



# **US ROCKIES REGION PLANNING**

**COLORADO NORTHERN ZONE - 83**

**WELD\_NRC 5 PAD**

**P\_NRC 7-8**

**P\_NRC 7-8**

**Plan: PLAN #1 1-5-10 RHS**

## **Standard Planning Report**

**12 March, 2010**



P\_NRC 7-8  
COLORADO NORTHERN ZONE - 83  
SECTION 8 T1N R67W  
1560 FNL 1519 FEL  
LAT: 40° 4' 6.661 N  
LONG: 104° 54' 37.944 W



Azimuths to True North  
Magnetic North: 9.07°  
  
Magnetic Field  
Strength: 53110.8nT  
Dip Angle: 66.81°  
Date: 1/5/2010  
Model: IGRF200510

WELL DETAILS: P\_NRC 7-8

+N/-S	+E/-W	Northing	Ground Level: Easting	5008.00 Latitude	Longitude	Slot
0.00	0.00	1268354.18	3164972.21	40° 4' 6.661 N	104° 54' 37.944 W	

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
3225.00	3252.48	PARKMAN
4700.00	4749.88	SUSSEX
5170.00	5227.02	SHANNON
7340.00	7409.77	NIO A
7680.00	7749.77	CODELL
8130.00	8199.77	JSAND

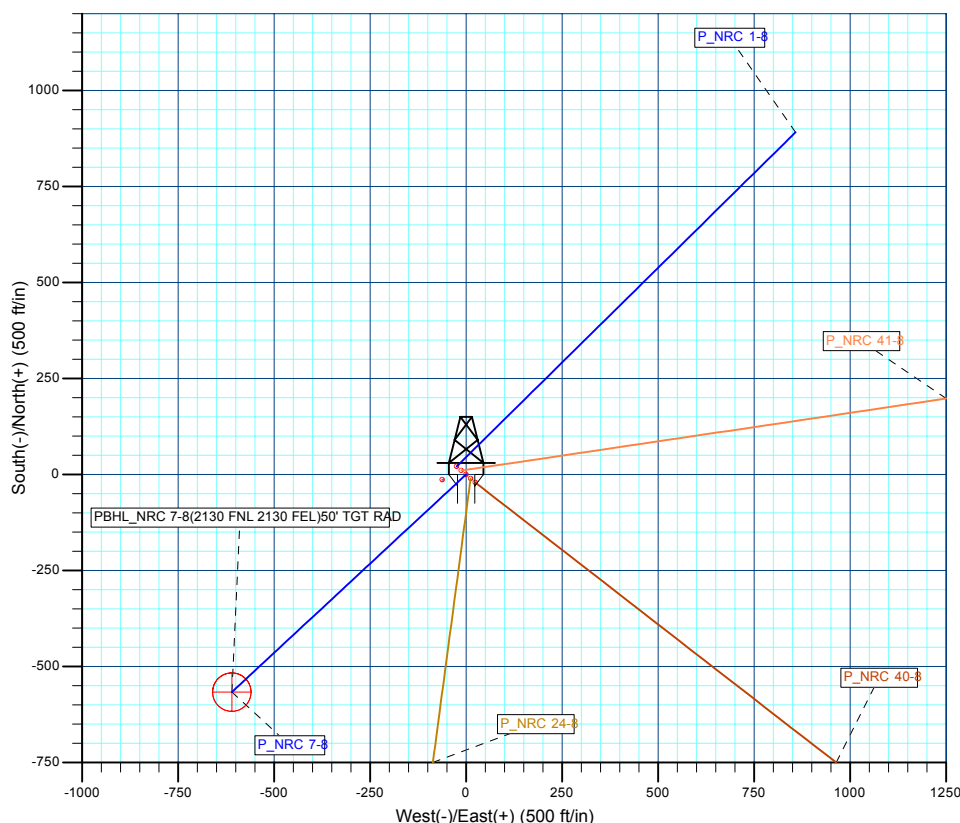
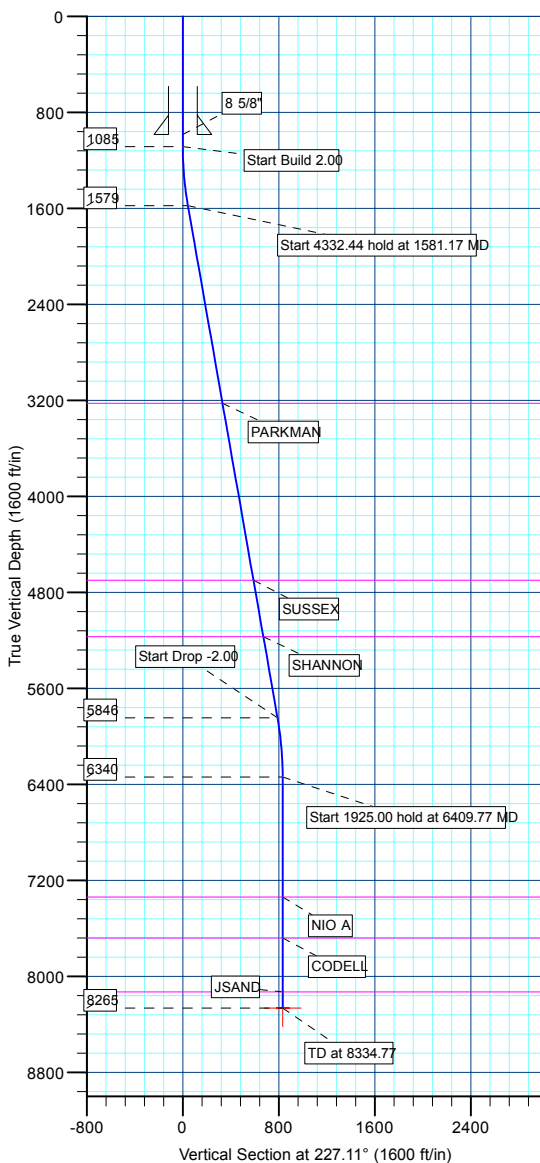
CASING DETAILS

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



KB ELEV: WELL @ 5023.00ft (Original Well Elev)

GRD ELEV: 5008.00



WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
PBHL	8265.00	-566.43	-609.86	1267783.71	3164366.13	40° 4' 1.063 N	104° 54' 45.788 W	Circle (Radius: 50.00)

Plan: PLAN #1 1-5-10 RHS (P\_NRC 7-8/P\_NRC 7-8)

Created By: Robert H. Scott

<b>Database:</b>	EDM 2003.21 Single User Db	<b>Local Co-ordinate Reference:</b>	Well P_NRC 7-8
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	WELL @ 5023.00ft (Original Well Elev)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	WELL @ 5023.00ft (Original Well Elev)
<b>Site:</b>	WELD_NRC 5 PAD	<b>North Reference:</b>	True
<b>Well:</b>	P_NRC 7-8	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	P_NRC 7-8		
<b>Design:</b>	PLAN #1 1-5-10 RHS		

<b>Project</b>	COLORADO NORTHERN ZONE - 83, KERR MCGEE OIL & GAS ONSHORE LP		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	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 7-8,					
Well Position	+N/-S	-21.14 ft	Northing:	1,268,354.18 ft	Latitude:	40° 4' 6.661 N
	+E/-W	24.35 ft	Easting:	3,164,972.21 ft	Longitude:	104° 54' 37.944 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	5,008.00 ft

<b>Wellbore</b>	P_NRC 7-8				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF200510	1/5/2010	9.07	66.81	53,111

<b>Design</b>	PLAN #1 1-5-10 RHS				
<b>Audit Notes:</b>					
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00	
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>	
	0.00	0.00	0.00	227.11	

<b>Plan Sections</b>										
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	
1,581.17	9.92	227.11	1,578.69	-29.17	-31.40	2.00	2.00	0.00	227.11	
5,913.60	9.92	227.11	5,846.31	-537.26	-578.45	0.00	0.00	0.00	0.00	
6,409.77	0.00	0.00	6,340.00	-566.43	-609.86	2.00	-2.00	0.00	180.00	
8,334.77	0.00	0.00	8,265.00	-566.43	-609.86	0.00	0.00	0.00	0.00	PBHL_NRC 7-8(21:

<b>Database:</b>	EDM 2003.21 Single User Db	<b>Local Co-ordinate Reference:</b>	Well P_NRC 7-8
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	WELL @ 5023.00ft (Original Well Elev)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	WELL @ 5023.00ft (Original Well Elev)
<b>Site:</b>	WELD_NRC 5 PAD	<b>North Reference:</b>	True
<b>Well:</b>	P_NRC 7-8	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	P_NRC 7-8		
<b>Design:</b>	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)
<b>Start Build 2.00</b>									
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	227.11	1,100.00	-0.03	-0.03	0.04	2.00	2.00	0.00
1,200.00	2.30	227.11	1,199.97	-1.57	-1.69	2.31	2.00	2.00	0.00
1,300.00	4.30	227.11	1,299.80	-5.49	-5.91	8.06	2.00	2.00	0.00
1,400.00	6.30	227.11	1,399.37	-11.77	-12.68	17.30	2.00	2.00	0.00
1,500.00	8.30	227.11	1,498.55	-20.42	-21.99	30.01	2.00	2.00	0.00
<b>Start 4332.44 hold at 1581.17 MD</b>									
1,581.17	9.92	227.11	1,578.69	-29.17	-31.40	42.86	2.00	2.00	0.00
1,600.00	9.92	227.11	1,597.24	-31.38	-33.78	46.11	0.00	0.00	0.00
1,700.00	9.92	227.11	1,695.75	-43.10	-46.41	63.34	0.00	0.00	0.00
1,800.00	9.92	227.11	1,794.25	-54.83	-59.04	80.57	0.00	0.00	0.00
1,900.00	9.92	227.11	1,892.75	-66.56	-71.66	97.80	0.00	0.00	0.00
2,000.00	9.92	227.11	1,991.26	-78.29	-84.29	115.04	0.00	0.00	0.00
2,100.00	9.92	227.11	2,089.76	-90.01	-96.92	132.27	0.00	0.00	0.00
2,200.00	9.92	227.11	2,188.26	-101.74	-109.54	149.50	0.00	0.00	0.00
2,300.00	9.92	227.11	2,286.77	-113.47	-122.17	166.74	0.00	0.00	0.00
2,400.00	9.92	227.11	2,385.27	-125.20	-134.80	183.97	0.00	0.00	0.00
2,500.00	9.92	227.11	2,483.78	-136.93	-147.42	201.20	0.00	0.00	0.00
2,600.00	9.92	227.11	2,582.28	-148.65	-160.05	218.43	0.00	0.00	0.00
2,700.00	9.92	227.11	2,680.78	-160.38	-172.68	235.67	0.00	0.00	0.00
2,800.00	9.92	227.11	2,779.29	-172.11	-185.30	252.90	0.00	0.00	0.00
2,900.00	9.92	227.11	2,877.79	-183.84	-197.93	270.13	0.00	0.00	0.00
3,000.00	9.92	227.11	2,976.30	-195.56	-210.56	287.37	0.00	0.00	0.00
3,100.00	9.92	227.11	3,074.80	-207.29	-223.18	304.60	0.00	0.00	0.00
3,200.00	9.92	227.11	3,173.30	-219.02	-235.81	321.83	0.00	0.00	0.00
<b>PARKMAN</b>									
3,252.48	9.92	227.11	3,225.00	-225.17	-242.44	330.88	0.00	0.00	0.00
3,300.00	9.92	227.11	3,271.81	-230.75	-248.44	339.07	0.00	0.00	0.00
3,400.00	9.92	227.11	3,370.31	-242.48	-261.06	356.30	0.00	0.00	0.00
3,500.00	9.92	227.11	3,468.82	-254.20	-273.69	373.53	0.00	0.00	0.00
3,600.00	9.92	227.11	3,567.32	-265.93	-286.32	390.76	0.00	0.00	0.00
3,700.00	9.92	227.11	3,665.82	-277.66	-298.95	408.00	0.00	0.00	0.00
3,800.00	9.92	227.11	3,764.33	-289.39	-311.57	425.23	0.00	0.00	0.00
3,900.00	9.92	227.11	3,862.83	-301.11	-324.20	442.46	0.00	0.00	0.00
4,000.00	9.92	227.11	3,961.34	-312.84	-336.83	459.70	0.00	0.00	0.00
4,100.00	9.92	227.11	4,059.84	-324.57	-349.45	476.93	0.00	0.00	0.00
4,200.00	9.92	227.11	4,158.34	-336.30	-362.08	494.16	0.00	0.00	0.00
4,300.00	9.92	227.11	4,256.85	-348.02	-374.71	511.40	0.00	0.00	0.00
4,400.00	9.92	227.11	4,355.35	-359.75	-387.33	528.63	0.00	0.00	0.00
4,500.00	9.92	227.11	4,453.86	-371.48	-399.96	545.86	0.00	0.00	0.00
4,600.00	9.92	227.11	4,552.36	-383.21	-412.59	563.09	0.00	0.00	0.00
4,700.00	9.92	227.11	4,650.86	-394.94	-425.21	580.33	0.00	0.00	0.00
<b>SUSSEX</b>									
4,749.88	9.92	227.11	4,700.00	-400.79	-431.51	588.92	0.00	0.00	0.00
4,800.00	9.92	227.11	4,749.37	-406.66	-437.84	597.56	0.00	0.00	0.00
4,900.00	9.92	227.11	4,847.87	-418.39	-450.47	614.79	0.00	0.00	0.00
5,000.00	9.92	227.11	4,946.37	-430.12	-463.09	632.03	0.00	0.00	0.00
5,100.00	9.92	227.11	5,044.88	-441.85	-475.72	649.26	0.00	0.00	0.00
5,200.00	9.92	227.11	5,143.38	-453.57	-488.35	666.49	0.00	0.00	0.00
<b>SHANNON</b>									
5,227.02	9.92	227.11	5,170.00	-456.74	-491.76	671.15	0.00	0.00	0.00
5,300.00	9.92	227.11	5,241.89	-465.30	-500.97	683.73	0.00	0.00	0.00

<b>Database:</b>	EDM 2003.21 Single User Db	<b>Local Co-ordinate Reference:</b>	Well P_NRC 7-8
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	WELL @ 5023.00ft (Original Well Elev)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	WELL @ 5023.00ft (Original Well Elev)
<b>Site:</b>	WELD_NRC 5 PAD	<b>North Reference:</b>	True
<b>Well:</b>	P_NRC 7-8	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	P_NRC 7-8		
<b>Design:</b>	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	9.92	227.11	5,340.39	-477.03	-513.60	700.96	0.00	0.00	0.00
5,500.00	9.92	227.11	5,438.89	-488.76	-526.23	718.19	0.00	0.00	0.00
5,600.00	9.92	227.11	5,537.40	-500.49	-538.85	735.42	0.00	0.00	0.00
5,700.00	9.92	227.11	5,635.90	-512.21	-551.48	752.66	0.00	0.00	0.00
5,800.00	9.92	227.11	5,734.41	-523.94	-564.11	769.89	0.00	0.00	0.00
5,900.00	9.92	227.11	5,832.91	-535.67	-576.74	787.12	0.00	0.00	0.00
<b>Start Drop -2.00</b>									
5,913.60	9.92	227.11	5,846.31	-537.26	-578.45	789.47	0.00	0.00	0.00
6,000.00	8.20	227.11	5,931.63	-546.52	-588.42	803.07	2.00	-2.00	0.00
6,100.00	6.20	227.11	6,030.83	-555.04	-597.60	815.60	2.00	-2.00	0.00
6,200.00	4.20	227.11	6,130.42	-561.21	-604.23	824.65	2.00	-2.00	0.00
6,300.00	2.20	227.11	6,230.26	-565.00	-608.32	830.22	2.00	-2.00	0.00
6,400.00	0.20	227.11	6,330.23	-566.42	-609.84	832.31	2.00	-2.00	0.00
<b>Start 1925.00 hold at 6409.77 MD</b>									
6,409.77	0.00	0.00	6,340.00	-566.43	-609.86	832.33	2.00	-2.00	1,360.14
6,500.00	0.00	0.00	6,430.23	-566.43	-609.86	832.33	0.00	0.00	0.00
6,600.00	0.00	0.00	6,530.23	-566.43	-609.86	832.33	0.00	0.00	0.00
6,700.00	0.00	0.00	6,630.23	-566.43	-609.86	832.33	0.00	0.00	0.00
6,800.00	0.00	0.00	6,730.23	-566.43	-609.86	832.33	0.00	0.00	0.00
6,900.00	0.00	0.00	6,830.23	-566.43	-609.86	832.33	0.00	0.00	0.00
7,000.00	0.00	0.00	6,930.23	-566.43	-609.86	832.33	0.00	0.00	0.00
7,100.00	0.00	0.00	7,030.23	-566.43	-609.86	832.33	0.00	0.00	0.00
7,200.00	0.00	0.00	7,130.23	-566.43	-609.86	832.33	0.00	0.00	0.00
7,300.00	0.00	0.00	7,230.23	-566.43	-609.86	832.33	0.00	0.00	0.00
7,400.00	0.00	0.00	7,330.23	-566.43	-609.86	832.33	0.00	0.00	0.00
<b>NIO A</b>									
7,409.77	0.00	0.00	7,340.00	-566.43	-609.86	832.33	0.00	0.00	0.00
7,500.00	0.00	0.00	7,430.23	-566.43	-609.86	832.33	0.00	0.00	0.00
7,600.00	0.00	0.00	7,530.23	-566.43	-609.86	832.33	0.00	0.00	0.00
7,700.00	0.00	0.00	7,630.23	-566.43	-609.86	832.33	0.00	0.00	0.00
<b>CODELL</b>									
7,749.77	0.00	0.00	7,680.00	-566.43	-609.86	832.33	0.00	0.00	0.00
7,800.00	0.00	0.00	7,730.23	-566.43	-609.86	832.33	0.00	0.00	0.00
7,900.00	0.00	0.00	7,830.23	-566.43	-609.86	832.33	0.00	0.00	0.00
8,000.00	0.00	0.00	7,930.23	-566.43	-609.86	832.33	0.00	0.00	0.00
8,100.00	0.00	0.00	8,030.23	-566.43	-609.86	832.33	0.00	0.00	0.00
<b>JSAND</b>									
8,199.77	0.00	0.00	8,130.00	-566.43	-609.86	832.33	0.00	0.00	0.00
8,200.00	0.00	0.00	8,130.23	-566.43	-609.86	832.33	0.00	0.00	0.00
8,300.00	0.00	0.00	8,230.23	-566.43	-609.86	832.33	0.00	0.00	0.00
<b>PBHL_NRC 7-8(2130 FNL 2130 FEL)50' TGT RAD</b>									
8,334.77	0.00	0.00	8,265.00	-566.43	-609.86	832.33	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
- hit/miss target									
- Shape									
PBHL_NRC 7-8(2130	0.00	0.00	8,265.00	-566.43	-609.86	1,267,783.71	3,164,366.13	40° 4' 1.063 N	104° 54' 45.788 W
- plan hits target center									
- Circle (radius 50.00)									

<b>Database:</b>	EDM 2003.21 Single User Db	<b>Local Co-ordinate Reference:</b>	Well P_NRC 7-8
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	WELL @ 5023.00ft (Original Well Elev)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	WELL @ 5023.00ft (Original Well Elev)
<b>Site:</b>	WELD_NRC 5 PAD	<b>North Reference:</b>	True
<b>Well:</b>	P_NRC 7-8	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	P_NRC 7-8		
<b>Design:</b>	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 (°)	
3,252.48	3,225.00	PARKMAN				
4,749.88	4,700.00	SUSSEX				
5,227.02	5,170.00	SHANNON				
7,409.77	7,340.00	NIO A				
7,749.77	7,680.00	CODELL				
8,199.77	8,130.00	JSAND				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
1,085.00	1,085.00	0.00	0.00	Start Build 2.00	
1,581.17	1,578.69	-29.17	-31.40	Start 4332.44 hold at 1581.17 MD	
5,913.60	5,846.31	-537.26	-578.45	Start Drop -2.00	
6,409.77	6,340.00	-566.43	-609.86	Start 1925.00 hold at 6409.77 MD	
8,334.77	8,265.00	-566.43	-609.86	TD at 8334.77	



# **US ROCKIES REGION PLANNING**

**COLORADO NORTHERN ZONE - 83  
WELD\_NRC 5 PAD  
P\_NRC 7-8**

**P\_NRC 7-8  
PLAN #1 1-5-10 RHS**

## **Anticollision Report**

**12 March, 2010**



<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well P_NRC 7-8
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	WELL @ 5023.00ft (Original Well Elev)
<b>Reference Site:</b>	WELD_NRC 5 PAD	<b>MD Reference:</b>	WELL @ 5023.00ft (Original Well Elev)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	P_NRC 7-8	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	P_NRC 7-8	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	PLAN #1 1-5-10 RHS	<b>Offset TVD Reference:</b>	Offset Datum

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

<b>Survey Tool Program</b>	<b>Date</b> 3/12/2010			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.00	8,334.77	PLAN #1 1-5-10 RHS (P_NRC 7-8)	MWD	MWD - Standard

<b>Summary</b>						
<b>Site Name</b>	<b>Reference Measured Depth (ft)</b>	<b>Offset Measured Depth (ft)</b>	<b>Distance Between Centres (ft)</b>	<b>Distance Between Ellipses (ft)</b>	<b>Separation Factor</b>	<b>Warning</b>
<b>Offset Well - Wellbore - Design</b>						
WELD_NRC 5 PAD						
P_NRC 1-8 - P_NRC 1-8 - PLAN #1 1-5-10 RHS	1,177.25	1,177.24	32.11	27.12	6.437	CC
P_NRC 1-8 - P_NRC 1-8 - PLAN #1 1-5-10 RHS	1,200.00	1,199.91	32.15	27.07	6.331	ES
P_NRC 1-8 - P_NRC 1-8 - PLAN #1 1-5-10 RHS	1,300.00	1,298.98	34.68	29.20	6.321	SF
P_NRC 24-8 - P_NRC 24-8 - PLAN #1 1-5-10 RHS	1,085.00	1,085.00	15.78	11.16	3.417	CC
P_NRC 24-8 - P_NRC 24-8 - PLAN #1 1-5-10 RHS	1,100.00	1,099.94	15.82	11.14	3.381	ES, SF
P_NRC 40-8 - P_NRC 40-8 - PLAN #1 1-5-10 RHS	1,085.00	1,085.00	32.00	27.38	6.928	CC
P_NRC 40-8 - P_NRC 40-8 - PLAN #1 1-5-10 RHS	1,100.00	1,099.83	32.04	27.36	6.849	ES, SF
P_NRC 41-8 - P_NRC 41-8 - PLAN #1 1-5-10 RHS	1,224.86	1,225.07	14.85	9.69	2.876	CC, ES, SF
ROCKY MOUNTAIN FUEL CO C #6 EXISTING - ROCK	1,647.48	1,626.01	32.03	-34.56	0.481	Level 1, CC, SF
ROCKY MOUNTAIN FUEL CO C #6 EXISTING - ROCK	1,700.00	1,677.75	33.28	-35.45	0.484	Level 1, ES

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						
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	Warning
0.00	0.00	0.00	0.00	0.00	0.00	-49.03	21.14	-24.35	32.25				
100.00	100.00	100.00	100.00	0.10	0.10	-49.03	21.14	-24.35	32.25	32.05	0.19	168.781	
200.00	200.00	200.00	200.00	0.32	0.32	-49.03	21.14	-24.35	32.25	31.61	0.64	50.338	
300.00	300.00	300.00	300.00	0.55	0.55	-49.03	21.14	-24.35	32.25	31.16	1.09	29.580	
400.00	400.00	400.00	400.00	0.77	0.77	-49.03	21.14	-24.35	32.25	30.71	1.54	20.944	
500.00	500.00	500.00	500.00	0.99	0.99	-49.03	21.14	-24.35	32.25	30.26	1.99	16.211	
600.00	600.00	600.00	600.00	1.22	1.22	-49.03	21.14	-24.35	32.25	29.81	2.44	13.223	
700.00	700.00	700.00	700.00	1.44	1.44	-49.03	21.14	-24.35	32.25	29.36	2.89	11.165	
800.00	800.00	800.00	800.00	1.67	1.67	-49.03	21.14	-24.35	32.25	28.91	3.34	9.661	
900.00	900.00	900.00	900.00	1.89	1.89	-49.03	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	-49.03	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	-49.03	21.14	-24.35	32.25	27.63	4.62	6.981	
1,100.00	1,100.00	1,100.01	1,100.01	2.34	2.34	83.99	21.17	-24.32	32.24	27.56	4.68	6.886	
1,177.25	1,177.24	1,177.24	1,177.22	2.48	2.51	89.14	22.18	-23.29	32.11	27.12	4.99	6.437 CC	
1,200.00	1,199.97	1,199.91	1,199.88	2.52	2.56	92.06	22.76	-22.71	32.15	27.07	5.08	6.331 ES	
1,300.00	1,299.80	1,298.98	1,298.78	2.71	2.78	111.13	26.75	-18.66	34.68	29.20	5.49	6.321 SF	
1,400.00	1,399.37	1,396.52	1,395.90	2.92	3.00	132.83	33.02	-12.30	44.93	39.04	5.90	7.621	

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



<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well P_NRC 7-8
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	WELL @ 5023.00ft (Original Well Elev)
<b>Reference Site:</b>	WELD_NRC 5 PAD	<b>MD Reference:</b>	WELL @ 5023.00ft (Original Well Elev)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	P_NRC 7-8	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	P_NRC 7-8	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	PLAN #1 1-5-10 RHS	<b>Offset TVD Reference:</b>	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
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	Warning
1,500.00	1,498.55	1,491.86	1,490.49	3.15	3.24	148.46	41.39	-3.81	64.93	58.65	6.28	10.332	
1,581.17	1,578.69	1,567.23	1,564.95	3.36	3.44	156.44	49.57	4.48	87.61	81.03	6.59	13.297	
1,600.00	1,597.24	1,584.44	1,581.92	3.41	3.49	157.89	51.63	6.57	93.56	86.90	6.66	14.040	
1,700.00	1,695.75	1,674.58	1,670.43	3.70	3.76	163.47	63.59	18.69	127.53	120.46	7.07	18.043	
1,800.00	1,794.25	1,762.52	1,756.22	4.01	4.06	166.89	77.14	32.43	165.01	157.53	7.48	22.071	
1,900.00	1,892.75	1,848.17	1,839.18	4.34	4.39	169.16	92.10	47.60	205.59	197.70	7.89	26.071	
2,000.00	1,991.26	1,937.24	1,924.98	4.68	4.76	170.82	108.88	64.62	248.19	239.88	8.31	29.857	
2,100.00	2,089.76	2,027.49	2,011.91	5.03	5.16	172.01	125.92	81.89	290.96	282.22	8.75	33.263	
2,200.00	2,188.26	2,117.74	2,098.83	5.38	5.58	172.90	142.95	99.16	333.82	324.63	9.19	36.329	
2,300.00	2,286.77	2,207.98	2,185.76	5.74	6.01	173.59	159.99	116.44	376.72	367.08	9.64	39.098	
2,400.00	2,385.27	2,298.23	2,272.68	6.11	6.45	174.14	177.03	133.71	419.66	409.57	10.09	41.604	
2,500.00	2,483.78	2,388.48	2,359.61	6.48	6.90	174.58	194.06	150.99	462.62	452.08	10.54	43.878	
2,600.00	2,582.28	2,478.73	2,446.53	6.86	7.35	174.95	211.10	168.26	505.61	494.60	11.00	45.952	
2,700.00	2,680.78	2,568.97	2,533.45	7.24	7.81	175.26	228.14	185.53	548.60	537.14	11.47	47.847	
2,800.00	2,779.29	2,659.22	2,620.38	7.62	8.28	175.53	245.17	202.81	591.61	579.68	11.93	49.586	
2,900.00	2,877.79	2,749.47	2,707.30	8.00	8.75	175.76	262.21	220.08	634.63	622.23	12.40	51.184	
3,000.00	2,976.30	2,839.71	2,794.23	8.38	9.22	175.96	279.25	237.35	677.66	664.79	12.87	52.658	
3,100.00	3,074.80	2,929.96	2,881.15	8.77	9.69	176.14	296.28	254.63	720.69	707.35	13.34	54.021	
3,200.00	3,173.30	3,020.21	2,968.08	9.16	10.17	176.30	313.32	271.90	763.72	749.91	13.81	55.284	
3,300.00	3,271.81	3,110.45	3,055.00	9.55	10.65	176.44	330.35	289.18	806.76	792.47	14.29	56.458	
3,400.00	3,370.31	3,200.70	3,141.93	9.94	11.13	176.56	347.39	306.45	849.81	835.04	14.77	57.550	
3,500.00	3,468.82	3,290.95	3,228.85	10.33	11.61	176.68	364.43	323.72	892.86	877.61	15.24	58.569	
3,600.00	3,567.32	3,381.19	3,315.78	10.72	12.10	176.78	381.46	341.00	935.91	920.18	15.72	59.522	
3,700.00	3,665.82	3,471.44	3,402.70	11.11	12.58	176.87	398.50	358.27	978.96	962.75	16.20	60.414	
3,800.00	3,764.33	3,561.69	3,489.62	11.51	13.07	176.96	415.54	375.55	1,022.01	1,005.33	16.69	61.252	
3,900.00	3,862.83	3,651.93	3,576.55	11.90	13.56	177.04	432.57	392.82	1,065.07	1,047.90	17.17	62.040	
4,000.00	3,961.34	3,742.18	3,663.47	12.30	14.05	177.11	449.61	410.09	1,108.12	1,090.47	17.65	62.781	
4,100.00	4,059.84	3,832.43	3,750.40	12.69	14.53	177.18	466.65	427.37	1,151.18	1,133.05	18.13	63.481	
4,200.00	4,158.34	3,922.68	3,837.32	13.09	15.02	177.25	483.68	444.64	1,194.24	1,175.62	18.62	64.142	
4,300.00	4,256.85	4,012.92	3,924.25	13.48	15.52	177.30	500.72	461.91	1,237.30	1,218.20	19.10	64.768	
4,400.00	4,355.35	4,103.17	4,011.17	13.88	16.01	177.36	517.75	479.19	1,280.37	1,260.78	19.59	65.360	
4,500.00	4,453.86	4,193.42	4,098.10	14.28	16.50	177.41	534.79	496.46	1,323.43	1,303.35	20.08	65.922	
4,600.00	4,552.36	4,283.66	4,185.02	14.68	16.99	177.46	551.83	513.74	1,366.49	1,345.93	20.56	66.456	
4,700.00	4,650.86	4,373.91	4,271.95	15.07	17.48	177.50	568.86	531.01	1,409.56	1,388.51	21.05	66.963	
4,800.00	4,749.37	4,464.16	4,358.87	15.47	17.98	177.54	585.90	548.28	1,452.62	1,431.08	21.54	67.446	
4,900.00	4,847.87	4,554.40	4,445.79	15.87	18.47	177.58	602.94	565.56	1,495.69	1,473.66	22.03	67.907	
5,000.00	4,946.37	4,644.65	4,532.72	16.27	18.96	177.62	619.97	582.83	1,538.75	1,516.24	22.51	68.347	
5,100.00	5,044.88	4,734.90	4,619.64	16.67	19.46	177.66	637.01	600.11	1,581.82	1,558.82	23.00	68.766	
5,200.00	5,143.38	4,825.14	4,706.57	17.07	19.95	177.69	654.05	617.38	1,624.89	1,601.40	23.49	69.168	
5,300.00	5,241.89	4,915.39	4,793.49	17.46	20.44	177.72	671.08	634.65	1,667.95	1,643.97	23.98	69.552	
5,400.00	5,340.39	5,005.64	4,880.42	17.86	20.94	177.75	688.12	651.93	1,711.02	1,686.55	24.47	69.919	
5,500.00	5,438.89	5,095.88	4,967.34	18.26	21.43	177.78	705.15	669.20	1,754.09	1,729.13	24.96	70.272	
5,600.00	5,537.40	5,186.13	5,054.27	18.66	21.93	177.81	722.19	686.47	1,797.16	1,771.71	25.45	70.610	
5,700.00	5,635.90	5,276.38	5,141.19	19.06	22.42	177.84	739.23	703.75	1,840.23	1,814.29	25.94	70.935	
5,800.00	5,734.41	5,366.62	5,228.12	19.46	22.92	177.86	756.26	721.02	1,883.30	1,856.86	26.43	71.247	
5,900.00	5,832.91	5,456.87	5,315.04	19.86	23.42	177.88	773.30	738.30	1,926.37	1,899.44	26.92	71.547	
5,913.60	5,846.31	5,469.15	5,326.87	19.92	23.48	177.89	775.62	740.65	1,932.23	1,905.24	26.99	71.587	
6,000.00	5,931.63	5,547.67	5,402.49	20.20	23.92	177.94	790.44	755.67	1,968.26	1,940.70	27.56	71.425	
6,100.00	6,030.83	5,639.86	5,491.29	20.44	24.42	177.98	807.84	773.32	2,006.98	1,978.82	28.16	71.259	
6,200.00	6,130.42	5,840.19	5,685.24	20.65	25.30	178.03	842.99	808.96	2,041.34	2,012.38	28.96	70.480	
6,300.00	6,230.26	6,184.71	6,025.17	20.82	26.32	178.07	881.45	847.95	2,062.76	2,032.81	29.95	68.875	
6,409.77	6,340.00	6,500.02	6,340.00	20.98	26.80	45.20	891.41	858.06	2,068.84	2,038.08	30.76	67.261	

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

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well P_NRC 7-8
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	WELL @ 5023.00ft (Original Well Elev)
<b>Reference Site:</b>	WELD_NRC 5 PAD	<b>MD Reference:</b>	WELL @ 5023.00ft (Original Well Elev)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	P_NRC 7-8	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	P_NRC 7-8	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	PLAN #1 1-5-10 RHS	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> WELD_NRC 5 PAD - P_NRC 1-8 - P_NRC 1-8 - PLAN #1 1-5-10 RHS												<b>Offset Site Error:</b>	0.00 ft
Survey Program: 0-MWD												<b>Offset Well Error:</b>	0.00 ft
Reference	Offset	Semi Major Axis		Distance									
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	Warning
6,500.00	6,430.23	6,590.25	6,430.23	21.10	26.90	45.20	891.41	858.06	2,068.84	2,037.75	31.09	66.542	
6,600.00	6,530.23	6,690.25	6,530.23	21.23	27.02	45.20	891.41	858.06	2,068.84	2,037.39	31.45	65.777	
6,700.00	6,630.23	6,790.25	6,630.23	21.36	27.13	45.20	891.41	858.06	2,068.84	2,037.02	31.82	65.025	
6,800.00	6,730.23	6,890.25	6,730.23	21.48	27.25	45.20	891.41	858.06	2,068.84	2,036.66	32.18	64.286	
6,900.00	6,830.23	6,990.25	6,830.23	21.62	27.36	45.20	891.41	858.06	2,068.84	2,036.29	32.55	63.559	
7,000.00	6,930.23	7,090.25	6,930.23	21.75	27.48	45.20	891.41	858.06	2,068.84	2,035.92	32.92	62.844	
7,100.00	7,030.23	7,190.25	7,030.23	21.88	27.60	45.20	891.41	858.06	2,068.84	2,035.55	33.29	62.142	
7,200.00	7,130.23	7,290.25	7,130.23	22.02	27.72	45.20	891.41	858.06	2,068.84	2,035.17	33.67	61.452	
7,300.00	7,230.23	7,390.25	7,230.23	22.16	27.85	45.20	891.41	858.06	2,068.84	2,034.80	34.04	60.773	
7,400.00	7,330.23	7,490.25	7,330.23	22.29	27.97	45.20	891.41	858.06	2,068.84	2,034.42	34.42	60.106	
7,500.00	7,430.23	7,590.25	7,430.23	22.43	28.09	45.20	891.41	858.06	2,068.84	2,034.04	34.80	59.451	
7,600.00	7,530.23	7,690.25	7,530.23	22.58	28.22	45.20	891.41	858.06	2,068.84	2,033.66	35.18	58.808	
7,700.00	7,630.23	7,790.25	7,630.23	22.72	28.35	45.20	891.41	858.06	2,068.84	2,033.27	35.56	58.175	
7,800.00	7,730.23	7,890.25	7,730.23	22.86	28.48	45.20	891.41	858.06	2,068.84	2,032.89	35.95	57.553	
7,900.00	7,830.23	7,990.25	7,830.23	23.01	28.61	45.20	891.41	858.06	2,068.84	2,032.51	36.33	56.943	
8,000.00	7,930.23	8,090.25	7,930.23	23.15	28.74	45.20	891.41	858.06	2,068.84	2,032.12	36.72	56.342	
8,100.00	8,030.23	8,190.25	8,030.23	23.30	28.87	45.20	891.41	858.06	2,068.84	2,031.73	37.11	55.752	
8,200.00	8,130.23	8,290.25	8,130.23	23.45	29.00	45.20	891.41	858.06	2,068.84	2,031.34	37.50	55.173	
8,300.00	8,230.23	8,390.25	8,230.23	23.60	29.14	45.20	891.41	858.06	2,068.84	2,030.95	37.89	54.603	
8,334.77	8,265.00	8,395.02	8,235.00	23.65	29.14	45.20	891.41	858.06	2,069.05	2,031.09	37.97	54.498	

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well P_NRC 7-8
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	WELL @ 5023.00ft (Original Well Elev)
<b>Reference Site:</b>	WELD_NRC 5 PAD	<b>MD Reference:</b>	WELL @ 5023.00ft (Original Well Elev)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	P_NRC 7-8	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	P_NRC 7-8	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	PLAN #1 1-5-10 RHS	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> WELD_NRC 5 PAD - P_NRC 24-8 - P_NRC 24-8 - PLAN #1 1-5-10 RHS												<b>Offset Site Error:</b>	0.00 ft
Survey Program: 0-MWD												<b>Offset Well Error:</b>	0.00 ft
Reference	Offset	Semi Major Axis		Distance									
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	Warning
0.00	0.00	0.00	0.00	0.00	0.00	130.31	-10.21	12.03	15.78				
100.00	100.00	100.00	100.00	0.10	0.10	130.31	-10.21	12.03	15.78	15.59	0.19	82.600	
200.00	200.00	200.00	200.00	0.32	0.32	130.31	-10.21	12.03	15.78	15.14	0.64	24.635	
300.00	300.00	300.00	300.00	0.55	0.55	130.31	-10.21	12.03	15.78	14.69	1.09	14.476	
400.00	400.00	400.00	400.00	0.77	0.77	130.31	-10.21	12.03	15.78	14.24	1.54	10.250	
500.00	500.00	500.00	500.00	0.99	0.99	130.31	-10.21	12.03	15.78	13.79	1.99	7.933	
600.00	600.00	600.00	600.00	1.22	1.22	130.31	-10.21	12.03	15.78	13.34	2.44	6.471	
700.00	700.00	700.00	700.00	1.44	1.44	130.31	-10.21	12.03	15.78	12.89	2.89	5.464	
800.00	800.00	800.00	800.00	1.67	1.67	130.31	-10.21	12.03	15.78	12.44	3.34	4.728	
900.00	900.00	900.00	900.00	1.89	1.89	130.31	-10.21	12.03	15.78	11.99	3.79	4.167	
1,000.00	1,000.00	1,000.00	1,000.00	2.12	2.12	130.31	-10.21	12.03	15.78	11.54	4.24	3.725	
1,085.00	1,085.00	1,085.00	1,085.00	2.31	2.31	130.31	-10.21	12.03	15.78	11.16	4.62	3.417 CC	
1,100.00	1,100.00	1,099.94	1,099.94	2.34	2.34	-96.86	-10.25	12.04	15.82	11.14	4.68	3.381 ES, SF	
1,200.00	1,199.97	1,199.47	1,199.44	2.52	2.51	-99.45	-12.46	12.45	17.85	12.83	5.03	3.551	
1,300.00	1,299.80	1,298.81	1,298.61	2.71	2.69	-103.93	-18.05	13.48	23.14	17.74	5.39	4.289	
1,400.00	1,399.37	1,397.79	1,397.17	2.92	2.88	-107.92	-26.98	15.14	31.78	25.99	5.79	5.492	
1,500.00	1,498.55	1,496.26	1,494.85	3.15	3.10	-110.77	-39.19	17.39	43.78	37.56	6.22	7.044	
1,581.17	1,578.69	1,575.69	1,573.30	3.36	3.30	-112.36	-51.43	19.66	55.96	49.36	6.60	8.474	
1,600.00	1,597.24	1,594.06	1,591.38	3.41	3.35	-112.65	-54.57	20.24	59.08	52.38	6.70	8.820	
1,700.00	1,695.75	1,691.20	1,686.69	3.70	3.63	-112.57	-73.04	23.65	76.73	69.48	7.24	10.594	
1,800.00	1,794.25	1,788.88	1,782.00	4.01	3.96	-111.26	-94.03	27.53	95.82	87.98	7.84	12.227	
1,900.00	1,892.75	1,887.00	1,877.72	4.34	4.32	-110.31	-115.26	31.46	115.03	106.56	8.47	13.588	
2,000.00	1,991.26	1,985.12	1,973.44	4.68	4.70	-109.64	-136.49	35.38	134.26	125.14	9.12	14.724	
2,100.00	2,089.76	2,083.25	2,069.16	5.03	5.09	-109.14	-157.72	39.31	153.51	143.72	9.79	15.678	
2,200.00	2,188.26	2,181.37	2,164.88	5.38	5.50	-108.74	-178.95	43.23	172.77	162.29	10.48	16.484	
2,300.00	2,286.77	2,279.49	2,260.59	5.74	5.91	-108.43	-200.18	47.16	192.03	180.85	11.18	17.171	
2,400.00	2,385.27	2,377.61	2,356.31	6.11	6.33	-108.17	-221.41	51.08	211.30	199.40	11.90	17.761	
2,500.00	2,483.78	2,475.74	2,452.03	6.48	6.76	-107.96	-242.64	55.01	230.57	217.95	12.62	18.272	
2,600.00	2,582.28	2,573.86	2,547.75	6.86	7.20	-107.78	-263.87	58.94	249.84	236.50	13.35	18.717	
2,700.00	2,680.78	2,671.98	2,643.46	7.24	7.63	-107.63	-285.10	62.86	269.12	255.04	14.08	19.109	
2,800.00	2,779.29	2,770.10	2,739.18	7.62	8.08	-107.49	-306.33	66.79	288.40	273.57	14.82	19.455	
2,900.00	2,877.79	2,868.22	2,834.90	8.00	8.52	-107.38	-327.56	70.71	307.67	292.11	15.57	19.762	
3,000.00	2,976.30	2,966.35	2,930.62	8.38	8.97	-107.27	-348.79	74.64	326.95	310.64	16.32	20.037	
3,100.00	3,074.80	3,064.47	3,026.33	8.77	9.42	-107.18	-370.02	78.56	346.24	329.17	17.07	20.285	
3,200.00	3,173.30	3,162.59	3,122.05	9.16	9.87	-107.10	-391.25	82.49	365.52	347.69	17.82	20.508	
3,300.00	3,271.81	3,260.71	3,217.77	9.55	10.32	-107.02	-412.48	86.41	384.80	366.22	18.58	20.711	
3,400.00	3,370.31	3,358.84	3,313.49	9.94	10.78	-106.96	-433.71	90.34	404.08	384.74	19.34	20.896	
3,500.00	3,468.82	3,456.96	3,409.21	10.33	11.23	-106.90	-454.94	94.26	423.36	403.27	20.10	21.065	
3,600.00	3,567.32	3,555.08	3,504.92	10.72	11.69	-106.84	-476.17	98.19	442.65	421.79	20.86	21.221	
3,700.00	3,665.82	3,653.20	3,600.64	11.11	12.15	-106.79	-497.40	102.11	461.93	440.31	21.62	21.364	
3,800.00	3,764.33	3,751.33	3,696.36	11.51	12.61	-106.74	-518.62	106.04	481.22	458.83	22.39	21.496	
3,900.00	3,862.83	3,849.45	3,792.08	11.90	13.07	-106.70	-539.85	109.96	500.50	477.35	23.15	21.619	
4,000.00	3,961.34	3,947.57	3,887.79	12.30	13.53	-106.66	-561.08	113.89	519.79	495.87	23.92	21.734	
4,100.00	4,059.84	4,045.69	3,983.51	12.69	13.99	-106.62	-582.31	117.81	539.07	514.39	24.68	21.841	
4,200.00	4,158.34	4,143.81	4,079.23	13.09	14.45	-106.59	-603.54	121.74	558.36	532.91	25.45	21.941	
4,300.00	4,256.85	4,241.94	4,174.95	13.48	14.91	-106.56	-624.77	125.66	577.64	551.43	26.22	22.034	
4,400.00	4,355.35	4,340.06	4,270.66	13.88	15.37	-106.53	-646.00	129.59	596.93	569.94	26.98	22.122	
4,500.00	4,453.86	4,438.18	4,366.38	14.28	15.84	-106.50	-667.23	133.52	616.21	588.46	27.75	22.205	
4,600.00	4,552.36	4,536.30	4,462.10	14.68	16.30	-106.47	-688.46	137.44	635.50	606.98	28.52	22.284	
4,700.00	4,650.86	4,634.43	4,557.82	15.07	16.76	-106.45	-709.69	141.37	654.78	625.50	29.29	22.358	
4,800.00	4,749.37	4,732.55	4,653.53	15.47	17.23	-106.42	-730.92	145.29	674.07	644.01	30.06	22.428	
4,900.00	4,847.87	4,830.67	4,749.25	15.87	17.69	-106.40	-752.15	149.22	693.36	662.53	30.82	22.494	

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

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well P_NRC 7-8
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	WELL @ 5023.00ft (Original Well Elev)
<b>Reference Site:</b>	WELD_NRC 5 PAD	<b>MD Reference:</b>	WELL @ 5023.00ft (Original Well Elev)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	P_NRC 7-8	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	P_NRC 7-8	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	PLAN #1 1-5-10 RHS	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> WELD_NRC 5 PAD - P_NRC 24-8 - P_NRC 24-8 - PLAN #1 1-5-10 RHS												<b>Offset Site Error:</b>	0.00 ft
Survey Program: 0-MWD												<b>Offset Well Error:</b>	0.00 ft
Reference		Offset		Semi Major Axis			Distance						
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	Warning
5,000.00	4,946.37	4,928.79	4,844.97	16.27	18.16	-106.38	-773.38	153.14	712.64	681.05	31.59	22.558	
5,100.00	5,044.88	5,026.91	4,940.69	16.67	18.62	-106.36	-794.61	157.07	731.93	699.57	32.36	22.618	
5,200.00	5,143.38	5,125.04	5,036.41	17.07	19.09	-106.34	-815.84	160.99	751.21	718.09	33.13	22.676	
5,300.00	5,241.89	5,223.16	5,132.12	17.46	19.55	-106.32	-837.07	164.92	770.50	736.60	33.90	22.731	
5,400.00	5,340.39	5,321.28	5,227.84	17.86	20.02	-106.31	-858.30	168.84	789.79	755.12	34.67	22.783	
5,500.00	5,438.89	5,419.40	5,323.56	18.26	20.49	-106.29	-879.53	172.77	809.07	773.63	35.44	22.828	
5,600.00	5,537.40	5,517.53	5,419.28	18.66	20.95	-106.27	-900.76	176.69	828.36	792.14	36.22	22.870	
5,700.00	5,635.90	5,615.65	5,514.99	19.06	21.42	-106.26	-921.99	180.62	847.65	810.65	37.00	22.910	
5,800.00	5,734.41	5,713.77	5,610.71	19.46	21.88	-106.24	-943.22	184.54	866.93	829.16	37.78	22.948	
5,900.00	5,832.91	5,813.63	5,708.13	19.86	22.35	-106.23	-964.81	188.54	886.21	847.66	38.56	22.984	
5,913.60	5,846.31	5,830.35	5,724.46	19.92	22.42	-106.23	-968.33	189.19	888.79	850.12	38.67	22.985	
6,000.00	5,931.63	5,937.13	5,829.23	20.20	22.80	-106.55	-988.61	192.94	903.58	864.25	39.33	22.976	
6,100.00	6,030.83	6,061.91	5,952.51	20.44	23.13	-106.84	-1,007.42	196.41	917.19	877.27	39.92	22.976	
6,200.00	6,130.42	6,187.65	6,077.49	20.65	23.41	-107.05	-1,021.02	198.93	926.98	886.55	40.43	22.928	
6,300.00	6,230.26	6,314.05	6,203.60	20.82	23.63	-107.19	-1,029.24	200.45	932.92	892.07	40.85	22.839	
6,409.77	6,340.00	6,450.49	6,340.00	20.98	23.81	119.86	-1,031.98	200.96	934.96	893.74	41.22	22.681	
6,500.00	6,430.23	6,540.72	6,430.23	21.10	23.91	119.86	-1,031.98	200.96	934.96	893.51	41.46	22.553	
6,600.00	6,530.23	6,640.72	6,530.23	21.23	24.02	119.86	-1,031.98	200.96	934.96	893.26	41.70	22.419	
6,700.00	6,630.23	6,740.72	6,630.23	21.36	24.12	119.86	-1,031.98	200.96	934.96	893.01	41.95	22.285	
6,800.00	6,730.23	6,840.72	6,730.23	21.48	24.23	119.86	-1,031.98	200.96	934.96	892.75	42.21	22.151	
6,900.00	6,830.23	6,940.72	6,830.23	21.62	24.34	119.86	-1,031.98	200.96	934.96	892.50	42.47	22.017	
7,000.00	6,930.23	7,040.72	6,930.23	21.75	24.45	119.86	-1,031.98	200.96	934.96	892.24	42.73	21.883	
7,100.00	7,030.23	7,140.72	7,030.23	21.88	24.56	119.86	-1,031.98	200.96	934.96	891.97	42.99	21.749	
7,200.00	7,130.23	7,240.72	7,130.23	22.02	24.68	119.86	-1,031.98	200.96	934.96	891.71	43.26	21.615	
7,300.00	7,230.23	7,340.72	7,230.23	22.16	24.79	119.86	-1,031.98	200.96	934.96	891.44	43.53	21.481	
7,400.00	7,330.23	7,440.72	7,330.23	22.29	24.91	119.86	-1,031.98	200.96	934.96	891.17	43.80	21.347	
7,500.00	7,430.23	7,540.72	7,430.23	22.43	25.03	119.86	-1,031.98	200.96	934.96	890.89	44.07	21.214	
7,600.00	7,530.23	7,640.72	7,530.23	22.58	25.15	119.86	-1,031.98	200.96	934.96	890.61	44.35	21.081	
7,700.00	7,630.23	7,740.72	7,630.23	22.72	25.27	119.86	-1,031.98	200.96	934.96	890.33	44.63	20.948	
7,800.00	7,730.23	7,840.72	7,730.23	22.86	25.39	119.86	-1,031.98	200.96	934.96	890.05	44.92	20.816	
7,900.00	7,830.23	7,940.72	7,830.23	23.01	25.51	119.86	-1,031.98	200.96	934.96	889.76	45.20	20.684	
8,000.00	7,930.23	8,040.72	7,930.23	23.15	25.64	119.86	-1,031.98	200.96	934.96	889.47	45.49	20.552	
8,100.00	8,030.23	8,140.72	8,030.23	23.30	25.77	119.86	-1,031.98	200.96	934.96	889.18	45.78	20.422	
8,200.00	8,130.23	8,240.72	8,130.23	23.45	25.89	119.86	-1,031.98	200.96	934.96	888.89	46.08	20.291	
8,300.00	8,230.23	8,340.72	8,230.23	23.60	26.02	119.86	-1,031.98	200.96	934.96	888.59	46.37	20.161	
8,318.50	8,248.73	8,359.22	8,248.73	23.63	26.05	119.86	-1,031.98	200.96	934.96	888.53	46.43	20.137	
8,334.77	8,265.00	8,365.49	8,255.00	23.65	26.06	119.86	-1,031.98	200.96	935.02	888.55	46.46	20.124	

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well P_NRC 7-8
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	WELL @ 5023.00ft (Original Well Elev)
<b>Reference Site:</b>	WELD_NRC 5 PAD	<b>MD Reference:</b>	WELL @ 5023.00ft (Original Well Elev)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	P_NRC 7-8	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	P_NRC 7-8	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	PLAN #1 1-5-10 RHS	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> WELD_NRC 5 PAD - P_NRC 40-8 - P_NRC 40-8 - PLAN #1 1-5-10 RHS												<b>Offset Site Error:</b>	0.00 ft
Survey Program: 0-MWD												<b>Offset Well Error:</b>	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	130.46	-20.76	24.35	32.00				
100.00	100.00	100.00	100.00	0.10	0.10	130.46	-20.76	24.35	32.00	31.81	0.19	167.495	
200.00	200.00	200.00	200.00	0.32	0.32	130.46	-20.76	24.35	32.00	31.36	0.64	49.955	
300.00	300.00	300.00	300.00	0.55	0.55	130.46	-20.76	24.35	32.00	30.91	1.09	29.355	
400.00	400.00	400.00	400.00	0.77	0.77	130.46	-20.76	24.35	32.00	30.46	1.54	20.784	
500.00	500.00	500.00	500.00	0.99	0.99	130.46	-20.76	24.35	32.00	30.01	1.99	16.087	
600.00	600.00	600.00	600.00	1.22	1.22	130.46	-20.76	24.35	32.00	29.56	2.44	13.122	
700.00	700.00	700.00	700.00	1.44	1.44	130.46	-20.76	24.35	32.00	29.11	2.89	11.079	
800.00	800.00	800.00	800.00	1.67	1.67	130.46	-20.76	24.35	32.00	28.66	3.34	9.587	
900.00	900.00	900.00	900.00	1.89	1.89	130.46	-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	130.46	-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	130.46	-20.76	24.35	32.00	27.38	4.62	6.928 CC	
1,100.00	1,100.00	1,099.83	1,099.83	2.34	2.34	-96.73	-20.79	24.38	32.04	27.36	4.68	6.849 ES, SF	
1,200.00	1,199.97	1,198.63	1,198.60	2.52	2.52	-100.53	-22.15	26.13	34.63	29.59	5.04	6.874	
1,300.00	1,299.80	1,296.94	1,296.75	2.71	2.71	-107.92	-25.57	30.54	41.73	36.32	5.41	7.714	
1,400.00	1,399.37	1,394.39	1,393.79	2.92	2.91	-115.44	-31.00	37.53	54.05	48.26	5.79	9.329	
1,500.00	1,498.55	1,490.57	1,489.22	3.15	3.14	-121.36	-38.33	46.99	71.87	65.68	6.20	11.598	
1,581.17	1,578.69	1,567.46	1,565.19	3.36	3.34	-124.86	-45.61	56.37	90.32	83.77	6.54	13.801	
1,600.00	1,597.24	1,585.14	1,582.61	3.41	3.38	-125.58	-47.46	58.75	95.06	88.43	6.63	14.339	
1,700.00	1,695.75	1,678.25	1,674.02	3.70	3.67	-128.01	-58.29	72.70	122.03	114.92	7.10	17.179	
1,800.00	1,794.25	1,769.93	1,763.42	4.01	3.99	-128.95	-70.72	88.73	151.78	144.17	7.61	19.949	
1,900.00	1,892.75	1,860.02	1,850.61	4.34	4.35	-129.08	-84.64	106.67	184.13	175.99	8.14	22.616	
2,000.00	1,991.26	1,948.41	1,935.40	4.68	4.75	-128.78	-99.93	126.37	219.01	210.31	8.70	25.172	
2,100.00	2,089.76	2,034.97	2,017.66	5.03	5.20	-128.23	-116.44	147.65	256.34	247.06	9.28	27.622	
2,200.00	2,188.26	2,119.61	2,097.26	5.38	5.69	-127.56	-134.06	170.35	296.08	286.20	9.88	29.974	
2,300.00	2,286.77	2,200.00	2,172.06	5.74	6.20	-126.84	-152.12	193.62	338.19	327.71	10.48	32.265	
2,400.00	2,385.27	2,282.80	2,248.21	6.11	6.79	-126.07	-172.06	219.32	382.59	371.47	11.12	34.405	
2,500.00	2,483.78	2,368.22	2,325.99	6.48	7.43	-125.30	-193.69	247.19	428.76	416.98	11.78	36.401	
2,600.00	2,582.28	2,456.71	2,406.53	6.86	8.12	-124.64	-216.17	276.16	475.11	462.65	12.46	38.131	
2,700.00	2,680.78	2,545.21	2,487.07	7.24	8.82	-124.10	-238.65	305.13	521.49	508.34	13.15	39.664	
2,800.00	2,779.29	2,633.70	2,567.61	7.62	9.53	-123.65	-261.13	334.10	567.90	554.06	13.84	41.028	
2,900.00	2,877.79	2,722.20	2,648.15	8.00	10.26	-123.27	-283.61	363.07	614.34	599.80	14.54	42.249	
3,000.00	2,976.30	2,810.69	2,728.69	8.38	10.99	-122.94	-306.09	392.04	660.79	645.55	15.24	43.347	
3,100.00	3,074.80	2,899.19	2,809.23	8.77	11.72	-122.65	-328.57	421.01	707.26	691.31	15.95	44.338	
3,200.00	3,173.30	2,987.68	2,889.77	9.16	12.46	-122.40	-351.05	449.98	753.75	737.08	16.66	45.236	
3,300.00	3,271.81	3,076.18	2,970.31	9.55	13.21	-122.18	-373.53	478.95	800.24	782.86	17.38	46.054	
3,400.00	3,370.31	3,164.67	3,050.85	9.94	13.95	-121.98	-396.01	507.92	846.74	828.65	18.09	46.803	
3,500.00	3,468.82	3,253.17	3,131.39	10.33	14.70	-121.81	-418.49	536.89	893.25	874.44	18.81	47.490	
3,600.00	3,567.32	3,341.66	3,211.93	10.72	15.46	-121.65	-440.97	565.86	939.76	920.23	19.53	48.123	
3,700.00	3,665.82	3,430.16	3,292.47	11.11	16.21	-121.50	-463.45	594.83	986.28	966.03	20.25	48.709	
3,800.00	3,764.33	3,518.65	3,373.01	11.51	16.97	-121.37	-485.93	623.80	1,032.80	1,011.83	20.97	49.252	
3,900.00	3,862.83	3,607.15	3,453.55	11.90	17.72	-121.25	-508.41	652.77	1,079.33	1,057.64	21.69	49.757	
4,000.00	3,961.34	3,695.64	3,534.09	12.30	18.48	-121.14	-530.90	681.74	1,125.86	1,103.45	22.42	50.227	
4,100.00	4,059.84	3,784.14	3,614.64	12.69	19.24	-121.04	-553.38	710.71	1,172.39	1,149.26	23.14	50.667	
4,200.00	4,158.34	3,872.63	3,695.18	13.09	20.00	-120.95	-575.86	739.68	1,218.93	1,195.07	23.86	51.080	
4,300.00	4,256.85	3,961.13	3,775.72	13.48	20.77	-120.86	-598.34	768.65	1,265.47	1,240.88	24.59	51.468	
4,400.00	4,355.35	4,049.62	3,856.26	13.88	21.53	-120.78	-620.82	797.62	1,312.01	1,286.70	25.31	51.833	
4,500.00	4,453.86	4,138.12	3,936.80	14.28	22.29	-120.70	-643.30	826.59	1,358.55	1,332.52	26.04	52.178	
4,600.00	4,552.36	4,226.61	4,017.34	14.68	23.06	-120.63	-665.78	855.56	1,405.10	1,378.34	26.76	52.504	
4,700.00	4,650.86	4,315.11	4,097.88	15.07	23.82	-120.57	-688.26	884.53	1,451.64	1,424.16	27.49	52.813	
4,800.00	4,749.37	4,403.60	4,178.42	15.47	24.59	-120.51	-710.74	913.50	1,498.19	1,469.98	28.21	53.106	
4,900.00	4,847.87	4,492.10	4,258.96	15.87	25.36	-120.45	-733.22	942.47	1,544.74	1,515.80	28.94	53.385	

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

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well P_NRC 7-8
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	WELL @ 5023.00ft (Original Well Elev)
<b>Reference Site:</b>	WELD_NRC 5 PAD	<b>MD Reference:</b>	WELL @ 5023.00ft (Original Well Elev)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	P_NRC 7-8	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	P_NRC 7-8	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	PLAN #1 1-5-10 RHS	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> WELD_NRC 5 PAD - P_NRC 40-8 - P_NRC 40-8 - PLAN #1 1-5-10 RHS												<b>Offset Site Error:</b>	0.00 ft
Survey Program: 0-MWD												<b>Offset Well Error:</b>	0.00 ft
Reference	Offset	Semi Major Axis		Distance									
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	Warning
5,000.00	4,946.37	4,580.59	4,339.50	16.27	26.12	-120.39	-755.70	971.44	1,591.29	1,561.63	29.66	53.651	
5,100.00	5,044.88	4,669.09	4,420.04	16.67	26.89	-120.34	-778.18	1,000.41	1,637.84	1,607.46	30.38	53.904	
5,200.00	5,143.38	4,757.58	4,500.58	17.07	27.66	-120.29	-800.66	1,029.38	1,684.39	1,653.28	31.11	54.146	
5,300.00	5,241.89	4,846.08	4,581.12	17.46	28.42	-120.25	-823.14	1,058.35	1,730.95	1,699.11	31.83	54.378	
5,400.00	5,340.39	4,934.57	4,661.66	17.86	29.19	-120.20	-845.62	1,087.33	1,777.50	1,744.94	32.55	54.601	
5,500.00	5,438.89	5,023.07	4,742.20	18.26	29.96	-120.16	-868.10	1,116.30	1,824.05	1,790.78	33.28	54.814	
5,600.00	5,537.40	5,111.56	4,822.74	18.66	30.73	-120.12	-890.58	1,145.27	1,870.61	1,836.59	34.01	54.995	
5,700.00	5,635.90	5,200.06	4,903.28	19.06	31.50	-120.09	-913.06	1,174.24	1,917.16	1,882.41	34.75	55.164	
5,800.00	5,734.41	5,288.55	4,983.82	19.46	32.27	-120.05	-935.55	1,203.21	1,963.72	1,928.23	35.49	55.324	
5,900.00	5,832.91	5,377.05	5,064.36	19.86	33.04	-120.02	-958.03	1,232.18	2,010.28	1,974.04	36.24	55.478	
5,913.60	5,846.31	5,389.09	5,075.32	19.92	33.14	-120.01	-961.08	1,236.12	2,016.61	1,980.28	36.34	55.498	
6,000.00	5,931.63	5,465.82	5,145.15	20.20	33.81	-120.72	-980.58	1,261.24	2,056.25	2,019.06	37.19	55.291	
6,100.00	6,030.83	5,701.77	5,363.09	20.44	35.35	-121.19	-1,035.90	1,332.54	2,098.22	2,059.73	38.49	54.511	
6,200.00	6,130.42	5,999.72	5,647.64	20.65	36.83	-121.45	-1,089.81	1,402.00	2,130.13	2,090.37	39.77	53.566	
6,300.00	6,230.26	6,316.32	5,958.23	20.82	37.89	-121.59	-1,126.91	1,449.81	2,150.73	2,109.91	40.82	52.693	
6,409.77	6,340.00	6,676.28	6,316.96	20.98	38.49	105.50	-1,143.29	1,470.93	2,159.39	2,117.73	41.66	51.840	
6,500.00	6,430.23	6,789.55	6,430.23	21.10	38.57	105.50	-1,143.41	1,471.08	2,159.44	2,117.52	41.92	51.513	
6,600.00	6,530.23	6,889.55	6,530.23	21.23	38.65	105.50	-1,143.41	1,471.08	2,159.44	2,117.27	42.17	51.208	
6,700.00	6,630.23	6,989.55	6,630.23	21.36	38.72	105.50	-1,143.41	1,471.08	2,159.44	2,117.02	42.42	50.904	
6,800.00	6,730.23	7,089.55	6,730.23	21.48	38.80	105.50	-1,143.41	1,471.08	2,159.44	2,116.77	42.68	50.599	
6,900.00	6,830.23	7,189.55	6,830.23	21.62	38.87	105.50	-1,143.41	1,471.08	2,159.44	2,116.51	42.94	50.294	
7,000.00	6,930.23	7,289.55	6,930.23	21.75	38.95	105.50	-1,143.41	1,471.08	2,159.44	2,116.24	43.20	49.989	
7,100.00	7,030.23	7,389.55	7,030.23	21.88	39.03	105.50	-1,143.41	1,471.08	2,159.44	2,115.98	43.46	49.685	
7,200.00	7,130.23	7,489.55	7,130.23	22.02	39.11	105.50	-1,143.41	1,471.08	2,159.44	2,115.71	43.73	49.381	
7,300.00	7,230.23	7,589.55	7,230.23	22.16	39.19	105.50	-1,143.41	1,471.08	2,159.44	2,115.44	44.00	49.077	
7,400.00	7,330.23	7,689.55	7,330.23	22.29	39.28	105.50	-1,143.41	1,471.08	2,159.44	2,115.17	44.27	48.774	
7,500.00	7,430.23	7,789.55	7,430.23	22.43	39.36	105.50	-1,143.41	1,471.08	2,159.44	2,114.89	44.55	48.471	
7,600.00	7,530.23	7,889.55	7,530.23	22.58	39.44	105.50	-1,143.41	1,471.08	2,159.44	2,114.61	44.83	48.169	
7,700.00	7,630.23	7,989.55	7,630.23	22.72	39.53	105.50	-1,143.41	1,471.08	2,159.44	2,114.33	45.11	47.868	
7,800.00	7,730.23	8,089.55	7,730.23	22.86	39.62	105.50	-1,143.41	1,471.08	2,159.44	2,114.05	45.40	47.568	
7,900.00	7,830.23	8,189.55	7,830.23	23.01	39.70	105.50	-1,143.41	1,471.08	2,159.44	2,113.76	45.68	47.268	
8,000.00	7,930.23	8,289.55	7,930.23	23.15	39.79	105.50	-1,143.41	1,471.08	2,159.44	2,113.47	45.97	46.970	
8,100.00	8,030.23	8,389.55	8,030.23	23.30	39.88	105.50	-1,143.41	1,471.08	2,159.44	2,113.18	46.27	46.673	
8,200.00	8,130.23	8,489.55	8,130.23	23.45	39.98	105.50	-1,143.41	1,471.08	2,159.44	2,112.88	46.56	46.378	
8,300.00	8,230.23	8,589.55	8,230.23	23.60	40.07	105.50	-1,143.41	1,471.08	2,159.44	2,112.58	46.86	46.083	
8,334.77	8,265.00	8,624.32	8,265.00	23.65	40.10	105.50	-1,143.41	1,471.08	2,159.44	2,112.48	46.96	45.981	



<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well P_NRC 7-8
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	WELL @ 5023.00ft (Original Well Elev)
<b>Reference Site:</b>	WELD_NRC 5 PAD	<b>MD Reference:</b>	WELL @ 5023.00ft (Original Well Elev)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	P_NRC 7-8	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	P_NRC 7-8	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	PLAN #1 1-5-10 RHS	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> WELD_NRC 5 PAD - P_NRC 41-8 - P_NRC 41-8 - PLAN #1 1-5-10 RHS												<b>Offset Site Error:</b>	0.00 ft
Survey Program: 0-MWD												<b>Offset Well Error:</b>	0.00 ft
Reference		Offset		Semi Major Axis			Distance						
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	Warning
0.00	0.00	0.00	0.00	0.00	0.00	-49.39	10.56	-12.31	16.22				
100.00	100.00	100.00	100.00	0.10	0.10	-49.39	10.56	-12.31	16.22	16.03	0.19	84.909	
200.00	200.00	200.00	200.00	0.32	0.32	-49.39	10.56	-12.31	16.22	15.58	0.64	25.324	
300.00	300.00	300.00	300.00	0.55	0.55	-49.39	10.56	-12.31	16.22	15.13	1.09	14.881	
400.00	400.00	400.00	400.00	0.77	0.77	-49.39	10.56	-12.31	16.22	14.68	1.54	10.536	
500.00	500.00	500.00	500.00	0.99	0.99	-49.39	10.56	-12.31	16.22	14.23	1.99	8.155	
600.00	600.00	600.00	600.00	1.22	1.22	-49.39	10.56	-12.31	16.22	13.78	2.44	6.652	
700.00	700.00	700.00	700.00	1.44	1.44	-49.39	10.56	-12.31	16.22	13.33	2.89	5.617	
800.00	800.00	800.00	800.00	1.67	1.67	-49.39	10.56	-12.31	16.22	12.88	3.34	4.860	
900.00	900.00	900.00	900.00	1.89	1.89	-49.39	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	-49.39	10.56	-12.31	16.22	11.99	4.24	3.829	
1,085.00	1,085.00	1,085.00	1,085.00	2.31	2.31	-49.39	10.56	-12.31	16.22	11.60	4.62	3.512	
1,100.00	1,100.00	1,100.06	1,100.06	2.34	2.34	83.74	10.57	-12.28	16.19	11.51	4.68	3.459	
1,200.00	1,199.97	1,200.26	1,200.23	2.52	2.55	99.18	10.90	-10.02	15.00	9.93	5.06	2.962	
1,224.86	1,224.80	1,225.07	1,225.02	2.57	2.60	107.26	11.06	-8.93	14.85	9.69	5.16	2.876 CC, ES, SF	
1,300.00	1,299.80	1,299.69	1,299.49	2.71	2.76	137.89	11.74	-4.36	17.30	11.84	5.46	3.170	
1,400.00	1,399.37	1,397.72	1,397.10	2.92	2.98	167.46	13.06	4.55	30.31	24.47	5.84	5.193	
1,500.00	1,498.55	1,493.73	1,492.34	3.15	3.21	-179.61	14.83	16.48	52.54	46.33	6.21	8.457	
1,581.17	1,578.69	1,569.79	1,567.48	3.36	3.42	-174.40	16.56	28.16	75.93	69.41	6.52	11.647	
1,600.00	1,597.24	1,587.18	1,584.62	3.41	3.47	-173.55	17.00	31.11	81.92	75.32	6.60	12.419	
1,700.00	1,695.75	1,678.37	1,674.14	3.70	3.75	-170.14	19.54	48.25	115.55	108.54	7.02	16.465	
1,800.00	1,794.25	1,767.48	1,761.05	4.01	4.06	-167.84	22.43	67.72	152.12	144.67	7.45	20.421	
1,900.00	1,892.75	1,854.43	1,845.21	4.34	4.41	-166.11	25.63	89.28	191.47	183.58	7.89	24.272	
2,000.00	1,991.26	1,939.13	1,926.53	4.68	4.79	-164.74	29.10	112.71	233.51	225.18	8.33	28.017	
2,100.00	2,089.76	2,021.53	2,004.94	5.03	5.20	-163.62	32.82	137.77	278.13	269.35	8.79	31.659	
2,200.00	2,188.26	2,106.87	2,085.51	5.38	5.67	-162.64	36.95	165.59	324.79	315.53	9.26	35.090	
2,300.00	2,286.77	2,195.09	2,168.75	5.74	6.18	-161.87	41.24	194.51	371.69	361.94	9.74	38.149	
2,400.00	2,385.27	2,283.32	2,251.99	6.11	6.71	-161.27	45.53	223.44	418.62	408.38	10.24	40.889	
2,500.00	2,483.78	2,371.55	2,335.23	6.48	7.25	-160.79	49.82	252.36	465.58	454.85	10.74	43.353	
2,600.00	2,582.28	2,459.77	2,418.46	6.86	7.80	-160.40	54.11	281.29	512.57	501.32	11.25	45.577	
2,700.00	2,680.78	2,548.00	2,501.70	7.24	8.36	-160.07	58.40	310.21	559.57	547.81	11.76	47.590	
2,800.00	2,779.29	2,636.22	2,584.94	7.62	8.92	-159.80	62.69	339.14	606.58	594.31	12.27	49.419	
2,900.00	2,877.79	2,724.45	2,668.18	8.00	9.50	-159.56	66.98	368.06	653.60	640.81	12.79	51.086	
3,000.00	2,976.30	2,812.68	2,751.42	8.38	10.07	-159.36	71.27	396.99	700.63	687.31	13.32	52.609	
3,100.00	3,074.80	2,900.90	2,834.66	8.77	10.65	-159.18	75.56	425.92	747.67	733.82	13.84	54.007	
3,200.00	3,173.30	2,989.13	2,917.90	9.16	11.23	-159.03	79.85	454.84	794.71	780.33	14.37	55.290	
3,300.00	3,271.81	3,077.35	3,001.14	9.55	11.82	-158.89	84.14	483.77	841.75	826.84	14.91	56.474	
3,400.00	3,370.31	3,165.58	3,084.37	9.94	12.41	-158.76	88.43	512.69	888.80	873.36	15.44	57.569	
3,500.00	3,468.82	3,253.80	3,167.61	10.33	13.00	-158.65	92.72	541.62	935.85	919.87	15.97	58.584	
3,600.00	3,567.32	3,342.03	3,250.85	10.72	13.59	-158.55	97.01	570.54	982.90	966.39	16.51	59.526	
3,700.00	3,665.82	3,430.26	3,334.09	11.11	14.18	-158.46	101.30	599.47	1,029.96	1,012.90	17.05	60.404	
3,800.00	3,764.33	3,518.48	3,417.33	11.51	14.77	-158.37	105.59	628.40	1,077.01	1,059.42	17.59	61.223	
3,900.00	3,862.83	3,606.71	3,500.57	11.90	15.37	-158.29	109.88	657.32	1,124.07	1,105.94	18.13	61.989	
4,000.00	3,961.34	3,694.93	3,583.81	12.30	15.97	-158.22	114.17	686.25	1,171.13	1,152.45	18.68	62.707	
4,100.00	4,059.84	3,783.16	3,667.05	12.69	16.56	-158.16	118.46	715.17	1,218.19	1,198.97	19.22	63.380	
4,200.00	4,158.34	3,871.38	3,750.28	13.09	17.16	-158.10	122.75	744.10	1,265.25	1,245.49	19.77	64.013	
4,300.00	4,256.85	3,959.61	3,833.52	13.48	17.76	-158.04	127.04	773.02	1,312.32	1,292.01	20.31	64.609	
4,400.00	4,355.35	4,047.84	3,916.76	13.88	18.36	-157.99	131.33	801.95	1,359.38	1,338.52	20.86	65.171	
4,500.00	4,453.86	4,136.06	4,000.00	14.28	18.96	-157.94	135.63	830.87	1,406.45	1,385.04	21.41	65.702	
4,600.00	4,552.36	4,224.29	4,083.24	14.68	19.56	-157.89	139.92	859.80	1,453.51	1,431.56	21.95	66.205	
4,700.00	4,650.86	4,312.51	4,166.48	15.07	20.16	-157.85	144.21	888.73	1,500.58	1,478.08	22.50	66.681	
4,800.00	4,749.37	4,400.74	4,249.72	15.47	20.77	-157.81	148.50	917.65	1,547.65	1,524.59	23.05	67.133	

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

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well P_NRC 7-8
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	WELL @ 5023.00ft (Original Well Elev)
<b>Reference Site:</b>	WELD_NRC 5 PAD	<b>MD Reference:</b>	WELL @ 5023.00ft (Original Well Elev)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	P_NRC 7-8	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	P_NRC 7-8	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	PLAN #1 1-5-10 RHS	<b>Offset TVD Reference:</b>	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									
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	Warning
4,900.00	4,847.87	4,488.97	4,332.96	15.87	21.37	-157.77	152.79	946.58	1,594.71	1,571.11	23.60	67.561	
5,000.00	4,946.37	4,577.19	4,416.19	16.27	21.97	-157.74	157.08	975.50	1,641.78	1,617.63	24.15	67.969	
5,100.00	5,044.88	4,665.42	4,499.43	16.67	22.57	-157.70	161.37	1,004.43	1,688.85	1,664.15	24.71	68.357	
5,200.00	5,143.38	4,753.64	4,582.67	17.07	23.18	-157.67	165.66	1,033.35	1,735.92	1,710.66	25.26	68.727	
5,300.00	5,241.89	4,841.87	4,665.91	17.46	23.78	-157.64	169.95	1,062.28	1,782.99	1,757.18	25.81	69.080	
5,400.00	5,340.39	4,930.09	4,749.15	17.86	24.39	-157.61	174.24	1,091.21	1,830.06	1,803.70	26.36	69.417	
5,500.00	5,438.89	5,018.32	4,832.39	18.26	24.99	-157.59	178.53	1,120.13	1,877.13	1,850.21	26.92	69.740	
5,600.00	5,537.40	5,106.55	4,915.63	18.66	25.60	-157.56	182.82	1,149.06	1,924.20	1,896.73	27.47	70.048	
5,700.00	5,635.90	5,194.77	4,998.87	19.06	26.20	-157.54	187.11	1,177.98	1,971.27	1,943.25	28.02	70.343	
5,800.00	5,734.41	5,283.00	5,082.10	19.46	26.81	-157.51	191.40	1,206.91	2,018.34	1,989.77	28.58	70.626	
5,900.00	5,832.91	5,371.22	5,165.34	19.86	27.41	-157.49	195.69	1,235.83	2,065.41	2,036.28	29.13	70.898	
5,913.60	5,846.31	5,383.23	5,176.67	19.92	27.49	-157.49	196.27	1,239.77	2,071.82	2,042.61	29.21	70.934	
6,000.00	5,931.63	5,460.00	5,249.10	20.20	28.02	-157.79	200.01	1,264.94	2,111.42	2,081.56	29.86	70.722	
6,100.00	6,030.83	5,550.18	5,334.18	20.44	28.64	-158.08	204.39	1,294.51	2,154.56	2,124.01	30.55	70.535	
6,200.00	6,130.42	5,782.75	5,555.54	20.65	29.87	-158.15	214.83	1,364.91	2,193.22	2,161.69	31.53	69.550	
6,300.00	6,230.26	6,172.66	5,937.08	20.82	31.25	-158.09	226.41	1,442.94	2,218.09	2,185.37	32.72	67.794	
6,409.77	6,340.00	6,576.78	6,340.00	20.98	31.92	69.03	230.28	1,469.04	2,226.33	2,192.64	33.69	66.080	
6,500.00	6,430.23	6,667.01	6,430.23	21.10	32.01	69.03	230.28	1,469.04	2,226.33	2,192.34	33.99	65.505	
6,600.00	6,530.23	6,767.01	6,530.23	21.23	32.10	69.03	230.28	1,469.04	2,226.33	2,192.02	34.31	64.893	
6,700.00	6,630.23	6,867.01	6,630.23	21.36	32.20	69.03	230.28	1,469.04	2,226.33	2,191.70	34.63	64.286	
6,800.00	6,730.23	6,967.01	6,730.23	21.48	32.30	69.03	230.28	1,469.04	2,226.33	2,191.37	34.96	63.686	
6,900.00	6,830.23	7,067.01	6,830.23	21.62	32.40	69.03	230.28	1,469.04	2,226.33	2,191.04	35.29	63.092	
7,000.00	6,930.23	7,167.01	6,930.23	21.75	32.50	69.03	230.28	1,469.04	2,226.33	2,190.71	35.62	62.504	
7,100.00	7,030.23	7,267.01	7,030.23	21.88	32.60	69.03	230.28	1,469.04	2,226.33	2,190.38	35.95	61.923	
7,200.00	7,130.23	7,367.01	7,130.23	22.02	32.70	69.03	230.28	1,469.04	2,226.33	2,190.04	36.29	61.348	
7,300.00	7,230.23	7,467.01	7,230.23	22.16	32.81	69.03	230.28	1,469.04	2,226.33	2,189.70	36.63	60.780	
7,400.00	7,330.23	7,567.01	7,330.23	22.29	32.92	69.03	230.28	1,469.04	2,226.33	2,189.36	36.97	60.219	
7,500.00	7,430.23	7,667.01	7,430.23	22.43	33.02	69.03	230.28	1,469.04	2,226.33	2,189.02	37.31	59.664	
7,600.00	7,530.23	7,767.01	7,530.23	22.58	33.13	69.03	230.28	1,469.04	2,226.33	2,188.67	37.66	59.115	
7,700.00	7,630.23	7,867.01	7,630.23	22.72	33.24	69.03	230.28	1,469.04	2,226.33	2,188.32	38.01	58.574	
7,800.00	7,730.23	7,967.01	7,730.23	22.86	33.35	69.03	230.28	1,469.04	2,226.33	2,187.97	38.36	58.039	
7,900.00	7,830.23	8,067.01	7,830.23	23.01	33.46	69.03	230.28	1,469.04	2,226.33	2,187.62	38.71	57.510	
8,000.00	7,930.23	8,167.01	7,930.23	23.15	33.58	69.03	230.28	1,469.04	2,226.33	2,187.26	39.07	56.989	
8,100.00	8,030.23	8,267.01	8,030.23	23.30	33.69	69.03	230.28	1,469.04	2,226.33	2,186.91	39.42	56.473	
8,200.00	8,130.23	8,367.01	8,130.23	23.45	33.81	69.03	230.28	1,469.04	2,226.33	2,186.55	39.78	55.965	
8,300.00	8,230.23	8,467.01	8,230.23	23.60	33.92	69.03	230.28	1,469.04	2,226.33	2,186.19	40.14	55.463	
8,314.39	8,244.62	8,481.39	8,244.62	23.62	33.94	69.03	230.28	1,469.04	2,226.33	2,186.14	40.19	55.391	
8,334.77	8,265.00	8,486.78	8,250.00	23.65	33.95	69.03	230.28	1,469.04	2,226.38	2,186.14	40.24	55.328	



<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well P_NRC 7-8
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	WELL @ 5023.00ft (Original Well Elev)
<b>Reference Site:</b>	WELD_NRC 5 PAD	<b>MD Reference:</b>	WELL @ 5023.00ft (Original Well Elev)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	P_NRC 7-8	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	P_NRC 7-8	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	PLAN #1 1-5-10 RHS	<b>Offset TVD Reference:</b>	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 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	-102.35	-13.48	-61.57	65.55				
100.00	100.00	82.00	82.00	0.10	1.64	-102.35	-13.48	-61.57	63.03	61.29	1.74	36.317	
200.00	200.00	182.00	182.00	0.32	5.28	-102.35	-13.48	-61.57	63.03	57.43	5.60	11.255	
300.00	300.00	282.00	282.00	0.55	9.28	-102.35	-13.48	-61.57	63.03	53.20	9.83	6.415	
400.00	400.00	382.00	382.00	0.77	13.28	-102.35	-13.48	-61.57	63.03	48.98	14.05	4.486	
500.00	500.00	482.00	482.00	0.99	17.28	-102.35	-13.48	-61.57	63.03	44.76	18.27	3.449	
600.00	600.00	582.00	582.00	1.22	21.28	-102.35	-13.48	-61.57	63.03	40.53	22.50	2.801	
700.00	700.00	682.00	682.00	1.44	25.28	-102.35	-13.48	-61.57	63.03	36.31	26.72	2.359	
800.00	800.00	782.00	782.00	1.67	29.28	-102.35	-13.48	-61.57	63.03	32.08	30.95	2.037	
900.00	900.00	882.00	882.00	1.89	33.28	-102.35	-13.48	-61.57	63.03	27.86	35.17	1.792	
1,000.00	1,000.00	982.00	982.00	2.12	37.28	-102.35	-13.48	-61.57	63.03	23.63	39.40	1.600	
1,085.00	1,085.00	1,067.00	1,067.00	2.31	40.68	-102.35	-13.48	-61.57	63.03	20.04	42.99	1.466	Level 3
1,100.00	1,100.00	1,082.00	1,082.00	2.34	41.28	30.56	-13.48	-61.57	63.00	19.38	43.62	1.444	Level 3
1,200.00	1,199.97	1,181.97	1,181.97	2.52	45.28	31.66	-13.48	-61.57	61.05	13.28	47.77	1.278	Level 3
1,300.00	1,299.80	1,281.80	1,281.80	2.71	49.27	34.79	-13.48	-61.57	56.23	4.35	51.88	1.084	Level 2
1,400.00	1,399.37	1,381.37	1,381.37	2.92	53.25	41.06	-13.48	-61.57	48.93	-7.04	55.97	0.874	Level 1
1,500.00	1,498.55	1,480.55	1,480.55	3.15	57.22	53.12	-13.48	-61.57	40.19	-19.93	60.12	0.668	Level 1
1,581.17	1,578.69	1,560.69	1,560.69	3.36	60.43	70.63	-13.48	-61.57	34.00	-29.66	63.67	0.534	Level 1
1,600.00	1,597.24	1,579.24	1,579.24	3.41	61.17	75.87	-13.48	-61.57	33.06	-31.46	64.51	0.512	Level 1
1,647.48	1,644.01	1,626.01	1,626.01	3.55	63.04	90.00	-13.48	-61.57	32.03	-34.56	66.59	0.481	Level 1, CC, SF
1,700.00	1,695.75	1,677.75	1,677.75	3.70	65.11	105.56	-13.48	-61.57	33.28	-35.45	68.73	0.484	Level 1, ES
1,800.00	1,794.25	1,776.25	1,776.25	4.01	69.05	128.95	-13.48	-61.57	41.43	-31.11	72.54	0.571	Level 1
1,900.00	1,892.75	1,874.75	1,874.75	4.34	72.99	143.24	-13.48	-61.57	54.03	-22.35	76.38	0.707	Level 1
2,000.00	1,991.26	1,973.26	1,973.26	4.68	76.93	151.84	-13.48	-61.57	68.68	-11.65	80.33	0.855	Level 1
2,100.00	2,089.76	2,071.76	2,071.76	5.03	80.87	157.37	-13.48	-61.57	84.30	-0.04	84.34	1.000	Level 1
2,200.00	2,188.26	2,170.26	2,170.26	5.38	84.81	161.15	-13.48	-61.57	100.46	12.06	88.39	1.136	Level 2
2,300.00	2,286.77	2,268.77	2,268.77	5.74	88.75	163.87	-13.48	-61.57	116.92	24.45	92.47	1.264	Level 3
2,400.00	2,385.27	2,367.27	2,367.27	6.11	92.69	165.93	-13.48	-61.57	133.58	37.02	96.56	1.383	Level 3
2,500.00	2,483.78	2,465.78	2,465.78	6.48	96.63	167.52	-13.48	-61.57	150.37	49.71	100.66	1.494	Level 3
2,600.00	2,582.28	2,564.28	2,564.28	6.86	100.57	168.80	-13.48	-61.57	167.24	62.48	104.76	1.596	
2,700.00	2,680.78	2,662.78	2,662.78	7.24	104.51	169.84	-13.48	-61.57	184.19	75.31	108.87	1.692	
2,800.00	2,779.29	2,761.29	2,761.29	7.62	108.45	170.70	-13.48	-61.57	201.18	88.19	112.99	1.781	
2,900.00	2,877.79	2,859.79	2,859.79	8.00	112.39	171.43	-13.48	-61.57	218.21	101.10	117.11	1.863	
3,000.00	2,976.30	2,958.30	2,958.30	8.38	116.33	172.06	-13.48	-61.57	235.27	114.04	121.23	1.941	
3,100.00	3,074.80	3,056.80	3,056.80	8.77	120.27	172.60	-13.48	-61.57	252.35	127.01	125.35	2.013	
3,200.00	3,173.30	3,155.30	3,155.30	9.16	124.21	173.07	-13.48	-61.57	269.46	139.99	129.47	2.081	
3,300.00	3,271.81	3,253.81	3,253.81	9.55	128.15	173.49	-13.48	-61.57	286.57	152.98	133.59	2.145	
3,400.00	3,370.31	3,352.31	3,352.31	9.94	132.09	173.86	-13.48	-61.57	303.71	165.99	137.72	2.205	
3,500.00	3,468.82	3,450.82	3,450.82	10.33	136.03	174.18	-13.48	-61.57	320.85	179.00	141.84	2.262	
3,600.00	3,567.32	3,549.32	3,549.32	10.72	139.97	174.48	-13.48	-61.57	338.00	192.03	145.97	2.316	
3,700.00	3,665.82	3,647.82	3,647.82	11.11	143.91	174.75	-13.48	-61.57	355.16	205.06	150.10	2.366	
3,800.00	3,764.33	3,746.33	3,746.33	11.51	147.85	174.99	-13.48	-61.57	372.32	218.10	154.23	2.414	
3,900.00	3,862.83	3,844.83	3,844.83	11.90	151.79	175.21	-13.48	-61.57	389.50	231.14	158.36	2.460	
4,000.00	3,961.34	3,943.34	3,943.34	12.30	155.73	175.41	-13.48	-61.57	406.67	244.19	162.49	2.503	
4,100.00	4,059.84	4,041.84	4,041.84	12.69	159.67	175.60	-13.48	-61.57	423.85	257.24	166.62	2.544	
4,200.00	4,158.34	4,140.34	4,140.34	13.09	163.61	175.77	-13.48	-61.57	441.04	270.29	170.75	2.583	
4,300.00	4,256.85	4,238.85	4,238.85	13.48	167.55	175.93	-13.48	-61.57	458.23	283.35	174.88	2.620	
4,400.00	4,355.35	4,337.35	4,337.35	13.88	171.49	176.08	-13.48	-61.57	475.42	296.41	179.01	2.656	
4,500.00	4,453.86	4,435.86	4,435.86	14.28	175.43	176.22	-13.48	-61.57	492.62	309.48	183.14	2.690	
4,600.00	4,552.36	4,534.36	4,534.36	14.68	179.37	176.34	-13.48	-61.57	509.81	322.54	187.27	2.722	
4,700.00	4,650.86	4,632.86	4,632.86	15.07	183.31	176.46	-13.48	-61.57	527.01	335.61	191.41	2.753	
4,800.00	4,749.37	4,731.37	4,731.37	15.47	187.25	176.58	-13.48	-61.57	544.22	348.68	195.54	2.783	

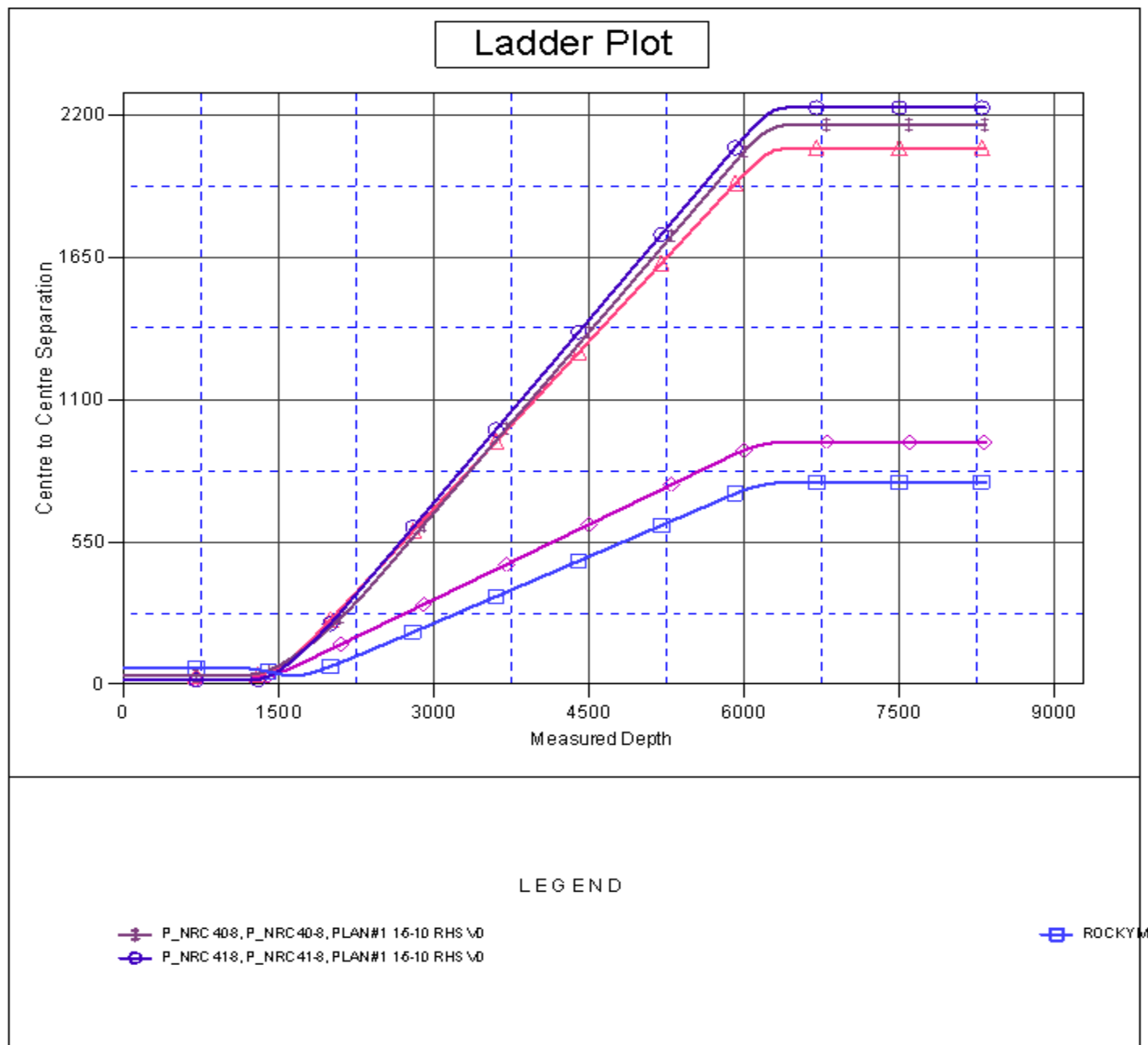
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well P_NRC 7-8
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	WELL @ 5023.00ft (Original Well Elev)
<b>Reference Site:</b>	WELD_NRC 5 PAD	<b>MD Reference:</b>	WELL @ 5023.00ft (Original Well Elev)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	P_NRC 7-8	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	P_NRC 7-8	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	PLAN #1 1-5-10 RHS	<b>Offset TVD Reference:</b>	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	
4,900.00	4,847.87	4,829.87	4,829.87	15.87	191.19	176.68	-13.48	-61.57	561.42	361.75	199.67	2.812	
5,000.00	4,946.37	4,928.37	4,928.37	16.27	195.13	176.78	-13.48	-61.57	578.63	374.82	203.80	2.839	
5,100.00	5,044.88	5,026.88	5,026.88	16.67	199.08	176.87	-13.48	-61.57	595.83	387.90	207.94	2.865	
5,200.00	5,143.38	5,125.38	5,125.38	17.07	203.02	176.96	-13.48	-61.57	613.04	400.97	212.07	2.891	
5,300.00	5,241.89	5,223.89	5,223.89	17.46	206.96	177.04	-13.48	-61.57	630.25	414.05	216.20	2.915	
5,400.00	5,340.39	5,322.39	5,322.39	17.86	210.90	177.12	-13.48	-61.57	647.46	427.13	220.34	2.939	
5,500.00	5,438.89	5,420.89	5,420.89	18.26	214.84	177.20	-13.48	-61.57	664.68	440.21	224.47	2.961	
5,600.00	5,537.40	5,519.40	5,519.40	18.66	218.78	177.27	-13.48	-61.57	681.89	453.29	228.60	2.983	
5,700.00	5,635.90	5,617.90	5,617.90	19.06	222.72	177.33	-13.48	-61.57	699.10	466.37	232.74	3.004	
5,800.00	5,734.41	5,716.41	5,716.41	19.46	226.66	177.40	-13.48	-61.57	716.32	479.45	236.87	3.024	
5,900.00	5,832.91	5,814.91	5,814.91	19.86	230.60	177.46	-13.48	-61.57	733.54	492.53	241.01	3.044	
5,913.60	5,846.31	5,828.31	5,828.31	19.92	231.13	177.47	-13.48	-61.57	735.88	494.31	241.57	3.046	
6,000.00	5,931.63	5,913.63	5,913.63	20.20	234.55	177.53	-13.48	-61.57	749.47	503.24	246.23	3.044	
6,100.00	6,030.83	6,012.83	6,012.83	20.44	238.51	177.58	-13.48	-61.57	761.98	510.59	251.39	3.031	
6,200.00	6,130.42	6,112.42	6,112.42	20.65	242.50	177.61	-13.48	-61.57	771.03	514.75	256.28	3.009	
6,300.00	6,230.26	6,212.26	6,212.26	20.82	246.49	177.63	-13.48	-61.57	776.60	515.71	260.88	2.977	
6,409.77	6,340.00	6,322.00	6,322.00	20.98	250.88	44.76	-13.48	-61.57	778.70	513.10	265.59	2.932	
6,500.00	6,430.23	6,412.23	6,412.23	21.10	254.49	44.76	-13.48	-61.57	778.70	509.33	269.37	2.891	
6,600.00	6,530.23	6,512.23	6,512.23	21.23	258.49	44.76	-13.48	-61.57	778.70	505.15	273.55	2.847	
6,700.00	6,630.23	6,612.23	6,612.23	21.36	262.49	44.76	-13.48	-61.57	778.70	500.97	277.73	2.804	
6,800.00	6,730.23	6,712.23	6,712.23	21.48	266.49	44.76	-13.48	-61.57	778.70	496.79	281.91	2.762	
6,900.00	6,830.23	6,812.23	6,812.23	21.62	270.49	44.76	-13.48	-61.57	778.70	492.61	286.09	2.722	
7,000.00	6,930.23	6,912.23	6,912.23	21.75	274.49	44.76	-13.48	-61.57	778.70	488.43	290.27	2.683	
7,100.00	7,030.23	7,012.23	7,012.23	21.88	278.49	44.76	-13.48	-61.57	778.70	484.24	294.46	2.645	
7,200.00	7,130.23	7,112.23	7,112.23	22.02	282.49	44.76	-13.48	-61.57	778.70	480.06	298.64	2.607	
7,300.00	7,230.23	7,212.23	7,212.23	22.16	286.49	44.76	-13.48	-61.57	778.70	475.87	302.83	2.571	
7,400.00	7,330.23	7,312.23	7,312.23	22.29	290.49	44.76	-13.48	-61.57	778.70	471.69	307.01	2.536	
7,500.00	7,430.23	7,412.23	7,412.23	22.43	294.49	44.76	-13.48	-61.57	778.70	467.50	311.20	2.502	
7,600.00	7,530.23	7,512.23	7,512.23	22.58	298.49	44.76	-13.48	-61.57	778.70	463.31	315.39	2.469	
7,700.00	7,630.23	7,612.23	7,612.23	22.72	302.49	44.76	-13.48	-61.57	778.70	459.12	319.58	2.437	
7,800.00	7,730.23	7,712.23	7,712.23	22.86	306.49	44.76	-13.48	-61.57	778.70	454.93	323.77	2.405	
7,900.00	7,830.23	7,812.23	7,812.23	23.01	310.49	44.76	-13.48	-61.57	778.70	450.74	327.96	2.374	
8,000.00	7,930.23	7,912.23	7,912.23	23.15	314.49	44.76	-13.48	-61.57	778.70	446.55	332.15	2.344	
8,100.00	8,030.23	8,012.23	8,012.23	23.30	318.49	44.76	-13.48	-61.57	778.70	442.35	336.35	2.315	
8,200.00	8,130.23	8,112.23	8,112.23	23.45	322.49	44.76	-13.48	-61.57	778.70	438.16	340.54	2.287	
8,300.00	8,230.23	8,212.23	8,212.23	23.60	326.49	44.76	-13.48	-61.57	778.70	433.97	344.73	2.259	
8,334.77	8,265.00	8,247.00	8,247.00	23.65	327.88	44.76	-13.48	-61.57	778.70	432.51	346.19	2.249	

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well P_NRC 7-8
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	WELL @ 5023.00ft (Original Well Elev)
<b>Reference Site:</b>	WELD_NRC 5 PAD	<b>MD Reference:</b>	WELL @ 5023.00ft (Original Well Elev)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	P_NRC 7-8	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	P_NRC 7-8	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	PLAN #1 1-5-10 RHS	<b>Offset TVD Reference:</b>	Offset Datum

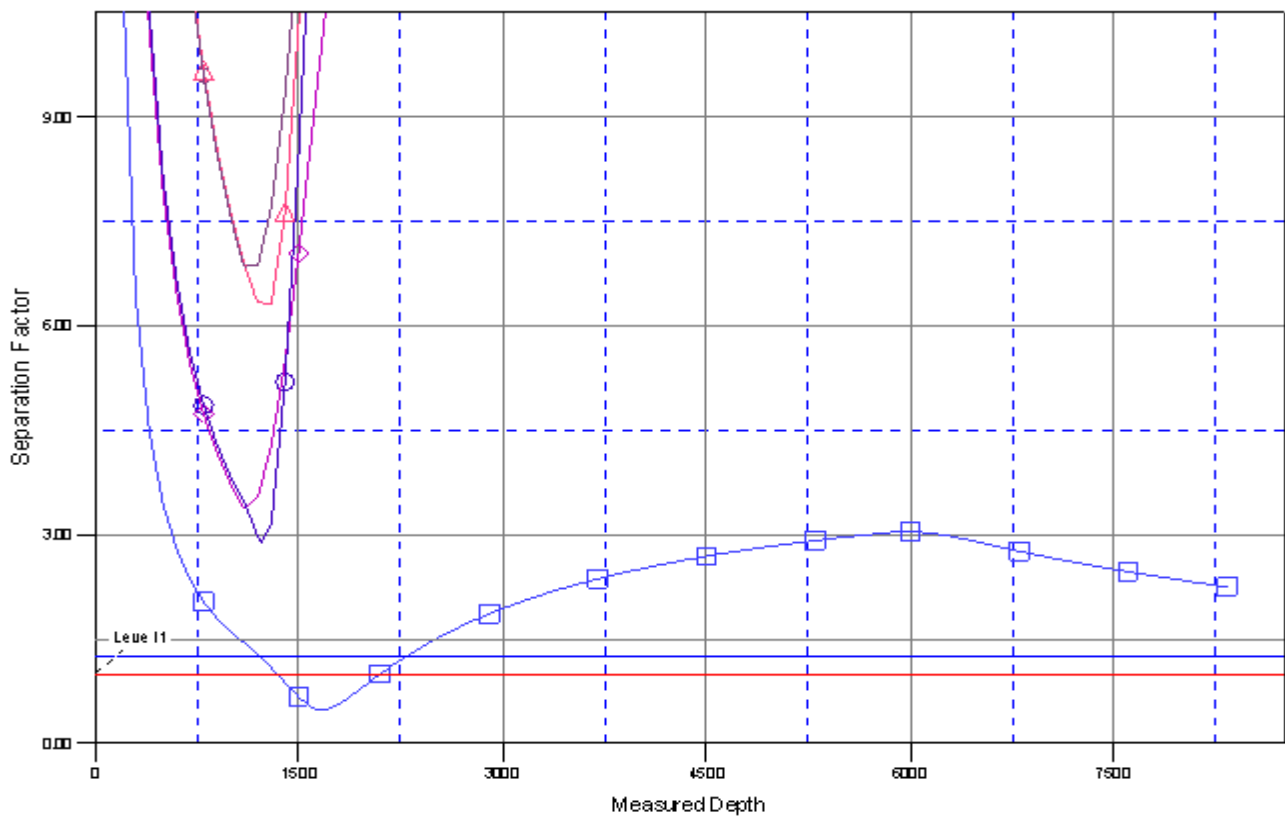
Reference Depths are relative to WELL @ 5023.00ft (Original Well Elev) Coordinates are relative to: P\_NRC 7-8  
Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Northern Zone  
Central Meridian is 105° 30' 0.000 W ° Grid Convergence at Surface is: 0.38°





<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well P_NRC 7-8
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	WELL @ 5023.00ft (Original Well Elev)
<b>Reference Site:</b>	WELD_NRC 5 PAD	<b>MD Reference:</b>	WELL @ 5023.00ft (Original Well Elev)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	P_NRC 7-8	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	P_NRC 7-8	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	PLAN #1 1-5-10 RHS	<b>Offset TVD Reference:</b>	Offset Datum


Reference Depths are relative to WELL @ 5023.00ft (Original Well Elev) Coordinates are relative to: P\_NRC 7-8  
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°

## Separation Factor Plot



### LEGEND

 P\_NRC 408, P\_NRC 40-8, PLAN#1 1-5-10 RHS \0  
 P\_NRC 418, P\_NRC 41-8, PLAN#1 1-5-10 RHS \0

 ROCKY MOUNTAIN