

Great Western Operating Company, LLC

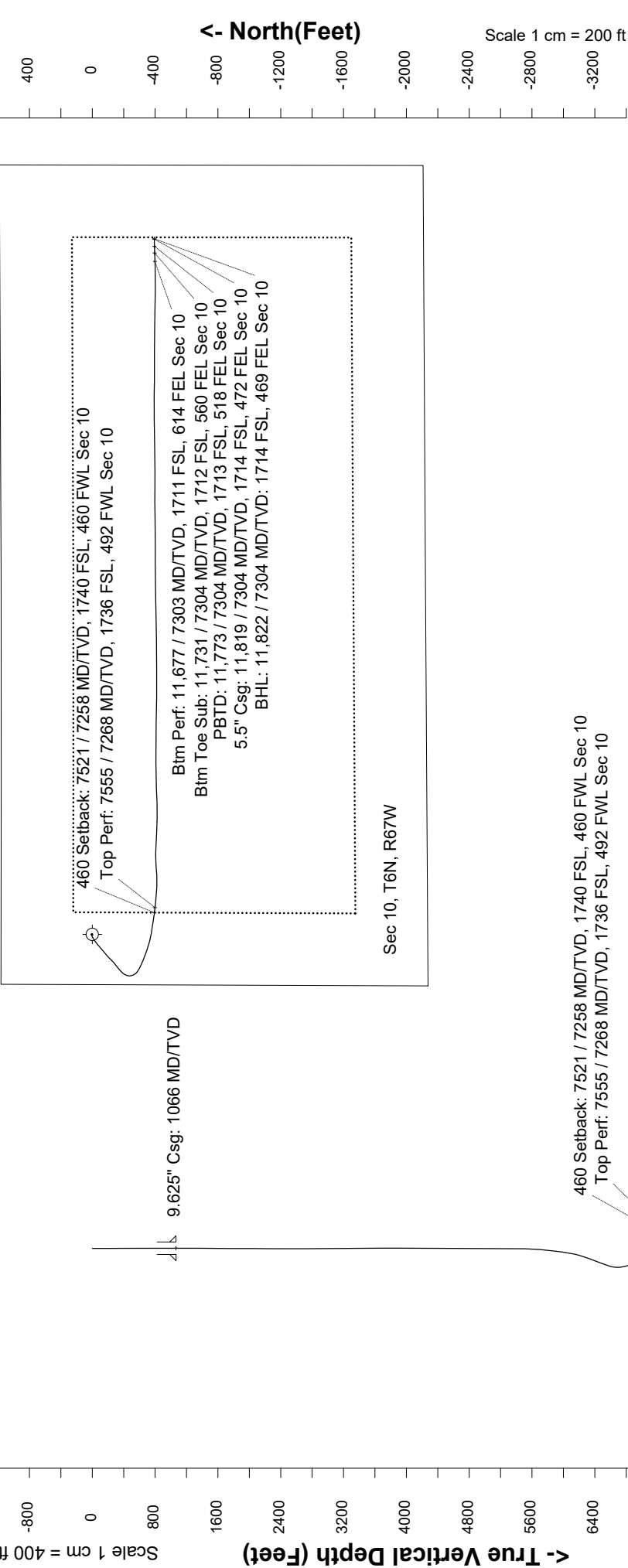
Location	Colorado	Slot	Slot 05 - DeTienne FD 10-279HC
Field	Wattenburg	Well	DeTienne FD 10-279HC
Installation	DeTienne 10	Wellbore	DeTienne FD 10-279HC (AWB)

Created by mmount  
Date plotted 14-Aug-2020  
Plot reference is DeTienne FD 10-279HC (AWB).  
Ref wellpath is DeTienne FD 10-279HC (AWP#1).  
Coordinates are in Feet reference Slot 05 - DeTienne FD 10-279HC.  
True Vertical Depths are reference Rig Datum.  
Measured Depths are reference Rig Datum.  
Rig Datum: Actual Datum #1  
Rig Datum to Mean Sea Level: 4855.20 ft.  
Plot North is aligned to TRUE North.

Scale 1 cm = 200 ft

East (Feet) ->

Nov-12-2014  
IGRF-12 Dip: 66.99 deg Field: 52812.0 nT  
Lat: N40.30 0.5184 Long: W104.53 15.6904 Elev: 4839.00 ft  
Magnetic North is 6.48 deg East of TRUE North  
To correct azimuth from Magnetic to TRUE add 6.48 deg



Great Western Operating Co, LLC  
Directional Survey Report  
Wellpath: DeTienne FD 10-279HC  
MDs and TVDs are from Rig Floor 4855.2ft above Mean Sea Level

**Wellpath Report**

MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	DLS [deg/100ft]	Vertical Section[ft]
0.00	0.00	0.00	0.00	0.00	0.00		0.00
16.20	0.00	0.00	16.20	0.00	0.00	==>	0.00
154.20	0.60	152.30	154.20	-0.64	0.34	0.43	0.39
185.20	0.30	152.50	185.20	-0.86	0.45	0.97	0.52
216.20	0.30	155.50	216.20	-1.00	0.52	0.05	0.61
250.20	0.30	147.10	250.20	-1.16	0.61	0.13	0.71
280.20	0.30	171.20	280.20	-1.30	0.66	0.42	0.77
310.20	0.10	213.00	310.20	-1.40	0.66	0.78	0.78
340.20	0.20	200.40	340.19	-1.47	0.63	0.35	0.75
370.20	0.30	200.40	370.19	-1.59	0.58	0.33	0.72
400.20	0.30	135.90	400.19	-1.72	0.61	1.07	0.76
430.20	0.30	141.30	430.19	-1.84	0.71	0.09	0.87
460.20	0.30	187.80	460.19	-1.98	0.75	0.79	0.92
490.20	0.20	146.00	490.19	-2.10	0.77	0.67	0.95
520.20	0.20	84.50	520.19	-2.14	0.85	0.68	1.04
550.20	0.30	96.60	550.19	-2.14	0.98	0.38	1.17
580.20	0.30	58.20	580.19	-2.11	1.12	0.66	1.31
610.20	0.30	57.40	610.19	-2.03	1.26	==>	1.43
640.20	0.40	61.30	640.19	-1.94	1.41	0.34	1.58
670.20	0.40	89.50	670.19	-1.88	1.61	0.65	1.77
700.20	0.20	68.10	700.19	-1.86	1.76	0.75	1.92
730.20	0.40	71.80	730.19	-1.81	1.91	0.67	2.07
760.20	0.20	30.50	760.19	-1.73	2.04	0.94	2.18
790.20	0.40	28.50	790.19	-1.60	2.12	0.67	2.25
820.20	0.20	30.20	820.19	-1.46	2.19	0.67	2.31
850.20	0.20	13.90	850.19	-1.36	2.23	0.19	2.34
880.20	0.20	25.20	880.19	-1.27	2.27	0.13	2.37
910.20	0.40	30.50	910.19	-1.13	2.34	0.67	2.43
940.20	0.20	33.40	940.19	-0.99	2.42	0.67	2.50
970.20	0.30	45.70	970.19	-0.90	2.51	0.38	2.58
1000.20	0.40	39.30	1000.19	-0.76	2.63	0.36	2.69
1030.20	0.40	350.00	1030.19	-0.58	2.68	1.11	2.72
1060.20	0.40	5.90	1060.19	-0.37	2.67	0.37	2.69
1099.00	0.40	24.40	1098.98	-0.11	2.74	0.33	2.74
1194.00	0.50	341.40	1193.98	0.59	2.75	0.36	2.68
1290.00	0.90	331.30	1289.97	1.64	2.25	0.43	2.10
1386.00	1.20	314.40	1385.96	3.01	1.17	0.45	0.90
1482.00	0.30	290.30	1481.95	3.80	0.22	0.97	-0.12
1578.00	0.40	288.90	1577.95	3.99	-0.34	0.10	-0.69
1674.00	0.20	259.80	1673.95	4.07	-0.82	0.26	-1.18
1769.00	0.30	314.10	1768.95	4.22	-1.16	0.26	-1.53
1865.00	0.70	172.60	1864.94	3.81	-1.27	0.99	-1.60
1961.00	0.80	183.20	1960.94	2.56	-1.23	0.18	-1.45
2057.00	0.60	201.30	2056.93	1.42	-1.45	0.31	-1.57
2153.00	0.70	207.30	2152.92	0.43	-1.90	0.13	-1.93
2248.00	0.40	266.60	2247.92	-0.10	-2.50	0.64	-2.48
2344.00	0.40	251.40	2343.92	-0.23	-3.15	0.11	-3.12
2439.00	0.80	250.20	2438.91	-0.56	-4.09	0.42	-4.02
2535.00	0.90	159.40	2534.90	-1.49	-4.45	1.26	-4.30
2631.00	0.80	144.20	2630.89	-2.74	-3.79	0.26	-3.54
2727.00	0.20	205.20	2726.89	-3.44	-3.47	0.75	-3.16
2823.00	0.20	288.60	2822.89	-3.54	-3.70	0.28	-3.38
2918.00	1.10	313.20	2917.88	-2.86	-4.53	0.97	-4.25
3015.00	1.30	62.20	3014.87	-1.71	-4.23	2.02	-4.06
3111.00	1.30	56.70	3110.85	-0.60	-2.36	0.13	-2.30
3207.00	1.30	65.20	3206.82	0.45	-0.46	0.20	-0.50
3302.00	1.10	75.70	3301.80	1.13	1.40	0.31	1.30
3398.00	0.50	64.20	3397.79	1.54	2.67	0.64	2.53
3494.00	0.50	3.70	3493.79	2.14	3.08	0.52	2.88
3590.00	0.40	355.30	3589.78	2.89	3.08	0.12	2.81
3686.00	0.20	31.80	3685.78	3.37	3.14	0.28	2.83
3781.00	0.00	184.50	3780.78	3.51	3.22	0.21	2.90
3877.00	0.20	345.20	3876.78	3.67	3.18	0.21	2.84
3973.00	0.40	322.40	3972.78	4.10	2.93	0.24	2.56

MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	DLS [deg/100ft]	Vertical Section[ft]
4069.00	1.00	6.30	4068.77	5.20	2.82	0.80	2.35
4164.00	0.70	317.70	4163.76	6.45	2.52	0.79	1.94
4260.00	0.50	321.50	4259.76	7.21	1.87	0.21	1.22
4356.00	0.30	224.70	4355.76	7.36	1.43	0.64	0.77
4452.00	0.60	258.00	4451.75	7.08	0.76	0.40	0.13
4548.00	0.30	150.20	4547.75	6.76	0.39	0.78	-0.21
4643.00	0.00	172.70	4642.75	6.54	0.52	0.32	-0.06
4739.00	0.30	342.50	4738.75	6.78	0.44	0.31	-0.16
4835.00	0.40	264.30	4834.75	6.99	0.03	0.47	-0.59
4931.00	0.80	279.30	4930.75	7.06	-0.96	0.44	-1.58
5027.00	0.80	236.40	5026.74	6.80	-2.18	0.61	-2.78
5124.00	0.40	193.10	5123.73	6.09	-2.82	0.60	-3.35
5220.00	0.40	199.30	5219.73	5.45	-3.01	0.05	-3.48
5315.00	0.40	120.20	5314.73	4.97	-2.83	0.54	-3.26
5411.00	0.40	212.70	5410.73	4.52	-2.72	0.60	-3.11
5509.00	2.50	246.80	5508.69	3.39	-4.87	2.22	-5.15
5604.00	2.70	254.40	5603.59	1.97	-8.93	0.42	-9.07
5696.00	5.10	245.40	5695.37	-0.31	-14.74	2.68	-14.65
5789.00	7.30	239.50	5787.82	-5.03	-23.59	2.46	-23.05
5878.00	7.70	241.00	5876.06	-10.79	-33.68	0.50	-32.58
5970.00	10.70	231.40	5966.87	-19.11	-45.74	3.65	-43.87
6063.00	13.10	230.50	6057.87	-31.20	-60.63	2.59	-57.62
6155.00	17.20	228.90	6146.65	-46.78	-78.93	4.48	-74.47
6247.00	25.10	232.60	6232.39	-67.61	-104.72	8.70	-98.31
6339.00	28.60	226.40	6314.48	-94.66	-136.19	4.87	-127.25
6431.00	26.10	225.00	6396.19	-124.16	-166.45	2.81	-154.77
6524.00	31.30	232.20	6477.76	-153.46	-200.03	6.71	-185.63
6616.00	27.60	229.50	6557.86	-181.96	-235.14	4.27	-218.06
6661.00	25.30	218.00	6598.17	-196.32	-248.99	12.45	-230.59
6706.00	23.90	202.70	6639.13	-212.33	-258.44	14.45	-238.58
6753.00	22.20	186.80	6682.42	-229.94	-263.17	13.69	-241.73
6798.00	22.50	170.80	6724.08	-246.90	-262.80	13.50	-239.86
6845.00	22.70	154.60	6767.51	-263.99	-257.47	13.22	-233.03
6891.00	20.80	136.50	6810.28	-277.95	-248.03	15.09	-222.39
6938.00	22.80	123.40	6853.95	-289.02	-234.67	11.16	-208.10
6983.00	22.10	119.50	6895.54	-297.99	-220.02	3.66	-192.72
7030.00	23.30	115.50	6938.90	-306.35	-203.94	4.16	-175.95
7080.00	28.40	113.40	6983.88	-315.33	-184.09	10.36	-155.38
7125.00	33.60	111.00	7022.44	-324.05	-162.63	11.88	-133.23
7175.00	39.70	111.60	7062.54	-334.90	-134.84	12.22	-104.59
7220.00	45.20	110.50	7095.73	-345.79	-106.50	12.33	-75.40
7271.00	49.80	106.00	7130.18	-357.50	-70.80	11.12	-38.80
7316.00	52.00	103.10	7158.57	-366.26	-37.00	6.99	-4.36
7365.00	54.30	100.60	7187.95	-374.30	1.37	6.22	34.57
7412.00	60.90	99.40	7213.13	-381.17	40.43	14.21	74.09
7463.00	64.00	98.50	7236.71	-388.20	85.09	6.28	119.20
7508.00	70.50	97.40	7254.10	-393.92	126.17	14.62	160.62
7521.40	71.78	97.01	7258.44	-395.52	138.75	9.94	173.30
7557.00	75.20	96.00	7268.55	-399.38	172.66	9.98	207.41
7604.00	75.30	96.30	7280.52	-404.25	217.85	0.65	252.86
7653.00	77.50	94.80	7292.04	-408.85	265.25	5.39	300.48
7700.00	81.40	91.50	7300.65	-411.38	311.37	10.79	346.64
7749.00	86.10	87.30	7305.98	-410.86	360.05	12.83	395.08
7806.00	88.83	86.72	7308.50	-407.89	416.91	4.90	451.46
7847.00	90.80	86.30	7308.63	-405.40	457.83	4.91	491.99
7943.00	93.60	93.30	7304.95	-405.06	553.69	7.85	587.45
8038.00	91.10	93.00	7301.05	-410.27	648.46	2.65	682.30
8134.00	87.60	90.80	7302.14	-413.45	744.38	4.31	778.13
8230.00	86.60	88.00	7307.00	-412.45	840.24	3.09	873.52
8325.00	86.70	87.70	7312.55	-408.89	935.01	0.33	967.60
8421.00	86.70	88.70	7318.07	-405.88	1030.80	1.04	1062.75
8517.00	89.90	89.70	7320.92	-404.54	1126.74	3.49	1158.19
8613.00	92.40	91.00	7319.00	-405.13	1222.71	2.94	1253.83
8708.00	92.50	91.40	7314.93	-407.12	1317.60	0.43	1348.52
8804.00	92.00	90.50	7311.17	-408.71	1413.51	1.07	1444.20
8900.00	89.90	90.60	7309.57	-409.63	1509.49	2.19	1539.88
8996.00	89.70	90.00	7309.91	-410.13	1605.49	0.66	1635.54
9091.00	89.90	89.70	7310.24	-409.88	1700.48	0.38	1730.14
9187.00	90.00	89.20	7310.32	-408.96	1796.48	0.53	1825.68
9283.00	89.80	89.30	7310.49	-407.71	1892.47	0.23	1921.18
9379.00	89.50	89.30	7311.08	-406.53	1988.46	0.31	2016.69
9475.00	90.50	88.90	7311.08	-405.02	2084.45	1.12	2112.16

MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	DLS [deg/100ft]	Vertical Section[ft]
9571.00	93.00	89.40	7308.15	-403.60	2180.39	2.66	2207.60
9667.00	93.30	88.30	7302.87	-401.68	2276.22	1.19	2302.88
9762.00	92.00	90.40	7298.48	-400.60	2371.10	2.60	2397.30
9858.00	88.90	90.10	7297.73	-401.02	2467.09	3.24	2492.94
9954.00	89.40	89.60	7299.15	-400.77	2563.08	0.74	2588.53
10050.00	89.60	88.90	7299.99	-399.51	2659.06	0.76	2684.02
10145.00	90.10	89.70	7300.24	-398.35	2754.06	0.99	2778.54
10241.00	89.50	90.80	7300.57	-398.77	2850.05	1.31	2874.19
10336.00	89.40	89.80	7301.48	-399.27	2945.05	1.06	2968.86
10432.00	89.60	89.40	7302.32	-398.60	3041.04	0.47	3064.41
10528.00	90.30	88.20	7302.40	-396.59	3137.02	1.45	3159.83
10624.00	91.00	89.10	7301.32	-394.33	3232.98	1.19	3255.22
10719.00	90.30	91.10	7300.24	-394.49	3327.97	2.23	3349.85
10816.00	90.30	89.80	7299.73	-395.25	3424.96	1.34	3446.53
10912.00	89.70	90.80	7299.73	-395.76	3520.96	1.21	3542.19
11008.00	89.80	89.50	7300.15	-396.01	3616.96	1.36	3637.83
11104.00	89.70	90.60	7300.57	-396.09	3712.95	1.15	3733.45
11200.00	89.70	90.20	7301.07	-396.76	3808.95	0.42	3829.13
11297.00	89.30	91.20	7301.92	-397.95	3905.94	1.11	3925.84
11393.00	89.80	90.70	7302.67	-399.54	4001.92	0.74	4021.59
11489.00	90.90	91.10	7302.08	-401.05	4097.91	1.22	4117.33
11585.00	89.40	89.00	7301.83	-401.13	4193.90	2.69	4212.95
11681.00	88.80	88.30	7303.34	-398.87	4289.86	0.96	4308.33
11762.00	90.00	88.30	7304.19	-396.47	4370.82	1.48	4388.76
11822.00	90.00	88.30	7304.19	-394.69	4430.79	==>	4448.33