



Final MWD Survey Certification

Lea County, New Mexico

Client: Devon Energy

Well Name: Jayhawk 7 FED 10H

Total Job No: 2019-404-X20

API No: 30-025-45548

Start Date: 06/18/2019

End Date: 06/30/2019

Measured Start Depth: 930 feet

Measured End Depth: 17712 feet

Vertical Section from well center at TD: 4733.41 feet (at proj to bit surey)

HOBBS OCD
FEB 19 2020
RECEIVED

I, Jesse Yerxa, certify that; I am employed by Total Directional Services, LLC and we conducted or supervised the taking of these open hole MWD surveys at the request of this client. This data is true, correct, complete and within the limitations of the tool as set forth by Total Directional Services, LLC. I am authorized and qualified to make this report and have reviewed this report and find that it conforms to the principals and procedures as set forth by Total Directional Services, LLC.

Date: 07/02/2019

Signed: *Jesse Yerxa*

DIRECTIONAL SURVEY REPORT

Company name: Devon Energy

Start date: 06/18/2019

Well name: Jayhawk 7 Fed 10H

End date: 06/30/2019

Field: Rattle Snake DBBU

Proposed direction: 179.69

Rig: Nabors X20

Declination: 6.27

API/UWI: 30-025-45548

North Reference: Grid

State/Province: New Mexico

Latitude/Longitude: 32.063737 / -103.5109

County/Parish: Lea

KB: 3372.8

Location Lea County

SVY	Depth	Inc	Azm	CL	TVD	VS	NS	EW	DLS
Tiein	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00
1	183.00	0.40	95.90	183.00	183.00	0.07	-0.07	0.64	0.22
2	233.00	0.60	102.80	50.00	233.00	0.15	-0.14	1.06	0.42
3	327.00	0.70	94.90	94.00	326.99	0.31	-0.30	2.12	0.14
4	422.00	1.40	129.60	95.00	421.97	1.11	-1.09	3.59	0.96
5	517.00	0.90	113.90	95.00	516.96	2.16	-2.13	5.17	0.62
6	612.00	1.10	118.20	95.00	611.94	2.90	-2.86	6.65	0.22
7	706.00	1.00	115.00	94.00	705.93	3.68	-3.64	8.19	0.12
8	801.00	1.20	125.60	95.00	800.91	4.62	-4.57	9.75	0.30
9	850.00	1.20	126.80	49.00	849.90	5.23	-5.17	10.58	0.05
10	981.00	1.50	145.60	131.00	980.86	7.48	-7.41	12.64	0.41
11	1075.00	1.60	145.90	94.00	1074.83	9.59	-9.51	14.08	0.11
12	1170.00	0.30	168.40	95.00	1169.81	10.93	-10.85	14.87	1.40
13	1265.00	1.20	296.50	95.00	1264.81	10.73	-10.65	14.03	1.48
14	1359.00	1.00	294.00	94.00	1358.79	9.95	-9.88	12.40	0.22
15	1454.00	0.90	297.10	95.00	1453.78	9.26	-9.20	10.98	0.12
16	1549.00	0.80	319.90	95.00	1548.77	8.41	-8.36	9.89	0.37
17	1644.00	1.00	344.20	95.00	1643.75	7.10	-7.05	9.23	0.45
18	1739.00	1.00	356.30	95.00	1738.74	5.47	-5.43	8.95	0.22
19	1833.00	0.80	3.90	94.00	1832.73	4.00	-3.95	8.95	0.25
20	1928.00	1.00	12.80	95.00	1927.72	2.53	-2.48	9.17	0.26
21	2023.00	1.00	11.60	95.00	2022.70	0.91	-0.86	9.52	0.02
22	2117.00	1.00	9.60	94.00	2116.69	-0.70	0.75	9.83	0.04
23	2212.00	1.10	13.50	95.00	2211.67	-2.40	2.45	10.18	0.13
24	2306.00	1.20	33.50	94.00	2305.65	-4.09	4.15	10.93	0.44
25	2401.00	1.10	33.70	95.00	2400.63	-5.68	5.74	11.99	0.11
26	2496.00	2.10	22.90	95.00	2495.60	-8.03	8.10	13.17	1.09
27	2591.00	4.00	19.90	95.00	2590.46	-12.74	12.82	14.97	2.01
28	2685.00	4.60	21.40	94.00	2684.19	-19.32	19.41	17.47	0.65
29	2780.00	4.50	24.60	95.00	2778.89	-26.24	26.35	20.41	0.29
30	2875.00	4.50	32.50	95.00	2873.60	-32.75	32.88	23.96	0.65
31	2970.00	4.80	42.20	95.00	2968.29	-38.81	38.97	28.63	0.88
32	3064.00	5.80	33.20	94.00	3061.89	-45.67	45.86	33.88	1.38
33	3159.00	7.00	21.60	95.00	3156.30	-55.05	55.26	38.64	1.85
34	3254.00	7.90	23.30	95.00	3250.49	-66.40	66.64	43.35	0.98

35	3348.00	8.30	33.50	94.00	3343.56	-77.96	78.23	49.65	1.58
36	3443.00	7.10	31.80	95.00	3437.70	-88.63	88.94	56.53	1.29
37	3538.00	5.90	21.20	95.00	3532.09	-98.14	98.48	61.39	1.78
38	3635.00	5.70	20.90	97.00	3628.60	-107.27	107.63	64.91	0.21
39	3730.00	6.20	31.60	95.00	3723.09	-116.03	116.40	69.28	1.28
40	3825.00	6.50	34.60	95.00	3817.51	-124.79	125.20	75.02	0.47
41	3920.00	7.20	39.40	95.00	3911.83	-133.78	134.23	81.85	0.95
42	4015.00	6.90	39.70	95.00	4006.11	-142.73	143.22	89.28	0.32
43	4110.00	6.10	21.40	95.00	4100.51	-151.79	152.31	94.77	2.33
44	4202.00	7.10	7.60	92.00	4191.90	-161.97	162.50	97.30	2.03
45	4297.00	7.90	13.50	95.00	4286.09	-174.12	174.66	99.60	1.17
46	4391.00	7.30	24.60	94.00	4379.27	-185.81	186.38	103.60	1.68
47	4486.00	5.60	36.10	95.00	4473.67	-195.02	195.61	108.84	2.24
48	4581.00	5.40	48.00	95.00	4568.24	-201.72	202.35	114.89	1.22
49	4675.00	5.50	41.20	94.00	4661.81	-208.04	208.70	121.15	0.69
50	4770.00	4.80	16.50	95.00	4756.44	-215.25	215.93	125.28	2.43
51	4864.00	4.20	25.40	94.00	4850.15	-222.12	222.81	127.87	0.98
52	4959.00	4.10	37.00	95.00	4944.90	-227.95	228.67	131.41	0.89
53	5053.00	4.80	21.70	94.00	5038.62	-234.27	235.01	134.88	1.46
54	5147.00	6.60	6.90	94.00	5132.16	-243.28	244.02	136.99	2.46
55	5242.00	7.10	4.70	95.00	5226.48	-254.54	255.30	138.12	0.59
56	5337.00	6.60	3.50	95.00	5320.80	-265.84	266.60	138.94	0.55
57	5432.00	6.80	6.90	95.00	5415.15	-276.87	277.63	139.95	0.47
58	5526.00	8.40	18.80	94.00	5508.33	-288.88	289.66	142.83	2.38
59	5621.00	9.10	21.90	95.00	5602.22	-302.39	303.19	147.87	0.89
60	5715.00	7.90	23.80	94.00	5695.19	-315.17	316.00	153.25	1.31
61	5810.00	6.80	22.90	95.00	5789.41	-326.30	327.16	158.07	1.16
62	5905.00	6.50	21.60	95.00	5883.77	-336.46	337.34	162.24	0.35
63	6000.00	6.50	18.20	95.00	5978.16	-346.54	347.45	165.90	0.41
64	6094.00	6.60	24.60	94.00	6071.55	-356.49	357.41	169.81	0.78
65	6189.00	7.10	31.60	95.00	6165.87	-366.42	367.38	175.16	1.02
66	6284.00	6.80	30.50	95.00	6260.17	-376.24	377.22	181.09	0.35
67	6379.00	6.60	30.90	95.00	6354.52	-385.74	386.75	186.75	0.22
68	6474.00	6.30	28.80	95.00	6448.92	-394.96	396.01	192.06	0.40
69	6569.00	6.60	30.00	95.00	6543.32	-404.23	405.30	197.30	0.35
70	6663.00	7.10	33.10	94.00	6636.65	-413.74	414.85	203.17	0.66
71	6758.00	6.80	38.10	95.00	6730.95	-423.05	424.19	209.85	0.71
72	6853.00	6.40	40.80	95.00	6825.32	-431.45	432.63	216.78	0.53
73	6947.00	6.60	39.00	94.00	6918.72	-439.57	440.79	223.60	0.30
74	7042.00	6.60	38.40	95.00	7013.09	-448.06	449.31	230.43	0.07
75	7137.00	6.60	37.50	95.00	7107.46	-456.63	457.92	237.15	0.11
76	7231.00	6.30	34.10	94.00	7200.86	-465.15	466.48	243.33	0.52
77	7326.00	6.10	34.00	95.00	7295.31	-473.62	474.98	249.07	0.21
78	7421.00	6.00	34.00	95.00	7389.78	-481.89	483.28	254.67	0.11
79	7515.00	5.70	32.50	94.00	7483.29	-489.88	491.29	259.93	0.36
80	7610.00	4.90	38.30	95.00	7577.88	-497.01	498.45	264.97	1.01
81	7705.00	3.60	55.60	95.00	7672.62	-501.85	503.32	269.95	1.91

82	7800.00	2.80	57.90	95.00	7767.48	-504.75	506.24	274.38	0.85
83	7894.00	1.80	49.50	94.00	7861.40	-506.91	508.42	277.44	1.12
84	7989.00	1.60	61.10	95.00	7956.36	-508.51	510.03	279.74	0.42
85	8084.00	1.30	62.70	95.00	8051.33	-509.63	511.16	281.86	0.32
86	8179.00	1.30	51.30	95.00	8146.30	-510.79	512.33	283.66	0.27
87	8274.00	0.80	154.70	95.00	8241.29	-510.86	512.41	284.78	1.77
88	8369.00	1.10	161.70	95.00	8336.28	-509.39	510.94	285.35	0.34
89	8464.00	1.00	179.30	95.00	8431.26	-507.69	509.25	285.65	0.35
90	8559.00	1.00	183.00	95.00	8526.25	-506.04	507.59	285.62	0.07
91	8653.00	1.00	183.80	94.00	8620.23	-504.40	505.95	285.52	0.01
92	8748.00	1.40	171.10	95.00	8715.21	-502.42	503.98	285.64	0.50
93	8842.00	1.20	169.80	94.00	8809.19	-500.32	501.87	285.99	0.22
94	8937.00	1.00	184.90	95.00	8904.17	-498.51	500.07	286.10	0.37
95	9032.00	1.20	191.60	95.00	8999.15	-496.72	498.27	285.83	0.25
96	9126.00	1.00	203.90	94.00	9093.14	-495.00	496.55	285.30	0.33
97	9220.00	0.80	219.80	94.00	9187.13	-493.75	495.30	284.55	0.34
98	9311.00	0.80	234.30	91.00	9278.12	-492.90	494.44	283.62	0.22
99	9411.00	0.80	236.10	100.00	9378.11	-492.11	493.65	282.48	0.03
100	9506.00	0.70	231.10	95.00	9473.10	-491.38	492.91	281.48	0.13
101	9601.00	0.50	277.20	95.00	9568.09	-491.07	492.60	280.61	0.53
102	9696.00	0.50	271.50	95.00	9663.09	-491.14	492.66	279.79	0.05
103	9791.00	0.90	259.60	95.00	9758.08	-491.02	492.54	278.64	0.45
104	9886.00	1.10	276.20	95.00	9853.07	-491.00	492.50	277.00	0.37
105	9981.00	1.10	299.30	95.00	9948.05	-491.55	493.05	275.30	0.46
106	10076.00	1.30	325.50	95.00	10043.03	-492.89	494.38	273.89	0.61
107	10171.00	1.30	339.00	95.00	10138.01	-494.79	496.27	272.89	0.32
108	10266.00	1.00	333.40	95.00	10232.99	-496.54	498.02	272.14	0.34
109	10361.00	0.90	326.50	95.00	10327.98	-497.91	499.39	271.35	0.16
110	10456.00	0.80	308.70	95.00	10422.97	-498.95	500.42	270.42	0.30
111	10551.00	0.70	295.60	95.00	10517.96	-499.62	501.09	269.38	0.21
112	10646.00	0.90	302.20	95.00	10612.95	-500.28	501.74	268.23	0.23
113	10741.00	1.30	293.10	95.00	10707.93	-501.11	502.56	266.61	0.46
114	10836.00	1.40	304.00	95.00	10802.90	-502.19	503.63	264.65	0.29
115	10930.00	1.40	306.10	94.00	10896.88	-503.52	504.95	262.77	0.05
116	11025.00	0.80	310.30	95.00	10991.86	-504.64	506.06	261.33	0.64
117	11119.00	0.80	312.10	94.00	11085.85	-505.51	506.92	260.34	0.03
118	11214.00	0.90	283.80	95.00	11180.84	-506.14	507.55	259.13	0.45
119	11308.00	1.00	257.20	94.00	11274.83	-506.14	507.54	257.61	0.48
120	11403.00	1.20	243.50	95.00	11369.81	-505.52	506.91	255.91	0.35
121	11498.00	1.20	244.70	95.00	11464.79	-504.66	506.04	254.12	0.03
122	11593.00	1.50	237.50	95.00	11559.76	-503.58	504.95	252.17	0.36
123	11687.00	2.00	235.30	94.00	11653.72	-502.00	503.36	249.79	0.54
124	11782.00	2.90	230.20	95.00	11748.63	-499.53	500.87	246.58	0.97
125	11876.00	4.10	233.40	94.00	11842.45	-496.03	497.35	242.05	1.29
126	11971.00	3.40	246.80	95.00	11937.25	-492.93	494.21	236.74	1.18
127	12066.00	3.20	253.10	95.00	12032.09	-491.07	492.33	231.61	0.44
128	12124.00	3.00	251.80	58.00	12090.01	-490.14	491.39	228.62	0.37

129	12177.00	2.70	245.80	53.00	12142.94	-489.21	490.44	226.16	0.80
130	12272.00	8.20	216.20	95.00	12237.49	-482.86	484.05	220.12	6.32
131	12367.00	20.00	206.60	95.00	12329.48	-462.85	463.99	208.80	12.62
132	12462.00	31.70	190.00	95.00	12414.93	-423.62	424.69	197.13	14.37
133	12557.00	45.60	178.60	95.00	12489.03	-364.77	365.82	193.61	16.39
134	12651.00	56.70	178.30	94.00	12547.91	-291.70	292.76	195.60	11.81
135	12746.00	62.50	170.40	95.00	12596.02	-210.26	211.37	203.82	9.41
136	12841.00	69.10	168.50	95.00	12634.94	-125.05	126.24	219.71	7.18
137	12936.00	79.80	168.70	95.00	12660.37	-35.36	36.65	237.77	11.26
138	13030.00	91.70	168.70	94.00	12667.32	56.49	-55.11	256.11	12.66
139	13125.00	91.00	171.90	95.00	12665.09	150.18	-148.71	272.11	3.45
140	13220.00	91.80	176.90	95.00	12662.76	244.72	-243.20	281.37	5.33
141	13314.00	92.00	182.10	94.00	12659.64	338.63	-337.11	282.19	5.53
142	13409.00	92.40	182.70	95.00	12656.00	433.46	-431.96	278.22	0.76
143	13504.00	90.60	180.70	95.00	12653.51	528.36	-526.87	275.40	2.83
144	13598.00	89.90	179.90	94.00	12653.10	622.35	-620.87	274.91	1.13
145	13693.00	90.00	180.50	95.00	12653.18	717.34	-715.87	274.58	0.64
146	13787.00	90.60	181.10	94.00	12652.69	811.32	-809.86	273.27	0.90
147	13883.00	90.20	180.70	96.00	12652.02	907.30	-905.84	271.76	0.59
148	13977.00	90.00	181.10	94.00	12651.86	1001.28	-999.83	270.28	0.48
149	14071.00	88.00	180.20	94.00	12653.50	1095.25	#####	269.21	2.33
150	14166.00	87.90	180.00	95.00	12656.90	1190.18	#####	269.05	0.24
151	14260.00	87.70	180.40	94.00	12660.50	1284.11	#####	268.72	0.48
152	14354.00	87.80	180.90	94.00	12664.20	1378.02	#####	267.66	0.54
153	14448.00	87.20	179.90	94.00	12668.30	1471.93	#####	267.00	1.24
154	14543.00	89.40	177.60	95.00	12671.11	1566.86	#####	269.07	3.35
155	14637.00	88.30	178.20	94.00	12673.00	1660.79	#####	272.52	1.33
156	14731.00	88.00	175.90	94.00	12676.04	1754.64	#####	277.35	2.47
157	14826.00	89.40	178.30	95.00	12678.19	1849.51	#####	282.15	2.92
158	14920.00	90.00	178.40	94.00	12678.68	1943.48	#####	284.86	0.65
159	15015.00	91.10	180.60	95.00	12677.77	2038.47	#####	285.69	2.59
160	15109.00	90.60	181.10	94.00	12676.38	2132.44	#####	284.30	0.75
161	15204.00	90.20	181.90	95.00	12675.71	2227.39	#####	281.81	0.94
162	15298.00	89.10	181.90	94.00	12676.29	2321.31	#####	278.69	1.17
163	15393.00	92.00	183.80	95.00	12675.38	2416.15	#####	273.97	3.65
164	15487.00	88.80	179.60	94.00	12674.72	2510.06	#####	271.18	5.62
165	15581.00	90.50	181.40	94.00	12675.29	2604.04	#####	270.36	2.63
166	15676.00	90.00	178.40	95.00	12674.88	2699.02	#####	270.53	3.20
167	15771.00	89.60	178.90	95.00	12675.21	2794.01	#####	272.77	0.67
168	15866.00	89.80	180.20	95.00	12675.71	2889.00	#####	273.51	1.38
169	15960.00	90.40	176.90	94.00	12675.54	2982.97	#####	275.89	3.57
170	16055.00	91.30	178.70	95.00	12674.13	3077.90	#####	279.54	2.12
171	16149.00	90.40	179.00	94.00	12672.74	3171.88	#####	281.42	1.01
172	16244.00	89.00	179.10	95.00	12673.24	3266.87	#####	283.00	1.48
173	16338.00	90.70	180.90	94.00	12673.48	3360.86	#####	283.00	2.63
174	16433.00	90.60	181.40	95.00	12672.41	3455.83	#####	281.09	0.54
175	16527.00	91.20	182.50	94.00	12670.93	3549.74	#####	277.89	1.33

176	16622.00	88.60	178.90	95.00	12671.10	3644.70	#####	276.73	4.67
177	16716.00	90.70	180.10	94.00	12671.67	3738.69	#####	277.55	2.57
178	16811.00	91.10	178.90	95.00	12670.18	3833.68	#####	278.38	1.33
179	16905.00	91.50	177.40	94.00	12668.04	3927.62	#####	281.42	1.65
180	16999.00	90.30	175.00	94.00	12666.57	4021.42	#####	287.65	2.85
181	17094.00	90.30	175.70	95.00	12666.07	4116.15	#####	295.35	0.74
182	17189.00	90.20	175.90	95.00	12665.66	4210.93	#####	302.30	0.24
183	17283.00	89.70	174.80	94.00	12665.74	4304.66	#####	309.92	1.29
184	17378.00	91.50	178.70	95.00	12664.74	4399.51	#####	315.31	4.52
185	17472.00	91.60	179.10	94.00	12662.20	4493.46	#####	317.11	0.44
186	17567.00	91.40	179.20	95.00	12659.71	4588.42	#####	318.52	0.24
187	17662.00	90.20	179.10	95.00	12658.39	4683.41	#####	319.93	1.27
PTB	17712.00	90.20	179.10	50.00	12658.21	4733.41	#####	320.72	0.00