



US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_WINTERS 12-3 PAD

P_WINTERS 19-3

P_WINTERS 19-3

Plan: PLAN #1 3-10-10 RHS

Standard Planning Report

10 March, 2010





Project: COLORADO NORTHERN ZONE - 83
 Site: WELD_WINTERS 12-3 PAD
 Well: P_WINTERS 19-3
 Wellbore: P_WINTERS 19-3
 Section: SECTION 3 T5N R65W
 SHL: 1695 FSL 499 FWL
 Design: PLAN #1 3-10-10 RHS
 Latitude: 40° 25' 32.491 N
 Longitude: 104° 39' 25.549 W
 GL: 4632.00
 KB: WELL @ 4647.00ft (Original Well Elev)



Weatherford



Azimuths to True North
 Magnetic North: 8.98°
 Magnetic Field
 Strength: 53291.9snT
 Dip Angle: 67.13°
 Date: 3/10/2010
 Model: IGRF2010

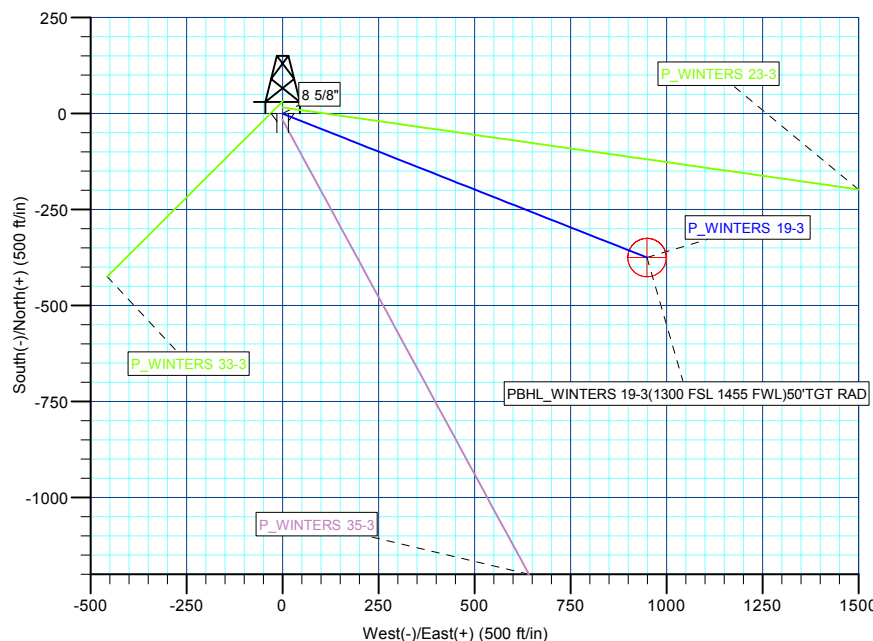
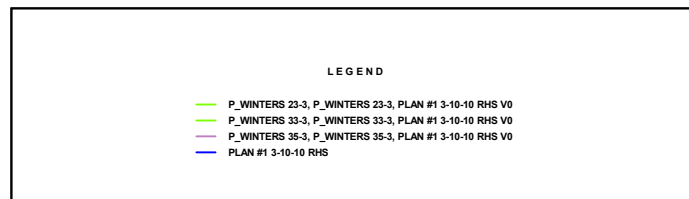
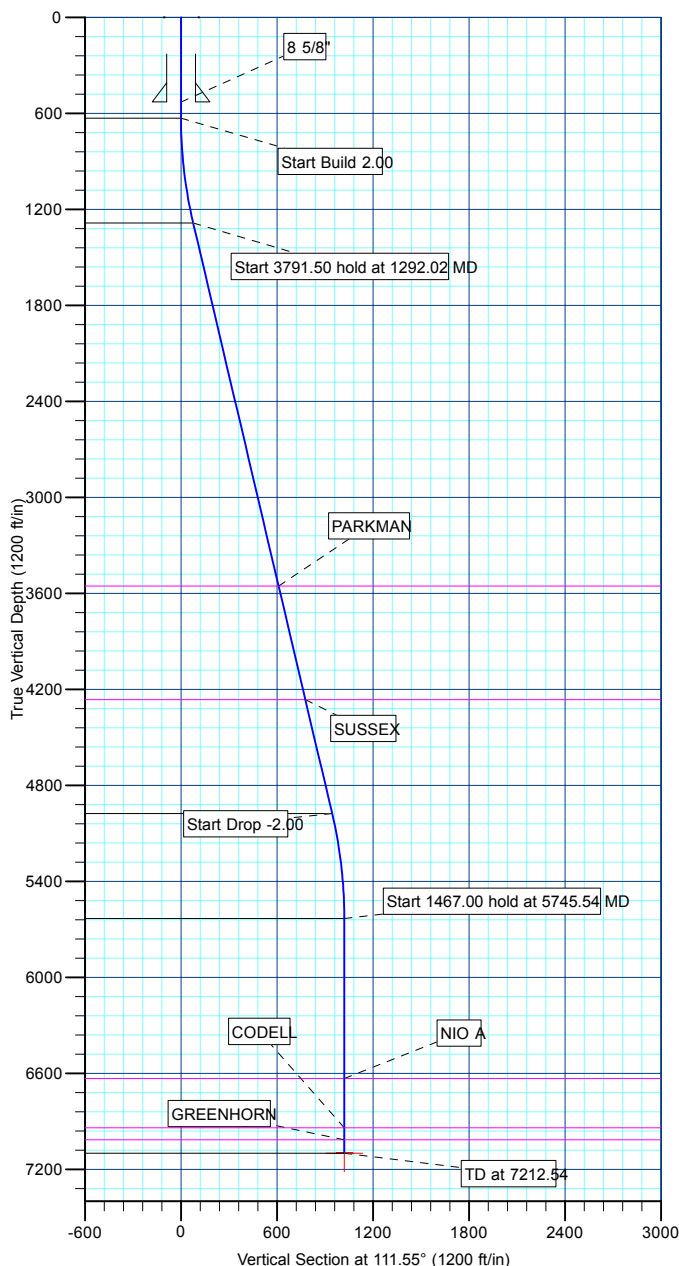
FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
3555.00	3622.83	PARKMAN
4265.00	4352.22	SUSSEX
6633.00	6745.54	NIO A
6941.00	7053.54	CODELL
7016.00	7128.54	GREENHORN

CASING DETAILS			
TVD	MD	Name	Size
530.00	530.00	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	
630.00	0.00	0.00	630.00	0.00	0.00	0.00	0.00	0.00	Start Build 2.00
1292.02	13.24	111.55	1286.14	-27.97	70.83	2.00	111.55	76.15	Start 3791.50 hold at 1292.02 MD
5083.52	13.24	111.55	4976.86	-346.88	878.55	0.00	0.00	944.55	Start Drop -2.00
5745.54	0.00	0.00	5633.00	-374.85	949.38	2.00	180.00	1020.70	Start 1467.00 hold at 5745.54 MD
7212.54	0.00	0.00	7100.00	-374.85	949.38	0.00	0.00	1020.70	TD at 7212.54

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)							
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape	
PBHL	7100.00	-374.85	949.38	40° 25' 28.787 N	104° 39' 13.273 W	Circle (Radius: 50.00)	

WELL DETAILS: P_WINTERS 19-3						
+N/-S	+E/-W	Northing	Ground Level: Easting	4632.00 Latitude	Longitude	Slot
0.00	0.00	1399035.25	3234664.71	40° 25' 32.491 N	104° 39' 25.549 W	



Plan: PLAN #1 3-10-10 RHS (P_WINTERS 19-3/P_WINTERS 19-3)	
Created By: Robert H. Scott	Date: 9:08, March 10 2010

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_WINTERS 19-3
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 4647.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 4647.00ft (Original Well Elev)
Site:	WELD_WINTERS 12-3 PAD	North Reference:	True
Well:	P_WINTERS 19-3	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_WINTERS 19-3		
Design:	PLAN #1 3-10-10 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_WINTERS 12-3 PAD, SECTION 3 T5N R65W			
Site Position:		Northing:	1,399,035.25 ft	Latitude:	40° 25' 32.491 N
From:	Lat/Long	Easting:	3,234,664.71 ft	Longitude:	104° 39' 25.549 W
Position Uncertainty:	0.00 ft	Slot Radius:	in	Grid Convergence:	0.54 °

Well	P_WINTERS 19-3					
Well Position	+N/-S	0.00 ft	Northing:	1,399,035.25 ft	Latitude:	40° 25' 32.491 N
	+E/-W	0.00 ft	Easting:	3,234,664.71 ft	Longitude:	104° 39' 25.549 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	4,632.00 ft

Wellbore	P_WINTERS 19-3				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/10/2010	8.98	67.13	53,292

Design	PLAN #1 3-10-10 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	111.55

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	
630.00	0.00	0.00	630.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,292.02	13.24	111.55	1,286.14	-27.97	70.83	2.00	2.00	0.00	111.55	
5,083.52	13.24	111.55	4,976.86	-346.88	878.55	0.00	0.00	0.00	0.00	
5,745.54	0.00	0.00	5,633.00	-374.85	949.38	2.00	-2.00	0.00	180.00	
7,212.54	0.00	0.00	7,100.00	-374.85	949.38	0.00	0.00	0.00	0.00	PBHL_WINTERS 1

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_WINTERS 19-3
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 4647.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 4647.00ft (Original Well Elev)
Site:	WELD_WINTERS 12-3 PAD	North Reference:	True
Well:	P_WINTERS 19-3	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_WINTERS 19-3		
Design:	PLAN #1 3-10-10 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									
630.00	0.00	0.00	630.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	1.40	111.55	699.99	-0.31	0.80	0.86	2.00	2.00	0.00
800.00	3.40	111.55	799.90	-1.85	4.69	5.04	2.00	2.00	0.00
900.00	5.40	111.55	899.60	-4.67	11.83	12.71	2.00	2.00	0.00
1,000.00	7.40	111.55	998.97	-8.76	22.19	23.86	2.00	2.00	0.00
1,100.00	9.40	111.55	1,097.89	-14.13	35.78	38.47	2.00	2.00	0.00
1,200.00	11.40	111.55	1,196.25	-20.76	52.57	56.52	2.00	2.00	0.00
Start 3791.50 hold at 1292.02 MD									
1,292.02	13.24	111.55	1,286.14	-27.97	70.83	76.15	2.00	2.00	0.00
1,300.00	13.24	111.55	1,293.91	-28.64	72.53	77.98	0.00	0.00	0.00
1,400.00	13.24	111.55	1,391.25	-37.05	93.83	100.88	0.00	0.00	0.00
1,500.00	13.24	111.55	1,488.59	-45.46	115.14	123.79	0.00	0.00	0.00
1,600.00	13.24	111.55	1,585.94	-53.87	136.44	146.69	0.00	0.00	0.00
1,700.00	13.24	111.55	1,683.28	-62.28	157.74	169.60	0.00	0.00	0.00
1,800.00	13.24	111.55	1,780.62	-70.69	179.05	192.50	0.00	0.00	0.00
1,900.00	13.24	111.55	1,877.96	-79.11	200.35	215.40	0.00	0.00	0.00
2,000.00	13.24	111.55	1,975.30	-87.52	221.65	238.31	0.00	0.00	0.00
2,100.00	13.24	111.55	2,072.65	-95.93	242.96	261.21	0.00	0.00	0.00
2,200.00	13.24	111.55	2,169.99	-104.34	264.26	284.11	0.00	0.00	0.00
2,300.00	13.24	111.55	2,267.33	-112.75	285.56	307.02	0.00	0.00	0.00
2,400.00	13.24	111.55	2,364.67	-121.16	306.87	329.92	0.00	0.00	0.00
2,500.00	13.24	111.55	2,462.01	-129.57	328.17	352.82	0.00	0.00	0.00
2,600.00	13.24	111.55	2,559.35	-137.98	349.47	375.73	0.00	0.00	0.00
2,700.00	13.24	111.55	2,656.70	-146.40	370.78	398.63	0.00	0.00	0.00
2,800.00	13.24	111.55	2,754.04	-154.81	392.08	421.54	0.00	0.00	0.00
2,900.00	13.24	111.55	2,851.38	-163.22	413.38	444.44	0.00	0.00	0.00
3,000.00	13.24	111.55	2,948.72	-171.63	434.69	467.34	0.00	0.00	0.00
3,100.00	13.24	111.55	3,046.06	-180.04	455.99	490.25	0.00	0.00	0.00
3,200.00	13.24	111.55	3,143.41	-188.45	477.29	513.15	0.00	0.00	0.00
3,300.00	13.24	111.55	3,240.75	-196.86	498.60	536.05	0.00	0.00	0.00
3,400.00	13.24	111.55	3,338.09	-205.27	519.90	558.96	0.00	0.00	0.00
3,500.00	13.24	111.55	3,435.43	-213.69	541.20	581.86	0.00	0.00	0.00
3,600.00	13.24	111.55	3,532.77	-222.10	562.51	604.77	0.00	0.00	0.00
PARKMAN									
3,622.83	13.24	111.55	3,555.00	-224.02	567.37	610.00	0.00	0.00	0.00
3,700.00	13.24	111.55	3,630.11	-230.51	583.81	627.67	0.00	0.00	0.00
3,800.00	13.24	111.55	3,727.46	-238.92	605.11	650.57	0.00	0.00	0.00
3,900.00	13.24	111.55	3,824.80	-247.33	626.42	673.48	0.00	0.00	0.00
4,000.00	13.24	111.55	3,922.14	-255.74	647.72	696.38	0.00	0.00	0.00
4,100.00	13.24	111.55	4,019.48	-264.15	669.02	719.28	0.00	0.00	0.00
4,200.00	13.24	111.55	4,116.82	-272.56	690.33	742.19	0.00	0.00	0.00
4,300.00	13.24	111.55	4,214.16	-280.98	711.63	765.09	0.00	0.00	0.00
SUSSEX									
4,352.22	13.24	111.55	4,265.00	-285.37	722.76	777.05	0.00	0.00	0.00
4,400.00	13.24	111.55	4,311.51	-289.39	732.93	787.99	0.00	0.00	0.00
4,500.00	13.24	111.55	4,408.85	-297.80	754.24	810.90	0.00	0.00	0.00
4,600.00	13.24	111.55	4,506.19	-306.21	775.54	833.80	0.00	0.00	0.00
4,700.00	13.24	111.55	4,603.53	-314.62	796.84	856.71	0.00	0.00	0.00
4,800.00	13.24	111.55	4,700.87	-323.03	818.15	879.61	0.00	0.00	0.00
4,900.00	13.24	111.55	4,798.22	-331.44	839.45	902.51	0.00	0.00	0.00
5,000.00	13.24	111.55	4,895.56	-339.85	860.75	925.42	0.00	0.00	0.00
Start Drop -2.00									

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_WINTERS 19-3
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 4647.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 4647.00ft (Original Well Elev)
Site:	WELD_WINTERS 12-3 PAD	North Reference:	True
Well:	P_WINTERS 19-3	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_WINTERS 19-3		
Design:	PLAN #1 3-10-10 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)
5,083.52	13.24	111.55	4,976.86	-346.88	878.55	944.55	0.00	0.00	0.00
5,100.00	12.91	111.55	4,992.91	-348.25	882.01	948.27	2.00	-2.00	0.00
5,200.00	10.91	111.55	5,090.75	-355.83	901.21	968.91	2.00	-2.00	0.00
5,300.00	8.91	111.55	5,189.25	-362.15	917.22	986.12	2.00	-2.00	0.00
5,400.00	6.91	111.55	5,288.30	-367.20	930.02	999.89	2.00	-2.00	0.00
5,500.00	4.91	111.55	5,387.76	-370.98	939.60	1,010.18	2.00	-2.00	0.00
5,600.00	2.91	111.55	5,487.52	-373.49	945.94	1,017.00	2.00	-2.00	0.00
5,700.00	0.91	111.55	5,587.46	-374.71	949.04	1,020.34	2.00	-2.00	0.00
Start 1467.00 hold at 5745.54 MD									
5,745.54	0.00	0.00	5,633.00	-374.85	949.38	1,020.70	2.00	-2.00	-244.94
5,800.00	0.00	0.00	5,687.46	-374.85	949.38	1,020.70	0.00	0.00	0.00
5,900.00	0.00	0.00	5,787.46	-374.85	949.38	1,020.70	0.00	0.00	0.00
6,000.00	0.00	0.00	5,887.46	-374.85	949.38	1,020.70	0.00	0.00	0.00
6,100.00	0.00	0.00	5,987.46	-374.85	949.38	1,020.70	0.00	0.00	0.00
6,200.00	0.00	0.00	6,087.46	-374.85	949.38	1,020.70	0.00	0.00	0.00
6,300.00	0.00	0.00	6,187.46	-374.85	949.38	1,020.70	0.00	0.00	0.00
6,400.00	0.00	0.00	6,287.46	-374.85	949.38	1,020.70	0.00	0.00	0.00
6,500.00	0.00	0.00	6,387.46	-374.85	949.38	1,020.70	0.00	0.00	0.00
6,600.00	0.00	0.00	6,487.46	-374.85	949.38	1,020.70	0.00	0.00	0.00
6,700.00	0.00	0.00	6,587.46	-374.85	949.38	1,020.70	0.00	0.00	0.00
NIO A									
6,745.54	0.00	0.00	6,633.00	-374.85	949.38	1,020.70	0.00	0.00	0.00
6,800.00	0.00	0.00	6,687.46	-374.85	949.38	1,020.70	0.00	0.00	0.00
6,900.00	0.00	0.00	6,787.46	-374.85	949.38	1,020.70	0.00	0.00	0.00
7,000.00	0.00	0.00	6,887.46	-374.85	949.38	1,020.70	0.00	0.00	0.00
CODELL									
7,053.54	0.00	0.00	6,941.00	-374.85	949.38	1,020.70	0.00	0.00	0.00
7,100.00	0.00	0.00	6,987.46	-374.85	949.38	1,020.70	0.00	0.00	0.00
GREENHORN									
7,128.54	0.00	0.00	7,016.00	-374.85	949.38	1,020.70	0.00	0.00	0.00
7,200.00	0.00	0.00	7,087.46	-374.85	949.38	1,020.70	0.00	0.00	0.00
PBHL_WINTERS 19-3(1300 FSL 1455 FWL)50'TGT RAD									
7,212.54	0.00	0.00	7,100.00	-374.85	949.38	1,020.70	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_WINTERS 19-3 - plan hits target center - Circle (radius 50.00)	0.00	0.00	7,100.00	-374.85	949.38	1,398,669.45	3,235,617.61	40° 25' 28.787 N	104° 39' 13.273 W

Casing Points				
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
530.00	530.00	8 5/8"	8.62	11.00

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_WINTERS 19-3
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 4647.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 4647.00ft (Original Well Elev)
Site:	WELD_WINTERS 12-3 PAD	North Reference:	True
Well:	P_WINTERS 19-3	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_WINTERS 19-3		
Design:	PLAN #1 3-10-10 RHS		

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,622.83	3,555.00	PARKMAN			
4,352.22	4,265.00	SUSSEX			
6,745.54	6,633.00	NIO A			
7,053.54	6,941.00	CODELL			
7,128.54	7,016.00	GREENHORN			

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
630.00	630.00	0.00	0.00	Start Build 2.00	
1,292.02	1,286.14	-27.97	70.83	Start 3791.50 hold at 1292.02 MD	
5,083.52	4,976.86	-346.88	878.55	Start Drop -2.00	
5,745.54	5,633.00	-374.85	949.38	Start 1467.00 hold at 5745.54 MD	
7,212.54	7,100.00	-374.85	949.38	TD at 7212.54	



US ROCKIES REGION PLANNING

**COLORADO NORTHERN ZONE - 83
WELD_WINTERS 12-3 PAD
P_WINTERS 19-3**

**P_WINTERS 19-3
PLAN #1 3-10-10 RHS**

Anticollision Report

10 March, 2010



Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_WINTERS 19-3
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4647.00ft (Original Well Elev)
Reference Site:	WELD_WINTERS 12-3 PAD	MD Reference:	WELL @ 4647.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_WINTERS 19-3	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_WINTERS 19-3	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-10-10 RHS	Offset TVD Reference:	Offset Datum

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

Survey Tool Program	Date 3/10/2010			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	7,212.54	PLAN #1 3-10-10 RHS (P_WINTERS 19-3	MWD	MWD - Standard

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
WELD_WINTERS 12-3 PAD						
P_WINTERS 23-3 - P_WINTERS 23-3 - PLAN #1 3-10-1	406.51	406.53	15.90	14.34	10.233	CC, ES
P_WINTERS 23-3 - P_WINTERS 23-3 - PLAN #1 3-10-1	500.00	499.81	16.66	14.71	8.518	SF
P_WINTERS 33-3 - P_WINTERS 33-3 - PLAN #1 3-10-1	785.57	786.50	31.24	28.05	9.799	CC
P_WINTERS 33-3 - P_WINTERS 33-3 - PLAN #1 3-10-1	800.00	800.95	31.27	28.03	9.642	ES
P_WINTERS 33-3 - P_WINTERS 33-3 - PLAN #1 3-10-1	900.00	900.49	34.33	30.69	9.418	SF
P_WINTERS 35-3 - P_WINTERS 35-3 - PLAN #1 3-10-1	300.00	300.00	16.05	14.96	14.719	CC, ES
P_WINTERS 35-3 - P_WINTERS 35-3 - PLAN #1 3-10-1	500.00	498.70	22.39	20.45	11.541	SF

Offset Design WELD_WINTERS 12-3 PAD - P_WINTERS 23-3 - P_WINTERS 23-3 - PLAN #1 3-10-10 RHS													Offset Site Error: 0.00 ft
Survey Program: 0-MWD													Offset Well Error: 0.00 ft
Reference Measured Depth (ft)	Vertical Depth (ft)	Offset Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	1.00	16.02	0.28	16.02				
100.00	100.00	100.00	100.00	0.10	0.10	1.00	16.02	0.28	16.02	15.83	0.19	83.849	
200.00	200.00	200.00	200.00	0.32	0.32	1.00	16.02	0.28	16.02	15.38	0.64	25.007	
300.00	300.00	300.00	300.00	0.55	0.55	1.00	16.02	0.28	16.02	14.93	1.09	14.695	
400.00	400.00	400.03	400.01	0.77	0.76	7.25	15.77	2.01	15.90	14.37	1.53	10.422	
406.51	406.51	406.53	406.51	0.78	0.77	8.10	15.74	2.24	15.90	14.34	1.55	10.233	CC, ES
500.00	500.00	499.81	499.65	0.99	0.97	25.51	15.04	7.17	16.66	14.71	1.96	8.518	SF
600.00	600.00	599.12	598.57	1.22	1.21	48.69	13.82	15.72	20.98	18.58	2.40	8.740	
630.00	630.00	628.78	628.06	1.29	1.29	54.79	13.36	18.94	23.26	20.72	2.54	9.151	
700.00	699.99	697.81	696.53	1.43	1.49	-46.36	12.13	27.58	29.74	26.87	2.86	10.388	
800.00	799.90	796.09	793.61	1.63	1.80	-38.55	9.98	42.70	40.30	37.01	3.29	12.239	
900.00	899.60	893.96	889.71	1.84	2.17	-34.82	7.37	61.02	51.60	47.86	3.75	13.777	
1,000.00	998.97	991.43	984.73	2.09	2.59	-33.07	4.32	82.49	63.32	59.09	4.23	14.985	
1,100.00	1,097.89	1,088.49	1,078.57	2.37	3.07	-32.41	0.83	107.03	75.32	70.58	4.74	15.893	
1,200.00	1,196.25	1,185.14	1,171.12	2.69	3.60	-32.39	-3.09	134.58	87.57	82.28	5.30	16.535	
1,292.02	1,286.14	1,273.72	1,255.08	3.04	4.15	-32.72	-7.07	162.54	99.05	93.20	5.86	16.913	
1,300.00	1,293.91	1,281.38	1,262.30	3.07	4.20	-32.77	-7.43	165.08	100.07	94.16	5.91	16.937	
1,400.00	1,391.25	1,376.98	1,351.79	3.49	4.86	-32.99	-12.17	198.35	114.45	107.88	6.57	17.416	
1,500.00	1,488.59	1,471.62	1,439.24	3.93	5.58	-32.68	-17.27	234.18	131.92	124.67	7.25	18.200	
1,600.00	1,585.94	1,566.59	1,525.80	4.38	6.36	-32.06	-22.77	272.85	152.28	144.35	7.93	19.198	
1,700.00	1,683.28	1,664.33	1,614.59	4.84	7.19	-31.49	-28.52	313.30	173.37	164.73	8.64	20.070	

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_WINTERS 19-3
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4647.00ft (Original Well Elev)
Reference Site:	WELD_WINTERS 12-3 PAD	MD Reference:	WELL @ 4647.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_WINTERS 19-3	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_WINTERS 19-3	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-10-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_WINTERS 12-3 PAD - P_WINTERS 23-3 - P_WINTERS 23-3 - PLAN #1 3-10-10 RHS												Offset Site Error:	0.00 ft
Survey Program: 0-MWD												Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
1,800.00	1,780.62	1,762.07	1,703.38	5.31	8.02	-31.05	-34.28	353.76	194.46	185.11	9.35	20.797	
1,900.00	1,877.96	1,859.81	1,792.16	5.78	8.87	-30.69	-40.04	394.21	215.57	205.50	10.07	21.410	
2,000.00	1,975.30	1,957.55	1,880.95	6.26	9.72	-30.39	-45.79	434.67	236.68	225.89	10.79	21.933	
2,100.00	2,072.65	2,055.29	1,969.74	6.74	10.57	-30.14	-51.55	475.12	257.80	246.28	11.52	22.384	
2,200.00	2,169.99	2,153.03	2,058.53	7.23	11.43	-29.93	-57.31	515.58	278.92	266.67	12.25	22.776	
2,300.00	2,267.33	2,250.77	2,147.31	7.71	12.29	-29.75	-63.06	556.03	300.04	287.07	12.98	23.121	
2,400.00	2,364.67	2,348.51	2,236.10	8.20	13.14	-29.60	-68.82	596.49	321.17	307.46	13.71	23.426	
2,500.00	2,462.01	2,446.25	2,324.89	8.69	14.01	-29.46	-74.58	636.94	342.30	327.85	14.44	23.698	
2,600.00	2,559.35	2,543.99	2,413.68	9.18	14.87	-29.34	-80.33	677.40	363.43	348.25	15.18	23.942	
2,700.00	2,656.70	2,641.73	2,502.46	9.67	15.73	-29.23	-86.09	717.85	384.56	368.64	15.92	24.162	
2,800.00	2,754.04	2,739.47	2,591.25	10.16	16.59	-29.13	-91.85	758.31	405.69	389.04	16.65	24.362	
2,900.00	2,851.38	2,837.21	2,680.04	10.66	17.46	-29.05	-97.60	798.76	426.83	409.44	17.39	24.544	
3,000.00	2,948.72	2,934.95	2,768.83	11.15	18.32	-28.97	-103.36	839.22	447.96	429.83	18.13	24.710	
3,100.00	3,046.06	3,032.68	2,857.61	11.65	19.19	-28.90	-109.12	879.67	469.10	450.23	18.87	24.863	
3,200.00	3,143.41	3,130.42	2,946.40	12.14	20.06	-28.83	-114.87	920.13	490.23	470.63	19.61	25.004	
3,300.00	3,240.75	3,228.16	3,035.19	12.63	20.92	-28.77	-120.63	960.58	511.37	491.02	20.34	25.135	
3,400.00	3,338.09	3,325.90	3,123.98	13.13	21.79	-28.72	-126.39	1,001.04	532.51	511.42	21.08	25.257	
3,500.00	3,435.43	3,423.64	3,212.76	13.63	22.66	-28.66	-132.14	1,041.49	553.64	531.81	21.83	25.364	
3,600.00	3,532.77	3,521.38	3,301.55	14.12	23.52	-28.62	-137.90	1,081.95	574.78	552.21	22.57	25.462	
3,700.00	3,630.11	3,619.12	3,390.34	14.62	24.39	-28.57	-143.66	1,122.41	595.92	572.60	23.32	25.553	
3,800.00	3,727.46	3,716.86	3,479.13	15.12	25.26	-28.53	-149.41	1,162.86	617.06	592.99	24.07	25.639	
3,900.00	3,824.80	3,814.60	3,567.91	15.61	26.13	-28.49	-155.17	1,203.32	638.20	613.38	24.81	25.719	
4,000.00	3,922.14	3,912.34	3,656.70	16.11	26.99	-28.46	-160.93	1,243.77	659.34	633.77	25.56	25.794	
4,100.00	4,019.48	4,010.08	3,745.49	16.61	27.86	-28.42	-166.68	1,284.23	680.47	654.17	26.31	25.864	
4,200.00	4,116.82	4,107.82	3,834.28	17.11	28.73	-28.39	-172.44	1,324.68	701.61	674.56	27.06	25.930	
4,300.00	4,214.16	4,205.56	3,923.06	17.60	29.60	-28.36	-178.20	1,365.14	722.75	694.95	27.81	25.993	
4,400.00	4,311.51	4,303.30	4,011.85	18.10	30.47	-28.34	-183.95	1,405.59	743.89	715.34	28.55	26.051	
4,500.00	4,408.85	4,401.04	4,100.64	18.60	31.34	-28.31	-189.71	1,446.05	765.03	735.73	29.30	26.107	
4,600.00	4,506.19	4,498.78	4,189.43	19.10	32.21	-28.28	-195.47	1,486.50	786.17	756.12	30.05	26.160	
4,700.00	4,603.53	4,596.51	4,278.21	19.60	33.08	-28.26	-201.22	1,526.96	807.31	776.51	30.80	26.210	
4,800.00	4,700.87	4,694.25	4,367.00	20.09	33.94	-28.24	-206.98	1,567.41	828.46	796.90	31.55	26.258	
4,900.00	4,798.22	4,791.99	4,455.79	20.59	34.81	-28.22	-212.73	1,607.87	849.60	817.30	32.30	26.303	
5,000.00	4,895.56	4,889.73	4,544.58	21.09	35.68	-28.20	-218.49	1,648.32	870.74	837.69	33.05	26.346	
5,083.52	4,976.86	4,971.37	4,618.73	21.51	36.41	-28.18	-223.30	1,682.11	888.39	854.72	33.68	26.380	
5,100.00	4,992.91	4,987.46	4,633.36	21.58	36.55	-28.21	-224.25	1,688.77	891.92	858.13	33.79	26.395	
5,200.00	5,090.75	5,084.74	4,721.72	21.92	37.42	-28.35	-229.98	1,729.04	915.05	880.65	34.40	26.599	
5,300.00	5,189.25	5,181.21	4,809.36	22.22	38.28	-28.41	-235.66	1,768.97	941.17	906.23	34.94	26.938	
5,400.00	5,288.30	5,276.78	4,896.18	22.48	39.13	-28.42	-241.29	1,808.53	970.25	934.85	35.40	27.408	
5,500.00	5,387.76	5,397.67	5,006.43	22.70	40.11	-28.29	-248.27	1,857.61	1,001.61	965.78	35.82	27.959	
5,600.00	5,487.52	5,542.69	5,141.15	22.87	41.02	-28.04	-255.83	1,910.70	1,031.79	995.64	36.15	28.544	
5,700.00	5,587.46	5,690.86	5,281.42	23.01	41.83	-27.77	-262.54	1,957.91	1,060.22	1,023.84	36.38	29.142	
5,745.54	5,633.00	5,759.38	5,347.08	23.06	42.16	83.92	-265.30	1,977.30	1,072.55	1,036.10	36.46	29.419	
5,800.00	5,687.46	5,842.35	5,427.19	23.12	42.53	84.20	-268.35	1,998.69	1,086.34	1,049.72	36.62	29.667	
5,900.00	5,787.46	5,997.86	5,578.86	23.23	43.12	84.64	-273.16	2,032.55	1,107.75	1,070.82	36.93	29.997	
6,000.00	5,887.46	6,156.76	5,735.53	23.34	43.57	84.95	-276.88	2,058.68	1,123.94	1,086.69	37.25	30.171	
6,100.00	5,987.46	6,318.16	5,895.92	23.45	43.91	85.16	-279.40	2,076.39	1,134.74	1,097.16	37.59	30.191	
6,200.00	6,087.46	6,481.09	6,058.59	23.57	44.12	85.26	-280.65	2,085.16	1,140.05	1,102.13	37.92	30.067	
6,300.00	6,187.46	6,609.97	6,187.46	23.68	44.21	85.27	-280.79	2,086.12	1,140.62	1,102.40	38.22	29.844	
6,400.00	6,287.46	6,709.97	6,287.46	23.80	44.28	85.27	-280.79	2,086.12	1,140.62	1,102.13	38.49	29.632	
6,500.00	6,387.46	6,809.97	6,387.46	23.92	44.34	85.27	-280.79	2,086.12	1,140.62	1,101.85	38.77	29.420	
6,600.00	6,487.46	6,909.97	6,487.46	24.04	44.41	85.27	-280.79	2,086.12	1,140.62	1,101.57	39.05	29.208	
6,700.00	6,587.46	7,009.97	6,587.46	24.16	44.48	85.27	-280.79	2,086.12	1,140.62	1,101.29	39.34	28.998	

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_WINTERS 19-3
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4647.00ft (Original Well Elev)
Reference Site:	WELD_WINTERS 12-3 PAD	MD Reference:	WELL @ 4647.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_WINTERS 19-3	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_WINTERS 19-3	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-10-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_WINTERS 12-3 PAD - P_WINTERS 23-3 - P_WINTERS 23-3 - PLAN #1 3-10-10 RHS												Offset Site Error:	0.00 ft
Survey Program: 0-MWD												Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
6,800.00	6,687.46	7,109.97	6,687.46	24.29	44.55	85.27	-280.79	2,086.12	1,140.62	1,101.00	39.62	28.788	
6,900.00	6,787.46	7,209.97	6,787.46	24.41	44.62	85.27	-280.79	2,086.12	1,140.62	1,100.71	39.91	28.579	
7,000.00	6,887.46	7,309.97	6,887.46	24.54	44.70	85.27	-280.79	2,086.12	1,140.62	1,100.42	40.20	28.371	
7,100.00	6,987.46	7,409.97	6,987.46	24.67	44.77	85.27	-280.79	2,086.12	1,140.62	1,100.12	40.50	28.164	
7,200.00	7,087.46	7,509.97	7,087.46	24.80	44.84	85.27	-280.79	2,086.12	1,140.62	1,099.83	40.80	27.958	
7,212.54	7,100.00	7,522.51	7,100.00	24.82	44.85	85.27	-280.79	2,086.12	1,140.62	1,099.79	40.84	27.932	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_WINTERS 19-3
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4647.00ft (Original Well Elev)
Reference Site:	WELD_WINTERS 12-3 PAD	MD Reference:	WELL @ 4647.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_WINTERS 19-3	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_WINTERS 19-3	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-10-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_WINTERS 12-3 PAD - P_WINTERS 33-3 - P_WINTERS 33-3 - PLAN #1 3-10-10 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)	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	1.00	32.03	0.56	32.04				
100.00	100.00	100.00	100.00	0.10	0.10	1.00	32.03	0.56	32.04	31.85	0.19	167.697	
200.00	200.00	200.00	200.00	0.32	0.32	1.00	32.03	0.56	32.04	31.40	0.64	50.015	
300.00	300.00	300.00	300.00	0.55	0.55	1.00	32.03	0.56	32.04	30.95	1.09	29.390	
400.00	400.00	400.00	400.00	0.77	0.77	1.00	32.03	0.56	32.04	30.50	1.54	20.809	
500.00	500.00	500.00	500.00	0.99	0.99	1.00	32.03	0.56	32.04	30.05	1.99	16.107	
600.00	600.00	600.00	600.00	1.22	1.22	1.00	32.03	0.56	32.04	29.60	2.44	13.138	
630.00	630.00	630.00	630.00	1.29	1.29	1.00	32.03	0.56	32.04	29.47	2.57	12.449	
700.00	699.99	700.54	700.53	1.43	1.43	-113.10	31.42	-0.06	31.75	28.89	2.86	11.103	
785.57	785.49	786.50	786.42	1.60	1.59	-123.40	29.01	-2.47	31.24	28.05	3.19	9.799 CC	
800.00	799.90	800.95	800.85	1.63	1.62	-125.92	28.43	-3.05	31.27	28.03	3.24	9.642 ES	
900.00	899.60	900.49	900.09	1.84	1.82	-147.72	23.02	-8.47	34.33	30.69	3.65	9.418 SF	
1,000.00	998.97	998.67	997.66	2.09	2.06	-169.35	15.30	-16.21	45.33	41.27	4.06	11.168	
1,100.00	1,097.89	1,095.76	1,093.83	2.37	2.32	176.48	5.94	-25.57	64.68	60.19	4.49	14.410	
1,200.00	1,196.25	1,192.18	1,189.34	2.69	2.59	169.28	-3.43	-34.97	89.50	84.56	4.94	18.126	
1,292.02	1,286.14	1,280.14	1,276.46	3.04	2.86	165.77	-11.99	-43.53	115.88	110.51	5.37	21.593	
1,300.00	1,293.91	1,287.74	1,283.99	3.07	2.88	165.57	-12.73	-44.27	118.30	112.89	5.41	21.879	
1,400.00	1,391.25	1,382.90	1,378.24	3.49	3.18	163.55	-21.98	-53.54	148.72	142.79	5.93	25.089	
1,500.00	1,488.59	1,478.05	1,472.49	3.93	3.48	162.22	-31.24	-62.81	179.24	172.78	6.46	27.733	
1,600.00	1,585.94	1,573.21	1,566.75	4.38	3.79	161.27	-40.49	-72.08	209.83	202.82	7.01	29.932	
1,700.00	1,683.28	1,668.37	1,661.00	4.84	4.10	160.57	-49.74	-81.35	240.46	232.89	7.57	31.781	
1,800.00	1,780.62	1,763.53	1,755.25	5.31	4.41	160.02	-59.00	-90.62	271.11	262.98	8.13	33.353	
1,900.00	1,877.96	1,858.69	1,849.50	5.78	4.73	159.59	-68.25	-99.89	301.78	293.08	8.70	34.702	
2,000.00	1,975.30	1,953.85	1,943.76	6.26	5.05	159.24	-77.51	-109.15	332.46	323.19	9.27	35.871	
2,100.00	2,072.65	2,049.01	2,038.01	6.74	5.37	158.94	-86.76	-118.42	363.15	353.31	9.84	36.893	
2,200.00	2,169.99	2,144.16	2,132.26	7.23	5.69	158.69	-96.02	-127.69	393.85	383.43	10.42	37.793	
2,300.00	2,267.33	2,239.32	2,226.51	7.71	6.02	158.48	-105.27	-136.96	424.56	413.56	11.00	38.592	
2,400.00	2,364.67	2,334.48	2,320.77	8.20	6.34	158.30	-114.52	-146.23	455.27	443.68	11.58	39.306	
2,500.00	2,462.01	2,429.64	2,415.02	8.69	6.67	158.14	-123.78	-155.50	485.98	473.81	12.17	39.948	
2,600.00	2,559.35	2,524.80	2,509.27	9.18	6.99	157.99	-133.03	-164.76	516.70	503.95	12.75	40.528	
2,700.00	2,656.70	2,619.96	2,603.52	9.67	7.32	157.87	-142.29	-174.03	547.41	534.08	13.33	41.055	
2,800.00	2,754.04	2,715.11	2,697.78	10.16	7.65	157.76	-151.54	-183.30	578.14	564.22	13.92	41.536	
2,900.00	2,851.38	2,810.27	2,792.03	10.66	7.98	157.66	-160.79	-192.57	608.86	594.35	14.50	41.977	
3,000.00	2,948.72	2,905.43	2,886.28	11.15	8.31	157.56	-170.05	-201.84	639.58	624.49	15.10	42.370	
3,100.00	3,046.06	3,000.59	2,980.54	11.65	8.63	157.48	-179.30	-211.11	670.31	654.62	15.69	42.727	
3,200.00	3,143.41	3,095.75	3,074.79	12.14	8.96	157.41	-188.56	-220.38	701.04	684.75	16.28	43.056	
3,300.00	3,240.75	3,190.91	3,169.04	12.63	9.29	157.34	-197.81	-229.64	731.76	714.89	16.88	43.360	
3,400.00	3,338.09	3,286.06	3,263.29	13.13	9.62	157.27	-207.07	-238.91	762.49	745.02	17.47	43.642	
3,500.00	3,435.43	3,381.22	3,357.55	13.63	9.95	157.21	-216.32	-248.18	793.22	775.16	18.07	43.904	
3,600.00	3,532.77	3,476.38	3,451.80	14.12	10.28	157.16	-225.57	-257.45	823.95	805.29	18.66	44.148	
3,700.00	3,630.11	3,571.54	3,546.05	14.62	10.61	157.11	-234.83	-266.72	854.68	835.42	19.26	44.376	
3,800.00	3,727.46	3,666.70	3,640.30	15.12	10.94	157.06	-244.08	-275.99	885.42	865.56	19.86	44.589	
3,900.00	3,824.80	3,761.86	3,734.56	15.61	11.28	157.02	-253.34	-285.26	916.15	895.69	20.45	44.789	
4,000.00	3,922.14	3,857.01	3,828.81	16.11	11.61	156.98	-262.59	-294.52	946.88	925.83	21.05	44.977	
4,100.00	4,019.48	3,952.17	3,923.06	16.61	11.94	156.94	-271.85	-303.79	977.61	955.96	21.65	45.153	
4,200.00	4,116.82	4,047.33	4,017.31	17.11	12.27	156.90	-281.10	-313.06	1,008.35	986.10	22.25	45.320	
4,300.00	4,214.16	4,142.49	4,111.57	17.60	12.60	156.87	-290.35	-322.33	1,039.08	1,016.23	22.85	45.477	
4,400.00	4,311.51	4,237.65	4,205.82	18.10	12.93	156.84	-299.61	-331.60	1,069.81	1,046.37	23.45	45.626	
4,500.00	4,408.85	4,332.81	4,300.07	18.60	13.26	156.81	-308.86	-340.87	1,100.55	1,076.50	24.05	45.767	
4,600.00	4,506.19	4,427.96	4,394.33	19.10	13.59	156.78	-318.12	-350.14	1,131.28	1,106.64	24.65	45.901	
4,700.00	4,603.53	4,523.12	4,488.58	19.60	13.93	156.75	-327.37	-359.40	1,162.02	1,136.77	25.25	46.028	
4,800.00	4,700.87	4,618.28	4,582.83	20.09	14.26	156.73	-336.62	-368.67	1,192.75	1,166.91	25.85	46.149	

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_WINTERS 19-3
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4647.00ft (Original Well Elev)
Reference Site:	WELD_WINTERS 12-3 PAD	MD Reference:	WELL @ 4647.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_WINTERS 19-3	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_WINTERS 19-3	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-10-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_WINTERS 12-3 PAD - P_WINTERS 33-3 - P_WINTERS 33-3 - PLAN #1 3-10-10 RHS												Offset Site Error:	0.00 ft
Survey Program: 0-MWD												Offset Well Error:	0.00 ft
Reference	Offset	Semi Major Axis		Distance									
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
4,900.00	4,798.22	4,713.44	4,677.08	20.59	14.59	156.70	-345.88	-377.94	1,223.49	1,197.04	26.45	46.264	
5,000.00	4,895.56	4,808.60	4,771.34	21.09	14.92	156.68	-355.13	-387.21	1,254.22	1,227.18	27.05	46.374	
5,083.52	4,976.86	4,888.07	4,850.06	21.51	15.20	156.66	-362.86	-394.95	1,279.89	1,252.35	27.55	46.462	
5,100.00	4,992.91	4,903.77	4,865.60	21.58	15.25	156.70	-364.39	-396.48	1,284.92	1,257.26	27.66	46.456	
5,200.00	5,090.75	4,999.55	4,960.47	21.92	15.59	156.87	-373.70	-405.81	1,313.62	1,285.33	28.28	46.445	
5,300.00	5,189.25	5,096.17	5,056.17	22.22	15.93	156.96	-383.10	-415.22	1,339.23	1,310.35	28.88	46.377	
5,400.00	5,288.30	5,193.51	5,152.59	22.48	16.27	156.96	-392.57	-424.70	1,361.73	1,332.30	29.44	46.259	
5,500.00	5,387.76	5,291.46	5,249.61	22.70	16.61	156.89	-402.09	-434.24	1,381.12	1,351.15	29.96	46.097	
5,600.00	5,487.52	5,426.94	5,384.03	22.87	16.99	156.68	-413.94	-446.11	1,396.48	1,365.98	30.50	45.792	
5,700.00	5,587.46	5,581.85	5,538.49	23.01	17.29	156.50	-422.11	-454.29	1,404.98	1,374.06	30.93	45.428	
5,745.54	5,633.00	5,652.85	5,609.44	23.06	17.40	-92.00	-423.88	-456.06	1,406.49	1,375.40	31.10	45.231	
5,800.00	5,687.46	5,730.87	5,687.46	23.12	17.51	-92.02	-424.41	-456.59	1,406.84	1,375.54	31.30	44.945	
5,900.00	5,787.46	5,830.87	5,787.46	23.23	17.65	-92.02	-424.41	-456.59	1,406.84	1,375.24	31.61	44.510	
6,000.00	5,887.46	5,930.87	5,887.46	23.34	17.78	-92.02	-424.41	-456.59	1,406.84	1,374.94	31.91	44.092	
6,100.00	5,987.46	6,030.87	5,987.46	23.45	17.91	-92.02	-424.41	-456.59	1,406.84	1,374.63	32.21	43.677	
6,200.00	6,087.46	6,130.87	6,087.46	23.57	18.05	-92.02	-424.41	-456.59	1,406.84	1,374.33	32.52	43.266	
6,300.00	6,187.46	6,230.87	6,187.46	23.68	18.19	-92.02	-424.41	-456.59	1,406.84	1,374.02	32.83	42.858	
6,400.00	6,287.46	6,330.87	6,287.46	23.80	18.33	-92.02	-424.41	-456.59	1,406.84	1,373.70	33.14	42.453	
6,500.00	6,387.46	6,430.87	6,387.46	23.92	18.47	-92.02	-424.41	-456.59	1,406.84	1,373.39	33.46	42.052	
6,600.00	6,487.46	6,530.87	6,487.46	24.04	18.62	-92.02	-424.41	-456.59	1,406.84	1,373.07	33.77	41.654	
6,700.00	6,587.46	6,630.87	6,587.46	24.16	18.76	-92.02	-424.41	-456.59	1,406.84	1,372.75	34.10	41.261	
6,800.00	6,687.46	6,730.87	6,687.46	24.29	18.91	-92.02	-424.41	-456.59	1,406.84	1,372.42	34.42	40.872	
6,900.00	6,787.46	6,830.87	6,787.46	24.41	19.06	-92.02	-424.41	-456.59	1,406.84	1,372.09	34.75	40.486	
7,000.00	6,887.46	6,930.87	6,887.46	24.54	19.21	-92.02	-424.41	-456.59	1,406.84	1,371.76	35.08	40.105	
7,100.00	6,987.46	7,030.87	6,987.46	24.67	19.36	-92.02	-424.41	-456.59	1,406.84	1,371.43	35.41	39.728	
7,200.00	7,087.46	7,130.87	7,087.46	24.80	19.51	-92.02	-424.41	-456.59	1,406.84	1,371.10	35.75	39.355	
7,212.54	7,100.00	7,143.41	7,100.00	24.82	19.53	-92.02	-424.41	-456.59	1,406.84	1,371.05	35.79	39.308	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_WINTERS 19-3
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4647.00ft (Original Well Elev)
Reference Site:	WELD_WINTERS 12-3 PAD	MD Reference:	WELL @ 4647.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_WINTERS 19-3	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_WINTERS 19-3	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-10-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_WINTERS 12-3 PAD - P_WINTERS 35-3 - P_WINTERS 35-3 - PLAN #1 3-10-10 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)	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	-180.00	-16.05	0.00	16.05				
100.00	100.00	100.00	100.00	0.10	0.10	-180.00	-16.05	0.00	16.05	15.85	0.19	83.985	
200.00	200.00	200.00	200.00	0.32	0.32	-180.00	-16.05	0.00	16.05	15.40	0.64	25.048	
300.00	300.00	300.00	300.00	0.55	0.55	-180.00	-16.05	0.00	16.05	14.96	1.09	14.719 CC, ES	
400.00	400.00	399.47	399.45	0.77	0.75	177.32	-17.56	0.82	17.59	16.08	1.51	11.612	
500.00	500.00	498.70	498.54	0.99	0.94	171.55	-22.10	3.28	22.39	20.45	1.94	11.541 SF	
600.00	600.00	597.46	596.92	1.22	1.18	166.05	-29.61	7.35	30.66	28.27	2.40	12.785	
630.00	630.00	626.96	626.25	1.29	1.25	164.68	-32.43	8.88	33.83	31.29	2.55	13.286	
700.00	699.99	695.59	694.33	1.43	1.44	51.23	-40.02	13.00	41.92	39.13	2.79	15.032	
800.00	799.90	793.19	790.76	1.63	1.76	51.28	-53.27	20.18	54.48	51.27	3.21	16.971	
900.00	899.60	890.19	886.03	1.84	2.12	52.93	-69.30	28.87	68.21	64.55	3.66	18.639	
1,000.00	998.97	986.54	979.99	2.09	2.54	55.26	-88.02	39.02	83.22	79.07	4.15	20.058	
1,100.00	1,097.89	1,082.16	1,072.48	2.37	3.01	57.86	-109.33	50.57	99.64	94.95	4.70	21.220	
1,200.00	1,196.25	1,177.01	1,163.38	2.69	3.53	60.49	-133.14	63.48	117.60	112.28	5.32	22.111	
1,292.02	1,286.14	1,263.55	1,245.49	3.04	4.06	62.82	-157.16	76.50	135.56	129.58	5.97	22.689	
1,300.00	1,293.91	1,271.02	1,252.54	3.07	4.10	63.04	-159.34	77.68	137.19	131.15	6.04	22.730	
1,400.00	1,391.25	1,364.07	1,339.77	3.49	4.73	65.16	-187.78	93.11	159.28	152.46	6.83	23.324	
1,500.00	1,488.59	1,455.95	1,424.84	3.93	5.41	66.31	-218.30	109.65	184.31	176.65	7.65	24.078	
1,600.00	1,585.94	1,549.53	1,510.47	4.38	6.14	66.85	-251.49	127.64	211.72	203.21	8.51	24.878	
1,700.00	1,683.28	1,645.60	1,598.23	4.84	6.91	67.24	-285.83	146.26	239.46	230.06	9.40	25.476	
1,800.00	1,780.62	1,741.66	1,685.99	5.31	7.69	67.55	-320.18	164.88	267.21	256.90	10.30	25.934	
1,900.00	1,877.96	1,837.73	1,773.75	5.78	8.47	67.80	-354.53	183.50	294.96	283.74	11.22	26.292	
2,000.00	1,975.30	1,933.79	1,861.51	6.26	9.25	68.01	-388.87	202.12	322.72	310.57	12.14	26.576	
2,100.00	2,072.65	2,029.85	1,949.27	6.74	10.04	68.18	-423.22	220.74	350.48	337.40	13.07	26.807	
2,200.00	2,169.99	2,125.92	2,037.03	7.23	10.83	68.33	-457.56	239.36	378.24	364.23	14.01	26.996	
2,300.00	2,267.33	2,221.98	2,124.80	7.71	11.63	68.46	-491.91	257.99	406.00	391.05	14.95	27.153	
2,400.00	2,364.67	2,318.05	2,212.56	8.20	12.42	68.57	-526.26	276.61	433.77	417.87	15.90	27.285	
2,500.00	2,462.01	2,414.11	2,300.32	8.69	13.22	68.67	-560.60	295.23	461.54	444.69	16.85	27.398	
2,600.00	2,559.35	2,510.18	2,388.08	9.18	14.01	68.76	-594.95	313.85	489.30	471.51	17.80	27.494	
2,700.00	2,656.70	2,606.24	2,475.84	9.67	14.81	68.83	-629.29	332.47	517.07	498.32	18.75	27.578	
2,800.00	2,754.04	2,702.31	2,563.60	10.16	15.61	68.90	-663.64	351.09	544.84	525.14	19.70	27.650	
2,900.00	2,851.38	2,798.37	2,651.36	10.66	16.41	68.97	-697.98	369.71	572.62	551.95	20.66	27.714	
3,000.00	2,948.72	2,894.44	2,739.13	11.15	17.20	69.02	-732.33	388.33	600.39	578.77	21.62	27.771	
3,100.00	3,046.06	2,990.50	2,826.89	11.65	18.00	69.08	-766.68	406.95	628.16	605.58	22.58	27.821	
3,200.00	3,143.41	3,086.57	2,914.65	12.14	18.80	69.12	-801.02	425.57	655.93	632.39	23.54	27.866	
3,300.00	3,240.75	3,182.63	3,002.41	12.63	19.60	69.17	-835.37	444.19	683.70	659.20	24.50	27.906	
3,400.00	3,338.09	3,278.70	3,090.17	13.13	20.40	69.21	-869.71	462.81	711.48	686.02	25.46	27.942	
3,500.00	3,435.43	3,374.76	3,177.93	13.63	21.20	69.25	-904.06	481.43	739.25	712.83	26.43	27.975	
3,600.00	3,532.77	3,470.82	3,265.69	14.12	22.00	69.28	-938.40	500.05	767.03	739.64	27.39	28.005	
3,700.00	3,630.11	3,566.89	3,353.46	14.62	22.80	69.31	-972.75	518.67	794.80	766.45	28.35	28.032	
3,800.00	3,727.46	3,662.95	3,441.22	15.12	23.60	69.34	-1,007.10	537.29	822.57	793.26	29.32	28.057	
3,900.00	3,824.80	3,759.02	3,528.98	15.61	24.41	69.37	-1,041.44	555.91	850.35	820.07	30.28	28.080	
4,000.00	3,922.14	3,855.08	3,616.74	16.11	25.21	69.40	-1,075.79	574.53	878.12	846.87	31.25	28.101	
4,100.00	4,019.48	3,951.15	3,704.50	16.61	26.01	69.42	-1,110.13	593.15	905.90	873.68	32.21	28.120	
4,200.00	4,116.82	4,047.21	3,792.26	17.11	26.81	69.45	-1,144.48	611.77	933.67	900.49	33.18	28.138	
4,300.00	4,214.16	4,143.28	3,880.02	17.60	27.61	69.47	-1,178.82	630.39	961.45	927.30	34.15	28.155	
4,400.00	4,311.51	4,239.34	3,967.79	18.10	28.41	69.49	-1,213.17	649.01	989.22	954.11	35.12	28.171	
4,500.00	4,408.85	4,335.41	4,055.55	18.60	29.21	69.51	-1,247.52	667.63	1,017.00	980.92	36.08	28.185	
4,600.00	4,506.19	4,431.47	4,143.31	19.10	30.02	69.53	-1,281.86	686.25	1,044.77	1,007.72	37.05	28.199	
4,700.00	4,603.53	4,527.54	4,231.07	19.60	30.82	69.54	-1,316.21	704.87	1,072.55	1,034.53	38.02	28.211	
4,800.00	4,700.87	4,623.60	4,318.83	20.09	31.62	69.56	-1,350.55	723.49	1,100.33	1,061.34	38.99	28.223	
4,900.00	4,798.22	4,719.67	4,406.59	20.59	32.42	69.58	-1,384.90	742.11	1,128.10	1,088.15	39.95	28.234	

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_WINTERS 19-3
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4647.00ft (Original Well Elev)
Reference Site:	WELD_WINTERS 12-3 PAD	MD Reference:	WELL @ 4647.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_WINTERS 19-3	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_WINTERS 19-3	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-10-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_WINTERS 12-3 PAD - P_WINTERS 35-3 - P_WINTERS 35-3 - PLAN #1 3-10-10 RHS												Offset Site Error:	0.00 ft
Survey Program: 0-MWD												Offset Well Error:	0.00 ft
Reference	Offset	Semi Major Axis		Distance									
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,000.00	4,895.56	4,830.92	4,508.37	21.09	33.26	69.60	-1,424.40	763.53	1,155.69	1,114.72	40.97	28.211	
5,083.52	4,976.86	4,954.87	4,623.39	21.51	33.97	69.74	-1,465.00	785.54	1,176.34	1,134.44	41.90	28.074	
5,100.00	4,992.91	4,979.57	4,646.54	21.58	34.10	69.85	-1,472.56	789.64	1,180.08	1,137.98	42.10	28.032	
5,200.00	5,090.75	5,130.92	4,789.95	21.92	34.86	70.46	-1,515.06	812.68	1,200.89	1,157.74	43.15	27.830	
5,300.00	5,189.25	5,284.54	4,937.90	22.22	35.53	70.96	-1,551.32	832.34	1,218.41	1,174.33	44.08	27.643	
5,400.00	5,288.30	5,440.08	5,089.74	22.48	36.08	71.36	-1,580.88	848.36	1,232.52	1,187.66	44.86	27.473	
5,500.00	5,387.76	5,597.15	5,244.71	22.70	36.53	71.65	-1,603.34	860.54	1,243.15	1,197.64	45.51	27.317	
5,600.00	5,487.52	5,755.34	5,401.95	22.87	36.85	71.84	-1,618.38	868.69	1,250.22	1,204.22	46.00	27.179	
5,700.00	5,587.46	5,914.20	5,560.56	23.01	37.06	71.93	-1,625.78	872.70	1,253.68	1,207.33	46.35	27.050	
5,745.54	5,633.00	5,986.65	5,633.00	23.06	37.12	-176.51	-1,626.58	873.14	1,254.06	1,207.59	46.46	26.992	
5,800.00	5,687.46	6,041.11	5,687.46	23.12	37.15	-176.51	-1,626.58	873.14	1,254.06	1,207.48	46.57	26.927	
5,900.00	5,787.46	6,141.11	5,787.46	23.23	37.21	-176.51	-1,626.58	873.14	1,254.06	1,207.27	46.78	26.807	
6,000.00	5,887.46	6,241.11	5,887.46	23.34	37.28	-176.51	-1,626.58	873.14	1,254.06	1,207.06	46.99	26.685	
6,100.00	5,987.46	6,341.11	5,987.46	23.45	37.34	-176.51	-1,626.58	873.14	1,254.06	1,206.84	47.21	26.563	
6,200.00	6,087.46	6,441.11	6,087.46	23.57	37.40	-176.51	-1,626.58	873.14	1,254.06	1,206.63	47.43	26.440	
6,300.00	6,187.46	6,541.11	6,187.46	23.68	37.47	-176.51	-1,626.58	873.14	1,254.06	1,206.40	47.65	26.317	
6,400.00	6,287.46	6,641.11	6,287.46	23.80	37.53	-176.51	-1,626.58	873.14	1,254.06	1,206.18	47.88	26.193	
6,500.00	6,387.46	6,741.11	6,387.46	23.92	37.60	-176.51	-1,626.58	873.14	1,254.06	1,205.95	48.11	26.068	
6,600.00	6,487.46	6,841.11	6,487.46	24.04	37.67	-176.51	-1,626.58	873.14	1,254.06	1,205.72	48.34	25.943	
6,700.00	6,587.46	6,941.11	6,587.46	24.16	37.74	-176.51	-1,626.58	873.14	1,254.06	1,205.48	48.57	25.817	
6,800.00	6,687.46	7,041.11	6,687.46	24.29	37.81	-176.51	-1,626.58	873.14	1,254.06	1,205.24	48.81	25.691	
6,900.00	6,787.46	7,141.11	6,787.46	24.41	37.89	-176.51	-1,626.58	873.14	1,254.06	1,205.00	49.05	25.565	
7,000.00	6,887.46	7,241.11	6,887.46	24.54	37.96	-176.51	-1,626.58	873.14	1,254.06	1,204.76	49.30	25.439	
7,100.00	6,987.46	7,341.11	6,987.46	24.67	38.03	-176.51	-1,626.58	873.14	1,254.06	1,204.51	49.54	25.312	
7,200.00	7,087.46	7,441.11	7,087.46	24.80	38.11	-176.51	-1,626.58	873.14	1,254.06	1,204.26	49.79	25.185	
7,212.54	7,100.00	7,453.65	7,100.00	24.82	38.12	-176.51	-1,626.58	873.14	1,254.06	1,204.23	49.82	25.169	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_WINTERS 19-3
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4647.00ft (Original Well Elev)
Reference Site:	WELD_WINTERS 12-3 PAD	MD Reference:	WELL @ 4647.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_WINTERS 19-3	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_WINTERS 19-3	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-10-10 RHS	Offset TVD Reference:	Offset Datum

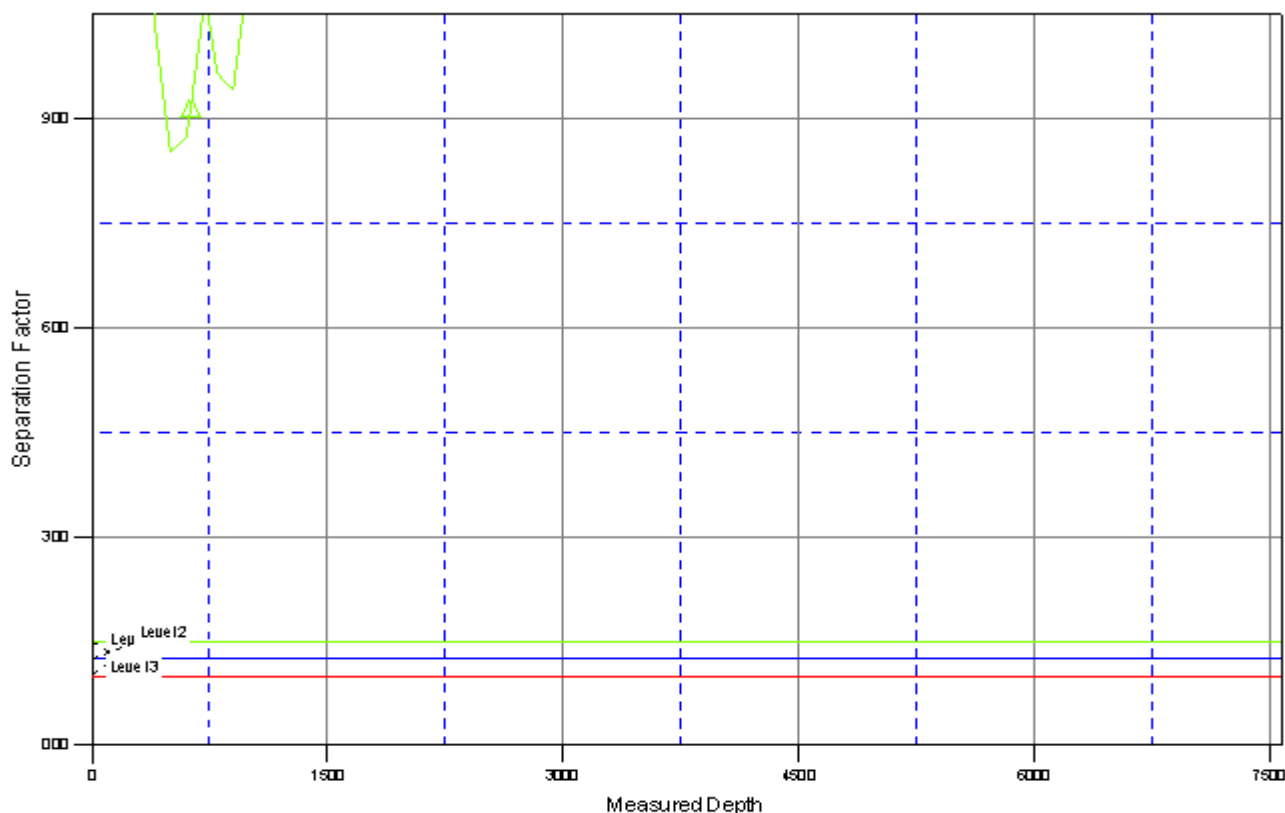
Reference Depths are relative to WELL @ 4647.00ft (Original Well Elev) Coordinates are relative to: P_WINTERS 19-3
Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Northern Zone
Central Meridian is 105° 30' 0.000 W ° Grid Convergence at Surface is: 0.54°



Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_WINTERS 19-3
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4647.00ft (Original Well Elev)
Reference Site:	WELD_WINTERS 12-3 PAD	MD Reference:	WELL @ 4647.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_WINTERS 19-3	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_WINTERS 19-3	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-10-10 RHS	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4647.00ft (Original Well Elev) Coordinates are relative to: P_WINTERS 19-3
Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Northern Zone
Central Meridian is 105° 30' 0.000 W ° Grid Convergence at Surface is: 0.54°

Separation Factor Plot



LEGEND

WINTERS 23-3, PLAN#1 3-10-10 RHS VD  P_WINTERS 33-3, P_WINTERS 33-3, PLAN#1 3-10-10 RHS VD  P_WINTERS 35-3, P_WINTERS 35-3