



US ROCKIES REGION PLANNING

**KERR MCGEE OIL & GAS ONSHORE LP
WELD_NORTHGLENN STATE 7 PAD
P_NORTHGLENN STATE 8-36**

P_NORTHGLENN STATE 8-36

Plan: PLAN #1 10-09-09 RHS

Standard Planning Report

09 October, 2009





P. NORTHGLENN STATE 8-36
KERR MCGEE OIL & GAS ONSHORE LP
SECTION 36 T1N R68W
1201 FNL 1473 FEL
LAT: 40° 0' 41.724 N
LONG: 104° 56' 52.152 W



Azimuths to True North
Magnetic North: 9.12°

Magnetic Field
Strength: 53100.6nT
Dip Angle: 66.77°
Date: 10/9/2009
Model: IGRF200510

WELL DETAILS: P_NORTHGLENN STATE 8-36

+N/-S	+E/-W	Northing	Ground Level:	Easting	Latitude	Longitude	Slot
0.00	0.00	1247550.32	5103.00	3154667.92	40° 0' 41.724 N	104° 56' 52.152 W	

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
3315.00	3457.17	PARKMAN TOP
4795.00	5004.05	SUSSEX TOP
5445.00	5654.05	SHANNON TOP
7395.00	7604.05	NIO A TOP
7835.00	8044.05	CODELL TOP
8265.00	8474.05	JSAND TOP

SECTION DETAILS

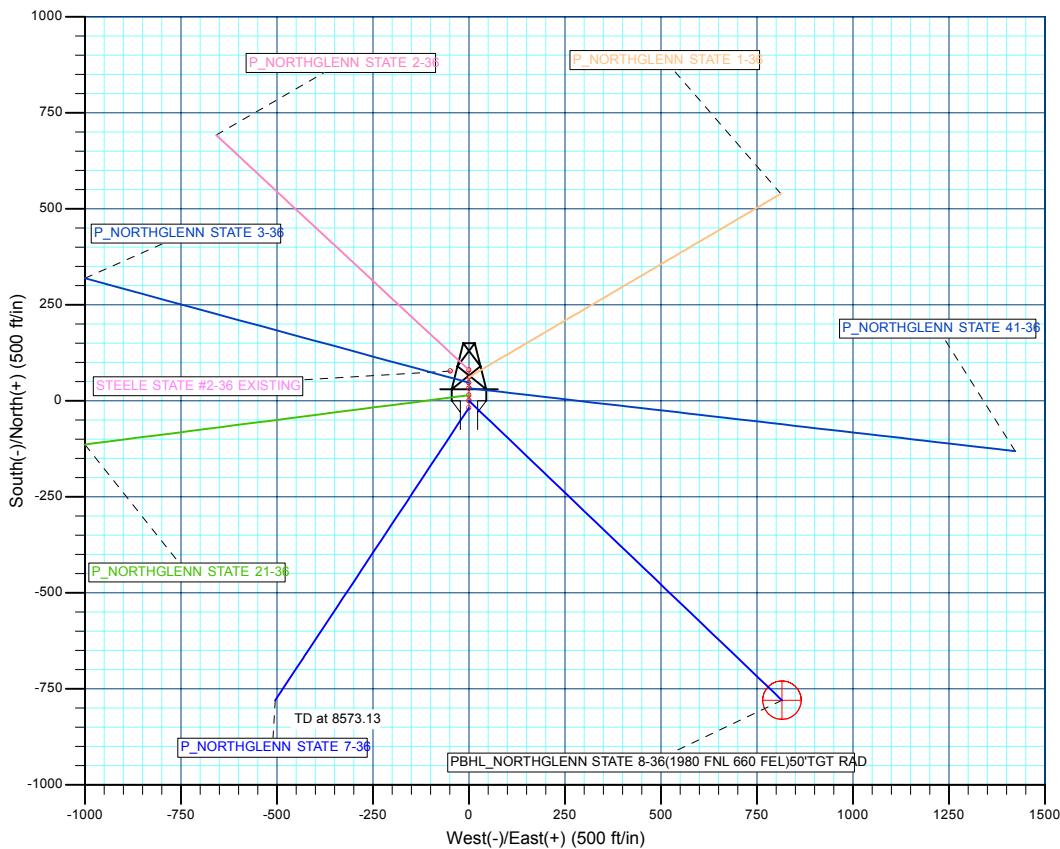
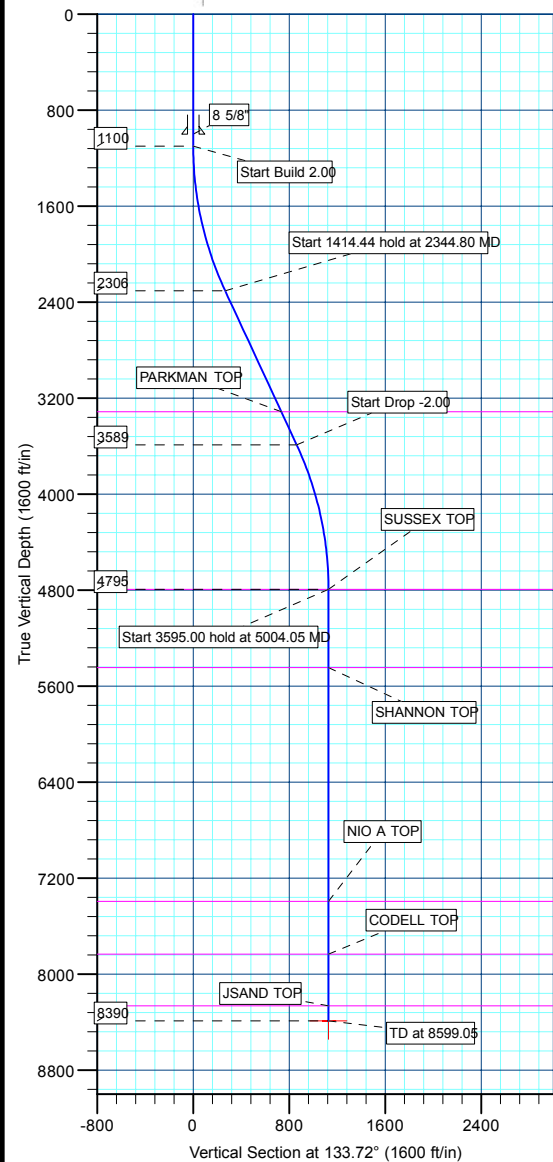
MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1100.00	0.00	0.00	1100.00	0.00	0.00	0.00	0.00	0.00	
2344.80	24.90	133.72	2306.00	-183.99	192.40	2.00	133.72	266.22	
3759.24	24.90	133.72	3589.00	-595.53	622.74	0.00	0.00	861.66	
5004.05	0.00	0.00	4795.00	-779.52	815.14	2.00	180.00	1127.87	
8599.05	0.00	0.00	8390.00	-779.52	815.14	0.00	0.00	1127.87	PBHL_NORTHGLENN STATE 8-36(1980 FNL 660 FEL)50°TGT



KB ELEV: WELL @ 5118.00ft (Original Well Elev)
GRD ELEV: 5103.00

CASING DETAILS

TVD	MD	Name	Size
1000.00	1000.00	8 5/8"	8.62



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

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
PBHL	8390.00	-779.52	815.14	1246775.89	3155487.89	40° 0' 34.020 N	104° 56' 41.676 W	Circle (Radius: 50.00)

Plan: PLAN #1 10-09-09 RHS (P_NORTHGLENN STATE 8-36/P_NORTHGLENN STATE 8-36)

Created By: Robert H. Scott

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_NORTHGLENN STATE 8-36
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 5118.00ft (Original Well Elev)
Project:	KERR MCGEE OIL & GAS ONSHORE LP	MD Reference:	WELL @ 5118.00ft (Original Well Elev)
Site:	WELD_NORTHGLENN STATE 7 PAD	North Reference:	True
Well:	P_NORTHGLENN STATE 8-36	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_NORTHGLENN STATE 8-36		
Design:	PLAN #1 10-09-09 RHS		

Project	KERR MCGEE OIL & GAS ONSHORE LP, 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_NORTHGLENN STATE 7 PAD, SECTION 36 T1N R68W											
Site Position:						Northing:			1,247,612.25 ft			Latitude:			40° 0' 42.336 N		
From:			Lat/Long			Easting:			3,154,667.53 ft			Longitude:			104° 56' 52.152 W		
Position Uncertainty:			0.00 ft			Slot Radius:			in			Grid Convergence:			0.36 °		

Well	P_NORTHGLENN STATE 8-36					
Well Position	+N/-S	-61.94 ft	Northing:	1,247,550.32 ft	Latitude:	40° 0' 41.724 N
	+E/-W	0.00 ft	Easting:	3,154,667.92 ft	Longitude:	104° 56' 52.152 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	5,103.00 ft

Wellbore	P_NORTHGLENN STATE 8-36				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	10/9/2009	9.12	66.77	53,101

Design	PLAN #1 10-09-09 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	133.72

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	
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,344.80	24.90	133.72	2,306.00	-183.99	192.40	2.00	2.00	0.00	133.72	
3,759.24	24.90	133.72	3,589.00	-595.53	622.74	0.00	0.00	0.00	0.00	
5,004.05	0.00	0.00	4,795.00	-779.52	815.14	2.00	-2.00	0.00	180.00	
8,599.05	0.00	0.00	8,390.00	-779.52	815.14	0.00	0.00	0.00	0.00	PBHL_NORTHGLE

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_NORTHGLENN STATE 8-36
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 5118.00ft (Original Well Elev)
Project:	KERR MCGEE OIL & GAS ONSHORE LP	MD Reference:	WELL @ 5118.00ft (Original Well Elev)
Site:	WELD_NORTHGLENN STATE 7 PAD	North Reference:	True
Well:	P_NORTHGLENN STATE 8-36	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_NORTHGLENN STATE 8-36		
Design:	PLAN #1 10-09-09 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									
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	2.00	133.72	1,199.98	-1.21	1.26	1.75	2.00	2.00	0.00
1,300.00	4.00	133.72	1,299.84	-4.82	5.04	6.98	2.00	2.00	0.00
1,400.00	6.00	133.72	1,399.45	-10.85	11.34	15.69	2.00	2.00	0.00
1,500.00	8.00	133.72	1,498.70	-19.27	20.15	27.88	2.00	2.00	0.00
1,600.00	10.00	133.72	1,597.47	-30.08	31.45	43.52	2.00	2.00	0.00
1,700.00	12.00	133.72	1,695.62	-43.27	45.24	62.60	2.00	2.00	0.00
1,800.00	14.00	133.72	1,793.06	-58.81	61.50	85.10	2.00	2.00	0.00
1,900.00	16.00	133.72	1,889.64	-76.70	80.21	110.98	2.00	2.00	0.00
2,000.00	18.00	133.72	1,985.27	-96.91	101.33	140.21	2.00	2.00	0.00
2,100.00	20.00	133.72	2,079.82	-119.41	124.86	172.77	2.00	2.00	0.00
2,200.00	22.00	133.72	2,173.17	-144.17	150.76	208.60	2.00	2.00	0.00
2,300.00	24.00	133.72	2,265.21	-171.18	179.00	247.67	2.00	2.00	0.00
Start 1414.44 hold at 2344.80 MD									
2,344.80	24.90	133.72	2,306.00	-183.99	192.40	266.22	2.00	2.00	0.00
2,400.00	24.90	133.72	2,356.07	-200.05	209.19	289.45	0.00	0.00	0.00
2,500.00	24.90	133.72	2,446.78	-229.15	239.62	331.55	0.00	0.00	0.00
2,600.00	24.90	133.72	2,537.48	-258.24	270.04	373.65	0.00	0.00	0.00
2,700.00	24.90	133.72	2,628.19	-287.34	300.47	415.74	0.00	0.00	0.00
2,800.00	24.90	133.72	2,718.90	-316.43	330.89	457.84	0.00	0.00	0.00
2,900.00	24.90	133.72	2,809.60	-345.53	361.32	499.94	0.00	0.00	0.00
3,000.00	24.90	133.72	2,900.31	-374.63	391.74	542.04	0.00	0.00	0.00
3,100.00	24.90	133.72	2,991.02	-403.72	422.16	584.13	0.00	0.00	0.00
3,200.00	24.90	133.72	3,081.73	-432.82	452.59	626.23	0.00	0.00	0.00
3,300.00	24.90	133.72	3,172.43	-461.91	483.01	668.33	0.00	0.00	0.00
3,400.00	24.90	133.72	3,263.14	-491.01	513.44	710.43	0.00	0.00	0.00
PARKMAN TOP									
3,457.17	24.90	133.72	3,315.00	-507.64	530.83	734.49	0.00	0.00	0.00
3,500.00	24.90	133.72	3,353.85	-520.10	543.86	752.52	0.00	0.00	0.00
3,600.00	24.90	133.72	3,444.56	-549.20	574.29	794.62	0.00	0.00	0.00
3,700.00	24.90	133.72	3,535.26	-578.29	604.71	836.72	0.00	0.00	0.00
Start Drop -2.00									
3,759.24	24.90	133.72	3,589.00	-595.53	622.74	861.66	0.00	0.00	0.00
3,800.00	24.08	133.72	3,626.09	-607.21	634.95	878.55	2.00	-2.00	0.00
3,900.00	22.08	133.72	3,718.08	-634.30	663.28	917.75	2.00	-2.00	0.00
4,000.00	20.08	133.72	3,811.38	-659.16	689.27	953.72	2.00	-2.00	0.00
4,100.00	18.08	133.72	3,905.88	-681.75	712.90	986.41	2.00	-2.00	0.00
4,200.00	16.08	133.72	4,001.47	-702.05	734.12	1,015.78	2.00	-2.00	0.00
4,300.00	14.08	133.72	4,098.02	-720.03	752.93	1,041.80	2.00	-2.00	0.00
4,400.00	12.08	133.72	4,195.42	-735.67	769.28	1,064.43	2.00	-2.00	0.00
4,500.00	10.08	133.72	4,293.55	-748.95	783.17	1,083.65	2.00	-2.00	0.00
4,600.00	8.08	133.72	4,392.29	-759.86	794.58	1,099.43	2.00	-2.00	0.00
4,700.00	6.08	133.72	4,491.52	-768.38	803.49	1,111.76	2.00	-2.00	0.00
4,800.00	4.08	133.72	4,591.13	-774.50	809.89	1,120.61	2.00	-2.00	0.00
4,900.00	2.08	133.72	4,690.98	-778.22	813.77	1,125.99	2.00	-2.00	0.00
5,000.00	0.08	133.72	4,790.95	-779.52	815.13	1,127.87	2.00	-2.00	0.00
Start 3595.00 hold at 5004.05 MD - SUSSEX TOP									
5,004.05	0.00	0.00	4,795.00	-779.52	815.14	1,127.87	2.00	-2.00	0.00
5,100.00	0.00	0.00	4,890.95	-779.52	815.14	1,127.87	0.00	0.00	0.00
5,200.00	0.00	0.00	4,990.95	-779.52	815.14	1,127.87	0.00	0.00	0.00
5,300.00	0.00	0.00	5,090.95	-779.52	815.14	1,127.87	0.00	0.00	0.00
5,400.00	0.00	0.00	5,190.95	-779.52	815.14	1,127.87	0.00	0.00	0.00
5,500.00	0.00	0.00	5,290.95	-779.52	815.14	1,127.87	0.00	0.00	0.00

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_NORTHGLENN STATE 8-36
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 5118.00ft (Original Well Elev)
Project:	KERR MCGEE OIL & GAS ONSHORE LP	MD Reference:	WELL @ 5118.00ft (Original Well Elev)
Site:	WELD_NORTHGLENN STATE 7 PAD	North Reference:	True
Well:	P_NORTHGLENN STATE 8-36	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_NORTHGLENN STATE 8-36		
Design:	PLAN #1 10-09-09 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)
5,600.00	0.00	0.00	5,390.95	-779.52	815.14	1,127.87	0.00	0.00	0.00
SHANNON TOP									
5,654.05	0.00	0.00	5,445.00	-779.52	815.14	1,127.87	0.00	0.00	0.00
5,700.00	0.00	0.00	5,490.95	-779.52	815.14	1,127.87	0.00	0.00	0.00
5,800.00	0.00	0.00	5,590.95	-779.52	815.14	1,127.87	0.00	0.00	0.00
5,900.00	0.00	0.00	5,690.95	-779.52	815.14	1,127.87	0.00	0.00	0.00
6,000.00	0.00	0.00	5,790.95	-779.52	815.14	1,127.87	0.00	0.00	0.00
6,100.00	0.00	0.00	5,890.95	-779.52	815.14	1,127.87	0.00	0.00	0.00
6,200.00	0.00	0.00	5,990.95	-779.52	815.14	1,127.87	0.00	0.00	0.00
6,300.00	0.00	0.00	6,090.95	-779.52	815.14	1,127.87	0.00	0.00	0.00
6,400.00	0.00	0.00	6,190.95	-779.52	815.14	1,127.87	0.00	0.00	0.00
6,500.00	0.00	0.00	6,290.95	-779.52	815.14	1,127.87	0.00	0.00	0.00
6,600.00	0.00	0.00	6,390.95	-779.52	815.14	1,127.87	0.00	0.00	0.00
6,700.00	0.00	0.00	6,490.95	-779.52	815.14	1,127.87	0.00	0.00	0.00
6,800.00	0.00	0.00	6,590.95	-779.52	815.14	1,127.87	0.00	0.00	0.00
6,900.00	0.00	0.00	6,690.95	-779.52	815.14	1,127.87	0.00	0.00	0.00
7,000.00	0.00	0.00	6,790.95	-779.52	815.14	1,127.87	0.00	0.00	0.00
7,100.00	0.00	0.00	6,890.95	-779.52	815.14	1,127.87	0.00	0.00	0.00
7,200.00	0.00	0.00	6,990.95	-779.52	815.14	1,127.87	0.00	0.00	0.00
7,300.00	0.00	0.00	7,090.95	-779.52	815.14	1,127.87	0.00	0.00	0.00
7,400.00	0.00	0.00	7,190.95	-779.52	815.14	1,127.87	0.00	0.00	0.00
7,500.00	0.00	0.00	7,290.95	-779.52	815.14	1,127.87	0.00	0.00	0.00
7,600.00	0.00	0.00	7,390.95	-779.52	815.14	1,127.87	0.00	0.00	0.00
NIO A TOP									
7,604.05	0.00	0.00	7,395.00	-779.52	815.14	1,127.87	0.00	0.00	0.00
7,700.00	0.00	0.00	7,490.95	-779.52	815.14	1,127.87	0.00	0.00	0.00
7,800.00	0.00	0.00	7,590.95	-779.52	815.14	1,127.87	0.00	0.00	0.00
7,900.00	0.00	0.00	7,690.95	-779.52	815.14	1,127.87	0.00	0.00	0.00
8,000.00	0.00	0.00	7,790.95	-779.52	815.14	1,127.87	0.00	0.00	0.00
CODELL TOP									
8,044.05	0.00	0.00	7,835.00	-779.52	815.14	1,127.87	0.00	0.00	0.00
8,100.00	0.00	0.00	7,890.95	-779.52	815.14	1,127.87	0.00	0.00	0.00
8,200.00	0.00	0.00	7,990.95	-779.52	815.14	1,127.87	0.00	0.00	0.00
8,300.00	0.00	0.00	8,090.95	-779.52	815.14	1,127.87	0.00	0.00	0.00
8,400.00	0.00	0.00	8,190.95	-779.52	815.14	1,127.87	0.00	0.00	0.00
JSAND TOP									
8,474.05	0.00	0.00	8,265.00	-779.52	815.14	1,127.87	0.00	0.00	0.00
8,500.00	0.00	0.00	8,290.95	-779.52	815.14	1,127.87	0.00	0.00	0.00
TD at 8599.05 - PBHL_NORTHGLENN STATE 8-36(1980 FNL 660 FEL)50'TGT									
8,599.05	0.00	0.00	8,390.00	-779.52	815.14	1,127.87	0.00	0.00	0.00

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target - Shape									
PBHL_NORTHGLENNI - plan hits target center - Circle (radius 50.00)	0.00	0.00	8,390.00	-779.52	815.14	1,246,775.89	3,155,487.89	40° 0' 34.020 N	104° 56' 41.676 W

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_NORTHGLENN STATE 8-36
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 5118.00ft (Original Well Elev)
Project:	KERR MCGEE OIL & GAS ONSHORE LP	MD Reference:	WELL @ 5118.00ft (Original Well Elev)
Site:	WELD_NORTHGLENN STATE 7 PAD	North Reference:	True
Well:	P_NORTHGLENN STATE 8-36	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_NORTHGLENN STATE 8-36		
Design:	PLAN #1 10-09-09 RHS		

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,000.00	1,000.00	8 5/8"	8.62	11.00	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,457.17	3,315.00	PARKMAN TOP				
5,004.05	4,795.00	SUSSEX TOP				
5,654.05	5,445.00	SHANNON TOP				
7,604.05	7,395.00	NIO A TOP				
8,044.05	7,835.00	CODELL TOP				
8,474.05	8,265.00	JSAND TOP		0.00		

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
1,100.00	1,100.00	0.00	0.00	Start Build 2.00	
2,344.80	2,306.00	-183.99	192.40	Start 1414.44 hold at 2344.80 MD	
3,759.24	3,589.00	-595.53	622.74	Start Drop -2.00	
5,004.05	4,795.00	-779.52	815.14	Start 3595.00 hold at 5004.05 MD	
8,599.05	8,390.00	-779.52	815.14	TD at 8599.05	



US ROCKIES REGION PLANNING

**KERR MCGEE OIL & GAS ONSHORE LP
WELD_NORTHGLENN STATE 7 PAD
P_NORTHGLENN STATE 8-36**

**P_NORTHGLENN STATE 8-36
PLAN #1 10-09-09 RHS**

Anticollision Report

09 October, 2009



Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_NORTHGLENN STATE 8-36
Project:	KERR MCGEE OIL & GAS ONSHORE LP	TVD Reference:	WELL @ 5118.00ft (Original Well Elev)
Reference Site:	WELD_NORTHGLENN STATE 7 PAD	MD Reference:	WELL @ 5118.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_NORTHGLENN STATE 8-36	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_NORTHGLENN STATE 8-36	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 10-09-09 RHS	Offset TVD Reference:	Offset Datum

Reference	PLAN #1 10-09-09 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	10/9/2009		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	8,599.05	PLAN #1 10-09-09 RHS (P_NORTHGLEN	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_NORTHGLENN STATE 7 PAD						
P_NORTHGLENN STATE 1-36 - P_NORTHGLENN STA	1,100.00	1,100.00	61.94	57.25	13.217	CC, ES
P_NORTHGLENN STATE 1-36 - P_NORTHGLENN STA	1,200.00	1,198.87	64.02	58.92	12.547	SF
P_NORTHGLENN STATE 21-36 - P_NORTHGLENN ST	1,100.00	1,100.00	14.57	9.88	3.109	CC, ES
P_NORTHGLENN STATE 21-36 - P_NORTHGLENN ST	1,200.00	1,199.97	15.84	10.74	3.109	SF
P_NORTHGLENN STATE 2-36 - P_NORTHGLENN STA	1,100.00	1,100.00	80.14	75.46	17.102	CC, ES
P_NORTHGLENN STATE 2-36 - P_NORTHGLENN STA	1,200.00	1,198.01	82.55	77.45	16.178	SF
P_NORTHGLENN STATE 3-36 - P_NORTHGLENN STA	1,100.00	1,100.00	47.36	42.67	10.106	CC, ES
P_NORTHGLENN STATE 3-36 - P_NORTHGLENN STA	1,200.00	1,199.17	49.39	44.29	9.683	SF
P_NORTHGLENN STATE 41-36 - P_NORTHGLENN ST	1,100.00	1,100.00	32.78	28.10	6.996	CC, ES
P_NORTHGLENN STATE 41-36 - P_NORTHGLENN ST	1,200.00	1,200.12	33.79	28.70	6.630	SF
P_NORTHGLENN STATE 7-36 - P_NORTHGLENN STA	1,100.00	1,100.00	18.21	13.52	3.886	CC
P_NORTHGLENN STATE 7-36 - P_NORTHGLENN STA	1,200.00	1,199.42	18.58	13.50	3.655	ES, SF
STEELE STATE #2-36 EXISTING - STEELE STATE #2-	1,100.00	1,100.00	91.40	47.36	2.075	CC
STEELE STATE #2-36 EXISTING - STEELE STATE #2-	1,200.00	1,199.98	93.09	44.87	1.930	ES
STEELE STATE #2-36 EXISTING - STEELE STATE #2-	1,300.00	1,299.84	98.17	45.86	1.877	SF

Offset Design	WELD_NORTHGLENN STATE 7 PAD - P_NORTHGLENN STATE 1-36 - P_NORTHGLENN STATE 1-36												Offset Site Error:	0.00 ft
Survey Program:	0-MWD												Offset Well Error:	0.00 ft
Reference	Offset	Semi Major Axis		Distance		Minimum Separation		Separation Factor		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)	Offset Wellbore Centre +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	0.00	61.94	0.00	61.94					
100.00	100.00	100.00	100.00	0.10	0.10	0.00	61.94	0.00	61.94	61.75	0.19	324.203		
200.00	200.00	200.00	200.00	0.32	0.32	0.00	61.94	0.00	61.94	61.30	0.64	96.692		
300.00	300.00	300.00	300.00	0.55	0.55	0.00	61.94	0.00	61.94	60.85	1.09	56.819		
400.00	400.00	400.00	400.00	0.77	0.77	0.00	61.94	0.00	61.94	60.40	1.54	40.230		
500.00	500.00	500.00	500.00	0.99	0.99	0.00	61.94	0.00	61.94	59.95	1.99	31.138		
600.00	600.00	600.00	600.00	1.22	1.22	0.00	61.94	0.00	61.94	59.50	2.44	25.398		
700.00	700.00	700.00	700.00	1.44	1.44	0.00	61.94	0.00	61.94	59.05	2.89	21.445		
800.00	800.00	800.00	800.00	1.67	1.67	0.00	61.94	0.00	61.94	58.60	3.34	18.557		
900.00	900.00	900.00	900.00	1.89	1.89	0.00	61.94	0.00	61.94	58.15	3.79	16.354		
1,000.00	1,000.00	1,000.00	1,000.00	2.12	2.12	0.00	61.94	0.00	61.94	57.70	4.24	14.619		
1,100.00	1,100.00	1,100.00	1,100.00	2.34	2.34	0.00	61.94	0.00	61.94	57.25	4.69	13.217	CC, ES	
1,200.00	1,199.98	1,198.87	1,198.85	2.54	2.56	-133.49	62.80	1.47	64.02	58.92	5.10	12.547	SF	

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_NORTHGLENN STATE 8-36
Project:	KERR MCGEE OIL & GAS ONSHORE LP	TVD Reference:	WELL @ 5118.00ft (Original Well Elev)
Reference Site:	WELD_NORTHGLENN STATE 7 PAD	MD Reference:	WELL @ 5118.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_NORTHGLENN STATE 8-36	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_NORTHGLENN STATE 8-36	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 10-09-09 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_NORTHGLENN STATE 7 PAD - P_NORTHGLENN STATE 1-36 - P_NORTHGLENN STATE 1-36												Offset Site Error:	0.00 ft
Survey Program: 0-MWD												Offset Well Error:	0.00 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
1,300.00	1,299.84	1,297.49	1,297.33	2.73	2.77	-132.87	65.39	5.87	70.26	64.76	5.50	12.782	
1,400.00	1,399.45	1,395.59	1,395.07	2.93	2.99	-132.04	69.66	13.14	80.64	74.74	5.91	13.654	
1,500.00	1,498.70	1,492.94	1,491.71	3.16	3.23	-131.16	75.57	23.20	95.14	88.80	6.34	15.009	
1,600.00	1,597.47	1,589.29	1,586.91	3.41	3.49	-130.30	83.05	35.94	113.71	106.91	6.81	16.708	
1,700.00	1,695.62	1,685.17	1,681.14	3.71	3.77	-129.57	92.03	51.23	136.21	128.89	7.32	18.617	
1,800.00	1,793.06	1,781.95	1,776.10	4.06	4.09	-129.64	101.49	67.32	161.30	153.43	7.87	20.484	
1,900.00	1,889.64	1,878.09	1,870.44	4.47	4.41	-130.39	110.88	83.31	188.59	180.12	8.47	22.264	
2,000.00	1,985.27	1,973.46	1,964.01	4.94	4.75	-131.53	120.20	99.17	218.16	209.06	9.10	23.966	
2,100.00	2,079.82	2,067.95	2,056.73	5.48	5.10	-132.86	129.44	114.89	250.11	240.34	9.77	25.608	
2,200.00	2,173.17	2,161.43	2,148.46	6.10	5.44	-134.28	138.57	130.44	284.55	274.09	10.46	27.208	
2,300.00	2,265.21	2,253.81	2,239.10	6.79	5.79	-135.70	147.60	145.80	321.56	310.39	11.17	28.780	
2,344.80	2,306.00	2,294.81	2,279.32	7.13	5.95	-136.33	151.60	152.62	339.00	327.50	11.50	29.480	
2,400.00	2,356.07	2,345.16	2,328.73	7.55	6.15	-137.35	156.52	161.00	360.86	348.92	11.93	30.235	
2,500.00	2,446.78	2,436.38	2,418.24	8.34	6.50	-138.93	165.44	176.17	400.67	387.94	12.73	31.468	
2,600.00	2,537.48	2,527.60	2,507.74	9.15	6.86	-140.23	174.35	191.34	440.70	427.16	13.54	32.549	
2,700.00	2,628.19	2,618.82	2,597.25	9.97	7.22	-141.31	183.26	206.51	480.89	466.53	14.35	33.501	
2,800.00	2,718.90	2,710.04	2,686.76	10.80	7.59	-142.23	192.18	221.68	521.19	506.02	15.18	34.345	
2,900.00	2,809.60	2,801.26	2,776.27	11.63	7.95	-143.01	201.09	236.86	561.60	545.60	16.00	35.097	
3,000.00	2,900.31	2,892.48	2,865.77	12.48	8.32	-143.69	210.00	252.03	602.08	585.25	16.83	35.771	
3,100.00	2,991.02	2,983.70	2,955.28	13.32	8.69	-144.28	218.92	267.20	642.63	624.96	17.67	36.377	
3,200.00	3,081.73	3,074.92	3,044.79	14.18	9.07	-144.81	227.83	282.37	683.22	664.72	18.50	36.925	
3,300.00	3,172.43	3,166.14	3,134.30	15.03	9.44	-145.27	236.74	297.54	723.86	704.52	19.34	37.422	
3,400.00	3,263.14	3,257.37	3,223.81	15.89	9.81	-145.69	245.66	312.72	764.53	744.35	20.19	37.876	
3,500.00	3,353.85	3,348.59	3,313.31	16.76	10.19	-146.06	254.57	327.89	805.24	784.21	21.03	38.290	
3,600.00	3,444.56	3,439.81	3,402.82	17.62	10.57	-146.40	263.48	343.06	845.97	824.09	21.88	38.671	
3,700.00	3,535.26	3,531.03	3,492.33	18.49	10.94	-146.71	272.40	358.23	886.72	863.99	22.72	39.022	
3,759.24	3,589.00	3,585.07	3,545.35	19.00	11.17	-146.88	277.68	367.22	910.87	887.64	23.23	39.217	
3,800.00	3,626.09	3,622.35	3,581.94	19.31	11.32	-147.17	281.32	373.42	927.27	903.68	23.59	39.313	
3,900.00	3,718.08	3,714.68	3,672.53	19.95	11.71	-147.77	290.34	388.78	965.60	941.17	24.43	39.527	
4,000.00	3,811.38	3,808.13	3,764.22	20.54	12.10	-148.19	299.47	404.32	1,001.20	975.93	25.27	39.625	
4,100.00	3,905.88	3,902.57	3,856.90	21.10	12.49	-148.47	308.70	420.03	1,034.00	1,007.91	26.10	39.622	
4,200.00	4,001.47	3,997.91	3,950.44	21.60	12.89	-148.61	318.02	435.88	1,063.99	1,037.08	26.91	39.534	
4,300.00	4,098.02	4,094.02	4,044.74	22.06	13.29	-148.63	327.41	451.87	1,091.15	1,063.43	27.71	39.373	
4,400.00	4,195.42	4,190.78	4,139.69	22.46	13.69	-148.53	336.86	467.96	1,115.45	1,086.96	28.49	39.147	
4,500.00	4,293.55	4,288.08	4,235.16	22.82	14.10	-148.32	346.37	484.15	1,136.91	1,107.66	29.25	38.866	
4,600.00	4,392.29	4,385.80	4,331.05	23.12	14.51	-148.01	355.92	500.40	1,155.53	1,125.55	29.98	38.537	
4,700.00	4,491.52	4,483.82	4,427.22	23.38	14.92	-147.59	365.50	516.70	1,171.35	1,140.66	30.69	38.165	
4,800.00	4,591.13	4,582.01	4,523.58	23.58	15.34	-147.07	375.09	533.03	1,184.39	1,153.02	31.37	37.756	
4,900.00	4,690.98	4,680.27	4,619.99	23.74	15.75	-146.44	384.69	549.38	1,194.70	1,162.68	32.02	37.315	
5,004.05	4,795.00	4,782.44	4,720.24	23.85	16.18	-11.96	394.68	566.37	1,202.59	1,169.93	32.66	36.826	
5,100.00	4,890.95	4,876.59	4,812.62	23.94	16.57	-11.14	403.88	582.03	1,208.68	1,175.39	33.28	36.313	
5,200.00	4,990.95	4,974.72	4,908.90	24.03	16.99	-10.30	413.46	598.35	1,215.30	1,181.36	33.94	35.808	
5,300.00	5,090.95	5,072.84	5,005.18	24.12	17.40	-9.46	423.05	614.67	1,222.18	1,187.59	34.59	35.336	
5,400.00	5,190.95	5,170.96	5,101.46	24.21	17.81	-8.64	432.64	630.99	1,229.33	1,194.10	35.23	34.894	
5,500.00	5,290.95	5,269.08	5,197.74	24.31	18.23	-7.82	442.23	647.31	1,236.74	1,200.87	35.87	34.481	
5,600.00	5,390.95	5,367.20	5,294.02	24.41	18.64	-7.01	451.81	663.63	1,244.40	1,207.90	36.50	34.094	
5,700.00	5,490.95	5,465.32	5,390.30	24.50	19.06	-6.22	461.40	679.95	1,252.32	1,215.19	37.12	33.733	
5,800.00	5,590.95	5,563.45	5,486.57	24.61	19.47	-5.43	470.99	696.27	1,260.48	1,222.73	37.74	33.395	
5,900.00	5,690.95	5,661.57	5,582.85	24.71	19.89	-4.65	480.58	712.59	1,268.88	1,230.52	38.36	33.080	
6,000.00	5,790.95	5,759.69	5,679.13	24.81	20.30	-3.89	490.16	728.91	1,277.52	1,238.55	38.97	32.786	
6,100.00	5,890.95	5,857.81	5,775.41	24.92	20.72	-3.13	499.75	745.22	1,286.38	1,246.82	39.57	32.512	
6,200.00	5,990.95	5,955.93	5,871.69	25.02	21.13	-2.38	509.34	761.54	1,295.48	1,255.32	40.16	32.256	

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_NORTHGLENN STATE 8-36
Project:	KERR MCGEE OIL & GAS ONSHORE LP	TVD Reference:	WELL @ 5118.00ft (Original Well Elev)
Reference Site:	WELD_NORTHGLENN STATE 7 PAD	MD Reference:	WELL @ 5118.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_NORTHGLENN STATE 8-36	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_NORTHGLENN STATE 8-36	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 10-09-09 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_NORTHGLENN STATE 7 PAD - P_NORTHGLENN STATE 1-36 - P_NORTHGLENN STATE 1-36												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
6,300.00	6,090.95	6,074.62	5,988.42	25.13	21.53	-1.55	520.19	780.02	1,304.23	1,263.48	40.75	32.009	
6,400.00	6,190.95	6,202.33	6,114.88	25.24	21.88	-0.87	529.19	795.33	1,311.07	1,269.81	41.26	31.775	
6,500.00	6,290.95	6,331.41	6,243.37	25.35	22.16	-0.40	535.37	805.86	1,315.79	1,274.09	41.70	31.555	
6,600.00	6,390.95	6,461.33	6,373.11	25.47	22.38	-0.16	538.63	811.40	1,318.28	1,276.21	42.07	31.337	
6,700.00	6,490.95	6,579.18	6,490.95	25.58	22.54	-0.12	539.15	812.29	1,318.68	1,276.31	42.37	31.124	
6,800.00	6,590.95	6,679.18	6,590.95	25.70	22.67	-0.12	539.15	812.29	1,318.68	1,276.03	42.65	30.916	
6,900.00	6,690.95	6,779.18	6,690.95	25.82	22.81	-0.12	539.15	812.29	1,318.68	1,275.74	42.94	30.707	
7,000.00	6,790.95	6,879.18	6,790.95	25.93	22.95	-0.12	539.15	812.29	1,318.68	1,275.44	43.24	30.499	
7,100.00	6,890.95	6,979.18	6,890.95	26.05	23.09	-0.12	539.15	812.29	1,318.68	1,275.15	43.53	30.292	
7,200.00	6,990.95	7,079.18	6,990.95	26.18	23.23	-0.12	539.15	812.29	1,318.68	1,274.85	43.83	30.086	
7,300.00	7,090.95	7,179.18	7,090.95	26.30	23.38	-0.12	539.15	812.29	1,318.68	1,274.55	44.13	29.881	
7,400.00	7,190.95	7,279.18	7,190.95	26.42	23.52	-0.12	539.15	812.29	1,318.68	1,274.24	44.43	29.677	
7,500.00	7,290.95	7,379.18	7,290.95	26.55	23.67	-0.12	539.15	812.29	1,318.68	1,273.94	44.74	29.474	
7,600.00	7,390.95	7,479.18	7,390.95	26.68	23.82	-0.12	539.15	812.29	1,318.68	1,273.63	45.05	29.272	
7,700.00	7,490.95	7,579.18	7,490.95	26.81	23.97	-0.12	539.15	812.29	1,318.68	1,273.32	45.36	29.072	
7,800.00	7,590.95	7,679.18	7,590.95	26.93	24.12	-0.12	539.15	812.29	1,318.68	1,273.01	45.67	28.873	
7,900.00	7,690.95	7,779.18	7,690.95	27.07	24.27	-0.12	539.15	812.29	1,318.68	1,272.69	45.99	28.675	
8,000.00	7,790.95	7,879.18	7,790.95	27.20	24.42	-0.12	539.15	812.29	1,318.68	1,272.37	46.30	28.478	
8,100.00	7,890.95	7,979.18	7,890.95	27.33	24.57	-0.12	539.15	812.29	1,318.68	1,272.05	46.62	28.283	
8,200.00	7,990.95	8,079.18	7,990.95	27.47	24.73	-0.12	539.15	812.29	1,318.68	1,271.73	46.95	28.089	
8,300.00	8,090.95	8,179.18	8,090.95	27.60	24.89	-0.12	539.15	812.29	1,318.68	1,271.41	47.27	27.897	
8,400.00	8,190.95	8,279.18	8,190.95	27.74	25.04	-0.12	539.15	812.29	1,318.68	1,271.08	47.60	27.706	
8,500.00	8,290.95	8,379.18	8,290.95	27.88	25.20	-0.12	539.15	812.29	1,318.68	1,270.75	47.92	27.516	
8,599.05	8,390.00	8,478.22	8,390.00	28.01	25.36	-0.12	539.15	812.29	1,318.68	1,270.43	48.25	27.330	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_NORTHGLENN STATE 8-36
Project:	KERR MCGEE OIL & GAS ONSHORE LP	TVD Reference:	WELL @ 5118.00ft (Original Well Elev)
Reference Site:	WELD_NORTHGLENN STATE 7 PAD	MD Reference:	WELL @ 5118.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_NORTHGLENN STATE 8-36	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_NORTHGLENN STATE 8-36	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 10-09-09 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	0.00	14.57	0.00	14.57				
100.00	100.00	100.00	100.00	0.10	0.10	0.00	14.57	0.00	14.57	14.38	0.19	76.267	
200.00	200.00	200.00	200.00	0.32	0.32	0.00	14.57	0.00	14.57	13.93	0.64	22.746	
300.00	300.00	300.00	300.00	0.55	0.55	0.00	14.57	0.00	14.57	13.48	1.09	13.366	
400.00	400.00	400.00	400.00	0.77	0.77	0.00	14.57	0.00	14.57	13.03	1.54	9.464	
500.00	500.00	500.00	500.00	0.99	0.99	0.00	14.57	0.00	14.57	12.58	1.99	7.325	
600.00	600.00	600.00	600.00	1.22	1.22	0.00	14.57	0.00	14.57	12.13	2.44	5.975	
700.00	700.00	700.00	700.00	1.44	1.44	0.00	14.57	0.00	14.57	11.68	2.89	5.045	
800.00	800.00	800.00	800.00	1.67	1.67	0.00	14.57	0.00	14.57	11.23	3.34	4.365	
900.00	900.00	900.00	900.00	1.89	1.89	0.00	14.57	0.00	14.57	10.78	3.79	3.847	
1,000.00	1,000.00	1,000.00	1,000.00	2.12	2.12	0.00	14.57	0.00	14.57	10.33	4.24	3.439	
1,100.00	1,100.00	1,100.00	1,100.00	2.34	2.34	0.00	14.57	0.00	14.57	9.88	4.69	3.109 CC, ES	
1,200.00	1,199.98	1,199.97	1,199.95	2.54	2.55	-144.59	14.35	-1.73	15.84	10.74	5.10	3.109 SF	
1,300.00	1,299.84	1,299.34	1,299.18	2.73	2.75	-166.44	13.69	-6.88	22.03	16.56	5.47	4.029	
1,400.00	1,399.45	1,397.54	1,397.01	2.93	2.97	177.59	12.61	-15.31	35.59	29.75	5.84	6.094	
1,500.00	1,498.70	1,494.03	1,492.79	3.16	3.19	168.91	11.13	-26.83	56.27	50.05	6.22	9.052	
1,600.00	1,597.47	1,588.29	1,585.93	3.41	3.45	164.13	9.29	-41.17	83.41	76.81	6.60	12.639	
1,700.00	1,695.62	1,679.87	1,675.92	3.71	3.72	161.25	7.12	-58.01	116.57	109.58	6.99	16.671	
1,800.00	1,793.06	1,768.38	1,762.34	4.06	4.02	159.36	4.69	-76.99	155.42	148.02	7.39	21.018	
1,900.00	1,889.64	1,858.34	1,849.83	4.47	4.37	158.17	2.02	-97.74	198.61	190.78	7.83	25.378	
2,000.00	1,985.27	1,947.07	1,936.12	4.94	4.72	157.57	-0.60	-118.21	244.72	236.45	8.27	29.584	
2,100.00	2,079.82	2,034.26	2,020.93	5.48	5.09	157.30	-3.19	-138.32	293.67	284.94	8.73	33.629	
2,200.00	2,173.17	2,119.82	2,104.13	6.10	5.45	157.21	-5.72	-158.06	345.41	336.20	9.21	37.513	
2,300.00	2,265.21	2,203.62	2,185.64	6.79	5.82	157.21	-8.20	-177.39	399.89	390.19	9.70	41.238	
2,344.80	2,306.00	2,240.58	2,221.58	7.13	5.99	157.22	-9.29	-185.92	425.17	415.25	9.92	42.854	
2,400.00	2,356.07	2,285.87	2,265.63	7.55	6.19	157.52	-10.64	-196.37	456.66	446.40	10.26	44.523	
2,500.00	2,446.78	2,367.94	2,345.45	8.34	6.57	157.97	-13.07	-215.30	513.72	502.85	10.88	47.238	
2,600.00	2,537.48	2,450.00	2,425.26	9.15	6.94	158.33	-15.50	-234.23	570.80	559.29	11.50	49.614	
2,700.00	2,628.19	2,532.06	2,505.07	9.97	7.33	158.62	-17.93	-253.16	627.89	615.75	12.14	51.705	
2,800.00	2,718.90	2,614.12	2,584.88	10.80	7.71	158.86	-20.36	-272.10	684.99	672.20	12.79	53.556	
2,900.00	2,809.60	2,696.18	2,664.69	11.63	8.10	159.07	-22.79	-291.03	742.10	728.66	13.44	55.204	
3,000.00	2,900.31	2,778.25	2,744.50	12.48	8.49	159.25	-25.22	-309.96	799.21	785.11	14.10	56.679	
3,100.00	2,991.02	2,860.31	2,824.31	13.32	8.89	159.40	-27.65	-328.89	856.33	841.57	14.76	58.005	
3,200.00	3,081.73	2,942.37	2,904.13	14.18	9.28	159.54	-30.08	-347.82	913.45	898.02	15.43	59.204	
3,300.00	3,172.43	3,024.43	2,983.94	15.03	9.68	159.65	-32.51	-366.75	970.58	954.48	16.10	60.293	
3,400.00	3,263.14	3,106.50	3,063.75	15.89	10.08	159.76	-34.94	-385.69	1,027.71	1,010.94	16.77	61.286	
3,500.00	3,353.85	3,188.56	3,143.56	16.76	10.48	159.85	-37.37	-404.62	1,084.83	1,067.39	17.44	62.194	
3,600.00	3,444.56	3,270.62	3,223.37	17.62	10.88	159.94	-39.80	-423.55	1,141.97	1,123.85	18.12	63.030	
3,700.00	3,535.26	3,352.68	3,303.18	18.49	11.28	160.02	-42.23	-442.48	1,199.10	1,180.30	18.79	63.801	
3,759.24	3,589.00	3,401.30	3,350.47	19.00	11.52	160.06	-43.67	-453.70	1,232.95	1,213.75	19.20	64.229	
3,800.00	3,626.09	3,434.90	3,383.15	19.31	11.68	160.27	-44.66	-461.45	1,256.01	1,236.50	19.51	64.373	
3,900.00	3,718.08	3,518.63	3,464.59	19.95	12.10	160.71	-47.14	-480.77	1,310.67	1,290.42	20.25	64.733	
4,000.00	3,811.38	3,604.12	3,547.72	20.54	12.52	161.06	-49.68	-500.49	1,362.54	1,341.57	20.97	64.975	
4,100.00	3,905.88	3,691.25	3,632.46	21.10	12.95	161.32	-52.26	-520.59	1,411.56	1,389.89	21.68	65.121	
4,200.00	4,001.47	3,779.91	3,718.70	21.60	13.39	161.51	-54.88	-541.04	1,457.68	1,435.32	22.36	65.178	
4,300.00	4,098.02	3,870.01	3,806.32	22.06	13.83	161.63	-57.55	-561.83	1,500.85	1,477.79	23.06	65.090	
4,400.00	4,195.42	3,961.43	3,895.24	22.46	14.29	161.69	-60.26	-582.92	1,541.02	1,517.29	23.73	64.951	
4,500.00	4,293.55	4,054.06	3,985.32	22.82	14.75	161.69	-63.00	-604.29	1,578.16	1,553.79	24.37	64.771	
4,600.00	4,392.29	4,147.78	4,076.48	23.12	15.21	161.64	-65.78	-625.91	1,612.23	1,587.26	24.97	64.556	
4,700.00	4,491.52	4,242.49	4,168.59	23.38	15.68	161.54	-68.58	-647.76	1,643.21	1,617.66	25.55	64.314	
4,800.00	4,591.13	4,338.06	4,261.54	23.58	16.16	161.39	-71.41	-669.81	1,671.07	1,644.98	26.09	64.050	
4,900.00	4,690.98	4,434.39	4,355.23	23.74	16.64	161.19	-74.26	-692.03	1,695.79	1,669.20	26.59	63.767	

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_NORTHGLENN STATE 8-36
Project:	KERR MCGEE OIL & GAS ONSHORE LP	TVD Reference:	WELL @ 5118.00ft (Original Well Elev)
Reference Site:	WELD_NORTHGLENN STATE 7 PAD	MD Reference:	WELL @ 5118.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_NORTHGLENN STATE 8-36	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_NORTHGLENN STATE 8-36	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 10-09-09 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	
5,004.05	4,795.00	4,535.28	4,453.35	23.85	17.14	-65.35	-77.25	-715.31	1,718.19	1,691.11	27.08	63.451	
5,100.00	4,890.95	4,628.61	4,544.12	23.94	17.61	-65.74	-80.02	-736.84	1,737.31	1,709.74	27.56	63.031	
5,200.00	4,990.95	4,725.86	4,638.71	24.03	18.10	-66.13	-82.90	-759.28	1,757.31	1,729.25	28.06	62.616	
5,300.00	5,090.95	4,823.12	4,733.30	24.12	18.58	-66.52	-85.78	-781.71	1,777.39	1,748.83	28.56	62.223	
5,400.00	5,190.95	4,920.38	4,827.89	24.21	19.07	-66.89	-88.66	-804.15	1,797.55	1,768.49	29.06	61.849	
5,500.00	5,290.95	5,017.64	4,922.48	24.31	19.56	-67.26	-91.54	-826.59	1,817.79	1,788.23	29.56	61.492	
5,600.00	5,390.95	5,114.89	5,017.07	24.41	20.04	-67.62	-94.42	-849.03	1,838.10	1,808.04	30.06	61.153	
5,700.00	5,490.95	5,212.15	5,111.66	24.50	20.53	-67.98	-97.30	-871.46	1,858.47	1,827.92	30.55	60.830	
5,800.00	5,590.95	5,309.41	5,206.25	24.61	21.02	-68.32	-100.18	-893.90	1,878.91	1,847.87	31.05	60.522	
5,900.00	5,690.95	5,406.67	5,300.84	24.71	21.51	-68.66	-103.06	-916.34	1,899.42	1,867.88	31.54	60.228	
6,000.00	5,790.95	5,503.92	5,395.43	24.81	21.99	-68.99	-105.94	-938.77	1,919.99	1,887.96	32.03	59.947	
6,100.00	5,890.95	5,601.18	5,490.02	24.92	22.48	-69.31	-108.82	-961.21	1,940.62	1,908.10	32.52	59.679	
6,200.00	5,990.95	5,698.44	5,584.61	25.02	22.97	-69.63	-111.70	-983.65	1,961.31	1,928.30	33.01	59.423	
6,300.00	6,090.95	5,795.70	5,679.20	25.13	23.46	-69.94	-114.58	-1,006.09	1,982.06	1,948.56	33.49	59.178	
6,400.00	6,190.95	5,893.16	5,773.98	25.24	23.95	-70.25	-117.46	-1,028.57	2,002.86	1,968.88	33.98	58.943	
6,500.00	6,290.95	6,158.27	6,034.31	25.35	24.80	-70.89	-123.78	-1,077.79	2,019.66	1,984.90	34.76	58.096	
6,600.00	6,390.95	6,430.57	6,305.29	25.47	25.36	-71.22	-127.06	-1,103.28	2,028.15	1,992.72	35.43	57.246	
6,700.00	6,490.95	6,616.28	6,490.95	25.58	25.60	-71.26	-127.46	-1,106.43	2,029.18	1,993.31	35.87	56.568	
6,800.00	6,590.95	6,716.28	6,590.95	25.70	25.71	-71.26	-127.46	-1,106.43	2,029.18	1,993.00	36.19	56.072	
6,900.00	6,690.95	6,816.28	6,690.95	25.82	25.83	-71.26	-127.46	-1,106.43	2,029.18	1,992.68	36.51	55.581	
7,000.00	6,790.95	6,916.28	6,790.95	25.93	25.95	-71.26	-127.46	-1,106.43	2,029.18	1,992.35	36.83	55.095	
7,100.00	6,890.95	7,016.28	6,890.95	26.05	26.07	-71.26	-127.46	-1,106.43	2,029.18	1,992.03	37.16	54.613	
7,200.00	6,990.95	7,116.28	6,990.95	26.18	26.20	-71.26	-127.46	-1,106.43	2,029.18	1,991.70	37.48	54.136	
7,300.00	7,090.95	7,216.28	7,090.95	26.30	26.32	-71.26	-127.46	-1,106.43	2,029.18	1,991.37	37.81	53.663	
7,400.00	7,190.95	7,316.28	7,190.95	26.42	26.45	-71.26	-127.46	-1,106.43	2,029.18	1,991.04	38.15	53.196	
7,500.00	7,290.95	7,416.28	7,290.95	26.55	26.58	-71.26	-127.46	-1,106.43	2,029.18	1,990.70	38.48	52.733	
7,600.00	7,390.95	7,516.28	7,390.95	26.68	26.70	-71.26	-127.46	-1,106.43	2,029.18	1,990.37	38.82	52.275	
7,700.00	7,490.95	7,616.28	7,490.95	26.81	26.83	-71.26	-127.46	-1,106.43	2,029.18	1,990.03	39.16	51.822	
7,800.00	7,590.95	7,716.28	7,590.95	26.93	26.96	-71.26	-127.46	-1,106.43	2,029.18	1,989.69	39.50	51.373	
7,900.00	7,690.95	7,816.28	7,690.95	27.07	27.10	-71.26	-127.46	-1,106.43	2,029.18	1,989.34	39.84	50.930	
8,000.00	7,790.95	7,916.28	7,790.95	27.20	27.23	-71.26	-127.46	-1,106.43	2,029.18	1,989.00	40.19	50.492	
8,100.00	7,890.95	8,016.28	7,890.95	27.33	27.36	-71.26	-127.46	-1,106.43	2,029.18	1,988.65	40.54	50.058	
8,200.00	7,990.95	8,116.28	7,990.95	27.47	27.50	-71.26	-127.46	-1,106.43	2,029.18	1,988.30	40.89	49.630	
8,232.03	8,022.99	8,148.31	8,022.99	27.51	27.54	-71.26	-127.46	-1,106.43	2,029.18	1,988.19	41.00	49.494	
8,300.00	8,090.95	8,165.32	8,040.00	27.60	27.57	-71.26	-127.46	-1,106.43	2,029.82	1,988.67	41.15	49.328	
8,400.00	8,190.95	8,165.32	8,040.00	27.74	27.57	-71.26	-127.46	-1,106.43	2,034.79	1,993.46	41.33	49.233	
8,500.00	8,290.95	8,165.32	8,040.00	27.88	27.57	-71.26	-127.46	-1,106.43	2,044.64	2,003.13	41.51	49.256	
8,599.05	8,390.00	8,165.32	8,040.00	28.01	27.57	-71.26	-127.46	-1,106.43	2,059.15	2,017.46	41.69	49.392	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_NORTHGLENN STATE 8-36
Project:	KERR MCGEE OIL & GAS ONSHORE LP	TVD Reference:	WELL @ 5118.00ft (Original Well Elev)
Reference Site:	WELD_NORTHGLENN STATE 7 PAD	MD Reference:	WELL @ 5118.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_NORTHGLENN STATE 8-36	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_NORTHGLENN STATE 8-36	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 10-09-09 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	0.00	80.14	0.00	80.14					
100.00	100.00	100.00	100.00	0.10	0.10	0.00	80.14	0.00	80.14	79.95	0.19	419.493		
200.00	200.00	200.00	200.00	0.32	0.32	0.00	80.14	0.00	80.14	79.50	0.64	125.112		
300.00	300.00	300.00	300.00	0.55	0.55	0.00	80.14	0.00	80.14	79.05	1.09	73.519		
400.00	400.00	400.00	400.00	0.77	0.77	0.00	80.14	0.00	80.14	78.61	1.54	52.054		
500.00	500.00	500.00	500.00	0.99	0.99	0.00	80.14	0.00	80.14	78.16	1.99	40.290		
600.00	600.00	600.00	600.00	1.22	1.22	0.00	80.14	0.00	80.14	77.71	2.44	32.864		
700.00	700.00	700.00	700.00	1.44	1.44	0.00	80.14	0.00	80.14	77.26	2.89	27.749		
800.00	800.00	800.00	800.00	1.67	1.67	0.00	80.14	0.00	80.14	76.81	3.34	24.011		
900.00	900.00	900.00	900.00	1.89	1.89	0.00	80.14	0.00	80.14	76.36	3.79	21.161		
1,000.00	1,000.00	1,000.00	1,000.00	2.12	2.12	0.00	80.14	0.00	80.14	75.91	4.24	18.916		
1,100.00	1,100.00	1,100.00	1,100.00	2.34	2.34	0.00	80.14	0.00	80.14	75.46	4.69	17.102 CC, ES		
1,200.00	1,199.98	1,198.01	1,197.99	2.54	2.56	-135.40	81.29	-1.23	82.55	77.45	5.10	16.178 SF		
1,300.00	1,299.84	1,295.33	1,295.18	2.73	2.77	-139.84	84.68	-4.88	90.17	84.67	5.50	16.408		
1,400.00	1,399.45	1,391.28	1,390.77	2.93	2.99	-145.67	90.22	-10.84	103.83	97.94	5.89	17.630		
1,500.00	1,498.70	1,485.21	1,484.05	3.16	3.22	-151.50	97.75	-18.94	124.24	117.96	6.28	19.785		
1,600.00	1,597.47	1,576.55	1,574.36	3.41	3.47	-156.56	107.07	-28.96	151.64	144.98	6.66	22.767		
1,700.00	1,695.62	1,664.79	1,661.14	3.71	3.73	-160.63	117.93	-40.64	185.88	178.85	7.03	26.441		
1,800.00	1,793.06	1,749.48	1,743.93	4.06	4.01	-163.78	130.06	-53.69	226.62	219.23	7.39	30.680		
1,900.00	1,889.64	1,830.27	1,822.38	4.47	4.31	-166.19	143.18	-67.80	273.45	265.72	7.73	35.373		
2,000.00	1,985.27	1,906.88	1,896.25	4.94	4.62	-168.04	157.01	-82.67	325.97	317.90	8.06	40.435		
2,100.00	2,079.82	1,979.79	1,966.03	5.48	4.96	-169.47	171.41	-98.16	383.74	375.36	8.38	45.770		
2,200.00	2,173.17	2,058.07	2,040.69	6.10	5.34	-170.73	187.42	-115.38	445.35	436.63	8.72	51.085		
2,300.00	2,265.21	2,134.13	2,113.24	6.79	5.73	-171.70	202.97	-132.11	509.78	500.73	9.04	56.370		
2,344.80	2,306.00	2,167.46	2,145.04	7.13	5.91	-172.07	209.79	-139.44	539.53	530.34	9.19	58.722		
2,400.00	2,356.07	2,208.24	2,183.93	7.55	6.12	-172.60	218.13	-148.41	576.53	567.10	9.43	61.122		
2,500.00	2,446.78	2,282.12	2,254.40	8.34	6.52	-173.41	233.24	-164.66	643.63	633.74	9.89	65.099		
2,600.00	2,537.48	2,355.99	2,324.86	9.15	6.93	-174.06	248.35	-180.91	710.78	700.43	10.35	68.669		
2,700.00	2,628.19	2,429.87	2,395.33	9.97	7.34	-174.61	263.46	-197.16	777.97	767.15	10.82	71.888		
2,800.00	2,718.90	2,503.75	2,465.79	10.80	7.75	-175.06	278.57	-213.41	845.20	833.90	11.30	74.797		
2,900.00	2,809.60	2,577.62	2,536.25	11.63	8.18	-175.45	293.68	-229.66	912.45	900.66	11.79	77.424		
3,000.00	2,900.31	2,651.50	2,606.72	12.48	8.60	-175.79	308.79	-245.91	979.72	967.44	12.28	79.813		
3,100.00	2,991.02	2,725.37	2,677.18	13.32	9.03	-176.08	323.89	-262.16	1,047.01	1,034.24	12.77	81.992		
3,200.00	3,081.73	2,799.25	2,747.65	14.18	9.46	-176.34	339.00	-278.41	1,114.31	1,101.04	13.27	83.986		
3,300.00	3,172.43	2,873.12	2,818.11	15.03	9.89	-176.57	354.11	-294.66	1,181.62	1,167.85	13.77	85.808		
3,400.00	3,263.14	2,947.00	2,888.58	15.89	10.33	-176.77	369.22	-310.92	1,248.94	1,234.66	14.28	87.485		
3,500.00	3,353.85	3,020.88	2,959.04	16.76	10.77	-176.96	384.33	-327.17	1,316.27	1,301.48	14.78	89.032		
3,600.00	3,444.56	3,094.75	3,029.51	17.62	11.21	-177.12	399.44	-343.42	1,383.60	1,368.31	15.29	90.462		
3,700.00	3,535.26	3,168.63	3,099.97	18.49	11.65	-177.27	414.55	-359.67	1,450.94	1,435.14	15.81	91.783		
3,759.24	3,589.00	3,212.39	3,141.72	19.00	11.91	-177.36	423.50	-369.29	1,490.84	1,474.73	16.11	92.523		
3,800.00	3,626.09	3,242.70	3,170.62	19.31	12.09	-177.44	429.70	-375.96	1,518.07	1,501.68	16.39	92.595		
3,900.00	3,718.08	3,318.67	3,243.09	19.95	12.55	-177.63	445.24	-392.67	1,583.05	1,565.98	17.06	92.766		
4,000.00	3,811.38	3,396.86	3,317.67	20.54	13.02	-177.80	461.23	-409.87	1,645.34	1,627.62	17.72	92.854		
4,100.00	3,905.88	3,477.18	3,394.28	21.10	13.50	-177.95	477.65	-427.54	1,704.86	1,686.50	18.36	92.872		
4,200.00	4,001.47	3,559.53	3,472.83	21.60	14.00	-178.07	494.50	-445.65	1,761.55	1,742.57	18.98	92.835		
4,300.00	4,098.02	3,643.81	3,553.21	22.06	14.51	-178.18	511.73	-464.19	1,815.33	1,795.76	19.57	92.751		
4,400.00	4,195.42	3,729.92	3,635.34	22.46	15.03	-178.28	529.34	-483.13	1,866.14	1,846.00	20.15	92.629		
4,500.00	4,293.55	3,817.74	3,719.12	22.82	15.57	-178.37	547.31	-502.45	1,913.92	1,893.23	20.70	92.475		
4,600.00	4,392.29	3,907.19	3,804.43	23.12	16.11	-178.45	565.60	-522.13	1,958.61	1,937.39	21.22	92.294		
4,700.00	4,491.52	3,998.14	3,891.18	23.38	16.67	-178.51	584.20	-542.13	2,000.15	1,978.43	21.72	92.090		
4,800.00	4,591.13	4,102.66	3,990.90	23.58	17.29	-178.58	605.54	-565.09	2,038.47	2,016.25	22.22	91.742		
4,900.00	4,690.98	4,440.03	4,318.39	23.74	18.64	-178.70	660.16	-623.84	2,067.48	2,044.32	23.16	89.258		

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_NORTHGLENN STATE 8-36
Project:	KERR MCGEE OIL & GAS ONSHORE LP	TVD Reference:	WELL @ 5118.00ft (Original Well Elev)
Reference Site:	WELD_NORTHGLENN STATE 7 PAD	MD Reference:	WELL @ 5118.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_NORTHGLENN STATE 8-36	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_NORTHGLENN STATE 8-36	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 10-09-09 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_NORTHGLENN STATE 7 PAD - P_NORTHGLENN STATE 2-36 - P_NORTHGLENN STATE 2-36													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		
5,004.05	4,795.00	4,813.39	4,688.97	23.85	19.56	-45.03	689.61	-655.50	2,081.43	2,057.39	24.04	86.583		
5,100.00	4,890.95	5,015.44	4,890.95	23.94	19.81	-45.03	692.14	-658.23	2,082.45	2,057.92	24.54	84.875		
5,200.00	4,990.95	5,115.44	4,990.95	24.03	19.93	-45.03	692.14	-658.23	2,082.45	2,057.57	24.89	83.678		
5,300.00	5,090.95	5,215.44	5,090.95	24.12	20.05	-45.03	692.14	-658.23	2,082.45	2,057.21	25.24	82.504		
5,400.00	5,190.95	5,315.44	5,190.95	24.21	20.17	-45.03	692.14	-658.23	2,082.45	2,056.86	25.60	81.353		
5,500.00	5,290.95	5,415.44	5,290.95	24.31	20.29	-45.03	692.14	-658.23	2,082.45	2,056.50	25.96	80.225		
5,600.00	5,390.95	5,515.44	5,390.95	24.41	20.42	-45.03	692.14	-658.23	2,082.45	2,056.13	26.32	79.120		
5,700.00	5,490.95	5,615.44	5,490.95	24.50	20.54	-45.03	692.14	-658.23	2,082.45	2,055.77	26.69	78.037		
5,800.00	5,590.95	5,715.44	5,590.95	24.61	20.67	-45.03	692.14	-658.23	2,082.45	2,055.40	27.05	76.976		
5,900.00	5,690.95	5,815.44	5,690.95	24.71	20.80	-45.03	692.14	-658.23	2,082.45	2,055.03	27.42	75.937		
6,000.00	5,790.95	5,915.44	5,790.95	24.81	20.93	-45.03	692.14	-658.23	2,082.45	2,054.66	27.80	74.919		
6,100.00	5,890.95	6,015.44	5,890.95	24.92	21.06	-45.03	692.14	-658.23	2,082.45	2,054.28	28.17	73.922		
6,200.00	5,990.95	6,115.44	5,990.95	25.02	21.20	-45.03	692.14	-658.23	2,082.45	2,053.91	28.55	72.946		
6,300.00	6,090.95	6,215.44	6,090.95	25.13	21.33	-45.03	692.14	-658.23	2,082.45	2,053.53	28.93	71.991		
6,400.00	6,190.95	6,315.44	6,190.95	25.24	21.47	-45.03	692.14	-658.23	2,082.45	2,053.15	29.31	71.055		
6,500.00	6,290.95	6,415.44	6,290.95	25.35	21.61	-45.03	692.14	-658.23	2,082.45	2,052.76	29.69	70.139		
6,600.00	6,390.95	6,515.44	6,390.95	25.47	21.75	-45.03	692.14	-658.23	2,082.45	2,052.38	30.08	69.242		
6,700.00	6,490.95	6,615.44	6,490.95	25.58	21.89	-45.03	692.14	-658.23	2,082.45	2,051.99	30.46	68.363		
6,800.00	6,590.95	6,715.44	6,590.95	25.70	22.03	-45.03	692.14	-658.23	2,082.45	2,051.60	30.85	67.503		
6,900.00	6,690.95	6,815.44	6,690.95	25.82	22.18	-45.03	692.14	-658.23	2,082.45	2,051.21	31.24	66.661		
7,000.00	6,790.95	6,915.44	6,790.95	25.93	22.32	-45.03	692.14	-658.23	2,082.45	2,050.82	31.63	65.836		
7,100.00	6,890.95	7,015.44	6,890.95	26.05	22.47	-45.03	692.14	-658.23	2,082.45	2,050.43	32.02	65.028		
7,200.00	6,990.95	7,115.44	6,990.95	26.18	22.62	-45.03	692.14	-658.23	2,082.45	2,050.04	32.42	64.237		
7,300.00	7,090.95	7,215.44	7,090.95	26.30	22.77	-45.03	692.14	-658.23	2,082.45	2,049.64	32.81	63.462		
7,400.00	7,190.95	7,315.44	7,190.95	26.42	22.92	-45.03	692.14	-658.23	2,082.45	2,049.24	33.21	62.703		
7,500.00	7,290.95	7,415.44	7,290.95	26.55	23.07	-45.03	692.14	-658.23	2,082.45	2,048.84	33.61	61.960		
7,600.00	7,390.95	7,515.44	7,390.95	26.68	23.22	-45.03	692.14	-658.23	2,082.45	2,048.44	34.01	61.232		
7,700.00	7,490.95	7,615.44	7,490.95	26.81	23.38	-45.03	692.14	-658.23	2,082.45	2,048.04	34.41	60.518		
7,800.00	7,590.95	7,715.44	7,590.95	26.93	23.53	-45.03	692.14	-658.23	2,082.45	2,047.64	34.81	59.819		
7,900.00	7,690.95	7,815.44	7,690.95	27.07	23.69	-45.03	692.14	-658.23	2,082.45	2,047.24	35.22	59.134		
8,000.00	7,790.95	7,915.44	7,790.95	27.20	23.85	-45.03	692.14	-658.23	2,082.45	2,046.83	35.62	58.463		
8,100.00	7,890.95	8,015.44	7,890.95	27.33	24.00	-45.03	692.14	-658.23	2,082.45	2,046.43	36.03	57.805		
8,200.00	7,990.95	8,115.44	7,990.95	27.47	24.16	-45.03	692.14	-658.23	2,082.45	2,046.02	36.43	57.160		
8,300.00	8,090.95	8,215.44	8,090.95	27.60	24.32	-45.03	692.14	-658.23	2,082.45	2,045.61	36.84	56.528		
8,400.00	8,190.95	8,315.44	8,190.95	27.74	24.49	-45.03	692.14	-658.23	2,082.45	2,045.21	37.25	55.908		
8,500.00	8,290.95	8,415.44	8,290.95	27.88	24.65	-45.03	692.14	-658.23	2,082.45	2,044.80	37.66	55.300		
8,599.05	8,390.00	8,514.49	8,390.00	28.01	24.81	-45.03	692.14	-658.23	2,082.45	2,044.39	38.06	54.710		

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_NORTHGLENN STATE 8-36
Project:	KERR MCGEE OIL & GAS ONSHORE LP	TVD Reference:	WELL @ 5118.00ft (Original Well Elev)
Reference Site:	WELD_NORTHGLENN STATE 7 PAD	MD Reference:	WELL @ 5118.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_NORTHGLENN STATE 8-36	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_NORTHGLENN STATE 8-36	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 10-09-09 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	0.00	47.36	0.00	47.36				
100.00	100.00	100.00	100.00	0.10	0.10	0.00	47.36	0.00	47.36	47.17	0.19	247.891	
200.00	200.00	200.00	200.00	0.32	0.32	0.00	47.36	0.00	47.36	46.72	0.64	73.933	
300.00	300.00	300.00	300.00	0.55	0.55	0.00	47.36	0.00	47.36	46.27	1.09	43.445	
400.00	400.00	400.00	400.00	0.77	0.77	0.00	47.36	0.00	47.36	45.82	1.54	30.760	
500.00	500.00	500.00	500.00	0.99	0.99	0.00	47.36	0.00	47.36	45.37	1.99	23.809	
600.00	600.00	600.00	600.00	1.22	1.22	0.00	47.36	0.00	47.36	44.92	2.44	19.420	
700.00	700.00	700.00	700.00	1.44	1.44	0.00	47.36	0.00	47.36	44.47	2.89	16.397	
800.00	800.00	800.00	800.00	1.67	1.67	0.00	47.36	0.00	47.36	44.02	3.34	14.189	
900.00	900.00	900.00	900.00	1.89	1.89	0.00	47.36	0.00	47.36	43.57	3.79	12.505	
1,000.00	1,000.00	1,000.00	1,000.00	2.12	2.12	0.00	47.36	0.00	47.36	43.12	4.24	11.178	
1,100.00	1,100.00	1,100.00	1,100.00	2.34	2.34	0.00	47.36	0.00	47.36	42.67	4.69	10.106 CC, ES	
1,200.00	1,199.98	1,199.17	1,199.12	2.54	2.56	-138.03	48.03	-2.48	49.39	44.29	5.10	9.683 SF	
1,300.00	1,299.84	1,297.21	1,296.86	2.73	2.77	-148.71	50.03	-9.82	56.91	51.42	5.49	10.371	
1,400.00	1,399.45	1,393.08	1,391.93	2.93	3.00	-160.66	53.24	-21.66	72.48	66.61	5.87	12.339	
1,500.00	1,498.70	1,485.81	1,483.19	3.16	3.26	-170.29	57.54	-37.48	97.27	91.02	6.25	15.554	
1,600.00	1,597.47	1,574.59	1,569.73	3.41	3.55	-177.06	62.74	-56.61	130.93	124.30	6.62	19.765	
1,700.00	1,695.62	1,658.80	1,650.86	3.71	3.88	178.31	68.64	-78.33	172.62	165.63	6.99	24.711	
1,800.00	1,793.06	1,737.96	1,726.16	4.06	4.25	175.09	75.04	-101.87	221.54	214.21	7.34	30.193	
1,900.00	1,889.64	1,811.77	1,795.41	4.47	4.64	172.75	81.74	-126.52	276.98	269.30	7.68	36.070	
2,000.00	1,985.27	1,880.09	1,858.58	4.94	5.06	170.97	88.56	-151.61	338.28	330.26	8.02	42.201	
2,100.00	2,079.82	1,942.88	1,915.79	5.48	5.51	169.55	95.35	-176.59	404.85	396.49	8.35	48.476	
2,200.00	2,173.17	2,000.00	1,967.06	6.10	5.93	168.35	101.94	-200.88	476.14	467.46	8.68	54.856	
2,300.00	2,265.21	2,052.30	2,013.33	6.79	6.38	167.29	108.34	-224.41	551.64	542.62	9.02	61.168	
2,344.80	2,306.00	2,073.97	2,032.30	7.13	6.57	166.83	111.08	-234.51	586.71	577.55	9.17	63.990	
2,400.00	2,356.07	2,100.00	2,054.93	7.55	6.79	166.61	114.46	-246.92	630.59	621.16	9.42	66.909	
2,500.00	2,446.78	2,143.89	2,092.69	8.34	7.22	166.25	120.32	-268.52	711.13	701.23	9.90	71.822	
2,600.00	2,537.48	2,185.56	2,128.05	9.15	7.63	165.93	126.11	-289.79	792.95	782.57	10.38	76.383	
2,700.00	2,628.19	2,224.81	2,160.91	9.97	8.05	165.64	131.73	-310.51	875.94	865.07	10.87	80.584	
2,800.00	2,718.90	2,261.82	2,191.47	10.80	8.46	165.38	137.20	-330.63	959.98	948.62	11.36	84.485	
2,900.00	2,809.60	2,300.00	2,222.59	11.63	8.89	165.12	143.01	-351.99	1,045.02	1,033.15	11.86	88.085	
3,000.00	2,900.31	2,329.71	2,246.49	12.48	9.26	164.93	147.63	-369.02	1,130.93	1,118.57	12.36	91.524	
3,100.00	2,991.02	2,360.89	2,271.27	13.32	9.64	164.73	152.60	-387.28	1,217.67	1,204.81	12.86	94.705	
3,200.00	3,081.73	2,400.00	2,301.91	14.18	10.13	164.48	158.97	-410.73	1,305.23	1,291.85	13.38	97.539	
3,300.00	3,172.43	2,418.36	2,316.13	15.03	10.37	164.37	162.02	-421.95	1,393.37	1,379.51	13.86	100.526	
3,400.00	3,263.14	2,444.88	2,336.46	15.89	10.73	164.21	166.48	-438.38	1,482.22	1,467.86	14.36	103.185	
3,500.00	3,353.85	2,473.01	2,357.77	16.76	11.11	164.05	171.29	-456.09	1,571.66	1,556.78	14.88	105.649	
3,600.00	3,444.56	2,517.21	2,391.13	17.62	11.72	163.81	178.90	-484.07	1,661.31	1,645.87	15.44	107.625	
3,700.00	3,535.26	2,561.42	2,424.50	18.49	12.34	163.59	186.50	-512.05	1,750.96	1,734.96	16.00	109.445	
3,759.24	3,589.00	2,587.61	2,444.27	19.00	12.71	163.47	191.00	-528.63	1,804.07	1,787.74	16.33	110.468	
3,800.00	3,626.09	2,605.87	2,458.05	19.31	12.96	163.84	194.15	-540.19	1,840.49	1,823.91	16.59	110.955	
3,900.00	3,718.08	2,652.71	2,493.41	19.95	13.63	164.63	202.20	-569.84	1,928.76	1,911.56	17.20	112.110	
4,000.00	3,811.38	2,702.41	2,530.92	20.54	14.34	165.27	210.75	-601.30	2,015.41	1,997.58	17.83	113.058	
4,100.00	3,905.88	2,754.90	2,570.54	21.10	15.09	165.78	219.78	-634.52	2,100.34	2,081.88	18.46	113.808	
4,200.00	4,001.47	2,810.12	2,612.23	21.60	15.88	166.19	229.28	-669.48	2,183.45	2,164.37	19.08	114.434	
4,300.00	4,098.02	2,868.01	2,655.92	22.06	16.72	166.52	239.23	-706.11	2,264.65	2,244.95	19.70	114.942	
4,400.00	4,195.42	2,928.48	2,701.57	22.46	17.60	166.79	249.64	-744.39	2,343.85	2,323.53	20.32	115.368	
4,500.00	4,293.55	2,991.48	2,749.12	22.82	18.51	167.00	260.47	-784.27	2,420.97	2,400.05	20.92	115.730	
4,600.00	4,392.29	3,056.91	2,798.51	23.12	19.47	167.15	271.73	-825.69	2,495.91	2,474.40	21.51	116.034	
4,700.00	4,491.52	3,124.71	2,849.69	23.38	20.46	167.27	283.39	-868.60	2,568.60	2,546.52	22.09	116.305	
4,800.00	4,591.13	3,194.79	2,902.58	23.58	21.49	167.35	295.44	-912.96	2,638.97	2,616.32	22.65	116.530	
4,900.00	4,690.98	3,267.06	2,957.14	23.74	22.55	167.39	307.87	-958.71	2,706.93	2,683.70	23.23	116.529	

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_NORTHGLENN STATE 8-36
Project:	KERR MCGEE OIL & GAS ONSHORE LP	TVD Reference:	WELL @ 5118.00ft (Original Well Elev)
Reference Site:	WELD_NORTHGLENN STATE 7 PAD	MD Reference:	WELL @ 5118.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_NORTHGLENN STATE 8-36	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_NORTHGLENN STATE 8-36	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 10-09-09 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_NORTHGLENN STATE 7 PAD - P_NORTHGLENN STATE 3-36 - P_NORTHGLENN STATE 3-36													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		
5,004.05	4,795.00	3,344.49	3,015.58	23.85	23.69	-58.87	321.19	-1,007.72	2,775.01	2,751.19	23.82	116.509		
5,100.00	4,890.95	3,416.92	3,070.25	23.94	24.75	-59.22	333.65	-1,053.56	2,836.57	2,812.26	24.31	116.694		
5,200.00	4,990.95	3,492.40	3,127.23	24.03	25.87	-59.56	346.63	-1,101.34	2,900.79	2,875.97	24.82	116.896		
5,300.00	5,090.95	5,662.12	5,090.95	24.12	40.96	-63.38	542.85	-1,823.45	2,951.41	2,920.27	31.14	94.784		
5,400.00	5,190.95	5,762.12	5,190.95	24.21	41.02	-63.38	542.85	-1,823.45	2,951.41	2,919.99	31.42	93.949		
5,500.00	5,290.95	5,862.12	5,290.95	24.31	41.08	-63.38	542.85	-1,823.45	2,951.41	2,919.71	31.70	93.116		
5,600.00	5,390.95	5,962.12	5,390.95	24.41	41.14	-63.38	542.85	-1,823.45	2,951.41	2,919.43	31.98	92.287		
5,700.00	5,490.95	6,062.12	5,490.95	24.50	41.20	-63.38	542.85	-1,823.45	2,951.41	2,919.14	32.27	91.462		
5,800.00	5,590.95	6,162.12	5,590.95	24.61	41.26	-63.38	542.85	-1,823.45	2,951.41	2,918.85	32.56	90.641		
5,900.00	5,690.95	6,262.12	5,690.95	24.71	41.33	-63.38	542.85	-1,823.45	2,951.41	2,918.55	32.86	89.826		
6,000.00	5,790.95	6,362.12	5,790.95	24.81	41.39	-63.38	542.85	-1,823.45	2,951.41	2,918.25	33.16	89.016		
6,100.00	5,890.95	6,462.12	5,890.95	24.92	41.46	-63.38	542.85	-1,823.45	2,951.41	2,917.95	33.46	88.211		
6,200.00	5,990.95	6,562.12	5,990.95	25.02	41.53	-63.38	542.85	-1,823.45	2,951.41	2,917.65	33.76	87.413		
6,300.00	6,090.95	6,662.12	6,090.95	25.13	41.60	-63.38	542.85	-1,823.45	2,951.41	2,917.34	34.07	86.621		
6,400.00	6,190.95	6,762.12	6,190.95	25.24	41.67	-63.38	542.85	-1,823.45	2,951.41	2,917.03	34.38	85.835		
6,500.00	6,290.95	6,862.12	6,290.95	25.35	41.74	-63.38	542.85	-1,823.45	2,951.41	2,916.71	34.70	85.056		
6,600.00	6,390.95	6,962.12	6,390.95	25.47	41.81	-63.38	542.85	-1,823.45	2,951.41	2,916.39	35.02	84.284		
6,700.00	6,490.95	7,062.12	6,490.95	25.58	41.88	-63.38	542.85	-1,823.45	2,951.41	2,916.07	35.34	83.520		
6,800.00	6,590.95	7,162.12	6,590.95	25.70	41.96	-63.38	542.85	-1,823.45	2,951.41	2,915.75	35.66	82.762		
6,900.00	6,690.95	7,262.12	6,690.95	25.82	42.03	-63.38	542.85	-1,823.45	2,951.41	2,915.42	35.99	82.013		
7,000.00	6,790.95	7,362.12	6,790.95	25.93	42.11	-63.38	542.85	-1,823.45	2,951.41	2,915.09	36.32	81.271		
7,100.00	6,890.95	7,462.12	6,890.95	26.05	42.19	-63.38	542.85	-1,823.45	2,951.41	2,914.76	36.65	80.536		
7,200.00	6,990.95	7,562.12	6,990.95	26.18	42.27	-63.38	542.85	-1,823.45	2,951.41	2,914.43	36.98	79.810		
7,300.00	7,090.95	7,662.12	7,090.95	26.30	42.35	-63.38	542.85	-1,823.45	2,951.41	2,914.09	37.32	79.091		
7,400.00	7,190.95	7,762.12	7,190.95	26.42	42.43	-63.38	542.85	-1,823.45	2,951.41	2,913.75	37.66	78.380		
7,500.00	7,290.95	7,862.12	7,290.95	26.55	42.51	-63.38	542.85	-1,823.45	2,951.41	2,913.41	38.00	77.677		
7,600.00	7,390.95	7,962.12	7,390.95	26.68	42.59	-63.38	542.85	-1,823.45	2,951.41	2,913.07	38.34	76.983		
7,700.00	7,490.95	8,062.12	7,490.95	26.81	42.68	-63.38	542.85	-1,823.45	2,951.41	2,912.73	38.68	76.296		
7,800.00	7,590.95	8,162.12	7,590.95	26.93	42.76	-63.38	542.85	-1,823.45	2,951.41	2,912.38	39.03	75.617		
7,900.00	7,690.95	8,262.12	7,690.95	27.07	42.85	-63.38	542.85	-1,823.45	2,951.41	2,912.03	39.38	74.947		
8,000.00	7,790.95	8,362.12	7,790.95	27.20	42.93	-63.38	542.85	-1,823.45	2,951.41	2,911.68	39.73	74.284		
8,100.00	7,890.95	8,462.12	7,890.95	27.33	43.02	-63.38	542.85	-1,823.45	2,951.41	2,911.33	40.08	73.630		
8,200.00	7,990.95	8,562.12	7,990.95	27.47	43.11	-63.38	542.85	-1,823.45	2,951.41	2,910.97	40.44	72.984		
8,300.00	8,090.95	8,662.12	8,090.95	27.60	43.20	-63.38	542.85	-1,823.45	2,951.41	2,910.61	40.80	72.345		
8,400.00	8,190.95	8,762.12	8,190.95	27.74	43.29	-63.38	542.85	-1,823.45	2,951.41	2,910.26	41.15	71.715		
8,500.00	8,290.95	8,862.12	8,290.95	27.88	43.38	-63.38	542.85	-1,823.45	2,951.41	2,909.89	41.52	71.092		
8,599.05	8,390.00	8,961.17	8,390.00	28.01	43.47	-63.38	542.85	-1,823.45	2,951.41	2,909.54	41.87	70.483		

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_NORTHGLENN STATE 8-36
Project:	KERR MCGEE OIL & GAS ONSHORE LP	TVD Reference:	WELL @ 5118.00ft (Original Well Elev)
Reference Site:	WELD_NORTHGLENN STATE 7 PAD	MD Reference:	WELL @ 5118.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_NORTHGLENN STATE 8-36	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_NORTHGLENN STATE 8-36	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 10-09-09 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 Tooface (")	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	0.00	32.78	0.00	32.78				
100.00	100.00	100.00	100.00	0.10	0.10	0.00	32.78	0.00	32.78	32.59	0.19	171.602	
200.00	200.00	200.00	200.00	0.32	0.32	0.00	32.78	0.00	32.78	32.14	0.64	51.180	
300.00	300.00	300.00	300.00	0.55	0.55	0.00	32.78	0.00	32.78	31.69	1.09	30.075	
400.00	400.00	400.00	400.00	0.77	0.77	0.00	32.78	0.00	32.78	31.25	1.54	21.294	
500.00	500.00	500.00	500.00	0.99	0.99	0.00	32.78	0.00	32.78	30.80	1.99	16.482	
600.00	600.00	600.00	600.00	1.22	1.22	0.00	32.78	0.00	32.78	30.35	2.44	13.443	
700.00	700.00	700.00	700.00	1.44	1.44	0.00	32.78	0.00	32.78	29.90	2.89	11.351	
800.00	800.00	800.00	800.00	1.67	1.67	0.00	32.78	0.00	32.78	29.45	3.34	9.822	
900.00	900.00	900.00	900.00	1.89	1.89	0.00	32.78	0.00	32.78	29.00	3.79	8.656	
1,000.00	1,000.00	1,000.00	1,000.00	2.12	2.12	0.00	32.78	0.00	32.78	28.55	4.24	7.738	
1,100.00	1,100.00	1,100.00	1,100.00	2.34	2.34	0.00	32.78	0.00	32.78	28.10	4.69	6.996 CC, ES	
1,200.00	1,199.98	1,200.12	1,200.10	2.54	2.55	-132.90	32.58	1.74	33.79	28.70	5.10	6.630 SF	
1,300.00	1,299.84	1,300.16	1,300.00	2.73	2.76	-130.71	31.99	6.94	36.86	31.38	5.48	6.724	
1,400.00	1,399.45	1,400.06	1,399.51	2.93	2.97	-127.77	30.99	15.60	42.05	36.16	5.89	7.140	
1,500.00	1,498.70	1,499.73	1,498.44	3.16	3.21	-124.69	29.60	27.66	49.44	43.11	6.34	7.803	
1,600.00	1,597.47	1,599.12	1,596.60	3.41	3.47	-121.84	27.82	43.08	59.07	52.23	6.84	8.638	
1,700.00	1,695.62	1,698.14	1,693.81	3.71	3.78	-119.39	25.67	61.81	70.92	63.51	7.41	9.569	
1,800.00	1,793.06	1,796.74	1,789.90	4.06	4.12	-117.35	23.14	83.76	84.98	76.91	8.07	10.527	
1,900.00	1,889.64	1,894.86	1,884.70	4.47	4.53	-115.65	20.25	108.84	101.21	92.38	8.84	11.454	
2,000.00	1,985.27	1,992.43	1,978.06	4.94	4.99	-114.24	17.01	136.98	119.58	109.87	9.71	12.309	
2,100.00	2,079.82	2,090.25	2,071.06	5.48	5.50	-113.56	13.54	167.14	139.78	129.08	10.70	13.070	
2,200.00	2,173.17	2,187.86	2,163.84	6.10	6.03	-114.08	10.07	197.27	161.37	149.62	11.75	13.735	
2,300.00	2,265.21	2,285.03	2,256.19	6.79	6.58	-115.36	6.61	227.26	184.44	171.59	12.86	14.343	
2,344.80	2,306.00	2,328.39	2,297.41	7.13	6.83	-116.10	5.07	240.64	195.31	181.94	13.37	14.605	
2,400.00	2,356.07	2,381.73	2,348.11	7.55	7.14	-117.24	3.18	257.10	208.95	194.93	14.02	14.901	
2,500.00	2,446.78	2,478.37	2,439.97	8.34	7.71	-118.95	-0.26	286.93	233.83	218.61	15.22	15.367	
2,600.00	2,537.48	2,575.02	2,531.83	9.15	8.30	-120.34	-3.69	316.75	258.86	242.44	16.43	15.759	
2,700.00	2,628.19	2,671.66	2,623.69	9.97	8.88	-121.48	-7.13	346.58	284.02	266.37	17.65	16.093	
2,800.00	2,718.90	2,768.30	2,715.56	10.80	9.48	-122.44	-10.56	376.41	309.26	290.38	18.88	16.380	
2,900.00	2,809.60	2,864.95	2,807.42	11.63	10.07	-123.25	-14.00	406.23	334.57	314.45	20.12	16.629	
3,000.00	2,900.31	2,961.59	2,899.28	12.48	10.68	-123.95	-17.43	436.06	359.93	338.57	21.37	16.846	
3,100.00	2,991.02	3,058.23	2,991.14	13.32	11.28	-124.56	-20.87	465.89	385.34	362.72	22.62	17.037	
3,200.00	3,081.73	3,154.87	3,083.00	14.18	11.89	-125.09	-24.30	495.71	410.78	386.91	23.87	17.206	
3,300.00	3,172.43	3,251.52	3,174.86	15.03	12.50	-125.56	-27.74	525.54	436.26	411.12	25.13	17.357	
3,400.00	3,263.14	3,348.16	3,266.72	15.89	13.11	-125.98	-31.17	555.37	461.75	435.36	26.40	17.493	
3,500.00	3,353.85	3,444.80	3,358.58	16.76	13.73	-126.35	-34.61	585.19	487.27	459.61	27.66	17.615	
3,600.00	3,444.56	3,541.45	3,450.44	17.62	14.34	-126.69	-38.04	615.02	512.81	483.88	28.93	17.725	
3,700.00	3,535.26	3,638.09	3,542.30	18.49	14.96	-126.99	-41.48	644.85	538.36	508.16	30.20	17.826	
3,759.24	3,589.00	3,695.34	3,596.72	19.00	15.33	-127.16	-43.51	662.52	553.50	522.55	30.95	17.881	
3,800.00	3,626.09	3,734.78	3,634.21	19.31	15.58	-127.42	-44.91	674.69	563.75	532.30	31.46	17.921	
3,900.00	3,718.08	3,831.93	3,726.55	19.95	16.20	-127.80	-48.37	704.67	587.45	554.82	32.63	18.002	
4,000.00	3,811.38	3,929.52	3,819.31	20.54	16.83	-127.89	-51.84	734.79	609.08	575.25	33.82	18.008	
4,100.00	3,905.88	4,027.44	3,912.39	21.10	17.46	-127.70	-55.32	765.01	628.63	593.61	35.02	17.951	
4,200.00	4,001.47	4,125.56	4,005.66	21.60	18.09	-127.26	-58.80	795.30	646.16	609.94	36.22	17.841	
4,300.00	4,098.02	4,223.78	4,099.01	22.06	18.72	-126.59	-62.29	825.61	661.74	624.33	37.41	17.688	
4,400.00	4,195.42	4,321.97	4,192.34	22.46	19.35	-125.70	-65.78	855.91	675.47	636.88	38.59	17.503	
4,500.00	4,293.55	4,420.00	4,285.52	22.82	19.98	-124.59	-69.27	886.17	687.49	647.74	39.75	17.294	
4,600.00	4,392.29	4,517.76	4,378.45	23.12	20.62	-123.27	-72.74	916.34	697.96	657.08	40.89	17.071	
4,700.00	4,491.52	4,615.14	4,471.01	23.38	21.25	-121.76	-76.20	946.39	707.07	665.09	41.98	16.843	
4,800.00	4,591.13	4,712.00	4,563.08	23.58	21.87	-120.05	-79.65	976.29	715.05	672.02	43.03	16.618	
4,900.00	4,690.98	4,808.24	4,654.56	23.74	22.49	-118.16	-83.07	1,005.99	722.15	678.14	44.01	16.408	

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_NORTHGLENN STATE 8-36
Project:	KERR MCGEE OIL & GAS ONSHORE LP	TVD Reference:	WELL @ 5118.00ft (Original Well Elev)
Reference Site:	WELD_NORTHGLENN STATE 7 PAD	MD Reference:	WELL @ 5118.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_NORTHGLENN STATE 8-36	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_NORTHGLENN STATE 8-36	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 10-09-09 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	
5,004.05	4,795.00	4,907.59	4,748.99	23.85	23.14	17.73	-86.60	1,036.65	728.92	683.96	44.96	16.212	
5,100.00	4,890.95	4,998.79	4,835.68	23.94	23.73	19.90	-89.84	1,064.80	735.56	689.78	45.78	16.066	
5,200.00	4,990.95	5,093.85	4,926.03	24.03	24.34	22.12	-93.22	1,094.14	743.69	697.10	46.58	15.964	
5,300.00	5,090.95	5,188.90	5,016.38	24.12	24.96	24.30	-96.60	1,123.47	753.01	705.68	47.33	15.910	
5,400.00	5,190.95	5,283.95	5,106.72	24.21	25.58	26.42	-99.98	1,152.81	763.48	715.46	48.02	15.900	
5,500.00	5,290.95	5,379.00	5,197.07	24.31	26.19	28.49	-103.35	1,182.14	775.06	726.40	48.65	15.930	
5,600.00	5,390.95	5,474.05	5,287.42	24.41	26.81	30.50	-106.73	1,211.48	787.69	738.45	49.24	15.998	
5,700.00	5,490.95	5,569.10	5,377.77	24.50	27.43	32.45	-110.11	1,240.81	801.33	751.55	49.77	16.099	
5,800.00	5,590.95	5,664.16	5,468.12	24.61	28.05	34.34	-113.49	1,270.15	815.92	765.65	50.27	16.232	
5,900.00	5,690.95	5,769.03	5,568.04	24.71	28.66	36.30	-117.13	1,301.80	831.09	780.39	50.70	16.393	
6,000.00	5,790.95	5,882.78	5,677.56	24.81	29.19	38.13	-120.64	1,332.26	845.22	794.20	51.02	16.567	
6,100.00	5,890.95	5,998.91	5,790.55	24.92	29.65	39.66	-123.71	1,358.88	857.81	806.52	51.28	16.727	
6,200.00	5,990.95	6,117.11	5,906.57	25.02	30.04	40.91	-126.29	1,381.28	868.54	817.02	51.52	16.859	
6,300.00	6,090.95	6,237.01	6,025.12	25.13	30.37	41.89	-128.34	1,399.13	877.16	825.42	51.74	16.953	
6,400.00	6,190.95	6,358.24	6,145.62	25.24	30.63	42.58	-129.84	1,412.15	883.49	831.53	51.96	17.003	
6,500.00	6,290.95	6,480.37	6,267.48	25.35	30.84	43.00	-130.76	1,420.13	887.39	835.21	52.18	17.006	
6,600.00	6,390.95	6,602.97	6,390.04	25.47	30.97	43.15	-131.09	1,422.94	888.77	836.36	52.41	16.959	
6,700.00	6,490.95	6,703.89	6,490.95	25.58	31.07	43.15	-131.09	1,422.95	888.77	836.14	52.63	16.888	
6,800.00	6,590.95	6,803.89	6,590.95	25.70	31.17	43.15	-131.09	1,422.95	888.77	835.92	52.85	16.817	
6,900.00	6,690.95	6,903.89	6,690.95	25.82	31.26	43.15	-131.09	1,422.95	888.77	835.69	53.08	16.744	
7,000.00	6,790.95	7,003.89	6,790.95	25.93	31.37	43.15	-131.09	1,422.95	888.77	835.46	53.31	16.672	
7,100.00	6,890.95	7,103.89	6,890.95	26.05	31.47	43.15	-131.09	1,422.95	888.77	835.22	53.54	16.599	
7,200.00	6,990.95	7,203.89	6,990.95	26.18	31.57	43.15	-131.09	1,422.95	888.77	834.99	53.78	16.526	
7,300.00	7,090.95	7,303.89	7,090.95	26.30	31.68	43.15	-131.09	1,422.95	888.77	834.75	54.02	16.453	
7,400.00	7,190.95	7,403.89	7,190.95	26.42	31.78	43.15	-131.09	1,422.95	888.77	834.51	54.26	16.379	
7,500.00	7,290.95	7,503.89	7,290.95	26.55	31.89	43.15	-131.09	1,422.95	888.77	834.26	54.51	16.306	
7,600.00	7,390.95	7,603.89	7,390.95	26.68	32.00	43.15	-131.09	1,422.95	888.77	834.01	54.75	16.232	
7,700.00	7,490.95	7,703.89	7,490.95	26.81	32.11	43.15	-131.09	1,422.95	888.77	833.76	55.00	16.159	
7,800.00	7,590.95	7,803.89	7,590.95	26.93	32.22	43.15	-131.09	1,422.95	888.77	833.51	55.25	16.085	
7,900.00	7,690.95	7,903.89	7,690.95	27.07	32.33	43.15	-131.09	1,422.95	888.77	833.26	55.51	16.011	
8,000.00	7,790.95	8,003.89	7,790.95	27.20	32.44	43.15	-131.09	1,422.95	888.77	833.00	55.77	15.937	
8,100.00	7,890.95	8,103.89	7,890.95	27.33	32.56	43.15	-131.09	1,422.95	888.77	832.74	56.03	15.864	
8,200.00	7,990.95	8,203.89	7,990.95	27.47	32.67	43.15	-131.09	1,422.95	888.77	832.48	56.29	15.790	
8,300.00	8,090.95	8,207.93	7,995.00	27.60	32.68	43.15	-131.09	1,422.95	893.93	837.50	56.43	15.842	
8,400.00	8,190.95	8,207.93	7,995.00	27.74	32.68	43.15	-131.09	1,422.95	910.11	853.55	56.57	16.090	
8,500.00	8,290.95	8,207.93	7,995.00	27.88	32.68	43.15	-131.09	1,422.95	936.75	880.04	56.70	16.520	
8,599.05	8,390.00	8,207.93	7,995.00	28.01	32.68	43.15	-131.09	1,422.95	972.59	915.75	56.84	17.111	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_NORTHGLENN STATE 8-36
Project:	KERR MCGEE OIL & GAS ONSHORE LP	TVD Reference:	WELL @ 5118.00ft (Original Well Elev)
Reference Site:	WELD_NORTHGLENN STATE 7 PAD	MD Reference:	WELL @ 5118.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_NORTHGLENN STATE 8-36	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_NORTHGLENN STATE 8-36	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 10-09-09 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	-180.00	-18.21	0.00	18.21				
100.00	100.00	100.00	100.00	0.10	0.10	-180.00	-18.21	0.00	18.21	18.02	0.19	95.312	
200.00	200.00	200.00	200.00	0.32	0.32	-180.00	-18.21	0.00	18.21	17.57	0.64	28.426	
300.00	300.00	300.00	300.00	0.55	0.55	-180.00	-18.21	0.00	18.21	17.12	1.09	16.704	
400.00	400.00	400.00	400.00	0.77	0.77	-180.00	-18.21	0.00	18.21	16.67	1.54	11.827	
500.00	500.00	500.00	500.00	0.99	0.99	-180.00	-18.21	0.00	18.21	16.22	1.99	9.154	
600.00	600.00	600.00	600.00	1.22	1.22	-180.00	-18.21	0.00	18.21	15.77	2.44	7.467	
700.00	700.00	700.00	700.00	1.44	1.44	-180.00	-18.21	0.00	18.21	15.32	2.89	6.305	
800.00	800.00	800.00	800.00	1.67	1.67	-180.00	-18.21	0.00	18.21	14.87	3.34	5.456	
900.00	900.00	900.00	900.00	1.89	1.89	-180.00	-18.21	0.00	18.21	14.42	3.79	4.808	
1,000.00	1,000.00	1,000.00	1,000.00	2.12	2.12	-180.00	-18.21	0.00	18.21	13.97	4.24	4.298	
1,100.00	1,100.00	1,100.00	1,100.00	2.34	2.34	-180.00	-18.21	0.00	18.21	13.52	4.69	3.886 CC	
1,200.00	1,199.98	1,199.42	1,199.40	2.54	2.54	53.09	-19.65	-0.95	18.58	13.50	5.08	3.655 ES, SF	
1,300.00	1,299.84	1,298.55	1,298.39	2.73	2.72	70.88	-23.94	-3.80	21.12	15.67	5.45	3.876	
1,400.00	1,399.45	1,397.09	1,396.56	2.93	2.91	90.16	-31.04	-8.50	28.46	22.63	5.83	4.881	
1,500.00	1,498.70	1,494.76	1,493.52	3.16	3.12	103.61	-40.85	-14.99	41.57	35.33	6.24	6.663	
1,600.00	1,597.47	1,591.30	1,588.89	3.41	3.36	111.65	-53.25	-23.20	59.98	53.30	6.68	8.976	
1,700.00	1,695.62	1,686.44	1,682.36	3.71	3.63	116.43	-68.08	-33.03	83.18	76.00	7.18	11.592	
1,800.00	1,793.06	1,779.97	1,773.60	4.06	3.95	119.35	-85.17	-44.35	110.80	103.07	7.73	14.336	
1,900.00	1,889.64	1,871.66	1,862.36	4.47	4.30	121.17	-104.33	-57.04	142.63	134.28	8.35	17.080	
2,000.00	1,985.27	1,961.34	1,948.42	4.94	4.69	122.32	-125.36	-70.96	178.47	169.43	9.05	19.729	
2,100.00	2,079.82	2,052.06	2,034.87	5.48	5.14	123.22	-148.30	-86.16	217.68	207.85	9.83	22.153	
2,200.00	2,173.17	2,142.91	2,121.41	6.10	5.60	124.27	-171.37	-101.43	258.88	248.21	10.67	24.252	
2,300.00	2,265.21	2,232.70	2,206.93	6.79	6.08	125.39	-194.16	-116.53	302.10	290.51	11.58	26.084	
2,344.80	2,306.00	2,272.55	2,244.88	7.13	6.30	125.89	-204.28	-123.23	322.13	310.12	12.01	26.832	
2,400.00	2,356.07	2,321.49	2,291.50	7.55	6.57	126.88	-216.70	-131.46	347.11	334.56	12.56	27.640	
2,500.00	2,446.78	2,410.16	2,375.96	8.34	7.07	128.36	-239.21	-146.36	392.55	378.98	13.58	28.911	
2,600.00	2,537.48	2,498.83	2,460.42	9.15	7.57	129.54	-261.72	-161.27	438.16	423.54	14.62	29.977	
2,700.00	2,628.19	2,587.50	2,544.88	9.97	8.09	130.49	-284.23	-176.18	483.88	468.21	15.67	30.880	
2,800.00	2,718.90	2,676.17	2,629.34	10.80	8.61	131.28	-306.74	-191.09	529.70	512.96	16.73	31.652	
2,900.00	2,809.60	2,764.84	2,713.80	11.63	9.13	131.94	-329.25	-206.00	575.58	557.77	17.81	32.320	
3,000.00	2,900.31	2,853.52	2,798.26	12.48	9.65	132.51	-351.77	-220.91	621.51	602.62	18.89	32.902	
3,100.00	2,991.02	2,942.19	2,882.72	13.32	10.18	133.00	-374.28	-235.82	667.48	647.51	19.98	33.413	
3,200.00	3,081.73	3,030.86	2,967.18	14.18	10.72	133.43	-396.79	-250.72	713.49	692.42	21.07	33.864	
3,300.00	3,172.43	3,119.53	3,051.64	15.03	11.25	133.80	-419.30	-265.63	759.52	737.36	22.17	34.266	
3,400.00	3,263.14	3,208.20	3,136.10	15.89	11.79	134.13	-441.81	-280.54	805.58	782.32	23.26	34.627	
3,500.00	3,353.85	3,296.87	3,220.56	16.76	12.33	134.43	-464.32	-295.45	851.66	827.29	24.37	34.951	
3,600.00	3,444.56	3,385.54	3,305.02	17.62	12.87	134.69	-486.83	-310.36	897.75	872.28	25.47	35.245	
3,700.00	3,535.26	3,474.21	3,389.49	18.49	13.41	134.93	-509.34	-325.27	943.86	917.28	26.58	35.512	
3,759.24	3,589.00	3,526.74	3,439.52	19.00	13.73	135.06	-522.68	-334.10	971.18	943.94	27.23	35.660	
3,800.00	3,626.09	3,562.98	3,474.04	19.31	13.95	135.43	-531.88	-340.19	989.79	962.11	27.68	35.752	
3,900.00	3,718.08	3,652.72	3,559.52	19.95	14.50	136.18	-554.66	-355.28	1,033.90	1,005.18	28.72	36.005	
4,000.00	3,811.38	3,743.53	3,646.02	20.54	15.06	136.73	-577.71	-370.55	1,075.73	1,046.00	29.73	36.179	
4,100.00	3,905.88	3,835.31	3,733.44	21.10	15.63	137.10	-601.01	-385.98	1,115.25	1,084.51	30.74	36.286	
4,200.00	4,001.47	3,927.94	3,821.67	21.60	16.20	137.32	-624.53	-401.55	1,152.43	1,120.72	31.71	36.337	
4,300.00	4,098.02	4,021.31	3,910.60	22.06	16.77	137.39	-648.23	-417.25	1,187.26	1,154.59	32.67	36.343	
4,400.00	4,195.42	4,122.10	4,006.66	22.46	17.35	137.30	-673.69	-434.11	1,219.68	1,186.09	33.59	36.310	
4,500.00	4,293.55	4,245.57	4,125.40	22.82	17.87	137.08	-701.87	-452.77	1,248.22	1,213.79	34.43	36.251	
4,600.00	4,392.29	4,372.09	4,248.47	23.12	18.34	136.89	-726.28	-468.94	1,272.12	1,236.94	35.19	36.154	
4,700.00	4,491.52	4,501.22	4,375.29	23.38	18.77	136.72	-746.51	-482.34	1,291.25	1,255.41	35.84	36.025	
4,800.00	4,591.13	4,632.45	4,505.16	23.58	19.12	136.56	-762.16	-492.71	1,305.48	1,269.09	36.39	35.875	
4,900.00	4,690.98	4,765.23	4,637.30	23.74	19.41	136.43	-772.94	-499.84	1,314.72	1,277.89	36.83	35.695	

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_NORTHGLENN STATE 8-36
Project:	KERR MCGEE OIL & GAS ONSHORE LP	TVD Reference:	WELL @ 5118.00ft (Original Well Elev)
Reference Site:	WELD_NORTHGLENN STATE 7 PAD	MD Reference:	WELL @ 5118.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_NORTHGLENN STATE 8-36	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_NORTHGLENN STATE 8-36	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 10-09-09 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_NORTHGLENN STATE 7 PAD - P_NORTHGLENN STATE 7-36 - P_NORTHGLENN STATE 7-36													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		
5,004.05	4,795.00	4,904.39	4,776.27	23.85	19.64	-89.97	-778.74	-503.68	1,318.95	1,281.77	37.18	35.472		
5,100.00	4,890.95	5,019.08	4,890.95	23.94	19.77	-90.00	-779.53	-504.21	1,319.34	1,281.91	37.43	35.245		
5,200.00	4,990.95	5,119.08	4,990.95	24.03	19.88	-90.00	-779.53	-504.21	1,319.34	1,281.69	37.66	35.037		
5,300.00	5,090.95	5,219.08	5,090.95	24.12	19.98	-90.00	-779.53	-504.21	1,319.34	1,281.46	37.88	34.827		
5,400.00	5,190.95	5,319.08	5,190.95	24.21	20.09	-90.00	-779.53	-504.21	1,319.34	1,281.23	38.11	34.617		
5,500.00	5,290.95	5,419.08	5,290.95	24.31	20.20	-90.00	-779.53	-504.21	1,319.34	1,281.00	38.35	34.405		
5,600.00	5,390.95	5,519.08	5,390.95	24.41	20.31	-90.00	-779.53	-504.21	1,319.34	1,280.76	38.59	34.192		
5,700.00	5,490.95	5,619.08	5,490.95	24.50	20.42	-90.00	-779.53	-504.21	1,319.34	1,280.51	38.83	33.979		
5,800.00	5,590.95	5,719.08	5,590.95	24.61	20.54	-90.00	-779.53	-504.21	1,319.34	1,280.27	39.07	33.765		
5,900.00	5,690.95	5,819.08	5,690.95	24.71	20.66	-90.00	-779.53	-504.21	1,319.34	1,280.02	39.32	33.551		
6,000.00	5,790.95	5,919.08	5,790.95	24.81	20.77	-90.00	-779.53	-504.21	1,319.34	1,279.77	39.58	33.336		
6,100.00	5,890.95	6,019.08	5,890.95	24.92	20.89	-90.00	-779.53	-504.21	1,319.34	1,279.51	39.83	33.121		
6,200.00	5,990.95	6,119.08	5,990.95	25.02	21.02	-90.00	-779.53	-504.21	1,319.34	1,279.25	40.09	32.906		
6,300.00	6,090.95	6,219.08	6,090.95	25.13	21.14	-90.00	-779.53	-504.21	1,319.34	1,278.99	40.36	32.691		
6,400.00	6,190.95	6,319.08	6,190.95	25.24	21.27	-90.00	-779.53	-504.21	1,319.34	1,278.72	40.62	32.476		
6,500.00	6,290.95	6,419.08	6,290.95	25.35	21.39	-90.00	-779.53	-504.21	1,319.34	1,278.45	40.90	32.262		
6,600.00	6,390.95	6,519.08	6,390.95	25.47	21.52	-90.00	-779.53	-504.21	1,319.34	1,278.17	41.17	32.047		
6,700.00	6,490.95	6,619.08	6,490.95	25.58	21.65	-90.00	-779.53	-504.21	1,319.34	1,277.90	41.45	31.833		
6,800.00	6,590.95	6,719.08	6,590.95	25.70	21.78	-90.00	-779.53	-504.21	1,319.34	1,277.62	41.72	31.620		
6,900.00	6,690.95	6,819.08	6,690.95	25.82	21.92	-90.00	-779.53	-504.21	1,319.34	1,277.34	42.01	31.407		
7,000.00	6,790.95	6,919.08	6,790.95	25.93	22.05	-90.00	-779.53	-504.21	1,319.34	1,277.05	42.29	31.195		
7,100.00	6,890.95	7,019.08	6,890.95	26.05	22.19	-90.00	-779.53	-504.21	1,319.34	1,276.76	42.58	30.984		
7,200.00	6,990.95	7,119.08	6,990.95	26.18	22.33	-90.00	-779.53	-504.21	1,319.34	1,276.47	42.87	30.773		
7,300.00	7,090.95	7,219.08	7,090.95	26.30	22.46	-90.00	-779.53	-504.21	1,319.34	1,276.18	43.17	30.564		
7,400.00	7,190.95	7,319.08	7,190.95	26.42	22.60	-90.00	-779.53	-504.21	1,319.34	1,275.88	43.46	30.355		
7,500.00	7,290.95	7,419.08	7,290.95	26.55	22.75	-90.00	-779.53	-504.21	1,319.34	1,275.58	43.76	30.147		
7,600.00	7,390.95	7,519.08	7,390.95	26.68	22.89	-90.00	-779.53	-504.21	1,319.34	1,275.28	44.07	29.941		
7,700.00	7,490.95	7,619.08	7,490.95	26.81	23.03	-90.00	-779.53	-504.21	1,319.34	1,274.97	44.37	29.735		
7,800.00	7,590.95	7,719.08	7,590.95	26.93	23.18	-90.00	-779.53	-504.21	1,319.34	1,274.67	44.68	29.531		
7,900.00	7,690.95	7,819.08	7,690.95	27.07	23.33	-90.00	-779.53	-504.21	1,319.34	1,274.36	44.99	29.328		
8,000.00	7,790.95	7,919.08	7,790.95	27.20	23.47	-90.00	-779.53	-504.21	1,319.34	1,274.04	45.30	29.126		
8,100.00	7,890.95	8,019.08	7,890.95	27.33	23.62	-90.00	-779.53	-504.21	1,319.34	1,273.73	45.61	28.925		
8,200.00	7,990.95	8,119.08	7,990.95	27.47	23.77	-90.00	-779.53	-504.21	1,319.34	1,273.41	45.93	28.726		
8,300.00	8,090.95	8,219.08	8,090.95	27.60	23.93	-90.00	-779.53	-504.21	1,319.34	1,273.10	46.25	28.528		
8,400.00	8,190.95	8,319.08	8,190.95	27.74	24.08	-90.00	-779.53	-504.21	1,319.34	1,272.77	46.57	28.331		
8,500.00	8,290.95	8,419.08	8,290.95	27.88	24.23	-90.00	-779.53	-504.21	1,319.34	1,272.45	46.89	28.136		
8,599.05	8,390.00	8,518.13	8,390.00	28.01	24.39	-90.00	-779.53	-504.21	1,319.34	1,272.13	47.21	27.944		

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_NORTHGLENN STATE 8-36
Project:	KERR MCGEE OIL & GAS ONSHORE LP	TVD Reference:	WELL @ 5118.00ft (Original Well Elev)
Reference Site:	WELD_NORTHGLENN STATE 7 PAD	MD Reference:	WELL @ 5118.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_NORTHGLENN STATE 8-36	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_NORTHGLENN STATE 8-36	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 10-09-09 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	
0.00	0.00	0.00	0.00	0.00	0.00	-31.77	77.71	-48.12	91.40				
100.00	100.00	100.00	100.00	0.10	1.70	-31.77	77.71	-48.12	91.40	89.60	1.80	50.904	
200.00	200.00	200.00	200.00	0.32	5.70	-31.77	77.71	-48.12	91.40	85.38	6.02	15.182	
300.00	300.00	300.00	300.00	0.55	9.70	-31.77	77.71	-48.12	91.40	81.15	10.25	8.921	
400.00	400.00	400.00	400.00	0.77	13.70	-31.77	77.71	-48.12	91.40	76.93	14.47	6.317	
500.00	500.00	500.00	500.00	0.99	17.70	-31.77	77.71	-48.12	91.40	72.70	18.69	4.889	
600.00	600.00	600.00	600.00	1.22	21.70	-31.77	77.71	-48.12	91.40	68.48	22.92	3.988	
700.00	700.00	700.00	700.00	1.44	25.70	-31.77	77.71	-48.12	91.40	64.25	27.14	3.367	
800.00	800.00	800.00	800.00	1.67	29.70	-31.77	77.71	-48.12	91.40	60.03	31.37	2.914	
900.00	900.00	900.00	900.00	1.89	33.70	-31.77	77.71	-48.12	91.40	55.81	35.59	2.568	
1,000.00	1,000.00	1,000.00	1,000.00	2.12	37.70	-31.77	77.71	-48.12	91.40	51.58	39.82	2.295	
1,100.00	1,100.00	1,100.00	1,100.00	2.34	41.70	-31.77	77.71	-48.12	91.40	47.36	44.04	2.075 CC	
1,200.00	1,199.98	1,199.98	1,199.98	2.54	45.70	-165.75	77.71	-48.12	93.09	44.87	48.22	1.930 ES	
1,300.00	1,299.84	1,299.84	1,299.84	2.73	49.69	-166.48	77.71	-48.12	98.17	45.86	52.31	1.877 SF	
1,400.00	1,399.45	1,399.45	1,399.45	2.93	53.68	-167.53	77.71	-48.12	106.66	50.34	56.32	1.894	
1,500.00	1,498.70	1,498.70	1,498.70	3.16	57.65	-168.76	77.71	-48.12	118.60	58.37	60.23	1.969	
1,600.00	1,597.47	1,597.47	1,597.47	3.41	61.60	-170.01	77.71	-48.12	133.98	69.97	64.01	2.093	
1,700.00	1,695.62	1,695.62	1,695.62	3.71	65.52	-171.19	77.71	-48.12	152.81	85.16	67.65	2.259	
1,800.00	1,793.06	1,793.06	1,793.06	4.06	69.42	-172.26	77.71	-48.12	175.08	103.95	71.14	2.461	
1,900.00	1,889.64	1,889.64	1,889.64	4.47	73.29	-173.19	77.71	-48.12	200.77	126.32	74.45	2.697	
2,000.00	1,985.27	1,985.27	1,985.27	4.94	77.11	-173.99	77.71	-48.12	229.84	152.27	77.57	2.963	
2,100.00	2,079.82	2,079.82	2,079.82	5.48	80.89	-174.67	77.71	-48.12	262.25	181.77	80.48	3.258	
2,200.00	2,173.17	2,173.17	2,173.17	6.10	84.63	-175.25	77.71	-48.12	297.97	214.78	83.18	3.582	
2,300.00	2,265.21	2,265.21	2,265.21	6.79	88.31	-175.73	77.71	-48.12	336.94	251.28	85.66	3.934	
2,344.80	2,306.00	2,306.00	2,306.00	7.13	89.94	-175.93	77.71	-48.12	355.44	268.75	86.69	4.100	
2,400.00	2,356.07	2,356.07	2,356.07	7.55	91.94	-176.18	77.71	-48.12	378.63	289.96	88.67	4.270	
2,500.00	2,446.78	2,446.78	2,446.78	8.34	95.57	-176.56	77.71	-48.12	420.66	328.40	92.26	4.560	
2,600.00	2,537.48	2,537.48	2,537.48	9.15	99.20	-176.87	77.71	-48.12	462.70	366.84	95.86	4.827	
2,700.00	2,628.19	2,628.19	2,628.19	9.97	102.83	-177.13	77.71	-48.12	504.75	405.28	99.47	5.074	
2,800.00	2,718.90	2,718.90	2,718.90	10.80	106.46	-177.35	77.71	-48.12	546.80	443.72	103.09	5.304	
2,900.00	2,809.60	2,809.60	2,809.60	11.63	110.08	-177.54	77.71	-48.12	588.87	482.16	106.71	5.518	
3,000.00	2,900.31	2,900.31	2,900.31	12.48	113.71	-177.71	77.71	-48.12	630.94	520.60	110.34	5.718	
3,100.00	2,991.02	2,991.02	2,991.02	13.32	117.34	-177.85	77.71	-48.12	673.01	559.04	113.97	5.905	
3,200.00	3,081.73	3,081.73	3,081.73	14.18	120.97	-177.98	77.71	-48.12	715.08	597.48	117.60	6.081	
3,300.00	3,172.43	3,172.43	3,172.43	15.03	124.60	-178.09	77.71	-48.12	757.16	635.92	121.24	6.245	
3,400.00	3,263.14	3,263.14	3,263.14	15.89	128.23	-178.19	77.71	-48.12	799.24	674.36	124.88	6.400	
3,500.00	3,353.85	3,353.85	3,353.85	16.76	131.85	-178.28	77.71	-48.12	841.32	712.80	128.52	6.546	
3,600.00	3,444.56	3,444.56	3,444.56	17.62	135.48	-178.36	77.71	-48.12	883.40	751.24	132.16	6.684	
3,700.00	3,535.26	3,535.26	3,535.26	18.49	139.11	-178.44	77.71	-48.12	925.48	789.68	135.81	6.815	
3,759.24	3,589.00	3,589.00	3,589.00	19.00	141.26	-178.48	77.71	-48.12	950.42	812.45	137.97	6.889	
3,800.00	3,626.09	3,626.09	3,626.09	19.31	142.74	-178.51	77.71	-48.12	967.31	827.02	140.28	6.895	
3,900.00	3,718.08	3,718.08	3,718.08	19.95	146.42	-178.59	77.71	-48.12	1,006.50	860.56	145.94	6.897	
4,000.00	3,811.38	3,811.38	3,811.38	20.54	150.16	-178.66	77.71	-48.12	1,042.45	890.89	151.57	6.878	
4,100.00	3,905.88	3,905.88	3,905.88	21.10	153.94	-178.72	77.71	-48.12	1,075.14	917.96	157.18	6.840	
4,200.00	4,001.47	4,001.47	4,001.47	21.60	157.76	-178.76	77.71	-48.12	1,104.50	941.79	162.71	6.788	
4,300.00	4,098.02	4,098.02	4,098.02	22.06	161.62	-178.80	77.71	-48.12	1,130.51	962.37	168.14	6.724	
4,400.00	4,195.42	4,195.42	4,195.42	22.46	165.52	-178.84	77.71	-48.12	1,153.14	979.69	173.45	6.648	
4,500.00	4,293.55	4,293.55	4,293.55	22.82	169.44	-178.86	77.71	-48.12	1,172.35	993.73	178.62	6.563	
4,600.00	4,392.29	4,392.29	4,392.29	23.12	173.39	-178.88	77.71	-48.12	1,188.13	1,004.50	183.63	6.470	
4,700.00	4,491.52	4,491.52	4,491.52	23.38	177.36	-178.90	77.71	-48.12	1,200.46	1,011.99	188.46	6.370	
4,800.00	4,591.13	4,591.13	4,591.13	23.58	181.35	-178.91	77.71	-48.12	1,209.31	1,016.21	193.10	6.263	
4,900.00	4,690.98	4,690.98	4,690.98	23.74	185.34	-178.92	77.71	-48.12	1,214.68	1,017.18	197.51	6.150	

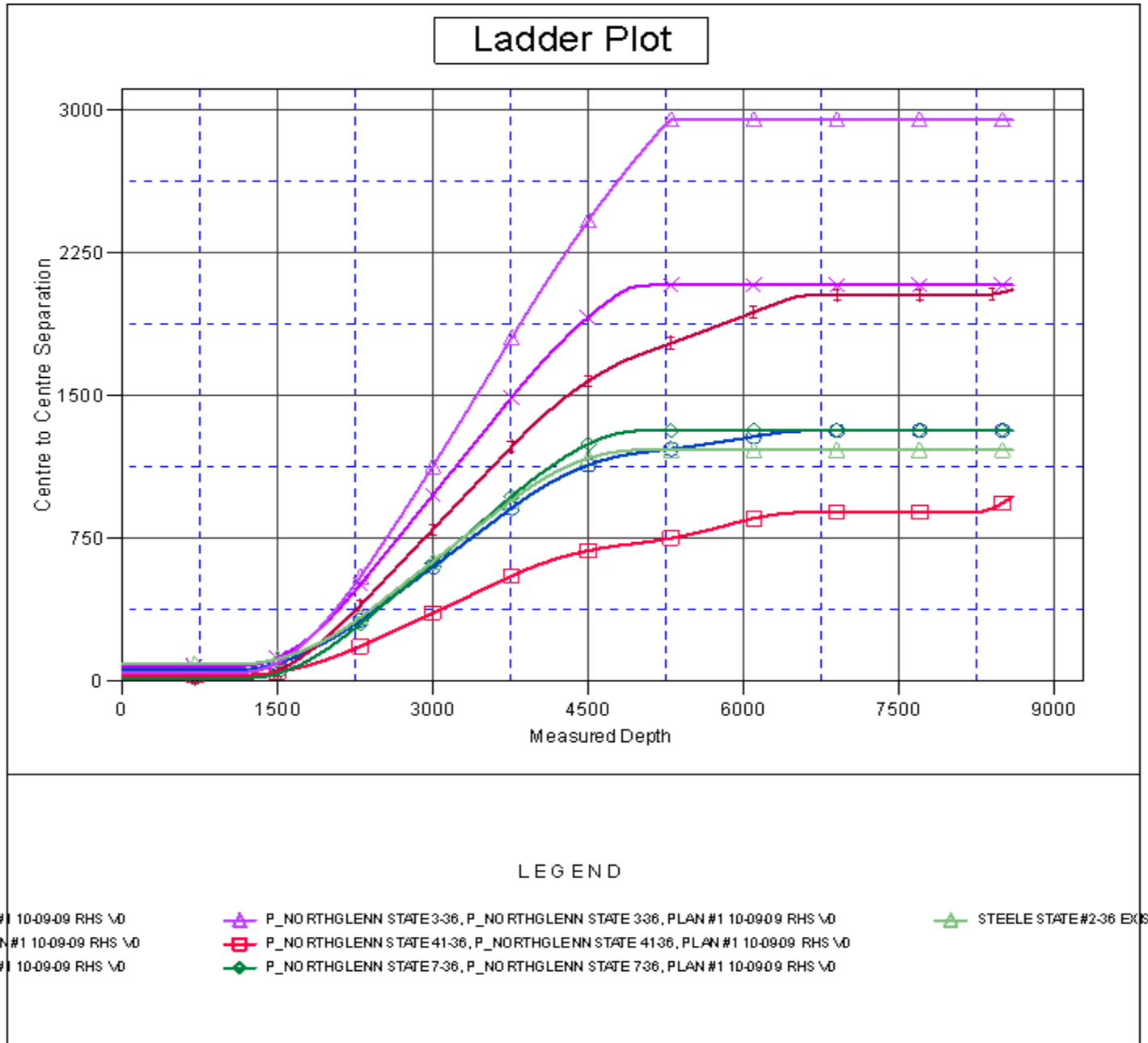
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_NORTHGLENN STATE 8-36
Project:	KERR MCGEE OIL & GAS ONSHORE LP	TVD Reference:	WELL @ 5118.00ft (Original Well Elev)
Reference Site:	WELD_NORTHGLENN STATE 7 PAD	MD Reference:	WELL @ 5118.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_NORTHGLENN STATE 8-36	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_NORTHGLENN STATE 8-36	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 10-09-09 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
5,004.05	4,795.00	4,795.00	4,795.00	23.85	189.50	-45.20	77.71	-48.12	1,216.57	1,014.73	201.85	6.027	
5,100.00	4,890.95	4,890.95	4,890.95	23.94	193.34	-45.20	77.71	-48.12	1,216.57	1,010.73	205.84	5.910	
5,200.00	4,990.95	4,990.95	4,990.95	24.03	197.34	-45.20	77.71	-48.12	1,216.57	1,006.57	210.01	5.793	
5,300.00	5,090.95	5,090.95	5,090.95	24.12	201.34	-45.20	77.71	-48.12	1,216.57	1,002.40	214.17	5.680	
5,400.00	5,190.95	5,190.95	5,190.95	24.21	205.34	-45.20	77.71	-48.12	1,216.57	998.23	218.34	5.572	
5,500.00	5,290.95	5,290.95	5,290.95	24.31	209.34	-45.20	77.71	-48.12	1,216.57	994.06	222.51	5.467	
5,600.00	5,390.95	5,390.95	5,390.95	24.41	213.34	-45.20	77.71	-48.12	1,216.57	989.89	226.68	5.367	
5,700.00	5,490.95	5,490.95	5,490.95	24.50	217.34	-45.20	77.71	-48.12	1,216.57	985.72	230.86	5.270	
5,800.00	5,590.95	5,590.95	5,590.95	24.61	221.34	-45.20	77.71	-48.12	1,216.57	981.54	235.03	5.176	
5,900.00	5,690.95	5,690.95	5,690.95	24.71	225.34	-45.20	77.71	-48.12	1,216.57	977.37	239.21	5.086	
6,000.00	5,790.95	5,790.95	5,790.95	24.81	229.34	-45.20	77.71	-48.12	1,216.57	973.19	243.39	4.999	
6,100.00	5,890.95	5,890.95	5,890.95	24.92	233.34	-45.20	77.71	-48.12	1,216.57	969.01	247.56	4.914	
6,200.00	5,990.95	5,990.95	5,990.95	25.02	237.34	-45.20	77.71	-48.12	1,216.57	964.83	251.74	4.833	
6,300.00	6,090.95	6,090.95	6,090.95	25.13	241.34	-45.20	77.71	-48.12	1,216.57	960.65	255.93	4.754	
6,400.00	6,190.95	6,190.95	6,190.95	25.24	245.34	-45.20	77.71	-48.12	1,216.57	956.46	260.11	4.677	
6,500.00	6,290.95	6,290.95	6,290.95	25.35	249.34	-45.20	77.71	-48.12	1,216.57	952.28	264.29	4.603	
6,600.00	6,390.95	6,390.95	6,390.95	25.47	253.34	-45.20	77.71	-48.12	1,216.57	948.10	268.48	4.531	
6,700.00	6,490.95	6,490.95	6,490.95	25.58	257.34	-45.20	77.71	-48.12	1,216.57	943.91	272.66	4.462	
6,800.00	6,590.95	6,590.95	6,590.95	25.70	261.34	-45.20	77.71	-48.12	1,216.57	939.72	276.85	4.394	
6,900.00	6,690.95	6,690.95	6,690.95	25.82	265.34	-45.20	77.71	-48.12	1,216.57	935.53	281.04	4.329	
7,000.00	6,790.95	6,790.95	6,790.95	25.93	269.34	-45.20	77.71	-48.12	1,216.57	931.34	285.23	4.265	
7,100.00	6,890.95	6,890.95	6,890.95	26.05	273.34	-45.20	77.71	-48.12	1,216.57	927.15	289.42	4.204	
7,200.00	6,990.95	6,990.95	6,990.95	26.18	277.34	-45.20	77.71	-48.12	1,216.57	922.96	293.61	4.144	
7,300.00	7,090.95	7,090.95	7,090.95	26.30	281.34	-45.20	77.71	-48.12	1,216.57	918.77	297.80	4.085	
7,400.00	7,190.95	7,190.95	7,190.95	26.42	285.34	-45.20	77.71	-48.12	1,216.57	914.58	301.99	4.028	
7,500.00	7,290.95	7,290.95	7,290.95	26.55	289.34	-45.20	77.71	-48.12	1,216.57	910.39	306.19	3.973	
7,600.00	7,390.95	7,390.95	7,390.95	26.68	293.34	-45.20	77.71	-48.12	1,216.57	906.19	310.38	3.920	
7,700.00	7,490.95	7,490.95	7,490.95	26.81	297.34	-45.20	77.71	-48.12	1,216.57	902.00	314.58	3.867	
7,800.00	7,590.95	7,590.95	7,590.95	26.93	301.34	-45.20	77.71	-48.12	1,216.57	897.80	318.77	3.816	
7,900.00	7,690.95	7,690.95	7,690.95	27.07	305.34	-45.20	77.71	-48.12	1,216.57	893.61	322.97	3.767	
8,000.00	7,790.95	7,790.95	7,790.95	27.20	309.34	-45.20	77.71	-48.12	1,216.57	889.41	327.16	3.719	
8,100.00	7,890.95	7,890.95	7,890.95	27.33	313.34	-45.20	77.71	-48.12	1,216.57	885.21	331.36	3.671	
8,200.00	7,990.95	7,990.95	7,990.95	27.47	317.34	-45.20	77.71	-48.12	1,216.57	881.01	335.56	3.626	
8,300.00	8,090.95	8,090.95	8,090.95	27.60	321.34	-45.20	77.71	-48.12	1,216.57	876.81	339.76	3.581	
8,400.00	8,190.95	8,190.95	8,190.95	27.74	325.34	-45.20	77.71	-48.12	1,216.57	872.61	343.96	3.537	
8,500.00	8,290.95	8,290.95	8,290.95	27.88	329.34	-45.20	77.71	-48.12	1,216.57	868.41	348.16	3.494	
8,599.05	8,390.00	8,390.00	8,390.00	28.01	333.30	-45.20	77.71	-48.12	1,216.57	864.25	352.32	3.453	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_NORTHGLENN STATE 8-36
Project:	KERR MCGEE OIL & GAS ONSHORE LP	TVD Reference:	WELL @ 5118.00ft (Original Well Elev)
Reference Site:	WELD_NORTHGLENN STATE 7 PAD	MD Reference:	WELL @ 5118.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_NORTHGLENN STATE 8-36	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_NORTHGLENN STATE 8-36	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 10-09-09 RHS	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 5118.00ft (Original Well Elev) Coordinates are relative to: P_NORTHGLENN STATE 8-36
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: 0.36°



Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_NORTHGLENN STATE 8-36
Project:	KERR MCGEE OIL & GAS ONSHORE LP	TVD Reference:	WELL @ 5118.00ft (Original Well Elev)
Reference Site:	WELD_NORTHGLENN STATE 7 PAD	MD Reference:	WELL @ 5118.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_NORTHGLENN STATE 8-36	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_NORTHGLENN STATE 8-36	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 10-09-09 RHS	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 5118.00ft (Original Well Elev) Coordinates are relative to: P_NORTHGLENN STATE 8-36
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: 0.36°

