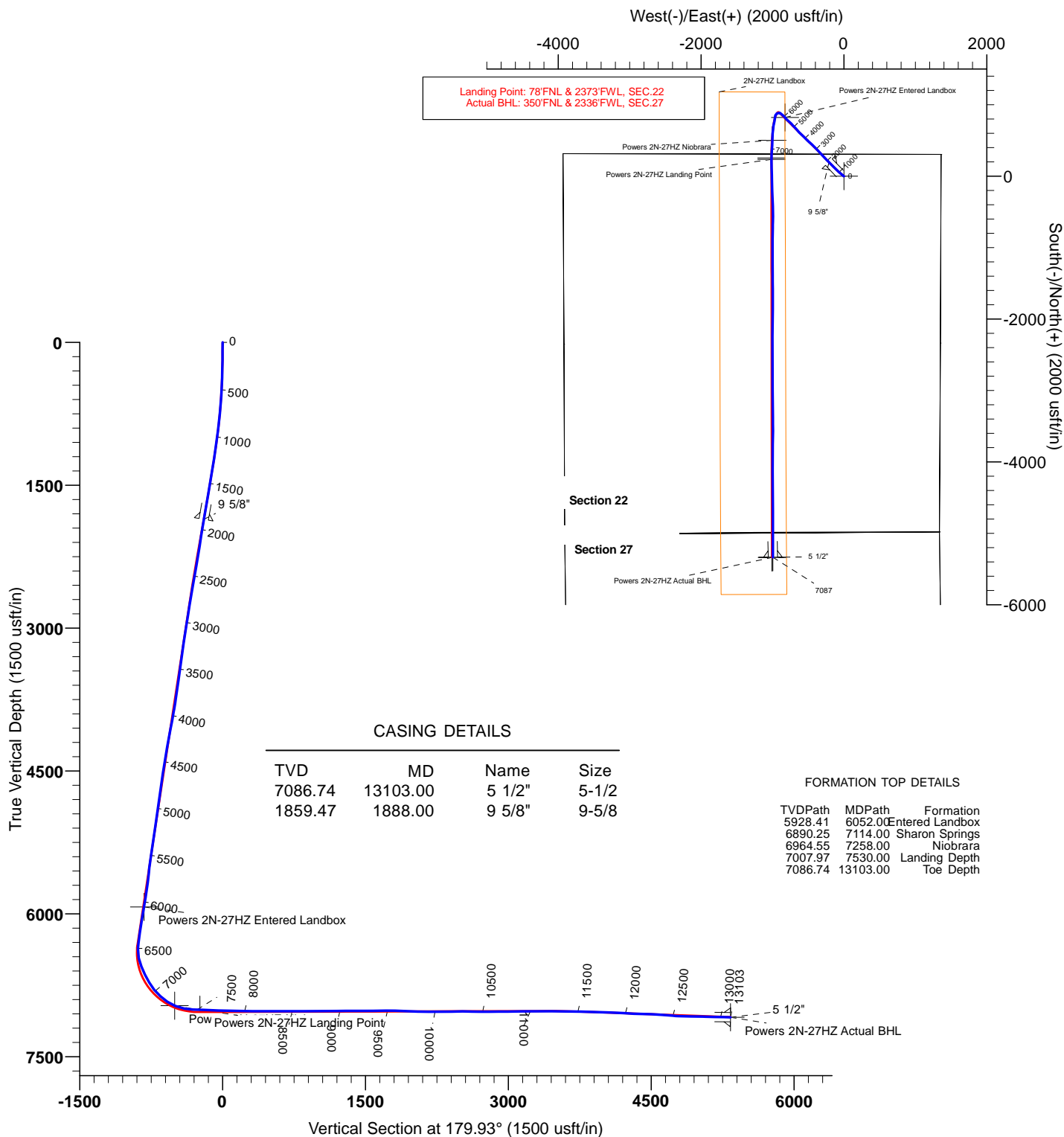


US ROCKIES WATTENBERG PLANNING



Project: WELD-NAD83-UTMFT13N
Site: 2N-65W-22 Powers 2-22 Pad
Well: POWERS 2N-27HZ
Wellbore: POWERS 2N-27HZ
Design: PDD Actual Surveys



CASING DETAILS

TVD	MD	Name	Size
7086.74	13103.00	5 1/2"	5-1/2
1859.47	1888.00	9 5/8"	9-5/8

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
5928.41	6052.00	Entered Landbox
6890.25	7114.00	Sharon Springs
6964.55	7258.00	Niobrara
7007.97	7530.00	Landing Depth
7086.74	13103.00	Toe Depth

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
Powers 2N-27HZ Entered Landbox	5928.41	823.68	-823.96	14575283.22	1738675.79	40.132792	-104.648457	Point
Powers 2N-27HZ Niobrara	6964.55	502.26	-1001.82	14574961.08	1738499.22	40.131909	-104.649093	Point
Powers 2N-27HZ Landing Point	7007.97	236.34	-1012.82	14574695.12	1738489.27	40.131179	-104.649132	Point
Powers 2N-27HZ Actual BHL	7086.74	-5333.91	-992.87	14569125.00	1738531.43	40.115882	-104.649060	Point

PREMIER DIRECTIONAL DRILLING

12941 North Freeway Suite 400, Houston, TX, 77060
 Phone: 281-673-4000



US ROCKIES WATTENBERG PLANNING

**WELD-NAD83-UTMFT13N
2N-65W-22 Powers 2-22 Pad
POWERS 2N-27HZ**

POWERS 2N-27HZ

Design: PDD Actual Surveys

Standard Survey Report

13 October, 2015

PDD

Survey Report

Company:	US ROCKIES WATTENBERG PLANNING	Local Co-ordinate Reference:	Well POWERS 2N-27HZ
Project:	WELD-NAD83-UTMFT13N	TVD Reference:	4894'+25' @ 4919.00usft (H&P 307)
Site:	2N-65W-22 Powers 2-22 Pad	MD Reference:	4894'+25' @ 4919.00usft (H&P 307)
Well:	POWERS 2N-27HZ	North Reference:	True
Wellbore:	POWERS 2N-27HZ	Survey Calculation Method:	Minimum Curvature
Design:	PDD Actual Surveys	Database:	EDM 5000.1 Single User Db

Project	WELD-NAD83-UTMFT13N		
Map System:	Universal Transverse Mercator (US Survey Feet)	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Zone 13N (108 W to 102 W)		

Site	2N-65W-22 Powers 2-22 Pad, centered on 2N-27HZ				
Site Position:		Northing:	14,574,462.82 usft	Latitude:	40.130530
From:	Lat/Long	Easting:	1,739,503.03 usft	Longitude:	-104.645509
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.23 °

Well		POWERS 2N-27HZ				
Well Position	+N/-S	0.00 usft	Northing:	14,574,462.82 usft	Latitude:	40.130530
	+E/-W	0.00 usft	Easting:	1,739,503.03 usft	Longitude:	-104.645509
Position Uncertainty		3.28 usft	Wellhead Elevation:	0.00 usft	Ground Level:	4,894.00 usft

Wellbore	POWERS 2N-27HZ				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	1/12/2015	8.30	66.73	52,625

Design	PDD Actual Surveys				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	179.93	

Survey Program	Date	10/13/2015			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
282.00	1,831.00	SDI MWD Surveys (POWERS 2N-27HZ)	APC_ISCWSA REV 2 MWD	Fixed:v2:standard declination	
1,974.00	13,103.00	PDD MWD+IFR Surveys (POWERS 2N-2	APC_ISCWSA REV 2 MWD+	Fixed:v2:crustal field declination	

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
282.00	2.24	300.94	281.93	2.83	-4.73	-2.84	0.79	0.79	0.00	
390.00	3.68	311.92	389.78	6.23	-9.12	-6.25	1.43	1.33	10.17	
480.00	3.68	313.50	479.60	10.15	-13.36	-10.17	0.11	0.00	1.76	
570.00	4.98	309.05	569.34	14.60	-18.49	-14.62	1.49	1.44	-4.94	
660.00	6.28	313.82	658.90	20.47	-25.08	-20.50	1.53	1.44	5.30	
750.00	7.62	314.71	748.24	28.08	-32.87	-28.12	1.49	1.49	0.99	
885.00	9.80	309.51	881.68	41.69	-48.10	-41.75	1.72	1.61	-3.85	
976.00	11.40	312.05	971.12	52.64	-60.75	-52.71	1.83	1.76	2.79	
1,066.00	12.08	311.09	1,059.24	64.79	-74.45	-64.88	0.79	0.76	-1.07	

PDD Survey Report

Company:	US ROCKIES WATTENBERG PLANNING	Local Co-ordinate Reference:	Well POWERS 2N-27HZ
Project:	WELD-NAD83-UTMFT13N	TVD Reference:	4894'+25' @ 4919.00usft (H&P 307)
Site:	2N-65W-22 Powers 2-22 Pad	MD Reference:	4894'+25' @ 4919.00usft (H&P 307)
Well:	POWERS 2N-27HZ	North Reference:	True
Wellbore:	POWERS 2N-27HZ	Survey Calculation Method:	Minimum Curvature
Design:	PDD Actual Surveys	Database:	EDM 5000.1 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,156.00	12.20	311.99	1,147.23	77.34	-88.62	-77.44	0.25	0.13	1.00
1,246.00	13.54	314.53	1,234.96	91.09	-103.20	-91.21	1.62	1.49	2.82
1,336.00	13.56	315.78	1,322.46	106.04	-118.07	-106.18	0.33	0.02	1.39
1,426.00	13.04	315.44	1,410.04	120.83	-132.55	-121.00	0.58	-0.58	-0.38
1,516.00	13.32	316.04	1,497.67	135.53	-146.87	-135.71	0.35	0.31	0.67
1,606.00	13.23	315.28	1,585.27	150.31	-161.31	-150.51	0.22	-0.10	-0.84
1,696.00	13.31	313.11	1,672.87	164.71	-176.12	-164.92	0.56	0.09	-2.41
1,786.00	13.84	314.43	1,760.35	179.33	-191.37	-179.56	0.68	0.59	1.47
1,831.00	13.69	316.45	1,804.06	186.95	-198.89	-187.20	1.12	-0.33	4.49
1,974.00	13.00	315.50	1,943.20	210.69	-221.82	-210.96	0.51	-0.48	-0.66
2,068.00	12.90	315.60	2,034.81	225.73	-236.57	-226.02	0.11	-0.11	0.11
2,163.00	12.20	314.20	2,127.54	240.30	-251.19	-240.61	0.80	-0.74	-1.47
2,257.00	12.40	312.30	2,219.38	254.02	-265.77	-254.34	0.48	0.21	-2.02
2,352.00	13.20	318.40	2,312.02	269.00	-280.52	-269.34	1.65	0.84	6.42
2,446.00	12.90	319.40	2,403.59	284.99	-294.47	-285.35	0.40	-0.32	1.06
2,541.00	12.40	318.40	2,496.29	300.67	-308.15	-301.04	0.57	-0.53	-1.05
2,635.00	13.30	321.10	2,587.93	316.63	-321.64	-317.02	1.15	0.96	2.87
2,730.00	13.40	316.20	2,680.37	333.08	-336.12	-333.49	1.20	0.11	-5.16
2,824.00	12.30	316.50	2,772.01	348.20	-350.55	-348.63	1.17	-1.17	0.32
2,919.00	11.40	315.30	2,864.99	362.22	-364.12	-362.66	0.98	-0.95	-1.26
3,013.00	13.20	313.80	2,956.83	376.25	-378.40	-376.71	1.94	1.91	-1.60
3,108.00	13.00	315.00	3,049.35	391.31	-393.79	-391.79	0.36	-0.21	1.26
3,202.00	11.90	315.10	3,141.14	405.66	-408.10	-406.15	1.17	-1.17	0.11
3,297.00	11.20	314.50	3,234.22	419.06	-421.60	-419.57	0.75	-0.74	-0.63
3,391.00	11.80	314.10	3,326.33	432.15	-435.01	-432.68	0.64	0.64	-0.43
3,486.00	10.90	311.40	3,419.47	444.85	-448.72	-445.40	1.10	-0.95	-2.84
3,581.00	11.60	311.40	3,512.65	457.10	-462.63	-457.67	0.74	0.74	0.00
3,675.00	12.40	315.00	3,604.59	470.49	-476.85	-471.07	1.17	0.85	3.83
3,770.00	11.20	313.10	3,697.58	484.01	-490.80	-484.61	1.33	-1.26	-2.00
3,864.00	12.50	313.30	3,789.58	497.22	-504.87	-497.84	1.38	1.38	0.21
3,958.00	14.60	314.30	3,880.96	512.48	-520.76	-513.11	2.25	2.23	1.06
4,053.00	13.60	314.40	3,973.09	528.65	-537.31	-529.31	1.05	-1.05	0.11
4,148.00	15.50	317.20	4,065.04	545.78	-553.91	-546.46	2.13	2.00	2.95
4,242.00	15.50	315.00	4,155.63	563.88	-571.33	-564.58	0.63	0.00	-2.34
4,337.00	14.00	313.70	4,247.49	580.80	-588.61	-581.51	1.62	-1.58	-1.37
4,431.00	13.10	312.10	4,338.88	595.79	-604.74	-596.53	1.04	-0.96	-1.70
4,526.00	12.20	309.30	4,431.57	609.37	-620.49	-610.13	1.15	-0.95	-2.95
4,620.00	12.10	321.00	4,523.48	623.32	-634.38	-624.09	2.62	-0.11	12.45
4,715.00	11.60	319.40	4,616.45	638.31	-646.86	-639.10	0.63	-0.53	-1.68
4,810.00	11.10	320.30	4,709.60	652.60	-658.92	-653.40	0.56	-0.53	0.95
4,904.00	11.70	319.90	4,801.74	666.85	-670.84	-667.67	0.64	0.64	-0.43
4,998.00	11.00	316.60	4,893.90	680.66	-683.14	-681.49	1.02	-0.74	-3.51
5,093.00	9.20	314.80	4,987.43	692.59	-694.76	-693.44	1.92	-1.89	-1.89

PDD Survey Report

Company:	US ROCKIES WATTENBERG PLANNING	Local Co-ordinate Reference:	Well POWERS 2N-27HZ
Project:	WELD-NAD83-UTMFT13N	TVD Reference:	4894'+25' @ 4919.00usft (H&P 307)
Site:	2N-65W-22 Powers 2-22 Pad	MD Reference:	4894'+25' @ 4919.00usft (H&P 307)
Well:	POWERS 2N-27HZ	North Reference:	True
Wellbore:	POWERS 2N-27HZ	Survey Calculation Method:	Minimum Curvature
Design:	PDD Actual Surveys	Database:	EDM 5000.1 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,188.00	10.10	314.10	5,081.08	703.74	-706.13	-704.60	0.96	0.95	-0.74
5,282.00	12.80	317.70	5,173.20	717.18	-719.06	-718.06	2.97	2.87	3.83
5,377.00	12.30	316.40	5,265.93	732.29	-733.12	-733.19	0.60	-0.53	-1.37
5,471.00	10.50	314.20	5,358.08	745.52	-746.17	-746.43	1.97	-1.91	-2.34
5,566.00	12.30	313.70	5,451.20	758.54	-759.69	-759.47	1.90	1.89	-0.53
5,660.00	10.30	309.40	5,543.37	770.80	-773.42	-771.74	2.31	-2.13	-4.57
5,755.00	10.40	311.90	5,636.83	781.91	-786.37	-782.87	0.48	0.11	2.63
5,849.00	10.50	312.70	5,729.27	793.39	-798.98	-794.36	0.19	0.11	0.85
5,944.00	10.60	323.70	5,822.67	806.30	-810.51	-807.29	2.12	0.11	11.58
6,038.00	12.60	321.50	5,914.75	821.30	-822.02	-822.30	2.18	2.13	-2.34
6,133.00	14.10	313.20	6,007.19	837.33	-836.90	-838.35	2.56	1.58	-8.74
6,228.00	12.50	311.10	6,099.64	852.01	-853.09	-853.05	1.76	-1.68	-2.21
6,322.00	14.20	309.00	6,191.09	865.95	-869.71	-867.02	1.88	1.81	-2.23
6,417.00	12.70	308.10	6,283.49	879.73	-886.99	-880.81	1.59	-1.58	-0.95
6,511.00	16.90	270.70	6,374.55	886.29	-908.84	-887.40	10.86	4.47	-39.79
6,606.00	20.90	240.90	6,464.61	878.20	-937.53	-879.34	10.85	4.21	-31.37
6,700.00	23.60	200.30	6,552.11	852.24	-958.84	-853.41	16.29	2.87	-43.19
6,795.00	25.80	179.20	6,638.58	813.65	-965.16	-814.83	9.52	2.32	-22.21
6,889.00	31.10	192.50	6,721.29	769.42	-970.14	-770.61	8.76	5.64	14.15
6,983.00	39.20	191.50	6,798.08	716.52	-981.33	-717.72	8.64	8.62	-1.06
7,078.00	47.80	188.10	6,866.94	652.14	-992.30	-653.35	9.38	9.05	-3.58
7,172.00	57.40	183.50	6,923.98	577.95	-999.64	-579.17	10.92	10.21	-4.89
7,267.00	67.20	179.60	6,968.10	493.99	-1,001.78	-495.21	10.93	10.32	-4.11
7,361.00	78.50	183.70	6,995.79	404.37	-1,004.46	-405.60	12.72	12.02	4.36
7,456.00	89.00	183.60	7,006.11	310.26	-1,010.46	-311.50	11.05	11.05	-0.11
7,550.00	87.90	179.10	7,008.66	216.35	-1,012.68	-217.59	4.93	-1.17	-4.79
7,645.00	88.90	178.50	7,011.31	121.41	-1,010.69	-122.64	1.23	1.05	-0.63
7,739.00	87.70	179.70	7,014.10	27.46	-1,009.21	-28.70	1.80	-1.28	1.28
7,834.00	88.00	178.40	7,017.66	-67.45	-1,007.64	66.22	1.40	0.32	-1.37
7,929.00	88.40	177.70	7,020.65	-162.35	-1,004.41	161.12	0.85	0.42	-0.74
8,023.00	88.80	177.40	7,022.94	-256.24	-1,000.39	255.01	0.53	0.43	-0.32
8,117.00	89.30	176.50	7,024.50	-350.09	-995.39	348.87	1.10	0.53	-0.96
8,212.00	90.30	179.50	7,024.83	-445.02	-992.08	443.81	3.33	1.05	3.16
8,306.00	90.50	180.60	7,024.18	-539.01	-992.16	537.80	1.19	0.21	1.17
8,401.00	90.10	180.70	7,023.68	-634.01	-993.24	632.79	0.43	-0.42	0.11
8,495.00	90.20	181.90	7,023.43	-727.98	-995.37	726.76	1.28	0.11	1.28
8,590.00	90.50	181.10	7,022.85	-822.95	-997.85	821.73	0.90	0.32	-0.84
8,684.00	90.40	180.30	7,022.12	-916.93	-999.00	915.71	0.86	-0.11	-0.85
8,779.00	90.30	180.00	7,021.54	-1,011.93	-999.25	1,010.71	0.33	-0.11	-0.32
8,873.00	90.10	179.90	7,021.21	-1,105.93	-999.17	1,104.71	0.24	-0.21	-0.11
8,968.00	90.40	179.20	7,020.79	-1,200.93	-998.42	1,199.71	0.80	0.32	-0.74
9,062.00	91.00	178.80	7,019.64	-1,294.91	-996.78	1,293.69	0.77	0.64	-0.43
9,156.00	89.60	180.50	7,019.15	-1,388.90	-996.21	1,387.68	2.34	-1.49	1.81

PDD

Survey Report

Company:	US ROCKIES WATTENBERG PLANNING	Local Co-ordinate Reference:	Well POWERS 2N-27HZ
Project:	WELD-NAD83-UTMFT13N	TVD Reference:	4894'+25' @ 4919.00usft (H&P 307)
Site:	2N-65W-22 Powers 2-22 Pad	MD Reference:	4894'+25' @ 4919.00usft (H&P 307)
Well:	POWERS 2N-27HZ	North Reference:	True
Wellbore:	POWERS 2N-27HZ	Survey Calculation Method:	Minimum Curvature
Design:	PDD Actual Surveys	Database:	EDM 5000.1 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,251.00	89.90	179.80	7,019.57	-1,483.89	-996.46	1,482.68	0.80	0.32	-0.74
9,345.00	90.40	179.30	7,019.32	-1,577.89	-995.72	1,576.67	0.75	0.53	-0.53
9,440.00	91.10	179.00	7,018.08	-1,672.87	-994.31	1,671.66	0.80	0.74	-0.32
9,535.00	89.70	180.70	7,017.41	-1,767.86	-994.06	1,766.65	2.32	-1.47	1.79
9,629.00	87.60	181.20	7,019.63	-1,861.82	-995.62	1,860.60	2.30	-2.23	0.53
9,724.00	87.80	180.60	7,023.44	-1,956.73	-997.11	1,955.51	0.67	0.21	-0.63
9,818.00	88.40	180.20	7,026.56	-2,050.68	-997.77	2,049.45	0.77	0.64	-0.43
9,912.00	89.60	180.00	7,028.20	-2,144.66	-997.93	2,143.44	1.29	1.28	-0.21
10,007.00	90.20	180.10	7,028.36	-2,239.66	-998.01	2,238.44	0.64	0.63	0.11
10,101.00	90.50	180.50	7,027.79	-2,333.66	-998.51	2,332.43	0.53	0.32	0.43
10,196.00	91.50	180.60	7,026.13	-2,428.64	-999.42	2,427.41	1.06	1.05	0.11
10,290.00	89.00	180.90	7,025.72	-2,522.62	-1,000.65	2,521.39	2.68	-2.66	0.32
10,385.00	89.40	180.40	7,027.05	-2,617.60	-1,001.72	2,616.38	0.67	0.42	-0.53
10,479.00	89.50	179.40	7,027.95	-2,711.60	-1,001.56	2,710.37	1.07	0.11	-1.06
10,574.00	90.30	178.80	7,028.12	-2,806.58	-1,000.07	2,805.36	1.05	0.84	-0.63
10,668.00	91.00	178.00	7,027.05	-2,900.54	-997.44	2,899.32	1.13	0.74	-0.85
10,763.00	90.20	179.50	7,026.05	-2,995.51	-995.37	2,994.29	1.79	-0.84	1.58
10,857.00	90.90	179.60	7,025.15	-3,089.50	-994.63	3,088.28	0.75	0.74	0.11
10,952.00	91.00	179.60	7,023.58	-3,184.49	-993.97	3,183.27	0.11	0.11	0.00
11,046.00	89.40	179.90	7,023.25	-3,278.48	-993.56	3,277.26	1.73	-1.70	0.32
11,141.00	89.50	179.70	7,024.16	-3,373.48	-993.23	3,372.26	0.24	0.11	-0.21
11,235.00	90.20	179.10	7,024.41	-3,467.47	-992.24	3,466.25	0.98	0.74	-0.64
11,330.00	89.60	179.90	7,024.57	-3,562.46	-991.42	3,561.25	1.05	-0.63	0.84
11,424.00	88.20	181.00	7,026.38	-3,656.44	-992.15	3,655.23	1.89	-1.49	1.17
11,519.00	88.70	181.60	7,028.95	-3,751.38	-994.31	3,750.16	0.82	0.53	0.63
11,613.00	89.50	180.90	7,030.42	-3,845.35	-996.36	3,844.12	1.13	0.85	-0.74
11,708.00	88.20	180.00	7,032.33	-3,940.32	-997.10	3,939.10	1.66	-1.37	-0.95
11,802.00	88.80	179.90	7,034.79	-4,034.29	-997.02	4,033.07	0.65	0.64	-0.11
11,897.00	87.20	180.70	7,038.11	-4,129.22	-997.52	4,128.00	1.88	-1.68	0.84
11,991.00	86.40	180.10	7,043.35	-4,223.07	-998.17	4,221.85	1.06	-0.85	-0.64
12,086.00	87.30	179.20	7,048.57	-4,317.93	-997.59	4,316.70	1.34	0.95	-0.95
12,180.00	87.90	179.20	7,052.51	-4,411.83	-996.28	4,410.61	0.64	0.64	0.00
12,275.00	88.60	179.00	7,055.41	-4,506.78	-994.79	4,505.56	0.77	0.74	-0.21
12,370.00	85.50	179.40	7,060.30	-4,601.63	-993.47	4,600.41	3.29	-3.26	0.42
12,464.00	85.10	179.70	7,068.00	-4,695.31	-992.73	4,694.10	0.53	-0.43	0.32
12,558.00	87.20	179.50	7,074.31	-4,789.09	-992.08	4,787.88	2.24	2.23	-0.21
12,653.00	88.90	180.30	7,077.55	-4,884.03	-991.91	4,882.82	1.98	1.79	0.84
12,748.00	89.90	180.20	7,078.54	-4,979.03	-992.33	4,977.81	1.06	1.05	-0.11
12,842.00	87.90	180.30	7,080.35	-5,073.00	-992.74	5,071.79	2.13	-2.13	0.11
12,936.00	88.30	180.70	7,083.46	-5,166.95	-993.56	5,165.73	0.60	0.43	0.43
13,030.00	89.10	179.40	7,085.59	-5,260.92	-993.64	5,259.70	1.62	0.85	-1.38
13,103.00	89.10	179.40	7,086.74	-5,333.91	-992.87	5,332.69	0.00	0.00	0.00

PDD

Survey Report

Company:	US ROCKIES WATTENBERG PLANNING	Local Co-ordinate Reference:	Well POWERS 2N-27HZ
Project:	WELD-NAD83-UTMFT13N	TVD Reference:	4894'+25' @ 4919.00usft (H&P 307)
Site:	2N-65W-22 Powers 2-22 Pad	MD Reference:	4894'+25' @ 4919.00usft (H&P 307)
Well:	POWERS 2N-27HZ	North Reference:	True
Wellbore:	POWERS 2N-27HZ	Survey Calculation Method:	Minimum Curvature
Design:	PDD Actual Surveys	Database:	EDM 5000.1 Single User Db

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Powers 2N-27HZ Entere - actual wellpath hits target center - Point	0.00	0.00	5,928.41	823.68	-823.96	14,575,283.21	1,738,675.79	40.132792	-104.648457
Powers 2N-27HZ Niobra - actual wellpath misses target center by 0.02usft at 7258.02usft MD (6964.55 TVD, 502.24 N, -1001.82 E) - Point	0.00	0.00	6,964.55	502.26	-1,001.82	14,574,961.08	1,738,499.22	40.131909	-104.649093
Powers 2N-27HZ Landir - actual wellpath hits target center - Point	0.00	0.00	7,007.97	236.34	-1,012.83	14,574,695.12	1,738,489.27	40.131179	-104.649133
Powers 2N-27HZ Actual - actual wellpath hits target center - Point	0.00	0.00	7,086.74	-5,333.91	-992.87	14,569,125.00	1,738,531.43	40.115883	-104.649061

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,888.00	1,859.47	9 5/8"	9-5/8	13-1/2	
13,103.00	7,086.74	5 1/2"	5-1/2	8-1/2	

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
6,052.00	5,928.41	Entered Landbox		0.00	
7,114.00	6,890.25	Sharon Springs		0.00	
7,258.00	6,964.55	Niobrara		0.00	
7,530.00	7,007.97	Landing Depth		0.00	
13,103.00	7,086.74	Toe Depth		0.00	

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
13,103.00	7,086.74	-5,333.91	-992.87	Projection to Bit	

Checked By: _____ Approved By: _____ Date: _____