



US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_KERR MCGEE 19-3 PAD

P_KERR-MCGEE 23-3

P_KERR-MCGEE 23-3

Plan: PLAN #1 1-15-10 RHS

Standard Planning Report

15 January, 2010



P. KERR-MCGEE 23-3
COLORADO NORTHERN ZONE - 83
SECTION 3 T1N R68W
1674 FSL 1142 FWL
LAT: 40° 4' 39.443 N
LONG: 104° 59' 41.485 W

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_KERR-MCGEE 23-3
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 5057.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 5057.00ft (Original Well Elev)
Site:	WELD_KERR MCGEE 19-3 PAD	North Reference:	True
Well:	P_KERR-MCGEE 23-3	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_KERR-MCGEE 23-3		
Design:	PLAN #1 1-15-10 RHS		

Project	COLORADO NORTHERN ZONE - 83, KERR MCGEE OIL & GAS ONSHORE LP		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site						WELD_KERR MCGEE 19-3 PAD, SECTION 3 T1N R68W											
Site Position:			Northing:			1,271,548.81 ft			Latitude:			40° 4' 39.673 N					
From:			Lat/Long			Easting:			3,141,336.90ft			Longitude:			104° 59' 41.726 W		
Position Uncertainty:			0.00 ft			Slot Radius:			in			Grid Convergence:			0.33 °		

Well	P_KERR-MCGEE 23-3					
Well Position	+N/-S	-23.33 ft	Northing:	1,271,525.59 ft	Latitude:	40° 4' 39.443 N
	+E/-W	18.75 ft	Easting:	3,141,355.78 ft	Longitude:	104° 59' 41.485 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	5,042.00 ft

Wellbore	P_KERR-MCGEE 23-3				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	1/15/2010	9.15	66.80	53,083

Design	PLAN #1 1-15-10 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	101.66

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,050.00	0.00	0.00	1,050.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,050.75	20.02	101.66	2,030.52	-34.97	169.45	2.00	2.00	0.00	101.66	
5,756.53	20.02	101.66	5,512.48	-291.36	1,411.64	0.00	0.00	0.00	0.00	
6,757.28	0.00	0.00	6,493.00	-326.33	1,581.09	2.00	-2.00	0.00	180.00	
8,619.28	0.00	0.00	8,355.00	-326.33	1,581.09	0.00	0.00	0.00	0.00	PBHL_KERR-MCG

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_KERR-MCGEE 23-3
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 5057.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 5057.00ft (Original Well Elev)
Site:	WELD_KERR MCGEE 19-3 PAD	North Reference:	True
Well:	P_KERR-MCGEE 23-3	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_KERR-MCGEE 23-3		
Design:	PLAN #1 1-15-10 RHS		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
Start Build 2.00									
1,050.00	0.00	0.00	1,050.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	1.00	101.66	1,100.00	-0.09	0.43	0.44	2.00	2.00	0.00
1,200.00	3.00	101.66	1,199.93	-0.79	3.85	3.93	2.00	2.00	0.00
1,300.00	5.00	101.66	1,299.68	-2.20	10.68	10.90	2.00	2.00	0.00
1,400.00	7.00	101.66	1,399.13	-4.32	20.91	21.35	2.00	2.00	0.00
1,500.00	9.00	101.66	1,498.15	-7.13	34.54	35.27	2.00	2.00	0.00
1,600.00	11.00	101.66	1,596.63	-10.64	51.55	52.63	2.00	2.00	0.00
1,700.00	13.00	101.66	1,694.44	-14.84	71.91	73.42	2.00	2.00	0.00
1,800.00	15.00	101.66	1,791.46	-19.73	95.60	97.62	2.00	2.00	0.00
1,900.00	17.00	101.66	1,887.58	-25.30	122.59	125.18	2.00	2.00	0.00
2,000.00	19.00	101.66	1,982.68	-31.55	152.86	156.08	2.00	2.00	0.00
Start 3705.77 hold at 2050.75 MD									
2,050.75	20.02	101.66	2,030.52	-34.97	169.45	173.03	2.00	2.00	0.00
2,100.00	20.02	101.66	2,076.80	-38.38	185.96	189.88	0.00	0.00	0.00
2,200.00	20.02	101.66	2,170.76	-45.30	219.48	224.11	0.00	0.00	0.00
2,300.00	20.02	101.66	2,264.72	-52.22	253.00	258.33	0.00	0.00	0.00
2,400.00	20.02	101.66	2,358.68	-59.14	286.52	292.56	0.00	0.00	0.00
2,500.00	20.02	101.66	2,452.64	-66.06	320.04	326.79	0.00	0.00	0.00
2,600.00	20.02	101.66	2,546.60	-72.97	353.56	361.01	0.00	0.00	0.00
2,700.00	20.02	101.66	2,640.56	-79.89	387.08	395.24	0.00	0.00	0.00
2,800.00	20.02	101.66	2,734.52	-86.81	420.60	429.47	0.00	0.00	0.00
2,900.00	20.02	101.66	2,828.48	-93.73	454.12	463.69	0.00	0.00	0.00
3,000.00	20.02	101.66	2,922.44	-100.65	487.64	497.92	0.00	0.00	0.00
3,100.00	20.02	101.66	3,016.40	-107.57	521.16	532.15	0.00	0.00	0.00
3,200.00	20.02	101.66	3,110.36	-114.48	554.68	566.38	0.00	0.00	0.00
3,300.00	20.02	101.66	3,204.32	-121.40	588.20	600.60	0.00	0.00	0.00
3,400.00	20.02	101.66	3,298.28	-128.32	621.72	634.83	0.00	0.00	0.00
3,500.00	20.02	101.66	3,392.24	-135.24	655.24	669.06	0.00	0.00	0.00
3,600.00	20.02	101.66	3,486.20	-142.16	688.76	703.28	0.00	0.00	0.00
3,700.00	20.02	101.66	3,580.16	-149.08	722.28	737.51	0.00	0.00	0.00
3,800.00	20.02	101.66	3,674.12	-155.99	755.80	771.74	0.00	0.00	0.00
3,900.00	20.02	101.66	3,768.08	-162.91	789.33	805.96	0.00	0.00	0.00
4,000.00	20.02	101.66	3,862.04	-169.83	822.85	840.19	0.00	0.00	0.00
PARKMAN									
4,019.11	20.02	101.66	3,880.00	-171.15	829.25	846.73	0.00	0.00	0.00
4,100.00	20.02	101.66	3,956.00	-176.75	856.37	874.42	0.00	0.00	0.00
4,200.00	20.02	101.66	4,049.96	-183.67	889.89	908.64	0.00	0.00	0.00
4,300.00	20.02	101.66	4,143.92	-190.59	923.41	942.87	0.00	0.00	0.00
4,400.00	20.02	101.66	4,237.88	-197.51	956.93	977.10	0.00	0.00	0.00
4,500.00	20.02	101.66	4,331.84	-204.42	990.45	1,011.32	0.00	0.00	0.00
4,600.00	20.02	101.66	4,425.80	-211.34	1,023.97	1,045.55	0.00	0.00	0.00
SUSSEX									
4,657.68	20.02	101.66	4,480.00	-215.33	1,043.30	1,065.29	0.00	0.00	0.00
4,700.00	20.02	101.66	4,519.76	-218.26	1,057.49	1,079.78	0.00	0.00	0.00
4,800.00	20.02	101.66	4,613.72	-225.18	1,091.01	1,114.00	0.00	0.00	0.00
4,900.00	20.02	101.66	4,707.68	-232.10	1,124.53	1,148.23	0.00	0.00	0.00
5,000.00	20.02	101.66	4,801.64	-239.02	1,158.05	1,182.46	0.00	0.00	0.00
5,100.00	20.02	101.66	4,895.60	-245.93	1,191.57	1,216.68	0.00	0.00	0.00
5,200.00	20.02	101.66	4,989.56	-252.85	1,225.09	1,250.91	0.00	0.00	0.00
5,300.00	20.02	101.66	5,083.52	-259.77	1,258.61	1,285.14	0.00	0.00	0.00
SHANNON									
5,317.53	20.02	101.66	5,100.00	-260.98	1,264.49	1,291.14	0.00	0.00	0.00

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Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 5057.00ft (Original Well Elev)
Site:	WELD_KERR MCGEE 19-3 PAD	North Reference:	True
Well:	P_KERR-MCGEE 23-3	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_KERR-MCGEE 23-3		
Design:	PLAN #1 1-15-10 RHS		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,400.00	20.02	101.66	5,177.48	-266.69	1,292.13	1,319.36	0.00	0.00	0.00
5,500.00	20.02	101.66	5,271.44	-273.61	1,325.65	1,353.59	0.00	0.00	0.00
5,600.00	20.02	101.66	5,365.41	-280.53	1,359.17	1,387.82	0.00	0.00	0.00
5,700.00	20.02	101.66	5,459.37	-287.44	1,392.69	1,422.04	0.00	0.00	0.00
Start Drop -2.00									
5,756.53	20.02	101.66	5,512.48	-291.36	1,411.64	1,441.39	0.00	0.00	0.00
5,800.00	19.15	101.66	5,553.44	-294.30	1,425.90	1,455.96	2.00	-2.00	0.00
5,900.00	17.15	101.66	5,648.46	-300.60	1,456.40	1,487.10	2.00	-2.00	0.00
6,000.00	15.15	101.66	5,744.51	-306.22	1,483.64	1,514.91	2.00	-2.00	0.00
6,100.00	13.15	101.66	5,841.47	-311.16	1,507.57	1,539.34	2.00	-2.00	0.00
6,200.00	11.15	101.66	5,939.23	-315.41	1,528.17	1,560.38	2.00	-2.00	0.00
6,300.00	9.15	101.66	6,037.66	-318.97	1,545.42	1,578.00	2.00	-2.00	0.00
6,400.00	7.15	101.66	6,136.65	-321.83	1,559.30	1,592.17	2.00	-2.00	0.00
6,500.00	5.15	101.66	6,236.07	-324.00	1,569.78	1,602.87	2.00	-2.00	0.00
6,600.00	3.15	101.66	6,335.80	-325.46	1,576.86	1,610.10	2.00	-2.00	0.00
6,700.00	1.15	101.66	6,435.73	-326.21	1,580.53	1,613.84	2.00	-2.00	0.00
Start 1862.00 hold at 6757.28 MD									
6,757.28	0.00	0.00	6,493.00	-326.33	1,581.09	1,614.42	2.00	-2.00	0.00
6,800.00	0.00	0.00	6,535.72	-326.33	1,581.09	1,614.42	0.00	0.00	0.00
6,900.00	0.00	0.00	6,635.72	-326.33	1,581.09	1,614.42	0.00	0.00	0.00
7,000.00	0.00	0.00	6,735.72	-326.33	1,581.09	1,614.42	0.00	0.00	0.00
7,100.00	0.00	0.00	6,835.72	-326.33	1,581.09	1,614.42	0.00	0.00	0.00
7,200.00	0.00	0.00	6,935.72	-326.33	1,581.09	1,614.42	0.00	0.00	0.00
7,300.00	0.00	0.00	7,035.72	-326.33	1,581.09	1,614.42	0.00	0.00	0.00
7,400.00	0.00	0.00	7,135.72	-326.33	1,581.09	1,614.42	0.00	0.00	0.00
7,500.00	0.00	0.00	7,235.72	-326.33	1,581.09	1,614.42	0.00	0.00	0.00
7,600.00	0.00	0.00	7,335.72	-326.33	1,581.09	1,614.42	0.00	0.00	0.00
7,700.00	0.00	0.00	7,435.72	-326.33	1,581.09	1,614.42	0.00	0.00	0.00
NIO A									
7,757.28	0.00	0.00	7,493.00	-326.33	1,581.09	1,614.42	0.00	0.00	0.00
7,800.00	0.00	0.00	7,535.72	-326.33	1,581.09	1,614.42	0.00	0.00	0.00
7,900.00	0.00	0.00	7,635.72	-326.33	1,581.09	1,614.42	0.00	0.00	0.00
8,000.00	0.00	0.00	7,735.72	-326.33	1,581.09	1,614.42	0.00	0.00	0.00
CODELL									
8,056.28	0.00	0.00	7,792.00	-326.33	1,581.09	1,614.42	0.00	0.00	0.00
8,100.00	0.00	0.00	7,835.72	-326.33	1,581.09	1,614.42	0.00	0.00	0.00
8,200.00	0.00	0.00	7,935.72	-326.33	1,581.09	1,614.42	0.00	0.00	0.00
8,300.00	0.00	0.00	8,035.72	-326.33	1,581.09	1,614.42	0.00	0.00	0.00
8,400.00	0.00	0.00	8,135.72	-326.33	1,581.09	1,614.42	0.00	0.00	0.00
JSAND									
8,466.28	0.00	0.00	8,202.00	-326.33	1,581.09	1,614.42	0.00	0.00	0.00
8,500.00	0.00	0.00	8,235.72	-326.33	1,581.09	1,614.42	0.00	0.00	0.00
8,600.00	0.00	0.00	8,335.72	-326.33	1,581.09	1,614.42	0.00	0.00	0.00
PBHL_KERR-MCGEE 23-3(1350 FSL 2590 FEL)50'TGT RAD									
8,619.28	0.00	0.00	8,355.00	-326.33	1,581.09	1,614.42	0.00	0.00	0.00

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_KERR-MCGEE 23-3
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 5057.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 5057.00ft (Original Well Elev)
Site:	WELD_KERR MCGEE 19-3 PAD	North Reference:	True
Well:	P_KERR-MCGEE 23-3	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_KERR-MCGEE 23-3		
Design:	PLAN #1 1-15-10 RHS		

Design Targets									
Target Name									
- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- Shape									
PBHL_KERR-MCGEE	0.00	0.00	8,355.00	-326.33	1,581.09	1,271,208.27	3,142,938.70	40° 4' 36.217 N	104° 59' 21.145 W
- plan hits target center									
- Circle (radius 50.00)									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
950.00	950.00	8 5/8"	8.62	11.00	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
4,019.11	3,880.00	PARKMAN				
4,657.68	4,480.00	SUSSEX				
5,317.53	5,100.00	SHANNON				
7,757.28	7,493.00	NIO A				
8,056.28	7,792.00	CODELL				
8,466.28	8,202.00	JSAND				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
1,050.00	1,050.00	0.00	0.00	Start Build 2.00	
2,050.75	2,030.52	-34.97	169.45	Start 3705.77 hold at 2050.75 MD	
5,756.53	5,512.48	-291.36	1,411.64	Start Drop -2.00	
6,757.28	6,493.00	-326.33	1,581.09	Start 1862.00 hold at 6757.28 MD	
8,619.28	8,355.00	-326.33	1,581.09	TD at 8619.28	



US ROCKIES REGION PLANNING

**COLORADO NORTHERN ZONE - 83
WELD_KERR MCGEE 19-3 PAD
P_KERR-MCGEE 23-3**

**P_KERR-MCGEE 23-3
PLAN #1 1-15-10 RHS**

Anticollision Report

15 January, 2010



Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_KERR-MCGEE 23-3
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5057.00ft (Original Well Elev)
Reference Site:	WELD_KERR MCGEE 19-3 PAD	MD Reference:	WELL @ 5057.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_KERR-MCGEE 23-3	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_KERR-MCGEE 23-3	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-15-10 RHS	Offset TVD Reference:	Offset Datum

Reference	PLAN #1 1-15-10 RHS		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	0.00 to 20,000.00ft	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.00ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program	Date	1/15/2010		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	8,619.28	PLAN #1 1-15-10 RHS (P_KERR-MCGEE	MWD	MWD - Standard

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
WELD_KERR MCGEE 19-3 PAD						
KERR-MCGEE #19-3i EXISTING - KERR-MCGEE #19-3	1,453.72	1,446.39	38.22	-20.74	0.648	Level 1, CC
KERR-MCGEE #19-3i EXISTING - KERR-MCGEE #19-3	1,500.00	1,492.15	38.83	-22.05	0.638	Level 1, ES, SF
P_KERR-MCGEE 10-3 - P_KERR-MCGEE 10-3 - PLAN	1,050.00	1,050.00	29.93	-12.00	0.714	Level 1, CC
P_KERR-MCGEE 10-3 - P_KERR-MCGEE 10-3 - PLAN	1,100.00	1,100.27	30.03	-13.14	0.696	Level 1, SF
P_KERR-MCGEE 10-3 - P_KERR-MCGEE 10-3 - PLAN	1,200.00	1,200.81	30.90	-13.23	0.700	Level 1, ES
P_KERR-MCGEE 11-3 - P_KERR-MCGEE 11-3 - PLAN	1,050.00	1,050.00	50.01	45.55	11.209	CC
P_KERR-MCGEE 11-3 - P_KERR-MCGEE 11-3 - PLAN	1,100.00	1,100.33	50.19	45.51	10.739	ES
P_KERR-MCGEE 11-3 - P_KERR-MCGEE 11-3 - PLAN	1,300.00	1,301.51	54.44	48.95	9.918	SF
P_KERR-MCGEE 12-3 - P_KERR-MCGEE 12-3 - PLAN	1,050.00	1,050.00	80.39	75.93	18.018	CC, ES
P_KERR-MCGEE 12-3 - P_KERR-MCGEE 12-3 - PLAN	1,200.00	1,195.81	87.05	81.98	17.176	SF
P_KERR-MCGEE 13-3 - P_KERR-MCGEE 13-3 - PLAN	1,050.00	1,050.00	39.73	35.27	8.905	CC
P_KERR-MCGEE 13-3 - P_KERR-MCGEE 13-3 - PLAN	1,100.00	1,100.30	39.88	35.22	8.550	ES
P_KERR-MCGEE 13-3 - P_KERR-MCGEE 13-3 - PLAN	1,200.00	1,200.66	41.47	36.44	8.244	SF
P_KERR-MCGEE 14-3 - P_KERR-MCGEE 14-3 - PLAN	1,050.00	1,050.00	10.00	5.54	2.241	CC
P_KERR-MCGEE 14-3 - P_KERR-MCGEE 14-3 - PLAN	1,100.00	1,099.82	10.09	5.43	2.164	ES, SF
P_KERR-MCGEE 15-3 - P_KERR-MCGEE 15-3 - PLAN	1,050.00	1,050.00	20.09	15.63	4.503	CC
P_KERR-MCGEE 15-3 - P_KERR-MCGEE 15-3 - PLAN	1,100.00	1,099.68	20.16	15.49	4.320	ES
P_KERR-MCGEE 15-3 - P_KERR-MCGEE 15-3 - PLAN	1,300.00	1,298.34	21.95	16.52	4.037	SF
P_KERR-MCGEE 19-3 - P_KERR-MCGEE 19-3 - PLAN	1,181.88	1,182.29	9.75	4.79	1.965	CC
P_KERR-MCGEE 19-3 - P_KERR-MCGEE 19-3 - PLAN	1,200.00	1,200.44	9.78	4.76	1.946	ES, SF
P_KERR-MCGEE 22-3 - P_KERR-MCGEE 22-3 - PLAN	1,050.00	1,050.00	70.11	65.65	15.714	CC, ES
P_KERR-MCGEE 22-3 - P_KERR-MCGEE 22-3 - PLAN	1,200.00	1,197.91	75.19	70.10	14.782	SF
P_KERR-MCGEE 33-3 - P_KERR-MCGEE 33-3 - PLAN	1,050.00	1,050.00	60.12	55.65	13.474	CC, ES
P_KERR-MCGEE 33-3 - P_KERR-MCGEE 33-3 - PLAN	1,200.00	1,198.69	64.60	59.55	12.801	SF
P_KERR-MCGEE 35-3 - P_KERR-MCGEE 35-3 - PLAN	1,151.18	1,151.76	19.81	14.96	4.084	CC
P_KERR-MCGEE 35-3 - P_KERR-MCGEE 35-3 - PLAN	1,200.00	1,200.78	19.96	14.93	3.971	ES, SF

WELD_KERR MCGEE 19-3 PAD - KERR-MCGEE #19-3i EXISTING - KERR-MCGEE #19-3i EXISTING												Offset Site Error:	0.00 ft
Survey Program: 0-UNKNOWN												Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth	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	48.28	31.69	35.54	47.99				
100.00	100.00	94.00	94.00	0.10	1.88	48.28	31.69	35.54	47.61	45.64	1.98	24.102	

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_KERR-MCGEE 23-3
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5057.00ft (Original Well Elev)
Reference Site:	WELD_KERR MCGEE 19-3 PAD	MD Reference:	WELL @ 5057.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_KERR-MCGEE 23-3	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_KERR-MCGEE 23-3	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-15-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 0-UNKNOWN													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
200.00	200.00	194.00	194.00	0.32	5.76	48.28	31.69	35.54	47.61	41.53	6.08	7.831		
300.00	300.00	294.00	294.00	0.55	9.76	48.28	31.69	35.54	47.61	37.31	10.31	4.621		
400.00	400.00	394.00	394.00	0.77	13.76	48.28	31.69	35.54	47.61	33.08	14.53	3.277		
500.00	500.00	494.00	494.00	0.99	17.76	48.28	31.69	35.54	47.61	28.86	18.75	2.539		
600.00	600.00	594.00	594.00	1.22	21.76	48.28	31.69	35.54	47.61	24.64	22.98	2.072		
700.00	700.00	694.00	694.00	1.44	25.76	48.28	31.69	35.54	47.61	20.41	27.20	1.750		
800.00	800.00	794.00	794.00	1.67	29.76	48.28	31.69	35.54	47.61	16.19	31.43	1.515		
900.00	900.00	894.00	894.00	1.89	33.76	48.28	31.69	35.54	47.61	11.96	35.65	1.335 Level 3		
1,000.00	1,000.00	994.00	994.00	2.12	37.76	48.28	31.69	35.54	47.61	7.74	39.88	1.194 Level 2		
1,050.00	1,050.00	1,044.00	1,044.00	2.23	39.76	48.28	31.69	35.54	47.61	5.62	41.99	1.134 Level 2		
1,100.00	1,100.00	1,094.00	1,094.00	2.33	41.76	-53.81	31.69	35.54	47.36	3.26	44.09	1.074 Level 2		
1,200.00	1,199.93	1,193.93	1,193.93	2.53	45.76	-57.40	31.69	35.54	45.38	-2.89	48.27	0.940 Level 1		
1,300.00	1,299.68	1,293.68	1,293.68	2.74	49.75	-65.48	31.69	35.54	42.03	-10.42	52.45	0.801 Level 1		
1,400.00	1,399.13	1,393.13	1,393.13	2.97	53.73	-79.63	31.69	35.54	38.86	-17.81	56.68	0.686 Level 1		
1,453.72	1,452.39	1,446.39	1,446.39	3.10	55.86	-90.00	31.69	35.54	38.22	-20.74	58.96	0.648 Level 1, CC		
1,500.00	1,498.15	1,492.15	1,492.15	3.22	57.69	-100.07	31.69	35.54	38.83	-22.05	60.88	0.638 Level 1, ES, SF		
1,600.00	1,596.63	1,590.63	1,590.63	3.51	61.63	-121.90	31.69	35.54	45.25	-19.51	64.76	0.699 Level 1		
1,700.00	1,694.44	1,688.44	1,688.44	3.84	65.54	-138.94	31.69	35.54	59.06	-9.18	68.24	0.865 Level 1		
1,800.00	1,791.46	1,785.46	1,785.46	4.22	69.42	-150.25	31.69	35.54	79.07	7.56	71.50	1.106 Level 2		
1,900.00	1,887.58	1,881.58	1,881.58	4.67	73.26	-157.56	31.69	35.54	104.05	29.44	74.61	1.395 Level 3		
2,000.00	1,982.68	1,976.68	1,976.68	5.19	77.07	-162.43	31.69	35.54	133.27	55.72	77.56	1.718		
2,050.75	2,030.52	2,024.52	2,024.52	5.48	78.98	-164.29	31.69	35.54	149.59	70.60	78.99	1.894		
2,100.00	2,076.80	2,070.80	2,070.80	5.77	80.83	-165.86	31.69	35.54	165.94	85.15	80.79	2.054		
2,200.00	2,170.76	2,164.76	2,164.76	6.38	84.59	-168.26	31.69	35.54	199.40	114.90	84.51	2.360		
2,300.00	2,264.72	2,258.72	2,258.72	7.02	88.35	-169.97	31.69	35.54	233.09	144.83	88.26	2.641		
2,400.00	2,358.68	2,352.68	2,352.68	7.67	92.11	-171.25	31.69	35.54	266.91	174.87	92.04	2.900		
2,500.00	2,452.64	2,446.64	2,446.64	8.33	95.87	-172.24	31.69	35.54	300.83	204.99	95.83	3.139		
2,600.00	2,546.60	2,540.60	2,540.60	9.00	99.62	-173.03	31.69	35.54	334.80	235.16	99.64	3.360		
2,700.00	2,640.56	2,634.56	2,634.56	9.68	103.38	-173.67	31.69	35.54	368.83	265.37	103.45	3.565		
2,800.00	2,734.52	2,728.52	2,728.52	10.36	107.14	-174.21	31.69	35.54	402.88	295.61	107.27	3.756		
2,900.00	2,828.48	2,822.48	2,822.48	11.05	110.90	-174.66	31.69	35.54	436.97	325.87	111.10	3.933		
3,000.00	2,922.44	2,916.44	2,916.44	11.74	114.66	-175.05	31.69	35.54	471.07	356.14	114.93	4.099		
3,100.00	3,016.40	3,010.40	3,010.40	12.44	118.42	-175.38	31.69	35.54	505.20	386.43	118.76	4.254		
3,200.00	3,110.36	3,104.36	3,104.36	13.14	122.17	-175.68	31.69	35.54	539.33	416.73	122.60	4.399		
3,300.00	3,204.32	3,198.32	3,198.32	13.84	125.93	-175.93	31.69	35.54	573.48	447.04	126.44	4.536		
3,400.00	3,298.28	3,292.28	3,292.28	14.54	129.69	-176.16	31.69	35.54	607.63	477.35	130.28	4.664		
3,500.00	3,392.24	3,386.24	3,386.24	15.25	133.45	-176.37	31.69	35.54	641.79	507.67	134.13	4.785		
3,600.00	3,486.20	3,480.20	3,480.20	15.95	137.21	-176.55	31.69	35.54	675.96	537.99	137.97	4.899		
3,700.00	3,580.16	3,574.16	3,574.16	16.66	140.97	-176.72	31.69	35.54	710.14	568.32	141.82	5.007		
3,800.00	3,674.12	3,668.12	3,668.12	17.37	144.72	-176.87	31.69	35.54	744.32	598.65	145.66	5.110		
3,900.00	3,768.08	3,762.08	3,762.08	18.08	148.48	-177.01	31.69	35.54	778.50	628.99	149.51	5.207		
4,000.00	3,862.04	3,856.04	3,856.04	18.79	152.24	-177.13	31.69	35.54	812.69	659.33	153.36	5.299		
4,100.00	3,956.00	3,950.00	3,950.00	19.50	156.00	-177.25	31.69	35.54	846.88	689.67	157.21	5.387		
4,200.00	4,049.96	4,043.96	4,043.96	20.21	159.76	-177.35	31.69	35.54	881.07	720.01	161.06	5.470		
4,300.00	4,143.92	4,137.92	4,137.92	20.92	163.52	-177.45	31.69	35.54	915.27	750.35	164.91	5.550		
4,400.00	4,237.88	4,231.88	4,231.88	21.64	167.28	-177.55	31.69	35.54	949.46	780.70	168.77	5.626		
4,500.00	4,331.84	4,325.84	4,325.84	22.35	171.03	-177.63	31.69	35.54	983.66	811.04	172.62	5.698		
4,600.00	4,425.80	4,419.80	4,419.80	23.06	174.79	-177.71	31.69	35.54	1,017.87	841.39	176.47	5.768		
4,700.00	4,519.76	4,513.76	4,513.76	23.78	178.55	-177.78	31.69	35.54	1,052.07	871.74	180.33	5.834		
4,800.00	4,613.72	4,607.72	4,607.72	24.49	182.31	-177.85	31.69	35.54	1,086.27	902.09	184.18	5.898		
4,900.00	4,707.68	4,701.68	4,701.68	25.21	186.07	-177.92	31.69	35.54	1,120.48	932.44	188.04	5.959		
5,000.00	4,801.64	4,795.64	4,795.64	25.92	189.83	-177.98	31.69	35.54	1,154.69	962.80	191.89	6.017		

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_KERR-MCGEE 23-3
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5057.00ft (Original Well Elev)
Reference Site:	WELD_KERR MCGEE 19-3 PAD	MD Reference:	WELL @ 5057.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_KERR-MCGEE 23-3	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_KERR-MCGEE 23-3	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-15-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 ft
Survey Program: 0-UNKNOWN												Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						
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
5,100.00	4,895.60	4,889.60	4,889.60	26.64	193.58	-178.04	31.69	35.54	1,188.90	993.15	195.75	6.074	
5,200.00	4,989.56	4,983.56	4,983.56	27.36	197.34	-178.09	31.69	35.54	1,223.11	1,023.50	199.60	6.128	
5,300.00	5,083.52	5,077.52	5,077.52	28.07	201.10	-178.15	31.69	35.54	1,257.32	1,053.86	203.46	6.180	
5,400.00	5,177.48	5,171.48	5,171.48	28.79	204.86	-178.20	31.69	35.54	1,291.53	1,084.21	207.32	6.230	
5,500.00	5,271.44	5,265.44	5,265.44	29.51	208.62	-178.24	31.69	35.54	1,325.74	1,114.57	211.18	6.278	
5,600.00	5,365.41	5,359.41	5,359.41	30.22	212.38	-178.29	31.69	35.54	1,359.95	1,144.92	215.03	6.324	
5,700.00	5,459.37	5,453.37	5,453.37	30.94	216.13	-178.33	31.69	35.54	1,394.17	1,175.28	218.89	6.369	
5,756.53	5,512.48	5,506.48	5,506.48	31.35	218.26	-178.35	31.69	35.54	1,413.51	1,192.44	221.07	6.394	
5,800.00	5,553.44	5,547.44	5,547.44	31.62	219.90	-178.38	31.69	35.54	1,428.07	1,204.24	223.84	6.380	
5,900.00	5,648.46	5,642.46	5,642.46	32.13	223.70	-178.43	31.69	35.54	1,459.20	1,229.05	230.15	6.340	
6,000.00	5,744.51	5,738.51	5,738.51	32.60	227.54	-178.47	31.69	35.54	1,487.00	1,250.71	236.29	6.293	
6,100.00	5,841.47	5,835.47	5,835.47	33.01	231.42	-178.51	31.69	35.54	1,511.43	1,269.20	242.23	6.240	
6,200.00	5,939.23	5,933.23	5,933.23	33.37	235.33	-178.54	31.69	35.54	1,532.46	1,284.51	247.95	6.180	
6,300.00	6,037.66	6,031.66	6,031.66	33.68	239.27	-178.57	31.69	35.54	1,550.07	1,296.63	253.44	6.116	
6,400.00	6,136.65	6,130.65	6,130.65	33.95	243.23	-178.59	31.69	35.54	1,564.23	1,305.56	258.67	6.047	
6,500.00	6,236.07	6,230.07	6,230.07	34.16	247.20	-178.60	31.69	35.54	1,574.93	1,311.31	263.62	5.974	
6,600.00	6,335.80	6,329.80	6,329.80	34.33	251.19	-178.61	31.69	35.54	1,582.16	1,313.88	268.28	5.897	
6,700.00	6,435.73	6,429.73	6,429.73	34.45	255.19	-178.62	31.69	35.54	1,585.90	1,313.29	272.61	5.817	
6,757.28	6,493.00	6,487.00	6,487.00	34.50	257.48	-76.96	31.69	35.54	1,586.48	1,311.53	274.95	5.770	
6,800.00	6,535.72	6,529.72	6,529.72	34.54	259.19	-76.96	31.69	35.54	1,586.48	1,309.75	276.73	5.733	
6,900.00	6,635.72	6,629.72	6,629.72	34.63	263.19	-76.96	31.69	35.54	1,586.48	1,305.59	280.88	5.648	
7,000.00	6,735.72	6,729.72	6,729.72	34.72	267.19	-76.96	31.69	35.54	1,586.48	1,301.43	285.04	5.566	
7,100.00	6,835.72	6,829.72	6,829.72	34.81	271.19	-76.96	31.69	35.54	1,586.48	1,297.27	289.20	5.486	
7,200.00	6,935.72	6,929.72	6,929.72	34.90	275.19	-76.96	31.69	35.54	1,586.48	1,293.11	293.36	5.408	
7,300.00	7,035.72	7,029.72	7,029.72	34.99	279.19	-76.96	31.69	35.54	1,586.48	1,288.95	297.53	5.332	
7,400.00	7,135.72	7,129.72	7,129.72	35.09	283.19	-76.96	31.69	35.54	1,586.48	1,284.78	301.69	5.259	
7,500.00	7,235.72	7,229.72	7,229.72	35.19	287.19	-76.96	31.69	35.54	1,586.48	1,280.62	305.86	5.187	
7,600.00	7,335.72	7,329.72	7,329.72	35.28	291.19	-76.96	31.69	35.54	1,586.48	1,276.45	310.03	5.117	
7,700.00	7,435.72	7,429.72	7,429.72	35.38	295.19	-76.96	31.69	35.54	1,586.48	1,272.28	314.19	5.049	
7,800.00	7,535.72	7,529.72	7,529.72	35.48	299.19	-76.96	31.69	35.54	1,586.48	1,268.11	318.36	4.983	
7,900.00	7,635.72	7,629.72	7,629.72	35.58	303.19	-76.96	31.69	35.54	1,586.48	1,263.94	322.53	4.919	
8,000.00	7,735.72	7,729.72	7,729.72	35.68	307.19	-76.96	31.69	35.54	1,586.48	1,259.77	326.71	4.856	
8,100.00	7,835.72	7,829.72	7,829.72	35.78	311.19	-76.96	31.69	35.54	1,586.48	1,255.60	330.88	4.795	
8,200.00	7,935.72	7,929.72	7,929.72	35.89	315.19	-76.96	31.69	35.54	1,586.48	1,251.42	335.05	4.735	
8,300.00	8,035.72	8,029.72	8,029.72	35.99	319.19	-76.96	31.69	35.54	1,586.48	1,247.25	339.23	4.677	
8,400.00	8,135.72	8,129.72	8,129.72	36.10	323.19	-76.96	31.69	35.54	1,586.48	1,243.07	343.40	4.620	
8,500.00	8,235.72	8,229.72	8,229.72	36.21	327.19	-76.96	31.69	35.54	1,586.48	1,238.90	347.58	4.564	
8,600.00	8,335.72	8,329.72	8,329.72	36.32	331.19	-76.96	31.69	35.54	1,586.48	1,234.72	351.76	4.510	
8,619.28	8,355.00	8,349.00	8,349.00	36.34	331.96	-76.96	31.69	35.54	1,586.48	1,233.91	352.56	4.500	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_KERR-MCGEE 23-3
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5057.00ft (Original Well Elev)
Reference Site:	WELD_KERR MCGEE 19-3 PAD	MD Reference:	WELL @ 5057.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_KERR-MCGEE 23-3	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_KERR-MCGEE 23-3	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-15-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_KERR MCGEE 19-3 PAD - P_KERR-MCGEE 10-3 - P_KERR-MCGEE 10-3 - PLAN #1 1-15-10												Offset Site Error:	0.00 ft
Survey Program: 0-UNKNOWN												Offset Well Error:	0.00 ft
Reference	Offset	Semi Major Axis					Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
0.00	0.00	0.00	0.00	0.00	0.00	-38.79	23.33	-18.75	29.93				
100.00	100.00	100.00	100.00	0.10	1.70	-38.79	23.33	-18.75	29.93	28.13	1.80	16.668	
200.00	200.00	200.00	200.00	0.32	5.70	-38.79	23.33	-18.75	29.93	23.91	6.02	4.971	
300.00	300.00	300.00	300.00	0.55	9.70	-38.79	23.33	-18.75	29.93	19.68	10.25	2.921	
400.00	400.00	400.00	400.00	0.77	13.70	-38.79	23.33	-18.75	29.93	15.46	14.47	2.068	
500.00	500.00	500.00	500.00	0.99	17.70	-38.79	23.33	-18.75	29.93	11.23	18.69	1.601	
600.00	600.00	600.00	600.00	1.22	21.70	-38.79	23.33	-18.75	29.93	7.01	22.92	1.306	Level 3
700.00	700.00	700.00	700.00	1.44	25.70	-38.79	23.33	-18.75	29.93	2.78	27.14	1.103	Level 2
800.00	800.00	800.00	800.00	1.67	29.70	-38.79	23.33	-18.75	29.93	-1.44	31.37	0.954	Level 1
900.00	900.00	900.00	900.00	1.89	33.70	-38.79	23.33	-18.75	29.93	-5.67	35.59	0.841	Level 1
1,000.00	1,000.00	1,000.00	1,000.00	2.12	37.70	-38.79	23.33	-18.75	29.93	-9.89	39.82	0.752	Level 1
1,050.00	1,050.00	1,050.00	1,050.00	2.23	39.70	-38.79	23.33	-18.75	29.93	-12.00	41.93	0.714	Level 1, CC
1,100.00	1,100.00	1,100.27	1,100.27	2.33	40.84	-140.27	23.38	-18.31	30.03	-13.14	43.17	0.696	Level 1, SF
1,200.00	1,199.93	1,200.81	1,200.74	2.53	41.63	-138.83	23.82	-14.81	30.90	-13.23	44.13	0.700	Level 1, ES
1,300.00	1,299.68	1,301.32	1,301.00	2.74	42.81	-136.19	24.71	-7.82	32.68	-12.76	45.44	0.719	Level 1
1,400.00	1,399.13	1,401.78	1,400.90	2.97	44.34	-132.74	26.03	2.65	35.46	-11.63	47.09	0.753	Level 1
1,500.00	1,498.15	1,502.17	1,500.29	3.22	46.23	-128.92	27.78	16.58	39.32	-9.77	49.09	0.801	Level 1
1,600.00	1,596.63	1,602.46	1,599.05	3.51	48.46	-125.10	29.97	33.94	44.33	-7.12	51.45	0.862	Level 1
1,700.00	1,694.44	1,702.65	1,697.02	3.84	51.03	-121.52	32.59	54.69	50.53	-3.66	54.19	0.932	Level 1
1,800.00	1,791.46	1,802.71	1,794.08	4.22	53.93	-118.32	35.64	78.80	57.92	0.60	57.32	1.011	Level 2
1,900.00	1,887.58	1,902.63	1,890.10	4.67	57.15	-115.52	39.09	106.21	66.50	5.67	60.83	1.093	Level 2
2,000.00	1,982.68	2,002.38	1,984.94	5.19	60.69	-113.12	42.96	136.87	76.24	11.52	64.72	1.178	Level 2
2,050.75	2,030.52	2,052.95	2,032.58	5.48	62.64	-112.04	45.08	153.66	81.63	14.75	66.88	1.221	Level 2
2,100.00	2,076.80	2,101.97	2,078.48	5.77	64.54	-110.91	47.24	170.73	86.98	17.90	69.07	1.259	Level 3
2,200.00	2,170.76	2,201.29	2,170.55	6.38	68.70	-107.48	51.90	207.70	97.91	23.98	73.93	1.324	Level 3
2,300.00	2,264.72	2,300.23	2,260.98	7.02	73.16	-103.04	56.93	247.51	109.35	30.23	79.12	1.382	Level 3
2,400.00	2,358.68	2,399.18	2,351.08	7.67	77.82	-99.05	62.05	288.10	121.43	37.02	84.41	1.439	Level 3
2,500.00	2,452.64	2,498.12	2,441.17	8.33	82.63	-95.80	67.17	328.69	134.00	44.25	89.75	1.493	Level 3
2,600.00	2,546.60	2,597.07	2,531.26	9.00	87.56	-93.10	72.29	369.28	146.91	51.80	95.11	1.545	
2,700.00	2,640.56	2,696.01	2,621.35	9.68	92.60	-90.84	77.41	409.86	160.10	59.59	100.51	1.593	
2,800.00	2,734.52	2,794.96	2,711.44	10.36	97.72	-88.93	82.53	450.45	173.50	67.56	105.93	1.638	
2,900.00	2,828.48	2,893.90	2,801.53	11.05	102.92	-87.30	87.66	491.04	187.05	75.68	111.38	1.679	
3,000.00	2,922.44	2,992.85	2,891.63	11.74	108.19	-85.88	92.78	531.63	200.74	83.89	116.85	1.718	
3,100.00	3,016.40	3,091.79	2,981.72	12.44	113.51	-84.65	97.90	572.22	214.53	92.20	122.33	1.754	
3,200.00	3,110.36	3,190.74	3,071.81	13.14	118.88	-83.56	103.02	612.80	228.41	100.57	127.84	1.787	
3,300.00	3,204.32	3,289.68	3,161.90	13.84	124.29	-82.60	108.14	653.39	242.36	109.00	133.37	1.817	
3,400.00	3,298.28	3,388.63	3,251.99	14.54	129.73	-81.74	113.26	693.98	256.37	117.46	138.91	1.846	
3,500.00	3,392.24	3,487.57	3,342.08	15.25	135.21	-80.98	118.39	734.57	270.43	125.97	144.46	1.872	
3,600.00	3,486.20	3,586.52	3,432.18	15.95	140.72	-80.29	123.51	775.16	284.53	134.50	150.03	1.897	
3,700.00	3,580.16	3,685.46	3,522.27	16.66	146.25	-79.66	128.63	815.74	298.67	143.06	155.61	1.919	
3,800.00	3,674.12	3,784.41	3,612.36	17.37	151.81	-79.09	133.75	856.33	312.85	151.64	161.20	1.941	
3,900.00	3,768.08	3,883.35	3,702.45	18.08	157.38	-78.57	138.87	896.92	327.04	160.24	166.80	1.961	
4,000.00	3,862.04	3,982.30	3,792.54	18.79	162.97	-78.09	143.99	937.51	341.27	168.85	172.41	1.979	
4,100.00	3,956.00	4,081.24	3,882.63	19.50	168.58	-77.65	149.12	978.10	355.51	177.48	178.03	1.997	
4,200.00	4,049.96	4,180.19	3,972.73	20.21	174.21	-77.25	154.24	1,018.68	369.78	186.12	183.66	2.013	
4,300.00	4,143.92	4,279.13	4,062.82	20.92	179.84	-76.87	159.36	1,059.27	384.06	194.76	189.30	2.029	
4,400.00	4,237.88	4,378.08	4,152.91	21.64	185.49	-76.53	164.48	1,099.86	398.35	203.42	194.94	2.043	
4,500.00	4,331.84	4,477.02	4,243.00	22.35	191.15	-76.20	169.60	1,140.45	412.66	212.08	200.58	2.057	
4,600.00	4,425.80	4,575.97	4,333.09	23.06	196.82	-75.90	174.72	1,181.04	426.98	220.74	206.24	2.070	
4,700.00	4,519.76	4,674.91	4,423.18	23.78	202.50	-75.62	179.85	1,221.62	441.31	229.42	211.90	2.083	
4,800.00	4,613.72	4,773.86	4,513.28	24.49	208.19	-75.35	184.97	1,262.21	455.65	238.09	217.56	2.094	
4,900.00	4,707.68	4,872.80	4,603.37	25.21	213.89	-75.10	190.09	1,302.80	470.00	246.78	223.23	2.105	

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_KERR-MCGEE 23-3
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5057.00ft (Original Well Elev)
Reference Site:	WELD_KERR MCGEE 19-3 PAD	MD Reference:	WELL @ 5057.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_KERR-MCGEE 23-3	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_KERR-MCGEE 23-3	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-15-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 ft
WELD_KERR MCGEE 19-3 PAD - P_KERR-MCGEE 10-3 - P_KERR-MCGEE 10-3 - PLAN #1 1-15-10												Offset Well Error:	0.00 ft
Survey Program: 0-UNKNOWN													
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	4,801.64	4,971.75	4,693.46	25.92	219.59	-74.87	195.21	1,343.39	484.36	255.46	228.90	2.116	
5,100.00	4,895.60	5,070.69	4,783.55	26.64	225.30	-74.65	200.33	1,383.98	498.73	264.15	234.58	2.126	
5,200.00	4,989.56	5,169.64	4,873.64	27.36	231.01	-74.44	205.45	1,424.56	513.10	272.84	240.26	2.136	
5,300.00	5,083.52	5,268.58	4,963.73	28.07	236.73	-74.25	210.58	1,465.15	527.48	281.54	245.94	2.145	
5,400.00	5,177.48	5,367.53	5,053.82	28.79	242.46	-74.06	215.70	1,505.74	541.87	290.24	251.63	2.153	
5,500.00	5,271.44	5,466.47	5,143.92	29.51	248.19	-73.88	220.82	1,546.33	556.26	298.94	257.32	2.162	
5,600.00	5,365.41	5,565.42	5,234.01	30.22	253.93	-73.71	225.94	1,586.92	570.65	307.64	263.01	2.170	
5,700.00	5,459.37	5,664.36	5,324.10	30.94	259.67	-73.56	231.06	1,627.50	585.05	316.34	268.71	2.177	
5,756.53	5,512.48	5,720.29	5,375.02	31.35	262.92	-73.47	233.96	1,650.45	593.19	321.26	271.93	2.181	
5,800.00	5,553.44	5,763.29	5,414.17	31.62	265.41	-73.50	236.18	1,668.08	599.55	325.23	274.31	2.186	
5,900.00	5,648.46	5,861.99	5,504.05	32.13	271.15	-73.36	241.29	1,708.57	614.89	335.46	279.42	2.201	
6,000.00	5,744.51	5,960.33	5,593.58	32.60	276.86	-72.95	246.38	1,748.91	631.28	347.18	284.10	2.222	
6,100.00	5,841.47	6,058.18	5,682.68	33.01	282.55	-72.32	251.45	1,789.05	648.82	360.49	288.33	2.250	
6,200.00	5,939.23	6,155.42	5,771.22	33.37	288.21	-71.47	256.48	1,828.94	667.64	375.55	292.09	2.286	
6,300.00	6,037.66	6,251.94	5,859.10	33.68	293.83	-70.46	261.48	1,868.53	687.90	392.52	295.37	2.329	
6,400.00	6,136.65	6,347.61	5,946.21	33.95	299.41	-69.30	266.43	1,907.78	709.76	411.60	298.16	2.380	
6,500.00	6,236.07	6,446.18	6,036.00	34.16	305.13	-67.96	271.52	1,948.13	733.36	432.84	300.52	2.440	
6,600.00	6,335.80	6,561.18	6,141.99	34.33	311.61	-66.34	277.11	1,992.39	757.17	454.38	302.79	2.501	
6,700.00	6,435.73	6,678.08	6,251.48	34.45	317.91	-64.78	282.23	2,033.01	780.32	475.60	304.72	2.561	
6,757.28	6,493.00	6,745.91	6,315.74	34.50	321.40	37.76	284.95	2,054.54	793.24	487.58	305.67	2.595	
6,800.00	6,535.72	6,797.02	6,364.49	34.54	324.00	38.55	286.87	2,069.76	802.58	496.16	306.42	2.619	
6,900.00	6,635.72	6,918.82	6,481.71	34.63	329.86	40.19	291.01	2,102.53	822.63	514.16	308.47	2.667	
7,000.00	6,735.72	7,043.35	6,602.91	34.72	335.49	41.52	294.59	2,130.90	839.92	528.92	311.00	2.701	
7,100.00	6,835.72	7,170.24	6,727.56	34.81	340.86	42.58	297.55	2,154.41	854.18	540.18	313.99	2.720	
7,200.00	6,935.72	7,299.03	6,855.02	34.90	345.95	43.37	299.85	2,172.64	865.19	547.74	317.44	2.725	
7,300.00	7,035.72	7,429.25	6,984.60	34.99	350.65	43.90	301.45	2,185.28	872.79	551.49	321.30	2.716	
7,400.00	7,135.72	7,560.36	7,115.51	35.09	355.02	44.18	302.31	2,192.09	876.87	551.33	325.54	2.694	
7,500.00	7,235.72	7,680.58	7,235.72	35.19	357.47	44.24	302.46	2,193.32	877.61	549.37	328.25	2.674	
7,600.00	7,335.72	7,780.58	7,335.72	35.28	358.34	44.24	302.46	2,193.32	877.61	548.35	329.27	2.665	
7,700.00	7,435.72	7,880.58	7,435.72	35.38	359.26	44.24	302.46	2,193.32	877.61	547.28	330.34	2.657	
7,800.00	7,535.72	7,980.58	7,535.72	35.48	360.22	44.24	302.46	2,193.32	877.61	546.15	331.46	2.648	
7,900.00	7,635.72	8,080.58	7,635.72	35.58	361.22	44.24	302.46	2,193.32	877.61	544.98	332.63	2.638	
8,000.00	7,735.72	8,180.58	7,735.72	35.68	362.26	44.24	302.46	2,193.32	877.61	543.76	333.86	2.629	
8,100.00	7,835.72	8,280.58	7,835.72	35.78	363.34	44.24	302.46	2,193.32	877.61	542.49	335.13	2.619	
8,200.00	7,935.72	8,380.58	7,935.72	35.89	364.46	44.24	302.46	2,193.32	877.61	541.16	336.45	2.608	
8,300.00	8,035.72	8,480.58	8,035.72	35.99	365.62	44.24	302.46	2,193.32	877.61	539.79	337.82	2.598	
8,400.00	8,135.72	8,580.58	8,135.72	36.10	366.83	44.24	302.46	2,193.32	877.61	538.37	339.24	2.587	
8,500.00	8,235.72	8,680.58	8,235.72	36.21	368.07	44.24	302.46	2,193.32	877.61	536.91	340.71	2.576	
8,600.00	8,335.72	8,780.58	8,335.72	36.32	369.35	44.24	302.46	2,193.32	877.61	535.39	342.22	2.564	
8,605.60	8,341.32	8,786.18	8,341.32	36.32	369.43	44.24	302.46	2,193.32	877.61	535.31	342.31	2.564	
8,619.28	8,355.00	8,794.85	8,350.00	36.34	369.54	44.24	302.46	2,193.32	877.63	535.18	342.44	2.563	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_KERR-MCGEE 23-3
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5057.00ft (Original Well Elev)
Reference Site:	WELD_KERR MCGEE 19-3 PAD	MD Reference:	WELL @ 5057.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_KERR-MCGEE 23-3	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_KERR-MCGEE 23-3	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-15-10 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	-38.81	38.97	-31.34	50.01				
100.00	100.00	100.00	100.00	0.10	0.10	-38.81	38.97	-31.34	50.01	49.82	0.19	261.774	
200.00	200.00	200.00	200.00	0.32	0.32	-38.81	38.97	-31.34	50.01	49.37	0.64	78.073	
300.00	300.00	300.00	300.00	0.55	0.55	-38.81	38.97	-31.34	50.01	48.92	1.09	45.878	
400.00	400.00	400.00	400.00	0.77	0.77	-38.81	38.97	-31.34	50.01	48.47	1.54	32.483	
500.00	500.00	500.00	500.00	0.99	0.99	-38.81	38.97	-31.34	50.01	48.02	1.99	25.142	
600.00	600.00	600.00	600.00	1.22	1.22	-38.81	38.97	-31.34	50.01	47.57	2.44	20.508	
700.00	700.00	700.00	700.00	1.44	1.44	-38.81	38.97	-31.34	50.01	47.12	2.89	17.316	
800.00	800.00	800.00	800.00	1.67	1.67	-38.81	38.97	-31.34	50.01	46.67	3.34	14.984	
900.00	900.00	900.00	900.00	1.89	1.89	-38.81	38.97	-31.34	50.01	46.22	3.79	13.205	
1,000.00	1,000.00	1,000.00	1,000.00	2.12	2.12	-38.81	38.97	-31.34	50.01	45.78	4.24	11.804	
1,050.00	1,050.00	1,050.00	1,050.00	2.23	2.23	-38.81	38.97	-31.34	50.01	45.55	4.46	11.209 CC	
1,100.00	1,100.00	1,100.33	1,100.32	2.33	2.34	-140.32	39.10	-30.92	50.19	45.51	4.67	10.739 ES	
1,200.00	1,199.93	1,200.95	1,200.88	2.53	2.55	-139.14	40.13	-27.54	51.58	46.51	5.07	10.166	
1,300.00	1,299.68	1,301.51	1,301.19	2.74	2.77	-136.97	42.20	-20.79	54.44	48.95	5.49	9.918 SF	
1,400.00	1,399.13	1,401.96	1,401.07	2.97	3.00	-134.12	45.28	-10.69	58.84	52.91	5.93	9.926	
1,500.00	1,498.15	1,502.25	1,500.37	3.22	3.26	-130.92	49.37	2.73	64.88	58.47	6.41	10.124	
1,600.00	1,596.63	1,602.21	1,598.82	3.51	3.55	-127.80	54.42	19.26	72.66	65.71	6.95	10.455	
1,700.00	1,694.44	1,701.70	1,696.67	3.84	3.86	-126.63	59.69	36.52	82.54	74.99	7.54	10.945	
1,800.00	1,791.46	1,800.97	1,794.29	4.22	4.19	-127.36	64.95	53.75	94.50	86.33	8.17	11.571	
1,900.00	1,887.58	1,899.88	1,891.56	4.67	4.53	-129.31	70.19	70.91	108.65	99.84	8.82	12.324	
2,000.00	1,982.68	1,998.33	1,988.37	5.19	4.88	-131.95	75.40	87.99	125.21	115.74	9.48	13.215	
2,050.75	2,030.52	2,048.07	2,037.29	5.48	5.06	-133.42	78.04	96.62	134.62	124.81	9.81	13.722	
2,100.00	2,076.80	2,096.26	2,084.68	5.77	5.23	-134.90	80.59	104.98	144.13	133.98	10.15	14.199	
2,200.00	2,170.76	2,194.11	2,180.90	6.38	5.59	-137.39	85.77	121.96	163.69	152.84	10.85	15.087	
2,300.00	2,264.72	2,291.96	2,277.13	7.02	5.96	-139.34	90.95	138.94	183.48	171.92	11.56	15.875	
2,400.00	2,358.68	2,389.81	2,373.36	7.67	6.33	-140.91	96.14	155.92	203.43	191.16	12.27	16.577	
2,500.00	2,452.64	2,487.66	2,469.58	8.33	6.70	-142.20	101.32	172.89	223.51	210.51	12.99	17.204	
2,600.00	2,546.60	2,585.51	2,565.81	9.00	7.08	-143.28	106.50	189.87	243.67	229.96	13.72	17.766	
2,700.00	2,640.56	2,683.36	2,662.04	9.68	7.45	-144.19	111.69	206.85	263.91	249.46	14.44	18.271	
2,800.00	2,734.52	2,781.21	2,758.27	10.36	7.83	-144.98	116.87	223.83	284.20	269.02	15.18	18.727	
2,900.00	2,828.48	2,879.06	2,854.49	11.05	8.22	-145.66	122.05	240.81	304.54	288.63	15.91	19.140	
3,000.00	2,922.44	2,976.92	2,950.72	11.74	8.60	-146.25	127.24	257.78	324.91	308.26	16.65	19.516	
3,100.00	3,016.40	3,074.77	3,046.95	12.44	8.99	-146.77	132.42	274.76	345.31	327.92	17.39	19.859	
3,200.00	3,110.36	3,172.62	3,143.17	13.14	9.37	-147.24	137.60	291.74	365.74	347.61	18.13	20.174	
3,300.00	3,204.32	3,270.47	3,239.40	13.84	9.76	-147.66	142.78	308.72	386.18	367.31	18.87	20.462	
3,400.00	3,298.28	3,368.32	3,335.63	14.54	10.15	-148.03	147.97	325.69	406.65	387.03	19.62	20.729	
3,500.00	3,392.24	3,466.17	3,431.86	15.25	10.54	-148.37	153.15	342.67	427.13	406.76	20.36	20.975	
3,600.00	3,486.20	3,564.02	3,528.08	15.95	10.93	-148.68	158.33	359.65	447.62	426.51	21.11	21.203	
3,700.00	3,580.16	3,661.87	3,624.31	16.66	11.32	-148.96	163.52	376.63	468.12	446.27	21.86	21.415	
3,800.00	3,674.12	3,759.72	3,720.54	17.37	11.72	-149.21	168.70	393.61	488.64	466.03	22.61	21.612	
3,900.00	3,768.08	3,857.57	3,816.76	18.08	12.11	-149.45	173.88	410.58	509.16	485.80	23.36	21.796	
4,000.00	3,862.04	3,955.42	3,912.99	18.79	12.50	-149.67	179.06	427.56	529.69	505.58	24.11	21.969	
4,100.00	3,956.00	4,053.27	4,009.22	19.50	12.89	-149.87	184.25	444.54	550.23	525.36	24.86	22.130	
4,200.00	4,049.96	4,151.12	4,105.45	20.21	13.29	-150.06	189.43	461.52	570.77	545.15	25.62	22.282	
4,300.00	4,143.92	4,248.98	4,201.67	20.92	13.68	-150.23	194.61	478.50	591.32	564.95	26.37	22.424	
4,400.00	4,237.88	4,346.83	4,297.90	21.64	14.08	-150.39	199.80	495.47	611.87	584.75	27.12	22.559	
4,500.00	4,331.84	4,444.68	4,394.13	22.35	14.47	-150.55	204.98	512.45	632.43	604.55	27.88	22.686	
4,600.00	4,425.80	4,542.53	4,490.35	23.06	14.87	-150.69	210.16	529.43	652.99	624.36	28.63	22.806	
4,700.00	4,519.76	4,640.38	4,586.58	23.78	15.26	-150.82	215.34	546.41	673.56	644.17	29.39	22.919	
4,800.00	4,613.72	4,738.23	4,682.81	24.49	15.66	-150.95	220.53	563.39	694.13	663.98	30.14	23.027	
4,900.00	4,707.68	4,836.08	4,779.04	25.21	16.06	-151.07	225.71	580.36	714.70	683.80	30.90	23.129	

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_KERR-MCGEE 23-3
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5057.00ft (Original Well Elev)
Reference Site:	WELD_KERR MCGEE 19-3 PAD	MD Reference:	WELL @ 5057.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_KERR-MCGEE 23-3	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_KERR-MCGEE 23-3	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-15-10 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
5,000.00	4,801.64	4,933.93	4,875.26	25.92	16.45	-151.18	230.89	597.34	735.27	703.61	31.66	23.226	
5,100.00	4,895.60	5,031.78	4,971.49	26.64	16.85	-151.28	236.08	614.32	755.85	723.43	32.41	23.319	
5,200.00	4,989.56	5,129.63	5,067.72	27.36	17.24	-151.39	241.26	631.30	776.43	743.26	33.17	23.407	
5,300.00	5,083.52	5,227.48	5,163.94	28.07	17.64	-151.48	246.44	648.28	797.01	763.08	33.93	23.491	
5,400.00	5,177.48	5,325.33	5,260.17	28.79	18.04	-151.57	251.63	665.25	817.59	782.91	34.69	23.571	
5,500.00	5,271.44	5,423.18	5,356.40	29.51	18.44	-151.66	256.81	682.23	838.18	802.73	35.44	23.648	
5,600.00	5,365.41	5,521.04	5,452.63	30.22	18.83	-151.74	261.99	699.21	858.77	822.56	36.20	23.721	
5,700.00	5,459.37	5,618.89	5,548.85	30.94	19.23	-151.82	267.17	716.19	879.35	842.39	36.96	23.791	
5,756.53	5,512.48	5,674.20	5,603.25	31.35	19.46	-151.86	270.10	725.78	890.99	853.60	37.39	23.830	
5,800.00	5,553.44	5,716.80	5,645.14	31.62	19.63	-151.96	272.36	733.18	899.66	861.92	37.73	23.842	
5,900.00	5,648.46	5,815.20	5,741.91	32.13	20.03	-152.11	277.57	750.25	917.42	878.92	38.50	23.829	
6,000.00	5,744.51	5,914.09	5,839.15	32.60	20.43	-152.12	282.81	767.41	932.14	892.88	39.26	23.740	
6,100.00	5,841.47	6,013.33	5,936.75	33.01	20.83	-152.01	288.07	784.63	943.82	903.79	40.03	23.580	
6,200.00	5,939.23	6,100.00	6,022.03	33.37	21.17	-151.83	292.59	799.44	952.67	911.96	40.70	23.406	
6,300.00	6,037.66	6,189.22	6,110.19	33.68	21.42	-151.66	296.58	812.51	959.85	918.59	41.26	23.263	
6,400.00	6,136.65	6,273.50	6,193.83	33.95	21.62	-151.53	299.61	822.44	965.62	923.90	41.72	23.147	
6,500.00	6,236.07	6,357.87	6,277.81	34.16	21.81	-151.44	301.93	830.03	969.93	927.84	42.09	23.046	
6,600.00	6,335.80	6,442.29	6,362.06	34.33	21.96	-151.36	303.52	835.24	972.78	930.41	42.37	22.958	
6,700.00	6,435.73	6,526.76	6,446.47	34.45	22.09	-151.32	304.39	838.08	974.16	931.59	42.57	22.882	
6,757.28	6,493.00	6,575.15	6,494.86	34.50	22.16	-49.64	304.55	838.64	974.30	931.64	42.65	22.843	
6,777.08	6,512.80	6,593.09	6,512.80	34.52	22.18	-49.64	304.56	838.66	974.28	931.58	42.70	22.816	
6,800.00	6,535.72	6,616.01	6,535.72	34.54	22.21	-49.64	304.56	838.66	974.28	931.52	42.76	22.783	
6,900.00	6,635.72	6,716.01	6,635.72	34.63	22.35	-49.64	304.56	838.66	974.28	931.25	43.04	22.637	
7,000.00	6,735.72	6,816.01	6,735.72	34.72	22.49	-49.64	304.56	838.66	974.28	930.97	43.32	22.491	
7,100.00	6,835.72	6,916.01	6,835.72	34.81	22.64	-49.64	304.56	838.66	974.28	930.68	43.60	22.346	
7,200.00	6,935.72	7,016.01	6,935.72	34.90	22.78	-49.64	304.56	838.66	974.28	930.40	43.89	22.201	
7,300.00	7,035.72	7,116.01	7,035.72	34.99	22.93	-49.64	304.56	838.66	974.28	930.11	44.17	22.056	
7,400.00	7,135.72	7,216.01	7,135.72	35.09	23.07	-49.64	304.56	838.66	974.28	929.82	44.46	21.912	
7,500.00	7,235.72	7,316.01	7,235.72	35.19	23.22	-49.64	304.56	838.66	974.28	929.53	44.76	21.769	
7,600.00	7,335.72	7,416.01	7,335.72	35.28	23.37	-49.64	304.56	838.66	974.28	929.23	45.05	21.626	
7,700.00	7,435.72	7,516.01	7,435.72	35.38	23.52	-49.64	304.56	838.66	974.28	928.93	45.35	21.484	
7,800.00	7,535.72	7,616.01	7,535.72	35.48	23.67	-49.64	304.56	838.66	974.28	928.63	45.65	21.342	
7,900.00	7,635.72	7,716.01	7,635.72	35.58	23.82	-49.64	304.56	838.66	974.28	928.33	45.95	21.202	
8,000.00	7,735.72	7,816.01	7,735.72	35.68	23.97	-49.64	304.56	838.66	974.28	928.03	46.26	21.062	
8,100.00	7,835.72	7,916.01	7,835.72	35.78	24.13	-49.64	304.56	838.66	974.28	927.72	46.57	20.923	
8,200.00	7,935.72	8,016.01	7,935.72	35.89	24.29	-49.64	304.56	838.66	974.28	927.41	46.88	20.784	
8,300.00	8,035.72	8,116.01	8,035.72	35.99	24.44	-49.64	304.56	838.66	974.28	927.10	47.19	20.647	
8,400.00	8,135.72	8,216.01	8,135.72	36.10	24.60	-49.64	304.56	838.66	974.28	926.78	47.50	20.510	
8,500.00	8,235.72	8,316.01	8,235.72	36.21	24.76	-49.64	304.56	838.66	974.28	926.47	47.82	20.375	
8,600.00	8,335.72	8,416.01	8,335.72	36.32	24.92	-49.64	304.56	838.66	974.28	926.15	48.14	20.240	
8,600.93	8,336.65	8,416.94	8,336.65	36.32	24.92	-49.64	304.56	838.66	974.28	926.14	48.14	20.239	
8,619.28	8,355.00	8,425.29	8,345.00	36.34	24.93	-49.64	304.56	838.66	974.34	926.15	48.18	20.222	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_KERR-MCGEE 23-3
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5057.00ft (Original Well Elev)
Reference Site:	WELD_KERR MCGEE 19-3 PAD	MD Reference:	WELL @ 5057.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_KERR-MCGEE 23-3	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_KERR-MCGEE 23-3	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-15-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_KERR MCGEE 19-3 PAD - P_KERR-MCGEE 12-3 - P_KERR-MCGEE 12-3 - PLAN #1 1-15-10												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	-38.80	62.65	-50.37	80.39				
100.00	100.00	100.00	100.00	0.10	0.10	-38.80	62.65	-50.37	80.39	80.20	0.19	420.771	
200.00	200.00	200.00	200.00	0.32	0.32	-38.80	62.65	-50.37	80.39	79.75	0.64	125.493	
300.00	300.00	300.00	300.00	0.55	0.55	-38.80	62.65	-50.37	80.39	79.30	1.09	73.744	
400.00	400.00	400.00	400.00	0.77	0.77	-38.80	62.65	-50.37	80.39	78.85	1.54	52.213	
500.00	500.00	500.00	500.00	0.99	0.99	-38.80	62.65	-50.37	80.39	78.40	1.99	40.413	
600.00	600.00	600.00	600.00	1.22	1.22	-38.80	62.65	-50.37	80.39	77.95	2.44	32.964	
700.00	700.00	700.00	700.00	1.44	1.44	-38.80	62.65	-50.37	80.39	77.50	2.89	27.833	
800.00	800.00	800.00	800.00	1.67	1.67	-38.80	62.65	-50.37	80.39	77.05	3.34	24.085	
900.00	900.00	900.00	900.00	1.89	1.89	-38.80	62.65	-50.37	80.39	76.60	3.79	21.226	
1,000.00	1,000.00	1,000.00	1,000.00	2.12	2.12	-38.80	62.65	-50.37	80.39	76.15	4.24	18.974	
1,050.00	1,050.00	1,050.00	1,050.00	2.23	2.23	-38.80	62.65	-50.37	80.39	75.93	4.46	18.018 CC, ES	
1,100.00	1,100.00	1,098.72	1,098.71	2.33	2.34	-140.75	62.86	-50.73	81.12	76.45	4.67	17.367	
1,200.00	1,199.93	1,195.81	1,195.75	2.53	2.54	-142.89	64.48	-53.60	87.05	81.98	5.07	17.176 SF	
1,300.00	1,299.68	1,291.90	1,291.62	2.74	2.76	-146.35	67.68	-59.25	99.19	93.73	5.47	18.147	
1,400.00	1,399.13	1,388.95	1,388.24	2.97	2.98	-150.18	72.14	-67.12	117.11	111.24	5.87	19.963	
1,500.00	1,498.15	1,486.27	1,485.12	3.22	3.22	-153.62	76.69	-75.16	138.67	132.40	6.27	22.130	
1,600.00	1,596.63	1,582.73	1,581.15	3.51	3.46	-156.57	81.20	-83.12	163.73	157.07	6.66	24.577	
1,700.00	1,694.44	1,678.23	1,676.21	3.84	3.70	-159.06	85.66	-91.00	192.28	185.23	7.05	27.259	
1,800.00	1,791.46	1,772.63	1,770.19	4.22	3.94	-161.14	90.08	-98.79	224.27	216.83	7.44	30.137	
1,900.00	1,887.58	1,865.83	1,862.97	4.67	4.19	-162.89	94.43	-106.48	259.65	251.83	7.83	33.178	
2,000.00	1,982.68	1,957.71	1,954.44	5.19	4.43	-164.35	98.73	-114.07	298.36	290.15	8.21	36.356	
2,050.75	2,030.52	2,003.80	2,000.32	5.48	4.55	-165.00	100.88	-117.87	319.26	310.86	8.40	38.014	
2,100.00	2,076.80	2,048.35	2,044.66	5.77	4.67	-165.68	102.97	-121.55	339.96	331.34	8.63	39.414	
2,200.00	2,170.76	2,138.79	2,134.70	6.38	4.91	-166.83	107.19	-129.01	382.10	373.01	9.09	42.025	
2,300.00	2,264.72	2,229.24	2,224.74	7.02	5.15	-167.76	111.42	-136.48	424.35	414.78	9.57	44.360	
2,400.00	2,358.68	2,319.69	2,314.78	7.67	5.40	-168.52	115.65	-143.94	466.67	456.62	10.05	46.454	
2,500.00	2,452.64	2,410.13	2,404.82	8.33	5.65	-169.15	119.88	-151.41	509.04	498.51	10.53	48.340	
2,600.00	2,546.60	2,500.58	2,494.86	9.00	5.89	-169.68	124.11	-158.87	551.46	540.44	11.02	50.045	
2,700.00	2,640.56	2,591.02	2,584.89	9.68	6.14	-170.14	128.34	-166.34	593.91	582.40	11.51	51.591	
2,800.00	2,734.52	2,681.47	2,674.93	10.36	6.39	-170.54	132.56	-173.80	636.39	624.38	12.01	52.999	
2,900.00	2,828.48	2,771.92	2,764.97	11.05	6.64	-170.89	136.79	-181.27	678.89	666.39	12.51	54.285	
3,000.00	2,922.44	2,862.36	2,855.01	11.74	6.89	-171.19	141.02	-188.73	721.41	708.41	13.01	55.463	
3,100.00	3,016.40	2,952.81	2,945.05	12.44	7.14	-171.47	145.25	-196.20	763.95	750.44	13.51	56.546	
3,200.00	3,110.36	3,043.26	3,035.09	13.14	7.39	-171.71	149.48	-203.66	806.49	792.48	14.02	57.545	
3,300.00	3,204.32	3,133.70	3,125.13	13.84	7.65	-171.93	153.71	-211.13	849.05	834.53	14.52	58.468	
3,400.00	3,298.28	3,224.15	3,215.17	14.54	7.90	-172.13	157.93	-218.60	891.62	876.59	15.03	59.324	
3,500.00	3,392.24	3,314.60	3,305.20	15.25	8.15	-172.31	162.16	-226.06	934.20	918.66	15.54	60.119	
3,600.00	3,486.20	3,405.04	3,395.24	15.95	8.40	-172.47	166.39	-233.53	976.78	960.73	16.05	60.860	
3,700.00	3,580.16	3,495.49	3,485.28	16.66	8.66	-172.63	170.62	-240.99	1,019.37	1,002.80	16.56	61.551	
3,800.00	3,674.12	3,585.94	3,575.32	17.37	8.91	-172.76	174.85	-248.46	1,061.96	1,044.89	17.07	62.197	
3,900.00	3,768.08	3,676.38	3,665.36	18.08	9.17	-172.89	179.07	-255.92	1,104.56	1,086.97	17.59	62.803	
4,000.00	3,862.04	3,766.83	3,755.40	18.79	9.42	-173.01	183.30	-263.39	1,147.16	1,129.06	18.10	63.372	
4,100.00	3,956.00	3,857.28	3,845.44	19.50	9.67	-173.12	187.53	-270.85	1,189.77	1,171.15	18.62	63.907	
4,200.00	4,049.96	3,947.72	3,935.47	20.21	9.93	-173.22	191.76	-278.32	1,232.38	1,213.24	19.13	64.411	
4,300.00	4,143.92	4,038.17	4,025.51	20.92	10.18	-173.32	195.99	-285.78	1,274.99	1,255.34	19.65	64.887	
4,400.00	4,237.88	4,128.62	4,115.55	21.64	10.44	-173.41	200.22	-293.25	1,317.60	1,297.44	20.17	65.336	
4,500.00	4,331.84	4,219.06	4,205.59	22.35	10.69	-173.49	204.44	-300.71	1,360.22	1,339.54	20.68	65.762	
4,600.00	4,425.80	4,309.51	4,295.63	23.06	10.95	-173.57	208.67	-308.18	1,402.84	1,381.64	21.20	66.166	
4,700.00	4,519.76	4,399.96	4,385.67	23.78	11.20	-173.65	212.90	-315.64	1,445.46	1,423.74	21.72	66.548	
4,800.00	4,613.72	4,490.40	4,475.71	24.49	11.46	-173.72	217.13	-323.11	1,488.09	1,465.85	22.24	66.912	
4,900.00	4,707.68	4,580.85	4,565.75	25.21	11.72	-173.78	221.36	-330.57	1,530.71	1,507.95	22.76	67.258	

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_KERR-MCGEE 23-3
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5057.00ft (Original Well Elev)
Reference Site:	WELD_KERR MCGEE 19-3 PAD	MD Reference:	WELL @ 5057.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_KERR-MCGEE 23-3	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_KERR-MCGEE 23-3	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-15-10 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	4,801.64	4,671.29	4,655.78	25.92	11.97	-173.84	225.59	-338.04	1,573.34	1,550.06	23.28	67.588	
5,100.00	4,895.60	4,761.74	4,745.82	26.64	12.23	-173.90	229.81	-345.50	1,615.97	1,592.17	23.80	67.903	
5,200.00	4,989.56	4,852.19	4,835.86	27.36	12.48	-173.96	234.04	-352.97	1,658.60	1,634.28	24.32	68.203	
5,300.00	5,083.52	4,942.63	4,925.90	28.07	12.74	-174.01	238.27	-360.43	1,701.23	1,676.39	24.84	68.490	
5,400.00	5,177.48	5,033.08	5,015.94	28.79	13.00	-174.06	242.50	-367.90	1,743.86	1,718.50	25.36	68.764	
5,500.00	5,271.44	5,123.53	5,105.98	29.51	13.25	-174.11	246.73	-375.36	1,786.50	1,760.62	25.88	69.027	
5,600.00	5,365.41	5,213.97	5,196.02	30.22	13.51	-174.16	250.95	-382.83	1,829.13	1,802.73	26.40	69.278	
5,700.00	5,459.37	5,304.42	5,286.05	30.94	13.76	-174.20	255.18	-390.29	1,871.77	1,844.84	26.92	69.520	
5,756.53	5,512.48	5,355.55	5,336.95	31.35	13.91	-174.23	257.57	-394.51	1,895.87	1,868.65	27.22	69.652	
5,800.00	5,553.44	5,395.01	5,376.23	31.62	14.02	-174.28	259.42	-397.77	1,914.11	1,886.59	27.52	69.559	
5,900.00	5,648.46	5,486.79	5,467.60	32.13	14.28	-174.40	263.71	-405.35	1,953.78	1,925.62	28.16	69.373	
6,000.00	5,744.51	5,579.89	5,560.29	32.60	14.55	-174.49	268.06	-413.03	1,990.25	1,961.47	28.77	69.174	
6,100.00	5,841.47	5,674.21	5,654.18	33.01	14.81	-174.57	272.47	-420.82	2,023.45	1,994.11	29.34	68.965	
6,200.00	5,939.23	5,769.63	5,749.17	33.37	15.08	-174.62	276.93	-428.69	2,053.37	2,023.50	29.87	68.748	
6,300.00	6,037.66	5,866.03	5,845.13	33.68	15.36	-174.66	281.44	-436.65	2,079.94	2,049.59	30.35	68.525	
6,400.00	6,136.65	5,963.29	5,941.95	33.95	15.63	-174.69	285.98	-444.68	2,103.16	2,072.36	30.79	68.299	
6,500.00	6,236.07	6,061.29	6,039.52	34.16	15.91	-174.69	290.57	-452.76	2,122.97	2,091.79	31.19	68.069	
6,600.00	6,335.80	6,159.93	6,137.70	34.33	16.19	-174.69	295.18	-460.91	2,139.38	2,107.84	31.54	67.837	
6,700.00	6,435.73	6,259.06	6,236.39	34.45	16.47	-174.67	299.81	-469.09	2,152.34	2,120.50	31.84	67.603	
6,757.28	6,493.00	6,441.17	6,418.05	34.50	16.85	-72.95	305.84	-479.73	2,156.91	2,124.71	32.20	66.983	
6,800.00	6,535.72	6,558.85	6,535.72	34.54	17.04	-72.94	306.73	-481.31	2,157.38	2,124.90	32.48	66.432	
6,900.00	6,635.72	6,658.85	6,635.72	34.63	17.22	-72.94	306.73	-481.31	2,157.38	2,124.54	32.83	65.708	
7,000.00	6,735.72	6,758.85	6,735.72	34.72	17.40	-72.94	306.73	-481.31	2,157.38	2,124.18	33.20	64.985	
7,100.00	6,835.72	6,858.85	6,835.72	34.81	17.59	-72.94	306.73	-481.31	2,157.38	2,123.81	33.57	64.274	
7,200.00	6,935.72	6,958.85	6,935.72	34.90	17.77	-72.94	306.73	-481.31	2,157.38	2,123.44	33.93	63.575	
7,300.00	7,035.72	7,058.85	7,035.72	34.99	17.96	-72.94	306.73	-481.31	2,157.38	2,123.07	34.31	62.888	
7,400.00	7,135.72	7,158.85	7,135.72	35.09	18.15	-72.94	306.73	-481.31	2,157.38	2,122.70	34.68	62.212	
7,500.00	7,235.72	7,258.85	7,235.72	35.19	18.34	-72.94	306.73	-481.31	2,157.38	2,122.32	35.05	61.548	
7,600.00	7,335.72	7,358.85	7,335.72	35.28	18.53	-72.94	306.73	-481.31	2,157.38	2,121.95	35.43	60.895	
7,700.00	7,435.72	7,458.85	7,435.72	35.38	18.72	-72.94	306.73	-481.31	2,157.38	2,121.57	35.81	60.253	
7,800.00	7,535.72	7,558.85	7,535.72	35.48	18.91	-72.94	306.73	-481.31	2,157.38	2,121.19	36.18	59.621	
7,900.00	7,635.72	7,658.85	7,635.72	35.58	19.10	-72.94	306.73	-481.31	2,157.38	2,120.81	36.57	59.001	
8,000.00	7,735.72	7,758.85	7,735.72	35.68	19.29	-72.94	306.73	-481.31	2,157.38	2,120.43	36.95	58.391	
8,100.00	7,835.72	7,858.85	7,835.72	35.78	19.49	-72.94	306.73	-481.31	2,157.38	2,120.04	37.33	57.791	
8,200.00	7,935.72	7,958.85	7,935.72	35.89	19.68	-72.94	306.73	-481.31	2,157.38	2,119.66	37.72	57.201	
8,300.00	8,035.72	8,058.85	8,035.72	35.99	19.87	-72.94	306.73	-481.31	2,157.38	2,119.27	38.10	56.622	
8,400.00	8,135.72	8,158.85	8,135.72	36.10	20.07	-72.94	306.73	-481.31	2,157.38	2,118.89	38.49	56.052	
8,500.00	8,235.72	8,258.85	8,235.72	36.21	20.27	-72.94	306.73	-481.31	2,157.38	2,118.50	38.88	55.491	
8,600.00	8,335.72	8,358.85	8,335.72	36.32	20.46	-72.94	306.73	-481.31	2,157.38	2,118.11	39.27	54.940	
8,619.28	8,355.00	8,378.13	8,355.00	36.34	20.50	-72.94	306.73	-481.31	2,157.38	2,118.03	39.34	54.835	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_KERR-MCGEE 23-3
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5057.00ft (Original Well Elev)
Reference Site:	WELD_KERR MCGEE 19-3 PAD	MD Reference:	WELL @ 5057.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_KERR-MCGEE 23-3	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_KERR-MCGEE 23-3	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-15-10 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	-38.82	30.96	-24.91	39.73				
100.00	100.00	100.00	100.00	0.10	0.10	-38.82	30.96	-24.91	39.73	39.54	0.19	207.956	
200.00	200.00	200.00	200.00	0.32	0.32	-38.82	30.96	-24.91	39.73	39.09	0.64	62.022	
300.00	300.00	300.00	300.00	0.55	0.55	-38.82	30.96	-24.91	39.73	38.64	1.09	36.446	
400.00	400.00	400.00	400.00	0.77	0.77	-38.82	30.96	-24.91	39.73	38.19	1.54	25.805	
500.00	500.00	500.00	500.00	0.99	0.99	-38.82	30.96	-24.91	39.73	37.74	1.99	19.973	
600.00	600.00	600.00	600.00	1.22	1.22	-38.82	30.96	-24.91	39.73	37.29	2.44	16.292	
700.00	700.00	700.00	700.00	1.44	1.44	-38.82	30.96	-24.91	39.73	36.84	2.89	13.756	
800.00	800.00	800.00	800.00	1.67	1.67	-38.82	30.96	-24.91	39.73	36.39	3.34	11.903	
900.00	900.00	900.00	900.00	1.89	1.89	-38.82	30.96	-24.91	39.73	35.94	3.79	10.490	
1,000.00	1,000.00	1,000.00	1,000.00	2.12	2.12	-38.82	30.96	-24.91	39.73	35.49	4.24	9.377	
1,050.00	1,050.00	1,050.00	1,050.00	2.23	2.23	-38.82	30.96	-24.91	39.73	35.27	4.46	8.905 CC	
1,100.00	1,100.00	1,100.30	1,100.29	2.33	2.33	-141.45	30.56	-25.09	39.88	35.22	4.66	8.550 ES	
1,200.00	1,199.93	1,200.66	1,200.59	2.53	2.51	-148.87	27.37	-26.59	41.47	36.44	5.03	8.244 SF	
1,300.00	1,299.68	1,300.35	1,300.03	2.74	2.69	-161.57	21.06	-29.54	46.46	41.06	5.40	8.599	
1,400.00	1,399.13	1,398.92	1,398.06	2.97	2.89	-175.29	11.74	-33.91	57.14	51.35	5.79	9.876	
1,500.00	1,498.15	1,495.97	1,494.17	3.22	3.12	173.38	-0.41	-39.61	74.56	68.37	6.18	12.055	
1,600.00	1,596.63	1,591.10	1,587.89	3.51	3.38	165.18	-15.18	-46.53	98.57	91.96	6.61	14.914	
1,700.00	1,694.44	1,683.97	1,678.81	3.84	3.67	159.44	-32.30	-54.55	128.62	121.55	7.06	18.209	
1,800.00	1,791.46	1,776.90	1,769.37	4.22	3.99	155.58	-51.15	-63.39	163.56	156.01	7.56	21.646	
1,900.00	1,887.58	1,869.13	1,859.25	4.67	4.34	153.36	-69.89	-72.17	201.80	193.72	8.08	24.963	
2,000.00	1,982.68	1,960.19	1,948.00	5.19	4.70	152.09	-88.39	-80.84	243.00	234.36	8.64	28.124	
2,050.75	2,030.52	2,005.93	1,992.56	5.48	4.88	151.67	-97.69	-85.20	264.99	256.06	8.93	29.666	
2,100.00	2,076.80	2,050.14	2,035.65	5.77	5.07	151.57	-106.67	-89.41	286.68	277.42	9.26	30.964	
2,200.00	2,170.76	2,139.92	2,123.14	6.38	5.44	151.40	-124.91	-97.96	330.72	320.78	9.93	33.291	
2,300.00	2,264.72	2,229.70	2,210.63	7.02	5.83	151.27	-143.15	-106.51	374.76	364.13	10.63	35.261	
2,400.00	2,358.68	2,319.47	2,298.11	7.67	6.22	151.17	-161.39	-115.06	418.80	407.46	11.34	36.942	
2,500.00	2,452.64	2,409.25	2,385.60	8.33	6.62	151.09	-179.63	-123.61	462.84	450.78	12.06	38.386	
2,600.00	2,546.60	2,499.03	2,473.09	9.00	7.02	151.02	-197.87	-132.16	506.88	494.09	12.79	39.637	
2,700.00	2,640.56	2,588.81	2,560.58	9.68	7.43	150.96	-216.11	-140.70	550.92	537.39	13.53	40.728	
2,800.00	2,734.52	2,678.59	2,648.07	10.36	7.84	150.91	-234.36	-149.25	594.96	580.69	14.27	41.686	
2,900.00	2,828.48	2,768.36	2,735.56	11.05	8.25	150.87	-252.60	-157.80	639.00	623.98	15.02	42.534	
3,000.00	2,922.44	2,858.14	2,823.05	11.74	8.66	150.83	-270.84	-166.35	683.05	667.27	15.78	43.289	
3,100.00	3,016.40	2,947.92	2,910.54	12.44	9.08	150.80	-289.08	-174.90	727.09	710.55	16.54	43.965	
3,200.00	3,110.36	3,037.70	2,998.02	13.14	9.50	150.77	-307.32	-183.45	771.13	753.83	17.30	44.574	
3,300.00	3,204.32	3,127.48	3,085.51	13.84	9.92	150.75	-325.56	-192.00	815.18	797.11	18.07	45.124	
3,400.00	3,298.28	3,217.25	3,173.00	14.54	10.34	150.72	-343.80	-200.55	859.22	840.39	18.83	45.624	
3,500.00	3,392.24	3,307.03	3,260.49	15.25	10.76	150.70	-362.04	-209.10	903.26	883.66	19.60	46.081	
3,600.00	3,486.20	3,396.81	3,347.98	15.95	11.18	150.68	-380.28	-217.65	947.31	926.94	20.37	46.500	
3,700.00	3,580.16	3,486.59	3,435.47	16.66	11.61	150.67	-398.52	-226.20	991.35	970.21	21.14	46.885	
3,800.00	3,674.12	3,576.36	3,522.96	17.37	12.03	150.65	-416.76	-234.75	1,035.40	1,013.48	21.92	47.241	
3,900.00	3,768.08	3,666.14	3,610.44	18.08	12.46	150.64	-435.01	-243.30	1,079.44	1,056.75	22.69	47.572	
4,000.00	3,862.04	3,755.92	3,697.93	18.79	12.89	150.62	-453.25	-251.85	1,123.48	1,100.02	23.47	47.879	
4,100.00	3,956.00	3,845.70	3,785.42	19.50	13.31	150.61	-471.49	-260.39	1,167.53	1,143.29	24.24	48.165	
4,200.00	4,049.96	3,935.48	3,872.91	20.21	13.74	150.60	-489.73	-268.94	1,211.57	1,186.56	25.02	48.433	
4,300.00	4,143.92	4,025.25	3,960.40	20.92	14.17	150.59	-507.97	-277.49	1,255.62	1,229.83	25.79	48.685	
4,400.00	4,237.88	4,115.03	4,047.89	21.64	14.60	150.58	-526.21	-286.04	1,299.66	1,273.09	26.57	48.921	
4,500.00	4,331.84	4,204.81	4,135.38	22.35	15.03	150.57	-544.45	-294.59	1,343.70	1,316.36	27.34	49.144	
4,600.00	4,425.80	4,294.59	4,222.86	23.06	15.46	150.56	-562.69	-303.14	1,387.75	1,359.63	28.12	49.355	
4,700.00	4,519.76	4,384.37	4,310.35	23.78	15.89	150.55	-580.93	-311.69	1,431.79	1,402.90	28.89	49.554	
4,800.00	4,613.72	4,474.14	4,397.84	24.49	16.32	150.55	-599.17	-320.24	1,475.84	1,446.17	29.67	49.744	
4,900.00	4,707.68	4,563.92	4,485.33	25.21	16.75	150.54	-617.41	-328.79	1,519.88	1,489.44	30.44	49.924	

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_KERR-MCGEE 23-3
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5057.00ft (Original Well Elev)
Reference Site:	WELD_KERR MCGEE 19-3 PAD	MD Reference:	WELL @ 5057.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_KERR-MCGEE 23-3	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_KERR-MCGEE 23-3	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-15-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_KERR MCGEE 19-3 PAD - P_KERR-MCGEE 13-3 - P_KERR-MCGEE 13-3 - PLAN #1 1-15-10												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	4,801.64	4,653.70	4,572.82	25.92	17.18	150.53	-635.66	-337.34	1,563.93	1,532.71	31.22	50.096	
5,100.00	4,895.60	4,743.48	4,660.31	26.64	17.61	150.53	-653.90	-345.89	1,607.97	1,575.98	31.99	50.260	
5,200.00	4,989.56	4,833.26	4,747.80	27.36	18.04	150.52	-672.14	-354.44	1,652.01	1,619.25	32.77	50.417	
5,300.00	5,083.52	4,923.03	4,835.28	28.07	18.47	150.51	-690.38	-362.99	1,696.06	1,662.52	33.54	50.567	
5,400.00	5,177.48	5,012.81	4,922.77	28.79	18.90	150.51	-708.62	-371.54	1,740.10	1,705.79	34.31	50.711	
5,500.00	5,271.44	5,102.59	5,010.26	29.51	19.33	150.50	-726.86	-380.09	1,784.15	1,749.06	35.09	50.849	
5,600.00	5,365.41	5,192.37	5,097.75	30.22	19.77	150.50	-745.10	-388.63	1,828.19	1,792.33	35.86	50.982	
5,700.00	5,459.37	5,282.15	5,185.24	30.94	20.20	150.49	-763.34	-397.18	1,872.24	1,835.60	36.63	51.111	
5,756.53	5,512.48	5,332.89	5,234.69	31.35	20.44	150.49	-773.65	-402.02	1,897.13	1,860.07	37.07	51.181	
5,800.00	5,553.44	5,372.05	5,272.85	31.62	20.63	150.69	-781.61	-405.75	1,916.02	1,878.59	37.44	51.182	
5,900.00	5,648.46	5,463.02	5,361.50	32.13	21.07	151.08	-800.09	-414.41	1,957.49	1,919.23	38.26	51.158	
6,000.00	5,744.51	5,555.17	5,451.30	32.60	21.51	151.37	-818.81	-423.18	1,996.17	1,957.09	39.08	51.082	
6,100.00	5,841.47	5,648.39	5,542.14	33.01	21.96	151.59	-837.75	-432.06	2,032.01	1,992.15	39.86	50.980	
6,200.00	5,939.23	5,742.55	5,633.91	33.37	22.42	151.72	-856.89	-441.03	2,064.99	2,024.38	40.60	50.857	
6,300.00	6,037.66	5,837.55	5,726.49	33.68	22.88	151.78	-876.19	-450.07	2,095.07	2,053.76	41.31	50.715	
6,400.00	6,136.65	5,933.28	5,819.77	33.95	23.34	151.77	-895.64	-459.19	2,122.25	2,080.28	41.98	50.560	
6,500.00	6,236.07	6,069.30	5,952.56	34.16	23.88	151.58	-922.31	-471.69	2,146.15	2,103.47	42.68	50.283	
6,600.00	6,335.80	6,267.37	6,147.93	34.33	24.43	151.28	-951.60	-485.42	2,163.41	2,120.03	43.38	49.868	
6,700.00	6,435.73	6,470.05	6,349.66	34.45	24.84	151.10	-968.85	-493.51	2,173.02	2,129.11	43.91	49.485	
6,757.28	6,493.00	6,587.24	6,466.76	34.50	25.01	-107.30	-972.92	-495.41	2,175.00	2,130.87	44.14	49.279	
6,800.00	6,535.72	6,656.20	6,535.72	34.54	25.09	-107.30	-973.34	-495.61	2,175.15	2,130.87	44.28	49.119	
6,900.00	6,635.72	6,756.20	6,635.72	34.63	25.20	-107.30	-973.34	-495.61	2,175.15	2,130.62	44.53	48.846	
7,000.00	6,735.72	6,856.20	6,735.72	34.72	25.30	-107.30	-973.34	-495.61	2,175.15	2,130.38	44.78	48.579	
7,100.00	6,835.72	6,956.20	6,835.72	34.81	25.41	-107.30	-973.34	-495.61	2,175.15	2,130.13	45.02	48.312	
7,200.00	6,935.72	7,056.20	6,935.72	34.90	25.52	-107.30	-973.34	-495.61	2,175.15	2,129.88	45.27	48.044	
7,300.00	7,035.72	7,156.20	7,035.72	34.99	25.62	-107.30	-973.34	-495.61	2,175.15	2,129.62	45.53	47.776	
7,400.00	7,135.72	7,256.20	7,135.72	35.09	25.73	-107.30	-973.34	-495.61	2,175.15	2,129.37	45.79	47.507	
7,500.00	7,235.72	7,356.20	7,235.72	35.19	25.84	-107.30	-973.34	-495.61	2,175.15	2,129.11	46.05	47.239	
7,600.00	7,335.72	7,456.20	7,335.72	35.28	25.96	-107.30	-973.34	-495.61	2,175.15	2,128.84	46.31	46.971	
7,700.00	7,435.72	7,556.20	7,435.72	35.38	26.07	-107.30	-973.34	-495.61	2,175.15	2,128.58	46.57	46.703	
7,800.00	7,535.72	7,656.20	7,535.72	35.48	26.19	-107.30	-973.34	-495.61	2,175.15	2,128.31	46.84	46.435	
7,900.00	7,635.72	7,756.20	7,635.72	35.58	26.30	-107.30	-973.34	-495.61	2,175.15	2,128.04	47.11	46.167	
8,000.00	7,735.72	7,856.20	7,735.72	35.68	26.42	-107.30	-973.34	-495.61	2,175.15	2,127.76	47.39	45.900	
8,100.00	7,835.72	7,956.20	7,835.72	35.78	26.54	-107.30	-973.34	-495.61	2,175.15	2,127.49	47.67	45.634	
8,200.00	7,935.72	8,056.20	7,935.72	35.89	26.66	-107.30	-973.34	-495.61	2,175.15	2,127.21	47.94	45.368	
8,300.00	8,035.72	8,156.20	8,035.72	35.99	26.79	-107.30	-973.34	-495.61	2,175.15	2,126.93	48.23	45.103	
8,400.00	8,135.72	8,256.20	8,135.72	36.10	26.91	-107.30	-973.34	-495.61	2,175.15	2,126.64	48.51	44.838	
8,500.00	8,235.72	8,356.20	8,235.72	36.21	27.03	-107.30	-973.34	-495.61	2,175.15	2,126.35	48.80	44.575	
8,600.00	8,335.72	8,456.20	8,335.72	36.32	27.16	-107.30	-973.34	-495.61	2,175.15	2,126.07	49.09	44.312	
8,600.93	8,336.65	8,457.13	8,336.65	36.32	27.16	-107.30	-973.34	-495.61	2,175.15	2,126.06	49.09	44.309	
8,619.28	8,355.00	8,465.48	8,345.00	36.34	27.17	-107.30	-973.34	-495.61	2,175.18	2,126.05	49.13	44.275	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_KERR-MCGEE 23-3
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5057.00ft (Original Well Elev)
Reference Site:	WELD_KERR MCGEE 19-3 PAD	MD Reference:	WELL @ 5057.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_KERR-MCGEE 23-3	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_KERR-MCGEE 23-3	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-15-10 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	139.92	-7.65	6.44	10.00				
100.00	100.00	100.00	100.00	0.10	0.10	139.92	-7.65	6.44	10.00	9.81	0.19	52.327	
200.00	200.00	200.00	200.00	0.32	0.32	139.92	-7.65	6.44	10.00	9.36	0.64	15.606	
300.00	300.00	300.00	300.00	0.55	0.55	139.92	-7.65	6.44	10.00	8.91	1.09	9.171	
400.00	400.00	400.00	400.00	0.77	0.77	139.92	-7.65	6.44	10.00	8.46	1.54	6.493	
500.00	500.00	500.00	500.00	0.99	0.99	139.92	-7.65	6.44	10.00	8.01	1.99	5.026	
600.00	600.00	600.00	600.00	1.22	1.22	139.92	-7.65	6.44	10.00	7.56	2.44	4.099	
700.00	700.00	700.00	700.00	1.44	1.44	139.92	-7.65	6.44	10.00	7.11	2.89	3.461	
800.00	800.00	800.00	800.00	1.67	1.67	139.92	-7.65	6.44	10.00	6.66	3.34	2.995	
900.00	900.00	900.00	900.00	1.89	1.89	139.92	-7.65	6.44	10.00	6.21	3.79	2.640	
1,000.00	1,000.00	1,000.00	1,000.00	2.12	2.12	139.92	-7.65	6.44	10.00	5.76	4.24	2.360	
1,050.00	1,050.00	1,050.00	1,050.00	2.23	2.23	139.92	-7.65	6.44	10.00	5.54	4.46	2.241 CC	
1,100.00	1,100.00	1,099.82	1,099.82	2.33	2.33	39.82	-7.98	6.71	10.09	5.43	4.66	2.164 ES, SF	
1,200.00	1,199.93	1,199.43	1,199.37	2.53	2.51	51.08	-10.66	8.91	11.11	6.07	5.04	2.205	
1,300.00	1,299.68	1,298.92	1,298.61	2.74	2.70	67.30	-16.00	13.30	14.08	8.65	5.43	2.593	
1,400.00	1,399.13	1,398.21	1,397.36	2.97	2.91	80.86	-23.98	19.86	19.77	13.91	5.86	3.371	
1,500.00	1,498.15	1,497.23	1,495.41	3.22	3.15	89.77	-34.56	28.56	28.21	21.87	6.35	4.446	
1,600.00	1,596.63	1,595.89	1,592.60	3.51	3.42	95.29	-47.71	39.36	39.23	32.34	6.89	5.693	
1,700.00	1,694.44	1,694.14	1,688.72	3.84	3.74	98.77	-63.36	52.22	52.67	45.15	7.52	7.007	
1,800.00	1,791.46	1,791.89	1,783.63	4.22	4.11	101.02	-81.45	67.09	68.44	60.20	8.24	8.307	
1,900.00	1,887.58	1,889.83	1,878.02	4.67	4.53	102.90	-101.61	83.66	86.20	77.13	9.07	9.508	
2,000.00	1,982.68	1,987.89	1,972.47	5.19	4.98	105.74	-121.99	100.41	105.05	95.06	9.99	10.515	
2,050.75	2,030.52	2,037.51	2,020.26	5.48	5.22	107.42	-132.30	108.88	115.10	104.61	10.49	10.972	
2,100.00	2,076.80	2,085.61	2,066.59	5.77	5.45	109.14	-142.30	117.10	125.08	114.09	10.99	11.381	
2,200.00	2,170.76	2,183.27	2,160.65	6.38	5.94	111.90	-162.59	133.77	145.62	133.59	12.03	12.108	
2,300.00	2,264.72	2,280.93	2,254.71	7.02	6.44	113.97	-182.88	150.45	166.40	153.32	13.08	12.718	
2,400.00	2,358.68	2,378.59	2,348.77	7.67	6.95	115.59	-203.18	167.13	187.35	173.19	14.16	13.232	
2,500.00	2,452.64	2,476.25	2,442.83	8.33	7.46	116.88	-223.47	183.81	208.41	193.17	15.24	13.671	
2,600.00	2,546.60	2,573.91	2,536.89	9.00	7.98	117.93	-243.77	200.49	229.56	213.21	16.34	14.047	
2,700.00	2,640.56	2,671.57	2,630.95	9.68	8.51	118.81	-264.06	217.17	250.76	233.32	17.45	14.373	
2,800.00	2,734.52	2,769.23	2,725.01	10.36	9.04	119.55	-284.35	233.85	272.02	253.46	18.56	14.658	
2,900.00	2,828.48	2,866.89	2,819.07	11.05	9.57	120.18	-304.65	250.52	293.31	273.63	19.67	14.908	
3,000.00	2,922.44	2,964.55	2,913.13	11.74	10.11	120.73	-324.94	267.20	314.62	293.83	20.80	15.129	
3,100.00	3,016.40	3,062.21	3,007.19	12.44	10.65	121.21	-345.24	283.88	335.97	314.05	21.92	15.326	
3,200.00	3,110.36	3,159.87	3,101.26	13.14	11.19	121.63	-365.53	300.56	357.33	334.28	23.05	15.503	
3,300.00	3,204.32	3,257.53	3,195.32	13.84	11.73	122.00	-385.82	317.24	378.71	354.53	24.18	15.662	
3,400.00	3,298.28	3,355.19	3,289.38	14.54	12.28	122.33	-406.12	333.92	400.10	374.79	25.31	15.806	
3,500.00	3,392.24	3,452.85	3,383.44	15.25	12.82	122.63	-426.41	350.60	421.51	395.06	26.45	15.938	
3,600.00	3,486.20	3,550.51	3,477.50	15.95	13.37	122.90	-446.71	367.27	442.92	415.34	27.58	16.057	
3,700.00	3,580.16	3,648.17	3,571.56	16.66	13.92	123.15	-467.00	383.95	464.35	435.63	28.72	16.167	
3,800.00	3,674.12	3,745.83	3,665.62	17.37	14.47	123.37	-487.29	400.63	485.78	455.92	29.86	16.269	
3,900.00	3,768.08	3,843.49	3,759.68	18.08	15.02	123.58	-507.59	417.31	507.21	476.22	31.00	16.362	
4,000.00	3,862.04	3,941.15	3,853.74	18.79	15.57	123.76	-527.88	433.99	528.66	496.52	32.14	16.449	
4,100.00	3,956.00	4,038.81	3,947.80	19.50	16.12	123.94	-548.18	450.67	550.11	516.82	33.28	16.529	
4,200.00	4,049.96	4,136.47	4,041.86	20.21	16.67	124.10	-568.47	467.35	571.56	537.14	34.42	16.605	
4,300.00	4,143.92	4,234.12	4,135.92	20.92	17.22	124.25	-588.76	484.02	593.01	557.45	35.56	16.675	
4,400.00	4,237.88	4,331.78	4,229.98	21.64	17.77	124.39	-609.06	500.70	614.47	577.77	36.71	16.741	
4,500.00	4,331.84	4,429.44	4,324.04	22.35	18.33	124.52	-629.35	517.38	635.94	598.09	37.85	16.802	
4,600.00	4,425.80	4,527.10	4,418.11	23.06	18.88	124.64	-649.65	534.06	657.40	618.41	38.99	16.861	
4,700.00	4,519.76	4,624.76	4,512.17	23.78	19.44	124.75	-669.94	550.74	678.87	638.74	40.13	16.916	
4,800.00	4,613.72	4,722.42	4,606.23	24.49	19.99	124.86	-690.23	567.42	700.34	659.07	41.28	16.967	
4,900.00	4,707.68	4,820.08	4,700.29	25.21	20.54	124.96	-710.53	584.10	721.81	679.40	42.42	17.017	

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_KERR-MCGEE 23-3
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5057.00ft (Original Well Elev)
Reference Site:	WELD_KERR MCGEE 19-3 PAD	MD Reference:	WELL @ 5057.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_KERR-MCGEE 23-3	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_KERR-MCGEE 23-3	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-15-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 ft
WELD_KERR MCGEE 19-3 PAD - P_KERR-MCGEE 14-3 - P_KERR-MCGEE 14-3 - PLAN #1 1-15-10												Offset Well Error:	0.00 ft
Survey Program: 0-MWD													
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	4,801.64	4,917.74	4,794.35	25.92	21.10	125.05	-730.82	600.77	743.29	699.73	43.56	17.063	
5,100.00	4,895.60	5,015.40	4,888.41	26.64	21.65	125.14	-751.12	617.45	764.77	720.06	44.70	17.107	
5,200.00	4,989.56	5,113.06	4,982.47	27.36	22.21	125.22	-771.41	634.13	786.25	740.40	45.85	17.150	
5,300.00	5,083.52	5,210.72	5,076.53	28.07	22.76	125.30	-791.70	650.81	807.73	760.74	46.99	17.190	
5,400.00	5,177.48	5,308.38	5,170.59	28.79	23.32	125.38	-812.00	667.49	829.21	781.08	48.13	17.228	
5,500.00	5,271.44	5,406.04	5,264.65	29.51	23.88	125.45	-832.29	684.17	850.69	801.42	49.27	17.265	
5,600.00	5,365.41	5,503.70	5,358.71	30.22	24.43	125.52	-852.59	700.85	872.17	821.76	50.41	17.300	
5,700.00	5,459.37	5,601.36	5,452.77	30.94	24.99	125.58	-872.88	717.52	893.66	842.10	51.56	17.334	
5,756.53	5,512.48	5,656.57	5,505.94	31.35	25.30	125.62	-884.35	726.95	905.80	853.60	52.20	17.352	
5,800.00	5,553.44	5,699.06	5,546.88	31.62	25.55	125.78	-893.18	734.21	914.96	862.28	52.67	17.370	
5,900.00	5,648.46	5,797.10	5,641.30	32.13	26.10	126.00	-913.55	750.95	934.58	880.88	53.69	17.406	
6,000.00	5,744.51	5,895.45	5,736.02	32.60	26.66	126.01	-933.99	767.75	952.19	897.49	54.70	17.408	
6,100.00	5,841.47	5,995.29	5,832.64	33.01	27.06	125.93	-953.40	783.70	967.75	912.23	55.52	17.431	
6,200.00	5,939.23	6,095.68	5,930.63	33.37	27.42	125.87	-970.28	797.57	981.18	924.93	56.24	17.445	
6,300.00	6,037.66	6,196.55	6,029.79	33.68	27.74	125.81	-984.55	809.30	992.44	935.57	56.88	17.449	
6,400.00	6,136.65	6,297.83	6,129.93	33.95	28.02	125.76	-996.17	818.85	1,001.52	944.09	57.43	17.440	
6,500.00	6,236.07	6,399.43	6,230.87	34.16	28.25	125.72	-1,005.06	826.16	1,008.39	950.51	57.88	17.422	
6,600.00	6,335.80	6,501.27	6,332.40	34.33	28.44	125.69	-1,011.19	831.20	1,013.05	954.81	58.23	17.397	
6,700.00	6,435.73	6,603.27	6,434.30	34.45	28.58	125.66	-1,014.54	833.95	1,015.47	956.99	58.48	17.363	
6,757.28	6,493.00	6,661.73	6,492.75	34.50	28.64	-132.70	-1,015.20	834.49	1,015.85	957.26	58.59	17.338	
6,800.00	6,535.72	6,704.70	6,535.72	34.54	28.69	-132.70	-1,015.22	834.50	1,015.85	957.18	58.67	17.313	
6,900.00	6,635.72	6,804.70	6,635.72	34.63	28.78	-132.70	-1,015.22	834.50	1,015.85	956.99	58.87	17.257	
7,000.00	6,735.72	6,904.70	6,735.72	34.72	28.88	-132.70	-1,015.22	834.50	1,015.85	956.79	59.06	17.200	
7,100.00	6,835.72	7,004.70	6,835.72	34.81	28.97	-132.70	-1,015.22	834.50	1,015.85	956.59	59.26	17.142	
7,200.00	6,935.72	7,104.70	6,935.72	34.90	29.07	-132.70	-1,015.22	834.50	1,015.85	956.39	59.46	17.084	
7,300.00	7,035.72	7,204.70	7,035.72	34.99	29.17	-132.70	-1,015.22	834.50	1,015.85	956.19	59.67	17.025	
7,400.00	7,135.72	7,304.70	7,135.72	35.09	29.28	-132.70	-1,015.22	834.50	1,015.85	955.98	59.87	16.967	
7,500.00	7,235.72	7,404.70	7,235.72	35.19	29.38	-132.70	-1,015.22	834.50	1,015.85	955.77	60.08	16.908	
7,600.00	7,335.72	7,504.70	7,335.72	35.28	29.48	-132.70	-1,015.22	834.50	1,015.85	955.56	60.29	16.848	
7,700.00	7,435.72	7,604.70	7,435.72	35.38	29.59	-132.70	-1,015.22	834.50	1,015.85	955.34	60.51	16.788	
7,800.00	7,535.72	7,704.70	7,535.72	35.48	29.70	-132.70	-1,015.22	834.50	1,015.85	955.13	60.73	16.728	
7,900.00	7,635.72	7,804.70	7,635.72	35.58	29.80	-132.70	-1,015.22	834.50	1,015.85	954.91	60.95	16.668	
8,000.00	7,735.72	7,904.70	7,735.72	35.68	29.91	-132.70	-1,015.22	834.50	1,015.85	954.68	61.17	16.608	
8,100.00	7,835.72	8,004.70	7,835.72	35.78	30.03	-132.70	-1,015.22	834.50	1,015.85	954.46	61.39	16.547	
8,200.00	7,935.72	8,104.70	7,935.72	35.89	30.14	-132.70	-1,015.22	834.50	1,015.85	954.23	61.62	16.486	
8,300.00	8,035.72	8,204.70	8,035.72	35.99	30.25	-132.70	-1,015.22	834.50	1,015.85	954.00	61.85	16.425	
8,400.00	8,135.72	8,304.70	8,135.72	36.10	30.37	-132.70	-1,015.22	834.50	1,015.85	953.77	62.08	16.363	
8,500.00	8,235.72	8,404.70	8,235.72	36.21	30.48	-132.70	-1,015.22	834.50	1,015.85	953.54	62.32	16.302	
8,600.00	8,335.72	8,504.70	8,335.72	36.32	30.60	-132.70	-1,015.22	834.50	1,015.85	953.30	62.55	16.240	
8,619.28	8,355.00	8,523.97	8,355.00	36.34	30.62	-132.70	-1,015.22	834.50	1,015.85	953.25	62.60	16.228	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_KERR-MCGEE 23-3
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5057.00ft (Original Well Elev)
Reference Site:	WELD_KERR MCGEE 19-3 PAD	MD Reference:	WELL @ 5057.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_KERR-MCGEE 23-3	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_KERR-MCGEE 23-3	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-15-10 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	141.19	-15.66	12.59	20.09				
100.00	100.00	100.00	100.00	0.10	0.10	141.19	-15.66	12.59	20.09	19.90	0.19	105.163	
200.00	200.00	200.00	200.00	0.32	0.32	141.19	-15.66	12.59	20.09	19.45	0.64	31.364	
300.00	300.00	300.00	300.00	0.55	0.55	141.19	-15.66	12.59	20.09	19.00	1.09	18.431	
400.00	400.00	400.00	400.00	0.77	0.77	141.19	-15.66	12.59	20.09	18.55	1.54	13.049	
500.00	500.00	500.00	500.00	0.99	0.99	141.19	-15.66	12.59	20.09	18.10	1.99	10.100	
600.00	600.00	600.00	600.00	1.22	1.22	141.19	-15.66	12.59	20.09	17.65	2.44	8.239	
700.00	700.00	700.00	700.00	1.44	1.44	141.19	-15.66	12.59	20.09	17.20	2.89	6.956	
800.00	800.00	800.00	800.00	1.67	1.67	141.19	-15.66	12.59	20.09	16.75	3.34	6.019	
900.00	900.00	900.00	900.00	1.89	1.89	141.19	-15.66	12.59	20.09	16.30	3.79	5.305	
1,000.00	1,000.00	1,000.00	1,000.00	2.12	2.12	141.19	-15.66	12.59	20.09	15.85	4.24	4.742	
1,050.00	1,050.00	1,050.00	1,050.00	2.23	2.23	141.19	-15.66	12.59	20.09	15.63	4.46	4.503 CC	
1,100.00	1,100.00	1,099.68	1,099.67	2.33	2.33	39.86	-15.87	12.97	20.16	15.49	4.67	4.320 ES	
1,200.00	1,199.93	1,199.02	1,198.95	2.53	2.52	42.45	-17.57	15.96	20.72	15.67	5.04	4.108	
1,300.00	1,299.68	1,298.34	1,298.03	2.74	2.72	47.19	-20.97	21.94	21.95	16.52	5.44	4.037 SF	
1,400.00	1,399.13	1,397.61	1,396.76	2.97	2.94	53.32	-26.07	30.90	24.05	18.19	5.86	4.105	
1,500.00	1,498.15	1,496.83	1,495.02	3.22	3.18	59.89	-32.85	42.82	27.20	20.87	6.33	4.298	
1,600.00	1,596.63	1,595.97	1,592.68	3.51	3.46	66.14	-41.30	57.68	31.51	24.64	6.87	4.587	
1,700.00	1,694.44	1,695.03	1,689.59	3.84	3.79	71.61	-51.40	75.45	37.05	29.54	7.51	4.936	
1,800.00	1,791.46	1,793.98	1,785.65	4.22	4.17	76.16	-63.14	96.10	43.80	35.55	8.26	5.306	
1,900.00	1,887.58	1,892.81	1,880.71	4.67	4.61	79.84	-76.50	119.59	51.75	42.62	9.13	5.667	
2,000.00	1,982.68	1,991.51	1,974.66	5.19	5.11	82.79	-91.45	145.87	60.84	50.70	10.14	5.999	
2,050.75	2,030.52	2,041.55	2,021.87	5.48	5.40	84.05	-99.64	160.27	65.88	55.17	10.71	6.150	
2,100.00	2,076.80	2,090.07	2,067.37	5.77	5.69	84.90	-107.97	174.92	71.08	59.80	11.28	6.300	
2,200.00	2,170.76	2,188.42	2,158.69	6.38	6.33	84.65	-126.01	206.64	82.61	70.13	12.48	6.620	
2,300.00	2,264.72	2,286.34	2,248.32	7.02	7.05	82.58	-145.50	240.92	95.48	81.78	13.70	6.971	
2,400.00	2,358.68	2,384.47	2,336.92	7.67	7.83	79.61	-166.35	277.58	109.76	94.84	14.92	7.356	
2,500.00	2,452.64	2,483.26	2,425.95	8.33	8.65	77.15	-187.52	314.80	124.47	108.31	16.16	7.704	
2,600.00	2,546.60	2,582.04	2,514.97	9.00	9.49	75.21	-208.69	352.02	139.36	121.96	17.40	8.010	
2,700.00	2,640.56	2,680.83	2,603.99	9.68	10.34	73.64	-229.86	389.25	154.37	135.73	18.65	8.279	
2,800.00	2,734.52	2,779.62	2,693.02	10.36	11.20	72.35	-251.02	426.47	169.48	149.58	19.90	8.517	
2,900.00	2,828.48	2,878.40	2,782.04	11.05	12.07	71.27	-272.19	463.69	184.65	163.50	21.15	8.729	
3,000.00	2,922.44	2,977.19	2,871.06	11.74	12.94	70.36	-293.36	500.92	199.88	177.47	22.42	8.917	
3,100.00	3,016.40	3,075.98	2,960.09	12.44	13.82	69.57	-314.53	538.14	215.16	191.48	23.68	9.085	
3,200.00	3,110.36	3,174.77	3,049.11	13.14	14.70	68.89	-335.70	575.36	230.47	205.52	24.95	9.237	
3,300.00	3,204.32	3,273.55	3,138.13	13.84	15.58	68.30	-356.87	612.59	245.80	219.58	26.22	9.374	
3,400.00	3,298.28	3,372.34	3,227.16	14.54	16.47	67.77	-378.03	649.81	261.16	233.66	27.50	9.498	
3,500.00	3,392.24	3,471.13	3,316.18	15.25	17.36	67.31	-399.20	687.03	276.54	247.76	28.77	9.611	
3,600.00	3,486.20	3,569.91	3,405.20	15.95	18.25	66.89	-420.37	724.26	291.93	261.88	30.05	9.715	
3,700.00	3,580.16	3,668.70	3,494.23	16.66	19.15	66.51	-441.54	761.48	307.34	276.01	31.33	9.810	
3,800.00	3,674.12	3,767.49	3,583.25	17.37	20.04	66.17	-462.71	798.70	322.76	290.14	32.61	9.897	
3,900.00	3,768.08	3,866.27	3,672.27	18.08	20.94	65.86	-483.88	835.93	338.18	304.29	33.90	9.977	
4,000.00	3,862.04	3,965.06	3,761.30	18.79	21.84	65.58	-505.05	873.15	353.62	318.44	35.18	10.052	
4,100.00	3,956.00	4,063.85	3,850.32	19.50	22.74	65.32	-526.21	910.37	369.07	332.60	36.47	10.121	
4,200.00	4,049.96	4,162.63	3,939.34	20.21	23.64	65.08	-547.38	947.60	384.52	346.77	37.75	10.185	
4,300.00	4,143.92	4,261.42	4,028.37	20.92	24.54	64.86	-568.55	984.82	399.98	360.94	39.04	10.245	
4,400.00	4,237.88	4,360.21	4,117.39	21.64	25.44	64.66	-589.72	1,022.04	415.44	375.11	40.33	10.301	
4,500.00	4,331.84	4,459.00	4,206.42	22.35	26.34	64.47	-610.89	1,059.27	430.91	389.29	41.62	10.354	
4,600.00	4,425.80	4,557.78	4,295.44	23.06	27.25	64.30	-632.06	1,096.49	446.38	403.47	42.91	10.403	
4,700.00	4,519.76	4,656.57	4,384.46	23.78	28.15	64.13	-653.23	1,133.71	461.86	417.66	44.20	10.450	
4,800.00	4,613.72	4,755.36	4,473.49	24.49	29.06	63.98	-674.39	1,170.94	477.34	431.85	45.49	10.493	
4,900.00	4,707.68	4,854.14	4,562.51	25.21	29.96	63.84	-695.56	1,208.16	492.82	446.04	46.78	10.534	

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_KERR-MCGEE 23-3
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5057.00ft (Original Well Elev)
Reference Site:	WELD_KERR MCGEE 19-3 PAD	MD Reference:	WELL @ 5057.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_KERR-MCGEE 23-3	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_KERR-MCGEE 23-3	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-15-10 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
5,000.00	4,801.64	4,952.93	4,651.53	25.92	30.86	63.70	-716.73	1,245.38	508.30	460.23	48.07	10.573	
5,100.00	4,895.60	5,051.72	4,740.56	26.64	31.77	63.58	-737.90	1,282.61	523.79	474.42	49.37	10.610	
5,200.00	4,989.56	5,150.50	4,829.58	27.36	32.67	63.46	-759.07	1,319.83	539.28	488.62	50.66	10.645	
5,300.00	5,083.52	5,249.29	4,918.60	28.07	33.58	63.34	-780.24	1,357.05	554.77	502.82	51.95	10.678	
5,400.00	5,177.48	5,348.08	5,007.63	28.79	34.49	63.24	-801.40	1,394.28	570.27	517.02	53.25	10.710	
5,500.00	5,271.44	5,446.86	5,096.65	29.51	35.39	63.14	-822.57	1,431.50	585.76	531.22	54.54	10.740	
5,600.00	5,365.41	5,545.65	5,185.67	30.22	36.30	63.04	-843.74	1,468.72	601.26	545.43	55.84	10.768	
5,700.00	5,459.37	5,644.44	5,274.70	30.94	37.21	62.95	-864.91	1,505.95	616.76	559.63	57.13	10.795	
5,756.53	5,512.48	5,700.28	5,325.02	31.35	37.72	62.90	-876.88	1,526.99	625.52	567.66	57.86	10.810	
5,800.00	5,553.44	5,743.20	5,363.70	31.62	38.11	62.96	-886.07	1,543.16	632.41	573.99	58.42	10.825	
5,900.00	5,648.46	5,841.67	5,452.43	32.13	39.02	62.93	-907.17	1,580.26	649.39	589.88	59.51	10.912	
6,000.00	5,744.51	5,939.69	5,540.77	32.60	39.92	62.67	-928.18	1,617.20	667.97	607.55	60.43	11.054	
6,100.00	5,841.47	6,037.15	5,628.59	33.01	40.81	62.22	-949.06	1,653.92	688.23	627.06	61.17	11.251	
6,200.00	5,939.23	6,133.92	5,715.80	33.37	41.70	61.60	-969.80	1,690.38	710.25	648.50	61.75	11.502	
6,300.00	6,037.66	6,229.88	5,802.28	33.68	42.58	60.83	-990.36	1,726.54	734.15	671.98	62.17	11.809	
6,400.00	6,136.65	6,324.93	5,887.93	33.95	43.46	59.96	-1,010.73	1,762.36	760.05	697.60	62.44	12.172	
6,500.00	6,236.07	6,423.26	5,976.57	34.16	44.34	58.93	-1,031.77	1,799.35	788.02	725.47	62.55	12.599	
6,600.00	6,335.80	6,543.31	6,086.17	34.33	45.23	57.58	-1,055.98	1,841.93	816.23	753.85	62.39	13.083	
6,700.00	6,435.73	6,665.63	6,199.85	34.45	45.99	56.28	-1,078.29	1,881.17	843.59	781.50	62.09	13.586	
6,757.28	6,493.00	6,736.74	6,266.78	34.50	46.39	157.21	-1,090.15	1,902.02	858.84	796.96	61.88	13.880	
6,800.00	6,535.72	6,790.39	6,317.67	34.54	46.68	156.50	-1,098.56	1,916.80	869.82	808.19	61.63	14.114	
6,900.00	6,635.72	6,918.50	6,440.40	34.63	47.30	155.06	-1,116.71	1,948.72	893.31	832.17	61.14	14.611	
7,000.00	6,735.72	7,049.84	6,567.79	34.72	47.84	153.87	-1,132.49	1,976.46	913.46	852.68	60.78	15.029	
7,100.00	6,835.72	7,183.97	6,699.25	34.81	48.30	152.95	-1,145.60	1,999.52	930.00	869.45	60.55	15.358	
7,200.00	6,935.72	7,320.36	6,834.06	34.90	48.67	152.25	-1,155.80	2,017.46	942.75	882.30	60.44	15.597	
7,300.00	7,035.72	7,458.44	6,971.38	34.99	48.94	151.79	-1,162.89	2,029.91	951.53	891.08	60.45	15.741	
7,400.00	7,135.72	7,597.59	7,110.30	35.09	49.13	151.54	-1,166.71	2,036.63	956.24	895.67	60.57	15.788	
7,500.00	7,235.72	7,723.02	7,235.72	35.19	49.22	151.49	-1,167.40	2,037.86	957.10	896.32	60.78	15.748	
7,600.00	7,335.72	7,823.02	7,335.72	35.28	49.29	151.49	-1,167.40	2,037.86	957.10	896.11	60.99	15.693	
7,700.00	7,435.72	7,923.02	7,435.72	35.38	49.36	151.49	-1,167.40	2,037.86	957.10	895.89	61.21	15.637	
7,800.00	7,535.72	8,023.02	7,535.72	35.48	49.43	151.49	-1,167.40	2,037.86	957.10	895.68	61.42	15.582	
7,900.00	7,635.72	8,123.02	7,635.72	35.58	49.49	151.49	-1,167.40	2,037.86	957.10	895.45	61.64	15.526	
8,000.00	7,735.72	8,223.02	7,735.72	35.68	49.56	151.49	-1,167.40	2,037.86	957.10	895.23	61.87	15.470	
8,100.00	7,835.72	8,323.02	7,835.72	35.78	49.64	151.49	-1,167.40	2,037.86	957.10	895.01	62.09	15.414	
8,200.00	7,935.72	8,423.02	7,935.72	35.89	49.71	151.49	-1,167.40	2,037.86	957.10	894.78	62.32	15.358	
8,300.00	8,035.72	8,523.02	8,035.72	35.99	49.78	151.49	-1,167.40	2,037.86	957.10	894.55	62.55	15.302	
8,400.00	8,135.72	8,623.02	8,135.72	36.10	49.85	151.49	-1,167.40	2,037.86	957.10	894.32	62.78	15.245	
8,500.00	8,235.72	8,723.02	8,235.72	36.21	49.93	151.49	-1,167.40	2,037.86	957.10	894.08	63.02	15.188	
8,600.00	8,335.72	8,823.02	8,335.72	36.32	50.00	151.49	-1,167.40	2,037.86	957.10	893.84	63.25	15.131	
8,619.28	8,355.00	8,842.30	8,355.00	36.34	50.02	151.49	-1,167.40	2,037.86	957.10	893.80	63.30	15.120	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_KERR-MCGEE 23-3
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5057.00ft (Original Well Elev)
Reference Site:	WELD_KERR MCGEE 19-3 PAD	MD Reference:	WELL @ 5057.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_KERR-MCGEE 23-3	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_KERR-MCGEE 23-3	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-15-10 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	-37.53	8.01	-6.16	10.11				
100.00	100.00	100.00	100.00	0.10	0.10	-37.53	8.01	-6.16	10.11	9.91	0.19	52.896	
200.00	200.00	200.00	200.00	0.32	0.32	-37.53	8.01	-6.16	10.11	9.47	0.64	15.776	
300.00	300.00	300.00	300.00	0.55	0.55	-37.53	8.01	-6.16	10.11	9.02	1.09	9.270	
400.00	400.00	400.00	400.00	0.77	0.77	-37.53	8.01	-6.16	10.11	8.57	1.54	6.564	
500.00	500.00	500.00	500.00	0.99	0.99	-37.53	8.01	-6.16	10.11	8.12	1.99	5.080	
600.00	600.00	600.00	600.00	1.22	1.22	-37.53	8.01	-6.16	10.11	7.67	2.44	4.144	
700.00	700.00	700.00	700.00	1.44	1.44	-37.53	8.01	-6.16	10.11	7.22	2.89	3.499	
800.00	800.00	800.00	800.00	1.67	1.67	-37.53	8.01	-6.16	10.11	6.77	3.34	3.028	
900.00	900.00	900.00	900.00	1.89	1.89	-37.53	8.01	-6.16	10.11	6.32	3.79	2.668	
1,000.00	1,000.00	1,000.00	1,000.00	2.12	2.12	-37.53	8.01	-6.16	10.11	5.87	4.24	2.385	
1,050.00	1,050.00	1,050.00	1,050.00	2.23	2.23	-37.53	8.01	-6.16	10.11	5.64	4.46	2.265	
1,100.00	1,100.00	1,100.17	1,100.17	2.33	2.33	-141.30	7.62	-5.96	10.01	5.35	4.66	2.147	
1,181.88	1,181.84	1,182.29	1,182.24	2.50	2.47	-154.41	5.29	-4.78	9.75	4.79	4.96	1.965 CC	
1,200.00	1,199.93	1,200.44	1,200.37	2.53	2.51	-158.98	4.49	-4.38	9.78	4.76	5.03	1.946 ES, SF	
1,300.00	1,299.68	1,300.45	1,300.14	2.74	2.69	171.11	-1.62	-1.30	12.00	6.60	5.40	2.221	
1,400.00	1,399.13	1,400.10	1,399.49	2.97	2.90	155.69	-8.49	2.16	19.21	13.41	5.80	3.313	
1,500.00	1,498.15	1,499.49	1,498.59	3.22	3.11	152.27	-15.33	5.62	30.07	23.86	6.21	4.840	
1,600.00	1,596.63	1,598.51	1,597.31	3.51	3.32	152.82	-22.16	9.05	44.03	37.40	6.63	6.637	
1,700.00	1,694.44	1,697.02	1,695.53	3.84	3.55	154.52	-28.94	12.48	61.09	54.03	7.06	8.651	
1,800.00	1,791.46	1,794.92	1,793.14	4.22	3.78	156.43	-35.69	15.88	81.32	73.83	7.49	10.853	
1,900.00	1,887.58	1,892.07	1,890.00	4.67	4.01	158.23	-42.38	19.25	104.77	96.84	7.93	13.216	
2,000.00	1,982.68	1,988.37	1,986.02	5.19	4.24	159.85	-49.01	22.59	131.47	123.10	8.36	15.719	
2,050.75	2,030.52	2,036.88	2,034.38	5.48	4.36	160.59	-52.35	24.28	146.26	137.68	8.59	17.035	
2,100.00	2,076.80	2,083.82	2,081.18	5.77	4.48	161.32	-55.59	25.91	161.03	152.20	8.84	18.222	
2,200.00	2,170.76	2,179.15	2,176.22	6.38	4.71	162.45	-62.15	29.22	191.08	181.73	9.36	20.422	
2,300.00	2,264.72	2,274.47	2,271.26	7.02	4.95	163.27	-68.72	32.53	221.18	211.30	9.89	22.372	
2,400.00	2,358.68	2,369.79	2,366.29	7.67	5.19	163.89	-75.29	35.84	251.32	240.89	10.43	24.106	
2,500.00	2,452.64	2,465.11	2,461.33	8.33	5.43	164.38	-81.85	39.15	281.47	270.50	10.97	25.656	
2,600.00	2,546.60	2,560.43	2,556.37	9.00	5.68	164.78	-88.42	42.46	311.64	300.11	11.52	27.047	
2,700.00	2,640.56	2,655.75	2,651.40	9.68	5.92	165.10	-94.99	45.77	341.81	329.74	12.08	28.300	
2,800.00	2,734.52	2,751.07	2,746.44	10.36	6.17	165.38	-101.55	49.08	372.00	359.36	12.64	29.434	
2,900.00	2,828.48	2,846.39	2,841.48	11.05	6.42	165.61	-108.12	52.40	402.20	388.99	13.20	30.463	
3,000.00	2,922.44	2,941.71	2,936.51	11.74	6.66	165.81	-114.69	55.71	432.39	418.62	13.77	31.401	
3,100.00	3,016.40	3,037.03	3,031.55	12.44	6.91	165.98	-121.25	59.02	462.60	448.26	14.34	32.259	
3,200.00	3,110.36	3,132.36	3,126.59	13.14	7.16	166.13	-127.82	62.33	492.80	477.89	14.91	33.047	
3,300.00	3,204.32	3,227.68	3,221.63	13.84	7.41	166.27	-134.39	65.64	523.01	507.53	15.49	33.771	
3,400.00	3,298.28	3,323.00	3,316.66	14.54	7.66	166.39	-140.95	68.95	553.23	537.16	16.06	34.440	
3,500.00	3,392.24	3,418.32	3,411.70	15.25	7.91	166.50	-147.52	72.26	583.44	566.80	16.64	35.059	
3,600.00	3,486.20	3,513.64	3,506.74	15.95	8.17	166.59	-154.08	75.57	613.65	596.43	17.22	35.633	
3,700.00	3,580.16	3,608.96	3,601.77	16.66	8.42	166.68	-160.65	78.88	643.87	626.07	17.80	36.168	
3,800.00	3,674.12	3,704.28	3,696.81	17.37	8.67	166.76	-167.22	82.19	674.09	655.70	18.38	36.666	
3,900.00	3,768.08	3,799.60	3,791.85	18.08	8.92	166.83	-173.78	85.50	704.31	685.34	18.97	37.131	
4,000.00	3,862.04	3,894.92	3,886.88	18.79	9.18	166.90	-180.35	88.81	734.53	714.98	19.55	37.567	
4,100.00	3,956.00	3,990.24	3,981.92	19.50	9.43	166.96	-186.92	92.12	764.75	744.61	20.14	37.975	
4,200.00	4,049.96	4,085.57	4,076.96	20.21	9.68	167.02	-193.48	95.43	794.97	774.25	20.72	38.360	
4,300.00	4,143.92	4,180.89	4,172.00	20.92	9.94	167.07	-200.05	98.74	825.19	803.88	21.31	38.721	
4,400.00	4,237.88	4,276.21	4,267.03	21.64	10.19	167.12	-206.62	102.06	855.42	833.52	21.90	39.062	
4,500.00	4,331.84	4,371.53	4,362.07	22.35	10.45	167.17	-213.18	105.37	885.64	863.15	22.49	39.384	
4,600.00	4,425.80	4,466.85	4,457.11	23.06	10.70	167.21	-219.75	108.68	915.86	892.79	23.08	39.689	
4,700.00	4,519.76	4,562.17	4,552.14	23.78	10.96	167.25	-226.32	111.99	946.09	922.42	23.67	39.977	
4,800.00	4,613.72	4,657.49	4,647.18	24.49	11.21	167.29	-232.88	115.30	976.31	952.06	24.26	40.251	

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_KERR-MCGEE 23-3
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5057.00ft (Original Well Elev)
Reference Site:	WELD_KERR MCGEE 19-3 PAD	MD Reference:	WELL @ 5057.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_KERR-MCGEE 23-3	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_KERR-MCGEE 23-3	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-15-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 ft
WELD_KERR MCGEE 19-3 PAD - P_KERR-MCGEE 19-3 - P_KERR-MCGEE 19-3 - PLAN #1 1-15-10												Offset Well Error:	0.00 ft
Survey Program: 0-MWD													
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	4,707.68	4,752.81	4,742.22	25.21	11.47	167.32	-239.45	118.61	1,006.54	981.69	24.85	40.511	
5,000.00	4,801.64	4,848.13	4,837.25	25.92	11.72	167.36	-246.02	121.92	1,036.76	1,011.33	25.44	40.758	
5,100.00	4,895.60	4,943.46	4,932.29	26.64	11.98	167.39	-252.58	125.23	1,066.99	1,040.96	26.03	40.993	
5,200.00	4,989.56	5,038.78	5,027.33	27.36	12.24	167.42	-259.15	128.54	1,097.22	1,070.60	26.62	41.218	
5,300.00	5,083.52	5,134.10	5,122.36	28.07	12.49	167.45	-265.71	131.85	1,127.44	1,100.23	27.21	41.432	
5,400.00	5,177.48	5,229.42	5,217.40	28.79	12.75	167.47	-272.28	135.16	1,157.67	1,129.86	27.80	41.636	
5,500.00	5,271.44	5,324.74	5,312.44	29.51	13.00	167.50	-278.85	138.47	1,187.89	1,159.50	28.40	41.832	
5,600.00	5,365.41	5,420.06	5,407.48	30.22	13.26	167.52	-285.41	141.78	1,218.12	1,189.13	28.99	42.019	
5,700.00	5,459.37	5,515.38	5,502.51	30.94	13.52	167.55	-291.98	145.09	1,248.35	1,218.77	29.58	42.198	
5,756.53	5,512.48	5,569.26	5,556.23	31.35	13.66	167.56	-295.69	146.97	1,265.44	1,235.52	29.92	42.296	
5,800.00	5,553.44	5,610.80	5,597.65	31.62	13.77	167.62	-298.55	148.41	1,278.27	1,248.05	30.22	42.298	
5,900.00	5,648.46	5,707.03	5,693.59	32.13	14.03	167.73	-305.18	151.75	1,305.44	1,274.58	30.87	42.294	
6,000.00	5,744.51	5,804.13	5,790.40	32.60	14.29	167.79	-311.87	155.12	1,329.32	1,297.84	31.48	42.229	
6,100.00	5,841.47	5,901.97	5,887.95	33.01	14.56	167.81	-318.61	158.52	1,349.87	1,317.81	32.06	42.109	
6,200.00	5,939.23	6,000.45	5,986.13	33.37	14.82	167.78	-325.40	161.94	1,367.07	1,334.48	32.60	41.938	
6,300.00	6,037.66	6,099.43	6,084.82	33.68	15.09	167.70	-332.21	165.38	1,380.91	1,347.82	33.10	41.721	
6,400.00	6,136.65	6,198.80	6,183.89	33.95	15.36	167.59	-339.06	168.83	1,391.38	1,357.82	33.56	41.458	
6,500.00	6,236.07	6,298.44	6,283.23	34.16	15.63	167.43	-345.92	172.29	1,398.46	1,364.48	33.98	41.153	
6,600.00	6,335.80	6,382.97	6,367.58	34.33	15.82	167.29	-350.95	174.82	1,402.63	1,368.35	34.28	40.919	
6,700.00	6,435.73	6,465.41	6,449.95	34.45	15.97	167.22	-353.73	176.23	1,404.65	1,370.18	34.47	40.752	
6,757.28	6,493.00	6,512.66	6,497.20	34.50	16.06	-91.14	-354.37	176.55	1,404.83	1,370.28	34.55	40.662	
6,789.77	6,525.49	6,540.95	6,525.49	34.53	16.11	-91.15	-354.43	176.58	1,404.79	1,370.15	34.65	40.546	
6,800.00	6,535.72	6,551.18	6,535.72	34.54	16.12	-91.15	-354.43	176.58	1,404.79	1,370.11	34.68	40.507	
6,900.00	6,635.72	6,651.18	6,635.72	34.63	16.29	-91.15	-354.43	176.58	1,404.79	1,369.79	35.00	40.139	
7,000.00	6,735.72	6,751.18	6,735.72	34.72	16.45	-91.15	-354.43	176.58	1,404.79	1,369.48	35.31	39.784	
7,100.00	6,835.72	6,851.18	6,835.72	34.81	16.62	-91.15	-354.43	176.58	1,404.79	1,369.17	35.63	39.432	
7,200.00	6,935.72	6,951.18	6,935.72	34.90	16.78	-91.15	-354.43	176.58	1,404.79	1,368.85	35.94	39.084	
7,300.00	7,035.72	7,051.18	7,035.72	34.99	16.95	-91.15	-354.43	176.58	1,404.79	1,368.53	36.26	38.738	
7,400.00	7,135.72	7,151.18	7,135.72	35.09	17.12	-91.15	-354.43	176.58	1,404.79	1,368.21	36.59	38.396	
7,500.00	7,235.72	7,251.18	7,235.72	35.19	17.28	-91.15	-354.43	176.58	1,404.79	1,367.88	36.91	38.057	
7,600.00	7,335.72	7,351.18	7,335.72	35.28	17.45	-91.15	-354.43	176.58	1,404.79	1,367.55	37.24	37.721	
7,700.00	7,435.72	7,451.18	7,435.72	35.38	17.62	-91.15	-354.43	176.58	1,404.79	1,367.22	37.57	37.389	
7,800.00	7,535.72	7,551.18	7,535.72	35.48	17.80	-91.15	-354.43	176.58	1,404.79	1,366.89	37.91	37.060	
7,900.00	7,635.72	7,651.18	7,635.72	35.58	17.97	-91.15	-354.43	176.58	1,404.79	1,366.55	38.24	36.734	
8,000.00	7,735.72	7,751.18	7,735.72	35.68	18.15	-91.15	-354.43	176.58	1,404.79	1,366.21	38.58	36.413	
8,100.00	7,835.72	7,851.18	7,835.72	35.78	18.32	-91.15	-354.43	176.58	1,404.79	1,365.87	38.92	36.094	
8,200.00	7,935.72	7,951.18	7,935.72	35.89	18.50	-91.15	-354.43	176.58	1,404.79	1,365.53	39.26	35.779	
8,300.00	8,035.72	8,051.18	8,035.72	35.99	18.68	-91.15	-354.43	176.58	1,404.79	1,365.19	39.61	35.468	
8,400.00	8,135.72	8,151.18	8,135.72	36.10	18.85	-91.15	-354.43	176.58	1,404.79	1,364.84	39.95	35.160	
8,500.00	8,235.72	8,251.18	8,235.72	36.21	19.03	-91.15	-354.43	176.58	1,404.79	1,364.49	40.30	34.856	
8,600.00	8,335.72	8,351.18	8,335.72	36.32	19.22	-91.15	-354.43	176.58	1,404.79	1,364.14	40.65	34.555	
8,619.28	8,355.00	8,370.46	8,355.00	36.34	19.25	-91.15	-354.43	176.58	1,404.79	1,364.07	40.72	34.498	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_KERR-MCGEE 23-3
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5057.00ft (Original Well Elev)
Reference Site:	WELD_KERR MCGEE 19-3 PAD	MD Reference:	WELL @ 5057.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_KERR-MCGEE 23-3	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_KERR-MCGEE 23-3	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-15-10 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	-38.80	54.64	-43.93	70.11				
100.00	100.00	100.00	100.00	0.10	0.10	-38.80	54.64	-43.93	70.11	69.92	0.19	366.971	
200.00	200.00	200.00	200.00	0.32	0.32	-38.80	54.64	-43.93	70.11	69.47	0.64	109.448	
300.00	300.00	300.00	300.00	0.55	0.55	-38.80	54.64	-43.93	70.11	69.02	1.09	64.315	
400.00	400.00	400.00	400.00	0.77	0.77	-38.80	54.64	-43.93	70.11	68.57	1.54	45.537	
500.00	500.00	500.00	500.00	0.99	0.99	-38.80	54.64	-43.93	70.11	68.12	1.99	35.246	
600.00	600.00	600.00	600.00	1.22	1.22	-38.80	54.64	-43.93	70.11	67.67	2.44	28.749	
700.00	700.00	700.00	700.00	1.44	1.44	-38.80	54.64	-43.93	70.11	67.22	2.89	24.274	
800.00	800.00	800.00	800.00	1.67	1.67	-38.80	54.64	-43.93	70.11	66.77	3.34	21.005	
900.00	900.00	900.00	900.00	1.89	1.89	-38.80	54.64	-43.93	70.11	66.32	3.79	18.512	
1,000.00	1,000.00	1,000.00	1,000.00	2.12	2.12	-38.80	54.64	-43.93	70.11	65.87	4.24	16.548	
1,050.00	1,050.00	1,050.00	1,050.00	2.23	2.23	-38.80	54.64	-43.93	70.11	65.65	4.46	15.714 CC, ES	
1,100.00	1,100.00	1,099.35	1,099.35	2.33	2.34	-140.39	55.04	-43.79	70.67	66.00	4.68	15.116	
1,200.00	1,199.93	1,197.91	1,197.85	2.53	2.56	-139.81	58.24	-42.67	75.19	70.10	5.09	14.782 SF	
1,300.00	1,299.68	1,296.01	1,295.71	2.74	2.78	-138.82	64.60	-40.45	84.22	78.71	5.50	15.304	
1,400.00	1,399.13	1,393.35	1,392.53	2.97	3.01	-137.67	74.04	-37.15	97.74	91.81	5.93	16.479	
1,500.00	1,498.15	1,489.66	1,487.93	3.22	3.25	-136.51	86.42	-32.81	115.73	109.35	6.38	18.140	
1,600.00	1,596.63	1,584.79	1,581.69	3.51	3.52	-135.44	101.61	-27.50	138.10	131.24	6.86	20.141	
1,700.00	1,694.44	1,681.44	1,676.70	3.84	3.81	-134.98	118.38	-21.63	163.75	156.37	7.37	22.204	
1,800.00	1,791.46	1,777.40	1,771.02	4.22	4.12	-135.28	135.04	-15.81	191.79	183.86	7.92	24.208	
1,900.00	1,887.58	1,872.56	1,864.55	4.67	4.44	-136.01	151.55	-10.03	222.25	213.75	8.50	26.148	
2,000.00	1,982.68	1,966.79	1,957.18	5.19	4.76	-136.99	167.90	-4.31	255.21	246.10	9.11	28.029	
2,050.75	2,030.52	2,014.23	2,003.81	5.48	4.93	-137.54	176.13	-1.43	272.91	263.49	9.42	28.966	
2,100.00	2,076.80	2,060.12	2,048.92	5.77	5.09	-138.29	184.10	1.36	290.43	280.68	9.76	29.766	
2,200.00	2,170.76	2,153.32	2,140.53	6.38	5.42	-139.56	200.27	7.02	326.13	315.68	10.45	31.203	
2,300.00	2,264.72	2,246.51	2,232.13	7.02	5.76	-140.58	216.44	12.67	361.94	350.77	11.16	32.429	
2,400.00	2,358.68	2,339.70	2,323.74	7.67	6.11	-141.42	232.61	18.33	397.82	385.94	11.88	33.482	
2,500.00	2,452.64	2,432.90	2,415.34	8.33	6.46	-142.12	248.78	23.99	433.78	421.16	12.61	34.394	
2,600.00	2,546.60	2,526.09	2,506.95	9.00	6.81	-142.71	264.96	29.65	469.78	456.43	13.35	35.189	
2,700.00	2,640.56	2,619.28	2,598.55	9.68	7.16	-143.22	281.13	35.31	505.81	491.72	14.09	35.887	
2,800.00	2,734.52	2,712.48	2,690.16	10.36	7.52	-143.66	297.30	40.96	541.88	527.04	14.84	36.504	
2,900.00	2,828.48	2,805.67	2,781.76	11.05	7.88	-144.05	313.47	46.62	577.97	562.37	15.60	37.052	
3,000.00	2,922.44	2,898.86	2,873.36	11.74	8.24	-144.39	329.64	52.28	614.08	597.73	16.36	37.542	
3,100.00	3,016.40	2,992.06	2,964.97	12.44	8.60	-144.69	345.82	57.94	650.21	633.09	17.12	37.981	
3,200.00	3,110.36	3,085.25	3,056.57	13.14	8.96	-144.97	361.99	63.59	686.36	668.47	17.88	38.378	
3,300.00	3,204.32	3,178.44	3,148.18	13.84	9.33	-145.21	378.16	69.25	722.51	703.86	18.65	38.738	
3,400.00	3,298.28	3,271.64	3,239.78	14.54	9.69	-145.43	394.33	74.91	758.68	739.26	19.42	39.065	
3,500.00	3,392.24	3,364.83	3,331.39	15.25	10.06	-145.63	410.50	80.57	794.85	774.66	20.19	39.364	
3,600.00	3,486.20	3,458.02	3,422.99	15.95	10.42	-145.81	426.67	86.23	831.03	810.07	20.97	39.638	
3,700.00	3,580.16	3,551.22	3,514.60	16.66	10.79	-145.98	442.85	91.88	867.22	845.48	21.74	39.890	
3,800.00	3,674.12	3,644.41	3,606.20	17.37	11.16	-146.14	459.02	97.54	903.42	880.90	22.52	40.123	
3,900.00	3,768.08	3,737.60	3,697.81	18.08	11.53	-146.28	475.19	103.20	939.62	916.32	23.29	40.337	
4,000.00	3,862.04	3,830.79	3,789.41	18.79	11.90	-146.41	491.36	108.86	975.82	951.75	24.07	40.537	
4,100.00	3,956.00	3,923.99	3,881.02	19.50	12.27	-146.53	507.53	114.52	1,012.03	987.18	24.85	40.722	
4,200.00	4,049.96	4,017.18	3,972.62	20.21	12.64	-146.65	523.70	120.17	1,048.24	1,022.61	25.63	40.895	
4,300.00	4,143.92	4,110.37	4,064.23	20.92	13.01	-146.75	539.88	125.83	1,084.46	1,058.05	26.41	41.056	
4,400.00	4,237.88	4,203.57	4,155.83	21.64	13.38	-146.85	556.05	131.49	1,120.68	1,093.48	27.20	41.207	
4,500.00	4,331.84	4,296.76	4,247.44	22.35	13.75	-146.95	572.22	137.15	1,156.90	1,128.92	27.98	41.349	
4,600.00	4,425.80	4,389.95	4,339.04	23.06	14.12	-147.04	588.39	142.80	1,193.13	1,164.36	28.76	41.482	
4,700.00	4,519.76	4,483.15	4,430.65	23.78	14.49	-147.12	604.56	148.46	1,229.35	1,199.81	29.55	41.607	
4,800.00	4,613.72	4,576.34	4,522.25	24.49	14.87	-147.20	620.74	154.12	1,265.58	1,235.25	30.33	41.725	
4,900.00	4,707.68	4,669.53	4,613.86	25.21	15.24	-147.27	636.91	159.78	1,301.81	1,270.70	31.12	41.837	

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_KERR-MCGEE 23-3
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5057.00ft (Original Well Elev)
Reference Site:	WELD_KERR MCGEE 19-3 PAD	MD Reference:	WELL @ 5057.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_KERR-MCGEE 23-3	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_KERR-MCGEE 23-3	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-15-10 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
5,000.00	4,801.64	4,762.73	4,705.46	25.92	15.61	-147.34	653.08	165.44	1,338.04	1,306.14	31.90	41.942	
5,100.00	4,895.60	4,855.92	4,797.07	26.64	15.98	-147.40	669.25	171.09	1,374.28	1,341.59	32.69	42.042	
5,200.00	4,989.56	4,949.11	4,888.67	27.36	16.36	-147.47	685.42	176.75	1,410.51	1,377.04	33.47	42.137	
5,300.00	5,083.52	5,042.31	4,980.28	28.07	16.73	-147.53	701.59	182.41	1,446.75	1,412.49	34.26	42.227	
5,400.00	5,177.48	5,135.50	5,071.88	28.79	17.10	-147.58	717.77	188.07	1,482.99	1,447.94	35.05	42.312	
5,500.00	5,271.44	5,228.69	5,163.49	29.51	17.48	-147.64	733.94	193.73	1,519.23	1,483.39	35.84	42.394	
5,600.00	5,365.41	5,321.89	5,255.09	30.22	17.85	-147.69	750.11	199.38	1,555.47	1,518.84	36.62	42.471	
5,700.00	5,459.37	5,415.08	5,346.70	30.94	18.23	-147.74	766.28	205.04	1,591.71	1,554.30	37.41	42.545	
5,756.53	5,512.48	5,467.76	5,398.48	31.35	18.44	-147.76	775.42	208.24	1,612.20	1,574.34	37.86	42.586	
5,800.00	5,553.44	5,508.38	5,438.40	31.62	18.60	-147.95	782.47	210.70	1,627.69	1,589.46	38.23	42.574	
5,900.00	5,648.46	5,602.54	5,530.96	32.13	18.98	-148.31	798.81	216.42	1,661.34	1,622.30	39.05	42.548	
6,000.00	5,744.51	5,697.63	5,624.43	32.60	19.36	-148.57	815.31	222.19	1,692.18	1,652.34	39.84	42.478	
6,100.00	5,841.47	5,793.53	5,718.70	33.01	19.75	-148.73	831.95	228.02	1,720.18	1,679.58	40.60	42.368	
6,200.00	5,939.23	5,890.14	5,813.66	33.37	20.14	-148.80	848.72	233.88	1,745.32	1,703.99	41.33	42.224	
6,300.00	6,037.66	5,987.32	5,909.18	33.68	20.53	-148.78	865.58	239.78	1,767.59	1,725.55	42.04	42.050	
6,400.00	6,136.65	6,090.66	6,010.78	33.95	20.93	-148.66	883.43	246.03	1,786.95	1,744.23	42.72	41.832	
6,500.00	6,236.07	6,222.32	6,140.86	34.16	21.31	-148.46	902.48	252.69	1,802.23	1,758.90	43.34	41.586	
6,600.00	6,335.80	6,355.77	6,273.53	34.33	21.62	-148.31	916.02	257.43	1,812.75	1,768.91	43.83	41.355	
6,700.00	6,435.73	6,490.40	6,407.90	34.45	21.88	-148.22	923.75	260.13	1,818.42	1,774.21	44.21	41.135	
6,757.28	6,493.00	6,567.78	6,485.26	34.50	21.99	-46.53	925.50	260.74	1,819.46	1,775.11	44.36	41.018	
6,800.00	6,535.72	6,618.25	6,535.72	34.54	22.06	-46.52	925.64	260.80	1,819.51	1,775.03	44.48	40.906	
6,900.00	6,635.72	6,718.25	6,635.72	34.63	22.20	-46.52	925.64	260.80	1,819.51	1,774.76	44.75	40.658	
7,000.00	6,735.72	6,818.25	6,735.72	34.72	22.34	-46.52	925.64	260.80	1,819.51	1,774.48	45.03	40.411	
7,100.00	6,835.72	6,918.25	6,835.72	34.81	22.48	-46.52	925.64	260.80	1,819.51	1,774.21	45.30	40.164	
7,200.00	6,935.72	7,018.25	6,935.72	34.90	22.62	-46.52	925.64	260.80	1,819.51	1,773.93	45.58	39.918	
7,300.00	7,035.72	7,118.25	7,035.72	34.99	22.77	-46.52	925.64	260.80	1,819.51	1,773.65	45.86	39.672	
7,400.00	7,135.72	7,218.25	7,135.72	35.09	22.92	-46.52	925.64	260.80	1,819.51	1,773.36	46.15	39.427	
7,500.00	7,235.72	7,318.25	7,235.72	35.19	23.07	-46.52	925.64	260.80	1,819.51	1,773.07	46.44	39.183	
7,600.00	7,335.72	7,418.25	7,335.72	35.28	23.21	-46.52	925.64	260.80	1,819.51	1,772.78	46.73	38.940	
7,700.00	7,435.72	7,518.25	7,435.72	35.38	23.36	-46.52	925.64	260.80	1,819.51	1,772.49	47.02	38.698	
7,800.00	7,535.72	7,618.25	7,535.72	35.48	23.52	-46.52	925.64	260.80	1,819.51	1,772.20	47.31	38.457	
7,900.00	7,635.72	7,718.25	7,635.72	35.58	23.67	-46.52	925.64	260.80	1,819.51	1,771.90	47.61	38.217	
8,000.00	7,735.72	7,818.25	7,735.72	35.68	23.82	-46.52	925.64	260.80	1,819.51	1,771.60	47.91	37.978	
8,100.00	7,835.72	7,918.25	7,835.72	35.78	23.98	-46.52	925.64	260.80	1,819.51	1,771.30	48.21	37.740	
8,200.00	7,935.72	8,018.25	7,935.72	35.89	24.13	-46.52	925.64	260.80	1,819.51	1,770.99	48.52	37.503	
8,215.12	7,950.85	8,033.37	7,950.85	35.90	24.16	-46.52	925.64	260.80	1,819.51	1,770.95	48.56	37.468	
8,300.00	8,035.72	8,057.52	7,975.00	35.99	24.20	-46.52	925.64	260.80	1,820.52	1,771.80	48.72	37.365	
8,400.00	8,135.72	8,057.52	7,975.00	36.10	24.20	-46.52	925.64	260.80	1,826.59	1,777.73	48.87	37.380	
8,500.00	8,235.72	8,057.52	7,975.00	36.21	24.20	-46.52	925.64	260.80	1,838.10	1,789.08	49.01	37.504	
8,600.00	8,335.72	8,057.52	7,975.00	36.32	24.20	-46.52	925.64	260.80	1,854.92	1,805.77	49.16	37.735	
8,619.28	8,355.00	8,057.52	7,975.00	36.34	24.20	-46.52	925.64	260.80	1,858.77	1,809.58	49.18	37.792	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_KERR-MCGEE 23-3
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5057.00ft (Original Well Elev)
Reference Site:	WELD_KERR MCGEE 19-3 PAD	MD Reference:	WELL @ 5057.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_KERR-MCGEE 23-3	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_KERR-MCGEE 23-3	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-15-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_KERR MCGEE 19-3 PAD - P_KERR-MCGEE 33-3 - P_KERR-MCGEE 33-3 - PLAN #1 1-15-10													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	-38.59	46.99	-37.50	60.12				
100.00	100.00	100.00	100.00	0.10	0.10	-38.59	46.99	-37.50	60.12	59.92	0.19	314.659	
200.00	200.00	200.00	200.00	0.32	0.32	-38.59	46.99	-37.50	60.12	59.48	0.64	93.846	
300.00	300.00	300.00	300.00	0.55	0.55	-38.59	46.99	-37.50	60.12	59.03	1.09	55.146	
400.00	400.00	400.00	400.00	0.77	0.77	-38.59	46.99	-37.50	60.12	58.58	1.54	39.045	
500.00	500.00	500.00	500.00	0.99	0.99	-38.59	46.99	-37.50	60.12	58.13	1.99	30.221	
600.00	600.00	600.00	600.00	1.22	1.22	-38.59	46.99	-37.50	60.12	57.68	2.44	24.651	
700.00	700.00	700.00	700.00	1.44	1.44	-38.59	46.99	-37.50	60.12	57.23	2.89	20.814	
800.00	800.00	800.00	800.00	1.67	1.67	-38.59	46.99	-37.50	60.12	56.78	3.34	18.011	
900.00	900.00	900.00	900.00	1.89	1.89	-38.59	46.99	-37.50	60.12	56.33	3.79	15.873	
1,000.00	1,000.00	1,000.00	1,000.00	2.12	2.12	-38.59	46.99	-37.50	60.12	55.88	4.24	14.189	
1,050.00	1,050.00	1,050.00	1,050.00	2.23	2.23	-38.59	46.99	-37.50	60.12	55.65	4.46	13.474 CC, ES	
1,100.00	1,100.00	1,099.67	1,099.67	2.33	2.33	-140.90	46.83	-37.90	60.59	55.92	4.67	12.982	
1,200.00	1,199.93	1,198.69	1,198.63	2.53	2.52	-145.68	45.59	-41.10	64.60	59.55	5.05	12.801 SF	
1,300.00	1,299.68	1,296.73	1,296.42	2.74	2.72	-153.49	43.15	-47.40	73.76	68.33	5.43	13.579	
1,400.00	1,399.13	1,393.16	1,392.34	2.97	2.94	-161.86	39.57	-56.64	89.37	83.55	5.82	15.363	
1,500.00	1,498.15	1,487.39	1,485.70	3.22	3.17	-169.15	34.94	-68.57	112.06	105.86	6.20	18.076	
1,600.00	1,596.63	1,578.99	1,575.99	3.51	3.42	-174.85	29.39	-82.91	141.80	135.22	6.58	21.560	
1,700.00	1,694.44	1,671.96	1,667.39	3.84	3.71	-179.02	23.24	-98.76	176.95	169.99	6.96	25.420	
1,800.00	1,791.46	1,763.63	1,757.51	4.22	4.01	-178.17	17.18	-114.40	215.90	208.56	7.34	29.400	
1,900.00	1,887.58	1,853.89	1,846.25	4.67	4.32	-176.23	11.22	-129.79	258.34	250.62	7.73	33.439	
2,000.00	1,982.68	1,942.64	1,933.50	5.19	4.64	-174.85	5.35	-144.93	304.07	295.96	8.11	37.503	
2,050.75	2,030.52	1,987.07	1,977.18	5.48	4.80	-174.30	2.41	-152.51	328.48	320.18	8.30	39.570	
2,100.00	2,076.80	2,029.97	2,019.36	5.77	4.95	-173.89	-0.42	-159.82	352.57	344.04	8.54	41.298	
2,200.00	2,170.76	2,117.08	2,105.01	6.38	5.28	-173.21	-6.18	-174.68	401.52	392.50	9.03	44.489	
2,300.00	2,264.72	2,204.20	2,190.65	7.02	5.60	-172.68	-11.94	-189.54	450.50	440.98	9.52	47.302	
2,400.00	2,358.68	2,291.32	2,276.30	7.67	5.94	-172.26	-17.70	-204.40	499.51	489.47	10.03	49.790	
2,500.00	2,452.64	2,378.43	2,361.94	8.33	6.27	-171.91	-23.46	-219.26	548.53	537.98	10.55	52.000	
2,600.00	2,546.60	2,465.55	2,447.59	9.00	6.61	-171.62	-29.22	-234.11	597.56	586.49	11.07	53.973	
2,700.00	2,640.56	2,552.66	2,533.23	9.68	6.96	-171.37	-34.98	-248.97	646.61	635.01	11.60	55.741	
2,800.00	2,734.52	2,639.78	2,618.88	10.36	7.30	-171.15	-40.74	-263.83	695.66	683.53	12.13	57.332	
2,900.00	2,828.48	2,726.89	2,704.52	11.05	7.65	-170.97	-46.49	-278.69	744.72	732.05	12.67	58.769	
3,000.00	2,922.44	2,814.01	2,790.17	11.74	8.00	-170.81	-52.25	-293.55	793.79	780.57	13.21	60.072	
3,100.00	3,016.40	2,901.12	2,875.81	12.44	8.35	-170.66	-58.01	-308.40	842.85	829.10	13.76	61.259	
3,200.00	3,110.36	2,988.24	2,961.46	13.14	8.70	-170.53	-63.77	-323.26	891.93	877.62	14.31	62.341	
3,300.00	3,204.32	3,075.35	3,047.10	13.84	9.05	-170.42	-69.53	-338.12	941.00	926.14	14.86	63.333	
3,400.00	3,298.28	3,162.47	3,132.75	14.54	9.40	-170.32	-75.29	-352.98	990.08	974.67	15.41	64.245	
3,500.00	3,392.24	3,249.58	3,218.40	15.25	9.76	-170.22	-81.05	-367.84	1,039.16	1,023.19	15.97	65.085	
3,600.00	3,486.20	3,336.70	3,304.04	15.95	10.11	-170.14	-86.81	-382.69	1,088.24	1,071.72	16.52	65.862	
3,700.00	3,580.16	3,423.81	3,389.69	16.66	10.47	-170.06	-92.57	-397.55	1,137.33	1,120.24	17.08	66.581	
3,800.00	3,674.12	3,510.93	3,475.33	17.37	10.83	-169.99	-98.32	-412.41	1,186.41	1,168.77	17.64	67.249	
3,900.00	3,768.08	3,598.04	3,560.98	18.08	11.18	-169.93	-104.08	-427.27	1,235.50	1,217.29	18.20	67.872	
4,000.00	3,862.04	3,685.16	3,646.62	18.79	11.54	-169.86	-109.84	-442.13	1,284.59	1,265.82	18.77	68.452	
4,100.00	3,956.00	3,772.27	3,732.27	19.50	11.90	-169.81	-115.60	-456.99	1,333.67	1,314.34	19.33	68.994	
4,200.00	4,049.96	3,859.39	3,817.91	20.21	12.26	-169.76	-121.36	-471.84	1,382.76	1,362.87	19.90	69.503	
4,300.00	4,143.92	3,946.50	3,903.56	20.92	12.62	-169.71	-127.12	-486.70	1,431.85	1,411.39	20.46	69.980	
4,400.00	4,237.88	4,033.62	3,989.20	21.64	12.98	-169.66	-132.88	-501.56	1,480.94	1,459.92	21.03	70.428	
4,500.00	4,331.84	4,120.74	4,074.85	22.35	13.34	-169.62	-138.64	-516.42	1,530.04	1,508.44	21.60	70.850	
4,600.00	4,425.80	4,207.85	4,160.50	23.06	13.70	-169.58	-144.39	-531.28	1,579.13	1,556.97	22.16	71.249	
4,700.00	4,519.76	4,294.97	4,246.14	23.78	14.06	-169.54	-150.15	-546.13	1,628.22	1,605.49	22.73	71.625	
4,800.00	4,613.72	4,382.08	4,331.79	24.49	14.42	-169.51	-155.91	-560.99	1,677.31	1,654.01	23.30	71.981	
4,900.00	4,707.68	4,469.20	4,417.43	25.21	14.78	-169.48	-161.67	-575.85	1,726.41	1,702.54	23.87	72.318	

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_KERR-MCGEE 23-3
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5057.00ft (Original Well Elev)
Reference Site:	WELD_KERR MCGEE 19-3 PAD	MD Reference:	WELL @ 5057.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_KERR-MCGEE 23-3	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_KERR-MCGEE 23-3	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-15-10 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
5,000.00	4,801.64	4,556.31	4,503.08	25.92	15.14	169.44	-167.43	-590.71	1,775.50	1,751.06	24.44	72.638	
5,100.00	4,895.60	4,643.43	4,588.72	26.64	15.50	169.41	-173.19	-605.57	1,824.60	1,799.58	25.01	72.942	
5,200.00	4,989.56	4,730.54	4,674.37	27.36	15.87	169.39	-178.95	-620.42	1,873.69	1,848.11	25.59	73.231	
5,300.00	5,083.52	4,817.66	4,760.01	28.07	16.23	169.36	-184.71	-635.28	1,922.79	1,896.63	26.16	73.506	
5,400.00	5,177.48	4,904.77	4,845.66	28.79	16.59	169.33	-190.46	-650.14	1,971.88	1,945.15	26.73	73.769	
5,500.00	5,271.44	4,991.89	4,931.30	29.51	16.95	169.31	-196.22	-665.00	2,020.98	1,993.68	27.30	74.019	
5,600.00	5,365.41	5,079.00	5,016.95	30.22	17.32	169.29	-201.98	-679.86	2,070.08	2,042.20	27.88	74.258	
5,700.00	5,459.37	5,166.12	5,102.59	30.94	17.68	169.27	-207.74	-694.71	2,119.17	2,090.72	28.45	74.486	
5,756.53	5,512.48	5,215.36	5,151.01	31.35	17.88	169.25	-211.00	-703.11	2,146.92	2,118.15	28.77	74.611	
5,800.00	5,553.44	5,253.39	5,188.39	31.62	18.04	169.33	-213.51	-709.60	2,167.99	2,138.88	29.11	74.488	
5,900.00	5,648.46	5,342.02	5,275.53	32.13	18.41	169.49	-219.37	-724.72	2,214.26	2,184.44	29.82	74.261	
6,000.00	5,744.51	5,432.18	5,364.17	32.60	18.79	169.61	-225.33	-740.09	2,257.47	2,226.98	30.49	74.028	
6,100.00	5,841.47	5,523.75	5,454.20	33.01	19.17	169.69	-231.38	-755.71	2,297.56	2,266.42	31.14	73.791	
6,200.00	5,939.23	5,616.63	5,545.50	33.37	19.56	169.75	-237.52	-771.55	2,334.48	2,302.75	31.74	73.555	
6,300.00	6,037.66	5,710.69	5,637.98	33.68	19.95	169.78	-243.74	-787.59	2,368.20	2,335.90	32.30	73.321	
6,400.00	6,136.65	5,805.83	5,731.51	33.95	20.35	169.78	-250.03	-803.82	2,398.67	2,365.85	32.82	73.092	
6,500.00	6,236.07	5,901.93	5,825.99	34.16	20.75	169.76	-256.38	-820.21	2,425.86	2,392.57	33.29	72.869	
6,600.00	6,335.80	5,998.87	5,921.29	34.33	21.15	169.71	-262.79	-836.74	2,449.74	2,416.03	33.72	72.653	
6,700.00	6,435.73	6,096.53	6,017.31	34.45	21.56	169.64	-269.25	-853.40	2,470.29	2,436.19	34.10	72.445	
6,757.28	6,493.00	6,152.75	6,072.58	34.50	21.79	-88.75	-272.96	-862.99	2,480.55	2,446.25	34.30	72.323	
6,800.00	6,535.72	6,194.75	6,113.87	34.54	21.97	-88.82	-275.74	-870.15	2,487.79	2,453.31	34.49	72.141	
6,900.00	6,635.72	6,293.06	6,210.53	34.63	22.38	-88.98	-282.24	-886.92	2,504.76	2,469.83	34.92	71.719	
7,000.00	6,735.72	6,391.38	6,307.18	34.72	22.79	-89.13	-288.74	-903.69	2,521.74	2,486.38	35.36	71.308	
7,100.00	6,835.72	6,489.69	6,403.84	34.81	23.20	-89.29	-295.24	-920.46	2,538.75	2,502.94	35.80	70.905	
7,200.00	6,935.72	6,588.00	6,500.49	34.90	23.61	-89.44	-301.74	-937.23	2,555.77	2,519.52	36.25	70.512	
7,300.00	7,035.72	6,686.32	6,597.14	34.99	24.03	-89.59	-308.23	-953.99	2,572.81	2,536.12	36.69	70.127	
7,400.00	7,135.72	6,784.63	6,693.80	35.09	24.44	-89.74	-314.73	-970.76	2,589.86	2,552.73	37.13	69.751	
7,500.00	7,235.72	6,882.94	6,790.45	35.19	24.85	-89.89	-321.23	-987.53	2,606.93	2,569.36	37.57	69.383	
7,600.00	7,335.72	6,981.25	6,887.11	35.28	25.26	-90.03	-327.73	-1,004.30	2,624.02	2,586.00	38.02	69.023	
7,700.00	7,435.72	7,079.57	6,983.76	35.38	25.67	-90.17	-334.23	-1,021.06	2,641.13	2,602.66	38.46	68.671	
7,800.00	7,535.72	7,177.88	7,080.41	35.48	26.08	-90.31	-340.73	-1,037.83	2,658.24	2,619.77	38.90	68.321	
7,900.00	7,635.72	7,276.19	7,177.12	35.58	26.49	-90.45	-347.23	-1,054.60	2,675.35	2,636.88	39.34	67.971	
8,000.00	7,735.72	7,374.50	7,273.43	35.68	26.90	-90.59	-353.73	-1,071.47	2,692.46	2,653.99	39.78	67.621	
8,100.00	7,835.72	7,472.81	7,370.74	35.78	27.31	-90.73	-360.23	-1,088.34	2,709.57	2,671.10	40.22	67.271	
8,200.00	7,935.72	7,571.12	7,468.05	35.89	27.72	-90.87	-366.73	-1,105.21	2,726.68	2,688.21	40.66	66.921	
8,224.72	7,960.44	7,596.44	7,500.00	35.91	27.37	-90.57	-352.59	-1,068.43	2,649.65	2,608.57	41.07	64.510	
8,300.00	8,035.72	7,674.50	7,580.00	35.99	27.39	-90.57	-352.59	-1,068.43	2,650.23	2,609.00	41.23	64.278	
8,400.00	8,135.72	7,772.81	7,680.00	36.10	27.39	-90.57	-352.59	-1,068.43	2,654.22	2,612.82	41.40	64.115	
8,500.00	8,235.72	7,871.12	7,780.00	36.21	27.39	-90.57	-352.59	-1,068.43	2,661.96	2,620.39	41.57	64.042	
8,600.00	8,335.72	7,969.43	7,880.00	36.32	27.39	-90.57	-352.59	-1,068.43	2,673.42	2,631.68	41.74	64.057	
8,619.28	8,355.00	7,980.00	7,980.00	36.34	27.39	-90.57	-352.59	-1,068.43	2,676.05	2,634.28	41.77	64.070	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_KERR-MCGEE 23-3
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5057.00ft (Original Well Elev)
Reference Site:	WELD_KERR MCGEE 19-3 PAD	MD Reference:	WELL @ 5057.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_KERR-MCGEE 23-3	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_KERR-MCGEE 23-3	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-15-10 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	-38.19	15.65	-12.31	19.91				
100.00	100.00	100.00	100.00	0.10	0.10	-38.19	15.65	-12.31	19.91	19.72	0.19	104.234	
200.00	200.00	200.00	200.00	0.32	0.32	-38.19	15.65	-12.31	19.91	19.27	0.64	31.087	
300.00	300.00	300.00	300.00	0.55	0.55	-38.19	15.65	-12.31	19.91	18.82	1.09	18.268	
400.00	400.00	400.00	400.00	0.77	0.77	-38.19	15.65	-12.31	19.91	18.37	1.54	12.934	
500.00	500.00	500.00	500.00	0.99	0.99	-38.19	15.65	-12.31	19.91	17.92	1.99	10.011	
600.00	600.00	600.00	600.00	1.22	1.22	-38.19	15.65	-12.31	19.91	17.48	2.44	8.166	
700.00	700.00	700.00	700.00	1.44	1.44	-38.19	15.65	-12.31	19.91	17.03	2.89	6.895	
800.00	800.00	800.00	800.00	1.67	1.67	-38.19	15.65	-12.31	19.91	16.58	3.34	5.966	
900.00	900.00	900.00	900.00	1.89	1.89	-38.19	15.65	-12.31	19.91	16.13	3.79	5.258	
1,000.00	1,000.00	1,000.00	1,000.00	2.12	2.12	-38.19	15.65	-12.31	19.91	15.68	4.24	4.700	
1,050.00	1,050.00	1,050.00	1,050.00	2.23	2.23	-38.19	15.65	-12.31	19.91	15.45	4.46	4.463	
1,100.00	1,100.00	1,100.30	1,100.30	2.33	2.33	-141.29	15.22	-12.24	19.87	15.21	4.66	4.261	
1,151.18	1,151.16	1,151.76	1,151.74	2.44	2.42	-145.74	13.87	-12.02	19.81	14.96	4.85	4.084 CC	
1,200.00	1,199.93	1,200.78	1,200.72	2.53	2.50	-152.76	11.74	-11.67	19.96	14.93	5.03	3.971 ES, SF	
1,300.00	1,299.68	1,300.91	1,300.59	2.74	2.69	-173.35	4.81	-10.54	22.36	16.97	5.39	4.145	
1,400.00	1,399.13	1,400.45	1,399.58	2.97	2.89	166.03	-5.48	-8.85	29.79	24.00	5.79	5.147	
1,500.00	1,498.15	1,499.19	1,497.35	3.22	3.12	151.84	-19.03	-6.63	42.86	36.64	6.23	6.884	
1,600.00	1,596.63	1,596.90	1,593.58	3.51	3.38	143.17	-35.71	-3.89	60.92	54.20	6.72	9.066	
1,700.00	1,694.44	1,693.38	1,687.99	3.84	3.69	137.76	-55.34	-0.68	83.37	76.10	7.27	11.461	
1,800.00	1,791.46	1,788.47	1,780.32	4.22	4.03	134.17	-77.75	3.00	109.85	101.95	7.90	13.906	
1,900.00	1,887.58	1,881.98	1,870.33	4.67	4.43	131.64	-102.73	7.09	140.12	131.51	8.61	16.274	
2,000.00	1,982.68	1,973.77	1,957.84	5.19	4.88	129.73	-130.05	11.57	174.02	164.61	9.41	18.497	
2,050.75	2,030.52	2,019.65	2,001.24	5.48	5.11	128.92	-144.75	13.98	192.56	182.72	9.84	19.561	
2,100.00	2,076.80	2,063.79	2,042.76	5.77	5.36	128.44	-159.53	16.40	211.15	200.85	10.30	20.493	
2,200.00	2,170.76	2,156.17	2,129.42	6.38	5.90	127.50	-191.12	21.58	249.27	237.98	11.29	22.075	
2,300.00	2,264.72	2,248.56	2,216.08	7.02	6.46	126.81	-222.71	26.76	287.44	275.13	12.31	23.347	
2,400.00	2,358.68	2,340.94	2,302.74	7.67	7.04	126.28	-254.30	31.94	325.63	312.27	13.36	24.381	
2,500.00	2,452.64	2,433.32	2,389.40	8.33	7.62	125.86	-285.90	37.11	363.84	349.42	14.42	25.230	
2,600.00	2,546.60	2,525.71	2,476.06	9.00	8.22	125.52	-317.49	42.29	402.06	386.56	15.50	25.937	
2,700.00	2,640.56	2,618.09	2,562.72	9.68	8.82	125.24	-349.08	47.47	440.29	423.70	16.59	26.533	
2,800.00	2,734.52	2,710.47	2,649.37	10.36	9.43	125.00	-380.67	52.65	478.53	460.84	17.70	27.039	
2,900.00	2,828.48	2,802.86	2,736.03	11.05	10.05	124.80	-412.26	57.83	516.78	497.97	18.81	27.475	
3,000.00	2,922.44	2,895.24	2,822.69	11.74	10.66	124.63	-443.86	63.00	555.03	535.10	19.93	27.852	
3,100.00	3,016.40	2,987.62	2,909.35	12.44	11.29	124.48	-475.45	68.18	593.29	572.23	21.05	28.182	
3,200.00	3,110.36	3,080.00	2,996.01	13.14	11.91	124.35	-507.04	73.36	631.54	609.36	22.18	28.473	
3,300.00	3,204.32	3,172.39	3,082.67	13.84	12.54	124.23	-538.63	78.54	669.80	646.49	23.31	28.731	
3,400.00	3,298.28	3,264.77	3,169.33	14.54	13.17	124.13	-570.22	83.72	708.07	683.62	24.45	28.961	
3,500.00	3,392.24	3,357.15	3,255.99	15.25	13.80	124.03	-601.82	88.90	746.33	720.74	25.59	29.169	
3,600.00	3,486.20	3,449.54	3,342.65	15.95	14.43	123.95	-633.41	94.07	784.60	757.87	26.73	29.356	
3,700.00	3,580.16	3,541.92	3,429.30	16.66	15.06	123.87	-665.00	99.25	822.86	795.00	27.87	29.526	
3,800.00	3,674.12	3,634.30	3,515.96	17.37	15.70	123.80	-696.59	104.43	861.13	832.12	29.01	29.681	
3,900.00	3,768.08	3,726.69	3,602.62	18.08	16.33	123.74	-728.19	109.61	899.40	869.24	30.16	29.823	
4,000.00	3,862.04	3,819.07	3,689.28	18.79	16.97	123.68	-759.78	114.79	937.67	906.37	31.30	29.953	
4,100.00	3,956.00	3,911.45	3,775.94	19.50	17.60	123.62	-791.37	119.96	975.94	943.49	32.45	30.074	
4,200.00	4,049.96	4,003.83	3,862.60	20.21	18.24	123.57	-822.96	125.14	1,014.22	980.62	33.60	30.186	
4,300.00	4,143.92	4,096.22	3,949.26	20.92	18.88	123.53	-854.55	130.32	1,052.49	1,017.74	34.75	30.290	
4,400.00	4,237.88	4,188.60	4,035.92	21.64	19.52	123.48	-886.15	135.50	1,090.76	1,054.87	35.90	30.387	
4,500.00	4,331.84	4,280.98	4,122.57	22.35	20.16	123.44	-917.74	140.68	1,129.03	1,091.99	37.04	30.478	
4,600.00	4,425.80	4,373.37	4,209.23	23.06	20.80	123.41	-949.33	145.86	1,167.31	1,129.12	38.19	30.563	
4,700.00	4,519.76	4,465.75	4,295.89	23.78	21.44	123.37	-980.92	151.03	1,205.58	1,166.24	39.34	30.644	
4,800.00	4,613.72	4,558.13	4,382.55	24.49	22.08	123.34	-1,012.51	156.21	1,243.86	1,203.37	40.49	30.719	

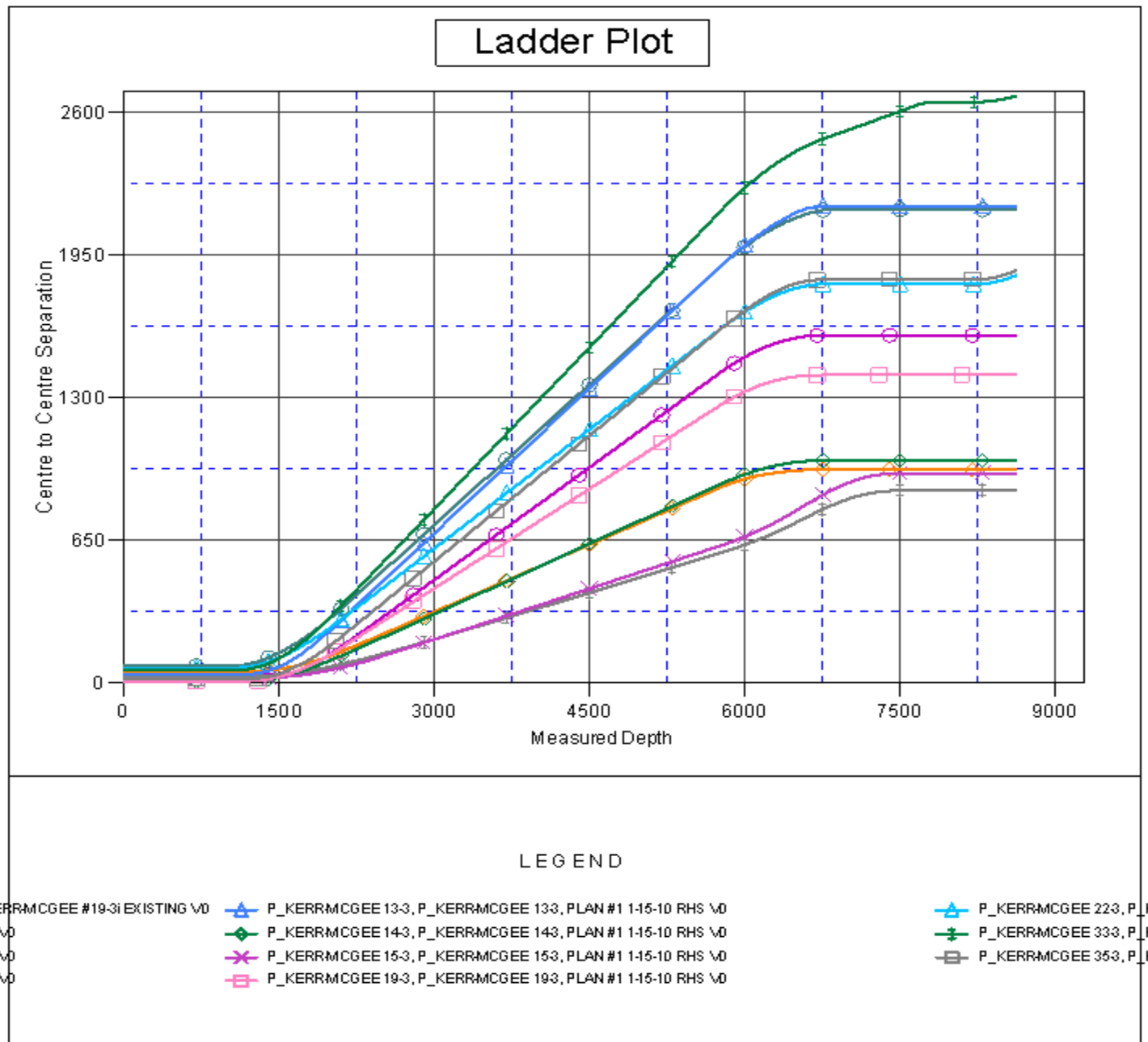
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_KERR-MCGEE 23-3
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5057.00ft (Original Well Elev)
Reference Site:	WELD_KERR MCGEE 19-3 PAD	MD Reference:	WELL @ 5057.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_KERR-MCGEE 23-3	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_KERR-MCGEE 23-3	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-15-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_KERR MCGEE 19-3 PAD - P_KERR-MCGEE 35-3 - P_KERR-MCGEE 35-3 - PLAN #1 1-15-10												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	4,707.68	4,650.52	4,469.21	25.21	22.72	123.31	-1,044.11	161.39	1,282.13	1,240.49	41.64	30.791	
5,000.00	4,801.64	4,742.90	4,555.87	25.92	23.37	123.28	-1,075.70	166.57	1,320.41	1,277.62	42.79	30.859	
5,100.00	4,895.60	4,835.28	4,642.53	26.64	24.01	123.25	-1,107.29	171.75	1,358.68	1,314.75	43.94	30.923	
5,200.00	4,989.56	4,927.67	4,729.19	27.36	24.65	123.22	-1,138.88	176.92	1,396.96	1,351.87	45.09	30.985	
5,300.00	5,083.52	5,020.05	4,815.85	28.07	25.29	123.20	-1,170.48	182.10	1,435.23	1,389.00	46.23	31.043	
5,400.00	5,177.48	5,112.43	4,902.50	28.79	25.94	123.18	-1,202.07	187.28	1,473.51	1,426.13	47.38	31.099	
5,500.00	5,271.44	5,204.81	4,989.16	29.51	26.58	123.15	-1,233.66	192.46	1,511.79	1,463.26	48.53	31.152	
5,600.00	5,365.41	5,297.20	5,075.82	30.22	27.22	123.13	-1,265.25	197.64	1,550.06	1,500.39	49.68	31.203	
5,700.00	5,459.37	5,389.58	5,162.48	30.94	27.87	123.11	-1,296.84	202.82	1,588.34	1,537.52	50.82	31.252	
5,756.53	5,512.48	5,441.80	5,211.46	31.35	28.23	123.10	-1,314.70	205.74	1,609.98	1,558.51	51.47	31.279	
5,800.00	5,553.44	5,482.03	5,249.20	31.62	28.51	123.38	-1,328.46	208.00	1,626.45	1,574.46	51.99	31.287	
5,900.00	5,648.46	5,575.03	5,336.44	32.13	29.16	123.92	-1,360.26	213.21	1,663.06	1,610.00	53.07	31.340	
6,000.00	5,744.51	5,668.57	5,424.19	32.60	29.81	124.31	-1,392.25	218.45	1,697.87	1,643.77	54.10	31.384	
6,100.00	5,841.47	5,762.61	5,512.39	33.01	30.47	124.58	-1,424.41	223.72	1,730.86	1,675.78	55.08	31.422	
6,200.00	5,939.23	5,905.57	5,647.69	33.37	31.18	124.60	-1,469.97	231.19	1,760.73	1,704.67	56.06	31.406	
6,300.00	6,037.66	6,052.45	5,788.89	33.68	31.79	124.61	-1,509.78	237.72	1,786.06	1,729.11	56.95	31.364	
6,400.00	6,136.65	6,202.71	5,935.30	33.95	32.33	124.61	-1,543.06	243.17	1,806.69	1,748.93	57.76	31.279	
6,500.00	6,236.07	6,355.76	6,086.04	34.16	32.78	124.60	-1,569.13	247.45	1,822.48	1,764.05	58.43	31.189	
6,600.00	6,335.80	6,510.91	6,240.06	34.33	33.14	124.59	-1,587.41	250.44	1,833.33	1,774.35	58.97	31.087	
6,700.00	6,435.73	6,667.42	6,396.22	34.45	33.38	124.57	-1,597.49	252.09	1,839.14	1,779.78	59.36	30.983	
6,757.28	6,493.00	6,757.38	6,486.15	34.50	33.48	-133.78	-1,599.47	252.42	1,840.19	1,780.66	59.52	30.915	
6,800.00	6,535.72	6,806.95	6,535.72	34.54	33.53	-133.78	-1,599.53	252.43	1,840.21	1,780.60	59.61	30.869	
6,900.00	6,635.72	6,906.95	6,635.72	34.63	33.60	-133.78	-1,599.53	252.43	1,840.21	1,780.41	59.80	30.774	
7,000.00	6,735.72	7,006.95	6,735.72	34.72	33.68	-133.78	-1,599.53	252.43	1,840.21	1,780.22	59.99	30.677	
7,100.00	6,835.72	7,106.95	6,835.72	34.81	33.76	-133.78	-1,599.53	252.43	1,840.21	1,780.03	60.18	30.580	
7,200.00	6,935.72	7,206.95	6,935.72	34.90	33.84	-133.78	-1,599.53	252.43	1,840.21	1,779.84	60.37	30.482	
7,300.00	7,035.72	7,306.95	7,035.72	34.99	33.92	-133.78	-1,599.53	252.43	1,840.21	1,779.64	60.57	30.383	
7,400.00	7,135.72	7,406.95	7,135.72	35.09	34.00	-133.78	-1,599.53	252.43	1,840.21	1,779.44	60.77	30.283	
7,500.00	7,235.72	7,506.95	7,235.72	35.19	34.08	-133.78	-1,599.53	252.43	1,840.21	1,779.24	60.97	30.183	
7,600.00	7,335.72	7,606.95	7,335.72	35.28	34.17	-133.78	-1,599.53	252.43	1,840.21	1,779.04	61.17	30.082	
7,700.00	7,435.72	7,706.95	7,435.72	35.38	34.25	-133.78	-1,599.53	252.43	1,840.21	1,778.83	61.38	29.981	
7,800.00	7,535.72	7,806.95	7,535.72	35.48	34.34	-133.78	-1,599.53	252.43	1,840.21	1,778.62	61.59	29.879	
7,900.00	7,635.72	7,906.95	7,635.72	35.58	34.43	-133.78	-1,599.53	252.43	1,840.21	1,778.41	61.80	29.776	
8,000.00	7,735.72	8,006.95	7,735.72	35.68	34.52	-133.78	-1,599.53	252.43	1,840.21	1,778.20	62.02	29.673	
8,100.00	7,835.72	8,106.95	7,835.72	35.78	34.61	-133.78	-1,599.53	252.43	1,840.21	1,777.98	62.23	29.570	
8,200.00	7,935.72	8,206.95	7,935.72	35.89	34.70	-133.78	-1,599.53	252.43	1,840.21	1,777.76	62.45	29.466	
8,300.00	8,035.72	8,236.23	7,965.00	35.99	34.72	-133.78	-1,599.53	252.43	1,841.57	1,778.97	62.60	29.419	
8,400.00	8,135.72	8,236.23	7,965.00	36.10	34.72	-133.78	-1,599.53	252.43	1,848.11	1,785.40	62.71	29.468	
8,500.00	8,235.72	8,236.23	7,965.00	36.21	34.72	-133.78	-1,599.53	252.43	1,860.02	1,797.19	62.83	29.603	
8,600.00	8,335.72	8,236.23	7,965.00	36.32	34.72	-133.78	-1,599.53	252.43	1,877.18	1,814.23	62.95	29.820	
8,619.28	8,355.00	8,236.23	7,965.00	36.34	34.72	-133.78	-1,599.53	252.43	1,881.08	1,818.11	62.97	29.871	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_KERR-MCGEE 23-3
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5057.00ft (Original Well Elev)
Reference Site:	WELD_KERR MCGEE 19-3 PAD	MD Reference:	WELL @ 5057.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_KERR-MCGEE 23-3	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_KERR-MCGEE 23-3	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-15-10 RHS	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 5057.00ft (Original Well Elev) Coordinates are relative to: P_KERR-MCGEE 23-3
Offset Depths are relative to Offset Datum
Central Meridian is 105° 30' 0.000 W °
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.33°



Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_KERR-MCGEE 23-3
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5057.00ft (Original Well Elev)
Reference Site:	WELD_KERR MCGEE 19-3 PAD	MD Reference:	WELL @ 5057.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_KERR-MCGEE 23-3	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_KERR-MCGEE 23-3	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-15-10 RHS	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 5057.00ft (Original Well Elev) Coordinates are relative to: P_KERR-MCGEE 23-3
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: 0.33°

