



# **US ROCKIES REGION PLANNING**

**COLORADO NORTHERN ZONE - 83**

**Riverbend 7-13 PAD**

**P\_Riverbend 5-18**

**P\_Riverbend 5-18**

**Plan: PLAN #1 6-21-10 RHS**

## **Standard Planning Report**

**21 June, 2010**

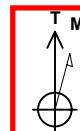




Project: COLORADO NORTHERN ZONE - 83  
Site: Riverbend 7-13 PAD  
Well: P\_Riverbend 5-18  
Wellbore: P\_Riverbend 5-18  
Section: SECTION 13 T1N R67W  
SHL: 2045 FNL 1707 FWL  
Design: PLAN #1 6-21-10 RHS  
Latitude: 40° 3' 9.777 N  
Longitude: 104° 50' 8.959 W  
GL: 4917.00  
KB: WELL @ 4932.00ft (Original Well Elev)



Weatherford®



Azimuths to True North  
Magnetic North: 9.00°

Magnetic Field  
Strength: 53043.5nT  
Dip Angle: 66.79°  
Date: 6/21/2010  
Model: IGRF2010

#### FORMATION TOP DETAILS

TVDPath	MDPath	Formation
3248.00	3466.89	PARKMAN
4578.00	4934.38	SUSSEX
7110.00	7594.65	NIO
7457.00	7941.65	CODELL
7542.00	8026.65	GREENHORN
7892.00	8376.65	JSAND

#### CASING DETAILS

TVD	MD	Name	Size
900.00	904.48	8 5/8"	8.62

#### SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	Start Build 2.00
1550.00	25.00	88.08	1510.71	9.01	268.26	2.00	88.08	268.41	Start 4334.09 hold at 1550.00 MD
5884.09	25.00	88.08	5438.73	70.52	2098.89	0.00	0.00	2100.07	Start Drop -2.00
7134.09	0.00	0.00	6649.44	79.54	2367.14	2.00	180.00	2368.48	Start 1377.56 hold at 7134.09 MD
8511.65	0.00	0.00	8027.00	79.54	2367.14	0.00	0.00	2368.48	TD at 8511.65

#### LEGEND

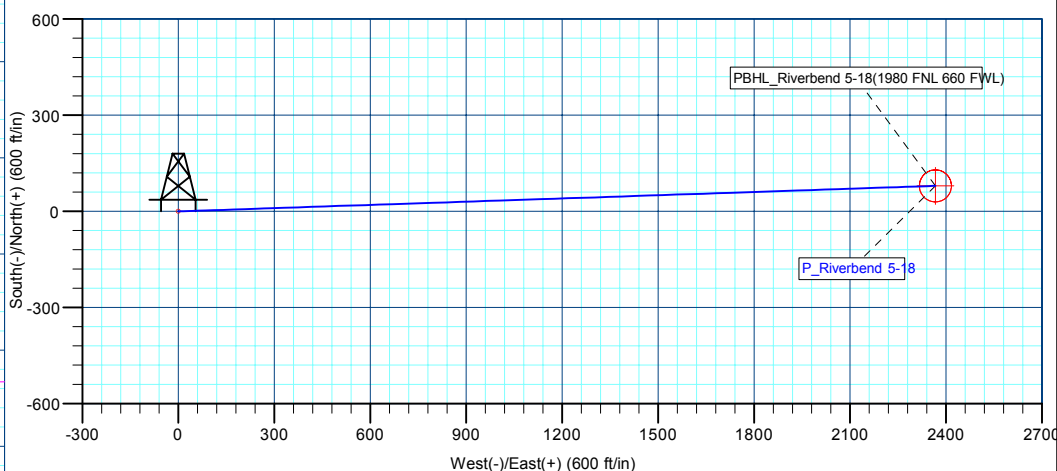
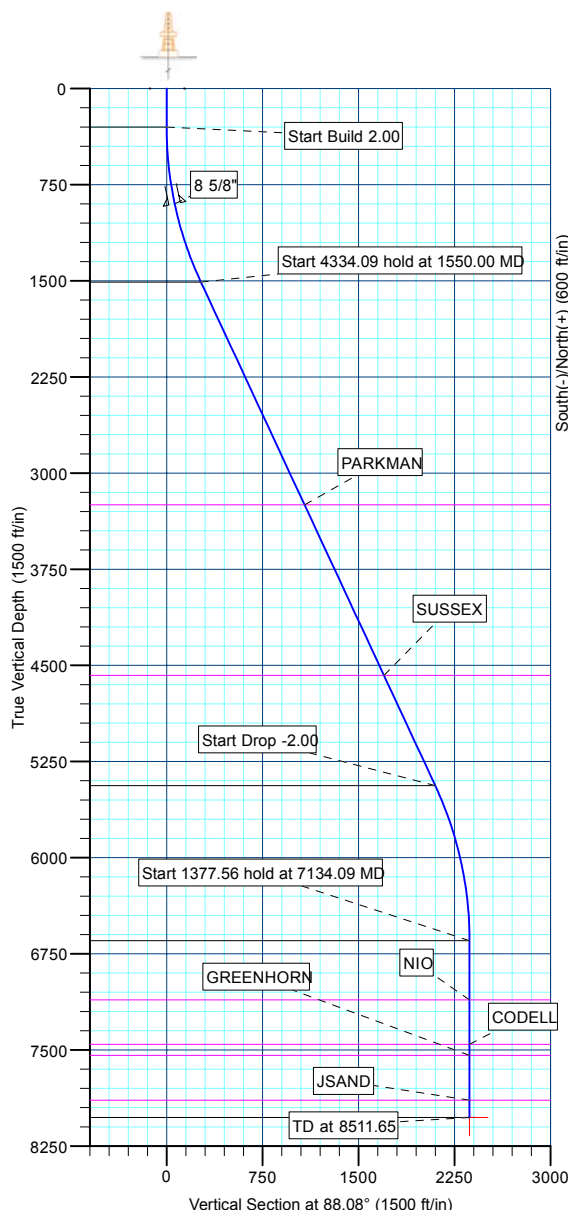
CHIKUMA UNIT #2 EXISTING, CHIKUMA UNIT #2 EXISTING, CHIKUMA UNIT #2 EXISTING V0  
HARRY S CHIKUMA #5 EXISTING, HARRY S CHIKUMA #5 EXISTING, HARRY S CHIKUMA #5 EXISTING V0  
HARRY S. CHIKUMA G.U. B #1 EXISTING, HARRY S. CHIKUMA G.U. B #1 EXISTING, HARRY S. CHIKUMA G.U. B #1 EXISTING V0  
P\_Riverbend 21-13, P\_Riverbend 21-13, PLAN #1 6-21-10 RHS V0  
P\_Riverbend 24-13, P\_Riverbend 24-13, PLAN #1 6-21-10 RHS V0  
P\_Riverbend 25-13, P\_Riverbend 25-13, PLAN #1 6-21-10 RHS V0  
P\_Riverbend 6-13, P\_Riverbend 6-13, PLAN #1 6-21-10 RH V0  
P\_Riverbend 7-13, P\_Riverbend 7-13, PLAN #1 6-21-10 RHS V0  
P\_Riverbend 8-13, P\_Riverbend 8-13, PLAN #1 6-21-10 RHS V0  
PLAN #1 6-21-10 RHS

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

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
PBHL	8027.00	79.54	2367.14	40° 3' 10.562 N	104° 49' 38.518 W	Circle (Radius: 50.00)

#### WELL DETAILS: P\_Riverbend 5-18

+N/-S	+E/-W	Northing	Ground Level:	4917.00	Latitude	Longitude	Slot
0.00	0.00	1262746.23	Easting	3185926.28	40° 3' 9.777 N	104° 50' 8.959 W	



Plan: PLAN #1 6-21-10 RHS (P\_Riverbend 5-18/P\_Riverbend 5-18)

Created By: Robert H. Scott Date: 15:44, June 21 2010

<b>Database:</b>	EDM 2003.21 Single User Db	<b>Local Co-ordinate Reference:</b>	Well P_Riverbend 5-18
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	WELL @ 4932.00ft (Original Well Elev)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	WELL @ 4932.00ft (Original Well Elev)
<b>Site:</b>	Riverbend 7-13 PAD	<b>North Reference:</b>	True
<b>Well:</b>	P_Riverbend 5-18	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	P_Riverbend 5-18		
<b>Design:</b>	PLAN #1 6-21-10 RHS		

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

Site						Riverbend 7-13 PAD, SECTION 13 T1N R67W											
Site Position:						Northing:			1,262,745.52 ft			Latitude:			40° 3' 9.774 N		
From:			Lat/Long			Easting:			3,185,878.14 ft			Longitude:			104° 50' 9.578 W		
Position Uncertainty:			0.00 ft			Slot Radius:			in			Grid Convergence:			0.43 °		

Well	P_Riverbend 5-18					
Well Position	+N/-S	0.35 ft	Northing:	1,262,746.23 ft	Latitude:	40° 3' 9.777 N
	+E/-W	48.15 ft	Easting:	3,185,926.28 ft	Longitude:	104° 50' 8.959 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	4,917.00 ft

<b>Wellbore</b>	P_Riverbend 5-18				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	6/21/2010	9.00	66.79	53,043

<b>Design</b>	PLAN #1 6-21-10 RHS			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	88.08

<b>Plan Sections</b>										
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	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,550.00	25.00	88.08	1,510.71	9.01	268.26	2.00	2.00	0.00	88.08	
5,884.09	25.00	88.08	5,438.73	70.52	2,098.89	0.00	0.00	0.00	0.00	
7,134.09	0.00	0.00	6,649.44	79.54	2,367.14	2.00	-2.00	0.00	180.00	
8,511.65	0.00	0.00	8,027.00	79.54	2,367.14	0.00	0.00	0.00	0.00	PBHL_Riverbend 5

<b>Database:</b>	EDM 2003.21 Single User Db	<b>Local Co-ordinate Reference:</b>	Well P_Riverbend 5-18
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	WELL @ 4932.00ft (Original Well Elev)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	WELL @ 4932.00ft (Original Well Elev)
<b>Site:</b>	Riverbend 7-13 PAD	<b>North Reference:</b>	True
<b>Well:</b>	P_Riverbend 5-18	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	P_Riverbend 5-18		
<b>Design:</b>	PLAN #1 6-21-10 RHS		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
<b>Start Build 2.00</b>									
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	2.00	88.08	399.98	0.06	1.74	1.75	2.00	2.00	0.00
500.00	4.00	88.08	499.84	0.23	6.97	6.98	2.00	2.00	0.00
600.00	6.00	88.08	599.45	0.53	15.68	15.69	2.00	2.00	0.00
700.00	8.00	88.08	698.70	0.94	27.86	27.88	2.00	2.00	0.00
800.00	10.00	88.08	797.47	1.46	43.50	43.52	2.00	2.00	0.00
900.00	12.00	88.08	895.62	2.10	62.57	62.60	2.00	2.00	0.00
<b>8 5/8"</b>									
904.48	12.09	88.08	900.00	2.13	63.50	63.54	2.00	2.00	0.00
1,000.00	14.00	88.08	993.06	2.86	85.05	85.10	2.00	2.00	0.00
1,100.00	16.00	88.08	1,089.64	3.73	110.91	110.98	2.00	2.00	0.00
1,200.00	18.00	88.08	1,185.27	4.71	140.13	140.21	2.00	2.00	0.00
1,300.00	20.00	88.08	1,279.82	5.80	172.67	172.77	2.00	2.00	0.00
1,400.00	22.00	88.08	1,373.17	7.01	208.49	208.60	2.00	2.00	0.00
1,500.00	24.00	88.08	1,465.21	8.32	247.53	247.67	2.00	2.00	0.00
<b>Start 4334.09 hold at 1550.00 MD</b>									
1,550.00	25.00	88.08	1,510.71	9.01	268.26	268.41	2.00	2.00	0.00
1,600.00	25.00	88.08	1,556.03	9.72	289.38	289.54	0.00	0.00	0.00
1,700.00	25.00	88.08	1,646.66	11.14	331.61	331.80	0.00	0.00	0.00
1,800.00	25.00	88.08	1,737.29	12.56	373.85	374.06	0.00	0.00	0.00
1,900.00	25.00	88.08	1,827.92	13.98	416.09	416.32	0.00	0.00	0.00
2,000.00	25.00	88.08	1,918.55	15.40	458.33	458.59	0.00	0.00	0.00
2,100.00	25.00	88.08	2,009.18	16.82	500.57	500.85	0.00	0.00	0.00
2,200.00	25.00	88.08	2,099.81	18.24	542.80	543.11	0.00	0.00	0.00
2,300.00	25.00	88.08	2,190.44	19.66	585.04	585.37	0.00	0.00	0.00
2,400.00	25.00	88.08	2,281.07	21.08	627.28	627.63	0.00	0.00	0.00
2,500.00	25.00	88.08	2,371.70	22.50	669.52	669.90	0.00	0.00	0.00
2,600.00	25.00	88.08	2,462.34	23.92	711.76	712.16	0.00	0.00	0.00
2,700.00	25.00	88.08	2,552.97	25.33	753.99	754.42	0.00	0.00	0.00
2,800.00	25.00	88.08	2,643.60	26.75	796.23	796.68	0.00	0.00	0.00
2,900.00	25.00	88.08	2,734.23	28.17	838.47	838.94	0.00	0.00	0.00
3,000.00	25.00	88.08	2,824.86	29.59	880.71	881.20	0.00	0.00	0.00
3,100.00	25.00	88.08	2,915.49	31.01	922.95	923.47	0.00	0.00	0.00
3,200.00	25.00	88.08	3,006.12	32.43	965.18	965.73	0.00	0.00	0.00
3,300.00	25.00	88.08	3,096.75	33.85	1,007.42	1,007.99	0.00	0.00	0.00
3,400.00	25.00	88.08	3,187.38	35.27	1,049.66	1,050.25	0.00	0.00	0.00
<b>PARKMAN</b>									
3,466.89	25.00	88.08	3,248.00	36.22	1,077.91	1,078.52	0.00	0.00	0.00
3,500.00	25.00	88.08	3,278.01	36.69	1,091.90	1,092.51	0.00	0.00	0.00
3,600.00	25.00	88.08	3,368.64	38.11	1,134.14	1,134.78	0.00	0.00	0.00
3,700.00	25.00	88.08	3,459.27	39.53	1,176.37	1,177.04	0.00	0.00	0.00
3,800.00	25.00	88.08	3,549.90	40.95	1,218.61	1,219.30	0.00	0.00	0.00
3,900.00	25.00	88.08	3,640.54	42.37	1,260.85	1,261.56	0.00	0.00	0.00
4,000.00	25.00	88.08	3,731.17	43.78	1,303.09	1,303.82	0.00	0.00	0.00
4,100.00	25.00	88.08	3,821.80	45.20	1,345.33	1,346.08	0.00	0.00	0.00
4,200.00	25.00	88.08	3,912.43	46.62	1,387.56	1,388.35	0.00	0.00	0.00
4,300.00	25.00	88.08	4,003.06	48.04	1,429.80	1,430.61	0.00	0.00	0.00
4,400.00	25.00	88.08	4,093.69	49.46	1,472.04	1,472.87	0.00	0.00	0.00
4,500.00	25.00	88.08	4,184.32	50.88	1,514.28	1,515.13	0.00	0.00	0.00
4,600.00	25.00	88.08	4,274.95	52.30	1,556.52	1,557.39	0.00	0.00	0.00
4,700.00	25.00	88.08	4,365.58	53.72	1,598.75	1,599.66	0.00	0.00	0.00
4,800.00	25.00	88.08	4,456.21	55.14	1,640.99	1,641.92	0.00	0.00	0.00

<b>Database:</b>	EDM 2003.21 Single User Db	<b>Local Co-ordinate Reference:</b>	Well P_Riverbend 5-18
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	WELL @ 4932.00ft (Original Well Elev)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	WELL @ 4932.00ft (Original Well Elev)
<b>Site:</b>	Riverbend 7-13 PAD	<b>North Reference:</b>	True
<b>Well:</b>	P_Riverbend 5-18	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	P_Riverbend 5-18		
<b>Design:</b>	PLAN #1 6-21-10 RHS		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,900.00	25.00	88.08	4,546.84	56.56	1,683.23	1,684.18	0.00	0.00	0.00
<b>SUSSEX</b>									
4,934.38	25.00	88.08	4,578.00	57.05	1,697.75	1,698.71	0.00	0.00	0.00
5,000.00	25.00	88.08	4,637.47	57.98	1,725.47	1,726.44	0.00	0.00	0.00
5,100.00	25.00	88.08	4,728.10	59.40	1,767.71	1,768.70	0.00	0.00	0.00
5,200.00	25.00	88.08	4,818.74	60.82	1,809.94	1,810.97	0.00	0.00	0.00
5,300.00	25.00	88.08	4,909.37	62.23	1,852.18	1,853.23	0.00	0.00	0.00
5,400.00	25.00	88.08	5,000.00	63.65	1,894.42	1,895.49	0.00	0.00	0.00
5,500.00	25.00	88.08	5,090.63	65.07	1,936.66	1,937.75	0.00	0.00	0.00
5,600.00	25.00	88.08	5,181.26	66.49	1,978.90	1,980.01	0.00	0.00	0.00
5,700.00	25.00	88.08	5,271.89	67.91	2,021.13	2,022.27	0.00	0.00	0.00
5,800.00	25.00	88.08	5,362.52	69.33	2,063.37	2,064.54	0.00	0.00	0.00
<b>Start Drop -2.00</b>									
5,884.09	25.00	88.08	5,438.73	70.52	2,098.89	2,100.07	0.00	0.00	0.00
5,900.00	24.68	88.08	5,453.17	70.75	2,105.57	2,106.76	2.00	-2.00	0.00
6,000.00	22.68	88.08	5,544.74	72.10	2,145.71	2,146.92	2.00	-2.00	0.00
6,100.00	20.68	88.08	5,637.66	73.34	2,182.63	2,183.86	2.00	-2.00	0.00
6,200.00	18.68	88.08	5,731.82	74.47	2,216.29	2,217.54	2.00	-2.00	0.00
6,300.00	16.68	88.08	5,827.09	75.49	2,246.65	2,247.91	2.00	-2.00	0.00
6,400.00	14.68	88.08	5,923.36	76.40	2,273.66	2,274.94	2.00	-2.00	0.00
6,500.00	12.68	88.08	6,020.52	77.19	2,297.30	2,298.59	2.00	-2.00	0.00
6,600.00	10.68	88.08	6,118.44	77.87	2,317.53	2,318.84	2.00	-2.00	0.00
6,700.00	8.68	88.08	6,217.01	78.44	2,334.34	2,335.66	2.00	-2.00	0.00
6,800.00	6.68	88.08	6,316.11	78.88	2,347.70	2,349.02	2.00	-2.00	0.00
6,900.00	4.68	88.08	6,415.61	79.22	2,357.59	2,358.92	2.00	-2.00	0.00
7,000.00	2.68	88.08	6,515.40	79.43	2,364.01	2,365.34	2.00	-2.00	0.00
7,100.00	0.68	88.08	6,615.35	79.53	2,366.94	2,368.28	2.00	-2.00	0.00
<b>Start 1377.56 hold at 7134.09 MD</b>									
7,134.09	0.00	0.00	6,649.44	79.54	2,367.14	2,368.48	2.00	-2.00	0.00
7,200.00	0.00	0.00	6,715.35	79.54	2,367.14	2,368.48	0.00	0.00	0.00
7,300.00	0.00	0.00	6,815.35	79.54	2,367.14	2,368.48	0.00	0.00	0.00
7,400.00	0.00	0.00	6,915.35	79.54	2,367.14	2,368.48	0.00	0.00	0.00
7,500.00	0.00	0.00	7,015.35	79.54	2,367.14	2,368.48	0.00	0.00	0.00
<b>NIO</b>									
7,594.65	0.00	0.00	7,110.00	79.54	2,367.14	2,368.48	0.00	0.00	0.00
7,600.00	0.00	0.00	7,115.35	79.54	2,367.14	2,368.48	0.00	0.00	0.00
7,700.00	0.00	0.00	7,215.35	79.54	2,367.14	2,368.48	0.00	0.00	0.00
7,800.00	0.00	0.00	7,315.35	79.54	2,367.14	2,368.48	0.00	0.00	0.00
7,900.00	0.00	0.00	7,415.35	79.54	2,367.14	2,368.48	0.00	0.00	0.00
<b>CODELL</b>									
7,941.65	0.00	0.00	7,457.00	79.54	2,367.14	2,368.48	0.00	0.00	0.00
8,000.00	0.00	0.00	7,515.35	79.54	2,367.14	2,368.48	0.00	0.00	0.00
<b>GREENHORN</b>									
8,026.65	0.00	0.00	7,542.00	79.54	2,367.14	2,368.48	0.00	0.00	0.00
8,100.00	0.00	0.00	7,615.35	79.54	2,367.14	2,368.48	0.00	0.00	0.00
8,200.00	0.00	0.00	7,715.35	79.54	2,367.14	2,368.48	0.00	0.00	0.00
8,300.00	0.00	0.00	7,815.35	79.54	2,367.14	2,368.48	0.00	0.00	0.00
<b>JSAND</b>									
8,376.65	0.00	0.00	7,892.00	79.54	2,367.14	2,368.48	0.00	0.00	0.00
8,400.00	0.00	0.00	7,915.35	79.54	2,367.14	2,368.48	0.00	0.00	0.00
8,500.00	0.00	0.00	8,015.35	79.54	2,367.14	2,368.48	0.00	0.00	0.00
<b>TD at 8511.65 - PBHL_Riverbend 5-18(1980 FNL 660 FWL)</b>									
8,511.65	0.00	0.00	8,027.00	79.54	2,367.14	2,368.48	0.00	0.00	0.00

<b>Database:</b>	EDM 2003.21 Single User Db	<b>Local Co-ordinate Reference:</b>	Well P_Riverbend 5-18
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	WELL @ 4932.00ft (Original Well Elev)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	WELL @ 4932.00ft (Original Well Elev)
<b>Site:</b>	Riverbend 7-13 PAD	<b>North Reference:</b>	True
<b>Well:</b>	P_Riverbend 5-18	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	P_Riverbend 5-18		
<b>Design:</b>	PLAN #1 6-21-10 RHS		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)

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 Riverbend 5-18	0.00	0.00	8,027.00	79.54	2,367.14	1,262,843.50	3,188,292.76	40° 3' 10.562 N	104° 49' 38.518 W
- plan hits target center									
- Circle (radius 50.00)									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
904.48	900.00	8 5/8"	8.62	11.00	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,466.89	3,248.00	PARKMAN				
4,934.38	4,578.00	SUSSEX				
7,594.65	7,110.00	NIO				
7,941.65	7,457.00	CODELL				
8,026.65	7,542.00	GREENHORN				
8,376.65	7,892.00	JSAND				

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
300.00	300.00	0.00	0.00	Start Build 2.00
1,550.00	1,510.71	9.01	268.26	Start 4334.09 hold at 1550.00 MD
5,884.09	5,438.73	70.52	2,098.89	Start Drop -2.00
7,134.09	6,649.44	79.54	2,367.14	Start 1377.56 hold at 7134.09 MD
8,511.65	8,027.00	79.54	2,367.14	TD at 8511.65



# **US ROCKIES REGION PLANNING**

**COLORADO NORTHERN ZONE - 83  
Riverbend 7-13 PAD  
P\_Riverbend 5-18**

**P\_Riverbend 5-18  
PLAN #1 6-21-10 RHS**

## **Anticollision Report**

**21 June, 2010**



<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well P_Riverbend 5-18
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	WELL @ 4932.00ft (Original Well Elev)
<b>Reference Site:</b>	Riverbend 7-13 PAD	<b>MD Reference:</b>	WELL @ 4932.00ft (Original Well Elev)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	P_Riverbend 5-18	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	P_Riverbend 5-18	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	PLAN #1 6-21-10 RHS	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	PLAN #1 6-21-10 RHS		
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
<b>Interpolation Method:</b>	Stations	<b>Error Model:</b>	ISCWSA
<b>Depth Range:</b>	0.00 to 20,000.00ft	<b>Scan Method:</b>	Closest Approach 3D
<b>Results Limited by:</b>	Maximum center-center distance of 10,000.00ft	<b>Error Surface:</b>	Elliptical Conic
<b>Warning Levels Evaluated at:</b>	2.00 Sigma		

<b>Survey Tool Program</b>	<b>Date</b> 6/21/2010				
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
0.00	8,511.65	PLAN #1 6-21-10 RHS (P_Riverbend 5-18	MWD	MWD - Standard	

<b>Summary</b>						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
<b>Offset Well - Wellbore - Design</b>						
Riverbend 7-13 PAD						
CHIKUMA UNIT #2 EXISTING - CHIKUMA UNIT #2 EXI	100.00	82.36	230.90	229.16	132.511	CC
CHIKUMA UNIT #2 EXISTING - CHIKUMA UNIT #2 EXI	400.00	381.24	234.57	220.53	16.714	ES
CHIKUMA UNIT #2 EXISTING - CHIKUMA UNIT #2 EXI	1,200.00	1,166.21	374.60	329.26	8.261	SF
HARRY S CHIKUMA #5 EXISTING - HARRY S CHIKUM	308.87	301.92	1,598.87	1,588.20	149.886	CC
HARRY S CHIKUMA #5 EXISTING - HARRY S CHIKUM	400.00	392.97	1,600.32	1,585.81	110.284	ES
HARRY S CHIKUMA #5 EXISTING - HARRY S CHIKUM	5,300.00	4,892.00	3,445.04	3,251.31	17.782	SF
HARRY S. CHIKUMA G.U. B #1 EXISTING - HARRY S.	0.00	0.00	535.58			
HARRY S. CHIKUMA G.U. B #1 EXISTING - HARRY S.	1,300.00	1,243.11	557.55	505.58	10.729	ES
HARRY S. CHIKUMA G.U. B #1 EXISTING - HARRY S.	8,511.65	7,988.76	2,355.78	2,009.95	6.812	SF
P_Riverbend 21-13 - P_Riverbend 21-13 - PLAN #1 6-21	300.00	300.00	48.15	47.06	44.170	CC, ES
P_Riverbend 21-13 - P_Riverbend 21-13 - PLAN #1 6-21	600.00	599.45	63.84	61.45	26.683	SF
P_Riverbend 24-13 - P_Riverbend 24-13 - PLAN #1 6-21	300.00	300.00	31.91	30.82	29.277	CC, ES
P_Riverbend 24-13 - P_Riverbend 24-13 - PLAN #1 6-21	500.00	499.84	38.89	36.93	19.872	SF
P_Riverbend 25-13 - P_Riverbend 25-13 - PLAN #1 6-21	300.00	300.00	64.11	63.02	58.807	CC, ES
P_Riverbend 25-13 - P_Riverbend 25-13 - PLAN #1 6-21	700.00	698.70	91.98	89.15	32.496	SF
P_Riverbend 6-13 - P_Riverbend 6-13 - PLAN #1 6-21-1	300.00	300.00	96.02	94.93	88.084	CC, ES
P_Riverbend 6-13 - P_Riverbend 6-13 - PLAN #1 6-21-1	600.00	587.26	126.72	124.39	54.443	SF
P_Riverbend 7-13 - P_Riverbend 7-13 - PLAN #1 6-21-1	300.00	300.00	80.06	78.97	73.444	CC, ES
P_Riverbend 7-13 - P_Riverbend 7-13 - PLAN #1 6-21-1	800.00	797.47	123.57	120.30	37.787	SF
P_Riverbend 8-13 - P_Riverbend 8-13 - PLAN #1 6-21-1	300.00	300.00	15.96	14.87	14.637	CC, ES
P_Riverbend 8-13 - P_Riverbend 8-13 - PLAN #1 6-21-1	400.00	399.98	17.70	16.17	11.596	SF

<b>Offset Design</b>	Riverbend 7-13 PAD - CHIKUMA UNIT #2 EXISTING - CHIKUMA UNIT #2 EXISTING - CHIKUMA UNIT											<b>Offset Site Error:</b>	0.00 ft
<b>Survey Program:</b>	0-UNKNOWN											<b>Offset Well Error:</b>	0.00 ft
Reference	Offset	Semi Major Axis		Distance		Minimum Separation		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	Warning
0.00	0.00	0.00	0.00	0.00	0.00	-78.90	44.44	-226.47	231.41				
100.00	100.00	82.36	82.35	0.10	1.65	-78.75	45.03	-226.47	230.90	229.16	1.74	132.511	CC
200.00	200.00	181.53	181.50	0.32	5.27	-78.20	47.31	-226.47	231.36	225.78	5.58	41.459	
300.00	300.00	281.32	281.23	0.55	9.28	-77.37	50.77	-226.47	232.10	222.30	9.80	23.694	
400.00	399.98	381.24	381.09	0.76	13.29	-164.70	54.25	-226.47	234.57	220.53	14.03	16.714	ES
500.00	499.84	481.04	480.83	0.98	17.30	-164.19	57.74	-226.47	240.43	222.22	18.21	13.201	
600.00	599.45	580.61	580.33	1.22	21.30	-163.91	61.21	-226.47	249.65	227.30	22.35	11.170	

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



<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well P_Riverbend 5-18
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	WELL @ 4932.00ft (Original Well Elev)
<b>Reference Site:</b>	Riverbend 7-13 PAD	<b>MD Reference:</b>	WELL @ 4932.00ft (Original Well Elev)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	P_Riverbend 5-18	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	P_Riverbend 5-18	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	PLAN #1 6-21-10 RHS	<b>Offset TVD Reference:</b>	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 Tooface (")	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
700.00	698.70	679.81	679.48	1.50	25.28	-163.84	64.67	-226.47	262.21	235.78	26.43	9.921	
800.00	797.47	778.53	778.14	1.82	29.25	-163.95	68.12	-226.47	278.08	247.65	30.43	9.138	
900.00	895.62	876.65	876.20	2.19	33.19	-164.21	71.54	-226.47	297.27	262.93	34.34	8.656	
1,000.00	993.06	974.05	973.54	2.62	37.10	-164.58	74.94	-226.47	319.76	281.62	38.14	8.384	
1,100.00	1,089.64	1,070.61	1,070.04	3.12	40.98	-165.02	78.31	-226.47	345.54	303.73	41.81	8.264	
1,200.00	1,185.27	1,166.21	1,165.58	3.67	44.82	-165.51	81.65	-226.47	374.60	329.26	45.34	8.261 SF	
1,300.00	1,279.82	1,260.74	1,260.05	4.30	48.61	-166.01	84.95	-226.47	406.92	358.21	48.72	8.353	
1,400.00	1,373.17	1,354.08	1,353.33	5.00	52.36	-166.52	88.21	-226.47	442.48	390.57	51.91	8.524	
1,500.00	1,465.21	1,446.11	1,445.31	5.77	56.06	-167.01	91.42	-226.47	481.24	426.32	54.92	8.763	
1,550.00	1,510.71	1,491.61	1,490.78	6.18	57.89	-167.25	93.01	-226.47	501.81	445.47	56.35	8.906	
1,600.00	1,556.03	1,536.92	1,536.06	6.60	59.71	-167.57	94.59	-226.47	522.79	464.62	58.17	8.987	
1,700.00	1,646.66	1,627.54	1,626.63	7.46	63.35	-168.14	97.75	-226.47	564.77	502.95	61.82	9.136	
1,800.00	1,737.29	1,718.17	1,717.20	8.32	66.99	-168.64	100.91	-226.47	606.80	541.32	65.47	9.268	
1,900.00	1,827.92	1,808.79	1,807.77	9.19	70.63	-169.07	104.07	-226.47	648.85	579.72	69.13	9.386	
2,000.00	1,918.55	1,899.42	1,898.34	10.06	74.27	-169.45	107.24	-226.47	690.94	618.14	72.79	9.492	
2,100.00	2,009.18	1,990.04	1,988.91	10.93	77.91	-169.78	110.40	-226.47	733.04	656.59	76.45	9.588	
2,200.00	2,099.81	2,080.67	2,079.48	11.81	81.55	-170.08	113.56	-226.47	775.16	695.05	80.12	9.675	
2,300.00	2,190.44	2,171.29	2,170.05	12.69	85.19	-170.35	116.73	-226.47	817.30	733.52	83.78	9.755	
2,400.00	2,281.07	2,261.92	2,260.62	13.58	88.83	-170.59	119.89	-226.47	859.46	772.01	87.45	9.828	
2,500.00	2,371.70	2,352.54	2,351.19	14.46	92.47	-170.81	123.05	-226.47	901.62	810.50	91.12	9.895	
2,600.00	2,462.34	2,443.17	2,441.76	15.34	96.11	-171.01	126.21	-226.47	943.79	849.01	94.78	9.957	
2,700.00	2,552.97	2,533.80	2,532.33	16.23	99.75	-171.19	129.38	-226.47	985.97	887.52	98.45	10.015	
2,800.00	2,643.60	2,624.42	2,622.90	17.12	103.39	-171.36	132.54	-226.47	1,028.16	926.04	102.12	10.068	
2,900.00	2,734.23	2,715.05	2,713.47	18.00	107.03	-171.51	135.70	-226.47	1,070.36	964.57	105.79	10.117	
3,000.00	2,824.86	2,805.67	2,804.04	18.89	110.67	-171.65	138.87	-226.47	1,112.56	1,003.10	109.47	10.164	
3,100.00	2,915.49	2,896.30	2,894.61	19.78	114.31	-171.79	142.03	-226.47	1,154.77	1,041.63	113.14	10.207	
3,200.00	3,006.12	2,986.92	2,985.18	20.67	117.95	-171.91	145.19	-226.47	1,196.98	1,080.17	116.81	10.247	
3,300.00	3,096.75	3,077.55	3,075.75	21.56	121.59	-172.02	148.35	-226.47	1,239.20	1,118.72	120.48	10.285	
3,400.00	3,187.38	3,168.17	3,166.32	22.45	125.23	-172.13	151.52	-226.47	1,281.42	1,157.26	124.15	10.321	
3,500.00	3,278.01	3,258.80	3,256.89	23.34	128.87	-172.23	154.68	-226.47	1,323.64	1,195.82	127.83	10.355	
3,600.00	3,368.64	3,349.42	3,347.46	24.23	132.51	-172.32	157.84	-226.47	1,365.87	1,234.37	131.50	10.387	
3,700.00	3,459.27	3,440.05	3,438.03	25.12	136.15	-172.41	161.00	-226.47	1,408.10	1,272.92	135.17	10.417	
3,800.00	3,549.90	3,530.67	3,528.60	26.01	139.79	-172.50	164.17	-226.47	1,450.33	1,311.48	138.85	10.445	
3,900.00	3,640.54	3,621.30	3,619.17	26.90	143.43	-172.57	167.33	-226.47	1,492.57	1,350.04	142.52	10.473	
4,000.00	3,731.17	3,711.92	3,709.74	27.79	147.07	-172.65	170.49	-226.47	1,534.80	1,388.61	146.20	10.498	
4,100.00	3,821.80	3,802.55	3,800.31	28.68	150.71	-172.72	173.66	-226.47	1,577.04	1,427.17	149.87	10.523	
4,200.00	3,912.43	3,893.17	3,890.88	29.57	154.35	-172.79	176.82	-226.47	1,619.28	1,465.74	153.55	10.546	
4,300.00	4,003.06	3,983.80	3,981.45	30.46	157.99	-172.85	179.98	-226.47	1,661.52	1,504.30	157.22	10.568	
4,400.00	4,093.69	4,074.42	4,072.02	31.35	161.63	-172.91	183.14	-226.47	1,703.77	1,542.87	160.89	10.589	
4,500.00	4,184.32	4,165.05	4,162.59	32.25	165.27	-172.97	186.31	-226.47	1,746.01	1,581.44	164.57	10.610	
4,600.00	4,274.95	4,255.67	4,253.16	33.14	168.91	-173.02	189.47	-226.47	1,788.26	1,620.02	168.24	10.629	
4,700.00	4,365.58	4,346.30	4,343.73	34.03	172.55	-173.07	192.63	-226.47	1,830.51	1,658.59	171.92	10.647	
4,800.00	4,456.21	4,436.92	4,434.30	34.92	176.19	-173.12	195.80	-226.47	1,872.76	1,697.16	175.60	10.665	
4,900.00	4,546.84	4,527.55	4,524.87	35.81	179.83	-173.17	198.96	-226.47	1,915.01	1,735.74	179.27	10.682	
5,000.00	4,637.47	4,618.17	4,615.44	36.70	183.47	-173.21	202.12	-226.47	1,957.26	1,774.31	182.95	10.699	
5,100.00	4,728.10	4,708.80	4,706.01	37.60	187.11	-173.26	205.28	-226.47	1,999.51	1,812.89	186.62	10.714	
5,200.00	4,818.74	4,799.44	4,796.65	38.49	190.75	-173.28	208.44	-226.47	2,041.76	1,851.47	190.30	10.729	
5,300.00	4,909.37	4,890.07	4,887.28	39.38	194.39	-173.28	211.60	-226.47	2,084.01	1,890.05	193.97	10.743	
5,400.00	5,000.00	4,980.70	4,977.91	40.27	198.37	-173.28	214.76	-226.47	2,126.26	1,928.63	197.64	10.757	
5,500.00	5,090.63	5,071.33	5,068.54	41.17	202.37	-173.28	217.92	-226.47	2,168.51	1,967.21	201.31	10.770	
5,600.00	5,181.26	5,161.96	5,159.17	42.06	206.37	-173.28	221.08	-226.47	2,210.76	2,005.79	204.98	10.783	
5,700.00	5,271.89	5,252.59	5,249.80	42.95	210.37	-173.28	224.24	-226.47	2,253.01	2,044.37	208.65	10.796	

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

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well P_Riverbend 5-18
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	WELL @ 4932.00ft (Original Well Elev)
<b>Reference Site:</b>	Riverbend 7-13 PAD	<b>MD Reference:</b>	WELL @ 4932.00ft (Original Well Elev)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	P_Riverbend 5-18	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	P_Riverbend 5-18	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	PLAN #1 6-21-10 RHS	<b>Offset TVD Reference:</b>	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	
5,800.00	5,362.52	4,765.00	4,762.18	43.84	189.37	-173.28	207.25	-226.47	2,367.00	2,175.66	191.34	12.371	
5,884.09	5,438.73	4,765.00	4,762.18	44.59	189.37	-173.28	207.25	-226.47	2,420.95	2,229.28	191.66	12.631	
5,900.00	5,453.17	4,765.00	4,762.18	44.72	189.37	-173.32	207.25	-226.47	2,431.32	2,239.16	192.16	12.653	
6,000.00	5,544.74	4,765.00	4,762.18	45.41	189.37	-173.51	207.25	-226.47	2,496.32	2,301.20	195.12	12.794	
6,100.00	5,637.66	4,765.00	4,762.18	46.03	189.37	-173.70	207.25	-226.47	2,561.00	2,363.17	197.82	12.946	
6,200.00	5,731.82	4,765.00	4,762.18	46.60	189.37	-173.88	207.25	-226.47	2,625.31	2,425.02	200.28	13.108	
6,300.00	5,827.09	4,765.00	4,762.18	47.12	189.37	-174.06	207.25	-226.47	2,689.20	2,486.71	202.49	13.281	
6,400.00	5,923.36	4,765.00	4,762.18	47.58	189.37	-174.22	207.25	-226.47	2,752.62	2,548.19	204.43	13.465	
6,500.00	6,020.52	4,765.00	4,762.18	47.98	189.37	-174.38	207.25	-226.47	2,815.53	2,609.42	206.11	13.660	
6,600.00	6,118.44	4,765.00	4,762.18	48.33	189.37	-174.54	207.25	-226.47	2,877.90	2,670.37	207.52	13.868	
6,700.00	6,217.01	4,765.00	4,762.18	48.62	189.37	-174.69	207.25	-226.47	2,939.68	2,731.00	208.67	14.088	
6,800.00	6,316.11	4,765.00	4,762.18	48.86	189.37	-174.83	207.25	-226.47	3,000.83	2,791.28	209.55	14.320	
6,900.00	6,415.61	4,765.00	4,762.18	49.05	189.37	-174.96	207.25	-226.47	3,061.32	2,851.16	210.16	14.567	
7,000.00	6,515.40	4,765.00	4,762.18	49.19	189.37	-175.09	207.25	-226.47	3,121.12	2,910.62	210.50	14.827	
7,100.00	6,615.35	4,765.00	4,762.18	49.28	189.37	-175.22	207.25	-226.47	3,180.19	2,969.63	210.56	15.103	
7,134.09	6,649.44	4,765.00	4,762.18	49.31	189.37	-87.18	207.25	-226.47	3,200.16	2,989.64	210.52	15.201	
7,200.00	6,715.35	4,765.00	4,762.18	49.34	189.37	-87.18	207.25	-226.47	3,239.12	3,028.52	210.61	15.380	
7,300.00	6,815.35	4,765.00	4,762.18	49.41	189.37	-87.18	207.25	-226.47	3,299.87	3,089.13	210.74	15.659	
7,400.00	6,915.35	4,765.00	4,762.18	49.48	189.37	-87.18	207.25	-226.47	3,362.50	3,151.63	210.87	15.946	
7,500.00	7,015.35	4,765.00	4,762.18	49.54	189.37	-87.18	207.25	-226.47	3,426.90	3,215.89	211.00	16.241	
7,600.00	7,115.35	4,765.00	4,762.18	49.61	189.37	-87.18	207.25	-226.47	3,492.97	3,281.84	211.14	16.544	
7,700.00	7,215.35	4,765.00	4,762.18	49.68	189.37	-87.18	207.25	-226.47	3,560.63	3,349.36	211.27	16.853	
7,800.00	7,315.35	4,765.00	4,762.18	49.75	189.37	-87.18	207.25	-226.47	3,629.78	3,418.37	211.41	17.169	
7,900.00	7,415.35	4,765.00	4,762.18	49.82	189.37	-87.18	207.25	-226.47	3,700.35	3,488.80	211.55	17.492	
8,000.00	7,515.35	4,765.00	4,762.18	49.89	189.37	-87.18	207.25	-226.47	3,772.24	3,560.55	211.69	17.820	
8,100.00	7,615.35	4,765.00	4,762.18	49.97	189.37	-87.18	207.25	-226.47	3,845.39	3,633.56	211.83	18.153	
8,200.00	7,715.35	4,765.00	4,762.18	50.04	189.37	-87.18	207.25	-226.47	3,919.73	3,707.75	211.98	18.491	
8,300.00	7,815.35	4,765.00	4,762.18	50.11	189.37	-87.18	207.25	-226.47	3,995.19	3,783.06	212.12	18.834	
8,400.00	7,915.35	4,765.00	4,762.18	50.19	189.37	-87.18	207.25	-226.47	4,071.70	3,859.43	212.27	19.182	
8,500.00	8,015.35	4,765.00	4,762.18	50.27	189.37	-87.18	207.25	-226.47	4,149.21	3,936.80	212.42	19.534	
8,511.65	8,027.00	4,765.00	4,762.18	50.27	189.37	-87.18	207.25	-226.47	4,158.30	3,945.87	212.43	19.575	

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well P_Riverbend 5-18
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	WELL @ 4932.00ft (Original Well Elev)
<b>Reference Site:</b>	Riverbend 7-13 PAD	<b>MD Reference:</b>	WELL @ 4932.00ft (Original Well Elev)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	P_Riverbend 5-18	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	P_Riverbend 5-18	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	PLAN #1 6-21-10 RHS	<b>Offset TVD Reference:</b>	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	-95.33	-148.57	-1,592.57	1,599.53				
100.00	100.00	90.34	90.33	0.10	1.81	-95.30	-147.86	-1,592.57	1,599.43	1,597.52	1.90	840.926	
200.00	200.00	192.93	192.90	0.32	5.73	-95.21	-145.33	-1,592.57	1,599.20	1,593.16	6.04	264.948	
300.00	300.00	293.05	292.95	0.55	9.75	-95.09	-141.84	-1,592.57	1,598.89	1,588.62	10.26	155.790	
308.87	308.87	301.92	301.81	0.56	10.10	176.85	-141.53	-1,592.57	1,598.87	1,588.20	10.67	149.886 CC	
400.00	399.98	392.97	392.81	0.76	13.76	176.96	-138.35	-1,592.57	1,600.32	1,585.81	14.51	110.284 ES	
500.00	499.84	492.77	492.56	0.98	17.77	177.09	-134.87	-1,592.57	1,605.25	1,586.56	18.70	85.862	
600.00	599.45	592.34	592.06	1.22	21.77	177.22	-131.39	-1,592.57	1,613.67	1,590.83	22.84	70.654	
700.00	698.70	691.54	691.20	1.50	25.75	177.35	-127.93	-1,592.57	1,625.56	1,598.64	26.92	60.384	
800.00	797.47	790.26	789.86	1.82	29.72	177.49	-124.48	-1,592.57	1,640.92	1,610.00	30.92	53.067	
900.00	895.62	888.38	887.92	2.19	33.66	177.62	-121.06	-1,592.57	1,659.72	1,624.90	34.82	47.660	
1,000.00	993.06	985.78	985.26	2.62	37.57	177.75	-117.66	-1,592.57	1,681.95	1,643.34	38.61	43.560	
1,100.00	1,089.64	1,082.34	1,081.76	3.12	41.45	177.88	-114.29	-1,592.57	1,707.58	1,665.31	42.27	40.399	
1,200.00	1,185.27	1,177.94	1,177.31	3.67	45.29	178.01	-110.95	-1,592.57	1,736.57	1,690.79	45.78	37.936	
1,300.00	1,279.82	1,272.47	1,271.78	4.30	49.09	178.14	-107.65	-1,592.57	1,768.89	1,719.77	49.12	36.010	
1,400.00	1,373.17	1,365.81	1,365.06	5.00	52.84	178.26	-104.40	-1,592.57	1,804.51	1,752.22	52.29	34.510	
1,500.00	1,465.21	1,457.85	1,457.04	5.77	56.53	178.38	-101.19	-1,592.57	1,843.37	1,788.10	55.27	33.355	
1,550.00	1,510.71	1,503.34	1,502.50	6.18	58.36	178.44	-99.60	-1,592.57	1,864.00	1,807.33	56.68	32.888	
1,600.00	1,556.03	1,548.65	1,547.79	6.60	60.18	178.51	-98.02	-1,592.57	1,885.04	1,826.54	58.50	32.223	
1,700.00	1,646.66	1,639.28	1,638.36	7.46	63.82	178.65	-94.85	-1,592.57	1,927.11	1,864.96	62.15	31.009	
1,800.00	1,737.29	1,729.90	1,728.93	8.32	67.46	178.78	-91.69	-1,592.57	1,969.19	1,903.39	65.80	29.928	
1,900.00	1,827.92	1,820.53	1,819.50	9.19	71.10	178.90	-88.53	-1,592.57	2,011.28	1,941.83	69.45	28.959	
2,000.00	1,918.55	1,911.15	1,910.07	10.06	74.74	179.02	-85.37	-1,592.57	2,053.38	1,980.27	73.11	28.087	
2,100.00	2,009.18	2,001.78	2,000.64	10.93	78.38	179.14	-82.20	-1,592.57	2,095.48	2,018.72	76.77	27.297	
2,200.00	2,099.81	2,092.40	2,091.21	11.81	82.02	179.25	-79.04	-1,592.57	2,137.60	2,057.17	80.43	26.578	
2,300.00	2,190.44	2,183.03	2,181.78	12.69	85.66	179.35	-75.88	-1,592.57	2,179.71	2,095.63	84.09	25.922	
2,400.00	2,281.07	2,273.65	2,272.35	13.58	89.30	179.45	-72.71	-1,592.57	2,221.84	2,134.09	87.75	25.320	
2,500.00	2,371.70	2,364.28	2,362.92	14.46	92.94	179.55	-69.55	-1,592.57	2,263.97	2,172.56	91.41	24.767	
2,600.00	2,462.34	2,454.90	2,453.49	15.34	96.58	179.65	-66.39	-1,592.57	2,306.10	2,211.03	95.07	24.256	
2,700.00	2,552.97	2,545.53	2,544.06	16.23	100.22	179.74	-63.23	-1,592.57	2,348.24	2,249.50	98.74	23.783	
2,800.00	2,643.60	2,636.15	2,634.63	17.12	103.86	179.83	-60.06	-1,592.57	2,390.35	2,287.98	102.40	23.343	
2,900.00	2,734.23	2,726.78	2,725.20	18.00	107.50	179.91	-56.90	-1,592.57	2,432.53	2,326.47	106.07	22.934	
3,000.00	2,824.86	2,817.40	2,815.77	18.89	111.14	179.99	-53.74	-1,592.57	2,474.69	2,364.96	109.73	22.553	
3,100.00	2,915.49	2,908.03	2,906.34	19.78	114.78	-179.93	-50.57	-1,592.57	2,516.84	2,403.45	113.39	22.195	
3,200.00	3,006.12	2,998.65	2,996.91	20.67	118.42	-179.85	-47.41	-1,592.57	2,559.01	2,441.95	117.06	21.861	
3,300.00	3,096.75	3,089.28	3,087.48	21.56	122.06	-179.78	-44.25	-1,592.57	2,601.17	2,480.45	120.72	21.546	
3,400.00	3,187.38	3,179.90	3,178.05	22.45	125.70	-179.70	-41.09	-1,592.57	2,643.34	2,518.95	124.39	21.250	
3,500.00	3,278.01	3,270.53	3,268.62	23.34	129.34	-179.63	-37.92	-1,592.57	2,685.51	2,557.45	128.06	20.971	
3,600.00	3,368.64	3,361.15	3,359.19	24.23	132.98	-179.57	-34.76	-1,592.57	2,727.68	2,595.96	131.72	20.708	
3,700.00	3,459.27	3,451.78	3,449.76	25.12	136.62	-179.50	-31.60	-1,592.57	2,769.86	2,634.48	135.39	20.459	
3,800.00	3,549.90	3,542.40	3,540.33	26.01	140.26	-179.44	-28.44	-1,592.57	2,812.04	2,672.99	139.05	20.223	
3,900.00	3,640.54	3,633.03	3,630.90	26.90	143.90	-179.38	-25.27	-1,592.57	2,854.23	2,711.51	142.72	19.999	
4,000.00	3,731.17	3,723.65	3,721.47	27.79	147.54	-179.32	-22.11	-1,592.57	2,896.41	2,750.03	146.38	19.786	
4,100.00	3,821.80	3,814.28	3,812.04	28.68	151.18	-179.26	-18.95	-1,592.57	2,938.60	2,788.55	150.05	19.584	
4,200.00	3,912.43	3,904.90	3,902.61	29.57	154.82	-179.20	-15.78	-1,592.57	2,980.79	2,827.08	153.72	19.391	
4,300.00	4,003.06	3,995.53	3,993.18	30.46	158.46	-179.15	-12.62	-1,592.57	3,022.99	2,865.60	157.38	19.208	
4,400.00	4,093.69	4,086.15	4,083.75	31.35	162.10	-179.09	-9.46	-1,592.57	3,065.18	2,904.13	161.05	19.033	
4,500.00	4,184.32	4,176.78	4,174.32	32.25	165.74	-179.04	-6.30	-1,592.57	3,107.38	2,942.66	164.72	18.865	
4,600.00	4,274.95	4,267.41	4,264.89	33.14	169.38	-178.99	-3.13	-1,592.57	3,149.58	2,981.19	168.39	18.704	
4,700.00	4,365.58	4,358.03	4,355.46	34.03	173.02	-178.94	0.03	-1,592.57	3,191.78	3,019.72	172.06	18.550	
4,800.00	4,456.21	4,448.66	4,446.03	34.92	176.66	-178.89	3.19	-1,592.57	3,233.98	3,058.25	175.73	18.403	
4,900.00	4,546.84	4,539.28	4,536.60	35.81	180.30	-178.85	6.36	-1,592.57	3,276.19	3,096.79	179.40	18.262	

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

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well P_Riverbend 5-18
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	WELL @ 4932.00ft (Original Well Elev)
<b>Reference Site:</b>	Riverbend 7-13 PAD	<b>MD Reference:</b>	WELL @ 4932.00ft (Original Well Elev)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	P_Riverbend 5-18	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	P_Riverbend 5-18	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	PLAN #1 6-21-10 RHS	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Riverbend 7-13 PAD - HARRY S CHIKUMA #5 EXISTING - HARRY S CHIKUMA #5 EXISTING - HARR												<b>Offset Site Error:</b>	0.00 ft
Survey Program: 0-UNKNOWN												<b>Offset Well Error:</b>	0.00 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,000.00	4,637.47	4,629.91	4,627.17	36.70	183.94	-178.80	9.52	-1,592.57	3,318.40	3,135.32	183.07	18.126	
5,100.00	4,728.10	4,720.53	4,717.74	37.60	187.58	-178.76	12.68	-1,592.57	3,360.61	3,173.86	186.75	17.996	
5,200.00	4,818.74	4,811.16	4,808.31	38.49	191.22	-178.71	15.84	-1,592.57	3,402.82	3,212.40	190.42	17.870	
5,300.00	4,909.37	4,892.00	4,889.10	39.38	194.47	-178.67	18.66	-1,592.57	3,445.04	3,251.31	193.73	17.782 SF	
5,400.00	5,000.00	4,892.00	4,889.10	40.27	194.47	-178.67	18.66	-1,592.57	3,488.69	3,294.58	194.11	17.973	
5,500.00	5,090.63	4,892.00	4,889.10	41.17	194.47	-178.67	18.66	-1,592.57	3,534.62	3,340.14	194.48	18.175	
5,600.00	5,181.26	4,892.00	4,889.10	42.06	194.47	-178.67	18.66	-1,592.57	3,582.76	3,387.91	194.85	18.387	
5,700.00	5,271.89	4,892.00	4,889.10	42.95	194.47	-178.67	18.66	-1,592.57	3,633.01	3,437.79	195.23	18.609	
5,800.00	5,362.52	4,892.00	4,889.10	43.84	194.47	-178.67	18.66	-1,592.57	3,685.30	3,489.70	195.60	18.841	
5,884.09	5,438.73	4,892.00	4,889.10	44.59	194.47	-178.67	18.66	-1,592.57	3,730.77	3,534.85	195.92	19.043	
5,900.00	5,453.17	4,892.00	4,889.10	44.72	194.47	-178.68	18.66	-1,592.57	3,739.49	3,543.06	196.43	19.037	
6,000.00	5,544.74	4,892.00	4,889.10	45.41	194.47	-178.71	18.66	-1,592.57	3,793.67	3,594.18	199.49	19.017	
6,100.00	5,637.66	4,892.00	4,889.10	46.03	194.47	-178.74	18.66	-1,592.57	3,846.78	3,644.48	202.29	19.016	
6,200.00	5,731.82	4,892.00	4,889.10	46.60	194.47	-178.76	18.66	-1,592.57	3,898.80	3,693.97	204.83	19.034	
6,300.00	5,827.09	4,892.00	4,889.10	47.12	194.47	-178.79	18.66	-1,592.57	3,949.72	3,742.61	207.11	19.071	
6,400.00	5,923.36	4,892.00	4,889.10	47.58	194.47	-178.81	18.66	-1,592.57	3,999.51	3,790.40	209.11	19.126	
6,500.00	6,020.52	4,892.00	4,889.10	47.98	194.47	-178.84	18.66	-1,592.57	4,048.16	3,837.32	210.84	19.200	
6,600.00	6,118.44	4,892.00	4,889.10	48.33	194.47	-178.86	18.66	-1,592.57	4,095.65	3,883.35	212.30	19.292	
6,700.00	6,217.01	4,892.00	4,889.10	48.62	194.47	-178.88	18.66	-1,592.57	4,141.96	3,928.48	213.48	19.402	
6,800.00	6,316.11	4,892.00	4,889.10	48.86	194.47	-178.90	18.66	-1,592.57	4,187.08	3,972.69	214.38	19.531	
6,900.00	6,415.61	4,892.00	4,889.10	49.05	194.47	-178.92	18.66	-1,592.57	4,230.98	4,015.98	215.01	19.678	
7,000.00	6,515.40	4,892.00	4,889.10	49.19	194.47	-178.93	18.66	-1,592.57	4,273.67	4,058.31	215.35	19.845	
7,100.00	6,615.35	4,892.00	4,889.10	49.28	194.47	-178.95	18.66	-1,592.57	4,315.11	4,099.69	215.42	20.031	
7,134.09	6,649.44	4,892.00	4,889.10	49.31	194.47	-90.88	18.66	-1,592.57	4,328.95	4,113.57	215.38	20.099	
7,200.00	6,715.35	4,892.00	4,889.10	49.34	194.47	-90.88	18.66	-1,592.57	4,355.98	4,140.52	215.46	20.217	
7,300.00	6,815.35	4,892.00	4,889.10	49.41	194.47	-90.88	18.66	-1,592.57	4,398.57	4,182.98	215.59	20.402	
7,400.00	6,915.35	4,892.00	4,889.10	49.48	194.47	-90.88	18.66	-1,592.57	4,443.01	4,227.28	215.73	20.595	
7,500.00	7,015.35	4,892.00	4,889.10	49.54	194.47	-90.88	18.66	-1,592.57	4,489.23	4,273.36	215.86	20.797	
7,600.00	7,115.35	4,892.00	4,889.10	49.61	194.47	-90.88	18.66	-1,592.57	4,537.18	4,321.18	216.00	21.006	
7,700.00	7,215.35	4,892.00	4,889.10	49.68	194.47	-90.88	18.66	-1,592.57	4,586.81	4,370.67	216.14	21.222	
7,800.00	7,315.35	4,892.00	4,889.10	49.75	194.47	-90.88	18.66	-1,592.57	4,638.07	4,421.79	216.28	21.445	
7,900.00	7,415.35	4,892.00	4,889.10	49.82	194.47	-90.88	18.66	-1,592.57	4,690.90	4,474.48	216.42	21.675	
8,000.00	7,515.35	4,892.00	4,889.10	49.89	194.47	-90.88	18.66	-1,592.57	4,745.25	4,528.69	216.56	21.912	
8,100.00	7,615.35	4,892.00	4,889.10	49.97	194.47	-90.88	18.66	-1,592.57	4,801.07	4,584.36	216.70	22.155	
8,200.00	7,715.35	4,892.00	4,889.10	50.04	194.47	-90.88	18.66	-1,592.57	4,858.30	4,641.45	216.85	22.404	
8,300.00	7,815.35	4,892.00	4,889.10	50.11	194.47	-90.88	18.66	-1,592.57	4,916.90	4,699.91	216.99	22.659	
8,400.00	7,915.35	4,892.00	4,889.10	50.19	194.47	-90.88	18.66	-1,592.57	4,976.83	4,759.68	217.14	22.920	
8,500.00	8,015.35	4,892.00	4,889.10	50.27	194.47	-90.88	18.66	-1,592.57	5,038.02	4,820.73	217.29	23.186	
8,511.65	8,027.00	4,892.00	4,889.10	50.27	194.47	-90.88	18.66	-1,592.57	5,045.23	4,827.92	217.31	23.217	

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well P_Riverbend 5-18
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	WELL @ 4932.00ft (Original Well Elev)
<b>Reference Site:</b>	Riverbend 7-13 PAD	<b>MD Reference:</b>	WELL @ 4932.00ft (Original Well Elev)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	P_Riverbend 5-18	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	P_Riverbend 5-18	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	PLAN #1 6-21-10 RHS	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b>		Riverbend 7-13 PAD - HARRY S. CHIKUMA G.U. B #1 EXISTING - HARRY S. CHIKUMA G.U. B #1 EX										<b>Offset Site Error:</b>	0.00 ft
Survey Program: 0-UNKNOWN												<b>Offset Well Error:</b>	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	13.30	520.92	123.17	535.58				
100.00	100.00	75.16	75.16	0.10	1.50	13.29	521.41	123.17	535.80	534.20	1.60	334.823	
200.00	200.00	166.79	166.76	0.32	4.68	13.24	523.34	123.17	537.86	532.86	5.00	107.590	
300.00	300.00	263.69	263.61	0.55	8.57	13.16	526.63	123.17	541.15	532.04	9.11	59.389	
400.00	399.98	363.61	363.47	0.76	12.58	-75.12	530.12	123.17	544.10	530.80	13.30	40.902	
500.00	499.84	463.41	463.21	0.98	16.59	-75.69	533.60	123.17	546.19	528.68	17.51	31.186	
600.00	599.45	562.98	562.72	1.22	20.59	-76.62	537.07	123.17	547.53	525.79	21.74	25.184	
700.00	698.70	662.18	661.86	1.50	24.57	-77.90	540.54	123.17	548.28	522.29	25.99	21.099	
800.00	797.47	760.90	760.52	1.82	28.54	-79.54	543.98	123.17	548.67	518.41	30.25	18.135	
900.00	895.62	859.02	858.58	2.19	32.48	-81.50	547.41	123.17	548.99	514.44	34.55	15.889	
1,000.00	993.06	956.42	955.92	2.62	36.39	-83.79	550.80	123.17	549.60	510.73	38.88	14.137	
1,100.00	1,089.64	1,052.98	1,052.42	3.12	40.27	-86.37	554.17	123.17	550.92	507.69	43.23	12.744	
1,200.00	1,185.27	1,148.58	1,147.96	3.67	44.11	-89.22	557.51	123.17	553.40	505.80	47.60	11.626	
1,300.00	1,279.82	1,243.11	1,242.43	4.30	47.91	-92.30	560.81	123.17	557.55	505.58	51.97	10.729 ES	
1,400.00	1,373.17	1,336.45	1,335.72	5.00	51.66	-95.55	564.07	123.17	563.89	507.58	56.31	10.014	
1,500.00	1,465.21	1,428.48	1,427.70	5.77	55.35	-98.93	567.28	123.17	572.96	512.36	60.60	9.455	
1,550.00	1,510.71	1,473.98	1,473.16	6.18	57.18	-100.65	568.87	123.17	578.68	515.97	62.71	9.228	
1,600.00	1,556.03	1,519.29	1,518.45	6.60	59.00	-102.47	570.45	123.17	585.17	520.36	64.81	9.029	
1,700.00	1,646.66	1,609.92	1,609.02	7.46	62.64	-106.02	573.61	123.17	600.17	531.22	68.95	8.705	
1,800.00	1,737.29	1,700.54	1,699.59	8.32	66.28	-109.40	576.77	123.17	617.71	544.70	73.01	8.460	
1,900.00	1,827.92	1,791.17	1,790.16	9.19	69.92	-112.62	579.94	123.17	637.57	560.57	77.01	8.280	
2,000.00	1,918.55	1,881.79	1,880.73	10.06	73.56	-115.66	583.10	123.17	659.55	578.62	80.93	8.150	
2,100.00	2,009.18	1,972.42	1,971.30	10.93	77.20	-118.52	586.26	123.17	683.44	598.66	84.78	8.061	
2,200.00	2,099.81	2,063.04	2,061.87	11.81	80.84	-121.20	589.43	123.17	709.05	620.46	88.58	8.004	
2,300.00	2,190.44	2,153.67	2,152.44	12.69	84.48	-123.72	592.59	123.17	736.19	643.86	92.33	7.973	
2,400.00	2,281.07	2,244.29	2,243.01	13.58	88.12	-126.07	595.75	123.17	764.71	668.67	96.04	7.963	
2,500.00	2,371.70	2,334.92	2,333.58	14.46	91.76	-128.26	598.91	123.17	794.45	694.74	99.71	7.968	
2,600.00	2,462.34	2,425.54	2,424.15	15.34	95.40	-130.31	602.08	123.17	825.29	721.94	103.35	7.985	
2,700.00	2,552.97	2,516.17	2,514.72	16.23	99.04	-132.22	605.24	123.17	857.11	750.14	106.97	8.012	
2,800.00	2,643.60	2,606.79	2,605.29	17.12	102.68	-134.01	608.40	123.17	889.80	779.22	110.57	8.047	
2,900.00	2,734.23	2,697.42	2,695.86	18.00	106.32	-135.67	611.56	123.17	923.26	809.10	114.16	8.088	
3,000.00	2,824.86	2,788.04	2,786.43	18.89	109.96	-137.23	614.73	123.17	957.43	839.69	117.73	8.132	
3,100.00	2,915.49	2,878.67	2,876.99	19.78	113.60	-138.69	617.89	123.17	992.21	870.92	121.30	8.180	
3,200.00	3,006.12	2,969.29	2,967.56	20.67	117.24	-140.05	621.05	123.17	1,027.56	902.70	124.86	8.230	
3,300.00	3,096.75	3,059.92	3,058.13	21.56	120.88	-141.33	624.22	123.17	1,063.42	935.00	128.41	8.281	
3,400.00	3,187.38	3,150.54	3,148.70	22.45	124.52	-142.52	627.38	123.17	1,099.73	967.76	131.97	8.333	
3,500.00	3,278.01	3,241.17	3,239.27	23.34	128.16	-143.65	630.54	123.17	1,136.45	1,000.94	135.52	8.386	
3,600.00	3,368.64	3,331.79	3,329.84	24.23	131.80	-144.70	633.70	123.17	1,173.55	1,034.48	139.07	8.439	
3,700.00	3,459.27	3,422.42	3,420.41	25.12	135.44	-145.70	636.87	123.17	1,210.99	1,068.37	142.62	8.491	
3,800.00	3,549.90	3,513.04	3,510.98	26.01	139.08	-146.64	640.03	123.17	1,248.73	1,102.56	146.17	8.543	
3,900.00	3,640.54	3,603.67	3,601.55	26.90	142.72	-147.52	643.19	123.17	1,286.76	1,137.04	149.72	8.594	
4,000.00	3,731.17	3,694.29	3,692.12	27.79	146.36	-148.36	646.36	123.17	1,325.04	1,171.77	153.28	8.645	
4,100.00	3,821.80	3,784.92	3,782.69	28.68	150.00	-149.15	649.52	123.17	1,363.56	1,206.73	156.83	8.694	
4,200.00	3,912.43	3,875.54	3,873.26	29.57	153.64	-149.89	652.68	123.17	1,402.30	1,241.91	160.39	8.743	
4,300.00	4,003.06	3,966.17	3,963.83	30.46	157.28	-150.60	655.84	123.17	1,441.24	1,277.28	163.96	8.790	
4,400.00	4,093.69	4,056.79	4,054.40	31.35	160.92	-151.28	659.01	123.17	1,480.35	1,312.83	167.52	8.837	
4,500.00	4,184.32	4,147.42	4,144.97	32.25	164.56	-151.91	662.17	123.17	1,519.64	1,348.55	171.09	8.882	
4,600.00	4,274.95	4,238.04	4,235.54	33.14	168.20	-152.52	665.33	123.17	1,559.09	1,384.43	174.66	8.926	
4,700.00	4,365.58	4,328.67	4,326.11	34.03	171.84	-153.10	668.49	123.17	1,598.67	1,420.44	178.23	8.970	
4,800.00	4,456.21	4,419.29	4,416.68	34.92	175.48	-153.65	671.66	123.17	1,638.40	1,456.59	181.81	9.012	
4,900.00	4,546.84	4,509.92	4,507.25	35.81	179.12	-154.18	674.82	123.17	1,678.24	1,492.86	185.39	9.053	
5,000.00	4,637.47	4,600.54	4,597.82	36.70	182.76	-154.68	677.98	123.17	1,718.21	1,529.24	188.97	9.093	

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

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well P_Riverbend 5-18
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	WELL @ 4932.00ft (Original Well Elev)
<b>Reference Site:</b>	Riverbend 7-13 PAD	<b>MD Reference:</b>	WELL @ 4932.00ft (Original Well Elev)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	P_Riverbend 5-18	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	P_Riverbend 5-18	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	PLAN #1 6-21-10 RHS	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b>		Riverbend 7-13 PAD - HARRY S. CHIKUMA G.U. B #1 EXISTING - HARRY S. CHIKUMA G.U. B #1 EX										<b>Offset Site Error:</b>	0.00 ft
Survey Program: 0-UNKNOWN												<b>Offset Well Error:</b>	0.00 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.00	4,728.10	4,691.17	4,688.39	37.60	186.40	-155.16	681.15	123.17	1,758.28	1,565.72	192.55	9.131	
5,200.00	4,818.74	4,781.79	4,778.96	38.49	190.04	-155.62	684.31	123.17	1,798.45	1,602.31	196.14	9.169	
5,300.00	4,909.37	4,872.42	4,869.53	39.38	193.68	-156.05	687.47	123.17	1,838.72	1,638.99	199.73	9.206	
5,400.00	5,000.00	4,963.04	4,960.10	40.27	197.32	-156.47	690.63	123.17	1,879.07	1,675.75	203.32	9.242	
5,500.00	5,090.63	5,053.67	5,050.67	41.17	200.96	-156.88	693.80	123.17	1,919.51	1,712.59	206.92	9.277	
5,600.00	5,181.26	5,144.29	5,141.24	42.06	204.60	-157.26	696.96	123.17	1,960.02	1,749.51	210.51	9.311	
5,700.00	5,271.89	5,234.92	5,231.81	42.95	208.24	-157.64	700.12	123.17	2,000.61	1,786.50	214.11	9.344	
5,800.00	5,362.52	5,325.55	5,322.38	43.84	211.88	-157.99	703.29	123.17	2,041.27	1,823.56	217.71	9.376	
5,884.09	5,438.73	5,401.75	5,398.54	44.59	214.95	-158.28	705.94	123.17	2,075.50	1,854.76	220.74	9.402	
5,900.00	5,453.17	5,416.19	5,412.97	44.72	215.53	-158.39	706.45	123.17	2,081.95	1,860.22	221.73	9.390	
6,000.00	5,544.74	5,507.75	5,504.48	45.41	219.20	-159.00	709.64	123.17	2,120.76	1,892.87	227.90	9.306	
6,100.00	5,637.66	5,600.66	5,597.33	46.03	222.93	-159.53	712.89	123.17	2,156.60	1,922.57	234.03	9.215	
6,200.00	5,731.82	5,694.80	5,691.41	46.60	226.72	-159.99	716.17	123.17	2,189.39	1,949.30	240.09	9.119	
6,300.00	5,827.09	5,790.05	5,786.60	47.12	230.54	-160.38	719.50	123.17	2,219.10	1,973.04	246.06	9.019	
6,400.00	5,923.36	5,886.29	5,882.79	47.58	234.41	-160.71	722.85	123.17	2,245.67	1,993.77	251.89	8.915	
6,500.00	6,020.52	5,983.42	5,979.85	47.98	238.31	-160.98	726.24	123.17	2,269.06	2,011.48	257.58	8.809	
6,600.00	6,118.44	6,081.30	6,077.68	48.33	242.24	-161.19	729.66	123.17	2,289.23	2,026.15	263.08	8.702	
6,700.00	6,217.01	6,179.84	6,176.15	48.62	246.20	-161.36	733.10	123.17	2,306.16	2,037.79	268.37	8.593	
6,800.00	6,316.11	6,278.89	6,275.14	48.86	250.18	-161.47	736.56	123.17	2,319.82	2,046.38	273.44	8.484	
6,900.00	6,415.61	6,378.34	6,374.54	49.05	254.17	-161.53	740.03	123.17	2,330.20	2,051.94	278.27	8.374	
7,000.00	6,515.40	6,478.08	6,474.21	49.19	258.18	-161.54	743.51	123.17	2,337.28	2,054.46	282.82	8.264	
7,100.00	6,615.35	6,577.97	6,574.05	49.28	262.19	-161.51	746.99	123.17	2,341.06	2,053.97	287.09	8.154	
7,134.09	6,649.44	6,612.04	6,608.09	49.31	263.56	-73.41	748.18	123.17	2,341.59	2,053.11	288.48	8.117	
7,200.00	6,715.35	6,677.91	6,673.92	49.34	266.20	-73.35	750.48	123.17	2,342.25	2,051.03	291.22	8.043	
7,300.00	6,815.35	6,777.85	6,773.80	49.41	270.22	-73.27	753.97	123.17	2,343.25	2,047.88	295.38	7.933	
7,400.00	6,915.35	6,877.79	6,873.68	49.48	274.23	-73.19	757.46	123.17	2,344.26	2,044.72	299.54	7.826	
7,500.00	7,015.35	6,977.73	6,973.56	49.54	278.25	-73.11	760.95	123.17	2,345.27	2,041.58	303.70	7.722	
7,600.00	7,115.35	7,077.67	7,073.44	49.61	282.26	-73.03	764.43	123.17	2,346.29	2,038.43	307.86	7.621	
7,700.00	7,215.35	7,177.61	7,173.32	49.68	286.28	-72.95	767.92	123.17	2,347.31	2,035.30	312.02	7.523	
7,800.00	7,315.35	7,277.55	7,273.19	49.75	290.29	-72.86	771.41	123.17	2,348.34	2,032.16	316.18	7.427	
7,900.00	7,415.35	7,377.48	7,373.07	49.82	294.30	-72.78	774.90	123.17	2,349.37	2,029.03	320.34	7.334	
8,000.00	7,515.35	7,477.42	7,472.95	49.89	298.32	-72.70	778.38	123.17	2,350.41	2,025.90	324.51	7.243	
8,100.00	7,615.35	7,577.36	7,572.83	49.97	302.33	-72.62	781.87	123.17	2,351.45	2,022.77	328.67	7.154	
8,200.00	7,715.35	7,677.30	7,672.71	50.04	306.35	-72.54	785.36	123.17	2,352.49	2,019.65	332.84	7.068	
8,300.00	7,815.35	7,777.24	7,772.58	50.11	310.36	-72.46	788.85	123.17	2,353.54	2,016.53	337.01	6.984	
8,400.00	7,915.35	7,877.18	7,872.46	50.19	314.37	-72.38	792.34	123.17	2,354.60	2,013.42	341.18	6.901	
8,500.00	8,015.35	7,977.12	7,972.34	50.27	318.39	-72.30	795.82	123.17	2,355.66	2,010.31	345.35	6.821	
8,511.65	8,027.00	7,988.76	7,983.97	50.27	318.86	-72.29	796.23	123.17	2,355.78	2,009.95	345.83	6.812 SF	



<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well P_Riverbend 5-18
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	WELL @ 4932.00ft (Original Well Elev)
<b>Reference Site:</b>	Riverbend 7-13 PAD	<b>MD Reference:</b>	WELL @ 4932.00ft (Original Well Elev)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	P_Riverbend 5-18	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	P_Riverbend 5-18	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	PLAN #1 6-21-10 RHS	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												Offset Site Error:	0.00 ft
Survey Program: 0-MWD												Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	-90.42	-0.35	-48.15	48.15				
100.00	100.00	100.00	100.00	0.10	0.10	-90.42	-0.35	-48.15	48.15	47.96	0.19	252.029	
200.00	200.00	200.00	200.00	0.32	0.32	-90.42	-0.35	-48.15	48.15	47.51	0.64	75.167	
300.00	300.00	300.00	300.00	0.55	0.55	-90.42	-0.35	-48.15	48.15	47.06	1.09	44.170 CC, ES	
400.00	399.98	399.98	399.98	0.76	0.77	-178.55	-0.35	-48.15	49.90	48.37	1.53	32.686	
500.00	499.84	499.84	499.84	0.98	0.99	-178.68	-0.35	-48.15	55.13	53.17	1.96	28.168	
600.00	599.45	599.45	599.45	1.22	1.22	-178.86	-0.35	-48.15	63.84	61.45	2.39	26.683 SF	
700.00	698.70	698.70	698.70	1.50	1.44	-179.04	-0.35	-48.15	76.02	73.19	2.83	26.859	
800.00	797.47	797.47	797.47	1.82	1.66	-179.20	-0.35	-48.15	91.67	88.39	3.27	28.029	
900.00	895.62	895.62	895.62	2.19	1.88	-179.33	-0.35	-48.15	110.74	107.03	3.71	29.835	
1,000.00	993.06	993.06	993.06	2.62	2.10	-179.44	-0.35	-48.15	133.24	129.08	4.16	32.065	
1,100.00	1,089.64	1,086.08	1,086.06	3.12	2.31	-179.20	0.49	-49.13	160.12	155.53	4.59	34.903	
1,200.00	1,185.27	1,176.45	1,176.34	3.67	2.51	-178.43	3.19	-52.26	192.61	187.60	5.01	38.416	
1,300.00	1,279.82	1,263.98	1,263.61	4.30	2.71	-177.41	7.58	-57.36	230.60	225.16	5.44	42.391	
1,400.00	1,373.17	1,348.28	1,347.42	5.00	2.91	-176.32	13.45	-64.17	273.94	268.07	5.87	46.680	
1,500.00	1,465.21	1,429.03	1,427.43	5.77	3.12	-175.24	20.58	-72.44	322.43	316.13	6.30	51.170	
1,550.00	1,510.71	1,468.00	1,465.92	6.18	3.22	-174.72	24.55	-77.04	348.54	342.02	6.52	53.459	
1,600.00	1,556.03	1,506.21	1,503.58	6.60	3.33	-174.26	28.77	-81.94	375.49	368.71	6.78	55.416	
1,700.00	1,646.66	1,580.95	1,576.98	7.46	3.57	-173.38	37.97	-92.62	430.75	423.45	7.30	59.014	
1,800.00	1,737.29	1,653.46	1,647.81	8.32	3.82	-172.55	48.09	-104.36	487.81	479.97	7.83	62.263	
1,900.00	1,827.92	1,727.18	1,719.42	9.19	4.09	-171.73	59.50	-117.60	546.51	538.12	8.39	65.160	
2,000.00	1,918.55	1,807.57	1,797.41	10.06	4.41	-170.97	72.23	-132.37	605.67	596.70	8.97	67.523	
2,100.00	2,009.18	1,887.96	1,875.40	10.93	4.75	-170.34	84.96	-147.14	664.88	655.32	9.56	69.525	
2,200.00	2,099.81	1,968.35	1,953.39	11.81	5.10	-169.82	97.69	-161.91	724.14	713.97	10.16	71.240	
2,300.00	2,190.44	2,048.73	2,031.38	12.69	5.46	-169.38	110.41	-176.68	783.43	772.66	10.77	72.727	
2,400.00	2,281.07	2,129.12	2,109.37	13.58	5.82	-169.00	123.14	-191.45	842.75	831.36	11.38	74.023	
2,500.00	2,371.70	2,209.51	2,187.36	14.46	6.19	-168.66	135.87	-206.22	902.08	890.08	12.00	75.161	
2,600.00	2,462.34	2,289.90	2,265.35	15.34	6.57	-168.37	148.60	-220.99	961.44	948.82	12.62	76.163	
2,700.00	2,552.97	2,370.29	2,343.33	16.23	6.95	-168.12	161.32	-235.76	1,020.81	1,007.56	13.25	77.052	
2,800.00	2,643.60	2,450.68	2,421.32	17.12	7.33	-167.89	174.05	-250.53	1,080.19	1,066.31	13.88	77.846	
2,900.00	2,734.23	2,531.07	2,499.31	18.00	7.72	-167.68	186.78	-265.30	1,139.58	1,125.08	14.51	78.560	
3,000.00	2,824.86	2,611.46	2,577.30	18.89	8.11	-167.50	199.51	-280.07	1,198.98	1,183.84	15.14	79.204	
3,100.00	2,915.49	2,691.85	2,655.29	19.78	8.50	-167.33	212.23	-294.84	1,258.39	1,242.62	15.77	79.786	
3,200.00	3,006.12	2,772.24	2,733.28	20.67	8.89	-167.18	224.96	-309.61	1,317.80	1,301.39	16.41	80.314	
3,300.00	3,096.75	2,852.63	2,811.27	21.56	9.29	-167.04	237.69	-324.38	1,377.22	1,360.18	17.05	80.797	
3,400.00	3,187.38	2,933.02	2,889.26	22.45	9.69	-166.91	250.42	-339.15	1,436.65	1,418.96	17.68	81.239	
3,500.00	3,278.01	3,013.41	2,967.25	23.34	10.08	-166.79	263.15	-353.92	1,496.07	1,477.75	18.32	81.646	
3,600.00	3,368.64	3,093.80	3,045.24	24.23	10.48	-166.69	275.87	-368.69	1,555.50	1,536.54	18.96	82.020	
3,700.00	3,459.27	3,174.19	3,123.23	25.12	10.88	-166.58	288.60	-383.46	1,614.94	1,595.33	19.61	82.366	
3,800.00	3,549.90	3,254.58	3,201.22	26.01	11.29	-166.49	301.33	-398.22	1,674.38	1,654.13	20.25	82.686	
3,900.00	3,640.54	3,334.97	3,279.21	26.90	11.69	-166.40	314.06	-412.99	1,733.82	1,712.93	20.89	82.984	
4,000.00	3,731.17	3,415.35	3,357.20	27.79	12.09	-166.32	326.78	-427.76	1,793.26	1,771.72	21.54	83.261	
4,100.00	3,821.80	3,495.74	3,435.18	28.68	12.49	-166.25	339.51	-442.53	1,852.71	1,830.52	22.18	83.520	
4,200.00	3,912.43	3,576.13	3,513.17	29.57	12.90	-166.18	352.24	-457.30	1,912.15	1,889.33	22.83	83.762	
4,300.00	4,003.06	3,656.52	3,591.16	30.46	13.30	-166.11	364.97	-472.07	1,971.60	1,948.13	23.47	83.988	
4,400.00	4,093.69	3,736.91	3,669.15	31.35	13.71	-166.05	377.69	-486.84	2,031.05	2,006.93	24.12	84.201	
4,500.00	4,184.32	3,817.30	3,747.14	32.25	14.11	-165.99	390.42	-501.61	2,090.51	2,065.74	24.77	84.401	
4,600.00	4,274.95	3,897.69	3,825.13	33.14	14.52	-165.93	403.15	-516.38	2,149.96	2,124.54	25.42	84.590	
4,700.00	4,365.58	3,978.08	3,903.12	34.03	14.93	-165.88	415.88	-531.15	2,209.42	2,183.35	26.06	84.768	
4,800.00	4,456.21	4,058.47	3,981.11	34.92	15.33	-165.83	428.61	-545.92	2,268.87	2,242.16	26.71	84.936	
4,900.00	4,546.84	4,138.86	4,059.10	35.81	15.74	-165.78	441.33	-560.69	2,328.33	2,300.97	27.36	85.095	
5,000.00	4,637.47	4,219.25	4,137.09	36.70	16.15	-165.73	454.06	-575.46	2,387.79	2,359.78	28.01	85.246	

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

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well P_Riverbend 5-18
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	WELL @ 4932.00ft (Original Well Elev)
<b>Reference Site:</b>	Riverbend 7-13 PAD	<b>MD Reference:</b>	WELL @ 4932.00ft (Original Well Elev)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	P_Riverbend 5-18	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	P_Riverbend 5-18	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	PLAN #1 6-21-10 RHS	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												Offset Site Error:	0.00 ft
Survey Program: 0-MWD												Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.00	4,728.10	4,299.64	4,215.08	37.60	16.56	-165.69	466.79	-590.23	2,447.25	2,418.59	28.66	85.389	
5,200.00	4,818.74	4,380.03	4,293.07	38.49	16.96	-165.65	479.52	-605.00	2,506.71	2,477.40	29.31	85.524	
5,300.00	4,909.37	4,460.42	4,371.06	39.38	17.37	-165.61	492.24	-619.77	2,566.17	2,536.21	29.96	85.654	
5,400.00	5,000.00	4,540.81	4,449.05	40.27	17.78	-165.57	504.97	-634.54	2,625.63	2,595.02	30.61	85.777	
5,500.00	5,090.63	4,621.20	4,527.03	41.17	18.19	-165.54	517.70	-649.31	2,685.09	2,653.83	31.26	85.894	
5,600.00	5,181.26	4,701.59	4,605.02	42.06	18.60	-165.50	530.43	-664.08	2,744.55	2,712.64	31.91	86.006	
5,700.00	5,271.89	4,781.98	4,683.01	42.95	19.01	-165.47	543.16	-678.84	2,804.02	2,771.46	32.56	86.113	
5,800.00	5,362.52	4,862.36	4,761.00	43.84	19.42	-165.44	555.88	-693.61	2,863.48	2,830.27	33.21	86.215	
5,884.09	5,438.73	4,929.96	4,826.58	44.59	19.76	-165.41	566.58	-706.03	2,913.48	2,879.72	33.76	86.298	
5,900.00	5,453.17	4,942.78	4,839.02	44.72	19.83	-165.47	568.61	-708.39	2,922.91	2,889.02	33.90	86.232	
6,000.00	5,544.74	5,024.46	4,918.26	45.41	20.24	-165.77	581.55	-723.39	2,980.57	2,945.86	34.71	85.868	
6,100.00	5,637.66	5,108.02	4,999.32	46.03	20.67	-166.03	594.78	-738.75	3,035.43	2,999.93	35.50	85.516	
6,200.00	5,731.82	5,193.35	5,082.11	46.60	21.10	-166.25	608.29	-754.42	3,087.43	3,051.19	36.25	85.181	
6,300.00	5,827.09	5,280.37	5,166.52	47.12	21.55	-166.42	622.06	-770.41	3,136.51	3,099.56	36.96	84.867	
6,400.00	5,923.36	5,368.94	5,252.46	47.58	22.00	-166.56	636.09	-786.69	3,182.62	3,144.99	37.63	84.576	
6,500.00	6,020.52	5,458.98	5,339.81	47.98	22.46	-166.66	650.34	-803.23	3,225.70	3,187.44	38.26	84.311	
6,600.00	6,118.44	5,550.37	5,428.47	48.33	22.92	-166.73	664.81	-820.02	3,265.70	3,226.85	38.84	84.072	
6,700.00	6,217.01	5,645.97	5,517.01	48.62	23.40	-166.64	679.93	-835.14	3,282.96	3,242.26	40.71	80.652	
6,800.00	6,316.11	5,744.07	5,616.11	48.86	23.92	-166.76	695.93	-850.14	3,295.97	3,254.94	41.03	80.328	
6,900.00	6,415.61	5,844.57	5,715.61	49.05	24.46	-166.84	712.93	-865.14	3,305.62	3,264.32	41.30	80.039	
7,000.00	6,515.40	5,944.36	5,815.40	49.19	25.16	-166.89	730.93	-880.14	3,311.87	3,270.36	41.51	79.784	
7,100.00	6,615.35	6,044.31	5,915.35	49.28	25.29	-166.92	750.93	-895.14	3,314.73	3,273.06	41.66	79.561	
7,134.09	6,649.44	6,078.39	5,949.44	49.31	25.33	-78.84	770.93	-885.14	3,314.93	3,273.22	41.70	79.490	
7,200.00	6,715.35	6,144.31	6,015.35	49.34	25.41	-78.84	790.93	-885.14	3,314.93	3,273.04	41.89	79.136	
7,300.00	6,815.35	6,244.31	6,115.35	49.41	25.54	-78.84	810.93	-885.14	3,314.93	3,272.75	42.17	78.600	
7,400.00	6,915.35	6,344.31	6,215.35	49.48	25.67	-78.84	830.93	-885.14	3,314.93	3,272.46	42.46	78.066	
7,500.00	7,015.35	6,444.31	6,315.35	49.54	25.80	-78.84	850.93	-885.14	3,314.93	3,272.17	42.75	77.534	
7,600.00	7,115.35	6,544.31	6,415.35	49.61	25.93	-78.84	870.93	-885.14	3,314.93	3,271.88	43.05	77.005	
7,700.00	7,215.35	6,644.31	6,515.35	49.68	26.06	-78.84	890.93	-885.14	3,314.93	3,271.58	43.34	76.478	
7,800.00	7,315.35	6,744.31	6,615.35	49.75	26.20	-78.84	910.93	-885.14	3,314.93	3,271.28	43.64	75.954	
7,900.00	7,415.35	6,844.31	6,715.35	49.82	26.33	-78.84	930.93	-885.14	3,314.93	3,270.98	43.95	75.433	
8,000.00	7,515.35	6,944.31	6,815.35	49.89	26.47	-78.84	950.93	-885.14	3,314.93	3,270.68	44.25	74.915	
8,100.00	7,615.35	7,044.31	6,915.35	49.97	26.61	-78.84	970.93	-885.14	3,314.93	3,270.37	44.56	74.400	
8,200.00	7,715.35	7,144.31	7,015.35	50.04	26.75	-78.84	990.93	-885.14	3,314.93	3,270.06	44.86	73.888	
8,300.00	7,815.35	7,244.31	7,115.35	50.11	26.89	-78.84	1010.93	-885.14	3,314.93	3,269.75	45.18	73.379	
8,400.00	7,915.35	7,344.31	7,215.35	50.19	27.03	-78.84	1030.93	-885.14	3,314.93	3,269.44	45.49	72.874	
8,500.00	8,015.35	7,444.31	7,315.35	50.27	27.17	-78.84	1050.93	-885.14	3,314.93	3,269.12	45.80	72.372	
8,511.65	8,027.00	7,456.95	7,327.00	50.27	27.19	-78.84	1050.93	-885.14	3,314.93	3,269.08	45.84	72.314	



<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well P_Riverbend 5-18
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	WELL @ 4932.00ft (Original Well Elev)
<b>Reference Site:</b>	Riverbend 7-13 PAD	<b>MD Reference:</b>	WELL @ 4932.00ft (Original Well Elev)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	P_Riverbend 5-18	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	P_Riverbend 5-18	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	PLAN #1 6-21-10 RHS	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												Offset Site Error:	0.00 ft
Survey Program: 0-MWD												Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	-90.65	-0.36	-31.91	31.91				
100.00	100.00	100.00	100.00	0.10	0.10	-90.65	-0.36	-31.91	31.91	31.72	0.19	167.049	
200.00	200.00	200.00	200.00	0.32	0.32	-90.65	-0.36	-31.91	31.91	31.27	0.64	49.822	
300.00	300.00	300.00	300.00	0.55	0.55	-90.65	-0.36	-31.91	31.91	30.82	1.09	29.277 CC, ES	
400.00	399.98	399.98	399.98	0.76	0.77	-178.79	-0.36	-31.91	33.66	32.13	1.53	22.050	
500.00	499.84	499.84	499.84	0.98	0.99	-178.95	-0.36	-31.91	38.89	36.93	1.96	19.872 SF	
600.00	599.45	599.45	599.45	1.22	1.22	-179.14	-0.36	-31.91	47.61	45.21	2.39	19.898	
700.00	698.70	698.70	698.70	1.50	1.44	-179.32	-0.36	-31.91	59.79	56.96	2.83	21.124	
800.00	797.47	797.47	797.47	1.82	1.66	-179.45	-0.36	-31.91	75.43	72.16	3.27	23.065	
900.00	895.62	895.62	895.62	2.19	1.88	-179.56	-0.36	-31.91	94.51	90.80	3.71	25.461	
1,000.00	993.06	993.06	993.06	2.62	2.10	-179.64	-0.36	-31.91	117.01	112.85	4.16	28.158	
1,100.00	1,089.64	1,092.33	1,092.32	3.12	2.30	179.79	-1.54	-31.00	142.04	137.45	4.58	30.983	
1,200.00	1,185.27	1,191.79	1,191.65	3.67	2.49	178.41	-5.43	-27.98	168.54	163.53	5.00	33.677	
1,300.00	1,279.82	1,291.11	1,290.61	4.30	2.68	176.57	-12.04	-22.85	196.63	191.18	5.45	36.092	
1,400.00	1,373.17	1,390.15	1,388.95	5.00	2.90	174.47	-21.31	-15.64	226.46	220.53	5.93	38.196	
1,500.00	1,465.21	1,485.58	1,483.39	5.77	3.14	172.48	-32.12	-7.24	258.61	252.16	6.45	40.113	
1,550.00	1,510.71	1,532.36	1,529.68	6.18	3.27	171.68	-37.47	-3.09	275.95	269.24	6.72	41.080	
1,600.00	1,556.03	1,578.99	1,575.82	6.60	3.39	171.03	-42.79	1.05	293.74	286.71	7.03	41.800	
1,700.00	1,646.66	1,672.26	1,668.10	7.46	3.66	169.94	-53.45	9.32	329.40	321.73	7.67	42.967	
1,800.00	1,737.29	1,765.52	1,760.39	8.32	3.93	169.07	-64.10	17.60	365.14	356.82	8.33	43.856	
1,900.00	1,827.92	1,858.78	1,852.67	9.19	4.22	168.35	-74.75	25.87	400.95	391.94	9.00	44.539	
2,000.00	1,918.55	1,952.05	1,944.95	10.06	4.51	167.75	-85.41	34.15	436.79	427.10	9.69	45.070	
2,100.00	2,009.18	2,045.31	2,037.23	10.93	4.81	167.24	-96.06	42.42	472.68	462.28	10.40	45.466	
2,200.00	2,099.81	2,138.57	2,129.52	11.81	5.11	166.80	-106.71	50.70	508.59	497.48	11.11	45.778	
2,300.00	2,190.44	2,231.84	2,221.80	12.69	5.41	166.42	-117.37	58.97	544.53	532.70	11.83	46.027	
2,400.00	2,281.07	2,325.10	2,314.08	13.58	5.72	166.09	-128.02	67.25	580.48	567.92	12.56	46.229	
2,500.00	2,371.70	2,418.36	2,406.36	14.46	6.03	165.80	-138.67	75.52	616.45	603.16	13.29	46.394	
2,600.00	2,462.34	2,511.63	2,498.65	15.34	6.35	165.53	-149.33	83.80	652.43	638.41	14.02	46.530	
2,700.00	2,552.97	2,604.89	2,590.93	16.23	6.67	165.30	-159.98	92.07	688.42	673.66	14.76	46.643	
2,800.00	2,643.60	2,698.15	2,683.21	17.12	6.98	165.09	-170.63	100.35	724.42	708.92	15.50	46.738	
2,900.00	2,734.23	2,791.42	2,775.49	18.00	7.30	164.90	-181.28	108.62	760.43	744.19	16.24	46.820	
3,000.00	2,824.86	2,884.68	2,867.78	18.89	7.62	164.72	-191.94	116.90	796.45	779.46	16.99	46.889	
3,100.00	2,915.49	2,977.94	2,960.06	19.78	7.95	164.57	-202.59	125.17	832.47	814.74	17.73	46.950	
3,200.00	3,006.12	3,071.21	3,052.34	20.67	8.27	164.42	-213.24	133.45	868.49	850.02	18.48	47.002	
3,300.00	3,096.75	3,164.47	3,144.62	21.56	8.60	164.29	-223.90	141.72	904.52	885.30	19.23	47.049	
3,400.00	3,187.38	3,257.73	3,236.91	22.45	8.92	164.16	-234.55	150.00	940.56	920.58	19.97	47.091	
3,500.00	3,278.01	3,351.00	3,329.19	23.34	9.25	164.05	-245.20	158.27	976.60	955.87	20.72	47.129	
3,600.00	3,368.64	3,444.26	3,421.47	24.23	9.57	163.94	-255.86	166.55	1,012.64	991.17	21.47	47.163	
3,700.00	3,459.27	3,537.52	3,513.76	25.12	9.90	163.84	-266.51	174.82	1,048.68	1,026.46	22.22	47.186	
3,800.00	3,549.90	3,630.79	3,606.04	26.01	10.23	163.75	-277.16	183.10	1,084.73	1,061.75	22.98	47.201	
3,900.00	3,640.54	3,724.05	3,698.32	26.90	10.56	163.66	-287.82	191.37	1,120.78	1,097.04	23.74	47.213	
4,000.00	3,731.17	3,817.31	3,790.60	27.79	10.89	163.58	-298.47	199.65	1,156.83	1,132.33	24.50	47.223	
4,100.00	3,821.80	3,910.58	3,882.89	28.68	11.22	163.50	-309.12	207.92	1,192.88	1,167.63	25.26	47.232	
4,200.00	3,912.43	4,003.84	3,975.17	29.57	11.55	163.43	-319.78	216.20	1,228.94	1,202.92	26.02	47.238	
4,300.00	4,003.06	4,097.10	4,067.45	30.46	11.88	163.36	-330.43	224.47	1,264.99	1,238.22	26.78	47.243	
4,400.00	4,093.69	4,190.37	4,159.73	31.35	12.21	163.30	-341.08	232.75	1,301.05	1,273.51	27.54	47.247	
4,500.00	4,184.32	4,283.63	4,252.02	32.25	12.54	163.24	-351.74	241.02	1,337.11	1,308.81	28.30	47.250	
4,600.00	4,274.95	4,376.89	4,344.30	33.14	12.87	163.18	-362.39	249.30	1,373.17	1,344.11	29.06	47.252	
4,700.00	4,365.58	4,470.16	4,436.58	34.03	13.20	163.13	-373.04	257.57	1,409.23	1,379.41	29.82	47.254	
4,800.00	4,456.21	4,563.42	4,528.86	34.92	13.53	163.08	-383.69	265.85	1,445.29	1,414.71	30.59	47.254	
4,900.00	4,546.84	4,656.68	4,621.15	35.81	13.86	163.03	-394.35	274.12	1,481.36	1,450.01	31.35	47.254	
5,000.00	4,637.47	4,749.95	4,713.43	36.70	14.19	162.98	-405.00	282.40	1,517.42	1,485.31	32.11	47.254	

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

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well P_Riverbend 5-18
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	WELL @ 4932.00ft (Original Well Elev)
<b>Reference Site:</b>	Riverbend 7-13 PAD	<b>MD Reference:</b>	WELL @ 4932.00ft (Original Well Elev)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	P_Riverbend 5-18	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	P_Riverbend 5-18	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	PLAN #1 6-21-10 RHS	<b>Offset TVD Reference:</b>	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	
5,100.00	4,728.10	4,843.21	4,805.71	37.60	14.53	162.94	-415.65	290.67	1,553.49	1,520.61	32.88	47.253	
5,200.00	4,818.74	4,936.47	4,897.99	38.49	14.86	162.89	-426.31	298.95	1,589.55	1,555.91	33.64	47.252	
5,300.00	4,909.37	5,029.74	4,990.28	39.38	15.19	162.85	-436.96	307.22	1,625.62	1,591.21	34.40	47.250	
5,400.00	5,000.00	5,123.00	5,082.56	40.27	15.52	162.81	-447.61	315.50	1,661.69	1,626.52	35.17	47.248	
5,500.00	5,090.63	5,216.26	5,174.84	41.17	15.85	162.78	-458.27	323.77	1,697.75	1,661.82	35.93	47.246	
5,600.00	5,181.26	5,309.53	5,267.12	42.06	16.19	162.74	-468.92	332.05	1,733.82	1,697.12	36.70	47.244	
5,700.00	5,271.89	5,402.79	5,359.41	42.95	16.52	162.71	-479.57	340.32	1,769.89	1,732.43	37.46	47.241	
5,800.00	5,362.52	5,496.05	5,451.69	43.84	16.85	162.67	-490.23	348.60	1,805.96	1,767.73	38.23	47.239	
5,884.09	5,438.73	5,574.48	5,529.29	44.59	17.13	162.65	-499.18	355.56	1,836.29	1,797.42	38.87	47.236	
5,900.00	5,453.17	5,589.33	5,543.99	44.72	17.19	162.68	-500.88	356.88	1,841.99	1,802.98	39.01	47.218	
6,000.00	5,544.74	5,683.35	5,637.02	45.41	17.52	162.84	-511.62	365.22	1,876.01	1,836.19	39.82	47.114	
6,100.00	5,637.66	5,772.77	5,725.51	46.03	17.83	162.96	-521.75	373.08	1,906.91	1,866.35	40.56	47.010	
6,200.00	5,731.82	5,850.90	5,803.05	46.60	18.03	163.09	-529.30	378.95	1,935.31	1,894.16	41.15	47.032	
6,300.00	5,827.09	5,929.39	5,881.19	47.12	18.20	163.24	-535.21	383.54	1,961.39	1,919.75	41.64	47.101	
6,400.00	5,923.36	6,000.00	5,951.62	47.58	18.33	163.41	-539.07	386.54	1,985.15	1,943.11	42.04	47.220	
6,500.00	6,020.52	6,087.15	6,038.69	47.98	18.48	163.60	-541.95	388.78	2,006.52	1,964.14	42.37	47.354	
6,600.00	6,118.44	6,166.91	6,118.44	48.33	18.60	163.82	-542.76	389.40	2,025.55	1,982.93	42.62	47.528	
6,700.00	6,217.01	6,265.48	6,217.01	48.62	18.73	164.04	-542.76	389.40	2,041.73	1,998.92	42.81	47.689	
6,800.00	6,316.11	6,364.58	6,316.11	48.86	18.87	164.21	-542.76	389.40	2,054.59	2,011.63	42.97	47.820	
6,900.00	6,415.61	6,464.08	6,415.61	49.05	19.01	164.34	-542.76	389.40	2,064.13	2,021.05	43.08	47.917	
7,000.00	6,515.40	6,563.87	6,515.40	49.19	19.14	164.42	-542.76	389.40	2,070.31	2,027.16	43.15	47.981	
7,100.00	6,615.35	6,663.82	6,615.35	49.28	19.29	164.46	-542.76	389.40	2,073.14	2,029.96	43.18	48.012	
7,134.09	6,649.44	6,697.91	6,649.44	49.31	19.33	-107.47	-542.76	389.40	2,073.33	2,030.15	43.18	48.014	
7,200.00	6,715.35	6,763.82	6,715.35	49.34	19.43	-107.47	-542.76	389.40	2,073.33	2,029.98	43.35	47.826	
7,300.00	6,815.35	6,863.82	6,815.35	49.41	19.57	-107.47	-542.76	389.40	2,073.33	2,029.72	43.61	47.540	
7,400.00	6,915.35	6,963.82	6,915.35	49.48	19.72	-107.47	-542.76	389.40	2,073.33	2,029.46	43.88	47.254	
7,500.00	7,015.35	7,063.82	7,015.35	49.54	19.87	-107.47	-542.76	389.40	2,073.33	2,029.19	44.14	46.968	
7,600.00	7,115.35	7,163.82	7,115.35	49.61	20.01	-107.47	-542.76	389.40	2,073.33	2,028.92	44.41	46.682	
7,700.00	7,215.35	7,263.82	7,215.35	49.68	20.16	-107.47	-542.76	389.40	2,073.33	2,028.65	44.69	46.397	
7,800.00	7,315.35	7,363.82	7,315.35	49.75	20.31	-107.47	-542.76	389.40	2,073.33	2,028.37	44.96	46.112	
7,900.00	7,415.35	7,463.82	7,415.35	49.82	20.47	-107.47	-542.76	389.40	2,073.33	2,028.09	45.24	45.828	
8,000.00	7,515.35	7,563.82	7,515.35	49.89	20.62	-107.47	-542.76	389.40	2,073.33	2,027.81	45.52	45.545	
8,100.00	7,615.35	7,663.82	7,615.35	49.97	20.78	-107.47	-542.76	389.40	2,073.33	2,027.53	45.81	45.263	
8,200.00	7,715.35	7,763.82	7,715.35	50.04	20.93	-107.47	-542.76	389.40	2,073.33	2,027.24	46.09	44.982	
8,300.00	7,815.35	7,863.82	7,815.35	50.11	21.09	-107.47	-542.76	389.40	2,073.33	2,026.95	46.38	44.701	
8,400.00	7,915.35	7,963.82	7,915.35	50.19	21.25	-107.47	-542.76	389.40	2,073.33	2,026.66	46.67	44.422	
8,500.00	8,015.35	8,063.82	8,015.35	50.27	21.41	-107.47	-542.76	389.40	2,073.33	2,026.37	46.97	44.144	
8,511.65	8,027.00	8,075.47	8,027.00	50.27	21.43	-107.47	-542.76	389.40	2,073.33	2,026.33	47.00	44.112	

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well P_Riverbend 5-18
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	WELL @ 4932.00ft (Original Well Elev)
<b>Reference Site:</b>	Riverbend 7-13 PAD	<b>MD Reference:</b>	WELL @ 4932.00ft (Original Well Elev)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	P_Riverbend 5-18	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	P_Riverbend 5-18	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	PLAN #1 6-21-10 RHS	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Riverbend 7-13 PAD - P_Riverbend 25-13 - P_Riverbend 25-13 - PLAN #1 6-21-10 RHS													Offset Site Error:	0.00 ft
Survey Program: 0-MWD													Offset Well Error:	0.00 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
0.00	0.00	0.00	0.00	0.00	0.00	-90.33	-0.36	-64.11	64.11					
100.00	100.00	100.00	100.00	0.10	0.10	-90.33	-0.36	-64.11	64.11	63.92	0.19	335.547		
200.00	200.00	200.00	200.00	0.32	0.32	-90.33	-0.36	-64.11	64.11	63.47	0.64	100.076		
300.00	300.00	300.00	300.00	0.55	0.55	-90.33	-0.36	-64.11	64.11	63.02	1.09	58.807 CC, ES		
400.00	399.98	399.98	399.98	0.76	0.77	-178.44	-0.36	-64.11	65.85	64.32	1.53	43.138		
500.00	499.84	499.84	499.84	0.98	0.99	-178.55	-0.36	-64.11	71.08	69.13	1.96	36.320		
600.00	599.45	599.45	599.45	1.22	1.22	-178.71	-0.36	-64.11	79.80	77.40	2.39	33.353		
700.00	698.70	698.70	698.70	1.50	1.44	-178.87	-0.36	-64.11	91.98	89.15	2.83	32.496 SF		
800.00	797.47	797.47	797.47	1.82	1.66	-179.03	-0.36	-64.11	107.62	104.35	3.27	32.908		
900.00	895.62	895.62	895.62	2.19	1.88	-179.17	-0.36	-64.11	126.70	122.99	3.71	34.133		
1,000.00	993.06	993.06	993.06	2.62	2.10	-179.29	-0.36	-64.11	149.19	145.03	4.16	35.905		
1,100.00	1,089.64	1,085.23	1,085.21	3.12	2.29	-179.62	-1.07	-65.16	176.19	171.62	4.57	38.538		
1,200.00	1,185.27	1,174.54	1,174.43	3.67	2.46	179.70	-3.33	-68.52	209.09	204.11	4.97	42.038		
1,300.00	1,279.82	1,260.83	1,260.47	4.30	2.64	178.86	-6.98	-73.96	247.71	242.34	5.38	46.065		
1,400.00	1,373.17	1,343.73	1,342.91	5.00	2.82	177.97	-11.85	-81.20	291.87	286.09	5.79	50.439		
1,500.00	1,465.21	1,422.93	1,421.39	5.77	3.01	177.11	-17.74	-89.97	341.34	335.13	6.20	55.045		
1,550.00	1,510.71	1,461.05	1,459.06	6.18	3.11	176.69	-21.01	-94.84	367.97	361.56	6.41	57.398		
1,600.00	1,556.03	1,500.00	1,497.47	6.60	3.21	176.31	-24.63	-100.23	395.48	388.82	6.66	59.387		
1,700.00	1,646.66	1,571.28	1,567.50	7.46	3.43	175.62	-32.02	-111.23	451.93	444.77	7.16	63.126		
1,800.00	1,737.29	1,646.24	1,640.81	8.32	3.68	174.93	-40.74	-124.21	510.11	502.43	7.68	66.433		
1,900.00	1,827.92	1,727.16	1,719.88	9.19	3.97	174.31	-50.34	-138.50	568.66	560.44	8.22	69.158		
2,000.00	1,918.55	1,808.09	1,798.96	10.06	4.27	173.81	-59.94	-152.79	627.25	618.47	8.78	71.479		
2,100.00	2,009.18	1,889.02	1,878.04	10.93	4.59	173.40	-69.54	-167.08	685.86	676.53	9.34	73.461		
2,200.00	2,099.81	1,969.95	1,957.12	11.81	4.91	173.05	-79.14	-181.37	744.50	734.59	9.90	75.171		
2,300.00	2,190.44	2,050.88	2,036.19	12.69	5.25	172.75	-88.74	-195.66	803.15	792.67	10.48	76.661		
2,400.00	2,281.07	2,131.81	2,115.27	13.58	5.59	172.49	-98.34	-209.95	861.81	850.75	11.05	77.968		
2,500.00	2,371.70	2,212.74	2,194.35	14.46	5.93	172.26	-107.94	-224.24	920.48	908.84	11.63	79.122		
2,600.00	2,462.34	2,293.67	2,273.42	15.34	6.28	172.06	-117.54	-238.54	979.16	966.94	12.22	80.143		
2,700.00	2,552.97	2,374.60	2,352.50	16.23	6.63	171.89	-127.14	-252.83	1,037.85	1,025.04	12.80	81.051		
2,800.00	2,643.60	2,455.53	2,431.58	17.12	6.99	171.73	-136.74	-267.12	1,096.54	1,083.14	13.39	81.867		
2,900.00	2,734.23	2,536.46	2,510.65	18.00	7.35	171.59	-146.34	-281.41	1,155.24	1,141.25	13.99	82.601		
3,000.00	2,824.86	2,617.39	2,589.73	18.89	7.71	171.46	-155.94	-295.70	1,213.94	1,199.36	14.58	83.266		
3,100.00	2,915.49	2,698.32	2,668.81	19.78	8.07	171.34	-165.54	-309.99	1,272.64	1,257.47	15.17	83.870		
3,200.00	3,006.12	2,779.25	2,747.88	20.67	8.43	171.24	-175.15	-324.28	1,331.35	1,315.58	15.77	84.419		
3,300.00	3,096.75	2,860.18	2,826.96	21.56	8.80	171.14	-184.75	-338.57	1,390.06	1,373.69	16.37	84.921		
3,400.00	3,187.38	2,941.10	2,906.04	22.45	9.16	171.05	-194.35	-352.86	1,448.77	1,431.81	16.97	85.383		
3,500.00	3,278.01	3,022.03	2,985.11	23.34	9.53	170.97	-203.95	-367.15	1,507.49	1,489.92	17.57	85.808		
3,600.00	3,368.64	3,102.96	3,064.19	24.23	9.90	170.90	-213.55	-381.44	1,566.21	1,548.04	18.17	86.200		
3,700.00	3,459.27	3,183.89	3,143.27	25.12	10.27	170.82	-223.15	-395.74	1,624.93	1,606.15	18.77	86.563		
3,800.00	3,549.90	3,264.82	3,222.35	26.01	10.64	170.76	-232.75	-410.03	1,683.65	1,664.27	19.37	86.900		
3,900.00	3,640.54	3,345.75	3,301.42	26.90	11.01	170.70	-242.35	-424.32	1,742.37	1,722.39	19.98	87.213		
4,000.00	3,731.17	3,426.68	3,380.50	27.79	11.39	170.64	-251.95	-438.61	1,801.09	1,780.51	20.58	87.506		
4,100.00	3,821.80	3,507.61	3,459.58	28.68	11.76	170.59	-261.55	-452.90	1,859.82	1,838.63	21.19	87.779		
4,200.00	3,912.43	3,588.54	3,538.65	29.57	12.13	170.54	-271.15	-467.19	1,918.54	1,896.75	21.79	88.034		
4,300.00	4,003.06	3,669.47	3,617.73	30.46	12.51	170.49	-280.75	-481.48	1,977.27	1,954.87	22.40	88.274		
4,400.00	4,093.69	3,750.40	3,696.81	31.35	12.88	170.45	-290.35	-495.77	2,035.99	2,012.99	23.01	88.499		
4,500.00	4,184.32	3,831.33	3,775.88	32.25	13.25	170.40	-299.95	-510.06	2,094.72	2,071.11	23.61	88.711		
4,600.00	4,274.95	3,912.26	3,854.96	33.14	13.63	170.36	-309.55	-524.35	2,153.45	2,129.23	24.22	88.912		
4,700.00	4,365.58	3,993.19	3,934.04	34.03	14.01	170.33	-319.15	-538.65	2,212.18	2,187.35	24.83	89.101		
4,800.00	4,456.21	4,074.11	4,013.11	34.92	14.38	170.29	-328.75	-552.94	2,270.91	2,245.47	25.44	89.279		
4,900.00	4,546.84	4,155.04	4,092.19	35.81	14.76	170.26	-338.35	-567.23	2,329.64	2,303.59	26.04	89.448		
5,000.00	4,637.47	4,235.97	4,171.27	36.70	15.13	170.22	-347.95	-581.52	2,388.37	2,361.72	26.65	89.609		

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

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well P_Riverbend 5-18
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	WELL @ 4932.00ft (Original Well Elev)
<b>Reference Site:</b>	Riverbend 7-13 PAD	<b>MD Reference:</b>	WELL @ 4932.00ft (Original Well Elev)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	P_Riverbend 5-18	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	P_Riverbend 5-18	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	PLAN #1 6-21-10 RHS	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												Offset Site Error:	0.00 ft
Riverbend 7-13 PAD - P_Riverbend 25-13 - P_Riverbend 25-13 - PLAN #1 6-21-10 RHS												Offset Well Error:	0.00 ft
Survey Program: 0-MWD													
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.00	4,728.10	4,316.90	4,250.34	37.60	15.51	170.19	-357.55	-595.81	2,447.10	2,419.84	27.26	89.761	
5,200.00	4,818.74	4,397.83	4,329.42	38.49	15.89	170.16	-367.15	-610.10	2,505.83	2,477.96	27.87	89.906	
5,300.00	4,909.37	4,478.76	4,408.50	39.38	16.26	170.14	-376.75	-624.39	2,564.56	2,536.08	28.48	90.044	
5,400.00	5,000.00	4,559.69	4,487.58	40.27	16.64	170.11	-386.35	-638.68	2,623.30	2,594.21	29.09	90.175	
5,500.00	5,090.63	4,640.62	4,566.65	41.17	17.02	170.08	-395.95	-652.97	2,682.03	2,652.33	29.70	90.300	
5,600.00	5,181.26	4,721.55	4,645.73	42.06	17.40	170.06	-405.55	-667.26	2,740.76	2,710.45	30.31	90.420	
5,700.00	5,271.89	4,802.48	4,724.81	42.95	17.77	170.04	-415.16	-681.55	2,799.50	2,768.57	30.92	90.534	
5,800.00	5,362.52	4,883.41	4,803.88	43.84	18.15	170.01	-424.76	-695.85	2,858.23	2,826.70	31.53	90.644	
5,884.09	5,438.73	4,951.46	4,870.38	44.59	18.47	170.00	-432.83	-707.86	2,907.62	2,875.57	32.05	90.732	
5,900.00	5,453.17	4,964.36	4,882.98	44.72	18.53	170.03	-434.36	-710.14	2,916.93	2,884.75	32.18	90.657	
6,000.00	5,544.74	5,046.59	4,963.33	45.41	18.91	170.24	-444.11	-724.66	2,973.81	2,940.87	32.95	90.265	
6,100.00	5,637.66	5,130.72	5,045.53	46.03	19.31	170.41	-454.09	-739.52	3,027.83	2,994.15	33.68	89.897	
6,200.00	5,731.82	5,216.64	5,129.49	46.60	19.71	170.56	-464.29	-754.69	3,078.93	3,044.55	34.38	89.555	
6,300.00	5,827.09	5,304.25	5,215.09	47.12	20.12	170.67	-474.68	-770.16	3,127.03	3,091.99	35.04	89.242	
6,400.00	5,923.36	5,393.44	5,302.24	47.58	20.54	170.76	-485.26	-785.91	3,172.10	3,136.44	35.66	88.960	
6,500.00	6,020.52	5,484.11	5,390.83	47.98	20.96	170.82	-496.01	-801.92	3,214.07	3,177.83	36.23	88.709	
6,600.00	6,118.44	5,576.13	5,480.75	48.33	21.39	170.87	-506.93	-818.17	3,252.89	3,216.13	36.76	88.491	
6,700.00	6,217.01	6,318.14	6,217.01	48.62	23.12	170.78	-548.94	-880.70	3,275.68	3,237.24	38.44	85.224	
6,800.00	6,316.11	6,417.23	6,316.11	48.86	23.23	170.86	-548.94	-880.70	3,288.88	3,250.14	38.74	84.903	
6,900.00	6,415.61	6,516.74	6,415.61	49.05	23.35	170.92	-548.94	-880.70	3,298.65	3,259.67	38.98	84.623	
7,000.00	6,515.40	6,616.53	6,515.40	49.19	23.46	170.95	-548.94	-880.70	3,305.00	3,265.83	39.17	84.383	
7,100.00	6,615.35	6,716.48	6,615.35	49.28	23.58	170.97	-548.94	-880.70	3,307.89	3,268.60	39.29	84.182	
7,134.09	6,649.44	6,750.56	6,649.44	49.31	23.63	-100.95	-548.94	-880.70	3,308.09	3,268.77	39.33	84.118	
7,200.00	6,715.35	6,816.48	6,715.35	49.34	23.71	-100.95	-548.94	-880.70	3,308.09	3,268.58	39.51	83.720	
7,300.00	6,815.35	6,916.48	6,815.35	49.41	23.83	-100.95	-548.94	-880.70	3,308.09	3,268.29	39.80	83.115	
7,400.00	6,915.35	7,016.48	6,915.35	49.48	23.95	-100.95	-548.94	-880.70	3,308.09	3,268.00	40.09	82.512	
7,500.00	7,015.35	7,116.48	7,015.35	49.54	24.08	-100.95	-548.94	-880.70	3,308.09	3,267.71	40.39	81.912	
7,600.00	7,115.35	7,216.48	7,115.35	49.61	24.21	-100.95	-548.94	-880.70	3,308.09	3,267.41	40.68	81.315	
7,700.00	7,215.35	7,316.48	7,215.35	49.68	24.34	-100.95	-548.94	-880.70	3,308.09	3,267.11	40.98	80.721	
7,800.00	7,315.35	7,416.48	7,315.35	49.75	24.47	-100.95	-548.94	-880.70	3,308.09	3,266.81	41.28	80.131	
7,900.00	7,415.35	7,516.48	7,415.35	49.82	24.60	-100.95	-548.94	-880.70	3,308.09	3,266.51	41.59	79.544	
8,000.00	7,515.35	7,616.48	7,515.35	49.89	24.73	-100.95	-548.94	-880.70	3,308.09	3,266.20	41.90	78.961	
8,100.00	7,615.35	7,716.48	7,615.35	49.97	24.87	-100.95	-548.94	-880.70	3,308.09	3,265.89	42.20	78.382	
8,200.00	7,715.35	7,816.48	7,715.35	50.04	25.00	-100.95	-548.94	-880.70	3,308.09	3,265.58	42.52	77.807	
8,300.00	7,815.35	7,916.48	7,815.35	50.11	25.14	-100.95	-548.94	-880.70	3,308.09	3,265.26	42.83	77.236	
8,400.00	7,915.35	8,016.48	7,915.35	50.19	25.28	-100.95	-548.94	-880.70	3,308.09	3,264.95	43.15	76.669	
8,500.00	8,015.35	8,116.48	8,015.35	50.27	25.42	-100.95	-548.94	-880.70	3,308.09	3,264.63	43.47	76.107	
8,511.65	8,027.00	8,128.12	8,027.00	50.27	25.43	-100.95	-548.94	-880.70	3,308.09	3,264.59	43.50	76.042	

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well P_Riverbend 5-18
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	WELL @ 4932.00ft (Original Well Elev)
<b>Reference Site:</b>	Riverbend 7-13 PAD	<b>MD Reference:</b>	WELL @ 4932.00ft (Original Well Elev)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	P_Riverbend 5-18	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	P_Riverbend 5-18	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	PLAN #1 6-21-10 RHS	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Riverbend 7-13 PAD - P_Riverbend 6-13 - P_Riverbend 6-13 - PLAN #1 6-21-10 RHS													Offset Site Error:	0.00 ft
Survey Program: 0-MWD													Offset Well Error:	0.00 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
0.00	0.00	0.00	0.00	0.00	0.00	-90.43	-0.73	-96.02	96.02					
100.00	100.00	100.00	100.00	0.10	0.10	-90.43	-0.73	-96.02	96.02	95.83	0.19	502.595		
200.00	200.00	200.00	200.00	0.32	0.32	-90.43	-0.73	-96.02	96.02	95.38	0.64	149.897		
300.00	300.00	300.00	300.00	0.55	0.55	-90.43	-0.73	-96.02	96.02	94.93	1.09	88.084 CC, ES		
400.00	399.98	396.65	396.63	0.76	0.75	-178.49	-0.66	-97.65	99.45	97.94	1.51	65.988		
500.00	499.84	492.62	492.47	0.98	0.96	-178.43	-0.46	-102.49	109.71	107.80	1.91	57.342		
600.00	599.45	587.26	586.78	1.22	1.19	-178.35	-0.14	-110.40	126.72	124.39	2.33	54.443 SF		
700.00	698.70	679.95	678.84	1.50	1.45	-178.27	0.30	-121.16	150.34	147.60	2.75	54.768		
800.00	797.47	770.13	768.02	1.82	1.73	-178.19	0.85	-134.48	180.39	177.23	3.16	57.032		
900.00	895.62	857.29	853.78	2.19	2.04	-178.12	1.48	-150.01	216.65	213.07	3.58	60.523		
1,000.00	993.06	941.00	935.67	2.62	2.38	-178.06	2.20	-167.37	258.86	254.87	3.99	64.819		
1,100.00	1,089.64	1,020.92	1,013.33	3.12	2.74	-178.00	2.97	-186.17	306.73	302.33	4.40	69.655		
1,200.00	1,185.27	1,100.00	1,089.64	3.67	3.13	-177.95	3.82	-206.90	359.97	355.16	4.82	74.747		
1,300.00	1,279.82	1,174.51	1,161.11	4.30	3.54	-177.90	4.68	-227.96	417.85	412.62	5.22	80.005		
1,400.00	1,373.17	1,253.85	1,237.18	5.00	3.99	-177.86	5.60	-250.50	478.71	473.06	5.64	84.825		
1,500.00	1,465.21	1,331.02	1,311.16	5.77	4.43	-177.83	6.50	-272.42	542.30	536.24	6.06	89.467		
1,550.00	1,510.71	1,368.76	1,347.34	6.18	4.64	-177.81	6.94	-283.14	575.10	568.83	6.27	91.729		
1,600.00	1,556.03	1,406.21	1,383.25	6.60	4.86	-177.83	7.38	-293.78	608.22	601.70	6.52	93.275		
1,700.00	1,646.66	1,481.12	1,455.07	7.46	5.29	-177.86	8.25	-315.06	674.47	667.44	7.03	95.955		
1,800.00	1,737.29	1,556.03	1,526.88	8.32	5.73	-177.89	9.12	-336.34	740.72	733.17	7.54	98.201		
1,900.00	1,827.92	1,630.94	1,598.70	9.19	6.17	-177.91	9.99	-357.63	806.97	798.90	8.06	100.106		
2,000.00	1,918.55	1,705.84	1,670.51	10.06	6.61	-177.93	10.87	-378.91	873.21	864.63	8.58	101.739		
2,100.00	2,009.18	1,780.75	1,742.33	10.93	7.06	-177.95	11.74	-400.19	939.46	930.36	9.11	103.149		
2,200.00	2,099.81	1,855.66	1,814.14	11.81	7.50	-177.96	12.61	-421.47	1,005.71	996.08	9.64	104.379		
2,300.00	2,190.44	1,930.56	1,885.96	12.69	7.94	-177.98	13.48	-442.75	1,071.96	1,061.80	10.16	105.461		
2,400.00	2,281.07	2,005.47	1,957.77	13.58	8.39	-177.99	14.36	-464.03	1,138.21	1,127.51	10.70	106.419		
2,500.00	2,371.70	2,080.38	2,029.59	14.46	8.83	-178.00	15.23	-485.31	1,204.46	1,193.23	11.23	107.270		
2,600.00	2,462.34	2,155.29	2,101.41	15.34	9.28	-178.01	16.10	-506.59	1,270.71	1,258.95	11.76	108.033		
2,700.00	2,552.97	2,230.19	2,173.22	16.23	9.73	-178.01	16.97	-527.87	1,336.96	1,324.66	12.30	108.721		
2,800.00	2,643.60	2,305.10	2,245.04	17.12	10.18	-178.02	17.84	-549.15	1,403.21	1,390.37	12.83	109.343		
2,900.00	2,734.23	2,380.01	2,316.85	18.00	10.62	-178.03	18.72	-570.43	1,469.45	1,456.08	13.37	109.908		
3,000.00	2,824.86	2,454.91	2,388.67	18.89	11.07	-178.03	19.59	-591.71	1,535.70	1,521.80	13.91	110.423		
3,100.00	2,915.49	2,529.82	2,460.48	19.78	11.52	-178.04	20.46	-612.99	1,601.95	1,587.51	14.45	110.895		
3,200.00	3,006.12	2,604.73	2,532.30	20.67	11.97	-178.05	21.33	-634.27	1,668.20	1,653.22	14.98	111.328		
3,300.00	3,096.75	2,679.63	2,604.11	21.56	12.42	-178.05	22.21	-655.55	1,734.45	1,718.93	15.52	111.728		
3,400.00	3,187.38	2,754.54	2,675.93	22.45	12.87	-178.05	23.08	-676.83	1,800.70	1,784.64	16.06	112.097		
3,500.00	3,278.01	2,829.45	2,747.74	23.34	13.32	-178.06	23.95	-698.12	1,866.95	1,850.34	16.60	112.440		
3,600.00	3,368.64	2,904.36	2,819.56	24.23	13.77	-178.06	24.82	-719.40	1,933.20	1,916.05	17.14	112.759		
3,700.00	3,459.27	2,979.26	2,891.37	25.12	14.22	-178.07	25.70	-740.68	1,999.45	1,981.76	17.69	113.055		
3,800.00	3,549.90	3,054.17	2,963.19	26.01	14.67	-178.07	26.57	-761.96	2,065.69	2,047.47	18.23	113.332		
3,900.00	3,640.54	3,129.08	3,035.00	26.90	15.12	-178.07	27.44	-783.24	2,131.94	2,113.18	18.77	113.592		
4,000.00	3,731.17	3,203.98	3,106.82	27.79	15.57	-178.07	28.31	-804.52	2,198.19	2,178.88	19.31	113.835		
4,100.00	3,821.80	3,278.89	3,178.64	28.68	16.02	-178.08	29.18	-825.80	2,264.44	2,244.59	19.85	114.064		
4,200.00	3,912.43	3,353.80	3,250.45	29.57	16.47	-178.08	30.06	-847.08	2,330.69	2,310.30	20.39	114.279		
4,300.00	4,003.06	3,428.71	3,322.27	30.46	16.92	-178.08	30.93	-868.36	2,396.94	2,376.00	20.94	114.482		
4,400.00	4,093.69	3,503.61	3,394.08	31.35	17.37	-178.08	31.80	-889.64	2,463.19	2,441.71	21.48	114.673		
4,500.00	4,184.32	3,578.52	3,465.90	32.25	17.82	-178.09	32.67	-910.92	2,529.44	2,507.41	22.02	114.855		
4,600.00	4,274.95	3,653.43	3,537.71	33.14	18.27	-178.09	33.55	-932.20	2,595.69	2,573.12	22.57	115.026		
4,700.00	4,365.58	3,728.33	3,609.53	34.03	18.72	-178.09	34.42	-953.48	2,661.94	2,638.83	23.11	115.189		
4,800.00	4,456.21	3,803.24	3,681.34	34.92	19.17	-178.09	35.29	-974.76	2,728.18	2,704.53	23.65	115.344		
4,900.00	4,546.84	3,878.15	3,753.16	35.81	19.62	-178.09	36.16	-996.04	2,794.43	2,770.24	24.20	115.491		
5,000.00	4,637.47	3,953.05	3,824.97	36.70	20.07	-178.10	37.03	-1,017.32	2,860.68	2,835.94	24.74	115.631		

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

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well P_Riverbend 5-18
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	WELL @ 4932.00ft (Original Well Elev)
<b>Reference Site:</b>	Riverbend 7-13 PAD	<b>MD Reference:</b>	WELL @ 4932.00ft (Original Well Elev)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	P_Riverbend 5-18	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	P_Riverbend 5-18	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	PLAN #1 6-21-10 RHS	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Riverbend 7-13 PAD - P_Riverbend 6-13 - P_Riverbend 6-13 - PLAN #1 6-21-10 RHS												<b>Offset Site Error:</b>	0.00 ft
Survey Program: 0-MWD												<b>Offset Well Error:</b>	0.00 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.00	4,728.10	4,027.96	3,896.79	37.60	20.52	-178.10	37.91	-1,038.60	2,926.93	2,901.65	25.28	115.764	
5,200.00	4,818.74	4,102.87	3,968.60	38.49	20.97	-178.10	38.78	-1,059.89	2,993.18	2,967.35	25.83	115.892	
5,300.00	4,909.37	4,177.78	4,040.42	39.38	21.42	-178.10	39.65	-1,081.17	3,059.43	3,033.06	26.37	116.013	
5,400.00	5,000.00	4,252.68	4,112.23	40.27	21.87	-178.10	40.52	-1,102.45	3,125.68	3,098.76	26.92	116.130	
5,500.00	5,090.63	4,327.59	4,184.05	41.17	22.33	-178.10	41.40	-1,123.73	3,191.93	3,164.47	27.46	116.241	
5,600.00	5,181.26	4,402.50	4,255.86	42.06	22.78	-178.11	42.27	-1,145.01	3,258.18	3,230.17	28.00	116.348	
5,700.00	5,271.89	4,477.40	4,327.68	42.95	23.23	-178.11	43.14	-1,166.29	3,324.43	3,295.88	28.55	116.450	
5,800.00	5,362.52	4,552.31	4,399.50	43.84	23.68	-178.11	44.01	-1,187.57	3,390.67	3,361.58	29.09	116.548	
5,884.09	5,438.73	4,615.30	4,459.88	44.59	24.06	-178.11	44.75	-1,205.46	3,446.38	3,416.83	29.55	116.627	
5,900.00	5,453.17	4,627.25	4,471.34	44.72	24.13	-178.12	44.89	-1,208.86	3,456.89	3,427.21	29.68	116.465	
6,000.00	5,544.74	4,703.65	4,544.59	45.41	24.59	-178.17	45.78	-1,230.56	3,521.40	3,490.92	30.47	115.564	
6,100.00	5,637.66	4,782.26	4,619.96	46.03	25.06	-178.22	46.69	-1,252.90	3,583.20	3,551.97	31.22	114.758	
6,200.00	5,731.82	4,862.98	4,697.34	46.60	25.55	-178.26	47.63	-1,275.83	3,642.22	3,610.28	31.94	114.041	
6,300.00	5,827.09	4,945.71	4,776.66	47.12	26.05	-178.29	48.59	-1,299.33	3,698.39	3,665.78	32.61	113.409	
6,400.00	5,923.36	5,030.34	4,857.80	47.58	26.56	-178.32	49.58	-1,323.38	3,751.64	3,718.40	33.24	112.857	
6,500.00	6,020.52	5,116.79	4,940.67	47.98	27.08	-178.35	50.59	-1,347.93	3,801.90	3,768.07	33.83	112.382	
6,600.00	6,118.44	5,204.93	5,025.18	48.33	27.61	-178.37	51.61	-1,372.97	3,849.12	3,814.75	34.37	111.981	
6,700.00	6,217.01	5,294.66	5,111.21	48.62	28.15	-178.38	52.66	-1,398.47	3,893.24	3,858.37	34.87	111.652	
6,800.00	6,316.11	5,319.11	5,111.21	48.86	31.70	-178.34	59.80	-1,572.69	3,920.43	3,882.89	37.54	104.441	
6,900.00	6,415.61	5,319.11	5,111.21	49.05	31.80	-178.35	59.80	-1,572.69	3,930.33	3,892.47	37.85	103.829	
7,000.00	6,515.40	5,319.11	5,111.21	49.19	31.89	-178.36	59.80	-1,572.69	3,936.74	3,898.63	38.11	103.299	
7,100.00	6,615.35	5,319.11	5,111.21	49.28	31.99	-178.36	59.80	-1,572.69	3,939.68	3,901.37	38.30	102.851	
7,134.09	6,649.44	5,319.11	5,111.21	49.31	32.02	-90.29	59.80	-1,572.69	3,939.88	3,901.52	38.36	102.711	
7,200.00	6,715.35	5,319.11	5,111.21	49.34	32.09	-90.29	59.80	-1,572.69	3,939.88	3,901.33	38.55	102.195	
7,300.00	6,815.35	5,319.11	5,111.21	49.41	32.19	-90.29	59.80	-1,572.69	3,939.88	3,901.03	38.85	101.412	
7,400.00	6,915.35	5,319.11	5,111.21	49.48	32.29	-90.29	59.80	-1,572.69	3,939.88	3,900.73	39.15	100.633	
7,500.00	7,015.35	5,319.11	5,111.21	49.54	32.39	-90.29	59.80	-1,572.69	3,939.88	3,900.43	39.45	99.859	
7,600.00	7,115.35	5,319.11	5,111.21	49.61	32.49	-90.29	59.80	-1,572.69	3,939.88	3,900.12	39.76	99.090	
7,700.00	7,215.35	5,319.11	5,111.21	49.68	32.60	-90.29	59.80	-1,572.69	3,939.88	3,899.81	40.07	98.327	
7,800.00	7,315.35	5,319.11	5,111.21	49.75	32.70	-90.29	59.80	-1,572.69	3,939.88	3,899.50	40.38	97.569	
7,900.00	7,415.35	5,319.11	5,111.21	49.82	32.81	-90.29	59.80	-1,572.69	3,939.88	3,899.19	40.69	96.816	
8,000.00	7,515.35	5,319.11	5,111.21	49.89	32.92	-90.29	59.80	-1,572.69	3,939.88	3,898.87	41.01	96.069	
8,100.00	7,615.35	5,319.11	5,111.21	49.97	33.03	-90.29	59.80	-1,572.69	3,939.88	3,898.55	41.33	95.328	
8,200.00	7,715.35	5,319.11	5,111.21	50.04	33.14	-90.29	59.80	-1,572.69	3,939.88	3,898.23	41.65	94.593	
8,300.00	7,815.35	5,319.11	5,111.21	50.11	33.25	-90.29	59.80	-1,572.69	3,939.88	3,897.91	41.97	93.864	
8,400.00	7,915.35	5,319.11	5,111.21	50.19	33.36	-90.29	59.80	-1,572.69	3,939.88	3,897.58	42.30	93.142	
8,500.00	8,015.35	5,319.11	5,111.21	50.27	33.48	-90.29	59.80	-1,572.69	3,939.88	3,897.25	42.63	92.425	
8,511.65	8,027.00	5,319.11	5,111.21	50.27	33.49	-90.29	59.80	-1,572.69	3,939.88	3,897.21	42.67	92.342	



<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well P_Riverbend 5-18
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	WELL @ 4932.00ft (Original Well Elev)
<b>Reference Site:</b>	Riverbend 7-13 PAD	<b>MD Reference:</b>	WELL @ 4932.00ft (Original Well Elev)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	P_Riverbend 5-18	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	P_Riverbend 5-18	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	PLAN #1 6-21-10 RHS	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												Offset Site Error:	0.00 ft
Survey Program: 0-MWD												Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	-90.26	-0.36	-80.06	80.06				
100.00	100.00	100.00	100.00	0.10	0.10	-90.26	-0.36	-80.06	80.06	79.87	0.19	419.065	
200.00	200.00	200.00	200.00	0.32	0.32	-90.26	-0.36	-80.06	80.06	79.42	0.64	124.984	
300.00	300.00	300.00	300.00	0.55	0.55	-90.26	-0.36	-80.06	80.06	78.97	1.09	73.444 CC, ES	
400.00	399.98	399.98	399.98	0.76	0.77	-178.37	-0.36	-80.06	81.81	80.28	1.53	53.591	
500.00	499.84	499.84	499.84	0.98	0.99	-178.47	-0.36	-80.06	87.04	85.08	1.96	44.473	
600.00	599.45	599.45	599.45	1.22	1.22	-178.60	-0.36	-80.06	95.75	93.36	2.39	40.022	
700.00	698.70	698.70	698.70	1.50	1.44	-178.75	-0.36	-80.06	107.93	105.10	2.83	38.133	
800.00	797.47	797.47	797.47	1.82	1.66	-178.91	-0.36	-80.06	123.57	120.30	3.27	37.787 SF	
900.00	895.62	895.62	895.62	2.19	1.88	-179.05	-0.36	-80.06	142.65	138.94	3.71	38.432	
1,000.00	993.06	993.06	993.06	2.62	2.10	-179.17	-0.36	-80.06	165.14	160.99	4.16	39.745	
1,100.00	1,089.64	1,084.15	1,084.14	3.12	2.29	-179.36	-0.67	-81.26	192.30	187.73	4.57	42.049	
1,200.00	1,185.27	1,172.14	1,172.04	3.67	2.47	-179.66	-1.63	-85.08	225.69	220.71	4.98	45.335	
1,300.00	1,279.82	1,261.68	1,261.36	4.30	2.66	179.98	-3.15	-91.09	264.56	259.17	5.39	49.079	
1,400.00	1,373.17	1,352.30	1,351.75	5.00	2.85	179.70	-4.73	-97.36	306.82	301.01	5.81	52.785	
1,500.00	1,465.21	1,441.38	1,440.61	5.77	3.05	179.48	-6.28	-103.53	352.23	345.99	6.24	56.452	
1,550.00	1,510.71	1,485.32	1,484.43	6.18	3.15	179.40	-7.05	-106.57	376.09	369.63	6.45	58.273	
1,600.00	1,556.03	1,529.05	1,528.04	6.60	3.25	179.32	-7.81	-109.59	400.33	393.63	6.71	59.694	
1,700.00	1,646.66	1,616.50	1,615.27	7.46	3.45	179.20	-9.34	-115.64	448.83	441.61	7.22	62.191	
1,800.00	1,737.29	1,703.95	1,702.50	8.32	3.66	179.11	-10.86	-121.70	497.32	489.59	7.73	64.306	
1,900.00	1,827.92	1,791.40	1,789.73	9.19	3.87	179.03	-12.39	-127.75	545.81	537.56	8.26	66.114	
2,000.00	1,918.55	1,878.85	1,876.96	10.06	4.08	178.96	-13.91	-133.80	594.31	585.53	8.78	67.675	
2,100.00	2,009.18	1,966.31	1,964.19	10.93	4.30	178.91	-15.44	-139.85	642.80	633.49	9.31	69.034	
2,200.00	2,099.81	2,053.76	2,051.42	11.81	4.51	178.86	-16.96	-145.90	691.30	681.46	9.84	70.227	
2,300.00	2,190.44	2,141.21	2,138.65	12.69	4.73	178.82	-18.49	-151.95	739.79	729.42	10.38	71.282	
2,400.00	2,281.07	2,228.66	2,225.88	13.58	4.95	178.78	-20.01	-158.00	788.29	777.38	10.92	72.219	
2,500.00	2,371.70	2,316.12	2,313.11	14.46	5.17	178.75	-21.54	-164.05	836.79	825.33	11.45	73.058	
2,600.00	2,462.34	2,403.57	2,400.34	15.34	5.39	178.72	-23.07	-170.10	885.28	873.29	11.99	73.812	
2,700.00	2,552.97	2,491.02	2,487.57	16.23	5.61	178.69	-24.59	-176.16	933.78	921.25	12.54	74.492	
2,800.00	2,643.60	2,578.47	2,574.80	17.12	5.83	178.67	-26.12	-182.21	982.28	969.20	13.08	75.110	
2,900.00	2,734.23	2,665.93	2,662.03	18.00	6.05	178.65	-27.64	-188.26	1,030.78	1,017.15	13.62	75.673	
3,000.00	2,824.86	2,753.38	2,749.26	18.89	6.28	178.63	-29.17	-194.31	1,079.27	1,065.11	14.17	76.188	
3,100.00	2,915.49	2,840.83	2,836.49	19.78	6.50	178.61	-30.69	-200.36	1,127.77	1,113.06	14.71	76.661	
3,200.00	3,006.12	2,928.28	2,923.72	20.67	6.72	178.59	-32.22	-206.41	1,176.27	1,161.01	15.26	77.096	
3,300.00	3,096.75	3,015.74	3,010.94	21.56	6.95	178.58	-33.75	-212.46	1,224.77	1,208.96	15.80	77.498	
3,400.00	3,187.38	3,103.19	3,098.17	22.45	7.17	178.56	-35.27	-218.51	1,273.26	1,256.91	16.35	77.870	
3,500.00	3,278.01	3,190.64	3,185.40	23.34	7.40	178.55	-36.80	-224.56	1,321.76	1,304.86	16.90	78.216	
3,600.00	3,368.64	3,278.09	3,272.63	24.23	7.62	178.54	-38.32	-230.62	1,370.26	1,352.81	17.45	78.538	
3,700.00	3,459.27	3,365.55	3,359.86	25.12	7.85	178.53	-39.85	-236.67	1,418.76	1,400.76	18.00	78.839	
3,800.00	3,549.90	3,453.00	3,447.09	26.01	8.08	178.52	-41.37	-242.72	1,467.25	1,448.71	18.54	79.120	
3,900.00	3,640.54	3,540.45	3,534.32	26.90	8.30	178.51	-42.90	-248.77	1,515.75	1,496.66	19.09	79.383	
4,000.00	3,731.17	3,627.90	3,621.55	27.79	8.53	178.50	-44.43	-254.82	1,564.25	1,544.61	19.64	79.630	
4,100.00	3,821.80	3,715.35	3,708.78	28.68	8.76	178.49	-45.95	-260.87	1,612.75	1,592.55	20.19	79.863	
4,200.00	3,912.43	3,802.81	3,796.01	29.57	8.98	178.48	-47.48	-266.92	1,661.24	1,640.50	20.74	80.082	
4,300.00	4,003.06	3,890.26	3,883.24	30.46	9.21	178.47	-49.00	-272.97	1,709.74	1,688.45	21.29	80.289	
4,400.00	4,093.69	3,977.71	3,970.47	31.35	9.44	178.47	-50.53	-279.03	1,758.24	1,736.39	21.85	80.485	
4,500.00	4,184.32	4,065.16	4,057.70	32.25	9.67	178.46	-52.05	-285.08	1,806.74	1,784.34	22.40	80.670	
4,600.00	4,274.95	4,152.62	4,144.93	33.14	9.89	178.45	-53.58	-291.13	1,855.24	1,832.29	22.95	80.846	
4,700.00	4,365.58	4,240.07	4,232.16	34.03	10.12	178.45	-55.10	-297.18	1,903.73	1,880.24	23.50	81.012	
4,800.00	4,456.21	4,327.52	4,319.39	34.92	10.35	178.44	-56.63	-303.23	1,952.23	1,928.18	24.05	81.171	
4,900.00	4,546.84	4,414.97	4,406.62	35.81	10.58	178.44	-58.16	-309.28	2,000.73	1,976.13	24.60	81.321	
5,000.00	4,637.47	4,502.43	4,493.84	36.70	10.81	178.43	-59.68	-315.33	2,049.23	2,024.07	25.15	81.465	

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

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well P_Riverbend 5-18
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	WELL @ 4932.00ft (Original Well Elev)
<b>Reference Site:</b>	Riverbend 7-13 PAD	<b>MD Reference:</b>	WELL @ 4932.00ft (Original Well Elev)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	P_Riverbend 5-18	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	P_Riverbend 5-18	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	PLAN #1 6-21-10 RHS	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Riverbend 7-13 PAD - P_Riverbend 7-13 - P_Riverbend 7-13 - PLAN #1 6-21-10 RH												<b>Offset Site Error:</b>	0.00 ft
Survey Program: 0-MWD												<b>Offset Well Error:</b>	0.00 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.00	4,728.10	4,589.88	4,581.07	37.60	11.03	178.43	-61.21	-321.38	2,097.73	2,072.02	25.71	81.602	
5,200.00	4,818.74	4,677.33	4,668.30	38.49	11.26	178.42	-62.73	-327.43	2,146.22	2,119.97	26.26	81.733	
5,300.00	4,909.37	4,764.78	4,755.53	39.38	11.49	178.42	-64.26	-333.49	2,194.72	2,167.91	26.81	81.858	
5,400.00	5,000.00	4,852.24	4,842.76	40.27	11.72	178.41	-65.78	-339.54	2,243.22	2,215.86	27.36	81.977	
5,500.00	5,090.63	4,939.69	4,929.99	41.17	11.95	178.41	-67.31	-345.59	2,291.72	2,263.80	27.92	82.092	
5,600.00	5,181.26	5,027.14	5,017.22	42.06	12.18	178.40	-68.84	-351.64	2,340.22	2,311.75	28.47	82.202	
5,700.00	5,271.89	5,114.59	5,104.45	42.95	12.41	178.40	-70.36	-357.69	2,388.71	2,359.69	29.02	82.307	
5,800.00	5,362.52	5,202.04	5,191.68	43.84	12.63	178.40	-71.89	-363.74	2,437.21	2,407.64	29.57	82.408	
5,884.09	5,438.73	5,275.58	5,265.03	44.59	12.83	178.39	-73.17	-368.83	2,477.99	2,447.95	30.04	82.490	
5,900.00	5,453.17	5,289.52	5,278.93	44.72	12.86	178.40	-73.41	-369.79	2,485.67	2,455.51	30.16	82.423	
6,000.00	5,544.74	5,378.06	5,367.25	45.41	13.10	178.42	-74.96	-375.92	2,532.14	2,501.29	30.86	82.065	
6,100.00	5,637.66	5,468.17	5,457.12	46.03	13.33	178.44	-76.53	-382.16	2,575.50	2,543.99	31.51	81.736	
6,200.00	5,731.82	5,559.73	5,548.45	46.60	13.57	178.46	-78.13	-388.49	2,615.68	2,583.56	32.12	81.434	
6,300.00	5,827.09	5,652.64	5,641.13	47.12	13.82	178.47	-79.75	-394.92	2,652.65	2,619.97	32.68	81.161	
6,400.00	5,923.36	5,746.78	5,735.03	47.58	14.06	178.47	-81.39	-401.43	2,686.35	2,653.15	33.20	80.916	
6,500.00	6,020.52	5,842.04	5,830.05	47.98	14.31	178.47	-83.05	-408.03	2,716.75	2,683.08	33.66	80.700	
6,600.00	6,118.44	5,938.31	5,926.06	48.33	14.56	178.47	-84.73	-414.69	2,743.80	2,709.72	34.08	80.512	
6,700.00	6,217.01	6,029.45	6,017.01	48.62	15.11	178.48	-86.68	-422.43	2,761.71	2,726.94	34.77	79.433	
6,800.00	6,316.11	6,128.55	6,116.11	48.86	15.29	178.49	-86.68	-422.43	2,775.07	2,740.02	35.05	79.184	
6,900.00	6,415.61	6,228.05	6,215.61	49.05	15.47	178.50	-86.68	-422.43	2,784.96	2,749.70	35.27	78.966	
7,000.00	6,515.40	6,327.84	6,315.40	49.19	15.65	178.51	-86.68	-422.43	2,791.38	2,755.95	35.43	78.780	
7,100.00	6,615.35	6,427.79	6,415.35	49.28	15.84	178.51	-86.68	-422.43	2,794.32	2,758.78	35.54	78.625	
7,134.09	6,649.44	6,461.88	6,449.44	49.31	15.90	-93.41	-86.68	-422.43	2,794.52	2,758.95	35.56	78.576	
7,200.00	6,715.35	6,527.79	6,515.35	49.34	16.03	-93.41	-86.68	-422.43	2,794.52	2,758.74	35.78	78.101	
7,300.00	6,815.35	6,627.79	6,615.35	49.41	16.21	-93.41	-86.68	-422.43	2,794.52	2,758.41	36.11	77.385	
7,400.00	6,915.35	6,727.79	6,715.35	49.48	16.40	-93.41	-86.68	-422.43	2,794.52	2,758.07	36.45	76.677	
7,500.00	7,015.35	7,027.79	7,015.35	49.54	16.59	-93.41	-86.68	-422.43	2,794.52	2,757.74	36.78	75.978	
7,600.00	7,115.35	7,127.79	7,115.35	49.61	16.78	-93.41	-86.68	-422.43	2,794.52	2,757.40	37.12	75.286	
7,700.00	7,215.35	7,227.79	7,215.35	49.68	16.97	-93.41	-86.68	-422.43	2,794.52	2,757.06	37.46	74.603	
7,800.00	7,315.35	7,327.79	7,315.35	49.75	17.16	-93.41	-86.68	-422.43	2,794.52	2,756.72	37.80	73.929	
7,900.00	7,415.35	7,427.79	7,415.35	49.82	17.35	-93.41	-86.68	-422.43	2,794.52	2,756.38	38.14	73.262	
8,000.00	7,515.35	7,527.79	7,515.35	49.89	17.54	-93.41	-86.68	-422.43	2,794.52	2,756.03	38.49	72.604	
8,100.00	7,615.35	7,627.79	7,615.35	49.97	17.74	-93.41	-86.68	-422.43	2,794.52	2,755.68	38.84	71.954	
8,200.00	7,715.35	7,727.79	7,715.35	50.04	17.93	-93.41	-86.68	-422.43	2,794.52	2,755.33	39.19	71.312	
8,300.00	7,815.35	7,827.79	7,815.35	50.11	18.13	-93.41	-86.68	-422.43	2,794.52	2,754.98	39.54	70.678	
8,400.00	7,915.35	7,927.79	7,915.35	50.19	18.32	-93.41	-86.68	-422.43	2,794.52	2,754.63	39.89	70.053	
8,500.00	8,015.35	8,027.79	8,015.35	50.27	18.52	-93.41	-86.68	-422.43	2,794.52	2,754.27	40.25	69.435	
8,511.65	8,027.00	8,039.44	8,027.00	50.27	18.54	-93.41	-86.68	-422.43	2,794.52	2,754.23	40.29	69.364	



<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well P_Riverbend 5-18
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	WELL @ 4932.00ft (Original Well Elev)
<b>Reference Site:</b>	Riverbend 7-13 PAD	<b>MD Reference:</b>	WELL @ 4932.00ft (Original Well Elev)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	P_Riverbend 5-18	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	P_Riverbend 5-18	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	PLAN #1 6-21-10 RHS	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												Offset Site Error:	0.00 ft
Survey Program: 0-MWD												Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	-90.00	0.00	-15.96	15.96				
100.00	100.00	100.00	100.00	0.10	0.10	-90.00	0.00	-15.96	15.96	15.77	0.19	83.519	
200.00	200.00	200.00	200.00	0.32	0.32	-90.00	0.00	-15.96	15.96	15.32	0.64	24.909	
300.00	300.00	300.00	300.00	0.55	0.55	-90.00	0.00	-15.96	15.96	14.87	1.09	14.637 CC, ES	
400.00	399.98	399.98	399.98	0.76	0.77	-178.26	0.00	-15.96	17.70	16.17	1.53	11.596 SF	
500.00	499.84	499.84	499.84	0.98	0.99	-178.66	0.00	-15.96	22.93	20.98	1.96	11.717	
600.00	599.45	599.45	599.45	1.22	1.22	-179.02	0.00	-15.96	31.65	29.25	2.39	13.227	
700.00	698.70	698.70	698.70	1.50	1.44	-179.29	0.00	-15.96	43.83	41.00	2.83	15.485	
800.00	797.47	797.47	797.47	1.82	1.66	-179.48	0.00	-15.96	59.47	56.20	3.27	18.185	
900.00	895.62	895.62	895.62	2.19	1.88	-179.60	0.00	-15.96	78.55	74.84	3.71	21.161	
1,000.00	993.06	993.06	993.06	2.62	2.10	-179.69	0.00	-15.96	101.05	96.89	4.16	24.317	
1,100.00	1,089.64	1,093.76	1,093.75	3.12	2.32	-179.72	0.10	-14.43	125.46	120.86	4.60	27.284	
1,200.00	1,185.27	1,195.64	1,195.49	3.67	2.53	-179.70	0.44	-9.29	149.84	144.80	5.04	29.731	
1,300.00	1,279.82	1,298.45	1,297.91	4.30	2.76	-179.65	1.03	-0.46	174.14	168.64	5.49	31.697	
1,400.00	1,373.17	1,402.22	1,400.90	5.00	3.01	-179.57	1.87	12.17	198.33	192.37	5.96	33.265	
1,500.00	1,465.21	1,506.97	1,504.33	5.77	3.30	-179.47	2.97	28.69	222.38	215.93	6.45	34.497	
1,550.00	1,510.71	1,559.72	1,556.17	6.18	3.46	-179.41	3.62	38.43	234.34	227.65	6.70	35.000	
1,600.00	1,556.03	1,612.83	1,608.17	6.60	3.63	-179.36	4.33	49.20	245.83	238.85	6.98	35.203	
1,700.00	1,646.66	1,720.36	1,712.80	7.46	4.03	-179.24	5.98	73.94	266.08	258.50	7.58	35.121	
1,800.00	1,737.29	1,829.42	1,817.88	8.32	4.51	-179.09	7.91	103.01	282.61	274.42	8.19	34.506	
1,900.00	1,827.92	1,939.72	1,922.96	9.19	5.07	-178.92	10.14	136.46	295.37	286.54	8.83	33.465	
2,000.00	1,918.55	2,050.95	2,027.54	10.06	5.72	-178.72	12.65	174.24	304.29	294.80	9.48	32.082	
2,100.00	2,009.18	2,162.79	2,131.12	10.93	6.46	-178.49	15.44	216.29	309.33	299.16	10.17	30.428	
2,200.00	2,099.81	2,269.40	2,228.42	11.81	7.25	-178.23	18.34	259.78	310.87	300.02	10.85	28.649	
2,300.00	2,190.44	2,369.39	2,319.41	12.69	8.03	-177.99	21.09	301.13	311.84	300.31	11.53	27.045	
2,400.00	2,281.07	2,469.37	2,410.41	13.58	8.82	-177.74	23.84	342.47	312.81	300.59	12.22	25.600	
2,500.00	2,371.70	2,569.36	2,501.40	14.46	9.63	-177.50	26.59	383.82	313.78	300.87	12.92	24.293	
2,600.00	2,462.34	2,669.35	2,592.40	15.34	10.45	-177.26	29.34	425.17	314.76	301.14	13.62	23.107	
2,700.00	2,552.97	2,769.33	2,683.39	16.23	11.28	-177.02	32.09	466.52	315.75	301.42	14.33	22.028	
2,800.00	2,643.60	2,869.32	2,774.39	17.12	12.11	-176.79	34.84	507.87	316.74	301.69	15.05	21.042	
2,900.00	2,734.23	2,969.31	2,865.38	18.00	12.95	-176.55	37.59	549.21	317.74	301.96	15.78	20.139	
3,000.00	2,824.86	3,069.29	2,956.38	18.89	13.80	-176.32	40.33	590.56	318.74	302.23	16.51	19.309	
3,100.00	2,915.49	3,169.28	3,047.37	19.78	14.64	-176.08	43.08	631.91	319.75	302.51	17.24	18.544	
3,200.00	3,006.12	3,269.27	3,138.37	20.67	15.49	-175.85	45.83	673.26	320.76	302.78	17.98	17.837	
3,300.00	3,096.75	3,369.25	3,229.36	21.56	16.35	-175.62	48.58	714.61	321.78	303.05	18.73	17.182	
3,400.00	3,187.38	3,469.24	3,320.36	22.45	17.20	-175.39	51.33	755.96	322.80	303.33	19.48	16.573	
3,500.00	3,278.01	3,567.49	3,409.79	23.34	18.03	-175.17	54.03	796.55	323.88	303.65	20.22	16.015	
3,600.00	3,368.64	3,657.30	3,492.29	24.23	18.84	-175.01	56.39	831.96	327.00	306.09	20.91	15.638	
3,700.00	3,459.27	3,746.86	3,575.62	25.12	19.20	-174.91	58.56	864.69	333.24	311.66	21.58	15.443	
3,800.00	3,549.90	3,835.99	3,659.53	26.01	19.71	-174.86	60.56	894.66	342.56	320.33	22.23	15.411	
3,900.00	3,640.54	3,924.53	3,743.77	26.90	20.18	-174.88	62.37	921.84	354.94	332.08	22.86	15.527	
4,000.00	3,731.17	4,012.30	3,828.08	27.79	20.61	-174.94	63.99	946.21	370.35	346.88	23.47	15.779	
4,100.00	3,821.80	4,100.00	3,913.01	28.68	21.00	-175.05	65.43	967.97	388.75	364.68	24.07	16.154	
4,200.00	3,912.43	4,184.98	3,995.92	29.57	21.33	-175.19	66.67	986.58	410.08	385.44	24.63	16.647	
4,300.00	4,003.06	4,269.61	4,079.00	30.46	21.63	-175.35	67.74	1,002.66	434.29	409.10	25.19	17.243	
4,400.00	4,093.69	4,352.93	4,161.22	31.35	21.89	-175.53	68.63	1,016.09	461.32	435.60	25.72	17.935	
4,500.00	4,184.32	4,434.84	4,242.40	32.25	22.11	-175.72	69.36	1,026.97	491.11	464.86	26.24	18.714	
4,600.00	4,274.95	4,515.24	4,322.35	33.14	22.29	-175.91	69.92	1,035.39	523.58	496.83	26.75	19.574	
4,700.00	4,365.58	4,600.00	4,406.86	34.03	22.45	-176.12	70.35	1,041.84	558.69	531.44	27.25	20.502	
4,800.00	4,456.21	4,671.20	4,477.98	34.92	22.56	-176.30	70.58	1,045.32	596.27	568.55	27.72	21.510	
4,900.00	4,546.84	4,746.64	4,553.39	35.81	22.64	-176.49	70.69	1,047.09	636.33	608.14	28.19	22.573	
5,000.00	4,637.47	4,830.72	4,637.47	36.70	22.72	-176.69	70.71	1,047.24	678.34	649.68	28.67	23.662	

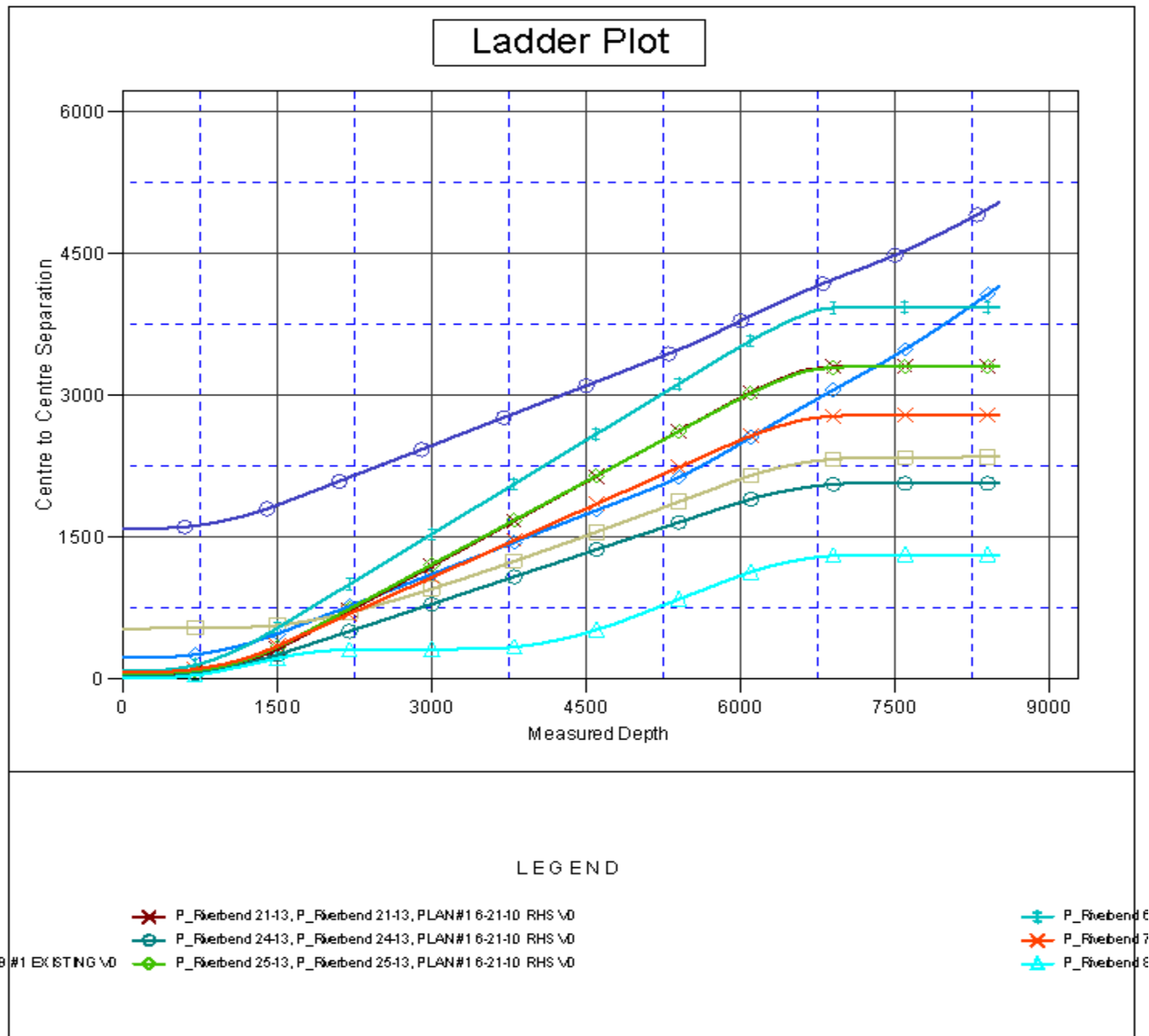
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well P_Riverbend 5-18
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	WELL @ 4932.00ft (Original Well Elev)
<b>Reference Site:</b>	Riverbend 7-13 PAD	<b>MD Reference:</b>	WELL @ 4932.00ft (Original Well Elev)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	P_Riverbend 5-18	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	P_Riverbend 5-18	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	PLAN #1 6-21-10 RHS	<b>Offset TVD Reference:</b>	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	
5,100.00	4,728.10	4,921.35	4,728.10	37.60	22.81	-176.88	70.71	1,047.24	720.55	691.39	29.16	24.710	
5,200.00	4,818.74	5,011.99	4,818.74	38.49	22.90	-177.06	70.71	1,047.24	762.76	733.11	29.66	25.720	
5,300.00	4,909.37	5,102.62	4,909.37	39.38	22.99	-177.21	70.71	1,047.24	804.98	774.83	30.16	26.693	
5,400.00	5,000.00	5,193.25	5,000.00	40.27	23.08	-177.35	70.71	1,047.24	847.21	816.55	30.66	27.633	
5,500.00	5,090.63	5,283.88	5,090.63	41.17	23.17	-177.48	70.71	1,047.24	889.43	858.27	31.16	28.540	
5,600.00	5,181.26	5,374.51	5,181.26	42.06	23.27	-177.59	70.71	1,047.24	931.66	899.99	31.67	29.416	
5,700.00	5,271.89	5,465.14	5,271.89	42.95	23.36	-177.70	70.71	1,047.24	973.89	941.71	32.18	30.262	
5,800.00	5,362.52	5,555.77	5,362.52	43.84	23.46	-177.79	70.71	1,047.24	1,016.13	983.44	32.69	31.081	
5,884.09	5,438.73	5,631.98	5,438.73	44.59	23.54	-177.87	70.71	1,047.24	1,051.64	1,018.52	33.12	31.748	
5,900.00	5,453.17	5,646.42	5,453.17	44.72	23.56	-177.88	70.71	1,047.24	1,058.33	1,025.11	33.22	31.858	
6,000.00	5,544.74	5,737.99	5,544.74	45.41	23.66	-177.99	70.71	1,047.24	1,098.47	1,064.68	33.78	32.515	
6,100.00	5,637.66	5,830.91	5,637.66	46.03	23.76	-178.09	70.71	1,047.24	1,135.39	1,101.09	34.30	33.104	
6,200.00	5,731.82	5,925.07	5,731.82	46.60	23.87	-178.16	70.71	1,047.24	1,169.05	1,134.29	34.76	33.628	
6,300.00	5,827.09	6,020.34	5,827.09	47.12	23.98	-178.23	70.71	1,047.24	1,199.41	1,164.23	35.18	34.094	
6,400.00	5,923.36	6,116.61	5,923.36	47.58	24.09	-178.29	70.71	1,047.24	1,226.43	1,190.88	35.54	34.505	
6,500.00	6,020.52	6,213.77	6,020.52	47.98	24.20	-178.33	70.71	1,047.24	1,250.07	1,214.22	35.85	34.866	
6,600.00	6,118.44	6,311.69	6,118.44	48.33	24.32	-178.37	70.71	1,047.24	1,270.31	1,234.20	36.11	35.179	
6,700.00	6,217.01	6,410.26	6,217.01	48.62	24.44	-178.40	70.71	1,047.24	1,287.12	1,250.81	36.31	35.448	
6,800.00	6,316.11	6,509.36	6,316.11	48.86	24.56	-178.43	70.71	1,047.24	1,300.48	1,264.03	36.45	35.674	
6,900.00	6,415.61	6,608.86	6,415.61	49.05	24.68	-178.44	70.71	1,047.24	1,310.38	1,273.83	36.54	35.860	
7,000.00	6,515.40	6,708.65	6,515.40	49.19	24.80	-178.45	70.71	1,047.24	1,316.79	1,280.22	36.57	36.006	
7,100.00	6,615.35	6,808.60	6,615.35	49.28	24.93	-178.46	70.71	1,047.24	1,319.73	1,283.19	36.54	36.115	
7,134.09	6,649.44	6,842.69	6,649.44	49.31	24.97	-90.38	70.71	1,047.24	1,319.93	1,283.41	36.52	36.141	
7,200.00	6,715.35	6,908.60	6,715.35	49.34	25.06	-90.38	70.71	1,047.24	1,319.93	1,283.20	36.73	35.932	
7,300.00	6,815.35	7,008.60	6,815.35	49.41	25.19	-90.38	70.71	1,047.24	1,319.93	1,282.87	37.06	35.616	
7,400.00	6,915.35	7,108.60	6,915.35	49.48	25.32	-90.38	70.71	1,047.24	1,319.93	1,282.54	37.39	35.303	
7,500.00	7,015.35	7,208.60	7,015.35	49.54	25.45	-90.38	70.71	1,047.24	1,319.93	1,282.21	37.72	34.993	
7,600.00	7,115.35	7,308.60	7,115.35	49.61	25.58	-90.38	70.71	1,047.24	1,319.93	1,281.88	38.05	34.687	
7,700.00	7,215.35	7,408.60	7,215.35	49.68	25.71	-90.38	70.71	1,047.24	1,319.93	1,281.54	38.39	34.384	
7,800.00	7,315.35	7,508.60	7,315.35	49.75	25.85	-90.38	70.71	1,047.24	1,319.93	1,281.21	38.72	34.085	
7,900.00	7,415.35	7,608.60	7,415.35	49.82	25.98	-90.38	70.71	1,047.24	1,319.93	1,280.87	39.06	33.789	
8,000.00	7,515.35	7,708.60	7,515.35	49.89	26.12	-90.38	70.71	1,047.24	1,319.93	1,280.53	39.41	33.496	
8,100.00	7,615.35	7,808.60	7,615.35	49.97	26.26	-90.38	70.71	1,047.24	1,319.93	1,280.18	39.75	33.207	
8,200.00	7,715.35	7,908.60	7,715.35	50.04	26.40	-90.38	70.71	1,047.24	1,319.93	1,279.84	40.09	32.921	
8,300.00	7,815.35	8,008.60	7,815.35	50.11	26.54	-90.38	70.71	1,047.24	1,319.93	1,279.49	40.44	32.638	
8,400.00	7,915.35	8,108.60	7,915.35	50.19	26.68	-90.38	70.71	1,047.24	1,319.93	1,279.14	40.79	32.359	
8,500.00	8,015.35	8,208.60	8,015.35	50.27	26.83	-90.38	70.71	1,047.24	1,319.93	1,278.79	41.14	32.083	
8,511.65	8,027.00	8,220.25	8,027.00	50.27	26.84	-90.38	70.71	1,047.24	1,319.93	1,278.75	41.18	32.051	

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well P_Riverbend 5-18
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	WELL @ 4932.00ft (Original Well Elev)
<b>Reference Site:</b>	Riverbend 7-13 PAD	<b>MD Reference:</b>	WELL @ 4932.00ft (Original Well Elev)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	P_Riverbend 5-18	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	P_Riverbend 5-18	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	PLAN #1 6-21-10 RHS	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4932.00ft (Original Well Elev) Coordinates are relative to: P\_Riverbend 5-18  
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: 0.43°



<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well P_Riverbend 5-18
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	WELL @ 4932.00ft (Original Well Elev)
<b>Reference Site:</b>	Riverbend 7-13 PAD	<b>MD Reference:</b>	WELL @ 4932.00ft (Original Well Elev)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	P_Riverbend 5-18	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	P_Riverbend 5-18	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	PLAN #1 6-21-10 RHS	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4932.00ft (Original Well Elev) Coordinates are relative to: P\_Riverbend 5-18  
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: 0.43°

