

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_POWER PAD

POWERS 28N-23HZ

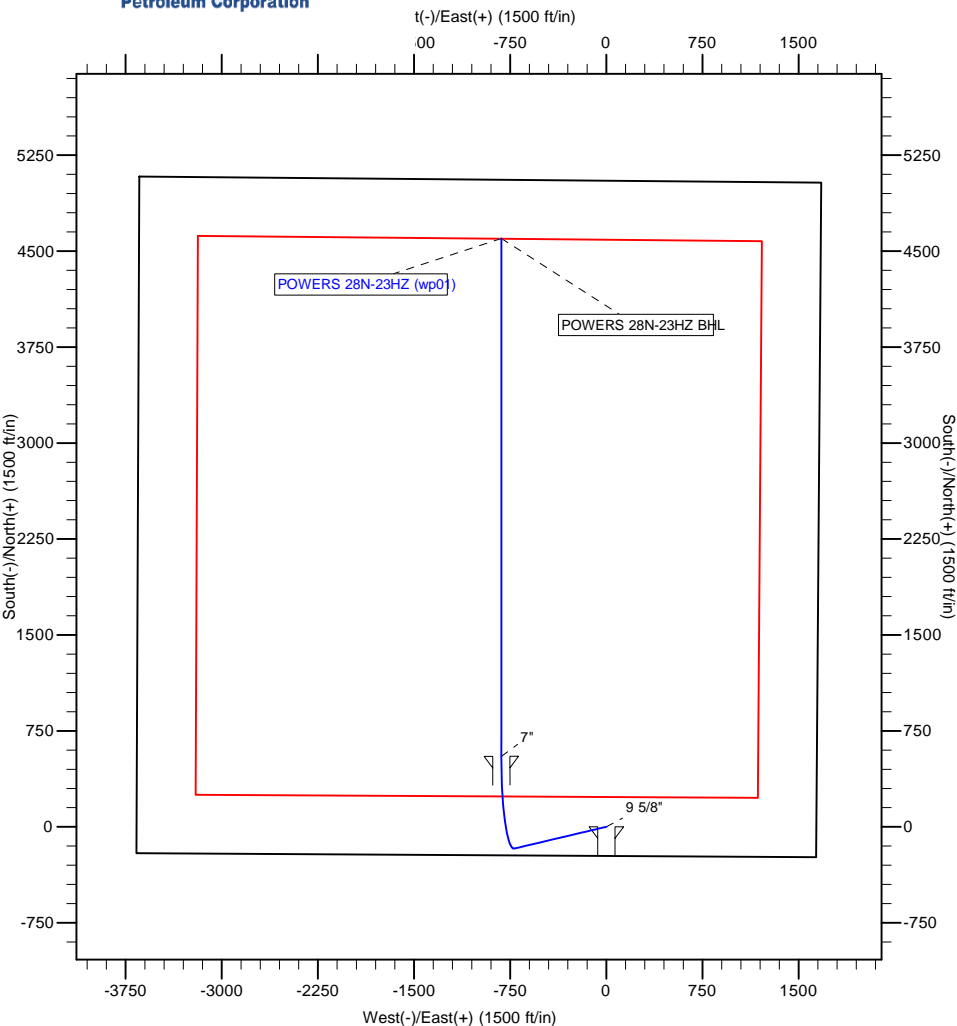
POWERS 28N-23HZ

Plan: POWERS 28N-23HZ (wp01)

Standard Planning Report

29 April, 2011





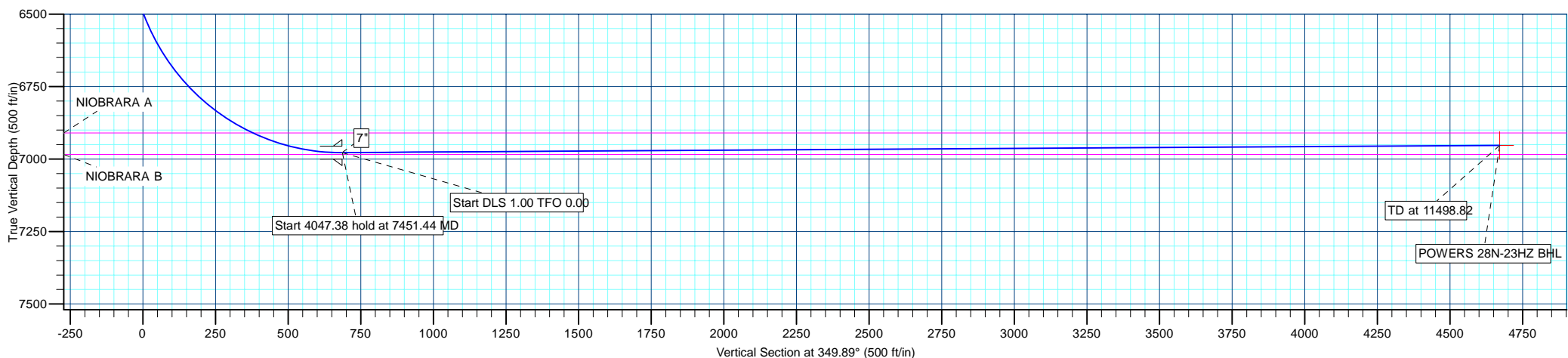
WELL DETAILS: POWERS 28N-23HZ						
+N/-S	+E/-W	Northing	Ground Level: Easting	4909.00 Latitude	Longitude	Slot
0.00	0.00	1286819.50	3243972.02	40.117418	-104.627633	

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)						
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
POWERS 28N-23HZ BHL	6953.00	4598.68	-819.84	40.130042	-104.630565	Point

SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	
1307.86	8.16	256.66	1306.49	-6.69	-28.20	2.00	256.66	-1.63	
6297.40	8.16	256.66	6245.54	-170.02	-717.07	0.00	0.00	-41.53	
7450.06	90.34	360.00	6978.00	550.00	-819.84	8.00	103.16	685.35	
7451.44	90.35	0.00	6977.99	551.38	-819.84	1.00	0.00	686.71	
11498.82	90.35	0.00	6953.00	4598.68	-819.84	0.00	0.00	4671.19	POWERS 28N-23HZ BHL

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
705.00	705.00	BASE FOX HILLS
3955.00	3983.45	PARKMAN
4321.00	4353.19	SUSSEX
6910.00	7129.58	NIOBRARA A

CASING DETAILS			
TVD	MD	Name	Size
750.00	750.00	9 5/8"	9-5/8
6978.00	7450.06	7"	7



Database:	edm5000p	Local Co-ordinate Reference:	Well POWERS 28N-23HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	17' RKB + 4909' GL @ 4926.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	17' RKB + 4909' GL @ 4926.00ft
Site:	WELD_POWERS PAD	North Reference:	True
Well:	POWERS 28N-23HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	POWERS 28N-23HZ		
Design:	POWERS 28N-23HZ (wp01)		

Project	COLORADO NORTHERN ZONE - 83		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		WELD_POWERS PAD			
Site Position:		Northing:	1,286,819.50 ft	Latitude:	40.117418
From:	Lat/Long	Easting:	3,243,972.03 ft	Longitude:	-104.627633
Position Uncertainty:	0.00 ft	Slot Radius:	0 "	Grid Convergence:	0.56

Well	POWERS 28N-23HZ					
Well Position	+N-S	0.00 ft	Northing:	1,286,819.49 ft	Latitude:	40.117418
	+E-W	0.00 ft	Easting:	3,243,972.03 ft	Longitude:	-104.627633
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,909.00 ft

Wellbore	POWERS 28N-23HZ				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	4/29/2011	8.78	66.85	53,010

Design	POWERS 28N-23HZ (wp01)			
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	349.89

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	
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,307.86	8.16	256.66	1,306.49	-6.69	-28.20	2.00	2.00	0.00	256.66	
6,297.40	8.16	256.66	6,245.55	-170.02	-717.07	0.00	0.00	0.00	0.00	
7,450.06	90.34	360.00	6,978.00	550.00	-819.84	8.00	7.13	8.97	103.16	
7,451.44	90.35	0.00	6,977.99	551.38	-819.84	1.00	1.00	0.00	0.00	
11,498.82	90.35	0.00	6,953.00	4,598.68	-819.84	0.00	0.00	0.00	0.00	POWERS 28N-23H

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Company:	US ROCKIES REGION PLANNING	TVD Reference:	17' RKB + 4909' GL @ 4926.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	17' RKB + 4909' GL @ 4926.00ft
Site:	WELD_POWERS PAD	North Reference:	True
Well:	POWERS 28N-23HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	POWERS 28N-23HZ		
Design:	POWERS 28N-23HZ (wp01)		

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)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
705.00	0.00	0.00	705.00	0.00	0.00	0.00	0.00	0.00	0.00
BASE FOX HILLS									
750.00	0.00	0.00	750.00	0.00	0.00	0.00	0.00	0.00	0.00
9 5/8"									
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
1,000.00	2.00	256.66	999.98	-0.40	-1.70	-0.10	2.00	2.00	0.00
1,100.00	4.00	256.66	1,099.84	-1.61	-6.79	-0.39	2.00	2.00	0.00
1,200.00	6.00	256.66	1,199.45	-3.62	-15.27	-0.88	2.00	2.00	0.00
1,300.00	8.00	256.66	1,298.70	-6.43	-27.13	-1.57	2.00	2.00	0.00
1,307.86	8.16	256.66	1,306.49	-6.69	-28.20	-1.63	2.00	2.00	0.00
Start 4989.54 hold at 1307.86 MD									
1,400.00	8.16	256.66	1,397.69	-9.70	-40.92	-2.37	0.00	0.00	0.00
1,500.00	8.16	256.66	1,496.68	-12.98	-54.73	-3.17	0.00	0.00	0.00
1,600.00	8.16	256.66	1,595.67	-16.25	-68.54	-3.97	0.00	0.00	0.00
1,700.00	8.16	256.66	1,694.66	-19.52	-82.34	-4.77	0.00	0.00	0.00
1,800.00	8.16	256.66	1,793.64	-22.80	-96.15	-5.57	0.00	0.00	0.00
1,900.00	8.16	256.66	1,892.63	-26.07	-109.95	-6.37	0.00	0.00	0.00
2,000.00	8.16	256.66	1,991.62	-29.34	-123.76	-7.17	0.00	0.00	0.00
2,100.00	8.16	256.66	2,090.61	-32.62	-137.57	-7.97	0.00	0.00	0.00
2,200.00	8.16	256.66	2,189.60	-35.89	-151.37	-8.77	0.00	0.00	0.00
2,300.00	8.16	256.66	2,288.59	-39.17	-165.18	-9.57	0.00	0.00	0.00
2,400.00	8.16	256.66	2,387.57	-42.44	-178.99	-10.37	0.00	0.00	0.00
2,500.00	8.16	256.66	2,486.56	-45.71	-192.79	-11.17	0.00	0.00	0.00
2,600.00	8.16	256.66	2,585.55	-48.99	-206.60	-11.97	0.00	0.00	0.00
2,700.00	8.16	256.66	2,684.54	-52.26	-220.40	-12.76	0.00	0.00	0.00
2,800.00	8.16	256.66	2,783.53	-55.53	-234.21	-13.56	0.00	0.00	0.00
2,900.00	8.16	256.66	2,882.52	-58.81	-248.02	-14.36	0.00	0.00	0.00
3,000.00	8.16	256.66	2,981.50	-62.08	-261.82	-15.16	0.00	0.00	0.00
3,100.00	8.16	256.66	3,080.49	-65.35	-275.63	-15.96	0.00	0.00	0.00
3,200.00	8.16	256.66	3,179.48	-68.63	-289.44	-16.76	0.00	0.00	0.00
3,300.00	8.16	256.66	3,278.47	-71.90	-303.24	-17.56	0.00	0.00	0.00
3,400.00	8.16	256.66	3,377.46	-75.17	-317.05	-18.36	0.00	0.00	0.00
3,500.00	8.16	256.66	3,476.44	-78.45	-330.85	-19.16	0.00	0.00	0.00
3,600.00	8.16	256.66	3,575.43	-81.72	-344.66	-19.96	0.00	0.00	0.00
3,700.00	8.16	256.66	3,674.42	-84.99	-358.47	-20.76	0.00	0.00	0.00
3,800.00	8.16	256.66	3,773.41	-88.27	-372.27	-21.56	0.00	0.00	0.00
3,900.00	8.16	256.66	3,872.40	-91.54	-386.08	-22.36	0.00	0.00	0.00
3,983.45	8.16	256.66	3,955.00	-94.27	-397.60	-23.03	0.00	0.00	0.00
PARKMAN									
4,000.00	8.16	256.66	3,971.39	-94.82	-399.89	-23.16	0.00	0.00	0.00
4,100.00	8.16	256.66	4,070.37	-98.09	-413.69	-23.96	0.00	0.00	0.00
4,200.00	8.16	256.66	4,169.36	-101.36	-427.50	-24.76	0.00	0.00	0.00
4,300.00	8.16	256.66	4,268.35	-104.64	-441.30	-25.56	0.00	0.00	0.00
4,353.19	8.16	256.66	4,321.00	-106.38	-448.65	-25.98	0.00	0.00	0.00

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Site:	WELD_POWERS PAD	North Reference:	True
Well:	POWERS 28N-23HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	POWERS 28N-23HZ		
Design:	POWERS 28N-23HZ (wp01)		

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)
SUSSEX									
4,400.00	8.16	256.66	4,367.34	-107.91	-455.11	-26.36	0.00	0.00	0.00
4,500.00	8.16	256.66	4,466.33	-111.18	-468.92	-27.16	0.00	0.00	0.00
4,600.00	8.16	256.66	4,565.32	-114.46	-482.72	-27.96	0.00	0.00	0.00
4,700.00	8.16	256.66	4,664.30	-117.73	-496.53	-28.76	0.00	0.00	0.00
4,800.00	8.16	256.66	4,763.29	-121.00	-510.34	-29.56	0.00	0.00	0.00
4,900.00	8.16	256.66	4,862.28	-124.28	-524.14	-30.36	0.00	0.00	0.00
5,000.00	8.16	256.66	4,961.27	-127.55	-537.95	-31.16	0.00	0.00	0.00
5,100.00	8.16	256.66	5,060.26	-130.82	-551.75	-31.96	0.00	0.00	0.00
5,200.00	8.16	256.66	5,159.24	-134.10	-565.56	-32.75	0.00	0.00	0.00
5,300.00	8.16	256.66	5,258.23	-137.37	-579.37	-33.55	0.00	0.00	0.00
5,400.00	8.16	256.66	5,357.22	-140.65	-593.17	-34.35	0.00	0.00	0.00
5,500.00	8.16	256.66	5,456.21	-143.92	-606.98	-35.15	0.00	0.00	0.00
5,600.00	8.16	256.66	5,555.20	-147.19	-620.78	-35.95	0.00	0.00	0.00
5,700.00	8.16	256.66	5,654.19	-150.47	-634.59	-36.75	0.00	0.00	0.00
5,800.00	8.16	256.66	5,753.17	-153.74	-648.40	-37.55	0.00	0.00	0.00
5,900.00	8.16	256.66	5,852.16	-157.01	-662.20	-38.35	0.00	0.00	0.00
6,000.00	8.16	256.66	5,951.15	-160.29	-676.01	-39.15	0.00	0.00	0.00
6,100.00	8.16	256.66	6,050.14	-163.56	-689.82	-39.95	0.00	0.00	0.00
6,200.00	8.16	256.66	6,149.13	-166.83	-703.62	-40.75	0.00	0.00	0.00
6,297.40	8.16	256.66	6,245.55	-170.02	-717.07	-41.53	0.00	0.00	0.00
Start DLS 8.00 TFO 103.16									
6,300.00	8.11	258.09	6,248.12	-170.10	-717.43	-41.55	8.00	-1.73	55.21
6,400.00	10.15	308.75	6,346.99	-166.04	-731.23	-35.12	8.00	2.04	50.66
6,500.00	16.35	331.56	6,444.35	-148.12	-744.82	-15.09	8.00	6.20	22.81
6,600.00	23.64	341.37	6,538.28	-116.69	-757.95	18.15	8.00	7.29	9.81
6,700.00	31.26	346.67	6,626.97	-72.37	-770.36	63.96	8.00	7.62	5.30
6,800.00	39.03	350.04	6,708.68	-16.02	-781.81	121.45	8.00	7.76	3.37
6,900.00	46.86	352.44	6,781.83	51.27	-792.07	189.49	8.00	7.83	2.40
7,000.00	54.73	354.29	6,845.00	128.18	-800.94	266.77	8.00	7.87	1.85
7,100.00	62.63	355.81	6,896.94	213.22	-808.26	351.77	8.00	7.89	1.52
7,129.58	64.96	356.22	6,910.00	239.70	-810.10	378.16	8.00	7.90	1.37
NIORARA A									
7,200.00	70.53	357.13	6,936.66	304.74	-813.87	442.85	8.00	7.91	1.29
7,300.00	78.45	358.32	6,963.37	400.94	-817.68	538.23	8.00	7.92	1.19
7,400.00	86.37	359.45	6,976.56	499.97	-819.60	636.06	8.00	7.92	1.13
7,450.06	90.34	360.00	6,978.00	550.00	-819.84	685.35	8.00	7.92	1.11
Start DLS 1.00 TFO 0.00 - 7"									
7,451.44	90.35	0.00	6,977.99	551.38	-819.84	686.71	1.01	1.01	0.00
Start 4047.38 hold at 7451.44 MD									
7,500.00	90.35	0.00	6,977.69	599.94	-819.84	734.52	0.00	0.00	0.00
7,600.00	90.35	0.00	6,977.07	699.94	-819.84	832.96	0.00	0.00	0.00
7,700.00	90.35	0.00	6,976.46	799.93	-819.84	931.41	0.00	0.00	0.00
7,800.00	90.35	0.00	6,975.84	899.93	-819.84	1,029.85	0.00	0.00	0.00
7,900.00	90.35	0.00	6,975.22	999.93	-819.84	1,128.30	0.00	0.00	0.00
8,000.00	90.35	0.00	6,974.60	1,099.93	-819.84	1,226.75	0.00	0.00	0.00
8,100.00	90.35	0.00	6,973.99	1,199.93	-819.84	1,325.19	0.00	0.00	0.00
8,200.00	90.35	0.00	6,973.37	1,299.92	-819.84	1,423.64	0.00	0.00	0.00
8,300.00	90.35	0.00	6,972.75	1,399.92	-819.84	1,522.08	0.00	0.00	0.00
8,400.00	90.35	0.00	6,972.13	1,499.92	-819.84	1,620.53	0.00	0.00	0.00
8,500.00	90.35	0.00	6,971.52	1,599.92	-819.84	1,718.97	0.00	0.00	0.00
8,600.00	90.35	0.00	6,970.90	1,699.92	-819.84	1,817.42	0.00	0.00	0.00
8,700.00	90.35	0.00	6,970.28	1,799.91	-819.84	1,915.87	0.00	0.00	0.00

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Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	17' RKB + 4909' GL @ 4926.00ft
Site:	WELD_POWERS PAD	North Reference:	True
Well:	POWERS 28N-23HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	POWERS 28N-23HZ		
Design:	POWERS 28N-23HZ (wp01)		

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)	
8,800.00	90.35	0.00	6,969.66	1,899.91	-819.84	2,014.31	0.00	0.00	0.00	
8,900.00	90.35	0.00	6,969.05	1,999.91	-819.84	2,112.76	0.00	0.00	0.00	
9,000.00	90.35	0.00	6,968.43	2,099.91	-819.84	2,211.20	0.00	0.00	0.00	
9,100.00	90.35	0.00	6,967.81	2,199.91	-819.84	2,309.65	0.00	0.00	0.00	
9,200.00	90.35	0.00	6,967.19	2,299.90	-819.84	2,408.10	0.00	0.00	0.00	
9,300.00	90.35	0.00	6,966.58	2,399.90	-819.84	2,506.54	0.00	0.00	0.00	
9,400.00	90.35	0.00	6,965.96	2,499.90	-819.84	2,604.99	0.00	0.00	0.00	
9,500.00	90.35	0.00	6,965.34	2,599.90	-819.84	2,703.43	0.00	0.00	0.00	
9,600.00	90.35	0.00	6,964.72	2,699.90	-819.84	2,801.88	0.00	0.00	0.00	
9,700.00	90.35	0.00	6,964.11	2,799.90	-819.84	2,900.33	0.00	0.00	0.00	
9,800.00	90.35	0.00	6,963.49	2,899.89	-819.84	2,998.77	0.00	0.00	0.00	
9,900.00	90.35	0.00	6,962.87	2,999.89	-819.84	3,097.22	0.00	0.00	0.00	
10,000.00	90.35	0.00	6,962.26	3,099.89	-819.84	3,195.66	0.00	0.00	0.00	
10,100.00	90.35	0.00	6,961.64	3,199.89	-819.84	3,294.11	0.00	0.00	0.00	
10,200.00	90.35	0.00	6,961.02	3,299.89	-819.84	3,392.55	0.00	0.00	0.00	
10,300.00	90.35	0.00	6,960.40	3,399.88	-819.84	3,491.00	0.00	0.00	0.00	
10,400.00	90.35	0.00	6,959.79	3,499.88	-819.84	3,589.45	0.00	0.00	0.00	
10,500.00	90.35	0.00	6,959.17	3,599.88	-819.84	3,687.89	0.00	0.00	0.00	
10,600.00	90.35	0.00	6,958.55	3,699.88	-819.84	3,786.34	0.00	0.00	0.00	
10,700.00	90.35	0.00	6,957.93	3,799.88	-819.84	3,884.78	0.00	0.00	0.00	
10,800.00	90.35	0.00	6,957.32	3,899.87	-819.84	3,983.23	0.00	0.00	0.00	
10,900.00	90.35	0.00	6,956.70	3,999.87	-819.84	4,081.68	0.00	0.00	0.00	
11,000.00	90.35	0.00	6,956.08	4,099.87	-819.84	4,180.12	0.00	0.00	0.00	
11,100.00	90.35	0.00	6,955.46	4,199.87	-819.84	4,278.57	0.00	0.00	0.00	
11,200.00	90.35	0.00	6,954.85	4,299.87	-819.84	4,377.01	0.00	0.00	0.00	
11,300.00	90.35	0.00	6,954.23	4,399.86	-819.84	4,475.46	0.00	0.00	0.00	
11,400.00	90.35	0.00	6,953.61	4,499.86	-819.84	4,573.91	0.00	0.00	0.00	
11,498.82	90.35	0.00	6,953.00	4,598.68	-819.84	4,671.19	0.00	0.00	0.00	
TD at 11498.82 - POWERS 28N-23HZ BHL										

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
POWERS 28N-23HZ - hit/miss target - Shape - plan hits target center - Point	0.00	0.00	6,953.00	4,598.68	-819.84	1,291,409.88	3,243,106.98	40.130042	-104.630565

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
750.00	750.00	9 5/8"	9-5/8	12-1/4	
7,450.06	6,978.00	7"	7	8-3/4	

Database:	edm5000p	Local Co-ordinate Reference:	Well POWERS 28N-23HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	17' RKB + 4909' GL @ 4926.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	17' RKB + 4909' GL @ 4926.00ft
Site:	WELD_POWERS PAD	North Reference:	True
Well:	POWERS 28N-23HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	POWERS 28N-23HZ		
Design:	POWERS 28N-23HZ (wp01)		

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
705.00	705.00	BASE FOX HILLS		0.00	
3,983.45	3,955.00	PARKMAN		0.00	
4,353.19	4,321.00	SUSSEX		0.00	
7,129.58	6,910.00	NIOBRARA A		0.00	

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
900.00	900.00	0.00	0.00	Start Build 2.00
1,307.86	1,306.49	-6.69	-28.20	Start 4989.54 hold at 1307.86 MD
6,297.40	6,245.55	-170.02	-717.07	Start DLS 8.00 TFO 103.16
7,450.06	6,978.00	550.00	-819.84	Start DLS 1.00 TFO 0.00
7,451.44	6,977.99	551.38	-819.84	Start 4047.38 hold at 7451.44 MD
11,498.82	6,953.00	4,598.68	-819.84	TD at 11498.82

US ROCKIES REGION PLANNING

**COLORADO NORTHERN ZONE - 83
WELD_POWERS PAD
POWERS 28N-23HZ**

**POWERS 28N-23HZ
POWERS 28N-23HZ (wp01)**

Anticollision Report

29 April, 2011



Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well POWERS 28N-23HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	17' RKB + 4909' GL @ 4926.00ft
Reference Site:	WELD_POWERS PAD	MD Reference:	17' RKB + 4909' GL @ 4926.00ft
Site Error:	0.00 ft	North Reference:	True
Reference Well:	POWERS 28N-23HZ	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	POWERS 28N-23HZ	Database:	edm5000p
Reference Design:	POWERS 28N-23HZ (wp01)	Offset TVD Reference:	Offset Datum

Reference	POWERS 28N-23HZ (wp01)		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD + Stations Interval 25.00ft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,000.00 ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program	Date 4/29/2011			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	11,498.82	POWERS 28N-23HZ (wp01) (POWERS 2	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_POWERS PAD						
POWERS 1C-23HZ - POWERS 1C-23HZ - POWERS 1C	900.00	900.00	119.98	116.20	31.717	CC, ES
POWERS 1C-23HZ - POWERS 1C-23HZ - POWERS 1C	1,075.00	1,067.50	130.21	125.74	29.134	SF
POWERS 1N-23HZ - POWERS 1N-23HZ - POWERS 1N	900.00	900.00	95.93	92.15	25.359	CC, ES
POWERS 1N-23HZ - POWERS 1N-23HZ - POWERS 1N	1,025.00	1,020.87	101.13	96.85	23.613	SF
POWERS 28C-23HZ - POWERS 28C-23HZ - POWERS	1,285.06	1,288.20	23.89	18.57	4.491	CC
POWERS 28C-23HZ - POWERS 28C-23HZ - POWERS	1,300.00	1,303.14	23.93	18.55	4.447	ES
POWERS 28C-23HZ - POWERS 28C-23HZ - POWERS	6,450.00	6,451.84	64.87	32.95	2.032	SF
POWERS 2C-23HZ - POWERS 2C-23HZ - POWERS 2C	900.00	900.00	71.88	68.09	19.001	CC, ES
POWERS 2C-23HZ - POWERS 2C-23HZ - POWERS 2C	1,000.00	997.65	75.14	70.95	17.941	SF
POWERS 2N-23HZ - POWERS 2N-23HZ - POWERS 2N	900.00	900.00	47.82	44.04	12.642	CC, ES
POWERS 2N-23HZ - POWERS 2N-23HZ - POWERS 2N	1,000.00	998.99	50.51	46.32	12.070	SF

Offset Design WELD_POWERS PAD - POWERS 1C-23HZ - POWERS 1C-23HZ - POWERS 1C-23HZ (wp01)											
Survey Program: 0-MWD											
Reference											
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)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)
0.00	0.00	0.00	0.00	0.00	0.00	90.35	-0.73	119.98	119.98		
25.00	25.00	25.00	25.00	0.01	0.02	90.35	-0.73	119.98	119.98	119.95	0.03 3,713.421
50.00	50.00	50.00	50.00	0.04	0.05	90.35	-0.73	119.98	119.98	119.90	0.08 1,433.031
75.00	75.00	75.00	75.00	0.07	0.07	90.35	-0.73	119.98	119.98	119.85	0.14 887.824
100.00	100.00	100.00	100.00	0.09	0.09	90.35	-0.73	119.98	119.98	119.79	0.19 643.138
125.00	125.00	125.00	125.00	0.15	0.15	90.35	-0.73	119.98	119.98	119.68	0.30 401.357
150.00	150.00	150.00	150.00	0.21	0.21	90.35	-0.73	119.98	119.98	119.57	0.41 291.696
175.00	175.00	175.00	175.00	0.26	0.26	90.35	-0.73	119.98	119.98	119.46	0.52 229.101
200.00	200.00	200.00	200.00	0.32	0.32	90.35	-0.73	119.98	119.98	119.35	0.64 188.624
225.00	225.00	225.00	225.00	0.37	0.37	90.35	-0.73	119.98	119.98	119.23	0.75 160.302
250.00	250.00	250.00	250.00	0.43	0.43	90.35	-0.73	119.98	119.98	119.12	0.86 139.375
275.00	275.00	275.00	275.00	0.49	0.49	90.35	-0.73	119.98	119.98	119.01	0.97 123.281
300.00	300.00	300.00	300.00	0.54	0.54	90.35	-0.73	119.98	119.98	118.90	1.09 110.519
325.00	325.00	325.00	325.00	0.60	0.60	90.35	-0.73	119.98	119.98	118.78	1.20 100.151
350.00	350.00	350.00	350.00	0.66	0.66	90.35	-0.73	119.98	119.98	118.67	1.31 91.562
375.00	375.00	375.00	375.00	0.71	0.71	90.35	-0.73	119.98	119.98	118.56	1.42 84.329

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 POWERS 28N-23HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	17' RKB + 4909' GL @ 4926.00ft
Reference Site:	WELD_POWER PAD	MD Reference:	17' RKB + 4909' GL @ 4926.00ft
Site Error:	0.00 ft	North Reference:	True
Reference Well:	POWERS 28N-23HZ	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	POWERS 28N-23HZ	Database:	edm5000p
Reference Design:	POWERS 28N-23HZ (wp01)	Offset TVD Reference:	Offset Datum

Offset Design WELD_POWER PAD - POWERS 1C-23HZ - POWERS 1C-23HZ - POWERS 1C-23HZ (wp01)												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	
400.00	400.00	400.00	400.00	0.77	0.77	90.35	-0.73	119.98	119.98	118.45	1.54	78.156	
425.00	425.00	425.00	425.00	0.82	0.82	90.35	-0.73	119.98	119.98	118.33	1.65	72.825	
450.00	450.00	450.00	450.00	0.88	0.88	90.35	-0.73	119.98	119.98	118.22	1.76	68.174	
475.00	475.00	475.00	475.00	0.94	0.94	90.35	-0.73	119.98	119.98	118.11	1.87	64.082	
500.00	500.00	500.00	500.00	0.99	0.99	90.35	-0.73	119.98	119.98	118.00	1.98	60.454	
525.00	525.00	525.00	525.00	1.05	1.05	90.35	-0.73	119.98	119.98	117.88	2.10	57.214	
550.00	550.00	550.00	550.00	1.10	1.10	90.35	-0.73	119.98	119.98	117.77	2.21	54.304	
575.00	575.00	575.00	575.00	1.16	1.16	90.35	-0.73	119.98	119.98	117.66	2.32	51.675	
600.00	600.00	600.00	600.00	1.22	1.22	90.35	-0.73	119.98	119.98	117.55	2.43	49.289	
625.00	625.00	625.00	625.00	1.27	1.27	90.35	-0.73	119.98	119.98	117.43	2.55	47.114	
650.00	650.00	650.00	650.00	1.33	1.33	90.35	-0.73	119.98	119.98	117.32	2.66	45.123	
675.00	675.00	675.00	675.00	1.39	1.39	90.35	-0.73	119.98	119.98	117.21	2.77	43.293	
700.00	700.00	700.00	700.00	1.44	1.44	90.35	-0.73	119.98	119.98	117.10	2.88	41.606	
725.00	725.00	725.00	725.00	1.50	1.50	90.35	-0.73	119.98	119.98	116.99	3.00	40.045	
750.00	750.00	750.00	750.00	1.55	1.55	90.35	-0.73	119.98	119.98	116.87	3.11	38.598	
775.00	775.00	775.00	775.00	1.61	1.61	90.35	-0.73	119.98	119.98	116.76	3.22	37.251	
800.00	800.00	800.00	800.00	1.67	1.67	90.35	-0.73	119.98	119.98	116.65	3.33	35.995	
825.00	825.00	825.00	825.00	1.72	1.72	90.35	-0.73	119.98	119.98	116.54	3.45	34.821	
850.00	850.00	850.00	850.00	1.78	1.78	90.35	-0.73	119.98	119.98	116.42	3.56	33.721	
875.00	875.00	875.00	875.00	1.84	1.84	90.35	-0.73	119.98	119.98	116.31	3.67	32.689	
900.00	900.00	900.00	900.00	1.89	1.89	90.35	-0.73	119.98	119.98	116.20	3.78	31.717 CC, ES	
925.00	925.00	924.01	924.01	1.94	1.94	-166.31	-0.75	120.08	120.19	116.31	3.88	30.941	
950.00	950.00	948.01	948.00	2.00	1.99	-166.32	-0.81	120.37	120.82	116.83	3.99	30.312	
975.00	974.99	971.98	971.98	2.05	2.04	-166.33	-0.90	120.87	121.86	117.78	4.09	29.818	
1,000.00	999.98	995.93	995.92	2.10	2.09	-166.35	-1.02	121.56	123.33	119.14	4.19	29.451	
1,025.00	1,024.96	1,019.84	1,019.81	2.15	2.14	-166.37	-1.19	122.44	125.20	120.92	4.28	29.238	
1,050.00	1,049.93	1,043.70	1,043.64	2.20	2.19	-166.39	-1.39	123.52	127.50	123.12	4.38	29.136	
1,075.00	1,074.89	1,067.50	1,067.40	2.25	2.24	-166.42	-1.62	124.79	130.21	125.74	4.47	29.134 SF	
1,100.00	1,099.84	1,091.23	1,091.09	2.30	2.29	-166.45	-1.89	126.25	133.33	128.77	4.56	29.226	
1,125.00	1,124.77	1,114.88	1,114.68	2.36	2.34	-166.48	-2.19	127.90	136.87	132.21	4.66	29.391	
1,150.00	1,149.68	1,138.44	1,138.17	2.41	2.39	-166.51	-2.53	129.73	140.81	136.06	4.75	29.636	
1,175.00	1,174.58	1,161.91	1,161.54	2.46	2.44	-166.54	-2.90	131.75	145.16	140.32	4.85	29.960	
1,200.00	1,199.45	1,185.27	1,184.80	2.52	2.49	-166.58	-3.30	133.94	149.92	144.99	4.94	30.358	
1,225.00	1,224.30	1,208.51	1,207.92	2.58	2.54	-166.61	-3.74	136.30	155.09	150.05	5.03	30.812	
1,250.00	1,249.13	1,231.63	1,230.89	2.64	2.60	-166.64	-4.21	138.84	160.65	155.52	5.13	31.327	
1,275.00	1,273.93	1,254.62	1,253.71	2.70	2.65	-166.67	-4.70	141.54	166.62	161.40	5.22	31.904	
1,300.00	1,298.70	1,277.47	1,276.37	2.76	2.71	-166.70	-5.23	144.40	172.98	167.66	5.32	32.541	
1,307.86	1,306.49	1,284.62	1,283.46	2.78	2.73	-166.71	-5.40	145.33	175.06	169.72	5.34	32.753	
1,325.00	1,323.45	1,300.00	1,298.70	2.83	2.76	-166.74	-5.78	147.40	179.69	174.27	5.41	33.194	
1,350.00	1,348.20	1,322.78	1,321.25	2.89	2.83	-166.79	-6.37	150.60	186.59	181.07	5.52	33.832	
1,375.00	1,372.94	1,345.29	1,343.50	2.96	2.89	-166.81	-6.99	153.94	193.68	188.06	5.62	34.484	
1,400.00	1,397.69	1,367.69	1,365.62	3.03	2.95	-166.83	-7.63	157.44	200.95	195.23	5.72	35.147	
1,425.00	1,422.44	1,389.99	1,387.61	3.10	3.01	-166.84	-8.30	161.09	208.41	202.59	5.82	35.812	
1,450.00	1,447.19	1,412.97	1,410.24	3.17	3.08	-166.83	-9.03	165.00	216.03	210.10	5.92	36.467	
1,475.00	1,471.93	1,436.78	1,433.68	3.24	3.15	-166.83	-9.78	169.08	223.67	217.64	6.03	37.088	
1,500.00	1,496.68	1,460.58	1,457.12	3.31	3.22	-166.83	-10.53	173.16	231.31	225.17	6.14	37.687	
1,525.00	1,521.43	1,484.38	1,480.56	3.39	3.30	-166.82	-11.28	177.23	238.95	232.70	6.25	38.260	
1,550.00	1,546.17	1,508.19	1,504.00	3.46	3.37	-166.82	-12.03	181.31	246.59	240.24	6.35	38.810	
1,575.00	1,570.92	1,531.99	1,527.44	3.53	3.45	-166.82	-12.78	185.39	254.23	247.77	6.46	39.336	
1,600.00	1,595.67	1,555.79	1,550.88	3.61	3.53	-166.81	-13.53	189.47	261.88	255.30	6.57	39.845	
1,625.00	1,620.41	1,579.60	1,574.32	3.69	3.60	-166.81	-14.28	193.54	269.52	262.83	6.68	40.332	
1,650.00	1,645.16	1,603.40	1,597.76	3.76	3.68	-166.81	-15.03	197.62	277.16	270.37	6.79	40.802	

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 POWERS 28N-23HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	17' RKB + 4909' GL @ 4926.00ft
Reference Site:	WELD_POWER PAD	MD Reference:	17' RKB + 4909' GL @ 4926.00ft
Site Error:	0.00 ft	North Reference:	True
Reference Well:	POWERS 28N-23HZ	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	POWERS 28N-23HZ	Database:	edm5000p
Reference Design:	POWERS 28N-23HZ (wp01)	Offset TVD Reference:	Offset Datum

Offset Design WELD_POWER PAD - POWERS 1C-23HZ - POWERS 1C-23HZ - POWERS 1C-23HZ (wp01)												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	
1,675.00	1,669.91	1,627.20	1,621.20	3.84	3.76	-166.81	-15.78	201.70	284.80	277.90	6.90	41.251	
1,700.00	1,694.66	1,651.01	1,644.64	3.92	3.84	-166.80	-16.54	205.77	292.44	285.43	7.02	41.686	
1,725.00	1,719.40	1,674.81	1,668.08	3.99	3.92	-166.80	-17.29	209.85	300.08	292.96	7.13	42.103	
1,750.00	1,744.15	1,698.61	1,691.52	4.07	4.01	-166.80	-18.04	213.93	307.73	300.49	7.24	42.508	
1,775.00	1,768.90	1,722.42	1,714.96	4.15	4.09	-166.80	-18.79	218.01	315.37	308.01	7.35	42.895	
1,800.00	1,793.64	1,746.22	1,738.39	4.23	4.17	-166.80	-19.54	222.08	323.01	315.54	7.46	43.270	
1,825.00	1,818.39	1,770.02	1,761.83	4.31	4.26	-166.79	-20.29	226.16	330.65	323.07	7.58	43.631	
1,850.00	1,843.14	1,793.83	1,785.27	4.39	4.34	-166.79	-21.04	230.24	338.29	330.60	7.69	43.981	
1,875.00	1,867.89	1,817.63	1,808.71	4.47	4.42	-166.79	-21.79	234.31	345.93	338.13	7.81	44.317	
1,900.00	1,892.63	1,841.43	1,832.15	4.55	4.51	-166.79	-22.54	238.39	353.58	345.66	7.92	44.643	
1,925.00	1,917.38	1,865.24	1,855.59	4.63	4.59	-166.79	-23.29	242.47	361.22	353.18	8.03	44.957	
1,950.00	1,942.13	1,889.04	1,879.03	4.71	4.68	-166.79	-24.05	246.55	368.86	360.71	8.15	45.262	
1,975.00	1,966.87	1,912.85	1,902.47	4.79	4.77	-166.79	-24.80	250.62	376.50	368.24	8.26	45.556	
2,000.00	1,991.62	1,936.65	1,925.91	4.87	4.85	-166.78	-25.55	254.70	384.14	375.76	8.38	45.841	
2,025.00	2,016.37	1,960.45	1,949.35	4.96	4.94	-166.78	-26.30	258.78	391.78	383.29	8.50	46.116	
2,050.00	2,041.11	1,984.26	1,972.79	5.04	5.03	-166.78	-27.05	262.85	399.43	390.81	8.61	46.384	
2,075.00	2,065.86	2,008.06	1,996.23	5.12	5.11	-166.78	-27.80	266.93	407.07	398.34	8.73	46.643	
2,100.00	2,090.61	2,031.86	2,019.67	5.20	5.20	-166.78	-28.55	271.01	414.71	405.86	8.84	46.894	
2,125.00	2,115.36	2,055.67	2,043.11	5.29	5.29	-166.78	-29.30	275.09	422.35	413.39	8.96	47.136	
2,150.00	2,140.10	2,079.47	2,066.55	5.37	5.38	-166.78	-30.05	279.16	429.99	420.92	9.08	47.373	
2,175.00	2,164.85	2,103.27	2,089.99	5.45	5.47	-166.78	-30.80	283.24	437.63	428.44	9.19	47.603	
2,200.00	2,189.60	2,127.08	2,113.43	5.53	5.55	-166.78	-31.56	287.32	445.28	435.96	9.31	47.825	
2,225.00	2,214.34	2,150.88	2,136.87	5.62	5.64	-166.77	-32.31	291.39	452.92	443.49	9.43	48.040	
2,250.00	2,239.09	2,174.68	2,160.31	5.70	5.73	-166.77	-33.06	295.47	460.56	451.01	9.55	48.250	
2,275.00	2,263.84	2,198.49	2,183.75	5.78	5.82	-166.77	-33.81	299.55	468.20	458.54	9.66	48.454	
2,300.00	2,288.59	2,222.29	2,207.19	5.87	5.91	-166.77	-34.56	303.63	475.84	466.06	9.78	48.652	
2,325.00	2,313.33	2,246.09	2,230.63	5.95	6.00	-166.77	-35.31	307.70	483.48	473.59	9.90	48.844	
2,350.00	2,338.08	2,269.90	2,254.07	6.04	6.09	-166.77	-36.06	311.78	491.13	481.11	10.02	49.032	
2,375.00	2,362.83	2,293.70	2,277.51	6.12	6.18	-166.77	-36.81	315.86	498.77	488.63	10.13	49.215	
2,400.00	2,387.57	2,317.50	2,300.95	6.20	6.27	-166.77	-37.56	319.93	506.41	496.16	10.25	49.392	
2,425.00	2,412.32	2,341.31	2,324.39	6.29	6.36	-166.77	-38.31	324.01	514.05	503.68	10.37	49.564	
2,450.00	2,437.07	2,365.11	2,347.83	6.37	6.45	-166.77	-39.06	328.09	521.69	511.20	10.49	49.733	
2,475.00	2,461.81	2,388.91	2,371.27	6.46	6.54	-166.77	-39.82	332.17	529.33	518.73	10.61	49.897	
2,500.00	2,486.56	2,412.72	2,394.71	6.54	6.63	-166.77	-40.57	336.24	536.98	526.25	10.73	50.057	
2,525.00	2,511.31	2,436.52	2,418.15	6.63	6.73	-166.77	-41.32	340.32	544.62	533.77	10.85	50.212	
2,550.00	2,536.06	2,460.32	2,441.58	6.71	6.82	-166.76	-42.07	344.40	552.26	541.29	10.97	50.364	
2,575.00	2,560.80	2,484.13	2,465.02	6.80	6.91	-166.76	-42.82	348.47	559.90	548.82	11.08	50.512	
2,600.00	2,585.55	2,507.93	2,488.46	6.88	7.00	-166.76	-43.57	352.55	567.54	556.34	11.20	50.657	
2,625.00	2,610.30	2,531.74	2,511.90	6.97	7.09	-166.76	-44.32	356.63	575.18	563.86	11.32	50.798	
2,650.00	2,635.04	2,555.54	2,535.34	7.05	7.18	-166.76	-45.07	360.71	582.83	571.38	11.44	50.935	
2,675.00	2,659.79	2,579.34	2,558.78	7.14	7.27	-166.76	-45.82	364.78	590.47	578.90	11.56	51.069	
2,700.00	2,684.54	2,603.15	2,582.22	7.22	7.37	-166.76	-46.57	368.86	598.11	586.43	11.68	51.201	
2,725.00	2,709.29	2,626.95	2,605.66	7.31	7.46	-166.76	-47.33	372.94	605.75	593.95	11.80	51.329	
2,750.00	2,734.03	2,650.75	2,629.10	7.40	7.55	-166.76	-48.08	377.01	613.39	601.47	11.92	51.454	
2,775.00	2,758.78	2,674.56	2,652.54	7.48	7.64	-166.76	-48.83	381.09	621.03	608.99	12.04	51.576	
2,800.00	2,783.53	2,698.36	2,675.98	7.57	7.73	-166.76	-49.58	385.17	628.68	616.51	12.16	51.696	
2,825.00	2,808.27	2,722.16	2,699.42	7.65	7.83	-166.76	-50.33	389.25	636.32	624.04	12.28	51.812	
2,850.00	2,833.02	2,745.97	2,722.86	7.74	7.92	-166.76	-51.08	393.32	643.96	631.56	12.40	51.927	
2,875.00	2,857.77	2,769.77	2,746.30	7.82	8.01	-166.76	-51.83	397.40	651.60	639.08	12.52	52.038	
2,900.00	2,882.52	2,793.57	2,769.74	7.91	8.10	-166.76	-52.58	401.48	659.24	646.60	12.64	52.148	
2,925.00	2,907.26	2,817.38	2,793.18	8.00	8.20	-166.76	-53.33	405.55	666.88	654.12	12.76	52.255	
2,950.00	2,932.01	2,841.18	2,816.62	8.08	8.29	-166.76	-54.08	409.63	674.53	661.64	12.88	52.359	

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 POWERS 28N-23HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	17' RKB + 4909' GL @ 4926.00ft
Reference Site:	WELD_POWER PAD	MD Reference:	17' RKB + 4909' GL @ 4926.00ft
Site Error:	0.00 ft	North Reference:	True
Reference Well:	POWERS 28N-23HZ	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	POWERS 28N-23HZ	Database:	edm5000p
Reference Design:	POWERS 28N-23HZ (wp01)	Offset TVD Reference:	Offset Datum

Offset Design WELD_POWER PAD - POWERS 1C-23HZ - POWERS 1C-23HZ - POWERS 1C-23HZ (wp01)												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	
2,975.00	2,956.76	2,864.98	2,840.06	8.17	8.38	-166.76	-54.84	413.71	682.17	669.16	13.00	52.462	
3,000.00	2,981.50	2,888.79	2,863.50	8.26	8.47	-166.76	-55.59	417.79	689.81	676.69	13.12	52.563	
3,025.00	3,006.25	2,912.59	2,886.94	8.34	8.57	-166.76	-56.34	421.86	697.45	684.21	13.24	52.661	
3,050.00	3,031.00	2,936.39	2,910.38	8.43	8.66	-166.75	-57.09	425.94	705.09	691.73	13.36	52.757	
3,075.00	3,055.74	2,960.20	2,933.82	8.51	8.75	-166.75	-57.84	430.02	712.73	699.25	13.49	52.851	
3,100.00	3,080.49	2,984.00	2,957.26	8.60	8.85	-166.75	-58.59	434.09	720.38	706.77	13.61	52.944	
3,125.00	3,105.24	3,007.80	2,980.70	8.69	8.94	-166.75	-59.34	438.17	728.02	714.29	13.73	53.034	
3,150.00	3,129.99	3,031.61	3,004.14	8.77	9.03	-166.75	-60.09	442.25	735.66	721.81	13.85	53.123	
3,175.00	3,154.73	3,055.41	3,027.58	8.86	9.13	-166.75	-60.84	446.33	743.30	729.33	13.97	53.210	
3,200.00	3,179.48	3,079.21	3,051.02	8.95	9.22	-166.75	-61.59	450.40	750.94	736.85	14.09	53.295	
3,225.00	3,204.23	3,103.02	3,074.46	9.03	9.31	-166.75	-62.35	454.48	758.58	744.37	14.21	53.379	
3,250.00	3,228.97	3,126.82	3,097.90	9.12	9.41	-166.75	-63.10	458.56	766.23	751.89	14.33	53.461	
3,275.00	3,253.72	3,150.63	3,121.33	9.21	9.50	-166.75	-63.85	462.63	773.87	759.41	14.45	53.541	
3,300.00	3,278.47	3,174.43	3,144.77	9.29	9.59	-166.75	-64.60	466.71	781.51	766.93	14.57	53.620	
3,325.00	3,303.22	3,198.23	3,168.21	9.38	9.69	-166.75	-65.35	470.79	789.15	774.45	14.70	53.698	
3,350.00	3,327.96	3,222.04	3,191.65	9.47	9.78	-166.75	-66.10	474.87	796.79	781.97	14.82	53.774	
3,375.00	3,352.71	3,245.84	3,215.09	9.55	9.87	-166.75	-66.85	478.94	804.43	789.49	14.94	53.849	
3,400.00	3,377.46	3,269.64	3,238.53	9.64	9.97	-166.75	-67.60	483.02	812.08	797.02	15.06	53.922	
3,425.00	3,402.20	3,293.45	3,261.97	9.73	10.06	-166.75	-68.35	487.10	819.72	804.54	15.18	53.994	
3,450.00	3,426.95	3,317.25	3,285.41	9.81	10.15	-166.75	-69.10	491.17	827.36	812.06	15.30	54.065	
3,475.00	3,451.70	3,341.05	3,308.85	9.90	10.25	-166.75	-69.86	495.25	835.00	819.58	15.42	54.134	
3,500.00	3,476.44	3,364.86	3,332.29	9.99	10.34	-166.75	-70.61	499.33	842.64	827.10	15.55	54.203	
3,525.00	3,501.19	3,388.66	3,355.73	10.07	10.43	-166.75	-71.36	503.41	850.28	834.62	15.67	54.270	
3,550.00	3,525.94	3,412.46	3,379.17	10.16	10.53	-166.75	-72.11	507.48	857.93	842.14	15.79	54.335	
3,575.00	3,550.69	3,436.27	3,402.61	10.25	10.62	-166.75	-72.86	511.56	865.57	849.66	15.91	54.400	
3,600.00	3,575.43	3,460.07	3,426.05	10.34	10.72	-166.75	-73.61	515.64	873.21	857.18	16.03	54.464	
3,625.00	3,600.18	3,483.87	3,449.49	10.42	10.81	-166.75	-74.36	519.71	880.85	864.70	16.15	54.526	
3,650.00	3,624.93	3,507.68	3,472.93	10.51	10.90	-166.75	-75.11	523.79	888.49	872.22	16.28	54.588	
3,675.00	3,649.67	3,531.48	3,496.37	10.60	11.00	-166.75	-75.86	527.87	896.13	879.74	16.40	54.648	
3,700.00	3,674.42	3,555.28	3,519.81	10.68	11.09	-166.75	-76.61	531.95	903.78	887.26	16.52	54.708	
3,725.00	3,699.17	3,579.09	3,543.25	10.77	11.19	-166.75	-77.37	536.02	911.42	894.78	16.64	54.767	
3,750.00	3,723.92	3,602.89	3,566.69	10.86	11.28	-166.75	-78.12	540.10	919.06	902.29	16.76	54.824	
3,775.00	3,748.66	3,626.69	3,590.13	10.95	11.37	-166.75	-78.87	544.18	926.70	909.81	16.89	54.881	
3,800.00	3,773.41	3,650.50	3,613.57	11.03	11.47	-166.75	-79.62	548.25	934.34	917.33	17.01	54.937	
3,825.00	3,798.16	3,674.30	3,637.01	11.12	11.56	-166.75	-80.37	552.33	941.98	924.85	17.13	54.991	
3,850.00	3,822.90	3,698.10	3,660.45	11.21	11.66	-166.75	-81.12	556.41	949.63	932.37	17.25	55.045	
3,875.00	3,847.65	3,721.91	3,683.89	11.30	11.75	-166.75	-81.87	560.49	957.27	939.89	17.37	55.099	
3,900.00	3,872.40	3,745.71	3,707.33	11.38	11.85	-166.75	-82.62	564.56	964.91	947.41	17.50	55.151	
3,925.00	3,897.14	3,769.52	3,730.77	11.47	11.94	-166.75	-83.37	568.64	972.55	954.93	17.62	55.202	
3,950.00	3,921.89	3,793.32	3,754.21	11.56	12.03	-166.75	-84.12	572.72	980.19	962.45	17.74	55.253	
3,975.00	3,946.64	3,817.12	3,777.65	11.65	12.13	-166.74	-84.88	576.79	987.83	969.97	17.86	55.303	
4,000.00	3,971.39	3,840.93	3,801.09	11.73	12.22	-166.74	-85.63	580.87	995.48	977.49	17.98	55.352	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well POWERS 28N-23HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	17' RKB + 4909' GL @ 4926.00ft
Reference Site:	WELD_POWER PAD	MD Reference:	17' RKB + 4909' GL @ 4926.00ft
Site Error:	0.00 ft	North Reference:	True
Reference Well:	POWERS 28N-23HZ	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	POWERS 28N-23HZ	Database:	edm5000p
Reference Design:	POWERS 28N-23HZ (wp01)	Offset TVD Reference:	Offset Datum

Offset Design WELD_POWER PAD - POWERS 1N-23HZ - POWERS 1N-23HZ - POWERS 1N-23HZ (wp01)												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	90.22	-0.37	95.93	95.93				
25.00	25.00	25.00	25.00	0.01	0.02	90.22	-0.37	95.93	95.93	95.90	0.03	2,968.972	
50.00	50.00	50.00	50.00	0.04	0.05	90.22	-0.37	95.93	95.93	95.84	0.08	1,145.744	
75.00	75.00	75.00	75.00	0.07	0.07	90.22	-0.37	95.93	95.93	95.79	0.14	709.837	
100.00	100.00	100.00	100.00	0.09	0.09	90.22	-0.37	95.93	95.93	95.74	0.19	514.204	
125.00	125.00	125.00	125.00	0.15	0.15	90.22	-0.37	95.93	95.93	95.63	0.30	320.895	
150.00	150.00	150.00	150.00	0.21	0.21	90.22	-0.37	95.93	95.93	95.52	0.41	233.219	
175.00	175.00	175.00	175.00	0.26	0.26	90.22	-0.37	95.93	95.93	95.40	0.52	183.172	
200.00	200.00	200.00	200.00	0.32	0.32	90.22	-0.37	95.93	95.93	95.29	0.64	150.809	
225.00	225.00	225.00	225.00	0.37	0.37	90.22	-0.37	95.93	95.93	95.18	0.75	128.165	
250.00	250.00	250.00	250.00	0.43	0.43	90.22	-0.37	95.93	95.93	95.07	0.86	111.433	
275.00	275.00	275.00	275.00	0.49	0.49	90.22	-0.37	95.93	95.93	94.95	0.97	98.566	
300.00	300.00	300.00	300.00	0.54	0.54	90.22	-0.37	95.93	95.93	94.84	1.09	88.362	
325.00	325.00	325.00	325.00	0.60	0.60	90.22	-0.37	95.93	95.93	94.73	1.20	80.073	
350.00	350.00	350.00	350.00	0.66	0.66	90.22	-0.37	95.93	95.93	94.62	1.31	73.206	
375.00	375.00	375.00	375.00	0.71	0.71	90.22	-0.37	95.93	95.93	94.51	1.42	67.423	
400.00	400.00	400.00	400.00	0.77	0.77	90.22	-0.37	95.93	95.93	94.39	1.54	62.488	
425.00	425.00	425.00	425.00	0.82	0.82	90.22	-0.37	95.93	95.93	94.28	1.65	58.225	
450.00	450.00	450.00	450.00	0.88	0.88	90.22	-0.37	95.93	95.93	94.17	1.76	54.507	
475.00	475.00	475.00	475.00	0.94	0.94	90.22	-0.37	95.93	95.93	94.06	1.87	51.235	
500.00	500.00	500.00	500.00	0.99	0.99	90.22	-0.37	95.93	95.93	93.94	1.98	48.334	
525.00	525.00	525.00	525.00	1.05	1.05	90.22	-0.37	95.93	95.93	93.83	2.10	45.744	
550.00	550.00	550.00	550.00	1.10	1.10	90.22	-0.37	95.93	95.93	93.72	2.21	43.417	
575.00	575.00	575.00	575.00	1.16	1.16	90.22	-0.37	95.93	95.93	93.61	2.32	41.316	
600.00	600.00	600.00	600.00	1.22	1.22	90.22	-0.37	95.93	95.93	93.49	2.43	39.408	
625.00	625.00	625.00	625.00	1.27	1.27	90.22	-0.37	95.93	95.93	93.38	2.55	37.669	
650.00	650.00	650.00	650.00	1.33	1.33	90.22	-0.37	95.93	95.93	93.27	2.66	36.077	
675.00	675.00	675.00	675.00	1.39	1.39	90.22	-0.37	95.93	95.93	93.16	2.77	34.614	
700.00	700.00	700.00	700.00	1.44	1.44	90.22	-0.37	95.93	95.93	93.04	2.88	33.265	
725.00	725.00	725.00	725.00	1.50	1.50	90.22	-0.37	95.93	95.93	92.93	3.00	32.017	
750.00	750.00	750.00	750.00	1.55	1.55	90.22	-0.37	95.93	95.93	92.82	3.11	30.860	
775.00	775.00	775.00	775.00	1.61	1.61	90.22	-0.37	95.93	95.93	92.71	3.22	29.783	
800.00	800.00	800.00	800.00	1.67	1.67	90.22	-0.37	95.93	95.93	92.59	3.33	28.779	
825.00	825.00	825.00	825.00	1.72	1.72	90.22	-0.37	95.93	95.93	92.48	3.45	27.840	
850.00	850.00	850.00	850.00	1.78	1.78	90.22	-0.37	95.93	95.93	92.37	3.56	26.961	
875.00	875.00	875.00	875.00	1.84	1.84	90.22	-0.37	95.93	95.93	92.26	3.67	26.135	
900.00	900.00	900.00	900.00	1.89	1.89	90.22	-0.37	95.93	95.93	92.15	3.78	25.359 CC, ES	
925.00	925.00	924.21	924.21	1.94	1.94	-166.44	-0.39	96.03	96.14	92.25	3.88	24.748	
950.00	950.00	948.42	948.41	2.00	1.99	-166.44	-0.47	96.32	96.76	92.77	3.99	24.274	
975.00	974.99	972.60	972.59	2.05	2.04	-166.43	-0.60	96.82	97.80	93.71	4.09	23.928	
1,000.00	999.98	996.75	996.74	2.10	2.09	-166.42	-0.78	97.51	99.26	95.07	4.19	23.700	
1,025.00	1,024.96	1,020.87	1,020.83	2.15	2.14	-166.40	-1.02	98.39	101.13	96.85	4.28	23.613 SF	
1,050.00	1,049.93	1,044.93	1,044.87	2.20	2.19	-166.39	-1.30	99.47	103.42	99.04	4.38	23.630	
1,075.00	1,074.89	1,068.94	1,068.84	2.25	2.24	-166.37	-1.64	100.74	106.12	101.65	4.47	23.740	
1,100.00	1,099.84	1,092.87	1,092.72	2.30	2.29	-166.35	-2.02	102.20	109.23	104.66	4.56	23.939	
1,125.00	1,124.77	1,116.73	1,116.52	2.36	2.34	-166.33	-2.46	103.85	112.75	108.09	4.66	24.207	
1,150.00	1,149.68	1,140.49	1,140.21	2.41	2.39	-166.31	-2.94	105.68	116.68	111.92	4.75	24.551	
1,175.00	1,174.58	1,164.16	1,163.79	2.46	2.44	-166.28	-3.47	107.70	121.01	116.17	4.85	24.969	
1,200.00	1,199.45	1,187.73	1,187.24	2.52	2.49	-166.25	-4.05	109.89	125.75	120.81	4.94	25.457	
1,225.00	1,224.30	1,211.18	1,210.57	2.58	2.54	-166.23	-4.67	112.25	130.90	125.86	5.04	25.997	
1,250.00	1,249.13	1,234.50	1,233.74	2.64	2.60	-166.20	-5.34	114.79	136.44	131.31	5.13	26.596	
1,275.00	1,273.93	1,257.69	1,256.76	2.70	2.65	-166.17	-6.05	117.49	142.38	137.15	5.22	27.252	

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 POWERS 28N-23HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	17' RKB + 4909' GL @ 4926.00ft
Reference Site:	WELD_POWER PAD	MD Reference:	17' RKB + 4909' GL @ 4926.00ft
Site Error:	0.00 ft	North Reference:	True
Reference Well:	POWERS 28N-23HZ	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	POWERS 28N-23HZ	Database:	edm5000p
Reference Design:	POWERS 28N-23HZ (wp01)	Offset TVD Reference:	Offset Datum

Offset Design WELD_POWER PAD - POWERS 1N-23HZ - POWERS 1N-23HZ - POWERS 1N-23HZ (wp01)												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
1,300.00	1,298.70	1,281.13	1,280.01	2.76	2.71	-166.14	-6.82	120.40	148.70	143.38	5.32	27.957	
1,307.86	1,306.49	1,288.72	1,287.54	2.78	2.73	-166.13	-7.07	121.35	150.75	145.40	5.35	28.181	
1,325.00	1,323.45	1,305.27	1,303.94	2.83	2.77	-166.14	-7.62	123.43	155.23	149.80	5.42	28.636	
1,350.00	1,348.20	1,329.40	1,327.87	2.89	2.83	-166.16	-8.41	126.45	161.76	156.23	5.53	29.275	
1,375.00	1,372.94	1,353.53	1,351.80	2.96	2.90	-166.17	-9.21	129.48	168.29	162.66	5.63	29.891	
1,400.00	1,397.69	1,377.66	1,375.72	3.03	2.96	-166.18	-10.01	132.51	174.82	169.09	5.73	30.484	
1,425.00	1,422.44	1,401.79	1,399.65	3.10	3.02	-166.19	-10.81	135.54	181.36	175.51	5.84	31.048	
1,450.00	1,447.19	1,425.92	1,423.58	3.17	3.09	-166.20	-11.61	138.57	187.89	181.94	5.95	31.586	
1,475.00	1,471.93	1,450.06	1,447.50	3.24	3.15	-166.21	-12.41	141.60	194.42	188.36	6.06	32.105	
1,500.00	1,496.68	1,474.19	1,471.43	3.31	3.22	-166.22	-13.21	144.63	200.95	194.79	6.16	32.605	
1,525.00	1,521.43	1,498.32	1,495.36	3.39	3.29	-166.22	-14.00	147.66	207.49	201.21	6.27	33.083	
1,550.00	1,546.17	1,522.45	1,519.29	3.46	3.36	-166.23	-14.80	150.69	214.02	207.64	6.38	33.539	
1,575.00	1,570.92	1,546.58	1,543.21	3.53	3.42	-166.24	-15.60	153.72	220.55	214.06	6.49	33.980	
1,600.00	1,595.67	1,570.71	1,567.14	3.61	3.49	-166.24	-16.40	156.75	227.08	220.48	6.60	34.406	
1,625.00	1,620.41	1,594.84	1,591.07	3.69	3.56	-166.25	-17.20	159.78	233.62	226.91	6.71	34.813	
1,650.00	1,645.16	1,618.98	1,614.99	3.76	3.63	-166.26	-18.00	162.81	240.15	233.33	6.82	35.204	
1,675.00	1,669.91	1,643.11	1,638.92	3.84	3.70	-166.26	-18.80	165.84	246.68	239.75	6.93	35.581	
1,700.00	1,694.66	1,667.24	1,662.85	3.92	3.77	-166.27	-19.59	168.87	253.21	246.17	7.04	35.946	
1,725.00	1,719.40	1,691.37	1,686.78	3.99	3.84	-166.27	-20.39	171.90	259.75	252.59	7.16	36.296	
1,750.00	1,744.15	1,715.50	1,710.70	4.07	3.91	-166.28	-21.19	174.92	266.28	259.01	7.27	36.634	
1,775.00	1,768.90	1,739.63	1,734.63	4.15	3.99	-166.28	-21.99	177.95	272.81	265.43	7.38	36.959	
1,800.00	1,793.64	1,763.76	1,758.56	4.23	4.06	-166.29	-22.79	180.98	279.34	271.85	7.49	37.275	
1,825.00	1,818.39	1,787.90	1,782.48	4.31	4.13	-166.29	-23.59	184.01	285.88	278.27	7.61	37.579	
1,850.00	1,843.14	1,812.03	1,806.41	4.39	4.20	-166.29	-24.38	187.04	292.41	284.69	7.72	37.872	
1,875.00	1,867.89	1,836.16	1,830.34	4.47	4.28	-166.30	-25.18	190.07	298.94	291.11	7.83	38.155	
1,900.00	1,892.63	1,860.29	1,854.27	4.55	4.35	-166.30	-25.98	193.10	305.47	297.53	7.95	38.430	
1,925.00	1,917.38	1,884.42	1,878.19	4.63	4.42	-166.30	-26.78	196.13	312.01	303.94	8.06	38.695	
1,950.00	1,942.13	1,908.55	1,902.12	4.71	4.50	-166.31	-27.58	199.16	318.54	310.36	8.18	38.952	
1,975.00	1,966.87	1,932.68	1,926.05	4.79	4.57	-166.31	-28.38	202.19	325.07	316.78	8.29	39.200	
2,000.00	1,991.62	1,956.82	1,949.98	4.87	4.64	-166.31	-29.18	205.22	331.60	323.20	8.41	39.441	
2,025.00	2,016.37	1,980.95	1,973.90	4.96	4.72	-166.32	-29.97	208.25	338.14	329.61	8.52	39.674	
2,050.00	2,041.11	2,005.08	1,997.83	5.04	4.79	-166.32	-30.77	211.28	344.67	336.03	8.64	39.900	
2,075.00	2,065.86	2,029.21	2,021.76	5.12	4.87	-166.32	-31.57	214.31	351.20	342.45	8.75	40.119	
2,100.00	2,090.61	2,053.34	2,045.68	5.20	4.94	-166.32	-32.37	217.34	357.74	348.87	8.87	40.332	
2,125.00	2,115.36	2,077.47	2,069.61	5.29	5.02	-166.33	-33.17	220.37	364.27	355.28	8.99	40.538	
2,150.00	2,140.10	2,101.60	2,093.54	5.37	5.09	-166.33	-33.97	223.39	370.80	361.70	9.10	40.739	
2,175.00	2,164.85	2,125.74	2,117.47	5.45	5.17	-166.33	-34.77	226.42	377.33	368.11	9.22	40.933	
2,200.00	2,189.60	2,149.87	2,141.39	5.53	5.25	-166.33	-35.56	229.45	383.87	374.53	9.33	41.122	
2,225.00	2,214.34	2,174.00	2,165.32	5.62	5.32	-166.34	-36.36	232.48	390.40	380.95	9.45	41.305	
2,250.00	2,239.09	2,198.13	2,189.25	5.70	5.40	-166.34	-37.16	235.51	396.93	387.36	9.57	41.484	
2,275.00	2,263.84	2,222.26	2,213.17	5.78	5.47	-166.34	-37.96	238.54	403.46	393.78	9.69	41.657	
2,300.00	2,288.59	2,246.39	2,237.10	5.87	5.55	-166.34	-38.76	241.57	410.00	400.19	9.80	41.826	
2,325.00	2,313.33	2,270.52	2,261.03	5.95	5.63	-166.34	-39.56	244.60	416.53	406.61	9.92	41.990	
2,350.00	2,338.08	2,294.65	2,284.96	6.04	5.70	-166.35	-40.35	247.63	423.06	413.02	10.04	42.150	
2,375.00	2,362.83	2,318.79	2,308.88	6.12	5.78	-166.35	-41.15	250.66	429.59	419.44	10.15	42.306	
2,400.00	2,387.57	2,342.92	2,332.81	6.20	5.85	-166.35	-41.95	253.69	436.13	425.85	10.27	42.457	
2,425.00	2,412.32	2,367.05	2,356.74	6.29	5.93	-166.35	-42.75	256.72	442.66	432.27	10.39	42.605	
2,450.00	2,437.07	2,391.18	2,380.66	6.37	6.01	-166.35	-43.55	259.75	449.19	438.68	10.51	42.749	
2,475.00	2,461.81	2,415.31	2,404.59	6.46	6.09	-166.35	-44.35	262.78	455.72	445.10	10.63	42.889	
2,500.00	2,486.56	2,439.44	2,428.52	6.54	6.16	-166.36	-45.15	265.81	462.26	451.51	10.74	43.026	
2,525.00	2,511.31	2,463.57	2,452.45	6.63	6.24	-166.36	-45.94	268.84	468.79	457.93	10.86	43.159	
2,550.00	2,536.06	2,487.71	2,476.37	6.71	6.32	-166.36	-46.74	271.86	475.32	464.34	10.98	43.289	

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 POWERS 28N-23HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	17' RKB + 4909' GL @ 4926.00ft
Reference Site:	WELD_POWER PAD	MD Reference:	17' RKB + 4909' GL @ 4926.00ft
Site Error:	0.00 ft	North Reference:	True
Reference Well:	POWERS 28N-23HZ	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	POWERS 28N-23HZ	Database:	edm5000p
Reference Design:	POWERS 28N-23HZ (wp01)	Offset TVD Reference:	Offset Datum

Offset Design WELD_POWER PAD - POWERS 1N-23HZ - POWERS 1N-23HZ - POWERS 1N-23HZ (wp01)												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
2,575.00	2,560.80	2,511.84	2,500.30	6.80	6.39	-166.36	-47.54	274.89	481.85	470.76	11.10	43.416	
2,600.00	2,585.55	2,535.97	2,524.23	6.88	6.47	-166.36	-48.34	277.92	488.39	477.17	11.22	43.540	
2,625.00	2,610.30	2,560.10	2,548.15	6.97	6.55	-166.36	-49.14	280.95	494.92	483.58	11.34	43.661	
2,650.00	2,635.04	2,584.23	2,572.08	7.05	6.63	-166.36	-49.94	283.98	501.45	490.00	11.45	43.779	
2,675.00	2,659.79	2,608.36	2,596.01	7.14	6.70	-166.37	-50.74	287.01	507.98	496.41	11.57	43.895	
2,700.00	2,684.54	2,632.49	2,619.94	7.22	6.78	-166.37	-51.53	290.04	514.52	502.83	11.69	44.007	
2,725.00	2,709.29	2,656.63	2,643.86	7.31	6.86	-166.37	-52.33	293.07	521.05	509.24	11.81	44.117	
2,750.00	2,734.03	2,680.76	2,667.79	7.40	6.94	-166.37	-53.13	296.10	527.58	515.65	11.93	44.225	
2,775.00	2,758.78	2,704.89	2,691.72	7.48	7.02	-166.37	-53.93	299.13	534.12	522.07	12.05	44.331	
2,800.00	2,783.53	2,729.02	2,715.65	7.57	7.09	-166.37	-54.73	302.16	540.65	528.48	12.17	44.434	
2,825.00	2,808.27	2,753.15	2,739.57	7.65	7.17	-166.37	-55.53	305.19	547.18	534.89	12.29	44.534	
2,850.00	2,833.02	2,777.28	2,763.50	7.74	7.25	-166.37	-56.32	308.22	553.71	541.31	12.41	44.633	
2,875.00	2,857.77	2,801.41	2,787.43	7.82	7.33	-166.37	-57.12	311.25	560.25	547.72	12.53	44.729	
2,900.00	2,882.52	2,825.55	2,811.35	7.91	7.41	-166.38	-57.92	314.28	566.78	554.13	12.64	44.824	
2,925.00	2,907.26	2,849.68	2,835.28	8.00	7.48	-166.38	-58.72	317.31	573.31	560.55	12.76	44.916	
2,950.00	2,932.01	2,873.81	2,859.21	8.08	7.56	-166.38	-59.52	320.33	579.84	566.96	12.88	45.006	
2,975.00	2,956.76	2,897.94	2,883.14	8.17	7.64	-166.38	-60.32	323.36	586.38	573.37	13.00	45.095	
3,000.00	2,981.50	2,922.07	2,907.06	8.26	7.72	-166.38	-61.12	326.39	592.91	579.79	13.12	45.182	
3,025.00	3,006.25	2,946.20	2,930.99	8.34	7.80	-166.38	-61.91	329.42	599.44	586.20	13.24	45.267	
3,050.00	3,031.00	2,970.33	2,954.92	8.43	7.88	-166.38	-62.71	332.45	605.97	592.61	13.36	45.350	
3,075.00	3,055.74	2,994.47	2,978.84	8.51	7.95	-166.38	-63.51	335.48	612.51	599.02	13.48	45.432	
3,100.00	3,080.49	3,018.60	3,002.77	8.60	8.03	-166.38	-64.31	338.51	619.04	605.44	13.60	45.512	
3,125.00	3,105.24	3,042.73	3,026.70	8.69	8.11	-166.38	-65.11	341.54	625.57	611.85	13.72	45.591	
3,150.00	3,129.99	3,066.86	3,050.63	8.77	8.19	-166.39	-65.91	344.57	632.10	618.26	13.84	45.667	
3,175.00	3,154.73	3,090.99	3,074.55	8.86	8.27	-166.39	-66.71	347.60	638.64	624.68	13.96	45.743	
3,200.00	3,179.48	3,115.12	3,098.48	8.95	8.35	-166.39	-67.50	350.63	645.17	631.09	14.08	45.817	
3,225.00	3,204.23	3,139.25	3,122.41	9.03	8.43	-166.39	-68.30	353.66	651.70	637.50	14.20	45.890	
3,250.00	3,228.97	3,163.39	3,146.33	9.12	8.51	-166.39	-69.10	356.69	658.23	643.91	14.32	45.961	
3,275.00	3,253.72	3,187.52	3,170.26	9.21	8.58	-166.39	-69.90	359.72	664.77	650.33	14.44	46.031	
3,300.00	3,278.47	3,211.65	3,194.19	9.29	8.66	-166.39	-70.70	362.75	671.30	656.74	14.56	46.100	
3,325.00	3,303.22	3,235.78	3,218.12	9.38	8.74	-166.39	-71.50	365.77	677.83	663.15	14.68	46.167	
3,350.00	3,327.96	3,259.91	3,242.04	9.47	8.82	-166.39	-72.29	368.80	684.37	669.56	14.80	46.233	
3,375.00	3,352.71	3,284.04	3,265.97	9.55	8.90	-166.39	-73.09	371.83	690.90	675.98	14.92	46.298	
3,400.00	3,377.46	3,308.17	3,289.90	9.64	8.98	-166.39	-73.89	374.86	697.43	682.39	15.04	46.362	
3,425.00	3,402.20	3,332.31	3,313.82	9.73	9.06	-166.39	-74.69	377.89	703.96	688.80	15.16	46.425	
3,450.00	3,426.95	3,356.44	3,337.75	9.81	9.14	-166.39	-75.49	380.92	710.50	695.21	15.28	46.487	
3,475.00	3,451.70	3,380.57	3,361.68	9.90	9.22	-166.39	-76.29	383.95	717.03	701.62	15.40	46.547	
3,500.00	3,476.44	3,404.70	3,385.61	9.99	9.30	-166.40	-77.09	386.98	723.56	708.04	15.52	46.607	
3,525.00	3,501.19	3,428.83	3,409.53	10.07	9.37	-166.40	-77.88	390.01	730.09	714.45	15.65	46.665	
3,550.00	3,525.94	3,452.96	3,433.46	10.16	9.45	-166.40	-78.68	393.04	736.63	720.86	15.77	46.723	
3,575.00	3,550.69	3,477.09	3,457.39	10.25	9.53	-166.40	-79.48	396.07	743.16	727.27	15.89	46.779	
3,600.00	3,575.43	3,501.23	3,481.32	10.34	9.61	-166.40	-80.28	399.10	749.69	733.68	16.01	46.835	
3,625.00	3,600.18	3,525.36	3,505.24	10.42	9.69	-166.40	-81.08	402.13	756.22	740.10	16.13	46.890	
3,650.00	3,624.93	3,549.49	3,529.17	10.51	9.77	-166.40	-81.88	405.16	762.76	746.51	16.25	46.943	
3,675.00	3,649.67	3,573.62	3,553.10	10.60	9.85	-166.40	-82.68	408.19	769.29	752.92	16.37	46.996	
3,700.00	3,674.42	3,597.75	3,577.02	10.68	9.93	-166.40	-83.47	411.22	775.82	759.33	16.49	47.049	
3,725.00	3,699.17	3,621.88	3,600.95	10.77	10.01	-166.40	-84.27	414.24	782.35	765.74	16.61	47.100	
3,750.00	3,723.92	3,646.01	3,624.88	10.86	10.09	-166.40	-85.07	417.27	788.89	772.16	16.73	47.150	
3,775.00	3,748.66	3,670.15	3,648.81	10.95	10.17	-166.40	-85.87	420.30	795.42	778.57	16.85	47.200	
3,800.00	3,773.41	3,694.28	3,672.73	11.03	10.25	-166.40	-86.67	423.33	801.95	784.98	16.97	47.249	
3,825.00	3,798.16	3,718.41	3,696.66	11.12	10.33	-166.40	-87.47	426.36	808.48	791.39	17.09	47.297	
3,850.00	3,822.90	3,742.54	3,720.59	11.21	10.41	-166.40	-88.26	429.39	815.02	797.80	17.21	47.344	

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 POWERS 28N-23HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	17' RKB + 4909' GL @ 4926.00ft
Reference Site:	WELD_POWER PAD	MD Reference:	17' RKB + 4909' GL @ 4926.00ft
Site Error:	0.00 ft	North Reference:	True
Reference Well:	POWERS 28N-23HZ	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	POWERS 28N-23HZ	Database:	edm5000p
Reference Design:	POWERS 28N-23HZ (wp01)	Offset TVD Reference:	Offset Datum

Offset Design WELD_POWER PAD - POWERS 1N-23HZ - POWERS 1N-23HZ - POWERS 1N-23HZ (wp01)												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 +N/-S (ft)	Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)		Separation Factor
3,875.00	3,847.65	3,766.67	3,744.51	11.30	10.48	-166.40	-89.06	432.42	821.55	804.21	17.34	47.390	
3,900.00	3,872.40	3,790.80	3,768.44	11.38	10.56	-166.40	-89.86	435.45	828.08	810.63	17.46	47.436	
3,925.00	3,897.14	3,814.93	3,792.37	11.47	10.64	-166.40	-90.66	438.48	834.62	817.04	17.58	47.481	
3,950.00	3,921.89	3,839.07	3,816.30	11.56	10.72	-166.40	-91.46	441.51	841.15	823.45	17.70	47.526	
3,975.00	3,946.64	3,863.20	3,840.22	11.65	10.80	-166.41	-92.26	444.54	847.68	829.86	17.82	47.570	
4,000.00	3,971.39	3,887.33	3,864.15	11.73	10.88	-166.41	-93.06	447.57	854.21	836.27	17.94	47.613	
4,025.00	3,996.13	3,911.46	3,888.08	11.82	10.96	-166.41	-93.85	450.60	860.75	842.68	18.06	47.656	
4,050.00	4,020.88	3,935.59	3,912.00	11.91	11.04	-166.41	-94.65	453.63	867.28	849.10	18.18	47.697	
4,075.00	4,045.63	3,959.72	3,935.93	11.99	11.12	-166.41	-95.45	456.66	873.81	855.51	18.30	47.739	
4,100.00	4,070.37	3,983.85	3,959.86	12.08	11.20	-166.41	-96.25	459.69	880.34	861.92	18.43	47.780	
4,125.00	4,095.12	4,007.99	3,983.79	12.17	11.28	-166.41	-97.05	462.71	886.88	868.33	18.55	47.820	
4,150.00	4,119.87	4,032.12	4,007.71	12.26	11.36	-166.41	-97.85	465.74	893.41	874.74	18.67	47.859	
4,175.00	4,144.62	4,056.25	4,031.64	12.34	11.44	-166.41	-98.65	468.77	899.94	881.15	18.79	47.898	
4,200.00	4,169.36	4,080.38	4,055.57	12.43	11.52	-166.41	-99.44	471.80	906.47	887.56	18.91	47.937	
4,225.00	4,194.11	4,104.51	4,079.49	12.52	11.60	-166.41	-100.24	474.83	913.01	893.98	19.03	47.975	
4,250.00	4,218.86	4,128.64	4,103.42	12.61	11.68	-166.41	-101.04	477.86	919.54	900.39	19.15	48.012	
4,275.00	4,243.60	4,152.77	4,127.35	12.70	11.76	-166.41	-101.84	480.89	926.07	906.80	19.27	48.049	
4,300.00	4,268.35	4,176.91	4,151.28	12.78	11.84	-166.41	-102.64	483.92	932.60	913.21	19.39	48.085	
4,325.00	4,293.10	4,201.04	4,175.20	12.87	11.92	-166.41	-103.44	486.95	939.14	919.62	19.52	48.121	
4,350.00	4,317.84	4,225.17	4,199.13	12.96	12.00	-166.41	-104.23	489.98	945.67	926.03	19.64	48.156	
4,375.00	4,342.59	4,249.30	4,223.06	13.05	12.08	-166.41	-105.03	493.01	952.20	932.44	19.76	48.191	
4,400.00	4,367.34	4,273.43	4,246.99	13.13	12.16	-166.41	-105.83	496.04	958.73	938.85	19.88	48.226	
4,425.00	4,392.09	4,297.56	4,270.91	13.22	12.24	-166.41	-106.63	499.07	965.27	945.27	20.00	48.260	
4,450.00	4,416.83	4,321.69	4,294.84	13.31	12.32	-166.41	-107.43	502.10	971.80	951.68	20.12	48.293	
4,475.00	4,441.58	4,345.82	4,318.77	13.40	12.40	-166.41	-108.23	505.13	978.33	958.09	20.24	48.326	
4,500.00	4,466.33	4,369.96	4,342.69	13.48	12.48	-166.41	-109.03	508.16	984.86	964.50	20.37	48.359	
4,525.00	4,491.07	4,394.09	4,366.62	13.57	12.56	-166.41	-109.82	511.18	991.40	970.91	20.49	48.391	
4,550.00	4,515.82	4,418.22	4,390.55	13.66	12.64	-166.41	-110.62	514.21	997.93	977.32	20.61	48.423	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well POWERS 28N-23HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	17' RKB + 4909' GL @ 4926.00ft
Reference Site:	WELD_POWER PAD	MD Reference:	17' RKB + 4909' GL @ 4926.00ft
Site Error:	0.00 ft	North Reference:	True
Reference Well:	POWERS 28N-23HZ	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	POWERS 28N-23HZ	Database:	edm5000p
Reference Design:	POWERS 28N-23HZ (wp01)	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	90.03	-0.01	24.05	24.05				
25.00	25.00	25.00	25.00	0.01	0.02	90.03	-0.01	24.05	24.05	24.02	0.03	744.402	
50.00	50.00	50.00	50.00	0.04	0.05	90.03	-0.01	24.05	24.05	23.97	0.08	287.269	
75.00	75.00	75.00	75.00	0.07	0.07	90.03	-0.01	24.05	24.05	23.92	0.14	177.975	
100.00	100.00	100.00	100.00	0.09	0.09	90.03	-0.01	24.05	24.05	23.87	0.19	128.925	
125.00	125.00	125.00	125.00	0.15	0.15	90.03	-0.01	24.05	24.05	23.75	0.30	80.457	
150.00	150.00	150.00	150.00	0.21	0.21	90.03	-0.01	24.05	24.05	23.64	0.41	58.474	
175.00	175.00	175.00	175.00	0.26	0.26	90.03	-0.01	24.05	24.05	23.53	0.52	45.926	
200.00	200.00	200.00	200.00	0.32	0.32	90.03	-0.01	24.05	24.05	23.42	0.64	37.812	
225.00	225.00	225.00	225.00	0.37	0.37	90.03	-0.01	24.05	24.05	23.30	0.75	32.134	
250.00	250.00	250.00	250.00	0.43	0.43	90.03	-0.01	24.05	24.05	23.19	0.86	27.939	
275.00	275.00	275.00	275.00	0.49	0.49	90.03	-0.01	24.05	24.05	23.08	0.97	24.713	
300.00	300.00	300.00	300.00	0.54	0.54	90.03	-0.01	24.05	24.05	22.97	1.09	22.155	
325.00	325.00	325.00	325.00	0.60	0.60	90.03	-0.01	24.05	24.05	22.85	1.20	20.077	
350.00	350.00	350.00	350.00	0.66	0.66	90.03	-0.01	24.05	24.05	22.74	1.31	18.355	
375.00	375.00	375.00	375.00	0.71	0.71	90.03	-0.01	24.05	24.05	22.63	1.42	16.905	
400.00	400.00	400.00	400.00	0.77	0.77	90.03	-0.01	24.05	24.05	22.52	1.54	15.667	
425.00	425.00	425.00	425.00	0.82	0.82	90.03	-0.01	24.05	24.05	22.40	1.65	14.599	
450.00	450.00	450.00	450.00	0.88	0.88	90.03	-0.01	24.05	24.05	22.29	1.76	13.666	
475.00	475.00	475.00	475.00	0.94	0.94	90.03	-0.01	24.05	24.05	22.18	1.87	12.846	
500.00	500.00	500.00	500.00	0.99	0.99	90.03	-0.01	24.05	24.05	22.07	1.98	12.119	
525.00	525.00	525.00	525.00	1.05	1.05	90.03	-0.01	24.05	24.05	21.95	2.10	11.469	
550.00	550.00	550.00	550.00	1.10	1.10	90.03	-0.01	24.05	24.05	21.84	2.21	10.886	
575.00	575.00	575.00	575.00	1.16	1.16	90.03	-0.01	24.05	24.05	21.73	2.32	10.359	
600.00	600.00	600.00	600.00	1.22	1.22	90.03	-0.01	24.05	24.05	21.62	2.43	9.881	
625.00	625.00	625.00	625.00	1.27	1.27	90.03	-0.01	24.05	24.05	21.51	2.55	9.445	
650.00	650.00	650.00	650.00	1.33	1.33	90.03	-0.01	24.05	24.05	21.39	2.66	9.045	
675.00	675.00	675.00	675.00	1.39	1.39	90.03	-0.01	24.05	24.05	21.28	2.77	8.679	
700.00	700.00	700.00	700.00	1.44	1.44	90.03	-0.01	24.05	24.05	21.17	2.88	8.340	
725.00	725.00	725.00	725.00	1.50	1.50	90.03	-0.01	24.05	24.05	21.06	3.00	8.028	
750.00	750.00	750.00	750.00	1.55	1.55	90.03	-0.01	24.05	24.05	20.94	3.11	7.737	
775.00	775.00	775.00	775.00	1.61	1.61	90.03	-0.01	24.05	24.05	20.83	3.22	7.467	
800.00	800.00	800.00	800.00	1.67	1.67	90.03	-0.01	24.05	24.05	20.72	3.33	7.216	
825.00	825.00	825.00	825.00	1.72	1.72	90.03	-0.01	24.05	24.05	20.61	3.45	6.980	
850.00	850.00	850.00	850.00	1.78	1.78	90.03	-0.01	24.05	24.05	20.49	3.56	6.760	
875.00	875.00	875.00	875.00	1.84	1.84	90.03	-0.01	24.05	24.05	20.38	3.67	6.553	
900.00	900.00	900.00	900.00	1.89	1.89	90.03	-0.01	24.05	24.05	20.27	3.78	6.358	
925.00	925.00	925.21	925.21	1.94	1.94	-166.63	-0.04	23.94	24.05	20.16	3.89	6.188	
950.00	950.00	950.41	950.41	2.00	2.00	-166.62	-0.12	23.62	24.05	20.06	3.99	6.027	
975.00	974.99	975.62	975.61	2.05	2.05	-166.61	-0.25	23.08	24.05	19.95	4.09	5.874	
1,000.00	999.98	1,000.82	1,000.80	2.10	2.10	-166.60	-0.43	22.33	24.04	19.84	4.20	5.728	
1,025.00	1,024.96	1,026.03	1,025.99	2.15	2.15	-166.57	-0.67	21.36	24.03	19.74	4.29	5.598	
1,050.00	1,049.93	1,051.23	1,051.16	2.20	2.20	-166.55	-0.96	20.17	24.03	19.64	4.39	5.473	
1,075.00	1,074.89	1,076.44	1,076.33	2.25	2.25	-166.52	-1.30	18.78	24.02	19.53	4.49	5.354	
1,100.00	1,099.84	1,101.64	1,101.48	2.30	2.30	-166.49	-1.70	17.16	24.01	19.43	4.58	5.240	
1,125.00	1,124.77	1,126.85	1,126.61	2.36	2.36	-166.45	-2.14	15.33	24.00	19.31	4.68	5.126	
1,150.00	1,149.68	1,152.05	1,151.73	2.41	2.41	-166.41	-2.64	13.29	23.98	19.20	4.78	5.018	
1,175.00	1,174.58	1,177.26	1,176.82	2.46	2.47	-166.36	-3.19	11.03	23.97	19.09	4.88	4.914	
1,200.00	1,199.45	1,202.46	1,201.90	2.52	2.52	-166.31	-3.80	8.56	23.95	18.98	4.98	4.814	
1,225.00	1,224.30	1,227.67	1,226.95	2.58	2.58	-166.25	-4.46	5.87	23.93	18.86	5.08	4.714	
1,250.00	1,249.13	1,252.87	1,251.98	2.64	2.64	-166.19	-5.16	2.97	23.92	18.74	5.18	4.619	
1,275.00	1,273.93	1,278.07	1,276.98	2.70	2.70	-166.12	-5.93	-0.15	23.90	18.62	5.28	4.527	

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 POWERS 28N-23HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	17' RKB + 4909' GL @ 4926.00ft
Reference Site:	WELD_POWER PAD	MD Reference:	17' RKB + 4909' GL @ 4926.00ft
Site Error:	0.00 ft	North Reference:	True
Reference Well:	POWERS 28N-23HZ	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	POWERS 28N-23HZ	Database:	edm5000p
Reference Design:	POWERS 28N-23HZ (wp01)	Offset TVD Reference:	Offset Datum

Offset Design WELD_POWER PAD - POWERS 28C-23HZ - POWERS 28C-23HZ - POWERS 28C-23HZ (wp01)												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
1,285.06	1,283.91	1,288.20	1,287.01	2.72	2.73	-166.09	-6.25	-1.46	23.89	18.57	5.32	4.491	CC
1,300.00	1,298.70	1,303.14	1,301.81	2.76	2.77	-166.08	-6.72	-3.41	23.93	18.55	5.38	4.447	ES
1,307.86	1,306.49	1,311.00	1,309.60	2.78	2.79	-166.09	-6.97	-4.43	23.98	18.57	5.41	4.430	
1,325.00	1,323.45	1,328.14	1,326.59	2.83	2.83	-166.13	-7.52	-6.67	24.11	18.62	5.49	4.395	
1,350.00	1,348.20	1,353.13	1,351.36	2.89	2.90	-166.19	-8.32	-9.93	24.30	18.71	5.59	4.344	
1,375.00	1,372.94	1,378.13	1,376.13	2.96	2.97	-166.24	-9.11	-13.19	24.50	18.79	5.70	4.295	
1,400.00	1,397.69	1,403.13	1,400.91	3.03	3.03	-166.30	-9.91	-16.45	24.69	18.88	5.81	4.248	
1,425.00	1,422.44	1,428.13	1,425.68	3.10	3.10	-166.35	-10.71	-19.71	24.88	18.96	5.92	4.201	
1,450.00	1,447.19	1,453.13	1,450.45	3.17	3.17	-166.41	-11.50	-22.97	25.08	19.04	6.03	4.156	
1,475.00	1,471.93	1,478.13	1,475.22	3.24	3.24	-166.46	-12.30	-26.23	25.27	19.12	6.15	4.112	
1,500.00	1,496.68	1,503.13	1,500.00	3.31	3.31	-166.51	-13.10	-29.49	25.46	19.21	6.26	4.070	
1,525.00	1,521.43	1,528.13	1,524.77	3.39	3.38	-166.56	-13.89	-32.75	25.65	19.29	6.37	4.028	
1,550.00	1,546.17	1,553.13	1,549.54	3.46	3.46	-166.61	-14.69	-36.01	25.85	19.37	6.48	3.987	
1,575.00	1,570.92	1,578.13	1,574.32	3.53	3.53	-166.66	-15.49	-39.27	26.04	19.45	6.60	3.948	
1,600.00	1,595.67	1,603.13	1,599.09	3.61	3.60	-166.71	-16.28	-42.53	26.23	19.53	6.71	3.910	
1,625.00	1,620.41	1,628.13	1,623.86	3.69	3.68	-166.76	-17.08	-45.79	26.43	19.60	6.82	3.873	
1,650.00	1,645.16	1,653.13	1,648.64	3.76	3.75	-166.80	-17.87	-49.05	26.62	19.68	6.94	3.836	
1,675.00	1,669.91	1,678.12	1,673.41	3.84	3.82	-166.85	-18.67	-52.31	26.81	19.76	7.05	3.801	
1,700.00	1,694.66	1,703.12	1,698.18	3.92	3.90	-166.90	-19.47	-55.57	27.01	19.84	7.17	3.767	
1,725.00	1,719.40	1,728.12	1,722.95	3.99	3.98	-166.94	-20.26	-58.83	27.20	19.92	7.29	3.734	
1,750.00	1,744.15	1,753.12	1,747.73	4.07	4.05	-166.98	-21.06	-62.09	27.40	19.99	7.40	3.701	
1,775.00	1,768.90	1,778.12	1,772.50	4.15	4.13	-167.03	-21.86	-65.35	27.59	20.07	7.52	3.670	
1,800.00	1,793.64	1,803.12	1,797.27	4.23	4.20	-167.07	-22.65	-68.61	27.78	20.15	7.63	3.639	
1,825.00	1,818.39	1,828.12	1,822.05	4.31	4.28	-167.11	-23.45	-71.86	27.98	20.22	7.75	3.609	
1,850.00	1,843.14	1,853.12	1,846.82	4.39	4.36	-167.16	-24.25	-75.12	28.17	20.30	7.87	3.579	
1,875.00	1,867.89	1,878.12	1,871.59	4.47	4.44	-167.20	-25.04	-78.38	28.36	20.38	7.99	3.551	
1,900.00	1,892.63	1,903.12	1,896.37	4.55	4.52	-167.24	-25.84	-81.64	28.56	20.45	8.10	3.523	
1,925.00	1,917.38	1,928.12	1,921.14	4.63	4.59	-167.28	-26.64	-84.90	28.75	20.53	8.22	3.496	
1,950.00	1,942.13	1,953.12	1,945.91	4.71	4.67	-167.32	-27.43	-88.16	28.94	20.60	8.34	3.470	
1,975.00	1,966.87	1,978.12	1,970.68	4.79	4.75	-167.36	-28.23	-91.42	29.14	20.68	8.46	3.444	
2,000.00	1,991.62	2,003.11	1,995.46	4.87	4.83	-167.40	-29.03	-94.68	29.33	20.75	8.58	3.419	
2,025.00	2,016.37	2,028.11	2,020.23	4.96	4.91	-167.43	-29.82	-97.94	29.52	20.83	8.70	3.395	
2,050.00	2,041.11	2,053.11	2,045.00	5.04	4.99	-167.47	-30.62	-101.20	29.72	20.90	8.82	3.371	
2,075.00	2,065.86	2,078.11	2,069.78	5.12	5.07	-167.51	-31.42	-104.46	29.91	20.98	8.94	3.348	
2,100.00	2,090.61	2,103.11	2,094.55	5.20	5.15	-167.55	-32.21	-107.72	30.10	21.05	9.05	3.325	
2,125.00	2,115.36	2,128.11	2,119.32	5.29	5.23	-167.58	-33.01	-110.98	30.30	21.12	9.17	3.303	
2,150.00	2,140.10	2,153.11	2,144.10	5.37	5.31	-167.62	-33.81	-114.24	30.49	21.20	9.29	3.281	
2,175.00	2,164.85	2,178.11	2,168.87	5.45	5.39	-167.65	-34.60	-117.50	30.69	21.27	9.41	3.260	
2,200.00	2,189.60	2,203.11	2,193.64	5.53	5.47	-167.69	-35.40	-120.76	30.88	21.35	9.53	3.239	
2,225.00	2,214.34	2,228.11	2,218.41	5.62	5.55	-167.72	-36.20	-124.02	31.07	21.42	9.65	3.219	
2,250.00	2,239.09	2,253.11	2,243.19	5.70	5.63	-167.76	-36.99	-127.28	31.27	21.49	9.77	3.199	
2,275.00	2,263.84	2,278.11	2,267.96	5.78	5.71	-167.79	-37.79	-130.54	31.46	21.57	9.89	3.180	
2,300.00	2,288.59	2,303.11	2,292.73	5.87	5.79	-167.82	-38.59	-133.80	31.65	21.64	10.01	3.161	
2,325.00	2,313.33	2,328.10	2,317.51	5.95	5.88	-167.86	-39.38	-137.06	31.85	21.71	10.14	3.142	
2,350.00	2,338.08	2,353.10	2,342.28	6.04	5.96	-167.89	-40.18	-140.32	32.04	21.79	10.26	3.124	
2,375.00	2,362.83	2,378.10	2,367.05	6.12	6.04	-167.92	-40.98	-143.58	32.24	21.86	10.38	3.107	
2,400.00	2,387.57	2,403.10	2,391.82	6.20	6.12	-167.95	-41.77	-146.84	32.43	21.93	10.50	3.089	
2,425.00	2,412.32	2,428.10	2,416.60	6.29	6.20	-167.98	-42.57	-150.10	32.62	22.00	10.62	3.072	
2,450.00	2,437.07	2,453.10	2,441.37	6.37	6.28	-168.02	-43.37	-153.36	32.82	22.08	10.74	3.056	
2,475.00	2,461.81	2,478.10	2,466.14	6.46	6.37	-168.05	-44.16	-156.62	33.01	22.15	10.86	3.039	
2,500.00	2,486.56	2,503.10	2,490.92	6.54	6.45	-168.08	-44.96	-159.88	33.20	22.22	10.98	3.024	
2,525.00	2,511.31	2,528.10	2,515.69	6.63	6.53	-168.11	-45.76	-163.14	33.40	22.29	11.10	3.008	

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 POWERS 28N-23HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	17' RKB + 4909' GL @ 4926.00ft
Reference Site:	WELD_POWER PAD	MD Reference:	17' RKB + 4909' GL @ 4926.00ft
Site Error:	0.00 ft	North Reference:	True
Reference Well:	POWERS 28N-23HZ	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	POWERS 28N-23HZ	Database:	edm5000p
Reference Design:	POWERS 28N-23HZ (wp01)	Offset TVD Reference:	Offset Datum

Offset Design WELD_POWER PAD - POWERS 28C-23HZ - POWERS 28C-23HZ - POWERS 28C-23HZ (wp01)												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	
2,550.00	2,536.06	2,553.10	2,540.46	6.71	6.61	-168.14	-46.55	-166.40	33.59	22.37	11.22	2.993	
2,575.00	2,560.80	2,578.10	2,565.24	6.80	6.70	-168.16	-47.35	-169.66	33.79	22.44	11.35	2.978	
2,600.00	2,585.55	2,603.10	2,590.01	6.88	6.78	-168.19	-48.15	-172.92	33.98	22.51	11.47	2.963	
2,625.00	2,610.30	2,628.10	2,614.78	6.97	6.86	-168.22	-48.94	-176.18	34.17	22.58	11.59	2.949	
2,650.00	2,635.04	2,653.10	2,639.55	7.05	6.94	-168.25	-49.74	-179.44	34.37	22.66	11.71	2.935	
2,675.00	2,659.79	2,678.09	2,664.33	7.14	7.03	-168.28	-50.54	-182.70	34.56	22.73	11.83	2.921	
2,700.00	2,684.54	2,703.09	2,689.10	7.22	7.11	-168.31	-51.33	-185.96	34.75	22.80	11.95	2.907	
2,725.00	2,709.29	2,728.09	2,713.87	7.31	7.19	-168.33	-52.13	-189.22	34.95	22.87	12.08	2.894	
2,750.00	2,734.03	2,753.09	2,738.65	7.40	7.27	-168.36	-52.93	-192.48	35.14	22.94	12.20	2.881	
2,775.00	2,758.78	2,778.09	2,763.42	7.48	7.36	-168.39	-53.72	-195.74	35.34	23.02	12.32	2.868	
2,800.00	2,783.53	2,803.09	2,788.19	7.57	7.44	-168.41	-54.52	-199.00	35.53	23.09	12.44	2.856	
2,825.00	2,808.27	2,828.09	2,812.97	7.65	7.52	-168.44	-55.32	-202.26	35.72	23.16	12.56	2.843	
2,850.00	2,833.02	2,853.09	2,837.74	7.74	7.61	-168.46	-56.11	-205.52	35.92	23.23	12.69	2.831	
2,875.00	2,857.77	2,878.09	2,862.51	7.82	7.69	-168.49	-56.91	-208.78	36.11	23.30	12.81	2.819	
2,900.00	2,882.52	2,903.09	2,887.28	7.91	7.77	-168.51	-57.71	-212.04	36.31	23.38	12.93	2.808	
2,925.00	2,907.26	2,928.09	2,912.06	8.00	7.86	-168.54	-58.50	-215.30	36.50	23.45	13.05	2.796	
2,950.00	2,932.01	2,953.09	2,936.83	8.08	7.94	-168.56	-59.30	-218.56	36.69	23.52	13.17	2.785	
2,975.00	2,956.76	2,978.09	2,961.60	8.17	8.02	-168.59	-60.10	-221.82	36.89	23.59	13.30	2.774	
3,000.00	2,981.50	3,003.08	2,986.38	8.26	8.11	-168.61	-60.89	-225.08	37.08	23.66	13.42	2.763	
3,025.00	3,006.25	3,028.08	3,011.15	8.34	8.19	-168.64	-61.69	-228.34	37.28	23.73	13.54	2.753	
3,050.00	3,031.00	3,053.08	3,035.92	8.43	8.27	-168.66	-62.49	-231.60	37.47	23.80	13.66	2.742	
3,075.00	3,055.74	3,078.08	3,060.70	8.51	8.36	-168.68	-63.28	-234.86	37.66	23.88	13.79	2.732	
3,100.00	3,080.49	3,103.08	3,085.47	8.60	8.44	-168.71	-64.08	-238.12	37.86	23.95	13.91	2.722	
3,125.00	3,105.24	3,128.08	3,110.24	8.69	8.53	-168.73	-64.88	-241.38	38.05	24.02	14.03	2.712	
3,150.00	3,129.99	3,153.08	3,135.01	8.77	8.61	-168.75	-65.67	-244.64	38.25	24.09	14.15	2.702	
3,175.00	3,154.73	3,178.08	3,159.79	8.86	8.69	-168.78	-66.47	-247.90	38.44	24.16	14.28	2.692	
3,200.00	3,179.48	3,203.08	3,184.56	8.95	8.78	-168.80	-67.27	-251.16	38.63	24.23	14.40	2.683	
3,225.00	3,204.23	3,228.08	3,209.33	9.03	8.86	-168.82	-68.06	-254.42	38.83	24.30	14.52	2.674	
3,250.00	3,228.97	3,253.08	3,234.11	9.12	8.94	-168.84	-68.86	-257.68	39.02	24.38	14.65	2.664	
3,275.00	3,253.72	3,278.08	3,258.88	9.21	9.03	-168.86	-69.66	-260.94	39.22	24.45	14.77	2.655	
3,300.00	3,278.47	3,303.08	3,283.65	9.29	9.11	-168.88	-70.45	-264.20	39.41	24.52	14.89	2.647	
3,325.00	3,303.22	3,328.07	3,308.42	9.38	9.20	-168.91	-71.25	-267.46	39.60	24.59	15.01	2.638	
3,350.00	3,327.96	3,353.07	3,333.20	9.47	9.28	-168.93	-72.05	-270.72	39.80	24.66	15.14	2.629	
3,375.00	3,352.71	3,378.07	3,357.97	9.55	9.36	-168.95	-72.84	-273.98	39.99	24.73	15.26	2.621	
3,400.00	3,377.46	3,403.07	3,382.74	9.64	9.45	-168.97	-73.64	-277.24	40.19	24.80	15.38	2.612	
3,425.00	3,402.20	3,428.07	3,407.52	9.73	9.53	-168.99	-74.43	-280.50	40.38	24.87	15.51	2.604	
3,450.00	3,426.95	3,453.07	3,432.29	9.81	9.62	-169.01	-75.23	-283.76	40.57	24.94	15.63	2.596	
3,475.00	3,451.70	3,478.07	3,457.06	9.90	9.70	-169.03	-76.03	-287.02	40.77	25.02	15.75	2.588	
3,500.00	3,476.44	3,503.07	3,481.84	9.99	9.78	-169.05	-76.82	-290.28	40.96	25.09	15.87	2.580	
3,525.00	3,501.19	3,528.07	3,506.61	10.07	9.87	-169.07	-77.62	-293.54	41.16	25.16	16.00	2.573	
3,550.00	3,525.94	3,553.07	3,531.38	10.16	9.95	-169.09	-78.42	-296.80	41.35	25.23	16.12	2.565	
3,575.00	3,550.69	3,578.07	3,556.15	10.25	10.04	-169.11	-79.21	-300.06	41.54	25.30	16.24	2.558	
3,600.00	3,575.43	3,603.07	3,580.93	10.34	10.12	-169.13	-80.01	-303.32	41.74	25.37	16.37	2.550	
3,625.00	3,600.18	3,628.07	3,605.70	10.42	10.21	-169.15	-80.81	-306.58	41.93	25.44	16.49	2.543	
3,650.00	3,624.93	3,653.06	3,630.47	10.51	10.29	-169.16	-81.60	-309.84	42.13	25.51	16.61	2.536	
3,675.00	3,649.67	3,678.06	3,655.25	10.60	10.37	-169.18	-82.40	-313.10	42.32	25.58	16.74	2.529	
3,700.00	3,674.42	3,703.06	3,680.02	10.68	10.46	-169.20	-83.20	-316.36	42.51	25.65	16.86	2.522	
3,725.00	3,699.17	3,728.06	3,704.79	10.77	10.54	-169.22	-83.99	-319.62	42.71	25.73	16.98	2.515	
3,750.00	3,723.92	3,753.06	3,729.57	10.86	10.63	-169.24	-84.79	-322.88	42.90	25.80	17.11	2.508	
3,775.00	3,748.66	3,778.06	3,754.34	10.95	10.71	-169.26	-85.59	-326.14	43.10	25.87	17.23	2.501	
3,800.00	3,773.41	3,803.06	3,779.11	11.03	10.80	-169.27	-86.38	-329.40	43.29	25.94	17.35	2.495	
3,825.00	3,798.16	3,828.06	3,803.88	11.12	10.88	-169.29	-87.18	-332.66	43.48	26.01	17.48	2.488	

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 POWERS 28N-23HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	17' RKB + 4909' GL @ 4926.00ft
Reference Site:	WELD_POWER PAD	MD Reference:	17' RKB + 4909' GL @ 4926.00ft
Site Error:	0.00 ft	North Reference:	True
Reference Well:	POWERS 28N-23HZ	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	POWERS 28N-23HZ	Database:	edm5000p
Reference Design:	POWERS 28N-23HZ (wp01)	Offset TVD Reference:	Offset Datum

Offset Design WELD_POWER PAD - POWERS 28C-23HZ - POWERS 28C-23HZ - POWERS 28C-23HZ (wp01)												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
3,850.00	3,822.90	3,853.06	3,828.66	11.21	10.97	-169.31	-87.98	-335.92	43.68	26.08	17.60	2.482	
3,875.00	3,847.65	3,878.06	3,853.43	11.30	11.05	-169.33	-88.77	-339.18	43.87	26.15	17.72	2.476	
3,900.00	3,872.40	3,903.06	3,878.20	11.38	11.14	-169.34	-89.57	-342.44	44.07	26.22	17.85	2.469	
3,925.00	3,897.14	3,928.06	3,902.98	11.47	11.22	-169.36	-90.37	-345.70	44.26	26.29	17.97	2.463	
3,950.00	3,921.89	3,953.06	3,927.75	11.56	11.30	-169.38	-91.16	-348.96	44.46	26.36	18.09	2.457	
3,975.00	3,946.64	3,978.05	3,952.52	11.65	11.39	-169.39	-91.96	-352.22	44.65	26.43	18.22	2.451	
4,000.00	3,971.39	4,003.05	3,977.30	11.73	11.47	-169.41	-92.76	-355.48	44.84	26.51	18.34	2.445	
4,025.00	3,996.13	4,028.05	4,002.07	11.82	11.56	-169.43	-93.55	-358.74	45.04	26.58	18.46	2.439	
4,050.00	4,020.88	4,053.05	4,026.84	11.91	11.64	-169.44	-94.35	-362.00	45.23	26.65	18.59	2.434	
4,075.00	4,045.63	4,078.05	4,051.61	11.99	11.73	-169.46	-95.15	-365.26	45.43	26.72	18.71	2.428	
4,100.00	4,070.37	4,103.05	4,076.39	12.08	11.81	-169.47	-95.94	-368.52	45.62	26.79	18.83	2.422	
4,125.00	4,095.12	4,128.05	4,101.16	12.17	11.90	-169.49	-96.74	-371.78	45.81	26.86	18.96	2.417	
4,150.00	4,119.87	4,153.05	4,125.93	12.26	11.98	-169.51	-97.54	-375.04	46.01	26.93	19.08	2.411	
4,175.00	4,144.62	4,178.05	4,150.71	12.34	12.07	-169.52	-98.33	-378.30	46.20	27.00	19.20	2.406	
4,200.00	4,169.36	4,203.05	4,175.48	12.43	12.15	-169.54	-99.13	-381.56	46.40	27.07	19.33	2.401	
4,225.00	4,194.11	4,228.05	4,200.25	12.52	12.24	-169.55	-99.93	-384.82	46.59	27.14	19.45	2.396	
4,250.00	4,218.86	4,253.05	4,225.03	12.61	12.32	-169.57	-100.72	-388.08	46.79	27.21	19.57	2.390	
4,275.00	4,243.60	4,278.05	4,249.80	12.70	12.41	-169.58	-101.52	-391.34	46.98	27.28	19.70	2.385	
4,300.00	4,268.35	4,303.05	4,274.57	12.78	12.49	-169.60	-102.32	-394.60	47.17	27.35	19.82	2.380	
4,325.00	4,293.10	4,328.04	4,299.34	12.87	12.58	-169.61	-103.11	-397.86	47.37	27.42	19.94	2.375	
4,350.00	4,317.84	4,353.04	4,324.12	12.96	12.66	-169.63	-103.91	-401.12	47.56	27.50	20.07	2.370	
4,375.00	4,342.59	4,378.04	4,348.89	13.05	12.74	-169.64	-104.71	-404.38	47.76	27.57	20.19	2.365	
4,400.00	4,367.34	4,403.04	4,373.66	13.13	12.83	-169.66	-105.50	-407.64	47.95	27.64	20.31	2.360	
4,425.00	4,392.09	4,428.04	4,398.44	13.22	12.91	-169.67	-106.30	-410.90	48.14	27.71	20.44	2.356	
4,450.00	4,416.83	4,453.04	4,423.21	13.31	13.00	-169.68	-107.10	-414.16	48.34	27.78	20.56	2.351	
4,475.00	4,441.58	4,478.04	4,447.98	13.40	13.08	-169.70	-107.89	-417.42	48.53	27.85	20.68	2.346	
4,500.00	4,466.33	4,503.04	4,472.75	13.48	13.17	-169.71	-108.69	-420.68	48.73	27.92	20.81	2.342	
4,525.00	4,491.07	4,528.04	4,497.53	13.57	13.25	-169.73	-109.49	-423.94	48.92	27.99	20.93	2.337	
4,550.00	4,515.82	4,553.04	4,522.30	13.66	13.34	-169.74	-110.28	-427.20	49.12	28.06	21.06	2.333	
4,575.00	4,540.57	4,578.04	4,547.07	13.75	13.42	-169.75	-111.08	-430.46	49.31	28.13	21.18	2.328	
4,600.00	4,565.32	4,603.04	4,571.85	13.83	13.51	-169.77	-111.88	-433.72	49.50	28.20	21.30	2.324	
4,625.00	4,590.06	4,628.04	4,596.62	13.92	13.59	-169.78	-112.67	-436.98	49.70	28.27	21.43	2.320	
4,650.00	4,614.81	4,653.03	4,621.39	14.01	13.68	-169.79	-113.47	-440.24	49.89	28.34	21.55	2.315	
4,675.00	4,639.56	4,678.03	4,646.17	14.10	13.76	-169.81	-114.27	-443.50	50.09	28.41	21.67	2.311	
4,700.00	4,664.30	4,703.03	4,670.94	14.19	13.85	-169.82	-115.06	-446.76	50.28	28.48	21.80	2.307	
4,725.00	4,689.05	4,728.03	4,695.71	14.27	13.93	-169.83	-115.86	-450.02	50.48	28.55	21.92	2.303	
4,750.00	4,713.80	4,753.03	4,720.48	14.36	14.02	-169.85	-116.66	-453.28	50.67	28.63	22.04	2.299	
4,775.00	4,738.54	4,778.03	4,745.26	14.45	14.10	-169.86	-117.45	-456.54	50.86	28.70	22.17	2.294	
4,800.00	4,763.29	4,803.03	4,770.03	14.54	14.19	-169.87	-118.25	-459.80	51.06	28.77	22.29	2.290	
4,825.00	4,788.04	4,828.03	4,794.80	14.63	14.27	-169.88	-119.05	-463.06	51.25	28.84	22.42	2.286	
4,850.00	4,812.79	4,853.03	4,819.58	14.71	14.36	-169.90	-119.84	-466.32	51.45	28.91	22.54	2.283	
4,875.00	4,837.53	4,878.03	4,844.35	14.80	14.44	-169.91	-120.64	-469.58	51.64	28.98	22.66	2.279	
4,900.00	4,862.28	4,903.03	4,869.12	14.89	14.53	-169.92	-121.44	-472.84	51.83	29.05	22.79	2.275	
4,925.00	4,887.03	4,928.03	4,893.90	14.98	14.61	-169.93	-122.23	-476.10	52.03	29.12	22.91	2.271	
4,950.00	4,911.77	4,953.03	4,918.67	15.06	14.70	-169.95	-123.03	-479.36	52.22	29.19	23.03	2.267	
4,975.00	4,936.52	4,978.02	4,943.44	15.15	14.78	-169.96	-123.83	-482.62	52.42	29.26	23.16	2.264	
5,000.00	4,961.27	5,003.02	4,968.21	15.24	14.87	-169.97	-124.62	-485.88	52.61	29.33	23.28	2.260	
5,025.00	4,986.02	5,028.02	4,992.99	15.33	14.95	-169.98	-125.42	-489.14	52.81	29.40	23.40	2.256	
5,050.00	5,010.76	5,053.02	5,017.76	15.42	15.04	-169.99	-126.22	-492.40	53.00	29.47	23.53	2.253	
5,075.00	5,035.51	5,078.02	5,042.53	15.50	15.12	-170.01	-127.01	-495.66	53.19	29.54	23.65	2.249	
5,100.00	5,060.26	5,103.02	5,067.31	15.59	15.21	-170.02	-127.81	-498.92	53.39	29.61	23.78	2.246	
5,125.00	5,085.00	5,128.02	5,092.08	15.68	15.29	-170.03	-128.61	-502.18	53.58	29.68	23.90	2.242	

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 POWERS 28N-23HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	17' RKB + 4909' GL @ 4926.00ft
Reference Site:	WELD_POWER PAD	MD Reference:	17' RKB + 4909' GL @ 4926.00ft
Site Error:	0.00 ft	North Reference:	True
Reference Well:	POWERS 28N-23HZ	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	POWERS 28N-23HZ	Database:	edm5000p
Reference Design:	POWERS 28N-23HZ (wp01)	Offset TVD Reference:	Offset Datum

Offset Design WELD_POWER PAD - POWERS 28C-23HZ - POWERS 28C-23HZ - POWERS 28C-23HZ (wp01)												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	
5,150.00	5,109.75	5,153.02	5,116.85	15.77	15.38	-170.04	-129.40	-505.44	53.78	29.75	24.02	2.239	
5,175.00	5,134.50	5,178.02	5,141.63	15.86	15.46	-170.05	-130.20	-508.70	53.97	29.82	24.15	2.235	
5,200.00	5,159.24	5,203.02	5,166.40	15.94	15.55	-170.06	-130.99	-511.96	54.17	29.90	24.27	2.232	
5,225.00	5,183.99	5,228.02	5,191.17	16.03	15.64	-170.07	-131.79	-515.22	54.36	29.97	24.39	2.228	
5,250.00	5,208.74	5,253.02	5,215.94	16.12	15.72	-170.09	-132.59	-518.48	54.55	30.04	24.52	2.225	
5,275.00	5,233.49	5,278.02	5,240.72	16.21	15.81	-170.10	-133.38	-521.74	54.75	30.11	24.64	2.222	
5,300.00	5,258.23	5,303.01	5,265.49	16.30	15.89	-170.11	-134.18	-525.00	54.94	30.18	24.77	2.219	
5,325.00	5,282.98	5,328.01	5,290.26	16.38	15.98	-170.12	-134.98	-528.26	55.14	30.25	24.89	2.215	
5,350.00	5,307.73	5,353.01	5,315.04	16.47	16.06	-170.13	-135.77	-531.52	55.33	30.32	25.01	2.212	
5,375.00	5,332.47	5,378.01	5,339.81	16.56	16.15	-170.14	-136.57	-534.78	55.53	30.39	25.14	2.209	
5,400.00	5,357.22	5,403.01	5,364.58	16.65	16.23	-170.15	-137.37	-538.04	55.72	30.46	25.26	2.206	
5,425.00	5,381.97	5,428.01	5,389.35	16.74	16.32	-170.16	-138.16	-541.30	55.91	30.53	25.38	2.203	
5,450.00	5,406.72	5,453.01	5,414.13	16.82	16.40	-170.17	-138.96	-544.56	56.11	30.60	25.51	2.200	
5,475.00	5,431.46	5,478.01	5,438.90	16.91	16.49	-170.18	-139.76	-547.82	56.30	30.67	25.63	2.197	
5,500.00	5,456.21	5,503.01	5,463.67	17.00	16.57	-170.19	-140.55	-551.08	56.50	30.74	25.76	2.194	
5,525.00	5,480.96	5,528.01	5,488.45	17.09	16.66	-170.20	-141.35	-554.34	56.69	30.81	25.88	2.191	
5,550.00	5,505.70	5,553.01	5,513.22	17.18	16.74	-170.21	-142.15	-557.60	56.89	30.88	26.00	2.188	
5,575.00	5,530.45	5,578.01	5,537.99	17.26	16.83	-170.22	-142.94	-560.86	57.08	30.95	26.13	2.185	
5,600.00	5,555.20	5,603.01	5,562.77	17.35	16.91	-170.23	-143.74	-564.12	57.27	31.02	26.25	2.182	
5,625.00	5,579.94	5,628.01	5,587.54	17.44	17.00	-170.24	-144.54	-567.38	57.47	31.09	26.38	2.179	
5,650.00	5,604.69	5,653.00	5,612.31	17.53	17.08	-170.25	-145.33	-570.64	57.66	31.16	26.50	2.176	
5,675.00	5,629.44	5,678.00	5,637.08	17.62	17.17	-170.26	-146.13	-573.90	57.86	31.23	26.62	2.173	
5,700.00	5,654.19	5,703.00	5,661.86	17.70	17.25	-170.27	-146.93	-577.16	58.05	31.31	26.75	2.170	
5,725.00	5,678.93	5,728.00	5,686.63	17.79	17.34	-170.28	-147.72	-580.42	58.25	31.38	26.87	2.168	
5,750.00	5,703.68	5,753.00	5,711.40	17.88	17.42	-170.29	-148.52	-583.68	58.44	31.45	26.99	2.165	
5,775.00	5,728.43	5,778.00	5,736.18	17.97	17.51	-170.30	-149.32	-586.94	58.64	31.52	27.12	2.162	
5,800.00	5,753.17	5,803.00	5,760.95	18.06	17.60	-170.31	-150.11	-590.20	58.83	31.59	27.24	2.159	
5,825.00	5,777.92	5,828.00	5,785.72	18.14	17.68	-170.32	-150.91	-593.46	59.02	31.66	27.37	2.157	
5,850.00	5,802.67	5,853.00	5,810.50	18.23	17.77	-170.33	-151.71	-596.72	59.22	31.73	27.49	2.154	
5,875.00	5,827.42	5,878.00	5,835.27	18.32	17.85	-170.34	-152.50	-599.98	59.41	31.80	27.61	2.152	
5,900.00	5,852.16	5,903.00	5,860.04	18.41	17.94	-170.35	-153.30	-603.24	59.61	31.87	27.74	2.149	
5,925.00	5,876.91	5,928.00	5,884.81	18.50	18.02	-170.36	-154.10	-606.50	59.80	31.94	27.86	2.146	
5,950.00	5,901.66	5,953.00	5,909.59	18.59	18.11	-170.37	-154.89	-609.76	60.00	32.01	27.99	2.144	
5,975.00	5,926.40	5,977.99	5,934.36	18.67	18.19	-170.38	-155.69	-613.02	60.19	32.08	28.11	2.141	
6,000.00	5,951.15	6,002.99	5,959.13	18.76	18.28	-170.39	-156.49	-616.28	60.38	32.15	28.23	2.139	
6,025.00	5,975.90	6,027.99	5,983.91	18.85	18.36	-170.40	-157.28	-619.54	60.58	32.22	28.36	2.136	
6,050.00	6,000.64	6,052.99	6,008.68	18.94	18.45	-170.40	-158.08	-622.80	60.77	32.29	28.48	2.134	
6,075.00	6,025.39	6,077.99	6,033.45	19.03	18.53	-170.41	-158.88	-626.06	60.97	32.36	28.60	2.131	
6,100.00	6,050.14	6,102.99	6,058.23	19.11	18.62	-170.42	-159.67	-629.32	61.16	32.43	28.73	2.129	
6,125.00	6,074.89	6,127.99	6,083.00	19.20	18.70	-170.43	-160.47	-632.58	61.36	32.50	28.85	2.127	
6,150.00	6,099.63	6,152.99	6,107.77	19.29	18.79	-170.44	-161.27	-635.84	61.55	32.57	28.98	2.124	
6,175.00	6,124.38	6,177.99	6,132.54	19.38	18.87	-170.45	-162.06	-639.10	61.74	32.64	29.10	2.122	
6,200.00	6,149.13	6,202.99	6,157.32	19.47	18.96	-170.46	-162.86	-642.36	61.94	32.71	29.22	2.119	
6,225.00	6,173.87	6,227.99	6,182.09	19.55	19.05	-170.47	-163.66	-645.62	62.13	32.79	29.35	2.117	
6,250.00	6,198.62	6,252.99	6,206.86	19.64	19.13	-170.47	-164.45	-648.88	62.33	32.86	29.47	2.115	
6,275.00	6,223.37	6,277.99	6,231.64	19.73	19.22	-170.48	-165.25	-652.14	62.52	32.93	29.60	2.113	
6,297.40	6,245.55	6,300.39	6,253.84	19.81	19.29	-170.49	-165.96	-655.06	62.70	32.99	29.71	2.110	
6,300.00	6,248.12	6,302.98	6,256.41	19.82	19.30	-171.91	-166.05	-655.40	62.72	33.00	29.72	2.110	
6,325.00	6,272.87	6,327.98	6,281.18	19.89	19.39	-174.38	-166.84	-658.65	62.88	33.01	29.87	2.105	
6,350.00	6,297.63	6,352.94	6,305.91	19.96	19.47	161.75	-167.64	-661.91	63.01	32.92	30.09	2.094	
6,375.00	6,322.34	6,377.83	6,330.58	20.03	19.56	151.61	-168.43	-665.16	63.17	32.78	30.39	2.079	
6,400.00	6,346.99	6,402.64	6,355.16	20.09	19.64	144.49	-169.22	-668.39	63.44	32.66	30.79	2.061	

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 POWERS 28N-23HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	17' RKB + 4909' GL @ 4926.00ft
Reference Site:	WELD_POWER PAD	MD Reference:	17' RKB + 4909' GL @ 4926.00ft
Site Error:	0.00 ft	North Reference:	True
Reference Well:	POWERS 28N-23HZ	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	POWERS 28N-23HZ	Database:	edm5000p
Reference Design:	POWERS 28N-23HZ (wp01)	Offset TVD Reference:	Offset Datum

Offset Design WELD_POWER PAD - POWERS 28C-23HZ - POWERS 28C-23HZ - POWERS 28C-23HZ (wp01)												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	
6,425.00	6,371.55	6,427.32	6,379.62	20.15	19.73	140.20	-170.01	-671.61	63.96	32.67	31.29	2.044	
6,450.00	6,395.98	6,451.84	6,403.92	20.21	19.81	138.26	-170.79	-674.81	64.87	32.95	31.92	2.032 SF	
6,475.00	6,420.26	6,476.18	6,428.04	20.27	19.89	138.11	-171.57	-677.98	66.35	33.72	32.63	2.033	
6,500.00	6,444.35	6,500.31	6,451.95	20.33	19.98	139.29	-172.33	-681.13	68.56	35.17	33.40	2.053	
6,525.00	6,468.22	6,524.58	6,476.00	20.38	20.06	141.40	-173.05	-684.29	71.65	37.51	34.15	2.098	
6,550.00	6,491.86	6,549.67	6,500.87	20.43	20.13	143.85	-173.11	-687.57	75.42	40.63	34.79	2.168	
6,575.00	6,515.22	6,575.04	6,526.01	20.47	20.20	146.26	-172.27	-690.87	79.71	44.46	35.25	2.261	
6,600.00	6,538.28	6,600.69	6,551.39	20.52	20.27	148.55	-170.51	-694.21	84.44	48.89	35.55	2.375	
6,625.00	6,561.02	6,626.65	6,576.98	20.56	20.33	150.66	-167.79	-697.58	89.52	53.85	35.67	2.510	
6,650.00	6,583.39	6,652.92	6,602.76	20.61	20.39	152.60	-164.10	-700.98	94.89	59.24	35.65	2.662	
6,675.00	6,605.39	6,679.50	6,628.70	20.65	20.45	154.36	-159.39	-704.39	100.48	64.99	35.49	2.831	
6,700.00	6,626.97	6,706.42	6,654.76	20.69	20.51	155.95	-153.64	-707.83	106.24	71.02	35.22	3.016	
6,725.00	6,648.12	6,733.66	6,680.91	20.73	20.56	157.38	-146.81	-711.27	112.12	77.28	34.84	3.218	
6,750.00	6,668.80	6,761.25	6,707.11	20.76	20.62	158.67	-138.88	-714.72	118.09	83.71	34.38	3.435	
6,775.00	6,689.00	6,789.19	6,733.31	20.80	20.67	159.83	-129.82	-718.17	124.10	90.26	33.84	3.667	
6,800.00	6,708.68	6,817.49	6,759.48	20.84	20.72	160.88	-119.60	-721.62	130.12	96.89	33.23	3.916	
6,825.00	6,727.83	6,846.16	6,785.55	20.88	20.76	161.83	-108.19	-725.05	136.13	103.57	32.55	4.182	
6,850.00	6,746.42	6,875.19	6,811.47	20.92	20.81	162.68	-95.57	-728.47	142.10	110.26	31.84	4.463	
6,875.00	6,764.43	6,904.61	6,837.19	20.95	20.85	163.46	-81.72	-731.86	148.00	116.94	31.06	4.766	
6,900.00	6,781.83	6,934.40	6,862.65	21.00	20.90	164.16	-66.61	-735.22	153.82	123.56	30.26	5.084	
6,925.00	6,798.61	6,964.57	6,887.77	21.04	20.94	164.80	-50.24	-738.53	159.52	130.11	29.42	5.423	
6,950.00	6,814.74	6,995.13	6,912.50	21.08	20.98	165.38	-32.58	-741.79	165.10	136.57	28.53	5.786	
6,975.00	6,830.21	7,026.08	6,936.75	21.13	21.02	165.91	-13.64	-744.99	170.53	142.89	27.64	6.170	
7,000.00	6,845.00	7,057.41	6,960.46	21.18	21.07	166.39	6.60	-748.12	175.80	149.09	26.70	6.583	
7,025.00	6,859.08	7,089.12	6,983.54	21.23	21.11	166.83	28.13	-751.16	180.88	155.11	25.77	7.019	
7,050.00	6,872.44	7,121.21	7,005.91	21.30	21.16	167.23	50.95	-754.11	185.76	160.95	24.81	7.488	
7,075.00	6,885.06	7,153.67	7,027.48	21.36	21.21	167.59	75.03	-756.96	190.42	166.53	23.89	7.970	
7,100.00	6,896.94	7,186.49	7,048.16	21.43	21.27	167.91	100.36	-759.69	194.85	171.89	22.96	8.487	
7,125.00	6,908.05	7,219.65	7,067.88	21.51	21.33	168.21	126.90	-762.30	199.03	177.00	22.03	9.035	
7,150.00	6,918.38	7,253.16	7,086.54	21.59	21.40	168.47	154.61	-764.76	202.95	181.83	21.13	9.607	
7,175.00	6,927.92	7,286.99	7,104.06	21.68	21.48	168.71	183.46	-767.08	206.60	186.33	20.26	10.196	
7,200.00	6,936.66	7,321.12	7,120.34	21.78	21.57	168.92	213.37	-769.23	209.95	190.51	19.44	10.799	
7,225.00	6,944.58	7,355.53	7,135.31	21.89	21.67	169.11	244.29	-771.21	213.01	194.33	18.68	11.402	
7,250.00	6,951.68	7,390.20	7,148.88	22.01	21.79	169.27	276.14	-773.01	215.75	197.76	18.00	11.990	
7,275.00	6,957.94	7,425.11	7,160.99	22.13	21.93	169.41	308.84	-774.62	218.17	200.77	17.40	12.538	
7,300.00	6,963.37	7,460.23	7,171.56	22.27	22.08	169.53	342.30	-776.02	220.27	203.36	16.91	13.027	
7,325.00	6,967.95	7,495.53	7,180.53	22.42	22.25	169.62	376.41	-777.21	222.02	205.48	16.54	13.423	
7,350.00	6,971.68	7,530.98	7,187.86	22.57	22.45	169.69	411.08	-778.19	223.43	207.12	16.30	13.703	
7,375.00	6,974.55	7,566.54	7,193.49	22.74	22.67	169.75	446.18	-778.95	224.49	208.27	16.22	13.843	
7,400.00	6,976.56	7,602.19	7,197.39	22.92	22.91	169.78	481.61	-779.47	225.19	208.92	16.28	13.834	
7,425.00	6,977.71	7,637.89	7,199.54	23.11	23.17	169.79	517.24	-779.77	225.54	209.04	16.50	13.671	
7,450.00	6,978.00	7,671.33	7,199.98	23.31	23.43	169.78	550.67	-779.84	225.56	208.71	16.85	13.386	
7,451.44	6,977.99	7,672.72	7,199.98	23.32	23.44	169.79	552.06	-779.84	225.56	208.70	16.87	13.373	
7,475.00	6,977.85	7,696.48	7,199.91	23.51	23.64	169.81	575.82	-779.92	225.63	208.49	17.13	13.168	
7,500.00	6,977.69	7,721.70	7,199.83	23.73	23.87	169.86	601.04	-780.11	225.67	208.26	17.41	12.965	
7,525.00	6,977.54	7,746.70	7,199.75	23.96	24.10	169.92	626.04	-780.36	225.70	208.02	17.68	12.767	
7,550.00	6,977.38	7,771.70	7,199.67	24.20	24.33	169.99	651.04	-780.61	225.73	207.77	17.95	12.573	
7,575.00	6,977.23	7,796.70	7,199.59	24.45	24.58	170.06	676.04	-780.86	225.76	207.53	18.23	12.386	
7,600.00	6,977.07	7,821.70	7,199.51	24.70	24.83	170.12	701.03	-781.11	225.79	207.28	18.51	12.199	
7,625.00	6,976.92	7,846.70	7,199.43	24.97	25.09	170.19	726.03	-781.35	225.82	207.02	18.80	12.014	
7,650.00	6,976.77	7,871.70	7,199.35	25.24	25.36	170.25	751.03	-781.60	225.85	206.77	19.08	11.835	
7,675.00	6,976.61	7,896.70	7,199.27	25.51	25.64	170.32	776.03	-781.85	225.88	206.51	19.37	11.660	

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 POWERS 28N-23HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	17' RKB + 4909' GL @ 4926.00ft
Reference Site:	WELD_POWER PAD	MD Reference:	17' RKB + 4909' GL @ 4926.00ft
Site Error:	0.00 ft	North Reference:	True
Reference Well:	POWERS 28N-23HZ	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	POWERS 28N-23HZ	Database:	edm5000p
Reference Design:	POWERS 28N-23HZ (wp01)	Offset TVD Reference:	Offset Datum

Offset Design WELD_POWER PAD - POWERS 28C-23HZ - POWERS 28C-23HZ - POWERS 28C-23HZ (wp01)												Offset Site Error:	0.00 ft
Survey Program: 0-MWMD												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	
7,700.00	6,976.46	7,921.69	7,199.19	25.80	25.92	170.38	801.02	-782.10	225.91	206.25	19.66	11.489	
7,725.00	6,976.30	7,946.69	7,199.11	26.09	26.21	170.45	826.02	-782.35	225.94	205.98	19.96	11.320	
7,750.00	6,976.15	7,971.69	7,199.03	26.39	26.50	170.51	851.02	-782.60	225.98	205.72	20.26	11.156	
7,775.00	6,975.99	7,996.69	7,198.95	26.69	26.80	170.58	876.02	-782.84	226.01	205.45	20.55	10.996	
7,800.00	6,975.84	8,021.69	7,198.87	27.00	27.11	170.64	901.01	-783.09	226.04	205.19	20.85	10.839	
7,825.00	6,975.69	8,046.69	7,198.79	27.32	27.42	170.71	926.01	-783.34	226.07	204.92	21.16	10.685	
7,850.00	6,975.53	8,071.69	7,198.71	27.64	27.74	170.77	951.01	-783.59	226.11	204.64	21.46	10.535	
7,875.00	6,975.38	8,096.69	7,198.63	27.96	28.06	170.84	976.00	-783.84	226.14	204.37	21.77	10.390	
7,900.00	6,975.22	8,121.68	7,198.55	28.29	28.39	170.90	1,001.00	-784.09	226.17	204.10	22.07	10.247	
7,925.00	6,975.07	8,146.68	7,198.47	28.63	28.72	170.97	1,026.00	-784.34	226.21	203.83	22.38	10.107	
7,950.00	6,974.91	8,171.68	7,198.39	28.97	29.06	171.03	1,051.00	-784.58	226.24	203.55	22.69	9.970	
7,975.00	6,974.76	8,196.68	7,198.31	29.31	29.40	171.10	1,075.99	-784.83	226.28	203.27	23.00	9.837	
8,000.00	6,974.60	8,221.68	7,198.23	29.66	29.74	171.16	1,100.99	-785.08	226.31	203.00	23.31	9.707	
8,025.00	6,974.45	8,246.68	7,198.15	30.01	30.09	171.23	1,125.99	-785.33	226.35	202.72	23.63	9.580	
8,050.00	6,974.30	8,271.68	7,198.07	30.36	30.45	171.29	1,150.99	-785.58	226.38	202.44	23.94	9.456	
8,075.00	6,974.14	8,296.67	7,197.99	30.72	30.80	171.36	1,175.98	-785.83	226.42	202.16	24.26	9.335	
8,100.00	6,973.99	8,321.67	7,197.91	31.08	31.16	171.42	1,200.98	-786.07	226.45	201.88	24.57	9.216	
8,125.00	6,973.83	8,346.67	7,197.83	31.45	31.52	171.49	1,225.98	-786.32	226.49	201.60	24.89	9.100	
8,150.00	6,973.68	8,371.67	7,197.75	31.81	31.89	171.55	1,250.97	-786.57	226.53	201.32	25.21	8.987	
8,175.00	6,973.52	8,396.67	7,197.67	32.18	32.26	171.62	1,275.97	-786.82	226.56	201.04	25.52	8.876	
8,200.00	6,973.37	8,421.67	7,197.59	32.56	32.63	171.68	1,300.97	-787.07	226.60	200.76	25.84	8.768	
8,225.00	6,973.22	8,446.67	7,197.51	32.93	33.01	171.75	1,325.97	-787.32	226.64	200.48	26.16	8.663	
8,250.00	6,973.06	8,471.66	7,197.42	33.31	33.38	171.81	1,350.96	-787.56	226.68	200.19	26.48	8.559	
8,275.00	6,972.91	8,496.66	7,197.34	33.70	33.76	171.88	1,375.96	-787.81	226.71	199.91	26.80	8.458	
8,300.00	6,972.75	8,521.66	7,197.26	34.08	34.15	171.94	1,400.96	-788.06	226.75	199.63	27.12	8.360	
8,325.00	6,972.60	8,546.66	7,197.18	34.47	34.53	172.01	1,425.96	-788.31	226.79	199.34	27.45	8.263	
8,350.00	6,972.44	8,571.66	7,197.10	34.86	34.92	172.07	1,450.95	-788.56	226.83	199.06	27.77	8.168	
8,375.00	6,972.29	8,596.66	7,197.02	35.25	35.31	172.14	1,475.95	-788.81	226.87	198.78	28.09	8.076	
8,400.00	6,972.13	8,621.66	7,196.94	35.64	35.70	172.20	1,500.95	-789.06	226.91	198.49	28.41	7.986	
8,425.00	6,971.98	8,646.66	7,196.86	36.03	36.10	172.27	1,525.94	-789.30	226.95	198.21	28.74	7.897	
8,450.00	6,971.83	8,671.65	7,196.78	36.43	36.49	172.33	1,550.94	-789.55	226.99	197.93	29.06	7.810	
8,475.00	6,971.67	8,696.65	7,196.70	36.83	36.89	172.40	1,575.94	-789.80	227.03	197.64	29.39	7.726	
8,500.00	6,971.52	8,721.65	7,196.62	37.23	37.29	172.46	1,600.94	-790.05	227.07	197.36	29.71	7.643	
8,525.00	6,971.36	8,746.65	7,196.54	37.63	37.69	172.52	1,625.93	-790.30	227.11	197.08	30.04	7.561	
8,550.00	6,971.21	8,771.65	7,196.46	38.04	38.10	172.59	1,650.93	-790.55	227.15	196.79	30.36	7.482	
8,575.00	6,971.05	8,796.65	7,196.38	38.45	38.50	172.65	1,675.93	-790.79	227.19	196.51	30.69	7.404	
8,600.00	6,970.90	8,821.65	7,196.30	38.85	38.91	172.72	1,700.93	-791.04	227.24	196.22	31.01	7.327	
8,625.00	6,970.75	8,846.64	7,196.22	39.26	39.32	172.78	1,725.92	-791.29	227.28	195.94	31.34	7.252	
8,650.00	6,970.59	8,871.64	7,196.14	39.67	39.73	172.85	1,750.92	-791.54	227.32	195.66	31.66	7.179	
8,675.00	6,970.44	8,896.64	7,196.06	40.09	40.14	172.91	1,775.92	-791.79	227.36	195.37	31.99	7.107	
8,700.00	6,970.28	8,921.64	7,195.98	40.50	40.55	172.98	1,800.91	-792.04	227.41	195.09	32.32	7.037	
8,725.00	6,970.13	8,946.64	7,195.90	40.91	40.97	173.04	1,825.91	-792.28	227.45	194.81	32.64	6.968	
8,750.00	6,969.97	8,971.64	7,195.82	41.33	41.38	173.10	1,850.91	-792.53	227.49	194.52	32.97	6.900	
8,775.00	6,969.82	8,996.64	7,195.74	41.75	41.80	173.17	1,875.91	-792.78	227.54	194.24	33.30	6.833	
8,800.00	6,969.66	9,021.64	7,195.66	42.17	42.22	173.23	1,900.90	-793.03	227.58	193.96	33.62	6.768	
8,825.00	6,969.51	9,046.63	7,195.58	42.59	42.64	173.30	1,925.90	-793.28	227.63	193.67	33.95	6.704	
8,850.00	6,969.36	9,071.63	7,195.50	43.01	43.06	173.36	1,950.90	-793.53	227.67	193.39	34.28	6.642	
8,875.00	6,969.20	9,096.63	7,195.42	43.43	43.48	173.43	1,975.90	-793.78	227.72	193.11	34.61	6.580	
8,900.00	6,969.05	9,121.63	7,195.34	43.86	43.91	173.49	2,000.89	-794.02	227.76	192.83	34.93	6.520	
8,925.00	6,968.89	9,146.63	7,195.26	44.28	44.33	173.55	2,025.89	-794.27	227.81	192.55	35.26	6.460	
8,950.00	6,968.74	9,171.63	7,195.18	44.71	44.76	173.62	2,050.89	-794.52	227.85	192.26	35.59	6.402	
8,975.00	6,968.58	9,196.63	7,195.10	45.13	45.18	173.68	2,075.89	-794.77	227.90	191.98	35.92	6.345	

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 POWERS 28N-23HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	17' RKB + 4909' GL @ 4926.00ft
Reference Site:	WELD_POWER PAD	MD Reference:	17' RKB + 4909' GL @ 4926.00ft
Site Error:	0.00 ft	North Reference:	True
Reference Well:	POWERS 28N-23HZ	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	POWERS 28N-23HZ	Database:	edm5000p
Reference Design:	POWERS 28N-23HZ (wp01)	Offset TVD Reference:	Offset Datum

Offset Design WELD_POWER PAD - POWERS 28C-23HZ - POWERS 28C-23HZ - POWERS 28C-23HZ (wp01)												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	
9,000.00	6,968.43	9,221.62	7,195.02	45.56	45.61	173.75	2,100.88	-795.02	227.95	191.70	36.25	6.289	
9,025.00	6,968.28	9,246.62	7,194.94	45.99	46.04	173.81	2,125.88	-795.27	227.99	191.42	36.57	6.234	
9,050.00	6,968.12	9,271.62	7,194.86	46.42	46.47	173.88	2,150.88	-795.51	228.04	191.14	36.90	6.180	
9,075.00	6,967.97	9,296.62	7,194.78	46.85	46.90	173.94	2,175.87	-795.76	228.09	190.86	37.23	6.126	
9,100.00	6,967.81	9,321.62	7,194.70	47.28	47.33	174.00	2,200.87	-796.01	228.13	190.58	37.56	6.074	
9,125.00	6,967.66	9,346.62	7,194.62	47.72	47.76	174.07	2,225.87	-796.26	228.18	190.30	37.89	6.023	
9,150.00	6,967.50	9,371.62	7,194.54	48.15	48.20	174.13	2,250.87	-796.51	228.23	190.02	38.22	5.972	
9,175.00	6,967.35	9,396.62	7,194.46	48.58	48.63	174.20	2,275.86	-796.76	228.28	189.74	38.54	5.923	
9,200.00	6,967.19	9,421.61	7,194.38	49.02	49.07	174.26	2,300.86	-797.00	228.33	189.46	38.87	5.874	
9,225.00	6,967.04	9,446.61	7,194.30	49.45	49.50	174.32	2,325.86	-797.25	228.38	189.18	39.20	5.826	
9,250.00	6,966.89	9,471.61	7,194.22	49.89	49.94	174.39	2,350.86	-797.50	228.43	188.90	39.53	5.778	
9,275.00	6,966.73	9,496.61	7,194.14	50.33	50.37	174.45	2,375.85	-797.75	228.48	188.62	39.86	5.732	
9,300.00	6,966.58	9,521.61	7,194.05	50.77	50.81	174.51	2,400.85	-798.00	228.53	188.34	40.19	5.686	
9,325.00	6,966.42	9,546.61	7,193.97	51.20	51.25	174.58	2,425.85	-798.25	228.58	188.06	40.52	5.641	
9,350.00	6,966.27	9,571.61	7,193.89	51.64	51.69	174.64	2,450.84	-798.50	228.63	187.78	40.85	5.597	
9,375.00	6,966.11	9,596.60	7,193.81	52.08	52.13	174.71	2,475.84	-798.74	228.68	187.50	41.18	5.554	
9,400.00	6,965.96	9,621.60	7,193.73	52.52	52.57	174.77	2,500.84	-798.99	228.73	187.22	41.50	5.511	
9,425.00	6,965.81	9,646.60	7,193.65	52.97	53.01	174.83	2,525.84	-799.24	228.78	186.95	41.83	5.469	
9,450.00	6,965.65	9,671.60	7,193.57	53.41	53.46	174.90	2,550.83	-799.49	228.83	186.67	42.16	5.427	
9,475.00	6,965.50	9,696.60	7,193.49	53.85	53.90	174.96	2,575.83	-799.74	228.88	186.39	42.49	5.386	
9,500.00	6,965.34	9,721.60	7,193.41	54.29	54.34	175.02	2,600.83	-799.99	228.94	186.11	42.82	5.346	
9,525.00	6,965.19	9,746.60	7,193.33	54.74	54.79	175.09	2,625.83	-800.23	228.99	185.84	43.15	5.307	
9,550.00	6,965.03	9,771.59	7,193.25	55.18	55.23	175.15	2,650.82	-800.48	229.04	185.56	43.48	5.268	
9,575.00	6,964.88	9,796.59	7,193.17	55.63	55.67	175.21	2,675.82	-800.73	229.09	185.28	43.81	5.229	
9,600.00	6,964.72	9,821.59	7,193.09	56.07	56.12	175.28	2,700.82	-800.98	229.15	185.01	44.14	5.191	
9,625.00	6,964.57	9,846.59	7,193.01	56.52	56.57	175.34	2,725.81	-801.23	229.20	184.73	44.47	5.154	
9,650.00	6,964.42	9,871.59	7,192.93	56.96	57.01	175.40	2,750.81	-801.48	229.25	184.45	44.80	5.117	
9,675.00	6,964.26	9,896.59	7,192.85	57.41	57.46	175.47	2,775.81	-801.72	229.31	184.18	45.13	5.081	
9,700.00	6,964.11	9,921.59	7,192.77	57.86	57.91	175.53	2,800.81	-801.97	229.36	183.90	45.46	5.045	
9,725.00	6,963.95	9,946.59	7,192.69	58.31	58.36	175.59	2,825.80	-802.22	229.42	183.63	45.79	5.010	
9,750.00	6,963.80	9,971.58	7,192.61	58.75	58.80	175.66	2,850.80	-802.47	229.47	183.35	46.12	4.975	
9,775.00	6,963.64	9,996.58	7,192.53	59.20	59.25	175.72	2,875.80	-802.72	229.53	183.08	46.45	4.941	
9,800.00	6,963.49	10,021.58	7,192.45	59.65	59.70	175.78	2,900.80	-802.97	229.58	182.80	46.78	4.908	
9,825.00	6,963.34	10,046.58	7,192.37	60.10	60.15	175.85	2,925.79	-803.21	229.64	182.53	47.11	4.874	
9,850.00	6,963.18	10,071.58	7,192.29	60.55	60.60	175.91	2,950.79	-803.46	229.70	182.25	47.44	4.841	
9,875.00	6,963.03	10,096.58	7,192.21	61.00	61.05	175.97	2,975.79	-803.71	229.75	181.98	47.77	4.809	
9,900.00	6,962.87	10,121.58	7,192.13	61.45	61.50	176.04	3,000.79	-803.96	229.81	181.70	48.11	4.777	
9,925.00	6,962.72	10,146.57	7,192.05	61.90	61.96	176.10	3,025.78	-804.21	229.86	181.43	48.44	4.746	
9,950.00	6,962.56	10,171.57	7,191.97	62.36	62.41	176.16	3,050.78	-804.46	229.92	181.15	48.77	4.715	
9,975.00	6,962.41	10,196.57	7,191.89	62.81	62.86	176.23	3,075.78	-804.71	229.98	180.88	49.10	4.684	
10,000.00	6,962.26	10,221.57	7,191.81	63.26	63.31	176.29	3,100.77	-804.95	230.04	180.61	49.43	4.654	
10,025.00	6,962.10	10,246.57	7,191.73	63.71	63.77	176.35	3,125.77	-805.20	230.10	180.33	49.76	4.624	
10,050.00	6,961.95	10,271.57	7,191.65	64.17	64.22	176.41	3,150.77	-805.45	230.15	180.06	50.09	4.594	
10,075.00	6,961.79	10,296.57	7,191.57	64.62	64.67	176.48	3,175.77	-805.70	230.21	179.79	50.43	4.565	
10,100.00	6,961.64	10,321.57	7,191.49	65.07	65.13	176.54	3,200.76	-805.95	230.27	179.51	50.76	4.537	
10,125.00	6,961.48	10,346.56	7,191.41	65.53	65.58	176.60	3,225.76	-806.20	230.33	179.24	51.09	4.508	
10,150.00	6,961.33	10,371.56	7,191.33	65.98	66.04	176.67	3,250.76	-806.44	230.39	178.97	51.42	4.480	
10,175.00	6,961.17	10,396.56	7,191.25	66.44	66.49	176.73	3,275.76	-806.69	230.45	178.69	51.76	4.453	
10,200.00	6,961.02	10,421.56	7,191.17	66.89	66.95	176.79	3,300.75	-806.94	230.51	178.42	52.09	4.425	
10,225.00	6,960.87	10,446.56	7,191.09	67.35	67.40	176.85	3,325.75	-807.19	230.57	178.15	52.42	4.398	
10,250.00	6,960.71	10,471.56	7,191.01	67.80	67.86	176.92	3,350.75	-807.44	230.63	177.88	52.76	4.372	
10,275.00	6,960.56	10,496.56	7,190.93	68.26	68.31	176.98	3,375.74	-807.69	230.69	177.60	53.09	4.345	

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 POWERS 28N-23HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	17' RKB + 4909' GL @ 4926.00ft
Reference Site:	WELD_POWERS PAD	MD Reference:	17' RKB + 4909' GL @ 4926.00ft
Site Error:	0.00 ft	North Reference:	True
Reference Well:	POWERS 28N-23HZ	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	POWERS 28N-23HZ	Database:	edm5000p
Reference Design:	POWERS 28N-23HZ (wp01)	Offset TVD Reference:	Offset Datum

Offset Design WELD_POWERS PAD - POWERS 28C-23HZ - POWERS 28C-23HZ - POWERS 28C-23HZ (wp01)												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	
10,300.00	6,960.40	10,521.55	7,190.85	68.71	68.77	177.04	3,400.74	-807.93	230.75	177.33	53.42	4.319	
10,325.00	6,960.25	10,546.55	7,190.77	69.17	69.23	177.10	3,425.74	-808.18	230.81	177.06	53.76	4.294	
10,350.00	6,960.09	10,571.55	7,190.68	69.63	69.68	177.17	3,450.74	-808.43	230.87	176.78	54.09	4.268	
10,375.00	6,959.94	10,596.55	7,190.60	70.08	70.14	177.23	3,475.73	-808.68	230.94	176.51	54.42	4.243	
10,400.00	6,959.79	10,621.55	7,190.52	70.54	70.60	177.29	3,500.73	-808.93	231.00	176.24	54.76	4.218	
10,425.00	6,959.63	10,646.55	7,190.44	71.00	71.06	177.35	3,525.73	-809.18	231.06	175.97	55.09	4.194	
10,450.00	6,959.48	10,671.55	7,190.36	71.46	71.52	177.42	3,550.73	-809.43	231.12	175.70	55.43	4.170	
10,475.00	6,959.32	10,696.55	7,190.28	71.91	71.97	177.48	3,575.72	-809.67	231.19	175.42	55.76	4.146	
10,500.00	6,959.17	10,721.54	7,190.20	72.37	72.43	177.54	3,600.72	-809.92	231.25	175.15	56.10	4.122	
10,525.00	6,959.01	10,746.54	7,190.12	72.83	72.89	177.60	3,625.72	-810.17	231.31	174.88	56.44	4.099	
10,550.00	6,958.86	10,771.54	7,190.04	73.29	73.35	177.67	3,650.71	-810.42	231.38	174.61	56.77	4.076	
10,575.00	6,958.70	10,796.54	7,189.96	73.75	73.81	177.73	3,675.71	-810.67	231.44	174.33	57.11	4.053	
10,600.00	6,958.55	10,821.54	7,189.88	74.21	74.27	177.79	3,700.71	-810.92	231.51	174.06	57.44	4.030	
10,625.00	6,958.40	10,846.54	7,189.80	74.67	74.73	177.85	3,725.71	-811.16	231.57	173.79	57.78	4.008	
10,650.00	6,958.24	10,871.54	7,189.72	75.13	75.19	177.91	3,750.70	-811.41	231.64	173.52	58.12	3.986	
10,675.00	6,958.09	10,896.53	7,189.64	75.59	75.65	177.98	3,775.70	-811.66	231.70	173.25	58.46	3.964	
10,700.00	6,957.93	10,921.53	7,189.56	76.05	76.11	178.04	3,800.70	-811.91	231.77	172.97	58.79	3.942	
10,725.00	6,957.78	10,946.53	7,189.48	76.51	76.57	178.10	3,825.70	-812.16	231.83	172.70	59.13	3.921	
10,750.00	6,957.62	10,971.53	7,189.40	76.97	77.03	178.16	3,850.69	-812.41	231.90	172.43	59.47	3.899	
10,775.00	6,957.47	10,996.53	7,189.32	77.43	77.50	178.22	3,875.69	-812.65	231.96	172.16	59.81	3.878	
10,800.00	6,957.32	11,021.53	7,189.24	77.89	77.96	178.29	3,900.69	-812.90	232.03	171.88	60.15	3.858	
10,825.00	6,957.16	11,046.53	7,189.16	78.35	78.42	178.35	3,925.68	-813.15	232.10	171.61	60.49	3.837	
10,850.00	6,957.01	11,071.53	7,189.08	78.81	78.88	178.41	3,950.68	-813.40	232.16	171.34	60.83	3.817	
10,875.00	6,956.85	11,096.52	7,189.00	79.27	79.34	178.47	3,975.68	-813.65	232.23	171.07	61.17	3.797	
10,900.00	6,956.70	11,121.52	7,188.92	79.74	79.80	178.53	4,000.68	-813.90	232.30	170.79	61.51	3.777	
10,925.00	6,956.54	11,146.52	7,188.84	80.20	80.27	178.59	4,025.67	-814.15	232.37	170.52	61.85	3.757	
10,950.00	6,956.39	11,171.52	7,188.76	80.66	80.73	178.66	4,050.67	-814.39	232.44	170.25	62.19	3.738	
10,975.00	6,956.23	11,196.52	7,188.68	81.12	81.19	178.72	4,075.67	-814.64	232.50	169.97	62.53	3.718	
11,000.00	6,956.08	11,221.52	7,188.60	81.59	81.66	178.78	4,100.67	-814.89	232.57	169.70	62.87	3.699	
11,025.00	6,955.93	11,246.52	7,188.52	82.05	82.12	178.84	4,125.66	-815.14	232.64	169.43	63.21	3.680	
11,050.00	6,955.77	11,271.51	7,188.44	82.51	82.58	178.90	4,150.66	-815.39	232.71	169.16	63.56	3.662	
11,075.00	6,955.62	11,296.51	7,188.36	82.97	83.05	178.96	4,175.66	-815.64	232.78	168.88	63.90	3.643	
11,100.00	6,955.46	11,321.51	7,188.28	83.44	83.51	179.03	4,200.66	-815.88	232.85	168.61	64.24	3.625	
11,125.00	6,955.31	11,346.51	7,188.20	83.90	83.97	179.09	4,225.65	-816.13	232.92	168.33	64.59	3.606	
11,150.00	6,955.15	11,371.51	7,188.12	84.36	84.44	179.15	4,250.65	-816.38	232.99	168.06	64.93	3.588	
11,175.00	6,955.00	11,396.51	7,188.04	84.83	84.90	179.21	4,275.65	-816.63	233.06	167.79	65.27	3.571	
11,200.00	6,954.85	11,421.51	7,187.96	85.29	85.37	179.27	4,300.64	-816.88	233.13	167.51	65.62	3.553	
11,225.00	6,954.69	11,446.50	7,187.88	85.75	85.83	179.33	4,325.64	-817.13	233.20	167.24	65.96	3.535	
11,250.00	6,954.54	11,471.50	7,187.80	86.22	86.29	179.39	4,350.64	-817.37	233.27	166.96	66.31	3.518	
11,275.00	6,954.38	11,496.50	7,187.72	86.68	86.76	179.45	4,375.64	-817.62	233.35	166.69	66.66	3.501	
11,300.00	6,954.23	11,521.50	7,187.64	87.15	87.22	179.52	4,400.63	-817.87	233.42	166.42	67.00	3.484	
11,325.00	6,954.07	11,546.50	7,187.56	87.61	87.69	179.58	4,425.63	-818.12	233.49	166.14	67.35	3.467	
11,350.00	6,953.92	11,571.50	7,187.48	88.08	88.15	179.64	4,450.63	-818.37	233.56	165.87	67.70	3.450	
11,375.00	6,953.76	11,596.50	7,187.40	88.54	88.62	179.70	4,475.63	-818.62	233.63	165.59	68.04	3.434	
11,400.00	6,953.61	11,621.50	7,187.31	89.01	89.08	179.76	4,500.62	-818.87	233.71	165.31	68.39	3.417	
11,425.00	6,953.46	11,646.49	7,187.23	89.47	89.55	179.82	4,525.62	-819.11	233.78	165.04	68.74	3.401	
11,450.00	6,953.30	11,671.49	7,187.15	89.94	90.02	179.88	4,550.62	-819.36	233.85	164.76	69.09	3.385	
11,475.00	6,953.15	11,696.49	7,187.07	90.40	90.48	179.94	4,575.61	-819.61	233.93	164.49	69.44	3.369	
11,498.82	6,953.00	11,719.56	7,187.00	90.84	90.91	180.00	4,598.68	-819.84	234.00	164.23	69.77	3.354	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well POWERS 28N-23HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	17' RKB + 4909' GL @ 4926.00ft
Reference Site:	WELD_POWER PAD	MD Reference:	17' RKB + 4909' GL @ 4926.00ft
Site Error:	0.00 ft	North Reference:	True
Reference Well:	POWERS 28N-23HZ	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	POWERS 28N-23HZ	Database:	edm5000p
Reference Design:	POWERS 28N-23HZ (wp01)	Offset TVD Reference:	Offset Datum

Offset Design WELD_POWER PAD - POWERS 2C-23HZ - POWERS 2C-23HZ - POWERS 2C-23HZ (wp01)												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	90.29	-0.37	71.88	71.88				
25.00	25.00	25.00	25.00	0.01	0.02	90.29	-0.37	71.88	71.88	71.84	0.03	2,224.578	
50.00	50.00	50.00	50.00	0.04	0.05	90.29	-0.37	71.88	71.88	71.79	0.08	858.478	
75.00	75.00	75.00	75.00	0.07	0.07	90.29	-0.37	71.88	71.88	71.74	0.14	531.864	
100.00	100.00	100.00	100.00	0.09	0.09	90.29	-0.37	71.88	71.88	71.69	0.19	385.281	
125.00	125.00	125.00	125.00	0.15	0.15	90.29	-0.37	71.88	71.88	71.58	0.30	240.438	
150.00	150.00	150.00	150.00	0.21	0.21	90.29	-0.37	71.88	71.88	71.47	0.41	174.745	
175.00	175.00	175.00	175.00	0.26	0.26	90.29	-0.37	71.88	71.88	71.35	0.52	137.246	
200.00	200.00	200.00	200.00	0.32	0.32	90.29	-0.37	71.88	71.88	71.24	0.64	112.998	
225.00	225.00	225.00	225.00	0.37	0.37	90.29	-0.37	71.88	71.88	71.13	0.75	96.031	
250.00	250.00	250.00	250.00	0.43	0.43	90.29	-0.37	71.88	71.88	71.02	0.86	83.494	
275.00	275.00	275.00	275.00	0.49	0.49	90.29	-0.37	71.88	71.88	70.90	0.97	73.853	
300.00	300.00	300.00	300.00	0.54	0.54	90.29	-0.37	71.88	71.88	70.79	1.09	66.208	
325.00	325.00	325.00	325.00	0.60	0.60	90.29	-0.37	71.88	71.88	70.68	1.20	59.997	
350.00	350.00	350.00	350.00	0.66	0.66	90.29	-0.37	71.88	71.88	70.57	1.31	54.851	
375.00	375.00	375.00	375.00	0.71	0.71	90.29	-0.37	71.88	71.88	70.45	1.42	50.519	
400.00	400.00	400.00	400.00	0.77	0.77	90.29	-0.37	71.88	71.88	70.34	1.54	46.820	
425.00	425.00	425.00	425.00	0.82	0.82	90.29	-0.37	71.88	71.88	70.23	1.65	43.627	
450.00	450.00	450.00	450.00	0.88	0.88	90.29	-0.37	71.88	71.88	70.12	1.76	40.841	
475.00	475.00	475.00	475.00	0.94	0.94	90.29	-0.37	71.88	71.88	70.00	1.87	38.389	
500.00	500.00	500.00	500.00	0.99	0.99	90.29	-0.37	71.88	71.88	69.89	1.98	36.216	
525.00	525.00	525.00	525.00	1.05	1.05	90.29	-0.37	71.88	71.88	69.78	2.10	34.275	
550.00	550.00	550.00	550.00	1.10	1.10	90.29	-0.37	71.88	71.88	69.67	2.21	32.531	
575.00	575.00	575.00	575.00	1.16	1.16	90.29	-0.37	71.88	71.88	69.55	2.32	30.957	
600.00	600.00	600.00	600.00	1.22	1.22	90.29	-0.37	71.88	71.88	69.44	2.43	29.528	
625.00	625.00	625.00	625.00	1.27	1.27	90.29	-0.37	71.88	71.88	69.33	2.55	28.224	
650.00	650.00	650.00	650.00	1.33	1.33	90.29	-0.37	71.88	71.88	69.22	2.66	27.032	
675.00	675.00	675.00	675.00	1.39	1.39	90.29	-0.37	71.88	71.88	69.11	2.77	25.935	
700.00	700.00	700.00	700.00	1.44	1.44	90.29	-0.37	71.88	71.88	68.99	2.88	24.925	
725.00	725.00	725.00	725.00	1.50	1.50	90.29	-0.37	71.88	71.88	68.88	3.00	23.990	
750.00	750.00	750.00	750.00	1.55	1.55	90.29	-0.37	71.88	71.88	68.77	3.11	23.122	
775.00	775.00	775.00	775.00	1.61	1.61	90.29	-0.37	71.88	71.88	68.66	3.22	22.316	
800.00	800.00	800.00	800.00	1.67	1.67	90.29	-0.37	71.88	71.88	68.54	3.33	21.563	
825.00	825.00	825.00	825.00	1.72	1.72	90.29	-0.37	71.88	71.88	68.43	3.45	20.860	
850.00	850.00	850.00	850.00	1.78	1.78	90.29	-0.37	71.88	71.88	68.32	3.56	20.201	
875.00	875.00	875.00	875.00	1.84	1.84	90.29	-0.37	71.88	71.88	68.21	3.67	19.583	
900.00	900.00	900.00	900.00	1.89	1.89	90.29	-0.37	71.88	71.88	68.09	3.78	19.001 CC, ES	
925.00	925.00	924.44	924.44	1.94	1.94	-166.35	-0.41	71.97	72.08	68.20	3.88	18.556	
950.00	950.00	948.86	948.86	2.00	1.99	-166.31	-0.54	72.26	72.69	68.71	3.99	18.237	
975.00	974.99	973.27	973.26	2.05	2.04	-166.24	-0.75	72.73	73.71	69.62	4.09	18.035	
1,000.00	999.98	997.65	997.63	2.10	2.09	-166.15	-1.04	73.40	75.14	70.95	4.19	17.941 SF	
1,025.00	1,024.96	1,021.99	1,021.95	2.15	2.14	-166.04	-1.42	74.25	76.97	72.69	4.28	17.974	
1,050.00	1,049.93	1,046.28	1,046.21	2.20	2.19	-165.91	-1.88	75.29	79.20	74.83	4.38	18.102	
1,075.00	1,074.89	1,070.51	1,070.41	2.25	2.24	-165.76	-2.42	76.52	81.85	77.38	4.47	18.317	
1,100.00	1,099.84	1,094.67	1,094.52	2.30	2.28	-165.60	-3.04	77.92	84.89	80.33	4.56	18.614	
1,125.00	1,124.77	1,118.76	1,118.55	2.36	2.33	-165.43	-3.74	79.51	88.34	83.69	4.66	18.977	
1,150.00	1,149.68	1,143.39	1,143.11	2.41	2.38	-165.27	-4.51	81.25	92.12	87.37	4.75	19.388	
1,175.00	1,174.58	1,168.07	1,167.71	2.46	2.44	-165.16	-5.28	83.00	96.10	91.26	4.85	19.827	
1,200.00	1,199.45	1,192.72	1,192.28	2.52	2.49	-165.08	-6.05	84.74	100.30	95.35	4.94	20.293	
1,225.00	1,224.30	1,217.33	1,216.82	2.58	2.54	-165.04	-6.82	86.48	104.70	99.66	5.04	20.773	
1,250.00	1,249.13	1,241.90	1,241.32	2.64	2.60	-165.03	-7.58	88.22	109.31	104.17	5.14	21.275	
1,275.00	1,273.93	1,266.43	1,265.78	2.70	2.65	-165.04	-8.35	89.95	114.12	108.89	5.23	21.801	

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 POWERS 28N-23HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	17' RKB + 4909' GL @ 4926.00ft
Reference Site:	WELD_POWER PAD	MD Reference:	17' RKB + 4909' GL @ 4926.00ft
Site Error:	0.00 ft	North Reference:	True
Reference Well:	POWERS 28N-23HZ	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	POWERS 28N-23HZ	Database:	edm5000p
Reference Design:	POWERS 28N-23HZ (wp01)	Offset TVD Reference:	Offset Datum

Offset Design WELD_POWER PAD - POWERS 2C-23HZ - POWERS 2C-23HZ - POWERS 2C-23HZ (wp01)												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	
1,300.00	1,298.70	1,290.92	1,290.19	2.76	2.71	-165.08	-9.11	91.68	119.15	113.81	5.33	22.349	
1,307.86	1,306.49	1,298.61	1,297.86	2.78	2.72	-165.10	-9.35	92.23	120.77	115.41	5.36	22.525	
1,325.00	1,323.45	1,315.38	1,314.58	2.83	2.76	-165.15	-9.88	93.41	124.33	118.89	5.43	22.883	
1,350.00	1,348.20	1,339.83	1,338.96	2.89	2.82	-165.23	-10.64	95.14	129.52	123.98	5.54	23.387	
1,375.00	1,372.94	1,364.29	1,363.34	2.96	2.87	-165.30	-11.40	96.87	134.71	129.07	5.64	23.872	
1,400.00	1,397.69	1,388.74	1,387.72	3.03	2.93	-165.36	-12.17	98.60	139.90	134.15	5.75	24.340	
1,425.00	1,422.44	1,413.19	1,412.10	3.10	2.99	-165.42	-12.93	100.33	145.09	139.24	5.85	24.783	
1,450.00	1,447.19	1,437.65	1,436.48	3.17	3.04	-165.47	-13.69	102.06	150.28	144.32	5.96	25.208	
1,475.00	1,471.93	1,462.10	1,460.86	3.24	3.10	-165.53	-14.46	103.79	155.48	149.41	6.07	25.618	
1,500.00	1,496.68	1,486.56	1,485.25	3.31	3.16	-165.57	-15.22	105.52	160.67	154.49	6.18	26.013	
1,525.00	1,521.43	1,511.01	1,509.63	3.39	3.22	-165.62	-15.98	107.24	165.86	159.58	6.29	26.389	
1,550.00	1,546.17	1,535.47	1,534.01	3.46	3.28	-165.66	-16.75	108.97	171.05	164.66	6.39	26.751	
1,575.00	1,570.92	1,559.92	1,558.39	3.53	3.33	-165.70	-17.51	110.70	176.24	169.74	6.50	27.100	
1,600.00	1,595.67	1,584.38	1,582.77	3.61	3.39	-165.74	-18.27	112.43	181.44	174.82	6.61	27.438	
1,625.00	1,620.41	1,608.83	1,607.15	3.69	3.45	-165.77	-19.04	114.16	186.63	179.91	6.72	27.760	
1,650.00	1,645.16	1,633.29	1,631.53	3.76	3.51	-165.81	-19.80	115.89	191.82	184.99	6.83	28.069	
1,675.00	1,669.91	1,657.74	1,655.92	3.84	3.57	-165.84	-20.57	117.62	197.01	190.07	6.94	28.369	
1,700.00	1,694.66	1,682.19	1,680.30	3.92	3.63	-165.87	-21.33	119.35	202.21	195.15	7.06	28.660	
1,725.00	1,719.40	1,706.65	1,704.68	3.99	3.69	-165.90	-22.09	121.08	207.40	200.23	7.17	28.938	
1,750.00	1,744.15	1,731.10	1,729.06	4.07	3.75	-165.93	-22.86	122.80	212.59	205.31	7.28	29.205	
1,775.00	1,768.90	1,755.56	1,753.44	4.15	3.81	-165.95	-23.62	124.53	217.79	210.39	7.39	29.465	
1,800.00	1,793.64	1,780.01	1,777.82	4.23	3.87	-165.98	-24.38	126.26	222.98	215.48	7.50	29.717	
1,825.00	1,818.39	1,804.47	1,802.20	4.31	3.93	-166.00	-25.15	127.99	228.17	220.56	7.62	29.959	
1,850.00	1,843.14	1,828.92	1,826.59	4.39	4.00	-166.02	-25.91	129.72	233.36	225.64	7.73	30.192	
1,875.00	1,867.89	1,853.38	1,850.97	4.47	4.06	-166.04	-26.67	131.45	238.56	230.72	7.84	30.418	
1,900.00	1,892.63	1,877.83	1,875.35	4.55	4.12	-166.06	-27.44	133.18	243.75	235.79	7.96	30.638	
1,925.00	1,917.38	1,902.29	1,899.73	4.63	4.18	-166.08	-28.20	134.91	248.94	240.87	8.07	30.850	
1,950.00	1,942.13	1,926.74	1,924.11	4.71	4.24	-166.10	-28.96	136.64	254.14	245.95	8.18	31.055	
1,975.00	1,966.87	1,951.20	1,948.49	4.79	4.30	-166.12	-29.73	138.37	259.33	251.03	8.30	31.253	
2,000.00	1,991.62	1,975.65	1,972.87	4.87	4.36	-166.14	-30.49	140.09	264.52	256.11	8.41	31.447	
2,025.00	2,016.37	2,000.10	1,997.26	4.96	4.43	-166.16	-31.25	141.82	269.72	261.19	8.53	31.634	
2,050.00	2,041.11	2,024.56	2,021.64	5.04	4.49	-166.17	-32.02	143.55	274.91	266.27	8.64	31.814	
2,075.00	2,065.86	2,049.01	2,046.02	5.12	4.55	-166.19	-32.78	145.28	280.10	271.35	8.76	31.990	
2,100.00	2,090.61	2,073.47	2,070.40	5.20	4.61	-166.20	-33.54	147.01	285.30	276.42	8.87	32.161	
2,125.00	2,115.36	2,097.92	2,094.78	5.29	4.67	-166.22	-34.31	148.74	290.49	281.50	8.99	32.327	
2,150.00	2,140.10	2,122.38	2,119.16	5.37	4.74	-166.23	-35.07	150.47	295.68	286.58	9.10	32.487	
2,175.00	2,164.85	2,146.83	2,143.54	5.45	4.80	-166.24	-35.83	152.20	300.88	291.66	9.22	32.644	
2,200.00	2,189.60	2,171.29	2,167.93	5.53	4.86	-166.26	-36.60	153.93	306.07	296.74	9.33	32.796	
2,225.00	2,214.34	2,195.74	2,192.31	5.62	4.93	-166.27	-37.36	155.66	311.26	301.81	9.45	32.944	
2,250.00	2,239.09	2,220.20	2,216.69	5.70	4.99	-166.28	-38.12	157.38	316.46	306.89	9.56	33.087	
2,275.00	2,263.84	2,244.65	2,241.07	5.78	5.05	-166.29	-38.89	159.11	321.65	311.97	9.68	33.227	
2,300.00	2,288.59	2,269.10	2,265.45	5.87	5.11	-166.31	-39.65	160.84	326.84	317.05	9.80	33.364	
2,325.00	2,313.33	2,293.56	2,289.83	5.95	5.18	-166.32	-40.41	162.57	332.04	322.12	9.91	33.496	
2,350.00	2,338.08	2,318.01	2,314.21	6.04	5.24	-166.33	-41.18	164.30	337.23	327.20	10.03	33.625	
2,375.00	2,362.83	2,342.47	2,338.60	6.12	5.30	-166.34	-41.94	166.03	342.42	332.28	10.15	33.751	
2,400.00	2,387.57	2,366.92	2,362.98	6.20	5.37	-166.35	-42.70	167.76	347.62	337.35	10.26	33.874	
2,425.00	2,412.32	2,391.38	2,387.36	6.29	5.43	-166.36	-43.47	169.49	352.81	342.43	10.38	33.993	
2,450.00	2,437.07	2,415.83	2,411.74	6.37	5.49	-166.37	-44.23	171.22	358.00	347.51	10.50	34.109	
2,475.00	2,461.81	2,440.29	2,436.12	6.46	5.56	-166.38	-44.99	172.94	363.20	352.58	10.61	34.223	
2,500.00	2,486.56	2,464.74	2,460.50	6.54	5.62	-166.39	-45.76	174.67	368.39	357.66	10.73	34.334	
2,525.00	2,511.31	2,489.20	2,484.88	6.63	5.68	-166.39	-46.52	176.40	373.58	362.74	10.85	34.442	
2,550.00	2,536.06	2,513.65	2,509.27	6.71	5.75	-166.40	-47.28	178.13	378.78	367.81	10.96	34.547	

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 POWERS 28N-23HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	17' RKB + 4909' GL @ 4926.00ft
Reference Site:	WELD_POWER PAD	MD Reference:	17' RKB + 4909' GL @ 4926.00ft
Site Error:	0.00 ft	North Reference:	True
Reference Well:	POWERS 28N-23HZ	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	POWERS 28N-23HZ	Database:	edm5000p
Reference Design:	POWERS 28N-23HZ (wp01)	Offset TVD Reference:	Offset Datum

Offset Design WELD_POWER PAD - POWERS 2C-23HZ - POWERS 2C-23HZ - POWERS 2C-23HZ (wp01)												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	
2,575.00	2,560.80	2,538.10	2,533.65	6.80	5.81	-166.41	-48.05	179.86	383.97	372.89	11.08	34.650	
2,600.00	2,585.55	2,562.56	2,558.03	6.88	5.87	-166.42	-48.81	181.59	389.16	377.96	11.20	34.751	
2,625.00	2,610.30	2,587.01	2,582.41	6.97	5.94	-166.43	-49.57	183.32	394.36	383.04	11.32	34.849	
2,650.00	2,635.04	2,611.47	2,606.79	7.05	6.00	-166.43	-50.34	185.05	399.55	388.12	11.43	34.945	
2,675.00	2,659.79	2,635.92	2,631.17	7.14	6.07	-166.44	-51.10	186.78	404.74	393.19	11.55	35.039	
2,700.00	2,684.54	2,660.38	2,655.55	7.22	6.13	-166.45	-51.86	188.51	409.94	398.27	11.67	35.131	
2,725.00	2,709.29	2,684.83	2,679.94	7.31	6.19	-166.46	-52.63	190.23	415.13	403.34	11.79	35.220	
2,750.00	2,734.03	2,709.29	2,704.32	7.40	6.26	-166.46	-53.39	191.96	420.32	408.42	11.90	35.308	
2,775.00	2,758.78	2,733.74	2,728.70	7.48	6.32	-166.47	-54.15	193.69	425.52	413.49	12.02	35.393	
2,800.00	2,783.53	2,758.20	2,753.08	7.57	6.39	-166.48	-54.92	195.42	430.71	418.57	12.14	35.477	
2,825.00	2,808.27	2,782.65	2,777.46	7.65	6.45	-166.48	-55.68	197.15	435.90	423.65	12.26	35.559	
2,850.00	2,833.02	2,807.10	2,801.84	7.74	6.51	-166.49	-56.44	198.88	441.10	428.72	12.38	35.640	
2,875.00	2,857.77	2,831.56	2,826.22	7.82	6.58	-166.50	-57.21	200.61	446.29	433.80	12.49	35.718	
2,900.00	2,882.52	2,856.01	2,850.61	7.91	6.64	-166.50	-57.97	202.34	451.48	438.87	12.61	35.796	
2,925.00	2,907.26	2,880.47	2,874.99	8.00	6.71	-166.51	-58.74	204.07	456.68	443.95	12.73	35.871	
2,950.00	2,932.01	2,904.92	2,899.37	8.08	6.77	-166.51	-59.50	205.80	461.87	449.02	12.85	35.945	
2,975.00	2,956.76	2,929.38	2,923.75	8.17	6.83	-166.52	-60.26	207.52	467.06	454.10	12.97	36.017	
3,000.00	2,981.50	2,953.83	2,948.13	8.26	6.90	-166.52	-61.03	209.25	472.26	459.17	13.09	36.088	
3,025.00	3,006.25	2,978.29	2,972.51	8.34	6.96	-166.53	-61.79	210.98	477.45	464.25	13.20	36.158	
3,050.00	3,031.00	3,002.74	2,996.89	8.43	7.03	-166.53	-62.55	212.71	482.65	469.32	13.32	36.226	
3,075.00	3,055.74	3,027.20	3,021.27	8.51	7.09	-166.54	-63.32	214.44	487.84	474.40	13.44	36.293	
3,100.00	3,080.49	3,051.65	3,045.66	8.60	7.16	-166.54	-64.08	216.17	493.03	479.47	13.56	36.358	
3,125.00	3,105.24	3,076.10	3,070.04	8.69	7.22	-166.55	-64.84	217.90	498.23	484.55	13.68	36.423	
3,150.00	3,129.99	3,100.56	3,094.42	8.77	7.29	-166.55	-65.61	219.63	503.42	489.62	13.80	36.486	
3,175.00	3,154.73	3,125.01	3,118.80	8.86	7.35	-166.56	-66.37	221.36	508.61	494.70	13.92	36.547	
3,200.00	3,179.48	3,149.47	3,143.18	8.95	7.41	-166.56	-67.13	223.08	513.81	499.77	14.04	36.608	
3,225.00	3,204.23	3,173.92	3,167.56	9.03	7.48	-166.57	-67.90	224.81	519.00	504.85	14.15	36.668	
3,250.00	3,228.97	3,198.38	3,191.94	9.12	7.54	-166.57	-68.66	226.54	524.19	509.92	14.27	36.726	
3,275.00	3,253.72	3,222.83	3,216.33	9.21	7.61	-166.58	-69.42	228.27	529.39	515.00	14.39	36.784	
3,300.00	3,278.47	3,247.29	3,240.71	9.29	7.67	-166.58	-70.19	230.00	534.58	520.07	14.51	36.840	
3,325.00	3,303.22	3,271.74	3,265.09	9.38	7.74	-166.58	-70.95	231.73	539.77	525.14	14.63	36.895	
3,350.00	3,327.96	3,296.20	3,289.47	9.47	7.80	-166.59	-71.71	233.46	544.97	530.22	14.75	36.950	
3,375.00	3,352.71	3,320.65	3,313.85	9.55	7.87	-166.59	-72.48	235.19	550.16	535.29	14.87	37.003	
3,400.00	3,377.46	3,345.10	3,338.23	9.64	7.93	-166.60	-73.24	236.92	555.35	540.37	14.99	37.056	
3,425.00	3,402.20	3,369.56	3,362.61	9.73	8.00	-166.60	-74.00	238.65	560.55	545.44	15.11	37.107	
3,450.00	3,426.95	3,394.01	3,387.00	9.81	8.06	-166.60	-74.77	240.37	565.74	550.52	15.23	37.158	
3,475.00	3,451.70	3,418.47	3,411.38	9.90	8.13	-166.61	-75.53	242.10	570.94	555.59	15.34	37.208	
3,500.00	3,476.44	3,442.92	3,435.76	9.99	8.19	-166.61	-76.29	243.83	576.13	560.67	15.46	37.257	
3,525.00	3,501.19	3,467.38	3,460.14	10.07	8.25	-166.62	-77.06	245.56	581.32	565.74	15.58	37.305	
3,550.00	3,525.94	3,491.83	3,484.52	10.16	8.32	-166.62	-77.82	247.29	586.52	570.81	15.70	37.353	
3,575.00	3,550.69	3,516.29	3,508.90	10.25	8.38	-166.62	-78.58	249.02	591.71	575.89	15.82	37.399	
3,600.00	3,575.43	3,540.74	3,533.28	10.34	8.45	-166.63	-79.35	250.75	596.90	580.96	15.94	37.445	
3,625.00	3,600.18	3,565.20	3,557.67	10.42	8.51	-166.63	-80.11	252.48	602.10	586.04	16.06	37.490	
3,650.00	3,624.93	3,589.65	3,582.05	10.51	8.58	-166.63	-80.87	254.21	607.29	591.11	16.18	37.534	
3,675.00	3,649.67	3,614.11	3,606.43	10.60	8.64	-166.64	-81.64	255.94	612.48	596.19	16.30	37.578	
3,700.00	3,674.42	3,638.56	3,630.81	10.68	8.71	-166.64	-82.40	257.66	617.68	601.26	16.42	37.621	
3,725.00	3,699.17	3,663.01	3,655.19	10.77	8.77	-166.64	-83.16	259.39	622.87	606.33	16.54	37.663	
3,750.00	3,723.92	3,687.47	3,679.57	10.86	8.84	-166.65	-83.93	261.12	628.06	611.41	16.66	37.705	
3,775.00	3,748.66	3,711.92	3,703.95	10.95	8.90	-166.65	-84.69	262.85	633.26	616.48	16.78	37.746	
3,800.00	3,773.41	3,736.38	3,728.34	11.03	8.97	-166.65	-85.45	264.58	638.45	621.56	16.90	37.786	
3,825.00	3,798.16	3,760.83	3,752.72	11.12	9.03	-166.65	-86.22	266.31	643.65	626.63	17.02	37.826	
3,850.00	3,822.90	3,785.29	3,777.10	11.21	9.10	-166.66	-86.98	268.04	648.84	631.70	17.14	37.865	

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 POWERS 28N-23HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	17' RKB + 4909' GL @ 4926.00ft
Reference Site:	WELD_POWER PAD	MD Reference:	17' RKB + 4909' GL @ 4926.00ft
Site Error:	0.00 ft	North Reference:	True
Reference Well:	POWERS 28N-23HZ	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	POWERS 28N-23HZ	Database:	edm5000p
Reference Design:	POWERS 28N-23HZ (wp01)	Offset TVD Reference:	Offset Datum

Offset Design WELD_POWER PAD - POWERS 2C-23HZ - POWERS 2C-23HZ - POWERS 2C-23HZ (wp01)												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
3,875.00	3,847.65	3,809.74	3,801.48	11.30	9.16	-166.66	-87.74	269.77	654.03	636.78	17.26	37.903	
3,900.00	3,872.40	3,834.20	3,825.86	11.38	9.23	-166.66	-88.51	271.50	659.23	641.85	17.37	37.941	
3,925.00	3,897.14	3,858.65	3,850.24	11.47	9.29	-166.67	-89.27	273.22	664.42	646.93	17.49	37.979	
3,950.00	3,921.89	3,883.11	3,874.62	11.56	9.36	-166.67	-90.03	274.95	669.61	652.00	17.61	38.015	
3,975.00	3,946.64	3,907.56	3,899.01	11.65	9.42	-166.67	-90.80	276.68	674.81	657.07	17.73	38.052	
4,000.00	3,971.39	3,932.01	3,923.39	11.73	9.49	-166.67	-91.56	278.41	680.00	662.15	17.85	38.088	
4,025.00	3,996.13	3,956.47	3,947.77	11.82	9.55	-166.68	-92.32	280.14	685.19	667.22	17.97	38.123	
4,050.00	4,020.88	3,980.92	3,972.15	11.91	9.62	-166.68	-93.09	281.87	690.39	672.30	18.09	38.157	
4,075.00	4,045.63	4,005.38	3,996.53	11.99	9.68	-166.68	-93.85	283.60	695.58	677.37	18.21	38.192	
4,100.00	4,070.37	4,029.83	4,020.91	12.08	9.75	-166.68	-94.61	285.33	700.78	682.44	18.33	38.225	
4,125.00	4,095.12	4,054.29	4,045.29	12.17	9.81	-166.69	-95.38	287.06	705.97	687.52	18.45	38.259	
4,150.00	4,119.87	4,078.74	4,069.68	12.26	9.88	-166.69	-96.14	288.79	711.16	692.59	18.57	38.291	
4,175.00	4,144.62	4,103.20	4,094.06	12.34	9.94	-166.69	-96.91	290.51	716.36	697.66	18.69	38.324	
4,200.00	4,169.36	4,127.65	4,118.44	12.43	10.01	-166.69	-97.67	292.24	721.55	702.74	18.81	38.356	
4,225.00	4,194.11	4,152.11	4,142.82	12.52	10.07	-166.70	-98.43	293.97	726.74	707.81	18.93	38.387	
4,250.00	4,218.86	4,176.56	4,167.20	12.61	10.14	-166.70	-99.20	295.70	731.94	712.89	19.05	38.418	
4,275.00	4,243.60	4,201.01	4,191.58	12.70	10.20	-166.70	-99.96	297.43	737.13	717.96	19.17	38.449	
4,300.00	4,268.35	4,225.47	4,215.96	12.78	10.27	-166.70	-100.72	299.16	742.32	723.03	19.29	38.479	
4,325.00	4,293.10	4,249.92	4,240.35	12.87	10.33	-166.70	-101.49	300.89	747.52	728.11	19.41	38.509	
4,350.00	4,317.84	4,274.38	4,264.73	12.96	10.40	-166.71	-102.25	302.62	752.71	733.18	19.53	38.538	
4,375.00	4,342.59	4,298.83	4,289.11	13.05	10.46	-166.71	-103.01	304.35	757.91	738.25	19.65	38.567	
4,400.00	4,367.34	4,323.29	4,313.49	13.13	10.53	-166.71	-103.78	306.08	763.10	743.33	19.77	38.596	
4,425.00	4,392.09	4,347.74	4,337.87	13.22	10.60	-166.71	-104.54	307.80	768.29	748.40	19.89	38.624	
4,450.00	4,416.83	4,372.20	4,362.25	13.31	10.66	-166.71	-105.30	309.53	773.49	753.47	20.01	38.652	
4,475.00	4,441.58	4,396.65	4,386.63	13.40	10.73	-166.72	-106.07	311.26	778.68	758.55	20.13	38.679	
4,500.00	4,466.33	4,421.11	4,411.02	13.48	10.79	-166.72	-106.83	312.99	783.87	763.62	20.25	38.706	
4,525.00	4,491.07	4,445.56	4,435.40	13.57	10.86	-166.72	-107.59	314.72	789.07	768.70	20.37	38.733	
4,550.00	4,515.82	4,470.01	4,459.78	13.66	10.92	-166.72	-108.36	316.45	794.26	773.77	20.49	38.760	
4,575.00	4,540.57	4,494.47	4,484.16	13.75	10.99	-166.72	-109.12	318.18	799.45	778.84	20.61	38.786	
4,600.00	4,565.32	4,518.92	4,508.54	13.83	11.05	-166.73	-109.88	319.91	804.65	783.92	20.73	38.812	
4,625.00	4,590.06	4,543.38	4,532.92	13.92	11.12	-166.73	-110.65	321.64	809.84	788.99	20.85	38.837	
4,650.00	4,614.81	4,567.83	4,557.30	14.01	11.18	-166.73	-111.41	323.36	815.04	794.06	20.97	38.862	
4,675.00	4,639.56	4,592.29	4,581.69	14.10	11.25	-166.73	-112.17	325.09	820.23	799.14	21.09	38.887	
4,700.00	4,664.30	4,616.74	4,606.07	14.19	11.31	-166.73	-112.94	326.82	825.42	804.21	21.21	38.912	
4,725.00	4,689.05	4,641.20	4,630.45	14.27	11.38	-166.73	-113.70	328.55	830.62	809.28	21.33	38.936	
4,750.00	4,713.80	4,665.65	4,654.83	14.36	11.44	-166.74	-114.46	330.28	835.81	814.36	21.45	38.960	
4,775.00	4,738.54	4,690.11	4,679.21	14.45	11.51	-166.74	-115.23	332.01	841.00	819.43	21.57	38.984	
4,800.00	4,763.29	4,714.56	4,703.59	14.54	11.57	-166.74	-115.99	333.74	846.20	824.50	21.69	39.007	
4,825.00	4,788.04	4,739.01	4,727.97	14.63	11.64	-166.74	-116.75	335.47	851.39	829.58	21.81	39.030	
4,850.00	4,812.79	4,763.47	4,752.36	14.71	11.70	-166.74	-117.52	337.20	856.58	834.65	21.93	39.053	
4,875.00	4,837.53	4,787.92	4,776.74	14.80	11.77	-166.74	-118.28	338.93	861.78	839.72	22.05	39.076	
4,900.00	4,862.28	4,812.38	4,801.12	14.89	11.84	-166.75	-119.04	340.65	866.97	844.80	22.17	39.098	
4,925.00	4,887.03	4,836.83	4,825.50	14.98	11.90	-166.75	-119.81	342.38	872.17	849.87	22.29	39.120	
4,950.00	4,911.77	4,861.29	4,849.88	15.06	11.97	-166.75	-120.57	344.11	877.36	854.94	22.41	39.142	
4,975.00	4,936.52	4,885.74	4,874.26	15.15	12.03	-166.75	-121.33	345.84	882.55	860.02	22.54	39.163	
5,000.00	4,961.27	4,910.20	4,898.64	15.24	12.10	-166.75	-122.10	347.57	887.75	865.09	22.66	39.185	
5,025.00	4,986.02	4,934.65	4,923.03	15.33	12.16	-166.75	-122.86	349.30	892.94	870.16	22.78	39.206	
5,050.00	5,010.76	4,959.11	4,947.41	15.42	12.23	-166.76	-123.62	351.03	898.13	875.24	22.90	39.227	
5,075.00	5,035.51	4,983.56	4,971.79	15.50	12.29	-166.76	-124.39	352.76	903.33	880.31	23.02	39.247	
5,100.00	5,060.26	5,008.02	4,996.17	15.59	12.36	-166.76	-125.15	354.49	908.52	885.38	23.14	39.268	
5,125.00	5,085.00	5,032.47	5,020.55	15.68	12.42	-166.76	-125.91	356.22	913.71	890.46	23.26	39.288	
5,150.00	5,109.75	5,056.92	5,044.93	15.77	12.49	-166.76	-126.68	357.94	918.91	895.53	23.38	39.308	

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 POWERS 28N-23HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	17' RKB + 4909' GL @ 4926.00ft
Reference Site:	WELD_POWERS PAD	MD Reference:	17' RKB + 4909' GL @ 4926.00ft
Site Error:	0.00 ft	North Reference:	True
Reference Well:	POWERS 28N-23HZ	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	POWERS 28N-23HZ	Database:	edm5000p
Reference Design:	POWERS 28N-23HZ (wp01)	Offset TVD Reference:	Offset Datum

Offset Design WELD_POWERS PAD - POWERS 2C-23HZ - POWERS 2C-23HZ - POWERS 2C-23HZ (wp01)												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
5,175.00	5,134.50	5,081.38	5,069.31	15.86	12.55	-166.76	-127.44	359.67	924.10	900.60	23.50	39.327	
5,200.00	5,159.24	5,105.83	5,093.70	15.94	12.62	-166.76	-128.20	361.40	929.30	905.68	23.62	39.347	
5,225.00	5,183.99	5,130.29	5,118.08	16.03	12.69	-166.77	-128.97	363.13	934.49	910.75	23.74	39.366	
5,250.00	5,208.74	5,154.74	5,142.46	16.12	12.75	-166.77	-129.73	364.86	939.68	915.82	23.86	39.385	
5,275.00	5,233.49	5,179.20	5,166.84	16.21	12.82	-166.77	-130.49	366.59	944.88	920.90	23.98	39.404	
5,300.00	5,258.23	5,203.65	5,191.22	16.30	12.88	-166.77	-131.26	368.32	950.07	925.97	24.10	39.423	
5,325.00	5,282.98	5,228.11	5,215.60	16.38	12.95	-166.77	-132.02	370.05	955.26	931.04	24.22	39.441	
5,350.00	5,307.73	5,252.56	5,239.98	16.47	13.01	-166.77	-132.78	371.78	960.46	936.12	24.34	39.459	
5,375.00	5,332.47	5,277.02	5,264.37	16.56	13.08	-166.77	-133.55	373.50	965.65	941.19	24.46	39.478	
5,400.00	5,357.22	5,301.47	5,288.75	16.65	13.14	-166.78	-134.31	375.23	970.84	946.26	24.58	39.495	
5,425.00	5,381.97	5,325.92	5,313.13	16.74	13.21	-166.78	-135.08	376.96	976.04	951.34	24.70	39.513	
5,450.00	5,406.72	5,350.38	5,337.51	16.82	13.27	-166.78	-135.84	378.69	981.23	956.41	24.82	39.531	
5,475.00	5,431.46	5,374.83	5,361.89	16.91	13.34	-166.78	-136.60	380.42	986.43	961.48	24.94	39.548	
5,500.00	5,456.21	5,399.29	5,386.27	17.00	13.40	-166.78	-137.37	382.15	991.62	966.56	25.06	39.565	
5,525.00	5,480.96	5,423.74	5,410.65	17.09	13.47	-166.78	-138.13	383.88	996.81	971.63	25.18	39.582	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well POWERS 28N-23HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	17' RKB + 4909' GL @ 4926.00ft
Reference Site:	WELD_POWER PAD	MD Reference:	17' RKB + 4909' GL @ 4926.00ft
Site Error:	0.00 ft	North Reference:	True
Reference Well:	POWERS 28N-23HZ	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	POWERS 28N-23HZ	Database:	edm5000p
Reference Design:	POWERS 28N-23HZ (wp01)	Offset TVD Reference:	Offset Datum

Offset Design WELD_POWER PAD - POWERS 2N-23HZ - POWERS 2N-23HZ - POWERS 2N-23HZ (wp01)												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	47.82	47.82				
25.00	25.00	25.00	25.00	0.01	0.02	90.00	0.00	47.82	47.82	47.79	0.03	1,480.147	
50.00	50.00	50.00	50.00	0.04	0.05	90.00	0.00	47.82	47.82	47.74	0.08	571.198	
75.00	75.00	75.00	75.00	0.07	0.07	90.00	0.00	47.82	47.82	47.69	0.14	353.881	
100.00	100.00	100.00	100.00	0.09	0.09	90.00	0.00	47.82	47.82	47.64	0.19	256.351	
125.00	125.00	125.00	125.00	0.15	0.15	90.00	0.00	47.82	47.82	47.52	0.30	159.978	
150.00	150.00	150.00	150.00	0.21	0.21	90.00	0.00	47.82	47.82	47.41	0.41	116.268	
175.00	175.00	175.00	175.00	0.26	0.26	90.00	0.00	47.82	47.82	47.30	0.52	91.318	
200.00	200.00	200.00	200.00	0.32	0.32	90.00	0.00	47.82	47.82	47.19	0.64	75.184	
225.00	225.00	225.00	225.00	0.37	0.37	90.00	0.00	47.82	47.82	47.08	0.75	63.895	
250.00	250.00	250.00	250.00	0.43	0.43	90.00	0.00	47.82	47.82	46.96	0.86	55.554	
275.00	275.00	275.00	275.00	0.49	0.49	90.00	0.00	47.82	47.82	46.85	0.97	49.139	
300.00	300.00	300.00	300.00	0.54	0.54	90.00	0.00	47.82	47.82	46.74	1.09	44.052	
325.00	325.00	325.00	325.00	0.60	0.60	90.00	0.00	47.82	47.82	46.63	1.20	39.920	
350.00	350.00	350.00	350.00	0.66	0.66	90.00	0.00	47.82	47.82	46.51	1.31	36.496	
375.00	375.00	375.00	375.00	0.71	0.71	90.00	0.00	47.82	47.82	46.40	1.42	33.613	
400.00	400.00	400.00	400.00	0.77	0.77	90.00	0.00	47.82	47.82	46.29	1.54	31.152	
425.00	425.00	425.00	425.00	0.82	0.82	90.00	0.00	47.82	47.82	46.18	1.65	29.027	
450.00	450.00	450.00	450.00	0.88	0.88	90.00	0.00	47.82	47.82	46.06	1.76	27.174	
475.00	475.00	475.00	475.00	0.94	0.94	90.00	0.00	47.82	47.82	45.95	1.87	25.543	
500.00	500.00	500.00	500.00	0.99	0.99	90.00	0.00	47.82	47.82	45.84	1.98	24.096	
525.00	525.00	525.00	525.00	1.05	1.05	90.00	0.00	47.82	47.82	45.73	2.10	22.805	
550.00	550.00	550.00	550.00	1.10	1.10	90.00	0.00	47.82	47.82	45.61	2.21	21.645	
575.00	575.00	575.00	575.00	1.16	1.16	90.00	0.00	47.82	47.82	45.50	2.32	20.597	
600.00	600.00	600.00	600.00	1.22	1.22	90.00	0.00	47.82	47.82	45.39	2.43	19.646	
625.00	625.00	625.00	625.00	1.27	1.27	90.00	0.00	47.82	47.82	45.28	2.55	18.779	
650.00	650.00	650.00	650.00	1.33	1.33	90.00	0.00	47.82	47.82	45.16	2.66	17.986	
675.00	675.00	675.00	675.00	1.39	1.39	90.00	0.00	47.82	47.82	45.05	2.77	17.256	
700.00	700.00	700.00	700.00	1.44	1.44	90.00	0.00	47.82	47.82	44.94	2.88	16.584	
725.00	725.00	725.00	725.00	1.50	1.50	90.00	0.00	47.82	47.82	44.83	3.00	15.962	
750.00	750.00	750.00	750.00	1.55	1.55	90.00	0.00	47.82	47.82	44.72	3.11	15.385	
775.00	775.00	775.00	775.00	1.61	1.61	90.00	0.00	47.82	47.82	44.60	3.22	14.848	
800.00	800.00	800.00	800.00	1.67	1.67	90.00	0.00	47.82	47.82	44.49	3.33	14.347	
825.00	825.00	825.00	825.00	1.72	1.72	90.00	0.00	47.82	47.82	44.38	3.45	13.879	
850.00	850.00	850.00	850.00	1.78	1.78	90.00	0.00	47.82	47.82	44.27	3.56	13.441	
875.00	875.00	875.00	875.00	1.84	1.84	90.00	0.00	47.82	47.82	44.15	3.67	13.029	
900.00	900.00	900.00	900.00	1.89	1.89	90.00	0.00	47.82	47.82	44.04	3.78	12.642 CC, ES	
925.00	925.00	924.77	924.77	1.94	1.94	-166.58	-0.09	47.88	47.99	44.11	3.88	12.357	
950.00	950.00	949.52	949.52	2.00	1.99	-166.35	-0.36	48.06	48.49	44.51	3.98	12.171	
975.00	974.99	974.27	974.26	2.05	2.04	-165.99	-0.80	48.37	49.33	45.25	4.08	12.078	
1,000.00	999.98	998.99	998.97	2.10	2.09	-165.49	-1.42	48.79	50.51	46.32	4.18	12.070 SF	
1,025.00	1,024.96	1,023.80	1,023.77	2.15	2.13	-164.91	-2.19	49.32	52.01	47.73	4.28	12.162	
1,050.00	1,049.93	1,048.74	1,048.68	2.20	2.18	-164.39	-3.00	49.87	53.74	49.37	4.37	12.302	
1,075.00	1,074.89	1,073.66	1,073.58	2.25	2.22	-163.97	-3.80	50.41	55.69	51.23	4.46	12.485	
1,100.00	1,099.84	1,098.56	1,098.47	2.30	2.27	-163.63	-4.60	50.96	57.85	53.29	4.55	12.708	
1,125.00	1,124.77	1,123.45	1,123.34	2.36	2.32	-163.37	-5.41	51.51	60.21	55.57	4.65	12.958	
1,150.00	1,149.68	1,148.32	1,148.18	2.41	2.37	-163.19	-6.21	52.06	62.79	58.05	4.74	13.243	
1,175.00	1,174.58	1,173.16	1,173.01	2.46	2.41	-163.08	-7.01	52.60	65.58	60.74	4.84	13.560	
1,200.00	1,199.45	1,197.98	1,197.81	2.52	2.46	-163.03	-7.81	53.15	68.57	63.64	4.93	13.909	
1,225.00	1,224.30	1,222.77	1,222.59	2.58	2.51	-163.03	-8.61	53.70	71.77	66.74	5.03	14.278	
1,250.00	1,249.13	1,247.54	1,247.33	2.64	2.56	-163.07	-9.41	54.24	75.17	70.05	5.12	14.673	
1,275.00	1,273.93	1,272.28	1,272.05	2.70	2.61	-163.16	-10.21	54.78	78.79	73.57	5.22	15.095	

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 POWERS 28N-23HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	17' RKB + 4909' GL @ 4926.00ft
Reference Site:	WELD_POWER PAD	MD Reference:	17' RKB + 4909' GL @ 4926.00ft
Site Error:	0.00 ft	North Reference:	True
Reference Well:	POWERS 28N-23HZ	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	POWERS 28N-23HZ	Database:	edm5000p
Reference Design:	POWERS 28N-23HZ (wp01)	Offset TVD Reference:	Offset Datum

Offset Design WELD_POWER PAD - POWERS 2N-23HZ - POWERS 2N-23HZ - POWERS 2N-23HZ (wp01)												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
1,300.00	1,298.70	1,296.98	1,296.74	2.76	2.66	-163.28	-11.01	55.33	82.61	77.29	5.32	15.542	
1,307.86	1,306.49	1,304.75	1,304.49	2.78	2.67	-163.32	-11.26	55.50	83.85	78.50	5.35	15.687	
1,325.00	1,323.45	1,321.66	1,321.40	2.83	2.71	-163.43	-11.80	55.87	86.58	81.17	5.42	15.985	
1,350.00	1,348.20	1,346.34	1,346.06	2.89	2.76	-163.58	-12.60	56.41	90.57	85.05	5.52	16.407	
1,375.00	1,372.94	1,371.02	1,370.72	2.96	2.81	-163.72	-13.39	56.96	94.56	88.94	5.62	16.813	
1,400.00	1,397.69	1,395.70	1,395.38	3.03	2.86	-163.84	-14.19	57.50	98.55	92.83	5.73	17.204	
1,425.00	1,422.44	1,420.38	1,420.04	3.10	2.91	-163.96	-14.99	58.04	102.54	96.71	5.83	17.575	
1,450.00	1,447.19	1,445.06	1,444.70	3.17	2.96	-164.07	-15.78	58.59	106.54	100.59	5.94	17.932	
1,475.00	1,471.93	1,469.74	1,469.36	3.24	3.02	-164.16	-16.58	59.13	110.53	104.48	6.05	18.276	
1,500.00	1,496.68	1,494.41	1,494.02	3.31	3.07	-164.26	-17.37	59.67	114.52	108.36	6.15	18.608	
1,525.00	1,521.43	1,519.09	1,518.68	3.39	3.12	-164.34	-18.17	60.22	118.51	112.25	6.26	18.924	
1,550.00	1,546.17	1,543.77	1,543.34	3.46	3.17	-164.42	-18.97	60.76	122.50	116.13	6.37	19.228	
1,575.00	1,570.92	1,568.45	1,568.00	3.53	3.23	-164.50	-19.76	61.30	126.49	120.01	6.48	19.522	
1,600.00	1,595.67	1,593.13	1,592.66	3.61	3.28	-164.57	-20.56	61.84	130.49	123.90	6.59	19.806	
1,625.00	1,620.41	1,617.81	1,617.32	3.69	3.33	-164.64	-21.35	62.39	134.48	127.78	6.70	20.077	
1,650.00	1,645.16	1,642.49	1,641.98	3.76	3.38	-164.70	-22.15	62.93	138.47	131.66	6.81	20.338	
1,675.00	1,669.91	1,667.17	1,666.64	3.84	3.44	-164.76	-22.95	63.47	142.47	135.55	6.92	20.591	
1,700.00	1,694.66	1,691.84	1,691.30	3.92	3.49	-164.81	-23.74	64.02	146.46	139.43	7.03	20.836	
1,725.00	1,719.40	1,716.52	1,715.96	3.99	3.55	-164.87	-24.54	64.56	150.45	143.31	7.14	21.071	
1,750.00	1,744.15	1,741.20	1,740.62	4.07	3.60	-164.92	-25.34	65.10	154.45	147.19	7.25	21.297	
1,775.00	1,768.90	1,765.88	1,765.28	4.15	3.65	-164.97	-26.13	65.65	158.44	151.08	7.36	21.517	
1,800.00	1,793.64	1,790.56	1,789.94	4.23	3.71	-165.01	-26.93	66.19	162.43	154.96	7.48	21.730	
1,825.00	1,818.39	1,815.24	1,814.60	4.31	3.76	-165.05	-27.72	66.73	166.43	158.84	7.59	21.934	
1,850.00	1,843.14	1,839.92	1,839.26	4.39	3.82	-165.10	-28.52	67.28	170.42	162.72	7.70	22.131	
1,875.00	1,867.89	1,864.59	1,863.92	4.47	3.87	-165.13	-29.32	67.82	174.41	166.60	7.81	22.323	
1,900.00	1,892.63	1,889.27	1,888.58	4.55	3.93	-165.17	-30.11	68.36	178.41	170.48	7.93	22.509	
1,925.00	1,917.38	1,913.95	1,913.24	4.63	3.98	-165.21	-30.91	68.90	182.40	174.36	8.04	22.688	
1,950.00	1,942.13	1,938.63	1,937.89	4.71	4.04	-165.24	-31.70	69.45	186.40	178.24	8.15	22.862	
1,975.00	1,966.87	1,963.31	1,962.55	4.79	4.09	-165.28	-32.50	69.99	190.39	182.12	8.27	23.030	
2,000.00	1,991.62	1,987.99	1,987.21	4.87	4.15	-165.31	-33.30	70.53	194.38	186.00	8.38	23.195	
2,025.00	2,016.37	2,012.67	2,011.87	4.96	4.20	-165.34	-34.09	71.08	198.38	189.88	8.49	23.353	
2,050.00	2,041.11	2,037.34	2,036.53	5.04	4.26	-165.37	-34.89	71.62	202.37	193.76	8.61	23.506	
2,075.00	2,065.86	2,062.02	2,061.19	5.12	4.31	-165.39	-35.68	72.16	206.37	197.64	8.72	23.655	
2,100.00	2,090.61	2,086.70	2,085.85	5.20	4.37	-165.42	-36.48	72.71	210.36	201.52	8.84	23.801	
2,125.00	2,115.36	2,111.38	2,110.51	5.29	4.43	-165.45	-37.28	73.25	214.36	205.40	8.95	23.941	
2,150.00	2,140.10	2,136.06	2,135.17	5.37	4.48	-165.47	-38.07	73.79	218.35	209.28	9.07	24.078	
2,175.00	2,164.85	2,160.74	2,159.83	5.45	4.54	-165.50	-38.87	74.33	222.35	213.16	9.18	24.211	
2,200.00	2,189.60	2,185.42	2,184.49	5.53	4.59	-165.52	-39.67	74.88	226.34	217.04	9.30	24.340	
2,225.00	2,214.34	2,210.10	2,209.15	5.62	4.65	-165.54	-40.46	75.42	230.33	220.92	9.41	24.466	
2,250.00	2,239.09	2,234.77	2,233.81	5.70	4.71	-165.56	-41.26	75.96	234.33	224.80	9.53	24.588	
2,275.00	2,263.84	2,259.45	2,258.47	5.78	4.76	-165.58	-42.05	76.51	238.32	228.68	9.65	24.707	
2,300.00	2,288.59	2,284.13	2,283.13	5.87	4.82	-165.60	-42.85	77.05	242.32	232.56	9.76	24.823	
2,325.00	2,313.33	2,308.81	2,307.79	5.95	4.87	-165.62	-43.65	77.59	246.31	236.44	9.88	24.936	
2,350.00	2,338.08	2,333.49	2,332.45	6.04	4.93	-165.64	-44.44	78.14	250.31	240.31	9.99	25.045	
2,375.00	2,362.83	2,358.17	2,357.11	6.12	4.99	-165.66	-45.24	78.68	254.30	244.19	10.11	25.152	
2,400.00	2,387.57	2,382.85	2,381.77	6.20	5.04	-165.68	-46.03	79.22	258.30	248.07	10.23	25.257	
2,425.00	2,412.32	2,407.52	2,406.43	6.29	5.10	-165.70	-46.83	79.77	262.29	251.95	10.34	25.358	
2,450.00	2,437.07	2,432.20	2,431.09	6.37	5.16	-165.71	-47.63	80.31	266.29	255.83	10.46	25.457	
2,475.00	2,461.81	2,456.88	2,455.75	6.46	5.21	-165.73	-48.42	80.85	270.28	259.71	10.58	25.554	
2,500.00	2,486.56	2,481.56	2,480.41	6.54	5.27	-165.75	-49.22	81.39	274.28	263.58	10.69	25.649	
2,525.00	2,511.31	2,506.24	2,505.07	6.63	5.33	-165.76	-50.01	81.94	278.27	267.46	10.81	25.741	
2,550.00	2,536.06	2,530.92	2,529.73	6.71	5.38	-165.78	-50.81	82.48	282.27	271.34	10.93	25.831	

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 POWERS 28N-23HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	17' RKB + 4909' GL @ 4926.00ft
Reference Site:	WELD_POWER PAD	MD Reference:	17' RKB + 4909' GL @ 4926.00ft
Site Error:	0.00 ft	North Reference:	True
Reference Well:	POWERS 28N-23HZ	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	POWERS 28N-23HZ	Database:	edm5000p
Reference Design:	POWERS 28N-23HZ (wp01)	Offset TVD Reference:	Offset Datum

Offset Design WELD_POWER PAD - POWERS 2N-23HZ - POWERS 2N-23HZ - POWERS 2N-23HZ (wp01)												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
2,575.00	2,560.80	2,555.60	2,554.39	6.80	5.44	-165.79	-51.61	83.02	286.26	275.22	11.04	25.918	
2,600.00	2,585.55	2,580.27	2,579.05	6.88	5.50	-165.80	-52.40	83.57	290.26	279.10	11.16	26.005	
2,625.00	2,610.30	2,604.95	2,603.71	6.97	5.55	-165.82	-53.20	84.11	294.25	282.97	11.28	26.088	
2,650.00	2,635.04	2,629.63	2,628.37	7.05	5.61	-165.83	-53.99	84.65	298.25	286.85	11.40	26.170	
2,675.00	2,659.79	2,654.31	2,653.03	7.14	5.67	-165.84	-54.79	85.20	302.24	290.73	11.51	26.250	
2,700.00	2,684.54	2,678.99	2,677.69	7.22	5.73	-165.86	-55.59	85.74	306.24	294.61	11.63	26.328	
2,725.00	2,709.29	2,703.67	2,702.35	7.31	5.78	-165.87	-56.38	86.28	310.23	298.48	11.75	26.405	
2,750.00	2,734.03	2,728.35	2,727.01	7.40	5.84	-165.88	-57.18	86.82	314.23	302.36	11.87	26.480	
2,775.00	2,758.78	2,753.03	2,751.67	7.48	5.90	-165.89	-57.98	87.37	318.22	306.24	11.98	26.553	
2,800.00	2,783.53	2,777.70	2,776.33	7.57	5.95	-165.90	-58.77	87.91	322.22	310.12	12.10	26.625	
2,825.00	2,808.27	2,802.38	2,800.99	7.65	6.01	-165.91	-59.57	88.45	326.21	313.99	12.22	26.695	
2,850.00	2,833.02	2,827.06	2,825.65	7.74	6.07	-165.93	-60.36	89.00	330.21	317.87	12.34	26.763	
2,875.00	2,857.77	2,851.74	2,850.31	7.82	6.13	-165.94	-61.16	89.54	334.20	321.75	12.46	26.830	
2,900.00	2,882.52	2,876.42	2,874.97	7.91	6.18	-165.95	-61.96	90.08	338.20	325.62	12.57	26.896	
2,925.00	2,907.26	2,901.10	2,899.63	8.00	6.24	-165.96	-62.75	90.63	342.19	329.50	12.69	26.961	
2,950.00	2,932.01	2,925.78	2,924.29	8.08	6.30	-165.97	-63.55	91.17	346.19	333.38	12.81	27.024	
2,975.00	2,956.76	2,950.45	2,948.95	8.17	6.36	-165.98	-64.34	91.71	350.18	337.26	12.93	27.086	
3,000.00	2,981.50	2,975.13	2,973.61	8.26	6.41	-165.99	-65.14	92.26	354.18	341.13	13.05	27.147	
3,025.00	3,006.25	2,999.81	2,998.27	8.34	6.47	-165.99	-65.94	92.80	358.17	345.01	13.17	27.206	
3,050.00	3,031.00	3,024.49	3,022.93	8.43	6.53	-166.00	-66.73	93.34	362.17	348.89	13.28	27.264	
3,075.00	3,055.74	3,049.17	3,047.59	8.51	6.59	-166.01	-67.53	93.88	366.17	352.76	13.40	27.321	
3,100.00	3,080.49	3,073.85	3,072.25	8.60	6.64	-166.02	-68.32	94.43	370.16	356.64	13.52	27.377	
3,125.00	3,105.24	3,098.53	3,096.91	8.69	6.70	-166.03	-69.12	94.97	374.16	360.52	13.64	27.432	
3,150.00	3,129.99	3,123.20	3,121.57	8.77	6.76	-166.04	-69.92	95.51	378.15	364.39	13.76	27.486	
3,175.00	3,154.73	3,147.88	3,146.23	8.86	6.82	-166.05	-70.71	96.06	382.15	368.27	13.88	27.539	
3,200.00	3,179.48	3,172.56	3,170.89	8.95	6.87	-166.05	-71.51	96.60	386.14	372.15	14.00	27.591	
3,225.00	3,204.23	3,197.24	3,195.55	9.03	6.93	-166.06	-72.31	97.14	390.14	376.02	14.11	27.642	
3,250.00	3,228.97	3,221.92	3,220.21	9.12	6.99	-166.07	-73.10	97.69	394.13	379.90	14.23	27.692	
3,275.00	3,253.72	3,246.60	3,244.87	9.21	7.05	-166.08	-73.90	98.23	398.13	383.78	14.35	27.741	
3,300.00	3,278.47	3,271.28	3,269.52	9.29	7.10	-166.08	-74.69	98.77	402.12	387.65	14.47	27.790	
3,325.00	3,303.22	3,295.96	3,294.18	9.38	7.16	-166.09	-75.49	99.31	406.12	391.53	14.59	27.837	
3,350.00	3,327.96	3,320.63	3,318.84	9.47	7.22	-166.10	-76.29	99.86	410.11	395.41	14.71	27.884	
3,375.00	3,352.71	3,345.31	3,343.50	9.55	7.28	-166.11	-77.08	100.40	414.11	399.28	14.83	27.929	
3,400.00	3,377.46	3,369.99	3,368.16	9.64	7.33	-166.11	-77.88	100.94	418.10	403.16	14.95	27.974	
3,425.00	3,402.20	3,394.67	3,392.82	9.73	7.39	-166.12	-78.67	101.49	422.10	407.03	15.06	28.019	
3,450.00	3,426.95	3,419.35	3,417.48	9.81	7.45	-166.13	-79.47	102.03	426.09	410.91	15.18	28.062	
3,475.00	3,451.70	3,444.03	3,442.14	9.90	7.51	-166.13	-80.27	102.57	430.09	414.79	15.30	28.105	
3,500.00	3,476.44	3,468.71	3,466.80	9.99	7.57	-166.14	-81.06	103.12	434.09	418.66	15.42	28.147	
3,525.00	3,501.19	3,493.38	3,491.46	10.07	7.62	-166.14	-81.86	103.66	438.08	422.54	15.54	28.188	
3,550.00	3,525.94	3,518.06	3,516.12	10.16	7.68	-166.15	-82.65	104.20	442.08	426.42	15.66	28.228	
3,575.00	3,550.69	3,542.74	3,540.78	10.25	7.74	-166.16	-83.45	104.75	446.07	430.29	15.78	28.268	
3,600.00	3,575.43	3,567.42	3,565.44	10.34	7.80	-166.16	-84.25	105.29	450.07	434.17	15.90	28.308	
3,625.00	3,600.18	3,592.10	3,590.10	10.42	7.85	-166.17	-85.04	105.83	454.06	438.04	16.02	28.346	
3,650.00	3,624.93	3,616.78	3,614.76	10.51	7.91	-166.17	-85.84	106.37	458.06	441.92	16.14	28.384	
3,675.00	3,649.67	3,641.46	3,639.42	10.60	7.97	-166.18	-86.63	106.92	462.05	445.80	16.26	28.422	
3,700.00	3,674.42	3,666.13	3,664.08	10.68	8.03	-166.18	-87.43	107.46	466.05	449.67	16.38	28.459	
3,725.00	3,699.17	3,690.81	3,688.74	10.77	8.09	-166.19	-88.23	108.00	470.04	453.55	16.50	28.495	
3,750.00	3,723.92	3,715.49	3,713.40	10.86	8.14	-166.19	-89.02	108.55	474.04	457.42	16.62	28.530	
3,775.00	3,748.66	3,740.17	3,738.06	10.95	8.20	-166.20	-89.82	109.09	478.03	461.30	16.73	28.566	
3,800.00	3,773.41	3,764.85	3,762.72	11.03	8.26	-166.20	-90.62	109.63	482.03	465.18	16.85	28.600	
3,825.00	3,798.16	3,789.53	3,787.38	11.12	8.32	-166.21	-91.41	110.18	486.03	469.05	16.97	28.634	
3,850.00	3,822.90	3,814.21	3,812.04	11.21	8.38	-166.21	-92.21	110.72	490.02	472.93	17.09	28.668	

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 POWERS 28N-23HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	17' RKB + 4909' GL @ 4926.00ft
Reference Site:	WELD_POWER PAD	MD Reference:	17' RKB + 4909' GL @ 4926.00ft
Site Error:	0.00 ft	North Reference:	True
Reference Well:	POWERS 28N-23HZ	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	POWERS 28N-23HZ	Database:	edm5000p
Reference Design:	POWERS 28N-23HZ (wp01)	Offset TVD Reference:	Offset Datum

Offset Design WELD_POWER PAD - POWERS 2N-23HZ - POWERS 2N-23HZ - POWERS 2N-23HZ (wp01)												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	
3,875.00	3,847.65	3,838.89	3,836.70	11.30	8.43	-166.22	-93.00	111.26	494.02	476.80	17.21	28.701	
3,900.00	3,872.40	3,863.56	3,861.36	11.38	8.49	-166.22	-93.80	111.80	498.01	480.68	17.33	28.733	
3,925.00	3,897.14	3,888.24	3,886.02	11.47	8.55	-166.23	-94.60	112.35	502.01	484.56	17.45	28.765	
3,950.00	3,921.89	3,912.92	3,910.68	11.56	8.61	-166.23	-95.39	112.89	506.00	488.43	17.57	28.797	
3,975.00	3,946.64	3,937.60	3,935.34	11.65	8.67	-166.24	-96.19	113.43	510.00	492.31	17.69	28.828	
4,000.00	3,971.39	3,962.28	3,960.00	11.73	8.73	-166.24	-96.98	113.98	513.99	496.18	17.81	28.859	
4,025.00	3,996.13	3,986.96	3,984.66	11.82	8.78	-166.25	-97.78	114.52	517.99	500.06	17.93	28.889	
4,050.00	4,020.88	4,011.64	4,009.32	11.91	8.84	-166.25	-98.58	115.06	521.98	503.93	18.05	28.919	
4,075.00	4,045.63	4,036.31	4,033.98	11.99	8.90	-166.26	-99.37	115.61	525.98	507.81	18.17	28.948	
4,100.00	4,070.37	4,060.99	4,058.64	12.08	8.96	-166.26	-100.17	116.15	529.97	511.69	18.29	28.977	
4,125.00	4,095.12	4,085.67	4,083.30	12.17	9.02	-166.26	-100.96	116.69	533.97	515.56	18.41	29.006	
4,150.00	4,119.87	4,110.35	4,107.96	12.26	9.07	-166.27	-101.76	117.24	537.97	519.44	18.53	29.034	
4,175.00	4,144.62	4,135.03	4,132.62	12.34	9.13	-166.27	-102.56	117.78	541.96	523.31	18.65	29.061	
4,200.00	4,169.36	4,159.71	4,157.28	12.43	9.19	-166.28	-103.35	118.32	545.96	527.19	18.77	29.089	
4,225.00	4,194.11	4,184.39	4,181.94	12.52	9.25	-166.28	-104.15	118.86	549.95	531.06	18.89	29.116	
4,250.00	4,218.86	4,209.06	4,206.60	12.61	9.31	-166.28	-104.95	119.41	553.95	534.94	19.01	29.142	
4,275.00	4,243.60	4,233.74	4,231.26	12.70	9.36	-166.29	-105.74	119.95	557.94	538.81	19.13	29.169	
4,300.00	4,268.35	4,258.42	4,255.92	12.78	9.42	-166.29	-106.54	120.49	561.94	542.69	19.25	29.195	
4,325.00	4,293.10	4,283.10	4,280.58	12.87	9.48	-166.29	-107.33	121.04	565.93	546.57	19.37	29.220	
4,350.00	4,317.84	4,307.78	4,305.24	12.96	9.54	-166.30	-108.13	121.58	569.93	550.44	19.49	29.245	
4,375.00	4,342.59	4,332.46	4,329.90	13.05	9.60	-166.30	-108.93	122.12	573.92	554.32	19.61	29.270	
4,400.00	4,367.34	4,357.14	4,354.56	13.13	9.66	-166.31	-109.72	122.67	577.92	558.19	19.73	29.295	
4,425.00	4,392.09	4,381.82	4,379.22	13.22	9.71	-166.31	-110.52	123.21	581.92	562.07	19.85	29.319	
4,450.00	4,416.83	4,406.49	4,403.88	13.31	9.77	-166.31	-111.31	123.75	585.91	565.94	19.97	29.343	
4,475.00	4,441.58	4,431.17	4,428.54	13.40	9.83	-166.32	-112.11	124.29	589.91	569.82	20.09	29.367	
4,500.00	4,466.33	4,455.85	4,453.20	13.48	9.89	-166.32	-112.91	124.84	593.90	573.69	20.21	29.390	
4,525.00	4,491.07	4,480.53	4,477.86	13.57	9.95	-166.32	-113.70	125.38	597.90	577.57	20.33	29.413	
4,550.00	4,515.82	4,505.21	4,502.52	13.66	10.01	-166.33	-114.50	125.92	601.89	581.45	20.45	29.436	
4,575.00	4,540.57	4,529.89	4,527.18	13.75	10.06	-166.33	-115.29	126.47	605.89	585.32	20.57	29.458	
4,600.00	4,565.32	4,554.57	4,551.84	13.83	10.12	-166.33	-116.09	127.01	609.88	589.20	20.69	29.481	
4,625.00	4,590.06	4,579.24	4,576.50	13.92	10.18	-166.34	-116.89	127.55	613.88	593.07	20.81	29.502	
4,650.00	4,614.81	4,603.92	4,601.15	14.01	10.24	-166.34	-117.68	128.10	617.87	596.95	20.93	29.524	
4,675.00	4,639.56	4,628.60	4,625.81	14.10	10.30	-166.34	-118.48	128.64	621.87	600.82	21.05	29.545	
4,700.00	4,664.30	4,653.28	4,650.47	14.19	10.36	-166.34	-119.27	129.18	625.87	604.70	21.17	29.567	
4,725.00	4,689.05	4,677.96	4,675.13	14.27	10.41	-166.35	-120.07	129.73	629.86	608.57	21.29	29.587	
4,750.00	4,713.80	4,702.64	4,699.79	14.36	10.47	-166.35	-120.87	130.27	633.86	612.45	21.41	29.608	
4,775.00	4,738.54	4,727.32	4,724.45	14.45	10.53	-166.35	-121.66	130.81	637.85	616.32	21.53	29.628	
4,800.00	4,763.29	4,751.99	4,749.11	14.54	10.59	-166.36	-122.46	131.35	641.85	620.20	21.65	29.648	
4,825.00	4,788.04	4,776.67	4,773.77	14.63	10.65	-166.36	-123.26	131.90	645.84	624.07	21.77	29.668	
4,850.00	4,812.79	4,801.35	4,798.43	14.71	10.71	-166.36	-124.05	132.44	649.84	627.95	21.89	29.688	
4,875.00	4,837.53	4,826.03	4,823.09	14.80	10.76	-166.36	-124.85	132.98	653.83	631.83	22.01	29.707	
4,900.00	4,862.28	4,850.71	4,847.75	14.89	10.82	-166.37	-125.64	133.53	657.83	635.70	22.13	29.727	
4,925.00	4,887.03	4,875.39	4,872.41	14.98	10.88	-166.37	-126.44	134.07	661.83	639.58	22.25	29.746	
4,950.00	4,911.77	4,900.07	4,897.07	15.06	10.94	-166.37	-127.24	134.61	665.82	643.45	22.37	29.764	
4,975.00	4,936.52	4,924.75	4,921.73	15.15	11.00	-166.37	-128.03	135.16	669.82	647.33	22.49	29.783	
5,000.00	4,961.27	4,949.42	4,946.39	15.24	11.06	-166.38	-128.83	135.70	673.81	651.20	22.61	29.801	
5,025.00	4,986.02	4,974.10	4,971.05	15.33	11.11	-166.38	-129.62	136.24	677.81	655.08	22.73	29.819	
5,050.00	5,010.76	4,998.78	4,995.71	15.42	11.17	-166.38	-130.42	136.78	681.80	658.95	22.85	29.837	
5,075.00	5,035.51	5,023.46	5,020.37	15.50	11.23	-166.39	-131.22	137.33	685.80	662.83	22.97	29.855	
5,100.00	5,060.26	5,048.14	5,045.03	15.59	11.29	-166.39	-132.01	137.87	689.79	666.70	23.09	29.872	
5,125.00	5,085.00	5,072.82	5,069.69	15.68	11.35	-166.39	-132.81	138.41	693.79	670.58	23.21	29.890	
5,150.00	5,109.75	5,097.50	5,094.35	15.77	11.41	-166.39	-133.60	138.96	697.78	674.45	23.33	29.907	

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 POWERS 28N-23HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	17' RKB + 4909' GL @ 4926.00ft
Reference Site:	WELD_POWER PAD	MD Reference:	17' RKB + 4909' GL @ 4926.00ft
Site Error:	0.00 ft	North Reference:	True
Reference Well:	POWERS 28N-23HZ	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	POWERS 28N-23HZ	Database:	edm5000p
Reference Design:	POWERS 28N-23HZ (wp01)	Offset TVD Reference:	Offset Datum

Offset Design WELD_POWER PAD - POWERS 2N-23HZ - POWERS 2N-23HZ - POWERS 2N-23HZ (wp01)												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
5,175.00	5,134.50	5,122.17	5,119.01	15.86	11.46	-166.39	-134.40	139.50	701.78	678.33	23.45	29.924	
5,200.00	5,159.24	5,146.85	5,143.67	15.94	11.52	-166.40	-135.20	140.04	705.78	682.20	23.57	29.941	
5,225.00	5,183.99	5,171.53	5,168.33	16.03	11.58	-166.40	-135.99	140.59	709.77	686.08	23.69	29.957	
5,250.00	5,208.74	5,196.21	5,192.99	16.12	11.64	-166.40	-136.79	141.13	713.77	689.95	23.81	29.974	
5,275.00	5,233.49	5,220.89	5,217.65	16.21	11.70	-166.40	-137.58	141.67	717.76	693.83	23.93	29.990	
5,300.00	5,258.23	5,245.57	5,242.31	16.30	11.76	-166.41	-138.38	142.22	721.76	697.70	24.05	30.006	
5,325.00	5,282.98	5,270.25	5,266.97	16.38	11.81	-166.41	-139.18	142.76	725.75	701.58	24.17	30.022	
5,350.00	5,307.73	5,294.92	5,291.63	16.47	11.87	-166.41	-139.97	143.30	729.75	705.45	24.29	30.037	
5,375.00	5,332.47	5,319.60	5,316.29	16.56	11.93	-166.41	-140.77	143.84	733.74	709.33	24.41	30.053	
5,400.00	5,357.22	5,344.28	5,340.95	16.65	11.99	-166.42	-141.57	144.39	737.74	713.20	24.54	30.068	
5,425.00	5,381.97	5,368.96	5,365.61	16.74	12.05	-166.42	-142.36	144.93	741.74	717.08	24.66	30.084	
5,450.00	5,406.72	5,393.64	5,390.27	16.82	12.11	-166.42	-143.16	145.47	745.73	720.95	24.78	30.099	
5,475.00	5,431.46	5,418.32	5,414.93	16.91	12.17	-166.42	-143.95	146.02	749.73	724.83	24.90	30.114	
5,500.00	5,456.21	5,443.00	5,439.59	17.00	12.22	-166.42	-144.75	146.56	753.72	728.71	25.02	30.128	
5,525.00	5,480.96	5,467.68	5,464.25	17.09	12.28	-166.43	-145.55	147.10	757.72	732.58	25.14	30.143	
5,550.00	5,505.70	5,492.35	5,488.91	17.18	12.34	-166.43	-146.34	147.65	761.71	736.46	25.26	30.157	
5,575.00	5,530.45	5,517.03	5,513.57	17.26	12.40	-166.43	-147.14	148.19	765.71	740.33	25.38	30.172	
5,600.00	5,555.20	5,541.71	5,538.23	17.35	12.46	-166.43	-147.93	148.73	769.70	744.21	25.50	30.186	
5,625.00	5,579.94	5,566.39	5,562.89	17.44	12.52	-166.43	-148.73	149.27	773.70	748.08	25.62	30.200	
5,650.00	5,604.69	5,591.07	5,587.55	17.53	12.57	-166.44	-149.53	149.82	777.70	751.96	25.74	30.214	
5,675.00	5,629.44	5,615.75	5,612.21	17.62	12.63	-166.44	-150.32	150.36	781.69	755.83	25.86	30.228	
5,700.00	5,654.19	5,640.43	5,636.87	17.70	12.69	-166.44	-151.12	150.90	785.69	759.71	25.98	30.241	
5,725.00	5,678.93	5,665.10	5,661.53	17.79	12.75	-166.44	-151.91	151.45	789.68	763.58	26.10	30.255	
5,750.00	5,703.68	5,689.78	5,686.19	17.88	12.81	-166.44	-152.71	151.99	793.68	767.46	26.22	30.268	
5,775.00	5,728.43	5,714.46	5,710.85	17.97	12.87	-166.44	-153.51	152.53	797.67	771.33	26.34	30.281	
5,800.00	5,753.17	5,739.14	5,735.51	18.06	12.93	-166.45	-154.30	153.08	801.67	775.21	26.46	30.294	
5,825.00	5,777.92	5,763.82	5,760.17	18.14	12.98	-166.45	-155.10	153.62	805.66	779.08	26.58	30.307	
5,850.00	5,802.67	5,788.50	5,784.83	18.23	13.04	-166.45	-155.90	154.16	809.66	782.96	26.70	30.320	
5,875.00	5,827.42	5,813.18	5,809.49	18.32	13.10	-166.45	-156.69	154.71	813.66	786.83	26.82	30.333	
5,900.00	5,852.16	5,837.85	5,834.15	18.41	13.16	-166.45	-157.49	155.25	817.65	790.71	26.94	30.346	
5,925.00	5,876.91	5,862.53	5,858.81	18.50	13.22	-166.46	-158.28	155.79	821.65	794.58	27.07	30.358	
5,950.00	5,901.66	5,887.21	5,883.47	18.59	13.28	-166.46	-159.08	156.33	825.64	798.46	27.19	30.370	
5,975.00	5,926.40	5,911.89	5,908.13	18.67	13.34	-166.46	-159.88	156.88	829.64	802.33	27.31	30.383	
6,000.00	5,951.15	5,936.57	5,932.78	18.76	13.39	-166.46	-160.67	157.42	833.63	806.21	27.43	30.395	
6,025.00	5,975.90	5,961.25	5,957.44	18.85	13.45	-166.46	-161.47	157.96	837.63	810.08	27.55	30.407	
6,050.00	6,000.64	5,985.93	5,982.10	18.94	13.51	-166.46	-162.26	158.51	841.62	813.96	27.67	30.419	
6,075.00	6,025.39	6,010.61	6,006.76	19.03	13.57	-166.47	-163.06	159.05	845.62	817.83	27.79	30.431	
6,100.00	6,050.14	6,035.28	6,031.42	19.11	13.63	-166.47	-163.86	159.59	849.61	821.71	27.91	30.442	
6,125.00	6,074.89	6,059.96	6,056.08	19.20	13.69	-166.47	-164.65	160.14	853.61	825.58	28.03	30.454	
6,150.00	6,099.63	6,084.64	6,080.74	19.29	13.75	-166.47	-165.45	160.68	857.61	829.46	28.15	30.465	
6,175.00	6,124.38	6,109.32	6,105.40	19.38	13.80	-166.47	-166.24	161.22	861.60	833.33	28.27	30.477	
6,200.00	6,149.13	6,134.00	6,130.06	19.47	13.86	-166.47	-167.04	161.76	865.60	837.21	28.39	30.488	
6,225.00	6,173.87	6,158.68	6,154.72	19.55	13.92	-166.48	-167.84	162.31	869.59	841.08	28.51	30.499	
6,250.00	6,198.62	6,183.36	6,179.38	19.64	13.98	-166.48	-168.63	162.85	873.59	844.96	28.63	30.510	
6,275.00	6,223.37	6,208.03	6,204.04	19.73	14.04	-166.48	-169.43	163.39	877.58	848.83	28.75	30.521	
6,297.40	6,245.55	6,230.15	6,226.14	19.81	14.09	-166.48	-170.14	163.88	881.16	852.30	28.86	30.531	
6,300.00	6,248.12	6,232.71	6,228.70	19.82	14.10	-167.93	-170.22	163.94	881.58	852.71	28.87	30.534	
6,325.00	6,272.87	6,257.39	6,253.37	19.89	14.15	-177.59	-170.70	164.48	885.58	856.62	28.96	30.580	
6,350.00	6,297.63	6,282.08	6,278.05	19.96	14.19	-163.40	-170.33	165.02	889.57	860.53	29.04	30.631	
6,375.00	6,322.34	6,306.78	6,302.71	20.03	14.23	-150.93	-169.11	165.57	893.57	864.45	29.12	30.687	
6,400.00	6,346.99	6,331.49	6,327.32	20.09	14.27	-140.73	-167.04	166.11	897.55	868.36	29.19	30.745	
6,425.00	6,371.55	6,356.20	6,351.86	20.15	14.31	-132.67	-164.12	166.65	901.52	872.26	29.26	30.807	

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

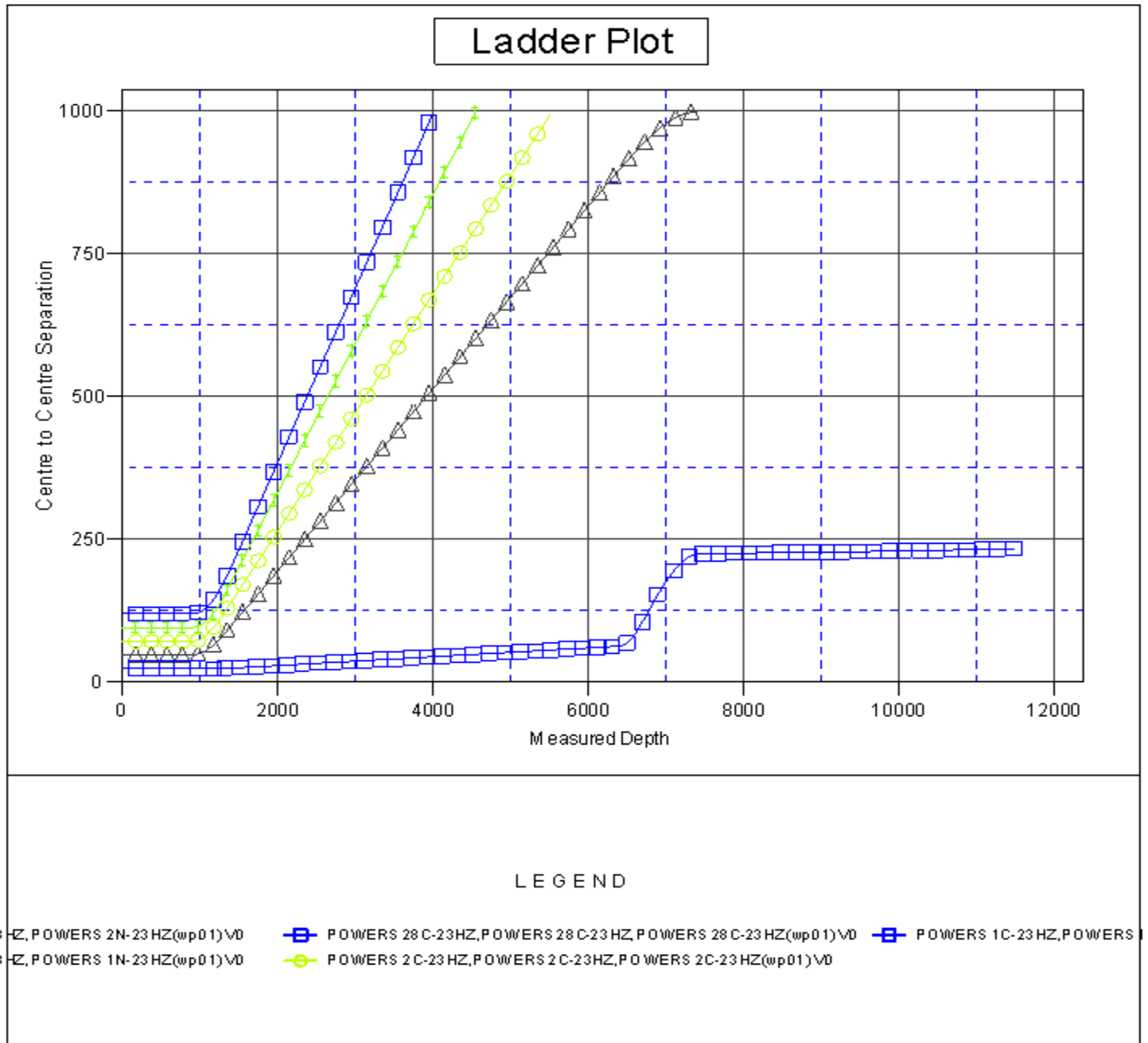
Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well POWERS 28N-23HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	17' RKB + 4909' GL @ 4926.00ft
Reference Site:	WELD_POWER5 PAD	MD Reference:	17' RKB + 4909' GL @ 4926.00ft
Site Error:	0.00 ft	North Reference:	True
Reference Well:	POWERS 28N-23HZ	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	POWERS 28N-23HZ	Database:	edm5000p
Reference Design:	POWERS 28N-23HZ (wp01)	Offset TVD Reference:	Offset Datum

Offset Design WELD_POWER5 PAD - POWERS 2N-23HZ - POWERS 2N-23HZ - POWERS 2N-23HZ (wp01)													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		
6,450.00	6,395.98	6,380.93	6,376.29	20.21	14.34	126.34	-160.35	167.19	905.47	876.14	29.33	30.870		
6,475.00	6,420.26	6,405.68	6,400.60	20.27	14.37	121.32	-155.74	167.72	909.39	880.00	29.40	30.935		
6,500.00	6,444.35	6,430.44	6,424.74	20.33	14.40	117.28	-150.28	168.26	913.29	883.83	29.46	31.000		
6,525.00	6,468.22	6,455.21	6,448.70	20.38	14.43	113.98	-143.99	168.79	917.15	887.63	29.52	31.065		
6,550.00	6,491.86	6,480.01	6,472.44	20.43	14.45	111.22	-136.87	169.31	920.98	891.39	29.59	31.129		
6,575.00	6,515.22	6,504.82	6,495.95	20.47	14.48	108.90	-128.93	169.83	924.76	895.11	29.65	31.190		
6,600.00	6,538.28	6,529.66	6,519.18	20.52	14.50	106.91	-120.17	170.34	928.49	898.78	29.71	31.249		
6,625.00	6,561.02	6,554.52	6,542.11	20.56	14.53	105.18	-110.60	170.85	932.18	902.40	29.78	31.303		
6,650.00	6,583.39	6,579.40	6,564.72	20.61	14.55	103.67	-100.23	171.35	935.80	905.95	29.85	31.352		
6,675.00	6,605.39	6,604.30	6,586.98	20.65	14.57	102.33	-89.06	171.84	939.37	909.44	29.92	31.394		
6,700.00	6,626.97	6,629.23	6,608.85	20.69	14.59	101.14	-77.12	172.32	942.87	912.87	30.00	31.431		
6,725.00	6,648.12	6,654.18	6,630.32	20.73	14.62	100.06	-64.42	172.79	946.30	916.21	30.08	31.456		
6,750.00	6,668.80	6,679.16	6,651.36	20.76	14.64	99.09	-50.95	173.26	949.65	919.48	30.17	31.474		
6,775.00	6,689.00	6,704.17	6,671.93	20.80	14.67	98.21	-36.75	173.71	952.93	922.66	30.27	31.478		
6,800.00	6,708.68	6,729.21	6,692.02	20.84	14.71	97.41	-21.82	174.16	956.13	925.75	30.38	31.473		
6,825.00	6,727.83	6,754.27	6,711.60	20.88	14.74	96.68	-6.18	174.59	959.24	928.74	30.50	31.451		
6,850.00	6,746.42	6,779.36	6,730.63	20.92	14.79	96.00	10.16	175.01	962.26	931.63	30.63	31.419		
6,875.00	6,764.43	6,804.47	6,749.11	20.95	14.84	95.38	27.17	175.42	965.19	934.41	30.77	31.365		
6,900.00	6,781.83	6,829.62	6,766.99	21.00	14.91	94.81	44.84	175.82	968.02	937.09	30.92	31.303		
6,925.00	6,798.61	6,854.79	6,784.27	21.04	14.98	94.28	63.14	176.20	970.75	939.66	31.09	31.222		
6,950.00	6,814.74	6,879.99	6,800.90	21.08	15.07	93.78	82.06	176.57	973.38	942.10	31.28	31.121		
6,975.00	6,830.21	6,905.22	6,816.88	21.13	15.16	93.33	101.58	176.92	975.90	944.42	31.48	31.002		
7,000.00	6,845.00	6,930.48	6,832.18	21.18	15.27	92.91	121.67	177.26	978.31	946.61	31.70	30.864		
7,025.00	6,859.08	6,955.76	6,846.77	21.23	15.39	92.52	142.31	177.58	980.60	948.67	31.93	30.708		
7,050.00	6,872.44	6,981.06	6,860.64	21.30	15.52	92.16	163.47	177.89	982.79	950.60	32.19	30.535		
7,075.00	6,885.06	7,006.39	6,873.77	21.36	15.66	91.83	185.13	178.18	984.85	952.39	32.46	30.341		
7,100.00	6,896.94	7,031.75	6,886.13	21.43	15.82	91.53	207.27	178.46	986.79	954.04	32.75	30.132		
7,125.00	6,908.05	7,057.12	6,897.71	21.51	15.98	91.25	229.84	178.71	988.61	955.55	33.06	29.902		
7,150.00	6,918.38	7,082.52	6,908.50	21.59	16.16	91.00	252.83	178.95	990.30	956.91	33.39	29.659		
7,175.00	6,927.92	7,107.94	6,918.47	21.68	16.34	90.77	276.21	179.18	991.87	958.13	33.74	29.395		
7,200.00	6,936.66	7,133.38	6,927.61	21.78	16.54	90.56	299.95	179.38	993.31	959.20	34.11	29.121		
7,225.00	6,944.58	7,158.83	6,935.91	21.89	16.75	90.37	324.01	179.57	994.61	960.11	34.50	28.828		
7,250.00	6,951.68	7,184.30	6,943.35	22.01	16.97	90.21	348.37	179.73	995.78	960.88	34.91	28.527		
7,275.00	6,957.94	7,209.79	6,949.93	22.13	17.20	90.06	372.99	179.88	996.82	961.48	35.34	28.209		
7,300.00	6,963.37	7,235.29	6,955.63	22.27	17.44	89.94	397.84	180.01	997.72	961.94	35.78	27.886		
7,325.00	6,967.95	7,260.79	6,960.44	22.42	17.69	89.83	422.89	180.12	998.49	962.24	36.24	27.549		
7,350.00	6,971.68	7,286.31	6,964.36	22.57	17.95	89.75	448.10	180.21	999.12	962.40	36.72	27.209		
7,375.00	6,974.55	7,311.84	6,967.38	22.74	18.22	89.68	473.45	180.28	999.60	962.39	37.22	26.858		
7,400.00	6,976.56	7,337.37	6,969.49	22.92	18.49	89.63	498.89	180.32	999.95	962.23	37.72	26.507		

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well POWERS 28N-23HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	17' RKB + 4909' GL @ 4926.00ft
Reference Site:	WELD_POWERS PAD	MD Reference:	17' RKB + 4909' GL @ 4926.00ft
Site Error:	0.00 ft	North Reference:	True
Reference Well:	POWERS 28N-23HZ	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	POWERS 28N-23HZ	Database:	edm5000p
Reference Design:	POWERS 28N-23HZ (wp01)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to 17' RKB + 4909' GL @ 4926.00ft
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000

Coordinates are relative to: POWERS 28N-23HZ
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.56°



Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well POWERS 28N-23HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	17' RKB + 4909' GL @ 4926.00ft
Reference Site:	WELD_POWERS PAD	MD Reference:	17' RKB + 4909' GL @ 4926.00ft
Site Error:	0.00 ft	North Reference:	True
Reference Well:	POWERS 28N-23HZ	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	POWERS 28N-23HZ	Database:	edm5000p
Reference Design:	POWERS 28N-23HZ (wp01)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to 17' RKB + 4909' GL @ 4926.00ft
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000

Coordinates are relative to: POWERS 28N-23HZ
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.56°

