

A Gyrodata Directional Survey

Field Copy Only, not definitive

for

PDC ENERGY INC

Lease: Booth Well: 14-35, 2 3/8" tubing

Location: wellhead, WATTENBERG

Job Number: RM1020GBC400

Run Date: 28 Oct 2020

Report Generated: 29 Oct 2020 10:38

Surveyor: Robert Steele

Calculation Method: MINIMUM CURVATURE

Survey Latitude: 40.524810 deg. N

Longitude: 104.638060 deg. W

Azimuth Correction:

Gyro: Bearings are Relative to True North

Depth Reference: Ground

Vertical Section Calculated from Well Head Location

Closure Calculated from Well Head Location

Horizontal Coordinates Calculated from Well Head Location

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MEASURED DEPTH ft.	INCL deg.	AZIMUTH deg.	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH ft.	CLOSURE DIST. ft.	AZIMUTH deg.	HORIZONTAL COORDINATES ft.
0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.00 N 0.00 E
0 - 7050 FT. RATE GYROSCOPIC MULTISHOT CONTINUOUS SURVEY RUN INSIDE 2 3/8" TUBING ALL MEASURED DEPTHS AND COORDINATES REFERENCED TO GRUOND LEVEL							
100.00	0.44	327.20	0.44	100.00	0.4	327.2	0.32 N 0.21 W
200.00	0.43	319.08	0.06	200.00	1.1	324.5	0.92 N 0.66 W
300.00	0.32	303.27	0.15	299.99	1.8	320.1	1.35 N 1.13 W
400.00	0.17	316.71	0.15	399.99	2.2	317.8	1.61 N 1.46 W
500.00	0.13	332.76	0.06	499.99	2.4	318.4	1.83 N 1.62 W
600.00	0.13	308.33	0.05	599.99	2.7	318.6	2.00 N 1.76 W
700.00	0.21	327.23	0.10	699.99	3.0	318.8	2.22 N 1.95 W
800.00	0.18	337.53	0.05	799.99	3.3	320.1	2.53 N 2.11 W
900.00	0.16	331.83	0.03	899.99	3.6	321.3	2.80 N 2.24 W
1000.00	0.21	332.16	0.05	999.99	3.9	322.2	3.08 N 2.39 W
1100.00	0.31	281.75	0.24	1099.99	4.3	320.3	3.30 N 2.74 W
1200.00	0.65	255.27	0.40	1199.99	4.8	312.0	3.21 N 3.56 W
1300.00	0.65	257.98	0.03	1299.98	5.5	302.2	2.95 N 4.67 W
1400.00	0.67	253.89	0.05	1399.97	6.4	294.7	2.66 N 5.79 W
1500.00	0.66	250.86	0.04	1499.97	7.3	288.6	2.31 N 6.89 W
1600.00	0.62	247.82	0.05	1599.96	8.2	283.6	1.92 N 7.94 W

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1700.00	0.60	248.00	0.02	1699.95	9.1	279.7	1.52 N 8.92 W
1800.00	0.60	248.17	0.00	1799.95	10.0	276.5	1.13 N 9.90 W
1900.00	0.70	256.21	0.14	1899.94	11.0	274.1	0.79 N 10.98 W
2000.00	0.66	259.71	0.06	1999.94	12.2	272.5	0.54 N 12.14 W
2100.00	0.71	258.84	0.05	2099.93	13.3	271.4	0.32 N 13.32 W
2200.00	0.68	243.80	0.18	2199.92	14.5	269.7	0.06 S 14.45 W
2300.00	0.58	198.75	0.49	2299.92	15.2	267.0	0.80 S 15.15 W
2400.00	0.49	177.96	0.21	2399.91	15.4	263.6	1.70 S 15.29 W
2500.00	0.51	90.29	0.69	2499.91	15.0	261.8	2.13 S 14.83 W
2600.00	0.71	64.08	0.34	2599.90	14.0	262.3	1.86 S 13.83 W
2700.00	0.68	52.64	0.14	2699.90	12.9	264.5	1.23 S 12.81 W
2800.00	0.43	36.65	0.29	2799.89	12.1	267.3	0.57 S 12.11 W
2900.00	0.30	14.61	0.19	2899.89	11.8	269.9	0.02 S 11.82 W
3000.00	0.23	40.92	0.14	2999.89	11.6	271.9	0.38 N 11.63 W
3100.00	0.30	87.54	0.22	3099.89	11.3	272.8	0.54 N 11.24 W
3200.00	0.36	101.17	0.10	3199.89	10.7	272.6	0.49 N 10.67 W
3300.00	0.47	111.63	0.14	3299.88	10.0	271.6	0.28 N 9.98 W
3400.00	0.58	133.44	0.22	3399.88	9.2	268.7	0.22 S 9.24 W
3500.00	0.61	148.16	0.16	3499.87	8.6	263.3	1.02 S 8.59 W
3600.00	0.45	197.70	0.47	3599.87	8.6	257.7	1.84 S 8.43 W
3700.00	1.28	270.53	1.22	3699.86	9.9	257.1	2.21 S 9.66 W
3800.00	1.64	275.00	0.38	3799.83	12.4	260.4	2.07 S 12.20 W

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3900.00	1.74	274.57	0.10	3899.78	15.2	263.1	1.82 S 15.14 W
4000.00	1.87	276.97	0.15	3999.73	18.3	265.3	1.51 S 18.27 W
4100.00	1.96	274.72	0.12	4099.68	21.6	266.9	1.17 S 21.59 W
4200.00	1.89	272.55	0.10	4199.62	25.0	267.8	0.95 S 24.95 W
4300.00	1.53	264.48	0.43	4299.58	28.0	267.9	1.01 S 27.93 W
4400.00	1.41	260.32	0.17	4399.54	30.5	267.5	1.34 S 30.47 W
4500.00	1.24	250.21	0.29	4499.52	32.8	266.6	1.91 S 32.70 W
4600.00	1.34	251.20	0.10	4599.49	34.9	265.6	2.66 S 34.82 W
4700.00	1.26	252.12	0.08	4699.47	37.1	264.8	3.37 S 36.98 W
4800.00	1.14	241.31	0.26	4799.44	39.1	263.9	4.19 S 38.90 W
4900.00	1.18	240.75	0.05	4899.42	41.0	262.8	5.17 S 40.67 W
5000.00	0.95	215.63	0.52	4999.41	42.5	261.4	6.35 S 42.05 W
5100.00	0.90	188.91	0.43	5099.39	43.4	259.6	7.80 S 42.66 W
5200.00	0.77	178.30	0.20	5199.38	43.7	257.8	9.24 S 42.76 W
5300.00	0.62	164.21	0.22	5299.38	43.9	256.2	10.44 S 42.59 W
5400.00	0.59	157.98	0.08	5399.37	43.8	254.9	11.44 S 42.25 W
5500.00	0.50	176.13	0.19	5499.37	43.8	253.6	12.35 S 42.03 W
5600.00	0.48	188.09	0.10	5599.36	44.1	252.6	13.19 S 42.06 W
5700.00	0.45	191.39	0.04	5699.36	44.5	251.7	13.99 S 42.20 W
5800.00	0.40	185.00	0.07	5799.36	44.8	250.8	14.72 S 42.30 W
5900.00	0.42	161.88	0.17	5899.35	44.9	249.9	15.42 S 42.22 W
6000.00	0.51	149.82	0.13	5999.35	44.9	248.9	16.16 S 41.88 W

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6100.00	0.58	142.33	0.10	6099.35	44.7	247.7	16.94 S 41.35 W
6200.00	0.57	133.09	0.09	6199.34	44.4	246.5	17.68 S 40.68 W
6300.00	0.65	126.45	0.11	6299.34	43.9	245.3	18.36 S 39.85 W
6400.00	0.70	115.54	0.14	6399.33	43.2	244.0	18.96 S 38.85 W
6500.00	0.78	103.25	0.18	6499.32	42.3	242.8	19.38 S 37.63 W
6600.00	0.94	97.13	0.18	6599.31	41.1	241.5	19.64 S 36.15 W
6700.00	1.18	100.21	0.25	6699.29	39.7	239.9	19.92 S 34.32 W
6800.00	1.61	104.97	0.44	6799.26	37.9	237.4	20.47 S 31.95 W
6900.00	2.12	106.66	0.51	6899.21	35.9	233.5	21.36 S 28.82 W
7000.00	2.88	101.54	0.80	6999.11	33.3	227.7	22.39 S 24.59 W
7050.00	3.23	98.82	0.76	7049.04	31.7	223.9	22.86 S 21.97 W

Final Station Closure: Distance: 31.70 ft Az: 223.86 deg.