



US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_NRC 5 PAD

P_NRC 1-8

P_NRC 1-8

Plan: PLAN #1 1-5-10 RHS

Standard Planning Report

05 January, 2010





P_NRC 1-8
 COLORADO NORTHERN ZONE - 83
 SECTION 8 T1N R67W
 1540 FNL 1544 FE
 LAT: 40° 4' 6.870 N
 LONG: 104° 54' 38.257 W

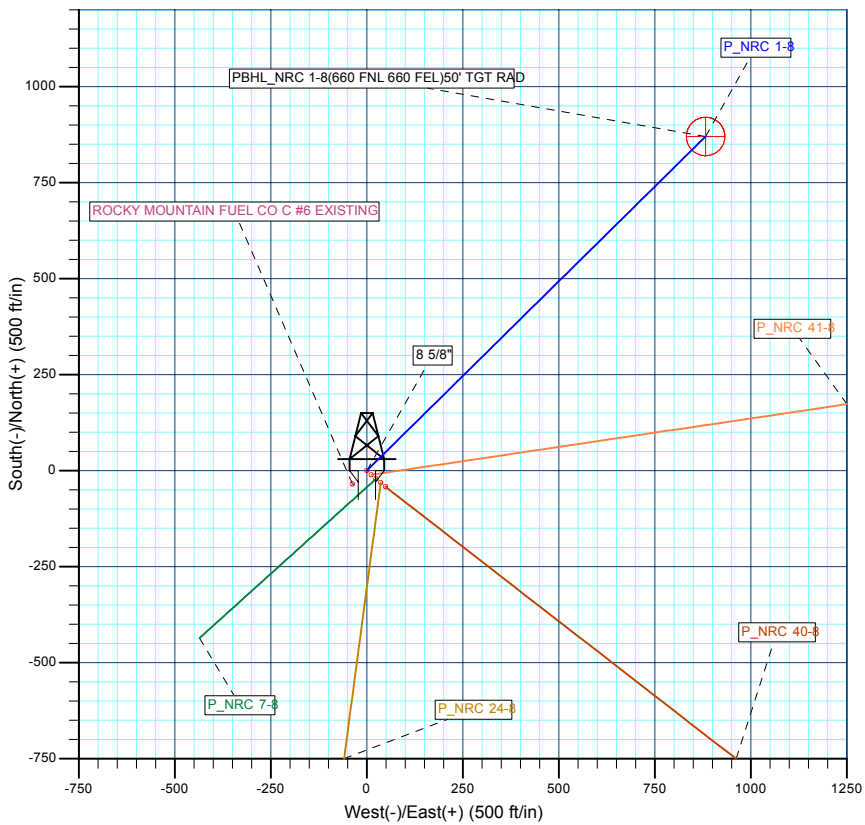
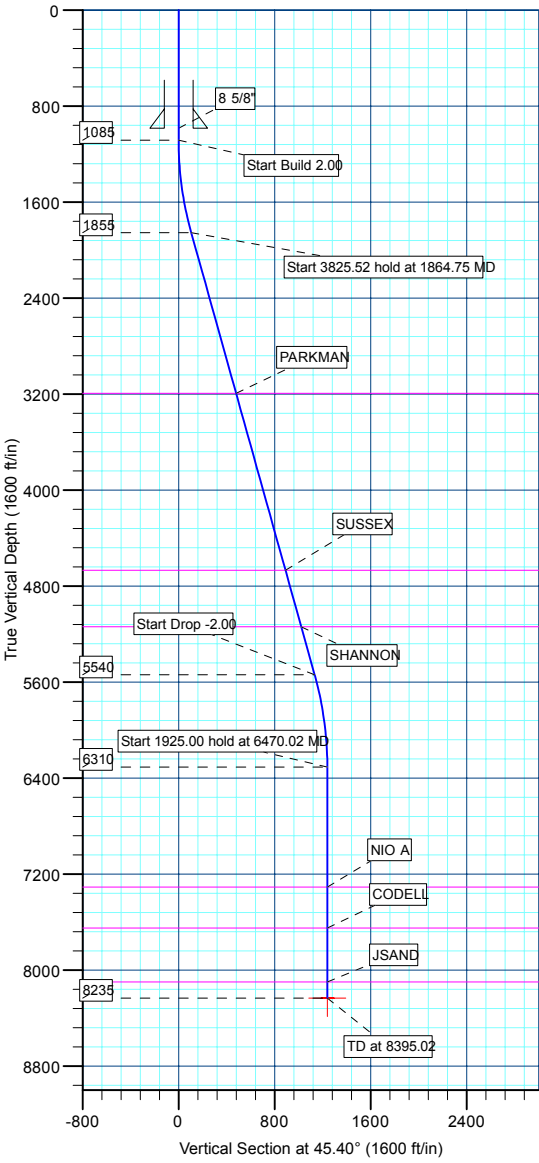
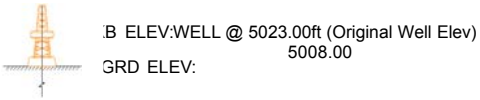


WELL DETAILS: P_NRC 1-8						
+N/-S	+E/-W	Northing	Easting	Ground Level:	Latitude	Longitude
0.00	0.00	1268375.16	3164947.72	5008.00	40° 4' 6.870 N	104° 54' 38.257 W

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
3195.00	3255.80	PARKMAN
4670.00	4787.18	SUSSEX
5140.00	5275.14	SHANNON
7310.00	7470.02	NIO A
7650.00	7810.02	CODELL
8100.00	8260.02	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	
1864.75	15.59	45.40	1855.16	74.06	75.09	2.00	45.40	105.46	
5690.27	15.59	45.40	5539.84	796.22	807.32	0.00	0.00	1133.90	
6470.02	0.00	0.00	6310.00	870.27	882.41	2.00	180.00	1239.36	
8395.02	0.00	0.00	8235.00	870.27	882.41	0.00	0.00	1239.36	PBHL_NRC 1-8(660 FNL 660 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	8235.00	870.27	882.41	1269251.28	3165824.32	40° 4' 15.470 N	104° 54' 26.906 W	Circle (Radius: 50.00)

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

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_NRC 1-8
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 1-8	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_NRC 1-8		
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 1-8					
Well Position	+N/-S	0.00 ft	Northing:	1,268,375.16 ft	Latitude:	40° 4' 6.870 N
	+E/-W	0.00 ft	Easting:	3,164,947.72 ft	Longitude:	104° 54' 38.257 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	5,008.00 ft

Wellbore	P_NRC 1-8				
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	45.40

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		
1,864.75	15.59	45.40	1,855.16	74.06	75.09	2.00	2.00	0.00	45.40		
5,690.27	15.59	45.40	5,539.84	796.22	807.32	0.00	0.00	0.00	0.00		
6,470.02	0.00	0.00	6,310.00	870.27	882.41	2.00	-2.00	0.00	180.00		
8,395.02	0.00	0.00	8,235.00	870.27	882.41	0.00	0.00	0.00	0.00	PBHL_NRC 1-8(66)	



Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_NRC 1-8
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 1-8	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_NRC 1-8		
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	45.40	1,100.00	0.03	0.03	0.04	2.00	2.00	0.00
1,200.00	2.30	45.40	1,199.97	1.62	1.64	2.31	2.00	2.00	0.00
1,300.00	4.30	45.40	1,299.80	5.66	5.74	8.06	2.00	2.00	0.00
1,400.00	6.30	45.40	1,399.37	12.15	12.32	17.30	2.00	2.00	0.00
1,500.00	8.30	45.40	1,498.55	21.07	21.36	30.01	2.00	2.00	0.00
1,600.00	10.30	45.40	1,597.23	32.42	32.87	46.17	2.00	2.00	0.00
1,700.00	12.30	45.40	1,695.29	46.18	46.82	65.76	2.00	2.00	0.00
1,800.00	14.30	45.40	1,792.60	62.33	63.20	88.76	2.00	2.00	0.00
Start 3825.52 hold at 1864.75 MD									
1,864.75	15.59	45.40	1,855.16	74.06	75.09	105.46	2.00	2.00	0.00
1,900.00	15.59	45.40	1,889.11	80.71	81.84	114.94	0.00	0.00	0.00
2,000.00	15.59	45.40	1,985.43	99.59	100.98	141.82	0.00	0.00	0.00
2,100.00	15.59	45.40	2,081.75	118.47	120.12	168.71	0.00	0.00	0.00
2,200.00	15.59	45.40	2,178.07	137.34	139.26	195.59	0.00	0.00	0.00
2,300.00	15.59	45.40	2,274.38	156.22	158.40	222.47	0.00	0.00	0.00
2,400.00	15.59	45.40	2,370.70	175.10	177.54	249.36	0.00	0.00	0.00
2,500.00	15.59	45.40	2,467.02	193.98	196.68	276.24	0.00	0.00	0.00
2,600.00	15.59	45.40	2,563.34	212.85	215.82	303.13	0.00	0.00	0.00
2,700.00	15.59	45.40	2,659.66	231.73	234.96	330.01	0.00	0.00	0.00
2,800.00	15.59	45.40	2,755.98	250.61	254.10	356.89	0.00	0.00	0.00
2,900.00	15.59	45.40	2,852.30	269.49	273.24	383.78	0.00	0.00	0.00
3,000.00	15.59	45.40	2,948.61	288.36	292.38	410.66	0.00	0.00	0.00
3,100.00	15.59	45.40	3,044.93	307.24	311.52	437.54	0.00	0.00	0.00
3,200.00	15.59	45.40	3,141.25	326.12	330.66	464.43	0.00	0.00	0.00
PARKMAN									
3,255.80	15.59	45.40	3,195.00	336.65	341.35	479.43	0.00	0.00	0.00
3,300.00	15.59	45.40	3,237.57	345.00	349.81	491.31	0.00	0.00	0.00
3,400.00	15.59	45.40	3,333.89	363.87	368.95	518.19	0.00	0.00	0.00
3,500.00	15.59	45.40	3,430.21	382.75	388.09	545.08	0.00	0.00	0.00
3,600.00	15.59	45.40	3,526.53	401.63	407.23	571.96	0.00	0.00	0.00
3,700.00	15.59	45.40	3,622.85	420.51	426.37	598.84	0.00	0.00	0.00
3,800.00	15.59	45.40	3,719.16	439.38	445.51	625.73	0.00	0.00	0.00
3,900.00	15.59	45.40	3,815.48	458.26	464.65	652.61	0.00	0.00	0.00
4,000.00	15.59	45.40	3,911.80	477.14	483.79	679.49	0.00	0.00	0.00
4,100.00	15.59	45.40	4,008.12	496.02	502.93	706.38	0.00	0.00	0.00
4,200.00	15.59	45.40	4,104.44	514.89	522.07	733.26	0.00	0.00	0.00
4,300.00	15.59	45.40	4,200.76	533.77	541.21	760.15	0.00	0.00	0.00
4,400.00	15.59	45.40	4,297.08	552.65	560.35	787.03	0.00	0.00	0.00
4,500.00	15.59	45.40	4,393.39	571.53	579.49	813.91	0.00	0.00	0.00
4,600.00	15.59	45.40	4,489.71	590.40	598.63	840.80	0.00	0.00	0.00
4,700.00	15.59	45.40	4,586.03	609.28	617.77	867.68	0.00	0.00	0.00
SUSSEX									
4,787.18	15.59	45.40	4,670.00	625.74	634.46	891.12	0.00	0.00	0.00
4,800.00	15.59	45.40	4,682.35	628.16	636.92	894.56	0.00	0.00	0.00
4,900.00	15.59	45.40	4,778.67	647.04	656.06	921.45	0.00	0.00	0.00
5,000.00	15.59	45.40	4,874.99	665.91	675.20	948.33	0.00	0.00	0.00
5,100.00	15.59	45.40	4,971.31	684.79	694.34	975.21	0.00	0.00	0.00
5,200.00	15.59	45.40	5,067.62	703.67	713.48	1,002.10	0.00	0.00	0.00
SHANNON									
5,275.14	15.59	45.40	5,140.00	717.85	727.86	1,022.30	0.00	0.00	0.00
5,300.00	15.59	45.40	5,163.94	722.55	732.62	1,028.98	0.00	0.00	0.00

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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 1-8	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_NRC 1-8		
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)	
5,400.00	15.59	45.40	5,260.26	741.42	751.76	1,055.86	0.00	0.00	0.00	
5,500.00	15.59	45.40	5,356.58	760.30	770.90	1,082.75	0.00	0.00	0.00	
5,600.00	15.59	45.40	5,452.90	779.18	790.04	1,109.63	0.00	0.00	0.00	
Start Drop -2.00										
5,690.27	15.59	45.40	5,539.84	796.22	807.32	1,133.90	0.00	0.00	0.00	
5,700.00	15.40	45.40	5,549.22	798.04	809.17	1,136.50	2.00	-2.00	0.00	
5,800.00	13.40	45.40	5,646.08	815.51	826.88	1,161.37	2.00	-2.00	0.00	
5,900.00	11.40	45.40	5,743.74	830.58	842.16	1,182.84	2.00	-2.00	0.00	
6,000.00	9.40	45.40	5,842.09	843.26	855.02	1,200.89	2.00	-2.00	0.00	
6,100.00	7.40	45.40	5,941.01	853.52	865.42	1,215.50	2.00	-2.00	0.00	
6,200.00	5.40	45.40	6,040.38	861.35	873.35	1,226.65	2.00	-2.00	0.00	
6,300.00	3.40	45.40	6,140.08	866.73	878.82	1,234.32	2.00	-2.00	0.00	
6,400.00	1.40	45.40	6,239.99	869.67	881.80	1,238.51	2.00	-2.00	0.00	
Start 1925.00 hold at 6470.02 MD										
6,470.02	0.00	0.00	6,310.00	870.27	882.41	1,239.36	2.00	-2.00	0.00	
6,500.00	0.00	0.00	6,339.98	870.27	882.41	1,239.36	0.00	0.00	0.00	
6,600.00	0.00	0.00	6,439.98	870.27	882.41	1,239.36	0.00	0.00	0.00	
6,700.00	0.00	0.00	6,539.98	870.27	882.41	1,239.36	0.00	0.00	0.00	
6,800.00	0.00	0.00	6,639.98	870.27	882.41	1,239.36	0.00	0.00	0.00	
6,900.00	0.00	0.00	6,739.98	870.27	882.41	1,239.36	0.00	0.00	0.00	
7,000.00	0.00	0.00	6,839.98	870.27	882.41	1,239.36	0.00	0.00	0.00	
7,100.00	0.00	0.00	6,939.98	870.27	882.41	1,239.36	0.00	0.00	0.00	
7,200.00	0.00	0.00	7,039.98	870.27	882.41	1,239.36	0.00	0.00	0.00	
7,300.00	0.00	0.00	7,139.98	870.27	882.41	1,239.36	0.00	0.00	0.00	
7,400.00	0.00	0.00	7,239.98	870.27	882.41	1,239.36	0.00	0.00	0.00	
NIO A										
7,470.02	0.00	0.00	7,310.00	870.27	882.41	1,239.36	0.00	0.00	0.00	
7,500.00	0.00	0.00	7,339.98	870.27	882.41	1,239.36	0.00	0.00	0.00	
7,600.00	0.00	0.00	7,439.98	870.27	882.41	1,239.36	0.00	0.00	0.00	
7,700.00	0.00	0.00	7,539.98	870.27	882.41	1,239.36	0.00	0.00	0.00	
7,800.00	0.00	0.00	7,639.98	870.27	882.41	1,239.36	0.00	0.00	0.00	
CODELL										
7,810.02	0.00	0.00	7,650.00	870.27	882.41	1,239.36	0.00	0.00	0.00	
7,900.00	0.00	0.00	7,739.98	870.27	882.41	1,239.36	0.00	0.00	0.00	
8,000.00	0.00	0.00	7,839.98	870.27	882.41	1,239.36	0.00	0.00	0.00	
8,100.00	0.00	0.00	7,939.98	870.27	882.41	1,239.36	0.00	0.00	0.00	
8,200.00	0.00	0.00	8,039.98	870.27	882.41	1,239.36	0.00	0.00	0.00	
JSAND										
8,260.02	0.00	0.00	8,100.00	870.27	882.41	1,239.36	0.00	0.00	0.00	
8,300.00	0.00	0.00	8,139.98	870.27	882.41	1,239.36	0.00	0.00	0.00	
PBHL_NRC 1-8(660 FNL 660 FEL)50' TGT RAD										
8,395.02	0.00	0.00	8,235.00	870.27	882.41	1,239.36	0.00	0.00	0.00	

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude	
PBHL_NRC 1-8(660 F - hit/miss target - Shape - Circle (radius 50.00)	0.00	0.00	8,235.00	870.27	882.41	1,269,251.28	3,165,824.32	40° 4' 15.470 N	104° 54' 26.906 W	

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_NRC 1-8
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 1-8	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_NRC 1-8		
Design:	PLAN #1 1-5-10 RHS		

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 (°)
3,255.80	3,195.00	PARKMAN			
4,787.18	4,670.00	SUSSEX			
5,275.14	5,140.00	SHANNON			
7,470.02	7,310.00	NIO A			
7,810.02	7,650.00	CODELL			
8,260.02	8,100.00	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
1,864.75	1,855.16	74.06	75.09	Start 3825.52 hold at 1864.75 MD
5,690.27	5,539.84	796.22	807.32	Start Drop -2.00
6,470.02	6,310.00	870.27	882.41	Start 1925.00 hold at 6470.02 MD
8,395.02	8,235.00	870.27	882.41	TD at 8395.02



US ROCKIES REGION PLANNING

**COLORADO NORTHERN ZONE - 83
WELD_NRC 5 PAD
P_NRC 1-8**

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

Anticollision Report

05 January, 2010



Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_NRC 1-8
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 1-8	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_NRC 1-8	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	8,395.02	PLAN #1 1-5-10 RHS (P_NRC 1-8)	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 24-8 - P_NRC 24-8 - PLAN #1 1-5-10 RHS	1,085.00	1,085.00	48.03	43.41	10.398	CC
P_NRC 24-8 - P_NRC 24-8 - PLAN #1 1-5-10 RHS	1,100.00	1,099.86	48.04	43.36	10.264	ES
P_NRC 24-8 - P_NRC 24-8 - PLAN #1 1-5-10 RHS	1,200.00	1,198.79	49.27	44.20	9.724	SF
P_NRC 40-8 - P_NRC 40-8 - PLAN #1 1-5-10 RHS	1,085.00	1,085.00	64.25	59.63	13.909	CC
P_NRC 40-8 - P_NRC 40-8 - PLAN #1 1-5-10 RHS	1,100.00	1,099.67	64.28	59.60	13.731	ES
P_NRC 40-8 - P_NRC 40-8 - PLAN #1 1-5-10 RHS	1,200.00	1,197.40	66.35	61.27	13.072	SF
P_NRC 41-8 - P_NRC 41-8 - PLAN #1 1-5-10 RHS	1,085.00	1,085.00	16.02	11.41	3.469	CC
P_NRC 41-8 - P_NRC 41-8 - PLAN #1 1-5-10 RHS	1,100.00	1,099.95	16.05	11.36	3.426	ES
P_NRC 41-8 - P_NRC 41-8 - PLAN #1 1-5-10 RHS	1,200.00	1,199.57	17.35	12.25	3.401	SF
P_NRC 7-8 - P_NRC 7-8 - PLAN #1 1-5-10 RHS	1,180.89	1,180.91	32.09	27.08	6.413	CC
P_NRC 7-8 - P_NRC 7-8 - PLAN #1 1-5-10 RHS	1,200.00	1,199.97	32.12	27.04	6.323	ES
P_NRC 7-8 - P_NRC 7-8 - PLAN #1 1-5-10 RHS	1,300.00	1,299.09	34.58	29.09	6.300	SF
ROCKY MOUNTAIN FUEL CO C #6 EXISTING - ROCH	1,085.00	1,067.00	50.83	7.84	1.182	Level 2, CC
ROCKY MOUNTAIN FUEL CO C #6 EXISTING - ROCH	1,200.00	1,181.97	53.14	5.33	1.112	Level 2, ES, 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	130.75	-31.35	36.38	48.03					
100.00	100.00	100.00	100.00	0.10	0.10	130.75	-31.35	36.38	48.03	47.84	0.19	251.378		
200.00	200.00	200.00	200.00	0.32	0.32	130.75	-31.35	36.38	48.03	47.39	0.64	74.972		
300.00	300.00	300.00	300.00	0.55	0.55	130.75	-31.35	36.38	48.03	46.94	1.09	44.056		
400.00	400.00	400.00	400.00	0.77	0.77	130.75	-31.35	36.38	48.03	46.49	1.54	31.193		
500.00	500.00	500.00	500.00	0.99	0.99	130.75	-31.35	36.38	48.03	46.04	1.99	24.144		
600.00	600.00	600.00	600.00	1.22	1.22	130.75	-31.35	36.38	48.03	45.59	2.44	19.693		
700.00	700.00	700.00	700.00	1.44	1.44	130.75	-31.35	36.38	48.03	45.14	2.89	16.628		
800.00	800.00	800.00	800.00	1.67	1.67	130.75	-31.35	36.38	48.03	44.69	3.34	14.389		
900.00	900.00	900.00	900.00	1.89	1.89	130.75	-31.35	36.38	48.03	44.24	3.79	12.681		
1,000.00	1,000.00	1,000.00	1,000.00	2.12	2.12	130.75	-31.35	36.38	48.03	43.79	4.24	11.335		
1,085.00	1,085.00	1,085.00	1,085.00	2.31	2.31	130.75	-31.35	36.38	48.03	43.41	4.62	10.398	CC	
1,100.00	1,100.00	1,099.86	1,099.86	2.34	2.34	85.44	-31.39	36.38	48.04	43.36	4.68	10.264	ES	
1,200.00	1,199.97	1,198.79	1,198.76	2.56	2.51	90.18	-33.59	36.09	49.27	44.20	5.07	9.724	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 1-8
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 1-8	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_NRC 1-8	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			
1,300.00	1,299.80	1,296.99	1,296.80	2.78	2.68	100.87	-39.12	35.35	53.77	48.31	5.46	9.841			
1,400.00	1,399.37	1,393.84	1,393.24	3.01	2.87	113.88	-47.84	34.19	64.14	58.27	5.87	10.924			
1,500.00	1,498.55	1,488.76	1,487.43	3.26	3.08	125.42	-59.51	32.64	82.12	75.84	6.28	13.077			
1,600.00	1,597.23	1,581.23	1,578.75	3.53	3.31	134.00	-73.85	30.74	107.88	101.20	6.68	16.142			
1,700.00	1,695.29	1,670.76	1,666.69	3.84	3.57	139.93	-90.51	28.52	140.84	133.75	7.08	19.883			
1,800.00	1,792.60	1,759.61	1,753.47	4.20	3.85	144.10	-109.38	26.01	180.00	172.51	7.49	24.039			
1,864.75	1,855.16	1,817.78	1,810.24	4.45	4.06	146.21	-121.96	24.34	207.40	199.65	7.75	26.745			
1,900.00	1,889.11	1,849.28	1,840.99	4.60	4.17	147.35	-128.77	23.44	222.73	214.81	7.92	28.134			
2,000.00	1,985.43	1,938.65	1,928.20	5.04	4.50	149.89	-148.09	20.87	266.53	258.14	8.39	31.781			
2,100.00	2,081.75	2,028.02	2,015.42	5.50	4.85	151.71	-167.41	18.30	310.63	301.76	8.87	35.024			
2,200.00	2,178.07	2,117.39	2,102.64	5.97	5.21	153.08	-186.73	15.73	354.93	345.56	9.36	37.908			
2,300.00	2,274.38	2,206.76	2,189.86	6.46	5.57	154.15	-206.05	13.16	399.35	389.48	9.87	40.479			
2,400.00	2,370.70	2,296.13	2,277.08	6.96	5.95	155.01	-225.37	10.60	443.86	433.49	10.38	42.777			
2,500.00	2,467.02	2,385.50	2,364.29	7.46	6.33	155.71	-244.69	8.03	488.44	477.55	10.89	44.837			
2,600.00	2,563.34	2,474.87	2,451.51	7.97	6.72	156.29	-264.01	5.46	533.07	521.65	11.42	46.692			
2,700.00	2,659.66	2,564.24	2,538.73	8.49	7.11	156.78	-283.33	2.89	577.73	565.79	11.94	48.369			
2,800.00	2,755.98	2,653.61	2,625.95	9.01	7.50	157.20	-302.66	0.33	622.42	609.95	12.48	49.888			
2,900.00	2,852.30	2,742.98	2,713.17	9.54	7.90	157.57	-321.98	-2.24	667.14	654.13	13.01	51.271			
3,000.00	2,948.61	2,832.34	2,800.38	10.06	8.30	157.89	-341.30	-4.81	711.88	698.32	13.55	52.533			
3,100.00	3,044.93	2,921.71	2,887.60	10.59	8.70	158.17	-360.62	-7.38	756.63	742.53	14.09	53.689			
3,200.00	3,141.25	3,011.08	2,974.82	11.13	9.10	158.42	-379.94	-9.95	801.39	786.75	14.64	54.750			
3,300.00	3,237.57	3,100.45	3,062.04	11.66	9.51	158.65	-399.26	-12.51	846.17	830.98	15.18	55.728			
3,400.00	3,333.89	3,189.82	3,149.26	12.20	9.92	158.85	-418.58	-15.08	890.95	875.22	15.73	56.630			
3,500.00	3,430.21	3,279.19	3,236.47	12.74	10.32	159.03	-437.90	-17.65	935.74	919.46	16.28	57.466			
3,600.00	3,526.53	3,368.56	3,323.69	13.28	10.73	159.20	-457.22	-20.22	980.54	963.71	16.84	58.241			
3,700.00	3,622.85	3,457.93	3,410.91	13.82	11.14	159.35	-476.54	-22.78	1,025.35	1,007.96	17.39	58.963			
3,800.00	3,719.16	3,547.30	3,498.13	14.36	11.55	159.49	-495.86	-25.35	1,070.16	1,052.22	17.95	59.636			
3,900.00	3,815.48	3,636.67	3,585.35	14.90	11.97	159.61	-515.18	-27.92	1,114.98	1,096.48	18.50	60.264			
4,000.00	3,911.80	3,726.04	3,672.56	15.44	12.38	159.73	-534.50	-30.49	1,159.80	1,140.74	19.06	60.853			
4,100.00	4,008.12	3,815.41	3,759.78	15.99	12.79	159.84	-553.82	-33.06	1,204.62	1,185.00	19.62	61.405			
4,200.00	4,104.44	3,904.77	3,847.00	16.53	13.21	159.94	-573.14	-35.62	1,249.45	1,229.27	20.18	61.923			
4,300.00	4,200.76	3,994.14	3,934.22	17.08	13.62	160.04	-592.46	-38.19	1,294.28	1,273.54	20.74	62.411			
4,400.00	4,297.08	4,083.51	4,021.44	17.62	14.04	160.12	-611.78	-40.76	1,339.11	1,317.81	21.30	62.871			
4,500.00	4,393.39	4,172.88	4,108.65	18.17	14.45	160.21	-631.10	-43.33	1,383.94	1,362.08	21.86	63.306			
4,600.00	4,489.71	4,262.25	4,195.87	18.72	14.87	160.28	-650.42	-45.89	1,428.78	1,406.35	22.42	63.716			
4,700.00	4,586.03	4,351.62	4,283.09	19.26	15.29	160.36	-669.74	-48.46	1,473.62	1,450.63	22.99	64.105			
4,800.00	4,682.35	4,440.99	4,370.31	19.81	15.70	160.42	-689.06	-51.03	1,518.46	1,494.91	23.55	64.474			
4,900.00	4,778.67	4,530.36	4,457.52	20.36	16.12	160.49	-708.38	-53.60	1,563.30	1,539.18	24.12	64.824			
5,000.00	4,874.99	4,619.73	4,544.74	20.91	16.54	160.55	-727.70	-56.17	1,608.14	1,583.46	24.68	65.157			
5,100.00	4,971.31	4,709.10	4,631.96	21.46	16.96	160.61	-747.02	-58.73	1,652.99	1,627.74	25.25	65.474			
5,200.00	5,067.62	4,798.47	4,719.18	22.01	17.37	160.66	-766.34	-61.30	1,697.83	1,672.02	25.81	65.776			
5,300.00	5,163.94	4,887.84	4,806.40	22.55	17.79	160.71	-785.67	-63.87	1,742.68	1,716.30	26.38	66.063			
5,400.00	5,260.26	4,977.20	4,893.61	23.10	18.21	160.76	-804.99	-66.44	1,787.53	1,760.58	26.95	66.338			
5,500.00	5,356.58	5,066.57	4,980.83	23.65	18.63	160.81	-824.31	-69.00	1,832.38	1,804.86	27.51	66.601			
5,600.00	5,452.90	5,155.94	5,068.05	24.20	19.05	160.85	-843.63	-71.57	1,877.23	1,849.15	28.08	66.852			
5,690.27	5,539.84	5,236.61	5,146.78	24.70	19.43	160.89	-861.07	-73.89	1,917.71	1,889.12	28.59	67.069			
5,700.00	5,549.22	5,245.32	5,155.28	24.75	19.47	160.92	-862.95	-74.14	1,922.06	1,893.40	28.66	67.057			
5,800.00	5,646.08	5,335.56	5,243.34	25.15	19.89	161.25	-882.46	-76.73	1,965.14	1,935.81	29.33	66.990			
5,900.00	5,743.74	5,427.17	5,332.75	25.52	20.32	161.51	-902.26	-79.37	2,005.21	1,975.24	29.98	66.891			
6,000.00	5,842.09	5,520.04	5,423.39	25.84	20.76	161.71	-922.34	-82.03	2,042.23	2,011.65	30.59	66.768			
6,100.00	5,941.01	5,614.07	5,515.15	26.12	21.20	161.86	-942.67	-84.74	2,076.16	2,045.00	31.16	66.627			
6,200.00	6,040.38	5,709.13	5,607.92	26.36	21.65	161.95	-963.22	-87.47	2,106.95	2,075.25	31.70	66.471			

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 1-8
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 1-8	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_NRC 1-8	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	
WELD_NRC 5 PAD - P_NRC 24-8 - P_NRC 24-8 - PLAN #1 1-5-10 RHS													Offset Well Error:		0.00 ft
Survey Program: 0-MWD															
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			
6,300.00	6,140.08	5,805.11	5,701.59	26.55	22.10	161.99	-983.97	-90.22	2,134.57	2,102.38	32.19	66.306			
6,400.00	6,239.99	6,129.01	6,020.95	26.70	23.06	161.74	-1,036.56	-97.21	2,154.10	2,120.99	33.11	65.050			
6,470.02	6,310.00	6,369.55	6,260.89	26.77	23.48	-152.95	-1,052.30	-99.31	2,159.28	2,125.63	33.65	64.172			
6,500.00	6,339.98	6,448.65	6,339.98	26.80	23.58	-152.96	-1,053.13	-99.42	2,159.50	2,125.68	33.83	63.838			
6,600.00	6,439.98	6,548.65	6,439.98	26.92	23.69	-152.96	-1,053.13	-99.42	2,159.50	2,125.35	34.16	63.220			
6,700.00	6,539.98	6,648.65	6,539.98	27.03	23.80	-152.96	-1,053.13	-99.42	2,159.50	2,125.02	34.49	62.621			
6,800.00	6,639.98	6,748.65	6,639.98	27.14	23.90	-152.96	-1,053.13	-99.42	2,159.50	2,124.69	34.81	62.028			
6,900.00	6,739.98	6,848.65	6,739.98	27.26	24.01	-152.96	-1,053.13	-99.42	2,159.50	2,124.36	35.15	61.442			
7,000.00	6,839.98	6,948.65	6,839.98	27.38	24.12	-152.96	-1,053.13	-99.42	2,159.50	2,124.02	35.48	60.862			
7,100.00	6,939.98	7,048.65	6,939.98	27.49	24.23	-152.96	-1,053.13	-99.42	2,159.50	2,123.69	35.82	60.289			
7,200.00	7,039.98	7,148.65	7,039.98	27.61	24.34	-152.96	-1,053.13	-99.42	2,159.50	2,123.35	36.16	59.723			
7,300.00	7,139.98	7,248.65	7,139.98	27.74	24.46	-152.96	-1,053.13	-99.42	2,159.50	2,123.00	36.50	59.163			
7,400.00	7,239.98	7,348.65	7,239.98	27.86	24.57	-152.96	-1,053.13	-99.42	2,159.50	2,122.66	36.85	58.610			
7,500.00	7,339.98	7,448.65	7,339.98	27.98	24.69	-152.96	-1,053.13	-99.42	2,159.50	2,122.31	37.19	58.064			
7,600.00	7,439.98	7,548.65	7,439.98	28.11	24.81	-152.96	-1,053.13	-99.42	2,159.50	2,121.96	37.54	57.525			
7,700.00	7,539.98	7,648.65	7,539.98	28.23	24.93	-152.96	-1,053.13	-99.42	2,159.50	2,121.61	37.89	56.992			
7,800.00	7,639.98	7,748.65	7,639.98	28.36	25.05	-152.96	-1,053.13	-99.42	2,159.50	2,121.26	38.24	56.466			
7,900.00	7,739.98	7,848.65	7,739.98	28.49	25.17	-152.96	-1,053.13	-99.42	2,159.50	2,120.90	38.60	55.946			
8,000.00	7,839.98	7,948.65	7,839.98	28.62	25.30	-152.96	-1,053.13	-99.42	2,159.50	2,120.55	38.96	55.434			
8,100.00	7,939.98	8,048.65	7,939.98	28.75	25.42	-152.96	-1,053.13	-99.42	2,159.50	2,120.19	39.32	54.928			
8,200.00	8,039.98	8,148.65	8,039.98	28.88	25.55	-152.96	-1,053.13	-99.42	2,159.50	2,119.83	39.68	54.428			
8,300.00	8,139.98	8,248.65	8,139.98	29.01	25.68	-152.96	-1,053.13	-99.42	2,159.50	2,119.47	40.04	53.935			
8,395.02	8,235.00	8,343.67	8,235.00	29.14	25.80	-152.96	-1,053.13	-99.42	2,159.50	2,119.12	40.38	53.473			

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_NRC 1-8
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 1-8	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_NRC 1-8	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 40-8 - P_NRC 40-8 - 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			
0.00	0.00	0.00	0.00	0.00	0.00	130.71	-41.90	48.70	64.25						
100.00	100.00	100.00	100.00	0.10	0.10	130.71	-41.90	48.70	64.25	64.05	0.19	336.273			
200.00	200.00	200.00	200.00	0.32	0.32	130.71	-41.90	48.70	64.25	63.60	0.64	100.292			
300.00	300.00	300.00	300.00	0.55	0.55	130.71	-41.90	48.70	64.25	63.16	1.09	58.934			
400.00	400.00	400.00	400.00	0.77	0.77	130.71	-41.90	48.70	64.25	62.71	1.54	41.727			
500.00	500.00	500.00	500.00	0.99	0.99	130.71	-41.90	48.70	64.25	62.26	1.99	32.297			
600.00	600.00	600.00	600.00	1.22	1.22	130.71	-41.90	48.70	64.25	61.81	2.44	26.344			
700.00	700.00	700.00	700.00	1.44	1.44	130.71	-41.90	48.70	64.25	61.36	2.89	22.244			
800.00	800.00	800.00	800.00	1.67	1.67	130.71	-41.90	48.70	64.25	60.91	3.34	19.248			
900.00	900.00	900.00	900.00	1.89	1.89	130.71	-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	130.71	-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	130.71	-41.90	48.70	64.25	59.63	4.62	13.909	CC		
1,100.00	1,100.00	1,099.67	1,099.67	2.34	2.34	85.35	-41.93	48.73	64.28	59.60	4.68	13.731	ES		
1,200.00	1,199.97	1,197.40	1,197.38	2.56	2.52	87.12	-43.26	50.44	66.35	61.27	5.08	13.072	SF		
1,300.00	1,299.80	1,294.79	1,294.61	2.78	2.71	91.13	-46.61	54.76	71.85	66.37	5.48	13.113			
1,400.00	1,399.37	1,391.54	1,390.96	3.01	2.91	96.33	-51.95	61.64	81.32	75.42	5.90	13.786			
1,500.00	1,498.55	1,487.37	1,486.05	3.26	3.13	101.68	-59.20	70.99	95.19	88.85	6.34	15.015			
1,600.00	1,597.23	1,582.01	1,579.52	3.53	3.38	106.46	-68.27	82.67	113.72	106.91	6.81	16.694			
1,700.00	1,695.29	1,675.20	1,671.03	3.84	3.66	110.40	-79.04	96.56	136.90	129.58	7.32	18.697			
1,800.00	1,792.60	1,766.71	1,760.30	4.20	3.98	113.50	-91.40	112.48	164.63	156.75	7.88	20.895			
1,864.75	1,855.16	1,824.97	1,816.77	4.45	4.20	115.10	-100.17	123.78	184.93	176.66	8.27	22.371			
1,900.00	1,889.11	1,856.39	1,847.10	4.60	4.33	116.03	-105.19	130.25	196.64	188.15	8.49	23.155			
2,000.00	1,985.43	1,944.61	1,931.77	5.04	4.74	117.84	-120.38	149.82	231.63	222.47	9.16	25.288			
2,100.00	2,081.75	2,031.38	2,014.26	5.50	5.18	118.80	-136.87	171.08	268.97	259.11	9.87	27.265			
2,200.00	2,178.07	2,116.60	2,094.45	5.97	5.67	119.19	-154.55	193.86	308.50	297.90	10.60	29.090			
2,300.00	2,274.38	2,200.00	2,172.06	6.46	6.20	119.20	-173.26	217.97	350.11	338.73	11.37	30.784			
2,400.00	2,370.70	2,281.95	2,247.43	6.96	6.78	118.96	-192.98	243.39	393.72	381.55	12.18	32.334			
2,500.00	2,467.02	2,368.21	2,325.99	7.46	7.43	118.59	-214.83	271.54	438.88	425.86	13.02	33.709			
2,600.00	2,563.34	2,457.34	2,407.11	7.97	8.12	118.26	-237.47	300.72	484.15	470.26	13.90	34.842			
2,700.00	2,659.66	2,546.48	2,488.23	8.49	8.83	117.98	-260.11	329.90	529.44	514.66	14.79	35.809			
2,800.00	2,755.98	2,635.61	2,569.35	9.01	9.55	117.75	-282.75	359.07	574.74	559.05	15.69	36.639			
2,900.00	2,852.30	2,724.74	2,650.47	9.54	10.28	117.55	-305.40	388.25	620.04	603.44	16.60	37.356			
3,000.00	2,948.61	2,813.87	2,731.58	10.06	11.01	117.38	-328.04	417.43	665.35	647.83	17.52	37.982			
3,100.00	3,044.93	2,903.00	2,812.70	10.59	11.75	117.23	-350.68	446.61	710.66	692.22	18.44	38.530			
3,200.00	3,141.25	2,992.13	2,893.82	11.13	12.50	117.10	-373.32	475.79	755.97	736.60	19.38	39.013			
3,300.00	3,237.57	3,081.26	2,974.94	11.66	13.25	116.99	-395.96	504.97	801.29	780.98	20.32	39.442			
3,400.00	3,333.89	3,170.39	3,056.06	12.20	14.00	116.88	-418.61	534.14	846.61	825.35	21.26	39.825			
3,500.00	3,430.21	3,259.52	3,137.18	12.74	14.76	116.79	-441.25	563.32	891.93	869.73	22.21	40.168			
3,600.00	3,526.53	3,348.65	3,218.30	13.28	15.52	116.71	-463.89	592.50	937.26	914.10	23.16	40.477			
3,700.00	3,622.85	3,437.79	3,299.42	13.82	16.28	116.63	-486.53	621.68	982.58	958.47	24.11	40.758			
3,800.00	3,719.16	3,526.92	3,380.54	14.36	17.04	116.56	-509.17	650.86	1,027.91	1,002.85	25.06	41.012			
3,900.00	3,815.48	3,616.05	3,461.66	14.90	17.80	116.50	-531.82	680.04	1,073.24	1,047.22	26.02	41.244			
4,000.00	3,911.80	3,705.18	3,542.77	15.44	18.57	116.44	-554.46	709.21	1,118.56	1,091.58	26.98	41.457			
4,100.00	4,008.12	3,794.31	3,623.89	15.99	19.33	116.38	-577.10	738.39	1,163.89	1,135.95	27.94	41.652			
4,200.00	4,104.44	3,883.44	3,705.01	16.53	20.10	116.33	-599.74	767.57	1,209.22	1,180.32	28.91	41.831			
4,300.00	4,200.76	3,972.57	3,786.13	17.08	20.87	116.29	-622.38	796.75	1,254.56	1,224.68	29.87	41.997			
4,400.00	4,297.08	4,061.70	3,867.25	17.62	21.63	116.24	-645.03	825.93	1,299.89	1,269.05	30.84	42.150			
4,500.00	4,393.39	4,150.83	3,948.37	18.17	22.40	116.20	-667.67	855.11	1,345.22	1,313.41	31.81	42.293			
4,600.00	4,489.71	4,239.96	4,029.49	18.72	23.17	116.17	-690.31	884.28	1,390.55	1,357.77	32.78	42.425			
4,700.00	4,586.03	4,329.10	4,110.61	19.26	23.94	116.13	-712.95	913.46	1,435.88	1,402.14	33.75	42.549			
4,800.00	4,682.35	4,418.23	4,191.73	19.81	24.72	116.10	-735.60	942.64	1,481.22	1,446.50	34.72	42.665			
4,900.00	4,778.67	4,507.36	4,272.85	20.36	25.49	116.07	-758.24	971.82	1,526.55	1,490.86	35.69	42.773			

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 1-8
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 1-8	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_NRC 1-8	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 40-8 - P_NRC 40-8 - 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	
5,000.00	4,874.99	4,596.49	4,353.96	20.91	26.26	116.04	-780.88	1,001.00	1,571.88	1,535.22	36.66	42.875		
5,100.00	4,971.31	4,685.62	4,435.08	21.46	27.03	116.01	-803.52	1,030.18	1,617.22	1,579.58	37.64	42.970		
5,200.00	5,067.62	4,774.75	4,516.20	22.01	27.81	115.98	-826.16	1,059.35	1,662.55	1,623.94	38.61	43.060		
5,300.00	5,163.94	4,863.88	4,597.32	22.55	28.58	115.96	-848.81	1,088.53	1,707.89	1,668.30	39.59	43.145		
5,400.00	5,260.26	4,953.01	4,678.44	23.10	29.35	115.94	-871.45	1,117.71	1,753.22	1,712.66	40.56	43.225		
5,500.00	5,356.58	5,042.14	4,759.56	23.65	30.13	115.91	-894.09	1,146.89	1,798.56	1,757.02	41.54	43.301		
5,600.00	5,452.90	5,131.28	4,840.68	24.20	30.90	115.89	-916.73	1,176.07	1,843.89	1,801.38	42.51	43.372		
5,690.27	5,539.84	5,211.73	4,913.90	24.70	31.60	115.87	-937.17	1,202.41	1,884.82	1,841.42	43.39	43.434		
5,700.00	5,549.22	5,220.41	4,921.80	24.75	31.67	115.96	-939.38	1,205.25	1,889.22	1,845.71	43.51	43.417		
5,800.00	5,646.08	5,309.92	5,003.26	25.15	32.45	116.77	-962.11	1,234.55	1,933.74	1,889.09	44.65	43.313		
5,900.00	5,743.74	5,399.97	5,085.22	25.52	33.24	117.44	-984.99	1,264.03	1,976.85	1,931.12	45.73	43.233		
6,000.00	5,842.09	5,497.21	5,173.73	25.84	34.07	117.97	-1,009.68	1,295.85	2,018.52	1,971.74	46.78	43.153		
6,100.00	5,941.01	5,714.36	5,374.92	26.12	35.42	118.02	-1,059.69	1,360.29	2,055.66	2,007.56	48.09	42.745		
6,200.00	6,040.38	5,944.04	5,593.79	26.36	36.58	118.03	-1,102.26	1,415.15	2,085.36	2,036.11	49.25	42.343		
6,300.00	6,140.08	6,184.20	5,827.82	26.55	37.51	117.99	-1,135.13	1,457.51	2,107.10	2,056.88	50.21	41.962		
6,400.00	6,239.99	6,432.01	6,073.12	26.70	38.15	117.92	-1,156.33	1,484.83	2,120.42	2,069.47	50.95	41.621		
6,470.02	6,310.00	6,608.23	6,248.92	26.77	38.42	163.26	-1,163.46	1,494.02	2,124.59	2,073.27	51.31	41.403		
6,500.00	6,339.98	6,684.00	6,324.67	26.80	38.49	163.24	-1,164.48	1,495.34	2,125.13	2,073.70	51.43	41.323		
6,600.00	6,439.98	6,799.31	6,439.98	26.92	38.58	163.23	-1,164.55	1,495.43	2,125.16	2,073.49	51.67	41.131		
6,700.00	6,539.98	6,899.31	6,539.98	27.03	38.65	163.23	-1,164.55	1,495.43	2,125.16	2,073.26	51.90	40.950		
6,800.00	6,639.98	6,999.31	6,639.98	27.14	38.73	163.23	-1,164.55	1,495.43	2,125.16	2,073.03	52.13	40.769		
6,900.00	6,739.98	7,099.31	6,739.98	27.26	38.81	163.23	-1,164.55	1,495.43	2,125.16	2,072.80	52.36	40.586		
7,000.00	6,839.98	7,199.31	6,839.98	27.38	38.88	163.23	-1,164.55	1,495.43	2,125.16	2,072.56	52.60	40.404		
7,100.00	6,939.98	7,299.31	6,939.98	27.49	38.96	163.23	-1,164.55	1,495.43	2,125.16	2,072.32	52.84	40.221		
7,200.00	7,039.98	7,399.31	7,039.98	27.61	39.04	163.23	-1,164.55	1,495.43	2,125.16	2,072.08	53.08	40.037		
7,300.00	7,139.98	7,499.31	7,139.98	27.74	39.12	163.23	-1,164.55	1,495.43	2,125.16	2,071.84	53.32	39.854		
7,400.00	7,239.98	7,599.31	7,239.98	27.86	39.20	163.23	-1,164.55	1,495.43	2,125.16	2,071.59	53.57	39.670		
7,500.00	7,339.98	7,699.31	7,339.98	27.98	39.28	163.23	-1,164.55	1,495.43	2,125.16	2,071.34	53.82	39.485		
7,600.00	7,439.98	7,799.31	7,439.98	28.11	39.37	163.23	-1,164.55	1,495.43	2,125.16	2,071.09	54.07	39.301		
7,700.00	7,539.98	7,899.31	7,539.98	28.23	39.45	163.23	-1,164.55	1,495.43	2,125.16	2,070.83	54.33	39.116		
7,800.00	7,639.98	7,999.31	7,639.98	28.36	39.54	163.23	-1,164.55	1,495.43	2,125.16	2,070.57	54.59	38.932		
7,900.00	7,739.98	8,099.31	7,739.98	28.49	39.63	163.23	-1,164.55	1,495.43	2,125.16	2,070.31	54.85	38.747		
8,000.00	7,839.98	8,199.31	7,839.98	28.62	39.71	163.23	-1,164.55	1,495.43	2,125.16	2,070.05	55.11	38.563		
8,100.00	7,939.98	8,299.31	7,939.98	28.75	39.80	163.23	-1,164.55	1,495.43	2,125.16	2,069.79	55.37	38.378		
8,200.00	8,039.98	8,399.31	8,039.98	28.88	39.89	163.23	-1,164.55	1,495.43	2,125.16	2,069.52	55.64	38.194		
8,300.00	8,139.98	8,499.31	8,139.98	29.01	39.98	163.23	-1,164.55	1,495.43	2,125.16	2,069.25	55.91	38.010		
8,395.02	8,235.00	8,594.32	8,235.00	29.14	40.07	163.23	-1,164.55	1,495.43	2,125.16	2,068.99	56.17	37.835		

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_NRC 1-8
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 1-8	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_NRC 1-8	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 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	131.32	-10.58	12.03	16.02						
100.00	100.00	100.00	100.00	0.10	0.10	131.32	-10.58	12.03	16.02	15.83	0.19	83.875			
200.00	200.00	200.00	200.00	0.32	0.32	131.32	-10.58	12.03	16.02	15.38	0.64	25.015			
300.00	300.00	300.00	300.00	0.55	0.55	131.32	-10.58	12.03	16.02	14.93	1.09	14.700			
400.00	400.00	400.00	400.00	0.77	0.77	131.32	-10.58	12.03	16.02	14.48	1.54	10.408			
500.00	500.00	500.00	500.00	0.99	0.99	131.32	-10.58	12.03	16.02	14.04	1.99	8.056			
600.00	600.00	600.00	600.00	1.22	1.22	131.32	-10.58	12.03	16.02	13.59	2.44	6.571			
700.00	700.00	700.00	700.00	1.44	1.44	131.32	-10.58	12.03	16.02	13.14	2.89	5.548			
800.00	800.00	800.00	800.00	1.67	1.67	131.32	-10.58	12.03	16.02	12.69	3.34	4.801			
900.00	900.00	900.00	900.00	1.89	1.89	131.32	-10.58	12.03	16.02	12.24	3.79	4.231			
1,000.00	1,000.00	1,000.00	1,000.00	2.12	2.12	131.32	-10.58	12.03	16.02	11.79	4.24	3.782			
1,085.00	1,085.00	1,085.00	1,085.00	2.31	2.31	131.32	-10.58	12.03	16.02	11.41	4.62	3.469	CC		
1,100.00	1,100.00	1,099.95	1,099.95	2.34	2.34	85.96	-10.58	12.07	16.05	11.36	4.68	3.426	ES		
1,200.00	1,199.97	1,199.57	1,199.54	2.56	2.54	87.70	-10.24	14.30	17.35	12.25	5.10	3.401	SF		
1,300.00	1,299.80	1,299.11	1,298.91	2.78	2.75	91.11	-9.41	19.95	20.73	15.20	5.53	3.748			
1,400.00	1,399.37	1,398.51	1,397.88	3.01	2.98	94.71	-8.07	28.99	26.24	20.26	5.98	4.390			
1,500.00	1,498.55	1,497.68	1,496.26	3.26	3.22	97.70	-6.23	41.39	33.93	27.47	6.46	5.252			
1,600.00	1,597.23	1,596.58	1,593.87	3.53	3.49	99.94	-3.90	57.10	43.78	36.79	6.99	6.263			
1,700.00	1,695.29	1,695.13	1,690.53	3.84	3.80	101.55	-1.08	76.06	55.78	48.19	7.59	7.351			
1,800.00	1,792.60	1,793.28	1,786.09	4.20	4.16	102.67	2.20	98.20	69.88	61.61	8.27	8.454			
1,864.75	1,855.16	1,856.59	1,847.29	4.45	4.42	103.21	4.57	114.20	80.12	71.36	8.76	9.147			
1,900.00	1,889.11	1,890.98	1,880.39	4.60	4.56	103.43	5.94	123.45	86.01	76.97	9.04	9.515			
2,000.00	1,985.43	1,988.23	1,973.34	5.04	5.03	102.74	10.14	151.72	103.55	93.66	9.89	10.468			
2,100.00	2,081.75	2,085.42	2,065.27	5.50	5.55	100.87	14.76	182.90	122.34	111.54	10.81	11.322			
2,200.00	2,178.07	2,183.49	2,157.80	5.97	6.11	99.22	19.53	215.06	141.55	129.78	11.77	12.031			
2,300.00	2,274.38	2,281.56	2,250.32	6.46	6.70	97.96	24.30	247.21	160.84	148.09	12.75	12.616			
2,400.00	2,370.70	2,379.62	2,342.85	6.96	7.30	96.97	29.07	279.36	180.19	166.43	13.75	13.101			
2,500.00	2,467.02	2,477.69	2,435.37	7.46	7.91	96.17	33.84	311.51	199.58	184.81	14.77	13.509			
2,600.00	2,563.34	2,575.76	2,527.90	7.97	8.54	95.52	38.61	343.66	219.00	203.19	15.81	13.854			
2,700.00	2,659.66	2,673.83	2,620.42	8.49	9.17	94.97	43.38	375.82	238.45	221.59	16.85	14.149			
2,800.00	2,755.98	2,771.90	2,712.94	9.01	9.80	94.50	48.15	407.97	257.91	240.00	17.91	14.403			
2,900.00	2,852.30	2,869.96	2,805.47	9.54	10.45	94.10	52.91	440.12	277.39	258.42	18.97	14.625			
3,000.00	2,948.61	2,968.03	2,897.99	10.06	11.09	93.75	57.68	472.27	296.88	276.84	20.03	14.819			
3,100.00	3,044.93	3,066.10	2,990.52	10.59	11.74	93.44	62.45	504.43	316.38	295.27	21.11	14.989			
3,200.00	3,141.25	3,164.17	3,083.04	11.13	12.40	93.17	67.22	536.58	335.88	313.70	22.18	15.141			
3,300.00	3,237.57	3,262.23	3,175.57	11.66	13.05	92.93	71.99	568.73	355.39	332.13	23.26	15.277			
3,400.00	3,333.89	3,360.30	3,268.09	12.20	13.71	92.72	76.76	600.88	374.91	350.56	24.35	15.398			
3,500.00	3,430.21	3,458.37	3,360.61	12.74	14.37	92.52	81.53	633.04	394.43	369.00	25.44	15.507			
3,600.00	3,526.53	3,556.44	3,453.14	13.28	15.03	92.35	86.30	665.19	413.96	387.44	26.52	15.607			
3,700.00	3,622.85	3,654.50	3,545.66	13.82	15.69	92.19	91.07	697.34	433.49	405.87	27.62	15.697			
3,800.00	3,719.16	3,752.57	3,638.19	14.36	16.36	92.04	95.84	729.49	453.02	424.31	28.71	15.779			
3,900.00	3,815.48	3,850.64	3,730.71	14.90	17.02	91.91	100.60	761.65	472.56	442.75	29.81	15.854			
4,000.00	3,911.80	3,948.71	3,823.23	15.44	17.69	91.79	105.37	793.80	492.10	461.19	30.90	15.924			
4,100.00	4,008.12	4,046.77	3,915.76	15.99	18.35	91.67	110.14	825.95	511.63	479.63	32.00	15.988			
4,200.00	4,104.44	4,144.84	4,008.28	16.53	19.02	91.57	114.91	858.10	531.18	498.07	33.10	16.047			
4,300.00	4,200.76	4,242.91	4,100.81	17.08	19.69	91.47	119.68	890.25	550.72	516.52	34.20	16.101			
4,400.00	4,297.08	4,340.98	4,193.33	17.62	20.36	91.38	124.45	922.41	570.26	534.96	35.31	16.152			
4,500.00	4,393.39	4,439.04	4,285.86	18.17	21.03	91.29	129.22	954.56	589.81	553.40	36.41	16.200			
4,600.00	4,489.71	4,537.11	4,378.38	18.72	21.70	91.21	133.99	986.71	609.36	571.84	37.51	16.244			
4,700.00	4,586.03	4,635.18	4,470.90	19.26	22.37	91.14	138.76	1,018.86	628.90	590.29	38.62	16.286			
4,800.00	4,682.35	4,733.25	4,563.43	19.81	23.04	91.07	143.53	1,051.02	648.45	608.73	39.72	16.324			
4,900.00	4,778.67	4,831.31	4,655.95	20.36	23.71	91.00	148.29	1,083.17	668.00	627.17	40.83	16.361			

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 1-8
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 1-8	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_NRC 1-8	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	
5,000.00	4,874.99	4,929.38	4,748.48	20.91	24.38	90.94	153.06	1,115.32	687.55	645.62	41.94	16.395		
5,100.00	4,971.31	5,027.45	4,841.00	21.46	25.05	90.88	157.83	1,147.47	707.10	664.06	43.04	16.428		
5,200.00	5,067.62	5,125.52	4,933.53	22.01	25.73	90.82	162.60	1,179.63	726.66	682.51	44.15	16.458		
5,300.00	5,163.94	5,223.58	5,026.05	22.55	26.40	90.77	167.37	1,211.78	746.21	700.95	45.26	16.487		
5,400.00	5,260.26	5,321.65	5,118.57	23.10	27.07	90.72	172.14	1,243.93	765.76	719.39	46.37	16.515		
5,500.00	5,356.58	5,419.72	5,211.10	23.65	27.74	90.67	176.91	1,276.08	785.32	737.84	47.48	16.541		
5,600.00	5,452.90	5,517.79	5,303.62	24.20	28.42	90.63	181.68	1,308.24	804.87	756.28	48.59	16.565		
5,690.27	5,539.84	5,608.68	5,389.39	24.70	29.02	90.59	186.09	1,338.00	822.50	772.92	49.59	16.586		
5,700.00	5,549.22	5,620.06	5,400.16	24.75	29.08	90.62	186.63	1,341.66	824.37	774.67	49.70	16.588		
5,800.00	5,646.08	5,737.61	5,512.15	25.15	29.66	90.97	191.87	1,376.92	842.27	791.58	50.69	16.616		
5,900.00	5,743.74	5,856.10	5,626.44	25.52	30.19	91.25	196.45	1,407.85	857.84	806.25	51.58	16.630		
6,000.00	5,842.09	5,975.42	5,742.73	25.84	30.65	91.48	200.37	1,434.24	871.02	818.65	52.37	16.632		
6,100.00	5,941.01	6,095.46	5,860.74	26.12	31.04	91.65	203.58	1,455.93	881.79	828.74	53.05	16.621		
6,200.00	6,040.38	6,216.08	5,980.14	26.36	31.36	91.78	206.08	1,472.78	890.12	836.50	53.62	16.601		
6,300.00	6,140.08	6,337.13	6,100.59	26.55	31.61	91.85	207.85	1,484.68	895.97	841.90	54.07	16.570		
6,400.00	6,239.99	6,458.48	6,221.73	26.70	31.80	91.88	208.87	1,491.55	899.33	844.91	54.42	16.527		
6,470.02	6,310.00	6,543.55	6,306.77	26.77	31.89	137.26	209.13	1,493.33	900.19	845.60	54.59	16.489		
6,500.00	6,339.98	6,576.76	6,339.98	26.80	31.92	137.26	209.14	1,493.39	900.22	845.56	54.66	16.470		
6,600.00	6,439.98	6,676.76	6,439.98	26.92	32.01	137.26	209.14	1,493.39	900.22	845.35	54.87	16.406		
6,700.00	6,539.98	6,776.76	6,539.98	27.03	32.11	137.26	209.14	1,493.39	900.22	845.13	55.09	16.341		
6,800.00	6,639.98	6,876.76	6,639.98	27.14	32.21	137.26	209.14	1,493.39	900.22	844.91	55.31	16.275		
6,900.00	6,739.98	6,976.76	6,739.98	27.26	32.31	137.26	209.14	1,493.39	900.22	844.68	55.54	16.209		
7,000.00	6,839.98	7,076.76	6,839.98	27.38	32.41	137.26	209.14	1,493.39	900.22	844.45	55.77	16.143		
7,100.00	6,939.98	7,176.76	6,939.98	27.49	32.51	137.26	209.14	1,493.39	900.22	844.22	56.00	16.077		
7,200.00	7,039.98	7,276.76	7,039.98	27.61	32.61	137.26	209.14	1,493.39	900.22	843.99	56.23	16.010		
7,300.00	7,139.98	7,376.76	7,139.98	27.74	32.71	137.26	209.14	1,493.39	900.22	843.76	56.46	15.943		
7,400.00	7,239.98	7,476.76	7,239.98	27.86	32.82	137.26	209.14	1,493.39	900.22	843.52	56.70	15.876		
7,500.00	7,339.98	7,576.76	7,339.98	27.98	32.93	137.26	209.14	1,493.39	900.22	843.28	56.94	15.809		
7,600.00	7,439.98	7,676.76	7,439.98	28.11	33.03	137.26	209.14	1,493.39	900.22	843.03	57.19	15.742		
7,700.00	7,539.98	7,776.76	7,539.98	28.23	33.14	137.26	209.14	1,493.39	900.22	842.79	57.43	15.675		
7,800.00	7,639.98	7,876.76	7,639.98	28.36	33.25	137.26	209.14	1,493.39	900.22	842.54	57.68	15.607		
7,900.00	7,739.98	7,976.76	7,739.98	28.49	33.36	137.26	209.14	1,493.39	900.22	842.29	57.93	15.540		
8,000.00	7,839.98	8,076.76	7,839.98	28.62	33.47	137.26	209.14	1,493.39	900.22	842.04	58.18	15.472		
8,100.00	7,939.98	8,176.76	7,939.98	28.75	33.59	137.26	209.14	1,493.39	900.22	841.78	58.44	15.405		
8,200.00	8,039.98	8,276.76	8,039.98	28.88	33.70	137.26	209.14	1,493.39	900.22	841.52	58.70	15.337		
8,300.00	8,139.98	8,376.76	8,139.98	29.01	33.82	137.26	209.14	1,493.39	900.22	841.26	58.96	15.269		
8,395.02	8,235.00	8,471.78	8,235.00	29.14	33.93	137.26	209.14	1,493.39	900.22	841.02	59.20	15.205		

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_NRC 1-8
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 1-8	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_NRC 1-8	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				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	130.97	-21.14	24.35	32.25						
100.00	100.00	100.00	100.00	0.10	0.10	130.97	-21.14	24.35	32.25	32.05	0.19	168.781			
200.00	200.00	200.00	200.00	0.32	0.32	130.97	-21.14	24.35	32.25	31.61	0.64	50.338			
300.00	300.00	300.00	300.00	0.55	0.55	130.97	-21.14	24.35	32.25	31.16	1.09	29.580			
400.00	400.00	400.00	400.00	0.77	0.77	130.97	-21.14	24.35	32.25	30.71	1.54	20.944			
500.00	500.00	500.00	500.00	0.99	0.99	130.97	-21.14	24.35	32.25	30.26	1.99	16.211			
600.00	600.00	600.00	600.00	1.22	1.22	130.97	-21.14	24.35	32.25	29.81	2.44	13.223			
700.00	700.00	700.00	700.00	1.44	1.44	130.97	-21.14	24.35	32.25	29.36	2.89	11.165			
800.00	800.00	800.00	800.00	1.67	1.67	130.97	-21.14	24.35	32.25	28.91	3.34	9.661			
900.00	900.00	900.00	900.00	1.89	1.89	130.97	-21.14	24.35	32.25	28.46	3.79	8.514			
1,000.00	1,000.00	1,000.00	1,000.00	2.12	2.12	130.97	-21.14	24.35	32.25	28.01	4.24	7.611			
1,085.00	1,085.00	1,085.00	1,085.00	2.31	2.31	130.97	-21.14	24.35	32.25	27.63	4.62	6.981			
1,100.00	1,100.00	1,100.02	1,100.02	2.34	2.34	85.71	-21.17	24.32	32.24	27.56	4.68	6.885			
1,180.89	1,180.87	1,180.91	1,180.90	2.52	2.49	91.28	-22.22	23.16	32.09	27.08	5.00	6.413 CC			
1,200.00	1,199.97	1,199.97	1,199.94	2.56	2.52	93.78	-22.69	22.64	32.12	27.04	5.08	6.323 ES			
1,300.00	1,299.80	1,299.09	1,298.89	2.78	2.71	112.94	-26.50	18.41	34.58	29.09	5.49	6.300 SF			
1,400.00	1,399.37	1,396.67	1,396.06	3.01	2.91	134.80	-32.48	11.77	44.76	38.86	5.90	7.589			
1,500.00	1,498.55	1,492.96	1,491.63	3.26	3.13	150.48	-40.30	3.10	64.41	58.11	6.29	10.239			
1,600.00	1,597.23	1,588.83	1,586.74	3.53	3.37	159.48	-48.37	-5.84	90.19	83.52	6.67	13.517			
1,700.00	1,695.29	1,683.65	1,680.81	3.84	3.61	164.85	-56.34	-14.69	120.43	113.38	7.05	17.087			
1,800.00	1,792.60	1,777.31	1,773.73	4.20	3.86	168.29	-64.22	-23.42	154.51	147.09	7.42	20.828			
1,864.75	1,855.16	1,837.27	1,833.22	4.45	4.03	169.90	-69.26	-29.02	178.49	170.84	7.66	23.315			
1,900.00	1,889.11	1,869.77	1,865.46	4.60	4.12	170.67	-71.99	-32.05	191.96	184.15	7.81	24.588			
2,000.00	1,985.43	1,961.95	1,956.91	5.04	4.38	172.37	-79.75	-40.65	230.29	222.04	8.24	27.937			
2,100.00	2,081.75	2,054.13	2,048.36	5.50	4.65	173.58	-87.50	-49.25	268.74	260.05	8.69	30.936			
2,200.00	2,178.07	2,146.31	2,139.81	5.97	4.92	174.49	-95.26	-57.84	307.27	298.13	9.14	33.629			
2,300.00	2,274.38	2,238.50	2,231.27	6.46	5.20	175.20	-103.01	-66.44	345.85	336.26	9.59	36.054			
2,400.00	2,370.70	2,330.68	2,322.72	6.96	5.48	175.77	-110.76	-75.04	384.47	374.42	10.05	38.246			
2,500.00	2,467.02	2,422.86	2,414.17	7.46	5.76	176.23	-118.52	-83.64	423.11	412.59	10.52	40.234			
2,600.00	2,563.34	2,515.05	2,505.63	7.97	6.05	176.62	-126.27	-92.24	461.77	450.79	10.98	42.042			
2,700.00	2,659.66	2,607.23	2,597.08	8.49	6.33	176.94	-134.02	-100.84	500.45	489.00	11.45	43.693			
2,800.00	2,755.98	2,699.41	2,688.53	9.01	6.62	177.22	-141.78	-109.44	539.14	527.21	11.93	45.205			
2,900.00	2,852.30	2,791.59	2,779.98	9.54	6.91	177.46	-149.53	-118.03	577.84	565.44	12.40	46.593			
3,000.00	2,948.61	2,883.78	2,871.44	10.06	7.20	177.67	-157.28	-126.63	616.55	603.67	12.88	47.872			
3,100.00	3,044.93	2,975.96	2,962.89	10.59	7.49	177.86	-165.04	-135.23	655.26	641.90	13.36	49.053			
3,200.00	3,141.25	3,068.14	3,054.34	11.13	7.79	178.03	-172.79	-143.83	693.98	680.14	13.84	50.148			
3,300.00	3,237.57	3,160.32	3,145.79	11.66	8.08	178.18	-180.54	-152.43	732.70	718.38	14.32	51.164			
3,400.00	3,333.89	3,252.51	3,237.25	12.20	8.38	178.31	-188.30	-161.03	771.43	756.62	14.80	52.110			
3,500.00	3,430.21	3,344.69	3,328.70	12.74	8.67	178.43	-196.05	-169.62	810.16	794.87	15.29	52.992			
3,600.00	3,526.53	3,436.87	3,420.15	13.28	8.97	178.54	-203.80	-178.22	848.89	833.12	15.77	53.816			
3,700.00	3,622.85	3,529.06	3,511.61	13.82	9.27	178.64	-211.56	-186.82	887.62	871.36	16.26	54.588			
3,800.00	3,719.16	3,621.24	3,603.06	14.36	9.57	178.73	-219.31	-195.42	926.36	909.61	16.75	55.312			
3,900.00	3,815.48	3,713.42	3,694.51	14.90	9.86	178.81	-227.06	-204.02	965.10	947.86	17.24	55.993			
4,000.00	3,911.80	3,805.60	3,785.96	15.44	10.16	178.89	-234.82	-212.62	1,003.84	986.12	17.72	56.635			
4,100.00	4,008.12	3,897.79	3,877.42	15.99	10.46	178.96	-242.57	-221.22	1,042.58	1,024.37	18.21	57.239			
4,200.00	4,104.44	3,989.97	3,968.87	16.53	10.76	179.03	-250.32	-229.81	1,081.33	1,062.62	18.70	57.810			
4,300.00	4,200.76	4,082.15	4,060.32	17.08	11.06	179.09	-258.08	-238.41	1,120.07	1,100.88	19.20	58.351			
4,400.00	4,297.08	4,174.33	4,151.77	17.62	11.36	179.15	-265.83	-247.01	1,158.82	1,139.13	19.69	58.863			
4,500.00	4,393.39	4,266.52	4,243.23	18.17	11.66	179.21	-273.58	-255.61	1,197.56	1,177.38	20.18	59.348			
4,600.00	4,489.71	4,358.70	4,334.68	18.72	11.96	179.26	-281.34	-264.21	1,236.31	1,215.64	20.67	59.809			
4,700.00	4,586.03	4,450.88	4,426.13	19.26	12.27	179.30	-289.09	-272.81	1,275.06	1,253.89	21.16	60.248			
4,800.00	4,682.35	4,543.07	4,517.59	19.81	12.57	179.35	-296.84	-281.41	1,313.81	1,292.15	21.66	60.665			

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 1-8
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 1-8	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_NRC 1-8	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 Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)		Separation Factor	
4,900.00	4,778.67	4,635.25	4,609.04	20.36	12.87	179.39	-304.60	-290.00	1,352.56	1,330.41	22.15	61.063		
5,000.00	4,874.99	4,727.43	4,700.49	20.91	13.17	179.43	-312.35	-298.60	1,391.31	1,368.66	22.64	61.443		
5,100.00	4,971.31	4,819.61	4,791.94	21.46	13.47	179.47	-320.10	-307.20	1,430.06	1,406.92	23.14	61.805		
5,200.00	5,067.62	4,911.80	4,883.40	22.01	13.78	179.51	-327.86	-315.80	1,468.81	1,445.18	23.63	62.152		
5,300.00	5,163.94	5,003.98	4,974.85	22.55	14.08	179.54	-335.61	-324.40	1,507.56	1,483.43	24.13	62.484		
5,400.00	5,260.26	5,096.16	5,066.30	23.10	14.38	179.57	-343.36	-333.00	1,546.31	1,521.69	24.62	62.802		
5,500.00	5,356.58	5,188.34	5,157.76	23.65	14.68	179.60	-351.12	-341.60	1,585.06	1,559.95	25.12	63.106		
5,600.00	5,452.90	5,280.53	5,249.21	24.20	14.99	179.63	-358.87	-350.19	1,623.82	1,598.20	25.61	63.399		
5,690.27	5,539.84	5,363.74	5,331.76	24.70	15.26	179.66	-365.87	-357.96	1,658.80	1,632.74	26.06	63.652		
5,700.00	5,549.22	5,372.72	5,340.67	24.75	15.29	179.66	-366.62	-358.79	1,662.55	1,636.43	26.12	63.644		
5,800.00	5,646.08	5,465.68	5,432.90	25.15	15.60	179.69	-374.44	-367.46	1,699.38	1,672.65	26.72	63.589		
5,900.00	5,743.74	5,559.88	5,526.35	25.52	15.91	179.72	-382.37	-376.25	1,732.93	1,705.64	27.29	63.499		
6,000.00	5,842.09	5,655.19	5,620.90	25.84	16.22	179.75	-390.38	-385.14	1,763.18	1,735.36	27.82	63.376		
6,100.00	5,941.01	5,751.49	5,716.44	26.12	16.54	179.77	-398.48	-394.12	1,790.08	1,761.77	28.31	63.226		
6,200.00	6,040.38	5,848.68	5,812.86	26.36	16.86	179.79	-406.66	-403.19	1,813.60	1,784.84	28.76	63.050		
6,300.00	6,140.08	5,946.63	5,910.03	26.55	17.18	179.81	-414.90	-412.33	1,833.72	1,804.55	29.18	62.852		
6,400.00	6,239.99	6,095.88	6,058.23	26.70	17.63	179.84	-426.73	-425.45	1,850.03	1,820.38	29.65	62.404		
6,470.02	6,310.00	6,293.13	6,255.03	26.77	18.00	-134.74	-435.19	-434.83	1,855.37	1,825.28	30.08	61.673		
6,500.00	6,339.98	6,378.06	6,339.95	26.80	18.13	-134.74	-436.04	-435.77	1,855.81	1,825.52	30.30	61.257		
6,600.00	6,439.98	6,478.09	6,439.98	26.92	18.28	-134.74	-436.04	-435.77	1,855.81	1,825.15	30.66	60.521		
6,700.00	6,539.98	6,578.09	6,539.98	27.03	18.43	-134.74	-436.04	-435.77	1,855.81	1,824.78	31.03	59.803		
6,800.00	6,639.98	6,678.09	6,639.98	27.14	18.57	-134.74	-436.04	-435.77	1,855.81	1,824.41	31.40	59.098		
6,900.00	6,739.98	6,778.09	6,739.98	27.26	18.72	-134.74	-436.04	-435.77	1,855.81	1,824.04	31.77	58.406		
7,000.00	6,839.98	6,878.09	6,839.98	27.38	18.87	-134.74	-436.04	-435.77	1,855.81	1,823.66	32.15	57.726		
7,100.00	6,939.98	6,978.09	6,939.98	27.49	19.03	-134.74	-436.04	-435.77	1,855.81	1,823.29	32.52	57.058		
7,200.00	7,039.98	7,078.09	7,039.98	27.61	19.18	-134.74	-436.04	-435.77	1,855.81	1,822.91	32.90	56.403		
7,300.00	7,139.98	7,178.09	7,139.98	27.74	19.34	-134.74	-436.04	-435.77	1,855.81	1,822.53	33.28	55.759		
7,400.00	7,239.98	7,278.09	7,239.98	27.86	19.49	-134.74	-436.04	-435.77	1,855.81	1,822.15	33.66	55.127		
7,500.00	7,339.98	7,378.09	7,339.98	27.98	19.65	-134.74	-436.04	-435.77	1,855.81	1,821.76	34.05	54.507		
7,600.00	7,439.98	7,478.09	7,439.98	28.11	19.81	-134.74	-436.04	-435.77	1,855.81	1,821.38	34.43	53.898		
7,700.00	7,539.98	7,578.09	7,539.98	28.23	19.97	-134.74	-436.04	-435.77	1,855.81	1,820.99	34.82	53.300		
7,800.00	7,639.98	7,678.09	7,639.98	28.36	20.13	-134.74	-436.04	-435.77	1,855.81	1,820.60	35.21	52.713		
7,900.00	7,739.98	7,778.09	7,739.98	28.49	20.29	-134.74	-436.04	-435.77	1,855.81	1,820.22	35.60	52.136		
8,000.00	7,839.98	7,878.09	7,839.98	28.62	20.46	-134.74	-436.04	-435.77	1,855.81	1,819.82	35.99	51.570		
8,100.00	7,939.98	7,978.09	7,939.98	28.75	20.62	-134.74	-436.04	-435.77	1,855.81	1,819.43	36.38	51.014		
8,200.00	8,039.98	8,078.09	8,039.98	28.88	20.79	-134.74	-436.04	-435.77	1,855.81	1,819.04	36.77	50.469		
8,300.00	8,139.98	8,178.09	8,139.98	29.01	20.96	-134.74	-436.04	-435.77	1,855.81	1,818.64	37.17	49.933		
8,395.02	8,235.00	8,273.11	8,235.00	29.14	21.12	-134.74	-436.04	-435.77	1,855.81	1,818.27	37.54	49.432		

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_NRC 1-8
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 1-8	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_NRC 1-8	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-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	-132.92	-34.62	-37.22	53.93					
100.00	100.00	82.00	82.00	0.10	1.64	-132.92	-34.62	-37.22	50.83	49.10	1.74	29.289		
200.00	200.00	182.00	182.00	0.32	5.28	-132.92	-34.62	-37.22	50.83	45.23	5.60	9.077		
300.00	300.00	282.00	282.00	0.55	9.28	-132.92	-34.62	-37.22	50.83	41.01	9.83	5.174		
400.00	400.00	382.00	382.00	0.77	13.28	-132.92	-34.62	-37.22	50.83	36.78	14.05	3.618		
500.00	500.00	482.00	482.00	0.99	17.28	-132.92	-34.62	-37.22	50.83	32.56	18.27	2.782		
600.00	600.00	582.00	582.00	1.22	21.28	-132.92	-34.62	-37.22	50.83	28.33	22.50	2.259		
700.00	700.00	682.00	682.00	1.44	25.28	-132.92	-34.62	-37.22	50.83	24.11	26.72	1.902		
800.00	800.00	782.00	782.00	1.67	29.28	-132.92	-34.62	-37.22	50.83	19.88	30.95	1.642		
900.00	900.00	882.00	882.00	1.89	33.28	-132.92	-34.62	-37.22	50.83	15.66	35.17	1.445	Level 3	
1,000.00	1,000.00	982.00	982.00	2.12	37.28	-132.92	-34.62	-37.22	50.83	11.43	39.40	1.290	Level 3	
1,085.00	1,085.00	1,067.00	1,067.00	2.31	40.68	-132.92	-34.62	-37.22	50.83	7.84	42.99	1.182	Level 2, CC	
1,100.00	1,100.00	1,082.00	1,082.00	2.34	41.28	-178.32	-34.62	-37.22	50.87	7.25	43.62	1.166	Level 2	
1,200.00	1,199.97	1,181.97	1,181.97	2.56	45.28	-178.39	-34.62	-37.22	53.14	5.33	47.81	1.112	Level 2, ES, SF	
1,300.00	1,299.80	1,281.80	1,281.80	2.78	49.27	-178.55	-34.62	-37.22	58.89	6.98	51.92	1.134	Level 2	
1,400.00	1,399.37	1,381.37	1,381.37	3.01	53.25	-178.74	-34.62	-37.22	68.13	12.19	55.94	1.218	Level 2	
1,500.00	1,498.55	1,480.55	1,480.55	3.26	57.22	-178.93	-34.62	-37.22	80.83	20.98	59.85	1.351	Level 3	
1,600.00	1,597.23	1,579.23	1,579.23	3.53	61.17	-179.11	-34.62	-37.22	96.99	33.36	63.63	1.524		
1,700.00	1,695.29	1,677.29	1,677.29	3.84	65.09	-179.25	-34.62	-37.22	116.58	49.31	67.27	1.733		
1,800.00	1,792.60	1,774.60	1,774.60	4.20	68.98	-179.37	-34.62	-37.22	139.58	68.83	70.75	1.973		
1,864.75	1,855.16	1,837.16	1,837.16	4.45	71.49	-179.43	-34.62	-37.22	156.28	83.37	72.91	2.143		
1,900.00	1,889.11	1,871.11	1,871.11	4.60	72.84	-179.47	-34.62	-37.22	165.76	91.45	74.31	2.231		
2,000.00	1,985.43	1,967.43	1,967.43	5.04	76.70	-179.54	-34.62	-37.22	192.64	114.37	78.27	2.461		
2,100.00	2,081.75	2,063.75	2,063.75	5.50	80.55	-179.60	-34.62	-37.22	219.52	137.28	82.24	2.669		
2,200.00	2,178.07	2,160.07	2,160.07	5.97	84.40	-179.64	-34.62	-37.22	246.41	160.19	86.22	2.858		
2,300.00	2,274.38	2,256.38	2,256.38	6.46	88.26	-179.68	-34.62	-37.22	273.29	183.10	90.19	3.030		
2,400.00	2,370.70	2,352.70	2,352.70	6.96	92.11	-179.70	-34.62	-37.22	300.17	206.00	94.17	3.187		
2,500.00	2,467.02	2,449.02	2,449.02	7.46	95.96	-179.73	-34.62	-37.22	327.06	228.90	98.16	3.332		
2,600.00	2,563.34	2,545.34	2,545.34	7.97	99.81	-179.75	-34.62	-37.22	353.94	251.80	102.14	3.465		
2,700.00	2,659.66	2,641.66	2,641.66	8.49	103.67	-179.77	-34.62	-37.22	380.82	274.70	106.13	3.588		
2,800.00	2,755.98	2,737.98	2,737.98	9.01	107.52	-179.78	-34.62	-37.22	407.71	297.59	110.12	3.703		
2,900.00	2,852.30	2,834.30	2,834.30	9.54	111.37	-179.80	-34.62	-37.22	434.59	320.48	114.11	3.809		
3,000.00	2,948.61	2,930.61	2,930.61	10.06	115.22	-179.81	-34.62	-37.22	461.47	343.38	118.10	3.908		
3,100.00	3,044.93	3,026.93	3,026.93	10.59	119.08	-179.82	-34.62	-37.22	488.36	366.27	122.09	4.000		
3,200.00	3,141.25	3,123.25	3,123.25	11.13	122.93	-179.83	-34.62	-37.22	515.24	389.16	126.08	4.086		
3,300.00	3,237.57	3,219.57	3,219.57	11.66	126.78	-179.84	-34.62	-37.22	542.12	412.05	130.08	4.168		
3,400.00	3,333.89	3,315.89	3,315.89	12.20	130.64	-179.84	-34.62	-37.22	569.01	434.93	134.07	4.244		
3,500.00	3,430.21	3,412.21	3,412.21	12.74	134.49	-179.85	-34.62	-37.22	595.89	457.82	138.07	4.316		
3,600.00	3,526.53	3,508.53	3,508.53	13.28	138.34	-179.86	-34.62	-37.22	622.77	480.71	142.07	4.384		
3,700.00	3,622.85	3,604.85	3,604.85	13.82	142.19	-179.86	-34.62	-37.22	649.66	503.59	146.06	4.448		
3,800.00	3,719.16	3,701.16	3,701.16	14.36	146.05	-179.87	-34.62	-37.22	676.54	526.48	150.06	4.508		
3,900.00	3,815.48	3,797.48	3,797.48	14.90	149.90	-179.87	-34.62	-37.22	703.42	549.36	154.06	4.566		
4,000.00	3,911.80	3,893.80	3,893.80	15.44	153.75	-179.88	-34.62	-37.22	730.31	572.25	158.06	4.620		
4,100.00	4,008.12	3,990.12	3,990.12	15.99	157.60	-179.88	-34.62	-37.22	757.19	595.13	162.06	4.672		
4,200.00	4,104.44	4,086.44	4,086.44	16.53	161.46	-179.89	-34.62	-37.22	784.07	618.02	166.06	4.722		
4,300.00	4,200.76	4,182.76	4,182.76	17.08	165.31	-179.89	-34.62	-37.22	810.96	640.90	170.06	4.769		
4,400.00	4,297.08	4,279.08	4,279.08	17.62	169.16	-179.89	-34.62	-37.22	837.84	663.78	174.06	4.814		
4,500.00	4,393.39	4,375.39	4,375.39	18.17	173.02	-179.90	-34.62	-37.22	864.73	686.67	178.06	4.856		
4,600.00	4,489.71	4,471.71	4,471.71	18.72	176.87	-179.90	-34.62	-37.22	891.61	709.55	182.06	4.897		
4,700.00	4,586.03	4,568.03	4,568.03	19.26	180.72	-179.90	-34.62	-37.22	918.49	732.43	186.06	4.937		
4,800.00	4,682.35	4,664.35	4,664.35	19.81	184.57	-179.91	-34.62	-37.22	945.38	755.31	190.06	4.974		
4,900.00	4,778.67	4,760.67	4,760.67	20.36	188.43	-179.91	-34.62	-37.22	972.26	778.20	194.06	5.010		

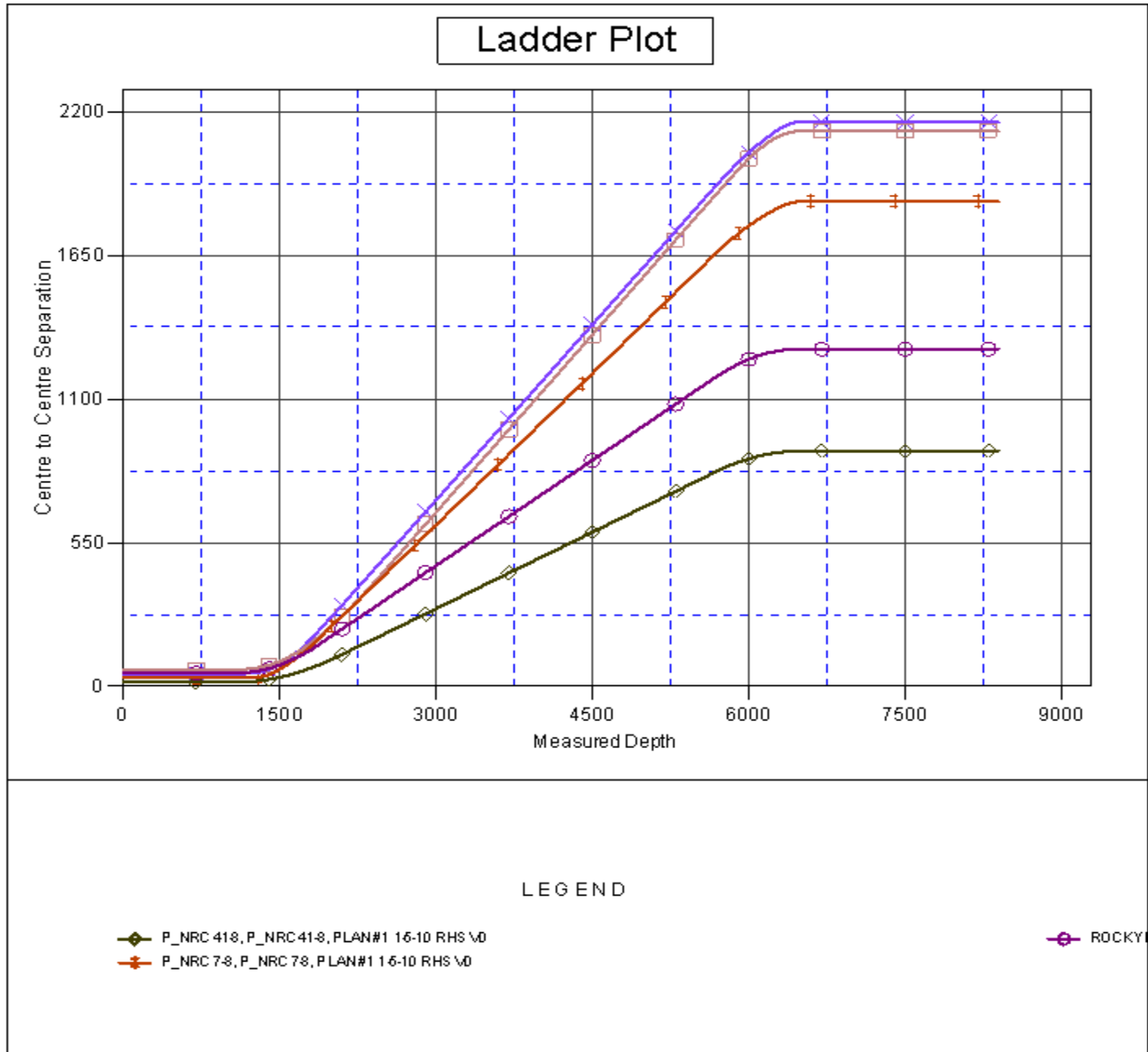
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_NRC 1-8
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 1-8	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_NRC 1-8	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	
5,000.00	4,874.99	4,856.99	4,856.99	20.91	192.28	-179.91	-34.62	-37.22	999.14	801.08	198.07	5.045		
5,100.00	4,971.31	4,953.31	4,953.31	21.46	196.13	-179.91	-34.62	-37.22	1,026.03	823.96	202.07	5.078		
5,200.00	5,067.62	5,049.62	5,049.62	22.01	199.98	-179.92	-34.62	-37.22	1,052.91	846.84	206.07	5.109		
5,300.00	5,163.94	5,145.94	5,145.94	22.55	203.84	-179.92	-34.62	-37.22	1,079.79	869.72	210.07	5.140		
5,400.00	5,260.26	5,242.26	5,242.26	23.10	207.69	-179.92	-34.62	-37.22	1,106.68	892.60	214.07	5.170		
5,500.00	5,356.58	5,338.58	5,338.58	23.65	211.54	-179.92	-34.62	-37.22	1,133.56	915.48	218.08	5.198		
5,600.00	5,452.90	5,434.90	5,434.90	24.20	215.40	-179.92	-34.62	-37.22	1,160.44	938.36	222.08	5.225		
5,690.27	5,539.84	5,521.84	5,521.84	24.70	218.87	-179.93	-34.62	-37.22	1,184.71	959.02	225.69	5.249		
5,700.00	5,549.22	5,531.22	5,531.22	24.75	219.25	-179.93	-34.62	-37.22	1,187.31	961.04	226.27	5.247		
5,800.00	5,646.08	5,628.08	5,628.08	25.15	223.12	-179.93	-34.62	-37.22	1,212.18	980.05	232.13	5.222		
5,900.00	5,743.74	5,725.74	5,725.74	25.52	227.03	-179.93	-34.62	-37.22	1,233.65	995.80	237.85	5.187		
6,000.00	5,842.09	5,824.09	5,824.09	25.84	230.96	-179.93	-34.62	-37.22	1,251.70	1,008.34	243.36	5.143		
6,100.00	5,941.01	5,923.01	5,923.01	26.12	234.92	-179.93	-34.62	-37.22	1,266.31	1,017.69	248.63	5.093		
6,200.00	6,040.38	6,022.38	6,022.38	26.36	238.90	-179.93	-34.62	-37.22	1,277.46	1,023.83	253.63	5.037		
6,300.00	6,140.08	6,122.08	6,122.08	26.55	242.88	-179.93	-34.62	-37.22	1,285.13	1,026.78	258.35	4.974		
6,400.00	6,239.99	6,221.99	6,221.99	26.70	246.88	-179.93	-34.62	-37.22	1,289.32	1,026.55	262.77	4.907		
6,470.02	6,310.00	6,292.00	6,292.00	26.77	249.68	-134.54	-34.62	-37.22	1,290.17	1,024.50	265.67	4.856		
6,500.00	6,339.98	6,321.98	6,321.98	26.80	250.88	-134.54	-34.62	-37.22	1,290.17	1,023.25	266.92	4.833		
6,600.00	6,439.98	6,421.98	6,421.98	26.92	254.88	-134.54	-34.62	-37.22	1,290.17	1,019.07	271.11	4.759		
6,700.00	6,539.98	6,521.98	6,521.98	27.03	258.88	-134.54	-34.62	-37.22	1,290.17	1,014.88	275.29	4.687		
6,800.00	6,639.98	6,621.98	6,621.98	27.14	262.88	-134.54	-34.62	-37.22	1,290.17	1,010.70	279.48	4.616		
6,900.00	6,739.98	6,721.98	6,721.98	27.26	266.88	-134.54	-34.62	-37.22	1,290.17	1,006.51	283.66	4.548		
7,000.00	6,839.98	6,821.98	6,821.98	27.38	270.88	-134.54	-34.62	-37.22	1,290.17	1,002.33	287.85	4.482		
7,100.00	6,939.98	6,921.98	6,921.98	27.49	274.88	-134.54	-34.62	-37.22	1,290.17	998.14	292.04	4.418		
7,200.00	7,039.98	7,021.98	7,021.98	27.61	278.88	-134.54	-34.62	-37.22	1,290.17	993.95	296.22	4.355		
7,300.00	7,139.98	7,121.98	7,121.98	27.74	282.88	-134.54	-34.62	-37.22	1,290.17	989.76	300.41	4.295		
7,400.00	7,239.98	7,221.98	7,221.98	27.86	286.88	-134.54	-34.62	-37.22	1,290.17	985.57	304.60	4.236		
7,500.00	7,339.98	7,321.98	7,321.98	27.98	290.88	-134.54	-34.62	-37.22	1,290.17	981.38	308.79	4.178		
7,600.00	7,439.98	7,421.98	7,421.98	28.11	294.88	-134.54	-34.62	-37.22	1,290.17	977.19	312.99	4.122		
7,700.00	7,539.98	7,521.98	7,521.98	28.23	298.88	-134.54	-34.62	-37.22	1,290.17	973.00	317.18	4.068		
7,800.00	7,639.98	7,621.98	7,621.98	28.36	302.88	-134.54	-34.62	-37.22	1,290.17	968.80	321.37	4.015		
7,900.00	7,739.98	7,721.98	7,721.98	28.49	306.88	-134.54	-34.62	-37.22	1,290.17	964.61	325.57	3.963		
8,000.00	7,839.98	7,821.98	7,821.98	28.62	310.88	-134.54	-34.62	-37.22	1,290.17	960.42	329.76	3.912		
8,100.00	7,939.98	7,921.98	7,921.98	28.75	314.88	-134.54	-34.62	-37.22	1,290.17	956.22	333.95	3.863		
8,200.00	8,039.98	8,021.98	8,021.98	28.88	318.88	-134.54	-34.62	-37.22	1,290.17	952.02	338.15	3.815		
8,300.00	8,139.98	8,121.98	8,121.98	29.01	322.88	-134.54	-34.62	-37.22	1,290.17	947.83	342.35	3.769		
8,395.02	8,235.00	8,217.00	8,217.00	29.14	326.68	-134.54	-34.62	-37.22	1,290.17	943.84	346.34	3.725		

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_NRC 1-8
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 1-8	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_NRC 1-8	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 1-8
 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 1-8
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 1-8	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_NRC 1-8	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-5-10 RHS	Offset TVD Reference:	Offset Datum

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