



US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_NRC 20-9 PAD

P_NRC 10-9

P_NRC 10-9

Plan: PLAN #1 1-6-10 RHS

Standard Planning Report

04 February, 2010



P_NRC 10-9
COLORADO NORTHERN ZONE - 83
SECTION 9 T1N R67W
1150 FSL 1504 FEL
LAT: 40° 3' 41.137 N
LONG: 104° 53' 30.077 W



Azimuths to True North
Magnetic North: 9.09°
Magnetic Field
Strength: 53088.9nT
Dip Angle: 66.80°
Date: 1/6/2010
Model: IGRF2010

WELL DETAILS: P_NRC 10-9

+N/-S	+E/-W	Northing	Ground Level: Easting	5024.00 Latitude	Longitude	Slot
0.00	0.00	1265807.16	3170265.95	40° 3' 41.137 N	104° 53' 30.077 W	

FORMATION TOP DETAILS

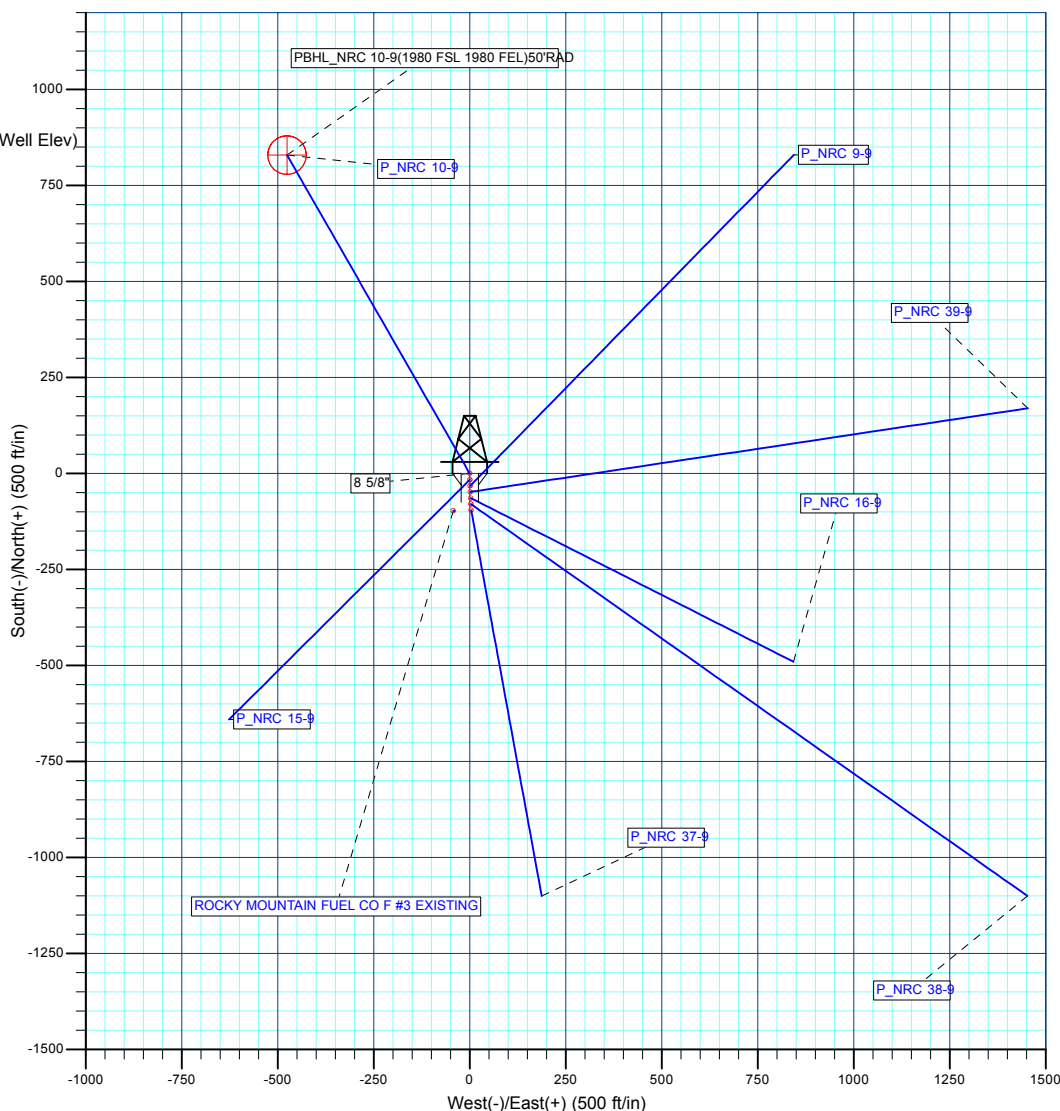
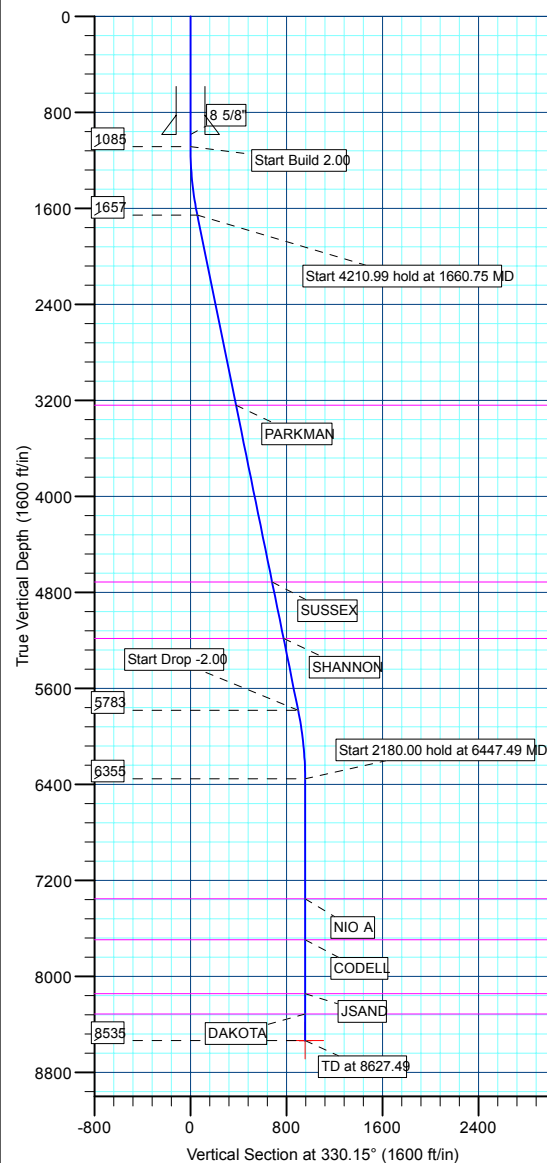
TVDPath	MDPath	Formation
3240.00	3276.39	PARKMAN
4715.00	4781.69	SUSSEX
5185.00	5261.34	SHANNON
7355.00	7447.49	NIO A
7695.00	7787.49	CODELL
8145.00	8237.49	JSAND
8315.00	8407.49	DAKOTA

CASING DETAILS

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



KB ELEV:WELL @ 5039.00ft (Original Well Elev)
GRD ELEV: 5024.00



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

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
PBHL	8535.00	829.11	-475.82	1266632.98	3169784.46	40° 3' 49.331 N	104° 53' 36.197 W	Circle (Radius: 50.00)

Plan: PLAN #1 1-6-10 RHS (P_NRC 10-9/P_NRC 10-9)

Created By: Robert H. Scott

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_NRC 10-9
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 5039.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 5039.00ft (Original Well Elev)
Site:	WELD_NRC 20-9 PAD	North Reference:	True
Well:	P_NRC 10-9	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_NRC 10-9		
Design:	PLAN #1 1-6-10 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 20-9 PAD, SECTION 9 T1N R67W											
Site Position:						Northing:			1,265,759.10 ft			Latitude:			40° 3' 40.662 N		
From:			Lat/Long			Easting:			3,170,268.24 ft			Longitude:			104° 53' 30.052 W		
Position Uncertainty:			0.00 ft			Slot Radius:			in			Grid Convergence:			0.39 °		

Well	P_NRC 10-9					
Well Position	+N/-S	48.07 ft	Northing:	1,265,807.16 ft	Latitude:	40° 3' 41.137 N
	+E/-W	-1.96 ft	Easting:	3,170,265.95 ft	Longitude:	104° 53' 30.077 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	5,024.00 ft

Wellbore	P_NRC 10-9				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	1/6/2010	9.09	66.80	53,089

Design	PLAN #1 1-6-10 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	330.15

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	
1,660.75	11.52	330.15	1,656.88	50.01	-28.70	2.00	2.00	0.00	330.15	
5,871.74	11.52	330.15	5,783.12	779.10	-447.12	0.00	0.00	0.00	0.00	
6,447.49	0.00	0.00	6,355.00	829.11	-475.82	2.00	-2.00	0.00	180.00	
8,627.49	0.00	0.00	8,535.00	829.11	-475.82	0.00	0.00	0.00	0.00	PBHL_NRC 10-9(1'

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_NRC 10-9
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 5039.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 5039.00ft (Original Well Elev)
Site:	WELD_NRC 20-9 PAD	North Reference:	True
Well:	P_NRC 10-9	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_NRC 10-9		
Design:	PLAN #1 1-6-10 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	330.15	1,100.00	0.03	-0.02	0.04	2.00	2.00	0.00
1,200.00	2.30	330.15	1,199.97	2.00	-1.15	2.31	2.00	2.00	0.00
1,300.00	4.30	330.15	1,299.80	6.99	-4.01	8.06	2.00	2.00	0.00
1,400.00	6.30	330.15	1,399.37	15.01	-8.61	17.30	2.00	2.00	0.00
1,500.00	8.30	330.15	1,498.55	26.03	-14.94	30.01	2.00	2.00	0.00
1,600.00	10.30	330.15	1,597.23	40.04	-22.98	46.17	2.00	2.00	0.00
Start 4210.99 hold at 1660.75 MD									
1,660.75	11.52	330.15	1,656.88	50.01	-28.70	57.66	2.00	2.00	0.00
1,700.00	11.52	330.15	1,695.34	56.81	-32.60	65.50	0.00	0.00	0.00
1,800.00	11.52	330.15	1,793.33	74.12	-42.54	85.46	0.00	0.00	0.00
1,900.00	11.52	330.15	1,891.32	91.43	-52.47	105.42	0.00	0.00	0.00
2,000.00	11.52	330.15	1,989.30	108.75	-62.41	125.38	0.00	0.00	0.00
2,100.00	11.52	330.15	2,087.29	126.06	-72.35	145.35	0.00	0.00	0.00
2,200.00	11.52	330.15	2,185.28	143.38	-82.28	165.31	0.00	0.00	0.00
2,300.00	11.52	330.15	2,283.27	160.69	-92.22	185.27	0.00	0.00	0.00
2,400.00	11.52	330.15	2,381.25	178.00	-102.15	205.23	0.00	0.00	0.00
2,500.00	11.52	330.15	2,479.24	195.32	-112.09	225.20	0.00	0.00	0.00
2,600.00	11.52	330.15	2,577.23	212.63	-122.03	245.16	0.00	0.00	0.00
2,700.00	11.52	330.15	2,675.21	229.95	-131.96	265.12	0.00	0.00	0.00
2,800.00	11.52	330.15	2,773.20	247.26	-141.90	285.08	0.00	0.00	0.00
2,900.00	11.52	330.15	2,871.19	264.57	-151.84	305.05	0.00	0.00	0.00
3,000.00	11.52	330.15	2,969.18	281.89	-161.77	325.01	0.00	0.00	0.00
3,100.00	11.52	330.15	3,067.16	299.20	-171.71	344.97	0.00	0.00	0.00
3,200.00	11.52	330.15	3,165.15	316.52	-181.64	364.93	0.00	0.00	0.00
PARKMAN									
3,276.39	11.52	330.15	3,240.00	329.74	-189.23	380.18	0.00	0.00	0.00
3,300.00	11.52	330.15	3,263.14	333.83	-191.58	384.90	0.00	0.00	0.00
3,400.00	11.52	330.15	3,361.12	351.14	-201.52	404.86	0.00	0.00	0.00
3,500.00	11.52	330.15	3,459.11	368.46	-211.45	424.82	0.00	0.00	0.00
3,600.00	11.52	330.15	3,557.10	385.77	-221.39	444.78	0.00	0.00	0.00
3,700.00	11.52	330.15	3,655.09	403.09	-231.33	464.75	0.00	0.00	0.00
3,800.00	11.52	330.15	3,753.07	420.40	-241.26	484.71	0.00	0.00	0.00
3,900.00	11.52	330.15	3,851.06	437.71	-251.20	504.67	0.00	0.00	0.00
4,000.00	11.52	330.15	3,949.05	455.03	-261.13	524.63	0.00	0.00	0.00
4,100.00	11.52	330.15	4,047.04	472.34	-271.07	544.60	0.00	0.00	0.00
4,200.00	11.52	330.15	4,145.02	489.66	-281.01	564.56	0.00	0.00	0.00
4,300.00	11.52	330.15	4,243.01	506.97	-290.94	584.52	0.00	0.00	0.00
4,400.00	11.52	330.15	4,341.00	524.28	-300.88	604.49	0.00	0.00	0.00
4,500.00	11.52	330.15	4,438.98	541.60	-310.82	624.45	0.00	0.00	0.00
4,600.00	11.52	330.15	4,536.97	558.91	-320.75	644.41	0.00	0.00	0.00
4,700.00	11.52	330.15	4,634.96	576.23	-330.69	664.37	0.00	0.00	0.00
SUSSEX									
4,781.69	11.52	330.15	4,715.00	590.37	-338.81	680.68	0.00	0.00	0.00
4,800.00	11.52	330.15	4,732.95	593.54	-340.63	684.34	0.00	0.00	0.00
4,900.00	11.52	330.15	4,830.93	610.85	-350.56	704.30	0.00	0.00	0.00
5,000.00	11.52	330.15	4,928.92	628.17	-360.50	724.26	0.00	0.00	0.00
5,100.00	11.52	330.15	5,026.91	645.48	-370.43	744.22	0.00	0.00	0.00
5,200.00	11.52	330.15	5,124.89	662.80	-380.37	764.19	0.00	0.00	0.00
SHANNON									
5,261.34	11.52	330.15	5,185.00	673.42	-386.47	776.43	0.00	0.00	0.00
5,300.00	11.52	330.15	5,222.88	680.11	-390.31	784.15	0.00	0.00	0.00

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_NRC 10-9
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 5039.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 5039.00ft (Original Well Elev)
Site:	WELD_NRC 20-9 PAD	North Reference:	True
Well:	P_NRC 10-9	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_NRC 10-9		
Design:	PLAN #1 1-6-10 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	11.52	330.15	5,320.87	697.42	-400.24	804.11	0.00	0.00	0.00
5,500.00	11.52	330.15	5,418.86	714.74	-410.18	824.07	0.00	0.00	0.00
5,600.00	11.52	330.15	5,516.84	732.05	-420.12	844.04	0.00	0.00	0.00
5,700.00	11.52	330.15	5,614.83	749.37	-430.05	864.00	0.00	0.00	0.00
5,800.00	11.52	330.15	5,712.82	766.68	-439.99	883.96	0.00	0.00	0.00
Start Drop -2.00									
5,871.74	11.52	330.15	5,783.12	779.10	-447.12	898.28	0.00	0.00	0.00
5,900.00	10.95	330.15	5,810.83	783.87	-449.86	903.79	2.00	-2.00	0.00
6,000.00	8.95	330.15	5,909.32	798.86	-458.46	921.06	2.00	-2.00	0.00
6,100.00	6.95	330.15	6,008.36	810.86	-465.34	934.89	2.00	-2.00	0.00
6,200.00	4.95	330.15	6,107.81	819.85	-470.50	945.26	2.00	-2.00	0.00
6,300.00	2.95	330.15	6,207.57	825.82	-473.93	952.15	2.00	-2.00	0.00
6,400.00	0.95	330.15	6,307.51	828.77	-475.62	955.55	2.00	-2.00	0.00
Start 2180.00 hold at 6447.49 MD									
6,447.49	0.00	0.00	6,355.00	829.11	-475.82	955.94	2.00	-2.00	62.85
6,500.00	0.00	0.00	6,407.51	829.11	-475.82	955.94	0.00	0.00	0.00
6,600.00	0.00	0.00	6,507.51	829.11	-475.82	955.94	0.00	0.00	0.00
6,700.00	0.00	0.00	6,607.51	829.11	-475.82	955.94	0.00	0.00	0.00
6,800.00	0.00	0.00	6,707.51	829.11	-475.82	955.94	0.00	0.00	0.00
6,900.00	0.00	0.00	6,807.51	829.11	-475.82	955.94	0.00	0.00	0.00
7,000.00	0.00	0.00	6,907.51	829.11	-475.82	955.94	0.00	0.00	0.00
7,100.00	0.00	0.00	7,007.51	829.11	-475.82	955.94	0.00	0.00	0.00
7,200.00	0.00	0.00	7,107.51	829.11	-475.82	955.94	0.00	0.00	0.00
7,300.00	0.00	0.00	7,207.51	829.11	-475.82	955.94	0.00	0.00	0.00
7,400.00	0.00	0.00	7,307.51	829.11	-475.82	955.94	0.00	0.00	0.00
NIO A									
7,447.49	0.00	0.00	7,355.00	829.11	-475.82	955.94	0.00	0.00	0.00
7,500.00	0.00	0.00	7,407.51	829.11	-475.82	955.94	0.00	0.00	0.00
7,600.00	0.00	0.00	7,507.51	829.11	-475.82	955.94	0.00	0.00	0.00
7,700.00	0.00	0.00	7,607.51	829.11	-475.82	955.94	0.00	0.00	0.00
CODELL									
7,787.49	0.00	0.00	7,695.00	829.11	-475.82	955.94	0.00	0.00	0.00
7,800.00	0.00	0.00	7,707.51	829.11	-475.82	955.94	0.00	0.00	0.00
7,900.00	0.00	0.00	7,807.51	829.11	-475.82	955.94	0.00	0.00	0.00
8,000.00	0.00	0.00	7,907.51	829.11	-475.82	955.94	0.00	0.00	0.00
8,100.00	0.00	0.00	8,007.51	829.11	-475.82	955.94	0.00	0.00	0.00
8,200.00	0.00	0.00	8,107.51	829.11	-475.82	955.94	0.00	0.00	0.00
JSAND									
8,237.49	0.00	0.00	8,145.00	829.11	-475.82	955.94	0.00	0.00	0.00
8,300.00	0.00	0.00	8,207.51	829.11	-475.82	955.94	0.00	0.00	0.00
8,400.00	0.00	0.00	8,307.51	829.11	-475.82	955.94	0.00	0.00	0.00
DAKOTA									
8,407.49	0.00	0.00	8,315.00	829.11	-475.82	955.94	0.00	0.00	0.00
8,500.00	0.00	0.00	8,407.51	829.11	-475.82	955.94	0.00	0.00	0.00
8,600.00	0.00	0.00	8,507.51	829.11	-475.82	955.94	0.00	0.00	0.00
PBHL_NRC 10-9(1980 FSL 1980 FEL)50'RAD									
8,627.49	0.00	0.00	8,535.00	829.11	-475.82	955.94	0.00	0.00	0.00

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_NRC 10-9
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 5039.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 5039.00ft (Original Well Elev)
Site:	WELD_NRC 20-9 PAD	North Reference:	True
Well:	P_NRC 10-9	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_NRC 10-9		
Design:	PLAN #1 1-6-10 RHS		

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
PBHL_NRC 10-9(198 - plan hits target center - Circle (radius 50.00)	0.00	0.00	8,535.00	829.11	-475.82	1,266,632.98	3,169,784.46	40° 3' 49.331 N	104° 53' 36.197 W

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

Formations						
Measured Depth	Vertical Depth				Dip	Dip Direction
(ft)	(ft)		Name	Lithology	(°)	(°)
3,276.39	3,240.00		PARKMAN			
4,781.69	4,715.00		SUSSEX			
5,261.34	5,185.00		SHANNON			
7,447.49	7,355.00		NIO A			
7,787.49	7,695.00		CODELL			
8,237.49	8,145.00		JSAND			
8,407.49	8,315.00		DAKOTA		0.00	

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates			
(ft)	(ft)	+N/-S	+E/-W	Comment	
(ft)	(ft)	(ft)	(ft)		
1,085.00	1,085.00	0.00	0.00	Start Build 2.00	
1,660.75	1,656.88	50.01	-28.70	Start 4210.99 hold at 1660.75 MD	
5,871.74	5,783.12	779.10	-447.12	Start Drop -2.00	
6,447.49	6,355.00	829.11	-475.82	Start 2180.00 hold at 6447.49 MD	
8,627.49	8,535.00	829.11	-475.82	TD at 8627.49	



US ROCKIES REGION PLANNING

**COLORADO NORTHERN ZONE - 83
WELD_NRC 20-9 PAD
P_NRC 10-9**

**P_NRC 10-9
PLAN #1 1-6-10 RHS**

Anticollision Report

04 February, 2010



Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_NRC 10-9
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5039.00ft (Original Well Elev)
Reference Site:	WELD_NRC 20-9 PAD	MD Reference:	WELL @ 5039.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_NRC 10-9	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_NRC 10-9	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-6-10 RHS	Offset TVD Reference:	Offset Datum

Reference	PLAN #1 1-6-10 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 2/4/2010			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	8,627.49	PLAN #1 1-6-10 RHS (P_NRC 10-9)	MWD	MWD - Standard

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
WELD_NRC 20-9 PAD						
P_NRC 15-9 - P_NRC 15-9 - PLAN #1 1-6-10 RHS	1,085.00	1,085.00	16.04	11.42	3.473	CC
P_NRC 15-9 - P_NRC 15-9 - PLAN #1 1-6-10 RHS	1,100.00	1,099.94	16.10	11.42	3.439	ES, SF
P_NRC 16-9 - P_NRC 16-9 - PLAN #1 1-6-10 RHS	1,085.00	1,085.00	64.17	59.55	13.893	CC
P_NRC 16-9 - P_NRC 16-9 - PLAN #1 1-6-10 RHS	1,100.00	1,099.84	64.22	59.54	13.716	ES
P_NRC 16-9 - P_NRC 16-9 - PLAN #1 1-6-10 RHS	1,200.00	1,198.58	67.41	62.32	13.254	SF
P_NRC 37-9 - P_NRC 37-9 - PLAN #1 1-6-10 RHS	1,085.00	1,085.00	95.89	91.27	20.761	CC, ES
P_NRC 37-9 - P_NRC 37-9 - PLAN #1 1-6-10 RHS	1,200.00	1,196.14	100.16	95.09	19.775	SF
P_NRC 38-9 - P_NRC 38-9 - PLAN #1 1-6-10 RHS	1,085.00	1,085.00	79.85	75.23	17.288	CC
P_NRC 38-9 - P_NRC 38-9 - PLAN #1 1-6-10 RHS	1,100.00	1,099.75	79.91	75.23	17.067	ES
P_NRC 38-9 - P_NRC 38-9 - PLAN #1 1-6-10 RHS	1,200.00	1,197.91	83.33	78.25	16.401	SF
P_NRC 39-9 - P_NRC 39-9 - PLAN #1 1-6-10 RHS	1,085.00	1,085.00	48.11	4.70	1.108	Level 2, CC
P_NRC 39-9 - P_NRC 39-9 - PLAN #1 1-6-10 RHS	1,100.00	1,100.03	48.14	4.35	1.099	Level 2, ES, SF
P_NRC 9-9 - P_NRC 9-9 - PLAN #1 1-6-10 RHS	1,085.00	1,085.00	32.09	27.47	6.948	CC
P_NRC 9-9 - P_NRC 9-9 - PLAN #1 1-6-10 RHS	1,100.00	1,100.12	32.10	27.41	6.850	ES
P_NRC 9-9 - P_NRC 9-9 - PLAN #1 1-6-10 RHS	1,300.00	1,301.21	35.06	29.50	6.306	SF
ROCKY MOUNTAIN FUEL CO F #3 EXISTING - ROCKY	1,085.00	1,066.00	106.16	101.57	23.113	CC
ROCKY MOUNTAIN FUEL CO F #3 EXISTING - ROCKY	1,100.00	1,081.00	106.18	101.52	22.785	ES
ROCKY MOUNTAIN FUEL CO F #3 EXISTING - ROCKY	1,400.00	1,380.37	117.28	111.29	19.563	SF

Offset Design WELD_NRC 20-9 PAD - P_NRC 15-9 - P_NRC 15-9 - PLAN #1 1-6-10 RHS											
Survey Program: 0-MWD											
Reference Offset Semi Major Axis											
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)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)
0.00	0.00	0.00	0.00	0.00	0.00	178.00	-16.03	0.56	16.04		
100.00	100.00	100.00	100.00	0.10	0.10	178.00	-16.03	0.56	16.04	15.85	0.19
200.00	200.00	200.00	200.00	0.32	0.32	178.00	-16.03	0.56	16.04	15.40	0.64
300.00	300.00	300.00	300.00	0.55	0.55	178.00	-16.03	0.56	16.04	14.95	1.09
400.00	400.00	400.00	400.00	0.77	0.77	178.00	-16.03	0.56	16.04	14.50	1.54
500.00	500.00	500.00	500.00	0.99	0.99	178.00	-16.03	0.56	16.04	14.05	1.99
600.00	600.00	600.00	600.00	1.22	1.22	178.00	-16.03	0.56	16.04	13.60	2.44
700.00	700.00	700.00	700.00	1.44	1.44	178.00	-16.03	0.56	16.04	13.15	2.89
800.00	800.00	800.00	800.00	1.67	1.67	178.00	-16.03	0.56	16.04	12.70	3.34
900.00	900.00	900.00	900.00	1.89	1.89	178.00	-16.03	0.56	16.04	12.25	3.79
											Separation Factor
											Warning

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 10-9
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5039.00ft (Original Well Elev)
Reference Site:	WELD_NRC 20-9 PAD	MD Reference:	WELL @ 5039.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_NRC 10-9	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_NRC 10-9	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-6-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_NRC 20-9 PAD - P_NRC 15-9 - P_NRC 15-9 - PLAN #1 1-6-10 RHS												Offset Site Error:	0.00 ft
Survey Program: 0-MWMD												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
1,000.00	1,000.00	1,000.00	1,000.00	2.12	2.12	178.00	-16.03	0.56	16.04	11.81	4.24	3.786	
1,085.00	1,085.00	1,085.00	1,085.00	2.31	2.31	178.00	-16.03	0.56	16.04	11.42	4.62	3.473 CC	
1,100.00	1,100.00	1,099.94	1,099.94	2.34	2.34	-152.11	-16.06	0.53	16.10	11.42	4.68	3.439 ES, SF	
1,200.00	1,199.97	1,199.45	1,199.42	2.56	2.52	-150.36	-17.65	-1.06	19.65	14.57	5.08	3.869	
1,300.00	1,299.80	1,298.43	1,298.23	2.79	2.71	-147.83	-21.64	-5.07	28.70	23.21	5.48	5.233	
1,400.00	1,399.37	1,396.45	1,395.84	3.02	2.91	-145.95	-27.96	-11.43	43.21	37.31	5.89	7.331	
1,500.00	1,498.55	1,493.09	1,491.71	3.27	3.13	-144.71	-36.50	-20.00	63.11	56.79	6.32	9.990	
1,600.00	1,597.23	1,587.94	1,585.36	3.54	3.37	-143.85	-47.10	-30.65	88.28	81.52	6.76	13.067	
1,660.75	1,656.88	1,645.38	1,641.84	3.73	3.54	-143.50	-54.47	-38.05	105.97	98.94	7.03	15.066	
1,700.00	1,695.34	1,682.80	1,678.63	3.85	3.65	-143.53	-59.33	-42.93	117.78	110.56	7.23	16.292	
1,800.00	1,793.33	1,778.16	1,772.36	4.19	3.96	-143.58	-71.71	-55.37	147.89	140.15	7.74	19.097	
1,900.00	1,891.32	1,873.52	1,866.09	4.54	4.27	-143.62	-84.10	-67.81	178.00	169.72	8.28	21.507	
2,000.00	1,989.30	1,968.88	1,959.82	4.90	4.61	-143.65	-96.48	-80.25	208.10	199.28	8.82	23.587	
2,100.00	2,087.29	2,064.24	2,053.55	5.27	4.95	-143.67	-108.86	-92.70	238.21	228.83	9.38	25.392	
2,200.00	2,185.28	2,159.61	2,147.28	5.66	5.30	-143.68	-121.25	-105.14	268.31	258.37	9.95	26.967	
2,300.00	2,283.27	2,254.97	2,241.01	6.05	5.66	-143.69	-133.63	-117.58	298.42	287.89	10.53	28.349	
2,400.00	2,381.25	2,350.33	2,334.74	6.44	6.02	-143.70	-146.02	-130.02	328.53	317.42	11.11	29.569	
2,500.00	2,479.24	2,445.69	2,428.47	6.85	6.39	-143.71	-158.40	-142.46	358.63	346.93	11.70	30.651	
2,600.00	2,577.23	2,541.05	2,522.20	7.25	6.76	-143.72	-170.79	-154.90	388.74	376.44	12.30	31.616	
2,700.00	2,675.21	2,636.41	2,615.93	7.66	7.13	-143.73	-183.17	-167.34	418.85	405.95	12.90	32.481	
2,800.00	2,773.20	2,731.77	2,709.67	8.07	7.51	-143.73	-195.56	-179.78	448.95	435.45	13.50	33.259	
2,900.00	2,871.19	2,827.13	2,803.40	8.48	7.89	-143.74	-207.94	-192.22	479.06	464.95	14.11	33.963	
3,000.00	2,969.18	2,922.49	2,897.13	8.90	8.28	-143.74	-220.32	-204.66	509.16	494.45	14.72	34.601	
3,100.00	3,067.16	3,017.85	2,990.86	9.32	8.66	-143.74	-232.71	-217.10	539.27	523.94	15.33	35.183	
3,200.00	3,165.15	3,113.21	3,084.59	9.73	9.05	-143.75	-245.09	-229.54	569.38	553.43	15.94	35.716	
3,300.00	3,263.14	3,208.57	3,178.32	10.16	9.43	-143.75	-257.48	-241.99	599.48	582.92	16.56	36.204	
3,400.00	3,361.12	3,303.93	3,272.05	10.58	9.82	-143.75	-269.86	-254.43	629.59	612.41	17.18	36.653	
3,500.00	3,459.11	3,399.29	3,365.78	11.00	10.21	-143.75	-282.25	-266.87	659.69	641.90	17.80	37.068	
3,600.00	3,557.10	3,494.65	3,459.51	11.42	10.60	-143.76	-294.63	-279.31	689.80	671.38	18.42	37.451	
3,700.00	3,655.09	3,590.01	3,553.24	11.85	10.99	-143.76	-307.02	-291.75	719.91	700.87	19.04	37.808	
3,800.00	3,753.07	3,685.37	3,646.97	12.27	11.39	-143.76	-319.40	-304.19	750.01	730.35	19.67	38.139	
3,900.00	3,851.06	3,780.73	3,740.70	12.70	11.78	-143.76	-331.78	-316.63	780.12	759.83	20.29	38.447	
4,000.00	3,949.05	3,876.09	3,834.44	13.12	12.17	-143.76	-344.17	-329.07	810.23	789.31	20.92	38.736	
4,100.00	4,047.04	3,971.45	3,928.17	13.55	12.57	-143.76	-356.55	-341.51	840.33	818.79	21.54	39.006	
4,200.00	4,145.02	4,066.81	4,021.90	13.98	12.96	-143.77	-368.94	-353.95	870.44	848.27	22.17	39.259	
4,300.00	4,243.01	4,162.18	4,115.63	14.41	13.36	-143.77	-381.32	-366.39	900.54	877.74	22.80	39.498	
4,400.00	4,341.00	4,257.54	4,209.36	14.83	13.75	-143.77	-393.71	-378.83	930.65	907.22	23.43	39.722	
4,500.00	4,438.98	4,352.90	4,303.09	15.26	14.15	-143.77	-406.09	-391.27	960.76	936.70	24.06	39.933	
4,600.00	4,536.97	4,448.26	4,396.82	15.69	14.54	-143.77	-418.47	-403.72	990.86	966.17	24.69	40.133	
4,700.00	4,634.96	4,543.62	4,490.55	16.12	14.94	-143.77	-430.86	-416.16	1,020.97	995.65	25.32	40.321	
4,800.00	4,732.95	4,638.98	4,584.28	16.55	15.34	-143.77	-443.24	-428.60	1,051.07	1,025.12	25.95	40.500	
4,900.00	4,830.93	4,734.34	4,678.01	16.98	15.74	-143.77	-455.63	-441.04	1,081.18	1,054.60	26.58	40.670	
5,000.00	4,928.92	4,829.70	4,771.74	17.41	16.13	-143.77	-468.01	-453.48	1,111.29	1,084.07	27.22	40.831	
5,100.00	5,026.91	4,925.06	4,865.48	17.84	16.53	-143.78	-480.40	-465.92	1,141.39	1,113.54	27.85	40.984	
5,200.00	5,124.89	5,020.42	4,959.21	18.27	16.93	-143.78	-492.78	-478.36	1,171.50	1,143.02	28.48	41.130	
5,300.00	5,222.88	5,115.78	5,052.94	18.70	17.33	-143.78	-505.17	-490.80	1,201.61	1,172.49	29.12	41.269	
5,400.00	5,320.87	5,211.14	5,146.67	19.14	17.72	-143.78	-517.55	-503.24	1,231.71	1,201.96	29.75	41.402	
5,500.00	5,418.86	5,306.50	5,240.40	19.57	18.12	-143.78	-529.93	-515.68	1,261.82	1,231.43	30.38	41.528	
5,600.00	5,516.84	5,401.86	5,334.13	20.00	18.52	-143.78	-542.32	-528.12	1,291.92	1,260.91	31.02	41.649	
5,700.00	5,614.83	5,497.22	5,427.86	20.43	18.92	-143.78	-554.70	-540.56	1,322.03	1,290.38	31.65	41.765	
5,800.00	5,712.82	5,592.58	5,521.59	20.86	19.32	-143.78	-567.09	-553.01	1,352.14	1,319.85	32.29	41.876	
5,871.74	5,783.12	5,660.99	5,588.83	21.17	19.61	-143.78	-575.97	-561.93	1,373.74	1,340.99	32.74	41.953	

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 10-9
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5039.00ft (Original Well Elev)
Reference Site:	WELD_NRC 20-9 PAD	MD Reference:	WELL @ 5039.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_NRC 10-9	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_NRC 10-9	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-6-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_NRC 20-9 PAD - P_NRC 15-9 - P_NRC 15-9 - PLAN #1 1-6-10 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
5,900.00	5,810.83	5,687.98	5,615.35	21.28	19.72	-143.88	-579.48	-565.45	1,382.14	1,349.19	32.95	41.948	
6,000.00	5,909.32	5,783.96	5,709.70	21.59	20.12	-144.16	-591.94	-577.97	1,410.13	1,376.52	33.61	41.957	
6,100.00	6,008.36	5,880.64	5,804.73	21.86	20.53	-144.31	-604.50	-590.59	1,435.40	1,401.17	34.23	41.933	
6,200.00	6,107.81	6,032.36	5,954.42	22.09	20.97	-144.29	-621.87	-608.04	1,456.36	1,421.49	34.87	41.762	
6,300.00	6,207.57	6,195.97	6,117.05	22.28	21.34	-144.27	-634.33	-620.56	1,470.29	1,434.85	35.44	41.491	
6,400.00	6,307.51	6,361.76	6,282.60	22.43	21.61	-144.27	-640.26	-626.51	1,476.97	1,441.08	35.89	41.150	
6,447.49	6,355.00	6,434.16	6,355.00	22.49	21.70	-174.13	-640.74	-627.00	1,477.61	1,441.54	36.07	40.967	
6,500.00	6,407.51	6,486.67	6,407.51	22.55	21.77	-174.13	-640.74	-627.00	1,477.61	1,441.38	36.23	40.786	
6,600.00	6,507.51	6,586.67	6,507.51	22.69	21.89	-174.13	-640.74	-627.00	1,477.61	1,441.06	36.55	40.428	
6,700.00	6,607.51	6,686.67	6,607.51	22.82	22.02	-174.13	-640.74	-627.00	1,477.61	1,440.74	36.87	40.073	
6,800.00	6,707.51	6,786.67	6,707.51	22.96	22.14	-174.13	-640.74	-627.00	1,477.61	1,440.41	37.20	39.721	
6,900.00	6,807.51	6,886.67	6,807.51	23.10	22.27	-174.13	-640.74	-627.00	1,477.61	1,440.08	37.53	39.373	
7,000.00	6,907.51	6,986.67	6,907.51	23.24	22.40	-174.13	-640.74	-627.00	1,477.61	1,439.75	37.86	39.029	
7,100.00	7,007.51	7,086.67	7,007.51	23.39	22.53	-174.13	-640.74	-627.00	1,477.61	1,439.42	38.19	38.688	
7,200.00	7,107.51	7,186.67	7,107.51	23.53	22.66	-174.13	-640.74	-627.00	1,477.61	1,439.08	38.53	38.350	
7,300.00	7,207.51	7,286.67	7,207.51	23.68	22.79	-174.13	-640.74	-627.00	1,477.61	1,438.74	38.87	38.017	
7,400.00	7,307.51	7,386.67	7,307.51	23.82	22.92	-174.13	-640.74	-627.00	1,477.61	1,438.40	39.21	37.686	
7,500.00	7,407.51	7,486.67	7,407.51	23.97	23.06	-174.13	-640.74	-627.00	1,477.61	1,438.06	39.55	37.360	
7,600.00	7,507.51	7,586.67	7,507.51	24.12	23.20	-174.13	-640.74	-627.00	1,477.61	1,437.71	39.90	37.037	
7,700.00	7,607.51	7,686.67	7,607.51	24.27	23.33	-174.13	-640.74	-627.00	1,477.61	1,437.37	40.24	36.718	
7,800.00	7,707.51	7,786.67	7,707.51	24.42	23.47	-174.13	-640.74	-627.00	1,477.61	1,437.02	40.59	36.402	
7,900.00	7,807.51	7,886.67	7,807.51	24.57	23.61	-174.13	-640.74	-627.00	1,477.61	1,436.67	40.94	36.090	
8,000.00	7,907.51	7,986.67	7,907.51	24.72	23.76	-174.13	-640.74	-627.00	1,477.61	1,436.31	41.29	35.782	
8,100.00	8,007.51	8,086.67	8,007.51	24.88	23.90	-174.13	-640.74	-627.00	1,477.61	1,435.96	41.65	35.477	
8,200.00	8,107.51	8,186.67	8,107.51	25.03	24.04	-174.13	-640.74	-627.00	1,477.61	1,435.60	42.01	35.176	
8,300.00	8,207.51	8,286.67	8,207.51	25.19	24.19	-174.13	-640.74	-627.00	1,477.61	1,435.24	42.36	34.879	
8,400.00	8,307.51	8,386.67	8,307.51	25.35	24.34	-174.13	-640.74	-627.00	1,477.61	1,434.88	42.72	34.585	
8,500.00	8,407.51	8,486.67	8,407.51	25.51	24.49	-174.13	-640.74	-627.00	1,477.61	1,434.52	43.09	34.295	
8,600.00	8,507.51	8,586.67	8,507.51	25.67	24.64	-174.13	-640.74	-627.00	1,477.61	1,434.16	43.45	34.008	
8,608.09	8,515.60	8,594.76	8,515.60	25.68	24.65	-174.13	-640.74	-627.00	1,477.61	1,434.13	43.48	33.985	
8,627.49	8,535.00	8,604.16	8,525.00	25.71	24.66	-174.13	-640.74	-627.00	1,477.64	1,434.11	43.53	33.944	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_NRC 10-9
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5039.00ft (Original Well Elev)
Reference Site:	WELD_NRC 20-9 PAD	MD Reference:	WELL @ 5039.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_NRC 10-9	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_NRC 10-9	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-6-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_NRC 20-9 PAD - P_NRC 16-9 - P_NRC 16-9 - PLAN #1 1-6-10 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
0.00	0.00	0.00	0.00	0.00	0.00	177.50	-64.11	2.80	64.17				
100.00	100.00	100.00	100.00	0.10	0.10	177.50	-64.11	2.80	64.17	63.98	0.19	335.876	
200.00	200.00	200.00	200.00	0.32	0.32	177.50	-64.11	2.80	64.17	63.53	0.64	100.174	
300.00	300.00	300.00	300.00	0.55	0.55	177.50	-64.11	2.80	64.17	63.08	1.09	58.865	
400.00	400.00	400.00	400.00	0.77	0.77	177.50	-64.11	2.80	64.17	62.63	1.54	41.678	
500.00	500.00	500.00	500.00	0.99	0.99	177.50	-64.11	2.80	64.17	62.18	1.99	32.259	
600.00	600.00	600.00	600.00	1.22	1.22	177.50	-64.11	2.80	64.17	61.73	2.44	26.313	
700.00	700.00	700.00	700.00	1.44	1.44	177.50	-64.11	2.80	64.17	61.28	2.89	22.218	
800.00	800.00	800.00	800.00	1.67	1.67	177.50	-64.11	2.80	64.17	60.83	3.34	19.225	
900.00	900.00	900.00	900.00	1.89	1.89	177.50	-64.11	2.80	64.17	60.38	3.79	16.943	
1,000.00	1,000.00	1,000.00	1,000.00	2.12	2.12	177.50	-64.11	2.80	64.17	59.93	4.24	15.146	
1,085.00	1,085.00	1,085.00	1,085.00	2.31	2.31	177.50	-64.11	2.80	64.17	59.55	4.62	13.893 CC	
1,100.00	1,100.00	1,099.84	1,099.84	2.34	2.34	-152.69	-64.13	2.83	64.22	59.54	4.68	13.716 ES	
1,200.00	1,199.97	1,198.58	1,198.55	2.56	2.52	-155.18	-65.13	4.81	67.41	62.32	5.09	13.254 SF	
1,300.00	1,299.80	1,296.58	1,296.39	2.79	2.72	-160.49	-67.64	9.76	75.97	70.48	5.49	13.835	
1,400.00	1,399.37	1,393.21	1,392.61	3.02	2.92	-166.79	-71.60	17.57	90.73	84.83	5.90	15.389	
1,500.00	1,498.55	1,487.86	1,486.54	3.27	3.15	-172.61	-76.90	28.02	112.18	105.88	6.29	17.821	
1,600.00	1,597.23	1,580.01	1,577.55	3.54	3.39	-177.38	-83.41	40.85	140.36	133.67	6.69	20.992	
1,660.75	1,656.88	1,634.56	1,631.20	3.73	3.55	-179.75	-87.88	49.67	160.67	153.75	6.92	23.223	
1,700.00	1,695.34	1,670.12	1,666.08	3.85	3.66	178.89	-91.02	55.86	174.74	167.65	7.09	24.651	
1,800.00	1,793.33	1,762.91	1,757.04	4.19	3.97	176.16	-99.28	72.15	211.04	203.51	7.53	28.009	
1,900.00	1,891.32	1,855.69	1,848.01	4.54	4.29	174.23	-107.54	88.44	247.64	239.65	7.99	31.001	
2,000.00	1,989.30	1,948.48	1,938.98	4.90	4.63	172.79	-115.81	104.73	284.42	275.97	8.45	33.664	
2,100.00	2,087.29	2,041.26	2,029.95	5.27	4.97	171.68	-124.07	121.02	321.31	312.40	8.92	36.038	
2,200.00	2,185.28	2,134.04	2,120.92	5.66	5.33	170.80	-132.33	137.31	358.30	348.91	9.39	38.161	
2,300.00	2,283.27	2,226.83	2,211.88	6.05	5.69	170.08	-140.59	153.60	395.34	385.47	9.87	40.066	
2,400.00	2,381.25	2,319.61	2,302.85	6.44	6.06	169.49	-148.85	169.89	432.42	422.07	10.35	41.781	
2,500.00	2,479.24	2,412.39	2,393.82	6.85	6.44	168.99	-157.12	186.18	469.54	458.71	10.84	43.332	
2,600.00	2,577.23	2,505.18	2,484.79	7.25	6.82	168.56	-165.38	202.47	506.69	495.36	11.33	44.739	
2,700.00	2,675.21	2,597.96	2,575.76	7.66	7.20	168.19	-173.64	218.76	543.85	532.04	11.82	46.019	
2,800.00	2,773.20	2,690.74	2,666.72	8.07	7.59	167.87	-181.90	235.05	581.04	568.72	12.31	47.188	
2,900.00	2,871.19	2,783.53	2,757.69	8.48	7.97	167.59	-190.16	251.34	618.24	605.42	12.81	48.258	
3,000.00	2,969.18	2,876.31	2,848.66	8.90	8.36	167.34	-198.43	267.63	655.44	642.13	13.31	49.242	
3,100.00	3,067.16	2,969.10	2,939.63	9.32	8.76	167.11	-206.69	283.92	692.66	678.85	13.81	50.150	
3,200.00	3,165.15	3,061.88	3,030.60	9.73	9.15	166.91	-214.95	300.20	729.89	715.57	14.32	50.988	
3,300.00	3,263.14	3,154.66	3,121.56	10.16	9.54	166.73	-223.21	316.49	767.12	752.30	14.82	51.764	
3,400.00	3,361.12	3,247.45	3,212.53	10.58	9.94	166.57	-231.47	332.78	804.36	789.04	15.33	52.486	
3,500.00	3,459.11	3,340.23	3,303.50	11.00	10.34	166.42	-239.74	349.07	841.61	825.78	15.83	53.157	
3,600.00	3,557.10	3,433.01	3,394.47	11.42	10.74	166.28	-248.00	365.36	878.86	862.52	16.34	53.784	
3,700.00	3,655.09	3,525.80	3,485.44	11.85	11.14	166.15	-256.26	381.65	916.11	899.26	16.85	54.370	
3,800.00	3,753.07	3,618.58	3,576.41	12.27	11.54	166.04	-264.52	397.94	953.37	936.01	17.36	54.918	
3,900.00	3,851.06	3,711.36	3,667.37	12.70	11.94	165.93	-272.78	414.23	990.63	972.76	17.87	55.433	
4,000.00	3,949.05	3,804.15	3,758.34	13.12	12.34	165.83	-281.04	430.52	1,027.89	1,009.51	18.38	55.917	
4,100.00	4,047.04	3,896.93	3,849.31	13.55	12.74	165.74	-289.31	446.81	1,065.16	1,046.26	18.89	56.373	
4,200.00	4,145.02	3,989.72	3,940.28	13.98	13.14	165.65	-297.57	463.10	1,102.42	1,083.02	19.41	56.803	
4,300.00	4,243.01	4,082.50	4,031.25	14.41	13.55	165.57	-305.83	479.39	1,139.69	1,119.77	19.92	57.210	
4,400.00	4,341.00	4,175.28	4,122.21	14.83	13.95	165.49	-314.09	495.68	1,176.97	1,156.53	20.44	57.594	
4,500.00	4,438.98	4,268.07	4,213.18	15.26	14.35	165.42	-322.35	511.97	1,214.24	1,193.29	20.95	57.958	
4,600.00	4,536.97	4,360.85	4,304.15	15.69	14.76	165.36	-330.62	528.26	1,251.51	1,230.05	21.47	58.304	
4,700.00	4,634.96	4,453.63	4,395.12	16.12	15.16	165.29	-338.88	544.55	1,288.79	1,266.81	21.98	58.632	
4,800.00	4,732.95	4,546.42	4,486.09	16.55	15.57	165.23	-347.14	560.84	1,326.07	1,303.57	22.50	58.944	
4,900.00	4,830.93	4,639.20	4,577.05	16.98	15.97	165.18	-355.40	577.13	1,363.35	1,340.33	23.01	59.241	

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 10-9
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5039.00ft (Original Well Elev)
Reference Site:	WELD_NRC 20-9 PAD	MD Reference:	WELL @ 5039.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_NRC 10-9	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_NRC 10-9	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-6-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_NRC 20-9 PAD - P_NRC 16-9 - P_NRC 16-9 - PLAN #1 1-6-10 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
5,000.00	4,928.92	4,731.98	4,668.02	17.41	16.38	165.12	-363.66	593.42	1,400.63	1,377.10	23.53	59.524	
5,100.00	5,026.91	4,824.77	4,758.99	17.84	16.79	165.07	-371.93	609.71	1,437.91	1,413.86	24.05	59.794	
5,200.00	5,124.89	4,917.55	4,849.96	18.27	17.19	165.02	-380.19	626.00	1,475.19	1,450.62	24.56	60.053	
5,300.00	5,222.88	5,010.34	4,940.93	18.70	17.60	164.98	-388.45	642.29	1,512.47	1,487.39	25.08	60.299	
5,400.00	5,320.87	5,103.12	5,031.89	19.14	18.00	164.94	-396.71	658.58	1,549.75	1,524.15	25.60	60.536	
5,500.00	5,418.86	5,195.90	5,122.86	19.57	18.41	164.89	-404.97	674.87	1,587.04	1,560.92	26.12	60.762	
5,600.00	5,516.84	5,288.69	5,213.83	20.00	18.82	164.86	-413.24	691.16	1,624.32	1,597.69	26.64	60.979	
5,700.00	5,614.83	5,381.47	5,304.80	20.43	19.22	164.82	-421.50	707.45	1,661.61	1,634.45	27.16	61.187	
5,800.00	5,712.82	5,474.25	5,395.77	20.86	19.63	164.78	-429.76	723.74	1,698.89	1,671.22	27.68	61.387	
5,871.74	5,783.12	5,540.82	5,461.03	21.17	19.92	164.76	-435.69	735.42	1,725.64	1,697.60	28.05	61.525	
5,900.00	5,810.83	5,567.09	5,486.78	21.28	20.04	164.80	-438.03	740.03	1,736.06	1,707.82	28.24	61.486	
6,000.00	5,909.32	5,660.81	5,578.67	21.59	20.45	164.94	-446.37	756.49	1,770.88	1,742.03	28.85	61.378	
6,100.00	6,008.36	5,755.63	5,671.63	21.86	20.87	165.03	-454.81	773.14	1,802.53	1,773.10	29.43	61.242	
6,200.00	6,107.81	5,851.43	5,765.56	22.09	21.29	165.07	-463.35	789.96	1,830.97	1,801.00	29.98	61.083	
6,300.00	6,207.57	6,074.06	5,985.11	22.28	21.97	164.94	-479.91	822.61	1,853.49	1,822.77	30.72	60.338	
6,400.00	6,307.51	6,333.37	6,243.47	22.43	22.48	164.87	-489.44	841.41	1,864.50	1,833.09	31.41	59.364	
6,447.49	6,355.00	6,444.92	6,355.00	22.49	22.63	135.01	-490.29	843.08	1,865.56	1,833.89	31.67	58.898	
6,500.00	6,407.51	6,497.43	6,407.51	22.55	22.70	135.01	-490.29	843.08	1,865.56	1,833.70	31.86	58.563	
6,600.00	6,507.51	6,597.43	6,507.51	22.69	22.82	135.01	-490.29	843.08	1,865.56	1,833.34	32.22	57.905	
6,700.00	6,607.51	6,697.43	6,607.51	22.82	22.95	135.01	-490.29	843.08	1,865.56	1,832.98	32.58	57.258	
6,800.00	6,707.51	6,797.43	6,707.51	22.96	23.08	135.01	-490.29	843.08	1,865.56	1,832.61	32.95	56.621	
6,900.00	6,807.51	6,897.43	6,807.51	23.10	23.20	135.01	-490.29	843.08	1,865.56	1,832.24	33.32	55.995	
7,000.00	6,907.51	6,997.43	6,907.51	23.24	23.34	135.01	-490.29	843.08	1,865.56	1,831.87	33.69	55.379	
7,100.00	7,007.51	7,097.43	7,007.51	23.39	23.47	135.01	-490.29	843.08	1,865.56	1,831.50	34.06	54.774	
7,200.00	7,107.51	7,197.43	7,107.51	23.53	23.60	135.01	-490.29	843.08	1,865.56	1,831.13	34.43	54.179	
7,300.00	7,207.51	7,297.43	7,207.51	23.68	23.74	135.01	-490.29	843.08	1,865.56	1,830.75	34.81	53.594	
7,400.00	7,307.51	7,397.43	7,307.51	23.82	23.87	135.01	-490.29	843.08	1,865.56	1,830.37	35.19	53.019	
7,500.00	7,407.51	7,497.43	7,407.51	23.97	24.01	135.01	-490.29	843.08	1,865.56	1,829.99	35.57	52.453	
7,600.00	7,507.51	7,597.43	7,507.51	24.12	24.15	135.01	-490.29	843.08	1,865.56	1,829.61	35.95	51.897	
7,700.00	7,607.51	7,697.43	7,607.51	24.27	24.29	135.01	-490.29	843.08	1,865.56	1,829.23	36.33	51.351	
7,800.00	7,707.51	7,797.43	7,707.51	24.42	24.43	135.01	-490.29	843.08	1,865.56	1,828.85	36.71	50.814	
7,900.00	7,807.51	7,897.43	7,807.51	24.57	24.57	135.01	-490.29	843.08	1,865.56	1,828.46	37.10	50.286	
8,000.00	7,907.51	7,997.43	7,907.51	24.72	24.72	135.01	-490.29	843.08	1,865.56	1,828.07	37.49	49.767	
8,100.00	8,007.51	8,097.43	8,007.51	24.88	24.86	135.01	-490.29	843.08	1,865.56	1,827.69	37.87	49.257	
8,200.00	8,107.51	8,197.43	8,107.51	25.03	25.01	135.01	-490.29	843.08	1,865.56	1,827.30	38.26	48.755	
8,300.00	8,207.51	8,297.43	8,207.51	25.19	25.16	135.01	-490.29	843.08	1,865.56	1,826.91	38.65	48.262	
8,400.00	8,307.51	8,397.43	8,307.51	25.35	25.31	135.01	-490.29	843.08	1,865.56	1,826.51	39.05	47.778	
8,500.00	8,407.51	8,497.43	8,407.51	25.51	25.45	135.01	-490.29	843.08	1,865.56	1,826.12	39.44	47.301	
8,566.50	8,474.00	8,563.93	8,474.00	25.61	25.56	135.01	-490.29	843.08	1,865.56	1,825.86	39.70	46.989	
8,600.00	8,507.51	8,596.92	8,507.00	25.67	25.61	135.01	-490.29	843.08	1,865.56	1,825.73	39.83	46.834	
8,627.49	8,535.00	8,596.92	8,507.00	25.71	25.61	135.01	-490.29	843.08	1,865.77	1,825.88	39.89	46.773	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_NRC 10-9
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5039.00ft (Original Well Elev)
Reference Site:	WELD_NRC 20-9 PAD	MD Reference:	WELL @ 5039.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_NRC 10-9	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_NRC 10-9	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-6-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_NRC 20-9 PAD - P_NRC 37-9 - P_NRC 37-9 - PLAN #1 1-6-10 RHS												Offset Site Error:	0.00 ft
Survey Program: 0-MWD												Offset Well Error:	0.00 ft
Reference	Offset	Semi Major Axis		Distance								Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
0.00	0.00	0.00	0.00	0.00	0.00	177.66	-95.81	3.92	95.89				
100.00	100.00	100.00	100.00	0.10	0.10	177.66	-95.81	3.92	95.89	95.70	0.19	501.924	
200.00	200.00	200.00	200.00	0.32	0.32	177.66	-95.81	3.92	95.89	95.25	0.64	149.697	
300.00	300.00	300.00	300.00	0.55	0.55	177.66	-95.81	3.92	95.89	94.80	1.09	87.966	
400.00	400.00	400.00	400.00	0.77	0.77	177.66	-95.81	3.92	95.89	94.35	1.54	62.283	
500.00	500.00	500.00	500.00	0.99	0.99	177.66	-95.81	3.92	95.89	93.90	1.99	48.207	
600.00	600.00	600.00	600.00	1.22	1.22	177.66	-95.81	3.92	95.89	93.45	2.44	39.321	
700.00	700.00	700.00	700.00	1.44	1.44	177.66	-95.81	3.92	95.89	93.01	2.89	33.201	
800.00	800.00	800.00	800.00	1.67	1.67	177.66	-95.81	3.92	95.89	92.56	3.34	28.730	
900.00	900.00	900.00	900.00	1.89	1.89	177.66	-95.81	3.92	95.89	92.11	3.79	25.320	
1,000.00	1,000.00	1,000.00	1,000.00	2.12	2.12	177.66	-95.81	3.92	95.89	91.66	4.24	22.633	
1,085.00	1,085.00	1,085.00	1,085.00	2.31	2.31	177.66	-95.81	3.92	95.89	91.27	4.62	20.761 CC, ES	
1,100.00	1,100.00	1,099.52	1,099.52	2.34	2.34	-152.50	-95.85	3.93	95.97	91.29	4.68	20.502	
1,200.00	1,199.97	1,196.14	1,196.12	2.56	2.50	-153.21	-97.93	4.31	100.16	95.09	5.06	19.775 SF	
1,300.00	1,299.80	1,292.01	1,291.83	2.79	2.68	-154.77	-103.17	5.26	110.84	105.39	5.45	20.333	
1,400.00	1,399.37	1,386.49	1,385.94	3.02	2.86	-156.70	-111.41	6.77	128.05	122.21	5.84	21.940	
1,500.00	1,498.55	1,478.99	1,477.75	3.27	3.06	-158.60	-122.42	8.78	151.76	145.54	6.22	24.406	
1,600.00	1,597.23	1,568.96	1,566.66	3.54	3.28	-160.27	-135.93	11.25	181.86	175.26	6.60	27.574	
1,660.75	1,656.88	1,622.17	1,619.03	3.73	3.43	-161.14	-145.21	12.95	203.17	196.35	6.82	29.785	
1,700.00	1,695.34	1,656.01	1,652.23	3.85	3.53	-161.71	-151.61	14.12	217.89	210.91	6.98	31.204	
1,800.00	1,793.33	1,744.67	1,738.94	4.19	3.81	-162.91	-169.81	17.44	257.02	249.62	7.40	34.710	
1,900.00	1,891.32	1,836.44	1,828.63	4.54	4.13	-163.82	-188.95	20.94	296.54	288.70	7.84	37.815	
2,000.00	1,989.30	1,928.22	1,918.32	4.90	4.46	-164.52	-208.08	24.44	336.10	327.82	8.29	40.560	
2,100.00	2,087.29	2,019.99	2,008.00	5.27	4.81	-165.07	-227.22	27.94	375.70	366.96	8.74	42.995	
2,200.00	2,185.28	2,111.76	2,097.69	5.66	5.17	-165.52	-246.36	31.43	415.32	406.13	9.20	45.164	
2,300.00	2,283.27	2,203.53	2,187.38	6.05	5.54	-165.89	-265.49	34.93	454.96	445.30	9.66	47.105	
2,400.00	2,381.25	2,295.30	2,277.06	6.44	5.92	-166.20	-284.63	38.43	494.62	484.49	10.13	48.847	
2,500.00	2,479.24	2,387.08	2,366.75	6.85	6.31	-166.46	-303.76	41.93	534.28	523.68	10.60	50.418	
2,600.00	2,577.23	2,478.85	2,456.44	7.25	6.70	-166.69	-322.90	45.42	573.95	562.88	11.07	51.840	
2,700.00	2,675.21	2,570.62	2,546.12	7.66	7.09	-166.88	-342.03	48.92	613.63	602.08	11.55	53.132	
2,800.00	2,773.20	2,662.39	2,635.81	8.07	7.49	-167.06	-361.17	52.42	653.31	641.28	12.03	54.311	
2,900.00	2,871.19	2,754.16	2,725.50	8.48	7.89	-167.21	-380.30	55.92	693.00	680.49	12.51	55.389	
3,000.00	2,969.18	2,845.94	2,815.18	8.90	8.30	-167.35	-399.44	59.41	732.69	719.70	13.00	56.379	
3,100.00	3,067.16	2,937.71	2,904.87	9.32	8.70	-167.47	-418.57	62.91	772.39	758.91	13.48	57.290	
3,200.00	3,165.15	3,029.48	2,994.56	9.73	9.11	-167.58	-437.71	66.41	812.09	798.12	13.97	58.130	
3,300.00	3,263.14	3,121.25	3,084.24	10.16	9.52	-167.68	-456.84	69.91	851.79	837.33	14.46	58.909	
3,400.00	3,361.12	3,213.02	3,173.93	10.58	9.93	-167.78	-475.98	73.40	891.49	876.54	14.95	59.630	
3,500.00	3,459.11	3,304.80	3,263.62	11.00	10.34	-167.86	-495.11	76.90	931.19	915.75	15.44	60.302	
3,600.00	3,557.10	3,396.57	3,353.30	11.42	10.76	-167.94	-514.25	80.40	970.90	954.96	15.94	60.927	
3,700.00	3,655.09	3,488.34	3,442.99	11.85	11.17	-168.01	-533.38	83.89	1,010.61	994.18	16.43	61.512	
3,800.00	3,753.07	3,580.11	3,532.68	12.27	11.59	-168.07	-552.52	87.39	1,050.31	1,033.39	16.92	62.059	
3,900.00	3,851.06	3,671.88	3,622.36	12.70	12.00	-168.13	-571.66	90.89	1,090.02	1,072.60	17.42	62.571	
4,000.00	3,949.05	3,763.66	3,712.05	13.12	12.42	-168.19	-590.79	94.39	1,129.73	1,111.82	17.92	63.053	
4,100.00	4,047.04	3,855.43	3,801.74	13.55	12.84	-168.24	-609.93	97.88	1,169.45	1,151.03	18.41	63.507	
4,200.00	4,145.02	3,947.20	3,891.42	13.98	13.26	-168.29	-629.06	101.38	1,209.16	1,190.24	18.91	63.934	
4,300.00	4,243.01	4,038.97	3,981.11	14.41	13.67	-168.34	-648.20	104.88	1,248.87	1,229.46	19.41	64.338	
4,400.00	4,341.00	4,130.74	4,070.80	14.83	14.09	-168.38	-667.33	108.38	1,288.58	1,268.67	19.91	64.719	
4,500.00	4,438.98	4,222.51	4,160.48	15.26	14.51	-168.42	-686.47	111.87	1,328.30	1,307.89	20.41	65.080	
4,600.00	4,536.97	4,314.29	4,250.17	15.69	14.93	-168.46	-705.60	115.37	1,368.01	1,347.10	20.91	65.423	
4,700.00	4,634.96	4,406.06	4,339.86	16.12	15.36	-168.50	-724.74	118.87	1,407.73	1,386.31	21.41	65.748	
4,800.00	4,732.95	4,497.83	4,429.54	16.55	15.78	-168.53	-743.87	122.37	1,447.44	1,425.53	21.91	66.057	
4,900.00	4,830.93	4,589.60	4,519.23	16.98	16.20	-168.56	-763.01	125.86	1,487.16	1,464.74	22.41	66.351	

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 10-9
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5039.00ft (Original Well Elev)
Reference Site:	WELD_NRC 20-9 PAD	MD Reference:	WELL @ 5039.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_NRC 10-9	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_NRC 10-9	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-6-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_NRC 20-9 PAD - P_NRC 37-9 - P_NRC 37-9 - PLAN #1 1-6-10 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
5,000.00	4,928.92	4,681.37	4,608.92	17.41	16.62	-168.59	-782.14	129.36	1,526.87	1,503.96	22.92	66.631	
5,100.00	5,026.91	4,773.15	4,698.60	17.84	17.04	-168.62	-801.28	132.86	1,566.59	1,543.17	23.42	66.898	
5,200.00	5,124.89	4,864.92	4,788.29	18.27	17.46	-168.65	-820.41	136.36	1,606.31	1,582.39	23.92	67.153	
5,300.00	5,222.88	4,956.69	4,877.98	18.70	17.89	-168.68	-839.55	139.85	1,646.02	1,621.60	24.42	67.397	
5,400.00	5,320.87	5,048.46	4,967.66	19.14	18.31	-168.70	-858.68	143.35	1,685.74	1,660.81	24.93	67.630	
5,500.00	5,418.86	5,140.23	5,057.35	19.57	18.73	-168.73	-877.82	146.85	1,725.46	1,700.03	25.43	67.853	
5,600.00	5,516.84	5,232.01	5,147.04	20.00	19.15	-168.75	-896.95	150.35	1,765.18	1,739.24	25.93	68.067	
5,700.00	5,614.83	5,323.78	5,236.72	20.43	19.58	-168.77	-916.09	153.84	1,804.89	1,778.46	26.44	68.272	
5,800.00	5,712.82	5,415.55	5,326.41	20.86	20.00	-168.79	-935.23	157.34	1,844.61	1,817.67	26.94	68.469	
5,871.74	5,783.12	5,481.39	5,390.75	21.17	20.30	-168.81	-948.95	159.85	1,873.11	1,845.80	27.30	68.606	
5,900.00	5,810.83	5,507.38	5,416.15	21.28	20.42	-168.86	-954.37	160.84	1,884.20	1,856.72	27.48	68.554	
6,000.00	5,909.32	5,600.18	5,506.84	21.59	20.85	-169.01	-973.72	164.38	1,921.45	1,893.36	28.08	68.420	
6,100.00	6,008.36	5,694.20	5,598.73	21.86	21.29	-169.13	-993.33	167.96	1,955.49	1,926.84	28.65	68.257	
6,200.00	6,107.81	5,789.32	5,691.69	22.09	21.73	-169.22	-1,013.16	171.59	1,986.29	1,957.11	29.18	68.068	
6,300.00	6,207.57	5,885.44	5,785.62	22.28	22.17	-169.27	-1,033.20	175.25	2,013.81	1,984.13	29.68	67.858	
6,400.00	6,307.51	6,174.80	6,070.77	22.43	23.07	-169.18	-1,080.87	183.96	2,034.17	2,003.64	30.53	66.636	
6,447.49	6,355.00	6,333.86	6,229.17	22.49	23.39	161.00	-1,094.97	186.54	2,038.78	2,007.87	30.91	65.949	
6,500.00	6,407.51	6,511.14	6,406.33	22.55	23.64	161.03	-1,100.47	187.54	2,040.42	2,009.11	31.32	65.155	
6,600.00	6,507.51	6,612.32	6,507.51	22.69	23.76	161.03	-1,100.47	187.54	2,040.42	2,008.73	31.69	64.390	
6,700.00	6,607.51	6,712.32	6,607.51	22.82	23.87	161.03	-1,100.47	187.54	2,040.42	2,008.37	32.05	63.666	
6,800.00	6,707.51	6,812.32	6,707.51	22.96	23.98	161.03	-1,100.47	187.54	2,040.42	2,008.01	32.41	62.954	
6,900.00	6,807.51	6,912.32	6,807.51	23.10	24.08	161.03	-1,100.47	187.54	2,040.42	2,007.65	32.78	62.254	
7,000.00	6,907.51	7,012.32	6,907.51	23.24	24.20	161.03	-1,100.47	187.54	2,040.42	2,007.28	33.14	61.566	
7,100.00	7,007.51	7,112.32	7,007.51	23.39	24.31	161.03	-1,100.47	187.54	2,040.42	2,006.91	33.51	60.888	
7,200.00	7,107.51	7,212.32	7,107.51	23.53	24.42	161.03	-1,100.47	187.54	2,040.42	2,006.54	33.88	60.222	
7,300.00	7,207.51	7,312.32	7,207.51	23.68	24.54	161.03	-1,100.47	187.54	2,040.42	2,006.17	34.25	59.568	
7,400.00	7,307.51	7,412.32	7,307.51	23.82	24.65	161.03	-1,100.47	187.54	2,040.42	2,005.79	34.63	58.924	
7,500.00	7,407.51	7,512.32	7,407.51	23.97	24.77	161.03	-1,100.47	187.54	2,040.42	2,005.42	35.00	58.291	
7,600.00	7,507.51	7,612.32	7,507.51	24.12	24.89	161.03	-1,100.47	187.54	2,040.42	2,005.04	35.38	57.669	
7,700.00	7,607.51	7,712.32	7,607.51	24.27	25.01	161.03	-1,100.47	187.54	2,040.42	2,004.66	35.76	57.057	
7,800.00	7,707.51	7,812.32	7,707.51	24.42	25.14	161.03	-1,100.47	187.54	2,040.42	2,004.28	36.14	56.456	
7,900.00	7,807.51	7,912.32	7,807.51	24.57	25.26	161.03	-1,100.47	187.54	2,040.42	2,003.90	36.52	55.864	
8,000.00	7,907.51	8,012.32	7,907.51	24.72	25.39	161.03	-1,100.47	187.54	2,040.42	2,003.51	36.91	55.283	
8,100.00	8,007.51	8,112.32	8,007.51	24.88	25.51	161.03	-1,100.47	187.54	2,040.42	2,003.13	37.29	54.712	
8,200.00	8,107.51	8,212.32	8,107.51	25.03	25.64	161.03	-1,100.47	187.54	2,040.42	2,002.74	37.68	54.150	
8,300.00	8,207.51	8,312.32	8,207.51	25.19	25.77	161.03	-1,100.47	187.54	2,040.42	2,002.35	38.07	53.598	
8,400.00	8,307.51	8,412.32	8,307.51	25.35	25.90	161.03	-1,100.47	187.54	2,040.42	2,001.96	38.46	53.055	
8,500.00	8,407.51	8,437.81	8,333.00	25.51	25.94	161.03	-1,100.47	187.54	2,041.78	2,003.07	38.71	52.743	
8,600.00	8,507.51	8,437.81	8,333.00	25.67	25.94	161.03	-1,100.47	187.54	2,047.87	2,008.95	38.92	52.620	
8,627.49	8,535.00	8,437.81	8,333.00	25.71	25.94	161.03	-1,100.47	187.54	2,050.40	2,011.42	38.97	52.608	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_NRC 10-9
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5039.00ft (Original Well Elev)
Reference Site:	WELD_NRC 20-9 PAD	MD Reference:	WELL @ 5039.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_NRC 10-9	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_NRC 10-9	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-6-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_NRC 20-9 PAD - P_NRC 38-9 - P_NRC 38-9 - PLAN #1 1-6-10 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)	Semi Major Axis 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	177.59	-79.78	3.36	79.85				
100.00	100.00	100.00	100.00	0.10	0.10	177.59	-79.78	3.36	79.85	79.66	0.19	417.959	
200.00	200.00	200.00	200.00	0.32	0.32	177.59	-79.78	3.36	79.85	79.21	0.64	124.654	
300.00	300.00	300.00	300.00	0.55	0.55	177.59	-79.78	3.36	79.85	78.76	1.09	73.251	
400.00	400.00	400.00	400.00	0.77	0.77	177.59	-79.78	3.36	79.85	78.31	1.54	51.864	
500.00	500.00	500.00	500.00	0.99	0.99	177.59	-79.78	3.36	79.85	77.86	1.99	40.143	
600.00	600.00	600.00	600.00	1.22	1.22	177.59	-79.78	3.36	79.85	77.41	2.44	32.743	
700.00	700.00	700.00	700.00	1.44	1.44	177.59	-79.78	3.36	79.85	76.96	2.89	27.647	
800.00	800.00	800.00	800.00	1.67	1.67	177.59	-79.78	3.36	79.85	76.51	3.34	23.924	
900.00	900.00	900.00	900.00	1.89	1.89	177.59	-79.78	3.36	79.85	76.06	3.79	21.084	
1,000.00	1,000.00	1,000.00	1,000.00	2.12	2.12	177.59	-79.78	3.36	79.85	75.61	4.24	18.847	
1,085.00	1,085.00	1,085.00	1,085.00	2.31	2.31	177.59	-79.78	3.36	79.85	75.23	4.62	17.288	CC
1,100.00	1,100.00	1,099.75	1,099.75	2.34	2.34	-152.59	-79.80	3.39	79.91	75.23	4.68	17.067	ES
1,200.00	1,199.97	1,197.91	1,197.88	2.56	2.52	-154.46	-81.06	5.18	83.33	78.25	5.08	16.401	SF
1,300.00	1,299.80	1,295.30	1,295.11	2.79	2.71	-158.54	-84.22	9.67	92.36	86.87	5.48	16.846	
1,400.00	1,399.37	1,391.29	1,390.70	3.02	2.91	-163.58	-89.20	16.73	107.59	101.71	5.88	18.290	
1,500.00	1,498.55	1,485.26	1,483.95	3.27	3.13	-168.49	-95.85	26.18	129.45	123.17	6.28	20.620	
1,600.00	1,597.23	1,576.66	1,574.25	3.54	3.37	-172.71	-104.01	37.77	158.02	151.35	6.67	23.707	
1,660.75	1,656.88	1,630.72	1,627.43	3.73	3.52	-174.87	-109.61	45.73	178.57	171.68	6.90	25.893	
1,700.00	1,695.34	1,665.10	1,661.14	3.85	3.63	-176.14	-113.48	51.22	192.85	185.79	7.06	27.309	
1,800.00	1,793.33	1,751.19	1,745.20	4.19	3.92	-178.86	-124.17	66.41	231.31	223.83	7.49	30.895	
1,900.00	1,891.32	1,835.05	1,826.51	4.54	4.25	178.96	-135.98	83.19	272.62	264.71	7.92	34.441	
2,000.00	1,989.30	1,916.64	1,905.01	4.90	4.61	177.19	-148.79	101.37	316.63	308.28	8.35	37.935	
2,100.00	2,087.29	2,000.00	1,984.52	5.27	5.01	175.63	-163.19	121.83	363.22	354.43	8.79	41.324	
2,200.00	2,185.28	2,072.87	2,053.41	5.66	5.42	174.45	-176.87	141.25	412.21	402.99	9.22	44.705	
2,300.00	2,283.27	2,147.49	2,123.30	6.05	5.87	173.38	-191.91	162.62	463.53	453.87	9.66	47.981	
2,400.00	2,381.25	2,219.78	2,190.33	6.44	6.35	172.45	-207.48	184.74	517.07	506.97	10.10	51.202	
2,500.00	2,479.24	2,293.04	2,257.58	6.85	6.86	171.60	-224.22	208.50	572.64	562.10	10.55	54.298	
2,600.00	2,577.23	2,375.43	2,333.00	7.25	7.48	170.78	-243.32	235.64	628.86	617.83	11.03	57.026	
2,700.00	2,675.21	2,457.83	2,408.42	7.66	8.11	170.10	-262.43	262.78	685.16	673.64	11.51	59.515	
2,800.00	2,773.20	2,540.23	2,483.83	8.07	8.74	169.53	-281.54	289.92	741.50	729.50	12.00	61.787	
2,900.00	2,871.19	2,622.63	2,559.25	8.48	9.39	169.03	-300.65	317.06	797.90	785.40	12.49	63.866	
3,000.00	2,969.18	2,705.03	2,634.67	8.90	10.04	168.60	-319.75	344.20	854.33	841.34	12.99	65.771	
3,100.00	3,067.16	2,787.43	2,710.09	9.32	10.70	168.22	-338.86	371.34	910.78	897.29	13.49	67.516	
3,200.00	3,165.15	2,869.82	2,785.51	9.73	11.37	167.89	-357.97	398.47	967.26	953.27	13.99	69.124	
3,300.00	3,263.14	2,952.22	2,860.92	10.16	12.04	167.59	-377.08	425.61	1,023.77	1,009.27	14.50	70.610	
3,400.00	3,361.12	3,034.62	2,936.34	10.58	12.71	167.33	-396.19	452.75	1,080.28	1,065.28	15.01	71.986	
3,500.00	3,459.11	3,117.02	3,011.76	11.00	13.39	167.09	-415.29	479.89	1,136.82	1,121.30	15.52	73.263	
3,600.00	3,557.10	3,199.42	3,087.18	11.42	14.06	166.87	-434.40	507.03	1,193.36	1,177.33	16.03	74.451	
3,700.00	3,655.09	3,281.82	3,162.59	11.85	14.75	166.68	-453.51	534.17	1,249.92	1,233.37	16.54	75.555	
3,800.00	3,753.07	3,364.21	3,238.01	12.27	15.43	166.50	-472.62	561.31	1,306.48	1,289.42	17.06	76.587	
3,900.00	3,851.06	3,446.61	3,313.43	12.70	16.11	166.33	-491.73	588.45	1,363.05	1,345.48	17.58	77.552	
4,000.00	3,949.05	3,529.01	3,388.85	13.12	16.80	166.18	-510.83	615.59	1,419.63	1,401.54	18.09	78.457	
4,100.00	4,047.04	3,611.41	3,464.26	13.55	17.48	166.04	-529.94	642.73	1,476.22	1,457.60	18.61	79.307	
4,200.00	4,145.02	3,693.81	3,539.68	13.98	18.17	165.91	-549.05	669.87	1,532.81	1,513.68	19.13	80.105	
4,300.00	4,243.01	3,776.21	3,615.10	14.41	18.86	165.79	-568.16	697.01	1,589.41	1,569.75	19.66	80.856	
4,400.00	4,341.00	3,858.60	3,690.52	14.83	19.55	165.67	-587.27	724.14	1,646.01	1,625.83	20.18	81.565	
4,500.00	4,438.98	3,941.00	3,765.94	15.26	20.24	165.57	-606.37	751.28	1,702.61	1,681.91	20.70	82.235	
4,600.00	4,536.97	4,023.40	3,841.35	15.69	20.93	165.47	-625.48	778.42	1,759.22	1,737.99	21.23	82.870	
4,700.00	4,634.96	4,105.80	3,916.77	16.12	21.62	165.38	-644.59	805.56	1,815.83	1,794.08	21.75	83.470	
4,800.00	4,732.95	4,188.20	3,992.19	16.55	22.31	165.29	-663.70	832.70	1,872.45	1,850.17	22.28	84.039	
4,900.00	4,830.93	4,270.60	4,067.61	16.98	23.01	165.21	-682.80	859.84	1,929.07	1,906.26	22.81	84.580	

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 10-9
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5039.00ft (Original Well Elev)
Reference Site:	WELD_NRC 20-9 PAD	MD Reference:	WELL @ 5039.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_NRC 10-9	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_NRC 10-9	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-6-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_NRC 20-9 PAD - P_NRC 38-9 - P_NRC 38-9 - PLAN #1 1-6-10 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
5,000.00	4,928.92	4,352.99	4,143.02	17.41	23.70	165.13	-701.91	886.98	1,985.69	1,962.35	23.34	85.094	
5,100.00	5,026.91	4,435.39	4,218.44	17.84	24.39	165.06	-721.02	914.12	2,042.31	2,018.44	23.86	85.583	
5,200.00	5,124.89	4,517.79	4,293.86	18.27	25.09	164.99	-740.13	941.26	2,098.93	2,074.54	24.39	86.050	
5,300.00	5,222.88	4,600.19	4,369.28	18.70	25.78	164.93	-759.24	968.40	2,155.56	2,130.64	24.92	86.495	
5,400.00	5,320.87	4,682.59	4,444.69	19.14	26.48	164.87	-778.34	995.54	2,212.19	2,186.74	25.45	86.919	
5,500.00	5,418.86	4,764.98	4,520.11	19.57	27.17	164.81	-797.45	1,022.68	2,268.82	2,242.84	25.98	87.325	
5,600.00	5,516.84	4,847.38	4,595.53	20.00	27.87	164.75	-816.56	1,049.81	2,325.45	2,298.94	26.51	87.713	
5,700.00	5,614.83	4,929.78	4,670.95	20.43	28.56	164.70	-835.67	1,076.95	2,382.08	2,355.04	27.04	88.085	
5,800.00	5,712.82	5,012.18	4,746.37	20.86	29.26	164.65	-854.78	1,104.09	2,438.72	2,411.14	27.57	88.441	
5,871.74	5,783.12	5,071.29	4,800.47	21.17	29.76	164.61	-868.48	1,123.56	2,479.35	2,451.39	27.96	88.687	
5,900.00	5,810.83	5,094.65	4,821.85	21.28	29.95	164.70	-873.90	1,131.26	2,495.24	2,467.06	28.18	88.551	
6,000.00	5,909.32	5,178.49	4,898.59	21.59	30.66	164.97	-893.34	1,158.87	2,549.68	2,520.76	28.93	88.147	
6,100.00	6,008.36	5,264.09	4,976.93	21.86	31.39	165.20	-913.19	1,187.06	2,601.27	2,571.63	29.64	87.757	
6,200.00	6,107.81	5,351.33	5,056.79	22.09	32.12	165.37	-933.42	1,215.80	2,649.95	2,619.62	30.33	87.384	
6,300.00	6,207.57	5,440.13	5,138.06	22.28	32.88	165.51	-954.02	1,245.04	2,695.65	2,664.68	30.97	87.030	
6,400.00	6,307.51	5,520.36	5,216.32	22.43	33.66	165.66	-974.72	1,274.15	2,740.01	2,709.14	31.66	86.678	
6,447.49	6,355.00	5,593.11	5,265.00	22.49	34.44	135.01	-1,100.06	1,452.47	2,727.64	2,693.36	34.28	79.565	
6,500.00	6,407.51	5,674.62	5,347.51	22.55	35.22	135.01	-1,100.06	1,452.47	2,727.64	2,693.19	34.45	79.182	
6,600.00	6,507.51	5,756.23	5,429.51	22.69	36.00	135.01	-1,100.06	1,452.47	2,727.64	2,692.86	34.78	78.422	
6,700.00	6,607.51	5,838.84	5,511.51	22.82	36.78	135.01	-1,100.06	1,452.47	2,727.64	2,692.52	35.12	77.671	
6,800.00	6,707.51	5,921.45	5,594.51	22.96	37.56	135.01	-1,100.06	1,452.47	2,727.64	2,692.18	35.46	76.928	
6,900.00	6,807.51	6,004.06	5,677.51	23.10	38.34	135.01	-1,100.06	1,452.47	2,727.64	2,691.84	35.80	76.195	
7,000.00	6,907.51	6,086.67	5,760.51	23.24	39.12	135.01	-1,100.06	1,452.47	2,727.64	2,691.50	36.14	75.471	
7,100.00	7,007.51	6,169.28	5,843.51	23.39	39.90	135.01	-1,100.06	1,452.47	2,727.64	2,691.15	36.49	74.756	
7,200.00	7,107.51	6,251.89	5,926.51	23.53	40.68	135.01	-1,100.06	1,452.47	2,727.64	2,690.80	36.83	74.051	
7,300.00	7,207.51	6,334.50	6,009.51	23.68	41.46	135.01	-1,100.06	1,452.47	2,727.64	2,690.45	37.18	73.354	
7,400.00	7,307.51	6,417.11	6,092.51	23.82	42.24	135.01	-1,100.06	1,452.47	2,727.64	2,690.10	37.54	72.666	
7,500.00	7,407.51	6,500.00	6,175.51	23.97	43.02	135.01	-1,100.06	1,452.47	2,727.64	2,689.75	37.89	71.987	
7,600.00	7,507.51	6,582.59	6,258.51	24.12	43.80	135.01	-1,100.06	1,452.47	2,727.64	2,689.39	38.25	71.318	
7,700.00	7,607.51	6,665.18	6,341.51	24.27	44.58	135.01	-1,100.06	1,452.47	2,727.64	2,689.04	38.60	70.657	
7,800.00	7,707.51	6,747.79	6,424.51	24.42	45.36	135.01	-1,100.06	1,452.47	2,727.64	2,688.68	38.96	70.005	
7,900.00	7,807.51	6,830.36	6,507.51	24.57	46.14	135.01	-1,100.06	1,452.47	2,727.64	2,688.31	39.33	69.361	
8,000.00	7,907.51	6,912.97	6,590.51	24.72	46.92	135.01	-1,100.06	1,452.47	2,727.64	2,687.95	39.69	68.727	
8,100.00	8,007.51	6,995.58	6,673.51	24.88	47.70	135.01	-1,100.06	1,452.47	2,727.64	2,687.59	40.05	68.101	
8,200.00	8,107.51	7,078.19	6,756.51	25.03	48.48	135.01	-1,100.06	1,452.47	2,727.64	2,687.22	40.42	67.484	
8,300.00	8,207.51	7,160.79	6,839.51	25.19	49.26	135.01	-1,100.06	1,452.47	2,727.64	2,686.85	40.79	66.875	
8,303.36	8,210.86	7,164.16	6,843.86	25.20	49.33	135.01	-1,100.06	1,452.47	2,727.64	2,686.84	40.80	66.855	
8,400.00	8,307.51	7,242.80	6,926.51	25.35	50.00	135.01	-1,100.06	1,452.47	2,728.43	2,687.38	41.05	66.471	
8,500.00	8,407.51	7,325.41	7,009.51	25.51	50.68	135.01	-1,100.06	1,452.47	2,732.66	2,691.41	41.25	66.247	
8,600.00	8,507.51	7,408.02	7,092.51	25.67	51.36	135.01	-1,100.06	1,452.47	2,740.53	2,699.08	41.45	66.112	
8,627.49	8,535.00	7,435.63	7,120.00	25.71	51.43	135.01	-1,100.06	1,452.47	2,743.33	2,701.82	41.51	66.091	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_NRC 10-9
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5039.00ft (Original Well Elev)
Reference Site:	WELD_NRC 20-9 PAD	MD Reference:	WELL @ 5039.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_NRC 10-9	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_NRC 10-9	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-6-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_NRC 20-9 PAD - P_NRC 39-9 - P_NRC 39-9 - PLAN #1 1-6-10 RHS												Offset Site Error:	0.00 ft
Survey Program: 0-UNKNOWN												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	177.67	-48.07	1.96	48.11				
100.00	100.00	100.00	100.00	0.10	1.70	177.67	-48.07	1.96	48.11	46.32	1.80	26.795	
200.00	200.00	200.00	200.00	0.32	5.70	177.67	-48.07	1.96	48.11	42.09	6.02	7.992	
300.00	300.00	300.00	300.00	0.55	9.70	177.67	-48.07	1.96	48.11	37.87	10.25	4.696	
400.00	400.00	400.00	400.00	0.77	13.70	177.67	-48.07	1.96	48.11	33.64	14.47	3.325	
500.00	500.00	500.00	500.00	0.99	17.70	177.67	-48.07	1.96	48.11	29.42	18.69	2.574	
600.00	600.00	600.00	600.00	1.22	21.70	177.67	-48.07	1.96	48.11	25.19	22.92	2.099	
700.00	700.00	700.00	700.00	1.44	25.70	177.67	-48.07	1.96	48.11	20.97	27.14	1.772	
800.00	800.00	800.00	800.00	1.67	29.70	177.67	-48.07	1.96	48.11	16.74	31.37	1.534	
900.00	900.00	900.00	900.00	1.89	33.70	177.67	-48.07	1.96	48.11	12.52	35.59	1.352	Level 3
1,000.00	1,000.00	1,000.00	1,000.00	2.12	37.70	177.67	-48.07	1.96	48.11	8.29	39.82	1.208	Level 2
1,085.00	1,085.00	1,085.00	1,085.00	2.31	41.10	177.67	-48.07	1.96	48.11	4.70	43.41	1.108	Level 2, CC
1,100.00	1,100.00	1,100.03	1,100.03	2.34	41.45	-152.55	-48.07	2.00	48.14	4.35	43.79	1.099	Level 2, ES, SF
1,200.00	1,199.97	1,200.08	1,200.05	2.56	42.25	-156.32	-47.73	4.24	50.02	5.22	44.80	1.117	Level 2
1,300.00	1,299.80	1,299.57	1,299.37	2.79	43.42	-164.58	-46.88	9.90	55.64	9.52	46.12	1.206	Level 2
1,400.00	1,399.37	1,397.99	1,397.37	3.02	44.91	-174.50	-45.54	18.85	66.51	18.79	47.72	1.394	Level 3
1,500.00	1,498.55	1,494.91	1,493.51	3.27	46.71	176.47	-43.73	30.91	83.62	34.07	49.55	1.688	
1,600.00	1,597.23	1,589.87	1,587.27	3.54	48.76	169.34	-41.49	45.84	107.16	55.60	51.56	2.078	
1,660.75	1,656.88	1,646.45	1,642.87	3.73	50.15	165.92	-39.93	56.19	124.47	71.63	52.85	2.355	
1,700.00	1,695.34	1,682.58	1,678.26	3.85	51.06	164.06	-38.86	63.37	136.58	82.78	53.80	2.539	
1,800.00	1,793.33	1,773.43	1,768.82	4.19	53.57	159.99	-35.86	83.37	169.26	112.90	56.36	3.003	
1,900.00	1,891.32	1,862.44	1,852.93	4.54	56.28	156.65	-32.51	105.64	204.54	145.52	59.02	3.466	
2,000.00	1,989.30	1,949.50	1,936.44	4.90	59.17	153.84	-28.86	129.98	242.37	180.62	61.75	3.925	
2,100.00	2,087.29	2,034.56	2,017.27	5.27	62.18	151.41	-24.93	156.17	282.70	218.21	64.49	4.384	
2,200.00	2,185.28	2,124.86	2,102.66	5.66	65.64	149.30	-20.57	185.21	324.44	256.92	67.51	4.806	
2,300.00	2,283.27	2,215.16	2,188.05	6.05	69.23	147.67	-16.21	214.26	366.45	295.87	70.59	5.191	
2,400.00	2,381.25	2,305.46	2,273.43	6.44	72.95	146.36	-11.85	243.30	408.67	334.94	73.73	5.543	
2,500.00	2,479.24	2,395.76	2,358.82	6.85	76.78	145.31	-7.49	272.35	451.03	374.10	76.93	5.863	
2,600.00	2,577.23	2,486.05	2,444.21	7.25	80.72	144.43	-3.14	301.39	493.49	413.31	80.19	6.154	
2,700.00	2,675.21	2,576.35	2,529.60	7.66	84.74	143.69	1.22	330.44	536.04	452.55	83.49	6.421	
2,800.00	2,773.20	2,666.65	2,614.99	8.07	88.83	143.06	5.58	359.49	578.64	491.81	86.83	6.664	
2,900.00	2,871.19	2,756.95	2,700.38	8.48	92.98	142.52	9.94	388.53	621.30	531.09	90.21	6.887	
3,000.00	2,969.18	2,847.25	2,785.77	8.90	97.19	142.04	14.30	417.58	663.99	570.37	93.62	7.093	
3,100.00	3,067.16	2,937.55	2,871.15	9.32	101.44	141.62	18.66	446.62	706.72	609.66	97.06	7.281	
3,200.00	3,165.15	3,027.85	2,956.54	9.73	105.73	141.25	23.02	475.67	749.48	648.95	100.53	7.455	
3,300.00	3,263.14	3,118.15	3,041.93	10.16	110.06	140.92	27.38	504.71	792.26	688.23	104.02	7.616	
3,400.00	3,361.12	3,208.44	3,127.32	10.58	114.43	140.63	31.74	533.76	835.06	727.52	107.54	7.765	
3,500.00	3,459.11	3,298.74	3,212.71	11.00	118.82	140.36	36.10	562.80	877.87	766.79	111.08	7.903	
3,600.00	3,557.10	3,389.04	3,298.10	11.42	123.24	140.12	40.45	591.85	920.70	806.07	114.63	8.032	
3,700.00	3,655.09	3,479.34	3,383.49	11.85	127.68	139.90	44.81	620.90	963.54	845.33	118.21	8.151	
3,800.00	3,753.07	3,569.64	3,468.88	12.27	132.15	139.69	49.17	649.94	1,006.39	884.60	121.79	8.263	
3,900.00	3,851.06	3,659.94	3,554.26	12.70	136.63	139.51	53.53	678.99	1,049.25	923.86	125.40	8.367	
4,000.00	3,949.05	3,750.24	3,639.65	13.12	141.13	139.34	57.89	708.03	1,092.12	963.11	129.01	8.465	
4,100.00	4,047.04	3,840.54	3,725.04	13.55	145.64	139.18	62.25	737.08	1,135.00	1,002.36	132.64	8.557	
4,200.00	4,145.02	3,930.83	3,810.43	13.98	150.17	139.03	66.61	766.12	1,177.88	1,041.60	136.28	8.643	
4,300.00	4,243.01	4,021.13	3,895.82	14.41	154.72	138.90	70.97	795.17	1,220.77	1,080.85	139.93	8.724	
4,400.00	4,341.00	4,111.43	3,981.21	14.83	159.27	138.77	75.33	824.21	1,263.67	1,120.08	143.58	8.801	
4,500.00	4,438.98	4,201.73	4,066.60	15.26	163.83	138.65	79.68	853.26	1,306.56	1,159.31	147.25	8.873	
4,600.00	4,536.97	4,292.03	4,151.98	15.69	168.41	138.54	84.04	882.31	1,349.47	1,198.54	150.93	8.941	
4,700.00	4,634.96	4,382.33	4,237.37	16.12	172.99	138.43	88.40	911.35	1,392.38	1,237.77	154.61	9.006	
4,800.00	4,732.95	4,472.63	4,322.76	16.55	177.58	138.34	92.76	940.40	1,435.29	1,276.99	158.30	9.067	
4,900.00	4,830.93	4,562.92	4,408.15	16.98	182.18	138.24	97.12	969.44	1,478.20	1,316.21	162.00	9.125	

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 10-9
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5039.00ft (Original Well Elev)
Reference Site:	WELD_NRC 20-9 PAD	MD Reference:	WELL @ 5039.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_NRC 10-9	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_NRC 10-9	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-6-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_NRC 20-9 PAD - P_NRC 39-9 - P_NRC 39-9 - PLAN #1 1-6-10 RHS												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	4,928.92	4,653.22	4,493.54	17.41	186.79	138.16	101.48	998.49	1,521.12	1,355.42	165.70	9.180	
5,100.00	5,026.91	4,743.52	4,578.93	17.84	191.40	138.07	105.84	1,027.53	1,564.04	1,394.63	169.41	9.232	
5,200.00	5,124.89	4,833.82	4,664.32	18.27	196.02	138.00	110.20	1,056.58	1,606.96	1,433.84	173.12	9.282	
5,300.00	5,222.88	4,924.12	4,749.70	18.70	200.65	137.92	114.56	1,085.62	1,649.88	1,473.05	176.84	9.330	
5,400.00	5,320.87	5,014.42	4,835.09	19.14	205.28	137.85	118.91	1,114.67	1,692.81	1,512.25	180.56	9.375	
5,500.00	5,418.86	5,104.72	4,920.48	19.57	209.92	137.79	123.27	1,143.72	1,735.74	1,551.45	184.29	9.419	
5,600.00	5,516.84	5,195.02	5,005.87	20.00	214.56	137.72	127.63	1,172.76	1,778.67	1,590.65	188.02	9.460	
5,700.00	5,614.83	5,285.31	5,091.26	20.43	219.20	137.66	131.99	1,201.81	1,821.60	1,629.85	191.76	9.500	
5,800.00	5,712.82	5,375.61	5,176.65	20.86	223.85	137.60	136.35	1,230.85	1,864.54	1,669.04	195.50	9.537	
5,871.74	5,783.12	5,440.39	5,237.91	21.17	227.19	137.56	139.48	1,251.69	1,895.34	1,697.16	198.18	9.564	
5,900.00	5,810.83	5,465.95	5,262.08	21.28	228.51	137.72	140.71	1,259.91	1,907.38	1,707.54	199.84	9.544	
6,000.00	5,909.32	5,557.05	5,348.22	21.59	233.21	138.22	145.11	1,289.21	1,948.48	1,742.85	205.63	9.476	
6,100.00	6,008.36	5,743.60	5,525.89	21.86	242.57	138.44	153.53	1,345.33	1,985.80	1,770.90	214.89	9.241	
6,200.00	6,107.81	5,995.46	5,770.83	22.09	254.16	138.53	162.18	1,402.98	2,013.95	1,787.44	226.51	8.891	
6,300.00	6,207.57	6,259.12	6,031.69	22.28	264.87	138.61	167.78	1,440.30	2,031.80	1,793.47	238.34	8.525	
6,400.00	6,307.51	6,529.39	6,301.51	22.43	274.12	138.70	169.81	1,453.78	2,038.84	1,789.14	249.71	8.165	
6,447.49	6,355.00	6,582.88	6,355.00	22.49	274.82	108.86	169.81	1,453.80	2,039.14	1,787.98	251.16	8.119	
6,500.00	6,407.51	6,635.38	6,407.51	22.55	275.41	108.86	169.81	1,453.80	2,039.14	1,787.18	251.96	8.093	
6,600.00	6,507.51	6,735.38	6,507.51	22.69	276.58	108.86	169.81	1,453.80	2,039.14	1,785.61	253.54	8.043	
6,700.00	6,607.51	6,835.38	6,607.51	22.82	277.80	108.86	169.81	1,453.80	2,039.14	1,783.97	255.18	7.991	
6,800.00	6,707.51	6,935.38	6,707.51	22.96	279.07	108.86	169.81	1,453.80	2,039.14	1,782.27	256.87	7.938	
6,900.00	6,807.51	7,035.38	6,807.51	23.10	280.39	108.86	169.81	1,453.80	2,039.14	1,780.51	258.63	7.884	
7,000.00	6,907.51	7,135.38	6,907.51	23.24	281.76	108.86	169.81	1,453.80	2,039.14	1,778.70	260.44	7.830	
7,100.00	7,007.51	7,235.38	7,007.51	23.39	283.18	108.86	169.81	1,453.80	2,039.14	1,776.83	262.31	7.774	
7,200.00	7,107.51	7,335.38	7,107.51	23.53	284.66	108.86	169.81	1,453.80	2,039.14	1,774.91	264.23	7.717	
7,300.00	7,207.51	7,435.38	7,207.51	23.68	286.18	108.86	169.81	1,453.80	2,039.14	1,772.93	266.21	7.660	
7,400.00	7,307.51	7,535.38	7,307.51	23.82	287.74	108.86	169.81	1,453.80	2,039.14	1,770.90	268.24	7.602	
7,500.00	7,407.51	7,635.38	7,407.51	23.97	289.36	108.86	169.81	1,453.80	2,039.14	1,768.82	270.32	7.543	
7,600.00	7,507.51	7,735.38	7,507.51	24.12	291.02	108.86	169.81	1,453.80	2,039.14	1,766.69	272.45	7.484	
7,700.00	7,607.51	7,835.38	7,607.51	24.27	292.73	108.86	169.81	1,453.80	2,039.14	1,764.51	274.63	7.425	
7,800.00	7,707.51	7,935.38	7,707.51	24.42	294.48	108.86	169.81	1,453.80	2,039.14	1,762.29	276.86	7.365	
7,900.00	7,807.51	8,035.38	7,807.51	24.57	296.27	108.86	169.81	1,453.80	2,039.14	1,760.01	279.13	7.305	
8,000.00	7,907.51	8,135.38	7,907.51	24.72	298.11	108.86	169.81	1,453.80	2,039.14	1,757.69	281.45	7.245	
8,100.00	8,007.51	8,235.38	8,007.51	24.88	299.99	108.86	169.81	1,453.80	2,039.14	1,755.33	283.81	7.185	
8,200.00	8,107.51	8,335.38	8,107.51	25.03	301.91	108.86	169.81	1,453.80	2,039.14	1,752.92	286.22	7.124	
8,300.00	8,207.51	8,435.38	8,207.51	25.19	303.87	108.86	169.81	1,453.80	2,039.14	1,750.48	288.67	7.064	
8,400.00	8,307.51	8,463.88	8,236.00	25.35	304.44	108.86	169.81	1,453.80	2,040.40	1,750.90	289.50	7.048	
8,500.00	8,407.51	8,463.88	8,236.00	25.51	304.44	108.86	169.81	1,453.80	2,046.34	1,756.66	289.68	7.064	
8,600.00	8,507.51	8,463.88	8,236.00	25.67	304.44	108.86	169.81	1,453.80	2,057.14	1,767.28	289.86	7.097	
8,627.49	8,535.00	8,463.88	8,236.00	25.71	304.44	108.86	169.81	1,453.80	2,060.95	1,771.04	289.91	7.109	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_NRC 10-9
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5039.00ft (Original Well Elev)
Reference Site:	WELD_NRC 20-9 PAD	MD Reference:	WELL @ 5039.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_NRC 10-9	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_NRC 10-9	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-6-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_NRC 20-9 PAD - P_NRC 9-9 - P_NRC 9-9 - PLAN #1 1-6-10 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	177.50	-32.06	1.40	32.09					
100.00	100.00	100.00	100.00	0.10	0.10	177.50	-32.06	1.40	32.09	31.90	0.19	167.971		
200.00	200.00	200.00	200.00	0.32	0.32	177.50	-32.06	1.40	32.09	31.45	0.64	50.097		
300.00	300.00	300.00	300.00	0.55	0.55	177.50	-32.06	1.40	32.09	31.00	1.09	29.438		
400.00	400.00	400.00	400.00	0.77	0.77	177.50	-32.06	1.40	32.09	30.55	1.54	20.843		
500.00	500.00	500.00	500.00	0.99	0.99	177.50	-32.06	1.40	32.09	30.10	1.99	16.133		
600.00	600.00	600.00	600.00	1.22	1.22	177.50	-32.06	1.40	32.09	29.65	2.44	13.159		
700.00	700.00	700.00	700.00	1.44	1.44	177.50	-32.06	1.40	32.09	29.20	2.89	11.111		
800.00	800.00	800.00	800.00	1.67	1.67	177.50	-32.06	1.40	32.09	28.75	3.34	9.615		
900.00	900.00	900.00	900.00	1.89	1.89	177.50	-32.06	1.40	32.09	28.30	3.79	8.473		
1,000.00	1,000.00	1,000.00	1,000.00	2.12	2.12	177.50	-32.06	1.40	32.09	27.85	4.24	7.574		
1,085.00	1,085.00	1,085.00	1,085.00	2.31	2.31	177.50	-32.06	1.40	32.09	27.47	4.62	6.948	CC	
1,100.00	1,100.00	1,100.12	1,100.12	2.34	2.34	-152.73	-32.03	1.43	32.10	27.41	4.69	6.850	ES	
1,200.00	1,199.97	1,200.82	1,200.79	2.56	2.56	-157.52	-30.39	3.04	32.67	27.54	5.12	6.376		
1,300.00	1,299.80	1,301.21	1,301.01	2.79	2.78	-168.65	-26.23	7.10	35.06	29.50	5.56	6.306	SF	
1,400.00	1,399.37	1,401.03	1,400.39	3.02	3.01	177.18	-19.61	13.58	41.13	35.14	5.99	6.864		
1,500.00	1,498.55	1,500.01	1,498.56	3.27	3.26	164.16	-10.61	22.38	52.29	45.86	6.44	8.125		
1,600.00	1,597.23	1,597.92	1,595.19	3.54	3.53	154.27	0.68	33.42	68.81	61.90	6.91	9.962		
1,660.75	1,656.88	1,656.78	1,652.99	3.73	3.71	149.73	8.60	41.17	81.31	74.10	7.21	11.270		
1,700.00	1,695.34	1,694.56	1,689.97	3.85	3.82	147.28	14.13	46.57	90.11	82.68	7.43	12.126		
1,800.00	1,793.33	1,790.09	1,782.99	4.19	4.16	141.72	29.66	61.77	113.85	105.83	8.02	14.195		
1,900.00	1,891.32	1,885.49	1,875.23	4.54	4.54	137.04	47.06	78.79	139.49	130.84	8.65	16.119		
2,000.00	1,989.30	1,981.55	1,968.02	4.90	4.94	133.67	64.82	96.16	165.91	156.60	9.32	17.808		
2,100.00	2,087.29	2,077.60	2,060.81	5.27	5.37	131.23	82.59	113.54	192.73	182.73	10.00	19.276		
2,200.00	2,185.28	2,173.66	2,153.59	5.66	5.81	129.38	100.35	130.91	219.79	209.09	10.70	20.550		
2,300.00	2,283.27	2,269.72	2,246.38	6.05	6.26	127.94	118.12	148.29	247.01	235.61	11.40	21.659		
2,400.00	2,381.25	2,365.77	2,339.17	6.44	6.72	126.79	135.88	165.66	274.36	262.23	12.12	22.628		
2,500.00	2,479.24	2,461.83	2,431.95	6.85	7.18	125.84	153.64	183.04	301.78	288.93	12.85	23.479		
2,600.00	2,577.23	2,557.88	2,524.74	7.25	7.66	125.05	171.41	200.41	329.27	315.68	13.59	24.231		
2,700.00	2,675.21	2,653.94	2,617.53	7.66	8.14	124.39	189.17	217.79	356.81	342.48	14.33	24.897		
2,800.00	2,773.20	2,750.00	2,710.32	8.07	8.62	123.82	206.93	235.16	384.39	369.31	15.08	25.492		
2,900.00	2,871.19	2,846.05	2,803.10	8.48	9.10	123.32	224.70	252.54	412.00	396.17	15.83	26.025		
3,000.00	2,969.18	2,942.11	2,895.89	8.90	9.59	122.89	242.46	269.91	439.63	423.04	16.59	26.505		
3,100.00	3,067.16	3,038.17	2,988.68	9.32	10.08	122.51	260.23	287.29	467.28	449.94	17.35	26.939		
3,200.00	3,165.15	3,134.22	3,081.46	9.73	10.58	122.17	277.99	304.66	494.95	476.85	18.11	27.333		
3,300.00	3,263.14	3,230.28	3,174.25	10.16	11.07	121.86	295.75	322.03	522.64	503.77	18.87	27.692		
3,400.00	3,361.12	3,326.34	3,267.04	10.58	11.57	121.59	313.52	339.41	550.34	530.70	19.64	28.020		
3,500.00	3,459.11	3,422.39	3,359.82	11.00	12.07	121.35	331.28	356.78	578.04	557.63	20.41	28.321		
3,600.00	3,557.10	3,518.45	3,452.61	11.42	12.57	121.12	349.04	374.16	605.76	584.58	21.18	28.598		
3,700.00	3,655.09	3,614.51	3,545.40	11.85	13.07	120.92	366.81	391.53	633.48	611.53	21.95	28.854		
3,800.00	3,753.07	3,710.56	3,638.19	12.27	13.57	120.73	384.57	408.91	661.21	638.49	22.73	29.091		
3,900.00	3,851.06	3,806.62	3,730.97	12.70	14.07	120.56	402.34	426.28	688.95	665.45	23.51	29.311		
4,000.00	3,949.05	3,902.68	3,823.76	13.12	14.58	120.40	420.10	443.66	716.69	692.41	24.28	29.515		
4,100.00	4,047.04	3,998.73	3,916.55	13.55	15.08	120.25	437.86	461.03	744.44	719.38	25.06	29.706		
4,200.00	4,145.02	4,094.79	4,009.33	13.98	15.59	120.12	455.63	478.41	772.19	746.35	25.84	29.884		
4,300.00	4,243.01	4,190.85	4,102.12	14.41	16.09	119.99	473.39	495.78	799.95	773.33	26.62	30.051		
4,400.00	4,341.00	4,286.90	4,194.91	14.83	16.60	119.87	491.15	513.16	827.70	800.30	27.40	30.207		
4,500.00	4,438.98	4,382.96	4,287.69	15.26	17.11	119.76	508.92	530.53	855.47	827.28	28.18	30.355		
4,600.00	4,536.97	4,479.02	4,380.48	15.69	17.61	119.66	526.68	547.91	883.23	854.27	28.96	30.493		
4,700.00	4,634.96	4,575.07	4,473.27	16.12	18.12	119.56	544.45	565.28	911.00	881.25	29.75	30.624		
4,800.00	4,732.95	4,671.13	4,566.06	16.55	18.63	119.47	562.21	582.66	938.77	908.23	30.53	30.747		
4,900.00	4,830.93	4,767.19	4,658.84	16.98	19.14	119.38	579.97	600.03	966.54	935.22	31.32	30.864		

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 10-9
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5039.00ft (Original Well Elev)
Reference Site:	WELD_NRC 20-9 PAD	MD Reference:	WELL @ 5039.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_NRC 10-9	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_NRC 10-9	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-6-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_NRC 20-9 PAD - P_NRC 9-9 - P_NRC 9-9 - PLAN #1 1-6-10 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
5,000.00	4,928.92	4,863.24	4,751.63	17.41	19.64	119.30	597.74	617.41	994.31	962.21	32.10	30.975	
5,100.00	5,026.91	4,959.30	4,844.42	17.84	20.15	119.22	615.50	634.78	1,022.08	989.20	32.89	31.080	
5,200.00	5,124.89	5,055.36	4,937.20	18.27	20.66	119.15	633.26	652.15	1,049.86	1,016.19	33.67	31.180	
5,300.00	5,222.88	5,151.41	5,029.99	18.70	21.17	119.08	651.03	669.53	1,077.64	1,043.18	34.46	31.275	
5,400.00	5,320.87	5,247.47	5,122.78	19.14	21.68	119.01	668.79	686.90	1,105.42	1,070.17	35.24	31.365	
5,500.00	5,418.86	5,343.53	5,215.57	19.57	22.19	118.95	686.56	704.28	1,133.20	1,097.17	36.03	31.451	
5,600.00	5,516.84	5,439.58	5,308.35	20.00	22.70	118.89	704.32	721.65	1,160.98	1,124.16	36.82	31.533	
5,700.00	5,614.83	5,535.64	5,401.14	20.43	23.21	118.83	722.08	739.03	1,188.76	1,151.16	37.61	31.612	
5,800.00	5,712.82	5,631.70	5,493.93	20.86	23.72	118.78	739.85	756.40	1,216.55	1,178.15	38.39	31.687	
5,871.74	5,783.12	5,700.61	5,560.49	21.17	24.09	118.74	752.59	768.87	1,236.48	1,197.52	38.96	31.739	
5,900.00	5,810.83	5,727.77	5,586.73	21.28	24.23	118.86	757.61	773.78	1,244.27	1,205.06	39.20	31.740	
6,000.00	5,909.32	5,861.15	5,716.19	21.59	24.80	119.18	780.55	796.21	1,269.58	1,229.52	40.06	31.695	
6,100.00	6,008.36	6,003.41	5,855.73	21.86	25.29	119.42	800.25	815.49	1,289.93	1,249.12	40.81	31.607	
6,200.00	6,107.81	6,148.01	5,998.80	22.09	25.68	119.60	815.19	830.09	1,305.16	1,263.71	41.46	31.483	
6,300.00	6,207.57	6,294.31	6,144.44	22.28	26.00	119.73	825.02	839.71	1,315.16	1,273.16	41.99	31.318	
6,400.00	6,307.51	6,441.60	6,291.58	22.43	26.22	119.80	829.55	844.14	1,319.86	1,277.45	42.41	31.122	
6,447.49	6,355.00	6,505.03	6,355.00	22.49	26.29	89.97	829.85	844.44	1,320.25	1,277.69	42.56	31.019	
6,500.00	6,407.51	6,557.53	6,407.51	22.55	26.35	89.97	829.85	844.44	1,320.25	1,277.55	42.70	30.918	
6,600.00	6,507.51	6,657.53	6,507.51	22.69	26.47	89.97	829.85	844.44	1,320.25	1,277.27	42.98	30.717	
6,700.00	6,607.51	6,757.53	6,607.51	22.82	26.58	89.97	829.85	844.44	1,320.25	1,276.99	43.26	30.518	
6,800.00	6,707.51	6,857.53	6,707.51	22.96	26.70	89.97	829.85	844.44	1,320.25	1,276.71	43.55	30.318	
6,900.00	6,807.51	6,957.53	6,807.51	23.10	26.82	89.97	829.85	844.44	1,320.25	1,276.42	43.83	30.120	
7,000.00	6,907.51	7,057.53	6,907.51	23.24	26.94	89.97	829.85	844.44	1,320.25	1,276.13	44.12	29.922	
7,100.00	7,007.51	7,157.53	7,007.51	23.39	27.06	89.97	829.85	844.44	1,320.25	1,275.84	44.42	29.725	
7,200.00	7,107.51	7,257.53	7,107.51	23.53	27.19	89.97	829.85	844.44	1,320.25	1,275.54	44.71	29.529	
7,300.00	7,207.51	7,357.53	7,207.51	23.68	27.31	89.97	829.85	844.44	1,320.25	1,275.25	45.01	29.334	
7,400.00	7,307.51	7,457.53	7,307.51	23.82	27.44	89.97	829.85	844.44	1,320.25	1,274.95	45.31	29.140	
7,500.00	7,407.51	7,557.53	7,407.51	23.97	27.56	89.97	829.85	844.44	1,320.25	1,274.64	45.61	28.947	
7,600.00	7,507.51	7,657.53	7,507.51	24.12	27.69	89.97	829.85	844.44	1,320.25	1,274.34	45.91	28.755	
7,700.00	7,607.51	7,757.53	7,607.51	24.27	27.82	89.97	829.85	844.44	1,320.25	1,274.03	46.22	28.564	
7,800.00	7,707.51	7,857.53	7,707.51	24.42	27.95	89.97	829.85	844.44	1,320.25	1,273.72	46.53	28.374	
7,900.00	7,807.51	7,957.53	7,807.51	24.57	28.08	89.97	829.85	844.44	1,320.25	1,273.41	46.84	28.185	
8,000.00	7,907.51	8,057.53	7,907.51	24.72	28.22	89.97	829.85	844.44	1,320.25	1,273.10	47.16	27.997	
8,100.00	8,007.51	8,157.53	8,007.51	24.88	28.35	89.97	829.85	844.44	1,320.25	1,272.78	47.47	27.811	
8,200.00	8,107.51	8,257.53	8,107.51	25.03	28.48	89.97	829.85	844.44	1,320.25	1,272.46	47.79	27.625	
8,300.00	8,207.51	8,357.53	8,207.51	25.19	28.62	89.97	829.85	844.44	1,320.25	1,272.14	48.11	27.441	
8,400.00	8,307.51	8,457.53	8,307.51	25.35	28.76	89.97	829.85	844.44	1,320.25	1,271.82	48.43	27.259	
8,500.00	8,407.51	8,557.53	8,407.51	25.51	28.90	89.97	829.85	844.44	1,320.25	1,271.49	48.76	27.077	
8,600.00	8,507.51	8,657.53	8,507.51	25.67	29.04	89.97	829.85	844.44	1,320.25	1,271.17	49.08	26.897	
8,603.82	8,511.33	8,661.36	8,511.33	25.67	29.04	89.97	829.85	844.44	1,320.25	1,271.16	49.10	26.891	
8,627.49	8,535.00	8,671.03	8,521.00	25.71	29.06	89.97	829.85	844.44	1,320.33	1,271.17	49.15	26.862	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_NRC 10-9
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5039.00ft (Original Well Elev)
Reference Site:	WELD_NRC 20-9 PAD	MD Reference:	WELL @ 5039.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_NRC 10-9	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_NRC 10-9	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-6-10 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	-156.37	-97.26	-42.55	107.85				
100.00	100.00	81.00	81.00	0.10	0.09	-156.37	-97.26	-42.55	106.16	105.97	0.19	568.937	
200.00	200.00	181.00	181.00	0.32	0.29	-156.37	-97.26	-42.55	106.16	105.55	0.61	172.692	
300.00	300.00	281.00	281.00	0.55	0.52	-156.37	-97.26	-42.55	106.16	105.10	1.06	99.750	
400.00	400.00	381.00	381.00	0.77	0.74	-156.37	-97.26	-42.55	106.16	104.65	1.51	70.128	
500.00	500.00	481.00	481.00	0.99	0.97	-156.37	-97.26	-42.55	106.16	104.20	1.96	54.071	
600.00	600.00	581.00	581.00	1.22	1.19	-156.37	-97.26	-42.55	106.16	103.75	2.41	43.998	
700.00	700.00	681.00	681.00	1.44	1.42	-156.37	-97.26	-42.55	106.16	103.30	2.86	37.088	
800.00	800.00	781.00	781.00	1.67	1.64	-156.37	-97.26	-42.55	106.16	102.85	3.31	32.054	
900.00	900.00	881.00	881.00	1.89	1.87	-156.37	-97.26	-42.55	106.16	102.40	3.76	28.223	
1,000.00	1,000.00	981.00	981.00	2.12	2.09	-156.37	-97.26	-42.55	106.16	101.95	4.21	25.210	
1,085.00	1,085.00	1,066.00	1,066.00	2.31	2.28	-156.37	-97.26	-42.55	106.16	101.57	4.59	23.113 CC	
1,100.00	1,100.00	1,081.00	1,081.00	2.34	2.32	-126.54	-97.26	-42.55	106.18	101.52	4.66	22.785 ES	
1,200.00	1,199.97	1,180.97	1,180.97	2.56	2.54	-127.49	-97.26	-42.55	107.55	102.44	5.11	21.067	
1,300.00	1,299.80	1,280.80	1,280.80	2.79	2.77	-129.79	-97.26	-42.55	111.15	105.60	5.55	20.027	
1,400.00	1,399.37	1,380.37	1,380.37	3.02	2.99	-133.16	-97.26	-42.55	117.28	111.29	6.00	19.563 SF	
1,500.00	1,498.55	1,479.55	1,479.55	3.27	3.21	-137.23	-97.26	-42.55	126.34	119.90	6.44	19.615	
1,600.00	1,597.23	1,578.23	1,578.23	3.54	3.43	-141.59	-97.26	-42.55	138.69	131.80	6.89	20.143	
1,660.75	1,656.88	1,637.88	1,637.88	3.73	3.57	-144.23	-97.26	-42.55	147.92	140.77	7.15	20.679	
1,700.00	1,695.34	1,676.34	1,676.34	3.85	3.66	-145.92	-97.26	-42.55	154.39	147.05	7.34	21.044	
1,800.00	1,793.33	1,774.33	1,774.33	4.19	3.88	-149.64	-97.26	-42.55	171.38	163.58	7.80	21.959	
1,900.00	1,891.32	1,872.32	1,872.32	4.54	4.10	-152.69	-97.26	-42.55	188.96	180.68	8.27	22.839	
2,000.00	1,989.30	1,970.30	1,970.30	4.90	4.32	-155.22	-97.26	-42.55	206.97	198.22	8.74	23.674	
2,100.00	2,087.29	2,068.29	2,068.29	5.27	4.54	-157.34	-97.26	-42.55	225.30	216.09	9.21	24.460	
2,200.00	2,185.28	2,166.28	2,166.28	5.66	4.76	-159.14	-97.26	-42.55	243.90	234.22	9.68	25.195	
2,300.00	2,283.27	2,264.27	2,264.27	6.05	4.98	-160.69	-97.26	-42.55	262.69	252.54	10.15	25.882	
2,400.00	2,381.25	2,362.25	2,362.25	6.44	5.20	-162.03	-97.26	-42.55	281.65	271.03	10.62	26.522	
2,500.00	2,479.24	2,460.24	2,460.24	6.85	5.42	-163.20	-97.26	-42.55	300.73	289.64	11.09	27.118	
2,600.00	2,577.23	2,558.23	2,558.23	7.25	5.64	-164.23	-97.26	-42.55	319.92	308.36	11.56	27.675	
2,700.00	2,675.21	2,656.21	2,656.21	7.66	5.86	-165.15	-97.26	-42.55	339.21	327.17	12.03	28.194	
2,800.00	2,773.20	2,754.20	2,754.20	8.07	6.08	-165.96	-97.26	-42.55	358.56	346.06	12.50	28.679	
2,900.00	2,871.19	2,852.19	2,852.19	8.48	6.30	-166.70	-97.26	-42.55	377.98	365.01	12.97	29.132	
3,000.00	2,969.18	2,950.18	2,950.18	8.90	6.52	-167.36	-97.26	-42.55	397.45	384.01	13.45	29.557	
3,100.00	3,067.16	3,048.16	3,048.16	9.32	6.74	-167.96	-97.26	-42.55	416.97	403.05	13.92	29.955	
3,200.00	3,165.15	3,146.15	3,146.15	9.73	6.96	-168.50	-97.26	-42.55	436.53	422.14	14.39	30.329	
3,300.00	3,263.14	3,244.14	3,244.14	10.16	7.18	-169.00	-97.26	-42.55	456.13	441.26	14.87	30.681	
3,400.00	3,361.12	3,342.12	3,342.12	10.58	7.40	-169.46	-97.26	-42.55	475.75	460.41	15.34	31.012	
3,500.00	3,459.11	3,440.11	3,440.11	11.00	7.62	-169.88	-97.26	-42.55	495.40	479.59	15.82	31.325	
3,600.00	3,557.10	3,538.10	3,538.10	11.42	7.84	-170.27	-97.26	-42.55	515.08	498.79	16.29	31.619	
3,700.00	3,655.09	3,636.09	3,636.09	11.85	8.06	-170.64	-97.26	-42.55	534.78	518.01	16.77	31.898	
3,800.00	3,753.07	3,734.07	3,734.07	12.27	8.28	-170.97	-97.26	-42.55	554.49	537.25	17.24	32.162	
3,900.00	3,851.06	3,832.06	3,832.06	12.70	8.50	-171.28	-97.26	-42.55	574.23	556.51	17.72	32.413	
4,000.00	3,949.05	3,930.05	3,930.05	13.12	8.72	-171.57	-97.26	-42.55	593.97	575.78	18.19	32.650	
4,100.00	4,047.04	4,028.04	4,028.04	13.55	8.94	-171.85	-97.26	-42.55	613.74	595.07	18.67	32.876	
4,200.00	4,145.02	4,126.02	4,126.02	13.98	9.16	-172.10	-97.26	-42.55	633.51	614.37	19.14	33.090	
4,300.00	4,243.01	4,224.01	4,224.01	14.41	9.38	-172.34	-97.26	-42.55	653.30	633.68	19.62	33.295	
4,400.00	4,341.00	4,322.00	4,322.00	14.83	9.60	-172.57	-97.26	-42.55	673.09	653.00	20.10	33.490	
4,500.00	4,438.98	4,419.98	4,419.98	15.26	9.82	-172.78	-97.26	-42.55	692.90	672.32	20.58	33.676	
4,600.00	4,536.97	4,517.97	4,517.97	15.69	10.04	-172.99	-97.26	-42.55	712.72	691.66	21.05	33.854	
4,700.00	4,634.96	4,615.96	4,615.96	16.12	10.26	-173.18	-97.26	-42.55	732.54	711.01	21.53	34.023	
4,800.00	4,732.95	4,713.95	4,713.95	16.55	10.48	-173.36	-97.26	-42.55	752.37	730.36	22.01	34.186	
4,900.00	4,830.93	4,811.93	4,811.93	16.98	10.70	-173.53	-97.26	-42.55	772.21	749.72	22.49	34.342	

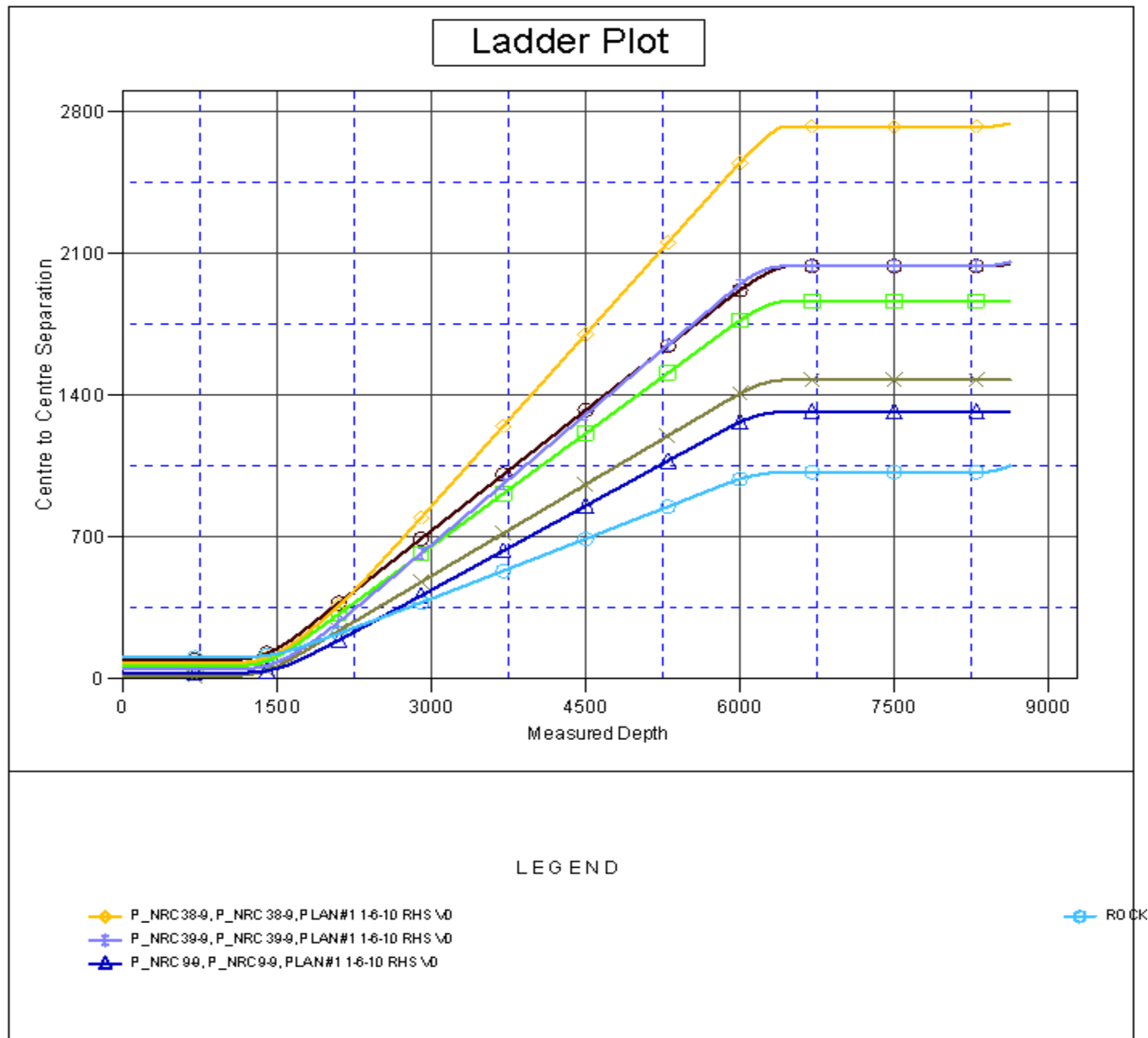
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_NRC 10-9
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5039.00ft (Original Well Elev)
Reference Site:	WELD_NRC 20-9 PAD	MD Reference:	WELL @ 5039.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_NRC 10-9	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_NRC 10-9	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-6-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_NRC 20-9 PAD - ROCKY MOUNTAIN FUEL CO F #3 EXISTING - ROCKY MOUNTAIN FUEL C												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
5,000.00	4,928.92	4,909.92	4,909.92	17.41	10.92	-173.69	-97.26	-42.55	792.05	769.09	22.96	34.491	
5,100.00	5,026.91	5,007.91	5,007.91	17.84	11.14	-173.85	-97.26	-42.55	811.90	788.46	23.44	34.634	
5,200.00	5,124.89	5,105.89	5,105.89	18.27	11.36	-173.99	-97.26	-42.55	831.75	807.83	23.92	34.772	
5,300.00	5,222.88	5,203.88	5,203.88	18.70	11.58	-174.13	-97.26	-42.55	851.61	827.21	24.40	34.904	
5,400.00	5,320.87	5,301.87	5,301.87	19.14	11.80	-174.27	-97.26	-42.55	871.48	846.60	24.88	35.031	
5,500.00	5,418.86	5,399.86	5,399.86	19.57	12.02	-174.40	-97.26	-42.55	891.35	865.99	25.36	35.153	
5,600.00	5,516.84	5,497.84	5,497.84	20.00	12.24	-174.52	-97.26	-42.55	911.22	885.38	25.83	35.271	
5,700.00	5,614.83	5,595.83	5,595.83	20.43	12.47	-174.64	-97.26	-42.55	931.10	904.78	26.31	35.385	
5,800.00	5,712.82	5,693.82	5,693.82	20.86	12.69	-174.75	-97.26	-42.55	950.98	924.18	26.79	35.494	
5,871.74	5,783.12	5,764.12	5,764.12	21.17	12.84	-174.83	-97.26	-42.55	965.24	938.10	27.14	35.570	
5,900.00	5,810.83	5,791.83	5,791.83	21.28	12.91	-174.87	-97.26	-42.55	970.72	943.43	27.29	35.569	
6,000.00	5,909.32	5,890.32	5,890.32	21.59	13.13	-174.99	-97.26	-42.55	987.94	960.15	27.79	35.551	
6,100.00	6,008.36	5,989.36	5,989.36	21.86	13.35	-175.08	-97.26	-42.55	1,001.71	973.46	28.25	35.458	
6,200.00	6,107.81	6,088.81	6,088.81	22.09	13.57	-175.15	-97.26	-42.55	1,012.04	983.37	28.67	35.297	
6,300.00	6,207.57	6,188.57	6,188.57	22.28	13.80	-175.19	-97.26	-42.55	1,018.91	989.85	29.05	35.070	
6,400.00	6,307.51	6,288.51	6,288.51	22.43	14.02	-175.21	-97.26	-42.55	1,022.30	992.90	29.39	34.780	
6,447.49	6,355.00	6,336.00	6,336.00	22.49	14.13	154.93	-97.26	-42.55	1,022.69	993.15	29.54	34.621	
6,500.00	6,407.51	6,388.51	6,388.51	22.55	14.25	154.93	-97.26	-42.55	1,022.69	992.94	29.75	34.375	
6,600.00	6,507.51	6,488.51	6,488.51	22.69	14.47	154.93	-97.26	-42.55	1,022.69	992.52	30.17	33.894	
6,700.00	6,607.51	6,588.51	6,588.51	22.82	14.70	154.93	-97.26	-42.55	1,022.69	992.09	30.60	33.425	
6,800.00	6,707.51	6,688.51	6,688.51	22.96	14.92	154.93	-97.26	-42.55	1,022.69	991.67	31.02	32.969	
6,900.00	6,807.51	6,788.51	6,788.51	23.10	15.15	154.93	-97.26	-42.55	1,022.69	991.24	31.44	32.524	
7,000.00	6,907.51	6,888.51	6,888.51	23.24	15.37	154.93	-97.26	-42.55	1,022.69	990.82	31.87	32.090	
7,100.00	7,007.51	6,988.51	6,988.51	23.39	15.60	154.93	-97.26	-42.55	1,022.69	990.39	32.30	31.667	
7,200.00	7,107.51	7,088.51	7,088.51	23.53	15.82	154.93	-97.26	-42.55	1,022.69	989.97	32.72	31.254	
7,300.00	7,207.51	7,188.51	7,188.51	23.68	16.04	154.93	-97.26	-42.55	1,022.69	989.54	33.15	30.852	
7,400.00	7,307.51	7,288.51	7,288.51	23.82	16.27	154.93	-97.26	-42.55	1,022.69	989.11	33.58	30.459	
7,500.00	7,407.51	7,388.51	7,388.51	23.97	16.49	154.93	-97.26	-42.55	1,022.69	988.68	34.00	30.075	
7,600.00	7,507.51	7,488.51	7,488.51	24.12	16.72	154.93	-97.26	-42.55	1,022.69	988.26	34.43	29.701	
7,700.00	7,607.51	7,588.51	7,588.51	24.27	16.94	154.93	-97.26	-42.55	1,022.69	987.83	34.86	29.336	
7,800.00	7,707.51	7,688.51	7,688.51	24.42	17.17	154.93	-97.26	-42.55	1,022.69	987.40	35.29	28.978	
7,900.00	7,807.51	7,788.51	7,788.51	24.57	17.39	154.93	-97.26	-42.55	1,022.69	986.97	35.72	28.630	
8,000.00	7,907.51	7,888.51	7,888.51	24.72	17.62	154.93	-97.26	-42.55	1,022.69	986.54	36.15	28.289	
8,100.00	8,007.51	7,988.51	7,988.51	24.88	17.84	154.93	-97.26	-42.55	1,022.69	986.11	36.58	27.956	
8,200.00	8,107.51	8,088.51	8,088.51	25.03	18.07	154.93	-97.26	-42.55	1,022.69	985.67	37.01	27.630	
8,300.00	8,207.51	8,188.51	8,188.51	25.19	18.29	154.93	-97.26	-42.55	1,022.69	985.24	37.45	27.311	
8,353.37	8,260.88	8,241.88	8,241.88	25.28	18.41	154.93	-97.26	-42.55	1,022.69	985.01	37.68	27.144	
8,400.00	8,307.51	8,260.00	8,260.00	25.35	18.45	154.93	-97.26	-42.55	1,023.09	985.27	37.81	27.056	
8,500.00	8,407.51	8,260.00	8,260.00	25.51	18.45	154.93	-97.26	-42.55	1,030.73	992.71	38.02	27.109	
8,600.00	8,507.51	8,260.00	8,260.00	25.67	18.45	154.93	-97.26	-42.55	1,047.91	1,009.68	38.23	27.411	
8,627.49	8,535.00	8,260.00	8,260.00	25.71	18.45	154.93	-97.26	-42.55	1,054.24	1,015.96	38.29	27.535	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_NRC 10-9
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5039.00ft (Original Well Elev)
Reference Site:	WELD_NRC 20-9 PAD	MD Reference:	WELL @ 5039.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_NRC 10-9	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_NRC 10-9	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-6-10 RHS	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 5039.00ft (Original Well Elev) Coordinates are relative to: P_NRC 10-9
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: 0.39°



Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_NRC 10-9
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5039.00ft (Original Well Elev)
Reference Site:	WELD_NRC 20-9 PAD	MD Reference:	WELL @ 5039.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_NRC 10-9	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
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