



US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_HIGHWAY 160 17-2 pad

P_HIGHWAY 160 8-2

P_HIGHWAY 160 8-2

Plan: PLAN #1 3-17-10 RHS

Standard Planning Report

17 March, 2010

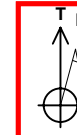




Project: COLORADO NORTHERN ZONE - 83
 Site: WELD_HIGHWAY 160 17-2 pad
 Well: P_HIGHWAY 160 8-2
 Wellbore: P_HIGHWAY 160 8-2
 Section: SECTION 2 T1N R66W
 SHL: 1496 FNL 1609 FEL
 Design: PLAN #1 3-17-10 RHS
 Latitude: 40° 4' 59.711 N
 Longitude: 104° 44' 26.120 W
 GL: 5104.00
 KB: WELL @ 5119.00ft (Original Well Elev)



Weatherford



Azimuths to True North
 Magnetic North: 8.99°

Magnetic Field
 Strength: 53096.4nT
 Dip Angle: 66.84°
 Date: 3/17/2010
 Model: IGRF2010

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
4256.00	4332.88	PARKMAN
4746.00	4837.38	SUSSEX
7226.00	7347.61	NIO A
7546.00	7667.61	CODELL
8006.00	8127.61	JSAND

CASING DETAILS			
TVD	MD	Name	Size
1100.00	1100.00	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	
1200.00	0.00	0.00	1200.00	0.00	0.00	0.00	0.00	0.00	Start Build 2.00
1888.57	13.77	116.65	1881.96	-36.94	73.61	2.00	116.65	82.35	Start 3770.47 hold at 1888.57 MD
5659.04	13.77	116.65	5544.04	-439.51	875.82	0.00	0.00	979.91	Start Drop -2.00
6347.61	0.00	0.00	6226.00	-476.44	949.42	2.00	180.00	1062.26	Start 1915.00 hold at 6347.61 MD
8262.61	0.00	0.00	8141.00	-476.44	949.42	0.00	0.00	1062.26	TD at 8262.61

LEGEND

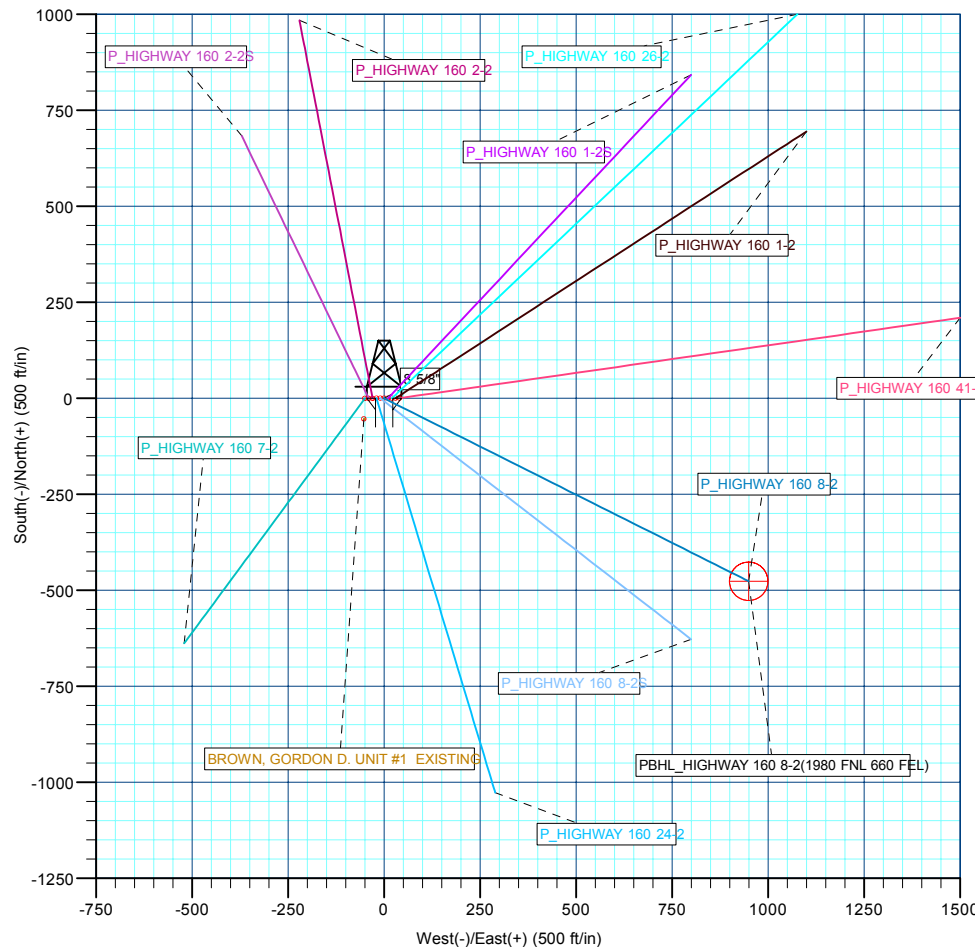
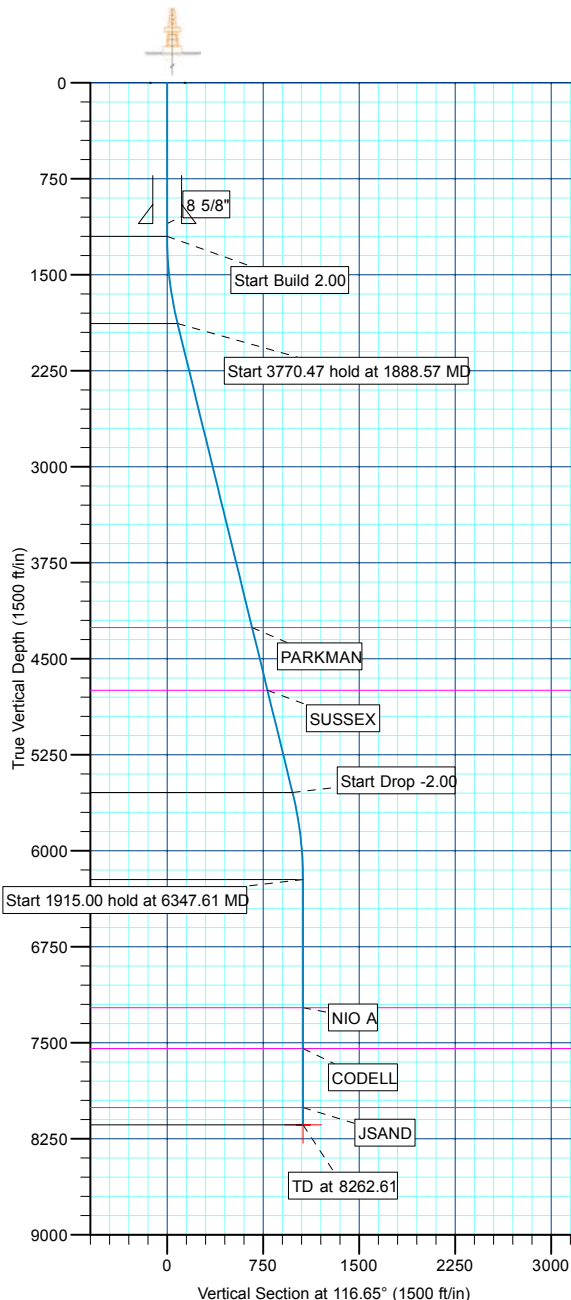
— BROWN, GORDON D. UNIT #1 EXISTING, BROWN, GORDON D. UNIT #1 EXISTING, BROWN, GORDON D. UNIT #1 EXISTING V0
 — P_HIGHWAY 160 1-2, P_HIGHWAY 160 1-2, PLAN #1 3-17-10 RHS V0
 — P_HIGHWAY 160 1-2S, P_HIGHWAY 160 1-2S, PLAN #1 3-17-10 RHS V0
 — P_HIGHWAY 160 2-2, P_HIGHWAY 160 2-2, PLAN #1 3-17-10 RHS V0
 — P_HIGHWAY 160 2-2S, P_HIGHWAY 160 2-2S, PLAN #1 3-17-10 RHS V0
 — P_HIGHWAY 160 24-2, P_HIGHWAY 160 24-2, PLAN #1 3-17-10 RHS V0
 — P_HIGHWAY 160 26-2, P_HIGHWAY 160 26-2, PLAN #1 3-17-10 RHS V0
 — P_HIGHWAY 160 41-2, P_HIGHWAY 160 41-2, PLAN #1 3-17-10 RHS V0
 — P_HIGHWAY 160 7-2, P_HIGHWAY 160 7-2, PLAN #1 3-17-10 RHS V0
 — P_HIGHWAY 160 8-2S, P_HIGHWAY 160 8-2S, PLAN #1 3-17-10 RHS V0
 — PLAN #1 3-17-10 RHS

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

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
PBHL	8141.00	-476.44	949.42	40° 4' 55.002 N	104° 44' 13.906 W	Circle (Radius: 50.00)

WELL DETAILS: P_HIGHWAY 160 8-2

+N/-S	+E/-W	Northing	Ground Level: Easting	5104.00 Latitude	Longitude	Slot
0.00	0.00	1274083.73	3212489.40	40° 4' 59.711 N	104° 44' 26.120 W	



Plan: PLAN #1 3-17-10 RHS (P_HIGHWAY 160 8-2/P_HIGHWAY 160 8-2)

Created By: Robert H. Scott Date: 15:08, March 17 2010

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_HIGHWAY 160 8-2
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 5119.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 5119.00ft (Original Well Elev)
Site:	WELD_HIGHWAY 160 17-2 pad	North Reference:	True
Well:	P_HIGHWAY 160 8-2	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_HIGHWAY 160 8-2		
Design:	PLAN #1 3-17-10 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_HIGHWAY 160 17-2 pad, SECTION 2 T1N R66W											
Site Position:						Northing:			1,274,084.36 ft			Latitude:			40° 4' 59.714 N		
From:			Lat/Long			Easting:			3,212,519.34 ft			Longitude:			104° 44' 25.735 W		
Position Uncertainty:			0.00 ft			Slot Radius:			in			Grid Convergence:			0.49 °		

Well	P_HIGHWAY 160 8-2					
Well Position	+N/-S	-0.38 ft	Northing:	1,274,083.73 ft	Latitude:	40° 4' 59.711 N
	+E/-W	-29.94 ft	Easting:	3,212,489.40 ft	Longitude:	104° 44' 26.120 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	5,104.00 ft

Wellbore	P_HIGHWAY 160 8-2				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/17/2010	8.99	66.84	53,096

Design	PLAN #1 3-17-10 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	116.65

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,888.57	13.77	116.65	1,881.96	-36.94	73.61	2.00	2.00	0.00	116.65	
5,659.04	13.77	116.65	5,544.04	-439.51	875.82	0.00	0.00	0.00	0.00	
6,347.61	0.00	0.00	6,226.00	-476.44	949.42	2.00	-2.00	0.00	180.00	
8,262.61	0.00	0.00	8,141.00	-476.44	949.42	0.00	0.00	0.00	0.00	PBHL_HIGHWAY 1

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_HIGHWAY 160 8-2
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 5119.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 5119.00ft (Original Well Elev)
Site:	WELD_HIGHWAY 160 17-2 pad	North Reference:	True
Well:	P_HIGHWAY 160 8-2	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_HIGHWAY 160 8-2		
Design:	PLAN #1 3-17-10 RHS		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
Start Build 2.00									
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	2.00	116.65	1,299.98	-0.78	1.56	1.75	2.00	2.00	0.00
1,400.00	4.00	116.65	1,399.84	-3.13	6.24	6.98	2.00	2.00	0.00
1,500.00	6.00	116.65	1,499.45	-7.04	14.03	15.69	2.00	2.00	0.00
1,600.00	8.00	116.65	1,598.70	-12.50	24.92	27.88	2.00	2.00	0.00
1,700.00	10.00	116.65	1,697.47	-19.52	38.90	43.52	2.00	2.00	0.00
1,800.00	12.00	116.65	1,795.62	-28.08	55.95	62.60	2.00	2.00	0.00
Start 3770.47 hold at 1888.57 MD									
1,888.57	13.77	116.65	1,881.96	-36.94	73.61	82.35	2.00	2.00	0.00
1,900.00	13.77	116.65	1,893.06	-38.16	76.04	85.07	0.00	0.00	0.00
2,000.00	13.77	116.65	1,990.19	-48.83	97.31	108.88	0.00	0.00	0.00
2,100.00	13.77	116.65	2,087.31	-59.51	118.59	132.68	0.00	0.00	0.00
2,200.00	13.77	116.65	2,184.44	-70.19	139.87	156.49	0.00	0.00	0.00
2,300.00	13.77	116.65	2,281.56	-80.87	161.14	180.29	0.00	0.00	0.00
2,400.00	13.77	116.65	2,378.69	-91.54	182.42	204.10	0.00	0.00	0.00
2,500.00	13.77	116.65	2,475.81	-102.22	203.69	227.90	0.00	0.00	0.00
2,600.00	13.77	116.65	2,572.94	-112.90	224.97	251.71	0.00	0.00	0.00
2,700.00	13.77	116.65	2,670.06	-123.57	246.25	275.51	0.00	0.00	0.00
2,800.00	13.77	116.65	2,767.19	-134.25	267.52	299.32	0.00	0.00	0.00
2,900.00	13.77	116.65	2,864.31	-144.93	288.80	323.12	0.00	0.00	0.00
3,000.00	13.77	116.65	2,961.44	-155.60	310.07	346.93	0.00	0.00	0.00
3,100.00	13.77	116.65	3,058.56	-166.28	331.35	370.73	0.00	0.00	0.00
3,200.00	13.77	116.65	3,155.69	-176.96	352.63	394.54	0.00	0.00	0.00
3,300.00	13.77	116.65	3,252.82	-187.63	373.90	418.34	0.00	0.00	0.00
3,400.00	13.77	116.65	3,349.94	-198.31	395.18	442.15	0.00	0.00	0.00
3,500.00	13.77	116.65	3,447.07	-208.99	416.46	465.95	0.00	0.00	0.00
3,600.00	13.77	116.65	3,544.19	-219.67	437.73	489.76	0.00	0.00	0.00
3,700.00	13.77	116.65	3,641.32	-230.34	459.01	513.56	0.00	0.00	0.00
3,800.00	13.77	116.65	3,738.44	-241.02	480.28	537.37	0.00	0.00	0.00
3,900.00	13.77	116.65	3,835.57	-251.70	501.56	561.17	0.00	0.00	0.00
4,000.00	13.77	116.65	3,932.69	-262.37	522.84	584.98	0.00	0.00	0.00
4,100.00	13.77	116.65	4,029.82	-273.05	544.11	608.78	0.00	0.00	0.00
4,200.00	13.77	116.65	4,126.94	-283.73	565.39	632.59	0.00	0.00	0.00
4,300.00	13.77	116.65	4,224.07	-294.40	586.66	656.39	0.00	0.00	0.00
PARKMAN									
4,332.88	13.77	116.65	4,256.00	-297.91	593.66	664.22	0.00	0.00	0.00
4,400.00	13.77	116.65	4,321.19	-305.08	607.94	680.20	0.00	0.00	0.00
4,500.00	13.77	116.65	4,418.32	-315.76	629.22	704.00	0.00	0.00	0.00
4,600.00	13.77	116.65	4,515.44	-326.43	650.49	727.81	0.00	0.00	0.00
4,700.00	13.77	116.65	4,612.57	-337.11	671.77	751.61	0.00	0.00	0.00
4,800.00	13.77	116.65	4,709.70	-347.79	693.05	775.41	0.00	0.00	0.00
SUSSEX									
4,837.38	13.77	116.65	4,746.00	-351.78	701.00	784.31	0.00	0.00	0.00
4,900.00	13.77	116.65	4,806.82	-358.47	714.32	799.22	0.00	0.00	0.00
5,000.00	13.77	116.65	4,903.95	-369.14	735.60	823.02	0.00	0.00	0.00
5,100.00	13.77	116.65	5,001.07	-379.82	756.87	846.83	0.00	0.00	0.00
5,200.00	13.77	116.65	5,098.20	-390.50	778.15	870.63	0.00	0.00	0.00
5,300.00	13.77	116.65	5,195.32	-401.17	799.43	894.44	0.00	0.00	0.00
5,400.00	13.77	116.65	5,292.45	-411.85	820.70	918.24	0.00	0.00	0.00
5,500.00	13.77	116.65	5,389.57	-422.53	841.98	942.05	0.00	0.00	0.00
5,600.00	13.77	116.65	5,486.70	-433.20	863.25	965.85	0.00	0.00	0.00
Start Drop -2.00									

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_HIGHWAY 160 8-2
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 5119.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 5119.00ft (Original Well Elev)
Site:	WELD_HIGHWAY 160 17-2 pad	North Reference:	True
Well:	P_HIGHWAY 160 8-2	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_HIGHWAY 160 8-2		
Design:	PLAN #1 3-17-10 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)
5,659.04	13.77	116.65	5,544.04	-439.51	875.82	979.91	0.00	0.00	0.00
5,700.00	12.95	116.65	5,583.89	-443.75	884.28	989.37	2.00	-2.00	0.00
5,800.00	10.95	116.65	5,681.72	-453.04	902.78	1,010.08	2.00	-2.00	0.00
5,900.00	8.95	116.65	5,780.21	-460.79	918.23	1,027.36	2.00	-2.00	0.00
6,000.00	6.95	116.65	5,879.24	-467.00	930.59	1,041.20	2.00	-2.00	0.00
6,100.00	4.95	116.65	5,978.70	-471.65	939.86	1,051.57	2.00	-2.00	0.00
6,200.00	2.95	116.65	6,078.46	-474.74	946.02	1,058.46	2.00	-2.00	0.00
6,300.00	0.95	116.65	6,178.39	-476.27	949.07	1,061.87	2.00	-2.00	0.00
Start 1915.00 hold at 6347.61 MD									
6,347.61	0.00	0.00	6,226.00	-476.44	949.42	1,062.26	2.00	-2.00	0.00
6,400.00	0.00	0.00	6,278.39	-476.44	949.42	1,062.26	0.00	0.00	0.00
6,500.00	0.00	0.00	6,378.39	-476.44	949.42	1,062.26	0.00	0.00	0.00
6,600.00	0.00	0.00	6,478.39	-476.44	949.42	1,062.26	0.00	0.00	0.00
6,700.00	0.00	0.00	6,578.39	-476.44	949.42	1,062.26	0.00	0.00	0.00
6,800.00	0.00	0.00	6,678.39	-476.44	949.42	1,062.26	0.00	0.00	0.00
6,900.00	0.00	0.00	6,778.39	-476.44	949.42	1,062.26	0.00	0.00	0.00
7,000.00	0.00	0.00	6,878.39	-476.44	949.42	1,062.26	0.00	0.00	0.00
7,100.00	0.00	0.00	6,978.39	-476.44	949.42	1,062.26	0.00	0.00	0.00
7,200.00	0.00	0.00	7,078.39	-476.44	949.42	1,062.26	0.00	0.00	0.00
7,300.00	0.00	0.00	7,178.39	-476.44	949.42	1,062.26	0.00	0.00	0.00
NIO A									
7,347.61	0.00	0.00	7,226.00	-476.44	949.42	1,062.26	0.00	0.00	0.00
7,400.00	0.00	0.00	7,278.39	-476.44	949.42	1,062.26	0.00	0.00	0.00
7,500.00	0.00	0.00	7,378.39	-476.44	949.42	1,062.26	0.00	0.00	0.00
7,600.00	0.00	0.00	7,478.39	-476.44	949.42	1,062.26	0.00	0.00	0.00
CODELL									
7,667.61	0.00	0.00	7,546.00	-476.44	949.42	1,062.26	0.00	0.00	0.00
7,700.00	0.00	0.00	7,578.39	-476.44	949.42	1,062.26	0.00	0.00	0.00
7,800.00	0.00	0.00	7,678.39	-476.44	949.42	1,062.26	0.00	0.00	0.00
7,900.00	0.00	0.00	7,778.39	-476.44	949.42	1,062.26	0.00	0.00	0.00
8,000.00	0.00	0.00	7,878.39	-476.44	949.42	1,062.26	0.00	0.00	0.00
8,100.00	0.00	0.00	7,978.39	-476.44	949.42	1,062.26	0.00	0.00	0.00
JSAND									
8,127.61	0.00	0.00	8,006.00	-476.44	949.42	1,062.26	0.00	0.00	0.00
8,200.00	0.00	0.00	8,078.39	-476.44	949.42	1,062.26	0.00	0.00	0.00
PBHL_HIGHWAY 160 8-2(1980 FNL 660 FEL)									
8,262.61	0.00	0.00	8,141.00	-476.44	949.42	1,062.26	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_HIGHWAY 160	0.00	0.00	8,141.00	-476.44	949.42	1,273,615.43	3,213,442.87	40° 4' 55.002 N	104° 44' 13.906 W
- plan hits target center									
- Circle (radius 50.00)									

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_HIGHWAY 160 8-2
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 5119.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 5119.00ft (Original Well Elev)
Site:	WELD_HIGHWAY 160 17-2 pad	North Reference:	True
Well:	P_HIGHWAY 160 8-2	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_HIGHWAY 160 8-2		
Design:	PLAN #1 3-17-10 RHS		

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,100.00	1,100.00	8 5/8"	8.62	11.00	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
4,332.88	4,256.00	PARKMAN				
4,837.38	4,746.00	SUSSEX				
7,347.61	7,226.00	NIO A				
7,667.61	7,546.00	CODELL				
8,127.61	8,006.00	JSAND				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
1,200.00	1,200.00	0.00	0.00	Start Build 2.00	
1,888.57	1,881.96	-36.94	73.61	Start 3770.47 hold at 1888.57 MD	
5,659.04	5,544.04	-439.51	875.82	Start Drop -2.00	
6,347.61	6,226.00	-476.44	949.42	Start 1915.00 hold at 6347.61 MD	
8,262.61	8,141.00	-476.44	949.42	TD at 8262.61	



US ROCKIES REGION PLANNING

**COLORADO NORTHERN ZONE - 83
WELD_HIGHWAY 160 17-2 pad
P_HIGHWAY 160 8-2**

**P_HIGHWAY 160 8-2
PLAN #1 3-17-10 RHS**

Anticollision Report

17 March, 2010



Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_HIGHWAY 160 8-2
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5119.00ft (Original Well Elev)
Reference Site:	WELD_HIGHWAY 160 17-2 pad	MD Reference:	WELL @ 5119.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_HIGHWAY 160 8-2	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_HIGHWAY 160 8-2	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-17-10 RHS	Offset TVD Reference:	Offset Datum

Reference	PLAN #1 3-17-10 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 3/17/2010			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	8,262.61	PLAN #1 3-17-10 RHS (P_HIGHWAY 160	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_HIGHWAY 160 17-2 pad						
BROWN, GORDON D. UNIT #1 EXISTING - BROWN, C	1,200.00	1,185.00	75.26	27.29	1.569	CC
BROWN, GORDON D. UNIT #1 EXISTING - BROWN, C	1,500.00	1,484.45	81.49	21.00	1.347	Level 3, ES, SF
P_HIGHWAY 160 1-2 - P_HIGHWAY 160 1-2 - PLAN #1	1,293.86	1,293.02	29.90	24.38	5.410	CC
P_HIGHWAY 160 1-2 - P_HIGHWAY 160 1-2 - PLAN #1	1,300.00	1,299.09	29.90	24.35	5.385	ES
P_HIGHWAY 160 1-2 - P_HIGHWAY 160 1-2 - PLAN #1	1,400.00	1,398.01	30.38	24.43	5.108	SF
P_HIGHWAY 160 1-2S - P_HIGHWAY 160 1-2S - PLAN	1,339.50	1,339.17	9.40	3.68	1.644	CC, ES, SF
P_HIGHWAY 160 2-2 - P_HIGHWAY 160 2-2 - PLAN #1	1,200.00	1,200.00	29.94	24.81	5.830	CC, ES
P_HIGHWAY 160 2-2 - P_HIGHWAY 160 2-2 - PLAN #1	1,300.00	1,299.72	31.90	26.34	5.738	SF
P_HIGHWAY 160 2-2S - P_HIGHWAY 160 2-2S - PLAN	1,200.00	1,200.00	40.01	34.88	7.791	CC, ES
P_HIGHWAY 160 2-2S - P_HIGHWAY 160 2-2S - PLAN	1,300.00	1,299.48	42.17	36.61	7.586	SF
P_HIGHWAY 160 24-2 - P_HIGHWAY 160 24-2 - PLAN	1,200.00	1,200.00	19.87	14.73	3.868	CC, ES
P_HIGHWAY 160 24-2 - P_HIGHWAY 160 24-2 - PLAN	1,300.00	1,300.18	20.94	15.41	3.784	SF
P_HIGHWAY 160 26-2 - P_HIGHWAY 160 26-2 - PLAN	300.00	300.00	20.15	19.06	18.481	CC, ES
P_HIGHWAY 160 26-2 - P_HIGHWAY 160 26-2 - PLAN	500.00	498.67	25.63	23.65	12.910	SF
P_HIGHWAY 160 41-2 - P_HIGHWAY 160 41-2 - PLAN	1,200.00	1,200.00	40.01	34.88	7.791	CC
P_HIGHWAY 160 41-2 - P_HIGHWAY 160 41-2 - PLAN	1,300.00	1,298.62	40.18	34.63	7.244	ES
P_HIGHWAY 160 41-2 - P_HIGHWAY 160 41-2 - PLAN	1,500.00	1,495.63	42.40	36.07	6.704	SF
P_HIGHWAY 160 7-2 - P_HIGHWAY 160 7-2 - PLAN #1	1,200.00	1,200.00	50.09	44.95	9.752	CC, ES
P_HIGHWAY 160 7-2 - P_HIGHWAY 160 7-2 - PLAN #1	1,300.00	1,298.89	52.68	47.15	9.520	SF
P_HIGHWAY 160 8-2S - P_HIGHWAY 160 8-2S - PLAN	1,200.00	1,200.00	9.79	4.66	1.907	CC, ES
P_HIGHWAY 160 8-2S - P_HIGHWAY 160 8-2S - PLAN	1,300.00	1,300.20	10.32	4.78	1.862	SF

Offset Design		WELD_HIGHWAY 160 17-2 pad - BROWN, GORDON D. UNIT #1 EXISTING - BROWN, GORDON D.								Offset Site Error:		0.00 ft			
Survey Program: 0-UNKNOWN												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 +N/-S	+E/-W	Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)				
0.00	0.00	0.00	0.00	0.00	0.00	-135.36	-53.55	-52.88	76.74						
100.00	100.00	85.00	85.00	0.10	1.70	-135.36	-53.55	-52.88	75.26	73.47	1.80	41.915			
200.00	200.00	185.00	185.00	0.32	5.40	-135.36	-53.55	-52.88	75.26	69.54	5.72	13.157			
300.00	300.00	285.00	285.00	0.55	9.40	-135.36	-53.55	-52.88	75.26	65.32	9.95	7.568			
400.00	400.00	385.00	385.00	0.77	13.40	-135.36	-53.55	-52.88	75.26	61.09	14.17	5.311			
500.00	500.00	485.00	485.00	0.99	17.40	-135.36	-53.55	-52.88	75.26	56.87	18.39	4.091			
600.00	600.00	585.00	585.00	1.22	21.40	-135.36	-53.55	-52.88	75.26	52.64	22.62	3.327			

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_HIGHWAY 160 8-2
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5119.00ft (Original Well Elev)
Reference Site:	WELD_HIGHWAY 160 17-2 pad	MD Reference:	WELL @ 5119.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_HIGHWAY 160 8-2	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_HIGHWAY 160 8-2	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-17-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_HIGHWAY 160 17-2 pad - BROWN, GORDON D. UNIT #1 EXISTING - BROWN, GORDON D.												Offset Site Error:	0.00 ft
Survey Program: 0-UNKNOWN												Offset Well Error:	0.00 ft
Reference	Offset	Semi Major Axis		Distance								Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
700.00	700.00	685.00	685.00	1.44	25.40	-135.36	-53.55	-52.88	75.26	48.42	26.84	2.804	
800.00	800.00	785.00	785.00	1.67	29.40	-135.36	-53.55	-52.88	75.26	44.19	31.07	2.422	
900.00	900.00	885.00	885.00	1.89	33.40	-135.36	-53.55	-52.88	75.26	39.97	35.29	2.132	
1,000.00	1,000.00	985.00	985.00	2.12	37.40	-135.36	-53.55	-52.88	75.26	35.74	39.52	1.904	
1,100.00	1,100.00	1,085.00	1,085.00	2.34	41.40	-135.36	-53.55	-52.88	75.26	31.52	43.74	1.721	
1,200.00	1,200.00	1,185.00	1,185.00	2.57	45.40	-135.36	-53.55	-52.88	75.26	27.29	47.97	1.569 CC	
1,300.00	1,299.98	1,284.98	1,284.98	2.77	49.40	109.24	-53.55	-52.88	75.82	23.65	52.17	1.453 Level 3	
1,400.00	1,399.84	1,384.84	1,384.84	2.97	53.39	112.84	-53.55	-52.88	77.70	21.36	56.34	1.379 Level 3	
1,500.00	1,499.45	1,484.45	1,484.45	3.17	57.38	118.42	-53.55	-52.88	81.49	21.00	60.49	1.347 Level 3, ES, SF	
1,600.00	1,598.70	1,583.70	1,583.70	3.40	61.35	125.27	-53.55	-52.88	87.97	23.41	64.56	1.363 Level 3	
1,700.00	1,697.47	1,682.47	1,682.47	3.66	65.30	132.57	-53.55	-52.88	97.89	29.40	68.49	1.429 Level 3	
1,800.00	1,795.62	1,780.62	1,780.62	3.96	69.22	139.56	-53.55	-52.88	111.78	39.53	72.25	1.547	
1,888.57	1,881.96	1,866.96	1,866.96	4.26	72.68	145.09	-53.55	-52.88	127.58	52.18	75.40	1.692	
1,900.00	1,893.06	1,878.06	1,878.06	4.30	73.12	145.77	-53.55	-52.88	129.84	54.00	75.84	1.712	
2,000.00	1,990.19	1,975.19	1,975.19	4.68	77.01	150.85	-53.55	-52.88	150.27	70.55	79.72	1.885	
2,100.00	2,087.31	2,072.31	2,072.31	5.09	80.89	154.70	-53.55	-52.88	171.58	87.93	83.64	2.051	
2,200.00	2,184.44	2,169.44	2,169.44	5.52	84.78	157.70	-53.55	-52.88	193.47	105.87	87.59	2.209	
2,300.00	2,281.56	2,266.56	2,266.56	5.96	88.66	160.10	-53.55	-52.88	215.76	124.20	91.56	2.356	
2,400.00	2,378.69	2,363.69	2,363.69	6.41	92.55	162.04	-53.55	-52.88	238.35	142.80	95.55	2.495	
2,500.00	2,475.81	2,460.81	2,460.81	6.87	96.43	163.65	-53.55	-52.88	261.15	161.61	99.54	2.624	
2,600.00	2,572.94	2,557.94	2,557.94	7.34	100.32	165.00	-53.55	-52.88	284.12	180.58	103.54	2.744	
2,700.00	2,670.06	2,655.06	2,655.06	7.81	104.20	166.14	-53.55	-52.88	307.22	199.67	107.55	2.856	
2,800.00	2,767.19	2,752.19	2,752.19	8.29	108.09	167.13	-53.55	-52.88	330.41	218.85	111.57	2.962	
2,900.00	2,864.31	2,849.31	2,849.31	8.78	111.97	167.99	-53.55	-52.88	353.69	238.11	115.59	3.060	
3,000.00	2,961.44	2,946.44	2,946.44	9.26	115.86	168.74	-53.55	-52.88	377.03	257.43	119.61	3.152	
3,100.00	3,058.56	3,043.56	3,043.56	9.75	119.74	169.40	-53.55	-52.88	400.43	276.80	123.63	3.239	
3,200.00	3,155.69	3,140.69	3,140.69	10.25	123.63	170.00	-53.55	-52.88	423.87	296.21	127.66	3.320	
3,300.00	3,252.82	3,237.82	3,237.82	10.74	127.51	170.53	-53.55	-52.88	447.36	315.66	131.69	3.397	
3,400.00	3,349.94	3,334.94	3,334.94	11.24	131.40	171.00	-53.55	-52.88	470.87	335.14	135.73	3.469	
3,500.00	3,447.07	3,432.07	3,432.07	11.74	135.28	171.43	-53.55	-52.88	494.41	354.65	139.76	3.538	
3,600.00	3,544.19	3,529.19	3,529.19	12.24	139.17	171.82	-53.55	-52.88	517.98	374.18	143.80	3.602	
3,700.00	3,641.32	3,626.32	3,626.32	12.74	143.05	172.18	-53.55	-52.88	541.56	393.73	147.83	3.663	
3,800.00	3,738.44	3,723.44	3,723.44	13.24	146.94	172.51	-53.55	-52.88	565.17	413.29	151.87	3.721	
3,900.00	3,835.57	3,820.57	3,820.57	13.74	150.82	172.81	-53.55	-52.88	588.79	432.87	155.91	3.776	
4,000.00	3,932.69	3,917.69	3,917.69	14.25	154.71	173.09	-53.55	-52.88	612.42	452.47	159.95	3.829	
4,100.00	4,029.82	4,014.82	4,014.82	14.75	158.59	173.35	-53.55	-52.88	636.07	472.07	164.00	3.879	
4,200.00	4,126.94	4,111.94	4,111.94	15.26	162.48	173.59	-53.55	-52.88	659.73	491.69	168.04	3.926	
4,300.00	4,224.07	4,209.07	4,209.07	15.77	166.36	173.81	-53.55	-52.88	683.40	511.32	172.08	3.971	
4,400.00	4,321.19	4,306.19	4,306.19	16.27	170.25	174.02	-53.55	-52.88	707.08	530.95	176.13	4.015	
4,500.00	4,418.32	4,403.32	4,403.32	16.78	174.13	174.21	-53.55	-52.88	730.76	550.59	180.17	4.056	
4,600.00	4,515.44	4,500.44	4,500.44	17.29	178.02	174.40	-53.55	-52.88	754.46	570.24	184.21	4.096	
4,700.00	4,612.57	4,597.57	4,597.57	17.80	181.90	174.57	-53.55	-52.88	778.16	589.90	188.26	4.133	
4,800.00	4,709.70	4,694.70	4,694.70	18.31	185.79	174.73	-53.55	-52.88	801.87	609.56	192.31	4.170	
4,900.00	4,806.82	4,791.82	4,791.82	18.82	189.67	174.88	-53.55	-52.88	825.58	629.22	196.35	4.205	
5,000.00	4,903.95	4,888.95	4,888.95	19.33	193.56	175.02	-53.55	-52.88	849.30	648.90	200.40	4.238	
5,100.00	5,001.07	4,986.07	4,986.07	19.84	197.44	175.16	-53.55	-52.88	873.02	668.57	204.45	4.270	
5,200.00	5,098.20	5,083.20	5,083.20	20.35	201.33	175.29	-53.55	-52.88	896.74	688.25	208.49	4.301	
5,300.00	5,195.32	5,180.32	5,180.32	20.86	205.21	175.41	-53.55	-52.88	920.48	707.93	212.54	4.331	
5,400.00	5,292.45	5,277.45	5,277.45	21.37	209.10	175.52	-53.55	-52.88	944.21	727.62	216.59	4.359	
5,500.00	5,389.57	5,374.57	5,374.57	21.88	212.98	175.63	-53.55	-52.88	967.95	747.31	220.64	4.387	
5,600.00	5,486.70	5,471.70	5,471.70	22.40	216.87	175.74	-53.55	-52.88	991.69	767.00	224.69	4.414	
5,659.04	5,544.04	5,529.04	5,529.04	22.70	219.16	175.80	-53.55	-52.88	1,005.71	778.63	227.08	4.429	

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_HIGHWAY 160 8-2
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5119.00ft (Original Well Elev)
Reference Site:	WELD_HIGHWAY 160 17-2 pad	MD Reference:	WELL @ 5119.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_HIGHWAY 160 8-2	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_HIGHWAY 160 8-2	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-17-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_HIGHWAY 160 17-2 pad - BROWN, GORDON D. UNIT #1 EXISTING - BROWN, GORDON D.												Offset Site Error:	0.00 ft
Survey Program: 0-UNKNOWN												Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,700.00	5,583.89	5,568.89	5,568.89	22.88	220.76	175.85	-53.55	-52.88	1,015.15	785.75	229.40	4.425	
5,800.00	5,681.72	5,666.72	5,666.72	23.22	224.67	175.96	-53.55	-52.88	1,035.81	800.85	234.96	4.409	
5,900.00	5,780.21	5,765.21	5,765.21	23.53	228.61	176.05	-53.55	-52.88	1,053.05	812.65	240.40	4.380	
6,000.00	5,879.24	5,864.24	5,864.24	23.79	232.57	176.12	-53.55	-52.88	1,066.85	821.24	245.61	4.344	
6,100.00	5,978.70	5,963.70	5,963.70	24.02	236.55	176.18	-53.55	-52.88	1,077.20	826.63	250.56	4.299	
6,200.00	6,078.46	6,063.46	6,063.46	24.20	240.54	176.21	-53.55	-52.88	1,084.07	828.84	255.24	4.247	
6,300.00	6,178.39	6,163.39	6,163.39	24.34	244.54	176.23	-53.55	-52.88	1,087.47	827.86	259.61	4.189	
6,347.61	6,226.00	6,211.00	6,211.00	24.39	246.44	-67.12	-53.55	-52.88	1,087.87	826.28	261.59	4.159	
6,400.00	6,278.39	6,263.39	6,263.39	24.45	248.54	-67.12	-53.55	-52.88	1,087.87	824.09	263.78	4.124	
6,500.00	6,378.39	6,363.39	6,363.39	24.56	252.54	-67.12	-53.55	-52.88	1,087.87	819.92	267.95	4.060	
6,600.00	6,478.39	6,463.39	6,463.39	24.68	256.54	-67.12	-53.55	-52.88	1,087.87	815.74	272.13	3.998	
6,700.00	6,578.39	6,563.39	6,563.39	24.80	260.54	-67.12	-53.55	-52.88	1,087.87	811.57	276.30	3.937	
6,800.00	6,678.39	6,663.39	6,663.39	24.92	264.54	-67.12	-53.55	-52.88	1,087.87	807.39	280.48	3.879	
6,900.00	6,778.39	6,763.39	6,763.39	25.04	268.54	-67.12	-53.55	-52.88	1,087.87	803.21	284.66	3.822	
7,000.00	6,878.39	6,863.39	6,863.39	25.16	272.54	-67.12	-53.55	-52.88	1,087.87	799.03	288.84	3.766	
7,100.00	6,978.39	6,963.39	6,963.39	25.28	276.54	-67.12	-53.55	-52.88	1,087.87	794.85	293.02	3.713	
7,200.00	7,078.39	7,063.39	7,063.39	25.41	280.54	-67.12	-53.55	-52.88	1,087.87	790.67	297.20	3.660	
7,300.00	7,178.39	7,163.39	7,163.39	25.54	284.54	-67.12	-53.55	-52.88	1,087.87	786.48	301.39	3.610	
7,400.00	7,278.39	7,263.39	7,263.39	25.66	288.54	-67.12	-53.55	-52.88	1,087.87	782.30	305.57	3.560	
7,500.00	7,378.39	7,363.39	7,363.39	25.79	292.54	-67.12	-53.55	-52.88	1,087.87	778.11	309.76	3.512	
7,600.00	7,478.39	7,463.39	7,463.39	25.92	296.54	-67.12	-53.55	-52.88	1,087.87	773.93	313.94	3.465	
7,700.00	7,578.39	7,563.39	7,563.39	26.06	300.54	-67.12	-53.55	-52.88	1,087.87	769.74	318.13	3.420	
7,800.00	7,678.39	7,663.39	7,663.39	26.19	304.54	-67.12	-53.55	-52.88	1,087.87	765.55	322.32	3.375	
7,900.00	7,778.39	7,763.39	7,763.39	26.32	308.54	-67.12	-53.55	-52.88	1,087.87	761.36	326.51	3.332	
8,000.00	7,878.39	7,863.39	7,863.39	26.46	312.54	-67.12	-53.55	-52.88	1,087.87	757.17	330.69	3.290	
8,100.00	7,978.39	7,963.39	7,963.39	26.60	316.54	-67.12	-53.55	-52.88	1,087.87	752.98	334.89	3.248	
8,200.00	8,078.39	8,063.39	8,063.39	26.73	320.54	-67.12	-53.55	-52.88	1,087.87	748.79	339.08	3.208	
8,262.61	8,141.00	8,126.00	8,126.00	26.82	323.04	-67.12	-53.55	-52.88	1,087.87	746.17	341.70	3.184	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_HIGHWAY 160 8-2
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5119.00ft (Original Well Elev)
Reference Site:	WELD_HIGHWAY 160 17-2 pad	MD Reference:	WELL @ 5119.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_HIGHWAY 160 8-2	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_HIGHWAY 160 8-2	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-17-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_HIGHWAY 160 17-2 pad - P_HIGHWAY 160 1-2 - P_HIGHWAY 160 1-2 - PLAN #1 3-17-10 RH: Survey Program: 0-MWD													Offset Site Error: 0.00 ft
Reference Offset Semi Major Axis Distance													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	89.28	0.38	29.94	29.94				
100.00	100.00	100.00	100.00	0.10	0.10	89.28	0.38	29.94	29.94	29.75	0.19	156.724	
200.00	200.00	200.00	200.00	0.32	0.32	89.28	0.38	29.94	29.94	29.30	0.64	46.742	
300.00	300.00	300.00	300.00	0.55	0.55	89.28	0.38	29.94	29.94	28.85	1.09	27.467	
400.00	400.00	400.00	400.00	0.77	0.77	89.28	0.38	29.94	29.94	28.40	1.54	19.447	
500.00	500.00	500.00	500.00	0.99	0.99	89.28	0.38	29.94	29.94	27.95	1.99	15.053	
600.00	600.00	600.00	600.00	1.22	1.22	89.28	0.38	29.94	29.94	27.50	2.44	12.278	
700.00	700.00	700.00	700.00	1.44	1.44	89.28	0.38	29.94	29.94	27.05	2.89	10.367	
800.00	800.00	800.00	800.00	1.67	1.67	89.28	0.38	29.94	29.94	26.60	3.34	8.971	
900.00	900.00	900.00	900.00	1.89	1.89	89.28	0.38	29.94	29.94	26.15	3.79	7.906	
1,000.00	1,000.00	1,000.00	1,000.00	2.12	2.12	89.28	0.38	29.94	29.94	25.71	4.24	7.067	
1,100.00	1,100.00	1,100.00	1,100.00	2.34	2.34	89.28	0.38	29.94	29.94	25.26	4.69	6.389	
1,200.00	1,200.00	1,200.00	1,200.00	2.57	2.57	89.28	0.38	29.94	29.94	24.81	5.14	5.830	
1,293.86	1,293.85	1,293.02	1,293.00	2.76	2.77	-30.26	1.20	31.21	29.90	24.38	5.53	5.410 CC	
1,300.00	1,299.98	1,299.09	1,299.07	2.77	2.79	-30.65	1.31	31.38	29.90	24.35	5.55	5.385 ES	
1,400.00	1,399.84	1,398.01	1,397.86	2.97	3.00	-40.35	4.10	35.68	30.38	24.43	5.95	5.108 SF	
1,500.00	1,499.45	1,496.58	1,496.05	3.17	3.22	-55.00	8.73	42.81	32.99	26.63	6.36	5.186	
1,600.00	1,598.70	1,594.63	1,593.38	3.40	3.46	-70.66	15.15	52.70	39.56	32.75	6.81	5.806	
1,700.00	1,697.47	1,692.00	1,689.58	3.66	3.72	-83.54	23.32	65.29	50.93	43.62	7.31	6.964	
1,800.00	1,795.62	1,788.52	1,784.39	3.96	4.00	-92.70	33.17	80.47	66.93	59.06	7.87	8.509	
1,888.57	1,881.96	1,873.19	1,867.01	4.26	4.29	-98.32	43.24	95.98	84.57	76.17	8.41	10.062	
1,900.00	1,893.06	1,884.06	1,877.58	4.30	4.32	-98.95	44.63	98.12	87.07	78.59	8.48	10.270	
2,000.00	1,990.19	1,978.71	1,969.15	4.68	4.69	-102.55	57.65	118.17	110.52	101.37	9.15	12.078	
2,100.00	2,087.31	2,073.07	2,059.64	5.09	5.10	-103.94	72.21	140.61	136.39	126.52	9.87	13.818	
2,200.00	2,184.44	2,169.46	2,151.79	5.52	5.56	-104.65	87.61	164.32	162.98	152.34	10.64	15.315	
2,300.00	2,281.56	2,265.84	2,243.93	5.96	6.03	-105.16	103.00	188.04	189.59	178.15	11.44	16.570	
2,400.00	2,378.69	2,362.22	2,336.07	6.41	6.53	-105.54	118.39	211.75	216.21	203.94	12.27	17.626	
2,500.00	2,475.81	2,458.61	2,428.22	6.87	7.04	-105.84	133.78	235.46	242.84	229.73	13.11	18.522	
2,600.00	2,572.94	2,554.99	2,520.36	7.34	7.56	-106.08	149.17	259.17	269.47	255.50	13.97	19.288	
2,700.00	2,670.06	2,651.37	2,612.51	7.81	8.08	-106.28	164.56	282.88	296.10	281.26	14.84	19.946	
2,800.00	2,767.19	2,747.75	2,704.65	8.29	8.62	-106.45	179.95	306.59	322.74	307.01	15.73	20.518	
2,900.00	2,864.31	2,844.14	2,796.80	8.78	9.16	-106.59	195.34	330.31	349.38	332.75	16.62	21.016	
3,000.00	2,961.44	2,940.52	2,888.94	9.26	9.70	-106.71	210.74	354.02	376.02	358.49	17.53	21.454	
3,100.00	3,058.56	3,036.90	2,981.09	9.75	10.25	-106.81	226.13	377.73	402.66	384.23	18.44	21.841	
3,200.00	3,155.69	3,133.29	3,073.23	10.25	10.81	-106.90	241.52	401.44	429.31	409.96	19.35	22.186	
3,300.00	3,252.82	3,229.67	3,165.37	10.74	11.36	-106.98	256.91	425.15	455.95	435.68	20.27	22.493	
3,400.00	3,349.94	3,326.05	3,257.52	11.24	11.92	-107.05	272.30	448.86	482.60	461.40	21.19	22.769	
3,500.00	3,447.07	3,422.44	3,349.66	11.74	12.48	-107.12	287.69	472.57	509.24	487.12	22.12	23.019	
3,600.00	3,544.19	3,518.82	3,441.81	12.24	13.04	-107.17	303.08	496.29	535.89	512.83	23.05	23.244	
3,700.00	3,641.32	3,615.20	3,533.95	12.74	13.61	-107.23	318.47	520.00	562.54	538.55	23.99	23.450	
3,800.00	3,738.44	3,711.59	3,626.10	13.24	14.17	-107.27	333.86	543.71	589.18	564.26	24.93	23.637	
3,900.00	3,835.57	3,807.97	3,718.24	13.74	14.74	-107.32	349.26	567.42	615.83	589.96	25.87	23.809	
4,000.00	3,932.69	3,904.35	3,810.38	14.25	15.31	-107.36	364.65	591.13	642.48	615.67	26.81	23.967	
4,100.00	4,029.82	4,000.74	3,902.53	14.75	15.88	-107.39	380.04	614.84	669.13	641.38	27.75	24.112	
4,200.00	4,126.94	4,097.12	3,994.67	15.26	16.45	-107.43	395.43	638.56	695.77	667.08	28.70	24.247	
4,300.00	4,224.07	4,193.50	4,086.82	15.77	17.02	-107.46	410.82	662.27	722.42	692.78	29.64	24.371	
4,400.00	4,321.19	4,289.89	4,178.96	16.27	17.59	-107.49	426.21	685.98	749.07	718.48	30.59	24.487	
4,500.00	4,418.32	4,386.27	4,271.11	16.78	18.16	-107.52	441.60	709.69	775.72	744.18	31.54	24.595	
4,600.00	4,515.44	4,482.65	4,363.25	17.29	18.73	-107.54	456.99	733.40	802.37	769.88	32.49	24.696	
4,700.00	4,612.57	4,579.03	4,455.40	17.80	19.31	-107.56	472.39	757.11	829.02	795.58	33.44	24.790	
4,800.00	4,709.70	4,675.42	4,547.54	18.31	19.88	-107.59	487.78	780.83	855.67	821.27	34.39	24.878	
4,900.00	4,806.82	4,771.80	4,639.68	18.82	20.45	-107.61	503.17	804.54	882.32	846.97	35.35	24.961	

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_HIGHWAY 160 8-2
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5119.00ft (Original Well Elev)
Reference Site:	WELD_HIGHWAY 160 17-2 pad	MD Reference:	WELL @ 5119.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_HIGHWAY 160 8-2	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_HIGHWAY 160 8-2	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-17-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_HIGHWAY 160 17-2 pad - P_HIGHWAY 160 1-2 - P_HIGHWAY 160 1-2 - PLAN #1 3-17-10 RH:												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	4,903.95	4,868.18	4,731.83	19.33	21.03	-107.63	518.56	828.25	908.97	872.67	36.30	25.039	
5,100.00	5,001.07	4,964.57	4,823.97	19.84	21.60	-107.65	533.95	851.96	935.62	898.36	37.26	25.113	
5,200.00	5,098.20	5,060.95	4,916.12	20.35	22.18	-107.66	549.34	875.67	962.27	924.05	38.21	25.182	
5,300.00	5,195.32	5,157.33	5,008.26	20.86	22.76	-107.68	564.73	899.38	988.92	949.75	39.17	25.248	
5,400.00	5,292.45	5,253.72	5,100.41	21.37	23.33	-107.70	580.12	923.09	1,015.57	975.44	40.13	25.310	
5,500.00	5,389.57	5,350.10	5,192.55	21.88	23.91	-107.71	595.51	946.81	1,042.22	1,001.13	41.08	25.369	
5,600.00	5,486.70	5,446.48	5,284.69	22.40	24.49	-107.72	610.91	970.52	1,068.87	1,026.83	42.04	25.425	
5,659.04	5,544.04	5,503.39	5,339.10	22.70	24.83	-107.73	619.99	984.52	1,084.60	1,041.99	42.61	25.456	
5,700.00	5,583.89	5,543.26	5,377.22	22.88	25.06	-107.94	626.36	994.33	1,095.43	1,052.42	43.01	25.467	
5,800.00	5,681.72	5,672.48	5,501.59	23.22	25.66	-108.34	645.44	1,023.71	1,119.70	1,075.77	43.93	25.489	
5,900.00	5,780.21	5,803.83	5,629.49	23.53	26.17	-108.66	661.68	1,048.73	1,140.04	1,095.31	44.73	25.488	
6,000.00	5,879.24	5,936.96	5,760.39	23.79	26.60	-108.92	674.86	1,069.05	1,156.35	1,110.93	45.42	25.459	
6,100.00	5,978.70	6,071.51	5,893.68	24.02	26.96	-109.12	684.81	1,084.37	1,168.55	1,122.54	46.01	25.399	
6,200.00	6,078.46	6,207.08	6,028.70	24.20	27.24	-109.25	691.38	1,094.49	1,176.58	1,130.09	46.49	25.309	
6,300.00	6,178.39	6,343.24	6,164.73	24.34	27.43	-109.33	694.46	1,099.25	1,180.40	1,133.55	46.85	25.195	
6,347.61	6,226.00	6,404.52	6,226.00	24.39	27.50	7.31	694.71	1,099.63	1,180.75	1,133.76	46.99	25.129	
6,400.00	6,278.39	6,456.91	6,278.39	24.45	27.55	7.31	694.71	1,099.63	1,180.75	1,133.64	47.11	25.062	
6,500.00	6,378.39	6,556.91	6,378.39	24.56	27.66	7.31	694.71	1,099.63	1,180.75	1,133.39	47.36	24.930	
6,600.00	6,478.39	6,656.91	6,478.39	24.68	27.77	7.31	694.71	1,099.63	1,180.75	1,133.14	47.61	24.799	
6,700.00	6,578.39	6,756.91	6,578.39	24.80	27.88	7.31	694.71	1,099.63	1,180.75	1,132.89	47.87	24.668	
6,800.00	6,678.39	6,856.91	6,678.39	24.92	28.00	7.31	694.71	1,099.63	1,180.75	1,132.63	48.12	24.536	
6,900.00	6,778.39	6,956.91	6,778.39	25.04	28.11	7.31	694.71	1,099.63	1,180.75	1,132.37	48.38	24.405	
7,000.00	6,878.39	7,056.91	6,878.39	25.16	28.23	7.31	694.71	1,099.63	1,180.75	1,132.11	48.64	24.273	
7,100.00	6,978.39	7,156.91	6,978.39	25.28	28.34	7.31	694.71	1,099.63	1,180.75	1,131.84	48.91	24.142	
7,200.00	7,078.39	7,256.91	7,078.39	25.41	28.46	7.31	694.71	1,099.63	1,180.75	1,131.58	49.18	24.011	
7,300.00	7,178.39	7,356.91	7,178.39	25.54	28.58	7.31	694.71	1,099.63	1,180.75	1,131.31	49.45	23.879	
7,400.00	7,278.39	7,456.91	7,278.39	25.66	28.70	7.31	694.71	1,099.63	1,180.75	1,131.03	49.72	23.748	
7,500.00	7,378.39	7,556.91	7,378.39	25.79	28.82	7.31	694.71	1,099.63	1,180.75	1,130.76	49.99	23.618	
7,600.00	7,478.39	7,656.91	7,478.39	25.92	28.95	7.31	694.71	1,099.63	1,180.75	1,130.48	50.27	23.487	
7,700.00	7,578.39	7,756.91	7,578.39	26.06	29.07	7.31	694.71	1,099.63	1,180.75	1,130.20	50.55	23.357	
7,800.00	7,678.39	7,856.91	7,678.39	26.19	29.20	7.31	694.71	1,099.63	1,180.75	1,129.92	50.84	23.227	
7,900.00	7,778.39	7,956.91	7,778.39	26.32	29.32	7.31	694.71	1,099.63	1,180.75	1,129.63	51.12	23.098	
8,000.00	7,878.39	8,056.91	7,878.39	26.46	29.45	7.31	694.71	1,099.63	1,180.75	1,129.34	51.41	22.968	
8,100.00	7,978.39	8,156.91	7,978.39	26.60	29.58	7.31	694.71	1,099.63	1,180.75	1,129.05	51.70	22.840	
8,200.00	8,078.39	8,256.91	8,078.39	26.73	29.71	7.31	694.71	1,099.63	1,180.75	1,128.76	51.99	22.711	
8,262.61	8,141.00	8,319.52	8,141.00	26.82	29.79	7.31	694.71	1,099.63	1,180.75	1,128.58	52.17	22.631	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_HIGHWAY 160 8-2
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5119.00ft (Original Well Elev)
Reference Site:	WELD_HIGHWAY 160 17-2 pad	MD Reference:	WELL @ 5119.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_HIGHWAY 160 8-2	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_HIGHWAY 160 8-2	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-17-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_HIGHWAY 160 17-2 pad - P_HIGHWAY 160 1-2S - P_HIGHWAY 160 1-2S - PLAN #1 3-17-10 f												Offset Site Error:	0.00 ft
Survey Program: 0-MWD												Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
0.00	0.00	0.00	0.00	0.00	0.00	90.00	0.00	10.07	10.07				
100.00	100.00	100.00	100.00	0.10	0.10	90.00	0.00	10.07	10.07	9.88	0.19	52.725	
200.00	200.00	200.00	200.00	0.32	0.32	90.00	0.00	10.07	10.07	9.43	0.64	15.725	
300.00	300.00	300.00	300.00	0.55	0.55	90.00	0.00	10.07	10.07	8.98	1.09	9.241	
400.00	400.00	400.00	400.00	0.77	0.77	90.00	0.00	10.07	10.07	8.53	1.54	6.543	
500.00	500.00	500.00	500.00	0.99	0.99	90.00	0.00	10.07	10.07	8.08	1.99	5.064	
600.00	600.00	600.00	600.00	1.22	1.22	90.00	0.00	10.07	10.07	7.63	2.44	4.131	
700.00	700.00	700.00	700.00	1.44	1.44	90.00	0.00	10.07	10.07	7.18	2.89	3.488	
800.00	800.00	800.00	800.00	1.67	1.67	90.00	0.00	10.07	10.07	6.74	3.34	3.018	
900.00	900.00	900.00	900.00	1.89	1.89	90.00	0.00	10.07	10.07	6.29	3.79	2.660	
1,000.00	1,000.00	1,000.00	1,000.00	2.12	2.12	90.00	0.00	10.07	10.07	5.84	4.24	2.378	
1,100.00	1,100.00	1,100.00	1,100.00	2.34	2.34	90.00	0.00	10.07	10.07	5.39	4.69	2.149	
1,200.00	1,200.00	1,200.00	1,200.00	2.57	2.57	90.00	0.00	10.07	10.07	4.94	5.14	1.961	
1,300.00	1,299.98	1,299.79	1,299.78	2.77	2.79	-37.09	0.95	10.96	9.57	4.01	5.56	1.721	
1,339.50	1,339.45	1,339.17	1,339.14	2.85	2.88	-47.65	1.85	11.81	9.40	3.68	5.72	1.644	CC, ES, SF
1,400.00	1,399.84	1,399.40	1,399.31	2.97	3.01	-69.63	3.80	13.63	10.15	4.18	5.97	1.700	
1,500.00	1,499.45	1,498.65	1,498.35	3.17	3.23	-101.67	8.51	18.05	16.10	9.71	6.40	2.517	
1,600.00	1,598.70	1,597.37	1,596.65	3.40	3.46	-117.39	15.07	24.19	27.66	20.83	6.83	4.048	
1,700.00	1,697.47	1,695.38	1,693.99	3.66	3.70	-124.70	23.41	32.01	43.61	36.33	7.28	5.989	
1,800.00	1,795.62	1,792.53	1,790.15	3.96	3.95	-128.48	33.47	41.44	63.47	55.71	7.76	8.177	
1,888.57	1,881.96	1,877.71	1,874.16	4.26	4.19	-130.44	43.75	51.08	84.14	75.92	8.22	10.239	
1,900.00	1,893.06	1,888.65	1,884.92	4.30	4.23	-130.66	45.17	52.41	87.00	78.72	8.28	10.506	
2,000.00	1,990.19	1,983.99	1,978.50	4.68	4.52	-131.54	58.50	64.90	112.73	103.86	8.87	12.716	
2,100.00	2,087.31	2,078.69	2,070.96	5.09	4.85	-131.22	73.42	78.88	139.70	130.20	9.50	14.710	
2,200.00	2,184.44	2,172.63	2,162.15	5.52	5.21	-130.30	89.87	94.29	167.90	157.73	10.17	16.506	
2,300.00	2,281.56	2,265.71	2,251.94	5.96	5.60	-129.06	107.77	111.08	197.41	186.52	10.89	18.130	
2,400.00	2,378.69	2,357.84	2,340.19	6.41	6.03	-127.65	127.06	129.16	228.27	216.63	11.64	19.610	
2,500.00	2,475.81	2,448.92	2,426.79	6.87	6.49	-126.16	147.66	148.45	260.56	248.14	12.42	20.971	
2,600.00	2,572.94	2,538.94	2,511.68	7.34	6.98	-124.66	169.48	168.91	294.33	281.10	13.23	22.242	
2,700.00	2,670.06	2,632.48	2,599.55	7.81	7.52	-123.25	192.90	190.86	328.93	314.85	14.08	23.354	
2,800.00	2,767.19	2,726.03	2,687.43	8.29	8.08	-122.11	216.32	212.80	363.67	348.72	14.94	24.336	
2,900.00	2,864.31	2,819.58	2,775.30	8.78	8.65	-121.17	239.74	234.75	398.51	382.70	15.81	25.203	
3,000.00	2,961.44	2,913.13	2,863.17	9.26	9.23	-120.38	263.16	256.70	433.44	416.75	16.69	25.974	
3,100.00	3,058.56	3,006.68	2,951.04	9.75	9.81	-119.71	286.57	278.64	468.42	450.85	17.57	26.662	
3,200.00	3,155.69	3,100.23	3,038.91	10.25	10.41	-119.13	309.99	300.59	503.45	485.00	18.46	27.278	
3,300.00	3,252.82	3,193.78	3,126.78	10.74	11.01	-118.62	333.41	322.54	538.53	519.18	19.35	27.833	
3,400.00	3,349.94	3,287.33	3,214.65	11.24	11.61	-118.18	356.83	344.49	573.63	553.39	20.25	28.334	
3,500.00	3,447.07	3,380.88	3,302.52	11.74	12.22	-117.79	380.25	366.43	608.76	587.62	21.15	28.789	
3,600.00	3,544.19	3,474.43	3,390.39	12.24	12.84	-117.44	403.67	388.38	643.92	621.87	22.05	29.204	
3,700.00	3,641.32	3,567.97	3,478.26	12.74	13.45	-117.13	427.08	410.33	679.09	656.14	22.96	29.583	
3,800.00	3,738.44	3,661.52	3,566.14	13.24	14.07	-116.84	450.50	432.27	714.28	690.42	23.86	29.931	
3,900.00	3,835.57	3,755.07	3,654.01	13.74	14.69	-116.59	473.92	454.22	749.48	724.71	24.78	30.251	
4,000.00	3,932.69	3,848.62	3,741.88	14.25	15.31	-116.36	497.34	476.17	784.70	759.01	25.69	30.546	
4,100.00	4,029.82	3,942.17	3,829.75	14.75	15.94	-116.14	520.76	498.12	819.92	793.32	26.60	30.819	
4,200.00	4,126.94	4,035.72	3,917.62	15.26	16.56	-115.95	544.18	520.06	855.16	827.64	27.52	31.073	
4,300.00	4,224.07	4,129.27	4,005.49	15.77	17.19	-115.77	567.60	542.01	890.40	861.96	28.44	31.309	
4,400.00	4,321.19	4,222.82	4,093.36	16.27	17.82	-115.60	591.01	563.96	925.65	896.29	29.36	31.528	
4,500.00	4,418.32	4,316.37	4,181.23	16.78	18.45	-115.45	614.43	585.90	960.91	930.63	30.28	31.734	
4,600.00	4,515.44	4,409.92	4,269.10	17.29	19.08	-115.30	637.85	607.85	996.17	964.96	31.20	31.926	
4,700.00	4,612.57	4,503.46	4,356.97	17.80	19.71	-115.17	661.27	629.80	1,031.43	999.31	32.13	32.106	
4,800.00	4,709.70	4,597.01	4,444.85	18.31	20.35	-115.05	684.69	651.75	1,066.70	1,033.65	33.05	32.276	
4,900.00	4,806.82	4,690.56	4,532.72	18.82	20.98	-114.93	708.11	673.69	1,101.98	1,068.00	33.98	32.435	

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_HIGHWAY 160 8-2
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5119.00ft (Original Well Elev)
Reference Site:	WELD_HIGHWAY 160 17-2 pad	MD Reference:	WELL @ 5119.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_HIGHWAY 160 8-2	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_HIGHWAY 160 8-2	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-17-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_HIGHWAY 160 17-2 pad - P_HIGHWAY 160 1-2S - P_HIGHWAY 160 1-2S - PLAN #1 3-17-10 f												Offset Site Error:	0.00 ft
Survey Program: 0-MWD												Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
5,000.00	4,903.95	4,784.11	4,620.59	19.33	21.61	-114.82	731.52	695.64	1,137.26	1,102.36	34.90	32.585	
5,100.00	5,001.07	4,877.66	4,708.46	19.84	22.25	-114.72	754.94	717.59	1,172.54	1,136.71	35.83	32.727	
5,200.00	5,098.20	4,971.21	4,796.33	20.35	22.88	-114.62	778.36	739.53	1,207.83	1,171.07	36.76	32.861	
5,300.00	5,195.32	5,064.76	4,884.20	20.86	23.52	-114.53	801.78	761.48	1,243.11	1,205.43	37.68	32.988	
5,400.00	5,292.45	5,158.31	4,972.07	21.37	24.16	-114.44	825.20	783.43	1,278.40	1,239.79	38.61	33.109	
5,500.00	5,389.57	5,226.37	5,036.00	21.88	24.62	-114.38	842.24	799.40	1,313.95	1,274.53	39.42	33.334	
5,600.00	5,486.70	5,226.37	5,036.00	22.40	24.62	-114.38	842.24	799.40	1,354.24	1,314.34	39.89	33.946	
5,659.04	5,544.04	5,226.37	5,036.00	22.70	24.62	-114.38	842.24	799.40	1,380.87	1,340.70	40.18	34.371	
5,700.00	5,583.89	5,226.37	5,036.00	22.88	24.62	-114.79	842.24	799.40	1,400.41	1,360.00	40.41	34.653	
5,800.00	5,681.72	5,226.37	5,036.00	23.22	24.62	-115.85	842.24	799.40	1,450.99	1,410.09	40.91	35.469	
5,900.00	5,780.21	5,226.37	5,036.00	23.53	24.62	-117.01	842.24	799.40	1,505.27	1,463.91	41.36	36.392	
6,000.00	5,879.24	5,226.37	5,036.00	23.79	24.62	-118.25	842.24	799.40	1,562.81	1,521.04	41.77	37.416	
6,100.00	5,978.70	5,226.37	5,036.00	24.02	24.62	-119.58	842.24	799.40	1,623.18	1,581.05	42.12	38.534	
6,200.00	6,078.46	5,226.37	5,036.00	24.20	24.62	-120.98	842.24	799.40	1,686.01	1,643.59	42.42	39.742	
6,300.00	6,178.39	5,226.37	5,036.00	24.34	24.62	-122.43	842.24	799.40	1,750.97	1,708.31	42.67	41.038	
6,347.61	6,226.00	5,226.37	5,036.00	24.39	24.62	-6.49	842.24	799.40	1,782.56	1,739.80	42.76	41.685	
6,400.00	6,278.39	5,226.37	5,036.00	24.45	24.62	-6.49	842.24	799.40	1,817.95	1,775.13	42.83	42.448	
6,500.00	6,378.39	5,226.37	5,036.00	24.56	24.62	-6.49	842.24	799.40	1,887.71	1,844.75	42.96	43.946	
6,600.00	6,478.39	5,226.37	5,036.00	24.68	24.62	-6.49	842.24	799.40	1,960.08	1,917.00	43.08	45.493	
6,700.00	6,578.39	5,226.37	5,036.00	24.80	24.62	-6.49	842.24	799.40	2,034.80	1,991.58	43.22	47.084	
6,800.00	6,678.39	5,226.37	5,036.00	24.92	24.62	-6.49	842.24	799.40	2,111.60	2,068.26	43.35	48.712	
6,900.00	6,778.39	5,226.37	5,036.00	25.04	24.62	-6.49	842.24	799.40	2,190.28	2,146.80	43.48	50.371	
7,000.00	6,878.39	5,226.37	5,036.00	25.16	24.62	-6.49	842.24	799.40	2,270.64	2,227.03	43.62	52.057	
7,100.00	6,978.39	5,226.37	5,036.00	25.28	24.62	-6.49	842.24	799.40	2,352.51	2,308.76	43.75	53.766	
7,200.00	7,078.39	5,226.37	5,036.00	25.41	24.62	-6.49	842.24	799.40	2,435.73	2,391.84	43.89	55.492	
7,300.00	7,178.39	5,226.37	5,036.00	25.54	24.62	-6.49	842.24	799.40	2,520.17	2,476.14	44.03	57.234	
7,400.00	7,278.39	5,226.37	5,036.00	25.66	24.62	-6.49	842.24	799.40	2,605.71	2,561.54	44.17	58.988	
7,500.00	7,378.39	5,226.37	5,036.00	25.79	24.62	-6.49	842.24	799.40	2,692.25	2,647.94	44.32	60.751	
7,600.00	7,478.39	5,226.37	5,036.00	25.92	24.62	-6.49	842.24	799.40	2,779.69	2,735.23	44.46	62.522	
7,700.00	7,578.39	5,226.37	5,036.00	26.06	24.62	-6.49	842.24	799.40	2,867.96	2,823.35	44.60	64.298	
7,800.00	7,678.39	5,226.37	5,036.00	26.19	24.62	-6.49	842.24	799.40	2,956.97	2,912.22	44.75	66.077	
7,900.00	7,778.39	5,226.37	5,036.00	26.32	24.62	-6.49	842.24	799.40	3,046.66	3,001.76	44.90	67.858	
8,000.00	7,878.39	5,226.37	5,036.00	26.46	24.62	-6.49	842.24	799.40	3,136.97	3,091.93	45.05	69.640	
8,100.00	7,978.39	5,226.37	5,036.00	26.60	24.62	-6.49	842.24	799.40	3,227.86	3,182.67	45.20	71.420	
8,200.00	8,078.39	5,226.37	5,036.00	26.73	24.62	-6.49	842.24	799.40	3,319.27	3,273.93	45.35	73.199	
8,262.61	8,141.00	5,226.37	5,036.00	26.82	24.62	-6.49	842.24	799.40	3,376.75	3,331.31	45.44	74.311	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_HIGHWAY 160 8-2
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5119.00ft (Original Well Elev)
Reference Site:	WELD_HIGHWAY 160 17-2 pad	MD Reference:	WELL @ 5119.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_HIGHWAY 160 8-2	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_HIGHWAY 160 8-2	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-17-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_HIGHWAY 160 17-2 pad - P_HIGHWAY 160 2-2 - P_HIGHWAY 160 2-2 - PLAN #1 3-17-10 RH: Survey Program: 0-MWD													Offset Site Error:	0.00 ft
Reference Offset Semi Major Axis Distance													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	-90.70	-0.36	-29.94	29.94					
100.00	100.00	100.00	100.00	0.10	0.10	-90.70	-0.36	-29.94	29.94	29.75	0.19	156.723		
200.00	200.00	200.00	200.00	0.32	0.32	-90.70	-0.36	-29.94	29.94	29.30	0.64	46.742		
300.00	300.00	300.00	300.00	0.55	0.55	-90.70	-0.36	-29.94	29.94	28.85	1.09	27.467		
400.00	400.00	400.00	400.00	0.77	0.77	-90.70	-0.36	-29.94	29.94	28.40	1.54	19.447		
500.00	500.00	500.00	500.00	0.99	0.99	-90.70	-0.36	-29.94	29.94	27.95	1.99	15.052		
600.00	600.00	600.00	600.00	1.22	1.22	-90.70	-0.36	-29.94	29.94	27.50	2.44	12.278		
700.00	700.00	700.00	700.00	1.44	1.44	-90.70	-0.36	-29.94	29.94	27.05	2.89	10.367		
800.00	800.00	800.00	800.00	1.67	1.67	-90.70	-0.36	-29.94	29.94	26.60	3.34	8.971		
900.00	900.00	900.00	900.00	1.89	1.89	-90.70	-0.36	-29.94	29.94	26.15	3.79	7.906		
1,000.00	1,000.00	1,000.00	1,000.00	2.12	2.12	-90.70	-0.36	-29.94	29.94	25.71	4.24	7.067		
1,100.00	1,100.00	1,100.00	1,100.00	2.34	2.34	-90.70	-0.36	-29.94	29.94	25.26	4.69	6.389		
1,200.00	1,200.00	1,200.00	1,200.00	2.57	2.57	-90.70	-0.36	-29.94	29.94	24.81	5.14	5.830 CC, ES		
1,300.00	1,299.98	1,299.72	1,299.70	2.77	2.79	157.15	1.34	-30.27	31.90	26.34	5.56	5.738 SF		
1,400.00	1,399.84	1,398.85	1,398.69	2.97	3.01	167.57	6.41	-31.25	38.70	32.74	5.96	6.495		
1,500.00	1,499.45	1,496.84	1,496.30	3.17	3.24	178.23	14.72	-32.86	51.78	45.43	6.35	8.151		
1,600.00	1,598.70	1,593.13	1,591.90	3.40	3.47	-173.75	26.08	-35.06	71.64	64.89	6.75	10.618		
1,700.00	1,697.47	1,687.24	1,684.89	3.66	3.72	-168.30	40.22	-37.79	98.02	90.88	7.14	13.727		
1,800.00	1,795.62	1,778.71	1,774.78	3.96	3.98	-164.61	56.83	-41.01	130.56	123.02	7.54	17.320		
1,888.57	1,881.96	1,857.50	1,851.75	4.26	4.23	-162.27	73.38	-44.21	164.21	156.31	7.89	20.807		
1,900.00	1,893.06	1,867.94	1,861.92	4.30	4.27	-162.05	75.69	-44.66	168.81	160.87	7.95	21.246		
2,000.00	1,990.19	1,959.30	1,950.93	4.68	4.59	-160.48	95.89	-48.57	209.21	200.78	8.43	24.826		
2,100.00	2,087.31	2,050.66	2,039.94	5.09	4.93	-159.42	116.10	-52.48	249.69	240.77	8.92	27.985		
2,200.00	2,184.44	2,142.02	2,128.95	5.52	5.28	-158.66	136.30	-56.39	290.22	280.79	9.43	30.775		
2,300.00	2,281.56	2,233.38	2,217.96	5.96	5.64	-158.09	156.50	-60.30	330.79	320.84	9.95	33.245		
2,400.00	2,378.69	2,324.73	2,306.97	6.41	6.01	-157.64	176.70	-64.20	371.38	360.90	10.48	35.440		
2,500.00	2,475.81	2,416.09	2,395.98	6.87	6.39	-157.27	196.90	-68.11	411.98	400.96	11.02	37.397		
2,600.00	2,572.94	2,507.45	2,484.99	7.34	6.77	-156.98	217.11	-72.02	452.59	441.03	11.56	39.149		
2,700.00	2,670.06	2,598.81	2,574.00	7.81	7.17	-156.73	237.31	-75.93	493.22	481.11	12.11	40.724		
2,800.00	2,767.19	2,690.17	2,663.02	8.29	7.56	-156.52	257.51	-79.84	533.85	521.18	12.67	42.144		
2,900.00	2,864.31	2,781.53	2,752.03	8.78	7.96	-156.34	277.71	-83.75	574.48	561.25	13.23	43.429		
3,000.00	2,961.44	2,872.88	2,841.04	9.26	8.36	-156.18	297.92	-87.66	615.12	601.33	13.79	44.598		
3,100.00	3,058.56	2,964.24	2,930.05	9.75	8.77	-156.05	318.12	-91.57	655.76	641.40	14.36	45.663		
3,200.00	3,155.69	3,055.60	3,019.06	10.25	9.18	-155.93	338.32	-95.48	696.41	681.47	14.93	46.638		
3,300.00	3,252.82	3,146.96	3,108.07	10.74	9.59	-155.82	358.52	-99.39	737.05	721.55	15.51	47.532		
3,400.00	3,349.94	3,238.32	3,197.08	11.24	10.00	-155.72	378.73	-103.30	777.70	761.62	16.08	48.355		
3,500.00	3,447.07	3,329.67	3,286.09	11.74	10.41	-155.63	398.93	-107.21	818.35	801.69	16.66	49.115		
3,600.00	3,544.19	3,421.03	3,375.10	12.24	10.83	-155.56	419.13	-111.12	859.00	841.76	17.24	49.818		
3,700.00	3,641.32	3,512.39	3,464.11	12.74	11.25	-155.48	439.33	-115.03	899.66	881.83	17.83	50.469		
3,800.00	3,738.44	3,603.75	3,553.12	13.24	11.66	-155.42	459.54	-118.94	940.31	921.90	18.41	51.075		
3,900.00	3,835.57	3,695.11	3,642.13	13.74	12.08	-155.36	479.74	-122.85	980.97	961.97	19.00	51.640		
4,000.00	3,932.69	3,786.46	3,731.14	14.25	12.50	-155.30	499.94	-126.76	1,021.62	1,002.04	19.58	52.167		
4,100.00	4,029.82	3,877.82	3,820.15	14.75	12.92	-155.25	520.14	-130.67	1,062.28	1,042.11	20.17	52.660		
4,200.00	4,126.94	3,969.18	3,909.16	15.26	13.35	-155.20	540.35	-134.57	1,102.94	1,082.18	20.76	53.123		
4,300.00	4,224.07	4,060.54	3,998.17	15.77	13.77	-155.16	560.55	-138.48	1,143.60	1,122.24	21.35	53.557		
4,400.00	4,321.19	4,151.90	4,087.19	16.27	14.19	-155.12	580.75	-142.39	1,184.25	1,162.31	21.94	53.966		
4,500.00	4,418.32	4,243.26	4,176.20	16.78	14.61	-155.08	600.95	-146.30	1,224.91	1,202.38	22.54	54.351		
4,600.00	4,515.44	4,334.61	4,265.21	17.29	15.04	-155.05	621.15	-150.21	1,265.57	1,242.44	23.13	54.714		
4,700.00	4,612.57	4,425.97	4,354.22	17.80	15.46	-155.01	641.36	-154.12	1,306.23	1,282.51	23.72	55.058		
4,800.00	4,709.70	4,517.33	4,443.23	18.31	15.89	-154.98	661.56	-158.03	1,346.89	1,322.57	24.32	55.383		
4,900.00	4,806.82	4,608.69	4,532.24	18.82	16.31	-154.95	681.76	-161.94	1,387.55	1,362.64	24.92	55.691		
5,000.00	4,903.95	4,700.05	4,621.25	19.33	16.74	-154.92	701.96	-165.85	1,428.21	1,402.70	25.51	55.983		

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_HIGHWAY 160 8-2
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5119.00ft (Original Well Elev)
Reference Site:	WELD_HIGHWAY 160 17-2 pad	MD Reference:	WELL @ 5119.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_HIGHWAY 160 8-2	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_HIGHWAY 160 8-2	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-17-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_HIGHWAY 160 17-2 pad - P_HIGHWAY 160 2-2 - P_HIGHWAY 160 2-2 - PLAN #1 3-17-10 RH:												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	5,001.07	4,791.40	4,710.26	19.84	17.16	-154.90	722.17	-169.76	1,468.87	1,442.77	26.11	56.261	
5,200.00	5,098.20	4,882.76	4,799.27	20.35	17.59	-154.87	742.37	-173.67	1,509.54	1,482.83	26.71	56.526	
5,300.00	5,195.32	4,974.12	4,888.28	20.86	18.02	-154.85	762.57	-177.58	1,550.20	1,522.89	27.30	56.777	
5,400.00	5,292.45	5,065.48	4,977.29	21.37	18.44	-154.83	782.77	-181.49	1,590.86	1,562.96	27.90	57.017	
5,500.00	5,389.57	5,156.84	5,066.30	21.88	18.87	-154.81	802.98	-185.40	1,631.52	1,603.02	28.50	57.247	
5,600.00	5,486.70	5,248.19	5,155.31	22.40	19.30	-154.78	823.18	-189.31	1,672.18	1,643.08	29.10	57.466	
5,659.04	5,544.04	5,302.13	5,207.87	22.70	19.55	-154.77	835.11	-191.61	1,696.19	1,666.74	29.45	57.590	
5,700.00	5,583.89	5,339.66	5,244.43	22.88	19.73	-154.91	843.40	-193.22	1,712.60	1,682.85	29.76	57.555	
5,800.00	5,681.72	5,432.13	5,334.52	23.22	20.16	-155.19	863.85	-197.18	1,750.62	1,720.17	30.45	57.488	
5,900.00	5,780.21	5,525.71	5,425.70	23.53	20.60	-155.39	884.55	-201.18	1,785.69	1,754.58	31.11	57.392	
6,000.00	5,879.24	5,620.30	5,517.85	23.79	21.04	-155.52	905.46	-205.23	1,817.79	1,786.05	31.74	57.274	
6,100.00	5,978.70	5,802.89	5,696.61	24.02	21.72	-155.43	941.92	-212.28	1,845.32	1,812.81	32.51	56.764	
6,200.00	6,078.46	6,032.90	5,924.50	24.20	22.33	-155.34	972.00	-218.11	1,863.32	1,830.08	33.24	56.061	
6,300.00	6,178.39	6,268.54	6,159.75	24.34	22.73	-155.33	984.11	-220.45	1,871.05	1,837.22	33.83	55.311	
6,347.61	6,226.00	6,334.79	6,226.00	24.39	22.82	-38.69	984.29	-220.48	1,871.48	1,837.47	34.01	55.035	
6,400.00	6,278.39	6,387.18	6,278.39	24.45	22.88	-38.69	984.29	-220.48	1,871.48	1,837.31	34.17	54.770	
6,500.00	6,378.39	6,487.18	6,378.39	24.56	23.01	-38.69	984.29	-220.48	1,871.48	1,836.98	34.50	54.245	
6,600.00	6,478.39	6,587.18	6,478.39	24.68	23.14	-38.69	984.29	-220.48	1,871.48	1,836.64	34.84	53.722	
6,700.00	6,578.39	6,687.18	6,578.39	24.80	23.27	-38.69	984.29	-220.48	1,871.48	1,836.30	35.17	53.206	
6,800.00	6,678.39	6,787.18	6,678.39	24.92	23.40	-38.69	984.29	-220.48	1,871.48	1,835.96	35.52	52.695	
6,900.00	6,778.39	6,887.18	6,778.39	25.04	23.54	-38.69	984.29	-220.48	1,871.48	1,835.62	35.86	52.191	
7,000.00	6,878.39	6,987.18	6,878.39	25.16	23.67	-38.69	984.29	-220.48	1,871.48	1,835.27	36.20	51.693	
7,100.00	6,978.39	7,087.18	6,978.39	25.28	23.81	-38.69	984.29	-220.48	1,871.48	1,834.93	36.55	51.202	
7,200.00	7,078.39	7,187.18	7,078.39	25.41	23.95	-38.69	984.29	-220.48	1,871.48	1,834.58	36.90	50.716	
7,300.00	7,178.39	7,287.18	7,178.39	25.54	24.09	-38.69	984.29	-220.48	1,871.48	1,834.23	37.25	50.237	
7,400.00	7,278.39	7,387.18	7,278.39	25.66	24.23	-38.69	984.29	-220.48	1,871.48	1,833.87	37.61	49.764	
7,500.00	7,378.39	7,487.18	7,378.39	25.79	24.37	-38.69	984.29	-220.48	1,871.48	1,833.52	37.96	49.297	
7,600.00	7,478.39	7,587.18	7,478.39	25.92	24.52	-38.69	984.29	-220.48	1,871.48	1,833.16	38.32	48.837	
7,700.00	7,578.39	7,687.18	7,578.39	26.06	24.66	-38.69	984.29	-220.48	1,871.48	1,832.80	38.68	48.382	
7,800.00	7,678.39	7,787.18	7,678.39	26.19	24.81	-38.69	984.29	-220.48	1,871.48	1,832.44	39.04	47.934	
7,900.00	7,778.39	7,887.18	7,778.39	26.32	24.95	-38.69	984.29	-220.48	1,871.48	1,832.07	39.41	47.492	
8,000.00	7,878.39	7,987.18	7,878.39	26.46	25.10	-38.69	984.29	-220.48	1,871.48	1,831.71	39.77	47.055	
8,100.00	7,978.39	8,087.18	7,978.39	26.60	25.25	-38.69	984.29	-220.48	1,871.48	1,831.34	40.14	46.625	
8,200.00	8,078.39	8,187.18	8,078.39	26.73	25.40	-38.69	984.29	-220.48	1,871.48	1,830.97	40.51	46.201	
8,216.94	8,095.33	8,204.12	8,095.33	26.76	25.43	-38.69	984.29	-220.48	1,871.48	1,830.91	40.57	46.129	
8,262.61	8,141.00	8,215.79	8,107.00	26.82	25.45	-38.69	984.29	-220.48	1,871.79	1,831.11	40.67	46.018	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_HIGHWAY 160 8-2
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5119.00ft (Original Well Elev)
Reference Site:	WELD_HIGHWAY 160 17-2 pad	MD Reference:	WELL @ 5119.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_HIGHWAY 160 8-2	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_HIGHWAY 160 8-2	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-17-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_HIGHWAY 160 17-2 pad - P_HIGHWAY 160 2-2S - P_HIGHWAY 160 2-2S - PLAN #1 3-17-10 f													Offset Site Error: 0.00 ft
Survey Program: 0-MWD													Offset Well Error: 0.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
0.00	0.00	0.00	0.00	0.00	0.00	-90.52	-0.36	-40.01	40.01				
100.00	100.00	100.00	100.00	0.10	0.10	-90.52	-0.36	-40.01	40.01	39.82	0.19	209.445	
200.00	200.00	200.00	200.00	0.32	0.32	-90.52	-0.36	-40.01	40.01	39.37	0.64	62.466	
300.00	300.00	300.00	300.00	0.55	0.55	-90.52	-0.36	-40.01	40.01	38.92	1.09	36.707	
400.00	400.00	400.00	400.00	0.77	0.77	-90.52	-0.36	-40.01	40.01	38.48	1.54	25.990	
500.00	500.00	500.00	500.00	0.99	0.99	-90.52	-0.36	-40.01	40.01	38.03	1.99	20.116	
600.00	600.00	600.00	600.00	1.22	1.22	-90.52	-0.36	-40.01	40.01	37.58	2.44	16.408	
700.00	700.00	700.00	700.00	1.44	1.44	-90.52	-0.36	-40.01	40.01	37.13	2.89	13.854	
800.00	800.00	800.00	800.00	1.67	1.67	-90.52	-0.36	-40.01	40.01	36.68	3.34	11.988	
900.00	900.00	900.00	900.00	1.89	1.89	-90.52	-0.36	-40.01	40.01	36.23	3.79	10.565	
1,000.00	1,000.00	1,000.00	1,000.00	2.12	2.12	-90.52	-0.36	-40.01	40.01	35.78	4.24	9.444	
1,100.00	1,100.00	1,100.00	1,100.00	2.34	2.34	-90.52	-0.36	-40.01	40.01	35.33	4.69	8.539	
1,200.00	1,200.00	1,200.00	1,200.00	2.57	2.57	-90.52	-0.36	-40.01	40.01	34.88	5.14	7.791 CC, ES	
1,300.00	1,299.98	1,299.48	1,299.46	2.77	2.79	155.48	0.80	-40.58	42.17	36.61	5.56	7.586 SF	
1,400.00	1,399.84	1,398.48	1,398.39	2.97	3.01	161.96	4.28	-42.26	49.08	43.12	5.96	8.241	
1,500.00	1,499.45	1,496.56	1,496.26	3.17	3.23	169.33	9.99	-45.02	61.54	55.19	6.35	9.694	
1,600.00	1,598.70	1,593.26	1,592.56	3.40	3.46	175.63	17.84	-48.82	79.97	73.24	6.73	11.875	
1,700.00	1,697.47	1,688.16	1,686.83	3.66	3.69	-179.59	27.68	-53.57	104.37	97.25	7.12	14.667	
1,800.00	1,795.62	1,780.88	1,778.64	3.96	3.93	-176.12	39.32	-59.20	134.51	127.01	7.49	17.953	
1,888.57	1,881.96	1,860.89	1,857.59	4.26	4.16	-173.84	50.98	-64.84	165.80	157.98	7.82	21.196	
1,900.00	1,893.06	1,871.06	1,867.62	4.30	4.19	-173.60	52.57	-65.61	170.12	162.25	7.87	21.613	
2,000.00	1,990.19	1,959.20	1,954.21	4.68	4.46	-171.73	67.34	-72.75	209.07	200.76	8.31	25.165	
2,100.00	2,087.31	2,045.93	2,039.03	5.09	4.75	-170.22	83.62	-80.62	250.01	241.25	8.75	28.564	
2,200.00	2,184.44	2,136.58	2,127.49	5.52	5.07	-168.98	101.46	-89.25	291.88	282.66	9.22	31.655	
2,300.00	2,281.56	2,227.23	2,215.95	5.96	5.41	-168.05	119.29	-97.87	333.85	324.15	9.70	34.428	
2,400.00	2,378.69	2,317.89	2,304.42	6.41	5.76	-167.33	137.13	-106.50	375.87	365.69	10.18	36.917	
2,500.00	2,475.81	2,408.54	2,392.88	6.87	6.12	-166.75	154.96	-115.12	417.93	407.25	10.67	39.158	
2,600.00	2,572.94	2,499.19	2,481.34	7.34	6.48	-166.28	172.80	-123.74	460.01	448.84	11.17	41.181	
2,700.00	2,670.06	2,589.85	2,569.80	7.81	6.85	-165.89	190.63	-132.37	502.12	490.45	11.67	43.012	
2,800.00	2,767.19	2,680.50	2,658.26	8.29	7.23	-165.56	208.47	-140.99	544.25	532.07	12.18	44.677	
2,900.00	2,864.31	2,771.15	2,746.72	8.78	7.61	-165.28	226.31	-149.62	586.39	573.69	12.69	46.195	
3,000.00	2,961.44	2,861.80	2,835.18	9.26	8.00	-165.03	244.14	-158.24	628.53	615.33	13.21	47.583	
3,100.00	3,058.56	2,952.46	2,923.65	9.75	8.39	-164.81	261.98	-166.86	670.69	656.96	13.73	48.856	
3,200.00	3,155.69	3,043.11	3,012.11	10.25	8.78	-164.62	279.81	-175.49	712.85	698.61	14.25	50.027	
3,300.00	3,252.82	3,133.76	3,100.57	10.74	9.18	-164.46	297.65	-184.11	755.02	740.25	14.77	51.107	
3,400.00	3,349.94	3,224.42	3,189.03	11.24	9.58	-164.31	315.48	-192.74	797.20	781.90	15.30	52.105	
3,500.00	3,447.07	3,315.07	3,277.49	11.74	9.98	-164.17	333.32	-201.36	839.38	823.55	15.83	53.030	
3,600.00	3,544.19	3,405.72	3,365.95	12.24	10.38	-164.05	351.16	-209.99	881.56	865.20	16.36	53.890	
3,700.00	3,641.32	3,496.37	3,454.42	12.74	10.78	-163.94	368.99	-218.61	923.74	906.85	16.89	54.691	
3,800.00	3,738.44	3,587.03	3,542.88	13.24	11.19	-163.83	386.83	-227.23	965.93	948.51	17.42	55.437	
3,900.00	3,835.57	3,677.68	3,631.34	13.74	11.59	-163.74	404.66	-235.86	1,008.12	990.16	17.96	56.135	
4,000.00	3,932.69	3,768.33	3,719.80	14.25	12.00	-163.66	422.50	-244.48	1,050.31	1,031.82	18.49	56.789	
4,100.00	4,029.82	3,858.98	3,808.26	14.75	12.41	-163.58	440.34	-253.11	1,092.50	1,073.47	19.03	57.403	
4,200.00	4,126.94	3,949.64	3,896.72	15.26	12.82	-163.50	458.17	-261.73	1,134.70	1,115.13	19.57	57.980	
4,300.00	4,224.07	4,040.29	3,985.18	15.77	13.23	-163.44	476.01	-270.36	1,176.90	1,156.79	20.11	58.523	
4,400.00	4,321.19	4,130.94	4,073.65	16.27	13.64	-163.37	493.84	-278.98	1,219.09	1,198.44	20.65	59.036	
4,500.00	4,418.32	4,221.60	4,162.11	16.78	14.05	-163.31	511.68	-287.60	1,261.29	1,240.10	21.19	59.520	
4,600.00	4,515.44	4,312.25	4,250.57	17.29	14.46	-163.26	529.51	-296.23	1,303.49	1,281.76	21.73	59.978	
4,700.00	4,612.57	4,402.90	4,339.03	17.80	14.88	-163.21	547.35	-304.85	1,345.69	1,323.42	22.28	60.412	
4,800.00	4,709.70	4,493.55	4,427.49	18.31	15.29	-163.16	565.19	-313.48	1,387.89	1,365.08	22.82	60.823	
4,900.00	4,806.82	4,584.21	4,515.95	18.82	15.70	-163.11	583.02	-322.10	1,430.10	1,406.73	23.36	61.214	
5,000.00	4,903.95	4,674.86	4,604.41	19.33	16.12	-163.07	600.86	-330.73	1,472.30	1,448.39	23.91	61.585	

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_HIGHWAY 160 8-2
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5119.00ft (Original Well Elev)
Reference Site:	WELD_HIGHWAY 160 17-2 pad	MD Reference:	WELL @ 5119.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_HIGHWAY 160 8-2	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_HIGHWAY 160 8-2	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-17-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 ft
WELD_HIGHWAY 160 17-2 pad - P_HIGHWAY 160 2-2S - P_HIGHWAY 160 2-2S - PLAN #1 3-17-10 f												Offset Well Error:	0.00 ft
Survey Program: 0-MWD													
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.00	5,001.07	4,765.51	4,692.88	19.84	16.53	-163.03	618.69	-339.35	1,514.50	1,490.05	24.45	61.938	
5,200.00	5,098.20	4,856.17	4,781.34	20.35	16.95	-162.99	636.53	-347.97	1,556.71	1,531.71	25.00	62.275	
5,300.00	5,195.32	4,946.82	4,869.80	20.86	17.36	-162.95	654.37	-356.60	1,598.91	1,573.37	25.54	62.597	
5,400.00	5,292.45	5,037.47	4,958.26	21.37	17.78	-162.92	672.20	-365.22	1,641.12	1,615.03	26.09	62.904	
5,500.00	5,389.57	5,092.54	5,012.00	21.88	18.03	-162.90	683.04	-370.46	1,683.70	1,657.16	26.54	63.441	
5,600.00	5,486.70	5,092.54	5,012.00	22.40	18.03	-162.90	683.04	-370.46	1,730.14	1,703.30	26.84	64.461	
5,659.04	5,544.04	5,092.54	5,012.00	22.70	18.03	-162.90	683.04	-370.46	1,759.65	1,732.64	27.02	65.130	
5,700.00	5,583.89	5,092.54	5,012.00	22.88	18.03	-163.04	683.04	-370.46	1,780.75	1,753.55	27.20	65.473	
5,800.00	5,681.72	5,092.54	5,012.00	23.22	18.03	-163.40	683.04	-370.46	1,833.13	1,805.54	27.59	66.441	
5,900.00	5,780.21	5,092.54	5,012.00	23.53	18.03	-163.76	683.04	-370.46	1,886.59	1,858.65	27.94	67.528	
6,000.00	5,879.24	5,092.54	5,012.00	23.79	18.03	-164.11	683.04	-370.46	1,940.99	1,912.75	28.24	68.729	
6,100.00	5,978.70	5,092.54	5,012.00	24.02	18.03	-164.47	683.04	-370.46	1,996.18	1,967.68	28.50	70.043	
6,200.00	6,078.46	5,092.54	5,012.00	24.20	18.03	-164.83	683.04	-370.46	2,052.05	2,023.34	28.71	71.469	
6,300.00	6,178.39	5,092.54	5,012.00	24.34	18.03	-165.18	683.04	-370.46	2,108.46	2,079.58	28.88	73.009	
6,347.61	6,226.00	5,092.54	5,012.00	24.39	18.03	-48.70	683.04	-370.46	2,135.48	2,106.54	28.95	73.775	
6,400.00	6,278.39	5,092.54	5,012.00	24.45	18.03	-48.70	683.04	-370.46	2,165.69	2,136.66	29.03	74.591	
6,500.00	6,378.39	5,092.54	5,012.00	24.56	18.03	-48.70	683.04	-370.46	2,225.65	2,196.44	29.20	76.210	
6,600.00	6,478.39	5,092.54	5,012.00	24.68	18.03	-48.70	683.04	-370.46	2,288.40	2,259.03	29.38	77.902	
6,700.00	6,578.39	5,092.54	5,012.00	24.80	18.03	-48.70	683.04	-370.46	2,353.73	2,324.19	29.55	79.658	
6,800.00	6,678.39	5,092.54	5,012.00	24.92	18.03	-48.70	683.04	-370.46	2,421.43	2,391.71	29.72	81.470	
6,900.00	6,778.39	5,092.54	5,012.00	25.04	18.03	-48.70	683.04	-370.46	2,491.31	2,461.41	29.90	83.330	
7,000.00	6,878.39	5,092.54	5,012.00	25.16	18.03	-48.70	683.04	-370.46	2,563.18	2,533.11	30.07	85.232	
7,100.00	6,978.39	5,092.54	5,012.00	25.28	18.03	-48.70	683.04	-370.46	2,636.89	2,606.64	30.25	87.168	
7,200.00	7,078.39	5,092.54	5,012.00	25.41	18.03	-48.70	683.04	-370.46	2,712.28	2,681.85	30.43	89.135	
7,300.00	7,178.39	5,092.54	5,012.00	25.54	18.03	-48.70	683.04	-370.46	2,789.22	2,758.61	30.61	91.126	
7,400.00	7,278.39	5,092.54	5,012.00	25.66	18.03	-48.70	683.04	-370.46	2,867.58	2,836.79	30.79	93.136	
7,500.00	7,378.39	5,092.54	5,012.00	25.79	18.03	-48.70	683.04	-370.46	2,947.25	2,916.28	30.97	95.163	
7,600.00	7,478.39	5,092.54	5,012.00	25.92	18.03	-48.70	683.04	-370.46	3,028.13	2,996.98	31.15	97.201	
7,700.00	7,578.39	5,092.54	5,012.00	26.06	18.03	-48.70	683.04	-370.46	3,110.12	3,078.78	31.34	99.248	
7,800.00	7,678.39	5,092.54	5,012.00	26.19	18.03	-48.70	683.04	-370.46	3,193.14	3,161.62	31.52	101.301	
7,900.00	7,778.39	5,092.54	5,012.00	26.32	18.03	-48.70	683.04	-370.46	3,277.10	3,245.40	31.71	103.357	
8,000.00	7,878.39	5,092.54	5,012.00	26.46	18.03	-48.70	683.04	-370.46	3,361.95	3,330.05	31.89	105.414	
8,100.00	7,978.39	5,092.54	5,012.00	26.60	18.03	-48.70	683.04	-370.46	3,447.60	3,415.52	32.08	107.470	
8,200.00	8,078.39	5,092.54	5,012.00	26.73	18.03	-48.70	683.04	-370.46	3,534.01	3,501.74	32.27	109.522	
8,262.61	8,141.00	5,092.54	5,012.00	26.82	18.03	-48.70	683.04	-370.46	3,588.47	3,556.09	32.39	110.805	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_HIGHWAY 160 8-2
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5119.00ft (Original Well Elev)
Reference Site:	WELD_HIGHWAY 160 17-2 pad	MD Reference:	WELL @ 5119.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_HIGHWAY 160 8-2	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_HIGHWAY 160 8-2	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-17-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_HIGHWAY 160 17-2 pad - P_HIGHWAY 160 24-2 - P_HIGHWAY 160 24-2 - PLAN #1 3-17-10 F												Offset Site Error:	0.00 ft
Survey Program: 0-MWD												Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
0.00	0.00	0.00	0.00	0.00	0.00	-90.00	0.00	-19.87	19.87				
100.00	100.00	100.00	100.00	0.10	0.10	-90.00	0.00	-19.87	19.87	19.68	0.19	103.986	
200.00	200.00	200.00	200.00	0.32	0.32	-90.00	0.00	-19.87	19.87	19.23	0.64	31.013	
300.00	300.00	300.00	300.00	0.55	0.55	-90.00	0.00	-19.87	19.87	18.78	1.09	18.224	
400.00	400.00	400.00	400.00	0.77	0.77	-90.00	0.00	-19.87	19.87	18.33	1.54	12.903	
500.00	500.00	500.00	500.00	0.99	0.99	-90.00	0.00	-19.87	19.87	17.88	1.99	9.987	
600.00	600.00	600.00	600.00	1.22	1.22	-90.00	0.00	-19.87	19.87	17.43	2.44	8.146	
700.00	700.00	700.00	700.00	1.44	1.44	-90.00	0.00	-19.87	19.87	16.98	2.89	6.878	
800.00	800.00	800.00	800.00	1.67	1.67	-90.00	0.00	-19.87	19.87	16.53	3.34	5.952	
900.00	900.00	900.00	900.00	1.89	1.89	-90.00	0.00	-19.87	19.87	16.08	3.79	5.246	
1,000.00	1,000.00	1,000.00	1,000.00	2.12	2.12	-90.00	0.00	-19.87	19.87	15.63	4.24	4.689	
1,100.00	1,100.00	1,100.00	1,100.00	2.34	2.34	-90.00	0.00	-19.87	19.87	15.18	4.69	4.239	
1,200.00	1,200.00	1,200.00	1,200.00	2.57	2.57	-90.00	0.00	-19.87	19.87	14.73	5.14	3.868 CC, ES	
1,300.00	1,299.98	1,300.18	1,300.16	2.77	2.77	150.90	-1.68	-19.36	20.94	15.41	5.53	3.784 SF	
1,400.00	1,399.84	1,400.25	1,400.08	2.97	2.94	144.88	-6.70	-17.85	24.35	18.46	5.89	4.133	
1,500.00	1,499.45	1,500.09	1,499.54	3.17	3.13	137.97	-15.04	-15.34	30.44	24.16	6.27	4.853	
1,600.00	1,598.70	1,599.58	1,598.29	3.40	3.34	131.98	-26.64	-11.84	39.39	32.70	6.69	5.888	
1,700.00	1,697.47	1,698.63	1,696.12	3.66	3.58	127.37	-41.45	-7.39	51.23	44.07	7.16	7.155	
1,800.00	1,795.62	1,797.13	1,792.82	3.96	3.85	123.96	-59.37	-1.99	65.91	58.21	7.70	8.561	
1,888.57	1,881.96	1,883.83	1,877.36	4.26	4.14	121.68	-77.78	3.55	81.22	72.97	8.25	9.847	
1,900.00	1,893.06	1,894.99	1,888.19	4.30	4.17	121.45	-80.33	4.32	83.34	75.01	8.32	10.011	
2,000.00	1,990.19	1,993.20	1,983.54	4.68	4.54	119.74	-102.89	11.11	101.96	92.93	9.04	11.284	
2,100.00	2,087.31	2,091.42	2,078.88	5.09	4.93	118.56	-125.45	17.91	120.65	110.86	9.79	12.323	
2,200.00	2,184.44	2,189.63	2,174.23	5.52	5.33	117.70	-148.01	24.70	139.37	128.79	10.58	13.176	
2,300.00	2,281.56	2,287.84	2,269.57	5.96	5.76	117.04	-170.57	31.49	158.11	146.72	11.39	13.879	
2,400.00	2,378.69	2,386.06	2,364.92	6.41	6.19	116.52	-193.14	38.29	176.87	164.65	12.23	14.465	
2,500.00	2,475.81	2,484.27	2,460.26	6.87	6.64	116.10	-215.70	45.08	195.65	182.56	13.08	14.957	
2,600.00	2,572.94	2,582.48	2,555.61	7.34	7.09	115.76	-238.26	51.88	214.43	200.48	13.95	15.373	
2,700.00	2,670.06	2,680.69	2,650.95	7.81	7.55	115.47	-260.82	58.67	233.21	218.39	14.83	15.730	
2,800.00	2,767.19	2,778.91	2,746.30	8.29	8.02	115.22	-283.38	65.46	252.00	236.29	15.71	16.037	
2,900.00	2,864.31	2,877.12	2,841.64	8.78	8.49	115.01	-305.95	72.26	270.80	254.19	16.61	16.303	
3,000.00	2,961.44	2,975.33	2,936.99	9.26	8.96	114.82	-328.51	79.05	289.60	272.08	17.51	16.536	
3,100.00	3,058.56	3,073.55	3,032.33	9.75	9.44	114.66	-351.07	85.84	308.40	289.98	18.42	16.742	
3,200.00	3,155.69	3,171.76	3,127.67	10.25	9.92	114.52	-373.63	92.64	327.20	307.87	19.33	16.924	
3,300.00	3,252.82	3,269.97	3,223.02	10.74	10.40	114.39	-396.19	99.43	346.01	325.76	20.25	17.087	
3,400.00	3,349.94	3,368.19	3,318.36	11.24	10.89	114.27	-418.76	106.22	364.81	343.64	21.17	17.232	
3,500.00	3,447.07	3,466.40	3,413.71	11.74	11.37	114.17	-441.32	113.02	383.62	361.53	22.09	17.364	
3,600.00	3,544.19	3,564.61	3,509.05	12.24	11.86	114.07	-463.88	119.81	402.43	379.41	23.02	17.482	
3,700.00	3,641.32	3,662.83	3,604.40	12.74	12.35	113.99	-486.44	126.61	421.24	397.29	23.95	17.590	
3,800.00	3,738.44	3,761.04	3,699.74	13.24	12.84	113.91	-509.00	133.40	440.05	415.17	24.88	17.689	
3,900.00	3,835.57	3,859.25	3,795.09	13.74	13.33	113.84	-531.57	140.19	458.86	433.05	25.81	17.780	
4,000.00	3,932.69	3,957.47	3,890.43	14.25	13.83	113.77	-554.13	146.99	477.67	450.93	26.74	17.863	
4,100.00	4,029.82	4,055.68	3,985.78	14.75	14.32	113.71	-576.69	153.78	496.48	468.81	27.67	17.940	
4,200.00	4,126.94	4,153.89	4,081.12	15.26	14.81	113.65	-599.25	160.57	515.30	486.69	28.61	18.011	
4,300.00	4,224.07	4,252.11	4,176.47	15.77	15.31	113.60	-621.81	167.37	534.11	504.56	29.55	18.077	
4,400.00	4,321.19	4,350.32	4,271.81	16.27	15.80	113.55	-644.38	174.16	552.92	522.44	30.48	18.139	
4,500.00	4,418.32	4,448.53	4,367.16	16.78	16.30	113.51	-666.94	180.96	571.74	540.32	31.42	18.197	
4,600.00	4,515.44	4,546.75	4,462.50	17.29	16.80	113.46	-689.50	187.75	590.55	558.19	32.36	18.251	
4,700.00	4,612.57	4,644.96	4,557.85	17.80	17.30	113.42	-712.06	194.54	609.37	576.07	33.30	18.301	
4,800.00	4,709.70	4,743.17	4,653.19	18.31	17.79	113.38	-734.62	201.34	628.18	593.94	34.24	18.348	
4,900.00	4,806.82	4,841.39	4,748.54	18.82	18.29	113.35	-757.19	208.13	647.00	611.81	35.18	18.389	
5,000.00	4,903.95	4,939.60	4,843.88	19.33	18.79	113.32	-779.75	214.92	665.81	629.68	36.13	18.428	

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_HIGHWAY 160 8-2
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5119.00ft (Original Well Elev)
Reference Site:	WELD_HIGHWAY 160 17-2 pad	MD Reference:	WELL @ 5119.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_HIGHWAY 160 8-2	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_HIGHWAY 160 8-2	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-17-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_HIGHWAY 160 17-2 pad - P_HIGHWAY 160 24-2 - P_HIGHWAY 160 24-2 - PLAN #1 3-17-10 F												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	5,001.07	5,037.81	4,939.23	19.84	19.29	113.28	-802.31	221.72	684.63	647.55	37.08	18.464	
5,200.00	5,098.20	5,136.02	5,034.57	20.35	19.79	113.25	-824.87	228.51	703.44	665.42	38.03	18.499	
5,300.00	5,195.32	5,234.24	5,129.92	20.86	20.29	113.22	-847.43	235.30	722.26	683.28	38.98	18.531	
5,400.00	5,292.45	5,332.45	5,225.26	21.37	20.79	113.20	-870.00	242.10	741.08	701.15	39.93	18.562	
5,500.00	5,389.57	5,430.66	5,320.61	21.88	21.29	113.17	-892.56	248.89	759.89	719.02	40.88	18.590	
5,600.00	5,486.70	5,528.88	5,415.95	22.40	21.79	113.15	-915.12	255.69	778.71	736.88	41.83	18.618	
5,659.04	5,544.04	5,586.86	5,472.24	22.70	22.08	113.13	-928.44	259.70	789.82	747.43	42.39	18.633	
5,700.00	5,583.89	5,627.11	5,511.31	22.88	22.29	113.25	-937.69	262.48	797.41	754.64	42.77	18.645	
5,800.00	5,681.72	5,732.68	5,613.98	23.22	22.75	113.37	-961.23	269.57	814.74	771.17	43.57	18.699	
5,900.00	5,780.21	5,843.81	5,722.89	23.53	23.11	113.44	-982.35	275.93	829.37	785.13	44.25	18.745	
6,000.00	5,879.24	5,955.69	5,833.32	23.79	23.42	113.50	-999.51	281.10	841.15	796.31	44.84	18.761	
6,100.00	5,978.70	6,068.18	5,944.97	24.02	23.69	113.53	-1,012.59	285.04	850.04	804.70	45.34	18.749	
6,200.00	6,078.46	6,181.11	6,057.50	24.20	23.91	113.55	-1,021.50	287.72	856.01	810.26	45.75	18.711	
6,300.00	6,178.39	6,294.31	6,170.60	24.34	24.08	113.54	-1,026.15	289.12	859.05	812.98	46.07	18.647	
6,347.61	6,226.00	6,348.26	6,224.53	24.39	24.15	-129.82	-1,026.86	289.33	859.46	813.27	46.19	18.605	
6,400.00	6,278.39	6,402.11	6,278.39	24.45	24.21	-129.82	-1,026.88	289.34	859.47	813.15	46.32	18.555	
6,500.00	6,378.39	6,502.11	6,378.39	24.56	24.32	-129.82	-1,026.88	289.34	859.47	812.92	46.55	18.464	
6,600.00	6,478.39	6,602.11	6,478.39	24.68	24.42	-129.82	-1,026.88	289.34	859.47	812.69	46.78	18.373	
6,700.00	6,578.39	6,702.11	6,578.39	24.80	24.53	-129.82	-1,026.88	289.34	859.47	812.46	47.01	18.281	
6,800.00	6,678.39	6,802.11	6,678.39	24.92	24.63	-129.82	-1,026.88	289.34	859.47	812.22	47.25	18.190	
6,900.00	6,778.39	6,902.11	6,778.39	25.04	24.74	-129.82	-1,026.88	289.34	859.47	811.98	47.49	18.097	
7,000.00	6,878.39	7,002.11	6,878.39	25.16	24.85	-129.82	-1,026.88	289.34	859.47	811.74	47.74	18.005	
7,100.00	6,978.39	7,102.11	6,978.39	25.28	24.97	-129.82	-1,026.88	289.34	859.47	811.49	47.98	17.913	
7,200.00	7,078.39	7,202.11	7,078.39	25.41	25.08	-129.82	-1,026.88	289.34	859.47	811.24	48.23	17.820	
7,300.00	7,178.39	7,302.11	7,178.39	25.54	25.20	-129.82	-1,026.88	289.34	859.47	810.99	48.48	17.727	
7,400.00	7,278.39	7,402.11	7,278.39	25.66	25.31	-129.82	-1,026.88	289.34	859.47	810.73	48.74	17.634	
7,500.00	7,378.39	7,502.11	7,378.39	25.79	25.43	-129.82	-1,026.88	289.34	859.47	810.48	49.00	17.541	
7,600.00	7,478.39	7,602.11	7,478.39	25.92	25.55	-129.82	-1,026.88	289.34	859.47	810.22	49.26	17.449	
7,700.00	7,578.39	7,702.11	7,578.39	26.06	25.67	-129.82	-1,026.88	289.34	859.47	809.95	49.52	17.356	
7,800.00	7,678.39	7,802.11	7,678.39	26.19	25.79	-129.82	-1,026.88	289.34	859.47	809.69	49.79	17.263	
7,900.00	7,778.39	7,902.11	7,778.39	26.32	25.92	-129.82	-1,026.88	289.34	859.47	809.42	50.06	17.170	
8,000.00	7,878.39	8,002.11	7,878.39	26.46	26.04	-129.82	-1,026.88	289.34	859.47	809.15	50.33	17.078	
8,100.00	7,978.39	8,102.11	7,978.39	26.60	26.17	-129.82	-1,026.88	289.34	859.47	808.87	50.60	16.985	
8,200.00	8,078.39	8,202.11	8,078.39	26.73	26.30	-129.82	-1,026.88	289.34	859.47	808.60	50.88	16.893	
8,262.61	8,141.00	8,264.72	8,141.00	26.82	26.38	-129.82	-1,026.88	289.34	859.47	808.42	51.05	16.835	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_HIGHWAY 160 8-2
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5119.00ft (Original Well Elev)
Reference Site:	WELD_HIGHWAY 160 17-2 pad	MD Reference:	WELL @ 5119.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_HIGHWAY 160 8-2	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_HIGHWAY 160 8-2	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-17-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_HIGHWAY 160 17-2 pad - P_HIGHWAY 160 26-2 - P_HIGHWAY 160 26-2 - PLAN #1 3-17-10 F												Offset Site Error:	0.00 ft
Survey Program: 0-MWD												Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
0.00	0.00	0.00	0.00	0.00	0.00	90.00	0.00	20.15	20.15				
100.00	100.00	100.00	100.00	0.10	0.10	90.00	0.00	20.15	20.15	19.96	0.19	105.451	
200.00	200.00	200.00	200.00	0.32	0.32	90.00	0.00	20.15	20.15	19.51	0.64	31.450	
300.00	300.00	300.00	300.00	0.55	0.55	90.00	0.00	20.15	20.15	19.06	1.09	18.481 CC, ES	
400.00	400.00	399.45	399.43	0.77	0.77	86.83	1.19	21.40	21.44	19.90	1.54	13.965	
500.00	500.00	498.67	498.51	0.99	0.99	79.34	4.74	25.15	25.63	23.65	1.99	12.910 SF	
600.00	600.00	597.40	596.87	1.22	1.23	71.30	10.61	31.34	33.24	30.78	2.45	13.544	
700.00	700.00	695.44	694.18	1.44	1.50	64.86	18.74	39.93	44.49	41.54	2.95	15.079	
800.00	800.00	792.55	790.13	1.67	1.81	60.24	29.05	50.81	59.35	55.87	3.48	17.052	
900.00	900.00	888.53	884.40	1.89	2.15	57.04	41.43	63.88	77.72	73.67	4.05	19.190	
1,000.00	1,000.00	983.19	976.73	2.12	2.54	54.79	55.76	79.01	99.46	94.80	4.66	21.342	
1,100.00	1,100.00	1,076.36	1,066.89	2.34	2.98	53.18	71.90	96.05	124.47	119.15	5.31	23.425	
1,200.00	1,200.00	1,167.87	1,154.65	2.57	3.46	52.01	89.71	114.85	152.63	146.62	6.01	25.403	
1,300.00	1,299.98	1,257.75	1,240.01	2.77	3.98	-65.43	109.08	135.30	183.17	177.54	5.63	32.557	
1,400.00	1,399.84	1,346.05	1,322.96	2.97	4.55	-66.67	129.88	157.26	215.43	209.36	6.07	35.490	
1,500.00	1,499.45	1,432.62	1,403.35	3.17	5.15	-68.10	151.98	180.59	249.53	243.00	6.53	38.209	
1,600.00	1,598.70	1,517.39	1,481.08	3.40	5.78	-69.59	175.22	205.12	285.57	278.56	7.01	40.711	
1,700.00	1,697.47	1,609.02	1,564.50	3.66	6.50	-71.32	201.30	232.65	322.46	314.90	7.56	42.630	
1,800.00	1,795.62	1,701.07	1,648.29	3.96	7.23	-73.11	227.49	260.30	358.86	350.69	8.17	43.934	
1,888.57	1,881.96	1,782.45	1,722.38	4.26	7.88	-74.73	250.65	284.75	390.84	382.08	8.76	44.618	
1,900.00	1,893.06	1,792.94	1,731.93	4.30	7.97	-75.03	253.64	287.90	394.96	386.12	8.84	44.678	
2,000.00	1,990.19	1,884.71	1,815.47	4.68	8.71	-77.36	279.75	315.47	431.38	421.80	9.58	45.045	
2,100.00	2,087.31	1,976.48	1,899.02	5.09	9.45	-79.33	305.87	343.04	468.34	457.98	10.36	45.218	
2,200.00	2,184.44	2,068.25	1,982.57	5.52	10.20	-81.02	331.99	370.61	505.71	494.54	11.17	45.262	
2,300.00	2,281.56	2,160.03	2,066.11	5.96	10.95	-82.48	358.11	398.19	543.42	531.40	12.02	45.224	
2,400.00	2,378.69	2,251.80	2,149.66	6.41	11.70	-83.75	384.22	425.76	581.39	568.51	12.88	45.133	
2,500.00	2,475.81	2,343.57	2,233.20	6.87	12.45	-84.87	410.34	453.33	619.59	605.82	13.76	45.013	
2,600.00	2,572.94	2,435.34	2,316.75	7.34	13.20	-85.86	436.46	480.90	657.97	643.30	14.66	44.875	
2,700.00	2,670.06	2,527.12	2,400.30	7.81	13.96	-86.74	462.57	508.47	696.49	680.92	15.57	44.729	
2,800.00	2,767.19	2,618.89	2,483.84	8.29	14.71	-87.53	488.69	536.04	735.15	718.66	16.49	44.581	
2,900.00	2,864.31	2,710.66	2,567.39	8.78	15.47	-88.25	514.81	563.61	773.91	756.49	17.42	44.435	
3,000.00	2,961.44	2,802.43	2,650.94	9.26	16.22	-88.89	540.92	591.18	812.76	794.41	18.35	44.292	
3,100.00	3,058.56	2,894.21	2,734.48	9.75	16.98	-89.48	567.04	618.75	851.70	832.41	19.29	44.155	
3,200.00	3,155.69	2,985.98	2,818.03	10.25	17.74	-90.01	593.16	646.32	890.70	870.47	20.23	44.023	
3,300.00	3,252.82	3,077.75	2,901.57	10.74	18.49	-90.50	619.27	673.89	929.77	908.59	21.18	43.898	
3,400.00	3,349.94	3,169.52	2,985.12	11.24	19.25	-90.95	645.39	701.46	968.89	946.75	22.13	43.779	
3,500.00	3,447.07	3,261.30	3,068.67	11.74	20.01	-91.37	671.51	729.03	1,008.05	984.97	23.09	43.666	
3,600.00	3,544.19	3,353.07	3,152.21	12.24	20.77	-91.75	697.63	756.60	1,047.26	1,023.22	24.04	43.559	
3,700.00	3,641.32	3,444.84	3,235.76	12.74	21.53	-92.11	723.74	784.17	1,086.50	1,061.50	25.00	43.458	
3,800.00	3,738.44	3,536.61	3,319.30	13.24	22.29	-92.44	749.86	811.75	1,125.78	1,099.82	25.96	43.362	
3,900.00	3,835.57	3,628.39	3,402.85	13.74	23.04	-92.75	775.98	839.32	1,165.09	1,138.16	26.93	43.272	
4,000.00	3,932.69	3,720.16	3,486.40	14.25	23.80	-93.04	802.09	866.89	1,204.43	1,176.54	27.89	43.186	
4,100.00	4,029.82	3,811.93	3,569.94	14.75	24.56	-93.32	828.21	894.46	1,243.79	1,214.93	28.86	43.105	
4,200.00	4,126.94	3,903.70	3,653.49	15.26	25.32	-93.57	854.33	922.03	1,283.17	1,253.35	29.82	43.028	
4,300.00	4,224.07	3,995.48	3,737.04	15.77	26.08	-93.81	880.44	949.60	1,322.57	1,291.78	30.79	42.955	
4,400.00	4,321.19	4,087.25	3,820.58	16.27	26.84	-94.04	906.56	977.17	1,361.99	1,330.23	31.76	42.885	
4,500.00	4,418.32	4,179.02	3,904.13	16.78	27.60	-94.25	932.68	1,004.74	1,401.43	1,368.70	32.73	42.819	
4,600.00	4,515.44	4,270.79	3,987.67	17.29	28.36	-94.45	958.80	1,032.31	1,440.88	1,407.18	33.70	42.756	
4,700.00	4,612.57	4,362.57	4,071.22	17.80	29.12	-94.64	984.91	1,059.88	1,480.35	1,445.68	34.67	42.697	
4,800.00	4,709.70	4,454.34	4,154.77	18.31	29.88	-94.83	1,011.03	1,087.45	1,519.83	1,484.19	35.64	42.640	
4,900.00	4,806.82	4,546.11	4,238.31	18.82	30.64	-95.00	1,037.15	1,115.02	1,559.33	1,522.71	36.62	42.586	
5,000.00	4,903.95	4,637.88	4,321.86	19.33	31.40	-95.16	1,063.26	1,142.59	1,598.83	1,561.24	37.59	42.534	

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

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_HIGHWAY 160 8-2
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5119.00ft (Original Well Elev)
Reference Site:	WELD_HIGHWAY 160 17-2 pad	MD Reference:	WELL @ 5119.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_HIGHWAY 160 8-2	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_HIGHWAY 160 8-2	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-17-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_HIGHWAY 160 17-2 pad - P_HIGHWAY 160 26-2 - P_HIGHWAY 160 26-2 - PLAN #1 3-17-10 F												Offset Site Error:	0.00 ft
Survey Program: 0-MWD												Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
5,100.00	5,001.07	4,729.66	4,405.40	19.84	32.16	-95.32	1,089.38	1,170.16	1,638.34	1,599.78	38.56	42.484	
5,200.00	5,098.20	4,821.43	4,488.95	20.35	32.92	-95.47	1,115.50	1,197.73	1,677.87	1,638.33	39.54	42.437	
5,300.00	5,195.32	4,913.20	4,572.50	20.86	33.68	-95.61	1,141.61	1,225.31	1,717.40	1,676.89	40.51	42.392	
5,400.00	5,292.45	5,004.97	4,656.04	21.37	34.44	-95.74	1,167.73	1,252.88	1,756.95	1,715.46	41.49	42.349	
5,500.00	5,389.57	5,096.75	4,739.59	21.88	35.21	-95.87	1,193.85	1,280.45	1,796.50	1,754.03	42.46	42.307	
5,600.00	5,486.70	5,188.52	4,823.14	22.40	35.97	-95.99	1,219.96	1,308.02	1,836.05	1,792.62	43.44	42.267	
5,659.04	5,544.04	5,242.70	4,872.46	22.70	36.41	-96.07	1,235.38	1,324.30	1,859.41	1,815.40	44.02	42.245	
5,700.00	5,583.89	5,280.31	4,906.70	22.88	36.73	-96.45	1,246.09	1,335.59	1,875.59	1,831.09	44.50	42.148	
5,800.00	5,681.72	5,372.29	4,990.43	23.22	37.49	-97.31	1,272.26	1,363.23	1,914.83	1,869.24	45.58	42.007	
5,900.00	5,780.21	5,551.19	5,154.78	23.53	38.74	-97.96	1,320.83	1,414.50	1,952.34	1,905.46	46.89	41.640	
6,000.00	5,879.24	5,788.92	5,379.29	23.79	40.00	-98.43	1,374.45	1,471.10	1,983.19	1,935.04	48.15	41.187	
6,100.00	5,978.70	6,037.37	5,619.97	24.02	41.02	-98.77	1,416.60	1,515.60	2,006.40	1,957.18	49.22	40.763	
6,200.00	6,078.46	6,293.86	5,873.05	24.20	41.76	-99.00	1,444.91	1,545.49	2,021.54	1,971.47	50.07	40.375	
6,300.00	6,178.39	6,555.09	6,133.54	24.34	42.18	-99.12	1,457.63	1,558.92	2,028.28	1,977.62	50.66	40.041	
6,347.61	6,226.00	6,647.56	6,226.00	24.39	42.25	17.50	1,458.27	1,559.58	2,028.64	1,977.82	50.82	39.916	
6,400.00	6,278.39	6,699.95	6,278.39	24.45	42.29	17.50	1,458.27	1,559.58	2,028.64	1,977.71	50.93	39.830	
6,500.00	6,378.39	6,799.95	6,378.39	24.56	42.36	17.50	1,458.27	1,559.58	2,028.64	1,977.49	51.16	39.656	
6,600.00	6,478.39	6,899.95	6,478.39	24.68	42.42	17.50	1,458.27	1,559.58	2,028.64	1,977.26	51.38	39.480	
6,700.00	6,578.39	6,999.95	6,578.39	24.80	42.50	17.50	1,458.27	1,559.58	2,028.64	1,977.03	51.61	39.304	
6,800.00	6,678.39	7,099.95	6,678.39	24.92	42.57	17.50	1,458.27	1,559.58	2,028.64	1,976.80	51.85	39.127	
6,900.00	6,778.39	7,199.95	6,778.39	25.04	42.64	17.50	1,458.27	1,559.58	2,028.64	1,976.56	52.08	38.950	
7,000.00	6,878.39	7,299.95	6,878.39	25.16	42.71	17.50	1,458.27	1,559.58	2,028.64	1,976.32	52.32	38.772	
7,100.00	6,978.39	7,399.95	6,978.39	25.28	42.79	17.50	1,458.27	1,559.58	2,028.64	1,976.08	52.56	38.594	
7,200.00	7,078.39	7,499.95	7,078.39	25.41	42.87	17.50	1,458.27	1,559.58	2,028.64	1,975.84	52.81	38.416	
7,300.00	7,178.39	7,599.95	7,178.39	25.54	42.94	17.50	1,458.27	1,559.58	2,028.64	1,975.59	53.05	38.237	
7,400.00	7,278.39	7,699.95	7,278.39	25.66	43.02	17.50	1,458.27	1,559.58	2,028.64	1,975.34	53.30	38.058	
7,500.00	7,378.39	7,799.95	7,378.39	25.79	43.10	17.50	1,458.27	1,559.58	2,028.64	1,975.09	53.56	37.879	
7,600.00	7,478.39	7,899.95	7,478.39	25.92	43.18	17.50	1,458.27	1,559.58	2,028.64	1,974.83	53.81	37.699	
7,700.00	7,578.39	7,999.95	7,578.39	26.06	43.26	17.50	1,458.27	1,559.58	2,028.64	1,974.58	54.07	37.520	
7,800.00	7,678.39	8,099.95	7,678.39	26.19	43.34	17.50	1,458.27	1,559.58	2,028.64	1,974.32	54.33	37.340	
7,900.00	7,778.39	8,199.95	7,778.39	26.32	43.43	17.50	1,458.27	1,559.58	2,028.64	1,974.05	54.59	37.161	
8,000.00	7,878.39	8,299.95	7,878.39	26.46	43.51	17.50	1,458.27	1,559.58	2,028.64	1,973.79	54.86	36.982	
8,100.00	7,978.39	8,399.95	7,978.39	26.60	43.60	17.50	1,458.27	1,559.58	2,028.64	1,973.52	55.12	36.802	
8,200.00	8,078.39	8,499.95	8,078.39	26.73	43.68	17.50	1,458.27	1,559.58	2,028.64	1,973.25	55.39	36.623	
8,231.94	8,110.33	8,531.90	8,110.33	26.78	43.71	17.50	1,458.27	1,559.58	2,028.64	1,973.17	55.48	36.566	
8,262.61	8,141.00	8,542.56	8,121.00	26.82	43.72	17.50	1,458.27	1,559.58	2,028.74	1,973.21	55.54	36.530	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_HIGHWAY 160 8-2
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5119.00ft (Original Well Elev)
Reference Site:	WELD_HIGHWAY 160 17-2 pad	MD Reference:	WELL @ 5119.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_HIGHWAY 160 8-2	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_HIGHWAY 160 8-2	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-17-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_HIGHWAY 160 17-2 pad - P_HIGHWAY 160 41-2 - P_HIGHWAY 160 41-2 - PLAN #1 3-17-10 F												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	89.48	0.36	40.01	40.01				
100.00	100.00	100.00	100.00	0.10	0.10	89.48	0.36	40.01	40.01	39.82	0.19	209.445	
200.00	200.00	200.00	200.00	0.32	0.32	89.48	0.36	40.01	40.01	39.37	0.64	62.466	
300.00	300.00	300.00	300.00	0.55	0.55	89.48	0.36	40.01	40.01	38.92	1.09	36.707	
400.00	400.00	400.00	400.00	0.77	0.77	89.48	0.36	40.01	40.01	38.48	1.54	25.990	
500.00	500.00	500.00	500.00	0.99	0.99	89.48	0.36	40.01	40.01	38.03	1.99	20.116	
600.00	600.00	600.00	600.00	1.22	1.22	89.48	0.36	40.01	40.01	37.58	2.44	16.408	
700.00	700.00	700.00	700.00	1.44	1.44	89.48	0.36	40.01	40.01	37.13	2.89	13.854	
800.00	800.00	800.00	800.00	1.67	1.67	89.48	0.36	40.01	40.01	36.68	3.34	11.988	
900.00	900.00	900.00	900.00	1.89	1.89	89.48	0.36	40.01	40.01	36.23	3.79	10.565	
1,000.00	1,000.00	1,000.00	1,000.00	2.12	2.12	89.48	0.36	40.01	40.01	35.78	4.24	9.444	
1,100.00	1,100.00	1,100.00	1,100.00	2.34	2.34	89.48	0.36	40.01	40.01	35.33	4.69	8.539	
1,200.00	1,200.00	1,200.00	1,200.00	2.57	2.57	89.48	0.36	40.01	40.01	34.88	5.14	7.791 CC	
1,300.00	1,299.98	1,298.62	1,298.60	2.77	2.78	-28.61	0.61	41.69	40.18	34.63	5.55	7.244 ES	
1,400.00	1,399.84	1,397.19	1,397.03	2.97	2.98	-32.84	1.33	46.73	40.83	34.90	5.93	6.886	
1,500.00	1,499.45	1,495.63	1,495.10	3.17	3.20	-39.52	2.53	55.10	42.40	36.07	6.32	6.704 SF	
1,600.00	1,598.70	1,593.88	1,592.64	3.40	3.43	-47.89	4.20	66.77	45.47	38.73	6.75	6.741	
1,700.00	1,697.47	1,691.89	1,689.48	3.66	3.69	-56.85	6.34	81.71	50.65	43.43	7.22	7.015	
1,800.00	1,795.62	1,789.61	1,785.45	3.96	3.98	-65.32	8.95	99.86	58.33	50.56	7.77	7.504	
1,888.57	1,881.96	1,875.85	1,869.60	4.26	4.28	-71.87	11.63	118.56	67.32	58.98	8.34	8.069	
1,900.00	1,893.06	1,886.96	1,880.40	4.30	4.32	-72.65	12.00	121.15	68.64	60.22	8.42	8.150	
2,000.00	1,990.19	1,983.97	1,974.22	4.68	4.70	-77.44	15.50	145.54	81.97	72.82	9.15	8.960	
2,100.00	2,087.31	2,080.49	2,066.69	5.09	5.14	-79.45	19.42	172.90	98.01	88.09	9.92	9.881	
2,200.00	2,184.44	2,176.30	2,157.51	5.52	5.63	-79.72	23.75	203.10	116.40	105.67	10.73	10.853	
2,300.00	2,281.56	2,271.43	2,246.63	5.96	6.18	-78.93	28.48	236.03	137.06	125.50	11.56	11.861	
2,400.00	2,378.69	2,369.02	2,337.56	6.41	6.79	-77.97	33.51	271.11	158.73	146.30	12.43	12.772	
2,500.00	2,475.81	2,466.62	2,428.50	6.87	7.43	-77.24	38.54	306.18	180.43	167.11	13.32	13.546	
2,600.00	2,572.94	2,564.21	2,519.43	7.34	8.08	-76.66	43.57	341.25	202.15	187.92	14.23	14.206	
2,700.00	2,670.06	2,661.80	2,610.37	7.81	8.75	-76.20	48.60	376.33	223.89	208.74	15.15	14.774	
2,800.00	2,767.19	2,759.40	2,701.30	8.29	9.43	-75.82	53.63	411.40	245.64	229.55	16.09	15.265	
2,900.00	2,864.31	2,856.99	2,792.23	8.78	10.11	-75.50	58.66	446.48	267.40	250.36	17.04	15.693	
3,000.00	2,961.44	2,954.59	2,883.17	9.26	10.81	-75.23	63.69	481.55	289.17	271.17	17.99	16.070	
3,100.00	3,058.56	3,052.18	2,974.10	9.75	11.51	-75.00	68.72	516.63	310.94	291.98	18.96	16.402	
3,200.00	3,155.69	3,149.77	3,065.04	10.25	12.21	-74.79	73.75	551.70	332.72	312.79	19.93	16.697	
3,300.00	3,252.82	3,247.37	3,155.97	10.74	12.92	-74.62	78.78	586.77	354.50	333.60	20.90	16.961	
3,400.00	3,349.94	3,344.96	3,246.91	11.24	13.63	-74.46	83.81	621.85	376.28	354.40	21.88	17.197	
3,500.00	3,447.07	3,442.56	3,337.84	11.74	14.35	-74.32	88.84	656.92	398.06	375.20	22.86	17.411	
3,600.00	3,544.19	3,540.15	3,428.78	12.24	15.06	-74.19	93.87	692.00	419.85	396.00	23.85	17.604	
3,700.00	3,641.32	3,637.74	3,519.71	12.74	15.78	-74.08	98.90	727.07	441.64	416.80	24.84	17.780	
3,800.00	3,738.44	3,735.34	3,610.64	13.24	16.50	-73.98	103.93	762.15	463.43	437.60	25.83	17.940	
3,900.00	3,835.57	3,832.93	3,701.58	13.74	17.22	-73.89	108.96	797.22	485.22	458.39	26.83	18.087	
4,000.00	3,932.69	3,930.53	3,792.51	14.25	17.95	-73.80	113.99	832.29	507.01	479.19	27.82	18.223	
4,100.00	4,029.82	4,028.12	3,883.45	14.75	18.67	-73.72	119.02	867.37	528.81	499.98	28.82	18.347	
4,200.00	4,126.94	4,125.71	3,974.38	15.26	19.40	-73.65	124.05	902.44	550.60	520.78	29.82	18.462	
4,300.00	4,224.07	4,223.31	4,065.32	15.77	20.13	-73.58	129.08	937.52	572.40	541.57	30.82	18.569	
4,400.00	4,321.19	4,320.90	4,156.25	16.27	20.85	-73.52	134.11	972.59	594.19	562.36	31.83	18.669	
4,500.00	4,418.32	4,418.49	4,247.19	16.78	21.58	-73.46	139.14	1,007.67	615.99	583.15	32.83	18.761	
4,600.00	4,515.44	4,516.09	4,338.12	17.29	22.31	-73.41	144.17	1,042.74	637.78	603.95	33.84	18.847	
4,700.00	4,612.57	4,613.68	4,429.05	17.80	23.04	-73.36	149.20	1,077.81	659.58	624.74	34.85	18.928	
4,800.00	4,709.70	4,711.28	4,519.99	18.31	23.77	-73.32	154.23	1,112.89	681.38	645.53	35.85	19.004	
4,900.00	4,806.82	4,808.87	4,610.92	18.82	24.50	-73.27	159.26	1,147.96	703.18	666.31	36.86	19.075	
5,000.00	4,903.95	4,906.46	4,701.86	19.33	25.23	-73.23	164.29	1,183.04	724.98	687.10	37.87	19.142	

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_HIGHWAY 160 8-2
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5119.00ft (Original Well Elev)
Reference Site:	WELD_HIGHWAY 160 17-2 pad	MD Reference:	WELL @ 5119.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_HIGHWAY 160 8-2	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_HIGHWAY 160 8-2	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-17-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_HIGHWAY 160 17-2 pad - P_HIGHWAY 160 41-2 - P_HIGHWAY 160 41-2 - PLAN #1 3-17-10 F												Offset Site Error:	0.00 ft
Survey Program: 0-MWD												Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
5,100.00	5,001.07	5,004.06	4,792.79	19.84	25.97	-73.19	169.32	1,218.11	746.78	707.89	38.88	19.205	
5,200.00	5,098.20	5,101.65	4,883.73	20.35	26.70	-73.16	174.35	1,253.18	768.57	728.68	39.89	19.265	
5,300.00	5,195.32	5,199.25	4,974.66	20.86	27.43	-73.12	179.38	1,288.26	790.37	749.47	40.91	19.321	
5,400.00	5,292.45	5,296.84	5,065.59	21.37	28.17	-73.09	184.41	1,323.33	812.17	770.25	41.92	19.375	
5,500.00	5,389.57	5,394.43	5,156.53	21.88	28.90	-73.06	189.44	1,358.41	833.97	791.04	42.93	19.425	
5,600.00	5,486.70	5,514.93	5,269.42	22.40	29.69	-73.10	195.42	1,400.11	854.74	810.74	44.01	19.422	
5,659.04	5,544.04	5,590.39	5,340.95	22.70	30.08	-73.23	198.83	1,423.85	865.48	820.85	44.63	19.390	
5,700.00	5,583.89	5,643.00	5,391.20	22.88	30.34	-73.48	201.04	1,439.31	872.32	827.26	45.06	19.359	
5,800.00	5,681.72	5,772.24	5,515.77	23.22	30.92	-74.01	205.93	1,473.36	887.32	841.36	45.96	19.304	
5,900.00	5,780.21	5,902.48	5,642.73	23.53	31.42	-74.46	210.04	1,502.02	899.85	853.09	46.76	19.245	
6,000.00	5,879.24	6,033.54	5,771.70	23.79	31.84	-74.81	213.34	1,525.07	909.85	862.42	47.43	19.184	
6,100.00	5,978.70	6,165.25	5,902.23	24.02	32.17	-75.07	215.81	1,542.32	917.28	869.30	47.98	19.118	
6,200.00	6,078.46	6,297.41	6,033.88	24.20	32.43	-75.25	217.44	1,553.64	922.12	873.70	48.42	19.045	
6,300.00	6,178.39	6,429.82	6,166.18	24.34	32.60	-75.35	218.20	1,558.95	924.33	875.60	48.73	18.967	
6,347.61	6,226.00	6,489.65	6,226.00	24.39	32.65	41.28	218.26	1,559.38	924.48	875.64	48.85	18.927	
6,400.00	6,278.39	6,542.04	6,278.39	24.45	32.70	41.28	218.26	1,559.38	924.48	875.52	48.96	18.881	
6,500.00	6,378.39	6,642.04	6,378.39	24.56	32.79	41.28	218.26	1,559.38	924.48	875.29	49.20	18.792	
6,600.00	6,478.39	6,742.04	6,478.39	24.68	32.89	41.28	218.26	1,559.38	924.48	875.05	49.43	18.703	
6,700.00	6,578.39	6,842.04	6,578.39	24.80	32.98	41.28	218.26	1,559.38	924.48	874.81	49.67	18.614	
6,800.00	6,678.39	6,942.04	6,678.39	24.92	33.08	41.28	218.26	1,559.38	924.48	874.57	49.91	18.524	
6,900.00	6,778.39	7,042.04	6,778.39	25.04	33.17	41.28	218.26	1,559.38	924.48	874.33	50.15	18.434	
7,000.00	6,878.39	7,142.04	6,878.39	25.16	33.27	41.28	218.26	1,559.38	924.48	874.09	50.40	18.344	
7,100.00	6,978.39	7,242.04	6,978.39	25.28	33.37	41.28	218.26	1,559.38	924.48	873.84	50.65	18.254	
7,200.00	7,078.39	7,342.04	7,078.39	25.41	33.47	41.28	218.26	1,559.38	924.48	873.58	50.90	18.164	
7,300.00	7,178.39	7,442.04	7,178.39	25.54	33.57	41.28	218.26	1,559.38	924.48	873.33	51.15	18.073	
7,400.00	7,278.39	7,542.04	7,278.39	25.66	33.68	41.28	218.26	1,559.38	924.48	873.07	51.41	17.983	
7,500.00	7,378.39	7,642.04	7,378.39	25.79	33.78	41.28	218.26	1,559.38	924.48	872.81	51.67	17.893	
7,600.00	7,478.39	7,742.04	7,478.39	25.92	33.89	41.28	218.26	1,559.38	924.48	872.55	51.93	17.802	
7,700.00	7,578.39	7,842.04	7,578.39	26.06	33.99	41.28	218.26	1,559.38	924.48	872.29	52.19	17.712	
7,800.00	7,678.39	7,942.04	7,678.39	26.19	34.10	41.28	218.26	1,559.38	924.48	872.02	52.46	17.622	
7,900.00	7,778.39	8,042.04	7,778.39	26.32	34.21	41.28	218.26	1,559.38	924.48	871.75	52.73	17.532	
8,000.00	7,878.39	8,142.04	7,878.39	26.46	34.32	41.28	218.26	1,559.38	924.48	871.48	53.00	17.442	
8,100.00	7,978.39	8,242.04	7,978.39	26.60	34.43	41.28	218.26	1,559.38	924.48	871.20	53.28	17.352	
8,200.00	8,078.39	8,342.04	8,078.39	26.73	34.54	41.28	218.26	1,559.38	924.48	870.93	53.56	17.262	
8,237.77	8,116.16	8,379.81	8,116.16	26.79	34.59	41.28	218.26	1,559.38	924.48	870.82	53.66	17.228	
8,262.61	8,141.00	8,394.65	8,131.00	26.82	34.60	41.28	218.26	1,559.38	924.54	870.82	53.72	17.212	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_HIGHWAY 160 8-2
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5119.00ft (Original Well Elev)
Reference Site:	WELD_HIGHWAY 160 17-2 pad	MD Reference:	WELL @ 5119.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_HIGHWAY 160 8-2	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_HIGHWAY 160 8-2	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-17-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_HIGHWAY 160 17-2 pad - P_HIGHWAY 160 7-2 - P_HIGHWAY 160 7-2 - PLAN #1 3-17-10 RH: Survey Program: 0-MWD													Offset Site Error: 0.00 ft
Reference Offset Semi Major Axis Distance													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	-90.42	-0.37	-50.09	50.09				
100.00	100.00	100.00	100.00	0.10	0.10	-90.42	-0.37	-50.09	50.09	49.90	0.19	262.169	
200.00	200.00	200.00	200.00	0.32	0.32	-90.42	-0.37	-50.09	50.09	49.45	0.64	78.191	
300.00	300.00	300.00	300.00	0.55	0.55	-90.42	-0.37	-50.09	50.09	49.00	1.09	45.947	
400.00	400.00	400.00	400.00	0.77	0.77	-90.42	-0.37	-50.09	50.09	48.55	1.54	32.532	
500.00	500.00	500.00	500.00	0.99	0.99	-90.42	-0.37	-50.09	50.09	48.10	1.99	25.180	
600.00	600.00	600.00	600.00	1.22	1.22	-90.42	-0.37	-50.09	50.09	47.65	2.44	20.539	
700.00	700.00	700.00	700.00	1.44	1.44	-90.42	-0.37	-50.09	50.09	47.20	2.89	17.342	
800.00	800.00	800.00	800.00	1.67	1.67	-90.42	-0.37	-50.09	50.09	46.75	3.34	15.006	
900.00	900.00	900.00	900.00	1.89	1.89	-90.42	-0.37	-50.09	50.09	46.30	3.79	13.225	
1,000.00	1,000.00	1,000.00	1,000.00	2.12	2.12	-90.42	-0.37	-50.09	50.09	45.85	4.24	11.822	
1,100.00	1,100.00	1,100.00	1,100.00	2.34	2.34	-90.42	-0.37	-50.09	50.09	45.40	4.69	10.688	
1,200.00	1,200.00	1,200.00	1,200.00	2.57	2.57	-90.42	-0.37	-50.09	50.09	44.95	5.14	9.752 CC, ES	
1,300.00	1,299.98	1,298.89	1,298.87	2.77	2.77	152.27	-1.74	-51.10	52.68	47.15	5.53	9.520 SF	
1,400.00	1,399.84	1,397.37	1,397.21	2.97	2.94	150.64	-5.84	-54.12	60.48	54.59	5.89	10.269	
1,500.00	1,499.45	1,495.03	1,494.50	3.17	3.13	148.67	-12.58	-59.10	73.50	67.25	6.26	11.750	
1,600.00	1,598.70	1,591.47	1,590.25	3.40	3.34	146.81	-21.86	-65.94	91.73	85.09	6.64	13.821	
1,700.00	1,697.47	1,686.32	1,683.99	3.66	3.57	145.24	-33.50	-74.54	115.09	108.05	7.04	16.348	
1,800.00	1,795.62	1,782.20	1,778.43	3.96	3.83	144.31	-46.77	-84.33	142.56	135.08	7.48	19.065	
1,888.57	1,881.96	1,866.67	1,861.64	4.26	4.07	144.22	-58.48	-92.96	169.18	161.29	7.89	21.444	
1,900.00	1,893.06	1,877.52	1,872.34	4.30	4.11	144.28	-59.98	-94.07	172.75	164.81	7.95	21.736	
2,000.00	1,990.19	1,972.50	1,965.90	4.68	4.40	144.72	-73.14	-103.78	204.01	195.54	8.48	24.066	
2,100.00	2,087.31	2,067.48	2,059.46	5.09	4.71	145.05	-86.30	-113.49	235.28	226.25	9.03	26.062	
2,200.00	2,184.44	2,162.46	2,153.02	5.52	5.02	145.29	-99.46	-123.20	266.55	256.96	9.60	27.778	
2,300.00	2,281.56	2,257.44	2,246.58	5.96	5.35	145.49	-112.62	-132.91	297.83	287.65	10.18	29.260	
2,400.00	2,378.69	2,352.42	2,340.14	6.41	5.68	145.65	-125.78	-142.62	329.11	318.33	10.77	30.548	
2,500.00	2,475.81	2,447.40	2,433.70	6.87	6.02	145.78	-138.93	-152.33	360.39	349.01	11.38	31.674	
2,600.00	2,572.94	2,542.37	2,527.26	7.34	6.36	145.89	-152.09	-162.04	391.67	379.68	11.99	32.663	
2,700.00	2,670.06	2,637.35	2,620.82	7.81	6.71	145.98	-165.25	-171.75	422.95	410.34	12.61	33.538	
2,800.00	2,767.19	2,732.33	2,714.38	8.29	7.06	146.07	-178.41	-181.46	454.23	441.00	13.24	34.315	
2,900.00	2,864.31	2,827.31	2,807.94	8.78	7.41	146.14	-191.57	-191.17	485.52	471.65	13.87	35.009	
3,000.00	2,961.44	2,922.29	2,901.50	9.26	7.77	146.20	-204.73	-200.88	516.80	502.30	14.50	35.633	
3,100.00	3,058.56	3,017.27	2,995.06	9.75	8.13	146.25	-217.89	-210.59	548.09	532.94	15.14	36.195	
3,200.00	3,155.69	3,112.25	3,088.62	10.25	8.49	146.30	-231.05	-220.30	579.37	563.59	15.78	36.705	
3,300.00	3,252.82	3,207.23	3,182.18	10.74	8.85	146.35	-244.20	-230.01	610.66	594.23	16.43	37.169	
3,400.00	3,349.94	3,302.21	3,275.74	11.24	9.21	146.39	-257.36	-239.72	641.95	624.87	17.08	37.593	
3,500.00	3,447.07	3,397.18	3,369.30	11.74	9.58	146.42	-270.52	-249.43	673.23	655.51	17.72	37.982	
3,600.00	3,544.19	3,492.16	3,462.86	12.24	9.95	146.45	-283.68	-259.14	704.52	686.14	18.38	38.340	
3,700.00	3,641.32	3,587.14	3,556.42	12.74	10.32	146.48	-296.84	-268.85	735.81	716.78	19.03	38.671	
3,800.00	3,738.44	3,682.12	3,649.99	13.24	10.68	146.51	-310.00	-278.56	767.09	747.41	19.68	38.977	
3,900.00	3,835.57	3,777.10	3,743.55	13.74	11.05	146.54	-323.16	-288.27	798.38	778.05	20.33	39.262	
4,000.00	3,932.69	3,872.08	3,837.11	14.25	11.42	146.56	-336.32	-297.98	829.67	808.68	20.99	39.528	
4,100.00	4,029.82	3,967.06	3,930.67	14.75	11.80	146.58	-349.47	-307.69	860.96	839.31	21.65	39.771	
4,200.00	4,126.94	4,062.04	4,024.23	15.26	12.17	146.60	-362.63	-317.40	892.24	869.93	22.31	39.987	
4,300.00	4,224.07	4,157.02	4,117.79	15.77	12.54	146.62	-375.79	-327.11	923.53	900.55	22.98	40.188	
4,400.00	4,321.19	4,252.00	4,211.35	16.27	12.91	146.64	-388.95	-336.82	954.82	931.17	23.65	40.376	
4,500.00	4,418.32	4,346.97	4,304.91	16.78	13.29	146.66	-402.11	-346.53	986.11	961.79	24.32	40.553	
4,600.00	4,515.44	4,441.95	4,398.47	17.29	13.66	146.67	-415.27	-356.24	1,017.39	992.41	24.99	40.718	
4,700.00	4,612.57	4,536.93	4,492.03	17.80	14.04	146.69	-428.43	-365.95	1,048.68	1,023.03	25.66	40.873	
4,800.00	4,709.70	4,631.91	4,585.59	18.31	14.41	146.70	-441.59	-375.66	1,079.97	1,053.64	26.33	41.020	
4,900.00	4,806.82	4,726.89	4,679.15	18.82	14.79	146.71	-454.75	-385.37	1,111.26	1,084.26	27.00	41.158	
5,000.00	4,903.95	4,821.87	4,772.71	19.33	15.16	146.72	-467.90	-395.08	1,142.55	1,114.87	27.67	41.288	

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_HIGHWAY 160 8-2
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5119.00ft (Original Well Elev)
Reference Site:	WELD_HIGHWAY 160 17-2 pad	MD Reference:	WELL @ 5119.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_HIGHWAY 160 8-2	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_HIGHWAY 160 8-2	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-17-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_HIGHWAY 160 17-2 pad - P_HIGHWAY 160 7-2 - P_HIGHWAY 160 7-2 - PLAN #1 3-17-10 RH:												Offset Site Error:	0.00 ft
Survey Program: 0-MWD												Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
5,100.00	5,001.07	4,916.85	4,866.27	19.84	15.54	146.74	-481.06	-404.79	1,173.84	1,145.49	28.35	41.411	
5,200.00	5,098.20	5,011.83	4,959.83	20.35	15.91	146.75	-494.22	-414.50	1,205.12	1,176.10	29.02	41.527	
5,300.00	5,195.32	5,106.81	5,053.39	20.86	16.29	146.76	-507.38	-424.21	1,236.41	1,206.72	29.69	41.638	
5,400.00	5,292.45	5,201.78	5,146.95	21.37	16.67	146.77	-520.54	-433.92	1,267.70	1,237.33	30.37	41.743	
5,500.00	5,389.57	5,296.76	5,240.51	21.88	17.04	146.78	-533.70	-443.63	1,298.99	1,267.94	31.04	41.842	
5,600.00	5,486.70	5,391.74	5,334.07	22.40	17.42	146.79	-546.86	-453.34	1,330.28	1,298.56	31.72	41.937	
5,659.04	5,544.04	5,447.82	5,389.31	22.70	17.64	146.79	-554.63	-459.07	1,348.75	1,316.63	32.12	41.991	
5,700.00	5,583.89	5,486.80	5,427.71	22.88	17.80	146.93	-560.03	-463.06	1,361.33	1,328.91	32.43	41.983	
5,800.00	5,681.72	5,582.56	5,522.04	23.22	18.18	147.19	-573.29	-472.85	1,390.08	1,356.97	33.11	41.982	
5,900.00	5,780.21	5,679.07	5,617.11	23.53	18.56	147.34	-586.67	-482.72	1,416.01	1,382.25	33.77	41.936	
6,000.00	5,879.24	5,776.22	5,712.81	23.79	18.95	147.38	-600.12	-492.65	1,439.11	1,404.73	34.39	41.853	
6,100.00	5,978.70	5,911.25	5,846.15	24.02	19.40	147.26	-617.19	-505.24	1,458.45	1,423.42	35.03	41.634	
6,200.00	6,078.46	6,062.62	5,996.61	24.20	19.74	147.15	-630.40	-514.99	1,471.56	1,436.01	35.56	41.388	
6,300.00	6,178.39	6,215.81	6,149.55	24.34	20.01	147.08	-637.24	-520.04	1,478.18	1,442.20	35.98	41.081	
6,347.61	6,226.00	6,289.04	6,222.77	24.39	20.12	-96.28	-638.19	-520.73	1,479.03	1,442.87	36.16	40.902	
6,400.00	6,278.39	6,344.66	6,278.39	24.45	20.19	-96.28	-638.20	-520.74	1,479.03	1,442.72	36.32	40.726	
6,500.00	6,378.39	6,444.66	6,378.39	24.56	20.32	-96.28	-638.20	-520.74	1,479.03	1,442.43	36.60	40.409	
6,600.00	6,478.39	6,544.66	6,478.39	24.68	20.45	-96.28	-638.20	-520.74	1,479.03	1,442.15	36.89	40.094	
6,700.00	6,578.39	6,644.66	6,578.39	24.80	20.57	-96.28	-638.20	-520.74	1,479.03	1,441.85	37.18	39.780	
6,800.00	6,678.39	6,744.66	6,678.39	24.92	20.71	-96.28	-638.20	-520.74	1,479.03	1,441.56	37.47	39.467	
6,900.00	6,778.39	6,844.66	6,778.39	25.04	20.84	-96.28	-638.20	-520.74	1,479.03	1,441.26	37.77	39.157	
7,000.00	6,878.39	6,944.66	6,878.39	25.16	20.97	-96.28	-638.20	-520.74	1,479.03	1,440.96	38.07	38.848	
7,100.00	6,978.39	7,044.66	6,978.39	25.28	21.11	-96.28	-638.20	-520.74	1,479.03	1,440.66	38.38	38.541	
7,200.00	7,078.39	7,144.66	7,078.39	25.41	21.25	-96.28	-638.20	-520.74	1,479.03	1,440.35	38.68	38.236	
7,300.00	7,178.39	7,244.66	7,178.39	25.54	21.39	-96.28	-638.20	-520.74	1,479.03	1,440.04	38.99	37.933	
7,400.00	7,278.39	7,344.66	7,278.39	25.66	21.53	-96.28	-638.20	-520.74	1,479.03	1,439.73	39.30	37.632	
7,500.00	7,378.39	7,444.66	7,378.39	25.79	21.67	-96.28	-638.20	-520.74	1,479.03	1,439.42	39.62	37.333	
7,600.00	7,478.39	7,544.66	7,478.39	25.92	21.81	-96.28	-638.20	-520.74	1,479.03	1,439.10	39.93	37.037	
7,700.00	7,578.39	7,644.66	7,578.39	26.06	21.96	-96.28	-638.20	-520.74	1,479.03	1,438.78	40.25	36.743	
7,800.00	7,678.39	7,744.66	7,678.39	26.19	22.10	-96.28	-638.20	-520.74	1,479.03	1,438.46	40.57	36.452	
7,900.00	7,778.39	7,844.66	7,778.39	26.32	22.25	-96.28	-638.20	-520.74	1,479.03	1,438.14	40.90	36.163	
8,000.00	7,878.39	7,944.66	7,878.39	26.46	22.40	-96.28	-638.20	-520.74	1,479.03	1,437.81	41.23	35.876	
8,100.00	7,978.39	8,044.66	7,978.39	26.60	22.55	-96.28	-638.20	-520.74	1,479.03	1,437.48	41.55	35.592	
8,200.00	8,078.39	8,144.66	8,078.39	26.73	22.70	-96.28	-638.20	-520.74	1,479.03	1,437.15	41.89	35.311	
8,262.61	8,141.00	8,207.27	8,141.00	26.82	22.80	-96.28	-638.20	-520.74	1,479.03	1,436.94	42.09	35.136	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_HIGHWAY 160 8-2
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5119.00ft (Original Well Elev)
Reference Site:	WELD_HIGHWAY 160 17-2 pad	MD Reference:	WELL @ 5119.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_HIGHWAY 160 8-2	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_HIGHWAY 160 8-2	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-17-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_HIGHWAY 160 17-2 pad - P_HIGHWAY 160 8-2S - P_HIGHWAY 160 8-2S - PLAN #1 3-17-10 f												Offset Site Error:	0.00 ft
Survey Program: 0-MWD												Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	-90.00	0.00	-9.79	9.79				
100.00	100.00	100.00	100.00	0.10	0.10	-90.00	0.00	-9.79	9.79	9.60	0.19	51.261	
200.00	200.00	200.00	200.00	0.32	0.32	-90.00	0.00	-9.79	9.79	9.15	0.64	15.288	
300.00	300.00	300.00	300.00	0.55	0.55	-90.00	0.00	-9.79	9.79	8.70	1.09	8.984	
400.00	400.00	400.00	400.00	0.77	0.77	-90.00	0.00	-9.79	9.79	8.25	1.54	6.361	
500.00	500.00	500.00	500.00	0.99	0.99	-90.00	0.00	-9.79	9.79	7.80	1.99	4.923	
600.00	600.00	600.00	600.00	1.22	1.22	-90.00	0.00	-9.79	9.79	7.35	2.44	4.016	
700.00	700.00	700.00	700.00	1.44	1.44	-90.00	0.00	-9.79	9.79	6.91	2.89	3.391	
800.00	800.00	800.00	800.00	1.67	1.67	-90.00	0.00	-9.79	9.79	6.46	3.34	2.934	
900.00	900.00	900.00	900.00	1.89	1.89	-90.00	0.00	-9.79	9.79	6.01	3.79	2.586	
1,000.00	1,000.00	1,000.00	1,000.00	2.12	2.12	-90.00	0.00	-9.79	9.79	5.56	4.24	2.311	
1,100.00	1,100.00	1,100.00	1,100.00	2.34	2.34	-90.00	0.00	-9.79	9.79	5.11	4.69	2.090	
1,200.00	1,200.00	1,200.00	1,200.00	2.57	2.57	-90.00	0.00	-9.79	9.79	4.66	5.14	1.907 CC, ES	
1,300.00	1,299.98	1,300.20	1,300.19	2.77	2.77	153.23	-0.81	-8.75	10.32	4.78	5.54	1.862 SF	
1,400.00	1,399.84	1,400.42	1,400.33	2.97	2.96	152.93	-3.22	-5.64	11.89	5.98	5.90	2.013	
1,500.00	1,499.45	1,500.65	1,500.34	3.17	3.15	152.57	-7.25	-0.45	14.50	8.23	6.28	2.310	
1,600.00	1,598.70	1,600.92	1,600.18	3.40	3.37	152.23	-12.88	6.82	18.17	11.50	6.67	2.725	
1,700.00	1,697.47	1,701.23	1,699.79	3.66	3.60	151.95	-20.13	16.16	22.87	15.80	7.07	3.234	
1,800.00	1,795.62	1,801.58	1,799.10	3.96	3.85	151.72	-28.97	27.56	28.62	21.11	7.50	3.815	
1,888.57	1,881.96	1,890.52	1,886.76	4.26	4.11	151.55	-38.15	39.39	34.57	26.66	7.91	4.372	
1,900.00	1,893.06	1,902.00	1,898.06	4.30	4.14	151.52	-39.42	41.04	35.38	27.41	7.96	4.442	
2,000.00	1,990.19	2,002.59	1,996.70	4.68	4.46	150.00	-51.49	56.59	41.33	32.81	8.52	4.851	
2,100.00	2,087.31	2,103.32	2,094.93	5.09	4.83	146.63	-65.16	74.22	45.37	36.21	9.16	4.952	
2,200.00	2,184.44	2,204.05	2,192.53	5.52	5.24	141.48	-80.41	93.88	47.79	37.86	9.93	4.811	
2,300.00	2,281.56	2,304.64	2,289.30	5.96	5.69	134.38	-97.21	115.54	49.05	38.17	10.88	4.508	
2,400.00	2,378.69	2,404.71	2,384.91	6.41	6.20	125.31	-115.33	138.91	49.97	37.95	12.02	4.156	
2,500.00	2,475.81	2,504.37	2,479.99	6.87	6.73	116.35	-133.64	162.51	51.97	38.73	13.24	3.925	
2,600.00	2,572.94	2,604.03	2,575.07	7.34	7.27	108.23	-151.94	186.11	55.13	40.69	14.44	3.818	
2,700.00	2,670.06	2,703.69	2,670.15	7.81	7.83	101.10	-170.24	209.71	59.27	43.69	15.58	3.804	
2,800.00	2,767.19	2,803.35	2,765.23	8.29	8.40	94.99	-188.55	233.31	64.21	47.55	16.65	3.856	
2,900.00	2,864.31	2,903.01	2,860.31	8.78	8.97	89.79	-206.85	256.91	69.77	52.11	17.66	3.951	
3,000.00	2,961.44	3,002.67	2,955.39	9.26	9.56	85.39	-225.16	280.51	75.82	57.20	18.61	4.074	
3,100.00	3,058.56	3,102.33	3,050.47	9.75	10.15	81.66	-243.46	304.12	82.24	62.72	19.53	4.212	
3,200.00	3,155.69	3,201.99	3,145.55	10.25	10.74	78.48	-261.76	327.72	88.97	68.56	20.41	4.359	
3,300.00	3,252.82	3,301.66	3,240.63	10.74	11.34	75.75	-280.07	351.32	95.93	74.66	21.27	4.509	
3,400.00	3,349.94	3,401.32	3,335.71	11.24	11.95	73.39	-298.37	374.92	103.08	80.95	22.12	4.659	
3,500.00	3,447.07	3,500.98	3,430.79	11.74	12.55	71.34	-316.68	398.52	110.38	87.42	22.96	4.807	
3,600.00	3,544.19	3,600.64	3,525.87	12.24	13.16	69.55	-334.98	422.12	117.80	94.01	23.80	4.950	
3,700.00	3,641.32	3,700.30	3,620.95	12.74	13.77	67.97	-353.28	445.72	125.32	100.70	24.62	5.090	
3,800.00	3,738.44	3,799.96	3,716.03	13.24	14.38	66.57	-371.59	469.32	132.93	107.49	25.45	5.224	
3,900.00	3,835.57	3,899.62	3,811.11	13.74	15.00	65.33	-389.89	492.92	140.61	114.34	26.27	5.353	
4,000.00	3,932.69	3,999.28	3,906.19	14.25	15.61	64.21	-408.20	516.52	148.35	121.26	27.09	5.476	
4,100.00	4,029.82	4,098.94	4,001.27	14.75	16.23	63.20	-426.50	540.12	156.14	128.23	27.91	5.594	
4,200.00	4,126.94	4,198.60	4,096.35	15.26	16.85	62.29	-444.81	563.72	163.97	135.24	28.73	5.707	
4,300.00	4,224.07	4,298.26	4,191.43	15.77	17.47	61.46	-463.11	587.32	171.84	142.29	29.55	5.815	
4,400.00	4,321.19	4,397.92	4,286.51	16.27	18.09	60.71	-481.41	610.92	179.74	149.37	30.37	5.918	
4,500.00	4,418.32	4,497.58	4,381.59	16.78	18.71	60.02	-499.72	634.52	187.67	156.48	31.19	6.017	
4,600.00	4,515.44	4,597.24	4,476.67	17.29	19.33	59.38	-518.02	658.12	195.62	163.61	32.01	6.111	
4,700.00	4,612.57	4,696.90	4,571.75	17.80	19.95	58.80	-536.33	681.73	203.60	170.77	32.83	6.201	
4,800.00	4,709.70	4,796.56	4,666.83	18.31	20.58	58.25	-554.63	705.33	211.59	177.94	33.65	6.288	
4,900.00	4,806.82	4,896.23	4,761.91	18.82	21.20	57.75	-572.93	728.93	219.61	185.13	34.47	6.370	
5,000.00	4,903.95	4,995.89	4,856.99	19.33	21.82	57.29	-591.24	752.53	227.64	192.34	35.30	6.449	

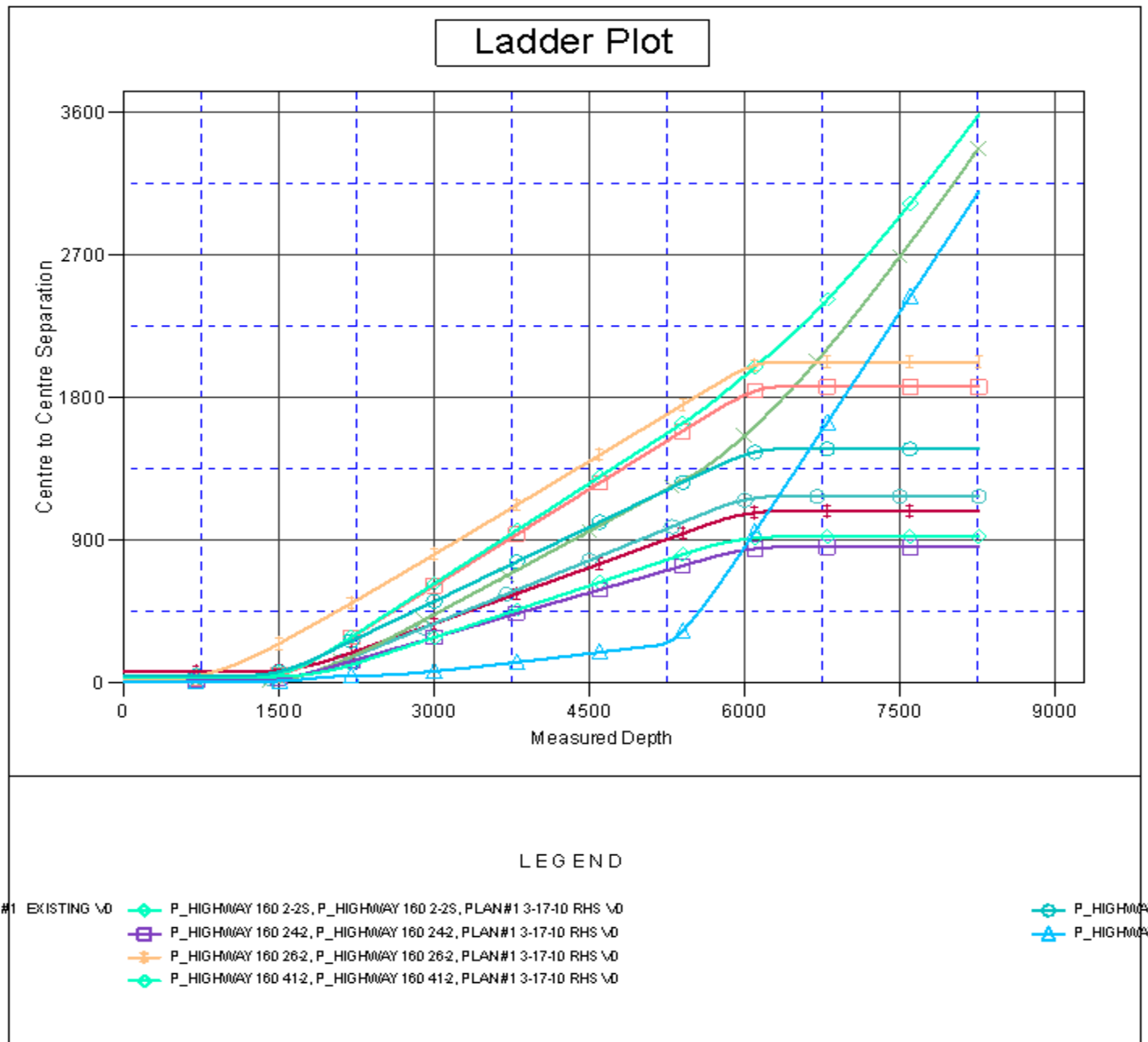
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_HIGHWAY 160 8-2
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5119.00ft (Original Well Elev)
Reference Site:	WELD_HIGHWAY 160 17-2 pad	MD Reference:	WELL @ 5119.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_HIGHWAY 160 8-2	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_HIGHWAY 160 8-2	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-17-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_HIGHWAY 160 17-2 pad - P_HIGHWAY 160 8-2S - P_HIGHWAY 160 8-2S - PLAN #1 3-17-10 f												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	5,001.07	5,095.55	4,952.07	19.84	22.45	56.85	-609.54	776.13	235.68	199.56	36.12	6.525	
5,200.00	5,098.20	5,194.00	5,046.00	20.35	23.07	56.45	-627.63	799.44	243.74	206.80	36.94	6.598	
5,300.00	5,195.32	5,194.00	5,046.00	20.86	23.07	56.45	-627.63	799.44	271.25	233.86	37.39	7.255	
5,400.00	5,292.45	5,194.00	5,046.00	21.37	23.07	56.45	-627.63	799.44	328.25	290.41	37.84	8.675	
5,500.00	5,389.57	5,194.00	5,046.00	21.88	23.07	56.45	-627.63	799.44	402.39	364.10	38.29	10.510	
5,600.00	5,486.70	5,194.00	5,046.00	22.40	23.07	56.45	-627.63	799.44	485.89	447.15	38.73	12.544	
5,659.04	5,544.04	5,194.00	5,046.00	22.70	23.07	56.45	-627.63	799.44	537.83	498.84	39.00	13.791	
5,700.00	5,583.89	5,194.00	5,046.00	22.88	23.07	57.88	-627.63	799.44	574.75	535.17	39.58	14.522	
5,800.00	5,681.72	5,194.00	5,046.00	23.22	23.07	62.14	-627.63	799.44	667.31	626.21	41.09	16.238	
5,900.00	5,780.21	5,194.00	5,046.00	23.53	23.07	67.63	-627.63	799.44	762.24	719.45	42.79	17.813	
6,000.00	5,879.24	5,194.00	5,046.00	23.79	23.07	74.53	-627.63	799.44	858.66	814.12	44.54	19.278	
6,100.00	5,978.70	5,194.00	5,046.00	24.02	23.07	82.91	-627.63	799.44	956.02	909.93	46.09	20.744	
6,200.00	6,078.46	5,194.00	5,046.00	24.20	23.07	92.60	-627.63	799.44	1,053.96	1,006.91	47.05	22.402	
6,300.00	6,178.39	5,194.00	5,046.00	24.34	23.07	103.08	-627.63	799.44	1,152.22	1,105.16	47.06	24.486	
6,347.61	6,226.00	5,194.00	5,046.00	24.39	23.07	-135.23	-627.63	799.44	1,199.06	1,152.38	46.68	25.686	
6,400.00	6,278.39	5,194.00	5,046.00	24.45	23.07	-135.23	-627.63	799.44	1,250.65	1,203.91	46.74	26.757	
6,500.00	6,378.39	5,194.00	5,046.00	24.56	23.07	-135.23	-627.63	799.44	1,349.30	1,302.44	46.86	28.796	
6,600.00	6,478.39	5,194.00	5,046.00	24.68	23.07	-135.23	-627.63	799.44	1,448.13	1,401.16	46.98	30.828	
6,700.00	6,578.39	5,194.00	5,046.00	24.80	23.07	-135.23	-627.63	799.44	1,547.12	1,500.02	47.09	32.851	
6,800.00	6,678.39	5,194.00	5,046.00	24.92	23.07	-135.23	-627.63	799.44	1,646.22	1,599.01	47.22	34.866	
6,900.00	6,778.39	5,194.00	5,046.00	25.04	23.07	-135.23	-627.63	799.44	1,745.43	1,698.09	47.34	36.872	
7,000.00	6,878.39	5,194.00	5,046.00	25.16	23.07	-135.23	-627.63	799.44	1,844.72	1,797.26	47.46	38.867	
7,100.00	6,978.39	5,194.00	5,046.00	25.28	23.07	-135.23	-627.63	799.44	1,944.09	1,896.50	47.59	40.853	
7,200.00	7,078.39	5,194.00	5,046.00	25.41	23.07	-135.23	-627.63	799.44	2,043.52	1,995.80	47.71	42.828	
7,300.00	7,178.39	5,194.00	5,046.00	25.54	23.07	-135.23	-627.63	799.44	2,143.00	2,095.15	47.84	44.793	
7,400.00	7,278.39	5,194.00	5,046.00	25.66	23.07	-135.23	-627.63	799.44	2,242.52	2,194.55	47.97	46.747	
7,500.00	7,378.39	5,194.00	5,046.00	25.79	23.07	-135.23	-627.63	799.44	2,342.09	2,293.99	48.10	48.689	
7,600.00	7,478.39	5,194.00	5,046.00	25.92	23.07	-135.23	-627.63	799.44	2,441.69	2,393.46	48.23	50.621	
7,700.00	7,578.39	5,194.00	5,046.00	26.06	23.07	-135.23	-627.63	799.44	2,541.33	2,492.96	48.37	52.541	
7,800.00	7,678.39	5,194.00	5,046.00	26.19	23.07	-135.23	-627.63	799.44	2,640.99	2,592.49	48.50	54.450	
7,900.00	7,778.39	5,194.00	5,046.00	26.32	23.07	-135.23	-627.63	799.44	2,740.68	2,692.04	48.64	56.347	
8,000.00	7,878.39	5,194.00	5,046.00	26.46	23.07	-135.23	-627.63	799.44	2,840.38	2,791.61	48.78	58.233	
8,100.00	7,978.39	5,194.00	5,046.00	26.60	23.07	-135.23	-627.63	799.44	2,940.11	2,891.20	48.91	60.107	
8,200.00	8,078.39	5,194.00	5,046.00	26.73	23.07	-135.23	-627.63	799.44	3,039.86	2,990.80	49.05	61.969	
8,262.61	8,141.00	5,194.00	5,046.00	26.82	23.07	-135.23	-627.63	799.44	3,102.32	3,053.17	49.14	63.129	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_HIGHWAY 160 8-2
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5119.00ft (Original Well Elev)
Reference Site:	WELD_HIGHWAY 160 17-2 pad	MD Reference:	WELL @ 5119.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_HIGHWAY 160 8-2	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_HIGHWAY 160 8-2	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-17-10 RHS	Offset TVD Reference:	Offset Datum

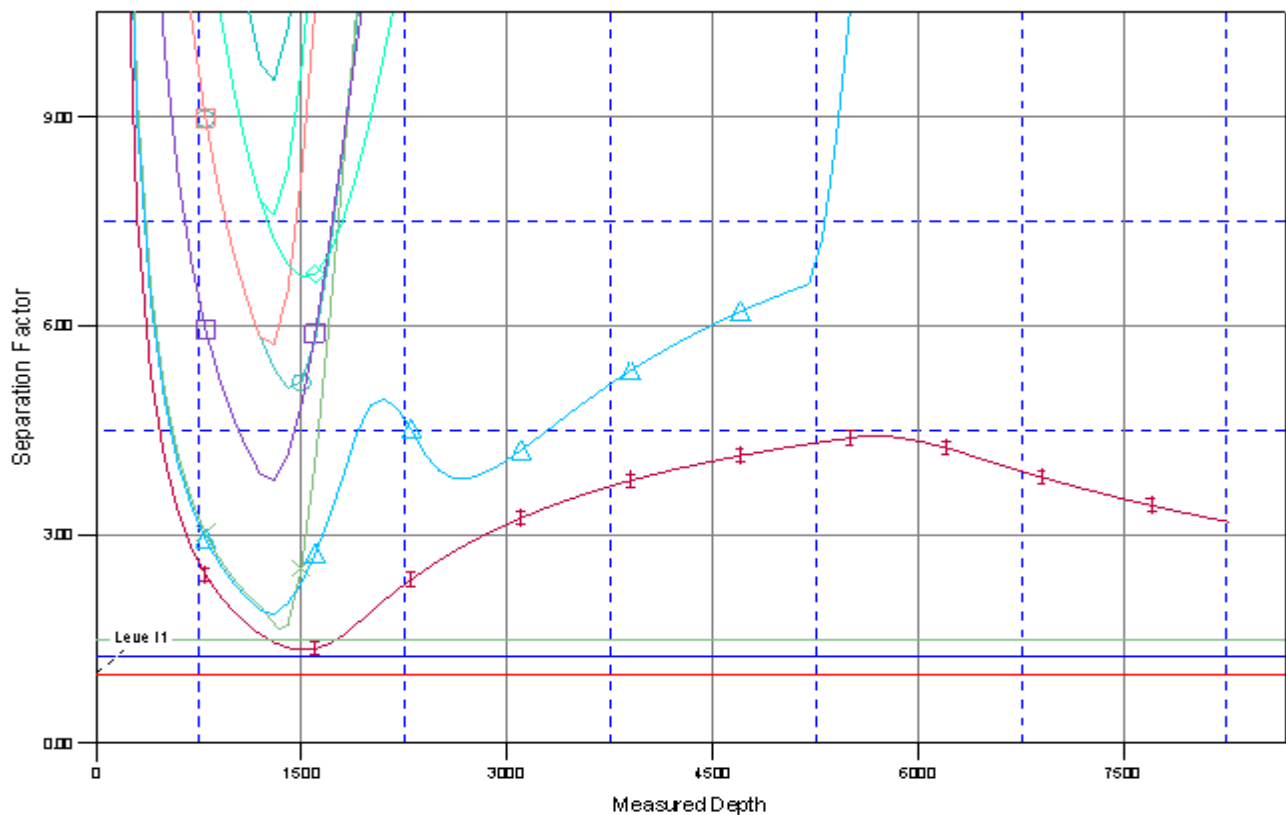
Reference Depths are relative to WELL @ 5119.00ft (Original Well Elev) Coordinates are relative to: P_HIGHWAY 160 8-2
Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Northern Zone
Central Meridian is 105° 30' 0.000 W ° Grid Convergence at Surface is: 0.49°



Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_HIGHWAY 160 8-2
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5119.00ft (Original Well Elev)
Reference Site:	WELD_HIGHWAY 160 17-2 pad	MD Reference:	WELL @ 5119.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_HIGHWAY 160 8-2	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_HIGHWAY 160 8-2	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-17-10 RHS	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 5119.00ft (Original Well Elev) Coordinates are relative to: P_HIGHWAY 160 8-2
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: 0.49°

Separation Factor Plot



LEGEND

T#1 EXISTING \0	P_HIGHWAY 160 2-2S, P_HIGHWAY 160 2-2S, PLAN#1 3-17-10 RHS \0	P_HIGHWAY
	P_HIGHWAY 160 242, P_HIGHWAY 160 242, PLAN#1 3-17-10 RHS \0	P_HIGHWAY
	P_HIGHWAY 160 262, P_HIGHWAY 160 262, PLAN#1 3-17-10 RHS \0	
	P_HIGHWAY 160 412, P_HIGHWAY 160 412, PLAN#1 3-17-10 RHS \0	