



US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

LARIMER_MIRACLE 40-12 PAD

P_MIRACLE 17-12

P_MIRACLE 17-12

Plan: PLAN #1 3-22-10 RHS

Standard Planning Report

23 March, 2010

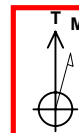




Project: COLORADO NORTHERN ZONE - 83
 Site: LARIMER_MIRACLE 40-12 PAD
 Well: P_MIRACLE 17-12
 Wellbore: P_MIRACLE 17-12
 Section: SECTION 12 T5N R68W
 SHL: 2480 FSL 325 FEL
 Design: PLAN #1 3-22-10 RHS
 Latitude: 40° 24' 49.615 N
 Longitude: 104° 56' 43.814 W
 GL: 4948.00
 KB: WELL @ 4963.00ft (Original Well Elev)



Weatherford®



Azimuths to True North
 Magnetic North: 9.13°
 Magnetic Field
 Strength: 53247.9nT
 Dip Angle: 67.07°
 Date: 3/22/2010
 Model: IGRF2010

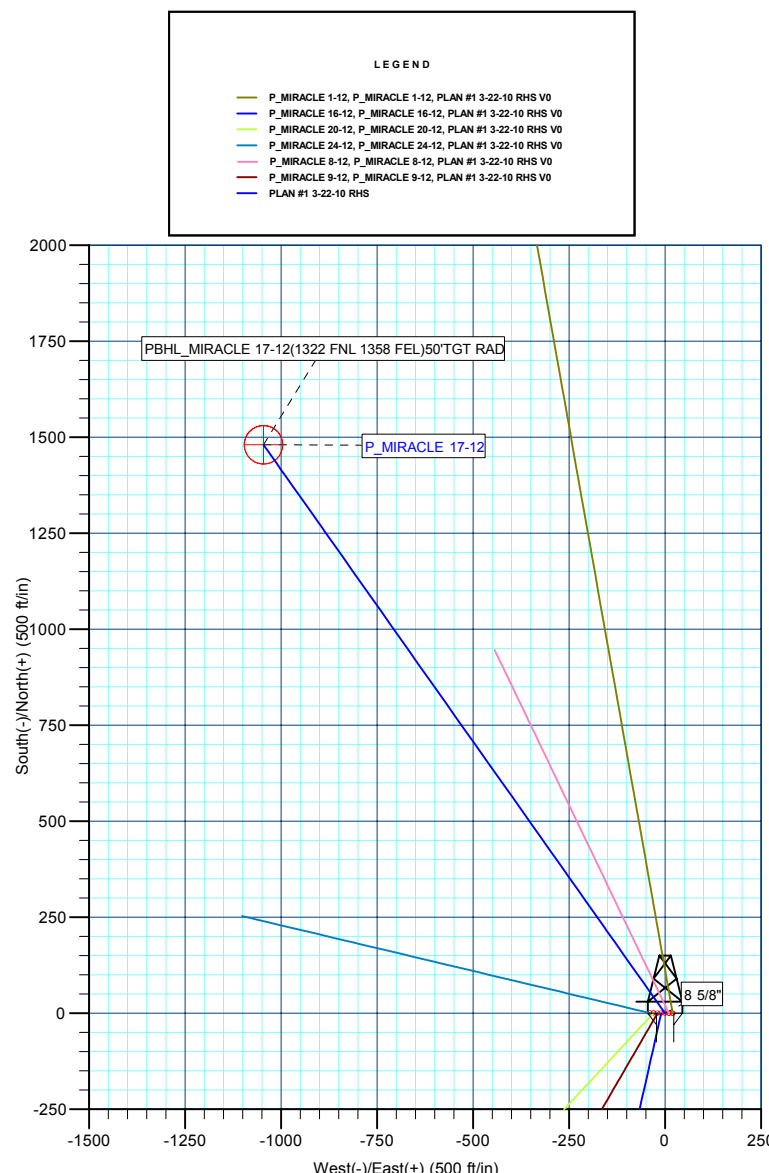
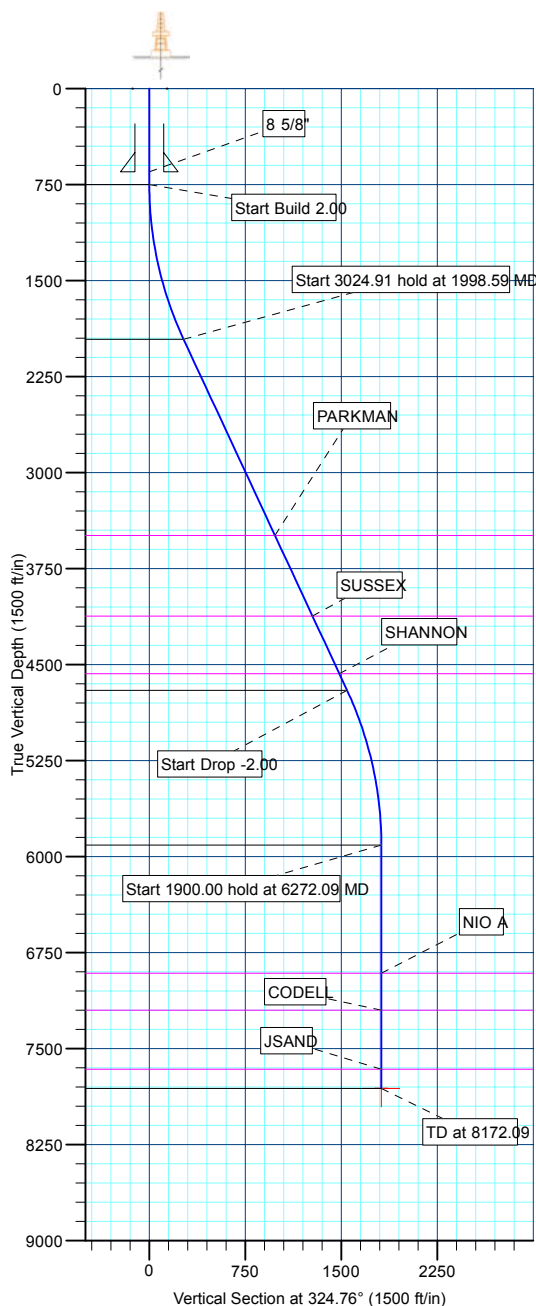
FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
3491.00	3688.10	PARKMAN
4121.00	4383.07	SUSSEX
4571.00	4879.47	SHANNON
6911.00	7272.09	NIO A
7201.00	7562.09	CODELL
7661.00	8022.09	JSAND

CASING DETAILS			
TVD	MD	Name	Size
650.00	650.00	8 5/8"	8.62

SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
750.00	0.00	0.00	750.00	0.00	0.00	0.00	0.00	0.00	Start Build 2.00
1998.59	24.97	324.76	1959.43	218.74	-154.51	2.00	324.76	267.81	Start 3024.91 hold at 1998.59 MD
5023.50	24.97	324.76	4701.57	1261.80	-891.30	0.00	0.00	1544.85	Start Drop -2.00
6272.09	0.00	0.00	5911.00	1480.55	-1045.81	2.00	180.00	1812.66	Start 1900.00 hold at 6272.09 MD
8172.09	0.00	0.00	7811.00	1480.55	-1045.81	0.00	0.00	1812.66	TD at 8172.09

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)						
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
PBHL	7811.00	1480.55	-1045.81	40° 25' 4.246 N	104° 56' 57.336 W	Circle (Radius: 50.00)

WELL DETAILS: P_MIRACLE 17-12						
+N/-S	+E/-W	Northing	Ground Level: Easting	4948.00 Latitude	Longitude	Slot
0.00	0.00	1394063.87	3154400.48	40° 24' 49.615 N	104° 56' 43.814 W	



Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_MIRACLE 17-12
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 4963.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 4963.00ft (Original Well Elev)
Site:	LARIMER_MIRACLE 40-12 PAD	North Reference:	True
Well:	P_MIRACLE 17-12	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_MIRACLE 17-12		
Design:	PLAN #1 3-22-10 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						LARIMER_MIRACLE 40-12 PAD, SECTION 12 T5N R68W											
Site Position:						Northing:			1,394,063.65 ft			Latitude:			40° 24' 49.612 N		
From:			Lat/Long			Easting:			3,154,420.53 ft			Longitude:			104° 56' 43.555 W		
Position Uncertainty:			0.00 ft			Slot Radius:			in			Grid Convergence:			0.36 °		

Well	P_MIRACLE 17-12					
Well Position	+N/-S	0.35 ft	Northing:	1,394,063.87 ft	Latitude:	40° 24' 49.615 N
	+E/-W	-20.05 ft	Easting:	3,154,400.48 ft	Longitude:	104° 56' 43.814 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	4,948.00 ft

Wellbore	P_MIRACLE 17-12				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/22/2010	9.13	67.07	53,248

Design	PLAN #1 3-22-10 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	324.76

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	
750.00	0.00	0.00	750.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,998.59	24.97	324.76	1,959.43	218.74	-154.51	2.00	2.00	0.00	324.76	
5,023.50	24.97	324.76	4,701.57	1,261.80	-891.30	0.00	0.00	0.00	0.00	
6,272.09	0.00	0.00	5,911.00	1,480.55	-1,045.81	2.00	-2.00	0.00	180.00	
8,172.09	0.00	0.00	7,811.00	1,480.55	-1,045.81	0.00	0.00	0.00	0.00	PBHL_MIRACLE 17-12

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_MIRACLE 17-12
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 4963.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 4963.00ft (Original Well Elev)
Site:	LARIMER_MIRACLE 40-12 PAD	North Reference:	True
Well:	P_MIRACLE 17-12	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_MIRACLE 17-12		
Design:	PLAN #1 3-22-10 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									
750.00	0.00	0.00	750.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	1.00	324.76	800.00	0.36	-0.25	0.44	2.00	2.00	0.00
900.00	3.00	324.76	899.93	3.21	-2.27	3.93	2.00	2.00	0.00
1,000.00	5.00	324.76	999.68	8.90	-6.29	10.90	2.00	2.00	0.00
1,100.00	7.00	324.76	1,099.13	17.44	-12.32	21.35	2.00	2.00	0.00
1,200.00	9.00	324.76	1,198.15	28.81	-20.35	35.27	2.00	2.00	0.00
1,300.00	11.00	324.76	1,296.63	42.99	-30.37	52.63	2.00	2.00	0.00
1,400.00	13.00	324.76	1,394.44	59.97	-42.36	73.42	2.00	2.00	0.00
1,500.00	15.00	324.76	1,491.46	79.73	-56.32	97.62	2.00	2.00	0.00
1,600.00	17.00	324.76	1,587.58	102.24	-72.22	125.18	2.00	2.00	0.00
1,700.00	19.00	324.76	1,682.68	127.48	-90.05	156.08	2.00	2.00	0.00
1,800.00	21.00	324.76	1,776.65	155.42	-109.78	190.28	2.00	2.00	0.00
1,900.00	23.00	324.76	1,869.36	186.01	-131.39	227.74	2.00	2.00	0.00
Start 3024.91 hold at 1998.59 MD									
1,998.59	24.97	324.76	1,959.43	218.74	-154.51	267.81	2.00	2.00	0.00
2,000.00	24.97	324.76	1,960.71	219.23	-154.86	268.41	0.00	0.00	0.00
2,100.00	24.97	324.76	2,051.36	253.71	-179.21	310.63	0.00	0.00	0.00
2,200.00	24.97	324.76	2,142.02	288.19	-203.57	352.84	0.00	0.00	0.00
2,300.00	24.97	324.76	2,232.67	322.68	-227.93	395.06	0.00	0.00	0.00
2,400.00	24.97	324.76	2,323.32	357.16	-252.29	437.28	0.00	0.00	0.00
2,500.00	24.97	324.76	2,413.97	391.64	-276.64	479.49	0.00	0.00	0.00
2,600.00	24.97	324.76	2,504.62	426.12	-301.00	521.71	0.00	0.00	0.00
2,700.00	24.97	324.76	2,595.27	460.61	-325.36	563.93	0.00	0.00	0.00
2,800.00	24.97	324.76	2,685.92	495.09	-349.71	606.15	0.00	0.00	0.00
2,900.00	24.97	324.76	2,776.58	529.57	-374.07	648.36	0.00	0.00	0.00
3,000.00	24.97	324.76	2,867.23	564.05	-398.43	690.58	0.00	0.00	0.00
3,100.00	24.97	324.76	2,957.88	598.53	-422.79	732.80	0.00	0.00	0.00
3,200.00	24.97	324.76	3,048.53	633.02	-447.14	775.01	0.00	0.00	0.00
3,300.00	24.97	324.76	3,139.18	667.50	-471.50	817.23	0.00	0.00	0.00
3,400.00	24.97	324.76	3,229.83	701.98	-495.86	859.45	0.00	0.00	0.00
3,500.00	24.97	324.76	3,320.49	736.46	-520.22	901.67	0.00	0.00	0.00
3,600.00	24.97	324.76	3,411.14	770.95	-544.57	943.88	0.00	0.00	0.00
PARKMAN									
3,688.10	24.97	324.76	3,491.00	801.32	-566.03	981.08	0.00	0.00	0.00
3,700.00	24.97	324.76	3,501.79	805.43	-568.93	986.10	0.00	0.00	0.00
3,800.00	24.97	324.76	3,592.44	839.91	-593.29	1,028.32	0.00	0.00	0.00
3,900.00	24.97	324.76	3,683.09	874.39	-617.64	1,070.54	0.00	0.00	0.00
4,000.00	24.97	324.76	3,773.74	908.87	-642.00	1,112.75	0.00	0.00	0.00
4,100.00	24.97	324.76	3,864.40	943.36	-666.36	1,154.97	0.00	0.00	0.00
4,200.00	24.97	324.76	3,955.05	977.84	-690.72	1,197.19	0.00	0.00	0.00
4,300.00	24.97	324.76	4,045.70	1,012.32	-715.07	1,239.40	0.00	0.00	0.00
SUSSEX									
4,383.07	24.97	324.76	4,121.00	1,040.96	-735.31	1,274.47	0.00	0.00	0.00
4,400.00	24.97	324.76	4,136.35	1,046.80	-739.43	1,281.62	0.00	0.00	0.00
4,500.00	24.97	324.76	4,227.00	1,081.29	-763.79	1,323.84	0.00	0.00	0.00
4,600.00	24.97	324.76	4,317.65	1,115.77	-788.14	1,366.06	0.00	0.00	0.00
4,700.00	24.97	324.76	4,408.30	1,150.25	-812.50	1,408.27	0.00	0.00	0.00
4,800.00	24.97	324.76	4,498.96	1,184.73	-836.86	1,450.49	0.00	0.00	0.00
SHANNON									
4,879.47	24.97	324.76	4,571.00	1,212.14	-856.22	1,484.04	0.00	0.00	0.00
4,900.00	24.97	324.76	4,589.61	1,219.21	-861.22	1,492.71	0.00	0.00	0.00
5,000.00	24.97	324.76	4,680.26	1,253.70	-885.57	1,534.92	0.00	0.00	0.00

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_MIRACLE 17-12
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 4963.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 4963.00ft (Original Well Elev)
Site:	LARIMER_MIRACLE 40-12 PAD	North Reference:	True
Well:	P_MIRACLE 17-12	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_MIRACLE 17-12		
Design:	PLAN #1 3-22-10 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 Drop -2.00									
5,023.50	24.97	324.76	4,701.57	1,261.80	-891.30	1,544.85	0.00	0.00	0.00
5,100.00	23.44	324.76	4,771.33	1,287.42	-909.39	1,576.21	2.00	-2.00	0.00
5,200.00	21.44	324.76	4,863.76	1,318.60	-931.42	1,614.38	2.00	-2.00	0.00
5,300.00	19.44	324.76	4,957.45	1,347.12	-951.57	1,649.31	2.00	-2.00	0.00
5,400.00	17.44	324.76	5,052.31	1,372.96	-969.82	1,680.94	2.00	-2.00	0.00
5,500.00	15.44	324.76	5,148.22	1,396.08	-986.15	1,709.24	2.00	-2.00	0.00
5,600.00	13.44	324.76	5,245.05	1,416.45	-1,000.53	1,734.18	2.00	-2.00	0.00
5,700.00	11.44	324.76	5,342.70	1,434.04	-1,012.96	1,755.73	2.00	-2.00	0.00
5,800.00	9.44	324.76	5,441.04	1,448.85	-1,023.42	1,773.85	2.00	-2.00	0.00
5,900.00	7.44	324.76	5,539.95	1,460.84	-1,031.89	1,788.53	2.00	-2.00	0.00
6,000.00	5.44	324.76	5,639.32	1,470.00	-1,038.36	1,799.75	2.00	-2.00	0.00
6,100.00	3.44	324.76	5,739.01	1,476.32	-1,042.83	1,807.49	2.00	-2.00	0.00
6,200.00	1.44	324.76	5,838.91	1,479.80	-1,045.29	1,811.75	2.00	-2.00	0.00
Start 1900.00 hold at 6272.09 MD									
6,272.09	0.00	0.00	5,911.00	1,480.55	-1,045.81	1,812.66	2.00	-2.00	48.88
6,300.00	0.00	0.00	5,938.91	1,480.55	-1,045.81	1,812.66	0.00	0.00	0.00
6,400.00	0.00	0.00	6,038.91	1,480.55	-1,045.81	1,812.66	0.00	0.00	0.00
6,500.00	0.00	0.00	6,138.91	1,480.55	-1,045.81	1,812.66	0.00	0.00	0.00
6,600.00	0.00	0.00	6,238.91	1,480.55	-1,045.81	1,812.66	0.00	0.00	0.00
6,700.00	0.00	0.00	6,338.91	1,480.55	-1,045.81	1,812.66	0.00	0.00	0.00
6,800.00	0.00	0.00	6,438.91	1,480.55	-1,045.81	1,812.66	0.00	0.00	0.00
6,900.00	0.00	0.00	6,538.91	1,480.55	-1,045.81	1,812.66	0.00	0.00	0.00
7,000.00	0.00	0.00	6,638.91	1,480.55	-1,045.81	1,812.66	0.00	0.00	0.00
7,100.00	0.00	0.00	6,738.91	1,480.55	-1,045.81	1,812.66	0.00	0.00	0.00
7,200.00	0.00	0.00	6,838.91	1,480.55	-1,045.81	1,812.66	0.00	0.00	0.00
NIO A									
7,272.09	0.00	0.00	6,911.00	1,480.55	-1,045.81	1,812.66	0.00	0.00	0.00
7,300.00	0.00	0.00	6,938.91	1,480.55	-1,045.81	1,812.66	0.00	0.00	0.00
7,400.00	0.00	0.00	7,038.91	1,480.55	-1,045.81	1,812.66	0.00	0.00	0.00
7,500.00	0.00	0.00	7,138.91	1,480.55	-1,045.81	1,812.66	0.00	0.00	0.00
CODELL									
7,562.09	0.00	0.00	7,201.00	1,480.55	-1,045.81	1,812.66	0.00	0.00	0.00
7,600.00	0.00	0.00	7,238.91	1,480.55	-1,045.81	1,812.66	0.00	0.00	0.00
7,700.00	0.00	0.00	7,338.91	1,480.55	-1,045.81	1,812.66	0.00	0.00	0.00
7,800.00	0.00	0.00	7,438.91	1,480.55	-1,045.81	1,812.66	0.00	0.00	0.00
7,900.00	0.00	0.00	7,538.91	1,480.55	-1,045.81	1,812.66	0.00	0.00	0.00
8,000.00	0.00	0.00	7,638.91	1,480.55	-1,045.81	1,812.66	0.00	0.00	0.00
JSAND									
8,022.09	0.00	0.00	7,661.00	1,480.55	-1,045.81	1,812.66	0.00	0.00	0.00
8,100.00	0.00	0.00	7,738.91	1,480.55	-1,045.81	1,812.66	0.00	0.00	0.00
PBHL_MIRACLE 17-12(1322 FNL 1358 FEL)50'TGT RAD									
8,172.09	0.00	0.00	7,811.00	1,480.55	-1,045.81	1,812.66	0.00	0.00	0.00

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_MIRACLE 17-12
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 4963.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 4963.00ft (Original Well Elev)
Site:	LARIMER_MIRACLE 40-12 PAD	North Reference:	True
Well:	P_MIRACLE 17-12	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_MIRACLE 17-12		
Design:	PLAN #1 3-22-10 RHS		

Design Targets									
Target Name									
- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- Shape									
PBHL_MIRACLE 17-1	0.00	0.00	7,811.00	1,480.55	-1,045.81	1,395,537.85	3,153,345.43	40° 25' 4.246 N	104° 56' 57.336 W
- plan hits target center									
- Circle (radius 50.00)									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
650.00	650.00	8 5/8"	8.62	11.00	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,688.10	3,491.00	PARKMAN				
4,383.07	4,121.00	SUSSEX				
4,879.47	4,571.00	SHANNON				
7,272.09	6,911.00	NIO A				
7,562.09	7,201.00	CODELL				
8,022.09	7,661.00	JSAND				

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
750.00	750.00	0.00	0.00	Start Build 2.00
1,998.59	1,959.43	218.74	-154.51	Start 3024.91 hold at 1998.59 MD
5,023.50	4,701.57	1,261.80	-891.30	Start Drop -2.00
6,272.09	5,911.00	1,480.55	-1,045.81	Start 1900.00 hold at 6272.09 MD
8,172.09	7,811.00	1,480.55	-1,045.81	TD at 8172.09



US ROCKIES REGION PLANNING

**COLORADO NORTHERN ZONE - 83
LARIMER_MIRACLE 40-12 PAD
P_MIRACLE 17-12**

**P_MIRACLE 17-12
PLAN #1 3-22-10 RHS**

Anticollision Report

23 March, 2010



Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_MIRACLE 17-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4963.00ft (Original Well Elev)
Reference Site:	LARIMER_MIRACLE 40-12 PAD	MD Reference:	WELL @ 4963.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MIRACLE 17-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 17-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-22-10 RHS	Offset TVD Reference:	Offset Datum

Reference	PLAN #1 3-22-10 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 3/22/2010			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	8,172.09	PLAN #1 3-22-10 RHS (P_MIRACLE 17-1	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						
LARIMER_MIRACLE 40-12 PAD						
P_MIRACLE 1-12 - P_MIRACLE 1-12 - PLAN #1 3-22-10	448.19	448.26	19.68	17.92	11.199	CC, ES
P_MIRACLE 1-12 - P_MIRACLE 1-12 - PLAN #1 3-22-10	600.00	599.31	22.97	20.51	9.327	SF
P_MIRACLE 16-12 - P_MIRACLE 16-12 - PLAN #1 3-22-10	835.32	835.20	9.76	6.30	2.819	CC, ES, SF
P_MIRACLE 20-12 - P_MIRACLE 20-12 - PLAN #1 3-22-10	750.00	750.00	29.80	26.69	9.574	CC
P_MIRACLE 20-12 - P_MIRACLE 20-12 - PLAN #1 3-22-10	800.00	799.65	29.84	26.51	8.980	ES
P_MIRACLE 20-12 - P_MIRACLE 20-12 - PLAN #1 3-22-10	900.00	898.73	30.65	26.92	8.233	SF
P_MIRACLE 24-12 - P_MIRACLE 24-12 - PLAN #1 3-22-10	750.00	750.00	39.83	36.71	12.793	CC
P_MIRACLE 24-12 - P_MIRACLE 24-12 - PLAN #1 3-22-10	800.00	799.33	39.99	36.66	12.012	ES
P_MIRACLE 24-12 - P_MIRACLE 24-12 - PLAN #1 3-22-10	1,000.00	996.42	44.35	40.17	10.605	SF
P_MIRACLE 8-12 - P_MIRACLE 8-12 - PLAN #1 3-22-10	750.00	750.00	10.02	6.91	3.220	CC
P_MIRACLE 8-12 - P_MIRACLE 8-12 - PLAN #1 3-22-10	800.00	800.08	10.09	6.75	3.024	ES
P_MIRACLE 8-12 - P_MIRACLE 8-12 - PLAN #1 3-22-10	1,000.00	1,000.37	11.63	7.40	2.753	SF
P_MIRACLE 9-12 - P_MIRACLE 9-12 - PLAN #1 3-22-10	816.12	815.88	19.73	16.35	5.826	CC, ES
P_MIRACLE 9-12 - P_MIRACLE 9-12 - PLAN #1 3-22-10	900.00	899.21	20.43	16.71	5.493	SF

Offset Design LARIMER_MIRACLE 40-12 PAD - P_MIRACLE 1-12 - P_MIRACLE 1-12 - PLAN #1 3-22-10 RHS											
Survey Program: 0-MWD											
Reference											
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +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	91.01	-0.35	20.05	20.05		
100.00	100.00	100.00	100.00	0.10	0.10	91.01	-0.35	20.05	20.05	19.86	0.19
200.00	200.00	200.00	200.00	0.32	0.32	91.01	-0.35	20.05	20.05	19.41	0.64
300.00	300.00	300.00	300.00	0.55	0.55	91.01	-0.35	20.05	20.05	18.96	1.09
400.00	400.00	400.09	400.07	0.77	0.77	86.03	1.37	19.74	19.79	18.25	1.54
448.19	448.19	448.26	448.19	0.88	0.88	79.98	3.42	19.38	19.68	17.92	1.76
500.00	500.00	499.94	499.78	0.99	1.00	70.92	6.52	18.84	19.93	17.94	1.99
600.00	600.00	599.31	598.76	1.22	1.24	49.06	15.03	17.33	22.97	20.51	2.46
700.00	700.00	697.96	696.68	1.44	1.51	29.61	26.82	15.25	31.03	28.07	2.96
750.00	750.00	746.94	745.13	1.56	1.66	22.43	33.91	13.99	37.01	33.79	3.21
800.00	800.00	795.73	793.26	1.67	1.82	52.36	41.78	12.60	43.89	40.51	3.38
900.00	899.93	892.87	888.65	1.89	2.17	46.50	59.84	9.41	58.92	55.07	3.85
1,000.00	999.68	989.42	982.78	2.12	2.56	43.98	80.94	5.68	74.96	70.63	4.33
1,100.00	1,099.13	1,085.36	1,075.56	2.36	3.01	43.10	104.99	1.43	91.71	86.88	4.83

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_MIRACLE 17-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4963.00ft (Original Well Elev)
Reference Site:	LARIMER_MIRACLE 40-12 PAD	MD Reference:	WELL @ 4963.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MIRACLE 17-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 17-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-22-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design LARIMER_MIRACLE 40-12 PAD - P_MIRACLE 1-12 - P_MIRACLE 1-12 - PLAN #1 3-22-10 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
1,200.00	1,198.15	1,180.67	1,166.86	2.63	3.51	43.12	131.90	-3.32	109.07	103.71	5.37	20.321	
1,300.00	1,296.63	1,275.34	1,256.60	2.93	4.06	43.66	161.57	-8.56	127.04	121.09	5.95	21.353	
1,400.00	1,394.44	1,369.36	1,344.69	3.28	4.67	44.49	193.91	-14.28	145.61	139.03	6.59	22.102	
1,500.00	1,491.46	1,462.71	1,431.05	3.68	5.32	45.51	228.83	-20.45	164.82	157.52	7.30	22.588	
1,600.00	1,587.58	1,557.11	1,517.22	4.15	6.03	46.68	266.78	-27.16	184.54	176.45	8.09	22.801	
1,700.00	1,682.68	1,655.23	1,606.49	4.67	6.79	48.28	306.90	-34.24	202.76	193.74	9.02	22.489	
1,800.00	1,776.65	1,753.56	1,695.94	5.26	7.56	50.30	347.10	-41.35	218.95	208.88	10.07	21.751	
1,900.00	1,869.36	1,851.98	1,785.47	5.93	8.34	52.70	387.33	-48.46	233.34	222.07	11.27	20.713	
1,998.59	1,959.43	1,948.97	1,873.72	6.65	9.10	55.42	426.99	-55.46	246.02	233.41	12.61	19.508	
2,000.00	1,960.71	1,950.36	1,874.98	6.66	9.12	55.47	427.56	-55.56	246.19	233.56	12.63	19.490	
2,100.00	2,051.36	2,048.69	1,964.43	7.44	9.90	58.46	467.76	-62.67	258.76	244.62	14.13	18.308	
2,200.00	2,142.02	2,147.01	2,053.88	8.23	10.69	61.17	507.96	-69.77	271.96	256.27	15.69	17.332	
2,300.00	2,232.67	2,245.34	2,143.33	9.03	11.47	63.63	548.15	-76.88	285.72	268.43	17.29	16.526	
2,400.00	2,323.32	2,343.67	2,232.79	9.85	12.26	65.86	588.35	-83.98	299.96	281.04	18.92	15.857	
2,500.00	2,413.97	2,441.99	2,322.24	10.67	13.05	67.89	628.55	-91.08	314.60	294.04	20.56	15.299	
2,600.00	2,504.62	2,540.32	2,411.69	11.49	13.85	69.74	668.75	-98.19	329.60	307.38	22.23	14.830	
2,700.00	2,595.27	2,638.65	2,501.14	12.32	14.64	71.43	708.95	-105.29	344.92	321.02	23.90	14.434	
2,800.00	2,685.92	2,736.97	2,590.60	13.16	15.43	72.98	749.15	-112.39	360.50	334.92	25.57	14.097	
2,900.00	2,776.58	2,835.30	2,680.05	14.00	16.23	74.39	789.35	-119.50	376.32	349.06	27.25	13.808	
3,000.00	2,867.23	2,933.63	2,769.50	14.83	17.02	75.70	829.55	-126.60	392.34	363.41	28.93	13.560	
3,100.00	2,957.88	3,031.95	2,858.95	15.68	17.82	76.90	869.75	-133.70	408.55	377.93	30.62	13.344	
3,200.00	3,048.53	3,130.28	2,948.40	16.52	18.61	78.01	909.95	-140.81	424.92	392.63	32.30	13.156	
3,300.00	3,139.18	3,228.61	3,037.86	17.36	19.41	79.03	950.15	-147.91	441.44	407.46	33.98	12.992	
3,400.00	3,229.83	3,326.94	3,127.31	18.21	20.21	79.99	990.35	-155.01	458.09	422.43	35.66	12.847	
3,500.00	3,320.49	3,425.26	3,216.76	19.06	21.00	80.87	1,030.55	-162.12	474.85	437.51	37.33	12.719	
3,600.00	3,411.14	3,523.59	3,306.21	19.90	21.80	81.70	1,070.75	-169.22	491.71	452.70	39.01	12.605	
3,700.00	3,501.79	3,621.92	3,395.67	20.75	22.60	82.47	1,110.95	-176.32	508.67	467.99	40.68	12.504	
3,800.00	3,592.44	3,720.24	3,485.12	21.60	23.40	83.19	1,151.15	-183.43	525.71	483.36	42.35	12.413	
3,900.00	3,683.09	3,818.57	3,574.57	22.45	24.19	83.87	1,191.35	-190.53	542.83	498.81	44.02	12.331	
4,000.00	3,773.74	3,916.90	3,664.02	23.30	24.99	84.50	1,231.55	-197.63	560.02	514.33	45.69	12.258	
4,100.00	3,864.40	4,015.22	3,753.48	24.15	25.79	85.10	1,271.75	-204.74	577.27	529.91	47.35	12.191	
4,200.00	3,955.05	4,113.55	3,842.93	25.00	26.59	85.67	1,311.95	-211.84	594.57	545.56	49.01	12.131	
4,300.00	4,045.70	4,211.88	3,932.38	25.85	27.38	86.20	1,352.15	-218.94	611.93	561.26	50.67	12.076	
4,400.00	4,136.35	4,310.20	4,021.83	26.71	28.18	86.70	1,392.34	-226.05	629.34	577.01	52.33	12.026	
4,500.00	4,227.00	4,408.53	4,111.29	27.56	28.98	87.17	1,432.54	-233.15	646.80	592.81	53.99	11.980	
4,600.00	4,317.65	4,506.86	4,200.74	28.41	29.78	87.62	1,472.74	-240.26	664.29	608.65	55.64	11.938	
4,700.00	4,408.30	4,605.19	4,290.19	29.27	30.58	88.05	1,512.94	-247.36	681.82	624.53	57.30	11.900	
4,800.00	4,498.96	4,703.51	4,379.64	30.12	31.38	88.46	1,553.14	-254.46	699.39	640.44	58.95	11.864	
4,900.00	4,589.61	4,801.84	4,469.09	30.97	32.18	88.84	1,593.34	-261.57	716.99	656.39	60.60	11.831	
5,000.00	4,680.26	4,900.17	4,558.55	31.83	32.98	89.21	1,633.54	-268.67	734.62	672.37	62.25	11.801	
5,023.50	4,701.57	4,923.28	4,579.57	32.03	33.16	89.29	1,642.99	-270.34	738.77	676.13	62.64	11.794	
5,100.00	4,771.33	4,998.53	4,648.03	32.60	33.77	89.75	1,673.76	-275.78	752.28	688.44	63.85	11.783	
5,200.00	4,863.76	5,096.95	4,737.57	33.21	34.57	90.12	1,713.99	-282.89	769.97	704.71	65.26	11.798	
5,300.00	4,957.45	5,195.31	4,827.05	33.78	35.37	90.22	1,754.21	-289.99	787.66	721.07	66.59	11.829	
5,400.00	5,052.31	5,293.49	4,916.37	34.30	36.17	90.09	1,794.35	-297.08	805.37	737.54	67.82	11.874	
5,500.00	5,148.22	5,391.37	5,005.41	34.78	36.97	89.73	1,834.36	-304.15	823.16	754.20	68.96	11.936	
5,600.00	5,245.05	5,488.83	5,094.08	35.20	37.76	89.17	1,874.21	-311.20	841.15	771.15	70.00	12.017	
5,700.00	5,342.70	5,598.00	5,193.98	35.57	38.54	88.37	1,917.54	-318.85	858.88	787.97	70.91	12.113	
5,800.00	5,441.04	5,711.11	5,299.15	35.90	39.18	87.54	1,958.50	-326.09	875.30	803.69	71.61	12.223	
5,900.00	5,539.95	5,825.47	5,407.08	36.17	39.77	86.72	1,995.73	-332.67	890.32	818.13	72.20	12.332	
6,000.00	5,639.32	5,941.05	5,517.60	36.39	40.31	85.90	2,029.02	-338.55	903.91	831.24	72.67	12.439	
6,100.00	5,739.01	6,057.82	5,630.55	36.57	40.79	85.07	2,058.16	-343.70	916.01	842.98	73.03	12.543	

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_MIRACLE 17-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4963.00ft (Original Well Elev)
Reference Site:	LARIMER_MIRACLE 40-12 PAD	MD Reference:	WELL @ 4963.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MIRACLE 17-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 17-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-22-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design LARIMER_MIRACLE 40-12 PAD - P_MIRACLE 1-12 - P_MIRACLE 1-12 - PLAN #1 3-22-10 RHS												Offset Site Error:	0.00 ft
Survey Program: 0-MWD												Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
6,200.00	5,838.91	6,175.71	5,745.71	36.69	41.22	84.23	2,082.95	-348.08	926.59	853.33	73.26	12.647	
6,272.09	5,911.00	6,261.36	5,829.98	36.75	41.49	48.38	2,098.04	-350.75	933.26	859.90	73.36	12.722	
6,300.00	5,938.91	6,294.69	5,862.88	36.77	41.59	48.11	2,103.23	-351.67	935.60	862.23	73.37	12.752	
6,400.00	6,038.91	6,415.03	5,982.17	36.85	41.88	47.29	2,118.85	-354.43	942.69	869.26	73.43	12.838	
6,500.00	6,138.91	6,536.51	6,103.15	36.92	42.11	46.73	2,129.60	-356.32	947.60	874.08	73.52	12.889	
6,600.00	6,238.91	6,658.70	6,225.19	37.00	42.27	46.44	2,135.30	-357.33	950.21	876.57	73.64	12.903	
6,700.00	6,338.91	6,772.42	6,338.91	37.08	42.36	46.39	2,136.26	-357.50	950.65	876.85	73.80	12.882	
6,800.00	6,438.91	6,872.42	6,438.91	37.16	42.43	46.39	2,136.26	-357.50	950.65	876.69	73.96	12.854	
6,900.00	6,538.91	6,972.42	6,538.91	37.24	42.49	46.39	2,136.26	-357.50	950.65	876.53	74.12	12.826	
7,000.00	6,638.91	7,072.42	6,638.91	37.32	42.56	46.39	2,136.26	-357.50	950.65	876.37	74.28	12.798	
7,100.00	6,738.91	7,172.42	6,738.91	37.41	42.63	46.39	2,136.26	-357.50	950.65	876.20	74.45	12.770	
7,200.00	6,838.91	7,272.42	6,838.91	37.49	42.70	46.39	2,136.26	-357.50	950.65	876.04	74.61	12.741	
7,300.00	6,938.91	7,372.42	6,938.91	37.58	42.77	46.39	2,136.26	-357.50	950.65	875.87	74.78	12.712	
7,400.00	7,038.91	7,472.42	7,038.91	37.66	42.85	46.39	2,136.26	-357.50	950.65	875.69	74.96	12.683	
7,500.00	7,138.91	7,572.42	7,138.91	37.75	42.92	46.39	2,136.26	-357.50	950.65	875.52	75.13	12.653	
7,600.00	7,238.91	7,672.42	7,238.91	37.84	42.99	46.39	2,136.26	-357.50	950.65	875.34	75.31	12.623	
7,700.00	7,338.91	7,772.42	7,338.91	37.93	43.07	46.39	2,136.26	-357.50	950.65	875.16	75.49	12.593	
7,800.00	7,438.91	7,872.42	7,438.91	38.02	43.15	46.39	2,136.26	-357.50	950.65	874.98	75.67	12.563	
7,900.00	7,538.91	7,972.42	7,538.91	38.12	43.22	46.39	2,136.26	-357.50	950.65	874.80	75.85	12.533	
8,000.00	7,638.91	8,072.42	7,638.91	38.21	43.30	46.39	2,136.26	-357.50	950.65	874.61	76.04	12.502	
8,100.00	7,738.91	8,172.42	7,738.91	38.30	43.38	46.39	2,136.26	-357.50	950.65	874.42	76.23	12.471	
8,172.09	7,811.00	8,244.52	7,811.00	38.37	43.44	46.39	2,136.26	-357.50	950.65	874.29	76.37	12.449	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_MIRACLE 17-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4963.00ft (Original Well Elev)
Reference Site:	LARIMER_MIRACLE 40-12 PAD	MD Reference:	WELL @ 4963.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MIRACLE 17-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 17-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-22-10 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	-87.92	0.36	-10.02	10.03				
100.00	100.00	100.00	100.00	0.10	0.10	-87.92	0.36	-10.02	10.03	9.84	0.19	52.504	
200.00	200.00	200.00	200.00	0.32	0.32	-87.92	0.36	-10.02	10.03	9.39	0.64	15.659	
300.00	300.00	300.00	300.00	0.55	0.55	-87.92	0.36	-10.02	10.03	8.94	1.09	9.202	
400.00	400.00	400.00	400.00	0.77	0.77	-87.92	0.36	-10.02	10.03	8.49	1.54	6.515	
500.00	500.00	500.00	500.00	0.99	0.99	-87.92	0.36	-10.02	10.03	8.04	1.99	5.043	
600.00	600.00	600.00	600.00	1.22	1.22	-87.92	0.36	-10.02	10.03	7.59	2.44	4.113	
700.00	700.00	700.00	700.00	1.44	1.44	-87.92	0.36	-10.02	10.03	7.14	2.89	3.473	
750.00	750.00	750.00	750.00	1.56	1.56	-87.92	0.36	-10.02	10.03	6.92	3.11	3.222	
800.00	800.00	799.96	799.95	1.67	1.65	-57.18	-0.06	-10.12	9.88	6.56	3.32	2.974	
835.32	835.31	835.20	835.19	1.75	1.72	-66.04	-0.87	-10.30	9.76	6.30	3.46	2.819 CC, ES, SF	
900.00	899.93	899.56	899.49	1.89	1.83	-92.30	-3.44	-10.88	10.89	7.18	3.72	2.930	
1,000.00	999.68	998.26	997.95	2.12	2.02	-126.54	-10.12	-12.39	20.06	15.93	4.12	4.863	
1,100.00	1,099.13	1,095.49	1,094.65	2.36	2.23	-140.53	-19.93	-14.60	37.71	33.18	4.53	8.318	
1,200.00	1,198.15	1,190.69	1,188.96	2.63	2.46	-146.38	-32.64	-17.47	62.20	57.25	4.95	12.565	
1,300.00	1,296.63	1,283.39	1,280.31	2.93	2.73	-149.23	-47.93	-20.92	92.86	87.48	5.38	17.274	
1,400.00	1,394.44	1,373.14	1,368.24	3.28	3.03	-150.76	-65.49	-24.87	129.35	123.54	5.81	22.254	
1,500.00	1,491.46	1,459.58	1,452.35	3.68	3.37	-151.61	-84.92	-29.26	171.39	165.12	6.26	27.370	
1,600.00	1,587.58	1,542.41	1,532.34	4.15	3.73	-152.06	-105.86	-33.98	218.68	211.96	6.72	32.524	
1,700.00	1,682.68	1,621.38	1,608.00	4.67	4.11	-152.26	-127.92	-38.95	270.96	263.76	7.20	37.638	
1,800.00	1,776.65	1,700.00	1,682.68	5.26	4.52	-152.30	-151.89	-44.36	327.94	320.25	7.70	42.607	
1,900.00	1,869.36	1,767.11	1,745.88	5.93	4.92	-152.13	-173.93	-49.33	389.28	381.09	8.20	47.498	
1,998.59	1,959.43	1,832.78	1,807.18	6.65	5.34	-151.87	-196.88	-54.50	453.79	445.07	8.72	52.027	
2,000.00	1,960.71	1,833.69	1,808.03	6.66	5.34	-151.88	-197.21	-54.58	454.74	446.01	8.73	52.084	
2,100.00	2,051.36	1,900.00	1,869.36	7.44	5.78	-152.32	-221.79	-60.12	522.89	513.54	9.36	55.890	
2,200.00	2,142.02	1,958.06	1,922.57	8.23	6.19	-152.55	-244.45	-65.23	592.46	582.48	9.98	59.356	
2,300.00	2,232.67	2,027.56	1,985.91	9.03	6.71	-152.73	-272.36	-71.52	662.89	652.24	10.65	62.263	
2,400.00	2,323.32	2,098.52	2,050.58	9.85	7.24	-152.88	-300.87	-77.95	733.33	722.01	11.32	64.758	
2,500.00	2,413.97	2,169.49	2,115.25	10.67	7.78	-153.00	-329.37	-84.38	803.78	791.77	12.01	66.918	
2,600.00	2,504.62	2,240.45	2,179.91	11.49	8.33	-153.11	-357.88	-90.80	874.23	861.53	12.71	68.809	
2,700.00	2,595.27	2,311.42	2,244.58	12.32	8.87	-153.19	-386.39	-97.23	944.68	931.28	13.40	70.475	
2,800.00	2,685.92	2,382.38	2,309.25	13.16	9.43	-153.27	-414.89	-103.66	1,015.13	1,001.02	14.11	71.950	
2,900.00	2,776.58	2,453.34	2,373.92	14.00	9.98	-153.34	-443.40	-110.09	1,085.58	1,070.77	14.82	73.265	
3,000.00	2,867.23	2,524.31	2,438.58	14.83	10.54	-153.39	-471.91	-116.52	1,156.04	1,140.51	15.53	74.445	
3,100.00	2,957.88	2,595.27	2,503.25	15.68	11.10	-153.44	-500.41	-122.94	1,226.49	1,210.25	16.24	75.508	
3,200.00	3,048.53	2,666.23	2,567.92	16.52	11.66	-153.49	-528.92	-129.37	1,296.94	1,279.98	16.96	76.470	
3,300.00	3,139.18	2,737.20	2,632.59	17.36	12.22	-153.53	-557.42	-135.80	1,367.40	1,349.72	17.68	77.346	
3,400.00	3,229.83	2,808.16	2,697.25	18.21	12.79	-153.57	-585.93	-142.23	1,437.85	1,419.45	18.40	78.147	
3,500.00	3,320.49	2,879.12	2,761.92	19.06	13.35	-153.60	-614.44	-148.66	1,508.30	1,489.18	19.12	78.881	
3,600.00	3,411.14	2,950.09	2,826.59	19.90	13.92	-153.63	-642.94	-155.08	1,578.76	1,558.91	19.84	79.558	
3,700.00	3,501.79	3,021.05	2,891.26	20.75	14.49	-153.66	-671.45	-161.51	1,649.21	1,628.65	20.57	80.183	
3,800.00	3,592.44	3,092.01	2,955.92	21.60	15.05	-153.68	-699.96	-167.94	1,719.67	1,698.38	21.29	80.763	
3,900.00	3,683.09	3,162.98	3,020.59	22.45	15.62	-153.71	-728.46	-174.37	1,790.12	1,768.10	22.03	81.274	
4,000.00	3,773.74	3,233.94	3,085.26	23.30	16.19	-153.73	-756.97	-180.79	1,860.58	1,837.82	22.76	81.742	
4,100.00	3,864.40	3,304.90	3,149.93	24.15	16.76	-153.75	-785.48	-187.22	1,931.03	1,907.54	23.50	82.177	
4,200.00	3,955.05	3,375.87	3,214.59	25.00	17.33	-153.77	-813.98	-193.65	2,001.49	1,977.25	24.24	82.581	
4,300.00	4,045.70	3,446.83	3,279.26	25.85	17.90	-153.79	-842.49	-200.08	2,071.95	2,046.97	24.98	82.958	
4,400.00	4,136.35	3,517.79	3,343.93	26.71	18.47	-153.80	-870.99	-206.51	2,142.40	2,116.69	25.72	83.310	
4,500.00	4,227.00	3,588.76	3,408.60	27.56	19.05	-153.82	-899.50	-212.93	2,212.86	2,186.40	26.46	83.640	
4,600.00	4,317.65	3,659.72	3,473.26	28.41	19.62	-153.83	-928.01	-219.36	2,283.31	2,256.11	27.20	83.949	
4,700.00	4,408.30	3,730.68	3,537.93	29.27	20.19	-153.85	-956.51	-225.79	2,353.77	2,325.83	27.94	84.240	
4,800.00	4,498.96	3,801.65	3,602.60	30.12	20.76	-153.86	-985.02	-232.22	2,424.23	2,395.54	28.68	84.514	

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_MIRACLE 17-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4963.00ft (Original Well Elev)
Reference Site:	LARIMER_MIRACLE 40-12 PAD	MD Reference:	WELL @ 4963.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MIRACLE 17-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 17-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-22-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design LARIMER_MIRACLE 40-12 PAD - P_MIRACLE 16-12 - P_MIRACLE 16-12 - PLAN #1 3-22-10 RHS												Offset Site Error:	0.00 ft
Survey Program: 0-MWD												Offset Well Error:	0.00 ft
Reference	Offset	Semi Major Axis		Distance									
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
4,900.00	4,589.61	3,872.61	3,667.27	30.97	21.34	-153.87	-1,013.53	-238.65	2,494.68	2,465.25	29.43	84.773	
5,000.00	4,680.26	3,943.57	3,731.93	31.83	21.91	-153.88	-1,042.03	-245.07	2,565.14	2,534.97	30.17	85.017	
5,023.50	4,701.57	3,960.25	3,747.13	32.03	22.04	-153.88	-1,048.73	-246.58	2,581.70	2,551.35	30.35	85.072	
5,100.00	4,771.33	4,015.18	3,797.19	32.60	22.49	-154.52	-1,070.80	-251.56	2,634.94	2,603.90	31.04	84.895	
5,200.00	4,863.76	4,088.87	3,864.34	33.21	23.08	-155.26	-1,100.40	-258.23	2,702.51	2,670.62	31.89	84.738	
5,300.00	4,957.45	4,164.62	3,933.37	33.78	23.70	-155.88	-1,130.83	-265.10	2,767.71	2,734.97	32.74	84.540	
5,400.00	5,052.31	4,242.34	4,004.19	34.30	24.32	-156.42	-1,162.05	-272.14	2,830.47	2,796.90	33.57	84.319	
5,500.00	5,148.22	4,321.93	4,076.72	34.78	24.97	-156.87	-1,194.02	-279.34	2,890.72	2,856.35	34.38	84.088	
5,600.00	5,245.05	4,403.30	4,150.87	35.20	25.63	-157.25	-1,226.70	-286.71	2,948.39	2,913.23	35.16	83.857	
5,700.00	5,342.70	4,486.34	4,226.54	35.57	26.30	-157.56	-1,260.06	-294.24	3,003.43	2,967.52	35.91	83.633	
5,800.00	5,441.04	4,570.95	4,303.65	35.90	26.98	-157.80	-1,294.05	-301.90	3,055.77	3,019.14	36.63	83.422	
5,900.00	5,539.95	4,657.04	4,382.10	36.17	27.68	-157.99	-1,328.63	-309.70	3,105.37	3,068.06	37.31	83.230	
6,000.00	5,639.32	4,744.49	4,461.79	36.39	28.39	-158.13	-1,363.76	-317.62	3,152.18	3,114.23	37.95	83.061	
6,100.00	5,739.01	4,833.20	4,542.64	36.57	29.11	-158.22	-1,399.40	-325.66	3,196.16	3,157.61	38.55	82.918	
6,200.00	5,838.91	4,923.07	4,624.53	36.69	29.84	-158.26	-1,435.50	-333.80	3,237.28	3,198.18	39.10	82.803	
6,272.09	5,911.00	4,988.51	4,684.16	36.75	30.37	166.51	-1,461.79	-339.72	3,265.12	3,225.66	39.46	82.739	
6,300.00	5,938.91	5,013.94	4,707.34	36.77	30.57	166.59	-1,472.00	-342.03	3,275.61	3,235.99	39.62	82.685	
6,400.00	6,038.91	5,105.07	4,790.38	36.85	31.31	166.90	-1,508.61	-350.28	3,313.25	3,273.08	40.17	82.474	
6,500.00	6,138.91	5,196.20	4,873.42	36.92	32.05	167.20	-1,545.22	-358.54	3,350.97	3,310.25	40.73	82.277	
6,600.00	6,238.91	5,286.42	4,956.46	37.00	32.79	167.23	-1,581.83	-366.80	3,388.69	3,347.91	41.28	82.088	
6,700.00	6,338.91	5,377.02	5,039.50	37.08	33.53	169.23	-1,618.44	-375.05	3,426.41	3,385.63	41.79	81.900	
6,800.00	6,438.91	5,467.13	5,122.54	37.16	34.27	169.23	-1,655.05	-383.30	3,464.13	3,423.35	42.29	81.712	
6,900.00	6,538.91	5,557.24	5,205.58	37.24	35.01	169.23	-1,691.66	-391.55	3,501.85	3,461.07	42.79	81.524	
7,000.00	6,638.91	5,647.35	5,288.62	37.32	35.75	169.23	-1,728.27	-400.00	3,539.57	3,498.80	43.29	81.336	
7,100.00	6,738.91	5,737.46	5,371.66	37.41	36.49	169.23	-1,764.88	-408.25	3,577.29	3,536.52	43.79	81.148	
7,200.00	6,838.91	5,827.57	5,454.70	37.49	37.23	169.23	-1,801.49	-416.50	3,615.01	3,574.24	44.29	80.960	
7,300.00	6,938.91	5,917.68	5,537.74	37.58	37.97	169.23	-1,838.10	-424.75	3,652.73	3,611.96	44.79	80.772	
7,400.00	7,038.91	6,007.79	5,620.78	37.66	38.71	169.23	-1,874.71	-433.00	3,690.45	3,649.68	45.29	80.584	
7,500.00	7,138.91	6,097.90	5,703.82	37.75	39.45	169.23	-1,911.32	-441.25	3,728.17	3,687.40	45.79	80.396	
7,600.00	7,238.91	6,188.01	5,786.86	37.84	40.19	169.23	-1,947.93	-449.50	3,765.89	3,725.12	46.29	80.208	
7,700.00	7,338.91	6,278.12	5,869.90	37.93	40.93	169.23	-1,984.54	-457.75	3,803.61	3,762.84	46.79	80.020	
7,800.00	7,438.91	6,368.23	5,952.94	38.02	41.67	169.23	-2,021.15	-466.00	3,841.33	3,800.56	47.29	79.832	
7,900.00	7,538.91	6,458.34	6,036.08	38.12	42.41	169.23	-2,057.76	-474.25	3,879.05	3,838.28	47.79	79.644	
8,000.00	7,638.91	6,548.45	6,119.12	38.21	43.15	169.23	-2,094.37	-482.50	3,916.77	3,875.99	48.29	79.456	
8,100.00	7,738.91	6,638.56	6,202.16	38.30	43.89	169.23	-2,130.98	-490.75	3,954.49	3,913.71	48.79	79.268	
8,147.72	7,786.63	6,686.23	6,249.83	38.35	44.63	169.23	-2,167.59	-499.00	3,992.21	3,951.43	49.29	79.080	
8,172.09	7,811.00	6,713.51	6,275.10	38.37	44.83	169.23	-2,181.83	-499.10	3,953.45	3,905.02	48.43	69.239	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_MIRACLE 17-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4963.00ft (Original Well Elev)
Reference Site:	LARIMER_MIRACLE 40-12 PAD	MD Reference:	WELL @ 4963.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MIRACLE 17-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 17-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-22-10 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	-88.60	0.73	-29.79	29.80				
100.00	100.00	100.00	100.00	0.10	0.10	-88.60	0.73	-29.79	29.80	29.61	0.19	155.997	
200.00	200.00	200.00	200.00	0.32	0.32	-88.60	0.73	-29.79	29.80	29.16	0.64	46.526	
300.00	300.00	300.00	300.00	0.55	0.55	-88.60	0.73	-29.79	29.80	28.71	1.09	27.340	
400.00	400.00	400.00	400.00	0.77	0.77	-88.60	0.73	-29.79	29.80	28.26	1.54	19.357	
500.00	500.00	500.00	500.00	0.99	0.99	-88.60	0.73	-29.79	29.80	27.81	1.99	14.983	
600.00	600.00	600.00	600.00	1.22	1.22	-88.60	0.73	-29.79	29.80	27.36	2.44	12.221	
700.00	700.00	700.00	700.00	1.44	1.44	-88.60	0.73	-29.79	29.80	26.92	2.89	10.319	
750.00	750.00	750.00	750.00	1.56	1.56	-88.60	0.73	-29.79	29.80	26.69	3.11	9.574 CC	
800.00	800.00	799.65	799.65	1.67	1.66	-54.65	0.41	-30.09	29.84	26.51	3.32	8.980 ES	
900.00	899.93	898.73	898.66	1.89	1.84	-64.66	-2.10	-32.42	30.65	26.92	3.72	8.233 SF	
1,000.00	999.68	997.17	996.86	2.12	2.03	-81.85	-7.08	-37.05	34.78	30.64	4.14	8.401	
1,100.00	1,099.13	1,094.54	1,093.71	2.36	2.25	-99.14	-14.43	-43.88	45.18	40.60	4.58	9.871	
1,200.00	1,198.15	1,190.46	1,188.73	2.63	2.49	-111.69	-24.03	-52.79	62.72	57.68	5.03	12.459	
1,300.00	1,296.63	1,284.56	1,281.47	2.93	2.77	-119.68	-35.71	-63.64	86.78	81.26	5.52	15.729	
1,400.00	1,394.44	1,376.51	1,371.53	3.28	3.09	-124.68	-49.26	-76.23	116.64	110.61	6.03	19.336	
1,500.00	1,491.46	1,466.00	1,458.57	3.68	3.44	-127.85	-64.49	-90.38	151.79	145.21	6.58	23.053	
1,600.00	1,587.58	1,552.79	1,542.33	4.15	3.83	-129.91	-81.14	-105.85	191.86	184.68	7.18	26.733	
1,700.00	1,682.68	1,636.66	1,622.57	4.67	4.26	-131.22	-99.00	-122.44	236.55	228.74	7.81	30.283	
1,800.00	1,776.65	1,717.43	1,699.15	5.26	4.71	-132.04	-117.82	-139.92	285.61	277.12	8.49	33.649	
1,900.00	1,869.36	1,795.08	1,772.05	5.93	5.18	-132.50	-137.39	-158.10	338.78	329.56	9.21	36.765	
1,998.59	1,959.43	1,876.29	1,847.94	6.65	5.71	-132.92	-158.60	-177.80	394.16	384.16	10.00	39.407	
2,000.00	1,960.71	1,877.45	1,849.01	6.66	5.72	-132.94	-158.90	-178.08	394.97	384.95	10.01	39.441	
2,100.00	2,051.36	1,959.05	1,925.26	7.44	6.26	-134.20	-180.21	-197.87	452.26	441.38	10.88	41.571	
2,200.00	2,142.02	2,040.65	2,001.50	8.23	6.81	-135.18	-201.51	-217.66	509.66	497.90	11.76	44.331	
2,300.00	2,232.67	2,122.26	2,077.75	9.03	7.37	-135.96	-222.82	-237.46	567.15	554.49	12.66	44.802	
2,400.00	2,323.32	2,203.86	2,153.99	9.85	7.93	-136.60	-244.13	-257.25	624.70	611.13	13.57	46.045	
2,500.00	2,413.97	2,285.46	2,230.24	10.67	8.50	-137.13	-265.44	-277.04	682.28	667.80	14.48	47.104	
2,600.00	2,504.62	2,367.07	2,306.48	11.49	9.08	-137.58	-286.75	-296.84	739.90	724.50	15.41	48.018	
2,700.00	2,595.27	2,448.67	2,382.73	12.32	9.65	-137.96	-308.05	-316.63	797.55	781.21	16.34	48.813	
2,800.00	2,685.92	2,530.27	2,458.97	13.16	10.23	-138.29	-329.36	-336.43	855.22	837.95	17.27	49.511	
2,900.00	2,776.58	2,611.88	2,535.22	14.00	10.81	-138.58	-350.67	-356.22	912.90	894.69	18.21	50.129	
3,000.00	2,867.23	2,693.48	2,611.46	14.83	11.40	-138.84	-371.98	-376.01	970.60	951.45	19.15	50.678	
3,100.00	2,957.88	2,775.08	2,687.71	15.68	11.98	-139.07	-393.28	-395.81	1,028.31	1,008.21	20.10	51.158	
3,200.00	3,048.53	2,856.69	2,763.95	16.52	12.57	-139.27	-414.59	-415.60	1,086.03	1,064.98	21.06	51.580	
3,300.00	3,139.18	2,938.29	2,840.20	17.36	13.15	-139.45	-435.90	-435.39	1,143.76	1,121.75	22.01	51.959	
3,400.00	3,229.83	3,019.89	2,916.44	18.21	13.74	-139.62	-457.21	-455.19	1,201.49	1,178.52	22.97	52.302	
3,500.00	3,320.49	3,101.50	2,992.69	19.06	14.33	-139.77	-478.51	-474.98	1,259.23	1,235.30	23.93	52.613	
3,600.00	3,411.14	3,183.10	3,068.93	19.90	14.92	-139.90	-499.82	-494.77	1,316.98	1,292.08	24.90	52.896	
3,700.00	3,501.79	3,264.70	3,145.18	20.75	15.51	-140.03	-521.13	-514.57	1,374.73	1,348.87	25.86	53.156	
3,800.00	3,592.44	3,346.31	3,221.42	21.60	16.10	-140.14	-542.44	-534.36	1,432.49	1,405.66	26.83	53.394	
3,900.00	3,683.09	3,427.91	3,297.67	22.45	16.69	-140.25	-563.75	-554.15	1,490.24	1,462.45	27.80	53.613	
4,000.00	3,773.74	3,509.51	3,373.91	23.30	17.28	-140.35	-585.05	-573.95	1,548.00	1,519.24	28.77	53.815	
4,100.00	3,864.40	3,591.12	3,450.16	24.15	17.87	-140.44	-606.36	-593.74	1,605.77	1,576.03	29.73	54.003	
4,200.00	3,955.05	3,672.72	3,526.40	25.00	18.47	-140.53	-627.67	-613.53	1,663.54	1,632.83	30.71	54.177	
4,300.00	4,045.70	3,754.32	3,602.65	25.85	19.06	-140.60	-648.98	-633.33	1,721.30	1,689.63	31.68	54.339	
4,400.00	4,136.35	3,835.93	3,678.89	26.71	19.65	-140.68	-670.28	-653.12	1,779.08	1,746.43	32.65	54.490	
4,500.00	4,227.00	3,917.53	3,755.14	27.56	20.25	-140.75	-691.59	-672.91	1,836.85	1,803.23	33.62	54.632	
4,600.00	4,317.65	3,999.13	3,831.38	28.41	20.84	-140.81	-712.90	-692.71	1,894.62	1,860.03	34.60	54.764	
4,700.00	4,408.30	4,080.74	3,907.63	29.27	21.44	-140.87	-734.21	-712.50	1,952.40	1,916.83	35.57	54.888	
4,800.00	4,498.96	4,162.34	3,983.87	30.12	22.03	-140.93	-755.52	-732.29	2,010.18	1,973.63	36.55	55.005	
4,900.00	4,589.61	4,243.94	4,060.12	30.97	22.62	-140.99	-776.82	-752.09	2,067.95	2,030.43	37.52	55.116	

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_MIRACLE 17-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4963.00ft (Original Well Elev)
Reference Site:	LARIMER_MIRACLE 40-12 PAD	MD Reference:	WELL @ 4963.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MIRACLE 17-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 17-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-22-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design LARIMER_MIRACLE 40-12 PAD - P_MIRACLE 20-12 - P_MIRACLE 20-12 - PLAN #1 3-22-10 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	4,680.26	4,325.55	4,136.36	31.83	23.22	-141.04	-798.13	-771.88	2,125.73	2,087.24	38.50	55.220	
5,023.50	4,701.57	4,344.73	4,154.28	32.03	23.36	-141.05	-803.14	-776.53	2,139.32	2,100.59	38.73	55.243	
5,100.00	4,771.33	4,407.61	4,213.04	32.60	23.82	-141.73	-819.56	-791.79	2,182.86	2,143.29	39.57	55.162	
5,200.00	4,863.76	4,491.17	4,291.11	33.21	24.43	-142.50	-841.38	-812.05	2,237.78	2,197.18	40.60	55.113	
5,300.00	4,957.45	4,576.15	4,370.51	33.78	25.05	-143.15	-863.57	-832.67	2,290.37	2,248.75	41.62	55.034	
5,400.00	5,052.31	4,662.46	4,451.16	34.30	25.68	-143.68	-886.10	-853.60	2,340.57	2,297.96	42.61	54.935	
5,500.00	5,148.22	4,750.00	4,532.94	34.78	26.32	-144.12	-908.96	-874.83	2,388.34	2,344.77	43.57	54.822	
5,600.00	5,245.05	4,838.64	4,615.77	35.20	26.96	-144.46	-932.11	-896.34	2,433.63	2,389.14	44.49	54.700	
5,700.00	5,342.70	4,928.30	4,699.54	35.57	27.62	-144.72	-955.52	-918.08	2,476.42	2,431.04	45.38	54.574	
5,800.00	5,441.04	5,018.85	4,784.14	35.90	28.28	-144.90	-979.16	-940.05	2,516.68	2,470.46	46.22	54.448	
5,900.00	5,539.95	5,110.19	4,869.48	36.17	28.95	-145.00	-1,003.01	-962.20	2,554.39	2,507.37	47.02	54.325	
6,000.00	5,639.32	5,367.55	5,113.46	36.39	30.28	-144.45	-1,062.84	-1,017.78	2,586.93	2,538.58	48.35	53.499	
6,100.00	5,739.01	5,663.46	5,401.68	36.57	31.36	-144.00	-1,111.50	-1,062.98	2,609.80	2,560.32	49.47	52.754	
6,200.00	5,838.91	5,972.42	5,708.24	36.69	32.07	-143.77	-1,138.79	-1,088.33	2,622.21	2,571.95	50.26	52.175	
6,272.09	5,911.00	6,175.33	5,911.00	36.75	32.30	-178.98	-1,143.50	-1,092.70	2,624.46	2,573.89	50.57	51.893	
6,300.00	5,938.91	6,203.23	5,938.91	36.77	32.32	-178.98	-1,143.50	-1,092.70	2,624.46	2,573.83	50.63	51.837	
6,400.00	6,038.91	6,303.23	6,038.91	36.85	32.40	-178.98	-1,143.50	-1,092.70	2,624.46	2,573.62	50.84	51.624	
6,500.00	6,138.91	6,403.23	6,138.91	36.92	32.48	-178.98	-1,143.50	-1,092.70	2,624.46	2,573.41	51.05	51.411	
6,600.00	6,238.91	6,503.23	6,238.91	37.00	32.55	-178.98	-1,143.50	-1,092.70	2,624.46	2,573.20	51.26	51.196	
6,700.00	6,338.91	6,603.23	6,338.91	37.08	32.63	-178.98	-1,143.50	-1,092.70	2,624.46	2,572.98	51.48	50.979	
6,800.00	6,438.91	6,703.23	6,438.91	37.16	32.71	-178.98	-1,143.50	-1,092.70	2,624.46	2,572.76	51.70	50.762	
6,900.00	6,538.91	6,803.23	6,538.91	37.24	32.80	-178.98	-1,143.50	-1,092.70	2,624.46	2,572.54	51.92	50.544	
7,000.00	6,638.91	6,903.23	6,638.91	37.32	32.88	-178.98	-1,143.50	-1,092.70	2,624.46	2,572.31	52.15	50.324	
7,100.00	6,738.91	7,003.23	6,738.91	37.41	32.97	-178.98	-1,143.50	-1,092.70	2,624.46	2,572.08	52.38	50.104	
7,200.00	6,838.91	7,103.23	6,838.91	37.49	33.05	-178.98	-1,143.50	-1,092.70	2,624.46	2,571.85	52.61	49.883	
7,300.00	6,938.91	7,203.23	6,938.91	37.58	33.14	-178.98	-1,143.50	-1,092.70	2,624.46	2,571.62	52.85	49.662	
7,400.00	7,038.91	7,303.23	7,038.91	37.66	33.23	-178.98	-1,143.50	-1,092.70	2,624.46	2,571.38	53.08	49.439	
7,500.00	7,138.91	7,403.23	7,138.91	37.75	33.32	-178.98	-1,143.50	-1,092.70	2,624.46	2,571.14	53.32	49.216	
7,600.00	7,238.91	7,503.23	7,238.91	37.84	33.41	-178.98	-1,143.50	-1,092.70	2,624.46	2,570.89	53.57	48.993	
7,700.00	7,338.91	7,603.23	7,338.91	37.93	33.50	-178.98	-1,143.50	-1,092.70	2,624.46	2,570.65	53.81	48.769	
7,800.00	7,438.91	7,703.23	7,438.91	38.02	33.60	-178.98	-1,143.50	-1,092.70	2,624.46	2,570.40	54.06	48.545	
7,900.00	7,538.91	7,803.23	7,538.91	38.12	33.69	-178.98	-1,143.50	-1,092.70	2,624.46	2,570.15	54.31	48.321	
8,000.00	7,638.91	7,903.23	7,638.91	38.21	33.79	-178.98	-1,143.50	-1,092.70	2,624.46	2,569.90	54.57	48.097	
8,100.00	7,738.91	8,003.23	7,738.91	38.30	33.89	-178.98	-1,143.50	-1,092.70	2,624.46	2,569.64	54.82	47.872	
8,143.74	7,782.64	8,046.97	7,782.64	38.35	33.93	-178.98	-1,143.50	-1,092.70	2,624.46	2,569.53	54.94	47.774	
8,172.09	7,811.00	8,064.33	7,800.00	38.37	33.95	-178.98	-1,143.50	-1,092.70	2,624.49	2,569.49	54.99	47.723	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_MIRACLE 17-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4963.00ft (Original Well Elev)
Reference Site:	LARIMER_MIRACLE 40-12 PAD	MD Reference:	WELL @ 4963.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MIRACLE 17-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 17-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-22-10 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	-88.95	0.73	-39.82	39.83				
100.00	100.00	100.00	100.00	0.10	0.10	-88.95	0.73	-39.82	39.83	39.63	0.19	208.455	
200.00	200.00	200.00	200.00	0.32	0.32	-88.95	0.73	-39.82	39.83	39.19	0.64	62.171	
300.00	300.00	300.00	300.00	0.55	0.55	-88.95	0.73	-39.82	39.83	38.74	1.09	36.533	
400.00	400.00	400.00	400.00	0.77	0.77	-88.95	0.73	-39.82	39.83	38.29	1.54	25.867	
500.00	500.00	500.00	500.00	0.99	0.99	-88.95	0.73	-39.82	39.83	37.84	1.99	20.021	
600.00	600.00	600.00	600.00	1.22	1.22	-88.95	0.73	-39.82	39.83	37.39	2.44	16.331	
700.00	700.00	700.00	700.00	1.44	1.44	-88.95	0.73	-39.82	39.83	36.94	2.89	13.789	
750.00	750.00	750.00	750.00	1.56	1.56	-88.95	0.73	-39.82	39.83	36.71	3.11	12.793 CC	
800.00	800.00	799.33	799.33	1.67	1.66	-54.08	0.83	-40.23	39.99	36.66	3.33	12.012 ES	
900.00	899.93	897.94	897.88	1.89	1.87	-56.89	1.61	-43.53	41.35	37.60	3.75	11.025	
1,000.00	999.68	996.42	996.12	2.12	2.09	-61.94	3.18	-50.12	44.35	40.17	4.18	10.605 SF	
1,100.00	1,099.13	1,094.69	1,093.86	2.36	2.32	-68.26	5.52	-59.97	49.40	44.76	4.64	10.655	
1,200.00	1,198.15	1,192.66	1,190.90	2.63	2.59	-74.78	8.63	-73.02	56.87	51.74	5.13	11.078	
1,300.00	1,296.63	1,290.24	1,287.05	2.93	2.88	-80.75	12.48	-89.23	66.99	61.29	5.70	11.759	
1,400.00	1,394.44	1,387.37	1,382.12	3.28	3.23	-85.78	17.07	-108.51	79.80	73.46	6.34	12.579	
1,500.00	1,491.46	1,484.80	1,476.83	3.68	3.62	-90.01	22.35	-130.73	95.10	88.01	7.09	13.414	
1,600.00	1,587.58	1,583.07	1,572.23	4.15	4.04	-94.54	27.81	-153.70	111.42	103.48	7.94	14.033	
1,700.00	1,682.68	1,680.96	1,667.25	4.67	4.48	-99.33	33.25	-176.57	128.86	119.98	8.88	14.518	
1,800.00	1,776.65	1,778.33	1,761.78	5.26	4.93	-104.17	38.66	-199.32	147.89	138.01	9.88	14.973	
1,900.00	1,869.36	1,875.08	1,855.70	5.93	5.39	-108.89	44.04	-221.93	168.94	158.02	10.92	15.471	
1,998.59	1,959.43	1,969.74	1,947.58	6.65	5.85	-113.31	49.30	-244.05	192.01	180.05	11.96	16.048	
2,000.00	1,960.71	1,971.09	1,948.89	6.66	5.85	-113.38	49.37	-244.37	192.36	180.38	11.98	16.057	
2,100.00	2,051.36	2,066.69	2,041.70	7.44	6.32	-117.63	54.69	-266.71	217.62	204.57	13.05	16.677	
2,200.00	2,142.02	2,162.30	2,134.50	8.23	6.78	-121.01	60.00	-289.05	243.80	229.69	14.10	17.287	
2,300.00	2,232.67	2,257.90	2,227.31	9.03	7.26	-123.73	65.31	-311.39	270.61	255.47	15.15	17.868	
2,400.00	2,323.32	2,353.51	2,320.12	9.85	7.73	-125.96	70.62	-333.73	297.90	281.72	16.18	18.411	
2,500.00	2,413.97	2,449.12	2,412.92	10.67	8.21	-127.82	75.94	-356.07	325.54	308.33	17.21	18.915	
2,600.00	2,504.62	2,544.72	2,505.73	11.49	8.69	-129.40	81.25	-378.41	353.46	335.22	18.24	19.381	
2,700.00	2,595.27	2,640.33	2,598.54	12.32	9.17	-130.74	86.56	-400.75	381.58	362.32	19.26	19.810	
2,800.00	2,685.92	2,735.93	2,691.34	13.16	9.65	-131.90	91.88	-423.09	409.87	389.59	20.29	20.206	
2,900.00	2,776.58	2,831.54	2,784.15	14.00	10.13	-132.90	97.19	-445.43	438.30	416.99	21.31	20.570	
3,000.00	2,867.23	2,927.14	2,876.96	14.83	10.62	-133.79	102.50	-467.77	466.83	444.50	22.33	20.908	
3,100.00	2,957.88	3,022.75	2,969.77	15.68	11.10	-134.58	107.81	-490.11	495.46	472.11	23.35	21.219	
3,200.00	3,048.53	3,118.36	3,062.57	16.52	11.59	-135.28	113.13	-512.45	524.16	499.79	24.37	21.508	
3,300.00	3,139.18	3,213.96	3,155.38	17.36	12.08	-135.90	118.44	-534.79	552.93	527.54	25.39	21.777	
3,400.00	3,229.83	3,309.57	3,248.19	18.21	12.56	-136.47	123.75	-557.13	581.76	555.34	26.41	22.026	
3,500.00	3,320.49	3,405.17	3,340.99	19.06	13.05	-136.98	129.06	-579.47	610.63	583.19	27.43	22.259	
3,600.00	3,411.14	3,500.78	3,433.80	19.90	13.54	-137.45	134.38	-601.81	639.54	611.08	28.45	22.477	
3,700.00	3,501.79	3,596.38	3,526.61	20.75	14.03	-137.87	139.69	-624.15	668.48	639.01	29.47	22.680	
3,800.00	3,592.44	3,691.99	3,619.41	21.60	14.52	-138.26	145.00	-646.49	697.46	666.97	30.50	22.871	
3,900.00	3,683.09	3,787.59	3,712.22	22.45	15.01	-138.62	150.32	-668.83	726.47	694.95	31.52	23.050	
4,000.00	3,773.74	3,883.20	3,805.03	23.30	15.50	-138.95	155.63	-691.17	755.50	722.96	32.54	23.219	
4,100.00	3,864.40	3,978.81	3,897.83	24.15	15.99	-139.26	160.94	-713.51	784.55	750.99	33.56	23.378	
4,200.00	3,955.05	4,074.41	3,990.64	25.00	16.48	-139.54	166.25	-735.85	813.62	779.04	34.58	23.527	
4,300.00	4,045.70	4,170.02	4,083.45	25.85	16.97	-139.81	171.57	-758.19	842.70	807.10	35.60	23.669	
4,400.00	4,136.35	4,265.62	4,176.25	26.71	17.46	-140.06	176.88	-780.53	871.81	835.18	36.63	23.803	
4,500.00	4,227.00	4,361.23	4,269.06	27.56	17.95	-140.29	182.19	-802.87	900.92	863.28	37.65	23.930	
4,600.00	4,317.65	4,456.83	4,361.87	28.41	18.44	-140.51	187.51	-825.22	930.05	891.38	38.67	24.051	
4,700.00	4,408.30	4,552.44	4,454.68	29.27	18.93	-140.71	192.82	-847.56	959.19	919.50	39.69	24.165	
4,800.00	4,498.96	4,648.05	4,547.48	30.12	19.43	-140.90	198.13	-869.90	988.35	947.63	40.72	24.274	
4,900.00	4,589.61	4,743.65	4,640.29	30.97	19.92	-141.08	203.44	-892.24	1,017.51	975.77	41.74	24.378	

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_MIRACLE 17-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4963.00ft (Original Well Elev)
Reference Site:	LARIMER_MIRACLE 40-12 PAD	MD Reference:	WELL @ 4963.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MIRACLE 17-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 17-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-22-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design LARIMER_MIRACLE 40-12 PAD - P_MIRACLE 24-12 - P_MIRACLE 24-12 - PLAN #1 3-22-10 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	4,680.26	4,839.26	4,733.10	31.83	20.41	-141.26	208.76	-914.58	1,046.68	1,003.91	42.76	24.477	
5,023.50	4,701.57	4,861.73	4,754.91	32.03	20.52	-141.29	210.01	-919.83	1,053.53	1,010.53	43.00	24.500	
5,100.00	4,771.33	4,935.10	4,826.14	32.60	20.90	-141.66	214.08	-936.97	1,075.09	1,031.31	43.77	24.560	
5,200.00	4,863.76	5,031.70	4,919.91	33.21	21.40	-142.00	219.45	-959.55	1,100.94	1,056.21	44.73	24.611	
5,300.00	4,957.45	5,128.95	5,014.31	33.78	21.90	-142.18	224.86	-982.27	1,124.13	1,078.43	45.70	24.598	
5,400.00	5,052.31	5,226.73	5,109.23	34.30	22.40	-142.23	230.29	-1,005.12	1,144.63	1,097.96	46.67	24.526	
5,500.00	5,148.22	5,322.31	5,202.05	34.78	22.86	-142.16	235.56	-1,027.28	1,162.49	1,114.91	47.58	24.432	
5,600.00	5,245.05	5,413.48	5,291.11	35.20	23.18	-142.09	240.07	-1,046.25	1,178.16	1,129.85	48.31	24.387	
5,700.00	5,342.70	5,505.04	5,381.13	35.57	23.47	-142.05	243.94	-1,062.51	1,191.76	1,142.81	48.95	24.347	
5,800.00	5,441.04	5,600.00	5,475.00	35.90	23.74	-142.02	247.24	-1,076.40	1,203.25	1,153.75	49.50	24.309	
5,900.00	5,539.95	5,689.11	5,563.48	36.17	23.95	-142.03	249.69	-1,086.69	1,212.62	1,162.69	49.93	24.288	
6,000.00	5,639.32	5,781.49	5,655.50	36.39	24.13	-142.04	251.55	-1,094.51	1,219.85	1,169.58	50.27	24.267	
6,100.00	5,739.01	5,873.99	5,747.86	36.57	24.28	-142.08	252.72	-1,099.46	1,224.94	1,174.43	50.51	24.252	
6,200.00	5,838.91	5,966.56	5,840.40	36.69	24.39	-142.13	253.21	-1,101.50	1,227.88	1,177.23	50.66	24.240	
6,272.09	5,911.00	6,037.16	5,911.00	36.75	24.47	-177.40	253.22	-1,101.55	1,228.59	1,177.86	50.73	24.219	
6,300.00	5,938.91	6,065.06	5,938.91	36.77	24.50	-177.40	253.22	-1,101.55	1,228.59	1,177.80	50.79	24.191	
6,400.00	6,038.91	6,165.06	6,038.91	36.85	24.62	-177.40	253.22	-1,101.55	1,228.59	1,177.58	51.01	24.086	
6,500.00	6,138.91	6,265.06	6,138.91	36.92	24.73	-177.40	253.22	-1,101.55	1,228.59	1,177.36	51.23	23.981	
6,600.00	6,238.91	6,365.06	6,238.91	37.00	24.85	-177.40	253.22	-1,101.55	1,228.59	1,177.13	51.46	23.875	
6,700.00	6,338.91	6,465.06	6,338.91	37.08	24.97	-177.40	253.22	-1,101.55	1,228.59	1,176.90	51.69	23.768	
6,800.00	6,438.91	6,565.06	6,438.91	37.16	25.09	-177.40	253.22	-1,101.55	1,228.59	1,176.66	51.92	23.662	
6,900.00	6,538.91	6,665.06	6,538.91	37.24	25.22	-177.40	253.22	-1,101.55	1,228.59	1,176.43	52.16	23.555	
7,000.00	6,638.91	6,765.06	6,638.91	37.32	25.34	-177.40	253.22	-1,101.55	1,228.59	1,176.19	52.40	23.447	
7,100.00	6,738.91	6,865.06	6,738.91	37.41	25.47	-177.40	253.22	-1,101.55	1,228.59	1,175.95	52.64	23.340	
7,200.00	6,838.91	6,965.06	6,838.91	37.49	25.60	-177.40	253.22	-1,101.55	1,228.59	1,175.70	52.88	23.232	
7,300.00	6,938.91	7,065.06	6,938.91	37.58	25.72	-177.40	253.22	-1,101.55	1,228.59	1,175.46	53.13	23.124	
7,400.00	7,038.91	7,165.06	7,038.91	37.66	25.85	-177.40	253.22	-1,101.55	1,228.59	1,175.21	53.38	23.016	
7,500.00	7,138.91	7,265.06	7,138.91	37.75	25.99	-177.40	253.22	-1,101.55	1,228.59	1,174.96	53.63	22.908	
7,600.00	7,238.91	7,365.06	7,238.91	37.84	26.12	-177.40	253.22	-1,101.55	1,228.59	1,174.70	53.89	22.799	
7,700.00	7,338.91	7,465.06	7,338.91	37.93	26.25	-177.40	253.22	-1,101.55	1,228.59	1,174.44	54.14	22.691	
7,800.00	7,438.91	7,565.06	7,438.91	38.02	26.39	-177.40	253.22	-1,101.55	1,228.59	1,174.18	54.40	22.583	
7,900.00	7,538.91	7,665.06	7,538.91	38.12	26.52	-177.40	253.22	-1,101.55	1,228.59	1,173.92	54.67	22.474	
8,000.00	7,638.91	7,765.06	7,638.91	38.21	26.66	-177.40	253.22	-1,101.55	1,228.59	1,173.66	54.93	22.366	
8,100.00	7,738.91	7,865.06	7,738.91	38.30	26.80	-177.40	253.22	-1,101.55	1,228.59	1,173.39	55.20	22.258	
8,147.72	7,786.63	7,912.79	7,786.63	38.35	26.87	-177.40	253.22	-1,101.55	1,228.59	1,173.26	55.33	22.206	
8,172.09	7,811.00	7,936.16	7,810.00	38.37	26.90	-177.40	253.22	-1,101.55	1,228.59	1,173.20	55.39	22.180	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_MIRACLE 17-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4963.00ft (Original Well Elev)
Reference Site:	LARIMER_MIRACLE 40-12 PAD	MD Reference:	WELL @ 4963.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MIRACLE 17-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 17-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-22-10 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						
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	90.02	0.00	10.02	10.02				
100.00	100.00	100.00	100.00	0.10	0.10	90.02	0.00	10.02	10.02	9.83	0.19	52.469	
200.00	200.00	200.00	200.00	0.32	0.32	90.02	0.00	10.02	10.02	9.38	0.64	15.649	
300.00	300.00	300.00	300.00	0.55	0.55	90.02	0.00	10.02	10.02	8.93	1.09	9.196	
400.00	400.00	400.00	400.00	0.77	0.77	90.02	0.00	10.02	10.02	8.48	1.54	6.511	
500.00	500.00	500.00	500.00	0.99	0.99	90.02	0.00	10.02	10.02	8.04	1.99	5.039	
600.00	600.00	600.00	600.00	1.22	1.22	90.02	0.00	10.02	10.02	7.59	2.44	4.111	
700.00	700.00	700.00	700.00	1.44	1.44	90.02	0.00	10.02	10.02	7.14	2.89	3.471	
750.00	750.00	750.00	750.00	1.56	1.56	90.02	0.00	10.02	10.02	6.91	3.11	3.220 CC	
800.00	800.00	800.00	800.00	1.67	1.67	125.04	0.39	9.84	10.09	6.75	3.34	3.024 ES	
900.00	899.93	900.22	900.16	1.89	1.89	123.42	3.55	8.32	10.59	6.82	3.78	2.806	
1,000.00	999.68	1,000.37	1,000.05	2.12	2.12	120.59	9.85	5.30	11.63	7.40	4.22	2.753 SF	
1,100.00	1,099.13	1,100.49	1,099.62	2.36	2.36	117.19	19.30	0.76	13.22	8.52	4.70	2.813	
1,200.00	1,198.15	1,200.60	1,198.75	2.63	2.63	113.77	31.88	-5.27	15.40	10.18	5.22	2.948	
1,300.00	1,296.63	1,300.69	1,297.30	2.93	2.93	110.66	47.57	-12.80	18.17	12.35	5.82	3.123	
1,400.00	1,394.44	1,400.75	1,395.16	3.28	3.28	107.98	66.35	-21.81	21.53	15.03	6.51	3.310	
1,500.00	1,491.46	1,500.66	1,492.46	3.68	3.67	109.15	86.82	-31.63	25.71	18.45	7.26	3.542	
1,600.00	1,587.58	1,600.44	1,589.63	4.15	4.07	115.96	107.27	-41.44	31.26	23.27	7.99	3.911	
1,700.00	1,682.68	1,699.98	1,686.56	4.67	4.49	125.01	127.67	-51.23	39.02	30.38	8.64	4.516	
1,800.00	1,776.65	1,799.15	1,783.14	5.26	4.92	133.92	148.00	-60.98	49.79	40.61	9.18	5.423	
1,900.00	1,869.36	1,897.83	1,879.24	5.93	5.35	141.52	168.23	-70.68	64.03	54.39	9.64	6.640	
1,998.59	1,959.43	1,994.53	1,973.40	6.65	5.79	147.50	188.05	-80.19	81.62	71.55	10.07	8.108	
2,000.00	1,960.71	1,995.90	1,974.74	6.66	5.79	147.58	188.33	-80.32	81.90	71.82	10.07	8.130	
2,100.00	2,051.36	2,093.65	2,069.92	7.44	6.23	152.05	208.36	-89.93	101.85	91.27	10.58	9.630	
2,200.00	2,142.02	2,191.39	2,165.11	8.23	6.68	155.04	228.39	-99.54	122.19	111.07	11.13	10.983	
2,300.00	2,232.67	2,289.13	2,260.29	9.03	7.13	157.18	248.43	-109.15	142.77	131.06	11.71	12.196	
2,400.00	2,323.32	2,386.87	2,355.47	9.85	7.58	158.78	268.46	-118.76	163.49	151.18	12.31	13.283	
2,500.00	2,413.97	2,484.61	2,450.65	10.67	8.04	160.02	288.49	-128.37	184.31	171.38	12.92	14.260	
2,600.00	2,504.62	2,582.35	2,545.83	11.49	8.49	161.01	308.53	-137.98	205.19	191.63	13.55	15.141	
2,700.00	2,595.27	2,680.09	2,641.01	12.32	8.95	161.81	328.56	-147.59	226.12	211.93	14.19	15.937	
2,800.00	2,685.92	2,777.83	2,736.20	13.16	9.41	162.48	348.59	-157.20	247.08	232.25	14.83	16.660	
2,900.00	2,776.58	2,875.57	2,831.38	14.00	9.87	163.05	368.63	-166.81	268.07	252.59	15.48	17.319	
3,000.00	2,867.23	2,973.31	2,926.56	14.83	10.33	163.53	388.66	-176.42	289.08	272.95	16.13	17.922	
3,100.00	2,957.88	3,071.05	3,021.74	15.68	10.79	163.94	408.69	-186.04	310.11	293.32	16.79	18.474	
3,200.00	3,048.53	3,168.79	3,116.92	16.52	11.25	164.31	428.73	-195.65	331.15	313.71	17.45	18.983	
3,300.00	3,139.18	3,266.53	3,212.10	17.36	11.72	164.63	448.76	-205.26	352.21	334.10	18.11	19.452	
3,400.00	3,229.83	3,364.27	3,307.29	18.21	12.18	164.91	468.79	-214.87	373.27	354.50	18.77	19.886	
3,500.00	3,320.49	3,462.01	3,402.47	19.06	12.64	165.17	488.83	-224.48	394.34	374.91	19.44	20.289	
3,600.00	3,411.14	3,559.76	3,497.65	19.90	13.11	165.40	508.86	-234.09	415.42	395.32	20.10	20.664	
3,700.00	3,501.79	3,657.50	3,592.83	20.75	13.57	165.60	528.89	-243.70	436.50	415.73	20.77	21.013	
3,800.00	3,592.44	3,755.24	3,688.01	21.60	14.04	165.79	548.93	-253.31	457.59	436.15	21.44	21.340	
3,900.00	3,683.09	3,852.98	3,783.19	22.45	14.50	165.96	568.96	-262.92	478.69	456.57	22.11	21.645	
4,000.00	3,773.74	3,950.72	3,878.38	23.30	14.97	166.12	588.99	-272.53	499.78	476.99	22.79	21.932	
4,100.00	3,864.40	4,048.46	3,973.56	24.15	15.44	166.26	609.03	-282.14	520.88	497.42	23.46	22.202	
4,200.00	3,955.05	4,146.20	4,068.74	25.00	15.90	166.39	629.06	-291.75	541.98	517.85	24.14	22.456	
4,300.00	4,045.70	4,243.94	4,163.92	25.85	16.37	166.52	649.09	-301.36	563.09	538.28	24.81	22.695	
4,400.00	4,136.35	4,341.68	4,259.10	26.71	16.84	166.63	669.13	-310.97	584.20	558.71	25.49	22.922	
4,500.00	4,227.00	4,439.42	4,354.28	27.56	17.30	166.73	689.16	-320.58	605.31	579.14	26.16	23.136	
4,600.00	4,317.65	4,537.16	4,449.47	28.41	17.77	166.83	709.19	-330.19	626.42	599.58	26.84	23.338	
4,700.00	4,408.30	4,634.90	4,544.65	29.27	18.24	166.93	729.23	-339.80	647.53	620.01	27.52	23.531	
4,800.00	4,498.96	4,732.64	4,639.83	30.12	18.71	167.01	749.26	-349.41	668.65	640.45	28.20	23.714	
4,900.00	4,589.61	4,830.38	4,735.01	30.97	19.18	167.09	769.29	-359.02	689.76	660.89	28.88	23.888	

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_MIRACLE 17-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4963.00ft (Original Well Elev)
Reference Site:	LARIMER_MIRACLE 40-12 PAD	MD Reference:	WELL @ 4963.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MIRACLE 17-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 17-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-22-10 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	
5,000.00	4,680.26	4,928.12	4,830.19	31.83	19.64	167.17	789.33	-368.63	710.88	681.32	29.55	24.053	
5,023.50	4,701.57	4,951.10	4,852.56	32.03	19.75	167.19	794.03	-370.89	715.84	686.13	29.71	24.091	
5,100.00	4,771.33	5,026.07	4,925.57	32.60	20.11	167.29	809.40	-378.26	731.02	700.72	30.30	24.128	
5,200.00	4,863.76	5,124.63	5,021.55	33.21	20.59	167.36	829.60	-387.95	747.91	716.89	31.02	24.110	
5,300.00	4,957.45	5,223.70	5,118.03	33.78	21.06	167.35	849.91	-397.69	761.43	729.71	31.72	24.005	
5,400.00	5,052.31	5,323.17	5,214.89	34.30	21.54	167.28	870.29	-407.47	771.58	739.19	32.39	23.819	
5,500.00	5,148.22	5,410.88	5,300.39	34.78	21.92	167.17	887.92	-415.93	778.80	745.82	32.97	23.619	
5,600.00	5,245.05	5,500.00	5,387.79	35.20	22.22	167.07	903.66	-423.48	785.06	751.60	33.46	23.459	
5,700.00	5,342.70	5,570.15	5,456.93	35.57	22.43	167.01	914.31	-428.59	790.36	756.52	33.83	23.360	
5,800.00	5,441.04	5,649.70	5,535.67	35.90	22.65	166.95	924.55	-433.50	794.89	760.73	34.16	23.267	
5,900.00	5,539.95	5,729.21	5,614.65	36.17	22.84	166.90	932.80	-437.46	798.59	764.17	34.42	23.198	
6,000.00	5,639.32	5,800.00	5,685.15	36.39	23.00	166.87	938.48	-440.18	801.51	766.91	34.60	23.165	
6,100.00	5,739.01	5,888.14	5,773.12	36.57	23.15	166.85	943.36	-442.53	803.48	768.74	34.74	23.128	
6,200.00	5,838.91	5,967.57	5,852.51	36.69	23.26	166.84	945.67	-443.63	804.66	769.87	34.79	23.127	
6,272.09	5,911.00	6,026.06	5,911.00	36.75	23.33	131.60	946.10	-443.84	804.99	770.19	34.79	23.135	
6,300.00	5,938.91	6,053.97	5,938.91	36.77	23.36	131.60	946.10	-443.84	804.99	770.11	34.87	23.082	
6,400.00	6,038.91	6,153.97	6,038.91	36.85	23.48	131.60	946.10	-443.84	804.99	769.81	35.18	22.883	
6,500.00	6,138.91	6,253.97	6,138.91	36.92	23.60	131.60	946.10	-443.84	804.99	769.49	35.49	22.681	
6,600.00	6,238.91	6,353.97	6,238.91	37.00	23.72	131.60	946.10	-443.84	804.99	769.18	35.81	22.481	
6,700.00	6,338.91	6,453.97	6,338.91	37.08	23.85	131.60	946.10	-443.84	804.99	768.86	36.13	22.283	
6,800.00	6,438.91	6,553.97	6,438.91	37.16	23.97	131.60	946.10	-443.84	804.99	768.54	36.45	22.086	
6,900.00	6,538.91	6,653.97	6,538.91	37.24	24.10	131.60	946.10	-443.84	804.99	768.21	36.77	21.892	
7,000.00	6,638.91	6,753.97	6,638.91	37.32	24.23	131.60	946.10	-443.84	804.99	767.89	37.10	21.699	
7,100.00	6,738.91	6,853.97	6,738.91	37.41	24.36	131.60	946.10	-443.84	804.99	767.56	37.43	21.508	
7,200.00	6,838.91	6,953.97	6,838.91	37.49	24.49	131.60	946.10	-443.84	804.99	767.23	37.76	21.320	
7,300.00	6,938.91	7,053.97	6,938.91	37.58	24.62	131.60	946.10	-443.84	804.99	766.89	38.09	21.133	
7,400.00	7,038.91	7,153.97	7,038.91	37.66	24.76	131.60	946.10	-443.84	804.99	766.56	38.43	20.948	
7,500.00	7,138.91	7,253.97	7,138.91	37.75	24.89	131.60	946.10	-443.84	804.99	766.22	38.77	20.765	
7,600.00	7,238.91	7,353.97	7,238.91	37.84	25.03	131.60	946.10	-443.84	804.99	765.88	39.11	20.584	
7,700.00	7,338.91	7,453.97	7,338.91	37.93	25.17	131.60	946.10	-443.84	804.99	765.54	39.45	20.405	
7,800.00	7,438.91	7,553.97	7,438.91	38.02	25.31	131.60	946.10	-443.84	804.99	765.19	39.79	20.228	
7,900.00	7,538.91	7,653.97	7,538.91	38.12	25.45	131.60	946.10	-443.84	804.99	764.84	40.14	20.054	
8,000.00	7,638.91	7,753.97	7,638.91	38.21	25.59	131.60	946.10	-443.84	804.99	764.50	40.49	19.881	
8,100.00	7,738.91	7,853.97	7,738.91	38.30	25.73	131.60	946.10	-443.84	804.99	764.14	40.84	19.710	
8,145.88	7,784.79	7,899.85	7,784.79	38.35	25.80	131.60	946.10	-443.84	804.99	763.98	41.00	19.632	
8,172.09	7,811.00	7,920.06	7,805.00	38.37	25.83	131.60	946.10	-443.84	805.01	763.92	41.08	19.594	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_MIRACLE 17-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4963.00ft (Original Well Elev)
Reference Site:	LARIMER_MIRACLE 40-12 PAD	MD Reference:	WELL @ 4963.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MIRACLE 17-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 17-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-22-10 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													
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	-88.94	0.36	-19.77	19.77				
100.00	100.00	100.00	100.00	0.10	0.10	-88.94	0.36	-19.77	19.77	19.58	0.19	103.499	
200.00	200.00	200.00	200.00	0.32	0.32	-88.94	0.36	-19.77	19.77	19.13	0.64	30.868	
300.00	300.00	300.00	300.00	0.55	0.55	-88.94	0.36	-19.77	19.77	18.68	1.09	18.139	
400.00	400.00	400.00	400.00	0.77	0.77	-88.94	0.36	-19.77	19.77	18.23	1.54	12.843	
500.00	500.00	500.00	500.00	0.99	0.99	-88.94	0.36	-19.77	19.77	17.78	1.99	9.941	
600.00	600.00	600.00	600.00	1.22	1.22	-88.94	0.36	-19.77	19.77	17.33	2.44	8.108	
700.00	700.00	700.00	700.00	1.44	1.44	-88.94	0.36	-19.77	19.77	16.89	2.89	6.846	
750.00	750.00	750.00	750.00	1.56	1.56	-88.94	0.36	-19.77	19.77	16.66	3.11	6.352	
800.00	800.00	799.82	799.82	1.67	1.66	-55.83	-0.01	-19.99	19.74	16.42	3.32	5.942	
816.12	816.12	815.88	815.87	1.70	1.68	-57.41	-0.29	-20.15	19.73	16.35	3.39	5.826 CC, ES	
900.00	899.93	899.21	899.14	1.89	1.83	-72.37	-3.00	-21.72	20.43	16.71	3.72	5.493 SF	
1,000.00	999.68	997.97	997.67	2.12	2.03	-97.71	-8.88	-25.12	25.98	21.85	4.13	6.284	
1,100.00	1,099.13	1,096.74	1,096.11	2.36	2.24	-117.26	-15.80	-29.13	37.37	32.81	4.56	8.189	
1,200.00	1,198.15	1,194.97	1,194.01	2.63	2.46	-129.96	-22.69	-33.11	53.21	48.21	5.00	10.640	
1,300.00	1,296.63	1,292.53	1,291.26	2.93	2.68	-138.42	-29.52	-37.07	73.02	67.57	5.45	13.408	
1,400.00	1,394.44	1,389.32	1,387.72	3.28	2.92	-144.35	-36.30	-40.99	96.52	90.62	5.90	16.372	
1,500.00	1,491.46	1,485.20	1,483.30	3.68	3.15	-148.70	-43.02	-44.88	123.56	117.21	6.35	19.459	
1,600.00	1,587.58	1,580.08	1,577.86	4.15	3.39	-152.01	-49.67	-48.73	154.03	147.22	6.81	22.630	
1,700.00	1,682.68	1,673.82	1,671.29	4.67	3.63	-154.59	-56.24	-52.53	187.86	180.59	7.27	25.856	
1,800.00	1,776.65	1,766.32	1,763.49	5.26	3.87	-156.66	-62.72	-56.28	224.99	217.26	7.73	29.118	
1,900.00	1,869.36	1,857.46	1,854.33	5.93	4.11	-158.35	-69.11	-59.98	265.35	257.16	8.19	32.403	
1,998.59	1,959.43	1,945.88	1,942.46	6.65	4.34	-159.72	-75.30	-63.56	308.26	299.61	8.65	35.653	
2,000.00	1,960.71	1,947.13	1,943.71	6.66	4.34	-159.75	-75.39	-63.61	308.90	300.24	8.65	35.695	
2,100.00	2,051.36	2,036.06	2,032.35	7.44	4.57	-161.15	-81.62	-67.22	354.06	344.85	9.20	38.474	
2,200.00	2,142.02	2,124.98	2,120.98	8.23	4.81	-162.25	-87.85	-70.82	399.35	389.59	9.76	40.921	
2,300.00	2,232.67	2,213.91	2,209.61	9.03	5.05	-163.12	-94.09	-74.43	444.73	434.41	10.32	43.088	
2,400.00	2,323.32	2,302.84	2,298.25	9.85	5.28	-163.82	-100.32	-78.04	490.18	479.29	10.89	45.015	
2,500.00	2,413.97	2,391.76	2,386.88	10.67	5.52	-164.41	-106.55	-81.64	535.68	524.22	11.46	46.738	
2,600.00	2,504.62	2,480.69	2,475.51	11.49	5.76	-164.91	-112.78	-85.25	581.22	569.18	12.04	48.286	
2,700.00	2,595.27	2,569.61	2,564.15	12.32	6.00	-165.34	-119.01	-88.86	626.78	614.17	12.62	49.684	
2,800.00	2,685.92	2,658.54	2,652.78	13.16	6.24	-165.70	-125.24	-92.46	672.37	659.18	13.20	50.950	
2,900.00	2,776.58	2,747.46	2,741.41	14.00	6.48	-166.02	-131.47	-96.07	717.98	704.20	13.78	52.102	
3,000.00	2,867.23	2,836.39	2,830.05	14.83	6.72	-166.31	-137.70	-99.67	763.61	749.24	14.37	53.155	
3,100.00	2,957.88	2,925.31	2,918.68	15.68	6.96	-166.56	-143.94	-103.28	809.25	794.30	14.95	54.120	
3,200.00	3,048.53	3,014.24	3,007.31	16.52	7.20	-166.78	-150.17	-106.89	854.90	839.36	15.54	55.007	
3,300.00	3,139.18	3,103.16	3,095.95	17.36	7.44	-166.98	-156.40	-110.49	900.56	884.43	16.13	55.825	
3,400.00	3,229.83	3,192.09	3,184.58	18.21	7.68	-167.16	-162.63	-114.10	946.22	929.50	16.72	56.582	
3,500.00	3,320.49	3,281.02	3,273.21	19.06	7.92	-167.33	-168.86	-117.70	991.90	974.58	17.32	57.285	
3,600.00	3,411.14	3,369.94	3,361.85	19.90	8.16	-167.48	-175.09	-121.31	1,037.58	1,019.67	17.91	57.938	
3,700.00	3,501.79	3,458.87	3,450.48	20.75	8.41	-167.62	-181.32	-124.92	1,083.26	1,064.76	18.50	58.546	
3,800.00	3,592.44	3,547.79	3,539.12	21.60	8.65	-167.74	-187.55	-128.52	1,128.95	1,109.85	19.10	59.115	
3,900.00	3,683.09	3,636.72	3,627.75	22.45	8.89	-167.86	-193.79	-132.13	1,174.65	1,154.95	19.69	59.647	
4,000.00	3,773.74	3,725.64	3,716.38	23.30	9.14	-167.97	-200.02	-135.74	1,220.34	1,200.05	20.29	60.146	
4,100.00	3,864.40	3,814.57	3,805.02	24.15	9.38	-168.07	-206.25	-139.34	1,266.04	1,245.16	20.89	60.616	
4,200.00	3,955.05	3,903.49	3,893.65	25.00	9.62	-168.16	-212.48	-142.95	1,311.75	1,290.26	21.48	61.058	
4,300.00	4,045.70	3,992.42	3,982.28	25.85	9.86	-168.25	-218.71	-146.55	1,357.45	1,335.37	22.08	61.474	
4,400.00	4,136.35	4,081.34	4,070.92	26.71	10.11	-168.33	-224.94	-150.16	1,403.16	1,380.48	22.68	61.868	
4,500.00	4,227.00	4,170.27	4,159.55	27.56	10.35	-168.41	-231.17	-153.77	1,448.87	1,425.59	23.28	62.240	
4,600.00	4,317.65	4,259.20	4,248.18	28.41	10.59	-168.48	-237.41	-157.37	1,494.58	1,470.70	23.88	62.593	
4,700.00	4,408.30	4,348.12	4,336.82	29.27	10.84	-168.55	-243.64	-160.98	1,540.30	1,515.82	24.48	62.928	
4,800.00	4,498.96	4,437.05	4,425.45	30.12	11.08	-168.61	-249.87	-164.59	1,586.01	1,560.93	25.08	63.245	

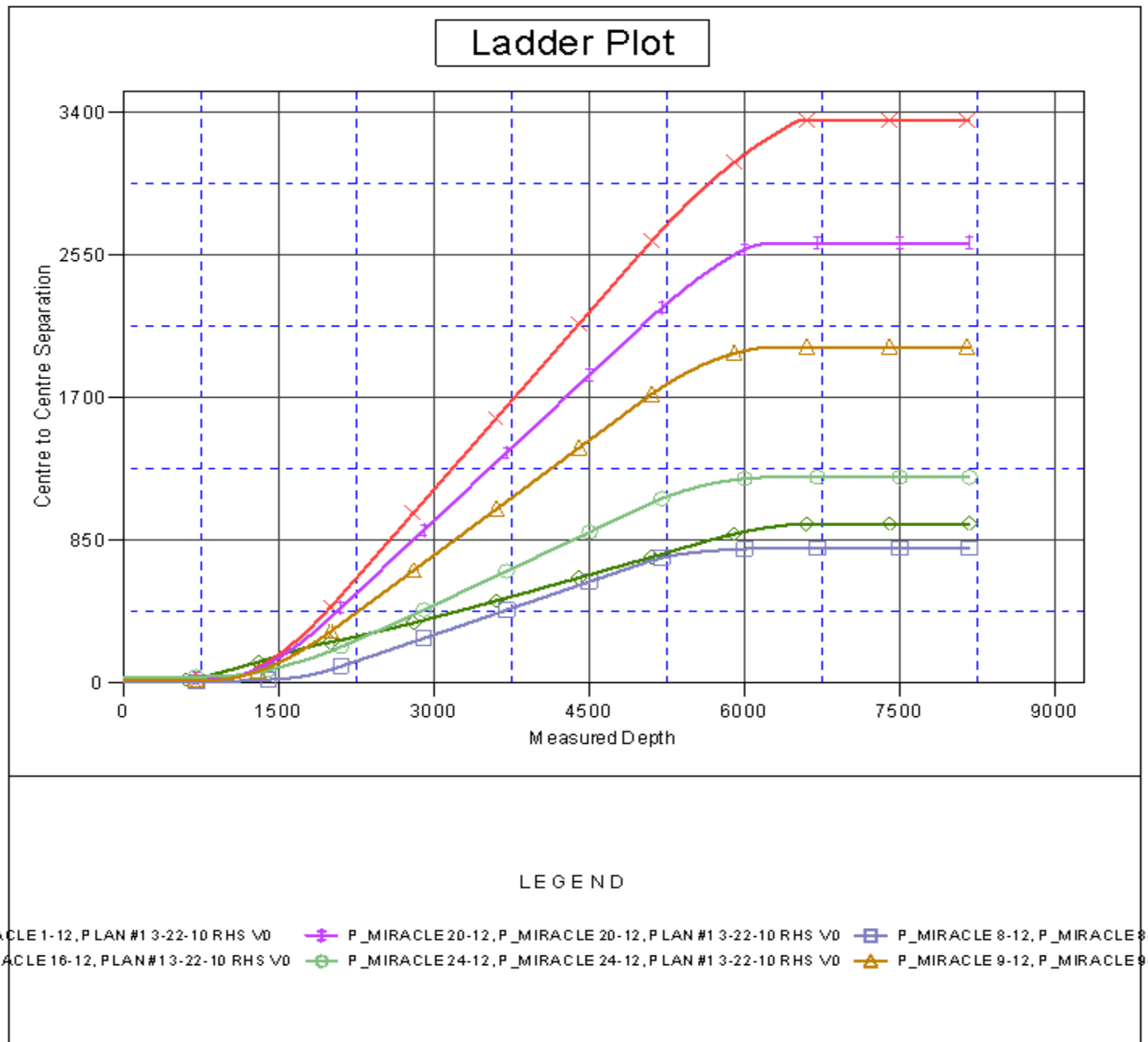
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_MIRACLE 17-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4963.00ft (Original Well Elev)
Reference Site:	LARIMER_MIRACLE 40-12 PAD	MD Reference:	WELL @ 4963.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MIRACLE 17-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 17-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-22-10 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	
4,900.00	4,589.61	4,525.97	4,514.08	30.97	11.33	-168.67	-256.10	-168.19	1,631.73	1,606.05	25.68	63.548	
5,000.00	4,680.26	4,614.90	4,602.72	31.83	11.57	-168.73	-262.33	-171.80	1,677.45	1,651.17	26.28	63.836	
5,023.50	4,701.57	4,635.80	4,623.55	32.03	11.63	-168.74	-263.79	-172.65	1,688.19	1,661.77	26.42	63.901	
5,100.00	4,771.33	4,704.28	4,691.80	32.60	11.81	-168.92	-268.59	-175.42	1,722.27	1,695.29	26.98	63.842	
5,200.00	4,863.76	4,795.10	4,782.33	33.21	12.06	-169.12	-274.96	-179.11	1,764.09	1,736.44	27.66	63.787	
5,300.00	4,957.45	4,887.31	4,874.24	33.78	12.32	-169.27	-281.42	-182.84	1,802.78	1,774.47	28.30	63.692	
5,400.00	5,052.31	4,980.79	4,967.41	34.30	12.57	-169.38	-287.97	-186.64	1,838.28	1,809.36	28.92	63.564	
5,500.00	5,148.22	5,075.42	5,061.73	34.78	12.83	-169.47	-294.60	-190.47	1,870.55	1,841.05	29.50	63.409	
5,600.00	5,245.05	5,171.10	5,157.09	35.20	13.10	-169.51	-301.30	-194.35	1,899.56	1,869.52	30.04	63.230	
5,700.00	5,342.70	5,267.69	5,253.37	35.57	13.36	-169.53	-308.07	-198.27	1,925.27	1,894.73	30.54	63.031	
5,800.00	5,441.04	5,365.10	5,350.45	35.90	13.63	-169.51	-314.90	-202.22	1,947.66	1,916.65	31.01	62.814	
5,900.00	5,539.95	5,463.19	5,448.22	36.17	13.90	-169.47	-321.77	-206.20	1,966.69	1,935.26	31.43	62.583	
6,000.00	5,639.32	5,561.84	5,546.56	36.39	14.17	-169.39	-328.69	-210.20	1,982.35	1,950.55	31.80	62.337	
6,100.00	5,739.01	5,660.95	5,645.34	36.57	14.44	-169.29	-335.63	-214.22	1,994.63	1,962.50	32.13	62.077	
6,200.00	5,838.91	5,806.09	5,790.15	36.69	14.74	-169.13	-343.90	-219.00	2,002.75	1,970.29	32.46	61.699	
6,272.09	5,911.00	5,926.98	5,911.00	36.75	14.95	155.68	-346.07	-220.26	2,004.51	1,971.86	32.65	61.396	
6,300.00	5,938.91	5,954.88	5,938.91	36.77	15.00	155.68	-346.07	-220.26	2,004.51	1,971.77	32.74	61.233	
6,400.00	6,038.91	6,054.88	6,038.91	36.85	15.16	155.68	-346.07	-220.26	2,004.51	1,971.46	33.05	60.646	
6,500.00	6,138.91	6,154.88	6,138.91	36.92	15.32	155.68	-346.07	-220.26	2,004.51	1,971.14	33.37	60.077	
6,600.00	6,238.91	6,254.88	6,238.91	37.00	15.47	155.68	-346.07	-220.26	2,004.51	1,970.83	33.68	59.513	
6,700.00	6,338.91	6,354.88	6,338.91	37.08	15.63	155.68	-346.07	-220.26	2,004.51	1,970.51	34.00	58.955	
6,800.00	6,438.91	6,454.88	6,438.91	37.16	15.80	155.68	-346.07	-220.26	2,004.51	1,970.19	34.32	58.402	
6,900.00	6,538.91	6,554.88	6,538.91	37.24	15.96	155.68	-346.07	-220.26	2,004.51	1,969.86	34.65	57.855	
7,000.00	6,638.91	6,654.88	6,638.91	37.32	16.12	155.68	-346.07	-220.26	2,004.51	1,969.54	34.97	57.313	
7,100.00	6,738.91	6,754.88	6,738.91	37.41	16.29	155.68	-346.07	-220.26	2,004.51	1,969.21	35.30	56.777	
7,200.00	6,838.91	6,854.88	6,838.91	37.49	16.46	155.68	-346.07	-220.26	2,004.51	1,968.87	35.64	56.247	
7,300.00	6,938.91	6,954.88	6,938.91	37.58	16.63	155.68	-346.07	-220.26	2,004.51	1,968.54	35.97	55.723	
7,400.00	7,038.91	7,054.88	7,038.91	37.66	16.80	155.68	-346.07	-220.26	2,004.51	1,968.20	36.31	55.205	
7,500.00	7,138.91	7,154.88	7,138.91	37.75	16.97	155.68	-346.07	-220.26	2,004.51	1,967.86	36.65	54.692	
7,600.00	7,238.91	7,254.88	7,238.91	37.84	17.14	155.68	-346.07	-220.26	2,004.51	1,967.52	36.99	54.186	
7,700.00	7,338.91	7,354.88	7,338.91	37.93	17.32	155.68	-346.07	-220.26	2,004.51	1,967.17	37.34	53.686	
7,800.00	7,438.91	7,454.88	7,438.91	38.02	17.49	155.68	-346.07	-220.26	2,004.51	1,966.83	37.68	53.192	
7,900.00	7,538.91	7,554.88	7,538.91	38.12	17.67	155.68	-346.07	-220.26	2,004.51	1,966.48	38.03	52.704	
8,000.00	7,638.91	7,654.88	7,638.91	38.21	17.84	155.68	-346.07	-220.26	2,004.51	1,966.13	38.38	52.222	
8,100.00	7,738.91	7,754.88	7,738.91	38.30	18.02	155.68	-346.07	-220.26	2,004.51	1,965.77	38.74	51.746	
8,147.72	7,786.63	7,802.61	7,786.63	38.35	18.11	155.68	-346.07	-220.26	2,004.51	1,965.60	38.91	51.521	
8,172.09	7,811.00	7,825.98	7,810.00	38.37	18.15	155.68	-346.07	-220.26	2,004.51	1,965.52	38.99	51.409	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_MIRACLE 17-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4963.00ft (Original Well Elev)
Reference Site:	LARIMER_MIRACLE 40-12 PAD	MD Reference:	WELL @ 4963.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MIRACLE 17-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 17-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-22-10 RHS	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4963.00ft (Original Well Elev) Coordinates are relative to: P_MIRACLE 17-12
Offset Depths are relative to Offset Datum
Central Meridian is 105° 30' 0.000 W °
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.36°



Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_MIRACLE 17-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4963.00ft (Original Well Elev)
Reference Site:	LARIMER_MIRACLE 40-12 PAD	MD Reference:	WELL @ 4963.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MIRACLE 17-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 17-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-22-10 RHS	Offset TVD Reference:	Offset Datum

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