

Directional Survey Report

CalEnergy Company

Well ID: 7615CY551030

Well Name: NEWBERRY 76-15 TCH

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Plane of Vertical Section: 0 degrees

Survey Type	Meas. Depth	Inc.	Azimuth	TVD	Coordinates		Vertical Section	Dog Leg Severity
					N-S	E-W		
** Tieln	0.00	0.00	0.00	0.00			0.00	
MSS	544.00	1.00	308.00	543.97	N 2.92	W 3.74	2.92	0.18
MSS	660.00	1.50	291.00	659.94	N 4.09	W 5.96	4.09	0.53
MSS	804.00	2.25	288.00	803.87	N 5.64	W 10.40	5.64	0.53
MSS	902.00	2.75	292.00	901.77	N 7.11	W 14.41	7.11	0.54
MSS	1008.00	2.75	295.00	1007.65	N 9.14	W 19.08	9.14	0.14
MSS	1107.00	2.50	285.00	1106.55	N 10.70	W 23.31	10.70	0.53
MSS	1208.00	2.75	279.00	1207.44	N 11.65	W 27.83	11.65	0.37
MSS	1304.00	2.25	286.00	1303.35	N 12.53	W 31.92	12.53	0.61
MSS	1408.00	2.50	281.00	1407.26	N 13.53	W 36.11	13.53	0.31
MSS	1518.00	2.25	281.00	1517.17	N 14.40	W 40.58	14.40	0.23
MSS	1608.00	3.00	281.00	1607.07	N 15.18	W 44.63	15.18	0.83
MSS	1706.00	2.75	276.00	1704.95	N 15.92	W 49.49	15.92	0.36
MSS	1807.00	3.25	275.00	1805.81	N 16.42	W 54.75	16.42	0.50
MSS	1907.00	3.25	281.00	1905.65	N 17.21	W 60.35	17.21	0.34
MSS	2010.00	3.50	276.00	2008.47	N 18.10	W 66.35	18.10	0.37
MSS	2102.00	3.00	273.00	2100.32	N 18.52	W 71.54	18.52	0.57
MSS	2202.00	3.00	273.00	2200.18	N 18.79	W 76.77	18.79	0.00
MSS	2304.00	2.75	273.00	2302.06	N 19.06	W 81.88	19.06	0.25
MSS	2400.00	2.75	274.00	2397.95	N 19.34	W 86.48	19.34	0.05
MSS	2508.00	2.75	278.00	2505.82	N 19.88	W 91.63	19.88	0.18
MSS	2603.00	2.00	274.00	2600.74	N 20.31	W 95.54	20.31	0.81
MSS	2718.00	2.50	273.00	2715.65	N 20.58	W 100.04	20.58	0.44
MSS	2848.00	2.25	267.00	2845.54	N 20.60	W 105.42	20.60	0.27
MSS	2938.00	2.25	251.00	2935.47	N 19.93	W 108.86	19.93	0.70
MSS	3026.00	2.00	252.00	3023.41	N 18.89	W 111.95	18.89	0.29
MSS	3106.00	2.00	251.00	3103.36	N 18.01	W 114.60	18.01	0.04
MSS	3118.00	2.00	242.00	3115.35	N 17.84	W 114.98	17.84	2.61
MSS	3138.00	1.25	222.00	3135.35	N 17.52	W 115.44	17.52	4.65
MSS	3158.00	0.50	87.00	3155.34	N 17.36	W 115.50	17.36	8.21
MSS	3178.00	1.50	90.00	3175.34	N 17.36	W 115.15	17.36	5.01
MSS	3198.00	2.75	82.00	3195.33	N 17.43	W 114.41	17.43	6.41
MSS	3238.00	3.50	88.00	3235.27	N 17.61	W 112.24	17.61	2.04
MSS	3238.00	4.25	89.00	3235.27	N 17.61	W 112.24	17.61	0.00

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Plane of Vertical Section: 0 degrees

Survey Type	Meas. Depth	Inc.	Azimuth	TVD	Coordinates N-S	E-W	Vertical Section	Dog Leg Severity
MSS	3258.00	4.50	91.00	3255.21	N 17.60	W 110.71	17.60	1.46
MSS	3278.00	5.50	94.00	3275.13	N 17.52	W 108.97	17.52	5.17
MSS	3298.00	6.00	100.00	3295.03	N 17.28	W 106.99	17.28	3.91
MSS	3328.00	6.25	112.00	3324.86	N 16.39	W 103.93	16.39	4.34
MSS	3348.00	6.50	119.00	3344.74	N 15.44	W 101.93	15.44	4.08
MSS	3368.00	7.25	125.00	3364.59	N 14.16	W 99.91	14.16	5.19
MSS	3395.00	6.75	123.00	3391.39	N 12.32	W 97.18	12.32	2.06
MSS	3420.00	7.00	127.00	3416.21	N 10.60	W 94.73	10.60	2.16
MSS	3508.00	8.00	132.00	3503.46	N 3.28	W 85.90	3.28	1.36
MSS	3619.00	7.50	139.00	3613.45	S 7.36	W 75.40	-7.36	0.96
MSS	3719.00	8.00	144.00	3712.54	S 17.91	W 67.03	-17.91	0.84
MSS	3819.00	8.50	146.00	3811.50	S 29.67	W 58.81	-29.67	0.58
MSS	3919.00	9.25	140.00	3910.31	S 41.95	W 49.51	-41.95	1.19
MSS	4019.00	9.25	147.00	4009.01	S 54.85	W 39.97	-54.85	1.12
MSS	4127.00	9.75	149.00	4115.53	S 69.97	W 30.53	-69.97	0.55
MSS	4229.00	10.00	147.00	4216.02	S 84.80	W 21.26	-84.80	0.42
MSS	4349.00	10.25	146.00	4334.15	S 102.39	W 9.61	-102.39	0.25
MSS	4446.00	10.50	147.00	4429.56	S 116.96	E 0.03	-116.96	0.32

Calculations using Minimum Curvature Method

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End of Report

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Well ID: 7615CY551032 Well Name: 76-15 TCH

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Survey Type	Meas. Depth	Inc.	Azimuth	TVD	Coordinates		Vertical Section	Dog Leg Severity
					N-S	E-W		
** Tieln	4349.00	10.25	146.00	4334.15	S 102.39	W 9.61	-102.39	
MSS	4446.00	10.50	147.00	4429.56	S 116.96	E 0.03	-116.96	0.32
MSS	4544.00	10.00	142.00	4526.00	S 131.15	E 10.13	-131.15	1.04
MSS	4650.00	10.25	141.00	4630.35	S 145.73	E 21.73	-145.73	0.29
MSS	5090.00	9.25	136.00	5064.00	S 201.60	E 70.94	-201.60	0.30
MSS	5358.00	8.75	137.00	5328.70	S 232.00	E 99.80	-232.00	0.20

Calculations using Minimum Curvature Method

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End of Report