



US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_STONEBRAKER 7-12 PAD

P_STONEBRAKER 21-12

P_STONEBRAKER 21-12

Plan: PLAN #1 12-16-09 RHS

Standard Planning Report

16 December, 2009





Azimuths to True North
Magnetic North: 9.10°

Magnetic Field
Strength: 53111.5nT
Dip Angle: 66.81°
Date: 12/16/2009
Model: IGRF200510

WELL DETAILS: P_STONEBRAKER 21-12

+N/-S	+E/-W	Northing	Ground Level: Easting	Latitude	Longitude	Slot
0.00	0.00	1268179.19	3154024.53	40° 4' 5.627 N	104° 56' 58.775 W	

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
4712.00	4744.86	SUSSEX
5202.00	5239.43	SHANNON
7482.00	7528.94	NIO A
7812.00	7858.94	CODELL
8257.00	8303.94	JSAND

SECTION DETAILS

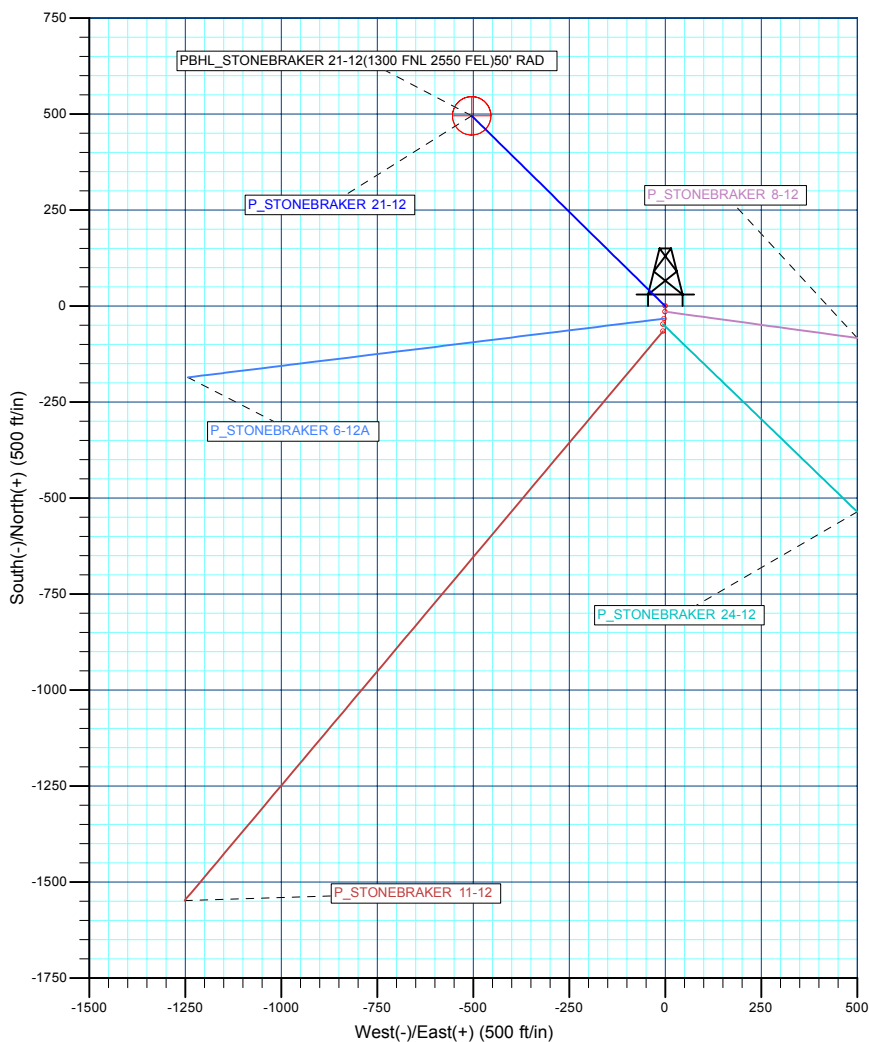
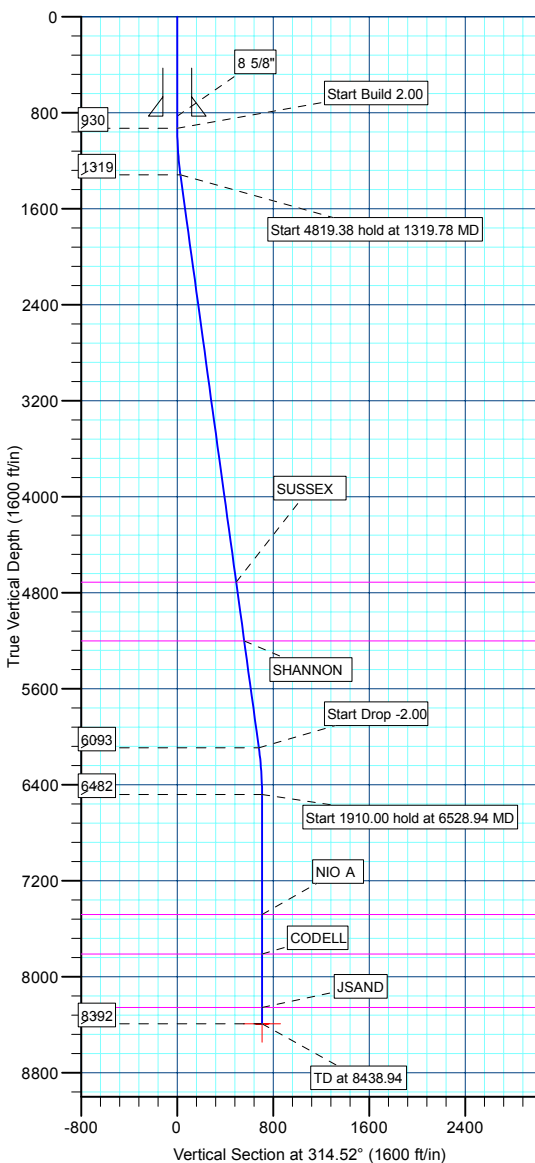
MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
930.00	0.00	0.00	930.00	0.00	0.00	0.00	0.00	0.00	
1319.78	7.80	314.52	1318.58	18.57	-18.88	2.00	314.52	26.48	
6139.16	7.80	314.52	6093.42	476.95	-484.93	0.00	0.00	680.18	
6528.94	0.00	0.00	6482.00	495.52	-503.81	2.00	180.00	706.65	
8438.94	0.00	0.00	8392.00	495.52	-503.81	0.00	0.00	706.65	PBHL_STONEBRAKER 21-12(1300 FNL 2550 FEL)50' RAD

CASING DETAILS

TVD	MD	Name	Size
830.00	830.00	8 5/8"	8.62



KB ELEV: WELL @ 5092.00ft (Original Well Elev)
GRD ELEV: 5077.00



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

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
PBHL	8392.00	495.52	-503.81	1268671.57	3153517.66	40° 4' 10.524 N	104° 57' 5.256 W	Circle (Radius: 50.00)

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_STONEBRAKER 21-12
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 5092.00ft (Original Well Elev)
Project:	COLORADO NOTHERN ZONE - 83	MD Reference:	WELL @ 5092.00ft (Original Well Elev)
Site:	WELD_STONEBRAKER 7-12 PAD	North Reference:	True
Well:	P_STONEBRAKER 21-12	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_STONEBRAKER 21-12		
Design:	PLAN #1 12-16-09 RHS		

Project	COLORADO NOTHERN 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_STONEBRAKER 7-12 PAD, SECTION 12 T1N R68W			
Site Position:		Northing:	1,268,113.68 ft	Latitude: 40° 4' 4.980 N
From:	Lat/Long	Easting:	3,154,019.29 ft	Longitude: 104° 56' 58.848 W
Position Uncertainty:	0.00 ft	Slot Radius:	in	Grid Convergence: 0.36 °

Well	P_STONEBRAKER 21-12			
Well Position	+N/-S	65.48 ft	Northing:	1,268,179.19 ft
	+E/-W	5.64 ft	Easting:	3,154,024.53 ft
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft
			Ground Level:	5,077.00 ft

Wellbore	P_STONEBRAKER 21-12				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	12/16/2009	9.10	66.81	53,111

Design	PLAN #1 12-16-09 RHS			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	314.52

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	
930.00	0.00	0.00	930.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,319.78	7.80	314.52	1,318.58	18.57	-18.88	2.00	2.00	0.00	314.52	
6,139.16	7.80	314.52	6,093.42	476.95	-484.93	0.00	0.00	0.00	0.00	
6,528.94	0.00	0.00	6,482.00	495.52	-503.81	2.00	-2.00	0.00	180.00	
8,438.94	0.00	0.00	8,392.00	495.52	-503.81	0.00	0.00	0.00	0.00	PBHL_STONEBRA

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_STONEBRAKER 21-12
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 5092.00ft (Original Well Elev)
Project:	COLORADO NOTHERN ZONE - 83	MD Reference:	WELL @ 5092.00ft (Original Well Elev)
Site:	WELD_STONEBRAKER 7-12 PAD	North Reference:	True
Well:	P_STONEBRAKER 21-12	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_STONEBRAKER 21-12		
Design:	PLAN #1 12-16-09 RHS		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
Start Build 2.00										
930.00	0.00	0.00	930.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,000.00	1.40	314.52	999.99	0.60	-0.61	0.86	2.00	2.00	0.00	
1,100.00	3.40	314.52	1,099.90	3.54	-3.60	5.04	2.00	2.00	0.00	
1,200.00	5.40	314.52	1,199.60	8.92	-9.06	12.71	2.00	2.00	0.00	
1,300.00	7.40	314.52	1,298.97	16.73	-17.01	23.86	2.00	2.00	0.00	
Start 4819.38 hold at 1319.78 MD										
1,319.78	7.80	314.52	1,318.58	18.57	-18.88	26.48	2.00	2.00	0.00	
1,400.00	7.80	314.52	1,398.06	26.20	-26.63	37.36	0.00	0.00	0.00	
1,500.00	7.80	314.52	1,497.13	35.71	-36.30	50.92	0.00	0.00	0.00	
1,600.00	7.80	314.52	1,596.21	45.22	-45.97	64.48	0.00	0.00	0.00	
1,700.00	7.80	314.52	1,695.28	54.73	-55.64	78.05	0.00	0.00	0.00	
1,800.00	7.80	314.52	1,794.36	64.24	-65.32	91.61	0.00	0.00	0.00	
1,900.00	7.80	314.52	1,893.44	73.75	-74.99	105.18	0.00	0.00	0.00	
2,000.00	7.80	314.52	1,992.51	83.26	-84.66	118.74	0.00	0.00	0.00	
2,100.00	7.80	314.52	2,091.59	92.77	-94.33	132.31	0.00	0.00	0.00	
2,200.00	7.80	314.52	2,190.66	102.29	-104.00	145.87	0.00	0.00	0.00	
2,300.00	7.80	314.52	2,289.74	111.80	-113.67	159.43	0.00	0.00	0.00	
2,400.00	7.80	314.52	2,388.82	121.31	-123.34	173.00	0.00	0.00	0.00	
2,500.00	7.80	314.52	2,487.89	130.82	-133.01	186.56	0.00	0.00	0.00	
2,600.00	7.80	314.52	2,586.97	140.33	-142.68	200.13	0.00	0.00	0.00	
2,700.00	7.80	314.52	2,686.04	149.84	-152.35	213.69	0.00	0.00	0.00	
2,800.00	7.80	314.52	2,785.12	159.35	-162.02	227.25	0.00	0.00	0.00	
2,900.00	7.80	314.52	2,884.19	168.86	-171.69	240.82	0.00	0.00	0.00	
3,000.00	7.80	314.52	2,983.27	178.38	-181.36	254.38	0.00	0.00	0.00	
3,100.00	7.80	314.52	3,082.35	187.89	-191.03	267.95	0.00	0.00	0.00	
3,200.00	7.80	314.52	3,181.42	197.40	-200.70	281.51	0.00	0.00	0.00	
3,300.00	7.80	314.52	3,280.50	206.91	-210.37	295.07	0.00	0.00	0.00	
3,400.00	7.80	314.52	3,379.57	216.42	-220.04	308.64	0.00	0.00	0.00	
3,500.00	7.80	314.52	3,478.65	225.93	-229.71	322.20	0.00	0.00	0.00	
3,600.00	7.80	314.52	3,577.73	235.44	-239.38	335.77	0.00	0.00	0.00	
3,700.00	7.80	314.52	3,676.80	244.96	-249.05	349.33	0.00	0.00	0.00	
3,800.00	7.80	314.52	3,775.88	254.47	-258.73	362.89	0.00	0.00	0.00	
3,900.00	7.80	314.52	3,874.95	263.98	-268.40	376.46	0.00	0.00	0.00	
4,000.00	7.80	314.52	3,974.03	273.49	-278.07	390.02	0.00	0.00	0.00	
4,100.00	7.80	314.52	4,073.10	283.00	-287.74	403.59	0.00	0.00	0.00	
4,200.00	7.80	314.52	4,172.18	292.51	-297.41	417.15	0.00	0.00	0.00	
4,300.00	7.80	314.52	4,271.26	302.02	-307.08	430.71	0.00	0.00	0.00	
4,400.00	7.80	314.52	4,370.33	311.53	-316.75	444.28	0.00	0.00	0.00	
4,500.00	7.80	314.52	4,469.41	321.05	-326.42	457.84	0.00	0.00	0.00	
4,600.00	7.80	314.52	4,568.48	330.56	-336.09	471.41	0.00	0.00	0.00	
4,700.00	7.80	314.52	4,667.56	340.07	-345.76	484.97	0.00	0.00	0.00	
SUSSEX										
4,744.86	7.80	314.52	4,712.00	344.33	-350.10	491.05	0.00	0.00	0.00	
4,800.00	7.80	314.52	4,766.63	349.58	-355.43	498.53	0.00	0.00	0.00	
4,900.00	7.80	314.52	4,865.71	359.09	-365.10	512.10	0.00	0.00	0.00	
5,000.00	7.80	314.52	4,964.79	368.60	-374.77	525.66	0.00	0.00	0.00	
5,100.00	7.80	314.52	5,063.86	378.11	-384.44	539.23	0.00	0.00	0.00	
5,200.00	7.80	314.52	5,162.94	387.62	-394.11	552.79	0.00	0.00	0.00	
SHANNON										
5,239.43	7.80	314.52	5,202.00	391.37	-397.92	558.14	0.00	0.00	0.00	
5,300.00	7.80	314.52	5,262.01	397.14	-403.78	566.35	0.00	0.00	0.00	
5,400.00	7.80	314.52	5,361.09	406.65	-413.45	579.92	0.00	0.00	0.00	

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_STONEBRAKER 21-12
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 5092.00ft (Original Well Elev)
Project:	COLORADO NOTHERN ZONE - 83	MD Reference:	WELL @ 5092.00ft (Original Well Elev)
Site:	WELD_STONEBRAKER 7-12 PAD	North Reference:	True
Well:	P_STONEBRAKER 21-12	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_STONEBRAKER 21-12		
Design:	PLAN #1 12-16-09 RHS		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,500.00	7.80	314.52	5,460.17	416.16	-423.12	593.48	0.00	0.00	0.00
5,600.00	7.80	314.52	5,559.24	425.67	-432.79	607.05	0.00	0.00	0.00
5,700.00	7.80	314.52	5,658.32	435.18	-442.46	620.61	0.00	0.00	0.00
5,800.00	7.80	314.52	5,757.39	444.69	-452.13	634.17	0.00	0.00	0.00
5,900.00	7.80	314.52	5,856.47	454.20	-461.81	647.74	0.00	0.00	0.00
6,000.00	7.80	314.52	5,955.54	463.72	-471.48	661.30	0.00	0.00	0.00
6,100.00	7.80	314.52	6,054.62	473.23	-481.15	674.87	0.00	0.00	0.00
Start Drop -2.00									
6,139.16	7.80	314.52	6,093.42	476.95	-484.93	680.18	0.00	0.00	0.00
6,200.00	6.58	314.52	6,153.78	482.29	-490.36	687.79	2.00	-2.00	0.00
6,300.00	4.58	314.52	6,253.30	489.11	-497.29	697.51	2.00	-2.00	0.00
6,400.00	2.58	314.52	6,353.10	493.48	-501.74	703.75	2.00	-2.00	0.00
6,500.00	0.58	314.52	6,453.06	495.41	-503.71	706.51	2.00	-2.00	0.00
Start 1910.00 hold at 6528.94 MD									
6,528.94	0.00	0.00	6,482.00	495.52	-503.81	706.65	2.00	-2.00	157.12
6,600.00	0.00	0.00	6,553.06	495.52	-503.81	706.65	0.00	0.00	0.00
6,700.00	0.00	0.00	6,653.06	495.52	-503.81	706.65	0.00	0.00	0.00
6,800.00	0.00	0.00	6,753.06	495.52	-503.81	706.65	0.00	0.00	0.00
6,900.00	0.00	0.00	6,853.06	495.52	-503.81	706.65	0.00	0.00	0.00
7,000.00	0.00	0.00	6,953.06	495.52	-503.81	706.65	0.00	0.00	0.00
7,100.00	0.00	0.00	7,053.06	495.52	-503.81	706.65	0.00	0.00	0.00
7,200.00	0.00	0.00	7,153.06	495.52	-503.81	706.65	0.00	0.00	0.00
7,300.00	0.00	0.00	7,253.06	495.52	-503.81	706.65	0.00	0.00	0.00
7,400.00	0.00	0.00	7,353.06	495.52	-503.81	706.65	0.00	0.00	0.00
7,500.00	0.00	0.00	7,453.06	495.52	-503.81	706.65	0.00	0.00	0.00
NIO A									
7,528.94	0.00	0.00	7,482.00	495.52	-503.81	706.65	0.00	0.00	0.00
7,600.00	0.00	0.00	7,553.06	495.52	-503.81	706.65	0.00	0.00	0.00
7,700.00	0.00	0.00	7,653.06	495.52	-503.81	706.65	0.00	0.00	0.00
7,800.00	0.00	0.00	7,753.06	495.52	-503.81	706.65	0.00	0.00	0.00
CODELL									
7,858.94	0.00	0.00	7,812.00	495.52	-503.81	706.65	0.00	0.00	0.00
7,900.00	0.00	0.00	7,853.06	495.52	-503.81	706.65	0.00	0.00	0.00
8,000.00	0.00	0.00	7,953.06	495.52	-503.81	706.65	0.00	0.00	0.00
8,100.00	0.00	0.00	8,053.06	495.52	-503.81	706.65	0.00	0.00	0.00
8,200.00	0.00	0.00	8,153.06	495.52	-503.81	706.65	0.00	0.00	0.00
8,300.00	0.00	0.00	8,253.06	495.52	-503.81	706.65	0.00	0.00	0.00
JSAND									
8,303.94	0.00	0.00	8,257.00	495.52	-503.81	706.65	0.00	0.00	0.00
8,400.00	0.00	0.00	8,353.06	495.52	-503.81	706.65	0.00	0.00	0.00
PBHL_STONEBRAKER 21-12(1300 FNL 2550 FEL)50' RAD									
8,438.94	0.00	0.00	8,392.00	495.52	-503.81	706.65	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_STONEBRAKE	0.00	0.00	8,392.00	495.52	-503.81	1,268,671.57	3,153,517.66	40° 4' 10.524 N	104° 57' 5.256 W
- plan hits target center									
- Circle (radius 50.00)									

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_STONEBRAKER 21-12
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 5092.00ft (Original Well Elev)
Project:	COLORADO NOTHERN ZONE - 83	MD Reference:	WELL @ 5092.00ft (Original Well Elev)
Site:	WELD_STONEBRAKER 7-12 PAD	North Reference:	True
Well:	P_STONEBRAKER 21-12	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_STONEBRAKER 21-12		
Design:	PLAN #1 12-16-09 RHS		

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
830.00	830.00	8 5/8"	8.62	11.00	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
4,744.86	4,712.00	SUSSEX				
5,239.43	5,202.00	SHANNON				
7,528.94	7,482.00	NIO A				
7,858.94	7,812.00	CODELL				
8,303.94	8,257.00	JSAND				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
930.00	930.00	0.00	0.00	Start Build 2.00	
1,319.78	1,318.58	18.57	-18.88	Start 4819.38 hold at 1319.78 MD	
6,139.16	6,093.42	476.95	-484.93	Start Drop -2.00	
6,528.94	6,482.00	495.52	-503.81	Start 1910.00 hold at 6528.94 MD	
8,438.94	8,392.00	495.52	-503.81	TD at 8438.94	

US ROCKIES REGION PLANNING

**COLORADO NOTHERN ZONE - 83
WELD_STONEBRAKER 7-12 PAD
P_STONEBRAKER 21-12**

**P_STONEBRAKER 21-12
PLAN #1 12-16-09 RHS**

Anticollision Report

16 December, 2009

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_STONEBRAKER 21-12
Project:	COLORADO NOTHERN ZONE - 83	TVD Reference:	WELL @ 5092.00ft (Original Well Elev)
Reference Site:	WELD_STONEBRAKER 7-12 PAD	MD Reference:	WELL @ 5092.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_STONEBRAKER 21-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_STONEBRAKER 21-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 12-16-09 RHS	Offset TVD Reference:	Offset Datum

Reference	PLAN #1 12-16-09 RHS		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	0.00 to 20,000.00ft	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.00ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program	Date	12/16/2009		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	8,438.94	PLAN #1 12-16-09 RHS (P_STONEBRAK	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_STONEBRAKER 7-12 PAD						
P_STONEBRAKER 11-12 - P_STONEBRAKER 11-12 -	930.00	930.00	65.72	61.80	16.756	CC, ES
P_STONEBRAKER 11-12 - P_STONEBRAKER 11-12 - I	1,100.00	1,096.56	72.98	68.37	15.836	SF
P_STONEBRAKER 24-12 - P_STONEBRAKER 24-12 - I	930.00	930.00	47.61	43.69	12.140	CC, ES
P_STONEBRAKER 24-12 - P_STONEBRAKER 24-12 - I	1,000.00	999.26	48.67	44.45	11.545	SF
P_STONEBRAKER 6-12A - P_STONEBRAKER 6-12A -	930.00	930.00	32.90	28.97	8.387	CC, ES
P_STONEBRAKER 6-12A - P_STONEBRAKER 6-12A -	1,000.00	999.83	33.62	29.40	7.961	SF
P_STONEBRAKER 8-12 - P_STONEBRAKER 8-12 - PL	930.00	930.00	14.50	10.58	3.697	CC, ES
P_STONEBRAKER 8-12 - P_STONEBRAKER 8-12 - PL	1,000.00	999.91	15.29	11.06	3.620	SF

Offset Design										WELD_STONEBRAKER 7-12 PAD - P_STONEBRAKER 11-12 - P_STONEBRAKER 11-12 - PLAN #1				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	-175.07	-65.48	-5.64	65.72								
100.00	100.00	100.00	100.00	0.10	0.10	-175.07	-65.48	-5.64	65.72	65.53	0.19	343.984					
200.00	200.00	200.00	200.00	0.32	0.32	-175.07	-65.48	-5.64	65.72	65.08	0.64	102.592					
300.00	300.00	300.00	300.00	0.55	0.55	-175.07	-65.48	-5.64	65.72	64.63	1.09	60.286					
400.00	400.00	400.00	400.00	0.77	0.77	-175.07	-65.48	-5.64	65.72	64.18	1.54	42.684					
500.00	500.00	500.00	500.00	0.99	0.99	-175.07	-65.48	-5.64	65.72	63.73	1.99	33.038					
600.00	600.00	600.00	600.00	1.22	1.22	-175.07	-65.48	-5.64	65.72	63.28	2.44	26.948					
700.00	700.00	700.00	700.00	1.44	1.44	-175.07	-65.48	-5.64	65.72	62.83	2.89	22.754					
800.00	800.00	800.00	800.00	1.67	1.67	-175.07	-65.48	-5.64	65.72	62.38	3.34	19.689					
900.00	900.00	900.00	900.00	1.89	1.89	-175.07	-65.48	-5.64	65.72	61.93	3.79	17.352					
930.00	930.00	930.00	930.00	1.96	1.96	-175.07	-65.48	-5.64	65.72	61.80	3.92	16.756	CC, ES				
1,000.00	999.99	998.69	998.68	2.12	2.10	-129.73	-66.11	-6.17	66.95	62.74	4.21	15.889					
1,100.00	1,099.90	1,096.56	1,096.47	2.34	2.28	-130.29	-69.18	-8.76	72.98	68.37	4.61	15.836	SF				
1,200.00	1,199.60	1,193.80	1,193.42	2.56	2.47	-131.10	-74.77	-13.45	84.03	79.01	5.02	16.753					
1,300.00	1,298.97	1,290.04	1,289.09	2.81	2.68	-131.92	-82.78	-20.18	100.05	94.61	5.44	18.392					
1,319.78	1,318.58	1,308.93	1,307.82	2.86	2.72	-132.07	-84.64	-21.74	103.80	98.27	5.53	18.784					
1,400.00	1,398.06	1,385.11	1,383.20	3.07	2.91	-132.48	-93.10	-28.85	120.23	114.34	5.89	20.396					
1,500.00	1,497.13	1,479.10	1,475.75	3.35	3.18	-132.13	-105.64	-39.39	142.99	136.62	6.38	22.425					
1,600.00	1,596.21	1,571.85	1,566.49	3.64	3.49	-131.22	-120.30	-51.70	168.26	161.38	6.88	24.454					
1,700.00	1,695.28	1,663.18	1,655.20	3.93	3.84	-130.02	-136.92	-65.66	196.05	188.65	7.41	26.472					

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_STONEBRAKER 21-12
Project:	COLORADO NOTHERN ZONE - 83	TVD Reference:	WELL @ 5092.00ft (Original Well Elev)
Reference Site:	WELD_STONEBRAKER 7-12 PAD	MD Reference:	WELL @ 5092.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_STONEBRAKER 21-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_STONEBRAKER 21-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 12-16-09 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_STONEBRAKER 7-12 PAD - P_STONEBRAKER 11-12 - P_STONEBRAKER 11-12 - PLAN #1												Offset Site Error:	0.00 ft
Survey Program: 0-MWD												Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
1,800.00	1,794.36	1,752.95	1,741.68	4.23	4.23	-128.68	-155.36	-81.15	226.38	218.43	7.95	28.478	
1,900.00	1,893.44	1,841.02	1,825.74	4.54	4.67	-127.30	-175.46	-98.04	259.26	250.76	8.51	30.475	
2,000.00	1,992.51	1,927.29	1,907.27	4.85	5.15	-125.94	-197.05	-116.18	294.68	285.60	9.08	32.465	
2,100.00	2,091.59	2,011.65	1,986.13	5.16	5.66	-124.63	-219.97	-135.44	332.60	322.95	9.65	34.451	
2,200.00	2,190.66	2,094.02	2,062.26	5.48	6.21	-123.40	-244.07	-155.68	372.99	362.75	10.24	36.427	
2,300.00	2,289.74	2,180.11	2,141.00	5.80	6.83	-122.19	-270.71	-178.06	415.43	404.58	10.85	38.290	
2,400.00	2,388.82	2,270.20	2,223.31	6.12	7.50	-121.14	-298.75	-201.62	458.22	446.74	11.48	39.913	
2,500.00	2,487.89	2,360.29	2,305.62	6.45	8.19	-120.26	-326.79	-225.17	501.12	489.01	12.12	41.361	
2,600.00	2,586.97	2,450.38	2,387.92	6.77	8.88	-119.53	-354.83	-248.73	544.10	531.35	12.75	42.659	
2,700.00	2,686.04	2,540.46	2,470.23	7.10	9.58	-118.90	-382.87	-272.29	587.15	573.75	13.40	43.826	
2,800.00	2,785.12	2,630.55	2,552.54	7.42	10.28	-118.36	-410.91	-295.85	630.24	616.20	14.04	44.879	
2,900.00	2,884.19	2,720.64	2,634.85	7.75	11.00	-117.89	-438.95	-319.40	673.37	658.68	14.69	45.834	
3,000.00	2,983.27	2,810.73	2,717.16	8.08	11.71	-117.47	-466.99	-342.96	716.54	701.20	15.34	46.704	
3,100.00	3,082.35	2,900.82	2,799.47	8.41	12.43	-117.10	-495.03	-366.52	759.73	743.74	16.00	47.497	
3,200.00	3,181.42	2,990.91	2,881.77	8.74	13.15	-116.77	-523.07	-390.07	802.95	786.30	16.65	48.224	
3,300.00	3,280.50	3,080.99	2,964.08	9.07	13.87	-116.47	-551.11	-413.63	846.19	828.88	17.31	48.892	
3,400.00	3,379.57	3,171.08	3,046.39	9.40	14.60	-116.21	-579.16	-437.19	889.44	871.47	17.97	49.507	
3,500.00	3,478.65	3,261.17	3,128.70	9.73	15.33	-115.96	-607.20	-460.74	932.71	914.08	18.63	50.077	
3,600.00	3,577.73	3,351.26	3,211.01	10.07	16.06	-115.74	-635.24	-484.30	975.99	956.70	19.29	50.605	
3,700.00	3,676.80	3,441.35	3,293.32	10.40	16.79	-115.54	-663.28	-507.86	1,019.28	999.33	19.95	51.096	
3,800.00	3,775.88	3,531.43	3,375.63	10.73	17.52	-115.36	-691.32	-531.42	1,062.58	1,041.96	20.61	51.553	
3,900.00	3,874.95	3,621.52	3,457.93	11.06	18.25	-115.18	-719.36	-554.97	1,105.88	1,084.61	21.28	51.980	
4,000.00	3,974.03	3,711.61	3,540.24	11.40	18.98	-115.03	-747.40	-578.53	1,149.20	1,127.26	21.94	52.379	
4,100.00	4,073.10	3,801.70	3,622.55	11.73	19.72	-114.88	-775.44	-602.09	1,192.52	1,169.92	22.61	52.754	
4,200.00	4,172.18	3,891.79	3,704.86	12.06	20.45	-114.74	-803.48	-625.64	1,235.85	1,212.58	23.27	53.105	
4,300.00	4,271.26	3,981.88	3,787.17	12.40	21.19	-114.62	-831.52	-649.20	1,279.18	1,255.24	23.94	53.436	
4,400.00	4,370.33	4,071.96	3,869.48	12.73	21.92	-114.50	-859.56	-672.76	1,322.52	1,297.91	24.61	53.747	
4,500.00	4,469.41	4,162.05	3,951.78	13.07	22.66	-114.39	-887.60	-696.31	1,365.86	1,340.59	25.27	54.042	
4,600.00	4,568.48	4,252.14	4,034.09	13.40	23.39	-114.28	-915.64	-719.87	1,409.21	1,383.27	25.94	54.320	
4,700.00	4,667.56	4,342.23	4,116.40	13.74	24.13	-114.18	-943.68	-743.43	1,452.56	1,425.95	26.61	54.583	
4,800.00	4,766.63	4,432.32	4,198.71	14.07	24.87	-114.09	-971.72	-766.98	1,495.91	1,468.63	27.28	54.833	
4,900.00	4,865.71	4,522.40	4,281.02	14.41	25.61	-114.00	-999.76	-790.54	1,539.27	1,511.32	27.95	55.070	
5,000.00	4,964.79	4,612.49	4,363.33	14.74	26.34	-113.92	-1,027.80	-814.10	1,582.63	1,554.01	28.62	55.295	
5,100.00	5,063.86	4,702.58	4,445.63	15.08	27.08	-113.84	-1,055.84	-837.66	1,625.99	1,596.70	29.29	55.510	
5,200.00	5,162.94	4,792.67	4,527.94	15.41	27.82	-113.77	-1,083.89	-861.21	1,669.35	1,639.39	29.96	55.714	
5,300.00	5,262.01	4,882.76	4,610.25	15.75	28.56	-113.70	-1,111.93	-884.77	1,712.72	1,682.09	30.63	55.909	
5,400.00	5,361.09	4,972.85	4,692.56	16.08	29.30	-113.63	-1,139.97	-908.33	1,756.09	1,724.78	31.31	56.095	
5,500.00	5,460.17	5,062.93	4,774.87	16.42	30.04	-113.57	-1,168.01	-931.88	1,799.46	1,767.48	31.98	56.273	
5,600.00	5,559.24	5,153.02	4,857.18	16.76	30.78	-113.51	-1,196.05	-955.44	1,842.83	1,810.18	32.65	56.443	
5,700.00	5,658.32	5,243.11	4,939.49	17.09	31.52	-113.45	-1,224.09	-979.00	1,886.20	1,852.88	33.32	56.606	
5,800.00	5,757.39	5,333.20	5,021.79	17.43	32.26	-113.39	-1,252.13	-1,002.55	1,929.58	1,895.58	33.99	56.762	
5,900.00	5,856.47	5,423.29	5,104.10	17.76	33.00	-113.34	-1,280.17	-1,026.11	1,972.95	1,938.29	34.67	56.912	
6,000.00	5,955.54	5,513.37	5,186.41	18.10	33.74	-113.29	-1,308.21	-1,049.67	2,016.33	1,980.99	35.34	57.055	
6,100.00	6,054.62	5,603.46	5,268.72	18.44	34.48	-113.24	-1,336.25	-1,073.22	2,059.71	2,023.70	36.01	57.193	
6,139.16	6,093.42	5,638.74	5,300.95	18.57	34.77	-113.22	-1,347.23	-1,082.45	2,076.70	2,040.42	36.28	57.246	
6,200.00	6,153.78	5,734.18	5,388.39	18.74	35.44	-113.67	-1,376.51	-1,107.05	2,102.68	2,065.72	36.96	56.895	
6,300.00	6,253.30	6,040.76	5,676.81	18.97	37.03	-114.11	-1,455.78	-1,173.64	2,138.30	2,099.97	38.34	55.775	
6,400.00	6,353.10	6,370.00	5,996.92	19.15	38.27	-114.36	-1,514.10	-1,222.64	2,162.63	2,123.10	39.53	54.712	
6,500.00	6,453.06	6,714.22	6,338.62	19.31	39.03	-114.44	-1,544.61	-1,248.27	2,174.67	2,134.23	40.43	53.783	
6,528.94	6,482.00	6,815.25	6,439.58	19.35	39.15	-159.92	-1,547.58	-1,250.76	2,175.77	2,135.14	40.63	53.544	
6,600.00	6,553.06	6,928.74	6,553.06	19.45	39.24	-159.91	-1,548.05	-1,251.16	2,175.94	2,135.06	40.88	53.223	
6,700.00	6,653.06	7,028.74	6,653.06	19.62	39.30	-159.91	-1,548.05	-1,251.16	2,175.94	2,134.76	41.17	52.846	

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_STONEBRAKER 21-12
Project:	COLORADO NOTHERN ZONE - 83	TVD Reference:	WELL @ 5092.00ft (Original Well Elev)
Reference Site:	WELD_STONEBRAKER 7-12 PAD	MD Reference:	WELL @ 5092.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_STONEBRAKER 21-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_STONEBRAKER 21-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 12-16-09 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_STONEBRAKER 7-12 PAD - P_STONEBRAKER 11-12 - P_STONEBRAKER 11-12 - PLAN #1												Offset Site Error:	0.00 ft
Survey Program: 0-MWD												Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
6,800.00	6,753.06	7,128.74	6,753.06	19.78	39.37	-159.91	-1,548.05	-1,251.16	2,175.94	2,134.47	41.47	52.471	
6,900.00	6,853.06	7,228.74	6,853.06	19.95	39.44	-159.91	-1,548.05	-1,251.16	2,175.94	2,134.17	41.77	52.098	
7,000.00	6,953.06	7,328.74	6,953.06	20.11	39.52	-159.91	-1,548.05	-1,251.16	2,175.94	2,133.87	42.07	51.727	
7,100.00	7,053.06	7,428.74	7,053.06	20.28	39.59	-159.91	-1,548.05	-1,251.16	2,175.94	2,133.57	42.37	51.357	
7,200.00	7,153.06	7,528.74	7,153.06	20.45	39.66	-159.91	-1,548.05	-1,251.16	2,175.94	2,133.26	42.67	50.991	
7,300.00	7,253.06	7,628.74	7,253.06	20.62	39.74	-159.91	-1,548.05	-1,251.16	2,175.94	2,132.96	42.98	50.626	
7,400.00	7,353.06	7,728.74	7,353.06	20.79	39.82	-159.91	-1,548.05	-1,251.16	2,175.94	2,132.65	43.29	50.264	
7,500.00	7,453.06	7,828.74	7,453.06	20.96	39.89	-159.91	-1,548.05	-1,251.16	2,175.94	2,132.34	43.60	49.904	
7,600.00	7,553.06	7,928.74	7,553.06	21.13	39.97	-159.91	-1,548.05	-1,251.16	2,175.94	2,132.02	43.92	49.547	
7,700.00	7,653.06	8,028.74	7,653.06	21.31	40.05	-159.91	-1,548.05	-1,251.16	2,175.94	2,131.70	44.23	49.192	
7,800.00	7,753.06	8,128.74	7,753.06	21.48	40.13	-159.91	-1,548.05	-1,251.16	2,175.94	2,131.39	44.55	48.840	
7,900.00	7,853.06	8,228.74	7,853.06	21.66	40.21	-159.91	-1,548.05	-1,251.16	2,175.94	2,131.06	44.87	48.490	
8,000.00	7,953.06	8,328.74	7,953.06	21.83	40.30	-159.91	-1,548.05	-1,251.16	2,175.94	2,130.74	45.20	48.144	
8,100.00	8,053.06	8,428.74	8,053.06	22.01	40.38	-159.91	-1,548.05	-1,251.16	2,175.94	2,130.42	45.52	47.800	
8,200.00	8,153.06	8,528.74	8,153.06	22.19	40.47	-159.91	-1,548.05	-1,251.16	2,175.94	2,130.09	45.85	47.458	
8,300.00	8,253.06	8,628.74	8,253.06	22.37	40.55	-159.91	-1,548.05	-1,251.16	2,175.94	2,129.76	46.18	47.120	
8,400.00	8,353.06	8,728.74	8,353.06	22.55	40.64	-159.91	-1,548.05	-1,251.16	2,175.94	2,129.43	46.51	46.784	
8,438.94	8,392.00	8,767.68	8,392.00	22.62	40.67	-159.91	-1,548.05	-1,251.16	2,175.94	2,129.30	46.64	46.654	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_STONEBRAKER 21-12
Project:	COLORADO NOTHERN ZONE - 83	TVD Reference:	WELL @ 5092.00ft (Original Well Elev)
Reference Site:	WELD_STONEBRAKER 7-12 PAD	MD Reference:	WELL @ 5092.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_STONEBRAKER 21-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_STONEBRAKER 21-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 12-16-09 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_STONEBRAKER 7-12 PAD - P_STONEBRAKER 24-12 - P_STONEBRAKER 24-12 - PLAN #1												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	-173.19	-47.28	-5.64	47.61				
100.00	100.00	100.00	100.00	0.10	0.10	-173.19	-47.28	-5.64	47.61	47.42	0.19	249.222	
200.00	200.00	200.00	200.00	0.32	0.32	-173.19	-47.28	-5.64	47.61	46.97	0.64	74.330	
300.00	300.00	300.00	300.00	0.55	0.55	-173.19	-47.28	-5.64	47.61	46.52	1.09	43.678	
400.00	400.00	400.00	400.00	0.77	0.77	-173.19	-47.28	-5.64	47.61	46.07	1.54	30.925	
500.00	500.00	500.00	500.00	0.99	0.99	-173.19	-47.28	-5.64	47.61	45.63	1.99	23.937	
600.00	600.00	600.00	600.00	1.22	1.22	-173.19	-47.28	-5.64	47.61	45.18	2.44	19.524	
700.00	700.00	700.00	700.00	1.44	1.44	-173.19	-47.28	-5.64	47.61	44.73	2.89	16.486	
800.00	800.00	800.00	800.00	1.67	1.67	-173.19	-47.28	-5.64	47.61	44.28	3.34	14.265	
900.00	900.00	900.00	900.00	1.89	1.89	-173.19	-47.28	-5.64	47.61	43.83	3.79	12.572	
930.00	930.00	930.00	930.00	1.96	1.96	-173.19	-47.28	-5.64	47.61	43.69	3.92	12.140 CC, ES	
1,000.00	999.99	999.26	999.26	2.12	2.10	-129.27	-47.86	-5.04	48.67	44.45	4.22	11.545 SF	
1,100.00	1,099.90	1,097.73	1,097.63	2.34	2.28	-135.94	-50.69	-2.11	54.29	49.68	4.61	11.768	
1,200.00	1,199.60	1,194.99	1,194.62	2.56	2.48	-144.87	-55.79	3.17	66.04	61.02	5.02	13.167	
1,300.00	1,298.97	1,290.40	1,289.45	2.81	2.69	-153.08	-63.01	10.64	84.93	79.52	5.41	15.687	
1,319.78	1,318.58	1,309.00	1,307.90	2.86	2.73	-154.49	-64.67	12.36	89.54	84.05	5.49	16.305	
1,400.00	1,398.06	1,383.81	1,381.92	3.07	2.92	-159.38	-72.19	20.16	110.14	104.31	5.82	18.915	
1,500.00	1,497.13	1,479.55	1,476.48	3.35	3.19	-163.66	-82.59	30.92	137.62	131.37	6.25	22.029	
1,600.00	1,596.21	1,575.29	1,571.04	3.64	3.47	-166.51	-92.98	41.68	165.57	158.90	6.68	24.801	
1,700.00	1,695.28	1,671.03	1,665.61	3.93	3.77	-168.54	-103.37	52.44	193.80	186.69	7.11	27.258	
1,800.00	1,794.36	1,766.77	1,760.17	4.23	4.07	-170.06	-113.76	63.21	222.20	214.65	7.55	29.436	
1,900.00	1,893.44	1,862.51	1,854.73	4.54	4.39	-171.23	-124.16	73.97	250.71	242.71	7.99	31.374	
2,000.00	1,992.51	1,958.25	1,949.29	4.85	4.71	-172.16	-134.55	84.73	279.29	270.85	8.44	33.105	
2,100.00	2,091.59	2,053.99	2,043.86	5.16	5.04	-172.92	-144.94	95.50	307.93	299.04	8.88	34.657	
2,200.00	2,190.66	2,149.73	2,138.42	5.48	5.37	-173.55	-155.33	106.26	336.61	327.27	9.34	36.055	
2,300.00	2,289.74	2,245.46	2,232.98	5.80	5.70	-174.08	-165.73	117.02	365.32	355.53	9.79	37.318	
2,400.00	2,388.82	2,341.20	2,327.55	6.12	6.04	-174.53	-176.12	127.78	394.05	383.81	10.24	38.466	
2,500.00	2,487.89	2,436.94	2,422.11	6.45	6.38	-174.92	-186.51	138.55	422.81	412.11	10.70	39.511	
2,600.00	2,586.97	2,532.68	2,516.67	6.77	6.73	-175.27	-196.90	149.31	451.58	440.42	11.16	40.466	
2,700.00	2,686.04	2,628.42	2,611.23	7.10	7.07	-175.57	-207.30	160.07	480.37	468.75	11.62	41.343	
2,800.00	2,785.12	2,724.16	2,705.80	7.42	7.42	-175.84	-217.69	170.83	509.16	497.08	12.08	42.150	
2,900.00	2,884.19	2,819.90	2,800.36	7.75	7.77	-176.07	-228.08	181.60	537.97	525.42	12.54	42.894	
3,000.00	2,983.27	2,915.64	2,894.92	8.08	8.11	-176.29	-238.47	192.36	566.78	553.77	13.00	43.584	
3,100.00	3,082.35	3,011.38	2,989.48	8.41	8.46	-176.48	-248.87	203.12	595.60	582.13	13.47	44.223	
3,200.00	3,181.42	3,107.12	3,084.05	8.74	8.82	-176.66	-259.26	213.88	624.42	610.49	13.93	44.818	
3,300.00	3,280.50	3,202.85	3,178.61	9.07	9.17	-176.82	-269.65	224.65	653.25	638.85	14.40	45.373	
3,400.00	3,379.57	3,298.59	3,273.17	9.40	9.52	-176.96	-280.05	235.41	682.08	667.22	14.86	45.891	
3,500.00	3,478.65	3,394.33	3,367.74	9.73	9.87	-177.10	-290.44	246.17	710.92	695.59	15.33	46.377	
3,600.00	3,577.73	3,490.07	3,462.30	10.07	10.23	-177.22	-300.83	256.94	739.76	723.97	15.80	46.832	
3,700.00	3,676.80	3,585.81	3,556.86	10.40	10.58	-177.34	-311.22	267.70	768.61	752.34	16.26	47.261	
3,800.00	3,775.88	3,681.55	3,651.42	10.73	10.94	-177.45	-321.62	278.46	797.45	780.72	16.73	47.664	
3,900.00	3,874.95	3,777.29	3,745.99	11.06	11.29	-177.54	-332.01	289.22	826.30	809.10	17.20	48.044	
4,000.00	3,974.03	3,873.03	3,840.55	11.40	11.65	-177.64	-342.40	299.99	855.15	837.48	17.67	48.404	
4,100.00	4,073.10	3,968.77	3,935.11	11.73	12.00	-177.72	-352.79	310.75	884.00	865.87	18.14	48.743	
4,200.00	4,172.18	4,064.50	4,029.67	12.06	12.36	-177.80	-363.19	321.51	912.86	894.25	18.60	49.066	
4,300.00	4,271.26	4,160.24	4,124.24	12.40	12.72	-177.88	-373.58	332.27	941.71	922.64	19.07	49.371	
4,400.00	4,370.33	4,255.98	4,218.80	12.73	13.07	-177.95	-383.97	343.04	970.57	951.03	19.54	49.662	
4,500.00	4,469.41	4,351.72	4,313.36	13.07	13.43	-178.02	-394.36	353.80	999.43	979.42	20.01	49.938	
4,600.00	4,568.48	4,447.46	4,407.93	13.40	13.79	-178.08	-404.76	364.56	1,028.29	1,007.81	20.48	50.201	
4,700.00	4,667.56	4,543.20	4,502.49	13.74	14.14	-178.14	-415.15	375.33	1,057.15	1,036.20	20.95	50.451	
4,800.00	4,766.63	4,638.94	4,597.05	14.07	14.50	-178.20	-425.54	386.09	1,086.01	1,064.59	21.42	50.691	
4,900.00	4,865.71	4,734.68	4,691.61	14.41	14.86	-178.25	-435.94	396.85	1,114.87	1,092.98	21.89	50.919	

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_STONEBRAKER 21-12
Project:	COLORADO NOTHERN ZONE - 83	TVD Reference:	WELL @ 5092.00ft (Original Well Elev)
Reference Site:	WELD_STONEBRAKER 7-12 PAD	MD Reference:	WELL @ 5092.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_STONEBRAKER 21-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_STONEBRAKER 21-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 12-16-09 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_STONEBRAKER 7-12 PAD - P_STONEBRAKER 24-12 - P_STONEBRAKER 24-12 - PLAN #1												Offset Site Error:	0.00 ft
Survey Program: 0-MWD												Offset Well Error:	0.00 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis Highside Tooface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,000.00	4,964.79	4,830.42	4,786.18	14.74	15.22	-178.31	-446.33	407.61	1,143.74	1,121.37	22.37	51.138	
5,100.00	5,063.86	4,926.16	4,880.74	15.08	15.58	-178.35	-456.72	418.38	1,172.60	1,149.77	22.84	51.347	
5,200.00	5,162.94	5,021.89	4,975.30	15.41	15.93	-178.40	-467.11	429.14	1,201.47	1,178.16	23.31	51.548	
5,300.00	5,262.01	5,117.63	5,069.86	15.75	16.29	-178.44	-477.51	439.90	1,230.33	1,206.55	23.78	51.740	
5,400.00	5,361.09	5,213.37	5,164.43	16.08	16.65	-178.49	-487.90	450.66	1,259.20	1,234.95	24.25	51.924	
5,500.00	5,460.17	5,309.11	5,258.99	16.42	17.01	-178.53	-498.29	461.43	1,288.07	1,263.35	24.72	52.102	
5,600.00	5,559.24	5,404.85	5,353.55	16.76	17.37	-178.57	-508.68	472.19	1,316.94	1,291.74	25.19	52.272	
5,700.00	5,658.32	5,500.59	5,448.12	17.09	17.73	-178.60	-519.08	482.95	1,345.80	1,320.14	25.67	52.436	
5,800.00	5,757.39	5,596.33	5,542.68	17.43	18.09	-178.64	-529.47	493.71	1,374.67	1,348.53	26.14	52.594	
5,900.00	5,856.47	5,692.07	5,637.24	17.76	18.45	-178.67	-539.86	504.48	1,403.54	1,376.93	26.61	52.746	
6,000.00	5,955.54	5,787.81	5,731.80	18.10	18.81	-178.70	-550.25	515.24	1,432.41	1,405.33	27.08	52.892	
6,100.00	6,054.62	5,883.55	5,826.37	18.44	19.17	-178.74	-560.65	526.00	1,461.28	1,433.73	27.55	53.033	
6,139.16	6,093.42	5,921.04	5,863.40	18.57	19.31	-178.75	-564.72	530.22	1,472.59	1,444.85	27.74	53.087	
6,200.00	6,153.78	5,979.47	5,921.11	18.74	19.53	-178.77	-571.06	536.79	1,489.53	1,461.45	28.08	53.037	
6,300.00	6,253.30	6,076.25	6,016.70	18.97	19.89	-178.81	-581.57	547.67	1,514.68	1,486.08	28.60	52.961	
6,400.00	6,353.10	6,173.84	6,113.10	19.15	20.26	-178.84	-592.16	558.64	1,536.43	1,507.35	29.08	52.834	
6,500.00	6,453.06	6,272.14	6,210.19	19.31	20.62	-178.87	-602.83	569.69	1,554.77	1,525.24	29.52	52.660	
6,528.94	6,482.00	6,300.71	6,238.40	19.35	20.73	135.65	-605.93	572.90	1,559.43	1,529.78	29.65	52.600	
6,600.00	6,553.06	6,370.89	6,307.72	19.45	21.00	135.64	-613.55	580.79	1,570.53	1,540.58	29.95	52.434	
6,700.00	6,653.06	6,469.66	6,405.28	19.62	21.37	135.62	-624.27	591.89	1,586.15	1,555.75	30.40	52.174	
6,800.00	6,753.06	6,568.43	6,502.84	19.78	21.74	135.61	-634.99	603.00	1,601.77	1,570.92	30.85	51.921	
6,900.00	6,853.06	6,667.20	6,600.40	19.95	22.11	135.59	-645.71	614.10	1,617.39	1,586.09	31.30	51.674	
7,000.00	6,953.06	6,765.98	6,697.96	20.11	22.48	135.58	-656.44	625.20	1,633.02	1,601.27	31.75	51.433	
7,100.00	7,053.06	6,864.75	6,795.51	20.28	22.85	135.56	-667.16	636.31	1,648.64	1,616.44	32.20	51.198	
7,200.00	7,153.06	6,963.52	6,893.07	20.45	23.22	135.55	-677.88	647.41	1,664.26	1,631.61	32.65	50.968	
7,300.00	7,253.06	7,062.29	6,990.63	20.62	23.60	135.53	-688.60	658.51	1,679.88	1,646.78	33.10	50.744	
7,400.00	7,353.06	7,244.37	7,170.96	20.79	24.14	135.51	-705.99	676.52	1,694.09	1,660.37	33.71	50.248	
7,500.00	7,453.06	7,489.20	7,415.19	20.96	24.59	135.50	-717.03	687.95	1,700.59	1,666.21	34.37	49.476	
7,600.00	7,553.06	7,627.07	7,553.06	21.13	24.77	135.49	-717.52	688.46	1,700.88	1,666.04	34.83	48.831	
7,700.00	7,653.06	7,727.07	7,653.06	21.31	24.90	135.49	-717.52	688.46	1,700.88	1,665.66	35.22	48.298	
7,800.00	7,753.06	7,827.07	7,753.06	21.48	25.03	135.49	-717.52	688.46	1,700.88	1,665.27	35.60	47.775	
7,900.00	7,853.06	7,927.07	7,853.06	21.66	25.16	135.49	-717.52	688.46	1,700.88	1,664.89	35.99	47.261	
8,000.00	7,953.06	8,027.07	7,953.06	21.83	25.29	135.49	-717.52	688.46	1,700.88	1,664.50	36.38	46.756	
8,100.00	8,053.06	8,127.07	8,053.06	22.01	25.42	135.49	-717.52	688.46	1,700.88	1,664.11	36.77	46.260	
8,200.00	8,153.06	8,227.07	8,153.06	22.19	25.55	135.49	-717.52	688.46	1,700.88	1,663.72	37.16	45.772	
8,300.00	8,253.06	8,327.07	8,253.06	22.37	25.68	135.49	-717.52	688.46	1,700.88	1,663.32	37.55	45.294	
8,400.00	8,353.06	8,427.07	8,353.06	22.55	25.82	135.49	-717.52	688.46	1,700.88	1,662.93	37.95	44.824	
8,424.88	8,377.94	8,451.95	8,377.94	22.59	25.85	135.49	-717.52	688.46	1,700.88	1,662.83	38.04	44.708	
8,438.94	8,392.00	8,463.01	8,389.00	22.62	25.87	135.49	-717.52	688.46	1,700.88	1,662.78	38.09	44.649	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_STONEBRAKER 21-12
Project:	COLORADO NOTHERN ZONE - 83	TVD Reference:	WELL @ 5092.00ft (Original Well Elev)
Reference Site:	WELD_STONEBRAKER 7-12 PAD	MD Reference:	WELL @ 5092.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_STONEBRAKER 21-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_STONEBRAKER 21-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 12-16-09 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_STONEBRAKER 7-12 PAD - P_STONEBRAKER 6-12A - P_STONEBRAKER 6-12A - PLAN #1												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	-175.12	-32.78	-2.80	32.90				
100.00	100.00	100.00	100.00	0.10	0.10	-175.12	-32.78	-2.80	32.90	32.70	0.19	172.182	
200.00	200.00	200.00	200.00	0.32	0.32	-175.12	-32.78	-2.80	32.90	32.26	0.64	51.353	
300.00	300.00	300.00	300.00	0.55	0.55	-175.12	-32.78	-2.80	32.90	31.81	1.09	30.176	
400.00	400.00	400.00	400.00	0.77	0.77	-175.12	-32.78	-2.80	32.90	31.36	1.54	21.366	
500.00	500.00	500.00	500.00	0.99	0.99	-175.12	-32.78	-2.80	32.90	30.91	1.99	16.537	
600.00	600.00	600.00	600.00	1.22	1.22	-175.12	-32.78	-2.80	32.90	30.46	2.44	13.489	
700.00	700.00	700.00	700.00	1.44	1.44	-175.12	-32.78	-2.80	32.90	30.01	2.89	11.390	
800.00	800.00	800.00	800.00	1.67	1.67	-175.12	-32.78	-2.80	32.90	29.56	3.34	9.856	
900.00	900.00	900.00	900.00	1.89	1.89	-175.12	-32.78	-2.80	32.90	29.11	3.79	8.686	
930.00	930.00	930.00	930.00	1.96	1.96	-175.12	-32.78	-2.80	32.90	28.97	3.92	8.387 CC, ES	
1,000.00	999.99	999.83	999.82	2.12	2.11	-129.33	-32.88	-3.64	33.62	29.40	4.22	7.961 SF	
1,100.00	1,099.90	1,099.49	1,099.39	2.34	2.31	-127.98	-33.39	-7.77	37.16	32.52	4.64	8.009	
1,200.00	1,199.60	1,198.91	1,198.52	2.56	2.52	-126.07	-34.32	-15.32	43.70	38.62	5.08	8.610	
1,300.00	1,298.97	1,297.97	1,296.96	2.81	2.75	-124.10	-35.66	-26.22	53.24	47.70	5.54	9.611	
1,319.78	1,318.58	1,317.52	1,316.34	2.86	2.80	-123.73	-35.98	-28.77	55.48	49.84	5.64	9.841	
1,400.00	1,398.06	1,396.59	1,394.53	3.07	3.01	-121.69	-37.42	-40.43	65.18	59.14	6.05	10.775	
1,500.00	1,497.13	1,494.67	1,491.02	3.35	3.31	-117.79	-39.56	-57.85	78.53	71.93	6.60	11.895	
1,600.00	1,596.21	1,592.00	1,586.13	3.64	3.65	-113.19	-42.10	-78.38	93.67	86.48	7.19	13.024	
1,700.00	1,695.28	1,689.09	1,680.29	3.93	4.04	-108.50	-44.99	-101.83	110.91	103.10	7.81	14.198	
1,800.00	1,794.36	1,787.12	1,775.21	4.23	4.47	-104.79	-47.99	-126.17	129.09	120.65	8.45	15.279	
1,900.00	1,893.44	1,885.16	1,870.12	4.54	4.92	-102.00	-50.99	-150.51	147.68	138.58	9.09	16.240	
2,000.00	1,992.51	1,983.19	1,965.04	4.85	5.38	-99.83	-53.99	-174.85	166.52	156.78	9.74	17.090	
2,100.00	2,091.59	2,081.23	2,059.96	5.16	5.85	-98.11	-56.99	-199.20	185.55	175.15	10.40	17.843	
2,200.00	2,190.66	2,179.26	2,154.87	5.48	6.33	-96.70	-59.99	-223.54	204.71	193.65	11.06	18.511	
2,300.00	2,289.74	2,277.30	2,249.79	5.80	6.82	-95.54	-63.00	-247.88	223.97	212.24	11.72	19.107	
2,400.00	2,388.82	2,375.33	2,344.71	6.12	7.32	-94.56	-66.00	-272.22	243.30	230.91	12.39	19.640	
2,500.00	2,487.89	2,473.37	2,439.63	6.45	7.82	-93.73	-69.00	-296.57	262.69	249.63	13.06	20.119	
2,600.00	2,586.97	2,571.40	2,534.54	6.77	8.32	-93.01	-72.00	-320.91	282.13	268.40	13.73	20.551	
2,700.00	2,686.04	2,669.44	2,629.46	7.10	8.82	-92.38	-75.00	-345.25	301.61	287.20	14.40	20.942	
2,800.00	2,785.12	2,767.47	2,724.38	7.42	9.33	-91.83	-78.00	-369.59	321.11	306.04	15.08	21.298	
2,900.00	2,884.19	2,865.51	2,819.30	7.75	9.84	-91.34	-81.00	-393.93	340.64	324.89	15.75	21.623	
3,000.00	2,983.27	2,963.54	2,914.21	8.08	10.35	-90.90	-84.01	-418.28	360.20	343.77	16.43	21.921	
3,100.00	3,082.35	3,061.58	3,009.13	8.41	10.87	-90.51	-87.01	-442.62	379.77	362.66	17.11	22.195	
3,200.00	3,181.42	3,159.61	3,104.05	8.74	11.38	-90.16	-90.01	-466.96	399.35	381.56	17.79	22.447	
3,300.00	3,280.50	3,257.65	3,198.97	9.07	11.90	-89.84	-93.01	-491.30	418.95	400.48	18.47	22.680	
3,400.00	3,379.57	3,355.68	3,293.88	9.40	12.41	-89.55	-96.01	-515.65	438.56	419.41	19.15	22.896	
3,500.00	3,478.65	3,453.72	3,388.80	9.73	12.93	-89.29	-99.01	-539.99	458.18	438.35	19.84	23.097	
3,600.00	3,577.73	3,551.75	3,483.72	10.07	13.45	-89.04	-102.01	-564.33	477.81	457.29	20.52	23.284	
3,700.00	3,676.80	3,649.79	3,578.64	10.40	13.97	-88.82	-105.02	-588.67	497.45	476.24	21.21	23.458	
3,800.00	3,775.88	3,747.82	3,673.55	10.73	14.49	-88.61	-108.02	-613.02	517.09	495.20	21.89	23.622	
3,900.00	3,874.95	3,845.86	3,768.47	11.06	15.01	-88.42	-111.02	-637.36	536.74	514.17	22.58	23.775	
4,000.00	3,974.03	3,943.89	3,863.39	11.40	15.53	-88.24	-114.02	-661.70	556.40	533.14	23.26	23.919	
4,100.00	4,073.10	4,041.93	3,958.31	11.73	16.05	-88.07	-117.02	-686.04	576.06	552.11	23.95	24.054	
4,200.00	4,172.18	4,139.96	4,053.22	12.06	16.57	-87.92	-120.02	-710.39	595.72	571.09	24.64	24.182	
4,300.00	4,271.26	4,238.00	4,148.14	12.40	17.10	-87.77	-123.02	-734.73	615.39	590.07	25.32	24.302	
4,400.00	4,370.33	4,336.03	4,243.06	12.73	17.62	-87.63	-126.02	-759.07	635.06	609.05	26.01	24.416	
4,500.00	4,469.41	4,434.07	4,337.98	13.07	18.14	-87.50	-129.03	-783.41	654.74	628.04	26.70	24.524	
4,600.00	4,568.48	4,532.10	4,432.89	13.40	18.67	-87.38	-132.03	-807.75	674.42	647.03	27.39	24.626	
4,700.00	4,667.56	4,630.14	4,527.81	13.74	19.19	-87.27	-135.03	-832.10	694.10	666.02	28.07	24.723	
4,800.00	4,766.63	4,728.17	4,622.73	14.07	19.71	-87.16	-138.03	-856.44	713.78	685.02	28.76	24.816	
4,900.00	4,865.71	4,826.21	4,717.65	14.41	20.24	-87.06	-141.03	-880.78	733.47	704.01	29.45	24.904	

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_STONEBRAKER 21-12
Project:	COLORADO NOTHERN ZONE - 83	TVD Reference:	WELL @ 5092.00ft (Original Well Elev)
Reference Site:	WELD_STONEBRAKER 7-12 PAD	MD Reference:	WELL @ 5092.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_STONEBRAKER 21-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_STONEBRAKER 21-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 12-16-09 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_STONEBRAKER 7-12 PAD - P_STONEBRAKER 6-12A - P_STONEBRAKER 6-12A - PLAN #1												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	4,964.79	4,924.24	4,812.56	14.74	20.76	-86.96	-144.03	-905.12	753.15	723.01	30.14	24.987	
5,100.00	5,063.86	5,022.28	4,907.48	15.08	21.29	-86.87	-147.03	-929.47	772.84	742.01	30.83	25.067	
5,200.00	5,162.94	5,120.31	5,002.40	15.41	21.81	-86.78	-150.04	-953.81	792.54	761.02	31.52	25.144	
5,300.00	5,262.01	5,218.35	5,097.32	15.75	22.34	-86.70	-153.04	-978.15	812.23	780.02	32.21	25.217	
5,400.00	5,361.09	5,316.38	5,192.23	16.08	22.86	-86.62	-156.04	-1,002.49	831.92	799.02	32.90	25.286	
5,500.00	5,460.17	5,414.42	5,287.15	16.42	23.39	-86.55	-159.04	-1,026.84	851.62	818.03	33.59	25.353	
5,600.00	5,559.24	5,512.45	5,382.07	16.76	23.91	-86.47	-162.04	-1,051.18	871.32	837.04	34.28	25.417	
5,700.00	5,658.32	5,610.49	5,476.99	17.09	24.44	-86.41	-165.04	-1,075.52	891.02	856.05	34.97	25.479	
5,800.00	5,757.39	5,708.52	5,571.90	17.43	24.96	-86.34	-168.04	-1,099.86	910.72	875.06	35.66	25.538	
5,900.00	5,856.47	5,806.56	5,666.82	17.76	25.49	-86.28	-171.05	-1,124.20	930.42	894.07	36.35	25.595	
6,000.00	5,955.54	5,904.59	5,761.74	18.10	26.01	-86.22	-174.05	-1,148.55	950.12	913.08	37.04	25.649	
6,100.00	6,054.62	6,034.25	5,887.81	18.44	26.57	-86.22	-177.74	-1,178.53	968.47	930.67	37.80	25.623	
6,139.16	6,093.42	6,087.69	5,940.15	18.57	26.76	-86.28	-179.07	-1,189.25	974.63	936.55	38.09	25.589	
6,200.00	6,153.78	6,171.15	6,022.27	18.74	27.01	-86.56	-180.89	-1,204.05	983.08	944.55	38.53	25.515	
6,300.00	6,253.30	6,309.35	6,159.08	18.97	27.38	-86.90	-183.27	-1,223.31	994.02	954.88	39.14	25.398	
6,400.00	6,353.10	6,448.48	6,297.60	19.15	27.65	-87.11	-184.84	-1,236.07	1,001.22	961.59	39.63	25.262	
6,500.00	6,453.06	6,588.16	6,437.14	19.31	27.85	-87.20	-185.59	-1,242.16	1,004.65	964.63	40.02	25.102	
6,528.94	6,482.00	6,628.64	6,477.61	19.35	27.90	-132.67	-185.65	-1,242.65	1,004.94	964.82	40.12	25.050	
6,600.00	6,553.06	6,704.09	6,553.06	19.45	27.97	-132.67	-185.66	-1,242.70	1,004.96	964.64	40.32	24.924	
6,700.00	6,653.06	6,804.09	6,653.06	19.62	28.08	-132.67	-185.66	-1,242.70	1,004.96	964.34	40.62	24.738	
6,800.00	6,753.06	6,904.09	6,753.06	19.78	28.19	-132.67	-185.66	-1,242.70	1,004.96	964.03	40.93	24.553	
6,900.00	6,853.06	7,004.09	6,853.06	19.95	28.30	-132.67	-185.66	-1,242.70	1,004.96	963.72	41.24	24.370	
7,000.00	6,953.06	7,104.09	6,953.06	20.11	28.42	-132.67	-185.66	-1,242.70	1,004.96	963.41	41.55	24.187	
7,100.00	7,053.06	7,204.09	7,053.06	20.28	28.53	-132.67	-185.66	-1,242.70	1,004.96	963.10	41.86	24.006	
7,200.00	7,153.06	7,304.09	7,153.06	20.45	28.65	-132.67	-185.66	-1,242.70	1,004.96	962.78	42.18	23.827	
7,300.00	7,253.06	7,404.09	7,253.06	20.62	28.76	-132.67	-185.66	-1,242.70	1,004.96	962.47	42.50	23.648	
7,400.00	7,353.06	7,504.09	7,353.06	20.79	28.88	-132.67	-185.66	-1,242.70	1,004.96	962.15	42.82	23.471	
7,500.00	7,453.06	7,604.09	7,453.06	20.96	29.00	-132.67	-185.66	-1,242.70	1,004.96	961.82	43.14	23.295	
7,600.00	7,553.06	7,704.09	7,553.06	21.13	29.12	-132.67	-185.66	-1,242.70	1,004.96	961.50	43.46	23.121	
7,700.00	7,653.06	7,804.09	7,653.06	21.31	29.24	-132.67	-185.66	-1,242.70	1,004.96	961.17	43.79	22.949	
7,800.00	7,753.06	7,904.09	7,753.06	21.48	29.37	-132.67	-185.66	-1,242.70	1,004.96	960.84	44.12	22.777	
7,900.00	7,853.06	8,004.09	7,853.06	21.66	29.49	-132.67	-185.66	-1,242.70	1,004.96	960.51	44.45	22.607	
8,000.00	7,953.06	8,104.09	7,953.06	21.83	29.62	-132.67	-185.66	-1,242.70	1,004.96	960.18	44.79	22.439	
8,100.00	8,053.06	8,204.09	8,053.06	22.01	29.74	-132.67	-185.66	-1,242.70	1,004.96	959.84	45.12	22.272	
8,200.00	8,153.06	8,304.09	8,153.06	22.19	29.87	-132.67	-185.66	-1,242.70	1,004.96	959.50	45.46	22.107	
8,300.00	8,253.06	8,404.09	8,253.06	22.37	30.00	-132.67	-185.66	-1,242.70	1,004.96	959.16	45.80	21.943	
8,400.00	8,353.06	8,504.09	8,353.06	22.55	30.13	-132.67	-185.66	-1,242.70	1,004.96	958.82	46.14	21.781	
8,438.94	8,392.00	8,543.03	8,392.00	22.62	30.18	-132.67	-185.66	-1,242.70	1,004.96	958.69	46.27	21.718	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_STONEBRAKER 21-12
Project:	COLORADO NOTHERN ZONE - 83	TVD Reference:	WELL @ 5092.00ft (Original Well Elev)
Reference Site:	WELD_STONEBRAKER 7-12 PAD	MD Reference:	WELL @ 5092.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_STONEBRAKER 21-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_STONEBRAKER 21-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 12-16-09 RHS	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 ft
Survey Program: 0-MWD												Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	-180.00	-14.50	0.00	14.50				
100.00	100.00	100.00	100.00	0.10	0.10	-180.00	-14.50	0.00	14.50	14.31	0.19	75.906	
200.00	200.00	200.00	200.00	0.32	0.32	-180.00	-14.50	0.00	14.50	13.86	0.64	22.639	
300.00	300.00	300.00	300.00	0.55	0.55	-180.00	-14.50	0.00	14.50	13.41	1.09	13.303	
400.00	400.00	400.00	400.00	0.77	0.77	-180.00	-14.50	0.00	14.50	12.96	1.54	9.419	
500.00	500.00	500.00	500.00	0.99	0.99	-180.00	-14.50	0.00	14.50	12.51	1.99	7.290	
600.00	600.00	600.00	600.00	1.22	1.22	-180.00	-14.50	0.00	14.50	12.06	2.44	5.947	
700.00	700.00	700.00	700.00	1.44	1.44	-180.00	-14.50	0.00	14.50	11.61	2.89	5.021	
800.00	800.00	800.00	800.00	1.67	1.67	-180.00	-14.50	0.00	14.50	11.16	3.34	4.345	
900.00	900.00	900.00	900.00	1.89	1.89	-180.00	-14.50	0.00	14.50	10.71	3.79	3.829	
930.00	930.00	930.00	930.00	1.96	1.96	-180.00	-14.50	0.00	14.50	10.58	3.92	3.697 CC, ES	
1,000.00	999.99	999.91	999.91	2.12	2.11	-139.97	-14.62	0.85	15.29	11.06	4.22	3.620 SF	
1,100.00	1,099.90	1,099.35	1,099.25	2.34	2.31	-159.01	-15.18	4.96	20.59	15.96	4.63	4.444	
1,200.00	1,199.60	1,197.68	1,197.29	2.56	2.52	-174.97	-16.20	12.38	33.10	28.07	5.04	6.570	
1,300.00	1,298.97	1,294.30	1,293.32	2.81	2.74	-176.11	-17.64	22.92	52.99	47.55	5.44	9.739	
1,319.78	1,318.58	1,313.16	1,312.02	2.86	2.79	-174.91	-17.97	25.35	57.74	52.22	5.52	10.460	
1,400.00	1,398.06	1,388.93	1,386.97	3.07	2.99	-171.18	-19.48	36.34	78.58	72.72	5.86	13.405	
1,500.00	1,497.13	1,481.86	1,478.45	3.35	3.27	-167.96	-21.69	52.50	107.38	101.08	6.29	17.058	
1,600.00	1,596.21	1,572.94	1,567.56	3.64	3.58	-165.61	-24.25	71.18	139.18	132.45	6.73	20.669	
1,700.00	1,695.28	1,662.07	1,654.12	3.93	3.93	-163.78	-27.13	92.17	173.90	166.73	7.18	24.226	
1,800.00	1,794.36	1,749.12	1,738.00	4.23	4.31	-162.30	-30.28	115.23	211.44	203.82	7.63	27.727	
1,900.00	1,893.44	1,840.55	1,825.67	4.54	4.75	-161.08	-33.81	140.98	250.60	242.51	8.10	30.955	
2,000.00	1,992.51	1,932.45	1,913.78	4.85	5.22	-160.18	-37.36	166.86	289.84	281.27	8.57	33.812	
2,100.00	2,091.59	2,024.35	2,001.88	5.16	5.70	-159.50	-40.90	192.74	329.12	320.07	9.05	36.348	
2,200.00	2,190.66	2,116.25	2,089.99	5.48	6.20	-158.96	-44.45	218.62	368.44	358.90	9.54	38.611	
2,300.00	2,289.74	2,208.15	2,178.10	5.80	6.70	-158.53	-47.99	244.50	407.78	397.74	10.03	40.638	
2,400.00	2,388.82	2,300.05	2,266.20	6.12	7.21	-158.17	-51.54	270.38	447.13	436.60	10.53	42.462	
2,500.00	2,487.89	2,391.94	2,354.31	6.45	7.73	-157.87	-55.08	296.27	486.50	475.47	11.03	44.110	
2,600.00	2,586.97	2,483.84	2,442.42	6.77	8.25	-157.61	-58.63	322.15	525.87	514.34	11.53	45.604	
2,700.00	2,686.04	2,575.74	2,530.53	7.10	8.77	-157.39	-62.17	348.03	565.26	553.22	12.04	46.965	
2,800.00	2,785.12	2,667.64	2,618.63	7.42	9.30	-157.20	-65.71	373.91	604.64	592.10	12.54	48.209	
2,900.00	2,884.19	2,759.54	2,706.74	7.75	9.83	-157.04	-69.26	399.79	644.04	630.99	13.05	49.350	
3,000.00	2,983.27	2,851.43	2,794.85	8.08	10.36	-156.89	-72.80	425.67	683.44	669.88	13.56	50.399	
3,100.00	3,082.35	2,943.33	2,882.95	8.41	10.90	-156.75	-76.35	451.56	722.84	708.77	14.07	51.367	
3,200.00	3,181.42	3,035.23	2,971.06	8.74	11.43	-156.64	-79.89	477.44	762.24	747.66	14.59	52.262	
3,300.00	3,280.50	3,127.13	3,059.17	9.07	11.97	-156.53	-83.44	503.32	801.65	786.55	15.10	53.093	
3,400.00	3,379.57	3,219.03	3,147.27	9.40	12.51	-156.43	-86.98	529.20	841.06	825.45	15.61	53.865	
3,500.00	3,478.65	3,310.93	3,235.38	9.73	13.05	-156.34	-90.53	555.08	880.47	864.34	16.13	54.584	
3,600.00	3,577.73	3,402.82	3,323.49	10.07	13.59	-156.26	-94.07	580.96	919.89	903.24	16.65	55.256	
3,700.00	3,676.80	3,494.72	3,411.60	10.40	14.14	-156.19	-97.62	606.85	959.30	942.13	17.17	55.885	
3,800.00	3,775.88	3,586.62	3,499.70	10.73	14.68	-156.12	-101.16	632.73	998.72	981.03	17.68	56.475	
3,900.00	3,874.95	3,678.52	3,587.81	11.06	15.22	-156.06	-104.71	658.61	1,038.13	1,019.93	18.20	57.029	
4,000.00	3,974.03	3,770.42	3,675.92	11.40	15.77	-156.00	-108.25	684.49	1,077.55	1,058.83	18.72	57.551	
4,100.00	4,073.10	3,862.31	3,764.02	11.73	16.31	-155.95	-111.80	710.37	1,116.97	1,097.72	19.24	58.043	
4,200.00	4,172.18	3,954.21	3,852.13	12.06	16.86	-155.90	-115.34	736.25	1,156.39	1,136.62	19.76	58.507	
4,300.00	4,271.26	4,046.11	3,940.24	12.40	17.40	-155.85	-118.89	762.13	1,195.81	1,175.52	20.29	58.946	
4,400.00	4,370.33	4,138.01	4,028.34	12.73	17.95	-155.80	-122.43	788.02	1,235.23	1,214.42	20.81	59.362	
4,500.00	4,469.41	4,229.91	4,116.45	13.07	18.50	-155.76	-125.98	813.90	1,274.65	1,253.32	21.33	59.756	
4,600.00	4,568.48	4,321.80	4,204.56	13.40	19.04	-155.72	-129.52	839.78	1,314.07	1,292.22	21.85	60.131	
4,700.00	4,667.56	4,413.70	4,292.67	13.74	19.59	-155.69	-133.07	865.66	1,353.49	1,331.12	22.38	60.487	
4,800.00	4,766.63	4,505.60	4,380.77	14.07	20.14	-155.65	-136.61	891.54	1,392.92	1,370.02	22.90	60.826	
4,900.00	4,865.71	4,597.50	4,468.88	14.41	20.69	-155.62	-140.16	917.42	1,432.34	1,408.91	23.42	61.149	

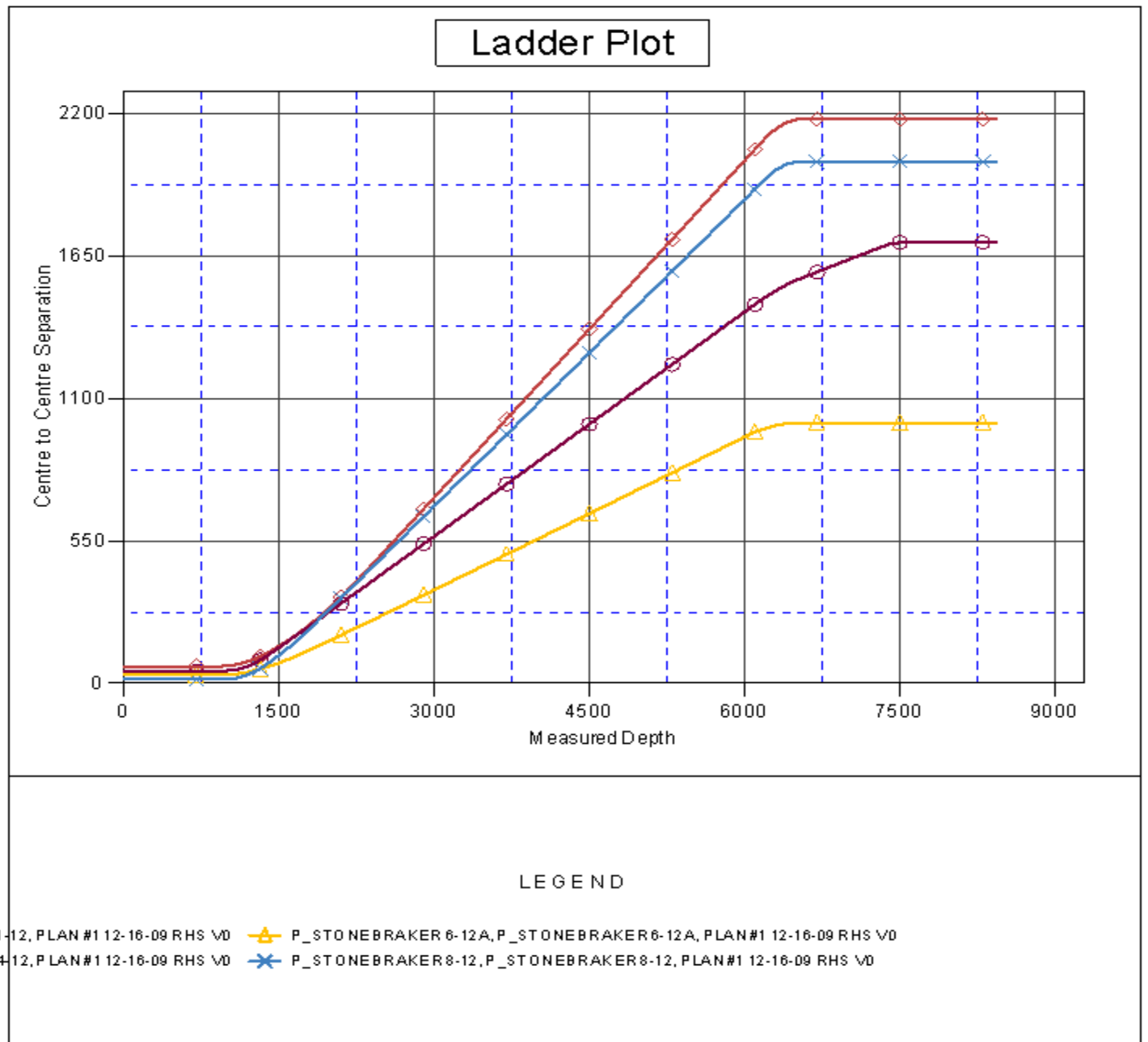
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_STONEBRAKER 21-12
Project:	COLORADO NOTHERN ZONE - 83	TVD Reference:	WELL @ 5092.00ft (Original Well Elev)
Reference Site:	WELD_STONEBRAKER 7-12 PAD	MD Reference:	WELL @ 5092.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_STONEBRAKER 21-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_STONEBRAKER 21-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 12-16-09 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_STONEBRAKER 7-12 PAD - P_STONEBRAKER 8-12 - P_STONEBRAKER 8-12 - PLAN #1 12-												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	4,964.79	4,689.40	4,556.99	14.74	21.23	155.59	-143.70	943.31	1,471.76	1,447.81	23.95	61.457	
5,100.00	5,063.86	4,781.30	4,645.09	15.08	21.78	155.56	-147.25	969.19	1,511.19	1,486.71	24.47	61.751	
5,200.00	5,162.94	4,873.19	4,733.20	15.41	22.33	155.53	-150.79	995.07	1,550.61	1,525.61	25.00	62.033	
5,300.00	5,262.01	4,965.09	4,821.31	15.75	22.88	155.50	-154.34	1,020.95	1,590.03	1,564.51	25.52	62.302	
5,400.00	5,361.09	5,056.99	4,909.41	16.08	23.43	155.48	-157.88	1,046.83	1,629.46	1,603.41	26.05	62.560	
5,500.00	5,460.17	5,148.89	4,997.52	16.42	23.98	155.46	-161.43	1,072.71	1,668.88	1,642.31	26.57	62.807	
5,600.00	5,559.24	5,240.79	5,085.63	16.76	24.53	155.43	-164.97	1,098.60	1,708.31	1,681.21	27.10	63.044	
5,700.00	5,658.32	5,332.68	5,173.74	17.09	25.08	155.41	-168.52	1,124.48	1,747.73	1,720.11	27.62	63.272	
5,800.00	5,757.39	5,424.58	5,261.84	17.43	25.62	155.39	-172.06	1,150.36	1,787.16	1,759.01	28.15	63.491	
5,900.00	5,856.47	5,516.48	5,349.95	17.76	26.17	155.37	-175.61	1,176.24	1,826.59	1,797.91	28.67	63.701	
6,000.00	5,955.54	5,608.38	5,438.06	18.10	26.72	155.35	-179.15	1,202.12	1,866.01	1,836.81	29.20	63.903	
6,100.00	6,054.62	5,700.28	5,526.16	18.44	27.27	155.33	-182.70	1,228.00	1,905.44	1,875.71	29.73	64.098	
6,139.16	6,093.42	5,736.26	5,560.67	18.57	27.49	155.32	-184.08	1,238.14	1,920.88	1,890.94	29.93	64.173	
6,200.00	6,153.78	5,792.40	5,614.49	18.74	27.82	155.52	-186.25	1,253.95	1,944.32	1,913.97	30.35	64.054	
6,300.00	6,253.30	5,894.03	5,809.00	18.97	28.79	155.70	-193.44	1,306.43	1,979.06	1,947.80	31.25	63.323	
6,400.00	6,353.10	6,296.53	6,106.51	19.15	29.74	155.77	-200.76	1,359.86	2,002.08	1,969.83	32.24	62.090	
6,500.00	6,453.06	6,611.48	6,420.50	19.31	30.29	155.81	-203.81	1,382.15	2,011.57	1,978.50	33.07	60.825	
6,528.94	6,482.00	6,672.98	6,482.00	19.35	30.35	110.34	-203.86	1,382.54	2,011.83	1,978.59	33.24	60.532	
6,600.00	6,553.06	6,744.04	6,553.06	19.45	30.42	110.34	-203.86	1,382.54	2,011.83	1,978.35	33.48	60.099	
6,700.00	6,653.06	6,844.04	6,653.06	19.62	30.52	110.34	-203.86	1,382.54	2,011.83	1,978.00	33.83	59.468	
6,800.00	6,753.06	6,944.04	6,753.06	19.78	30.62	110.34	-203.86	1,382.54	2,011.83	1,977.64	34.19	58.847	
6,900.00	6,853.06	7,044.04	6,853.06	19.95	30.72	110.34	-203.86	1,382.54	2,011.83	1,977.28	34.55	58.234	
7,000.00	6,953.06	7,144.04	6,953.06	20.11	30.83	110.34	-203.86	1,382.54	2,011.83	1,976.92	34.91	57.631	
7,100.00	7,053.06	7,244.04	7,053.06	20.28	30.93	110.34	-203.86	1,382.54	2,011.83	1,976.56	35.27	57.038	
7,200.00	7,153.06	7,344.04	7,153.06	20.45	31.04	110.34	-203.86	1,382.54	2,011.83	1,976.19	35.64	56.453	
7,300.00	7,253.06	7,444.04	7,253.06	20.62	31.15	110.34	-203.86	1,382.54	2,011.83	1,975.82	36.00	55.877	
7,400.00	7,353.06	7,544.04	7,353.06	20.79	31.26	110.34	-203.86	1,382.54	2,011.83	1,975.45	36.37	55.310	
7,500.00	7,453.06	7,644.04	7,453.06	20.96	31.37	110.34	-203.86	1,382.54	2,011.83	1,975.08	36.74	54.752	
7,600.00	7,553.06	7,744.04	7,553.06	21.13	31.48	110.34	-203.86	1,382.54	2,011.83	1,974.71	37.12	54.203	
7,700.00	7,653.06	7,844.04	7,653.06	21.31	31.60	110.34	-203.86	1,382.54	2,011.83	1,974.34	37.49	53.662	
7,800.00	7,753.06	7,944.04	7,753.06	21.48	31.71	110.34	-203.86	1,382.54	2,011.83	1,973.96	37.87	53.130	
7,900.00	7,853.06	8,044.04	7,853.06	21.66	31.83	110.34	-203.86	1,382.54	2,011.83	1,973.58	38.24	52.606	
8,000.00	7,953.06	8,144.04	7,953.06	21.83	31.94	110.34	-203.86	1,382.54	2,011.83	1,973.21	38.62	52.090	
8,100.00	8,053.06	8,244.04	8,053.06	22.01	32.06	110.34	-203.86	1,382.54	2,011.83	1,972.83	39.00	51.582	
8,200.00	8,153.06	8,344.04	8,153.06	22.19	32.18	110.34	-203.86	1,382.54	2,011.83	1,972.44	39.38	51.082	
8,300.00	8,253.06	8,444.04	8,253.06	22.37	32.30	110.34	-203.86	1,382.54	2,011.83	1,972.06	39.77	50.590	
8,400.00	8,353.06	8,544.04	8,353.06	22.55	32.42	110.34	-203.86	1,382.54	2,011.83	1,971.68	40.15	50.106	
8,418.68	8,371.73	8,562.72	8,371.73	22.58	32.45	110.34	-203.86	1,382.54	2,011.83	1,971.60	40.22	50.016	
8,438.94	8,392.00	8,568.98	8,378.00	22.62	32.45	110.34	-203.86	1,382.54	2,011.88	1,971.60	40.28	49.952	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_STONEBRAKER 21-12
Project:	COLORADO NOTHERN ZONE - 83	TVD Reference:	WELL @ 5092.00ft (Original Well Elev)
Reference Site:	WELD_STONEBRAKER 7-12 PAD	MD Reference:	WELL @ 5092.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_STONEBRAKER 21-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_STONEBRAKER 21-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 12-16-09 RHS	Offset TVD Reference:	Offset Datum

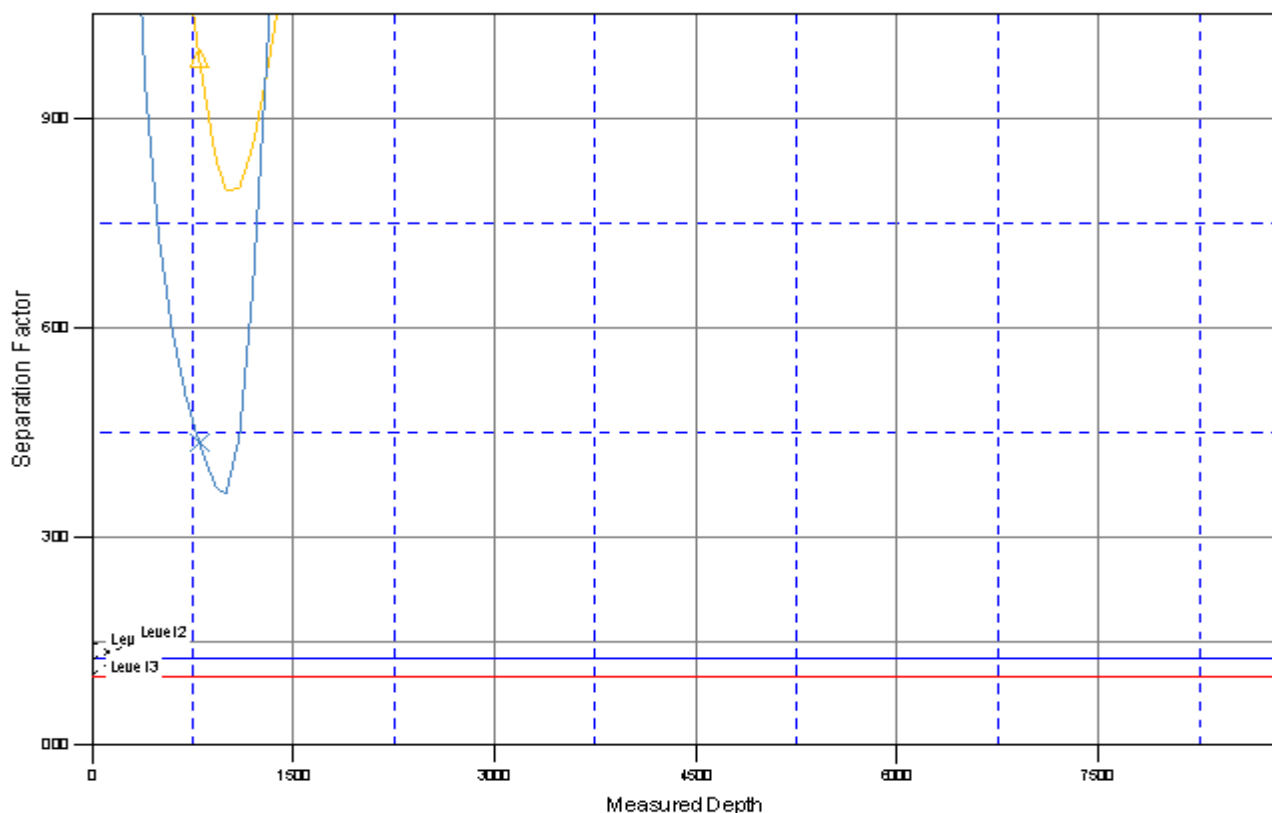
Reference Depths are relative to WELL @ 5092.00ft (Original Well Elev) Coordinates are relative to: P_STONEBRAKER 21-12
Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Northern Zone
Central Meridian is 105° 30' 0.000 W ° Grid Convergence at Surface is: 0.36°





Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_STONEBRAKER 21-12
Project:	COLORADO NOTHERN ZONE - 83	TVD Reference:	WELL @ 5092.00ft (Original Well Elev)
Reference Site:	WELD_STONEBRAKER 7-12 PAD	MD Reference:	WELL @ 5092.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_STONEBRAKER 21-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_STONEBRAKER 21-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 12-16-09 RHS	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 5092.00ft (Original Well Elev) Coordinates are relative to: P_STONEBRAKER 21-12
Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Northern Zone
Central Meridian is 105° 30' 0.000 W ° Grid Convergence at Surface is: 0.36°

Separation Factor Plot



LEGEND

11-12, PLAN #1 12-16-09 RHS VD  P_STONEBRAKER 6-12A, P_STONEBRAKER 6-12A, PLAN #1 12-16-09 RHS VD
24-12, PLAN #1 12-16-09 RHS VD  P_STONEBRAKER 8-12, P_STONEBRAKER 8-12, PLAN #1 12-16-09 RHS VD