



US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_OLIN 18-31 PAD

P_OLIN 25-31

P_OLIN 25-31

Plan: PLAN #1 4-5-10 RHS

Standard Planning Report

05 April, 2010





Project: COLORADO NORTHERN ZONE - 83
 Site: WELD_OLIN 18-31 PAD
 Well: P_OLIN 25-31
 Wellbore: P_OLIN 25-31
 Section: SECTION 31 T3N R66W
 SHL: 1492 FNL 1280 FWL
 Design: PLAN #1 4-5-10 RHS
 Latitude: 40° 11' 3.170 N
 Longitude: 104° 49' 30.569 W
 GL: 4829.00
 KB: WELL @ 4844.00ft (Original Well Elev)



Weatherford®



Azimuths to True North
 Magnetic North: 9.04°
 Magnetic Field
 Strength: 53137.2snT
 Dip Angle: 66.91°
 Date: 4/5/2010
 Model: IGRF2010

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
3820.00	3998.79	PARKMAN
4255.00	4467.74	SUSSEX
7038.00	7332.97	NIO A
7322.00	7616.97	CODELL
7736.00	8030.97	JSAND

CASING DETAILS

TVD	MD	Name	Size
700.00	700.00	8 5/8"	8.62

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	Start Build 2.00
1896.82	21.94	129.80	1870.22	-132.76	159.36	2.00	129.80	207.41	Start 3339.33 hold at 1896.82 MD
5236.92	21.94	129.80	4967.78	-931.26	1117.82	0.00	0.00	1454.91	Start Drop -2.00
6332.97	0.00	0.00	6038.00	-1064.03	1277.18	2.00	180.00	1662.33	Start 1847.00 hold at 6332.97 MD
8179.97	0.00	0.00	7885.00	-1064.03	1277.18	0.00	0.00	1662.33	TD at 8179.97

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

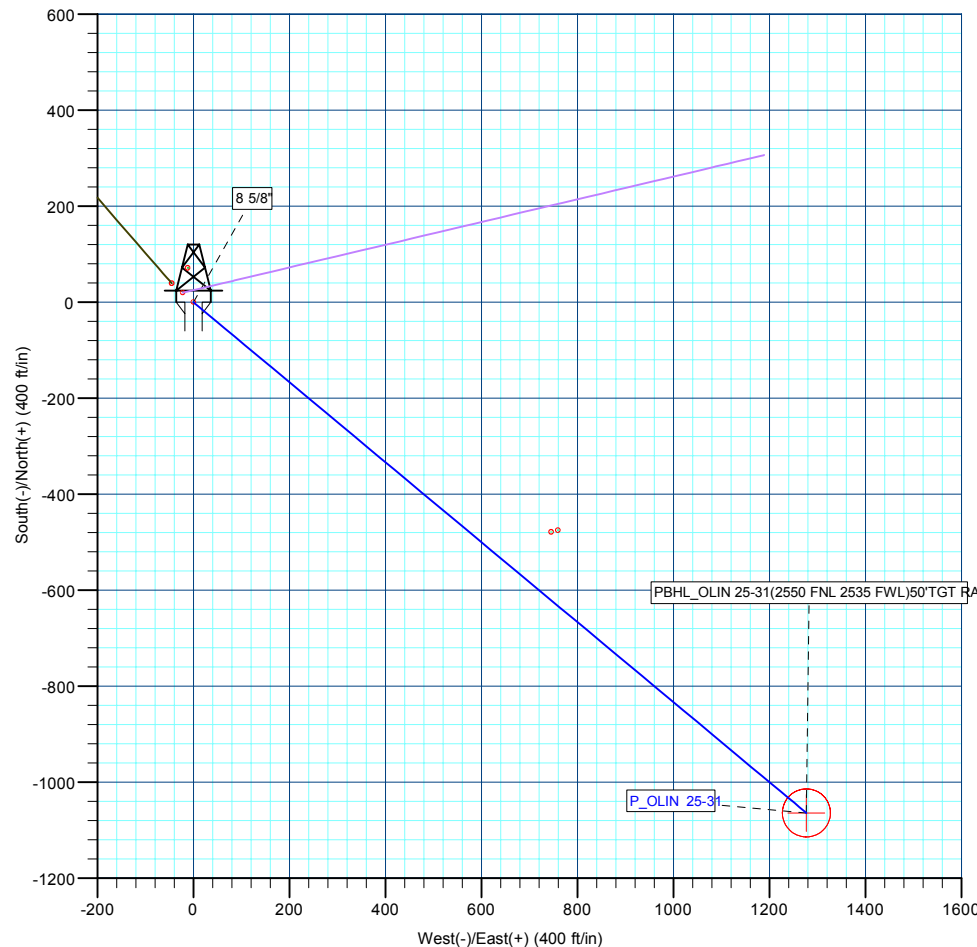
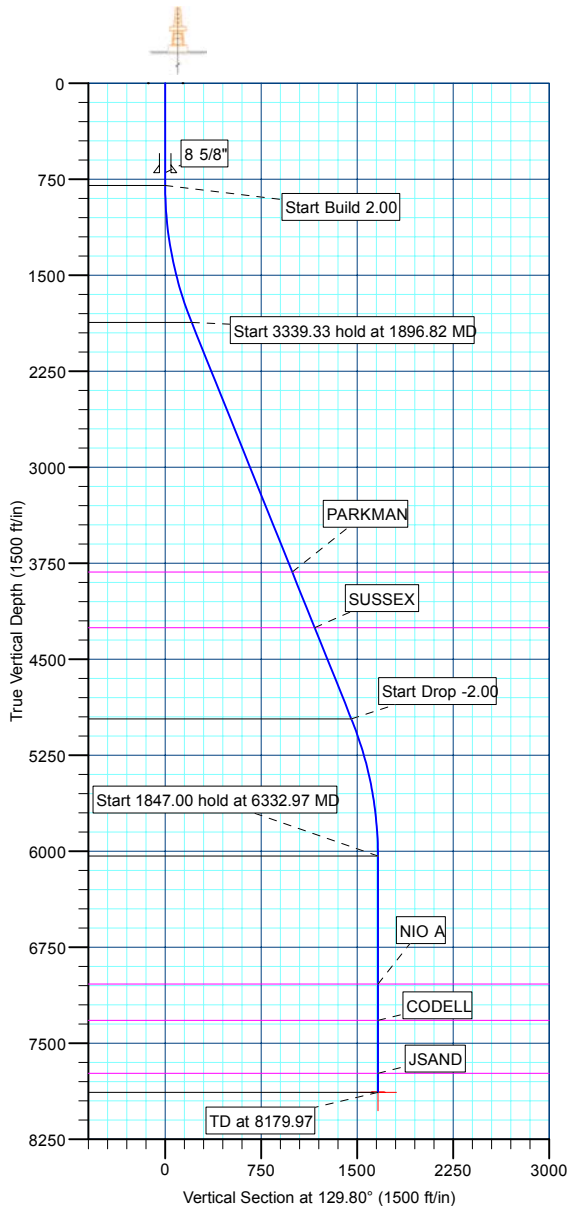
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
PBHL	7885.00	-1064.03	1277.18	40° 10' 52.655 N	104° 49' 14.113 W	Circle (Radius: 50.00)

WELL DETAILS: P_OLIN 25-31

+N/-S	+E/-W	Northing	Ground Level: Easting	4829.00 Latitude	Longitude	Slot
0.00	0.00	1310669.33	3188546.90	40° 11' 3.170 N	104° 49' 30.569 W	

LEGEND

— HSR CAROL MILLER #6-31 EXISTING, HSR CAROL MILLER #6-31 EXISTING, HSR CAROL MILLER #6-31 EXISTING V0
 — MILLER FEDERAL #6-31A EXISTING, MILLER FEDERAL #6-31A EXISTING, MILLER FEDERAL #6-31A EXISTING V0
 — P_OLIN 21-31, P_OLIN 21-31, PLAN #1 4-5-10 RHS V0
 — P_OLIN 30-31, P_OLIN 30-31, PLAN #1 4-5-10 RHS V0
 — UPRR 42 PAN AM UNIT X TRUE #1 EXISTING, UPRR 42 PAN AM UNIT X TRUE #1 EXISTING, UPRR 42 PAN AM UNIT X TRUE #1 EXISTING V0
 — PLAN #1 4-5-10 RHS



Plan: PLAN #1 4-5-10 RHS (P_OLIN 25-31/P_OLIN 25-31)

Created By: Robert H. Scott Date: 16:03, April 05 2010

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_OLIN 25-31
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 4844.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 4844.00ft (Original Well Elev)
Site:	WELD_OLIN 18-31 PAD	North Reference:	True
Well:	P_OLIN 25-31	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_OLIN 25-31		
Design:	PLAN #1 4-5-10 RHS		

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

Site						WELD_OLIN 18-31 PAD, SECTION 31 T3N R66W											
Site Position:						Northing:			1,310,688.85 ft			Latitude:			40° 11' 3.365 N		
From:			Lat/Long			Easting:			3,188,524.40 ft			Longitude:			104° 49' 30.857 W		
Position Uncertainty:			0.00 ft			Slot Radius:			in			Grid Convergence:			0.44 °		

Well	P_OLIN 25-31					
Well Position	+N/-S	-19.68 ft	Northing:	1,310,669.33 ft	Latitude:	40° 11' 3.170 N
	+E/-W	22.35 ft	Easting:	3,188,546.90 ft	Longitude:	104° 49' 30.569 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	4,829.00 ft

Wellbore	P_OLIN 25-31				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	4/5/2010	9.04	66.91	53,137

Design	PLAN #1 4-5-10 RHS			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	129.80

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,896.82	21.94	129.80	1,870.22	-132.76	159.36	2.00	2.00	0.00	129.80	
5,236.15	21.94	129.80	4,967.78	-931.26	1,117.82	0.00	0.00	0.00	0.00	
6,332.97	0.00	0.00	6,038.00	-1,064.03	1,277.18	2.00	-2.00	0.00	180.00	
8,179.97	0.00	0.00	7,885.00	-1,064.03	1,277.18	0.00	0.00	0.00	0.00	PBHL_OLIN 25-31(

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_OLIN 25-31
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 4844.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 4844.00ft (Original Well Elev)
Site:	WELD_OLIN 18-31 PAD	North Reference:	True
Well:	P_OLIN 25-31	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_OLIN 25-31		
Design:	PLAN #1 4-5-10 RHS		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
Start Build 2.00									
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	2.00	129.80	899.98	-1.12	1.34	1.75	2.00	2.00	0.00
1,000.00	4.00	129.80	999.84	-4.47	5.36	6.98	2.00	2.00	0.00
1,100.00	6.00	129.80	1,099.45	-10.05	12.06	15.69	2.00	2.00	0.00
1,200.00	8.00	129.80	1,198.70	-17.85	21.42	27.88	2.00	2.00	0.00
1,300.00	10.00	129.80	1,297.47	-27.86	33.44	43.52	2.00	2.00	0.00
1,400.00	12.00	129.80	1,395.62	-40.07	48.10	62.60	2.00	2.00	0.00
1,500.00	14.00	129.80	1,493.06	-54.47	65.38	85.10	2.00	2.00	0.00
1,600.00	16.00	129.80	1,589.64	-71.03	85.26	110.98	2.00	2.00	0.00
1,700.00	18.00	129.80	1,685.27	-89.75	107.73	140.21	2.00	2.00	0.00
1,800.00	20.00	129.80	1,779.82	-110.59	132.74	172.77	2.00	2.00	0.00
Start 3339.33 hold at 1896.82 MD									
1,896.82	21.94	129.80	1,870.22	-132.76	159.36	207.41	2.00	2.00	0.00
1,900.00	21.94	129.80	1,873.17	-133.52	160.27	208.60	0.00	0.00	0.00
2,000.00	21.94	129.80	1,965.93	-157.43	188.97	245.96	0.00	0.00	0.00
2,100.00	21.94	129.80	2,058.69	-181.35	217.67	283.32	0.00	0.00	0.00
2,200.00	21.94	129.80	2,151.45	-205.26	246.38	320.67	0.00	0.00	0.00
2,300.00	21.94	129.80	2,244.21	-229.17	275.08	358.03	0.00	0.00	0.00
2,400.00	21.94	129.80	2,336.97	-253.08	303.78	395.39	0.00	0.00	0.00
2,500.00	21.94	129.80	2,429.73	-276.99	332.48	432.75	0.00	0.00	0.00
2,600.00	21.94	129.80	2,522.49	-300.91	361.19	470.11	0.00	0.00	0.00
2,700.00	21.94	129.80	2,615.25	-324.82	389.89	507.46	0.00	0.00	0.00
2,800.00	21.94	129.80	2,708.01	-348.73	418.59	544.82	0.00	0.00	0.00
2,900.00	21.94	129.80	2,800.77	-372.64	447.29	582.18	0.00	0.00	0.00
3,000.00	21.94	129.80	2,893.53	-396.55	476.00	619.54	0.00	0.00	0.00
3,100.00	21.94	129.80	2,986.29	-420.47	504.70	656.90	0.00	0.00	0.00
3,200.00	21.94	129.80	3,079.05	-444.38	533.40	694.25	0.00	0.00	0.00
3,300.00	21.94	129.80	3,171.81	-468.29	562.10	731.61	0.00	0.00	0.00
3,400.00	21.94	129.80	3,264.57	-492.20	590.80	768.97	0.00	0.00	0.00
3,500.00	21.94	129.80	3,357.33	-516.11	619.51	806.33	0.00	0.00	0.00
3,600.00	21.94	129.80	3,450.09	-540.03	648.21	843.68	0.00	0.00	0.00
3,700.00	21.94	129.80	3,542.85	-563.94	676.91	881.04	0.00	0.00	0.00
3,800.00	21.94	129.80	3,635.61	-587.85	705.61	918.40	0.00	0.00	0.00
3,900.00	21.94	129.80	3,728.37	-611.76	734.32	955.76	0.00	0.00	0.00
PARKMAN									
3,998.79	21.94	129.80	3,820.00	-635.38	762.67	992.66	0.00	0.00	0.00
4,000.00	21.94	129.80	3,821.13	-635.67	763.02	993.12	0.00	0.00	0.00
4,100.00	21.94	129.80	3,913.89	-659.59	791.72	1,030.47	0.00	0.00	0.00
4,200.00	21.94	129.80	4,006.65	-683.50	820.42	1,067.83	0.00	0.00	0.00
4,300.00	21.94	129.80	4,099.41	-707.41	849.13	1,105.19	0.00	0.00	0.00
4,400.00	21.94	129.80	4,192.17	-731.32	877.83	1,142.55	0.00	0.00	0.00
SUSSEX									
4,467.74	21.94	129.80	4,255.00	-747.52	897.27	1,167.85	0.00	0.00	0.00
4,500.00	21.94	129.80	4,284.93	-755.23	906.53	1,179.91	0.00	0.00	0.00
4,600.00	21.94	129.80	4,377.69	-779.15	935.23	1,217.26	0.00	0.00	0.00
4,700.00	21.94	129.80	4,470.45	-803.06	963.93	1,254.62	0.00	0.00	0.00
4,800.00	21.94	129.80	4,563.21	-826.97	992.64	1,291.98	0.00	0.00	0.00
4,900.00	21.94	129.80	4,655.97	-850.88	1,021.34	1,329.34	0.00	0.00	0.00
5,000.00	21.94	129.80	4,748.73	-874.79	1,050.04	1,366.69	0.00	0.00	0.00
5,100.00	21.94	129.80	4,841.48	-898.71	1,078.74	1,404.05	0.00	0.00	0.00
5,200.00	21.94	129.80	4,934.24	-922.62	1,107.45	1,441.41	0.00	0.00	0.00
Start Drop -2.00									

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_OLIN 25-31
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 4844.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 4844.00ft (Original Well Elev)
Site:	WELD_OLIN 18-31 PAD	North Reference:	True
Well:	P_OLIN 25-31	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_OLIN 25-31		
Design:	PLAN #1 4-5-10 RHS		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,236.15	21.94	129.80	4,967.78	-931.26	1,117.82	1,454.91	0.00	0.00	0.00
5,300.00	20.66	129.80	5,027.27	-946.11	1,135.64	1,478.11	2.00	-2.00	0.00
5,400.00	18.66	129.80	5,121.43	-967.64	1,161.49	1,511.75	2.00	-2.00	0.00
5,500.00	16.66	129.80	5,216.71	-987.06	1,184.79	1,542.08	2.00	-2.00	0.00
5,600.00	14.66	129.80	5,313.00	-1,004.33	1,205.53	1,569.07	2.00	-2.00	0.00
5,700.00	12.66	129.80	5,410.16	-1,019.45	1,223.67	1,592.69	2.00	-2.00	0.00
5,800.00	10.66	129.80	5,508.10	-1,032.38	1,239.20	1,612.89	2.00	-2.00	0.00
5,900.00	8.66	129.80	5,606.67	-1,043.12	1,252.09	1,629.67	2.00	-2.00	0.00
6,000.00	6.66	129.80	5,705.78	-1,051.65	1,262.33	1,643.00	2.00	-2.00	0.00
6,100.00	4.66	129.80	5,805.28	-1,057.96	1,269.91	1,652.86	2.00	-2.00	0.00
6,200.00	2.66	129.80	5,905.07	-1,062.05	1,274.81	1,659.24	2.00	-2.00	0.00
6,300.00	0.66	129.80	6,005.03	-1,063.90	1,277.03	1,662.14	2.00	-2.00	0.00
Start 1847.00 hold at 6332.97 MD									
6,332.97	0.00	0.00	6,038.00	-1,064.03	1,277.18	1,662.33	2.00	-2.00	-393.65
6,400.00	0.00	0.00	6,105.03	-1,064.03	1,277.18	1,662.33	0.00	0.00	0.00
6,500.00	0.00	0.00	6,205.03	-1,064.03	1,277.18	1,662.33	0.00	0.00	0.00
6,600.00	0.00	0.00	6,305.03	-1,064.03	1,277.18	1,662.33	0.00	0.00	0.00
6,700.00	0.00	0.00	6,405.03	-1,064.03	1,277.18	1,662.33	0.00	0.00	0.00
6,800.00	0.00	0.00	6,505.03	-1,064.03	1,277.18	1,662.33	0.00	0.00	0.00
6,900.00	0.00	0.00	6,605.03	-1,064.03	1,277.18	1,662.33	0.00	0.00	0.00
7,000.00	0.00	0.00	6,705.03	-1,064.03	1,277.18	1,662.33	0.00	0.00	0.00
7,100.00	0.00	0.00	6,805.03	-1,064.03	1,277.18	1,662.33	0.00	0.00	0.00
7,200.00	0.00	0.00	6,905.03	-1,064.03	1,277.18	1,662.33	0.00	0.00	0.00
7,300.00	0.00	0.00	7,005.03	-1,064.03	1,277.18	1,662.33	0.00	0.00	0.00
NIO A									
7,332.97	0.00	0.00	7,038.00	-1,064.03	1,277.18	1,662.33	0.00	0.00	0.00
7,400.00	0.00	0.00	7,105.03	-1,064.03	1,277.18	1,662.33	0.00	0.00	0.00
7,500.00	0.00	0.00	7,205.03	-1,064.03	1,277.18	1,662.33	0.00	0.00	0.00
7,600.00	0.00	0.00	7,305.03	-1,064.03	1,277.18	1,662.33	0.00	0.00	0.00
CODELL									
7,616.97	0.00	0.00	7,322.00	-1,064.03	1,277.18	1,662.33	0.00	0.00	0.00
7,700.00	0.00	0.00	7,405.03	-1,064.03	1,277.18	1,662.33	0.00	0.00	0.00
7,800.00	0.00	0.00	7,505.03	-1,064.03	1,277.18	1,662.33	0.00	0.00	0.00
7,900.00	0.00	0.00	7,605.03	-1,064.03	1,277.18	1,662.33	0.00	0.00	0.00
8,000.00	0.00	0.00	7,705.03	-1,064.03	1,277.18	1,662.33	0.00	0.00	0.00
JSAND									
8,030.97	0.00	0.00	7,736.00	-1,064.03	1,277.18	1,662.33	0.00	0.00	0.00
8,100.00	0.00	0.00	7,805.03	-1,064.03	1,277.18	1,662.33	0.00	0.00	0.00
PBHL_OLIN 25-31(2550 FNL 2535 FWL)50'TGT RAD									
8,179.97	0.00	0.00	7,885.00	-1,064.03	1,277.18	1,662.33	0.00	0.00	0.00

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
PBHL_OLIN 25-31(25	0.00	0.00	7,885.00	-1,064.03	1,277.18	1,309,615.06	3,189,832.14	40° 10' 52.655 N	104° 49' 14.113 W
- plan hits target center									
- Circle (radius 50.00)									

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_OLIN 25-31
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 4844.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 4844.00ft (Original Well Elev)
Site:	WELD_OLIN 18-31 PAD	North Reference:	True
Well:	P_OLIN 25-31	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_OLIN 25-31		
Design:	PLAN #1 4-5-10 RHS		

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
700.00	700.00	8 5/8"	8.62	11.00	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,998.79	3,820.00	PARKMAN				
4,467.74	4,255.00	SUSSEX				
7,332.97	7,038.00	NIO A				
7,616.97	7,322.00	CODELL				
8,030.97	7,736.00	JSAND				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
800.00	800.00	0.00	0.00	Start Build 2.00	
1,896.82	1,870.22	-132.76	159.36	Start 3339.33 hold at 1896.82 MD	
5,236.15	4,967.78	-931.26	1,117.82	Start Drop -2.00	
6,332.97	6,038.00	-1,064.03	1,277.18	Start 1847.00 hold at 6332.97 MD	
8,179.97	7,885.00	-1,064.03	1,277.18	TD at 8179.97	



US ROCKIES REGION PLANNING

**COLORADO NORTHERN ZONE - 83
WELD_OLIN 18-31 PAD
P_OLIN 25-31**

**P_OLIN 25-31
PLAN #1 4-5-10 RHS**

Anticollision Report

05 April, 2010



Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_OLIN 25-31
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4844.00ft (Original Well Elev)
Reference Site:	WELD_OLIN 18-31 PAD	MD Reference:	WELL @ 4844.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_OLIN 25-31	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_OLIN 25-31	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 4-5-10 RHS	Offset TVD Reference:	Offset Datum

Reference	PLAN #1 4-5-10 RHS		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	0.00 to 20,000.00ft	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.00ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program	Date 4/5/2010			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	8,179.97	PLAN #1 4-5-10 RHS (P_OLIN 25-31)	INC	Inclinometer (Totco/Teledrift)

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
WELD_OLIN 18-31 PAD						
HSR CAROL MILLER #6-31 EXISTING - HSR CAROL M	3,716.06	3,546.44	120.46	-2,781.78	0.042	Level 1, CC, SF
HSR CAROL MILLER #6-31 EXISTING - HSR CAROL M	3,800.00	3,624.05	124.57	-2,785.22	0.043	Level 1, ES
MILLER FEDERAL #6-31A EXISTING - MILLER FEDER	3,692.60	3,524.27	110.03	-2,775.28	0.038	Level 1, CC
MILLER FEDERAL #6-31A EXISTING - MILLER FEDER	3,700.00	3,531.15	110.06	-2,781.28	0.038	Level 1, ES, SF
P_OLIN 21-31 - P_OLIN 21-31 - PLAN #1 4-5-10 RHS	800.00	800.00	29.78	-1.51	0.952	Level 1, CC
P_OLIN 21-31 - P_OLIN 21-31 - PLAN #1 4-5-10 RHS	8,179.97	8,047.00	1,373.26	-6,275.38	0.180	Level 1, ES, SF
P_OLIN 30-31 - P_OLIN 30-31 - PLAN #1 4-5-10 RHS	800.00	800.00	59.76	42.44	3.451	CC, ES, SF
UPRR 42 PAN AM UNIT X TRUE #1 EXISTING - UPRR	807.92	793.11	70.11	34.32	1.959	CC
UPRR 42 PAN AM UNIT X TRUE #1 EXISTING - UPRR	1,300.00	1,282.57	106.38	11.10	1.117	Level 2, ES
UPRR 42 PAN AM UNIT X TRUE #1 EXISTING - UPRR	1,400.00	1,380.69	123.89	11.34	1.101	Level 2, SF

Offset Design WELD_OLIN 18-31 PAD - HSR CAROL MILLER #6-31 EXISTING - HSR CAROL MILLER #6-31 EXIST											
Survey Program: 412-INC											
Reference											
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)
0.00	0.00	0.00	0.00	0.00	0.00	122.03	-475.02	759.42	895.81		
100.00	100.00	87.81	87.81	1.13	1.68	122.04	-475.32	759.42	895.90	893.59	2.31
200.00	200.00	188.83	188.83	3.44	3.61	122.05	-475.46	759.42	895.98	890.01	5.97
300.00	300.00	289.84	289.84	5.52	5.54	122.05	-475.39	759.42	895.94	886.53	9.41
400.00	400.00	390.85	390.85	7.56	7.47	122.03	-475.11	759.42	895.79	882.98	12.81
500.00	500.00	489.68	489.67	9.59	10.00	122.02	-474.88	759.42	895.67	879.12	16.55
600.00	600.00	589.21	589.21	11.61	12.73	122.01	-474.79	759.42	895.62	875.21	20.41
644.48	644.48	633.49	633.48	12.51	13.95	122.01	-474.78	759.42	895.61	873.50	22.12
700.00	700.00	688.75	688.74	13.63	15.46	122.01	-474.79	759.42	895.62	871.37	24.26
800.00	800.00	788.29	788.28	15.65	18.20	122.02	-474.89	759.42	895.68	867.57	28.10
900.00	899.98	888.05	888.04	16.96	20.97	-7.79	-475.09	759.42	894.05	858.70	35.35
1,000.00	999.84	988.19	988.17	26.63	23.82	-7.84	-475.26	759.42	888.96	851.68	37.28
1,100.00	1,099.45	1,088.08	1,088.06	51.37	26.67	-7.93	-475.37	759.42	880.38	840.04	40.34
1,200.00	1,198.70	1,187.59	1,187.58	88.69	29.51	-8.07	-475.43	759.42	868.34	822.83	45.51
1,300.00	1,297.47	1,286.61	1,286.59	137.41	32.33	-8.27	-475.43	759.42	852.86	799.48	53.38
1,400.00	1,395.62	1,385.01	1,384.99	197.15	35.14	-8.52	-475.37	759.42	833.94	769.90	64.04
1,500.00	1,493.06	1,482.66	1,482.64	267.70	37.93	-8.83	-475.26	759.42	811.64	734.09	77.55
											10.466

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

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_OLIN 25-31
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4844.00ft (Original Well Elev)
Reference Site:	WELD_OLIN 18-31 PAD	MD Reference:	WELL @ 4844.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_OLIN 25-31	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_OLIN 25-31	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 4-5-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 ft
Survey Program: 412-INC												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	
1,600.00	1,589.64	1,579.44	1,579.42	348.93	40.69	-9.21	-475.10	759.42	785.97	691.82	94.15	8.348	
1,700.00	1,685.27	1,672.80	1,672.76	440.74	44.32	-9.65	-475.24	759.42	757.17	642.42	114.75	6.598	
1,800.00	1,779.82	1,767.72	1,767.68	542.98	48.74	-10.18	-475.58	759.42	725.22	585.17	140.05	5.178	
1,896.82	1,870.22	1,858.46	1,858.42	651.80	52.97	-10.80	-475.83	759.42	691.20	521.86	169.34	4.082	
1,900.00	1,873.17	1,861.42	1,861.38	655.53	53.10	-10.82	-475.83	759.42	690.04	519.68	170.36	4.051	
2,000.00	1,965.93	1,954.48	1,954.44	772.89	57.44	-11.42	-476.02	759.42	653.38	449.28	204.10	3.201	
2,100.00	2,058.69	2,047.50	2,047.46	890.25	61.77	-12.10	-476.13	759.42	616.75	375.28	241.47	2.554	
2,200.00	2,151.45	2,140.49	2,140.44	1,007.62	66.10	-12.86	-476.18	759.42	580.18	297.00	283.18	2.049	
2,300.00	2,244.21	2,233.43	2,233.39	1,124.99	70.43	-13.74	-476.15	759.42	543.67	213.59	330.08	1.647	
2,400.00	2,336.97	2,326.34	2,326.29	1,242.36	74.75	-14.75	-476.05	759.42	507.26	123.98	383.28	1.323 Level 3	
2,500.00	2,429.73	2,419.20	2,419.16	1,359.74	79.08	-15.93	-475.88	759.42	470.98	26.79	444.20	1.060 Level 2	
2,600.00	2,522.49	2,512.03	2,511.98	1,477.11	83.40	-17.30	-475.64	759.42	434.88	-79.78	514.66	0.845 Level 1	
2,700.00	2,615.25	2,604.81	2,604.77	1,594.49	87.72	-18.93	-475.33	759.42	399.00	-198.07	597.07	0.668 Level 1	
2,800.00	2,708.01	2,696.34	2,696.21	1,711.86	92.43	-20.83	-475.12	759.42	363.51	-329.86	693.37	0.524 Level 1	
2,900.00	2,800.77	2,789.40	2,789.27	1,829.24	99.49	-23.03	-475.65	759.42	328.68	-478.87	807.55	0.407 Level 1	
3,000.00	2,893.53	2,882.40	2,882.26	1,946.62	106.54	-25.76	-476.08	759.42	294.37	-651.05	945.42	0.311 Level 1	
3,100.00	2,986.29	2,975.34	2,975.18	2,064.00	113.58	-29.21	-476.39	759.42	260.79	-853.46	1,114.25	0.234 Level 1	
3,200.00	3,079.05	3,068.21	3,068.05	2,181.37	120.62	-33.64	-476.59	759.42	228.30	-1,095.09	1,323.39	0.173 Level 1	
3,300.00	3,171.81	3,161.01	3,160.85	2,298.75	127.66	-39.46	-476.69	759.42	197.49	-1,386.04	1,583.54	0.125 Level 1	
3,400.00	3,264.57	3,253.75	3,253.58	2,416.13	134.69	-47.21	-476.67	759.42	169.33	-1,733.06	1,902.38	0.089 Level 1	
3,500.00	3,357.33	3,346.43	3,346.25	2,533.51	141.72	-57.56	-476.54	759.42	145.40	-2,125.58	2,270.98	0.064 Level 1	
3,600.00	3,450.09	3,439.03	3,438.86	2,650.89	148.74	-70.94	-476.30	759.42	128.17	-2,507.44	2,635.61	0.049 Level 1	
3,700.00	3,542.85	3,531.58	3,531.40	2,768.27	155.75	-86.80	-475.96	759.42	120.61	-2,761.33	2,881.94	0.042 Level 1	
3,716.06	3,557.75	3,546.44	3,546.26	2,787.12	156.88	-89.46	-475.89	759.42	120.46	-2,781.78	2,902.24	0.042 Level 1, CC, SF	
3,800.00	3,635.61	3,624.05	3,623.87	2,885.64	162.76	-103.09	-475.50	759.42	124.57	-2,785.22	2,909.78	0.043 Level 1, ES	
3,900.00	3,728.37	3,716.63	3,716.20	3,003.02	169.72	-117.44	-474.92	759.42	139.13	-2,608.67	2,747.80	0.051 Level 1	
4,000.00	3,821.13	3,809.42	3,808.98	3,120.40	176.24	-128.83	-474.20	759.42	161.52	-2,344.49	2,506.00	0.064 Level 1	
4,100.00	3,913.89	3,902.31	3,901.85	3,237.78	182.76	-137.43	-473.64	759.42	188.74	-2,078.74	2,267.47	0.083 Level 1	
4,200.00	4,006.65	3,995.28	3,994.82	3,355.16	189.30	-143.90	-473.22	759.42	218.95	-1,842.04	2,060.99	0.106 Level 1	
4,300.00	4,099.41	4,088.35	4,087.87	3,472.54	195.84	-148.84	-472.96	759.42	251.03	-1,638.64	1,889.67	0.133 Level 1	
4,400.00	4,192.17	4,181.50	4,181.02	3,589.92	202.38	-152.69	-472.85	759.42	284.31	-1,464.51	1,748.82	0.163 Level 1	
4,500.00	4,284.93	4,274.75	4,274.25	3,707.30	208.93	-155.76	-472.89	759.42	318.37	-1,314.16	1,632.53	0.195 Level 1	
4,600.00	4,377.69	4,368.08	4,367.57	3,824.68	215.49	-158.25	-473.08	759.42	352.97	-1,182.64	1,535.61	0.230 Level 1	
4,700.00	4,470.45	4,461.51	4,460.97	3,942.06	222.06	-160.32	-473.43	759.42	387.93	-1,065.98	1,453.90	0.267 Level 1	
4,800.00	4,563.21	4,555.02	4,554.47	4,059.44	228.63	-162.06	-473.93	759.42	423.13	-961.05	1,384.18	0.306 Level 1	
4,900.00	4,655.97	4,648.62	4,648.05	4,176.82	235.20	-163.54	-474.58	759.42	458.50	-865.49	1,323.98	0.346 Level 1	
5,000.00	4,748.73	4,739.21	4,738.53	4,294.20	240.88	-164.77	-475.10	759.42	494.19	-780.96	1,275.15	0.388 Level 1	
5,100.00	4,841.48	4,831.85	4,831.17	4,411.58	245.67	-165.84	-475.26	759.42	530.35	-702.07	1,232.42	0.430 Level 1	
5,200.00	4,934.24	4,924.47	4,923.78	4,528.96	250.47	-166.76	-475.39	759.42	566.69	-628.76	1,195.45	0.474 Level 1	
5,236.15	4,967.78	4,957.94	4,957.25	4,571.39	252.20	-167.07	-475.43	759.42	579.86	-603.45	1,183.32	0.490 Level 1	
5,300.00	5,027.27	5,017.32	5,016.63	4,644.25	255.28	-167.67	-475.48	759.42	602.52	-555.06	1,157.58	0.521 Level 1	
5,400.00	5,121.43	5,111.30	5,110.61	4,749.95	260.14	-168.46	-475.53	759.42	635.48	-488.60	1,124.08	0.565 Level 1	
5,500.00	5,216.71	5,206.37	5,205.67	4,845.26	265.06	-169.10	-475.54	759.42	665.28	-432.23	1,097.51	0.606 Level 1	
5,600.00	5,313.00	5,302.42	5,301.72	4,930.06	270.03	-169.62	-475.51	759.42	691.86	-384.80	1,076.66	0.643 Level 1	
5,700.00	5,410.16	5,399.33	5,398.63	5,004.27	275.05	-170.04	-475.44	759.42	715.18	-345.47	1,060.65	0.674 Level 1	
5,800.00	5,508.10	5,497.00	5,496.30	5,067.77	280.11	-170.37	-475.32	759.42	735.19	-313.58	1,048.77	0.701 Level 1	
5,900.00	5,606.67	5,595.30	5,594.60	5,120.50	285.19	-170.63	-475.16	759.42	751.87	-288.65	1,040.52	0.723 Level 1	
6,000.00	5,705.78	5,691.89	5,691.10	5,162.40	289.90	-170.82	-474.86	759.42	765.26	-270.66	1,035.92	0.739 Level 1	
6,100.00	5,805.28	5,791.77	5,790.97	5,193.41	293.82	-170.94	-474.26	759.42	775.45	-259.00	1,034.45	0.750 Level 1	
6,200.00	5,905.07	5,891.96	5,891.15	5,213.49	297.76	-171.01	-473.73	759.42	782.15	-253.09	1,035.24	0.756 Level 1	
6,300.00	6,005.03	5,992.32	5,991.52	5,222.62	301.70	-171.03	-473.28	759.42	785.35	-252.83	1,038.18	0.756 Level 1	
6,332.97	6,038.00	6,025.44	6,024.63	5,223.22	303.00	-41.23	-473.14	759.42	785.64	-253.91	1,039.55	0.756 Level 1	

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

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_OLIN 25-31
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4844.00ft (Original Well Elev)
Reference Site:	WELD_OLIN 18-31 PAD	MD Reference:	WELL @ 4844.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_OLIN 25-31	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_OLIN 25-31	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 4-5-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design		WELD_OLIN 18-31 PAD - HSR CAROL MILLER #6-31 EXISTING - HSR CAROL MILLER #6-31 EXIST										Offset Site Error:		0.00 ft			
Survey Program: 412-INC														Offset Well Error:		0.00 ft	
Reference		Offset		Semi Major Axis			Distance										
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning				
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)						
6,400.00	6,105.03	6,092.75	6,091.94	5,223.21	305.65	-41.21	-472.89	759.42	785.83	-256.68	1,042.50	0.754	Level 1				
6,500.00	6,205.03	6,193.18	6,192.37	5,223.19	309.59	-41.20	-472.58	759.42	786.06	-260.61	1,046.67	0.751	Level 1				
6,600.00	6,305.03	6,293.61	6,292.80	5,223.17	313.54	-41.19	-472.34	759.42	786.24	-264.29	1,050.53	0.748	Level 1				
6,700.00	6,405.03	6,394.05	6,393.23	5,223.16	317.49	-41.18	-472.18	759.42	786.36	-267.74	1,054.10	0.746	Level 1				
6,800.00	6,505.03	6,494.49	6,493.67	5,223.14	321.44	-41.18	-472.09	759.42	786.43	-270.94	1,057.36	0.744	Level 1				
6,900.00	6,605.03	6,594.93	6,594.10	5,223.12	325.38	-41.18	-472.07	759.42	786.44	-273.89	1,060.33	0.742	Level 1				
7,000.00	6,705.03	6,695.38	6,694.54	5,223.11	329.33	-41.18	-472.12	759.42	786.40	-276.60	1,063.01	0.740	Level 1				
7,100.00	6,805.03	6,795.82	6,794.99	5,223.09	333.28	-41.18	-472.25	759.42	786.31	-279.08	1,065.38	0.738	Level 1				
7,200.00	6,905.03	6,896.27	6,895.43	5,223.08	337.22	-41.19	-472.45	759.42	786.15	-281.30	1,067.46	0.736	Level 1				
7,300.00	7,005.03	6,996.73	6,995.88	5,223.07	341.17	-41.21	-472.73	759.42	785.95	-283.29	1,069.24	0.735	Level 1				
7,400.00	7,105.03	7,097.18	7,096.33	5,223.06	345.12	-41.22	-473.07	759.42	785.69	-285.03	1,070.72	0.734	Level 1				
7,500.00	7,205.03	7,197.64	7,196.78	5,223.04	349.07	-41.24	-473.50	759.42	785.37	-286.53	1,071.91	0.733	Level 1				
7,600.00	7,305.03	7,298.10	7,297.23	5,223.03	353.01	-41.27	-473.99	759.42	785.00	-287.79	1,072.79	0.732	Level 1				
7,700.00	7,405.03	7,398.56	7,397.68	5,223.02	356.96	-41.29	-474.56	759.42	784.58	-288.80	1,073.38	0.731	Level 1				
7,769.40	7,474.43	7,468.28	7,467.40	5,223.02	359.70	-41.32	-474.99	759.42	784.25	-289.36	1,073.61	0.730	Level 1				
7,800.00	7,505.03	7,472.00	7,471.09	5,223.02	359.85	-41.32	-475.02	759.42	784.56	-289.05	1,073.61	0.731	Level 1				
7,900.00	7,605.03	7,472.00	7,471.09	5,223.01	359.85	-41.32	-475.02	759.42	793.80	-279.77	1,073.57	0.739	Level 1				
8,000.00	7,705.03	7,472.00	7,471.09	5,223.00	359.85	-41.32	-475.02	759.42	815.30	-258.23	1,073.53	0.759	Level 1				
8,100.00	7,805.03	7,472.00	7,471.09	5,222.99	359.85	-41.32	-475.02	759.42	848.11	-225.39	1,073.50	0.790	Level 1				
8,179.97	7,885.00	7,472.00	7,471.09	5,222.99	359.85	-41.32	-475.02	759.42	881.67	-191.81	1,073.48	0.821	Level 1				

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_OLIN 25-31
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4844.00ft (Original Well Elev)
Reference Site:	WELD_OLIN 18-31 PAD	MD Reference:	WELL @ 4844.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_OLIN 25-31	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_OLIN 25-31	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 4-5-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_OLIN 18-31 PAD - MILLER FEDERAL #6-31A EXISTING - MILLER FEDERAL #6-31A EXISTING													Offset Site Error:	0.00 ft
Survey Program: 302-INC													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	122.70	-478.66	745.45	885.97					
100.00	100.00	86.22	86.21	1.13	2.63	122.73	-479.19	745.45	886.18	883.87	2.32	382.670		
200.00	200.00	189.06	189.06	3.44	5.76	122.74	-479.27	745.45	886.23	880.19	6.03	146.907		
300.00	300.00	291.88	291.88	5.52	8.90	122.71	-478.74	745.45	885.95	876.42	9.52	93.014		
365.76	365.76	354.22	354.20	6.86	11.86	122.70	-478.58	745.45	885.85	873.88	11.97	74.023		
400.00	400.00	388.07	388.05	7.56	13.59	122.70	-478.56	745.45	885.84	872.55	13.29	66.657		
404.97	404.97	392.99	392.97	7.66	13.84	122.70	-478.56	745.45	885.84	872.36	13.48	65.711		
500.00	500.00	488.04	488.00	9.59	18.65	122.70	-478.66	745.45	885.89	868.73	17.16	51.615		
600.00	600.00	588.04	588.00	11.61	23.19	122.70	-478.66	745.45	885.89	864.72	21.17	41.854		
700.00	700.00	688.93	688.88	13.63	27.53	122.70	-478.58	745.45	885.85	860.65	25.20	35.154		
800.00	800.00	788.51	788.45	15.65	31.46	122.69	-478.44	745.45	885.77	856.55	29.23	30.307		
900.00	899.98	888.06	888.01	16.96	35.38	-7.13	-478.39	745.45	884.01	837.11	46.91	18.846		
1,000.00	999.84	987.51	987.45	26.63	39.30	-7.18	-478.43	745.45	878.84	829.24	49.61	17.717		
1,100.00	1,099.45	1,086.73	1,086.66	51.37	43.21	-7.27	-478.55	745.45	870.26	816.98	53.28	16.333		
1,200.00	1,198.70	1,182.56	1,182.48	88.69	48.03	-7.37	-479.07	745.45	858.47	798.96	59.51	14.427		
1,300.00	1,297.47	1,283.32	1,283.23	137.41	54.52	-7.50	-479.79	745.45	843.33	773.85	69.48	12.138		
1,400.00	1,395.62	1,383.36	1,383.26	197.15	60.97	-7.71	-480.09	745.45	824.57	742.58	81.99	10.057		
1,500.00	1,493.06	1,482.51	1,482.42	267.70	67.36	-8.00	-479.97	745.45	802.21	705.06	97.16	8.257		
1,600.00	1,589.64	1,580.65	1,580.56	348.93	73.69	-8.38	-479.46	745.45	776.31	661.03	115.28	6.734		
1,700.00	1,685.27	1,677.56	1,677.36	440.74	79.93	-8.87	-478.56	745.45	746.92	609.99	136.92	5.455		
1,800.00	1,779.82	1,770.37	1,770.17	542.98	85.94	-9.43	-477.77	745.45	714.31	551.97	162.35	4.400		
1,896.82	1,870.22	1,859.31	1,859.09	651.80	91.69	-10.06	-477.37	745.45	679.89	488.49	191.41	3.552		
1,900.00	1,873.17	1,862.21	1,861.99	655.53	91.88	-10.08	-477.36	745.45	678.72	486.30	192.42	3.527		
2,000.00	1,965.93	1,953.66	1,953.43	772.89	97.80	-10.66	-477.32	745.45	641.86	416.01	225.85	2.842		
2,100.00	2,058.69	2,045.33	2,045.09	890.25	103.73	-11.27	-477.64	745.45	605.26	342.97	262.29	2.308		
2,200.00	2,151.45	2,137.20	2,136.94	1,007.62	109.67	-11.93	-478.32	745.45	568.89	266.84	302.06	1.883		
2,300.00	2,244.21	2,231.61	2,231.31	1,124.99	114.61	-12.72	-478.90	745.45	532.55	186.42	346.13	1.539		
2,400.00	2,336.97	2,324.72	2,324.42	1,242.36	118.86	-13.64	-479.19	745.45	496.18	100.47	395.71	1.254 Level 3		
2,500.00	2,429.73	2,417.77	2,417.47	1,359.74	123.10	-14.71	-479.37	745.45	459.88	7.28	452.61	1.016 Level 2		
2,600.00	2,522.49	2,510.77	2,510.46	1,477.11	127.35	-15.98	-479.44	745.45	423.71	-94.95	518.66	0.817 Level 1		
2,700.00	2,615.25	2,603.70	2,603.39	1,594.49	131.59	-17.50	-479.41	745.45	387.71	-208.61	596.32	0.650 Level 1		
2,800.00	2,708.01	2,696.58	2,696.27	1,711.86	135.83	-19.34	-479.27	745.45	351.96	-336.92	688.88	0.511 Level 1		
2,900.00	2,800.77	2,789.39	2,789.08	1,829.24	140.07	-21.60	-479.03	745.45	316.57	-484.28	800.85	0.395 Level 1		
3,000.00	2,893.53	2,882.15	2,881.84	1,946.62	144.30	-24.44	-478.69	745.45	281.69	-656.73	938.42	0.300 Level 1		
3,100.00	2,986.29	2,974.66	2,974.29	2,064.00	149.64	-27.95	-478.66	745.45	247.68	-859.89	1,107.57	0.224 Level 1		
3,200.00	3,079.05	3,067.42	3,067.05	2,181.37	155.08	-32.54	-478.66	745.45	214.80	-1,105.56	1,320.36	0.163 Level 1		
3,300.00	3,171.81	3,160.18	3,159.81	2,298.75	160.52	-38.64	-478.66	745.45	183.64	-1,405.78	1,589.41	0.116 Level 1		
3,400.00	3,264.57	3,252.92	3,252.51	2,416.13	165.72	-46.98	-478.58	745.45	155.24	-1,769.92	1,925.16	0.081 Level 1		
3,500.00	3,357.33	3,345.62	3,345.20	2,533.51	169.95	-58.47	-478.23	745.45	131.51	-2,185.77	2,317.29	0.057 Level 1		
3,600.00	3,450.09	3,438.36	3,437.93	2,650.89	174.19	-73.52	-477.98	745.45	115.35	-2,573.75	2,689.10	0.043 Level 1		
3,692.60	3,535.98	3,524.27	3,523.85	2,759.57	178.11	-89.83	-477.82	745.45	110.03	-2,775.28	2,885.31	0.038 Level 1, CC		
3,700.00	3,542.85	3,531.15	3,530.72	2,768.27	178.42	-91.17	-477.82	745.45	110.06	-2,781.28	2,891.34	0.038 Level 1, ES, SF		
3,800.00	3,635.61	3,623.99	3,623.56	2,885.64	182.66	-108.56	-477.74	745.45	117.09	-2,713.03	2,830.13	0.041 Level 1		
3,900.00	3,728.37	3,716.88	3,716.44	3,003.02	186.90	-123.06	-477.75	745.45	134.47	-2,457.19	2,591.66	0.052 Level 1		
4,000.00	3,821.13	3,809.82	3,809.38	3,120.40	191.15	-134.02	-477.85	745.45	158.80	-2,156.58	2,315.38	0.069 Level 1		
4,100.00	3,913.89	3,902.81	3,902.36	3,237.78	195.39	-142.07	-478.05	745.45	187.35	-1,881.83	2,069.18	0.091 Level 1		
4,200.00	4,006.65	3,995.85	3,995.39	3,355.16	199.64	-148.01	-478.33	745.45	218.44	-1,647.79	1,866.23	0.117 Level 1		
4,300.00	4,099.41	4,091.83	4,091.33	3,472.54	204.55	-152.64	-478.87	745.45	250.99	-1,444.24	1,695.23	0.148 Level 1		
4,400.00	4,192.17	4,180.33	4,179.83	3,589.92	212.51	-155.96	-479.57	745.45	284.44	-1,286.94	1,571.38	0.181 Level 1		
4,500.00	4,284.93	4,267.00	4,266.42	3,707.30	220.30	-158.42	-478.66	745.45	320.13	-1,161.36	1,481.49	0.216 Level 1		
4,600.00	4,377.69	4,366.10	4,365.48	3,824.68	234.33	-160.76	-478.52	745.45	355.52	-1,034.83	1,390.35	0.256 Level 1		
4,700.00	4,470.45	4,459.36	4,458.71	3,942.06	247.52	-162.56	-478.52	745.45	391.23	-931.21	1,322.44	0.296 Level 1		

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

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_OLIN 25-31
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4844.00ft (Original Well Elev)
Reference Site:	WELD_OLIN 18-31 PAD	MD Reference:	WELL @ 4844.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_OLIN 25-31	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_OLIN 25-31	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 4-5-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 ft
Survey Program: 302-INC												Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
4,800.00	4,563.21	4,548.00	4,547.13	4,059.44	260.07	-164.00	-478.66	745.45	427.13	-843.16	1,270.29	0.336	Level 1
4,900.00	4,655.97	4,644.87	4,643.97	4,176.82	273.24	-165.32	-478.66	745.45	463.32	-757.21	1,220.54	0.380	Level 1
5,000.00	4,748.73	4,737.66	4,736.73	4,294.20	285.85	-166.40	-478.66	745.45	499.70	-682.35	1,182.05	0.423	Level 1
5,100.00	4,841.48	4,830.59	4,829.48	4,411.58	298.53	-167.34	-478.66	745.45	536.22	-613.59	1,149.80	0.466	Level 1
5,200.00	4,934.24	4,923.37	4,922.24	4,528.96	311.20	-168.16	-478.66	745.45	572.84	-549.81	1,122.65	0.510	Level 1
5,236.15	4,967.78	4,956.92	4,955.78	4,571.39	315.78	-168.43	-478.66	745.45	586.10	-527.82	1,113.92	0.526	Level 1
5,300.00	5,027.27	5,016.43	5,015.27	4,644.25	323.91	-168.96	-478.66	745.45	608.90	-486.30	1,095.20	0.556	Level 1
5,400.00	5,121.43	5,109.91	5,108.56	4,749.95	335.49	-169.64	-478.37	745.45	642.24	-430.70	1,072.94	0.599	Level 1
5,500.00	5,216.71	5,206.58	5,205.21	4,845.26	347.45	-170.21	-478.34	745.45	672.18	-382.67	1,054.85	0.637	Level 1
5,600.00	5,313.00	5,304.41	5,303.00	4,930.06	359.56	-170.69	-478.57	745.45	698.65	-342.08	1,040.73	0.671	Level 1
5,700.00	5,410.16	5,402.00	5,400.41	5,004.27	372.15	-171.10	-479.06	745.45	721.62	-308.73	1,030.35	0.700	Level 1
5,800.00	5,508.10	5,498.28	5,496.68	5,067.77	384.72	-171.41	-479.30	745.45	741.41	-283.50	1,024.91	0.723	Level 1
5,900.00	5,606.67	5,595.09	5,593.46	5,120.50	397.37	-171.64	-479.25	745.45	758.05	-265.63	1,023.68	0.741	Level 1
6,000.00	5,705.78	5,692.31	5,690.67	5,162.40	410.06	-171.80	-478.88	745.45	771.52	-254.73	1,026.25	0.752	Level 1
6,100.00	5,805.28	5,792.33	5,790.40	5,193.41	423.14	-171.91	-478.31	745.45	781.71	-250.27	1,031.98	0.757	Level 1
6,200.00	5,905.07	5,893.67	5,891.71	5,213.49	436.41	-171.97	-477.94	745.45	788.30	-250.68	1,038.97	0.759	Level 1
6,300.00	6,005.03	5,995.24	5,993.24	5,222.62	449.70	-172.01	-477.85	745.45	791.23	-255.67	1,046.90	0.756	Level 1
6,332.97	6,038.00	6,028.76	6,026.75	5,223.22	454.09	-42.21	-477.88	745.45	791.40	-258.24	1,049.64	0.754	Level 1
6,400.00	6,105.03	6,096.90	6,094.86	5,223.21	463.01	-42.22	-478.03	745.45	791.29	-263.69	1,054.98	0.750	Level 1
6,500.00	6,205.03	6,198.60	6,196.51	5,223.19	476.32	-42.24	-478.48	745.45	790.96	-271.07	1,062.03	0.745	Level 1
6,523.06	6,228.09	6,222.05	6,219.96	5,223.19	479.39	-42.25	-478.62	745.45	790.86	-272.64	1,063.50	0.744	Level 1
6,600.00	6,305.03	6,290.01	6,287.66	5,223.17	484.60	-42.22	-477.97	745.45	791.35	-278.37	1,069.72	0.740	Level 1
6,700.00	6,405.03	6,393.92	6,391.56	5,223.16	492.03	-42.19	-477.37	745.45	791.78	-285.51	1,077.29	0.735	Level 1
6,800.00	6,505.03	6,497.89	6,495.51	5,223.14	499.46	-42.19	-477.46	745.45	791.71	-290.33	1,082.04	0.732	Level 1
6,900.00	6,605.03	6,601.90	6,599.49	5,223.12	506.90	-42.23	-478.25	745.45	791.15	-292.82	1,083.97	0.730	Level 1
7,000.00	6,705.03	6,697.41	6,694.96	5,223.11	512.10	-42.26	-478.89	745.45	790.65	-294.36	1,085.01	0.729	Level 1
7,100.00	6,805.03	6,796.42	6,793.96	5,223.09	516.55	-42.27	-479.13	745.45	790.47	-296.74	1,087.21	0.727	Level 1
7,192.51	6,897.53	6,887.99	6,885.54	5,223.08	520.66	-42.28	-479.21	745.45	790.41	-299.46	1,089.87	0.725	Level 1
7,200.00	6,905.03	6,895.41	6,892.96	5,223.08	520.99	-42.28	-479.21	745.45	790.41	-299.70	1,090.11	0.725	Level 1
7,300.00	7,005.03	6,994.40	6,991.95	5,223.07	525.44	-42.27	-479.11	745.45	790.49	-303.22	1,093.71	0.723	Level 1
7,400.00	7,105.03	7,093.38	7,090.93	5,223.06	529.89	-42.26	-478.84	745.45	790.69	-307.32	1,098.00	0.720	Level 1
7,500.00	7,205.03	7,195.52	7,193.03	5,223.04	535.23	-42.25	-478.66	745.45	790.82	-311.74	1,102.57	0.717	Level 1
7,600.00	7,305.03	7,295.53	7,293.03	5,223.03	541.07	-42.25	-478.66	745.45	790.82	-315.88	1,106.70	0.715	Level 1
7,700.00	7,405.03	7,395.53	7,393.03	5,223.02	546.91	-42.25	-478.66	745.45	790.82	-320.03	1,110.85	0.712	Level 1
7,800.00	7,505.03	7,495.54	7,493.03	5,223.02	552.75	-42.25	-478.66	745.45	790.82	-324.18	1,115.00	0.709	Level 1
7,900.00	7,605.03	7,595.54	7,593.03	5,223.01	558.59	-42.25	-478.66	745.45	790.82	-328.34	1,119.16	0.707	Level 1
8,000.00	7,705.03	7,695.55	7,693.03	5,223.00	564.43	-42.25	-478.66	745.45	790.82	-332.50	1,123.32	0.704	Level 1
8,100.00	7,805.03	7,795.55	7,793.03	5,222.99	570.27	-42.25	-478.66	745.45	790.82	-336.67	1,127.49	0.701	Level 1
8,179.97	7,885.00	7,875.53	7,873.00	5,222.99	574.94	-42.25	-478.66	745.45	790.82	-340.01	1,130.83	0.699	Level 1

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_OLIN 25-31
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4844.00ft (Original Well Elev)
Reference Site:	WELD_OLIN 18-31 PAD	MD Reference:	WELL @ 4844.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_OLIN 25-31	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_OLIN 25-31	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 4-5-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_OLIN 18-31 PAD - P_OLIN 21-31 - P_OLIN 21-31 - PLAN #1 4-5-10 RHS												Offset Site Error:	0.00 ft
Survey Program: 0-INC												Offset Well Error:	0.00 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	-48.63	19.68	-22.35	29.78				
100.00	100.00	100.00	100.00	1.13	1.13	-48.63	19.68	-22.35	29.78	27.52	2.26	13.159	
200.00	200.00	200.00	200.00	3.44	3.44	-48.63	19.68	-22.35	29.78	22.91	6.87	4.334	
300.00	300.00	300.00	300.00	5.52	5.52	-48.63	19.68	-22.35	29.78	18.75	11.03	2.700	
400.00	400.00	400.00	400.00	7.56	7.56	-48.63	19.68	-22.35	29.78	14.67	15.12	1.970	
500.00	500.00	500.00	500.00	9.59	9.59	-48.63	19.68	-22.35	29.78	10.61	19.17	1.553	
600.00	600.00	600.00	600.00	11.61	11.61	-48.63	19.68	-22.35	29.78	6.56	23.22	1.283 Level 3	
700.00	700.00	700.00	700.00	13.63	13.63	-48.63	19.68	-22.35	29.78	2.52	27.26	1.093 Level 2	
800.00	800.00	800.00	800.00	15.65	15.65	-48.63	19.68	-22.35	29.78	-1.51	31.29	0.952 Level 1, CC	
900.00	899.98	900.58	900.56	16.96	17.85	-175.82	20.09	-20.63	30.54	-3.06	33.61	0.909 Level 1	
1,000.00	999.84	1,001.01	1,000.85	26.63	28.41	-168.77	21.31	-15.49	33.17	-9.18	42.35	0.783 Level 1	
1,100.00	1,099.45	1,101.15	1,100.59	51.37	53.13	-159.44	23.33	-6.96	38.43	-35.08	73.51	0.523 Level 1	
1,200.00	1,198.70	1,200.85	1,199.54	88.69	90.19	-150.22	26.13	4.89	46.99	-87.57	134.55	0.349 Level 1	
1,300.00	1,297.47	1,299.97	1,297.43	137.41	138.30	-142.52	29.71	20.00	59.11	-162.15	221.26	0.267 Level 1	
1,400.00	1,395.62	1,398.38	1,394.04	197.15	196.95	-136.57	34.02	38.24	74.76	-254.30	329.06	0.227 Level 1	
1,500.00	1,493.06	1,495.96	1,489.13	267.70	265.52	-132.09	39.06	59.51	93.79	-361.49	455.28	0.206 Level 1	
1,600.00	1,589.64	1,592.64	1,582.57	348.93	343.18	-128.71	44.78	83.67	116.04	-482.18	598.22	0.194 Level 1	
1,700.00	1,685.27	1,689.44	1,675.75	440.74	425.53	-126.82	50.82	109.21	140.90	-610.55	751.45	0.188 Level 1	
1,800.00	1,779.82	1,785.75	1,768.44	542.98	507.49	-126.33	56.83	134.61	167.81	-741.15	908.96	0.185 Level 1	
1,896.82	1,870.22	1,878.41	1,857.64	651.80	586.37	-126.65	62.62	159.05	195.78	-869.37	1,065.16	0.184 Level 1	
1,900.00	1,873.17	1,881.44	1,860.55	655.53	588.95	-126.68	62.81	159.85	196.73	-873.64	1,070.38	0.184 Level 1	
2,000.00	1,965.93	1,976.80	1,952.35	772.89	670.14	-127.64	68.76	185.01	226.64	-1,007.69	1,234.33	0.184 Level 1	
2,100.00	2,058.69	2,072.17	2,044.14	890.25	751.35	-128.37	74.71	210.16	256.58	-1,141.13	1,397.71	0.184 Level 1	
2,200.00	2,151.45	2,167.53	2,135.93	1,007.62	832.56	-128.95	80.67	235.32	286.56	-1,274.14	1,560.70	0.184 Level 1	
2,300.00	2,244.21	2,262.90	2,227.73	1,124.99	913.77	-129.42	86.62	260.47	316.56	-1,406.85	1,723.41	0.184 Level 1	
2,400.00	2,336.97	2,358.26	2,319.52	1,242.36	994.99	-129.81	92.58	285.63	346.57	-1,539.34	1,885.91	0.184 Level 1	
2,500.00	2,429.73	2,453.63	2,411.32	1,359.74	1,076.21	-130.14	98.53	310.79	376.60	-1,671.65	2,048.25	0.184 Level 1	
2,600.00	2,522.49	2,548.99	2,503.11	1,477.11	1,157.44	-130.41	104.48	335.94	406.64	-1,803.84	2,210.47	0.184 Level 1	
2,700.00	2,615.25	2,644.36	2,594.91	1,594.49	1,238.66	-130.65	110.44	361.10	436.68	-1,935.91	2,372.59	0.184 Level 1	
2,800.00	2,708.01	2,739.72	2,686.70	1,711.86	1,319.89	-130.86	116.39	386.25	466.73	-2,067.91	2,534.64	0.184 Level 1	
2,900.00	2,800.77	2,835.09	2,778.50	1,829.24	1,401.11	-131.05	122.34	411.41	496.78	-2,199.83	2,696.62	0.184 Level 1	
3,000.00	2,893.53	2,930.45	2,870.29	1,946.62	1,482.34	-131.21	128.30	436.57	526.84	-2,331.70	2,858.54	0.184 Level 1	
3,100.00	2,986.29	3,025.82	2,962.09	2,064.00	1,563.57	-131.36	134.25	461.72	556.91	-2,463.51	3,020.42	0.184 Level 1	
3,200.00	3,079.05	3,121.18	3,053.88	2,181.37	1,644.80	-131.49	140.21	486.88	586.97	-2,595.29	3,182.26	0.184 Level 1	
3,300.00	3,171.81	3,216.55	3,145.68	2,298.75	1,726.03	-131.60	146.16	512.03	617.04	-2,727.03	3,344.07	0.185 Level 1	
3,400.00	3,264.57	3,311.91	3,237.47	2,416.13	1,807.26	-131.71	152.11	537.19	647.11	-2,858.74	3,505.85	0.185 Level 1	
3,500.00	3,357.33	3,407.28	3,329.26	2,533.51	1,888.49	-131.81	158.07	562.35	677.18	-2,990.43	3,667.61	0.185 Level 1	
3,600.00	3,450.09	3,502.64	3,421.06	2,650.89	1,969.72	-131.90	164.02	587.50	707.26	-3,122.09	3,829.35	0.185 Level 1	
3,700.00	3,542.85	3,598.01	3,512.85	2,768.27	2,050.96	-131.98	169.97	612.66	737.33	-3,253.74	3,991.07	0.185 Level 1	
3,800.00	3,635.61	3,693.38	3,604.65	2,885.64	2,132.19	-132.05	175.93	637.81	767.41	-3,385.36	4,152.77	0.185 Level 1	
3,900.00	3,728.37	3,788.74	3,696.44	3,003.02	2,213.42	-132.12	181.88	662.97	797.48	-3,516.97	4,314.46	0.185 Level 1	
4,000.00	3,821.13	3,884.11	3,788.24	3,120.40	2,294.65	-132.19	187.84	688.13	827.56	-3,648.57	4,476.13	0.185 Level 1	
4,100.00	3,913.89	3,979.47	3,880.03	3,237.78	2,375.88	-132.25	193.79	713.28	857.64	-3,780.16	4,637.80	0.185 Level 1	
4,200.00	4,006.65	4,074.84	3,971.83	3,355.16	2,457.12	-132.31	199.74	738.44	887.72	-3,911.73	4,799.45	0.185 Level 1	
4,300.00	4,099.41	4,170.20	4,063.62	3,472.54	2,538.35	-132.36	205.70	763.59	917.80	-4,043.29	4,961.10	0.185 Level 1	
4,400.00	4,192.17	4,265.57	4,155.42	3,589.92	2,619.58	-132.41	211.65	788.75	947.88	-4,174.85	5,122.73	0.185 Level 1	
4,500.00	4,284.93	4,360.93	4,247.21	3,707.30	2,700.82	-132.45	217.60	813.90	977.97	-4,306.39	5,284.36	0.185 Level 1	
4,600.00	4,377.69	4,456.30	4,339.01	3,824.68	2,782.05	-132.50	223.56	839.06	1,008.05	-4,437.93	5,445.98	0.185 Level 1	
4,700.00	4,470.45	4,551.66	4,430.80	3,942.06	2,863.28	-132.54	229.51	864.22	1,038.13	-4,569.46	5,607.60	0.185 Level 1	
4,800.00	4,563.21	4,647.03	4,522.60	4,059.44	2,944.52	-132.58	235.47	889.37	1,068.22	-4,700.99	5,769.20	0.185 Level 1	
4,900.00	4,655.97	4,742.39	4,614.39	4,176.82	3,025.75	-132.61	241.42	914.53	1,098.30	-4,832.51	5,930.81	0.185 Level 1	
5,000.00	4,748.73	4,837.76	4,706.18	4,294.20	3,106.99	-132.65	247.37	939.68	1,128.38	-4,964.02	6,092.41	0.185 Level 1	

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

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_OLIN 25-31
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4844.00ft (Original Well Elev)
Reference Site:	WELD_OLIN 18-31 PAD	MD Reference:	WELL @ 4844.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_OLIN 25-31	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_OLIN 25-31	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 4-5-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_OLIN 18-31 PAD - P_OLIN 21-31 - P_OLIN 21-31 - PLAN #1 4-5-10 RHS												Offset Site Error:	0.00 ft
Survey Program: 0-INC												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	4,841.48	4,933.12	4,797.98	4,411.58	3,188.22	-132.68	253.33	964.84	1,158.47	-5,095.53	6,254.00	0.185 Level 1	
5,200.00	4,934.24	5,028.49	4,889.77	4,528.96	3,269.45	-132.71	259.28	990.00	1,188.55	-5,227.04	6,415.59	0.185 Level 1	
5,236.15	4,967.78	5,062.96	4,922.96	4,571.39	3,298.82	-132.72	261.43	999.09	1,199.43	-5,274.57	6,474.00	0.185 Level 1	
5,300.00	5,027.27	5,124.00	4,981.71	4,644.25	3,350.81	-133.00	265.24	1,015.19	1,218.18	-5,360.03	6,578.20	0.185 Level 1	
5,400.00	5,121.43	5,220.11	5,074.22	4,749.95	3,432.68	-133.31	271.24	1,040.54	1,245.67	-5,494.81	6,740.48	0.185 Level 1	
5,500.00	5,216.71	5,316.76	5,167.25	4,845.26	3,515.01	-133.46	277.28	1,066.04	1,270.86	-5,630.60	6,901.46	0.184 Level 1	
5,600.00	5,313.00	5,415.73	5,262.55	4,930.06	3,598.19	-133.47	283.43	1,092.01	1,293.74	-5,767.57	7,061.31	0.183 Level 1	
5,700.00	5,410.16	5,520.67	5,364.32	5,004.27	3,678.44	-133.43	289.32	1,116.92	1,313.91	-5,897.43	7,211.35	0.182 Level 1	
5,800.00	5,508.10	5,626.64	5,467.97	5,067.77	3,747.54	-133.41	294.40	1,138.37	1,331.21	-6,009.16	7,340.37	0.181 Level 1	
5,900.00	5,606.67	5,733.51	5,573.24	5,120.50	3,805.01	-133.40	298.62	1,156.21	1,345.58	-6,102.01	7,447.59	0.181 Level 1	
6,000.00	5,705.78	5,841.09	5,679.84	5,162.40	3,850.42	-133.40	301.95	1,170.30	1,356.98	-6,175.35	7,532.33	0.180 Level 1	
6,100.00	5,805.28	5,949.22	5,787.45	5,193.41	3,883.42	-133.41	304.37	1,180.52	1,365.38	-6,228.66	7,594.04	0.180 Level 1	
6,200.00	5,905.07	6,057.73	5,895.76	5,213.49	3,903.78	-133.43	305.86	1,186.80	1,370.77	-6,261.55	7,632.32	0.180 Level 1	
6,300.00	6,005.03	6,166.42	6,004.42	5,222.62	3,912.27	-133.47	306.40	1,189.09	1,373.12	-6,274.70	7,647.82	0.180 Level 1	
6,332.97	6,038.00	6,200.00	6,038.00	5,223.22	3,912.58	-3.68	306.40	1,189.10	1,373.26	-6,275.07	7,648.33	0.180 Level 1	
6,400.00	6,105.03	6,267.03	6,105.03	5,223.21	3,912.60	-3.68	306.40	1,189.10	1,373.26	-6,275.07	7,648.33	0.180 Level 1	
6,500.00	6,205.03	6,367.03	6,205.03	5,223.19	3,912.62	-3.68	306.40	1,189.10	1,373.26	-6,275.07	7,648.33	0.180 Level 1	
6,600.00	6,305.03	6,467.03	6,305.03	5,223.17	3,912.65	-3.68	306.40	1,189.10	1,373.26	-6,275.07	7,648.33	0.180 Level 1	
6,700.00	6,405.03	6,567.03	6,405.03	5,223.16	3,912.67	-3.68	306.40	1,189.10	1,373.26	-6,275.08	7,648.33	0.180 Level 1	
6,800.00	6,505.03	6,667.03	6,505.03	5,223.14	3,912.70	-3.68	306.40	1,189.10	1,373.26	-6,275.08	7,648.34	0.180 Level 1	
6,900.00	6,605.03	6,767.03	6,605.03	5,223.12	3,912.73	-3.68	306.40	1,189.10	1,373.26	-6,275.09	7,648.35	0.180 Level 1	
7,000.00	6,705.03	6,867.03	6,705.03	5,223.11	3,912.75	-3.68	306.40	1,189.10	1,373.26	-6,275.10	7,648.36	0.180 Level 1	
7,100.00	6,805.03	6,967.03	6,805.03	5,223.09	3,912.78	-3.68	306.40	1,189.10	1,373.26	-6,275.11	7,648.37	0.180 Level 1	
7,200.00	6,905.03	7,067.03	6,905.03	5,223.08	3,912.82	-3.68	306.40	1,189.10	1,373.26	-6,275.13	7,648.38	0.180 Level 1	
7,300.00	7,005.03	7,167.03	7,005.03	5,223.07	3,912.85	-3.68	306.40	1,189.10	1,373.26	-6,275.14	7,648.40	0.180 Level 1	
7,400.00	7,105.03	7,267.03	7,105.03	5,223.06	3,912.88	-3.68	306.40	1,189.10	1,373.26	-6,275.16	7,648.42	0.180 Level 1	
7,500.00	7,205.03	7,367.03	7,205.03	5,223.04	3,912.91	-3.68	306.40	1,189.10	1,373.26	-6,275.18	7,648.44	0.180 Level 1	
7,600.00	7,305.03	7,467.03	7,305.03	5,223.03	3,912.95	-3.68	306.40	1,189.10	1,373.26	-6,275.21	7,648.46	0.180 Level 1	
7,700.00	7,405.03	7,567.03	7,405.03	5,223.02	3,912.98	-3.68	306.40	1,189.10	1,373.26	-6,275.23	7,648.49	0.180 Level 1	
7,800.00	7,505.03	7,667.03	7,505.03	5,223.02	3,913.02	-3.68	306.40	1,189.10	1,373.26	-6,275.26	7,648.52	0.180 Level 1	
7,900.00	7,605.03	7,767.03	7,605.03	5,223.01	3,913.06	-3.68	306.40	1,189.10	1,373.26	-6,275.29	7,648.54	0.180 Level 1	
8,000.00	7,705.03	7,867.03	7,705.03	5,223.00	3,913.10	-3.68	306.40	1,189.10	1,373.26	-6,275.32	7,648.58	0.180 Level 1	
8,100.00	7,805.03	7,967.03	7,805.03	5,222.99	3,913.14	-3.68	306.40	1,189.10	1,373.26	-6,275.35	7,648.61	0.180 Level 1	
8,179.97	7,885.00	8,047.00	7,885.00	5,222.99	3,913.17	-3.68	306.40	1,189.10	1,373.26	-6,275.38	7,648.64	0.180 Level 1, ES, SF	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_OLIN 25-31
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4844.00ft (Original Well Elev)
Reference Site:	WELD_OLIN 18-31 PAD	MD Reference:	WELL @ 4844.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_OLIN 25-31	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_OLIN 25-31	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 4-5-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_OLIN 18-31 PAD - P_OLIN 30-31 - P_OLIN 30-31 - PLAN #1 4-5-10 RHS												Offset Site Error:	0.00 ft
Survey Program: 0-MWD												Offset Well Error:	0.00 ft
Reference	Offset	Semi Major Axis		Distance									
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	-48.83	39.34	-44.98	59.76				
100.00	100.00	100.00	100.00	1.13	0.10	-48.83	39.34	-44.98	59.76	58.53	1.23	48.695	
200.00	200.00	200.00	200.00	3.44	0.32	-48.83	39.34	-44.98	59.76	56.00	3.76	15.908	
300.00	300.00	300.00	300.00	5.52	0.55	-48.83	39.34	-44.98	59.76	53.70	6.06	9.860	
400.00	400.00	400.00	400.00	7.56	0.77	-48.83	39.34	-44.98	59.76	51.43	8.33	7.176	
500.00	500.00	500.00	500.00	9.59	0.99	-48.83	39.34	-44.98	59.76	49.18	10.58	5.647	
600.00	600.00	600.00	600.00	11.61	1.22	-48.83	39.34	-44.98	59.76	46.93	12.83	4.658	
700.00	700.00	700.00	700.00	13.63	1.44	-48.83	39.34	-44.98	59.76	44.68	15.07	3.964	
800.00	800.00	800.00	800.00	15.65	1.67	-48.83	39.34	-44.98	59.76	42.44	17.32	3.451 CC, ES, SF	
900.00	899.98	897.86	897.84	16.96	1.89	-178.46	40.60	-46.08	63.19	45.27	17.92	3.526	
1,000.00	999.84	995.03	994.88	26.63	2.10	-178.04	44.34	-49.34	73.48	56.28	17.20	4.273	
1,100.00	1,099.45	1,090.84	1,090.34	51.37	2.33	-177.56	50.46	-54.67	90.54	73.75	16.79	5.393	
1,200.00	1,198.70	1,184.66	1,183.50	88.69	2.56	-177.12	58.79	-61.92	114.23	97.21	17.01	6.714	
1,300.00	1,297.47	1,275.91	1,273.72	137.41	2.81	-176.75	69.08	-70.88	144.37	126.04	18.34	7.874	
1,400.00	1,395.62	1,364.08	1,360.44	197.15	3.09	-176.47	81.09	-81.33	180.75	159.62	21.12	8.556	
1,500.00	1,493.06	1,448.74	1,443.21	267.70	3.39	-176.23	94.50	-93.01	223.08	197.60	25.48	8.755	
1,600.00	1,589.64	1,529.52	1,521.66	348.93	3.70	-176.04	109.01	-105.65	271.08	239.76	31.33	8.654	
1,700.00	1,685.27	1,606.16	1,595.56	440.74	4.04	-175.87	124.32	-118.98	324.45	285.89	38.56	8.414	
1,800.00	1,779.82	1,678.45	1,664.75	542.98	4.39	-175.72	140.12	-132.73	382.84	335.70	47.14	8.121	
1,896.82	1,870.22	1,744.19	1,727.18	651.80	4.74	-175.58	155.63	-146.23	443.86	387.12	56.75	7.822	
1,900.00	1,873.17	1,746.27	1,729.16	655.53	4.75	-175.57	156.14	-146.68	445.93	388.89	57.04	7.818	
2,000.00	1,965.93	1,810.61	1,789.78	772.89	5.12	-175.55	172.39	-160.83	512.03	445.52	66.51	7.699	
2,100.00	2,058.69	1,872.46	1,847.58	890.25	5.50	-175.52	188.97	-175.27	579.75	503.45	76.30	7.598	
2,200.00	2,151.45	1,931.90	1,902.68	1,007.62	5.90	-175.48	205.80	-189.92	649.01	562.62	86.39	7.513	
2,300.00	2,244.21	1,989.03	1,955.18	1,124.99	6.30	-175.43	222.78	-204.70	719.71	622.98	96.74	7.440	
2,400.00	2,336.97	2,044.69	2,005.89	1,242.36	6.71	-175.38	240.08	-219.77	791.78	684.44	107.34	7.376	
2,500.00	2,429.73	2,112.34	2,067.26	1,359.74	7.23	-175.33	261.56	-238.47	864.52	746.17	118.35	7.305	
2,600.00	2,522.49	2,180.96	2,129.51	1,477.11	7.77	-175.28	283.34	-257.43	937.27	807.87	129.40	7.243	
2,700.00	2,615.25	2,249.58	2,191.75	1,594.49	8.32	-175.24	305.12	-276.40	1,010.01	869.54	140.47	7.190	
2,800.00	2,708.01	2,318.19	2,253.99	1,711.86	8.87	-175.20	326.90	-295.37	1,082.75	931.21	151.55	7.145	
2,900.00	2,800.77	2,386.81	2,316.23	1,829.24	9.42	-175.17	348.69	-314.33	1,155.50	992.86	162.64	7.105	
3,000.00	2,893.53	2,455.43	2,378.47	1,946.62	9.98	-175.15	370.47	-333.30	1,228.24	1,054.50	173.74	7.069	
3,100.00	2,986.29	2,524.04	2,440.71	2,064.00	10.55	-175.12	392.25	-352.27	1,300.98	1,116.14	184.85	7.038	
3,200.00	3,079.05	2,592.66	2,502.95	2,181.37	11.11	-175.10	414.04	-371.23	1,373.73	1,177.77	195.96	7.010	
3,300.00	3,171.81	2,661.27	2,565.20	2,298.75	11.68	-175.08	435.82	-390.20	1,446.47	1,239.39	207.08	6.985	
3,400.00	3,264.57	2,729.89	2,627.44	2,416.13	12.25	-175.06	457.60	-409.17	1,519.21	1,301.01	218.21	6.962	
3,500.00	3,357.33	2,798.51	2,689.68	2,533.51	12.83	-175.05	479.39	-428.13	1,591.96	1,362.62	229.33	6.942	
3,600.00	3,450.09	2,867.12	2,751.92	2,650.89	13.40	-175.03	501.17	-447.10	1,664.70	1,424.23	240.47	6.923	
3,700.00	3,542.85	2,935.74	2,814.16	2,768.27	13.98	-175.02	522.95	-466.07	1,737.45	1,485.84	251.60	6.905	
3,800.00	3,635.61	3,004.36	2,876.40	2,885.64	14.55	-175.01	544.74	-485.03	1,810.19	1,547.45	262.74	6.890	
3,900.00	3,728.37	3,072.97	2,938.64	3,003.02	15.13	-175.00	566.52	-504.00	1,882.93	1,609.05	273.88	6.875	
4,000.00	3,821.13	3,141.59	3,000.89	3,120.40	15.71	-174.99	588.30	-522.97	1,955.68	1,670.65	285.03	6.861	
4,100.00	3,913.89	3,210.21	3,063.13	3,237.78	16.29	-174.98	610.09	-541.93	2,028.42	1,732.25	296.17	6.849	
4,200.00	4,006.65	3,278.82	3,125.37	3,355.16	16.87	-174.97	631.87	-560.90	2,101.17	1,793.84	307.32	6.837	
4,300.00	4,099.41	3,347.44	3,187.61	3,472.54	17.45	-174.96	653.65	-579.87	2,173.91	1,855.44	318.47	6.826	
4,400.00	4,192.17	3,416.06	3,249.85	3,589.92	18.03	-174.95	675.44	-598.83	2,246.65	1,917.03	329.62	6.816	
4,500.00	4,284.93	3,484.67	3,312.09	3,707.30	18.62	-174.94	697.22	-617.80	2,319.40	1,978.63	340.77	6.806	
4,600.00	4,377.69	3,553.29	3,374.33	3,824.68	19.20	-174.94	719.00	-636.77	2,392.14	2,040.22	351.93	6.797	
4,700.00	4,470.45	3,621.91	3,436.58	3,942.06	19.78	-174.93	740.79	-655.73	2,464.89	2,101.81	363.08	6.789	
4,800.00	4,563.21	3,690.52	3,498.82	4,059.44	20.37	-174.93	762.57	-674.70	2,537.63	2,163.40	374.24	6.781	
4,900.00	4,655.97	3,759.14	3,561.06	4,176.82	20.95	-174.92	784.35	-693.67	2,610.37	2,224.98	385.39	6.773	
5,000.00	4,748.73	3,827.76	3,623.30	4,294.20	21.54	-174.91	806.14	-712.63	2,683.12	2,286.57	396.55	6.766	

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

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_OLIN 25-31
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4844.00ft (Original Well Elev)
Reference Site:	WELD_OLIN 18-31 PAD	MD Reference:	WELL @ 4844.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_OLIN 25-31	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_OLIN 25-31	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 4-5-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_OLIN 18-31 PAD - P_OLIN 30-31 - P_OLIN 30-31 - PLAN #1 4-5-10 RHS												Offset Site Error:	0.00 ft
Survey Program: 0-MWD												Offset Well Error:	0.00 ft
Reference	Offset	Semi Major Axis		Distance									
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.00	4,841.48	3,896.37	3,685.54	4,411.58	22.12	-174.91	827.92	-731.60	2,755.86	2,348.16	407.71	6.759	
5,200.00	4,934.24	3,964.99	3,747.78	4,528.96	22.71	-174.90	849.70	-750.57	2,828.61	2,409.74	418.87	6.753	
5,236.15	4,967.78	3,989.80	3,770.28	4,571.39	22.92	-174.90	857.58	-757.42	2,854.90	2,432.00	422.90	6.751	
5,300.00	5,027.27	4,034.12	3,810.49	4,644.25	23.30	-175.01	871.65	-769.67	2,900.86	2,479.92	420.94	6.891	
5,400.00	5,121.43	4,105.56	3,875.29	4,749.95	23.91	-175.17	894.33	-789.42	2,970.83	2,552.49	418.34	7.101	
5,500.00	5,216.71	4,179.38	3,942.25	4,845.26	24.54	-175.30	917.76	-809.83	3,038.27	2,622.03	416.24	7.299	
5,600.00	5,313.00	4,255.50	4,011.30	4,930.06	25.19	-175.41	941.93	-830.87	3,103.10	2,688.53	414.57	7.485	
5,700.00	5,410.16	4,333.83	4,082.35	5,004.27	25.86	-175.50	966.79	-852.52	3,165.25	2,751.98	413.27	7.659	
5,800.00	5,508.10	4,414.26	4,155.31	5,067.77	26.54	-175.58	992.33	-874.75	3,224.63	2,812.35	412.29	7.821	
5,900.00	5,606.67	4,496.71	4,230.10	5,120.50	27.25	-175.64	1,018.50	-897.54	3,281.18	2,869.62	411.57	7.972	
6,000.00	5,705.78	4,581.06	4,306.62	5,162.40	27.97	-175.69	1,045.28	-920.86	3,334.83	2,923.77	411.06	8.113	
6,100.00	5,805.28	4,667.23	4,384.78	5,193.41	28.71	-175.73	1,072.64	-944.67	3,385.51	2,974.79	410.72	8.243	
6,200.00	5,905.07	4,755.10	4,464.48	5,213.49	29.46	-175.76	1,100.53	-968.96	3,433.16	3,022.65	410.51	8.363	
6,300.00	6,005.03	4,844.56	4,545.63	5,222.62	30.23	-175.77	1,128.93	-993.69	3,477.72	3,067.34	410.39	8.474	
6,332.97	6,038.00	4,874.39	4,572.69	5,223.22	30.48	-45.98	1,138.40	-1,001.94	3,491.73	3,081.50	410.24	8.512	
6,400.00	6,105.03	4,935.19	4,627.84	5,223.21	31.01	-45.94	1,157.70	-1,018.74	3,519.86	3,106.10	413.76	8.507	
6,500.00	6,205.03	6,570.04	6,205.03	5,223.19	37.60	-45.46	1,422.93	-1,249.68	3,545.41	3,085.16	460.25	7.703	
6,600.00	6,305.03	6,670.04	6,305.03	5,223.17	37.68	-45.46	1,422.93	-1,249.68	3,545.41	3,085.20	460.21	7.704	
6,700.00	6,405.03	6,770.04	6,405.03	5,223.16	37.75	-45.46	1,422.93	-1,249.68	3,545.41	3,085.24	460.18	7.704	
6,800.00	6,505.03	6,870.04	6,505.03	5,223.14	37.83	-45.46	1,422.93	-1,249.68	3,545.41	3,085.26	460.16	7.705	
6,900.00	6,605.03	6,970.04	6,605.03	5,223.12	37.92	-45.46	1,422.93	-1,249.68	3,545.41	3,085.27	460.15	7.705	
7,000.00	6,705.03	7,070.04	6,705.03	5,223.11	38.00	-45.46	1,422.93	-1,249.68	3,545.41	3,085.27	460.15	7.705	
7,100.00	6,805.03	7,170.04	6,805.03	5,223.09	38.08	-45.46	1,422.93	-1,249.68	3,545.41	3,085.26	460.16	7.705	
7,200.00	6,905.03	7,270.04	6,905.03	5,223.08	38.17	-45.46	1,422.93	-1,249.68	3,545.41	3,085.24	460.18	7.704	
7,300.00	7,005.03	7,370.04	7,005.03	5,223.07	38.25	-45.46	1,422.93	-1,249.68	3,545.41	3,085.21	460.21	7.704	
7,400.00	7,105.03	7,470.04	7,105.03	5,223.06	38.34	-45.46	1,422.93	-1,249.68	3,545.41	3,085.16	460.25	7.703	
7,500.00	7,205.03	7,570.04	7,205.03	5,223.04	38.43	-45.46	1,422.93	-1,249.68	3,545.41	3,085.11	460.30	7.702	
7,600.00	7,305.03	7,670.04	7,305.03	5,223.03	38.52	-45.46	1,422.93	-1,249.68	3,545.41	3,085.05	460.36	7.701	
7,700.00	7,405.03	7,770.04	7,405.03	5,223.02	38.61	-45.46	1,422.93	-1,249.68	3,545.41	3,084.98	460.43	7.700	
7,800.00	7,505.03	7,870.04	7,505.03	5,223.02	38.70	-45.46	1,422.93	-1,249.68	3,545.41	3,084.90	460.52	7.699	
7,900.00	7,605.03	7,970.04	7,605.03	5,223.01	38.79	-45.46	1,422.93	-1,249.68	3,545.41	3,084.80	460.61	7.697	
8,000.00	7,705.03	8,070.04	7,705.03	5,223.00	38.88	-45.46	1,422.93	-1,249.68	3,545.41	3,084.70	460.71	7.695	
8,100.00	7,805.03	8,170.04	7,805.03	5,222.99	38.98	-45.46	1,422.93	-1,249.68	3,545.41	3,084.59	460.83	7.694	
8,179.97	7,885.00	8,250.01	7,885.00	5,222.99	39.05	-45.46	1,422.93	-1,249.68	3,545.41	3,084.49	460.92	7.692	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_OLIN 25-31
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4844.00ft (Original Well Elev)
Reference Site:	WELD_OLIN 18-31 PAD	MD Reference:	WELL @ 4844.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_OLIN 25-31	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_OLIN 25-31	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 4-5-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 ft
Survey Program: 90-INC												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	-9.33	71.40	-11.73	73.90				
100.00	100.00	84.86	84.86	1.13	1.27	-9.33	71.39	-11.73	72.35	70.02	2.32	31.132	
200.00	200.00	185.30	185.30	3.44	4.98	-9.39	71.00	-11.73	71.96	64.23	7.74	9.302	
300.00	300.00	285.28	285.28	5.52	8.78	-9.44	70.61	-11.73	71.58	58.57	13.01	5.504	
400.00	400.00	385.27	385.26	7.56	12.59	-9.48	70.25	-11.73	71.22	52.99	18.24	3.906	
500.00	500.00	485.25	485.24	9.59	16.39	-9.53	69.92	-11.73	70.90	47.45	23.45	3.023	
600.00	600.00	585.23	585.22	11.61	20.20	-9.57	69.63	-11.73	70.61	41.95	28.66	2.464	
700.00	700.00	685.21	685.20	13.63	24.00	-9.60	69.36	-11.73	70.35	36.49	33.86	2.078	
800.00	800.00	785.19	785.18	15.65	27.81	-9.63	69.13	-11.73	70.12	31.06	39.06	1.795	
807.92	807.92	793.11	793.10	15.72	28.11	-139.44	69.12	-11.73	70.11	34.32	35.79	1.959 CC	
900.00	899.98	885.15	885.14	16.96	31.61	-140.36	68.93	-11.73	71.26	32.26	39.01	1.827	
1,000.00	999.84	985.00	984.98	26.63	35.41	-142.88	68.77	-11.73	75.20	29.67	45.53	1.652	
1,100.00	1,099.45	1,084.59	1,084.58	51.37	39.21	-146.48	68.63	-11.73	82.19	22.92	59.28	1.387 Level 3	
1,200.00	1,198.70	1,183.83	1,183.81	88.69	42.98	-150.56	68.53	-11.73	92.52	15.58	76.94	1.202 Level 2	
1,300.00	1,297.47	1,282.57	1,282.55	137.41	46.74	-154.59	68.45	-11.73	106.38	11.10	95.28	1.117 Level 2, ES	
1,400.00	1,395.62	1,380.69	1,380.68	197.15	50.48	-158.25	68.41	-11.73	123.89	11.34	112.55	1.101 Level 2, SF	
1,500.00	1,493.06	1,478.09	1,478.08	267.70	54.18	-161.40	68.40	-11.73	145.06	16.98	128.08	1.133 Level 2	
1,600.00	1,589.64	1,574.63	1,574.62	348.93	57.86	-164.03	68.42	-11.73	169.87	28.08	141.79	1.198 Level 2	
1,700.00	1,685.27	1,670.20	1,670.18	440.74	61.50	-166.20	68.47	-11.73	198.25	44.36	153.89	1.288 Level 3	
1,800.00	1,779.82	1,764.67	1,764.66	542.98	65.09	-167.98	68.54	-11.73	230.13	65.48	164.65	1.398 Level 3	
1,896.82	1,870.22	1,854.99	1,854.98	651.80	68.53	-169.39	68.64	-11.73	264.27	90.19	174.08	1.518	
1,900.00	1,873.17	1,857.93	1,857.92	655.53	68.64	-169.44	68.64	-11.73	265.44	91.09	174.35	1.522	
2,000.00	1,965.93	1,950.59	1,950.58	772.89	72.17	-170.71	68.77	-11.73	302.41	120.19	182.23	1.660	
2,100.00	2,058.69	2,043.23	2,043.22	890.25	75.69	-171.71	68.93	-11.73	339.51	150.33	189.18	1.795	
2,200.00	2,151.45	2,135.86	2,135.85	1,007.62	79.22	-172.51	69.11	-11.73	376.70	181.19	195.50	1.927	
2,300.00	2,244.21	2,228.47	2,228.46	1,124.99	82.75	-173.16	69.32	-11.73	413.96	212.55	201.41	2.055	
2,400.00	2,336.97	2,321.07	2,321.06	1,242.36	86.27	-173.70	69.56	-11.73	451.28	244.26	207.01	2.180	
2,500.00	2,429.73	2,413.65	2,413.64	1,359.74	89.79	-174.16	69.83	-11.73	488.64	276.23	212.42	2.300	
2,600.00	2,522.49	2,506.21	2,506.20	1,477.11	93.32	-174.55	70.12	-11.73	526.05	308.37	217.68	2.417	
2,700.00	2,615.25	2,598.77	2,598.76	1,594.49	96.84	-174.88	70.44	-11.73	563.50	340.66	222.84	2.529	
2,800.00	2,708.01	2,691.30	2,691.29	1,711.86	100.36	-175.17	70.79	-11.73	600.98	373.03	227.95	2.636	
2,900.00	2,800.77	2,783.82	2,783.81	1,829.24	103.88	-175.43	71.16	-11.73	638.49	405.47	233.02	2.740	
3,000.00	2,893.53	2,880.57	2,880.56	1,946.62	108.24	-175.69	71.23	-11.73	675.80	438.40	237.40	2.847	
3,100.00	2,986.29	2,973.14	2,973.02	2,064.00	113.29	-175.93	70.88	-11.73	712.83	471.44	241.38	2.953	
3,200.00	3,079.05	3,065.68	3,065.55	2,181.37	118.34	-176.15	70.58	-11.73	749.91	504.45	245.45	3.055	
3,300.00	3,171.81	3,158.19	3,158.06	2,298.75	123.38	-176.35	70.35	-11.73	787.03	537.42	249.62	3.153	
3,400.00	3,264.57	3,250.66	3,250.53	2,416.13	128.43	-176.52	70.17	-11.73	824.20	570.32	253.88	3.246	
3,500.00	3,357.33	3,343.10	3,342.97	2,533.51	133.47	-176.68	70.04	-11.73	861.42	603.16	258.26	3.335	
3,600.00	3,450.09	3,435.52	3,435.38	2,650.89	138.52	-176.82	69.97	-11.73	898.68	635.93	262.75	3.420	
3,700.00	3,542.85	3,527.89	3,527.75	2,768.27	143.56	-176.95	69.96	-11.73	935.98	668.62	267.36	3.501	
3,800.00	3,635.61	3,620.24	3,620.10	2,885.64	148.59	-177.06	70.01	-11.73	973.33	701.24	272.09	3.577	
3,900.00	3,728.37	3,712.55	3,712.41	3,003.02	153.63	-177.17	70.11	-11.73	1,010.71	733.77	276.94	3.650	
4,000.00	3,821.13	3,804.84	3,804.69	3,120.40	158.67	-177.26	70.27	-11.73	1,048.14	766.22	281.92	3.718	
4,100.00	3,913.89	3,897.09	3,896.94	3,237.78	163.70	-177.34	70.48	-11.73	1,085.61	798.58	287.03	3.782	
4,200.00	4,006.65	3,989.30	3,989.15	3,355.16	168.73	-177.42	70.75	-11.73	1,123.11	830.85	292.26	3.843	
4,300.00	4,099.41	4,081.49	4,081.34	3,472.54	173.76	-177.49	71.08	-11.73	1,160.66	863.04	297.62	3.900	
4,400.00	4,192.17	4,160.00	4,159.68	3,589.92	178.04	-177.54	71.40	-11.73	1,198.33	895.23	303.10	3.954	
4,500.00	4,284.93	4,269.47	4,269.14	3,707.30	185.24	-177.63	71.51	-11.73	1,235.60	927.01	308.60	4.004	
4,600.00	4,377.69	4,362.29	4,361.96	3,824.68	191.34	-177.69	71.59	-11.73	1,272.99	958.91	314.08	4.053	
4,700.00	4,470.45	4,455.11	4,454.77	3,942.06	197.45	-177.76	71.67	-11.73	1,310.37	990.81	319.56	4.101	
4,800.00	4,563.21	4,547.94	4,547.60	4,059.44	203.55	-177.82	71.73	-11.73	1,347.75	1,022.71	325.04	4.146	
4,900.00	4,655.97	4,640.78	4,640.42	4,176.82	209.65	-177.87	71.79	-11.73	1,385.12	1,054.61	330.51	4.191	

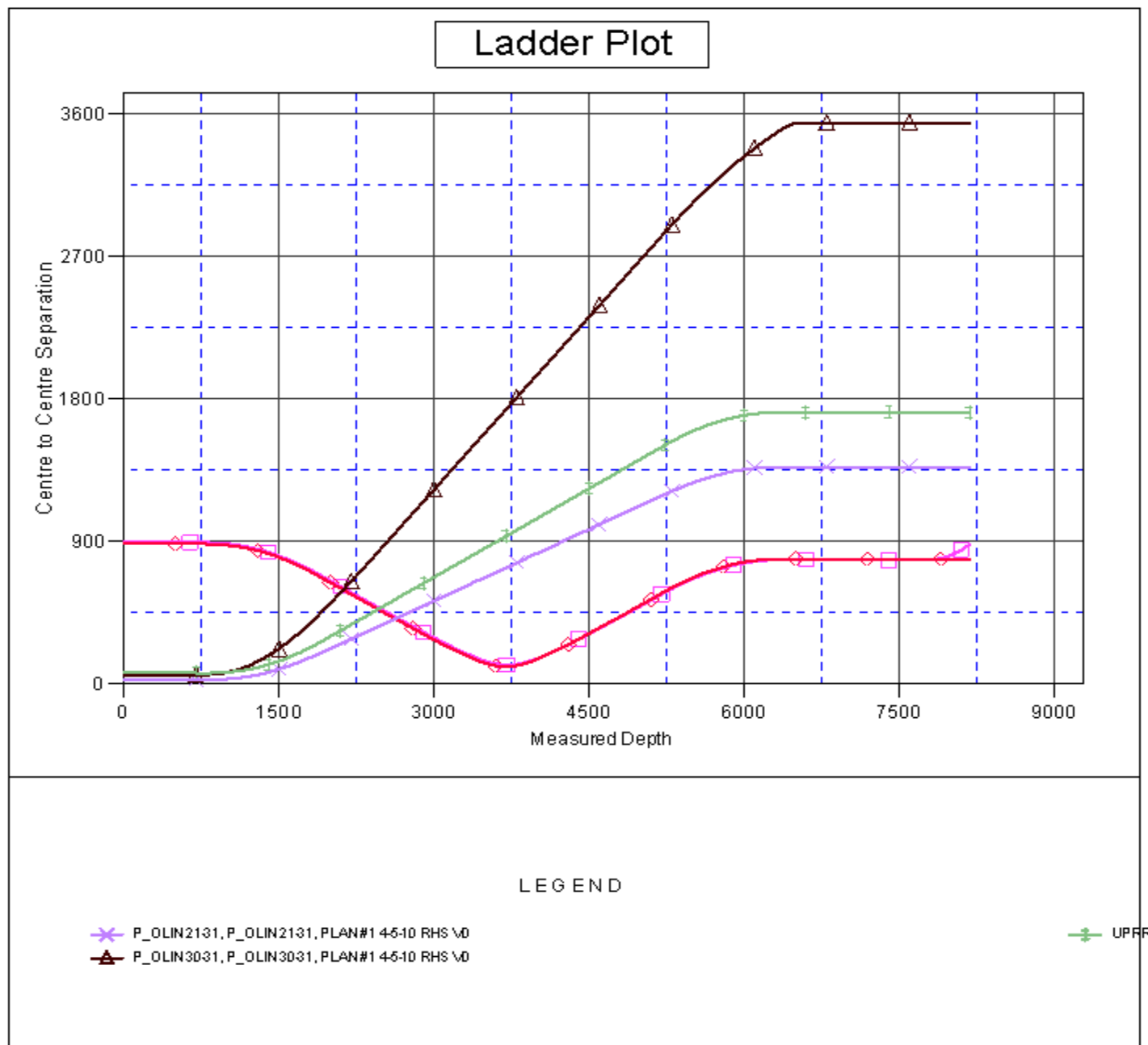
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_OLIN 25-31
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4844.00ft (Original Well Elev)
Reference Site:	WELD_OLIN 18-31 PAD	MD Reference:	WELL @ 4844.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_OLIN 25-31	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_OLIN 25-31	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 4-5-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_OLIN 18-31 PAD - UPRR 42 PAN AM UNIT X TRUE #1 EXISTING - UPRR 42 PAN AM UNIT X												Offset Site Error:	0.00 ft
Survey Program: 90-INC												Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,000.00	4,748.73	4,733.61	4,733.25	4,294.20	215.76	-177.93	71.84	-11.73	1,422.49	1,086.51	335.98	4.234	
5,100.00	4,841.48	4,826.46	4,826.09	4,411.58	221.86	-177.98	71.88	-11.73	1,459.86	1,118.40	341.45	4.275	
5,200.00	4,934.24	4,919.31	4,918.93	4,528.96	227.97	-178.03	71.91	-11.73	1,497.22	1,150.29	346.92	4.316	
5,236.15	4,967.78	4,952.87	4,952.49	4,571.39	230.17	-178.05	71.92	-11.73	1,510.72	1,161.82	348.90	4.330	
5,300.00	5,027.27	5,012.42	5,012.04	4,644.25	234.09	-178.09	71.93	-11.73	1,533.91	1,181.10	352.81	4.348	
5,400.00	5,121.43	5,106.69	5,106.30	4,749.95	240.29	-178.16	71.95	-11.73	1,567.54	1,208.51	359.04	4.366	
5,500.00	5,216.71	5,202.08	5,201.68	4,845.26	246.56	-178.21	71.96	-11.73	1,597.87	1,232.53	365.34	4.374	
5,600.00	5,313.00	5,298.47	5,298.07	4,930.06	252.89	-178.26	71.95	-11.73	1,624.85	1,253.17	371.68	4.372	
5,700.00	5,410.16	5,395.75	5,395.34	5,004.27	259.29	-178.30	71.94	-11.73	1,648.44	1,270.43	378.01	4.361	
5,800.00	5,508.10	5,493.81	5,493.38	5,067.77	265.74	-178.33	71.92	-11.73	1,668.63	1,284.32	384.31	4.342	
5,900.00	5,606.67	5,592.51	5,592.08	5,120.50	272.23	-178.36	71.89	-11.73	1,685.38	1,294.86	390.52	4.316	
6,000.00	5,705.78	5,691.73	5,691.30	5,162.40	278.75	-178.38	71.85	-11.73	1,698.68	1,302.05	396.63	4.283	
6,100.00	5,805.28	5,791.37	5,790.92	5,193.41	285.30	-178.40	71.80	-11.73	1,708.50	1,305.92	402.58	4.244	
6,200.00	5,905.07	5,891.29	5,890.83	5,213.49	291.87	-178.41	71.74	-11.73	1,714.84	1,306.48	408.36	4.199	
6,300.00	6,005.03	5,991.37	5,990.91	5,222.62	298.45	-178.41	71.67	-11.73	1,717.69	1,303.76	413.92	4.150	
6,332.97	6,038.00	6,024.38	6,023.92	5,223.22	300.62	-48.62	71.64	-11.73	1,717.86	1,302.43	415.43	4.135	
6,400.00	6,105.03	6,091.50	6,091.02	5,223.21	305.03	-48.62	71.59	-11.73	1,717.82	1,299.49	418.33	4.106	
6,500.00	6,205.03	6,191.62	6,191.14	5,223.19	311.62	-48.62	71.50	-11.73	1,717.76	1,295.09	422.68	4.064	
6,588.52	6,293.55	6,280.26	6,279.77	5,223.17	317.44	-48.62	71.41	-11.73	1,717.71	1,291.18	426.53	4.027	
6,600.00	6,305.03	6,290.00	6,289.22	5,223.17	318.08	-48.62	71.40	-11.73	1,717.70	1,290.76	426.94	4.023	
6,700.00	6,405.03	6,385.26	6,384.48	5,223.16	322.76	-48.61	71.89	-11.73	1,718.03	1,286.93	431.10	3.985	
6,800.00	6,505.03	6,486.00	6,485.21	5,223.14	327.71	-48.60	72.35	-11.73	1,718.34	1,282.89	435.44	3.946	
6,900.00	6,605.03	6,586.74	6,585.95	5,223.12	332.65	-48.59	72.74	-11.73	1,718.59	1,278.91	439.69	3.909	
7,000.00	6,705.03	6,687.49	6,686.69	5,223.11	337.60	-48.58	73.07	-11.73	1,718.81	1,274.97	443.83	3.873	
7,100.00	6,805.03	6,788.24	6,787.44	5,223.09	342.54	-48.57	73.33	-11.73	1,718.98	1,271.10	447.88	3.838	
7,200.00	6,905.03	6,888.99	6,888.18	5,223.08	347.49	-48.57	73.52	-11.73	1,719.10	1,267.27	451.83	3.805	
7,300.00	7,005.03	6,989.75	6,988.94	5,223.07	352.43	-48.57	73.65	-11.73	1,719.19	1,263.51	455.67	3.773	
7,400.00	7,105.03	7,090.51	7,089.69	5,223.06	357.38	-48.57	73.71	-11.73	1,719.22	1,259.80	459.42	3.742	
7,500.00	7,205.03	7,191.27	7,190.45	5,223.04	362.33	-48.57	73.70	-11.73	1,719.22	1,256.16	463.06	3.713	
7,600.00	7,305.03	7,292.04	7,291.21	5,223.03	367.27	-48.57	73.63	-11.73	1,719.17	1,252.57	466.60	3.684	
7,700.00	7,405.03	7,392.81	7,391.97	5,223.02	372.22	-48.57	73.49	-11.73	1,719.08	1,249.04	470.04	3.657	
7,800.00	7,505.03	7,493.58	7,492.74	5,223.02	377.17	-48.58	73.28	-11.73	1,718.95	1,245.57	473.38	3.631	
7,900.00	7,605.03	7,594.36	7,593.50	5,223.01	382.11	-48.58	73.01	-11.73	1,718.77	1,242.15	476.61	3.606	
8,000.00	7,705.03	7,695.14	7,694.27	5,223.00	387.06	-48.59	72.67	-11.73	1,718.54	1,238.80	479.75	3.582	
8,100.00	7,805.03	7,795.92	7,795.05	5,222.99	392.01	-48.60	72.27	-11.73	1,718.28	1,235.50	482.78	3.559	
8,179.97	7,885.00	7,876.52	7,875.64	5,222.99	395.97	-48.61	71.89	-11.73	1,718.04	1,232.91	485.13	3.541	

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Reference Site:	WELD_OLIN 18-31 PAD	MD Reference:	WELL @ 4844.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_OLIN 25-31	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_OLIN 25-31	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 4-5-10 RHS	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4844.00ft (Original Well Elev) Coordinates are relative to: P_OLIN 25-31
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: 0.44°



Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_OLIN 25-31
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4844.00ft (Original Well Elev)
Reference Site:	WELD_OLIN 18-31 PAD	MD Reference:	WELL @ 4844.00ft (Original Well Elev)
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Reference Well:	P_OLIN 25-31	Survey Calculation Method:	Minimum Curvature
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