6.928	CC
P_NRC 7-8 - P_NRC 7-8 - PLAN #1 1-5-10 RHS	1,100.00	1,099.98	32.04	27.37	6.849	ES, SF
ROCKY MOUNTAIN FUEL CO C #6 EXISTING - ROCK	1,085.00	1,067.00	86.23	43.24	2.006	CC
ROCKY MOUNTAIN FUEL CO C #6 EXISTING - ROCK	1,200.00	1,181.97	88.17	40.40	1.845	ES
ROCKY MOUNTAIN FUEL CO C #6 EXISTING - ROCK	1,300.00	1,281.80	93.10	41.21	1.794	SF

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 0-MWD													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	-49.29	41.90	-48.70	64.25					
100.00	100.00	100.00	100.00	0.10	0.10	-49.29	41.90	-48.70	64.25	64.05	0.19	336.273		
200.00	200.00	200.00	200.00	0.32	0.32	-49.29	41.90	-48.70	64.25	63.60	0.64	100.292		
300.00	300.00	300.00	300.00	0.55	0.55	-49.29	41.90	-48.70	64.25	63.16	1.09	58.934		
400.00	400.00	400.00	400.00	0.77	0.77	-49.29	41.90	-48.70	64.25	62.71	1.54	41.727		
500.00	500.00	500.00	500.00	0.99	0.99	-49.29	41.90	-48.70	64.25	62.26	1.99	32.297		
600.00	600.00	600.00	600.00	1.22	1.22	-49.29	41.90	-48.70	64.25	61.81	2.44	26.344		
700.00	700.00	700.00	700.00	1.44	1.44	-49.29	41.90	-48.70	64.25	61.36	2.89	22.244		
800.00	800.00	800.00	800.00	1.67	1.67	-49.29	41.90	-48.70	64.25	60.91	3.34	19.248		
900.00	900.00	900.00	900.00	1.89	1.89	-49.29	41.90	-48.70	64.25	60.46	3.79	16.963		
1,000.00	1,000.00	1,000.00	1,000.00	2.12	2.12	-49.29	41.90	-48.70	64.25	60.01	4.24	15.164		
1,085.00	1,085.00	1,085.00	1,085.00	2.31	2.31	-49.29	41.90	-48.70	64.25	59.63	4.62	13.909	CC	
1,100.00	1,100.00	1,100.03	1,100.03	2.34	2.34	-177.07	41.93	-48.67	64.28	59.60	4.68	13.729	ES	
1,200.00	1,199.97	1,200.13	1,200.10	2.52	2.56	-175.21	43.53	-47.05	66.40	61.32	5.08	13.079	SF	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_NRC 40-8
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5023.00ft (Original Well Elev)
Reference Site:	WELD_NRC 5 PAD	MD Reference:	WELL @ 5023.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_NRC 40-8	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_NRC 40-8	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-5-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design													WELD_NRC 5 PAD - P_NRC 1-8 - P_NRC 1-8 - PLAN #1 1-5-10 RHS	Offset Site Error:	0.00 ft
Survey Program: 0-MWD														Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Tooface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
1,300.00	1,299.80	1,299.87	1,299.67	2.72	2.78	-171.00	47.56	-42.96	72.05	66.57	5.48	13.157			
1,400.00	1,399.37	1,398.93	1,398.30	2.93	3.01	-165.53	53.97	-36.46	81.76	75.87	5.88	13.895			
1,500.00	1,498.55	1,497.02	1,495.60	3.16	3.25	-159.88	62.67	-27.64	96.01	89.70	6.31	15.212			
1,600.00	1,597.23	1,593.85	1,591.18	3.43	3.51	-154.75	73.55	-16.61	115.02	108.25	6.77	16.996			
1,700.00	1,695.29	1,689.15	1,684.68	3.73	3.81	-150.41	86.47	-3.51	138.79	131.53	7.26	19.113			
1,800.00	1,792.60	1,782.69	1,775.81	4.10	4.13	-146.84	101.27	11.49	167.20	159.40	7.80	21.427			
1,900.00	1,889.05	1,874.54	1,864.59	4.52	4.49	-143.93	117.81	28.26	200.07	191.67	8.40	23.827			
2,000.00	1,984.52	1,967.55	1,954.17	5.01	4.89	-141.88	135.37	46.07	236.35	227.30	9.05	26.113			
2,100.00	2,078.90	2,059.63	2,042.86	5.57	5.31	-140.68	152.75	63.69	275.26	265.51	9.74	28.250			
2,200.00	2,172.06	2,150.65	2,130.53	6.20	5.74	-140.04	169.93	81.11	316.65	306.18	10.47	30.232			
2,308.97	2,272.07	2,248.51	2,224.79	6.98	6.21	-139.75	188.41	99.85	364.52	353.21	11.31	32.231			
2,400.00	2,354.92	2,329.65	2,302.94	7.67	6.61	-140.18	203.72	115.38	405.71	393.62	12.09	33.545			
2,500.00	2,445.93	2,418.78	2,388.79	8.46	7.05	-140.56	220.55	132.44	450.98	438.00	12.98	34.753			
2,600.00	2,536.94	2,507.91	2,474.64	9.26	7.50	-140.88	237.37	149.50	496.26	482.39	13.88	35.764			
2,700.00	2,627.95	2,597.04	2,560.49	10.07	7.96	-141.14	254.20	166.56	541.55	526.76	14.79	36.619			
2,800.00	2,718.96	2,686.17	2,646.34	10.90	8.42	-141.36	271.02	183.62	586.85	571.14	15.71	37.348			
2,900.00	2,809.97	2,775.30	2,732.19	11.73	8.88	-141.55	287.85	200.68	632.15	615.51	16.65	37.976			
3,000.00	2,900.98	2,864.43	2,818.04	12.57	9.35	-141.71	304.68	217.74	677.46	659.87	17.59	38.520			
3,100.00	2,992.00	2,953.57	2,903.89	13.41	9.82	-141.86	321.50	234.80	722.77	704.24	18.53	38.996			
3,200.00	3,083.01	3,042.70	2,989.74	14.25	10.29	-141.98	338.33	251.86	768.09	748.60	19.49	39.415			
3,300.00	3,174.02	3,131.83	3,075.59	15.10	10.76	-142.10	355.15	268.92	813.41	792.96	20.44	39.785			
3,400.00	3,265.03	3,220.96	3,161.44	15.95	11.24	-142.20	371.98	285.98	858.73	837.32	21.41	40.115			
3,500.00	3,356.04	3,310.09	3,247.29	16.81	11.72	-142.29	388.80	303.04	904.05	881.68	22.37	40.411			
3,600.00	3,447.05	3,399.22	3,333.14	17.66	12.20	-142.37	405.63	320.10	949.38	926.04	23.34	40.676			
3,700.00	3,538.06	3,488.35	3,418.99	18.52	12.67	-142.44	422.46	337.16	994.70	970.39	24.31	40.916			
3,800.00	3,629.07	3,577.48	3,504.84	19.38	13.16	-142.51	439.28	354.22	1,040.03	1,014.74	25.28	41.134			
3,900.00	3,720.08	3,666.61	3,590.69	20.24	13.64	-142.57	456.11	371.28	1,085.36	1,059.10	26.26	41.332			
4,000.00	3,811.09	3,755.74	3,676.54	21.10	14.12	-142.63	472.93	388.34	1,130.68	1,103.45	27.24	41.513			
4,100.00	3,902.11	3,844.88	3,762.39	21.96	14.60	-142.68	489.76	405.40	1,176.01	1,147.80	28.22	41.679			
4,200.00	3,993.12	3,934.01	3,848.24	22.83	15.09	-142.73	506.58	422.46	1,221.34	1,192.15	29.20	41.832			
4,300.00	4,084.13	4,023.14	3,934.09	23.69	15.57	-142.78	523.41	439.52	1,266.67	1,236.50	30.18	41.973			
4,400.00	4,175.14	4,112.27	4,019.94	24.56	16.06	-142.82	540.24	456.58	1,312.01	1,280.84	31.16	42.104			
4,500.00	4,266.15	4,201.40	4,105.79	25.42	16.54	-142.86	557.06	473.64	1,357.34	1,325.19	32.15	42.225			
4,600.00	4,357.16	4,290.53	4,191.64	26.29	17.03	-142.90	573.89	490.70	1,402.67	1,369.54	33.13	42.337			
4,700.00	4,448.17	4,379.66	4,277.49	27.16	17.51	-142.93	590.71	507.76	1,448.00	1,413.89	34.12	42.442			
4,800.00	4,539.18	4,468.79	4,363.34	28.02	18.00	-142.96	607.54	524.82	1,493.34	1,458.23	35.10	42.540			
4,900.00	4,630.19	4,557.92	4,449.19	28.89	18.49	-142.99	624.36	541.88	1,538.67	1,502.58	36.09	42.632			
5,000.00	4,721.20	4,647.05	4,535.03	29.76	18.98	-143.02	641.19	558.94	1,584.00	1,546.92	37.08	42.718			
5,100.00	4,812.22	4,736.19	4,620.88	30.63	19.46	-143.05	658.02	576.00	1,629.34	1,591.27	38.07	42.799			
5,200.00	4,903.23	4,825.32	4,706.73	31.50	19.95	-143.08	674.84	593.06	1,674.67	1,635.61	39.06	42.875			
5,300.00	4,994.24	4,914.45	4,792.58	32.37	20.44	-143.10	691.67	610.12	1,720.01	1,679.96	40.05	42.946			
5,400.00	5,085.25	5,003.58	4,878.43	33.24	20.93	-143.12	708.49	627.18	1,765.34	1,724.30	41.04	43.014			
5,485.35	5,162.93	5,079.65	4,951.71	33.98	21.35	-143.14	722.85	641.74	1,804.04	1,762.15	41.89	43.069			
5,500.00	5,176.27	5,092.72	4,964.30	34.09	21.42	-143.23	725.32	644.25	1,810.65	1,768.61	42.04	43.066			
5,600.00	5,268.19	5,182.65	5,050.92	34.74	21.91	-143.79	742.30	661.46	1,854.36	1,811.31	43.06	43.066			
5,700.00	5,361.43	5,273.74	5,138.65	35.34	22.41	-144.22	759.49	678.89	1,895.53	1,851.47	44.06	43.023			
5,800.00	5,455.87	5,365.87	5,227.39	35.89	22.92	-144.56	776.88	696.53	1,934.11	1,889.07	45.04	42.943			
5,900.00	5,551.40	5,458.93	5,317.02	36.38	23.43	-144.79	794.45	714.34	1,970.06	1,924.07	46.00	42.832			
6,000.00	5,647.90	5,552.81	5,407.45	36.83	23.94	-144.93	812.17	732.31	2,003.37	1,956.45	46.92	42.695			
6,100.00	5,745.26	5,647.40	5,498.55	37.22	24.46	-144.99	830.03	750.41	2,034.02	1,986.20	47.82	42.535			
6,200.00	5,843.36	5,768.16	5,615.14	37.56	25.02	-144.88	852.11	772.80	2,061.68	2,012.95	48.73	42.309			
6,300.00	5,942.07	5,913.04	5,756.53	37.85	25.56	-144.73	874.28	795.28	2,084.67	2,035.10	49.57	42.054			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_NRC 40-8
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5023.00ft (Original Well Elev)
Reference Site:	WELD_NRC 5 PAD	MD Reference:	WELL @ 5023.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_NRC 40-8	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_NRC 40-8	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-5-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design													WELD_NRC 5 PAD - P_NRC 1-8 - P_NRC 1-8 - PLAN #1 1-5-10 RHS	Offset Site Error:	0.00 ft
Survey Program: 0-MWD														Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
6,400.00	6,041.28	6,061.18	5,902.55	38.09	26.01	-144.62	891.73	812.97	2,102.61	2,052.34	50.27	41.825			
6,500.00	6,140.86	6,211.80	6,052.13	38.27	26.38	-144.56	904.01	825.43	2,115.37	2,064.55	50.83	41.619			
6,600.00	6,240.70	6,364.03	6,204.03	38.41	26.64	-144.55	910.80	832.31	2,122.86	2,071.64	51.22	41.446			
6,709.32	6,350.00	6,510.02	6,350.00	38.52	26.82	-16.77	912.18	833.71	2,125.16	2,073.69	51.47	41.291			
6,800.00	6,440.68	6,600.69	6,440.68	38.58	26.92	-16.77	912.18	833.71	2,125.16	2,073.49	51.67	41.130			
6,900.00	6,540.68	6,700.69	6,540.68	38.66	27.03	-16.77	912.18	833.71	2,125.16	2,073.26	51.90	40.949			
7,000.00	6,640.68	6,800.69	6,640.68	38.73	27.14	-16.77	912.18	833.71	2,125.16	2,073.03	52.13	40.767			
7,100.00	6,740.68	6,900.69	6,740.68	38.81	27.26	-16.77	912.18	833.71	2,125.16	2,072.80	52.36	40.585			
7,200.00	6,840.68	7,000.69	6,840.68	38.88	27.38	-16.77	912.18	833.71	2,125.16	2,072.56	52.60	40.403			
7,300.00	6,940.68	7,100.69	6,940.68	38.96	27.50	-16.77	912.18	833.71	2,125.16	2,072.32	52.84	40.220			
7,400.00	7,040.68	7,200.69	7,040.68	39.04	27.62	-16.77	912.18	833.71	2,125.16	2,072.08	53.08	40.036			
7,500.00	7,140.68	7,300.69	7,140.68	39.12	27.74	-16.77	912.18	833.71	2,125.16	2,071.84	53.33	39.852			
7,600.00	7,240.68	7,400.69	7,240.68	39.20	27.86	-16.77	912.18	833.71	2,125.16	2,071.59	53.57	39.668			
7,700.00	7,340.68	7,500.69	7,340.68	39.28	27.98	-16.77	912.18	833.71	2,125.16	2,071.34	53.82	39.484			
7,800.00	7,440.68	7,600.69	7,440.68	39.37	28.11	-16.77	912.18	833.71	2,125.16	2,071.09	54.08	39.300			
7,900.00	7,540.68	7,700.69	7,540.68	39.45	28.23	-16.77	912.18	833.71	2,125.16	2,070.83	54.33	39.115			
8,000.00	7,640.68	7,800.69	7,640.68	39.54	28.36	-16.77	912.18	833.71	2,125.16	2,070.57	54.59	38.930			
8,100.00	7,740.68	7,900.69	7,740.68	39.63	28.49	-16.77	912.18	833.71	2,125.16	2,070.31	54.85	38.746			
8,200.00	7,840.68	8,000.69	7,840.68	39.71	28.62	-16.77	912.18	833.71	2,125.16	2,070.05	55.11	38.561			
8,300.00	7,940.68	8,100.69	7,940.68	39.80	28.75	-16.77	912.18	833.71	2,125.16	2,069.79	55.38	38.377			
8,400.00	8,040.68	8,200.69	8,040.68	39.89	28.88	-16.77	912.18	833.71	2,125.16	2,069.52	55.64	38.192			
8,500.00	8,140.68	8,300.69	8,140.68	39.98	29.02	-16.77	912.18	833.71	2,125.16	2,069.25	55.91	38.008			
8,564.66	8,205.34	8,365.35	8,205.34	40.04	29.10	-16.77	912.18	833.71	2,125.16	2,069.07	56.09	37.889			
8,600.00	8,240.68	8,395.02	8,235.00	40.08	29.14	-16.77	912.18	833.71	2,125.17	2,068.99	56.18	37.830			
8,634.32	8,275.00	8,395.02	8,235.00	40.11	29.14	-16.77	912.18	833.71	2,125.54	2,069.32	56.22	37.807			

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_NRC 40-8
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5023.00ft (Original Well Elev)
Reference Site:	WELD_NRC 5 PAD	MD Reference:	WELL @ 5023.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_NRC 40-8	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_NRC 40-8	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-5-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design													WELD_NRC 5 PAD - P_NRC 24-8 - P_NRC 24-8 - PLAN #1 1-5-10 RHS	Offset Site Error:	0.00 ft
Survey Program: 0-MWD														Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
0.00	0.00	0.00	0.00	0.00	0.00	-49.40	10.56	-12.31	16.22						
100.00	100.00	100.00	100.00	0.10	0.10	-49.40	10.56	-12.31	16.22	16.03	0.19	84.895			
200.00	200.00	200.00	200.00	0.32	0.32	-49.40	10.56	-12.31	16.22	15.58	0.64	25.320			
300.00	300.00	300.00	300.00	0.55	0.55	-49.40	10.56	-12.31	16.22	15.13	1.09	14.879			
400.00	400.00	400.00	400.00	0.77	0.77	-49.40	10.56	-12.31	16.22	14.68	1.54	10.534			
500.00	500.00	500.00	500.00	0.99	0.99	-49.40	10.56	-12.31	16.22	14.23	1.99	8.154			
600.00	600.00	600.00	600.00	1.22	1.22	-49.40	10.56	-12.31	16.22	13.78	2.44	6.651			
700.00	700.00	700.00	700.00	1.44	1.44	-49.40	10.56	-12.31	16.22	13.33	2.89	5.616			
800.00	800.00	800.00	800.00	1.67	1.67	-49.40	10.56	-12.31	16.22	12.88	3.34	4.859			
900.00	900.00	900.00	900.00	1.89	1.89	-49.40	10.56	-12.31	16.22	12.43	3.79	4.283			
1,000.00	1,000.00	1,000.00	1,000.00	2.12	2.12	-49.40	10.56	-12.31	16.22	11.98	4.24	3.828			
1,085.00	1,085.00	1,085.00	1,085.00	2.31	2.31	-49.40	10.56	-12.31	16.22	11.60	4.62	3.511	CC		
1,100.00	1,100.00	1,100.05	1,100.05	2.34	2.34	-177.33	10.52	-12.32	16.24	11.56	4.68	3.471	ES		
1,200.00	1,199.97	1,200.31	1,200.28	2.52	2.51	175.99	8.26	-12.62	17.38	12.36	5.03	3.458	SF		
1,300.00	1,299.80	1,300.36	1,300.16	2.72	2.69	162.90	2.53	-13.38	21.12	15.74	5.39	3.922			
1,400.00	1,399.37	1,400.03	1,399.39	2.93	2.88	150.12	-6.60	-14.59	28.55	22.78	5.77	4.949			
1,500.00	1,498.55	1,499.13	1,497.69	3.16	3.10	140.82	-19.06	-16.25	39.97	33.78	6.19	6.459			
1,600.00	1,597.23	1,597.50	1,594.77	3.43	3.35	134.67	-34.77	-18.34	55.25	48.58	6.67	8.289			
1,700.00	1,695.29	1,694.97	1,690.37	3.73	3.64	130.58	-53.57	-20.84	74.15	66.94	7.21	10.284			
1,800.00	1,792.60	1,792.31	1,785.38	4.10	3.97	128.34	-74.55	-23.63	96.16	88.33	7.83	12.285			
1,900.00	1,889.05	1,889.33	1,880.07	4.52	4.32	128.08	-95.53	-26.41	120.34	111.84	8.50	14.154			
2,000.00	1,984.52	1,985.77	1,974.19	5.01	4.68	128.85	-116.37	-29.18	146.63	137.40	9.23	15.889			
2,100.00	2,078.90	2,081.51	2,067.62	5.57	5.06	130.14	-137.07	-31.93	175.13	165.13	10.00	17.512			
2,200.00	2,172.06	2,176.42	2,160.25	6.20	5.45	131.67	-157.59	-34.66	205.95	195.14	10.81	19.050			
2,308.97	2,272.07	2,278.77	2,260.14	6.98	5.88	133.42	-179.72	-37.60	242.33	230.60	11.73	20.660			
2,400.00	2,354.92	2,363.77	2,343.09	7.67	6.24	135.16	-198.09	-40.04	274.08	261.53	12.55	21.835			
2,500.00	2,445.93	2,457.14	2,434.21	8.46	6.64	136.66	-218.28	-42.73	309.16	295.69	13.47	22.954			
2,600.00	2,536.94	2,550.51	2,525.33	9.26	7.05	137.85	-238.46	-45.41	344.39	329.99	14.40	23.923			
2,700.00	2,627.95	2,643.88	2,616.46	10.07	7.46	138.83	-258.65	-48.09	379.73	364.39	15.33	24.768			
2,800.00	2,718.96	2,737.25	2,707.58	10.90	7.87	139.63	-278.83	-50.78	415.14	398.87	16.27	25.510			
2,900.00	2,809.97	2,830.63	2,798.71	11.73	8.29	140.31	-299.02	-53.46	450.62	433.40	17.22	26.167			
3,000.00	2,900.98	2,924.00	2,889.83	12.57	8.71	140.90	-319.21	-56.14	486.14	467.97	18.17	26.750			
3,100.00	2,992.00	3,017.37	2,980.95	13.41	9.13	141.40	-339.39	-58.82	521.70	502.58	19.13	27.273			
3,200.00	3,083.01	3,110.74	3,072.08	14.25	9.56	141.84	-359.58	-61.51	557.30	537.21	20.09	27.742			
3,300.00	3,174.02	3,204.11	3,163.20	15.10	9.98	142.22	-379.76	-64.19	592.92	571.87	21.05	28.167			
3,400.00	3,265.03	3,297.48	3,254.33	15.95	10.41	142.57	-399.95	-66.87	628.55	606.54	22.01	28.553			
3,500.00	3,356.04	3,390.85	3,345.45	16.81	10.84	142.87	-420.13	-69.56	664.21	641.23	22.98	28.905			
3,600.00	3,447.05	3,484.23	3,436.57	17.66	11.26	143.15	-440.32	-72.24	699.88	675.94	23.95	29.228			
3,700.00	3,538.06	3,577.60	3,527.70	18.52	11.69	143.39	-460.51	-74.92	735.57	710.65	24.91	29.524			
3,800.00	3,629.07	3,670.97	3,618.82	19.38	12.13	143.62	-480.69	-77.60	771.26	745.38	25.88	29.798			
3,900.00	3,720.08	3,764.34	3,709.95	20.24	12.56	143.82	-500.88	-80.29	806.97	780.11	26.85	30.052			
4,000.00	3,811.09	3,857.71	3,801.07	21.10	12.99	144.01	-521.06	-82.97	842.68	814.86	27.82	30.287			
4,100.00	3,902.11	3,951.08	3,892.19	21.96	13.42	144.18	-541.25	-85.65	878.40	849.60	28.79	30.507			
4,200.00	3,993.12	4,044.46	3,983.32	22.83	13.86	144.34	-561.43	-88.33	914.12	884.36	29.76	30.712			
4,300.00	4,084.13	4,137.83	4,074.44	23.69	14.29	144.49	-581.62	-91.02	949.86	919.12	30.74	30.904			
4,400.00	4,175.14	4,231.20	4,165.57	24.56	14.73	144.63	-601.80	-93.70	985.59	953.89	31.71	31.084			
4,500.00	4,266.15	4,324.57	4,256.69	25.42	15.16	144.75	-621.99	-96.38	1,021.33	988.66	32.68	31.254			
4,600.00	4,357.16	4,417.94	4,347.81	26.29	15.60	144.87	-642.18	-99.07	1,057.08	1,023.43	33.65	31.414			
4,700.00	4,448.17	4,511.31	4,438.94	27.16	16.03	144.98	-662.36	-101.75	1,092.83	1,058.21	34.62	31.565			
4,800.00	4,539.18	4,604.68	4,530.06	28.02	16.47	145.08	-682.55	-104.43	1,128.58	1,092.99	35.59	31.709			
4,900.00	4,630.19	4,698.06	4,621.19	28.89	16.90	145.18	-702.73	-107.11	1,164.34	1,127.77	36.56	31.845			
5,000.00	4,721.20	4,791.43	4,712.31	29.76	17.34	145.27	-722.92	-109.80	1,200.10	1,162.56	37.53	31.974			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_NRC 40-8
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5023.00ft (Original Well Elev)
Reference Site:	WELD_NRC 5 PAD	MD Reference:	WELL @ 5023.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_NRC 40-8	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_NRC 40-8	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-5-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design												WELD_NRC 5 PAD - P_NRC 24-8 - P_NRC 24-8 - PLAN #1 1-5-10 RHS	Offset Site Error:	0.00 ft
Survey Program: 0-MWD													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance					Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Tooface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)		Separation Factor	
5,100.00	4,812.22	4,884.80	4,803.43	30.63	17.78	145.36	-743.10	-112.48	1,235.86	1,197.35	38.50	32.097		
5,200.00	4,903.23	4,978.17	4,894.56	31.50	18.22	145.44	-763.29	-115.16	1,271.62	1,232.15	39.47	32.214		
5,300.00	4,994.24	5,071.54	4,985.68	32.37	18.65	145.52	-783.48	-117.85	1,307.39	1,266.94	40.44	32.326		
5,400.00	5,085.25	5,164.91	5,076.81	33.24	19.09	145.59	-803.66	-120.53	1,343.15	1,301.74	41.41	32.434		
5,485.35	5,162.93	5,244.61	5,154.58	33.98	19.46	145.65	-820.89	-122.82	1,373.68	1,331.44	42.24	32.521		
5,500.00	5,176.27	5,258.30	5,167.94	34.09	19.53	145.72	-823.85	-123.21	1,378.89	1,336.51	42.38	32.537		
5,600.00	5,268.19	5,352.33	5,259.71	34.74	19.97	146.14	-844.18	-125.91	1,412.91	1,369.63	43.28	32.645		
5,700.00	5,361.43	5,447.29	5,352.38	35.34	20.42	146.43	-864.71	-128.64	1,444.19	1,400.01	44.18	32.690		
5,800.00	5,455.87	5,543.06	5,445.85	35.89	20.87	146.61	-885.41	-131.39	1,472.70	1,427.63	45.07	32.677		
5,900.00	5,551.40	5,639.54	5,540.01	36.38	21.32	146.69	-906.27	-134.17	1,498.42	1,452.48	45.95	32.611		
6,000.00	5,647.90	5,736.60	5,634.73	36.83	21.78	146.66	-927.25	-136.95	1,521.34	1,474.53	46.82	32.497		
6,100.00	5,745.26	5,834.75	5,730.55	37.22	22.21	146.54	-948.36	-139.76	1,541.45	1,493.81	47.65	32.351		
6,200.00	5,843.36	5,935.54	5,829.45	37.56	22.57	146.41	-967.54	-142.31	1,558.64	1,510.30	48.34	32.241		
6,300.00	5,942.07	6,037.25	5,929.90	37.85	22.84	146.31	-983.39	-144.42	1,572.82	1,523.92	48.90	32.165		
6,400.00	6,041.28	6,139.72	6,031.59	38.09	23.08	146.24	-995.78	-146.06	1,583.94	1,534.59	49.35	32.096		
6,500.00	6,140.86	6,242.75	6,134.23	38.27	23.28	146.19	-1,004.59	-147.23	1,591.98	1,542.28	49.70	32.031		
6,600.00	6,240.70	6,346.15	6,237.50	38.41	23.45	146.18	-1,009.74	-147.92	1,596.91	1,546.96	49.95	31.972		
6,709.32	6,350.00	6,458.67	6,350.00	38.52	23.59	-86.00	-1,011.22	-148.11	1,598.73	1,548.61	50.12	31.898		
6,800.00	6,440.68	6,549.35	6,440.68	38.58	23.69	-86.00	-1,011.22	-148.11	1,598.73	1,548.42	50.31	31.776		
6,900.00	6,540.68	6,649.35	6,540.68	38.66	23.80	-86.00	-1,011.22	-148.11	1,598.73	1,548.21	50.52	31.648		
7,000.00	6,640.68	6,749.35	6,640.68	38.73	23.90	-86.00	-1,011.22	-148.11	1,598.73	1,548.01	50.72	31.519		
7,100.00	6,740.68	6,849.35	6,740.68	38.81	24.01	-86.00	-1,011.22	-148.11	1,598.73	1,547.80	50.93	31.389		
7,200.00	6,840.68	6,949.35	6,840.68	38.88	24.12	-86.00	-1,011.22	-148.11	1,598.73	1,547.58	51.15	31.258		
7,300.00	6,940.68	7,049.35	6,940.68	38.96	24.23	-86.00	-1,011.22	-148.11	1,598.73	1,547.37	51.36	31.126		
7,400.00	7,040.68	7,149.35	7,040.68	39.04	24.34	-86.00	-1,011.22	-148.11	1,598.73	1,547.15	51.58	30.994		
7,500.00	7,140.68	7,249.35	7,140.68	39.12	24.46	-86.00	-1,011.22	-148.11	1,598.73	1,546.93	51.80	30.861		
7,600.00	7,240.68	7,349.35	7,240.68	39.20	24.57	-86.00	-1,011.22	-148.11	1,598.73	1,546.70	52.03	30.727		
7,700.00	7,340.68	7,449.35	7,340.68	39.28	24.69	-86.00	-1,011.22	-148.11	1,598.73	1,546.47	52.26	30.593		
7,800.00	7,440.68	7,549.35	7,440.68	39.37	24.81	-86.00	-1,011.22	-148.11	1,598.73	1,546.24	52.49	30.458		
7,900.00	7,540.68	7,649.35	7,540.68	39.45	24.93	-86.00	-1,011.22	-148.11	1,598.73	1,546.01	52.72	30.323		
8,000.00	7,640.68	7,749.35	7,640.68	39.54	25.05	-86.00	-1,011.22	-148.11	1,598.73	1,545.77	52.96	30.188		
8,100.00	7,740.68	7,849.35	7,740.68	39.63	25.17	-86.00	-1,011.22	-148.11	1,598.73	1,545.53	53.20	30.052		
8,200.00	7,840.68	7,949.35	7,840.68	39.71	25.30	-86.00	-1,011.22	-148.11	1,598.73	1,545.29	53.44	29.916		
8,300.00	7,940.68	8,049.35	7,940.68	39.80	25.42	-86.00	-1,011.22	-148.11	1,598.73	1,545.04	53.69	29.779		
8,400.00	8,040.68	8,149.35	8,040.68	39.89	25.55	-86.00	-1,011.22	-148.11	1,598.73	1,544.80	53.93	29.642		
8,500.00	8,140.68	8,249.35	8,140.68	39.98	25.68	-86.00	-1,011.22	-148.11	1,598.73	1,544.55	54.18	29.505		
8,600.00	8,240.68	8,349.35	8,240.68	40.08	25.81	-86.00	-1,011.22	-148.11	1,598.73	1,544.29	54.44	29.369		
8,606.91	8,247.58	8,356.25	8,247.58	40.08	25.82	-86.00	-1,011.22	-148.11	1,598.73	1,544.28	54.45	29.359		
8,634.32	8,275.00	8,363.67	8,255.00	40.11	25.83	-86.00	-1,011.22	-148.11	1,598.86	1,544.36	54.50	29.338		

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_NRC 40-8
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5023.00ft (Original Well Elev)
Reference Site:	WELD_NRC 5 PAD	MD Reference:	WELL @ 5023.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_NRC 40-8	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_NRC 40-8	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-5-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 ft	
Survey Program: 0-MWD												Offset Well Error:		0.00 ft
Reference				Offset			Semi Major Axis			Distance				Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Tooface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	-49.49	31.32	-36.66	48.22					
100.00	100.00	100.00	100.00	0.10	0.10	-49.49	31.32	-36.66	48.22	48.03	0.19	252.404		
200.00	200.00	200.00	200.00	0.32	0.32	-49.49	31.32	-36.66	48.22	47.58	0.64	75.278		
300.00	300.00	300.00	300.00	0.55	0.55	-49.49	31.32	-36.66	48.22	47.13	1.09	44.236		
400.00	400.00	400.00	400.00	0.77	0.77	-49.49	31.32	-36.66	48.22	46.68	1.54	31.320		
500.00	500.00	500.00	500.00	0.99	0.99	-49.49	31.32	-36.66	48.22	46.23	1.99	24.242		
600.00	600.00	600.00	600.00	1.22	1.22	-49.49	31.32	-36.66	48.22	45.78	2.44	19.774		
700.00	700.00	700.00	700.00	1.44	1.44	-49.49	31.32	-36.66	48.22	45.33	2.89	16.696		
800.00	800.00	800.00	800.00	1.67	1.67	-49.49	31.32	-36.66	48.22	44.88	3.34	14.447		
900.00	900.00	900.00	900.00	1.89	1.89	-49.49	31.32	-36.66	48.22	44.43	3.79	12.733		
1,000.00	1,000.00	1,000.00	1,000.00	2.12	2.12	-49.49	31.32	-36.66	48.22	43.99	4.24	11.382		
1,085.00	1,085.00	1,085.00	1,085.00	2.31	2.31	-49.49	31.32	-36.66	48.22	43.60	4.62	10.440	CC	
1,100.00	1,100.00	1,100.17	1,100.17	2.34	2.34	-177.27	31.33	-36.62	48.24	43.55	4.68	10.304	ES	
1,200.00	1,199.97	1,201.26	1,201.22	2.52	2.55	-175.35	31.67	-34.33	49.02	43.96	5.06	9.681		
1,300.00	1,299.80	1,302.21	1,302.00	2.72	2.76	-170.77	32.53	-28.52	51.25	45.80	5.45	9.396	SF	
1,400.00	1,399.37	1,402.92	1,402.26	2.93	2.99	-164.28	33.91	-19.23	55.43	49.57	5.86	9.458		
1,500.00	1,498.55	1,503.26	1,501.78	3.16	3.24	-156.91	35.80	-6.51	62.13	55.83	6.30	9.866		
1,600.00	1,597.23	1,603.14	1,600.32	3.43	3.51	-149.67	38.18	9.56	71.79	65.00	6.78	10.581		
1,700.00	1,695.29	1,702.44	1,697.67	3.73	3.83	-143.20	41.05	28.90	84.60	77.25	7.34	11.519		
1,800.00	1,792.60	1,801.06	1,793.63	4.10	4.19	-137.75	44.39	51.40	100.57	92.58	7.99	12.583		
1,900.00	1,889.05	1,898.92	1,888.02	4.52	4.60	-133.27	48.17	76.94	119.60	110.86	8.74	13.683		
2,000.00	1,984.52	1,995.93	1,980.66	5.01	5.06	-129.63	52.39	105.39	141.56	131.96	9.60	14.741		
2,100.00	2,078.90	2,092.30	2,071.77	5.57	5.59	-126.74	57.00	136.46	166.29	155.71	10.58	15.720		
2,200.00	2,172.06	2,188.53	2,162.55	6.20	6.14	-125.14	61.68	168.01	193.27	181.65	11.63	16.622		
2,308.97	2,272.07	2,292.80	2,260.93	6.98	6.77	-124.54	66.75	202.20	224.91	212.07	12.83	17.526		
2,400.00	2,354.92	2,379.61	2,342.83	7.67	7.30	-124.84	70.97	230.66	252.27	238.37	13.91	18.139		
2,500.00	2,445.93	2,474.97	2,432.80	8.46	7.90	-125.10	75.61	261.92	282.35	267.23	15.12	18.678		
2,600.00	2,536.94	2,570.34	2,522.78	9.26	8.50	-125.31	80.25	293.19	312.42	296.07	16.35	19.110		
2,700.00	2,627.95	2,665.70	2,612.75	10.07	9.11	-125.48	84.89	324.45	342.50	324.90	17.60	19.462		
2,800.00	2,718.96	2,761.06	2,702.73	10.90	9.73	-125.63	89.52	355.72	372.58	353.72	18.86	19.753		
2,900.00	2,809.97	2,856.43	2,792.70	11.73	10.36	-125.75	94.16	386.99	402.67	382.53	20.14	19.995		
3,000.00	2,900.98	2,951.79	2,882.67	12.57	10.99	-125.86	98.80	418.25	432.75	411.33	21.42	20.200		
3,100.00	2,992.00	3,047.16	2,972.65	13.41	11.62	-125.95	103.44	449.52	462.84	440.12	22.72	20.375		
3,200.00	3,083.01	3,142.52	3,062.62	14.25	12.25	-126.04	108.07	480.78	492.93	468.91	24.02	20.525		
3,300.00	3,174.02	3,237.89	3,152.59	15.10	12.89	-126.11	112.71	512.05	523.02	497.69	25.32	20.655		
3,400.00	3,265.03	3,333.25	3,242.57	15.95	13.53	-126.17	117.35	543.32	553.10	526.47	26.63	20.769		
3,500.00	3,356.04	3,428.61	3,332.54	16.81	14.17	-126.23	121.99	574.58	583.19	555.25	27.95	20.869		
3,600.00	3,447.05	3,523.98	3,422.51	17.66	14.81	-126.28	126.62	605.85	613.28	584.02	29.26	20.958		
3,700.00	3,538.06	3,619.34	3,512.49	18.52	15.46	-126.33	131.26	637.11	643.37	612.79	30.58	21.037		
3,800.00	3,629.07	3,714.71	3,602.46	19.38	16.10	-126.37	135.90	668.38	673.47	641.56	31.91	21.107		
3,900.00	3,720.08	3,810.07	3,692.44	20.24	16.75	-126.41	140.54	699.65	703.56	670.32	33.23	21.171		
4,000.00	3,811.09	3,905.43	3,782.41	21.10	17.39	-126.45	145.17	730.91	733.65	699.09	34.56	21.228		
4,100.00	3,902.11	4,000.80	3,872.38	21.96	18.04	-126.48	149.81	762.18	763.74	727.85	35.89	21.280		
4,200.00	3,993.12	4,096.16	3,962.36	22.83	18.69	-126.51	154.45	793.44	793.83	756.61	37.22	21.328		
4,300.00	4,084.13	4,191.53	4,052.33	23.69	19.34	-126.54	159.09	824.71	823.92	785.37	38.55	21.371		
4,400.00	4,175.14	4,286.89	4,142.30	24.56	19.99	-126.57	163.72	855.98	854.02	814.13	39.89	21.411		
4,500.00	4,266.15	4,382.25	4,232.28	25.42	20.64	-126.59	168.36	887.24	884.11	842.89	41.22	21.447		
4,600.00	4,357.16	4,477.62	4,322.25	26.29	21.29	-126.62	173.00	918.51	914.20	871.64	42.56	21.481		
4,700.00	4,448.17	4,572.98	4,412.22	27.16	21.94	-126.64	177.64	949.77	944.29	900.40	43.90	21.512		
4,800.00	4,539.18	4,668.35	4,502.20	28.02	22.60	-126.66	182.27	981.04	974.39	929.15	45.23	21.541		
4,900.00	4,630.19	4,763.71	4,592.17	28.89	23.25	-126.68	186.91	1,012.31	1,004.48	957.91	46.57	21.568		
5,000.00	4,721.20	4,859.08	4,682.14	29.76	23.90	-126.69	191.55	1,043.57	1,034.57	986.66	47.91	21.593		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_NRC 40-8
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5023.00ft (Original Well Elev)
Reference Site:	WELD_NRC 5 PAD	MD Reference:	WELL @ 5023.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_NRC 40-8	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_NRC 40-8	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-5-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design												WELD_NRC 5 PAD - P_NRC 41-8 - P_NRC 41-8 - PLAN #1 1-5-10 RHS	Offset Site Error:	0.00 ft
Survey Program: 0-MWD													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance					Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)		Separation Factor	
5,100.00	4,812.22	4,954.44	4,772.12	30.63	24.55	-126.71	196.19	1,074.84	1,064.67	1,015.41	49.25	21.616		
5,200.00	4,903.23	5,049.80	4,862.09	31.50	25.21	-126.73	200.82	1,106.10	1,094.76	1,044.16	50.59	21.638		
5,300.00	4,994.24	5,145.17	4,952.07	32.37	25.86	-126.74	205.46	1,137.37	1,124.85	1,072.92	51.94	21.658		
5,400.00	5,085.25	5,240.53	5,042.04	33.24	26.51	-126.76	210.10	1,168.64	1,154.95	1,101.67	53.28	21.678		
5,485.35	5,162.93	5,321.93	5,118.83	33.98	27.07	-126.77	214.06	1,195.32	1,180.63	1,126.21	54.42	21.693		
5,500.00	5,176.27	5,335.90	5,132.02	34.09	27.17	-126.84	214.74	1,199.90	1,185.02	1,130.40	54.62	21.696		
5,600.00	5,268.19	5,431.65	5,222.35	34.74	27.83	-127.25	219.39	1,231.30	1,213.81	1,157.94	55.88	21.723		
5,700.00	5,361.43	5,527.90	5,313.16	35.34	28.49	-127.48	224.07	1,262.85	1,240.59	1,183.46	57.13	21.716		
5,800.00	5,455.87	5,626.29	5,406.05	35.89	29.11	-127.56	228.83	1,294.94	1,265.32	1,206.99	58.33	21.692		
5,900.00	5,551.40	5,729.27	5,504.16	36.38	29.62	-127.60	233.42	1,325.88	1,287.69	1,228.31	59.38	21.685		
6,000.00	5,647.90	5,833.23	5,604.28	36.83	30.09	-127.63	237.53	1,353.55	1,307.56	1,247.23	60.33	21.673		
6,100.00	5,745.26	5,938.07	5,706.21	37.22	30.51	-127.67	241.12	1,377.79	1,324.89	1,263.72	61.17	21.658		
6,200.00	5,843.36	6,043.66	5,809.70	37.56	30.87	-127.70	244.19	1,398.47	1,339.63	1,277.73	61.90	21.640		
6,300.00	5,942.07	6,149.90	5,914.54	37.85	31.19	-127.74	246.71	1,415.45	1,351.76	1,289.24	62.53	21.619		
6,400.00	6,041.28	6,256.65	6,020.45	38.09	31.45	-127.78	248.66	1,428.63	1,361.25	1,298.21	63.04	21.595		
6,500.00	6,140.86	6,363.78	6,127.16	38.27	31.66	-127.82	250.04	1,437.92	1,368.07	1,304.64	63.43	21.567		
6,600.00	6,240.70	6,471.15	6,234.39	38.41	31.81	-127.86	250.83	1,443.27	1,372.22	1,308.50	63.72	21.535		
6,709.32	6,350.00	6,586.78	6,350.00	38.52	31.93	-0.09	251.04	1,444.69	1,373.69	1,309.78	63.91	21.493		
6,800.00	6,440.68	6,677.45	6,440.68	38.58	32.02	-0.09	251.04	1,444.69	1,373.69	1,309.62	64.08	21.438		
6,900.00	6,540.68	6,777.45	6,540.68	38.66	32.11	-0.09	251.04	1,444.69	1,373.69	1,309.43	64.26	21.376		
7,000.00	6,640.68	6,877.45	6,640.68	38.73	32.21	-0.09	251.04	1,444.69	1,373.69	1,309.24	64.45	21.314		
7,100.00	6,740.68	6,977.45	6,740.68	38.81	32.31	-0.09	251.04	1,444.69	1,373.69	1,309.05	64.64	21.251		
7,200.00	6,840.68	7,077.45	6,840.68	38.88	32.41	-0.09	251.04	1,444.69	1,373.69	1,308.86	64.83	21.188		
7,300.00	6,940.68	7,177.45	6,940.68	38.96	32.51	-0.09	251.04	1,444.69	1,373.69	1,308.66	65.03	21.124		
7,400.00	7,040.68	7,277.45	7,040.68	39.04	32.61	-0.09	251.04	1,444.69	1,373.69	1,308.47	65.23	21.060		
7,500.00	7,140.68	7,377.45	7,140.68	39.12	32.72	-0.09	251.04	1,444.69	1,373.69	1,308.27	65.43	20.996		
7,600.00	7,240.68	7,477.45	7,240.68	39.20	32.82	-0.09	251.04	1,444.69	1,373.69	1,308.06	65.63	20.931		
7,700.00	7,340.68	7,577.45	7,340.68	39.28	32.93	-0.09	251.04	1,444.69	1,373.69	1,307.86	65.84	20.865		
7,800.00	7,440.68	7,677.45	7,440.68	39.37	33.03	-0.09	251.04	1,444.69	1,373.69	1,307.65	66.04	20.800		
7,900.00	7,540.68	7,777.45	7,540.68	39.45	33.14	-0.09	251.04	1,444.69	1,373.69	1,307.44	66.25	20.734		
8,000.00	7,640.68	7,877.45	7,640.68	39.54	33.25	-0.09	251.04	1,444.69	1,373.69	1,307.23	66.47	20.667		
8,100.00	7,740.68	7,977.45	7,740.68	39.63	33.36	-0.09	251.04	1,444.69	1,373.69	1,307.01	66.68	20.601		
8,200.00	7,840.68	8,077.45	7,840.68	39.71	33.48	-0.09	251.04	1,444.69	1,373.69	1,306.79	66.90	20.534		
8,300.00	7,940.68	8,177.45	7,940.68	39.80	33.59	-0.09	251.04	1,444.69	1,373.69	1,306.57	67.12	20.466		
8,400.00	8,040.68	8,277.45	8,040.68	39.89	33.70	-0.09	251.04	1,444.69	1,373.69	1,306.35	67.34	20.399		
8,500.00	8,140.68	8,377.45	8,140.68	39.98	33.82	-0.09	251.04	1,444.69	1,373.69	1,306.13	67.57	20.331		
8,600.00	8,240.68	8,477.45	8,240.68	40.08	33.93	-0.09	251.04	1,444.69	1,373.69	1,305.90	67.79	20.263		
8,634.32	8,275.00	8,486.78	8,250.00	40.11	33.95	-0.09	251.04	1,444.69	1,373.92	1,306.08	67.84	20.252		

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_NRC 40-8
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5023.00ft (Original Well Elev)
Reference Site:	WELD_NRC 5 PAD	MD Reference:	WELL @ 5023.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_NRC 40-8	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_NRC 40-8	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-5-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 ft		
Survey Program: 0-MWD												Offset Well Error:		0.00 ft	
Reference				Offset			Semi Major Axis			Distance				Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Tooface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
0.00	0.00	0.00	0.00	0.00	0.00	-49.54	20.76	-24.35	32.00						
100.00	100.00	100.00	100.00	0.10	0.10	-49.54	20.76	-24.35	32.00	31.81	0.19	167.495			
200.00	200.00	200.00	200.00	0.32	0.32	-49.54	20.76	-24.35	32.00	31.36	0.64	49.955			
300.00	300.00	300.00	300.00	0.55	0.55	-49.54	20.76	-24.35	32.00	30.91	1.09	29.355			
400.00	400.00	400.00	400.00	0.77	0.77	-49.54	20.76	-24.35	32.00	30.46	1.54	20.784			
500.00	500.00	500.00	500.00	0.99	0.99	-49.54	20.76	-24.35	32.00	30.01	1.99	16.087			
600.00	600.00	600.00	600.00	1.22	1.22	-49.54	20.76	-24.35	32.00	29.56	2.44	13.122			
700.00	700.00	700.00	700.00	1.44	1.44	-49.54	20.76	-24.35	32.00	29.11	2.89	11.079			
800.00	800.00	800.00	800.00	1.67	1.67	-49.54	20.76	-24.35	32.00	28.66	3.34	9.587			
900.00	900.00	900.00	900.00	1.89	1.89	-49.54	20.76	-24.35	32.00	28.21	3.79	8.449			
1,000.00	1,000.00	1,000.00	1,000.00	2.12	2.12	-49.54	20.76	-24.35	32.00	27.76	4.24	7.553			
1,085.00	1,085.00	1,085.00	1,085.00	2.31	2.31	-49.54	20.76	-24.35	32.00	27.38	4.62	6.928	CC		
1,100.00	1,100.00	1,099.98	1,099.98	2.34	2.34	-177.43	20.74	-24.38	32.04	27.37	4.68	6.849	ES, SF		
1,200.00	1,199.97	1,199.72	1,199.69	2.52	2.52	178.70	19.23	-26.05	34.69	29.65	5.04	6.888			
1,300.00	1,299.80	1,298.98	1,298.78	2.72	2.71	171.20	15.41	-30.28	41.94	36.54	5.40	7.764			
1,400.00	1,399.37	1,397.33	1,396.71	2.93	2.91	163.54	9.37	-36.98	54.51	48.73	5.78	9.434			
1,500.00	1,498.55	1,495.04	1,493.70	3.16	3.14	157.69	1.43	-45.79	72.43	66.26	6.17	11.735			
1,600.00	1,597.23	1,592.58	1,590.47	3.43	3.38	154.77	-6.78	-54.89	94.11	87.52	6.59	14.291			
1,700.00	1,695.29	1,689.43	1,686.54	3.73	3.63	153.62	-14.92	-63.92	118.95	111.93	7.02	16.951			
1,800.00	1,792.60	1,785.46	1,781.82	4.10	3.89	153.39	-23.00	-72.88	146.82	139.35	7.47	19.666			
1,900.00	1,889.05	1,880.56	1,876.17	4.52	4.15	153.65	-31.00	-81.75	177.67	169.74	7.93	22.407			
2,000.00	1,984.52	1,974.62	1,969.48	5.01	4.42	154.16	-38.91	-90.53	211.52	203.11	8.41	25.159			
2,100.00	2,078.90	2,067.52	2,061.64	5.57	4.69	154.78	-46.72	-99.19	248.34	239.45	8.90	27.909			
2,200.00	2,172.06	2,159.14	2,152.54	6.20	4.96	155.45	-54.43	-107.74	288.15	278.75	9.40	30.652			
2,308.97	2,272.07	2,257.40	2,250.02	6.98	5.26	156.16	-62.69	-116.90	334.92	324.96	9.96	33.625			
2,400.00	2,354.92	2,338.76	2,330.73	7.67	5.50	157.01	-69.54	-124.49	375.48	364.96	10.52	35.706			
2,500.00	2,445.93	2,428.13	2,419.40	8.46	5.78	157.75	-77.05	-132.83	420.10	408.97	11.14	37.726			
2,600.00	2,536.94	2,517.50	2,508.06	9.26	6.05	158.36	-84.57	-141.17	464.77	453.00	11.76	39.510			
2,700.00	2,627.95	2,606.88	2,596.73	10.07	6.33	158.85	-92.09	-149.50	509.47	497.07	12.40	41.096			
2,800.00	2,718.96	2,696.25	2,685.40	10.90	6.61	159.27	-99.61	-157.84	554.20	541.16	13.04	42.512			
2,900.00	2,809.97	2,785.62	2,774.06	11.73	6.89	159.62	-107.12	-166.17	598.94	585.26	13.68	43.783			
3,000.00	2,900.98	2,875.00	2,862.73	12.57	7.17	159.93	-114.64	-174.51	643.70	629.38	14.33	44.930			
3,100.00	2,992.00	2,964.37	2,951.39	13.41	7.46	160.19	-122.16	-182.85	688.48	673.50	14.98	45.970			
3,200.00	3,083.01	3,053.74	3,040.06	14.25	7.74	160.42	-129.67	-191.18	733.27	717.64	15.63	46.917			
3,300.00	3,174.02	3,143.12	3,128.72	15.10	8.03	160.63	-137.19	-199.52	778.06	761.78	16.28	47.782			
3,400.00	3,265.03	3,232.49	3,217.39	15.95	8.31	160.81	-144.71	-207.86	822.86	805.92	16.94	48.577			
3,500.00	3,356.04	3,321.86	3,306.06	16.81	8.60	160.98	-152.23	-216.19	867.67	850.07	17.60	49.309			
3,600.00	3,447.05	3,411.24	3,394.72	17.66	8.89	161.13	-159.74	-224.53	912.48	894.22	18.26	49.985			
3,700.00	3,538.06	3,500.61	3,483.39	18.52	9.18	161.26	-167.26	-232.87	957.30	938.38	18.91	50.612			
3,800.00	3,629.07	3,589.98	3,572.05	19.38	9.46	161.38	-174.78	-241.20	1,002.12	982.54	19.57	51.196			
3,900.00	3,720.08	3,679.36	3,660.72	20.24	9.75	161.50	-182.29	-249.54	1,046.94	1,026.71	20.23	51.740			
4,000.00	3,811.09	3,768.73	3,749.38	21.10	10.04	161.60	-189.81	-257.88	1,091.77	1,070.87	20.90	52.250			
4,100.00	3,902.11	3,858.10	3,838.05	21.96	10.33	161.69	-197.33	-266.21	1,136.60	1,115.04	21.56	52.722			
4,200.00	3,993.12	3,947.48	3,926.71	22.83	10.62	161.78	-204.84	-274.55	1,181.43	1,159.20	22.23	53.139			
4,300.00	4,084.13	4,036.85	4,015.38	23.69	10.91	161.86	-212.36	-282.89	1,226.26	1,203.36	22.91	53.530			
4,400.00	4,175.14	4,126.22	4,104.05	24.56	11.21	161.94	-219.88	-291.22	1,271.10	1,247.51	23.58	53.896			
4,500.00	4,266.15	4,215.60	4,192.71	25.42	11.50	162.01	-227.40	-299.56	1,315.94	1,291.68	24.26	54.240			
4,600.00	4,357.16	4,304.97	4,281.38	26.29	11.79	162.07	-234.91	-307.89	1,360.78	1,335.84	24.94	54.564			
4,700.00	4,448.17	4,394.34	4,370.04	27.16	12.08	162.14	-242.43	-316.23	1,405.62	1,380.00	25.62	54.869			
4,800.00	4,539.18	4,483.72	4,458.71	28.02	12.37	162.19	-249.95	-324.57	1,450.46	1,424.16	26.30	55.157			
4,900.00	4,630.19	4,573.09	4,547.37	28.89	12.67	162.25	-257.46	-332.90	1,495.30	1,468.32	26.98	55.429			
5,000.00	4,721.20	4,662.46	4,636.04	29.76	12.96	162.30	-264.98	-341.24	1,540.14	1,512.49	27.66	55.687			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_NRC 40-8
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5023.00ft (Original Well Elev)
Reference Site:	WELD_NRC 5 PAD	MD Reference:	WELL @ 5023.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_NRC 40-8	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_NRC 40-8	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-5-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design												WELD_NRC 5 PAD - P_NRC 7-8 - P_NRC 7-8 - PLAN #1 1-5-10 RHS	Offset Site Error:	0.00 ft
Survey Program: 0-MWD													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance					Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Tooface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)		Separation Factor	
5,100.00	4,812.22	4,751.84	4,724.71	30.63	13.25	162.35	-272.50	-349.58	1,584.99	1,556.65	28.34	55.932		
5,200.00	4,903.23	4,841.21	4,813.37	31.50	13.54	162.39	-280.02	-357.91	1,629.83	1,600.81	29.02	56.164		
5,300.00	4,994.24	4,930.58	4,902.04	32.37	13.84	162.44	-287.53	-366.25	1,674.68	1,644.98	29.70	56.384		
5,400.00	5,085.25	5,019.96	4,990.70	33.24	14.13	162.48	-295.05	-374.59	1,719.53	1,689.14	30.38	56.594		
5,485.35	5,162.93	5,096.24	5,066.38	33.98	14.38	162.51	-301.47	-381.70	1,757.80	1,726.84	30.97	56.765		
5,500.00	5,176.27	5,109.35	5,079.38	34.09	14.42	162.56	-302.57	-382.92	1,764.34	1,733.26	31.08	56.759		
5,600.00	5,268.19	5,199.67	5,168.99	34.74	14.72	162.85	-310.17	-391.35	1,807.25	1,775.40	31.85	56.737		
5,700.00	5,361.43	5,291.37	5,259.96	35.34	15.02	163.09	-317.88	-399.90	1,847.13	1,814.53	32.60	56.665		
5,800.00	5,455.87	5,384.33	5,352.19	35.89	15.33	163.26	-325.70	-408.57	1,883.92	1,850.60	33.31	56.551		
5,900.00	5,551.40	5,478.45	5,445.56	36.38	15.64	163.38	-333.61	-417.35	1,917.58	1,883.58	34.00	56.401		
6,000.00	5,647.90	5,573.61	5,539.97	36.83	15.95	163.45	-341.62	-426.23	1,948.09	1,913.44	34.65	56.220		
6,100.00	5,745.26	5,669.69	5,635.29	37.22	16.27	163.47	-349.70	-435.19	1,975.40	1,940.13	35.27	56.012		
6,200.00	5,843.36	5,766.58	5,731.41	37.56	16.59	163.45	-357.85	-444.23	1,999.49	1,963.64	35.85	55.780		
6,300.00	5,942.07	5,864.16	5,828.22	37.85	16.91	163.38	-366.06	-453.33	2,020.33	1,983.95	36.38	55.527		
6,400.00	6,041.28	5,962.31	5,925.59	38.09	17.23	163.27	-374.31	-462.49	2,037.92	2,001.04	36.88	55.255		
6,500.00	6,140.86	6,062.00	6,044.42	38.27	17.59	163.07	-383.89	-473.11	2,052.02	2,014.65	37.38	54.900		
6,600.00	6,240.70	6,229.99	6,191.95	38.41	17.89	162.91	-391.57	-481.62	2,060.87	2,023.10	37.77	54.571		
6,709.32	6,350.00	6,388.11	6,350.00	38.52	18.15	-69.33	-394.13	-484.47	2,064.04	2,025.99	38.05	54.252		
6,800.00	6,440.68	6,478.78	6,440.68	38.58	18.28	-69.33	-394.13	-484.47	2,064.04	2,025.74	38.30	53.895		
6,900.00	6,540.68	6,578.78	6,540.68	38.66	18.43	-69.33	-394.13	-484.47	2,064.04	2,025.47	38.57	53.511		
7,000.00	6,640.68	6,678.78	6,640.68	38.73	18.58	-69.33	-394.13	-484.47	2,064.04	2,025.19	38.85	53.128		
7,100.00	6,740.68	6,778.78	6,740.68	38.81	18.73	-69.33	-394.13	-484.47	2,064.04	2,024.91	39.13	52.746		
7,200.00	6,840.68	6,878.78	6,840.68	38.88	18.88	-69.33	-394.13	-484.47	2,064.04	2,024.62	39.42	52.365		
7,300.00	6,940.68	6,978.78	6,940.68	38.96	19.03	-69.33	-394.13	-484.47	2,064.04	2,024.33	39.70	51.986		
7,400.00	7,040.68	7,078.78	7,040.68	39.04	19.18	-69.33	-394.13	-484.47	2,064.04	2,024.04	39.99	51.609		
7,500.00	7,140.68	7,178.78	7,140.68	39.12	19.34	-69.33	-394.13	-484.47	2,064.04	2,023.75	40.29	51.233		
7,600.00	7,240.68	7,278.78	7,240.68	39.20	19.49	-69.33	-394.13	-484.47	2,064.04	2,023.45	40.58	50.859		
7,700.00	7,340.68	7,378.78	7,340.68	39.28	19.65	-69.33	-394.13	-484.47	2,064.04	2,023.16	40.88	50.488		
7,800.00	7,440.68	7,478.78	7,440.68	39.37	19.81	-69.33	-394.13	-484.47	2,064.04	2,022.85	41.18	50.118		
7,900.00	7,540.68	7,578.78	7,540.68	39.45	19.97	-69.33	-394.13	-484.47	2,064.04	2,022.55	41.49	49.750		
8,000.00	7,640.68	7,678.78	7,640.68	39.54	20.13	-69.33	-394.13	-484.47	2,064.04	2,022.24	41.79	49.385		
8,100.00	7,740.68	7,778.78	7,740.68	39.63	20.29	-69.33	-394.13	-484.47	2,064.04	2,021.93	42.10	49.022		
8,200.00	7,840.68	7,878.78	7,840.68	39.71	20.46	-69.33	-394.13	-484.47	2,064.04	2,021.62	42.42	48.662		
8,300.00	7,940.68	7,978.78	7,940.68	39.80	20.62	-69.33	-394.13	-484.47	2,064.04	2,021.31	42.73	48.304		
8,400.00	8,040.68	8,078.78	8,040.68	39.89	20.79	-69.33	-394.13	-484.47	2,064.04	2,020.99	43.05	47.949		
8,500.00	8,140.68	8,178.78	8,140.68	39.98	20.96	-69.33	-394.13	-484.47	2,064.04	2,020.67	43.37	47.596		
8,600.00	8,240.68	8,278.78	8,240.68	40.08	21.13	-69.33	-394.13	-484.47	2,064.04	2,020.35	43.69	47.246		
8,618.18	8,258.86	8,296.96	8,258.86	40.09	21.16	-69.33	-394.13	-484.47	2,064.04	2,020.29	43.75	47.183		
8,634.32	8,275.00	8,303.11	8,265.00	40.11	21.17	-69.33	-394.13	-484.47	2,064.06	2,020.28	43.78	47.146		

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_NRC 40-8
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5023.00ft (Original Well Elev)
Reference Site:	WELD_NRC 5 PAD	MD Reference:	WELL @ 5023.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_NRC 40-8	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_NRC 40-8	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-5-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design												WELD_NRC 5 PAD - ROCKY MOUNTAIN FUEL CO C #6 EXISTING - ROCKY MOUNTAIN FUEL CO	Offset Site Error:	0.00 ft
Survey Program: 0-UNKNOWN													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance					Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Tooface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	-85.15	7.29	-85.92	88.09					
100.00	100.00	82.00	82.00	0.10	1.64	-85.15	7.29	-85.92	86.23	84.49	1.74	49.684		
200.00	200.00	182.00	182.00	0.32	5.28	-85.15	7.29	-85.92	86.23	80.63	5.60	15.397		
300.00	300.00	282.00	282.00	0.55	9.28	-85.15	7.29	-85.92	86.23	76.40	9.83	8.776		
400.00	400.00	382.00	382.00	0.77	13.28	-85.15	7.29	-85.92	86.23	72.18	14.05	6.137		
500.00	500.00	482.00	482.00	0.99	17.28	-85.15	7.29	-85.92	86.23	67.95	18.27	4.719		
600.00	600.00	582.00	582.00	1.22	21.28	-85.15	7.29	-85.92	86.23	63.73	22.50	3.833		
700.00	700.00	682.00	682.00	1.44	25.28	-85.15	7.29	-85.92	86.23	59.51	26.72	3.227		
800.00	800.00	782.00	782.00	1.67	29.28	-85.15	7.29	-85.92	86.23	55.28	30.95	2.786		
900.00	900.00	882.00	882.00	1.89	33.28	-85.15	7.29	-85.92	86.23	51.06	35.17	2.452		
1,000.00	1,000.00	982.00	982.00	2.12	37.28	-85.15	7.29	-85.92	86.23	46.83	39.40	2.189		
1,085.00	1,085.00	1,067.00	1,067.00	2.31	40.68	-85.15	7.29	-85.92	86.23	43.24	42.99	2.006	CC	
1,100.00	1,100.00	1,082.00	1,082.00	2.34	41.28	147.05	7.29	-85.92	86.26	42.64	43.62	1.978		
1,200.00	1,199.97	1,181.97	1,181.97	2.52	45.28	147.83	7.29	-85.92	88.17	40.40	47.78	1.845	ES	
1,300.00	1,299.80	1,281.80	1,281.80	2.72	49.27	149.67	7.29	-85.92	93.10	41.21	51.89	1.794	SF	
1,400.00	1,399.37	1,381.37	1,381.37	2.93	53.25	152.23	7.29	-85.92	101.18	45.26	55.92	1.809		
1,500.00	1,498.55	1,480.55	1,480.55	3.16	57.22	155.14	7.29	-85.92	112.60	52.74	59.86	1.881		
1,600.00	1,597.23	1,579.23	1,579.23	3.43	61.17	158.08	7.29	-85.92	127.46	63.80	63.66	2.002		
1,700.00	1,695.29	1,677.29	1,677.29	3.73	65.09	160.83	7.29	-85.92	145.86	78.53	67.33	2.166		
1,800.00	1,792.60	1,774.60	1,774.60	4.10	68.98	163.27	7.29	-85.92	167.80	96.98	70.82	2.369		
1,900.00	1,889.05	1,871.05	1,871.05	4.52	72.84	165.39	7.29	-85.92	193.28	119.14	74.14	2.607		
2,000.00	1,984.52	1,966.52	1,966.52	5.01	76.66	167.18	7.29	-85.92	222.24	144.98	77.27	2.876		
2,100.00	2,078.90	2,060.90	2,060.90	5.57	80.44	168.70	7.29	-85.92	254.64	174.46	80.18	3.176		
2,200.00	2,172.06	2,154.06	2,154.06	6.20	84.16	169.97	7.29	-85.92	290.42	207.54	82.88	3.504		
2,308.97	2,272.07	2,254.07	2,254.07	6.98	88.16	171.12	7.29	-85.92	333.18	247.63	85.56	3.894		
2,400.00	2,354.92	2,336.92	2,336.92	7.67	91.48	172.02	7.29	-85.92	370.56	281.74	88.83	4.172		
2,500.00	2,445.93	2,427.93	2,427.93	8.46	95.12	172.82	7.29	-85.92	411.70	319.27	92.43	4.454		
2,600.00	2,536.94	2,518.94	2,518.94	9.26	98.76	173.47	7.29	-85.92	452.89	356.85	96.05	4.715		
2,700.00	2,627.95	2,609.95	2,609.95	10.07	102.40	174.02	7.29	-85.92	494.12	394.45	99.67	4.958		
2,800.00	2,718.96	2,700.96	2,700.96	10.90	106.04	174.48	7.29	-85.92	535.39	432.08	103.30	5.183		
2,900.00	2,809.97	2,791.97	2,791.97	11.73	109.68	174.87	7.29	-85.92	576.68	469.73	106.94	5.392		
3,000.00	2,900.98	2,882.98	2,882.98	12.57	113.32	175.22	7.29	-85.92	617.99	507.40	110.59	5.588		
3,100.00	2,992.00	2,974.00	2,974.00	13.41	116.96	175.52	7.29	-85.92	659.31	545.08	114.24	5.772		
3,200.00	3,083.01	3,065.01	3,065.01	14.25	120.60	175.78	7.29	-85.92	700.65	582.76	117.89	5.943		
3,300.00	3,174.02	3,156.02	3,156.02	15.10	124.24	176.02	7.29	-85.92	742.00	620.46	121.54	6.105		
3,400.00	3,265.03	3,247.03	3,247.03	15.95	127.88	176.23	7.29	-85.92	783.36	658.16	125.20	6.257		
3,500.00	3,356.04	3,338.04	3,338.04	16.81	131.52	176.42	7.29	-85.92	824.72	695.86	128.86	6.400		
3,600.00	3,447.05	3,429.05	3,429.05	17.66	135.16	176.59	7.29	-85.92	866.09	733.58	132.52	6.536		
3,700.00	3,538.06	3,520.06	3,520.06	18.52	138.80	176.74	7.29	-85.92	907.47	771.29	136.18	6.664		
3,800.00	3,629.07	3,611.07	3,611.07	19.38	142.44	176.89	7.29	-85.92	948.86	809.01	139.85	6.785		
3,900.00	3,720.08	3,702.08	3,702.08	20.24	146.08	177.02	7.29	-85.92	990.24	846.73	143.51	6.900		
4,000.00	3,811.09	3,793.09	3,793.09	21.10	149.72	177.14	7.29	-85.92	1,031.64	884.46	147.18	7.009		
4,100.00	3,902.11	3,884.11	3,884.11	21.96	153.36	177.25	7.29	-85.92	1,073.03	922.18	150.85	7.113		
4,200.00	3,993.12	3,975.12	3,975.12	22.83	157.00	177.35	7.29	-85.92	1,114.43	959.91	154.52	7.212		
4,300.00	4,084.13	4,066.13	4,066.13	23.69	160.65	177.44	7.29	-85.92	1,155.83	997.64	158.19	7.307		
4,400.00	4,175.14	4,157.14	4,157.14	24.56	164.29	177.53	7.29	-85.92	1,197.24	1,035.38	161.86	7.397		
4,500.00	4,266.15	4,248.15	4,248.15	25.42	167.93	177.61	7.29	-85.92	1,238.64	1,073.11	165.53	7.483		
4,600.00	4,357.16	4,339.16	4,339.16	26.29	171.57	177.69	7.29	-85.92	1,280.05	1,110.85	169.20	7.565		
4,700.00	4,448.17	4,430.17	4,430.17	27.16	175.21	177.76	7.29	-85.92	1,321.46	1,148.58	172.88	7.644		
4,800.00	4,539.18	4,521.18	4,521.18	28.02	178.85	177.83	7.29	-85.92	1,362.87	1,186.32	176.55	7.719		
4,900.00	4,630.19	4,612.19	4,612.19	28.89	182.49	177.90	7.29	-85.92	1,404.28	1,224.06	180.22	7.792		
5,000.00	4,721.20	4,703.20	4,703.20	29.76	186.13	177.96	7.29	-85.92	1,445.70	1,261.80	183.90	7.861		

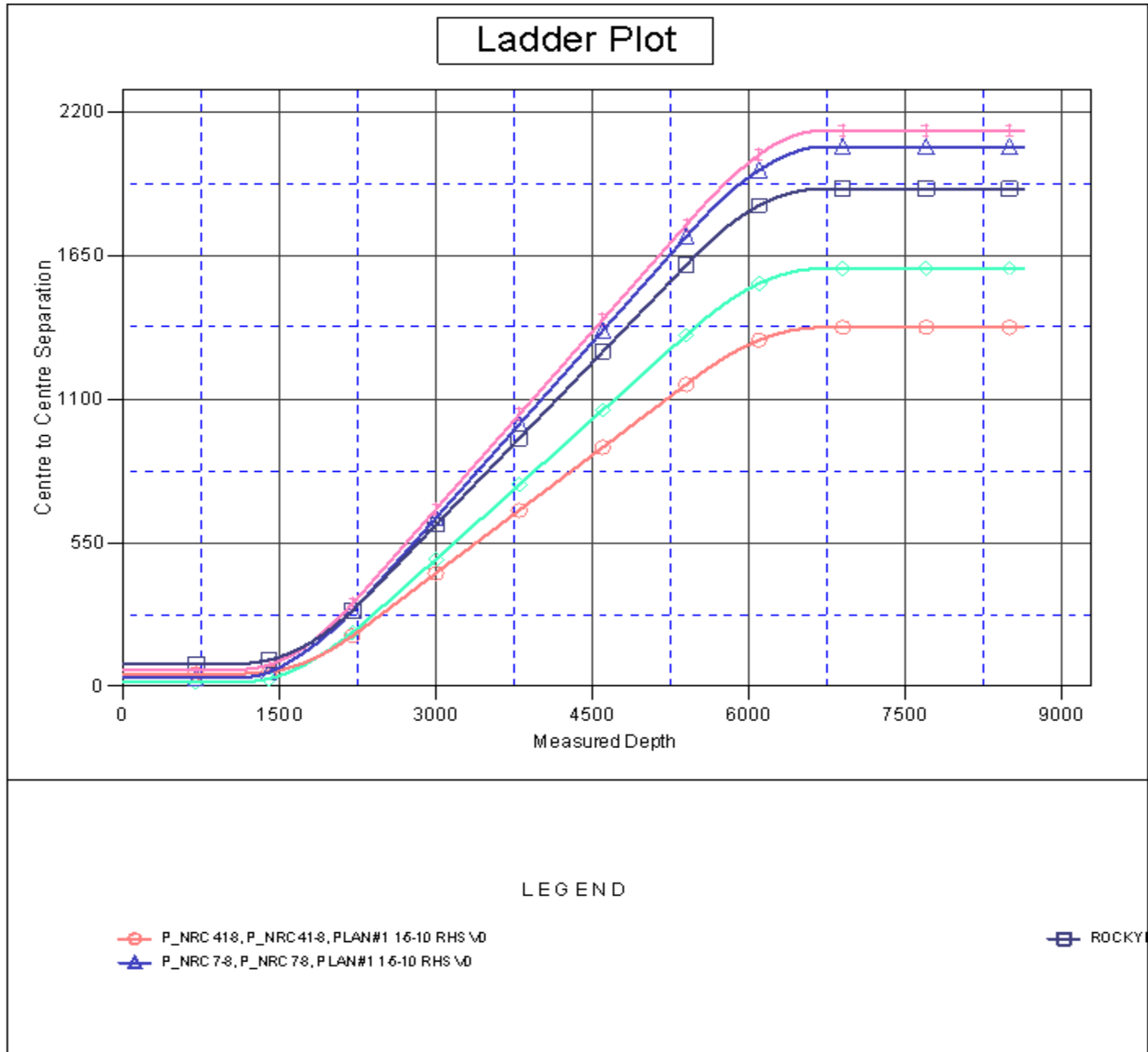
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_NRC 40-8
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5023.00ft (Original Well Elev)
Reference Site:	WELD_NRC 5 PAD	MD Reference:	WELL @ 5023.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_NRC 40-8	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_NRC 40-8	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-5-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design												WELD_NRC 5 PAD - ROCKY MOUNTAIN FUEL CO C #6 EXISTING - ROCKY MOUNTAIN FUEL CO	Offset Site Error:	0.00 ft
Survey Program: 0-UNKNOWN													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance					Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)		Separation Factor	
5,100.00	4,812.22	4,794.22	4,794.22	30.63	189.77	178.01	7.29	-85.92	1,487.11	1,299.54	187.57	7.928		
5,200.00	4,903.23	4,885.23	4,885.23	31.50	193.41	178.07	7.29	-85.92	1,528.53	1,337.28	191.25	7.992		
5,300.00	4,994.24	4,976.24	4,976.24	32.37	197.05	178.12	7.29	-85.92	1,569.95	1,375.02	194.93	8.054		
5,400.00	5,085.25	5,067.25	5,067.25	33.24	200.69	178.17	7.29	-85.92	1,611.37	1,412.76	198.60	8.114		
5,485.35	5,162.93	5,144.93	5,144.93	33.98	203.80	178.21	7.29	-85.92	1,646.72	1,444.98	201.74	8.163		
5,500.00	5,176.27	5,158.27	5,158.27	34.09	204.33	178.22	7.29	-85.92	1,652.75	1,450.06	202.69	8.154		
5,600.00	5,268.19	5,250.19	5,250.19	34.74	208.01	178.28	7.29	-85.92	1,692.11	1,482.99	209.12	8.092		
5,700.00	5,361.43	5,343.43	5,343.43	35.34	211.74	178.34	7.29	-85.92	1,728.23	1,512.79	215.45	8.022		
5,800.00	5,455.87	5,437.87	5,437.87	35.89	215.51	178.39	7.29	-85.92	1,761.08	1,539.34	221.74	7.942		
5,900.00	5,551.40	5,533.40	5,533.40	36.38	219.34	178.44	7.29	-85.92	1,790.62	1,562.74	227.88	7.858		
6,000.00	5,647.90	5,629.90	5,629.90	36.83	223.20	178.47	7.29	-85.92	1,816.81	1,582.97	233.84	7.770		
6,100.00	5,745.26	5,727.26	5,727.26	37.22	227.09	178.50	7.29	-85.92	1,839.61	1,600.01	239.59	7.678		
6,200.00	5,843.36	5,825.36	5,825.36	37.56	231.01	178.53	7.29	-85.92	1,859.00	1,613.87	245.13	7.584		
6,300.00	5,942.07	5,924.07	5,924.07	37.85	234.96	178.55	7.29	-85.92	1,874.96	1,624.54	250.42	7.487		
6,400.00	6,041.28	6,023.28	6,023.28	38.09	238.93	178.57	7.29	-85.92	1,887.47	1,632.01	255.46	7.389		
6,500.00	6,140.86	6,122.86	6,122.86	38.27	242.91	178.58	7.29	-85.92	1,896.50	1,636.30	260.21	7.288		
6,600.00	6,240.70	6,222.70	6,222.70	38.41	246.91	178.59	7.29	-85.92	1,902.06	1,637.40	264.66	7.187		
6,709.32	6,350.00	6,332.00	6,332.00	38.52	251.28	-53.60	7.29	-85.92	1,904.14	1,634.99	269.16	7.075		
6,800.00	6,440.68	6,422.68	6,422.68	38.58	254.91	-53.60	7.29	-85.92	1,904.14	1,631.23	272.92	6.977		
6,900.00	6,540.68	6,522.68	6,522.68	38.66	258.91	-53.60	7.29	-85.92	1,904.14	1,627.08	277.06	6.873		
7,000.00	6,640.68	6,622.68	6,622.68	38.73	262.91	-53.60	7.29	-85.92	1,904.14	1,622.94	281.21	6.771		
7,100.00	6,740.68	6,722.68	6,722.68	38.81	266.91	-53.60	7.29	-85.92	1,904.14	1,618.79	285.36	6.673		
7,200.00	6,840.68	6,822.68	6,822.68	38.88	270.91	-53.60	7.29	-85.92	1,904.14	1,614.64	289.51	6.577		
7,300.00	6,940.68	6,922.68	6,922.68	38.96	274.91	-53.60	7.29	-85.92	1,904.14	1,610.48	293.66	6.484		
7,400.00	7,040.68	7,022.68	7,022.68	39.04	278.91	-53.60	7.29	-85.92	1,904.14	1,606.33	297.81	6.394		
7,500.00	7,140.68	7,122.68	7,122.68	39.12	282.91	-53.60	7.29	-85.92	1,904.14	1,602.18	301.97	6.306		
7,600.00	7,240.68	7,222.68	7,222.68	39.20	286.91	-53.60	7.29	-85.92	1,904.14	1,598.02	306.12	6.220		
7,700.00	7,340.68	7,322.68	7,322.68	39.28	290.91	-53.60	7.29	-85.92	1,904.14	1,593.86	310.28	6.137		
7,800.00	7,440.68	7,422.68	7,422.68	39.37	294.91	-53.60	7.29	-85.92	1,904.14	1,589.70	314.44	6.056		
7,900.00	7,540.68	7,522.68	7,522.68	39.45	298.91	-53.60	7.29	-85.92	1,904.14	1,585.54	318.60	5.977		
8,000.00	7,640.68	7,622.68	7,622.68	39.54	302.91	-53.60	7.29	-85.92	1,904.14	1,581.38	322.76	5.900		
8,100.00	7,740.68	7,722.68	7,722.68	39.63	306.91	-53.60	7.29	-85.92	1,904.14	1,577.22	326.92	5.824		
8,200.00	7,840.68	7,822.68	7,822.68	39.71	310.91	-53.60	7.29	-85.92	1,904.14	1,573.06	331.09	5.751		
8,300.00	7,940.68	7,922.68	7,922.68	39.80	314.91	-53.60	7.29	-85.92	1,904.14	1,568.89	335.25	5.680		
8,400.00	8,040.68	8,022.68	8,022.68	39.89	318.91	-53.60	7.29	-85.92	1,904.14	1,564.73	339.42	5.610		
8,500.00	8,140.68	8,122.68	8,122.68	39.98	322.91	-53.60	7.29	-85.92	1,904.14	1,560.56	343.58	5.542		
8,600.00	8,240.68	8,222.68	8,222.68	40.08	326.91	-53.60	7.29	-85.92	1,904.14	1,556.39	347.75	5.476		
8,634.32	8,275.00	8,257.00	8,257.00	40.11	328.28	-53.60	7.29	-85.92	1,904.14	1,554.96	349.18	5.453		

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_NRC 40-8
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5023.00ft (Original Well Elev)
Reference Site:	WELD_NRC 5 PAD	MD Reference:	WELL @ 5023.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_NRC 40-8	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_NRC 40-8	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-5-10 RHS	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 5023.00ft (Original Well Elev) Coordinates are relative to: P_NRC 40-8
 Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Northern Zone
 Central Meridian is 105° 30' 0.000 W ° Grid Convergence at Surface is: 0.38°



Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_NRC 40-8
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5023.00ft (Original Well Elev)
Reference Site:	WELD_NRC 5 PAD	MD Reference:	WELL @ 5023.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_NRC 40-8	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_NRC 40-8	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-5-10 RHS	Offset TVD Reference:	Offset Datum

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