

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_POWER PAD

POWERS 2C-23HZ

POWERS 2C-23HZ

Plan: POWERS 2C-23HZ (wp01)

Standard Planning Report

29 April, 2011



Database:	edm5000p	Local Co-ordinate Reference:	Well POWERS 2C-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 2C-23HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	POWERS 2C-23HZ		
Design:	POWERS 2C-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 2C-23HZ					
Well Position	+N-S	-0.37 ft	Northing:	1,286,819.83 ft	Latitude:	40.117417
	+E-W	71.88 ft	Easting:	3,244,043.90 ft	Longitude:	-104.627376
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,909.00 ft

Wellbore	POWERS 2C-23HZ				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	4/29/2011	8.78	66.85	53,010

Design	POWERS 2C-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	5.46	

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	
1,121.63	4.43	113.82	1,121.41	-3.46	7.84	2.00	2.00	0.00	113.82	
6,471.53	4.43	113.82	6,455.31	-170.47	386.08	0.00	0.00	0.00	0.00	
7,620.51	90.13	0.00	7,192.00	547.00	438.44	8.00	7.46	-9.91	-113.75	
7,661.48	90.13	0.00	7,191.91	587.96	438.44	0.01	-0.01	0.00	180.00	
11,661.26	90.13	0.00	7,183.00	4,587.74	438.44	0.00	0.00	0.00	0.00	POWERS 2C-23HZ

Database:	edm5000p	Local Co-ordinate Reference:	Well POWERS 2C-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 2C-23HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	POWERS 2C-23HZ		
Design:	POWERS 2C-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	113.82	999.98	-0.70	1.60	-0.55	2.00	2.00	0.00
1,100.00	4.00	113.82	1,099.84	-2.82	6.38	-2.20	2.00	2.00	0.00
1,121.63	4.43	113.82	1,121.41	-3.46	7.84	-2.70	2.00	2.00	0.00
Start 5349.90 hold at 1121.63 MD									
1,200.00	4.43	113.82	1,199.54	-5.91	13.38	-4.61	0.00	0.00	0.00
1,300.00	4.43	113.82	1,299.25	-9.03	20.45	-7.04	0.00	0.00	0.00
1,400.00	4.43	113.82	1,398.95	-12.15	27.52	-9.48	0.00	0.00	0.00
1,500.00	4.43	113.82	1,498.65	-15.27	34.59	-11.91	0.00	0.00	0.00
1,600.00	4.43	113.82	1,598.35	-18.39	41.66	-14.35	0.00	0.00	0.00
1,700.00	4.43	113.82	1,698.05	-21.52	48.73	-16.78	0.00	0.00	0.00
1,800.00	4.43	113.82	1,797.75	-24.64	55.80	-19.22	0.00	0.00	0.00
1,900.00	4.43	113.82	1,897.45	-27.76	62.87	-21.65	0.00	0.00	0.00
2,000.00	4.43	113.82	1,997.15	-30.88	69.94	-24.09	0.00	0.00	0.00
2,100.00	4.43	113.82	2,096.85	-34.00	77.01	-26.52	0.00	0.00	0.00
2,200.00	4.43	113.82	2,196.55	-37.12	84.08	-28.96	0.00	0.00	0.00
2,300.00	4.43	113.82	2,296.25	-40.25	91.15	-31.39	0.00	0.00	0.00
2,400.00	4.43	113.82	2,395.96	-43.37	98.22	-33.83	0.00	0.00	0.00
2,500.00	4.43	113.82	2,495.66	-46.49	105.29	-36.26	0.00	0.00	0.00
2,600.00	4.43	113.82	2,595.36	-49.61	112.36	-38.70	0.00	0.00	0.00
2,700.00	4.43	113.82	2,695.06	-52.73	119.43	-41.13	0.00	0.00	0.00
2,800.00	4.43	113.82	2,794.76	-55.85	126.50	-43.57	0.00	0.00	0.00
2,900.00	4.43	113.82	2,894.46	-58.98	133.57	-46.00	0.00	0.00	0.00
3,000.00	4.43	113.82	2,994.16	-62.10	140.64	-48.44	0.00	0.00	0.00
3,100.00	4.43	113.82	3,093.86	-65.22	147.71	-50.87	0.00	0.00	0.00
3,200.00	4.43	113.82	3,193.56	-68.34	154.78	-53.31	0.00	0.00	0.00
3,300.00	4.43	113.82	3,293.26	-71.46	161.85	-55.74	0.00	0.00	0.00
3,400.00	4.43	113.82	3,392.96	-74.59	168.92	-58.18	0.00	0.00	0.00
3,500.00	4.43	113.82	3,492.67	-77.71	175.99	-60.61	0.00	0.00	0.00
3,600.00	4.43	113.82	3,592.37	-80.83	183.06	-63.05	0.00	0.00	0.00
3,700.00	4.43	113.82	3,692.07	-83.95	190.13	-65.48	0.00	0.00	0.00
3,800.00	4.43	113.82	3,791.77	-87.07	197.20	-67.92	0.00	0.00	0.00
3,900.00	4.43	113.82	3,891.47	-90.19	204.27	-70.35	0.00	0.00	0.00
3,963.72	4.43	113.82	3,955.00	-92.18	208.78	-71.90	0.00	0.00	0.00
PARKMAN									
4,000.00	4.43	113.82	3,991.17	-93.32	211.34	-72.79	0.00	0.00	0.00
4,100.00	4.43	113.82	4,090.87	-96.44	218.41	-75.22	0.00	0.00	0.00
4,200.00	4.43	113.82	4,190.57	-99.56	225.48	-77.66	0.00	0.00	0.00
4,300.00	4.43	113.82	4,290.27	-102.68	232.55	-80.09	0.00	0.00	0.00
4,330.82	4.43	113.82	4,321.00	-103.64	234.73	-80.84	0.00	0.00	0.00

Database:	edm5000p	Local Co-ordinate Reference:	Well POWERS 2C-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 2C-23HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	POWERS 2C-23HZ		
Design:	POWERS 2C-23HZ (wp01)		

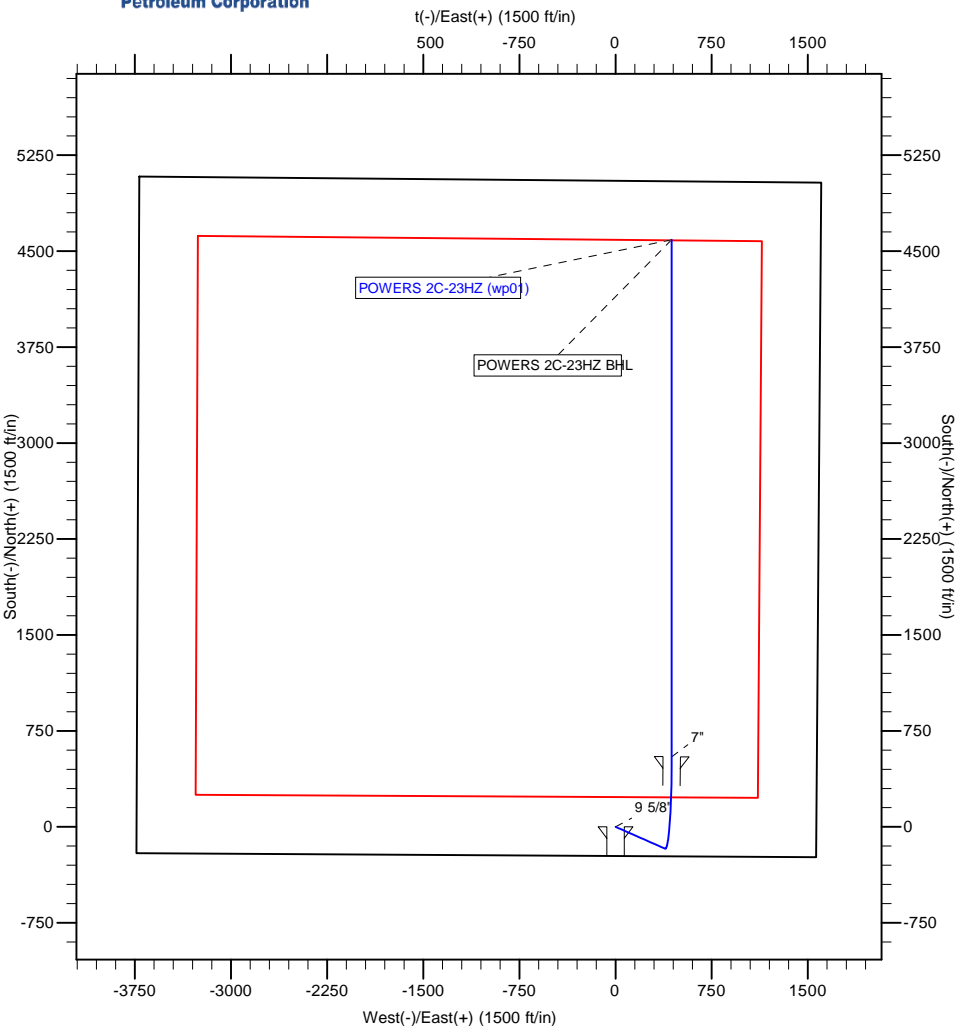
Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
SUSSEX										
4,400.00	4.43	113.82	4,389.97	-105.80	239.62	-82.53	0.00	0.00	0.00	
4,500.00	4.43	113.82	4,489.67	-108.92	246.69	-84.96	0.00	0.00	0.00	
4,600.00	4.43	113.82	4,589.38	-112.05	253.76	-87.40	0.00	0.00	0.00	
4,700.00	4.43	113.82	4,689.08	-115.17	260.83	-89.83	0.00	0.00	0.00	
4,800.00	4.43	113.82	4,788.78	-118.29	267.90	-92.27	0.00	0.00	0.00	
4,900.00	4.43	113.82	4,888.48	-121.41	274.97	-94.70	0.00	0.00	0.00	
5,000.00	4.43	113.82	4,988.18	-124.53	282.04	-97.14	0.00	0.00	0.00	
5,100.00	4.43	113.82	5,087.88	-127.65	289.11	-99.57	0.00	0.00	0.00	
5,200.00	4.43	113.82	5,187.58	-130.78	296.18	-102.01	0.00	0.00	0.00	
5,300.00	4.43	113.82	5,287.28	-133.90	303.25	-104.44	0.00	0.00	0.00	
5,400.00	4.43	113.82	5,386.98	-137.02	310.32	-106.87	0.00	0.00	0.00	
5,500.00	4.43	113.82	5,486.68	-140.14	317.39	-109.31	0.00	0.00	0.00	
5,600.00	4.43	113.82	5,586.38	-143.26	324.46	-111.74	0.00	0.00	0.00	
5,700.00	4.43	113.82	5,686.08	-146.38	331.53	-114.18	0.00	0.00	0.00	
5,800.00	4.43	113.82	5,785.79	-149.51	338.60	-116.61	0.00	0.00	0.00	
5,900.00	4.43	113.82	5,885.49	-152.63	345.68	-119.05	0.00	0.00	0.00	
6,000.00	4.43	113.82	5,985.19	-155.75	352.75	-121.48	0.00	0.00	0.00	
6,100.00	4.43	113.82	6,084.89	-158.87	359.82	-123.92	0.00	0.00	0.00	
6,200.00	4.43	113.82	6,184.59	-161.99	366.89	-126.35	0.00	0.00	0.00	
6,300.00	4.43	113.82	6,284.29	-165.11	373.96	-128.79	0.00	0.00	0.00	
6,400.00	4.43	113.82	6,383.99	-168.24	381.03	-131.22	0.00	0.00	0.00	
6,471.53	4.43	113.82	6,455.31	-170.47	386.08	-132.97	0.00	0.00	0.00	
Start DLS 8.00 TFO -113.75										
6,500.00	4.09	83.12	6,483.70	-170.79	388.10	-133.10	8.00	-1.22	-107.83	
6,600.00	9.40	25.37	6,583.06	-162.97	395.14	-124.64	8.00	5.32	-57.76	
6,700.00	16.97	13.45	6,680.37	-141.36	402.05	-102.47	8.00	7.57	-11.92	
6,800.00	24.80	8.84	6,773.74	-106.39	408.68	-67.03	8.00	7.84	-4.61	
6,900.00	32.71	6.35	6,861.34	-58.73	414.90	-18.99	8.00	7.91	-2.49	
6,959.48	37.44	5.32	6,910.00	-24.74	418.35	15.17	8.00	7.94	-1.72	
NIORARA A										
7,000.00	40.66	4.75	6,941.47	0.69	420.59	40.70	8.00	7.95	-1.43	
7,058.14	45.28	4.04	6,984.00	40.19	423.61	80.31	8.00	7.96	-1.22	
NIORARA B										
7,100.00	48.62	3.59	7,012.57	70.71	425.64	110.88	8.00	7.96	-1.06	
7,142.98	52.04	3.18	7,040.00	103.72	427.59	143.93	8.00	7.97	-0.96	
NIORARA C										
7,200.00	56.58	2.69	7,073.26	149.97	429.96	190.19	8.00	7.97	-0.86	
7,300.00	64.56	1.94	7,122.35	236.92	433.45	277.08	8.00	7.97	-0.75	
7,400.00	72.53	1.29	7,158.90	329.88	436.06	369.87	8.00	7.98	-0.65	
7,500.00	80.51	0.69	7,182.18	427.03	437.73	466.74	8.00	7.98	-0.60	
7,600.00	88.49	0.12	7,191.75	526.49	438.42	565.81	8.00	7.98	-0.57	
7,620.51	90.13	0.00	7,192.00	547.00	438.44	586.23	8.00	7.98	-0.57	
Start DLS 0.01 TFO 180.00 - 7"										
7,661.48	90.13	0.00	7,191.91	587.96	438.44	627.01	0.01	-0.01	0.00	
Start 3999.79 hold at 7661.48 MD										
7,700.00	90.13	0.00	7,191.82	626.49	438.44	665.36	0.00	0.00	0.00	
7,800.00	90.13	0.00	7,191.60	726.49	438.44	764.91	0.00	0.00	0.00	
7,900.00	90.13	0.00	7,191.38	826.49	438.44	864.45	0.00	0.00	0.00	
8,000.00	90.13	0.00	7,191.15	926.49	438.44	964.00	0.00	0.00	0.00	
8,100.00	90.13	0.00	7,190.93	1,026.49	438.44	1,063.54	0.00	0.00	0.00	
8,200.00	90.13	0.00	7,190.71	1,126.49	438.44	1,163.09	0.00	0.00	0.00	
8,300.00	90.13	0.00	7,190.49	1,226.49	438.44	1,262.64	0.00	0.00	0.00	

Database:	edm5000p	Local Co-ordinate Reference:	Well POWERS 2C-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 2C-23HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	POWERS 2C-23HZ		
Design:	POWERS 2C-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)
8,400.00	90.13	0.00	7,190.26	1,326.49	438.44	1,362.18	0.00	0.00	0.00
8,500.00	90.13	0.00	7,190.04	1,426.49	438.44	1,461.73	0.00	0.00	0.00
8,600.00	90.13	0.00	7,189.82	1,526.49	438.44	1,561.27	0.00	0.00	0.00
8,700.00	90.13	0.00	7,189.60	1,626.49	438.44	1,660.82	0.00	0.00	0.00
8,800.00	90.13	0.00	7,189.37	1,726.49	438.44	1,760.37	0.00	0.00	0.00
8,900.00	90.13	0.00	7,189.15	1,826.49	438.44	1,859.91	0.00	0.00	0.00
9,000.00	90.13	0.00	7,188.93	1,926.49	438.44	1,959.46	0.00	0.00	0.00
9,100.00	90.13	0.00	7,188.70	2,026.49	438.44	2,059.01	0.00	0.00	0.00
9,200.00	90.13	0.00	7,188.48	2,126.49	438.44	2,158.55	0.00	0.00	0.00
9,300.00	90.13	0.00	7,188.26	2,226.49	438.44	2,258.10	0.00	0.00	0.00
9,400.00	90.13	0.00	7,188.04	2,326.49	438.44	2,357.64	0.00	0.00	0.00
9,500.00	90.13	0.00	7,187.81	2,426.48	438.44	2,457.19	0.00	0.00	0.00
9,600.00	90.13	0.00	7,187.59	2,526.48	438.44	2,556.74	0.00	0.00	0.00
9,700.00	90.13	0.00	7,187.37	2,626.48	438.44	2,656.28	0.00	0.00	0.00
9,800.00	90.13	0.00	7,187.15	2,726.48	438.44	2,755.83	0.00	0.00	0.00
9,900.00	90.13	0.00	7,186.92	2,826.48	438.44	2,855.38	0.00	0.00	0.00
10,000.00	90.13	0.00	7,186.70	2,926.48	438.44	2,954.92	0.00	0.00	0.00
10,100.00	90.13	0.00	7,186.48	3,026.48	438.44	3,054.47	0.00	0.00	0.00
10,200.00	90.13	0.00	7,186.25	3,126.48	438.44	3,154.01	0.00	0.00	0.00
10,300.00	90.13	0.00	7,186.03	3,226.48	438.44	3,253.56	0.00	0.00	0.00
10,400.00	90.13	0.00	7,185.81	3,326.48	438.44	3,353.11	0.00	0.00	0.00
10,500.00	90.13	0.00	7,185.59	3,426.48	438.44	3,452.65	0.00	0.00	0.00
10,600.00	90.13	0.00	7,185.36	3,526.48	438.44	3,552.20	0.00	0.00	0.00
10,700.00	90.13	0.00	7,185.14	3,626.48	438.44	3,651.74	0.00	0.00	0.00
10,800.00	90.13	0.00	7,184.92	3,726.48	438.44	3,751.29	0.00	0.00	0.00
10,900.00	90.13	0.00	7,184.70	3,826.48	438.44	3,850.84	0.00	0.00	0.00
11,000.00	90.13	0.00	7,184.47	3,926.48	438.44	3,950.38	0.00	0.00	0.00
11,100.00	90.13	0.00	7,184.25	4,026.48	438.44	4,049.93	0.00	0.00	0.00
11,200.00	90.13	0.00	7,184.03	4,126.48	438.44	4,149.48	0.00	0.00	0.00
11,300.00	90.13	0.00	7,183.80	4,226.48	438.44	4,249.02	0.00	0.00	0.00
11,400.00	90.13	0.00	7,183.58	4,326.48	438.44	4,348.57	0.00	0.00	0.00
11,500.00	90.13	0.00	7,183.36	4,426.48	438.44	4,448.11	0.00	0.00	0.00
11,600.00	90.13	0.00	7,183.14	4,526.48	438.44	4,547.66	0.00	0.00	0.00
11,661.26	90.13	0.00	7,183.00	4,587.74	438.44	4,608.65	0.00	0.00	0.00
POWERS 2C-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 2C-23HZ B	0.00	0.00	7,183.00	4,587.74	438.44	1,291,411.67	3,244,437.18	40.130011	-104.625808
- hit/miss target									
- Shape									
- plan hits target center									
- Point									

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	
7,620.51	7,192.00	7"	7	8-3/4	



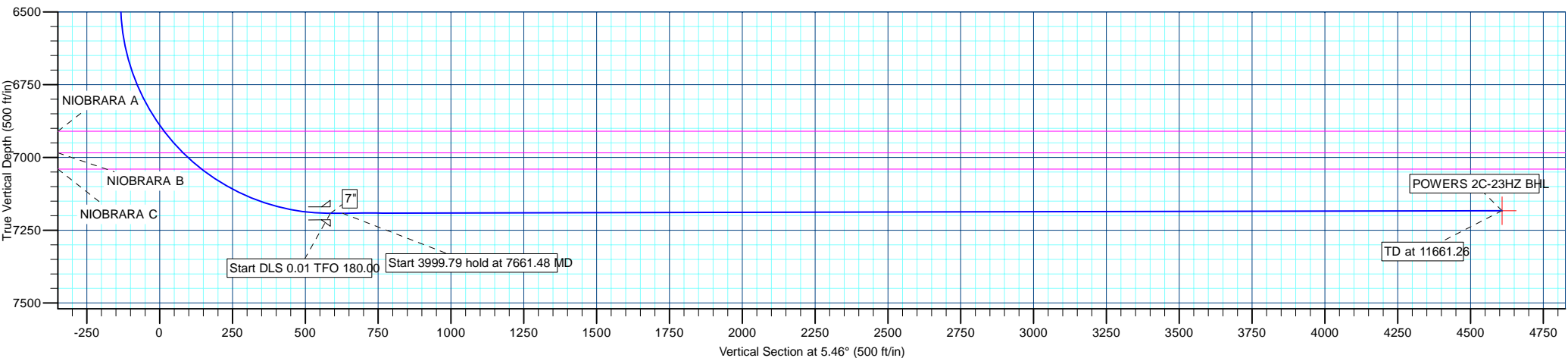
WELL DETAILS: POWERS 2C-23HZ						
+N/-S	+E/-W	Northing	Ground Level: Easting	Latitude	Longitude	Slot
0.00	0.00	128619.83	3244043.90	40.117417	-104.627376	

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)						
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
POWERS 2C-23HZ BHL	7183.00	4587.74	438.44	40.130011	-104.625808	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	
1121.63	4.43	113.82	1121.41	-3.46	7.84	2.00	113.82	-2.70	
6471.53	4.43	113.82	6455.31	-170.47	386.08	0.00	0.00	-132.97	
7620.51	90.13	0.00	7192.00	547.00	438.44	8.00	-113.75	586.23	
7661.48	90.13	0.00	7191.91	587.96	438.44	0.01	180.00	627.01	
11661.26	90.13	0.00	7183.00	4587.74	438.44	0.00	0.00	4608.65	POWERS 2C-23HZ BHL

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
705.00	705.00	BASE FOX HILLS
3955.00	3963.72	PARKMAN
4321.00	4330.82	SUSSEX
6910.00	6959.48	NIOBRARA A
6984.00	7058.14	NIOBRARA B
7040.00	7142.98	NIOBRARA C

CASING DETAILS			
TVD	MD	Name	Size
750.00	750.00	9 5/8"	9-5/8
7192.00	7620.51	7"	7



Database:	edm5000p	Local Co-ordinate Reference:	Well POWERS 2C-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 2C-23HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	POWERS 2C-23HZ		
Design:	POWERS 2C-23HZ (wp01)		

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
705.00	705.00	BASE FOX HILLS		0.00	
3,963.72	3,955.00	PARKMAN		0.00	
4,330.82	4,321.00	SUSSEX		0.00	
6,959.48	6,910.00	NIOBRARA A		0.00	
7,058.14	6,984.00	NIOBRARA B		0.00	
7,142.98	7,040.00	NIOBRARA C		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
1,121.63	1,121.41	-3.46	7.84	Start 5349.90 hold at 1121.63 MD
6,471.53	6,455.31	-170.47	386.08	Start DLS 8.00 TFO -113.75
7,620.51	7,192.00	547.00	438.44	Start DLS 0.01 TFO 180.00
7,661.48	7,191.91	587.96	438.44	Start 3999.79 hold at 7661.48 MD
11,661.26	7,183.00	4,587.74	438.44	TD at 11661.26

US ROCKIES REGION PLANNING

**COLORADO NORTHERN ZONE - 83
WELD_POWER PAD
POWERS 2C-23HZ**

**POWERS 2C-23HZ
POWERS 2C-23HZ (wp01)**

Anticollision Summary Report

29 April, 2011



APC

Anticollision Summary Report



Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well POWERS 2C-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 2C-23HZ	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	POWERS 2C-23HZ	Database:	edm5000p
Reference Design:	POWERS 2C-23HZ (wp01)	Offset TVD Reference:	Offset Datum

Reference	POWERS 2C-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		

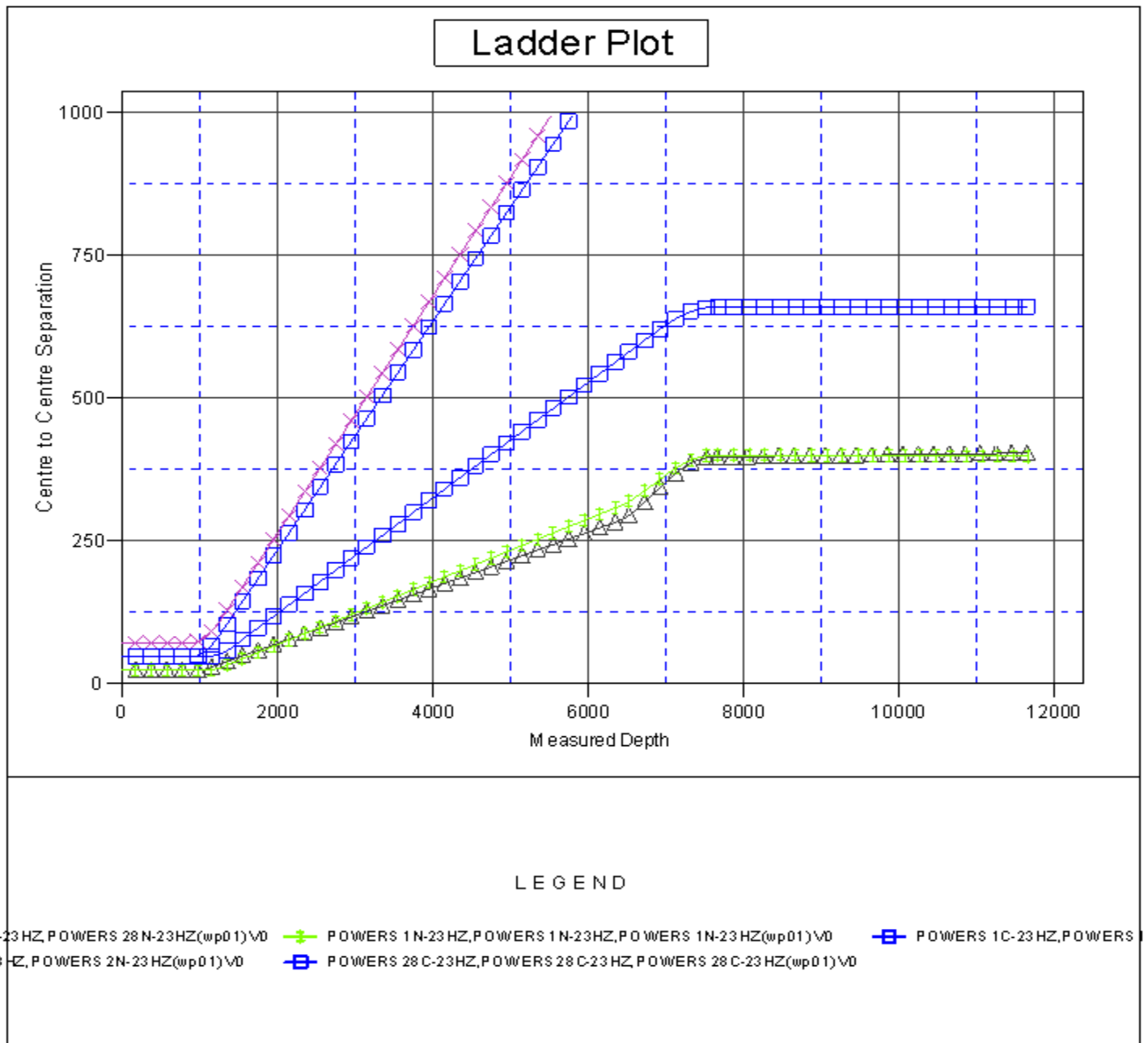
Survey Tool Program	Date 4/29/2011			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	11,661.26	POWERS 2C-23HZ (wp01) (POWERS 2C	MWD	MWD - Standard

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	48.10	44.32	12.717	CC
POWERS 1C-23HZ - POWERS 1C-23HZ - POWERS 1C	1,100.00	1,096.74	48.49	43.92	10.610	ES
POWERS 1C-23HZ - POWERS 1C-23HZ - POWERS 1C	11,661.26	11,724.44	660.00	480.96	3.686	SF
POWERS 1N-23HZ - POWERS 1N-23HZ - POWERS 1N	900.00	900.00	24.05	20.27	6.358	CC
POWERS 1N-23HZ - POWERS 1N-23HZ - POWERS 1N	1,121.63	1,119.84	24.47	19.81	5.256	ES
POWERS 1N-23HZ - POWERS 1N-23HZ - POWERS 1N	11,661.26	11,463.77	398.82	243.78	2.572	SF
POWERS 28C-23HZ - POWERS 28C-23HZ - POWERS	900.00	900.00	47.83	44.04	12.643	CC, ES
POWERS 28C-23HZ - POWERS 28C-23HZ - POWERS	975.00	973.76	49.66	45.57	12.148	SF
POWERS 28N-23HZ - POWERS 28N-23HZ - POWERS	900.00	900.00	71.88	68.09	19.001	CC, ES
POWERS 28N-23HZ - POWERS 28N-23HZ - POWERS	1,000.00	997.52	75.13	70.94	17.941	SF
POWERS 2N-23HZ - POWERS 2N-23HZ - POWERS 2N	900.00	900.00	24.05	20.27	6.359	CC
POWERS 2N-23HZ - POWERS 2N-23HZ - POWERS 2N	925.00	925.12	24.09	20.21	6.203	ES
POWERS 2N-23HZ - POWERS 2N-23HZ - POWERS 2N	11,661.26	11,424.67	404.50	254.07	2.689	SF

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well POWERS 2C-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 2C-23HZ	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	POWERS 2C-23HZ	Database:	edm5000p
Reference Design:	POWERS 2C-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 2C-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 2C-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 2C-23HZ	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	POWERS 2C-23HZ	Database:	edm5000p
Reference Design:	POWERS 2C-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 2C-23HZ
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.56°

