



US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

LARIMER_MIRACLE 25-12 PAD

P_MIRACLE 19-12

P_MIRACLE 19-12

Plan: PLAN #1 3-23-10 RHS

Standard Planning Report

24 March, 2010

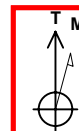




Project: COLORADO NORTHERN ZONE - 83
Site: LARIMER MIRACLE 25-12 PAD
Well: P_MIRACLE 19-12
Wellbore: P_MIRACLE 19-12
Section: SECTION 12 T5N R68W
SHL: 2484 FSL 2671 FEL
Design: PLAN #1 3-23-10 RHS
Latitude: 40° 24' 50.076 N
Longitude: 104° 57' 14.522 W
GL: 4963.00
KB: WELL @ 4978.00ft (Original Well Elev)



Weatherford®



Azimuths to True North
Magnetic North: 9.13°

Magnetic Field
Strength: 53246.6snT
Dip Angle: 67.07°
Date: 3/23/2010
Model: IGRF2010

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
3464.00	3650.71	PARKMAN
4094.00	4342.53	SUSSEX
4544.00	4836.68	SHANNON
6884.00	7248.20	NIO A
7174.00	7538.20	CODELL
7634.00	7998.20	JSAND

CASING DETAILS

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

SECTION DETAILS

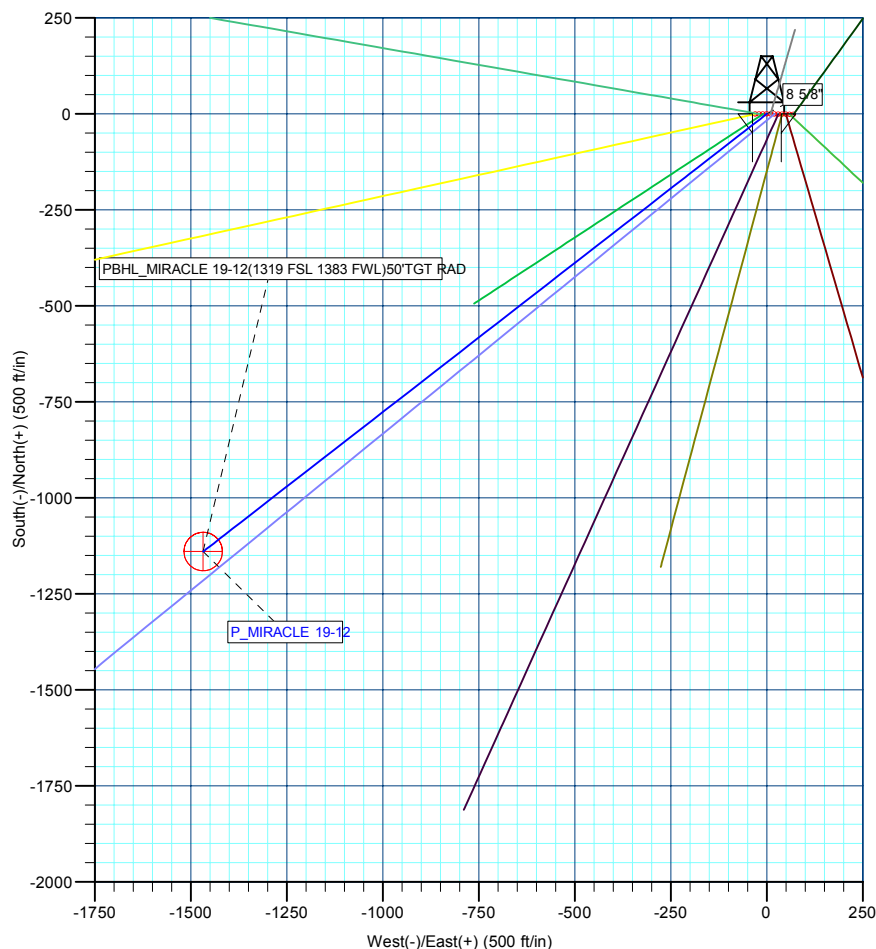
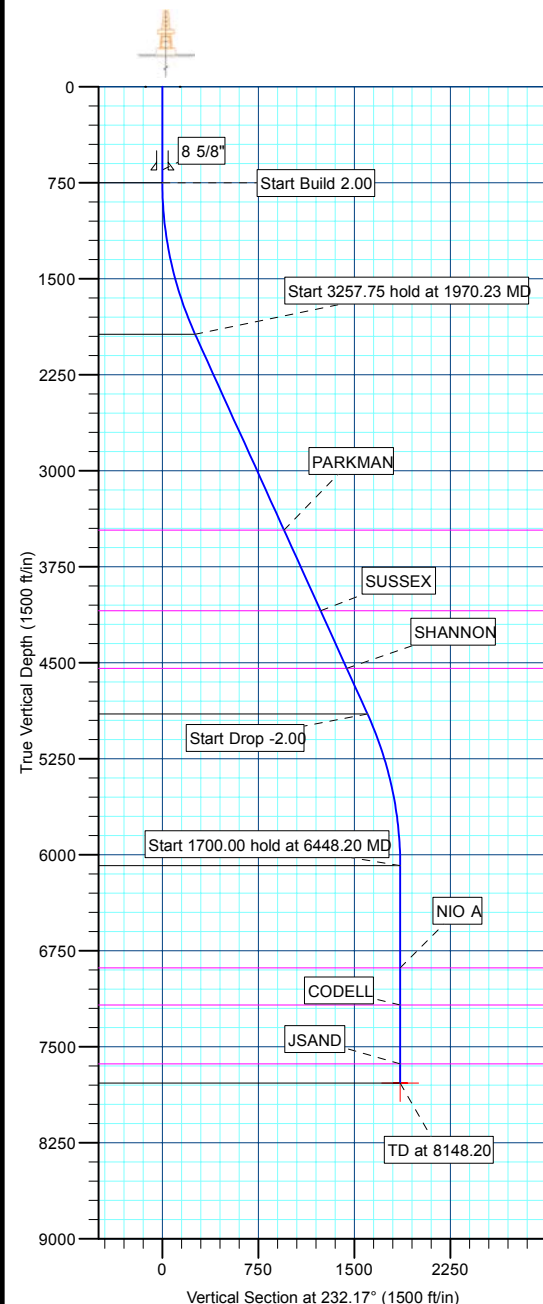
MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
750.00	0.00	0.00	750.00	0.00	0.00	0.00	0.00	0.00	Start Build 2.00
1970.23	24.40	232.17	1933.66	-156.98	-202.18	2.00	232.17	255.97	Start 3257.75 hold at 1970.23 MD
5227.98	24.40	232.17	4900.34	-982.49	-1265.34	0.00	0.00	1601.99	Start Drop -2.00
6448.20	0.00	0.00	6084.00	-1139.47	-1467.52	2.00	180.00	1857.96	Start 1700.00 hold at 6448.20 MD
8148.20	0.00	0.00	7784.00	-1139.47	-1467.52	0.00	0.00	1857.96	TD at 8148.20

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

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
PBHL	7784.00	-1139.47	-1467.52	40° 24' 38.815 N	104° 57' 33.494 W	Circle (Radius: 50.00)

WELL DETAILS: P_MIRACLE 19-12

+N/-S	+E/-W	Northing	Ground Level: Easting	4963.00 Latitude	Longitude	Slot
0.00	0.00	1394095.76	3152025.03	40° 24' 50.076 N	104° 57' 14.522 W	



LEGEND

- P_MIRACLE 10-12, P_MIRACLE 10-12, PLAN #1 3-23-10 RHS V0
- P_MIRACLE 11-12, P_MIRACLE 11-12, PLAN #1 3-23-10 RHS V0
- P_MIRACLE 12-12, P_MIRACLE 12-12, PLAN #1 3-23-10 RHS V0
- P_MIRACLE 13-12, P_MIRACLE 13-12, PLAN #1 3-23-10 RHS V0
- P_MIRACLE 14-12, P_MIRACLE 14-12, PLAN #1 3-23-10 RHS V0
- P_MIRACLE 15-12, P_MIRACLE 15-12, PLAN #1 3-23-10 RHS V0
- P_MIRACLE 22-12, P_MIRACLE 22-12, PLAN #1 3-23-10 RHS V0
- P_MIRACLE 23-12, P_MIRACLE 23-12, PLAN #1 3-23-10 RHS V0
- P_MIRACLE 25-12, P_MIRACLE 25-12, PLAN #1 3-23-10 RHS V0
- P_MIRACLE 7-12, P_MIRACLE 7-12, PLAN #1 3-23-10 RHS V0
- PLAN #1 3-23-10 RHS

Plan: PLAN #1 3-23-10 RHS (P_MIRACLE 19-12/P_MIRACLE 19-12)

Created By: Robert H. Scott Date: 9:57, March 24 2010

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_MIRACLE 19-12
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 4978.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 4978.00ft (Original Well Elev)
Site:	LARIMER_MIRACLE 25-12 PAD	North Reference:	True
Well:	P_MIRACLE 19-12	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_MIRACLE 19-12		
Design:	PLAN #1 3-23-10 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 25-12 PAD, SECTION 12 T5N R68W											
Site Position:						Northing:			1,394,095.11 ft			Latitude:			40° 24' 50.065 N		
From:			Lat/Long			Easting:			3,152,094.92 ft			Longitude:			104° 57' 13.619 W		
Position Uncertainty:			0.00 ft			Slot Radius:			in			Grid Convergence:			0.35 °		

Well	P_MIRACLE 19-12					
Well Position	+N/-S	1.08 ft	Northing:	1,394,095.76 ft	Latitude:	40° 24' 50.076 N
	+E/-W	-69.89 ft	Easting:	3,152,025.03 ft	Longitude:	104° 57' 14.522 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	4,963.00 ft

Wellbore	P_MIRACLE 19-12				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/23/2010	9.13	67.07	53,247

Design	PLAN #1 3-23-10 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	232.17

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	
1,970.23	24.40	232.17	1,933.66	-156.98	-202.18	2.00	2.00	0.00	232.17	
5,227.98	24.40	232.17	4,900.34	-982.49	-1,265.34	0.00	0.00	0.00	0.00	
6,448.20	0.00	0.00	6,084.00	-1,139.47	-1,467.52	2.00	-2.00	0.00	180.00	
8,148.20	0.00	0.00	7,784.00	-1,139.47	-1,467.52	0.00	0.00	0.00	0.00	PBHL_MIRACLE 19

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_MIRACLE 19-12
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 4978.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 4978.00ft (Original Well Elev)
Site:	LARIMER_MIRACLE 25-12 PAD	North Reference:	True
Well:	P_MIRACLE 19-12	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_MIRACLE 19-12		
Design:	PLAN #1 3-23-10 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	232.17	800.00	-0.27	-0.34	0.44	2.00	2.00	0.00
900.00	3.00	232.17	899.93	-2.41	-3.10	3.93	2.00	2.00	0.00
1,000.00	5.00	232.17	999.68	-6.69	-8.61	10.90	2.00	2.00	0.00
1,100.00	7.00	232.17	1,099.13	-13.10	-16.87	21.35	2.00	2.00	0.00
1,200.00	9.00	232.17	1,198.15	-21.63	-27.86	35.27	2.00	2.00	0.00
1,300.00	11.00	232.17	1,296.63	-32.28	-41.57	52.63	2.00	2.00	0.00
1,400.00	13.00	232.17	1,394.44	-45.03	-57.99	73.42	2.00	2.00	0.00
1,500.00	15.00	232.17	1,491.46	-59.87	-77.10	97.62	2.00	2.00	0.00
1,600.00	17.00	232.17	1,587.58	-76.77	-98.87	125.18	2.00	2.00	0.00
1,700.00	19.00	232.17	1,682.68	-95.72	-123.28	156.08	2.00	2.00	0.00
1,800.00	21.00	232.17	1,776.65	-116.70	-150.29	190.28	2.00	2.00	0.00
1,900.00	23.00	232.17	1,869.36	-139.67	-179.88	227.74	2.00	2.00	0.00
Start 3257.75 hold at 1970.23 MD									
1,970.23	24.40	232.17	1,933.66	-156.98	-202.18	255.97	2.00	2.00	0.00
2,000.00	24.40	232.17	1,960.78	-164.53	-211.89	268.27	0.00	0.00	0.00
2,100.00	24.40	232.17	2,051.84	-189.87	-244.53	309.59	0.00	0.00	0.00
2,200.00	24.40	232.17	2,142.91	-215.21	-277.16	350.90	0.00	0.00	0.00
2,300.00	24.40	232.17	2,233.97	-240.55	-309.80	392.22	0.00	0.00	0.00
2,400.00	24.40	232.17	2,325.04	-265.89	-342.43	433.54	0.00	0.00	0.00
2,500.00	24.40	232.17	2,416.10	-291.23	-375.07	474.86	0.00	0.00	0.00
2,600.00	24.40	232.17	2,507.17	-316.57	-407.70	516.17	0.00	0.00	0.00
2,700.00	24.40	232.17	2,598.23	-341.90	-440.34	557.49	0.00	0.00	0.00
2,800.00	24.40	232.17	2,689.30	-367.24	-472.97	598.81	0.00	0.00	0.00
2,900.00	24.40	232.17	2,780.36	-392.58	-505.61	640.13	0.00	0.00	0.00
3,000.00	24.40	232.17	2,871.43	-417.92	-538.24	681.44	0.00	0.00	0.00
3,100.00	24.40	232.17	2,962.49	-443.26	-570.88	722.76	0.00	0.00	0.00
3,200.00	24.40	232.17	3,053.56	-468.60	-603.51	764.08	0.00	0.00	0.00
3,300.00	24.40	232.17	3,144.62	-493.94	-636.15	805.40	0.00	0.00	0.00
3,400.00	24.40	232.17	3,235.69	-519.28	-668.78	846.71	0.00	0.00	0.00
3,500.00	24.40	232.17	3,326.75	-544.62	-701.42	888.03	0.00	0.00	0.00
3,600.00	24.40	232.17	3,417.82	-569.96	-734.05	929.35	0.00	0.00	0.00
PARKMAN									
3,650.71	24.40	232.17	3,464.00	-582.81	-750.60	950.30	0.00	0.00	0.00
3,700.00	24.40	232.17	3,508.88	-595.30	-766.69	970.67	0.00	0.00	0.00
3,800.00	24.40	232.17	3,599.95	-620.64	-799.32	1,011.99	0.00	0.00	0.00
3,900.00	24.40	232.17	3,691.01	-645.98	-831.96	1,053.30	0.00	0.00	0.00
4,000.00	24.40	232.17	3,782.08	-671.32	-864.59	1,094.62	0.00	0.00	0.00
4,100.00	24.40	232.17	3,873.14	-696.66	-897.23	1,135.94	0.00	0.00	0.00
4,200.00	24.40	232.17	3,964.21	-722.00	-929.86	1,177.26	0.00	0.00	0.00
4,300.00	24.40	232.17	4,055.27	-747.34	-962.50	1,218.57	0.00	0.00	0.00
SUSSEX									
4,342.53	24.40	232.17	4,094.00	-758.12	-976.38	1,236.14	0.00	0.00	0.00
4,400.00	24.40	232.17	4,146.34	-772.68	-995.13	1,259.89	0.00	0.00	0.00
4,500.00	24.40	232.17	4,237.40	-798.02	-1,027.77	1,301.21	0.00	0.00	0.00
4,600.00	24.40	232.17	4,328.47	-823.36	-1,060.40	1,342.53	0.00	0.00	0.00
4,700.00	24.40	232.17	4,419.53	-848.70	-1,093.04	1,383.84	0.00	0.00	0.00
4,800.00	24.40	232.17	4,510.60	-874.04	-1,125.67	1,425.16	0.00	0.00	0.00
SHANNON									
4,836.68	24.40	232.17	4,544.00	-883.33	-1,137.64	1,440.32	0.00	0.00	0.00
4,900.00	24.40	232.17	4,601.66	-899.38	-1,158.31	1,466.48	0.00	0.00	0.00
5,000.00	24.40	232.17	4,692.73	-924.72	-1,190.94	1,507.80	0.00	0.00	0.00

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Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 4978.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 4978.00ft (Original Well Elev)
Site:	LARIMER_MIRACLE 25-12 PAD	North Reference:	True
Well:	P_MIRACLE 19-12	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_MIRACLE 19-12		
Design:	PLAN #1 3-23-10 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)
5,100.00	24.40	232.17	4,783.79	-950.06	-1,223.58	1,549.11	0.00	0.00	0.00
5,200.00	24.40	232.17	4,874.86	-975.40	-1,256.21	1,590.43	0.00	0.00	0.00
Start Drop -2.00									
5,227.98	24.40	232.17	4,900.34	-982.49	-1,265.34	1,601.99	0.00	0.00	0.00
5,300.00	22.96	232.17	4,966.29	-1,000.23	-1,288.19	1,630.92	2.00	-2.00	0.00
5,400.00	20.96	232.17	5,059.03	-1,023.17	-1,317.74	1,668.32	2.00	-2.00	0.00
5,500.00	18.96	232.17	5,153.02	-1,044.11	-1,344.70	1,702.46	2.00	-2.00	0.00
5,600.00	16.96	232.17	5,248.14	-1,063.02	-1,369.06	1,733.30	2.00	-2.00	0.00
5,700.00	14.96	232.17	5,344.27	-1,079.89	-1,390.78	1,760.81	2.00	-2.00	0.00
5,800.00	12.96	232.17	5,441.31	-1,094.69	-1,409.84	1,784.94	2.00	-2.00	0.00
5,900.00	10.96	232.17	5,539.14	-1,107.40	-1,426.22	1,805.67	2.00	-2.00	0.00
6,000.00	8.96	232.17	5,637.62	-1,118.01	-1,439.88	1,822.97	2.00	-2.00	0.00
6,100.00	6.96	232.17	5,736.65	-1,126.51	-1,450.83	1,836.82	2.00	-2.00	0.00
6,200.00	4.96	232.17	5,836.11	-1,132.88	-1,459.03	1,847.21	2.00	-2.00	0.00
6,300.00	2.96	232.17	5,935.86	-1,137.12	-1,464.49	1,854.12	2.00	-2.00	0.00
6,400.00	0.96	232.17	6,035.80	-1,139.22	-1,467.20	1,857.55	2.00	-2.00	0.00
Start 1700.00 hold at 6448.20 MD									
6,448.20	0.00	0.00	6,084.00	-1,139.47	-1,467.52	1,857.96	2.00	-2.00	0.00
6,500.00	0.00	0.00	6,135.80	-1,139.47	-1,467.52	1,857.96	0.00	0.00	0.00
6,600.00	0.00	0.00	6,235.80	-1,139.47	-1,467.52	1,857.96	0.00	0.00	0.00
6,700.00	0.00	0.00	6,335.80	-1,139.47	-1,467.52	1,857.96	0.00	0.00	0.00
6,800.00	0.00	0.00	6,435.80	-1,139.47	-1,467.52	1,857.96	0.00	0.00	0.00
6,900.00	0.00	0.00	6,535.80	-1,139.47	-1,467.52	1,857.96	0.00	0.00	0.00
7,000.00	0.00	0.00	6,635.80	-1,139.47	-1,467.52	1,857.96	0.00	0.00	0.00
7,100.00	0.00	0.00	6,735.80	-1,139.47	-1,467.52	1,857.96	0.00	0.00	0.00
7,200.00	0.00	0.00	6,835.80	-1,139.47	-1,467.52	1,857.96	0.00	0.00	0.00
NIO A									
7,248.20	0.00	0.00	6,884.00	-1,139.47	-1,467.52	1,857.96	0.00	0.00	0.00
7,300.00	0.00	0.00	6,935.80	-1,139.47	-1,467.52	1,857.96	0.00	0.00	0.00
7,400.00	0.00	0.00	7,035.80	-1,139.47	-1,467.52	1,857.96	0.00	0.00	0.00
7,500.00	0.00	0.00	7,135.80	-1,139.47	-1,467.52	1,857.96	0.00	0.00	0.00
CODELL									
7,538.20	0.00	0.00	7,174.00	-1,139.47	-1,467.52	1,857.96	0.00	0.00	0.00
7,600.00	0.00	0.00	7,235.80	-1,139.47	-1,467.52	1,857.96	0.00	0.00	0.00
7,700.00	0.00	0.00	7,335.80	-1,139.47	-1,467.52	1,857.96	0.00	0.00	0.00
7,800.00	0.00	0.00	7,435.80	-1,139.47	-1,467.52	1,857.96	0.00	0.00	0.00
7,900.00	0.00	0.00	7,535.80	-1,139.47	-1,467.52	1,857.96	0.00	0.00	0.00
JSAND									
7,998.20	0.00	0.00	7,634.00	-1,139.47	-1,467.52	1,857.96	0.00	0.00	0.00
8,000.00	0.00	0.00	7,635.80	-1,139.47	-1,467.52	1,857.96	0.00	0.00	0.00
8,100.00	0.00	0.00	7,735.80	-1,139.47	-1,467.52	1,857.96	0.00	0.00	0.00
PBHL_MIRACLE 19-12(1319 FSL 1383 FWL)50'TGT RAD									
8,148.20	0.00	0.00	7,784.00	-1,139.47	-1,467.52	1,857.96	0.00	0.00	0.00

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_MIRACLE 19-12
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 4978.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 4978.00ft (Original Well Elev)
Site:	LARIMER_MIRACLE 25-12 PAD	North Reference:	True
Well:	P_MIRACLE 19-12	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_MIRACLE 19-12		
Design:	PLAN #1 3-23-10 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_MIRACLE 19-1	0.00	0.00	7,784.00	-1,139.47	-1,467.52	1,392,947.28	3,150,564.55	40° 24' 38.815 N	104° 57' 33.494 W
- plan hits target center									
- Circle (radius 50.00)									

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

Formations						
Measured Depth	Vertical Depth				Dip	Dip Direction
(ft)	(ft)		Name	Lithology	(°)	(°)
3,650.71	3,464.00		PARKMAN			
4,342.53	4,094.00		SUSSEX			
4,836.68	4,544.00		SHANNON			
7,248.20	6,884.00		NIO A			
7,538.20	7,174.00		CODELL			
7,998.20	7,634.00		JSAND			

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates			
(ft)	(ft)	+N/-S	+E/-W	Comment	
(ft)	(ft)	(ft)	(ft)		
750.00	750.00	0.00	0.00	Start Build 2.00	
1,970.23	1,933.66	-156.98	-202.18	Start 3257.75 hold at 1970.23 MD	
5,227.98	4,900.34	-982.49	-1,265.34	Start Drop -2.00	
6,448.20	6,084.00	-1,139.47	-1,467.52	Start 1700.00 hold at 6448.20 MD	
8,148.20	7,784.00	-1,139.47	-1,467.52	TD at 8148.20	



US ROCKIES REGION PLANNING

**COLORADO NORTHERN ZONE - 83
LARIMER_MIRACLE 25-12 PAD
P_MIRACLE 19-12**

**P_MIRACLE 19-12
PLAN #1 3-23-10 RHS**

Anticollision Report

24 March, 2010



Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_MIRACLE 19-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4978.00ft (Original Well Elev)
Reference Site:	LARIMER_MIRACLE 25-12 PAD	MD Reference:	WELL @ 4978.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MIRACLE 19-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 19-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-23-10 RHS	Offset TVD Reference:	Offset Datum

Reference	PLAN #1 3-23-10 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 3/23/2010				
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.00	8,148.20	PLAN #1 3-23-10 RHS (P_MIRACLE 19-1	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
LARIMER_MIRACLE 25-12 PAD						
P_MIRACLE 10-12 - P_MIRACLE 10-12 - PLAN #1 3-23	750.00	750.00	59.88	56.76	19.235	CC, ES
P_MIRACLE 10-12 - P_MIRACLE 10-12 - PLAN #1 3-23	900.00	897.48	65.80	62.13	17.909	SF
P_MIRACLE 11-12 - P_MIRACLE 11-12 - PLAN #1 3-23	750.00	750.00	9.75	6.64	3.133	CC
P_MIRACLE 11-12 - P_MIRACLE 11-12 - PLAN #1 3-23	1,500.00	1,498.18	12.94	5.80	1.812	ES, SF
P_MIRACLE 12-12 - P_MIRACLE 12-12 - PLAN #1 3-23	300.00	300.00	29.79	28.70	27.332	CC, ES
P_MIRACLE 12-12 - P_MIRACLE 12-12 - PLAN #1 3-23	5,300.00	5,183.77	785.69	716.94	11.427	SF
P_MIRACLE 13-12 - P_MIRACLE 13-12 - PLAN #1 3-23	545.68	546.21	12.96	10.80	6.005	CC, ES
P_MIRACLE 13-12 - P_MIRACLE 13-12 - PLAN #1 3-23	600.00	600.13	14.33	11.89	5.872	SF
P_MIRACLE 14-12 - P_MIRACLE 14-12 - PLAN #1 3-23	558.87	559.23	27.70	25.51	12.622	CC, ES
P_MIRACLE 14-12 - P_MIRACLE 14-12 - PLAN #1 3-23	700.00	699.04	32.08	29.20	11.133	SF
P_MIRACLE 15-12 - P_MIRACLE 15-12 - PLAN #1 3-23	300.00	300.00	50.13	49.04	45.983	CC, ES
P_MIRACLE 15-12 - P_MIRACLE 15-12 - PLAN #1 3-23	750.00	744.10	69.03	65.88	21.941	SF
P_MIRACLE 22-12 - P_MIRACLE 22-12 - PLAN #1 3-23	750.00	750.00	19.77	16.66	6.351	CC
P_MIRACLE 22-12 - P_MIRACLE 22-12 - PLAN #1 3-23	800.00	799.66	19.86	16.54	5.982	ES
P_MIRACLE 22-12 - P_MIRACLE 22-12 - PLAN #1 3-23	900.00	898.92	20.74	17.03	5.597	SF
P_MIRACLE 23-12 - P_MIRACLE 23-12 - PLAN #1 3-23	750.00	750.00	40.10	36.99	12.883	CC, ES
P_MIRACLE 23-12 - P_MIRACLE 23-12 - PLAN #1 3-23	1,000.00	1,000.65	46.11	42.05	11.369	SF
P_MIRACLE 25-12 - P_MIRACLE 25-12 - PLAN #1 3-23	750.00	750.00	10.03	6.92	3.222	CC, ES
P_MIRACLE 25-12 - P_MIRACLE 25-12 - PLAN #1 3-23	800.00	799.94	10.49	7.17	3.156	SF
P_MIRACLE 7-12 - P_MIRACLE 7-12 - PLAN #1 3-23-1C	750.00	750.00	69.90	66.79	22.454	CC, ES
P_MIRACLE 7-12 - P_MIRACLE 7-12 - PLAN #1 3-23-1C	900.00	897.54	75.39	71.67	20.268	SF

Offset Design LARIMER_MIRACLE 25-12 PAD - P_MIRACLE 10-12 - P_MIRACLE 10-12 - PLAN #1 3-23-10 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	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)		
0.00	0.00	0.00	0.00	0.00	0.00	91.05	-1.10	59.87	59.88				
100.00	100.00	100.00	100.00	0.10	0.10	91.05	-1.10	59.87	59.88	59.69	0.19	313.411	
200.00	200.00	200.00	200.00	0.32	0.32	91.05	-1.10	59.87	59.88	59.24	0.64	93.474	
300.00	300.00	300.00	300.00	0.55	0.55	91.05	-1.10	59.87	59.88	58.79	1.09	54.928	
400.00	400.00	400.00	400.00	0.77	0.77	91.05	-1.10	59.87	59.88	58.34	1.54	38.891	
500.00	500.00	500.00	500.00	0.99	0.99	91.05	-1.10	59.87	59.88	57.89	1.99	30.102	
600.00	600.00	600.00	600.00	1.22	1.22	91.05	-1.10	59.87	59.88	57.44	2.44	24.553	

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 19-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4978.00ft (Original Well Elev)
Reference Site:	LARIMER_MIRACLE 25-12 PAD	MD Reference:	WELL @ 4978.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MIRACLE 19-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 19-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-23-10 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	
700.00	700.00	700.00	700.00	1.44	1.44	91.05	-1.10	59.87	59.88	56.99	2.89	20.732	
750.00	750.00	750.00	750.00	1.56	1.56	91.05	-1.10	59.87	59.88	56.76	3.11	19.235 CC, ES	
800.00	800.00	799.23	799.23	1.66	1.66	-141.10	-1.39	60.18	60.54	57.22	3.31	18.278	
900.00	899.93	897.48	897.41	1.84	1.84	-140.94	-3.70	62.64	65.80	62.13	3.67	17.909 SF	
1,000.00	999.68	995.12	994.82	2.05	2.03	-140.67	-8.27	67.52	76.30	72.24	4.05	18.820	
1,100.00	1,099.13	1,091.77	1,090.96	2.27	2.25	-140.36	-15.02	74.73	91.98	87.52	4.46	20.631	
1,200.00	1,198.15	1,187.04	1,185.35	2.53	2.50	-140.03	-23.85	84.15	112.76	107.87	4.89	23.040	
1,300.00	1,296.63	1,283.24	1,280.33	2.84	2.77	-139.98	-34.25	95.26	137.81	132.45	5.37	25.672	
1,400.00	1,394.44	1,379.28	1,375.16	3.19	3.07	-140.59	-44.69	106.40	165.52	159.65	5.88	28.161	
1,500.00	1,491.46	1,474.47	1,469.13	3.61	3.38	-141.56	-55.03	117.45	195.89	189.47	6.42	30.522	
1,600.00	1,587.58	1,568.68	1,562.15	4.09	3.69	-142.69	-65.27	128.38	228.96	221.97	6.99	32.776	
1,700.00	1,682.68	1,661.80	1,654.08	4.63	4.01	-143.87	-75.38	139.18	264.79	257.22	7.58	34.944	
1,800.00	1,776.65	1,753.71	1,744.83	5.25	4.33	-145.04	-85.37	149.84	303.44	295.25	8.19	37.044	
1,900.00	1,869.36	1,844.31	1,834.27	5.93	4.65	-146.15	-95.22	160.35	344.91	336.09	8.82	39.094	
1,970.23	1,933.66	1,907.09	1,896.25	6.46	4.87	-146.89	-102.04	167.64	375.74	366.46	9.28	40.509	
2,000.00	1,960.78	1,933.55	1,922.38	6.69	4.97	-147.34	-104.91	170.71	389.12	379.63	9.49	41.017	
2,100.00	2,051.84	2,022.43	2,010.12	7.48	5.29	-148.66	-114.57	181.02	434.16	423.97	10.20	42.567	
2,200.00	2,142.91	2,111.30	2,097.87	8.28	5.61	-149.73	-124.23	191.33	479.36	468.45	10.92	43.909	
2,300.00	2,233.97	2,200.18	2,185.61	9.09	5.93	-150.62	-133.88	201.64	524.67	513.04	11.64	45.080	
2,400.00	2,325.04	2,289.05	2,273.36	9.91	6.26	-151.37	-143.54	211.95	570.07	557.71	12.36	46.111	
2,500.00	2,416.10	2,377.92	2,361.10	10.73	6.59	-152.00	-153.20	222.26	615.53	602.44	13.09	47.025	
2,600.00	2,507.17	2,466.80	2,448.85	11.56	6.92	-152.55	-162.85	232.57	661.04	647.23	13.82	47.841	
2,700.00	2,598.23	2,555.67	2,536.59	12.39	7.25	-153.03	-172.51	242.88	706.60	692.05	14.55	48.574	
2,800.00	2,689.30	2,644.55	2,624.34	13.23	7.58	-153.45	-182.17	253.19	752.19	736.91	15.28	49.237	
2,900.00	2,780.36	2,733.42	2,712.08	14.06	7.91	-153.83	-191.83	263.50	797.81	781.80	16.01	49.838	
3,000.00	2,871.43	2,822.30	2,799.82	14.90	8.24	-154.16	-201.48	273.81	843.45	826.71	16.74	50.387	
3,100.00	2,962.49	2,911.17	2,887.57	15.75	8.57	-154.46	-211.14	284.13	889.11	871.64	17.47	50.890	
3,200.00	3,053.56	3,000.05	2,975.31	16.59	8.91	-154.73	-220.80	294.44	934.80	916.59	18.20	51.354	
3,300.00	3,144.62	3,088.92	3,063.06	17.43	9.24	-154.97	-230.45	304.75	980.49	961.56	18.94	51.782	
3,400.00	3,235.69	3,177.80	3,150.80	18.28	9.58	-155.20	-240.11	315.06	1,026.20	1,006.53	19.67	52.179	
3,500.00	3,326.75	3,266.67	3,238.55	19.13	9.91	-155.40	-249.77	325.37	1,071.92	1,051.52	20.40	52.549	
3,600.00	3,417.82	3,355.54	3,326.29	19.97	10.25	-155.59	-259.42	335.68	1,117.65	1,096.52	21.13	52.894	
3,700.00	3,508.88	3,444.42	3,414.04	20.82	10.58	-155.76	-269.08	345.99	1,163.39	1,141.53	21.86	53.218	
3,800.00	3,599.95	3,533.29	3,501.78	21.67	10.92	-155.92	-278.74	356.30	1,209.13	1,186.54	22.59	53.522	
3,900.00	3,691.01	3,622.17	3,589.53	22.52	11.25	-156.07	-288.40	366.61	1,254.88	1,231.56	23.32	53.808	
4,000.00	3,782.08	3,711.04	3,677.27	23.37	11.59	-156.21	-298.05	376.92	1,300.64	1,276.59	24.05	54.078	
4,100.00	3,873.14	3,799.92	3,765.02	24.22	11.92	-156.33	-307.71	387.23	1,346.41	1,321.63	24.78	54.333	
4,200.00	3,964.21	3,888.79	3,852.76	25.07	12.26	-156.45	-317.37	397.54	1,392.18	1,366.67	25.51	54.575	
4,300.00	4,055.27	3,977.67	3,940.50	25.92	12.60	-156.57	-327.02	407.85	1,437.95	1,411.71	26.24	54.806	
4,400.00	4,146.34	4,066.54	4,028.25	26.77	12.93	-156.67	-336.68	418.17	1,483.73	1,456.76	26.96	55.025	
4,500.00	4,237.40	4,155.42	4,115.99	27.62	13.27	-156.77	-346.34	428.48	1,529.51	1,501.82	27.69	55.234	
4,600.00	4,328.47	4,244.29	4,203.74	28.47	13.61	-156.86	-356.00	438.79	1,575.30	1,546.88	28.42	55.434	
4,700.00	4,419.53	4,333.16	4,291.48	29.33	13.95	-156.95	-365.65	449.10	1,621.08	1,591.94	29.14	55.626	
4,800.00	4,510.60	4,422.04	4,379.23	30.18	14.28	-157.03	-375.31	459.41	1,666.88	1,637.01	29.87	55.809	
4,900.00	4,601.66	4,510.91	4,466.97	31.03	14.62	-157.11	-384.97	469.72	1,712.67	1,682.08	30.59	55.986	
5,000.00	4,692.73	4,599.79	4,554.72	31.88	14.96	-157.19	-394.62	480.03	1,758.47	1,727.15	31.31	56.155	
5,100.00	4,783.79	4,688.66	4,642.46	32.74	15.30	-157.26	-404.28	490.34	1,804.26	1,772.23	32.04	56.318	
5,200.00	4,874.86	4,777.54	4,730.21	33.59	15.63	-157.33	-413.94	500.65	1,850.06	1,817.31	32.76	56.476	
5,227.98	4,900.34	4,802.40	4,754.75	33.83	15.73	-157.34	-416.64	503.54	1,862.88	1,829.92	32.96	56.519	
5,300.00	4,966.29	4,866.80	4,818.33	34.35	15.97	-157.65	-423.64	511.01	1,895.12	1,861.57	33.55	56.480	
5,400.00	5,059.03	4,957.42	4,907.80	34.94	16.32	-158.01	-433.48	521.52	1,937.39	1,903.05	34.33	56.431	
5,500.00	5,153.02	5,049.36	4,998.57	35.48	16.67	-158.30	-443.47	532.19	1,976.70	1,941.61	35.09	56.334	

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 19-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4978.00ft (Original Well Elev)
Reference Site:	LARIMER_MIRACLE 25-12 PAD	MD Reference:	WELL @ 4978.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MIRACLE 19-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 19-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-23-10 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
5,600.00	5,248.14	5,142.50	5,090.52	35.97	17.02	-158.51	-453.59	542.99	2,013.01	1,977.18	35.82	56.196	
5,700.00	5,344.27	5,236.72	5,183.56	36.42	17.38	-158.66	-463.83	553.92	2,046.28	2,009.75	36.52	56.024	
5,800.00	5,441.31	5,331.93	5,277.55	36.82	17.74	-158.75	-474.18	564.97	2,076.47	2,039.28	37.20	55.823	
5,900.00	5,539.14	5,427.99	5,372.39	37.17	18.11	-158.78	-484.61	576.11	2,103.57	2,065.73	37.84	55.598	
6,000.00	5,637.62	5,535.81	5,478.87	37.47	18.50	-158.73	-496.23	588.51	2,127.49	2,089.03	38.46	55.315	
6,100.00	5,736.65	5,632.69	5,584.56	37.72	18.91	-158.64	-509.27	602.44	2,146.46	2,107.39	39.07	54.944	
6,200.00	5,836.11	5,732.32	5,680.81	37.92	19.20	-158.65	-516.54	610.20	2,159.49	2,120.00	39.49	54.685	
6,300.00	5,935.86	5,834.40	5,783.86	38.08	19.40	-158.75	-518.01	611.77	2,166.60	2,126.84	39.77	54.484	
6,400.00	6,035.80	6,034.34	6,035.80	38.18	19.53	-158.81	-518.01	611.77	2,169.80	2,129.88	39.92	54.358	
6,448.20	6,084.00	6,142.54	6,084.00	38.22	19.59	73.36	-518.01	611.77	2,170.18	2,130.20	39.98	54.284	
6,500.00	6,135.80	6,194.33	6,135.80	38.26	19.66	73.36	-518.01	611.77	2,170.18	2,130.07	40.11	54.108	
6,600.00	6,235.80	6,294.33	6,235.80	38.33	19.79	73.36	-518.01	611.77	2,170.18	2,129.82	40.36	53.776	
6,700.00	6,335.80	6,394.33	6,335.80	38.40	19.92	73.36	-518.01	611.77	2,170.18	2,129.57	40.61	53.444	
6,800.00	6,435.80	6,494.33	6,435.80	38.47	20.05	73.36	-518.01	611.77	2,170.18	2,129.32	40.86	53.111	
6,900.00	6,535.80	6,594.33	6,535.80	38.54	20.19	73.36	-518.01	611.77	2,170.18	2,129.06	41.12	52.779	
7,000.00	6,635.80	6,694.33	6,635.80	38.61	20.32	73.36	-518.01	611.77	2,170.18	2,128.80	41.38	52.446	
7,100.00	6,735.80	6,794.33	6,735.80	38.69	20.46	73.36	-518.01	611.77	2,170.18	2,128.53	41.64	52.114	
7,200.00	6,835.80	6,894.33	6,835.80	38.76	20.60	73.36	-518.01	611.77	2,170.18	2,128.27	41.91	51.781	
7,300.00	6,935.80	6,994.33	6,935.80	38.84	20.75	73.36	-518.01	611.77	2,170.18	2,128.00	42.18	51.450	
7,400.00	7,035.80	7,094.33	7,035.80	38.92	20.89	73.36	-518.01	611.77	2,170.18	2,127.72	42.45	51.119	
7,500.00	7,135.80	7,194.33	7,135.80	39.00	21.03	73.36	-518.01	611.77	2,170.18	2,127.45	42.73	50.788	
7,600.00	7,235.80	7,294.33	7,235.80	39.08	21.18	73.36	-518.01	611.77	2,170.18	2,127.17	43.01	50.458	
7,700.00	7,335.80	7,394.33	7,335.80	39.16	21.33	73.36	-518.01	611.77	2,170.18	2,126.89	43.29	50.130	
7,800.00	7,435.80	7,494.33	7,435.80	39.24	21.47	73.36	-518.01	611.77	2,170.18	2,126.60	43.58	49.802	
7,900.00	7,535.80	7,594.33	7,535.80	39.32	21.62	73.36	-518.01	611.77	2,170.18	2,126.31	43.86	49.476	
8,000.00	7,635.80	7,694.33	7,635.80	39.41	21.78	73.36	-518.01	611.77	2,170.18	2,126.02	44.15	49.151	
8,100.00	7,735.80	7,794.33	7,735.80	39.49	21.93	73.36	-518.01	611.77	2,170.18	2,125.73	44.45	48.827	
8,148.20	7,784.00	7,842.54	7,784.00	39.53	22.00	73.36	-518.01	611.77	2,170.18	2,125.59	44.59	48.671	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_MIRACLE 19-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4978.00ft (Original Well Elev)
Reference Site:	LARIMER_MIRACLE 25-12 PAD	MD Reference:	WELL @ 4978.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MIRACLE 19-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 19-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-23-10 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	-92.14	-0.36	-9.75	9.75				
100.00	100.00	100.00	100.00	0.10	0.10	-92.14	-0.36	-9.75	9.75	9.56	0.19	51.047	
200.00	200.00	200.00	200.00	0.32	0.32	-92.14	-0.36	-9.75	9.75	9.11	0.64	15.225	
300.00	300.00	300.00	300.00	0.55	0.55	-92.14	-0.36	-9.75	9.75	8.66	1.09	8.946	
400.00	400.00	400.00	400.00	0.77	0.77	-92.14	-0.36	-9.75	9.75	8.21	1.54	6.334	
500.00	500.00	500.00	500.00	0.99	0.99	-92.14	-0.36	-9.75	9.75	7.76	1.99	4.903	
600.00	600.00	600.00	600.00	1.22	1.22	-92.14	-0.36	-9.75	9.75	7.31	2.44	3.999	
700.00	700.00	700.00	700.00	1.44	1.44	-92.14	-0.36	-9.75	9.75	6.86	2.89	3.377	
750.00	750.00	750.00	750.00	1.56	1.56	-92.14	-0.36	-9.75	9.75	6.64	3.11	3.133 CC	
800.00	800.00	799.85	799.85	1.66	1.66	35.86	-0.60	-10.11	9.77	6.46	3.31	2.948	
900.00	899.93	899.56	899.50	1.84	1.85	37.22	-2.51	-13.01	9.92	6.24	3.68	2.694	
1,000.00	999.68	999.27	998.96	2.05	2.05	39.82	-6.31	-18.81	10.23	6.16	4.07	2.513	
1,100.00	1,099.13	1,098.98	1,098.11	2.27	2.28	43.42	-12.01	-27.50	10.73	6.24	4.49	2.391	
1,200.00	1,198.15	1,198.68	1,196.85	2.53	2.54	47.70	-19.60	-39.06	11.46	6.50	4.96	2.311	
1,300.00	1,296.63	1,298.38	1,295.04	2.84	2.84	52.30	-29.07	-53.50	12.45	6.94	5.51	2.261	
1,400.00	1,394.44	1,398.33	1,393.12	3.19	3.18	62.30	-39.62	-69.58	12.85	6.64	6.21	2.070	
1,456.72	1,449.57	1,454.99	1,448.72	3.43	3.39	74.05	-45.60	-78.70	12.74	6.00	6.73	1.892	
1,500.00	1,491.46	1,498.18	1,491.10	3.61	3.55	86.18	-50.16	-85.65	12.94	5.80	7.14	1.812 ES, SF	
1,600.00	1,587.58	1,597.80	1,588.85	4.09	3.92	118.04	-60.68	-101.68	16.39	8.64	7.75	2.116	
1,700.00	1,682.68	1,697.05	1,686.25	4.63	4.31	140.86	-71.16	-117.66	25.45	17.56	7.89	3.224	
1,800.00	1,776.65	1,795.82	1,783.17	5.25	4.70	153.34	-81.59	-133.55	39.44	31.35	8.09	4.875	
1,900.00	1,869.36	1,893.98	1,879.50	5.93	5.10	160.34	-91.95	-149.35	57.55	49.15	8.40	6.853	
1,970.23	1,933.66	1,962.50	1,946.74	6.46	5.38	163.54	-99.19	-160.38	72.51	63.86	8.66	8.376	
2,000.00	1,960.78	1,991.47	1,975.16	6.69	5.50	164.63	-102.25	-165.04	79.25	70.46	8.80	9.010	
2,100.00	2,051.84	2,088.76	2,070.63	7.48	5.90	167.23	-112.52	-180.70	102.03	92.73	9.30	10.973	
2,200.00	2,142.91	2,186.05	2,166.10	8.28	6.31	168.89	-122.79	-196.36	124.93	115.10	9.83	12.705	
2,300.00	2,233.97	2,283.34	2,261.57	9.09	6.72	170.03	-133.06	-212.02	147.90	137.51	10.39	14.238	
2,400.00	2,325.04	2,380.63	2,357.05	9.91	7.13	170.86	-143.34	-227.68	170.91	159.96	10.96	15.601	
2,500.00	2,416.10	2,477.92	2,452.52	10.73	7.54	171.50	-153.61	-243.34	193.95	182.42	11.53	16.819	
2,600.00	2,507.17	2,575.21	2,547.99	11.56	7.95	172.00	-163.88	-258.99	217.01	204.89	12.11	17.913	
2,700.00	2,598.23	2,672.50	2,643.46	12.39	8.37	172.40	-174.15	-274.65	240.08	227.37	12.70	18.900	
2,800.00	2,689.30	2,769.79	2,738.93	13.23	8.78	172.74	-184.43	-290.31	263.15	249.86	13.30	19.793	
2,900.00	2,780.36	2,867.08	2,834.40	14.06	9.20	173.02	-194.70	-305.97	286.24	272.35	13.89	20.606	
3,000.00	2,871.43	2,964.37	2,929.87	14.90	9.62	173.25	-204.97	-321.63	309.33	294.84	14.49	21.348	
3,100.00	2,962.49	3,061.66	3,025.34	15.75	10.03	173.46	-215.25	-337.29	332.43	317.33	15.09	22.028	
3,200.00	3,053.56	3,158.95	3,120.81	16.59	10.45	173.64	-225.52	-352.95	355.52	339.83	15.69	22.653	
3,300.00	3,144.62	3,256.24	3,216.28	17.43	10.87	173.79	-235.79	-368.60	378.62	362.33	16.30	23.229	
3,400.00	3,235.69	3,353.53	3,311.75	18.28	11.29	173.93	-246.06	-384.26	401.73	384.82	16.91	23.762	
3,500.00	3,326.75	3,450.82	3,407.22	19.13	11.71	174.06	-256.34	-399.92	424.83	407.32	17.51	24.256	
3,600.00	3,417.82	3,548.11	3,502.69	19.97	12.13	174.17	-266.61	-415.58	447.94	429.82	18.12	24.716	
3,700.00	3,508.88	3,645.40	3,598.16	20.82	12.55	174.27	-276.88	-431.24	471.05	452.32	18.73	25.144	
3,800.00	3,599.95	3,742.69	3,693.64	21.67	12.98	174.36	-287.16	-446.90	494.16	474.81	19.35	25.544	
3,900.00	3,691.01	3,839.98	3,789.11	22.52	13.40	174.44	-297.43	-462.56	517.27	497.31	19.96	25.918	
4,000.00	3,782.08	3,937.27	3,884.58	23.37	13.82	174.52	-307.70	-478.22	540.38	519.81	20.57	26.269	
4,100.00	3,873.14	4,034.56	3,980.05	24.22	14.24	174.59	-317.97	-493.87	563.49	542.31	21.18	26.599	
4,200.00	3,964.21	4,131.85	4,075.52	25.07	14.66	174.65	-328.25	-509.53	586.61	564.81	21.80	26.910	
4,300.00	4,055.27	4,229.14	4,170.99	25.92	15.09	174.71	-338.52	-525.19	609.72	587.31	22.41	27.202	
4,400.00	4,146.34	4,326.43	4,266.46	26.77	15.51	174.76	-348.79	-540.85	632.84	609.81	23.03	27.479	
4,500.00	4,237.40	4,423.72	4,361.93	27.62	15.93	174.81	-359.06	-556.51	655.95	632.31	23.65	27.741	
4,600.00	4,328.47	4,521.01	4,457.40	28.47	16.36	174.86	-369.34	-572.17	679.07	654.81	24.26	27.988	
4,700.00	4,419.53	4,618.30	4,552.87	29.33	16.78	174.90	-379.61	-587.83	702.18	677.30	24.88	28.223	
4,800.00	4,510.60	4,715.59	4,648.34	30.18	17.20	174.95	-389.88	-603.49	725.30	699.80	25.50	28.447	

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 19-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4978.00ft (Original Well Elev)
Reference Site:	LARIMER_MIRACLE 25-12 PAD	MD Reference:	WELL @ 4978.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MIRACLE 19-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 19-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-23-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design LARIMER_MIRACLE 25-12 PAD - P_MIRACLE 11-12 - P_MIRACLE 11-12 - PLAN #1 3-23-10 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	4,601.66	4,812.88	4,743.81	31.03	17.63	174.99	-400.16	-619.14	748.42	722.30	26.11	28.659	
5,000.00	4,692.73	4,910.17	4,839.28	31.88	18.05	175.02	-410.43	-634.80	771.53	744.80	26.73	28.861	
5,100.00	4,783.79	5,007.46	4,934.75	32.74	18.47	175.06	-420.70	-650.46	794.65	767.30	27.35	29.054	
5,200.00	4,874.86	5,104.75	5,030.23	33.59	18.90	175.09	-430.97	-666.12	817.77	789.80	27.97	29.238	
5,227.98	4,900.34	5,131.97	5,056.94	33.83	19.02	175.10	-433.85	-670.50	824.24	796.09	28.14	29.288	
5,300.00	4,966.29	5,202.24	5,125.89	34.35	19.32	175.14	-441.27	-681.81	840.01	811.34	28.66	29.305	
5,400.00	5,059.03	5,300.42	5,222.24	34.94	19.75	175.18	-451.64	-697.61	858.98	829.64	29.34	29.278	
5,500.00	5,153.02	5,399.20	5,319.17	35.48	20.18	175.19	-462.07	-713.51	874.52	844.55	29.97	29.178	
5,600.00	5,248.14	5,480.80	5,399.35	35.97	20.49	175.19	-470.37	-726.17	887.37	856.87	30.50	29.096	
5,700.00	5,344.27	5,556.72	5,474.30	36.42	20.71	175.20	-477.01	-736.30	899.29	868.35	30.93	29.070	
5,800.00	5,441.31	5,632.49	5,549.39	36.82	20.90	175.21	-482.56	-744.75	910.35	879.04	31.31	29.076	
5,900.00	5,539.14	5,700.00	5,616.49	37.17	21.05	175.23	-486.58	-750.88	920.59	888.98	31.61	29.124	
6,000.00	5,637.62	5,783.62	5,699.82	37.47	21.21	175.25	-490.36	-756.63	929.86	897.99	31.88	29.169	
6,100.00	5,736.65	5,859.00	5,775.09	37.72	21.33	175.27	-492.62	-760.08	938.31	906.24	32.07	29.258	
6,200.00	5,836.11	5,934.28	5,850.34	37.92	21.44	175.30	-493.79	-761.86	945.88	913.67	32.21	29.370	
6,300.00	5,935.86	6,019.81	5,935.86	38.08	21.54	175.34	-493.97	-762.14	952.33	920.03	32.30	29.481	
6,400.00	6,035.80	6,119.74	6,035.80	38.18	21.66	175.36	-493.97	-762.14	955.75	923.38	32.37	29.524	
6,448.20	6,084.00	6,167.94	6,084.00	38.22	21.72	47.54	-493.97	-762.14	956.15	923.76	32.39	29.520	
6,500.00	6,135.80	6,219.74	6,135.80	38.26	21.78	47.54	-493.97	-762.14	956.15	923.60	32.55	29.372	
6,600.00	6,235.80	6,319.74	6,235.80	38.33	21.90	47.54	-493.97	-762.14	956.15	923.28	32.87	29.091	
6,700.00	6,335.80	6,419.74	6,335.80	38.40	22.02	47.54	-493.97	-762.14	956.15	922.97	33.19	28.813	
6,800.00	6,435.80	6,519.74	6,435.80	38.47	22.15	47.54	-493.97	-762.14	956.15	922.65	33.51	28.537	
6,900.00	6,535.80	6,619.74	6,535.80	38.54	22.27	47.54	-493.97	-762.14	956.15	922.32	33.83	28.264	
7,000.00	6,635.80	6,719.74	6,635.80	38.61	22.40	47.54	-493.97	-762.14	956.15	922.00	34.15	27.995	
7,100.00	6,735.80	6,819.74	6,735.80	38.69	22.53	47.54	-493.97	-762.14	956.15	921.67	34.48	27.728	
7,200.00	6,835.80	6,919.74	6,835.80	38.76	22.66	47.54	-493.97	-762.14	956.15	921.34	34.81	27.464	
7,300.00	6,935.80	7,019.74	6,935.80	38.84	22.79	47.54	-493.97	-762.14	956.15	921.00	35.15	27.203	
7,400.00	7,035.80	7,119.74	7,035.80	38.92	22.92	47.54	-493.97	-762.14	956.15	920.67	35.49	26.945	
7,500.00	7,135.80	7,219.74	7,135.80	39.00	23.05	47.54	-493.97	-762.14	956.15	920.33	35.82	26.690	
7,600.00	7,235.80	7,319.74	7,235.80	39.08	23.19	47.54	-493.97	-762.14	956.15	919.99	36.17	26.438	
7,700.00	7,335.80	7,419.74	7,335.80	39.16	23.33	47.54	-493.97	-762.14	956.15	919.64	36.51	26.190	
7,800.00	7,435.80	7,519.74	7,435.80	39.24	23.47	47.54	-493.97	-762.14	956.15	919.30	36.85	25.944	
7,900.00	7,535.80	7,619.74	7,535.80	39.32	23.61	47.54	-493.97	-762.14	956.15	918.95	37.20	25.701	
8,000.00	7,635.80	7,719.74	7,635.80	39.41	23.75	47.54	-493.97	-762.14	956.15	918.60	37.55	25.462	
8,100.00	7,735.80	7,819.74	7,735.80	39.49	23.89	47.54	-493.97	-762.14	956.15	918.25	37.90	25.225	
8,148.20	7,784.00	7,867.94	7,784.00	39.53	23.96	47.54	-493.97	-762.14	956.15	918.08	38.07	25.113	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_MIRACLE 19-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4978.00ft (Original Well Elev)
Reference Site:	LARIMER_MIRACLE 25-12 PAD	MD Reference:	WELL @ 4978.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MIRACLE 19-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 19-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-23-10 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	-90.01	0.00	-29.79	29.79				
100.00	100.00	100.00	100.00	0.10	0.10	-90.01	0.00	-29.79	29.79	29.60	0.19	155.951	
200.00	200.00	200.00	200.00	0.32	0.32	-90.01	0.00	-29.79	29.79	29.15	0.64	46.512	
300.00	300.00	300.00	300.00	0.55	0.55	-90.01	0.00	-29.79	29.79	28.70	1.09	27.332 CC, ES	
400.00	400.00	398.96	398.94	0.77	0.75	-90.68	-0.37	-31.46	31.48	29.96	1.52	20.670	
500.00	500.00	497.67	497.52	0.99	0.97	-92.31	-1.47	-36.45	36.57	34.61	1.96	18.696	
600.00	600.00	595.93	595.40	1.22	1.20	-94.21	-3.29	-44.71	45.06	42.66	2.41	18.716	
700.00	700.00	693.49	692.25	1.44	1.47	-95.91	-5.82	-56.14	56.97	54.09	2.88	19.754	
750.00	750.00	741.94	740.19	1.56	1.63	-96.64	-7.33	-63.02	64.20	61.06	3.14	20.465	
800.00	800.00	790.20	787.81	1.66	1.79	30.65	-9.02	-70.65	71.89	68.62	3.26	22.029	
900.00	899.93	886.30	882.22	1.84	2.15	30.53	-12.88	-88.18	87.53	83.85	3.68	23.791	
1,000.00	999.68	981.84	975.42	2.05	2.56	31.19	-17.40	-108.66	103.50	99.39	4.11	25.160	
1,100.00	1,099.13	1,076.79	1,067.31	2.27	3.02	32.30	-22.55	-132.01	119.83	115.26	4.57	26.205	
1,200.00	1,198.15	1,171.14	1,157.77	2.53	3.54	33.67	-28.32	-158.14	136.56	131.50	5.06	26.965	
1,300.00	1,296.63	1,264.87	1,246.73	2.84	4.12	35.21	-34.68	-186.97	153.74	148.14	5.60	27.455	
1,400.00	1,394.44	1,357.98	1,334.09	3.19	4.75	36.83	-41.61	-218.41	171.42	165.23	6.19	27.684	
1,500.00	1,491.46	1,450.45	1,419.77	3.61	5.44	38.49	-49.10	-252.35	189.65	182.80	6.86	27.660	
1,600.00	1,587.58	1,544.42	1,505.73	4.09	6.19	40.21	-57.28	-289.43	208.31	200.69	7.62	27.352	
1,700.00	1,682.68	1,642.60	1,595.26	4.63	7.01	42.24	-65.96	-328.78	225.30	216.78	8.51	26.468	
1,800.00	1,776.65	1,740.97	1,684.96	5.25	7.84	44.55	-74.66	-368.20	240.12	230.57	9.55	25.150	
1,900.00	1,869.36	1,839.40	1,774.73	5.93	8.67	47.16	-83.36	-407.65	252.99	242.25	10.74	23.548	
1,970.23	1,933.66	1,908.50	1,837.74	6.46	9.26	49.17	-89.47	-435.34	261.00	249.31	11.69	22.324	
2,000.00	1,960.78	1,937.79	1,864.45	6.69	9.51	50.10	-92.06	-447.07	264.27	252.15	12.12	21.802	
2,100.00	2,051.84	2,036.15	1,954.15	7.48	10.35	53.04	-100.75	-486.49	275.74	262.12	13.62	20.243	
2,200.00	2,142.91	2,134.51	2,043.85	8.28	11.19	55.74	-109.45	-525.91	287.88	272.68	15.19	18.950	
2,300.00	2,233.97	2,232.88	2,133.55	9.09	12.04	58.23	-118.14	-565.33	300.60	283.79	16.82	17.877	
2,400.00	2,325.04	2,331.24	2,223.24	9.91	12.89	60.51	-126.84	-604.75	313.85	295.37	18.48	16.984	
2,500.00	2,416.10	2,429.60	2,312.94	10.73	13.74	62.61	-135.54	-644.16	327.56	307.38	20.17	16.237	
2,600.00	2,507.17	2,527.96	2,402.64	11.56	14.59	64.54	-144.23	-683.58	341.66	319.77	21.89	15.608	
2,700.00	2,598.23	2,626.32	2,492.34	12.39	15.44	66.31	-152.93	-723.00	356.12	332.50	23.62	15.076	
2,800.00	2,689.30	2,724.69	2,582.03	13.23	16.29	67.95	-161.62	-762.42	370.90	345.53	25.36	14.623	
2,900.00	2,780.36	2,823.05	2,671.73	14.06	17.14	69.46	-170.32	-801.83	385.94	358.83	27.11	14.234	
3,000.00	2,871.43	2,921.41	2,761.43	14.90	17.99	70.86	-179.01	-841.25	401.24	372.37	28.87	13.899	
3,100.00	2,962.49	3,019.77	2,851.13	15.75	18.84	72.16	-187.71	-880.67	416.75	386.13	30.63	13.608	
3,200.00	3,053.56	3,118.13	2,940.83	16.59	19.70	73.36	-196.40	-920.09	432.46	400.08	32.38	13.355	
3,300.00	3,144.62	3,216.50	3,030.52	17.43	20.55	74.48	-205.10	-959.51	448.34	414.20	34.14	13.133	
3,400.00	3,235.69	3,314.86	3,120.22	18.28	21.40	75.52	-213.80	-998.92	464.38	428.48	35.90	12.937	
3,500.00	3,326.75	3,413.22	3,209.92	19.13	22.26	76.50	-222.49	-1,038.34	480.56	442.91	37.65	12.764	
3,600.00	3,417.82	3,511.58	3,299.62	19.97	23.11	77.41	-231.19	-1,077.76	496.86	457.46	39.40	12.610	
3,700.00	3,508.88	3,609.95	3,389.32	20.82	23.97	78.26	-239.88	-1,117.18	513.29	472.13	41.15	12.473	
3,800.00	3,599.95	3,708.31	3,479.01	21.67	24.82	79.06	-248.58	-1,156.60	529.81	486.91	42.90	12.350	
3,900.00	3,691.01	3,806.67	3,568.71	22.52	25.68	79.81	-257.27	-1,196.01	546.43	501.79	44.65	12.239	
4,000.00	3,782.08	3,905.03	3,658.41	23.37	26.53	80.52	-265.97	-1,235.43	563.14	516.75	46.39	12.140	
4,100.00	3,873.14	4,003.39	3,748.11	24.22	27.39	81.19	-274.67	-1,274.85	579.92	531.80	48.13	12.050	
4,200.00	3,964.21	4,101.76	3,837.81	25.07	28.25	81.81	-283.36	-1,314.27	596.78	546.92	49.86	11.968	
4,300.00	4,055.27	4,200.12	3,927.50	25.92	29.10	82.41	-292.06	-1,353.68	613.71	562.11	51.60	11.894	
4,400.00	4,146.34	4,298.48	4,017.20	26.77	29.96	82.97	-300.75	-1,393.10	630.69	577.36	53.33	11.827	
4,500.00	4,237.40	4,396.84	4,106.90	27.62	30.81	83.51	-309.45	-1,432.52	647.73	592.68	55.06	11.765	
4,600.00	4,328.47	4,495.20	4,196.60	28.47	31.67	84.01	-318.14	-1,471.94	664.83	608.04	56.78	11.708	
4,700.00	4,419.53	4,593.57	4,286.30	29.33	32.53	84.49	-326.84	-1,511.36	681.97	623.46	58.51	11.656	
4,800.00	4,510.60	4,691.93	4,375.99	30.18	33.38	84.95	-335.54	-1,550.77	699.15	638.93	60.23	11.608	
4,900.00	4,601.66	4,790.29	4,465.69	31.03	34.24	85.38	-344.23	-1,590.19	716.38	654.43	61.95	11.564	

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 19-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4978.00ft (Original Well Elev)
Reference Site:	LARIMER_MIRACLE 25-12 PAD	MD Reference:	WELL @ 4978.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MIRACLE 19-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 19-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-23-10 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	4,692.73	4,888.65	4,555.39	31.88	35.09	85.80	-352.93	-1,629.61	733.65	669.98	63.66	11.524	
5,100.00	4,783.79	4,987.01	4,645.09	32.74	35.95	86.20	-361.62	-1,669.03	750.95	685.57	65.38	11.486	
5,200.00	4,874.86	5,085.38	4,734.78	33.59	36.81	86.57	-370.32	-1,708.44	768.28	701.19	67.09	11.451	
5,227.98	4,900.34	5,112.89	4,759.88	33.83	37.05	86.68	-372.75	-1,719.47	773.14	705.57	67.57	11.442	
5,300.00	4,966.29	5,183.77	4,824.51	34.35	37.66	87.12	-379.02	-1,747.87	785.69	716.94	68.76	11.427 SF	
5,400.00	5,059.03	5,282.20	4,914.27	34.94	38.52	87.52	-387.72	-1,787.32	803.28	733.07	70.21	11.441	
5,500.00	5,153.02	5,380.57	5,003.97	35.48	39.38	87.67	-396.41	-1,826.74	821.02	749.45	71.57	11.471	
5,600.00	5,248.14	5,478.74	5,093.50	35.97	40.23	87.59	-405.09	-1,866.08	838.94	766.10	72.83	11.519	
5,700.00	5,344.27	5,578.07	5,184.09	36.42	41.09	87.29	-413.87	-1,905.87	857.06	783.08	73.98	11.585	
5,800.00	5,441.31	5,691.96	5,289.01	36.82	41.84	86.81	-423.41	-1,949.10	874.42	799.49	74.93	11.670	
5,900.00	5,539.14	5,806.98	5,396.68	37.17	42.52	86.31	-432.12	-1,988.59	890.26	814.52	75.74	11.754	
6,000.00	5,637.62	5,923.08	5,506.91	37.47	43.12	85.81	-439.96	-2,024.15	904.54	828.12	76.42	11.837	
6,100.00	5,736.65	6,040.21	5,619.54	37.72	43.66	85.30	-446.89	-2,055.56	917.22	840.26	76.97	11.917	
6,200.00	5,836.11	6,158.33	5,734.33	37.92	44.12	84.78	-452.87	-2,082.67	928.27	850.88	77.39	11.994	
6,300.00	5,935.86	6,277.35	5,851.07	38.08	44.52	84.24	-457.86	-2,105.28	937.65	859.96	77.69	12.070	
6,400.00	6,035.80	6,397.21	5,969.50	38.18	44.85	83.68	-461.82	-2,123.25	945.34	867.48	77.85	12.143	
6,448.20	6,084.00	6,455.26	6,027.12	38.22	44.97	-44.43	-463.36	-2,130.21	948.43	870.54	77.88	12.177	
6,500.00	6,135.80	6,517.88	6,089.41	38.26	45.10	-44.75	-464.73	-2,136.43	951.25	873.35	77.90	12.212	
6,600.00	6,235.80	6,639.43	6,210.65	38.33	45.27	-45.18	-466.56	-2,144.72	955.01	877.07	77.94	12.253	
6,700.00	6,335.80	6,761.48	6,332.65	38.40	45.39	-45.35	-467.28	-2,147.98	956.49	878.44	78.05	12.255	
6,800.00	6,435.80	6,864.63	6,435.80	38.47	45.46	-45.35	-467.29	-2,148.03	956.52	878.32	78.19	12.233	
6,900.00	6,535.80	6,964.63	6,535.80	38.54	45.52	-45.35	-467.29	-2,148.03	956.52	878.18	78.34	12.211	
7,000.00	6,635.80	7,064.63	6,635.80	38.61	45.59	-45.35	-467.29	-2,148.03	956.52	878.04	78.48	12.188	
7,100.00	6,735.80	7,164.63	6,735.80	38.69	45.66	-45.35	-467.29	-2,148.03	956.52	877.89	78.63	12.165	
7,200.00	6,835.80	7,264.63	6,835.80	38.76	45.72	-45.35	-467.29	-2,148.03	956.52	877.74	78.78	12.142	
7,300.00	6,935.80	7,364.63	6,935.80	38.84	45.79	-45.35	-467.29	-2,148.03	956.52	877.59	78.93	12.119	
7,400.00	7,035.80	7,464.63	7,035.80	38.92	45.87	-45.35	-467.29	-2,148.03	956.52	877.44	79.08	12.095	
7,500.00	7,135.80	7,564.63	7,135.80	39.00	45.94	-45.35	-467.29	-2,148.03	956.52	877.28	79.24	12.072	
7,600.00	7,235.80	7,664.63	7,235.80	39.08	46.01	-45.35	-467.29	-2,148.03	956.52	877.12	79.39	12.048	
7,700.00	7,335.80	7,764.63	7,335.80	39.16	46.08	-45.35	-467.29	-2,148.03	956.52	876.96	79.55	12.023	
7,800.00	7,435.80	7,864.63	7,435.80	39.24	46.16	-45.35	-467.29	-2,148.03	956.52	876.80	79.72	11.999	
7,900.00	7,535.80	7,964.63	7,535.80	39.32	46.23	-45.35	-467.29	-2,148.03	956.52	876.63	79.88	11.974	
8,000.00	7,635.80	8,064.63	7,635.80	39.41	46.31	-45.35	-467.29	-2,148.03	956.52	876.47	80.05	11.949	
8,100.00	7,735.80	8,164.63	7,735.80	39.49	46.39	-45.35	-467.29	-2,148.03	956.52	876.30	80.22	11.924	
8,148.20	7,784.00	8,212.83	7,784.00	39.53	46.43	-45.35	-467.29	-2,148.03	956.52	876.22	80.30	11.912	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_MIRACLE 19-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4978.00ft (Original Well Elev)
Reference Site:	LARIMER_MIRACLE 25-12 PAD	MD Reference:	WELL @ 4978.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MIRACLE 19-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 19-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-23-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design LARIMER_MIRACLE 25-12 PAD - P_MIRACLE 13-12 - P_MIRACLE 13-12 - PLAN #1 3-23-10 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	91.04	-0.36	20.05	20.05				
100.00	100.00	100.00	100.00	0.10	0.10	91.04	-0.36	20.05	20.05	19.86	0.19	104.956	
200.00	200.00	200.00	200.00	0.32	0.32	91.04	-0.36	20.05	20.05	19.41	0.64	31.303	
300.00	300.00	300.26	300.26	0.55	0.53	91.87	-0.64	19.71	19.72	18.64	1.08	18.263	
400.00	400.00	400.67	400.60	0.77	0.74	99.59	-2.87	16.98	17.23	15.73	1.50	11.472	
500.00	500.00	500.70	500.38	0.99	0.97	122.27	-7.30	11.56	13.67	11.73	1.94	7.047	
545.68	545.68	546.21	545.68	1.10	1.09	140.77	-10.04	8.20	12.96	10.80	2.16	6.005 CC, ES	
600.00	600.00	600.13	599.25	1.22	1.23	165.86	-13.88	3.49	14.33	11.89	2.44	5.872 SF	
700.00	700.00	698.71	696.88	1.44	1.53	-162.48	-22.54	-7.12	23.84	20.85	2.99	7.969	
750.00	750.00	747.62	745.12	1.56	1.71	-154.21	-27.63	-13.35	31.07	27.79	3.28	9.485	
800.00	800.00	796.32	793.01	1.66	1.88	-21.05	-33.21	-20.18	39.08	35.77	3.31	11.822	
900.00	899.93	893.29	887.90	1.84	2.28	-15.16	-45.85	-35.67	55.61	51.88	3.72	14.931	
1,000.00	999.68	989.71	981.52	2.05	2.74	-12.06	-60.42	-53.52	72.35	68.19	4.16	17.383	
1,100.00	1,099.13	1,085.60	1,073.80	2.27	3.25	-10.19	-76.88	-73.69	89.10	84.48	4.62	19.301	
1,200.00	1,198.15	1,180.97	1,164.67	2.53	3.81	-8.96	-95.18	-96.11	105.78	100.69	5.09	20.793	
1,300.00	1,296.63	1,275.83	1,254.05	2.84	4.44	-8.11	-115.27	-120.72	122.33	116.76	5.58	21.942	
1,400.00	1,394.44	1,370.19	1,341.86	3.19	5.11	-7.50	-137.10	-147.46	138.73	132.65	6.08	22.813	
1,500.00	1,491.46	1,464.08	1,428.06	3.61	5.85	-7.05	-160.63	-176.27	154.94	148.34	6.61	23.454	
1,600.00	1,587.58	1,557.49	1,512.57	4.09	6.63	-6.71	-185.79	-207.10	170.96	163.81	7.15	23.904	
1,700.00	1,682.68	1,650.45	1,595.34	4.63	7.47	-6.47	-212.55	-239.88	186.75	179.03	7.72	24.195	
1,800.00	1,776.65	1,742.98	1,676.31	5.25	8.36	-6.28	-240.86	-274.56	202.30	194.00	8.31	24.358	
1,900.00	1,869.36	1,841.36	1,761.49	5.93	9.34	-6.17	-271.99	-312.70	216.30	207.36	8.94	24.195	
1,970.23	1,933.66	1,911.16	1,821.91	6.46	10.05	-6.16	-294.09	-339.76	224.09	214.69	9.40	23.843	
2,000.00	1,960.78	1,940.78	1,847.56	6.69	10.35	-6.17	-303.46	-351.25	227.03	217.42	9.61	23.617	
2,100.00	2,051.84	2,040.30	1,933.71	7.48	11.36	-6.21	-334.96	-389.84	236.90	226.56	10.34	22.911	
2,200.00	2,142.91	2,139.81	2,019.86	8.28	12.37	-6.24	-366.46	-428.42	246.78	235.70	11.08	22.277	
2,300.00	2,233.97	2,239.32	2,106.00	9.09	13.39	-6.28	-397.96	-467.01	256.65	244.83	11.82	21.706	
2,400.00	2,325.04	2,338.83	2,192.15	9.91	14.41	-6.31	-429.46	-505.59	266.52	253.95	12.58	21.192	
2,500.00	2,416.10	2,438.34	2,278.30	10.73	15.43	-6.34	-460.96	-544.18	276.40	263.06	13.34	20.726	
2,600.00	2,507.17	2,537.85	2,364.45	11.56	16.45	-6.36	-492.45	-582.76	286.27	272.17	14.10	20.303	
2,700.00	2,598.23	2,637.36	2,450.60	12.39	17.47	-6.39	-523.95	-621.35	296.15	281.28	14.87	19.919	
2,800.00	2,689.30	2,736.87	2,536.74	13.23	18.49	-6.41	-555.45	-659.93	306.02	290.38	15.64	19.567	
2,900.00	2,780.36	2,836.39	2,622.89	14.06	19.52	-6.43	-586.95	-698.52	315.89	299.48	16.41	19.245	
3,000.00	2,871.43	2,935.90	2,709.04	14.90	20.55	-6.45	-618.45	-737.11	325.77	308.58	17.19	18.949	
3,100.00	2,962.49	3,035.41	2,795.19	15.75	21.57	-6.47	-649.95	-775.69	335.64	317.67	17.97	18.677	
3,200.00	3,053.56	3,134.92	2,881.34	16.59	22.60	-6.49	-681.44	-814.28	345.52	326.76	18.75	18.425	
3,300.00	3,144.62	3,234.43	2,967.48	17.43	23.63	-6.51	-712.94	-852.86	355.39	335.86	19.54	18.191	
3,400.00	3,235.69	3,333.94	3,053.63	18.28	24.65	-6.52	-744.44	-891.45	365.27	344.94	20.32	17.974	
3,500.00	3,326.75	3,433.45	3,139.78	19.13	25.68	-6.54	-775.94	-930.03	375.14	354.03	21.11	17.772	
3,600.00	3,417.82	3,532.96	3,225.93	19.97	26.71	-6.55	-807.44	-968.62	385.02	363.12	21.90	17.584	
3,700.00	3,508.88	3,632.48	3,312.08	20.82	27.74	-6.57	-838.94	-1,007.20	394.89	372.20	22.69	17.407	
3,800.00	3,599.95	3,731.99	3,398.23	21.67	28.77	-6.58	-870.43	-1,045.79	404.76	381.29	23.48	17.242	
3,900.00	3,691.01	3,831.50	3,484.37	22.52	29.80	-6.59	-901.93	-1,084.37	414.64	390.37	24.27	17.087	
4,000.00	3,782.08	3,931.01	3,570.52	23.37	30.83	-6.60	-933.43	-1,122.96	424.51	399.45	25.06	16.941	
4,100.00	3,873.14	4,030.52	3,656.67	24.22	31.86	-6.61	-964.93	-1,161.55	434.39	408.54	25.85	16.804	
4,200.00	3,964.21	4,130.03	3,742.82	25.07	32.89	-6.62	-996.43	-1,200.13	444.26	417.62	26.64	16.674	
4,300.00	4,055.27	4,229.54	3,828.97	25.92	33.92	-6.64	-1,027.93	-1,238.72	454.14	426.70	27.44	16.552	
4,400.00	4,146.34	4,329.05	3,915.11	26.77	34.95	-6.65	-1,059.42	-1,277.30	464.01	435.78	28.23	16.436	
4,500.00	4,237.40	4,428.57	4,001.26	27.62	35.98	-6.65	-1,090.92	-1,315.89	473.89	444.86	29.03	16.326	
4,600.00	4,328.47	4,528.08	4,087.41	28.47	37.01	-6.66	-1,122.42	-1,354.47	483.76	453.94	29.82	16.221	
4,700.00	4,419.53	4,627.59	4,173.56	29.33	38.04	-6.67	-1,153.92	-1,393.06	493.63	463.02	30.62	16.122	
4,800.00	4,510.60	4,727.10	4,259.71	30.18	39.07	-6.68	-1,185.42	-1,431.64	503.51	472.09	31.42	16.028	

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 19-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4978.00ft (Original Well Elev)
Reference Site:	LARIMER_MIRACLE 25-12 PAD	MD Reference:	WELL @ 4978.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MIRACLE 19-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 19-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-23-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design LARIMER_MIRACLE 25-12 PAD - P_MIRACLE 13-12 - P_MIRACLE 13-12 - PLAN #1 3-23-10 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	4,601.66	4,826.61	4,345.85	31.03	40.10	-6.69	-1,216.92	-1,470.23	513.38	481.17	32.21	15.938	
5,000.00	4,692.73	4,926.12	4,432.00	31.88	41.13	-6.70	-1,248.41	-1,508.82	523.26	490.25	33.01	15.852	
5,100.00	4,783.79	5,025.63	4,518.15	32.74	42.16	-6.70	-1,279.91	-1,547.40	533.13	499.33	33.81	15.770	
5,200.00	4,874.86	5,125.14	4,604.30	33.59	43.19	-6.71	-1,311.41	-1,585.99	543.01	508.40	34.60	15.692	
5,227.98	4,900.34	5,152.98	4,628.40	33.83	43.48	-6.71	-1,320.22	-1,596.78	545.77	510.94	34.83	15.671	
5,300.00	4,966.29	5,224.56	4,690.36	34.35	44.22	-6.73	-1,342.88	-1,624.53	553.78	518.40	35.38	15.654	
5,400.00	5,059.03	5,323.56	4,776.07	34.94	45.24	-6.72	-1,374.21	-1,662.92	567.85	531.79	36.06	15.745	
5,500.00	5,153.02	5,422.01	4,861.30	35.48	46.26	-6.68	-1,405.38	-1,701.10	585.35	548.66	36.68	15.957	
5,600.00	5,248.14	5,519.79	4,945.95	35.97	47.28	-6.61	-1,436.33	-1,739.01	606.25	569.02	37.23	16.285	
5,700.00	5,344.27	5,616.78	5,029.91	36.42	48.28	-6.52	-1,467.03	-1,776.62	630.53	592.83	37.70	16.727	
5,800.00	5,441.31	5,712.86	5,113.09	36.82	49.28	-6.42	-1,497.44	-1,813.87	658.16	620.07	38.09	17.279	
5,900.00	5,539.14	5,807.92	5,195.39	37.17	50.26	-6.30	-1,527.53	-1,850.73	689.12	650.71	38.41	17.942	
6,000.00	5,637.62	5,916.06	5,289.29	37.47	51.28	-6.15	-1,561.45	-1,892.29	722.95	684.26	38.69	18.687	
6,100.00	5,736.65	6,042.87	5,401.62	37.72	52.22	-5.97	-1,598.65	-1,937.85	756.55	717.62	38.92	19.437	
6,200.00	5,836.11	6,172.14	5,518.69	37.92	53.09	-5.80	-1,633.29	-1,980.29	789.23	750.15	39.08	20.196	
6,300.00	5,935.86	6,303.91	5,640.45	38.08	53.90	-5.65	-1,665.13	-2,019.29	820.90	781.75	39.15	20.969	
6,400.00	6,035.80	6,438.21	5,766.79	38.18	54.63	-5.50	-1,693.90	-2,054.54	851.47	812.34	39.13	21.760	
6,448.20	6,084.00	6,503.85	5,829.29	38.22	54.96	-133.26	-1,706.60	-2,070.09	865.79	826.70	39.09	22.146	
6,500.00	6,135.80	6,575.25	5,897.76	38.26	55.28	-133.17	-1,719.37	-2,085.74	880.42	841.09	39.33	22.385	
6,600.00	6,235.80	6,715.88	6,034.02	38.33	55.85	-133.01	-1,741.36	-2,112.67	905.10	865.32	39.78	22.754	
6,700.00	6,335.80	6,859.76	6,175.01	38.40	56.33	-132.89	-1,759.45	-2,134.83	924.95	884.74	40.21	23.005	
6,800.00	6,435.80	7,006.23	6,319.83	38.47	56.71	-132.81	-1,773.24	-2,151.73	939.82	899.21	40.61	23.141	
6,900.00	6,535.80	7,154.59	6,467.47	38.54	56.97	-132.75	-1,782.43	-2,162.98	949.59	908.61	40.99	23.169	
7,000.00	6,635.80	7,304.07	6,616.77	38.61	57.14	-132.73	-1,786.78	-2,168.31	954.19	912.86	41.33	23.087	
7,100.00	6,735.80	7,423.10	6,735.80	38.69	57.20	-132.73	-1,787.14	-2,168.76	954.57	912.96	41.62	22.938	
7,200.00	6,835.80	7,523.10	6,835.80	38.76	57.25	-132.73	-1,787.14	-2,168.76	954.57	912.69	41.88	22.794	
7,300.00	6,935.80	7,623.10	6,935.80	38.84	57.30	-132.73	-1,787.14	-2,168.76	954.57	912.43	42.14	22.651	
7,400.00	7,035.80	7,723.10	7,035.80	38.92	57.35	-132.73	-1,787.14	-2,168.76	954.57	912.16	42.41	22.507	
7,500.00	7,135.80	7,823.10	7,135.80	39.00	57.40	-132.73	-1,787.14	-2,168.76	954.57	911.89	42.68	22.364	
7,600.00	7,235.80	7,923.10	7,235.80	39.08	57.46	-132.73	-1,787.14	-2,168.76	954.57	911.62	42.96	22.222	
7,700.00	7,335.80	8,023.10	7,335.80	39.16	57.51	-132.73	-1,787.14	-2,168.76	954.57	911.34	43.23	22.079	
7,800.00	7,435.80	8,123.10	7,435.80	39.24	57.56	-132.73	-1,787.14	-2,168.76	954.57	911.06	43.51	21.937	
7,900.00	7,535.80	8,223.10	7,535.80	39.32	57.62	-132.73	-1,787.14	-2,168.76	954.57	910.78	43.80	21.796	
8,000.00	7,635.80	8,323.10	7,635.80	39.41	57.67	-132.73	-1,787.14	-2,168.76	954.57	910.49	44.08	21.655	
8,100.00	7,735.80	8,423.10	7,735.80	39.49	57.73	-132.73	-1,787.14	-2,168.76	954.57	910.20	44.37	21.514	
8,127.93	7,763.73	8,451.03	7,763.73	39.52	57.75	-132.73	-1,787.14	-2,168.76	954.57	910.12	44.45	21.475	
8,148.20	7,784.00	8,461.31	7,774.00	39.53	57.75	-132.73	-1,787.14	-2,168.76	954.63	910.13	44.50	21.454	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_MIRACLE 19-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4978.00ft (Original Well Elev)
Reference Site:	LARIMER_MIRACLE 25-12 PAD	MD Reference:	WELL @ 4978.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MIRACLE 19-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 19-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-23-10 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	91.40	-0.73	30.07	30.08				
100.00	100.00	100.00	100.00	0.10	0.10	91.40	-0.73	30.07	30.08	29.89	0.19	157.455	
200.00	200.00	200.00	200.00	0.32	0.32	91.40	-0.73	30.07	30.08	29.44	0.64	46.960	
300.00	300.00	300.00	300.00	0.55	0.55	91.40	-0.73	30.07	30.08	28.99	1.09	27.595	
400.00	400.00	400.37	400.35	0.77	0.75	94.55	-2.33	29.35	29.44	27.93	1.52	19.427	
500.00	500.00	500.49	500.33	0.99	0.95	104.68	-7.12	27.18	28.10	26.17	1.93	14.531	
558.87	558.87	559.23	558.87	1.13	1.08	114.33	-11.41	25.24	27.70	25.51	2.19	12.622 CC, ES	
600.00	600.00	600.13	599.58	1.22	1.18	122.51	-15.05	23.60	27.99	25.61	2.38	11.761	
700.00	700.00	699.04	697.75	1.44	1.45	144.37	-26.02	18.64	32.08	29.20	2.88	11.133 SF	
750.00	750.00	748.16	746.33	1.56	1.61	154.34	-32.61	15.66	36.36	33.20	3.16	11.504	
800.00	800.00	797.07	794.58	1.66	1.76	-69.81	-39.93	12.35	42.00	38.67	3.32	12.633	
900.00	899.93	894.45	890.19	1.84	2.13	-59.98	-56.73	4.76	55.75	51.99	3.75	14.856	
1,000.00	999.68	991.21	984.52	2.05	2.54	-55.08	-76.35	-4.11	71.43	67.22	4.21	16.969	
1,100.00	1,099.13	1,087.32	1,077.45	2.27	3.01	-52.74	-98.70	-14.21	88.34	83.64	4.70	18.778	
1,200.00	1,198.15	1,182.76	1,168.86	2.53	3.53	-51.80	-123.69	-25.51	106.20	100.96	5.25	20.244	
1,300.00	1,296.63	1,277.52	1,258.67	2.84	4.11	-51.66	-151.23	-37.96	124.91	119.07	5.85	21.369	
1,400.00	1,394.44	1,371.58	1,346.77	3.19	4.73	-52.00	-181.23	-51.53	144.45	137.93	6.52	22.170	
1,500.00	1,491.46	1,464.92	1,433.08	3.61	5.40	-52.64	-213.59	-66.16	164.80	157.54	7.27	22.678	
1,600.00	1,587.58	1,560.87	1,520.82	4.09	6.14	-53.59	-248.97	-82.15	185.44	177.31	8.13	22.816	
1,700.00	1,682.68	1,658.86	1,610.35	4.63	6.90	-55.10	-285.27	-98.56	204.38	195.26	9.12	22.407	
1,800.00	1,776.65	1,757.00	1,700.02	5.25	7.67	-57.09	-321.63	-115.00	221.62	211.36	10.26	21.609	
1,900.00	1,869.36	1,855.18	1,789.71	5.93	8.45	-59.48	-358.00	-131.44	237.40	225.83	11.57	20.517	
1,970.23	1,933.66	1,924.07	1,852.65	6.46	9.00	-61.39	-383.52	-142.98	247.76	235.16	12.60	19.665	
2,000.00	1,960.78	1,953.26	1,879.33	6.69	9.23	-62.29	-394.34	-147.87	252.08	239.02	13.06	19.300	
2,100.00	2,051.84	2,051.32	1,968.91	7.48	10.01	-65.12	-430.66	-164.29	267.02	252.37	14.65	18.230	
2,200.00	2,142.91	2,149.37	2,058.49	8.28	10.79	-67.64	-466.99	-180.71	282.53	266.26	16.27	17.362	
2,300.00	2,233.97	2,247.42	2,148.07	9.09	11.58	-69.91	-503.31	-197.13	298.53	280.60	17.92	16.655	
2,400.00	2,325.04	2,345.47	2,237.66	9.91	12.36	-71.94	-539.64	-213.55	314.94	295.34	19.59	16.074	
2,500.00	2,416.10	2,443.53	2,327.24	10.73	13.15	-73.77	-575.96	-229.97	331.70	310.43	21.27	15.592	
2,600.00	2,507.17	2,541.58	2,416.82	11.56	13.94	-75.42	-612.29	-246.40	348.78	325.80	22.96	15.190	
2,700.00	2,598.23	2,639.63	2,506.41	12.39	14.73	-76.92	-648.61	-262.82	366.08	341.43	24.65	14.851	
2,800.00	2,689.30	2,737.68	2,595.99	13.23	15.52	-78.29	-684.94	-279.24	383.63	357.28	26.34	14.563	
2,900.00	2,780.36	2,835.74	2,685.57	14.06	16.31	-79.54	-721.26	-295.66	401.36	373.33	28.03	14.317	
3,000.00	2,871.43	2,933.79	2,775.15	14.90	17.10	-80.68	-757.59	-312.08	419.27	389.55	29.72	14.105	
3,100.00	2,962.49	3,031.84	2,864.74	15.75	17.89	-81.73	-793.91	-328.51	437.33	405.92	31.41	13.922	
3,200.00	3,053.56	3,129.89	2,954.32	16.59	18.68	-82.69	-830.24	-344.93	455.52	422.42	33.10	13.762	
3,300.00	3,144.62	3,227.94	3,043.90	17.43	19.47	-83.58	-866.56	-361.35	473.82	439.04	34.78	13.622	
3,400.00	3,235.69	3,326.00	3,133.48	18.28	20.26	-84.41	-902.89	-377.77	492.23	455.76	36.47	13.498	
3,500.00	3,326.75	3,424.05	3,223.07	19.13	21.05	-85.17	-939.22	-394.19	510.73	472.58	38.15	13.389	
3,600.00	3,417.82	3,522.10	3,312.65	19.97	21.85	-85.88	-975.54	-410.61	529.31	489.49	39.82	13.292	
3,700.00	3,508.88	3,620.15	3,402.23	20.82	22.64	-86.55	-1,011.87	-427.04	547.96	506.47	41.50	13.205	
3,800.00	3,599.95	3,718.21	3,491.81	21.67	23.43	-87.17	-1,048.19	-443.46	566.68	523.52	43.17	13.128	
3,900.00	3,691.01	3,816.26	3,581.40	22.52	24.22	-87.75	-1,084.52	-459.88	585.47	540.63	44.84	13.058	
4,000.00	3,782.08	3,914.31	3,670.98	23.37	25.02	-88.29	-1,120.84	-476.30	604.30	557.80	46.50	12.995	
4,100.00	3,873.14	4,012.36	3,760.56	24.22	25.81	-88.81	-1,157.17	-492.72	623.19	575.02	48.17	12.938	
4,200.00	3,964.21	4,110.42	3,850.15	25.07	26.60	-89.29	-1,193.49	-509.14	642.12	592.29	49.83	12.886	
4,300.00	4,055.27	4,208.47	3,939.73	25.92	27.39	-89.74	-1,229.82	-525.57	661.09	609.60	51.49	12.839	
4,400.00	4,146.34	4,306.52	4,029.31	26.77	28.19	-90.17	-1,266.14	-541.99	680.10	626.96	53.15	12.797	
4,500.00	4,237.40	4,404.57	4,118.89	27.62	28.98	-90.58	-1,302.47	-558.41	699.15	644.34	54.80	12.757	
4,600.00	4,328.47	4,502.62	4,208.48	28.47	29.77	-90.96	-1,338.79	-574.83	718.23	661.77	56.46	12.722	
4,700.00	4,419.53	4,600.68	4,298.06	29.33	30.57	-91.32	-1,375.12	-591.25	737.33	679.22	58.11	12.689	
4,800.00	4,510.60	4,698.73	4,387.64	30.18	31.36	-91.67	-1,411.44	-607.68	756.47	696.71	59.76	12.658	

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 19-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4978.00ft (Original Well Elev)
Reference Site:	LARIMER_MIRACLE 25-12 PAD	MD Reference:	WELL @ 4978.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MIRACLE 19-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 19-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-23-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design LARIMER_MIRACLE 25-12 PAD - P_MIRACLE 14-12 - P_MIRACLE 14-12 - PLAN #1 3-23-10 RHS												Offset Site Error:	0.00 ft
Survey Program: 0-MWD												Offset Well Error:	0.00 ft
Reference	Offset	Semi Major Axis			Distance								Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
4,900.00	4,601.66	4,796.78	4,477.22	31.03	32.15	-92.00	-1,447.77	-624.10	775.63	714.22	61.41	12.630	
5,000.00	4,692.73	4,894.83	4,566.81	31.88	32.95	-92.31	-1,484.09	-640.52	794.81	731.75	63.06	12.605	
5,100.00	4,783.79	4,992.89	4,656.39	32.74	33.74	-92.61	-1,520.42	-656.94	814.01	749.31	64.70	12.581	
5,200.00	4,874.86	5,090.94	4,745.97	33.59	34.54	-92.90	-1,556.74	-673.36	833.24	766.89	66.35	12.559	
5,227.98	4,900.34	5,118.37	4,771.03	33.83	34.76	-92.97	-1,566.91	-677.96	838.62	771.82	66.81	12.553	
5,300.00	4,966.29	5,191.15	4,837.55	34.35	35.32	-93.39	-1,593.82	-690.12	852.41	784.48	67.93	12.548	
5,400.00	5,059.03	5,302.02	4,939.98	34.94	35.94	-93.91	-1,632.48	-707.60	870.46	801.27	69.19	12.582	
5,500.00	5,153.02	5,413.43	5,044.47	35.48	36.50	-94.39	-1,667.67	-723.51	886.84	816.51	70.34	12.609	
5,600.00	5,248.14	5,525.30	5,150.83	35.97	37.01	-94.84	-1,699.25	-737.78	901.53	830.14	71.39	12.628	
5,700.00	5,344.27	5,637.59	5,258.87	36.42	37.48	-95.26	-1,727.11	-750.38	914.50	842.15	72.35	12.641	
5,800.00	5,441.31	5,750.22	5,368.35	36.82	37.89	-95.64	-1,751.17	-761.26	925.72	852.52	73.20	12.647	
5,900.00	5,539.14	5,863.13	5,479.06	37.17	38.25	-96.00	-1,771.33	-770.37	935.17	861.22	73.95	12.647	
6,000.00	5,637.62	5,976.24	5,590.76	37.47	38.55	-96.33	-1,787.52	-777.69	942.84	868.25	74.59	12.641	
6,100.00	5,736.65	6,089.48	5,703.20	37.72	38.80	-96.64	-1,799.70	-783.20	948.70	873.58	75.12	12.630	
6,200.00	5,836.11	6,202.78	5,816.14	37.92	38.98	-96.92	-1,807.82	-786.87	952.76	877.22	75.54	12.613	
6,300.00	5,935.86	6,316.05	5,929.32	38.08	39.10	-97.19	-1,811.87	-788.70	955.00	879.15	75.85	12.591	
6,400.00	6,035.80	6,422.53	6,035.80	38.18	39.18	-97.39	-1,812.36	-788.92	955.60	879.54	76.06	12.563	
6,448.20	6,084.00	6,470.73	6,084.00	38.22	39.21	134.76	-1,812.36	-788.92	955.66	879.52	76.14	12.552	
6,500.00	6,135.80	6,522.53	6,135.80	38.26	39.24	134.76	-1,812.36	-788.92	955.66	879.45	76.20	12.541	
6,600.00	6,235.80	6,622.53	6,235.80	38.33	39.30	134.76	-1,812.36	-788.92	955.66	879.32	76.34	12.519	
6,700.00	6,335.80	6,722.53	6,335.80	38.40	39.36	134.76	-1,812.36	-788.92	955.66	879.19	76.47	12.497	
6,800.00	6,435.80	6,822.53	6,435.80	38.47	39.42	134.76	-1,812.36	-788.92	955.66	879.05	76.61	12.475	
6,900.00	6,535.80	6,922.53	6,535.80	38.54	39.48	134.76	-1,812.36	-788.92	955.66	878.91	76.75	12.452	
7,000.00	6,635.80	7,022.53	6,635.80	38.61	39.55	134.76	-1,812.36	-788.92	955.66	878.77	76.89	12.429	
7,100.00	6,735.80	7,122.53	6,735.80	38.69	39.61	134.76	-1,812.36	-788.92	955.66	878.62	77.03	12.406	
7,200.00	6,835.80	7,222.53	6,835.80	38.76	39.68	134.76	-1,812.36	-788.92	955.66	878.48	77.18	12.382	
7,300.00	6,935.80	7,322.53	6,935.80	38.84	39.75	134.76	-1,812.36	-788.92	955.66	878.33	77.33	12.359	
7,400.00	7,035.80	7,422.53	7,035.80	38.92	39.82	134.76	-1,812.36	-788.92	955.66	878.18	77.48	12.334	
7,500.00	7,135.80	7,522.53	7,135.80	39.00	39.89	134.76	-1,812.36	-788.92	955.66	878.02	77.63	12.310	
7,600.00	7,235.80	7,622.53	7,235.80	39.08	39.96	134.76	-1,812.36	-788.92	955.66	877.87	77.79	12.285	
7,700.00	7,335.80	7,722.53	7,335.80	39.16	40.03	134.76	-1,812.36	-788.92	955.66	877.71	77.95	12.261	
7,800.00	7,435.80	7,822.53	7,435.80	39.24	40.10	134.76	-1,812.36	-788.92	955.66	877.55	78.11	12.235	
7,900.00	7,535.80	7,922.53	7,535.80	39.32	40.18	134.76	-1,812.36	-788.92	955.66	877.39	78.27	12.210	
8,000.00	7,635.80	8,022.53	7,635.80	39.41	40.25	134.76	-1,812.36	-788.92	955.66	877.22	78.43	12.184	
8,100.00	7,735.80	8,122.53	7,735.80	39.49	40.33	134.76	-1,812.36	-788.92	955.66	877.05	78.60	12.158	
8,148.20	7,784.00	8,170.73	7,784.00	39.53	40.37	134.76	-1,812.36	-788.92	955.66	876.97	78.68	12.146	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_MIRACLE 19-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4978.00ft (Original Well Elev)
Reference Site:	LARIMER_MIRACLE 25-12 PAD	MD Reference:	WELL @ 4978.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MIRACLE 19-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 19-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-23-10 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	90.84	-0.73	50.12	50.13				
100.00	100.00	100.00	100.00	0.10	0.10	90.84	-0.73	50.12	50.13	49.94	0.19	262.375	
200.00	200.00	200.00	200.00	0.32	0.32	90.84	-0.73	50.12	50.13	49.49	0.64	78.252	
300.00	300.00	300.00	300.00	0.55	0.55	90.84	-0.73	50.12	50.13	49.04	1.09	45.983 CC, ES	
400.00	400.00	399.45	399.43	0.77	0.74	92.70	-2.39	50.61	50.66	49.15	1.51	33.471	
500.00	500.00	498.66	498.50	0.99	0.94	98.03	-7.34	52.05	52.59	50.65	1.93	27.187	
600.00	600.00	597.39	596.86	1.22	1.17	105.93	-15.54	54.44	56.70	54.32	2.39	23.765	
700.00	700.00	695.42	694.17	1.44	1.44	114.96	-26.89	57.76	63.98	61.10	2.88	22.227	
750.00	750.00	744.10	742.33	1.56	1.59	119.43	-33.71	59.75	69.03	65.88	3.15	21.941 SF	
800.00	800.00	792.55	790.13	1.66	1.75	-108.69	-41.28	61.96	75.24	71.94	3.30	22.767	
900.00	899.93	888.73	884.59	1.84	2.11	-102.95	-58.60	67.02	91.15	87.41	3.75	24.337	
1,000.00	999.68	983.78	977.31	2.05	2.51	-99.65	-78.70	72.88	111.03	106.81	4.22	26.327	
1,100.00	1,099.13	1,077.54	1,068.03	2.27	2.97	-97.96	-101.40	79.51	134.36	129.63	4.73	28.387	
1,200.00	1,198.15	1,169.84	1,156.53	2.53	3.47	-97.23	-126.52	86.85	160.91	155.60	5.31	30.321	
1,300.00	1,296.63	1,260.54	1,242.64	2.84	4.01	-97.06	-153.87	94.83	190.53	184.59	5.95	32.027	
1,400.00	1,394.44	1,349.51	1,326.19	3.19	4.60	-97.20	-183.22	103.40	223.16	216.49	6.67	33.461	
1,500.00	1,491.46	1,436.65	1,407.06	3.61	5.21	-97.48	-214.36	112.49	258.72	251.25	7.47	34.629	
1,600.00	1,587.58	1,525.88	1,488.99	4.09	5.89	-97.92	-248.30	122.40	296.82	288.44	8.38	35.419	
1,700.00	1,682.68	1,617.61	1,573.11	4.63	6.60	-98.68	-283.42	132.65	335.77	326.37	9.40	35.726	
1,800.00	1,776.65	1,708.79	1,656.72	5.25	7.31	-99.66	-318.33	142.85	375.46	364.95	10.51	35.728	
1,900.00	1,869.36	1,799.30	1,739.72	5.93	8.02	-100.78	-352.99	152.96	416.05	404.34	11.71	35.537	
1,970.23	1,933.66	1,862.40	1,797.58	6.46	8.52	-101.61	-377.15	160.02	445.17	432.57	12.60	35.333	
2,000.00	1,960.78	1,889.07	1,822.03	6.69	8.73	-102.22	-387.36	163.00	457.66	444.65	13.00	35.192	
2,100.00	2,051.84	1,978.63	1,904.16	7.48	9.44	-104.04	-421.65	173.01	499.87	485.50	14.37	34.774	
2,200.00	2,142.91	2,068.19	1,986.29	8.28	10.15	-105.59	-455.94	183.02	542.45	526.70	15.75	34.431	
2,300.00	2,233.97	2,157.75	2,068.42	9.09	10.86	-106.92	-490.24	193.03	585.32	568.18	17.14	34.149	
2,400.00	2,325.04	2,247.31	2,150.54	9.91	11.57	-108.07	-524.53	203.05	628.40	609.88	18.53	33.916	
2,500.00	2,416.10	2,336.87	2,232.67	10.73	12.29	-109.07	-558.82	213.06	671.67	651.76	19.92	33.721	
2,600.00	2,507.17	2,426.43	2,314.80	11.56	13.00	-109.96	-593.11	223.07	715.09	693.78	21.31	33.559	
2,700.00	2,598.23	2,515.99	2,396.93	12.39	13.72	-110.74	-627.41	233.08	758.64	735.94	22.70	33.421	
2,800.00	2,689.30	2,605.56	2,479.06	13.23	14.43	-111.44	-661.70	243.09	802.28	778.19	24.09	33.304	
2,900.00	2,780.36	2,695.12	2,561.18	14.06	15.15	-112.06	-695.99	253.10	846.01	820.54	25.48	33.205	
3,000.00	2,871.43	2,784.68	2,643.31	14.90	15.87	-112.63	-730.28	263.12	889.82	862.95	26.87	33.119	
3,100.00	2,962.49	2,874.24	2,725.44	15.75	16.59	-113.14	-764.58	273.13	933.69	905.44	28.25	33.045	
3,200.00	3,053.56	2,963.80	2,807.57	16.59	17.30	-113.61	-798.87	283.14	977.62	947.98	29.64	32.981	
3,300.00	3,144.62	3,053.36	2,889.70	17.43	18.02	-114.03	-833.16	293.15	1,021.59	990.57	31.03	32.926	
3,400.00	3,235.69	3,142.92	2,971.82	18.28	18.74	-114.43	-867.45	303.16	1,065.61	1,033.20	32.41	32.878	
3,500.00	3,326.75	3,232.49	3,053.95	19.13	19.46	-114.79	-901.75	313.18	1,109.67	1,075.87	33.79	32.836	
3,600.00	3,417.82	3,322.05	3,136.08	19.97	20.18	-115.12	-936.04	323.19	1,153.75	1,118.58	35.18	32.799	
3,700.00	3,508.88	3,411.61	3,218.21	20.82	20.90	-115.43	-970.33	333.20	1,197.87	1,161.31	36.56	32.767	
3,800.00	3,599.95	3,501.17	3,300.34	21.67	21.62	-115.72	-1,004.63	343.21	1,242.01	1,204.07	37.94	32.738	
3,900.00	3,691.01	3,590.73	3,382.46	22.52	22.34	-115.98	-1,038.92	353.22	1,286.18	1,246.86	39.32	32.714	
4,000.00	3,782.08	3,680.29	3,464.59	23.37	23.06	-116.23	-1,073.21	363.23	1,330.37	1,289.67	40.69	32.692	
4,100.00	3,873.14	3,769.85	3,546.72	24.22	23.78	-116.47	-1,107.50	373.25	1,374.57	1,332.50	42.07	32.673	
4,200.00	3,964.21	3,859.41	3,628.85	25.07	24.50	-116.69	-1,141.80	383.26	1,418.80	1,375.35	43.45	32.656	
4,300.00	4,055.27	3,948.98	3,710.98	25.92	25.22	-116.89	-1,176.09	393.27	1,463.03	1,418.21	44.82	32.642	
4,400.00	4,146.34	4,038.54	3,793.10	26.77	25.94	-117.09	-1,210.38	403.28	1,507.29	1,461.09	46.19	32.630	
4,500.00	4,237.40	4,128.10	3,875.23	27.62	26.66	-117.27	-1,244.67	413.29	1,551.56	1,503.99	47.57	32.619	
4,600.00	4,328.47	4,217.66	3,957.36	28.47	27.38	-117.44	-1,278.97	423.31	1,595.83	1,546.90	48.94	32.610	
4,700.00	4,419.53	4,307.22	4,039.49	29.33	28.10	-117.61	-1,313.26	433.32	1,640.12	1,589.82	50.31	32.602	
4,800.00	4,510.60	4,396.78	4,121.62	30.18	28.82	-117.76	-1,347.55	443.33	1,684.42	1,632.75	51.68	32.595	
4,900.00	4,601.66	4,486.34	4,203.74	31.03	29.54	-117.91	-1,381.84	453.34	1,728.73	1,675.69	53.05	32.590	

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 19-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4978.00ft (Original Well Elev)
Reference Site:	LARIMER_MIRACLE 25-12 PAD	MD Reference:	WELL @ 4978.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MIRACLE 19-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 19-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-23-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design LARIMER_MIRACLE 25-12 PAD - P_MIRACLE 15-12 - P_MIRACLE 15-12 - PLAN #1 3-23-10 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	4,692.73	4,575.90	4,285.87	31.88	30.26	-118.05	-1,416.14	463.35	1,773.05	1,718.64	54.41	32.585	
5,100.00	4,783.79	4,665.47	4,368.00	32.74	30.98	-118.18	-1,450.43	473.36	1,817.38	1,761.60	55.78	32.582	
5,200.00	4,874.86	4,755.03	4,450.13	33.59	31.70	-118.31	-1,484.72	483.38	1,861.71	1,804.57	57.14	32.579	
5,227.98	4,900.34	4,780.08	4,473.11	33.83	31.91	-118.34	-1,494.31	486.18	1,874.12	1,816.59	57.53	32.579	
5,300.00	4,966.29	4,844.80	4,532.45	34.35	32.43	-119.02	-1,519.10	493.41	1,905.66	1,847.08	58.58	32.531	
5,400.00	5,059.03	4,935.32	4,615.46	34.94	33.16	-119.83	-1,553.76	503.53	1,948.15	1,888.24	59.91	32.518	
5,500.00	5,153.02	5,026.51	4,699.08	35.48	33.89	-120.50	-1,588.67	513.73	1,989.06	1,927.87	61.19	32.505	
5,600.00	5,248.14	5,148.85	4,811.65	35.97	34.72	-121.00	-1,634.64	527.15	2,028.02	1,965.52	62.50	32.450	
5,700.00	5,344.27	5,307.78	4,960.58	36.42	35.55	-121.38	-1,687.85	542.68	2,062.79	1,999.05	63.74	32.361	
5,800.00	5,441.31	5,471.76	5,117.22	36.82	36.28	-121.74	-1,734.35	556.26	2,092.79	2,027.93	64.86	32.265	
5,900.00	5,539.14	5,640.11	5,280.64	37.17	36.92	-122.08	-1,773.06	567.56	2,117.80	2,051.96	65.84	32.166	
6,000.00	5,637.62	5,812.00	5,449.65	37.47	37.45	-122.42	-1,803.01	576.30	2,137.65	2,070.99	66.66	32.066	
6,100.00	5,736.65	5,986.47	5,622.80	37.72	37.83	-122.75	-1,823.41	582.26	2,152.22	2,084.91	67.32	31.972	
6,200.00	5,836.11	6,162.49	5,798.46	37.92	38.07	-123.08	-1,833.70	585.26	2,161.41	2,093.62	67.79	31.882	
6,300.00	5,935.86	6,299.91	5,935.86	38.08	38.18	-123.34	-1,834.95	585.63	2,165.63	2,097.53	68.10	31.799	
6,400.00	6,035.80	6,399.84	6,035.80	38.18	38.24	-123.45	-1,834.95	585.63	2,167.52	2,099.22	68.30	31.734	
6,448.20	6,084.00	6,448.04	6,084.00	38.22	38.27	108.71	-1,834.95	585.63	2,167.74	2,099.36	68.38	31.702	
6,500.00	6,135.80	6,499.84	6,135.80	38.26	38.30	108.71	-1,834.95	585.63	2,167.74	2,099.29	68.45	31.667	
6,600.00	6,235.80	6,599.84	6,235.80	38.33	38.36	108.71	-1,834.95	585.63	2,167.74	2,099.15	68.60	31.601	
6,700.00	6,335.80	6,699.84	6,335.80	38.40	38.43	108.71	-1,834.95	585.63	2,167.74	2,099.00	68.74	31.534	
6,800.00	6,435.80	6,799.84	6,435.80	38.47	38.49	108.71	-1,834.95	585.63	2,167.74	2,098.85	68.89	31.466	
6,900.00	6,535.80	6,899.84	6,535.80	38.54	38.55	108.71	-1,834.95	585.63	2,167.74	2,098.70	69.04	31.397	
7,000.00	6,635.80	6,999.84	6,635.80	38.61	38.62	108.71	-1,834.95	585.63	2,167.74	2,098.55	69.20	31.328	
7,100.00	6,735.80	7,099.84	6,735.80	38.69	38.69	108.71	-1,834.95	585.63	2,167.74	2,098.39	69.35	31.257	
7,200.00	6,835.80	7,199.84	6,835.80	38.76	38.76	108.71	-1,834.95	585.63	2,167.74	2,098.23	69.51	31.186	
7,300.00	6,935.80	7,299.84	6,935.80	38.84	38.83	108.71	-1,834.95	585.63	2,167.74	2,098.07	69.67	31.113	
7,400.00	7,035.80	7,399.84	7,035.80	38.92	38.90	108.71	-1,834.95	585.63	2,167.74	2,097.91	69.84	31.040	
7,500.00	7,135.80	7,499.84	7,135.80	39.00	38.97	108.71	-1,834.95	585.63	2,167.74	2,097.74	70.00	30.966	
7,600.00	7,235.80	7,599.84	7,235.80	39.08	39.04	108.71	-1,834.95	585.63	2,167.74	2,097.57	70.17	30.892	
7,700.00	7,335.80	7,699.84	7,335.80	39.16	39.11	108.71	-1,834.95	585.63	2,167.74	2,097.40	70.34	30.816	
7,800.00	7,435.80	7,799.84	7,435.80	39.24	39.19	108.71	-1,834.95	585.63	2,167.74	2,097.22	70.52	30.740	
7,900.00	7,535.80	7,899.84	7,535.80	39.32	39.27	108.71	-1,834.95	585.63	2,167.74	2,097.05	70.70	30.663	
8,000.00	7,635.80	7,999.84	7,635.80	39.41	39.34	108.71	-1,834.95	585.63	2,167.74	2,096.87	70.87	30.586	
8,100.00	7,735.80	8,099.84	7,735.80	39.49	39.42	108.71	-1,834.95	585.63	2,167.74	2,096.69	71.06	30.507	
8,148.20	7,784.00	8,148.04	7,784.00	39.53	39.46	108.71	-1,834.95	585.63	2,167.74	2,096.60	71.14	30.470	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_MIRACLE 19-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4978.00ft (Original Well Elev)
Reference Site:	LARIMER_MIRACLE 25-12 PAD	MD Reference:	WELL @ 4978.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MIRACLE 19-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 19-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-23-10 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	-90.01	0.00	-19.77	19.77				
100.00	100.00	100.00	100.00	0.10	0.10	-90.01	0.00	-19.77	19.77	19.58	0.19	103.481	
200.00	200.00	200.00	200.00	0.32	0.32	-90.01	0.00	-19.77	19.77	19.13	0.64	30.863	
300.00	300.00	300.00	300.00	0.55	0.55	-90.01	0.00	-19.77	19.77	18.68	1.09	18.136	
400.00	400.00	400.00	400.00	0.77	0.77	-90.01	0.00	-19.77	19.77	18.23	1.54	12.841	
500.00	500.00	500.00	500.00	0.99	0.99	-90.01	0.00	-19.77	19.77	17.78	1.99	9.939	
600.00	600.00	600.00	600.00	1.22	1.22	-90.01	0.00	-19.77	19.77	17.33	2.44	8.107	
700.00	700.00	700.00	700.00	1.44	1.44	-90.01	0.00	-19.77	19.77	16.88	2.89	6.845	
750.00	750.00	750.00	750.00	1.56	1.56	-90.01	0.00	-19.77	19.77	16.66	3.11	6.351 CC	
800.00	800.00	799.66	799.66	1.66	1.66	38.80	0.07	-20.19	19.86	16.54	3.32	5.982 ES	
900.00	899.93	898.92	898.85	1.84	1.87	46.28	0.66	-23.58	20.74	17.03	3.71	5.597 SF	
1,000.00	999.68	998.01	997.70	2.05	2.09	59.00	1.85	-30.34	23.43	19.31	4.11	5.696	
1,100.00	1,099.13	1,096.80	1,095.96	2.27	2.32	72.56	3.61	-40.42	29.05	24.49	4.56	6.372	
1,200.00	1,198.15	1,195.20	1,193.41	2.53	2.59	83.56	5.95	-53.78	38.14	33.08	5.07	7.529	
1,300.00	1,296.63	1,293.08	1,289.83	2.84	2.89	91.34	8.84	-70.32	50.64	44.99	5.65	8.970	
1,400.00	1,394.44	1,390.35	1,385.03	3.19	3.23	96.61	12.28	-89.97	66.30	60.00	6.31	10.513	
1,500.00	1,491.46	1,486.91	1,478.81	3.61	3.63	100.19	16.25	-112.61	84.94	77.88	7.06	12.028	
1,600.00	1,587.58	1,582.66	1,570.99	4.09	4.08	102.64	20.71	-138.13	106.39	98.48	7.92	13.439	
1,700.00	1,682.68	1,677.53	1,661.41	4.63	4.59	104.34	25.66	-166.39	130.55	121.67	8.88	14.704	
1,800.00	1,776.65	1,771.91	1,750.40	5.25	5.15	105.54	31.08	-197.36	157.30	147.35	9.95	15.816	
1,900.00	1,869.36	1,867.64	1,840.31	5.93	5.76	107.02	36.74	-229.72	185.61	174.49	11.12	16.694	
1,970.23	1,933.66	1,934.54	1,903.15	6.46	6.20	108.27	40.70	-252.34	206.22	194.24	11.98	17.209	
2,000.00	1,960.78	1,962.85	1,929.74	6.69	6.38	108.98	42.38	-261.91	215.12	202.75	12.36	17.400	
2,100.00	2,051.84	2,057.92	2,019.03	7.48	7.02	110.97	48.01	-294.05	245.18	231.53	13.65	17.960	
2,200.00	2,142.91	2,152.98	2,108.32	8.28	7.66	112.54	53.63	-326.19	275.45	260.50	14.96	18.417	
2,300.00	2,233.97	2,248.05	2,197.61	9.09	8.31	113.79	59.26	-358.33	305.87	289.60	16.27	18.796	
2,400.00	2,325.04	2,343.12	2,286.90	9.91	8.97	114.81	64.88	-390.48	336.41	318.81	17.60	19.115	
2,500.00	2,416.10	2,438.19	2,376.20	10.73	9.63	115.67	70.51	-422.62	367.02	348.09	18.93	19.385	
2,600.00	2,507.17	2,533.25	2,465.49	11.56	10.30	116.39	76.13	-454.76	397.70	377.43	20.27	19.618	
2,700.00	2,598.23	2,628.32	2,554.78	12.39	10.96	117.01	81.76	-486.90	428.43	406.81	21.62	19.819	
2,800.00	2,689.30	2,723.39	2,644.07	13.23	11.63	117.55	87.39	-519.04	459.19	436.23	22.97	19.995	
2,900.00	2,780.36	2,818.45	2,733.36	14.06	12.31	118.02	93.01	-551.18	489.99	465.67	24.32	20.150	
3,000.00	2,871.43	2,913.52	2,822.66	14.90	12.98	118.44	98.64	-583.32	520.81	495.14	25.67	20.288	
3,100.00	2,962.49	3,008.59	2,911.95	15.75	13.65	118.81	104.26	-615.46	551.66	524.63	27.03	20.411	
3,200.00	3,053.56	3,103.65	3,001.24	16.59	14.33	119.13	109.89	-647.60	582.53	554.14	28.39	20.521	
3,300.00	3,144.62	3,198.72	3,090.53	17.43	15.01	119.43	115.52	-679.75	613.41	583.66	29.75	20.621	
3,400.00	3,235.69	3,293.79	3,179.82	18.28	15.69	119.70	121.14	-711.89	644.30	613.19	31.11	20.711	
3,500.00	3,326.75	3,388.86	3,269.11	19.13	16.37	119.94	126.77	-744.03	675.21	642.73	32.47	20.794	
3,600.00	3,417.82	3,483.92	3,358.41	19.97	17.05	120.16	132.39	-776.17	706.12	672.28	33.84	20.869	
3,700.00	3,508.88	3,578.99	3,447.70	20.82	17.73	120.37	138.02	-808.31	737.05	701.84	35.20	20.938	
3,800.00	3,599.95	3,674.06	3,536.99	21.67	18.41	120.55	143.64	-840.45	767.98	731.41	36.57	21.002	
3,900.00	3,691.01	3,769.12	3,626.28	22.52	19.09	120.73	149.27	-872.59	798.92	760.98	37.93	21.060	
4,000.00	3,782.08	3,864.19	3,715.57	23.37	19.77	120.89	154.90	-904.73	829.86	790.56	39.30	21.115	
4,100.00	3,873.14	3,959.26	3,804.87	24.22	20.46	121.03	160.52	-936.87	860.81	820.14	40.67	21.166	
4,200.00	3,964.21	4,054.33	3,894.16	25.07	21.14	121.17	166.15	-969.02	891.77	849.73	42.04	21.213	
4,300.00	4,055.27	4,149.39	3,983.45	25.92	21.82	121.30	171.77	-1,001.16	922.73	879.32	43.41	21.257	
4,400.00	4,146.34	4,244.46	4,072.74	26.77	22.51	121.42	177.40	-1,033.30	953.69	908.91	44.78	21.298	
4,500.00	4,237.40	4,339.53	4,162.03	27.62	23.19	121.53	183.03	-1,065.44	984.66	938.51	46.15	21.337	
4,600.00	4,328.47	4,434.59	4,251.33	28.47	23.87	121.64	188.65	-1,097.58	1,015.63	968.11	47.52	21.373	
4,700.00	4,419.53	4,529.66	4,340.62	29.33	24.56	121.74	194.28	-1,129.72	1,046.60	997.71	48.89	21.407	
4,800.00	4,510.60	4,624.73	4,429.91	30.18	25.24	121.83	199.90	-1,161.86	1,077.58	1,027.32	50.26	21.439	
4,900.00	4,601.66	4,719.79	4,519.20	31.03	25.93	121.92	205.53	-1,194.00	1,108.56	1,056.92	51.63	21.470	

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 19-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4978.00ft (Original Well Elev)
Reference Site:	LARIMER_MIRACLE 25-12 PAD	MD Reference:	WELL @ 4978.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MIRACLE 19-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 19-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-23-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design LARIMER_MIRACLE 25-12 PAD - P_MIRACLE 22-12 - P_MIRACLE 22-12 - PLAN #1 3-23-10 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	4,692.73	4,814.86	4,608.49	31.88	26.61	122.01	211.15	-1,226.14	1,139.54	1,086.53	53.01	21.498	
5,100.00	4,783.79	4,909.93	4,697.78	32.74	27.30	122.09	216.78	-1,258.29	1,170.52	1,116.14	54.38	21.526	
5,200.00	4,874.86	5,005.00	4,787.08	33.59	27.98	122.16	222.41	-1,290.43	1,201.51	1,145.75	55.75	21.551	
5,227.98	4,900.34	5,031.59	4,812.06	33.83	28.18	122.18	223.98	-1,299.42	1,210.17	1,154.04	56.13	21.558	
5,300.00	4,966.29	5,100.22	4,876.51	34.35	28.67	122.58	228.04	-1,322.62	1,232.03	1,174.92	57.11	21.574	
5,400.00	5,059.03	5,200.89	4,971.24	34.94	29.35	123.00	233.92	-1,356.21	1,260.74	1,202.39	58.35	21.607	
5,500.00	5,153.02	5,307.54	5,072.69	35.48	29.89	123.37	239.59	-1,388.60	1,286.96	1,227.54	59.42	21.658	
5,600.00	5,248.14	5,415.22	5,176.29	35.97	30.38	123.73	244.65	-1,417.50	1,310.54	1,250.14	60.40	21.699	
5,700.00	5,344.27	5,523.81	5,281.80	36.42	30.81	124.08	249.07	-1,442.74	1,331.44	1,270.17	61.27	21.732	
5,800.00	5,441.31	5,633.17	5,388.97	36.82	31.19	124.41	252.82	-1,464.16	1,349.61	1,287.58	62.03	21.758	
5,900.00	5,539.14	5,743.17	5,497.52	37.17	31.50	124.73	255.87	-1,481.63	1,365.03	1,302.35	62.68	21.777	
6,000.00	5,637.62	5,853.64	5,607.14	37.47	31.77	125.04	258.22	-1,495.02	1,377.67	1,314.45	63.22	21.792	
6,100.00	5,736.65	5,964.43	5,717.53	37.72	31.97	125.34	259.84	-1,504.27	1,387.51	1,323.86	63.64	21.801	
6,200.00	5,836.11	6,075.38	5,828.35	37.92	32.12	125.64	260.72	-1,509.31	1,394.53	1,330.57	63.95	21.805	
6,300.00	5,935.86	6,182.90	5,935.86	38.08	32.21	125.91	260.90	-1,510.32	1,398.77	1,334.61	64.16	21.802	
6,400.00	6,035.80	6,282.83	6,035.80	38.18	32.30	126.06	260.90	-1,510.32	1,400.78	1,336.46	64.32	21.778	
6,448.20	6,084.00	6,331.03	6,084.00	38.22	32.34	-1.75	260.90	-1,510.32	1,401.02	1,336.63	64.39	21.758	
6,500.00	6,135.80	6,382.83	6,135.80	38.26	32.39	-1.75	260.90	-1,510.32	1,401.02	1,336.54	64.48	21.728	
6,600.00	6,235.80	6,482.83	6,235.80	38.33	32.48	-1.75	260.90	-1,510.32	1,401.02	1,336.37	64.65	21.670	
6,700.00	6,335.80	6,582.83	6,335.80	38.40	32.57	-1.75	260.90	-1,510.32	1,401.02	1,336.19	64.83	21.610	
6,800.00	6,435.80	6,682.83	6,435.80	38.47	32.67	-1.75	260.90	-1,510.32	1,401.02	1,336.01	65.01	21.551	
6,900.00	6,535.80	6,782.83	6,535.80	38.54	32.76	-1.75	260.90	-1,510.32	1,401.02	1,335.83	65.19	21.490	
7,000.00	6,635.80	6,882.83	6,635.80	38.61	32.86	-1.75	260.90	-1,510.32	1,401.02	1,335.64	65.38	21.430	
7,100.00	6,735.80	6,982.83	6,735.80	38.69	32.96	-1.75	260.90	-1,510.32	1,401.02	1,335.45	65.57	21.368	
7,200.00	6,835.80	7,082.83	6,835.80	38.76	33.06	-1.75	260.90	-1,510.32	1,401.02	1,335.26	65.76	21.307	
7,300.00	6,935.80	7,182.83	6,935.80	38.84	33.16	-1.75	260.90	-1,510.32	1,401.02	1,335.07	65.95	21.244	
7,400.00	7,035.80	7,282.83	7,035.80	38.92	33.26	-1.75	260.90	-1,510.32	1,401.02	1,334.88	66.14	21.182	
7,500.00	7,135.80	7,382.83	7,135.80	39.00	33.36	-1.75	260.90	-1,510.32	1,401.02	1,334.68	66.34	21.119	
7,600.00	7,235.80	7,482.83	7,235.80	39.08	33.46	-1.75	260.90	-1,510.32	1,401.02	1,334.48	66.54	21.055	
7,700.00	7,335.80	7,582.83	7,335.80	39.16	33.57	-1.75	260.90	-1,510.32	1,401.02	1,334.28	66.74	20.991	
7,800.00	7,435.80	7,682.83	7,435.80	39.24	33.67	-1.75	260.90	-1,510.32	1,401.02	1,334.07	66.95	20.927	
7,900.00	7,535.80	7,782.83	7,535.80	39.32	33.78	-1.75	260.90	-1,510.32	1,401.02	1,333.86	67.15	20.863	
8,000.00	7,635.80	7,882.83	7,635.80	39.41	33.89	-1.75	260.90	-1,510.32	1,401.02	1,333.66	67.36	20.798	
8,100.00	7,735.80	7,982.83	7,735.80	39.49	34.00	-1.75	260.90	-1,510.32	1,401.02	1,333.44	67.58	20.733	
8,148.20	7,784.00	8,031.03	7,784.00	39.53	34.05	-1.75	260.90	-1,510.32	1,401.02	1,333.34	67.68	20.701	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_MIRACLE 19-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4978.00ft (Original Well Elev)
Reference Site:	LARIMER_MIRACLE 25-12 PAD	MD Reference:	WELL @ 4978.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MIRACLE 19-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 19-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-23-10 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	91.04	-0.73	40.10	40.10				
100.00	100.00	100.00	100.00	0.10	0.10	91.04	-0.73	40.10	40.10	39.91	0.19	209.912	
200.00	200.00	200.00	200.00	0.32	0.32	91.04	-0.73	40.10	40.10	39.46	0.64	62.605	
300.00	300.00	300.00	300.00	0.55	0.55	91.04	-0.73	40.10	40.10	39.01	1.09	36.789	
400.00	400.00	400.00	400.00	0.77	0.77	91.04	-0.73	40.10	40.10	38.56	1.54	26.047	
500.00	500.00	500.00	500.00	0.99	0.99	91.04	-0.73	40.10	40.10	38.11	1.99	20.161	
600.00	600.00	600.00	600.00	1.22	1.22	91.04	-0.73	40.10	40.10	37.67	2.44	16.445	
700.00	700.00	700.00	700.00	1.44	1.44	91.04	-0.73	40.10	40.10	37.22	2.89	13.885	
750.00	750.00	750.00	750.00	1.56	1.56	91.04	-0.73	40.10	40.10	36.99	3.11	12.883 CC, ES	
800.00	800.00	800.17	800.17	1.66	1.65	-140.91	-1.15	39.98	40.34	37.03	3.31	12.181	
900.00	899.93	900.47	900.40	1.84	1.83	-139.25	-4.54	39.07	42.23	38.56	3.67	11.506	
1,000.00	999.68	1,000.65	1,000.33	2.05	2.02	-136.35	-11.31	37.26	46.11	42.05	4.06	11.369 SF	
1,100.00	1,099.13	1,100.65	1,099.78	2.27	2.24	-132.81	-21.43	34.55	52.09	47.61	4.48	11.622	
1,200.00	1,198.15	1,200.39	1,198.54	2.53	2.49	-129.20	-34.86	30.95	60.28	55.31	4.97	12.129	
1,300.00	1,296.63	1,299.81	1,296.44	2.84	2.78	-125.85	-51.53	26.48	70.72	65.18	5.54	12.769	
1,400.00	1,394.44	1,398.83	1,393.29	3.19	3.12	-122.92	-71.39	21.15	83.43	77.22	6.21	13.442	
1,500.00	1,491.46	1,497.38	1,488.93	3.61	3.52	-120.43	-94.36	14.99	98.38	91.39	6.99	14.083	
1,600.00	1,587.58	1,595.75	1,583.71	4.09	3.97	-118.68	-119.79	8.18	115.43	107.56	7.87	14.661	
1,700.00	1,682.68	1,693.97	1,678.29	4.63	4.44	-118.52	-145.37	1.32	134.20	125.36	8.83	15.190	
1,800.00	1,776.65	1,791.80	1,772.50	5.25	4.93	-119.44	-170.86	-5.52	154.63	144.78	9.85	15.694	
1,900.00	1,869.36	1,889.13	1,866.22	5.93	5.43	-121.03	-196.21	-12.31	176.88	165.96	10.91	16.205	
1,970.23	1,933.66	1,957.11	1,931.69	6.46	5.78	-122.39	-213.92	-17.06	193.68	182.01	11.68	16.585	
2,000.00	1,960.78	1,985.87	1,959.37	6.69	5.93	-123.09	-221.41	-19.07	201.04	189.04	12.01	16.741	
2,100.00	2,051.84	2,082.44	2,052.37	7.48	6.44	-125.13	-246.57	-25.81	225.95	212.82	13.12	17.215	
2,200.00	2,142.91	2,179.01	2,145.36	8.28	6.95	-126.76	-271.72	-32.56	251.06	236.82	14.25	17.624	
2,300.00	2,233.97	2,275.58	2,238.35	9.09	7.47	-128.09	-296.88	-39.30	276.33	260.96	15.37	17.980	
2,400.00	2,325.04	2,372.15	2,331.34	9.91	7.99	-129.20	-322.03	-46.05	301.72	285.23	16.49	18.292	
2,500.00	2,416.10	2,468.72	2,424.34	10.73	8.51	-130.14	-347.19	-52.79	327.20	309.58	17.62	18.567	
2,600.00	2,507.17	2,565.29	2,517.33	11.56	9.04	-130.94	-372.35	-59.54	352.75	334.00	18.75	18.811	
2,700.00	2,598.23	2,661.86	2,610.32	12.39	9.57	-131.64	-397.50	-66.28	378.36	358.48	19.88	19.030	
2,800.00	2,689.30	2,758.43	2,703.31	13.23	10.10	-132.25	-422.66	-73.02	404.01	383.00	21.01	19.226	
2,900.00	2,780.36	2,855.00	2,796.31	14.06	10.63	-132.78	-447.81	-79.77	429.70	407.55	22.15	19.403	
3,000.00	2,871.43	2,951.58	2,889.30	14.90	11.16	-133.25	-472.97	-86.51	455.42	432.14	23.28	19.564	
3,100.00	2,962.49	3,048.15	2,982.29	15.75	11.69	-133.68	-498.12	-93.26	481.17	456.76	24.41	19.710	
3,200.00	3,053.56	3,144.72	3,075.29	16.59	12.23	-134.06	-523.28	-100.00	506.94	481.39	25.55	19.845	
3,300.00	3,144.62	3,241.29	3,168.28	17.43	12.76	-134.40	-548.44	-106.75	532.72	506.04	26.68	19.968	
3,400.00	3,235.69	3,337.86	3,261.27	18.28	13.30	-134.71	-573.59	-113.49	558.53	530.71	27.81	20.082	
3,500.00	3,326.75	3,434.43	3,354.26	19.13	13.84	-135.00	-598.75	-120.24	584.34	555.40	28.95	20.188	
3,600.00	3,417.82	3,531.00	3,447.26	19.97	14.37	-135.26	-623.90	-126.98	610.17	580.10	30.08	20.286	
3,700.00	3,508.88	3,627.57	3,540.25	20.82	14.91	-135.50	-649.06	-133.73	636.01	604.80	31.21	20.378	
3,800.00	3,599.95	3,724.14	3,633.24	21.67	15.45	-135.72	-674.22	-140.47	661.87	629.52	32.34	20.463	
3,900.00	3,691.01	3,820.71	3,726.23	22.52	15.98	-135.92	-699.37	-147.21	687.72	654.25	33.48	20.543	
4,000.00	3,782.08	3,917.28	3,819.23	23.37	16.52	-136.11	-724.53	-153.96	713.59	678.98	34.61	20.619	
4,100.00	3,873.14	4,013.85	3,912.22	24.22	17.06	-136.29	-749.68	-160.70	739.46	703.72	35.74	20.689	
4,200.00	3,964.21	4,110.43	4,005.21	25.07	17.60	-136.45	-774.84	-167.45	765.34	728.47	36.87	20.756	
4,300.00	4,055.27	4,207.00	4,098.20	25.92	18.14	-136.61	-800.00	-174.19	791.23	753.22	38.00	20.819	
4,400.00	4,146.34	4,303.57	4,191.20	26.77	18.68	-136.75	-825.15	-180.94	817.12	777.98	39.14	20.879	
4,500.00	4,237.40	4,400.14	4,284.19	27.62	19.22	-136.88	-850.31	-187.68	843.01	802.75	40.27	20.936	
4,600.00	4,328.47	4,496.71	4,377.18	28.47	19.76	-137.01	-875.46	-194.43	868.91	827.51	41.40	20.990	
4,700.00	4,419.53	4,593.28	4,470.17	29.33	20.30	-137.13	-900.62	-201.17	894.81	852.29	42.53	21.042	
4,800.00	4,510.60	4,689.85	4,563.17	30.18	20.84	-137.24	-925.78	-207.92	920.72	877.06	43.65	21.091	
4,900.00	4,601.66	4,786.42	4,656.16	31.03	21.38	-137.35	-950.93	-214.66	946.63	901.84	44.78	21.138	

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 19-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4978.00ft (Original Well Elev)
Reference Site:	LARIMER_MIRACLE 25-12 PAD	MD Reference:	WELL @ 4978.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MIRACLE 19-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 19-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-23-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design LARIMER_MIRACLE 25-12 PAD - P_MIRACLE 23-12 - P_MIRACLE 23-12 - PLAN #1 3-23-10 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	4,692.73	4,882.99	4,749.15	31.88	21.92	-137.45	-976.09	-221.40	972.54	926.62	45.91	21.183	
5,100.00	4,783.79	4,979.56	4,842.14	32.74	22.46	-137.55	-1,001.24	-228.15	998.45	951.41	47.04	21.226	
5,200.00	4,874.86	5,076.13	4,935.14	33.59	23.00	-137.64	-1,026.40	-234.89	1,024.37	976.20	48.17	21.267	
5,227.98	4,900.34	5,103.15	4,961.15	33.83	23.15	-137.66	-1,033.44	-236.78	1,031.62	983.14	48.48	21.278	
5,300.00	4,966.29	5,172.88	5,028.30	34.35	23.54	-137.94	-1,051.60	-241.65	1,049.64	1,000.38	49.25	21.310	
5,400.00	5,059.03	5,270.22	5,122.03	34.94	24.08	-138.18	-1,076.96	-248.45	1,072.49	1,022.22	50.27	21.334	
5,500.00	5,153.02	5,360.66	5,209.49	35.48	24.45	-138.35	-1,099.20	-254.41	1,093.14	1,042.05	51.09	21.397	
5,600.00	5,248.14	5,451.36	5,297.88	35.97	24.76	-138.54	-1,118.81	-259.67	1,111.91	1,060.11	51.80	21.465	
5,700.00	5,344.27	5,542.30	5,387.11	36.42	25.04	-138.73	-1,135.75	-264.21	1,128.77	1,076.34	52.43	21.531	
5,800.00	5,441.31	5,633.44	5,477.04	36.82	25.29	-138.94	-1,149.98	-268.02	1,143.71	1,090.75	52.96	21.596	
5,900.00	5,539.14	5,724.72	5,567.55	37.17	25.51	-139.15	-1,161.45	-271.10	1,156.73	1,103.33	53.40	21.661	
6,000.00	5,637.62	5,816.10	5,658.48	37.47	25.70	-139.37	-1,170.14	-273.43	1,167.80	1,114.05	53.75	21.727	
6,100.00	5,736.65	5,907.52	5,749.69	37.72	25.85	-139.60	-1,176.02	-275.01	1,176.93	1,122.93	54.00	21.794	
6,200.00	5,836.11	6,000.00	5,842.11	37.92	25.97	-139.84	-1,179.11	-275.84	1,184.11	1,129.96	54.16	21.864	
6,300.00	5,935.86	6,093.75	5,935.86	38.08	26.06	-140.09	-1,179.58	-275.96	1,189.29	1,135.05	54.24	21.927	
6,400.00	6,035.80	6,193.69	6,035.80	38.18	26.15	-140.23	-1,179.58	-275.96	1,191.92	1,137.62	54.30	21.950	
6,448.20	6,084.00	6,241.89	6,084.00	38.22	26.19	91.93	-1,179.58	-275.96	1,192.23	1,137.89	54.34	21.940	
6,500.00	6,135.80	6,293.69	6,135.80	38.26	26.24	91.93	-1,179.58	-275.96	1,192.23	1,137.80	54.43	21.902	
6,600.00	6,235.80	6,393.69	6,235.80	38.33	26.33	91.93	-1,179.58	-275.96	1,192.23	1,137.62	54.61	21.831	
6,700.00	6,335.80	6,493.69	6,335.80	38.40	26.42	91.93	-1,179.58	-275.96	1,192.23	1,137.44	54.79	21.759	
6,800.00	6,435.80	6,593.69	6,435.80	38.47	26.51	91.93	-1,179.58	-275.96	1,192.23	1,137.25	54.98	21.686	
6,900.00	6,535.80	6,693.69	6,535.80	38.54	26.61	91.93	-1,179.58	-275.96	1,192.23	1,137.07	55.16	21.613	
7,000.00	6,635.80	6,793.69	6,635.80	38.61	26.71	91.93	-1,179.58	-275.96	1,192.23	1,136.88	55.35	21.538	
7,100.00	6,735.80	6,893.69	6,735.80	38.69	26.80	91.93	-1,179.58	-275.96	1,192.23	1,136.68	55.55	21.464	
7,200.00	6,835.80	6,993.69	6,835.80	38.76	26.90	91.93	-1,179.58	-275.96	1,192.23	1,136.49	55.74	21.388	
7,300.00	6,935.80	7,093.69	6,935.80	38.84	27.00	91.93	-1,179.58	-275.96	1,192.23	1,136.29	55.94	21.312	
7,400.00	7,035.80	7,193.69	7,035.80	38.92	27.11	91.93	-1,179.58	-275.96	1,192.23	1,136.09	56.14	21.235	
7,500.00	7,135.80	7,293.69	7,135.80	39.00	27.21	91.93	-1,179.58	-275.96	1,192.23	1,135.88	56.35	21.158	
7,600.00	7,235.80	7,393.69	7,235.80	39.08	27.32	91.93	-1,179.58	-275.96	1,192.23	1,135.68	56.56	21.081	
7,700.00	7,335.80	7,493.69	7,335.80	39.16	27.42	91.93	-1,179.58	-275.96	1,192.23	1,135.47	56.77	21.002	
7,800.00	7,435.80	7,593.69	7,435.80	39.24	27.53	91.93	-1,179.58	-275.96	1,192.23	1,135.25	56.98	20.924	
7,900.00	7,535.80	7,693.69	7,535.80	39.32	27.64	91.93	-1,179.58	-275.96	1,192.23	1,135.04	57.20	20.845	
8,000.00	7,635.80	7,793.69	7,635.80	39.41	27.75	91.93	-1,179.58	-275.96	1,192.23	1,134.82	57.41	20.765	
8,100.00	7,735.80	7,893.69	7,735.80	39.49	27.86	91.93	-1,179.58	-275.96	1,192.23	1,134.60	57.64	20.686	
8,148.20	7,784.00	7,941.89	7,784.00	39.53	27.92	91.93	-1,179.58	-275.96	1,192.23	1,134.49	57.74	20.647	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_MIRACLE 19-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4978.00ft (Original Well Elev)
Reference Site:	LARIMER_MIRACLE 25-12 PAD	MD Reference:	WELL @ 4978.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MIRACLE 19-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 19-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-23-10 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	92.10	-0.37	10.02	10.03				
100.00	100.00	100.00	100.00	0.10	0.10	92.10	-0.37	10.02	10.03	9.84	0.19	52.505	
200.00	200.00	200.00	200.00	0.32	0.32	92.10	-0.37	10.02	10.03	9.39	0.64	15.659	
300.00	300.00	300.00	300.00	0.55	0.55	92.10	-0.37	10.02	10.03	8.94	1.09	9.202	
400.00	400.00	400.00	400.00	0.77	0.77	92.10	-0.37	10.02	10.03	8.49	1.54	6.515	
500.00	500.00	500.00	500.00	0.99	0.99	92.10	-0.37	10.02	10.03	8.04	1.99	5.043	
600.00	600.00	600.00	600.00	1.22	1.22	92.10	-0.37	10.02	10.03	7.59	2.44	4.113	
700.00	700.00	700.00	700.00	1.44	1.44	92.10	-0.37	10.02	10.03	7.14	2.89	3.473	
750.00	750.00	750.00	750.00	1.56	1.56	92.10	-0.37	10.02	10.03	6.92	3.11	3.222 CC, ES	
800.00	800.00	799.94	799.94	1.66	1.67	-143.90	0.05	10.15	10.49	7.17	3.33	3.156 SF	
900.00	899.93	899.57	899.50	1.84	1.89	-164.10	3.32	11.09	15.31	11.58	3.73	4.107	
1,000.00	999.68	998.96	998.79	2.05	2.12	-176.54	7.66	12.34	25.41	21.27	4.13	6.146	
1,100.00	1,099.13	1,097.92	1,097.65	2.27	2.34	178.35	11.98	13.59	39.48	34.93	4.54	8.691	
1,200.00	1,198.15	1,196.33	1,195.96	2.53	2.57	176.16	16.27	14.83	57.13	52.18	4.95	11.538	
1,300.00	1,296.63	1,294.06	1,293.59	2.84	2.79	175.21	20.53	16.07	78.24	72.88	5.36	14.597	
1,400.00	1,394.44	1,391.01	1,390.44	3.19	3.02	174.82	24.77	17.29	102.74	96.97	5.77	17.813	
1,500.00	1,491.46	1,487.05	1,486.37	3.61	3.24	174.70	28.96	18.50	130.60	124.42	6.17	21.150	
1,600.00	1,587.58	1,582.06	1,581.29	4.09	3.46	174.72	33.10	19.70	161.77	155.19	6.58	24.582	
1,700.00	1,682.68	1,675.92	1,675.06	4.63	3.68	174.80	37.20	20.88	196.24	189.25	6.99	28.088	
1,800.00	1,776.65	1,768.53	1,767.57	5.25	3.90	174.92	41.24	22.05	233.94	226.55	7.39	31.650	
1,900.00	1,869.36	1,859.78	1,858.72	5.93	4.11	175.04	45.22	23.20	274.84	267.05	7.80	35.256	
1,970.23	1,933.66	1,922.97	1,921.85	6.46	4.26	175.13	47.98	24.00	305.46	297.38	8.08	37.808	
2,000.00	1,960.78	1,949.61	1,948.46	6.69	4.32	175.19	49.14	24.33	318.76	310.53	8.23	38.739	
2,100.00	2,051.84	2,039.06	2,037.82	7.48	4.53	175.36	53.05	25.46	363.45	354.72	8.74	41.608	
2,200.00	2,142.91	2,128.52	2,127.18	8.28	4.74	175.50	56.95	26.59	408.14	398.90	9.25	44.130	
2,300.00	2,233.97	2,217.97	2,216.54	9.09	4.95	175.60	60.86	27.72	452.84	443.07	9.77	46.361	
2,400.00	2,325.04	2,307.42	2,305.91	9.91	5.16	175.69	64.76	28.85	497.53	487.24	10.29	48.344	
2,500.00	2,416.10	2,396.88	2,395.27	10.73	5.38	175.76	68.66	29.97	542.23	531.41	10.82	50.118	
2,600.00	2,507.17	2,486.33	2,484.63	11.56	5.59	175.82	72.57	31.10	586.92	575.58	11.35	51.712	
2,700.00	2,598.23	2,575.78	2,573.99	12.39	5.80	175.88	76.47	32.23	631.62	619.74	11.88	53.152	
2,800.00	2,689.30	2,665.24	2,663.35	13.23	6.01	175.92	80.37	33.36	676.32	663.90	12.42	54.457	
2,900.00	2,780.36	2,754.69	2,752.71	14.06	6.22	175.96	84.28	34.49	721.02	708.06	12.96	55.647	
3,000.00	2,871.43	2,844.15	2,842.07	14.90	6.43	176.00	88.18	35.61	765.71	752.22	13.50	56.734	
3,100.00	2,962.49	2,933.60	2,931.43	15.75	6.64	176.03	92.09	36.74	810.41	796.37	14.04	57.731	
3,200.00	3,053.56	3,023.05	3,020.80	16.59	6.85	176.06	95.99	37.87	855.11	840.53	14.58	58.649	
3,300.00	3,144.62	3,112.51	3,110.16	17.43	7.07	176.08	99.89	39.00	899.81	884.68	15.12	59.497	
3,400.00	3,235.69	3,201.96	3,199.52	18.28	7.28	176.11	103.80	40.13	944.51	928.84	15.67	60.282	
3,500.00	3,326.75	3,291.41	3,288.88	19.13	7.49	176.13	107.70	41.25	989.20	972.99	16.21	61.011	
3,600.00	3,417.82	3,380.87	3,378.24	19.97	7.70	176.15	111.61	42.38	1,033.90	1,017.14	16.76	61.690	
3,700.00	3,508.88	3,470.32	3,467.60	20.82	7.91	176.16	115.51	43.51	1,078.60	1,061.29	17.31	62.323	
3,800.00	3,599.95	3,559.77	3,556.96	21.67	8.12	176.18	119.41	44.64	1,123.30	1,105.45	17.85	62.915	
3,900.00	3,691.01	3,649.23	3,646.32	22.52	8.34	176.20	123.32	45.77	1,168.00	1,149.60	18.40	63.470	
4,000.00	3,782.08	3,738.68	3,735.69	23.37	8.55	176.21	127.22	46.90	1,212.70	1,193.75	18.95	63.990	
4,100.00	3,873.14	3,828.14	3,825.05	24.22	8.76	176.22	131.12	48.02	1,257.40	1,237.90	19.50	64.480	
4,200.00	3,964.21	3,917.59	3,914.41	25.07	8.97	176.23	135.03	49.15	1,302.09	1,282.04	20.05	64.942	
4,300.00	4,055.27	4,007.04	4,003.77	25.92	9.18	176.24	138.93	50.28	1,346.79	1,326.19	20.60	65.378	
4,400.00	4,146.34	4,096.50	4,093.13	26.77	9.40	176.26	142.84	51.41	1,391.49	1,370.34	21.15	65.790	
4,500.00	4,237.40	4,185.95	4,182.49	27.62	9.61	176.27	146.74	52.54	1,436.19	1,414.49	21.70	66.180	
4,600.00	4,328.47	4,275.40	4,271.85	28.47	9.82	176.27	150.64	53.66	1,480.89	1,458.64	22.25	66.550	
4,700.00	4,419.53	4,364.86	4,361.22	29.33	10.03	176.28	154.55	54.79	1,525.59	1,502.79	22.80	66.901	
4,800.00	4,510.60	4,454.31	4,450.58	30.18	10.24	176.29	158.45	55.92	1,570.29	1,546.93	23.36	67.235	
4,900.00	4,601.66	4,543.76	4,539.94	31.03	10.46	176.30	162.36	57.05	1,614.99	1,591.08	23.91	67.553	

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 19-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4978.00ft (Original Well Elev)
Reference Site:	LARIMER_MIRACLE 25-12 PAD	MD Reference:	WELL @ 4978.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MIRACLE 19-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 19-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-23-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design LARIMER_MIRACLE 25-12 PAD - P_MIRACLE 25-12 - P_MIRACLE 25-12 - PLAN #1 3-23-10 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	4,692.73	4,633.22	4,629.30	31.88	10.67	176.31	166.26	58.18	1,659.69	1,635.23	24.46	67.855	
5,100.00	4,783.79	4,722.67	4,718.66	32.74	10.88	176.31	170.16	59.31	1,704.39	1,679.37	25.01	68.144	
5,200.00	4,874.86	4,812.13	4,808.02	33.59	11.09	176.32	174.07	60.43	1,749.08	1,723.52	25.56	68.420	
5,227.98	4,900.34	4,837.15	4,833.02	33.83	11.15	176.32	175.16	60.75	1,761.59	1,735.87	25.72	68.495	
5,300.00	4,966.29	4,901.98	4,897.78	34.35	11.30	176.37	177.99	61.57	1,792.97	1,766.74	26.23	68.351	
5,400.00	5,059.03	4,993.24	4,988.95	34.94	11.52	176.42	181.97	62.72	1,833.83	1,806.93	26.90	68.174	
5,500.00	5,153.02	5,085.88	5,081.49	35.48	11.74	176.46	186.01	63.89	1,871.48	1,843.95	27.53	67.983	
5,600.00	5,248.14	5,179.77	5,175.29	35.97	11.96	176.49	190.11	65.07	1,905.88	1,877.76	28.12	67.782	
5,700.00	5,344.27	5,274.80	5,270.22	36.42	12.19	176.51	194.26	66.27	1,936.99	1,908.33	28.67	67.572	
5,800.00	5,441.31	5,370.85	5,366.17	36.82	12.42	176.51	198.45	67.48	1,964.77	1,935.60	29.17	67.356	
5,900.00	5,539.14	5,467.81	5,463.03	37.17	12.65	176.51	202.68	68.70	1,989.19	1,959.56	29.63	67.135	
6,000.00	5,637.62	5,565.56	5,560.68	37.47	12.88	176.50	206.95	69.94	2,010.22	1,980.18	30.04	66.911	
6,100.00	5,736.65	5,663.98	5,659.00	37.72	13.11	176.47	211.24	71.18	2,027.83	1,997.42	30.41	66.684	
6,200.00	5,836.11	5,762.95	5,757.87	37.92	13.35	176.44	215.56	72.43	2,042.00	2,011.28	30.73	66.456	
6,300.00	5,935.86	5,841.02	5,835.86	38.08	13.68	176.41	219.32	73.51	2,050.70	2,019.61	31.09	65.956	
6,400.00	6,035.80	6,040.95	6,035.80	38.18	13.88	176.42	219.32	73.51	2,054.12	2,022.84	31.28	65.667	
6,448.20	6,084.00	6,089.15	6,084.00	38.22	13.98	48.60	219.32	73.51	2,054.53	2,023.16	31.36	65.507	
6,500.00	6,135.80	6,140.95	6,135.80	38.26	14.09	48.60	219.32	73.51	2,054.53	2,022.98	31.55	65.119	
6,600.00	6,235.80	6,240.95	6,235.80	38.33	14.30	48.60	219.32	73.51	2,054.53	2,022.62	31.91	64.386	
6,700.00	6,335.80	6,340.95	6,335.80	38.40	14.52	48.60	219.32	73.51	2,054.53	2,022.26	32.27	63.666	
6,800.00	6,435.80	6,440.95	6,435.80	38.47	14.73	48.60	219.32	73.51	2,054.53	2,021.90	32.63	62.959	
6,900.00	6,535.80	6,540.95	6,535.80	38.54	14.95	48.60	219.32	73.51	2,054.53	2,021.53	33.00	62.264	
7,000.00	6,635.80	6,640.95	6,635.80	38.61	15.16	48.60	219.32	73.51	2,054.53	2,021.16	33.36	61.580	
7,100.00	6,735.80	6,740.95	6,735.80	38.69	15.37	48.60	219.32	73.51	2,054.53	2,020.80	33.73	60.908	
7,200.00	6,835.80	6,840.95	6,835.80	38.76	15.59	48.60	219.32	73.51	2,054.53	2,020.43	34.10	60.248	
7,300.00	6,935.80	6,940.95	6,935.80	38.84	15.81	48.60	219.32	73.51	2,054.53	2,020.06	34.47	59.600	
7,400.00	7,035.80	7,040.95	7,035.80	38.92	16.02	48.60	219.32	73.51	2,054.53	2,019.68	34.84	58.962	
7,500.00	7,135.80	7,140.95	7,135.80	39.00	16.24	48.60	219.32	73.51	2,054.53	2,019.31	35.22	58.335	
7,600.00	7,235.80	7,240.95	7,235.80	39.08	16.45	48.60	219.32	73.51	2,054.53	2,018.93	35.60	57.719	
7,700.00	7,335.80	7,340.95	7,335.80	39.16	16.67	48.60	219.32	73.51	2,054.53	2,018.56	35.97	57.114	
7,800.00	7,435.80	7,440.95	7,435.80	39.24	16.89	48.60	219.32	73.51	2,054.53	2,018.18	36.35	56.519	
7,900.00	7,535.80	7,540.95	7,535.80	39.32	17.10	48.60	219.32	73.51	2,054.53	2,017.80	36.73	55.934	
8,000.00	7,635.80	7,640.95	7,635.80	39.41	17.32	48.60	219.32	73.51	2,054.53	2,017.42	37.11	55.359	
8,100.00	7,735.80	7,740.95	7,735.80	39.49	17.54	48.60	219.32	73.51	2,054.53	2,017.03	37.50	54.794	
8,148.20	7,784.00	7,789.15	7,784.00	39.53	17.64	48.60	219.32	73.51	2,054.53	2,016.85	37.68	54.525	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_MIRACLE 19-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4978.00ft (Original Well Elev)
Reference Site:	LARIMER_MIRACLE 25-12 PAD	MD Reference:	WELL @ 4978.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MIRACLE 19-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 19-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-23-10 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	90.89	-1.08	69.89	69.90				
100.00	100.00	100.00	100.00	0.10	0.10	90.89	-1.08	69.89	69.90	69.71	0.19	365.872	
200.00	200.00	200.00	200.00	0.32	0.32	90.89	-1.08	69.89	69.90	69.26	0.64	109.120	
300.00	300.00	300.00	300.00	0.55	0.55	90.89	-1.08	69.89	69.90	68.81	1.09	64.122	
400.00	400.00	400.00	400.00	0.77	0.77	90.89	-1.08	69.89	69.90	68.36	1.54	45.400	
500.00	500.00	500.00	500.00	0.99	0.99	90.89	-1.08	69.89	69.90	67.91	1.99	35.140	
600.00	600.00	600.00	600.00	1.22	1.22	90.89	-1.08	69.89	69.90	67.46	2.44	28.663	
700.00	700.00	700.00	700.00	1.44	1.44	90.89	-1.08	69.89	69.90	67.01	2.89	24.202	
750.00	750.00	750.00	750.00	1.56	1.56	90.89	-1.08	69.89	69.90	66.79	3.11	22.454 CC, ES	
800.00	800.00	799.30	799.29	1.66	1.67	-141.78	-0.74	70.14	70.49	67.17	3.32	21.215	
900.00	899.93	897.54	897.47	1.84	1.88	-145.43	2.00	72.12	75.39	71.67	3.72	20.268 SF	
1,000.00	999.68	994.76	994.46	2.05	2.10	-151.37	7.39	76.02	85.95	81.83	4.12	20.853	
1,100.00	1,099.13	1,090.29	1,089.49	2.27	2.33	-157.83	15.27	81.72	103.04	98.52	4.53	22.769	
1,200.00	1,198.15	1,183.53	1,181.88	2.53	2.58	-163.58	25.45	89.08	127.11	122.18	4.93	25.799	
1,300.00	1,296.63	1,273.95	1,271.03	2.84	2.84	-168.22	37.63	97.90	158.10	152.78	5.32	29.703	
1,400.00	1,394.44	1,361.86	1,357.22	3.19	3.13	-171.82	51.63	108.03	195.68	189.97	5.71	34.267	
1,500.00	1,491.46	1,451.96	1,445.37	3.61	3.45	-174.57	66.76	118.97	237.92	231.81	6.11	38.966	
1,600.00	1,587.58	1,540.51	1,532.00	4.09	3.78	-176.54	81.63	129.73	283.62	277.13	6.50	43.659	
1,700.00	1,682.68	1,627.40	1,617.00	4.63	4.12	-178.00	96.23	140.29	332.61	325.72	6.88	48.318	
1,800.00	1,776.65	1,712.52	1,700.27	5.25	4.46	-179.10	110.52	150.63	384.73	377.46	7.27	52.934	
1,900.00	1,869.36	1,795.77	1,781.71	5.93	4.79	-179.96	124.50	160.75	439.88	432.23	7.65	57.502	
1,970.23	1,933.66	1,853.05	1,837.75	6.46	5.03	179.55	134.12	167.71	480.37	472.45	7.92	60.676	
2,000.00	1,960.78	1,877.13	1,861.31	6.69	5.13	179.36	138.17	170.63	497.84	489.78	8.06	61.753	
2,100.00	2,051.84	1,958.00	1,940.42	7.48	5.46	178.83	151.75	180.46	556.53	547.98	8.56	65.053	
2,200.00	2,142.91	2,038.86	2,019.53	8.28	5.80	178.40	165.33	190.28	615.25	606.19	9.06	67.934	
2,300.00	2,233.97	2,119.73	2,098.64	9.09	6.14	178.05	178.91	200.11	673.99	664.42	9.56	70.465	
2,400.00	2,325.04	2,200.60	2,177.75	9.91	6.48	177.75	192.49	209.93	732.74	722.66	10.08	72.701	
2,500.00	2,416.10	2,281.46	2,256.86	10.73	6.83	177.49	206.07	219.76	791.51	780.91	10.60	74.683	
2,600.00	2,507.17	2,362.33	2,335.97	11.56	7.17	177.28	219.65	229.58	850.28	839.16	11.12	76.454	
2,700.00	2,598.23	2,443.20	2,415.08	12.39	7.52	177.09	233.23	239.41	909.06	897.41	11.65	78.044	
2,800.00	2,689.30	2,524.06	2,494.19	13.23	7.87	176.92	246.81	249.23	967.84	955.66	12.18	79.477	
2,900.00	2,780.36	2,604.93	2,573.30	14.06	8.22	176.77	260.39	259.06	1,026.63	1,013.92	12.71	80.775	
3,000.00	2,871.43	2,685.80	2,652.41	14.90	8.57	176.64	273.97	268.88	1,085.43	1,072.18	13.24	81.955	
3,100.00	2,962.49	2,766.66	2,731.52	15.75	8.92	176.52	287.56	278.71	1,144.22	1,130.44	13.78	83.030	
3,200.00	3,053.56	2,847.53	2,810.63	16.59	9.27	176.41	301.14	288.53	1,203.02	1,188.70	14.32	84.016	
3,300.00	3,144.62	2,928.40	2,889.74	17.43	9.63	176.31	314.72	298.36	1,261.83	1,246.97	14.86	84.922	
3,400.00	3,235.69	3,009.26	2,968.85	18.28	9.98	176.23	328.30	308.18	1,320.63	1,305.23	15.40	85.757	
3,500.00	3,326.75	3,090.13	3,047.96	19.13	10.33	176.15	341.88	318.01	1,379.44	1,363.49	15.94	86.528	
3,600.00	3,417.82	3,171.00	3,127.07	19.97	10.69	176.07	355.46	327.84	1,438.24	1,421.76	16.49	87.243	
3,700.00	3,508.88	3,251.86	3,206.18	20.82	11.04	176.00	369.04	337.66	1,497.05	1,480.02	17.03	87.907	
3,800.00	3,599.95	3,332.73	3,285.29	21.67	11.40	175.94	382.62	347.49	1,555.87	1,538.29	17.58	88.526	
3,900.00	3,691.01	3,413.60	3,364.40	22.52	11.75	175.88	396.20	357.31	1,614.68	1,596.56	18.12	89.104	
4,000.00	3,782.08	3,494.46	3,443.51	23.37	12.11	175.83	409.78	367.14	1,673.49	1,654.82	18.67	89.644	
4,100.00	3,873.14	3,575.33	3,522.62	24.22	12.46	175.78	423.36	376.96	1,732.31	1,713.09	19.22	90.151	
4,200.00	3,964.21	3,656.19	3,601.73	25.07	12.82	175.73	436.94	386.79	1,791.12	1,771.36	19.76	90.626	
4,300.00	4,055.27	3,737.06	3,680.84	25.92	13.18	175.68	450.53	396.61	1,849.94	1,829.62	20.31	91.074	
4,400.00	4,146.34	3,817.93	3,759.95	26.77	13.53	175.64	464.11	406.44	1,908.75	1,887.89	20.86	91.496	
4,500.00	4,237.40	3,898.79	3,839.06	27.62	13.89	175.60	477.69	416.26	1,967.57	1,946.16	21.41	91.894	
4,600.00	4,328.47	3,979.66	3,918.17	28.47	14.25	175.57	491.27	426.09	2,026.39	2,004.43	21.96	92.271	
4,700.00	4,419.53	4,060.53	3,997.28	29.33	14.61	175.53	504.85	435.91	2,085.21	2,062.69	22.51	92.627	
4,800.00	4,510.60	4,141.39	4,076.39	30.18	14.96	175.50	518.43	445.74	2,144.02	2,120.96	23.06	92.965	
4,900.00	4,601.66	4,222.26	4,155.50	31.03	15.32	175.47	532.01	455.56	2,202.84	2,179.23	23.61	93.286	

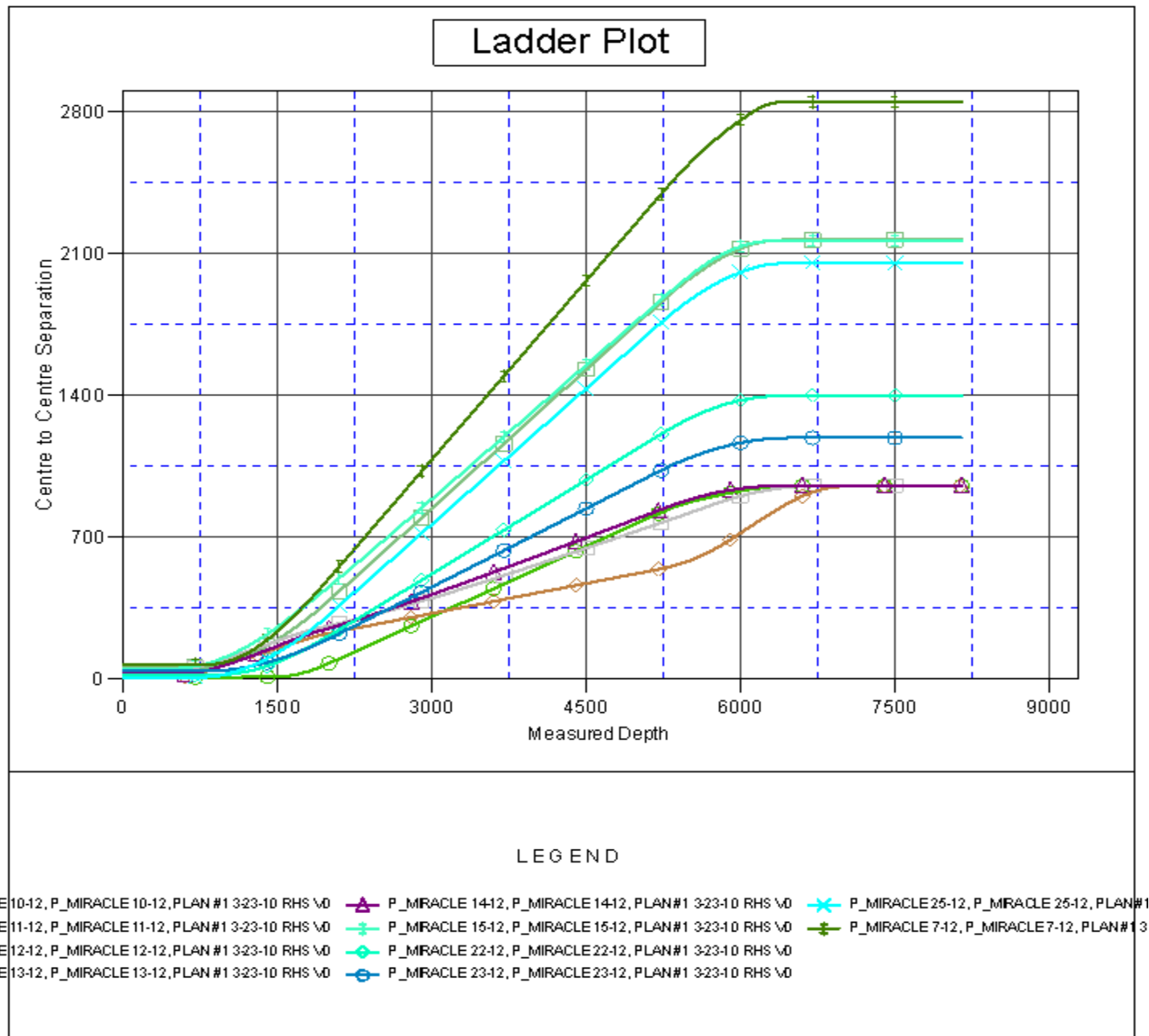
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_MIRACLE 19-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4978.00ft (Original Well Elev)
Reference Site:	LARIMER_MIRACLE 25-12 PAD	MD Reference:	WELL @ 4978.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MIRACLE 19-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 19-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-23-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design LARIMER_MIRACLE 25-12 PAD - P_MIRACLE 7-12 - P_MIRACLE 7-12 - PLAN #1 3-23-10 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	4,692.73	4,303.13	4,234.61	31.88	15.68	175.44	545.59	465.39	2,261.66	2,237.50	24.17	93.591	
5,100.00	4,783.79	4,383.99	4,313.72	32.74	16.04	175.41	559.17	475.21	2,320.48	2,295.77	24.72	93.882	
5,200.00	4,874.86	4,464.86	4,392.83	33.59	16.39	175.38	572.75	485.04	2,379.30	2,354.03	25.27	94.158	
5,227.98	4,900.34	4,487.48	4,414.96	33.83	16.50	175.37	576.55	487.79	2,395.76	2,370.33	25.42	94.233	
5,300.00	4,966.29	4,546.25	4,472.45	34.35	16.76	175.44	586.42	494.93	2,437.39	2,411.41	25.97	93.838	
5,400.00	5,059.03	4,629.53	4,553.93	34.94	17.12	175.51	600.41	505.05	2,492.72	2,466.02	26.70	93.369	
5,500.00	5,153.02	4,714.68	4,637.23	35.48	17.50	175.56	614.71	515.39	2,545.12	2,517.74	27.39	92.933	
5,600.00	5,248.14	4,801.60	4,722.26	35.97	17.89	175.61	629.31	525.95	2,594.53	2,566.49	28.04	92.528	
5,700.00	5,344.27	4,890.18	4,808.92	36.42	18.28	175.64	644.18	536.71	2,640.89	2,612.23	28.66	92.155	
5,800.00	5,441.31	4,980.31	4,897.09	36.82	18.68	175.65	659.32	547.67	2,684.13	2,654.90	29.23	91.815	
5,900.00	5,539.14	5,071.89	4,986.67	37.17	19.09	175.66	674.70	558.79	2,724.21	2,694.44	29.77	91.506	
6,000.00	5,637.62	5,164.79	5,077.56	37.47	19.50	175.66	690.30	570.08	2,761.09	2,730.82	30.27	91.228	
6,100.00	5,736.65	5,258.91	5,169.64	37.72	19.92	175.64	706.11	581.51	2,794.71	2,763.99	30.72	90.983	
6,200.00	5,836.11	5,354.14	5,262.80	37.92	20.34	175.62	722.10	593.08	2,825.03	2,793.91	31.12	90.769	
6,300.00	5,935.86	5,452.84	5,365.86	38.08	20.76	175.41	738.23	604.81	2,855.14	2,823.57	31.57	90.579	
6,400.00	6,035.80	5,552.77	5,465.80	38.18	21.16	175.42	754.53	616.81	2,884.96	2,852.76	32.00	90.419	
6,448.20	6,084.00	5,600.98	5,510.00	38.22	21.52	175.42	769.83	628.81	2,914.96	2,882.06	32.40	90.289	
6,500.00	6,135.80	5,652.77	5,565.80	38.26	21.89	175.42	784.83	639.81	2,944.96	2,911.89	32.77	90.179	
6,600.00	6,235.80	5,752.77	5,665.80	38.33	22.24	175.42	799.53	649.81	2,974.96	2,941.89	33.12	90.089	
6,700.00	6,335.80	5,852.77	5,765.80	38.40	22.55	175.42	813.83	658.81	2,999.96	2,966.89	33.40	90.019	
6,800.00	6,435.80	5,952.77	5,865.80	38.47	22.68	175.42	827.83	666.81	3,024.96	2,991.89	33.60	89.969	
6,900.00	6,535.80	6,052.77	5,965.80	38.54	22.82	175.42	841.53	673.81	3,049.96	3,016.89	33.77	89.939	
7,000.00	6,635.80	6,152.77	6,065.80	38.61	22.95	175.42	854.83	679.81	3,074.96	3,041.89	33.90	89.919	
7,100.00	6,735.80	6,252.77	6,165.80	38.69	23.09	175.42	867.83	684.81	3,099.96	3,066.89	34.00	89.909	
7,200.00	6,835.80	6,352.77	6,265.80	38.76	23.23	175.42	880.53	688.81	3,124.96	3,091.89	34.07	89.909	
7,300.00	6,935.80	6,452.77	6,365.80	38.84	23.37	175.42	892.83	691.81	3,149.96	3,116.89	34.10	89.919	
7,400.00	7,035.80	6,552.77	6,465.80	38.92	23.51	175.42	904.83	693.81	3,174.96	3,141.89	34.12	89.939	
7,500.00	7,135.80	6,652.77	6,565.80	39.00	23.65	175.42	916.53	694.81	3,199.96	3,166.89	34.12	89.969	
7,600.00	7,235.80	6,752.77	6,665.80	39.08	23.80	175.42	927.83	694.81	3,224.96	3,191.89	34.10	89.999	
7,700.00	7,335.80	6,852.77	6,765.80	39.16	23.94	175.42	938.83	693.81	3,249.96	3,216.89	34.07	90.029	
7,800.00	7,435.80	6,952.77	6,865.80	39.24	24.09	175.42	949.53	691.81	3,274.96	3,241.89	34.00	90.059	
7,900.00	7,535.80	7,052.77	6,965.80	39.32	24.24	175.42	959.83	688.81	3,299.96	3,266.89	33.90	90.089	
8,000.00	7,635.80	7,152.77	7,065.80	39.41	24.38	175.42	969.83	686.81	3,324.96	3,291.89	33.77	90.119	
8,100.00	7,735.80	7,252.77	7,165.80	39.49	24.53	175.42	979.53	682.81	3,349.96	3,316.89	33.60	90.149	
8,148.20	7,784.00	7,280.98	7,184.00	39.53	24.61	175.42	982.53	681.81	3,364.96	3,331.89	33.40	90.179	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_MIRACLE 19-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4978.00ft (Original Well Elev)
Reference Site:	LARIMER_MIRACLE 25-12 PAD	MD Reference:	WELL @ 4978.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MIRACLE 19-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 19-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-23-10 RHS	Offset TVD Reference:	Offset Datum

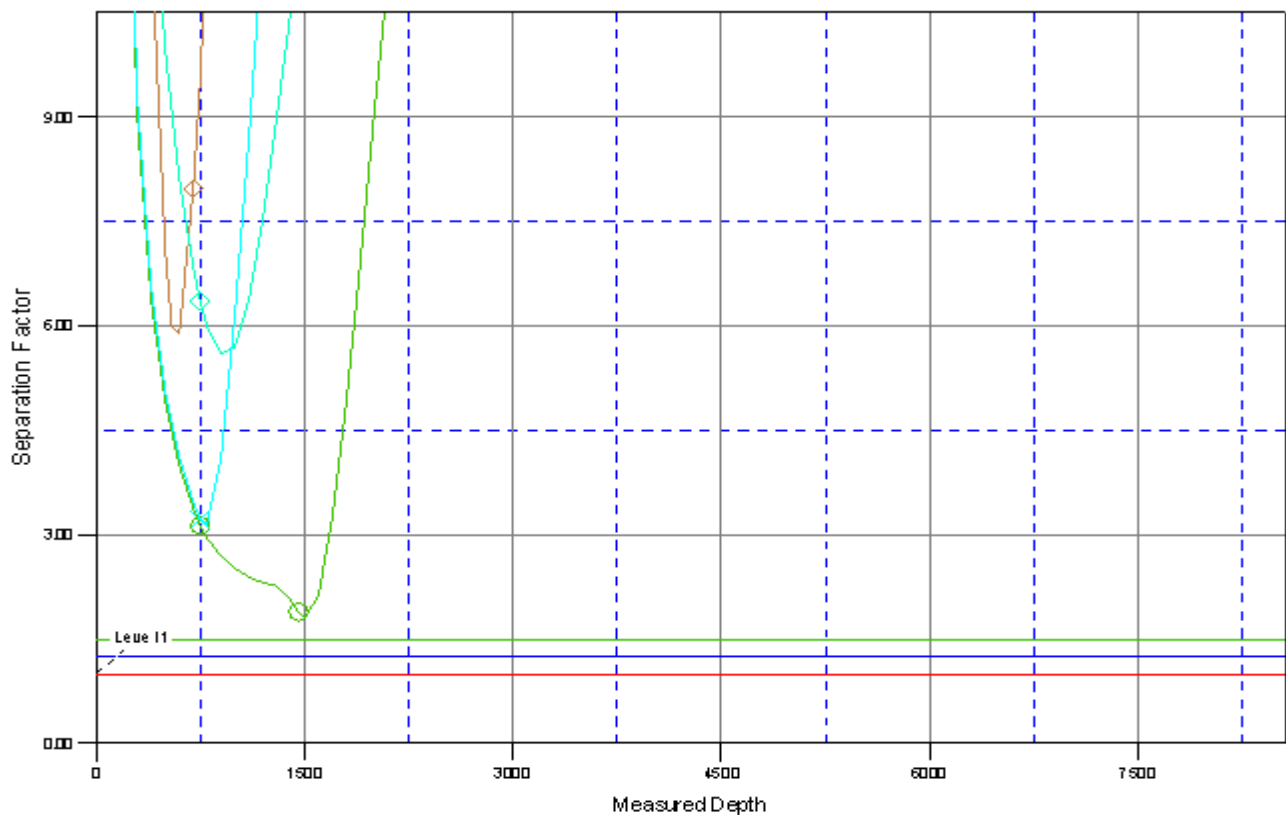
Reference Depths are relative to WELL @ 4978.00ft (Original Well Elev) Coordinates are relative to: P_MIRACLE 19-12
Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Northern Zone
Central Meridian is 105° 30' 0.000 W ° Grid Convergence at Surface is: 0.35°



Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_MIRACLE 19-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4978.00ft (Original Well Elev)
Reference Site:	LARIMER_MIRACLE 25-12 PAD	MD Reference:	WELL @ 4978.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MIRACLE 19-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 19-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-23-10 RHS	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4978.00ft (Original Well Elev) Coordinates are relative to: P_MIRACLE 19-12
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: 0.35°

Separation Factor Plot



LEGEND

LE 10-12, P_MIRACLE 10-12, PLAN #1 3-23-10 RHS \0	P_MIRACLE 14-12, P_MIRACLE 14-12, PLAN #1 3-23-10 RHS \0	P_MIRACLE 25-12, P_MIRACLE 25-12, PLAN #1 3-23-10 RHS \0
LE 11-12, P_MIRACLE 11-12, PLAN #1 3-23-10 RHS \0	P_MIRACLE 15-12, P_MIRACLE 15-12, PLAN #1 3-23-10 RHS \0	P_MIRACLE 7-12, P_MIRACLE 7-12, PLAN #1 3-23-10 RHS \0
LE 12-12, P_MIRACLE 12-12, PLAN #1 3-23-10 RHS \0	P_MIRACLE 22-12, P_MIRACLE 22-12, PLAN #1 3-23-10 RHS \0	
LE 13-12, P_MIRACLE 13-12, PLAN #1 3-23-10 RHS \0	P_MIRACLE 23-12, P_MIRACLE 23-12, PLAN #1 3-23-10 RHS \0	