



Digital Drilling Data
Systems, LLC

Survey Report

Company: Encana Oil & Gas

Location: Ness Co.

Well: Pabts Farm 3H-2

Rig: Precision 209

API or UWI: 15135253960000

Job Number: DR1207107

State: Kansas

Operator: Kenny Harris/S.Folmar

County: Ness

Magnetic Declination: 0.00

Comment

Proposed Azimuth: 2.63

North Reference: GRID

Tiein Survey Data:

MD	Inclination	Azimuth	TVD	NS	EW
0.00	0.00	0.00	0.00	0.00	0.00

MD	Inclination	Azimuth	TVD	NS	EW	CA	CD	VS	DLS
63.60	0.50	187.04	63.60	-0.28	-0.03	187.04	0.28	-0.28	0.79
153.70	0.44	176.99	153.70	-1.01	-0.06	183.62	1.01	-1.01	0.11
243.80	0.25	164.15	243.79	-1.55	0.01	179.71	1.55	-1.54	0.23
333.90	0.10	146.53	333.89	-1.80	0.10	176.67	1.80	-1.79	0.17
424.00	0.56	118.42	423.99	-2.08	0.54	165.53	2.14	-2.05	0.53
514.10	0.55	84.17	514.09	-2.24	1.35	148.88	2.62	-2.18	0.36
604.20	0.94	56.91	604.18	-1.79	2.40	126.75	3.00	-1.68	0.57
694.30	0.88	21.43	694.27	-0.75	3.27	102.84	3.36	-0.60	0.62
784.40	0.51	356.66	784.36	0.30	3.50	85.13	3.52	0.46	0.52
874.50	0.60	347.70	874.46	1.16	3.38	71.06	3.57	1.31	0.14
964.60	1.10	335.31	964.55	2.41	2.92	50.49	3.78	2.54	0.59
1054.70	0.97	327.99	1054.64	3.84	2.15	29.28	4.40	3.93	0.21
1144.80	0.84	339.37	1144.72	5.10	1.52	16.54	5.32	5.17	0.25
1234.90	0.82	352.57	1234.81	6.36	1.20	10.68	6.47	6.41	0.21
1325.00	0.35	7.31	1324.91	7.27	1.15	8.99	7.36	7.32	0.54
1401.00	0.40	330.10	1400.91	7.73	1.05	7.72	7.80	7.77	0.32
1491.00	0.30	330.00	1490.91	8.21	0.77	5.39	8.25	8.24	0.11
1582.00	0.30	325.10	1581.91	8.61	0.52	3.45	8.63	8.63	0.03
1672.00	0.20	269.80	1671.90	8.80	0.23	1.48	8.81	8.81	0.28

MD	Inclination	Azimuth	TVD	NS	EW	CA	CD	VS	DLS
1763.00	0.10	273.70	1762.90	8.81	-0.01	359.93	8.81	8.80	0.11
1853.00	0.10	111.50	1852.90	8.79	-0.02	359.89	8.79	8.77	0.22
1944.00	0.10	14.10	1943.90	8.83	0.08	0.50	8.83	8.83	0.17
2034.00	0.30	256.60	2033.90	8.85	-0.13	359.14	8.86	8.84	0.40
2124.00	0.30	308.50	2123.90	8.95	-0.55	356.50	8.96	8.91	0.29
2215.00	0.30	321.80	2214.90	9.28	-0.88	354.58	9.32	9.23	0.08
2305.00	0.30	355.00	2304.90	9.70	-1.05	353.84	9.76	9.64	0.19
2396.00	0.40	357.50	2395.90	10.26	-1.08	353.98	10.31	10.20	0.11
2486.00	0.40	352.70	2485.90	10.88	-1.14	354.04	10.94	10.82	0.04
2576.00	0.60	351.20	2575.89	11.66	-1.25	353.89	11.73	11.59	0.22
2667.00	0.40	232.10	2666.89	11.94	-1.57	352.50	12.04	11.85	0.95
2757.00	0.50	338.60	2756.89	12.11	-1.96	350.80	12.27	12.01	0.80
2848.00	0.50	345.50	2847.89	12.86	-2.21	350.27	13.05	12.75	0.07
2938.00	0.50	355.80	2937.88	13.63	-2.33	350.29	13.83	13.51	0.10
3028.00	0.60	344.40	3027.88	14.48	-2.49	350.25	14.69	14.35	0.16
3119.00	0.50	335.50	3118.87	15.30	-2.78	349.70	15.55	15.16	0.14
3209.00	0.60	335.70	3208.87	16.09	-3.14	348.96	16.39	15.93	0.11
3300.00	0.50	333.10	3299.87	16.87	-3.51	348.24	17.24	16.70	0.11
3345.00	0.90	353.50	3344.86	17.40	-3.64	348.18	17.78	17.22	1.03
3375.00	2.20	5.00	3374.85	18.21	-3.62	348.76	18.56	18.02	4.43
3405.00	4.00	6.90	3404.81	19.82	-3.44	350.14	20.12	19.64	6.01
3435.00	5.60	9.30	3434.70	22.30	-3.08	352.13	22.52	22.14	5.37
3465.00	7.20	10.60	3464.51	25.60	-2.50	354.42	25.72	25.46	5.35
3481.00	8.20	10.60	3480.37	27.70	-2.10	355.66	27.78	27.58	6.25
3519.00	10.50	10.00	3517.86	33.78	-1.00	358.30	33.79	33.70	6.06
3564.00	14.20	8.70	3561.81	43.28	0.54	0.72	43.28	43.26	8.24
3609.00	18.00	7.90	3605.04	55.62	2.33	2.40	55.67	55.67	8.46
3655.00	20.50	8.90	3648.46	70.62	4.56	3.69	70.77	70.76	5.48
3700.00	23.70	9.80	3690.15	87.32	7.32	4.79	87.63	87.57	7.15
3745.00	27.00	10.90	3730.81	106.27	10.79	5.80	106.82	106.66	7.41
3790.00	29.80	10.20	3770.39	127.31	14.70	6.59	128.16	127.85	6.27
3835.00	33.00	10.10	3808.80	150.39	18.83	7.14	151.56	151.09	7.11
3881.00	36.80	10.20	3846.52	176.29	23.47	7.58	177.85	177.18	8.26
3926.00	40.30	10.40	3881.71	203.88	28.48	7.95	205.86	204.97	7.78
3971.00	43.80	10.20	3915.12	233.53	33.87	8.25	235.97	234.84	7.78

MD	Inclination	Azimuth	TVD	NS	EW	CA	CD	VS	DLS
4016.00	46.00	9.80	3946.99	264.81	39.38	8.46	267.72	266.34	4.93
4061.00	48.40	8.70	3977.56	297.39	44.69	8.55	300.73	299.13	5.63
4107.00	50.60	7.60	4007.44	332.02	49.64	8.50	335.71	333.94	5.12
4152.00	50.70	7.80	4035.97	366.50	54.30	8.43	370.50	368.61	0.41
4197.00	50.70	7.90	4064.47	401.00	59.06	8.38	405.32	403.28	0.17
4242.00	50.60	7.80	4093.00	435.47	63.81	8.34	440.12	437.94	0.28
4287.00	51.20	7.20	4121.38	470.09	68.37	8.27	475.04	472.73	1.69
4332.00	55.60	7.50	4148.21	505.91	72.99	8.21	511.15	508.73	9.79
4377.00	60.70	7.90	4171.95	543.78	78.11	8.17	549.36	546.79	11.36
4423.00	64.60	9.10	4193.08	584.18	84.16	8.20	590.21	587.42	8.79
4468.00	68.80	9.00	4210.87	624.98	90.66	8.25	631.53	628.49	9.34
4513.00	72.90	9.40	4225.63	666.94	97.45	8.31	674.02	670.71	9.15
4558.00	77.60	9.10	4237.08	709.88	104.45	8.37	717.52	713.92	10.46
4603.00	82.40	9.80	4244.90	753.58	111.72	8.43	761.82	757.91	10.78
4649.00	87.20	10.10	4249.06	798.69	119.64	8.52	807.60	803.34	10.45
4722.00	88.80	9.80	4251.61	870.54	132.24	8.64	880.53	875.69	2.23
4754.00	89.60	10.00	4252.06	902.06	137.74	8.68	912.52	907.43	2.58
4786.00	89.70	10.30	4252.25	933.56	143.38	8.73	944.51	939.16	0.99
4817.00	89.20	9.90	4252.55	964.08	148.82	8.78	975.50	969.89	2.07
4849.00	89.10	8.70	4253.03	995.66	153.99	8.79	1007.49	1001.67	3.76
4881.00	89.30	7.80	4253.47	1027.32	158.58	8.78	1039.49	1033.52	2.88
4912.00	89.20	7.40	4253.88	1058.05	162.68	8.74	1070.48	1064.40	1.33
4944.00	89.80	7.20	4254.16	1089.79	166.75	8.70	1102.47	1096.29	1.98
4976.00	90.00	6.50	4254.21	1121.56	170.56	8.65	1134.45	1128.20	2.28
5007.00	90.50	7.30	4254.08	1152.33	174.29	8.60	1165.44	1159.12	3.04
5039.00	91.00	6.80	4253.66	1184.09	178.21	8.56	1197.42	1191.02	2.21
5071.00	91.20	6.40	4253.04	1215.87	181.89	8.51	1229.40	1222.93	1.40
5102.00	91.00	6.80	4252.45	1246.66	185.45	8.46	1260.38	1253.85	1.44
5134.00	90.50	6.10	4252.03	1278.45	189.05	8.41	1292.35	1285.78	2.69
5165.00	90.20	6.20	4251.84	1309.27	192.37	8.36	1323.33	1316.72	1.02
5197.00	90.80	6.60	4251.56	1341.07	195.94	8.31	1355.31	1348.65	2.25
5228.00	91.60	7.00	4250.91	1371.85	199.61	8.28	1386.29	1379.56	2.89
5260.00	91.40	6.80	4250.07	1403.60	203.45	8.25	1418.27	1411.46	0.88
5292.00	90.10	6.60	4249.66	1435.38	207.18	8.21	1450.26	1443.38	4.11
5323.00	88.60	5.30	4250.01	1466.21	210.39	8.17	1481.23	1474.32	6.40

MD	Inclination	Azimuth	TVD	NS	EW	CA	CD	VS	DLS
5355.00	86.80	3.30	4251.29	1498.09	212.79	8.08	1513.13	1506.28	8.40
5387.00	87.10	3.00	4252.99	1530.00	214.55	7.98	1544.97	1538.23	1.32
5418.00	87.20	3.60	4254.54	1560.91	216.33	7.89	1575.83	1569.19	1.96
5450.00	87.50	3.90	4256.01	1592.81	218.42	7.81	1607.71	1601.15	1.33
5482.00	89.10	3.60	4256.96	1624.72	220.51	7.73	1639.62	1633.13	5.09
5513.00	91.00	3.30	4256.94	1655.67	222.38	7.65	1670.53	1664.13	6.20
5545.00	91.60	3.20	4256.21	1687.61	224.19	7.57	1702.43	1696.12	1.90
5576.00	92.50	3.00	4255.10	1718.54	225.87	7.49	1733.32	1727.09	2.97
5608.00	92.10	2.30	4253.82	1750.48	227.35	7.40	1765.18	1759.07	2.52
5640.00	91.60	1.80	4252.78	1782.44	228.49	7.30	1797.03	1791.05	2.21
5671.00	92.40	1.60	4251.70	1813.41	229.41	7.21	1827.86	1822.03	2.66
5703.00	91.10	1.80	4250.73	1845.38	230.36	7.12	1859.70	1854.01	4.11
5734.00	89.40	1.30	4250.59	1876.37	231.20	7.02	1890.56	1885.00	5.72
5766.00	89.50	1.50	4250.90	1908.36	231.98	6.93	1922.40	1916.99	0.70
5797.00	90.10	1.90	4251.01	1939.34	232.90	6.85	1953.28	1947.99	2.33
5829.00	90.00	1.50	4250.98	1971.33	233.85	6.77	1985.15	1979.98	1.29
5861.00	88.80	0.90	4251.31	2003.32	234.52	6.68	2017.00	2011.97	4.19
5892.00	89.10	0.70	4251.88	2034.31	234.95	6.59	2047.83	2042.95	1.16
5924.00	89.10	0.50	4252.38	2066.30	235.28	6.50	2079.66	2074.92	0.62
5955.00	88.80	0.50	4252.95	2097.30	235.56	6.41	2110.48	2105.90	0.97
5987.00	89.60	0.70	4253.40	2129.29	235.89	6.32	2142.32	2137.87	2.58
6019.00	89.10	1.00	4253.76	2161.29	236.36	6.24	2174.17	2169.86	1.82
6050.00	89.00	0.90	4254.27	2192.28	236.88	6.17	2205.04	2200.84	0.46
6082.00	88.40	359.80	4255.00	2224.27	237.07	6.08	2236.87	2232.81	3.91
6114.00	88.70	359.70	4255.81	2256.26	236.93	5.99	2268.67	2264.75	0.99
6145.00	88.30	358.80	4256.62	2287.25	236.53	5.90	2299.44	2295.69	3.18
6177.00	88.70	358.10	4257.46	2319.22	235.66	5.80	2331.17	2327.59	2.52
6208.00	89.10	357.70	4258.06	2350.20	234.53	5.70	2361.87	2358.48	1.82
6240.00	88.50	357.50	4258.73	2382.16	233.19	5.59	2393.55	2390.35	1.98
6272.00	89.00	357.50	4259.42	2414.12	231.79	5.48	2425.22	2422.22	1.56
6303.00	89.80	357.60	4259.75	2445.09	230.47	5.38	2455.93	2453.09	2.60
6335.00	90.50	357.50	4259.66	2477.06	229.10	5.28	2487.63	2484.97	2.21
6367.00	90.70	357.50	4259.33	2509.03	227.70	5.19	2519.34	2516.84	0.62
6398.00	92.00	357.70	4258.60	2539.99	226.41	5.09	2550.06	2547.71	4.24
6430.00	92.60	358.50	4257.31	2571.95	225.35	5.01	2581.80	2579.58	3.12

MD	Inclination	Azimuth	TVD	NS	EW	CA	CD	VS	DLS
6462.00	93.30	358.80	4255.67	2603.90	224.59	4.93	2613.57	2611.46	2.38
6493.00	93.00	359.70	4253.96	2634.85	224.19	4.86	2644.37	2642.36	3.06
6525.00	92.00	0.80	4252.57	2666.82	224.33	4.81	2676.24	2674.30	4.64
6557.00	91.80	1.00	4251.51	2698.80	224.83	4.76	2708.14	2706.27	0.88
6588.00	92.00	0.50	4250.48	2729.78	225.24	4.72	2739.05	2737.24	1.74
6620.00	91.40	0.20	4249.53	2761.76	225.43	4.67	2770.95	2769.20	2.10
6632.00	91.40	359.90	4249.24	2773.76	225.44	4.65	2782.90	2781.18	2.50
6663.00	91.60	0.30	4248.43	2804.75	225.50	4.60	2813.80	2812.14	1.44
6695.00	92.10	0.00	4247.39	2836.73	225.58	4.55	2845.69	2844.09	1.82
6726.00	90.30	359.20	4246.74	2867.72	225.36	4.49	2876.56	2875.04	6.35
6758.00	87.90	357.50	4247.25	2899.70	224.44	4.43	2908.37	2906.94	9.19
6790.00	87.70	357.60	4248.47	2931.65	223.08	4.35	2940.12	2938.80	0.70
6821.00	88.60	357.80	4249.47	2962.61	221.83	4.28	2970.90	2969.66	2.97
6853.00	88.80	356.90	4250.20	2994.56	220.35	4.21	3002.66	3001.52	2.88
6884.00	89.30	356.60	4250.71	3025.51	218.60	4.13	3033.40	3032.35	1.88
6916.00	89.60	356.10	4251.02	3057.44	216.56	4.05	3065.10	3064.16	1.82
6947.00	89.40	356.30	4251.29	3088.37	214.50	3.97	3095.81	3094.96	0.91
6979.00	88.90	357.70	4251.77	3120.32	212.83	3.90	3127.57	3126.80	4.65
7011.00	88.70	358.60	4252.44	3152.30	211.80	3.84	3159.41	3158.70	2.88
7042.00	88.90	358.40	4253.09	3183.28	210.99	3.79	3190.27	3189.61	0.91
7074.00	88.80	358.60	4253.73	3215.27	210.15	3.74	3222.13	3221.52	0.70
7105.00	89.70	359.20	4254.13	3246.26	209.55	3.69	3253.01	3252.45	3.49
7137.00	89.80	0.40	4254.27	3278.26	209.44	3.66	3284.94	3284.41	3.76
7169.00	89.40	0.00	4254.50	3310.26	209.55	3.62	3316.88	3316.38	1.77
7200.00	88.90	359.50	4254.96	3341.25	209.42	3.59	3347.81	3347.34	2.28
7232.00	88.90	358.40	4255.57	3373.24	208.83	3.54	3379.70	3379.27	3.44
7264.00	89.30	359.60	4256.07	3405.23	208.27	3.50	3411.59	3411.20	3.95
7295.00	89.70	0.60	4256.35	3436.23	208.33	3.47	3442.54	3442.17	3.47
7327.00	90.50	1.20	4256.29	3468.22	208.83	3.45	3474.51	3474.15	3.12
7359.00	91.10	1.90	4255.84	3500.21	209.69	3.43	3506.48	3506.14	2.88
7390.00	91.20	2.00	4255.22	3531.18	210.75	3.42	3537.47	3537.14	0.46
7422.00	91.40	2.00	4254.49	3563.16	211.87	3.40	3569.45	3569.13	0.63
7454.00	92.40	1.70	4253.43	3595.12	212.90	3.39	3601.42	3601.10	3.26
7485.00	93.00	2.00	4251.97	3626.07	213.90	3.38	3632.38	3632.07	2.16
7517.00	91.10	0.70	4250.83	3658.04	214.65	3.36	3664.33	3664.04	7.19

MD	Inclination	Azimuth	TVD	NS	EW	CA	CD	VS	DLS
7549.00	90.70	0.40	4250.33	3690.03	214.96	3.33	3696.29	3696.01	1.56
7580.00	90.60	359.40	4249.97	3721.03	214.90	3.31	3727.23	3726.97	3.24
7612.00	90.00	359.40	4249.81	3753.03	214.57	3.27	3759.16	3758.92	1.87
7643.00	90.20	0.20	4249.75	3784.03	214.46	3.24	3790.10	3789.88	2.66
7675.00	90.80	359.30	4249.47	3816.03	214.32	3.21	3822.04	3821.84	3.38
7707.00	92.10	359.30	4248.66	3848.01	213.93	3.18	3853.96	3853.78	4.06
7739.00	91.70	0.10	4247.60	3880.00	213.76	3.15	3885.88	3885.72	2.79
7770.00	90.40	0.30	4247.04	3910.99	213.87	3.13	3916.83	3916.68	4.24
7802.00	89.00	0.20	4247.20	3942.99	214.01	3.11	3948.79	3948.65	4.39
7834.00	88.70	1.30	4247.84	3974.98	214.43	3.09	3980.76	3980.63	3.56
7865.00	88.60	0.80	4248.58	4005.96	215.00	3.07	4011.73	4011.61	1.64
7897.00	88.80	0.90	4249.30	4037.95	215.47	3.05	4043.70	4043.59	0.70
7928.00	89.10	0.00	4249.87	4068.95	215.72	3.03	4074.66	4074.56	3.06
7960.00	89.30	359.80	4250.32	4100.94	215.66	3.01	4106.61	4106.52	0.88
7991.00	89.30	0.40	4250.69	4131.94	215.71	2.99	4137.57	4137.49	1.94
8023.00	89.00	0.60	4251.17	4163.94	215.99	2.97	4169.53	4169.46	1.13
8054.00	88.70	359.90	4251.79	4194.93	216.13	2.95	4200.49	4200.43	2.46
8086.00	88.70	359.70	4252.52	4226.92	216.02	2.93	4232.44	4232.38	0.62
8118.00	89.40	359.10	4253.05	4258.91	215.68	2.90	4264.37	4264.32	2.88
8149.00	90.10	359.90	4253.18	4289.91	215.41	2.87	4295.32	4295.28	3.43
8181.00	89.40	0.20	4253.32	4321.91	215.44	2.85	4327.28	4327.24	2.38
8213.00	88.10	0.30	4254.02	4353.90	215.58	2.83	4359.24	4359.21	4.07
8244.00	88.20	359.90	4255.02	4384.89	215.63	2.82	4390.19	4390.16	1.33
8276.00	88.20	0.30	4256.03	4416.87	215.69	2.80	4422.13	4422.11	1.25
8308.00	89.20	0.00	4256.75	4448.86	215.77	2.78	4454.09	4454.08	3.26
8339.00	90.10	0.10	4256.94	4479.86	215.80	2.76	4485.06	4485.04	2.92
8371.00	89.60	359.60	4257.03	4511.86	215.72	2.74	4517.01	4517.01	2.21
8402.00	88.70	359.90	4257.49	4542.86	215.58	2.72	4547.97	4547.96	3.06
8434.00	88.90	359.20	4258.16	4574.85	215.33	2.69	4579.91	4579.91	2.27
8466.00	88.70	359.50	4258.83	4606.84	214.97	2.67	4611.85	4611.85	1.13
8497.00	88.60	359.40	4259.56	4637.83	214.67	2.65	4642.79	4642.79	0.46
8529.00	88.70	358.90	4260.31	4669.82	214.19	2.63	4674.73	4674.73	1.59
8561.00	88.60	359.10	4261.07	4701.80	213.64	2.60	4706.65	4706.65	0.70
8592.00	87.20	358.40	4262.20	4732.77	212.96	2.58	4737.56	4737.56	5.05
8624.00	87.30	358.80	4263.74	4764.73	212.18	2.55	4769.45	4769.44	1.29

MD	Inclination	Azimuth	TVD	NS	EW	CA	CD	VS	DLS
8656.00	89.30	359.20	4264.69	4796.71	211.62	2.53	4801.37	4801.36	6.37
8677.00	89.20	358.70	4264.96	4817.70	211.24	2.51	4822.33	4822.32	2.43
8725.00	89.20	358.70	4265.63	4865.68	210.15	2.47	4870.22	4870.20	0.00