

28-Aug-2015
IGRF Model [1900.0-2020.0] Dip: 66.68 deg Field: 52453.1 nT
Lat: N40 5 17.5596 Long: W104 35 57.6708 Elev: 4932.60 ft
Magnetic North is 8.29 deg East of TRUE North
To correct azimuth from Magnetic to TRUE add 8.29 deg

Great Western Operating Company, LLC

Location	Colorado	Slot	Land JG 31-19D
Field	Wattenburg	Well	Land JG 31-19D
Installation	Land	Wellbore	Land JG 31-19D (AWB)

Created by admin
Date plotted 14-Mar-2016
Plot reference is Land JG 31-19D (AWB).
Ref wellpath is Land JG 31-19D (AWP#1).
Coordinates are in Feet reference Land JG 31-19D.
True Vertical Depths are reference Rig Datum.
Measured Depths are reference Rig Datum.
Rig Datum: Actual Datum #1
Rig Datum to Mean Sea Level: 4946.60 ft.
Plot North is aligned to TRUE North.

Scale 1 cm = 200 ft

East (Feet) ->

-1200 -800 -400 0 400 800 1200 1600 2000 2400 2800 3200 3600 4000 4400

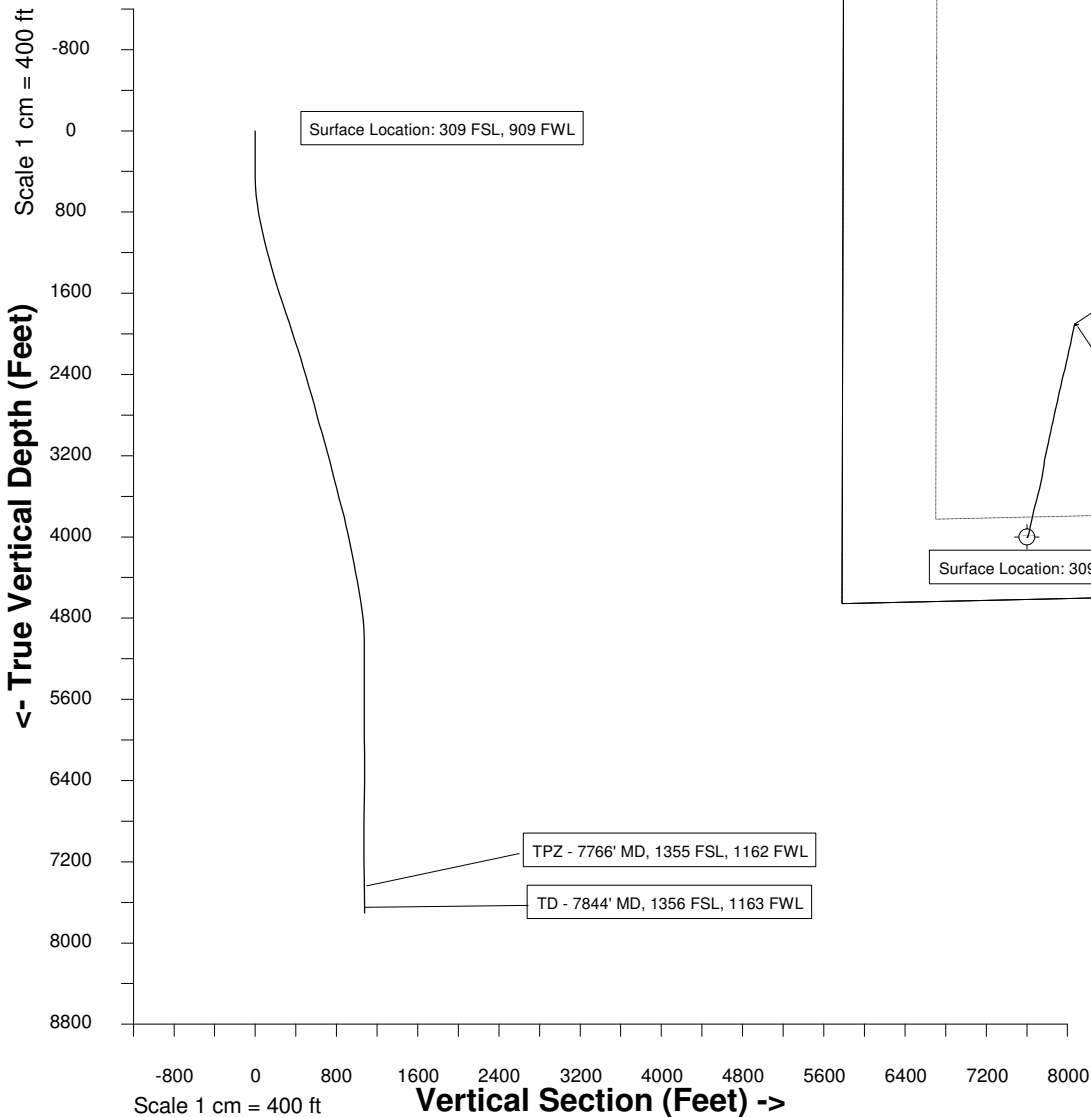
W2 Sec 31, T2N, R64W

TD - 7844' MD, 1356 FSL, 1163 FWL

TPZ - 7766' MD, 1355 FSL, 1162 FWL

Surface Location: 309 FSL, 909 FWL

Surface Location: 309 FSL, 909 FWL



North(Feet)

Scale 1 cm = 200 ft



Company: GREAT WESTERN
Field: WATTENBERG
Cty/Blk/Par: WELD
Well Name: Land JG 31-19D
Rig: CADE 25

Job Number: PA-2521
Magnetic Decl.: 8.56
Grid Corr.: TRUE
Total Survey Corr.: 8.56
Target Info: 1342' FSL & 1141' FWL
Calculation Method: Minimum Curvature
Proposed Azimuth: 12.78
Depth Reference: RKB
Tie Into Drill: SURFACE

No.	Tool Type	Survey Depth (ft)	Incl (°)	Azimuth (°)	Course Lgth (ft)	TVD (ft)	VS (ft)	Coordinates		DLS (°/100')	Bld Rate (°/100')	Wlk Rate (°/100')	Remarks
								N/S (ft)	E/W (ft)				
0	Tie In	0	0.00	0.00		0.00	0.00	0.00	0.00				SURFACE
1	MWD	88	0.40	135.60	88	88.00	-0.17	0.22	S 0.21 E	0.45	0.5	154.1	
2	MWD	178	0.50	114.60	90	178.00	-0.42	0.61	S 0.79 E	0.21	0.1	-23.3	
3	MWD	271	1.00	146.90	93	270.99	-1.07	1.46	S 1.60 E	0.68	0.5	34.7	
4	MWD	364	1.00	155.00	93	363.97	-2.27	2.87	S 2.39 E	0.15	0.0	8.7	
5	MWD	454	1.10	50.70	90	453.97	-2.21	3.04	S 3.39 E	1.84	0.1	-115.9	
6	MWD	544	3.50	20.30	90	543.89	1.19	0.09	N 5.01 E	2.90	2.7	-33.8	
7	MWD	635	5.80	14.40	91	634.58	8.55	7.15	N 7.12 E	2.58	2.5	-6.5	
8	MWD	725	8.00	12.30	90	723.93	19.36	17.67	N 9.59 E	2.46	2.4	-2.3	
9	MWD	819	9.90	12.50	94	816.78	33.98	31.95	N 12.73 E	2.02	2.0	0.2	
10	MWD	914	11.60	12.10	95	910.11	51.70	49.27	N 16.50 E	1.79	1.8	-0.4	
11	MWD	987	12.90	12.10	73	981.44	67.18	64.41	N 19.74 E	1.78	1.8	0.0	
12	MWD	1075	12.90	12.80	88	1067.22	86.83	83.60	N 23.98 E	0.18	0.0	0.8	
13	MWD	1170	14.30	11.50	95	1159.56	109.16	105.43	N 28.67 E	1.51	1.5	-1.4	
14	MWD	1265	15.90	15.10	95	1251.28	133.90	129.50	N 34.40 E	1.95	1.7	3.8	
15	MWD	1360	15.50	14.40	95	1342.73	159.59	154.36	N 40.95 E	0.47	-0.4	-0.7	
16	MWD	1455	17.00	14.70	95	1433.93	186.16	180.09	N 47.63 E	1.58	1.6	0.3	
17	MWD	1551	17.20	14.50	96	1525.69	214.37	207.40	N 54.74 E	0.22	0.2	-0.2	
18	MWD	1645	17.90	14.40	94	1615.31	242.71	234.85	N 61.81 E	0.75	0.7	-0.1	
19	MWD	1740	18.70	11.50	95	1705.51	272.53	263.92	N 68.48 E	1.28	0.8	-3.1	
20	MWD	1834	18.70	10.70	94	1794.55	302.65	293.49	N 74.28 E	0.27	0.0	-0.9	
21	MWD	1928	18.70	9.40	94	1883.59	332.75	323.16	N 79.54 E	0.44	0.0	-1.4	
22	MWD	2024	17.10	7.30	96	1974.94	362.17	352.35	N 83.85 E	1.80	-1.7	-2.2	
23	MWD	2119	17.90	10.00	95	2065.54	390.65	380.58	N 88.16 E	1.20	0.8	2.8	
24	MWD	2214	17.90	11.40	95	2155.94	419.83	409.27	N 93.58 E	0.45	0.0	1.5	
25	MWD	2309	17.30	13.30	95	2246.50	448.55	437.33	N 99.72 E	0.87	-0.6	2.0	
26	MWD	2404	16.40	11.50	95	2337.42	476.08	464.22	N 105.64 E	1.09	-0.9	-1.9	
27	MWD	2498	16.60	11.90	94	2427.55	502.78	490.36	N 111.05 E	0.24	0.2	0.4	
28	MWD	2593	16.60	12.10	95	2518.59	529.91	516.91	N 116.70 E	0.06	0.0	0.2	
29	MWD	2688	15.40	12.80	95	2609.91	556.10	542.48	N 122.34 E	1.28	-1.3	0.7	
30	MWD	2782	14.80	14.00	94	2700.66	580.58	566.30	N 128.01 E	0.72	-0.6	1.3	
31	MWD	2877	14.80	11.70	95	2792.51	604.85	589.95	N 133.40 E	0.62	0.0	-2.4	
32	MWD	2972	15.80	11.50	95	2884.14	629.91	614.51	N 138.44 E	1.05	1.1	-0.2	
33	MWD	3067	16.80	13.10	95	2975.32	656.57	640.55	N 144.13 E	1.15	1.1	1.7	
34	MWD	3161	15.50	11.70	94	3065.61	682.71	666.08	N 149.76 E	1.44	-1.4	-1.5	
35	MWD	3256	15.10	12.10	95	3157.24	707.78	690.61	N 154.93 E	0.44	-0.4	0.4	
36	MWD	3351	14.70	11.90	95	3249.05	732.20	714.51	N 160.00 E	0.42	-0.4	-0.2	
37	MWD	3445	13.90	15.80	94	3340.14	755.40	737.04	N 165.54 E	1.33	-0.9	4.1	
38	MWD	3539	15.20	11.70	94	3431.12	779.00	759.98	N 171.11 E	1.76	1.4	-4.4	
39	MWD	3634	14.10	13.00	95	3523.03	803.02	783.45	N 176.24 E	1.21	-1.2	1.4	
40	MWD	3730	13.40	15.20	96	3616.28	825.83	805.58	N 181.79 E	0.91	-0.7	2.3	
41	MWD	3825	16.00	13.50	95	3708.17	849.93	828.93	N 187.73 E	2.77	2.7	-1.8	
42	MWD	3918	14.00	13.00	93	3797.99	873.99	852.36	N 193.25 E	2.16	-2.2	-0.5	
43	MWD	4013	11.60	13.80	95	3890.62	895.04	872.84	N 198.12 E	2.53	-2.5	0.8	
44	MWD	4108	12.40	11.40	95	3983.55	914.78	892.11	N 202.41 E	0.99	0.8	-2.5	
45	MWD	4202	11.20	11.40	94	4075.56	934.00	910.95	N 206.21 E	1.28	-1.3	0.0	
46	MWD	4297	12.50	15.10	95	4168.53	953.50	929.92	N 210.71 E	1.58	1.4	3.9	
47	MWD	4392	10.00	11.40	95	4261.70	972.02	947.94	N 215.02 E	2.74	-2.6	-3.9	
48	MWD	4486	11.30	10.70	94	4354.08	989.38	964.99	N 218.35 E	1.39	1.4	-0.7	
49	MWD	4581	10.50	12.10	95	4447.37	1007.34	982.60	N 221.89 E	0.89	-0.8	1.5	
50	MWD	4675	9.40	11.00	94	4539.95	1023.58	998.51	N 225.15 E	1.19	-1.2	-1.2	
51	MWD	4770	8.70	11.90	95	4633.77	1038.52	1013.16	N 228.11 E	0.75	-0.7	0.9	
52	MWD	4865	7.70	7.00	95	4727.80	1052.03	1026.50	N 230.37 E	1.28	-1.1	-5.2	
53	MWD	4960	5.70	22.40	95	4822.15	1063.02	1037.18	N 232.94 E	2.81	-2.1	16.2	
54	MWD	5053	3.60	31.40	93	4914.84	1070.34	1043.95	N 236.22 E	2.38	-2.3	9.7	
55	MWD	5148	1.80	63.20	95	5009.74	1074.12	1047.17	N 239.11 E	2.40	-1.9	33.5	
56	MWD	5338	0.50	173.60	190	5199.71	1075.24	1047.69	N 241.87 E	1.07	-0.7	58.1	
57	MWD	5528	0.20	201.40	190	5389.70	1074.12	1046.55	N 241.84 E	0.18	-0.2	14.6	
58	MWD	5718	0.50	87.70	190	5579.70	1074.01	1046.28	N 242.55 E	0.32	0.2	-59.8	
59	MWD	5906	0.50	288.40	188	5767.70	1074.31	1046.57	N 242.59 E	0.52	0.0	106.8	
60	MWD	6095	0.50	350.80	189	5956.69	1075.15	1047.65	N 241.67 E	0.27	0.0	33.0	
61	MWD	6283	0.60	304.40	188	6144.68	1076.28	1049.01	N 240.73 E	0.24	0.1	-24.7	
62	MWD	6565	1.10	286.50	282	6426.65	1076.99	1050.61	N 236.92 E	0.20	0.2	-6.3	
63	MWD	6753	1.80	177.30	188	6614.62	1074.27	1048.18	N 235.32 E	1.28	0.4	-58.1	
64	MWD	6941	0.70	150.30	188	6802.57	1070.57	1044.23	N 236.03 E	0.65	-0.6	-14.4	
65	MWD	7131	1.00	113.00	190	6992.55	1069.42	1042.57	N 238.13 E	0.32	0.2	-19.6	
66	MWD	7320	1.40	84.80	189	7181.51	1069.84	1042.14	N 241.95 E	0.37	0.2	-14.9	
67	MWD	7510	1.90	68.90	190	7371.43	1072.32	1043.48	N 247.20 E	0.35	0.3	-8.4	
68	MWD	7794	1.00	59.70	284	7655.34	1076.63	1046.43	N 253.73 E	0.33	-0.3	-3.2	TD
69	PRJ	7844	1.00	59.70	50	7705.33	1077.23	1046.87	N 254.49 E	0.00	0.0	0.0	PROJ. TO BIT