

2" = 100' TVD

COMPANY : HIGHPOINT RESOURCES									
WELL : ANSCHUTZ EQUUS FARMS FED 05-61-34-5649B									
FIELD : WATTENBERG									
COUNTY : WELD									
STATE : COLORADO									
COUNTRY : U.S.A.									
UWI : 05-123-48183									

WELL LOCATION				NAD83				OTHER SERVICES	
LAT:40°21'17.030"N LONG:104°11'11.400"W									
N:1374780.09 ft E:3366054.24 ft									
SEC:34				TWP:5N				RANGE:61W	
DEPTH REF. : RKB				RKB to Ground Level				DIRECTIONAL	
REF. HEIGHT : 16.500 ft				G.I. to MEAN SEA LEVEL				ROP	
GROUND LEVEL : 4479.600 ft									

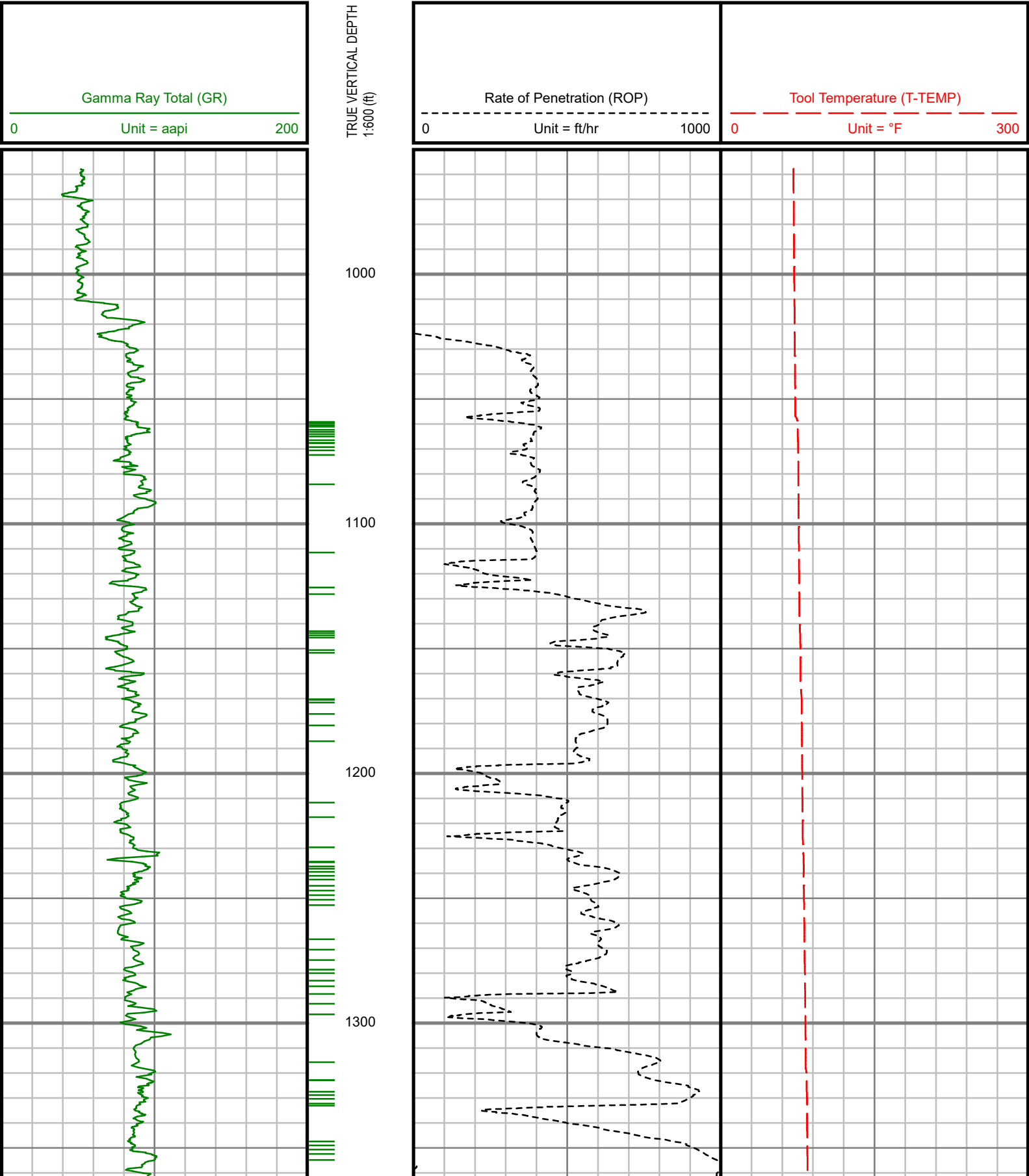
BOREHOLE RECORD				DEVIATION RECORD			
HOLE SIZE in	FROM ft	TO ft	INCLINATION deg	FROM ft	TO ft		
13.5	0	960	0 - 4	0	959		
8.75	960	6305	4 - 20	959	1964		
6.125	6305	15967	20	1964	2704		
			20 - 0	2704	3928		
			0	3928	5340		
			0 - 90	5340	6309		
CASING RECORD			88 - 92	6309	15967		
CASING SIZE in	FROM ft	TO ft					
9.625	0	960					
7	960	6294					
			DRILLING CO.: CADE				
			RIG: 24				
			LWD UNIT NO.: KIT MUD PUDISTRICT: CASPER				
			SPUD DATE: 01/14/2019				
			LWD START DATE: 03/28/2019				
			LWD END DATE: 04/08/2019				
			DEPTH: 1026 ft				
			DEPTH: 15967 ft				
			TOTAL DEPTH: 15967 ft				

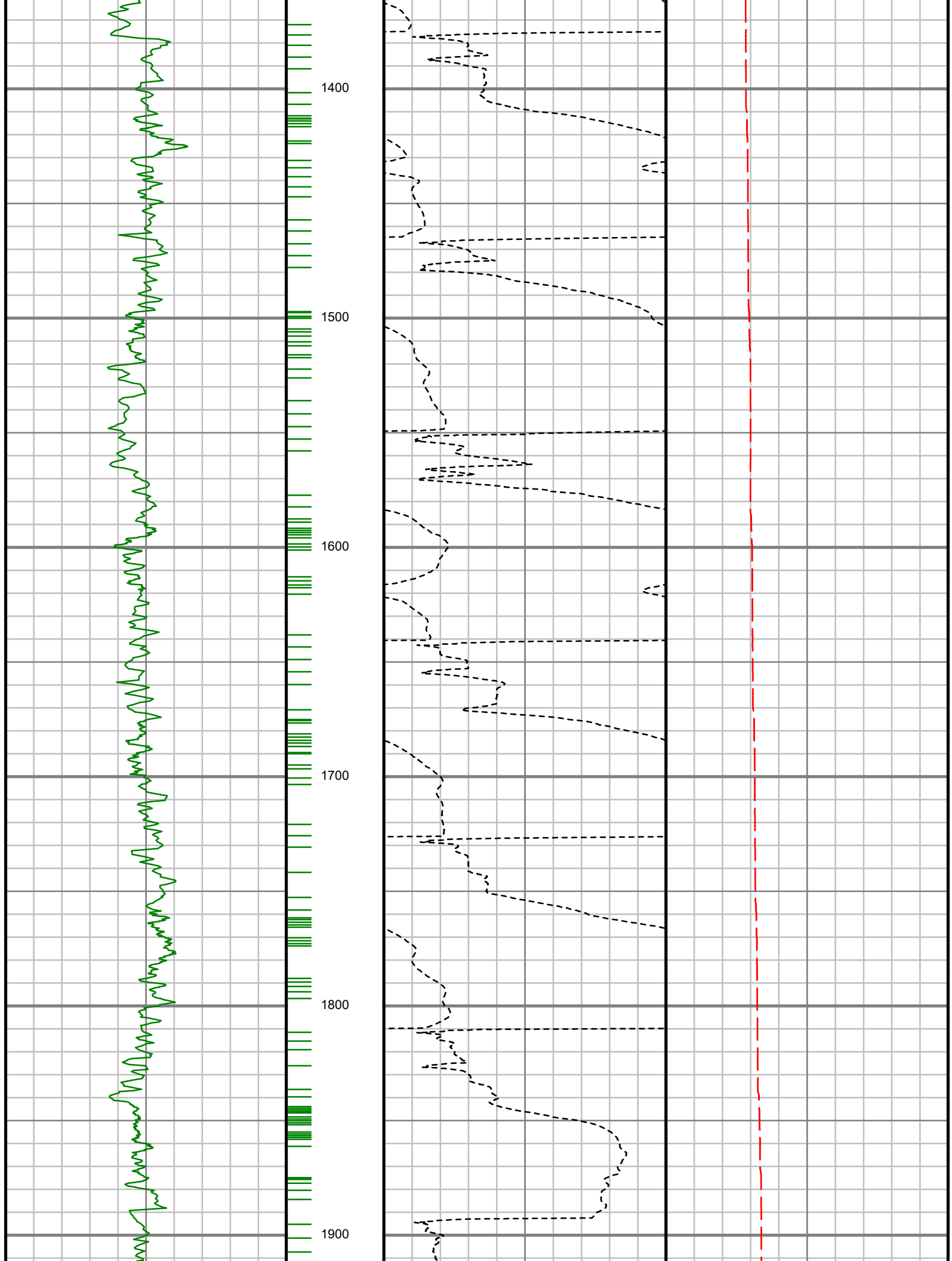
Run Data						
RUN NUMBER	1	2	3	4		
START DATE	03/28/2019	03/31/2019	04/02/2019	04/05/2019		
START TIME	19:25	11:30	12:30	10:00		
END DATE	03/30/2018	04/02/2019	04/05/2019	04/08/2019		
END TIME	16:30	12:30	10:00	08:45		
DEPTH IN (ft)	1026	6305	11420	15045		
DEPTH OUT (ft)	6305	11420	15045	15967		
LOG TOP (ft)	1026	6305	11420	15045		
LOG BOTTOM (ft)	6305	11420	15045	15967		
HOLE SIZE (in)	8.75	6.125	6.125	6.125		
MUD DATA @ (ft)	6302	6302	15045	15522		
MUD TYPE	WATER-BASED	WATER-BASED	WATER-BASED	WATER-BASED		
DENSITY (lb / gal)	9.8	9.8	9	8.9		
VISCOSITY (s / qt)	58	58	30	31		
pH	9	9	9.2	9.3		
FLUID LOSS (cm3 / 30)	-	-	-	-		
SALINITY (mg/L)	650	650	650	700		
Rm (ohmm @ deg F)	-	-	-	-		
Rmf (ohmm @ deg F)	-	-	-	-		
MAX TEMP (deg F)	173.38	218	230	227		
Rm @ MAX TEMP (ohmm)	-	-	-	-		
LWD ENGINEER #1	M. BAILY	M. BAILY	M. BAILY	M. BAILY		
LWD ENGINEER #2	P. FLAVIUS	G. SAKOU	G. SAKOU	A. FARQUHAR		
LWD ENGINEER #3	-	-	M. POTTER	-		
LOG WTINNESS #1	A. ROWE	A. ROWE	A. ROWE	A. ROWE		
LOG WTINNESS #2	-	-	-	-		

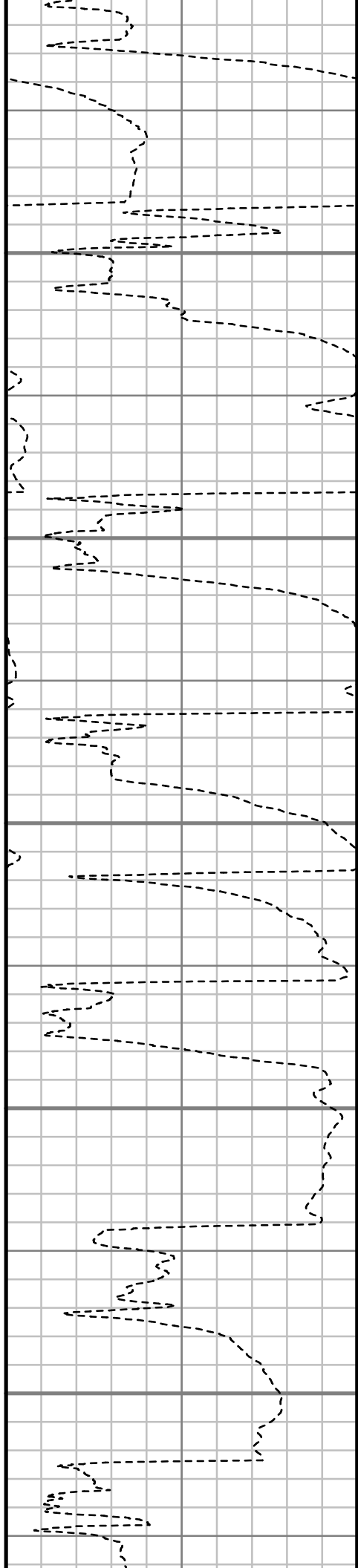
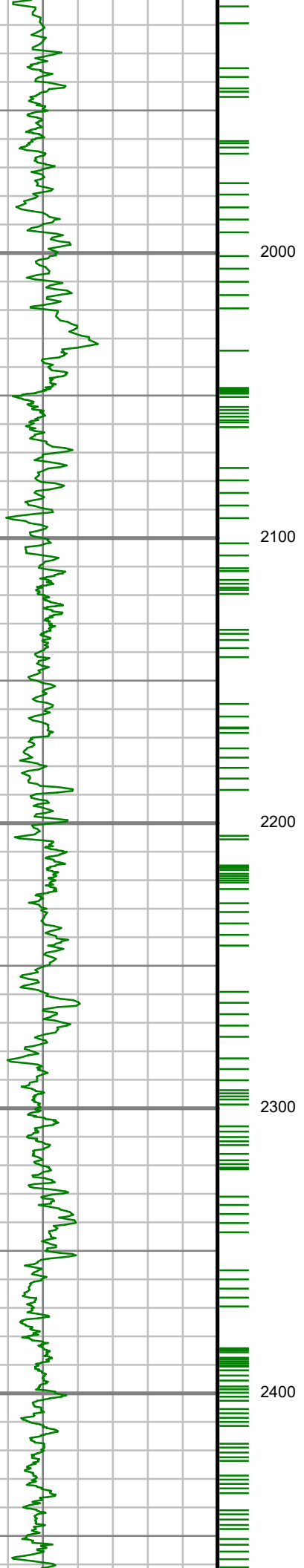


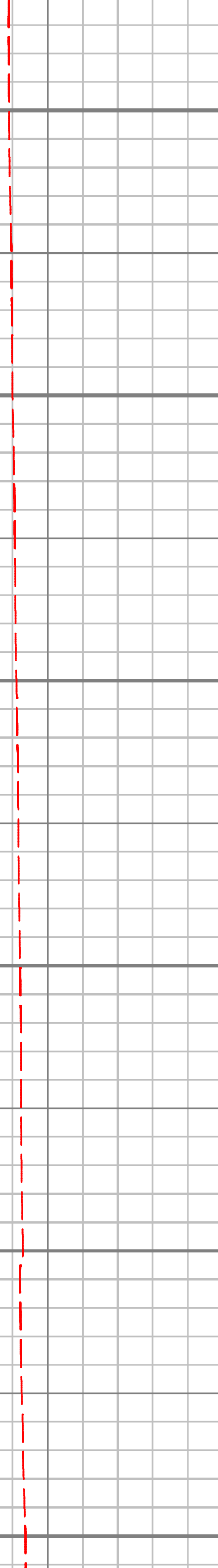
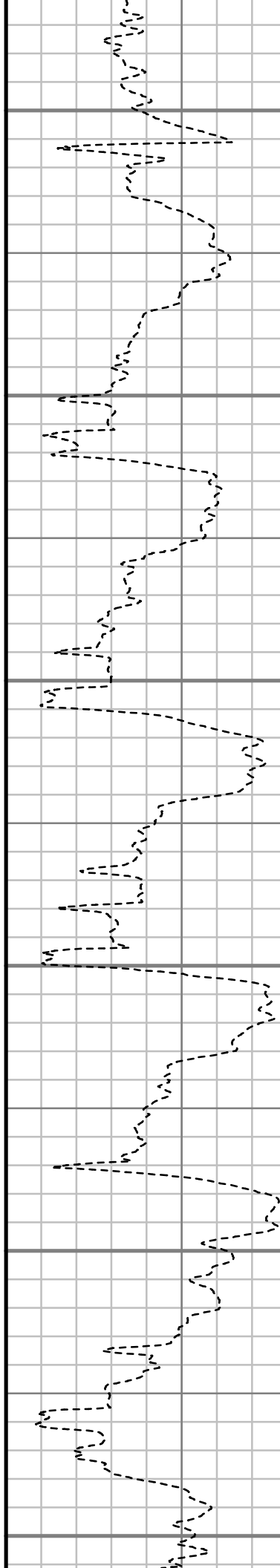
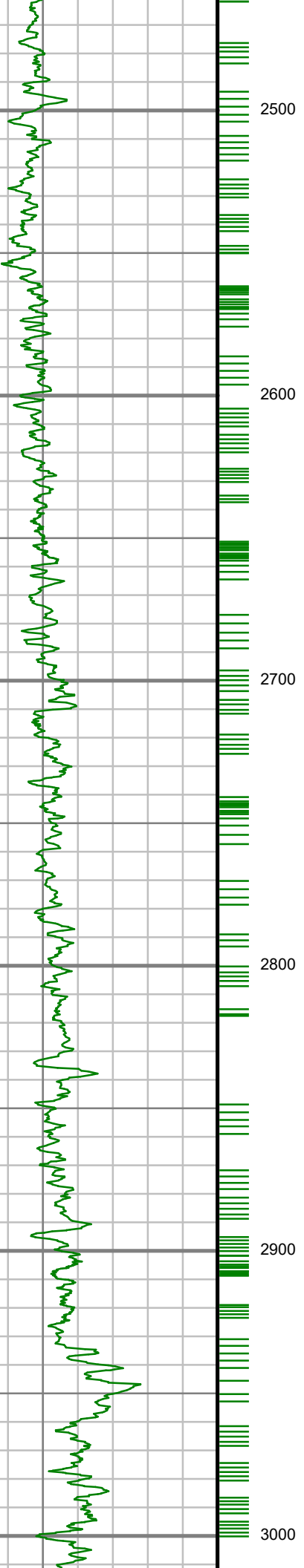
All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions as set out in our current price schedule.

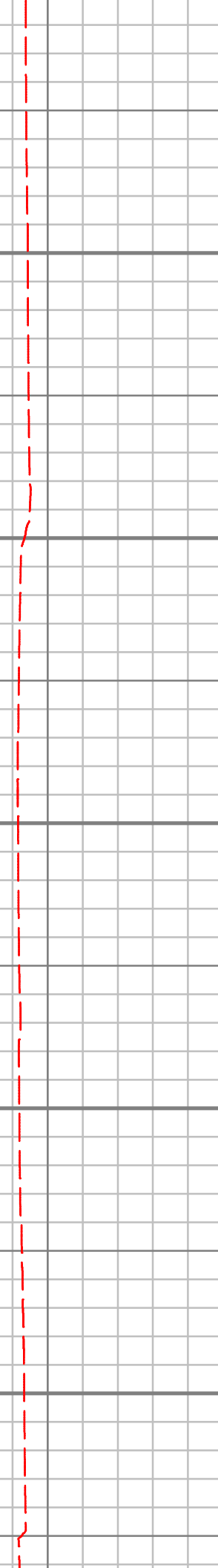
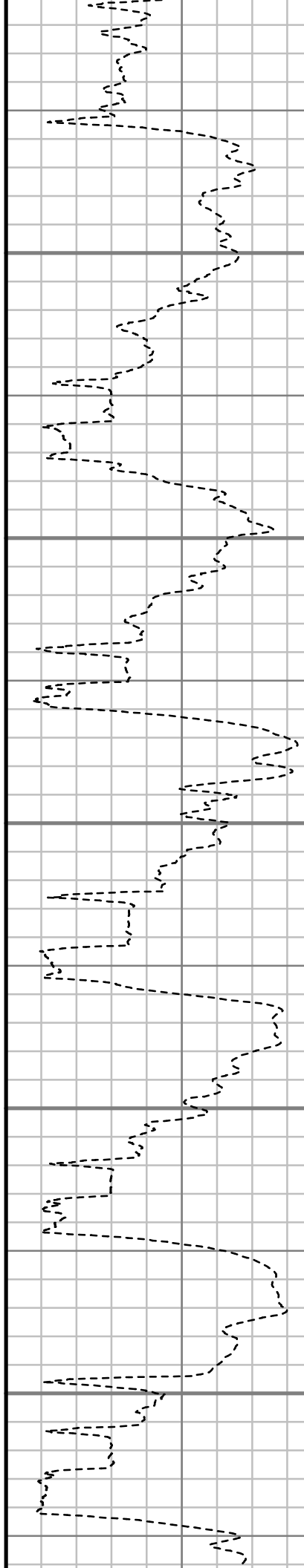
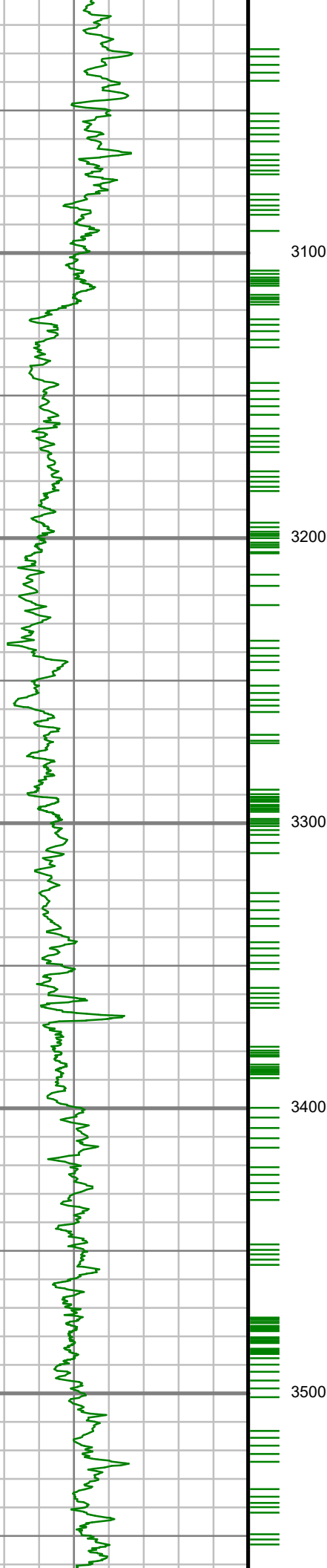
HIGHPOINT RESOURCES  
ANSCHUTZ EQUUS FARMS FED 05-61-34-5649B  
WATENBERG FIELD  
WELD COUNTY, COLORADO  
API # 05-123-48183

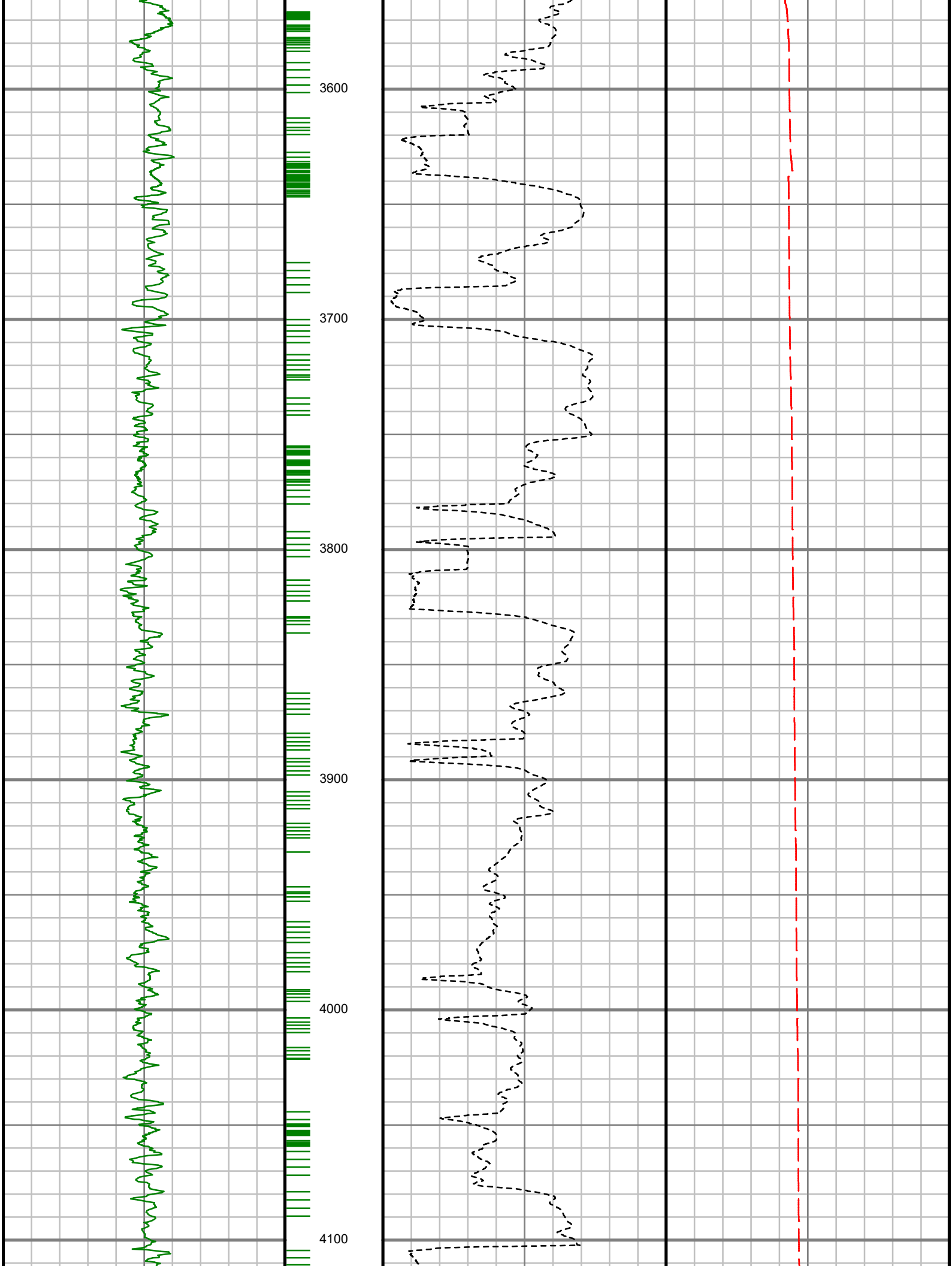




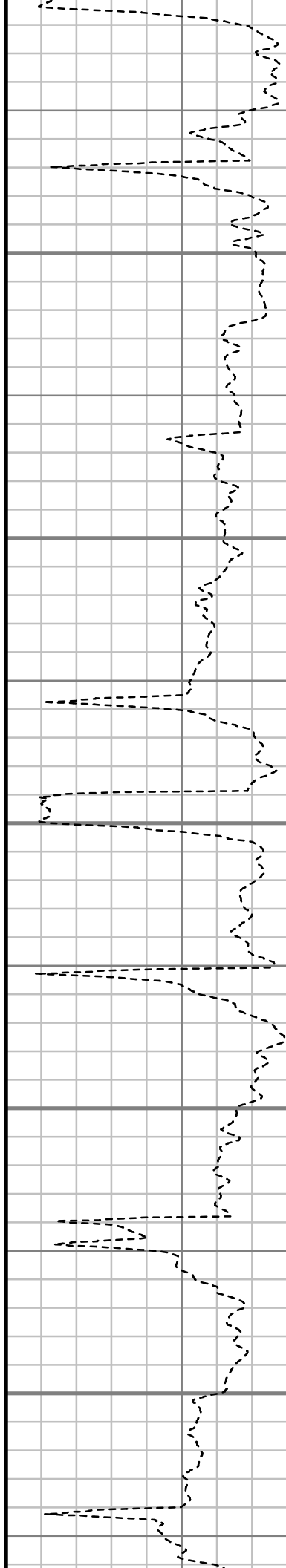
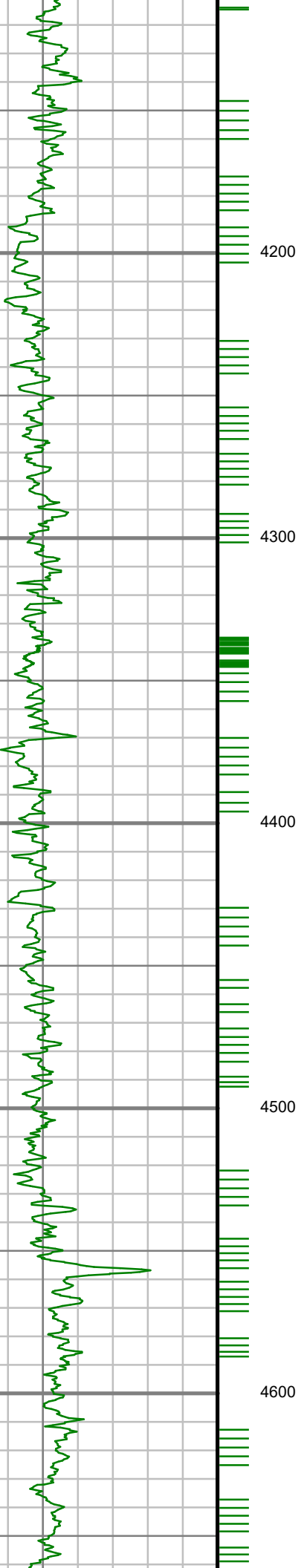


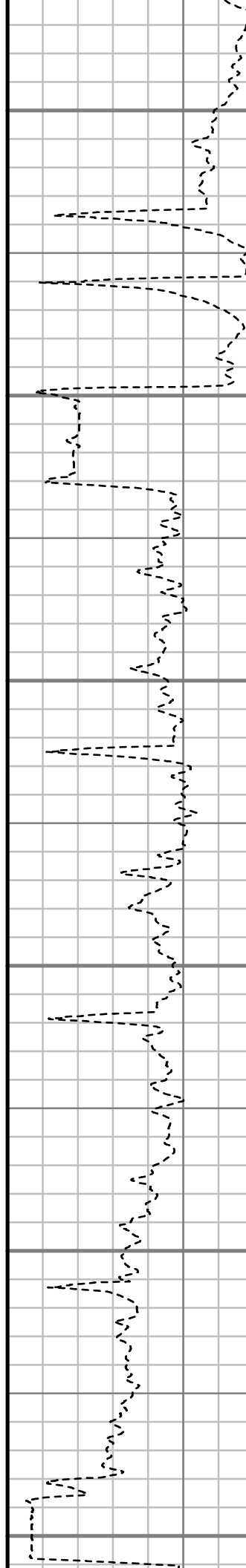
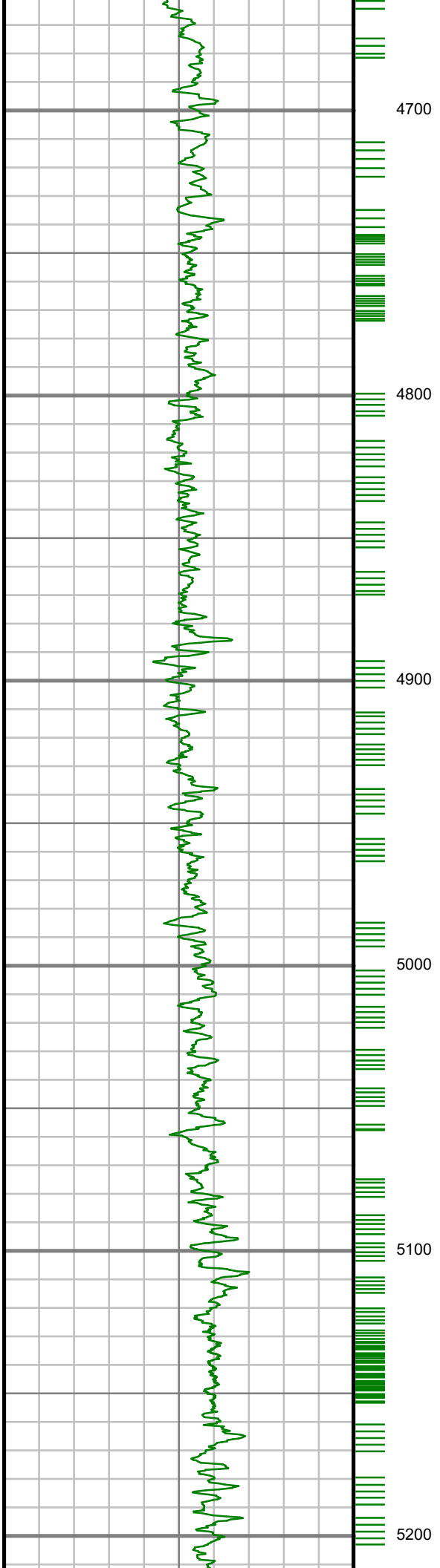


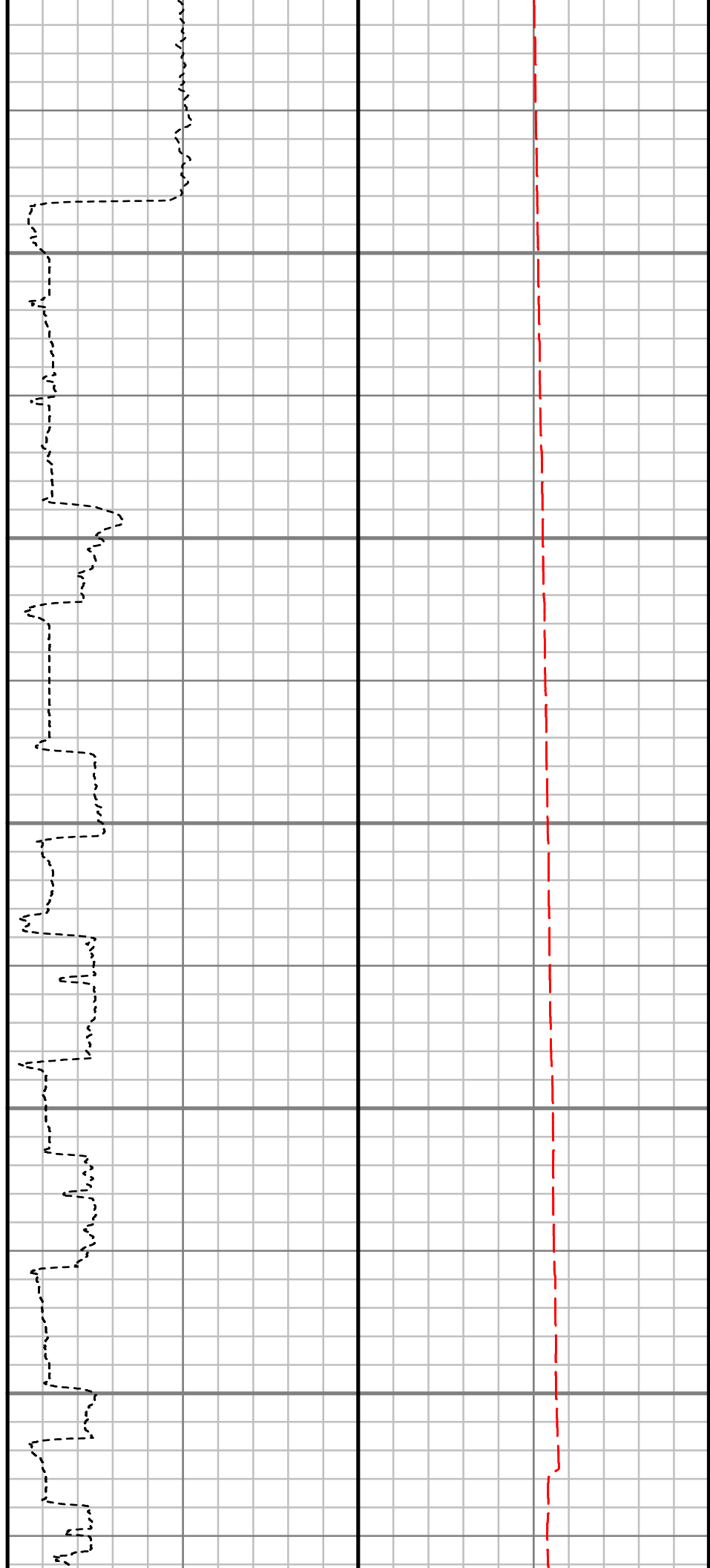
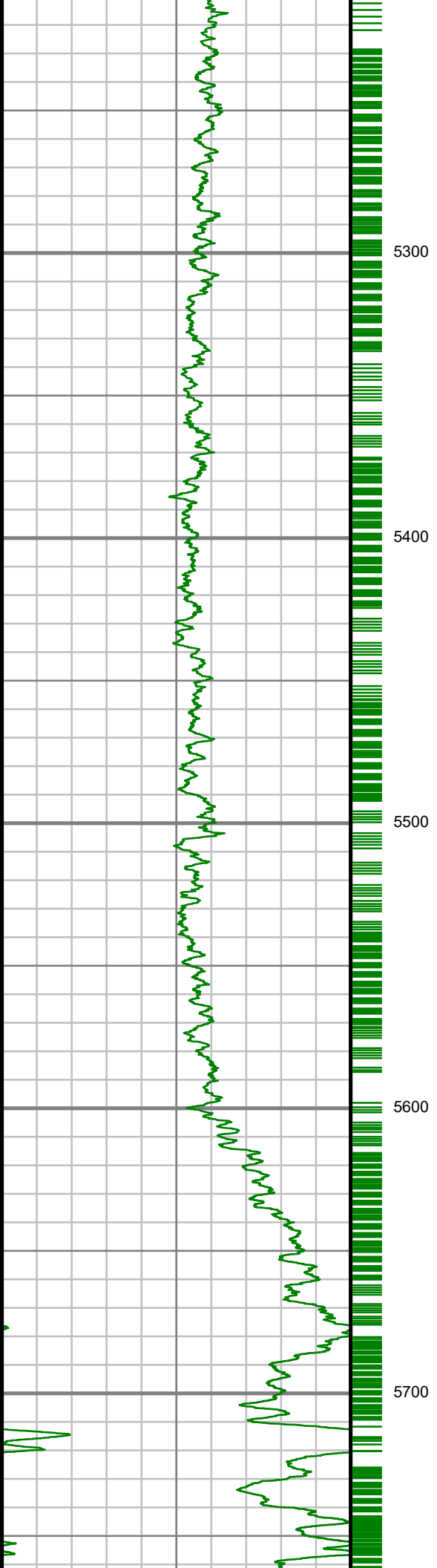


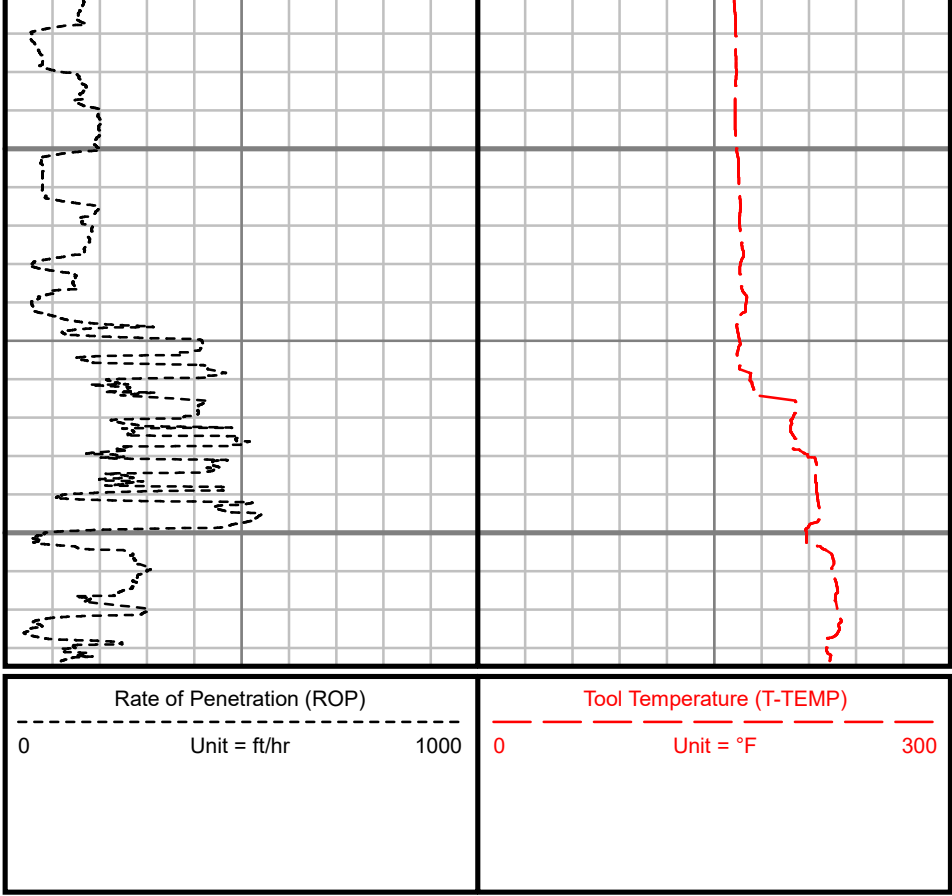
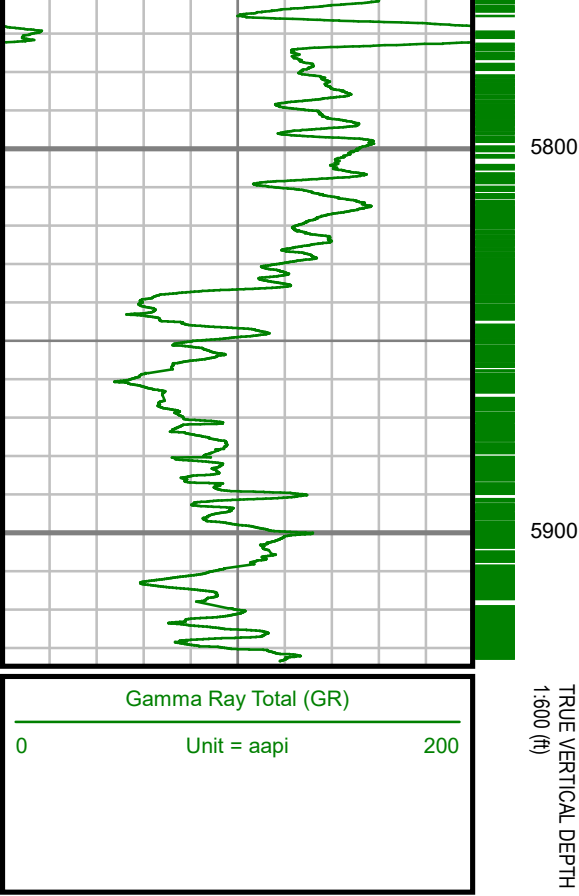












# SURVEY REPORT

ANSCHUTZ EQUUS FARMS FED 05-61-34-5649B

COMPUTED SURVEYS

CUSTOMER HIGHPOINT RESOURCES  
PROJECT ANSCHUTZ EQUUS FARMS FED  
05-61-34-5649B  
FIELD WATTENBERG

## WELL INFORMATION

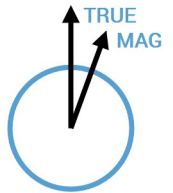
Lat/Long 40° 21' 17.03" N, 104° 11' 11.4" W  
Northing 1,374,780.09 ft  
Easting 3,366,054.24 ft  
UWI 05-123-48183

## MAP INFORMATION

North Reference True North  
Grid Correction  
System US State Plane 1983  
Datum North American Datum 1983 (GRS 1980)  
Map Zone Colorado North: 0501

## VERTICAL SECTION REFERENCE

+N/-S 0 ft  
+E/-W 0 ft  
Proposal Direction 269.75°  
Calculation Method Minimum Curvature



## GEOMAGNETIC REFERENCE INFORMATION

Local Gravity: 999.110 mG [computed]

MD	MODEL	DATE	DECLINATION	MAG TO TRUE
960-15911 ft	HDGM2018	27 Mar 2019	8.1°	add 8.1°

## WELL NOTES

## OPERATORS

A. FARQUHAR, G. SAKOU, M. BAILY, M. POTTER, P. FLAVIUS

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
959.50	4.79	147.44	957.68	-27.90	-34.05	28.05	Invalid
1057.00	4.77	146.04	1054.84	-32.33	-40.84	32.51	0.12
1147.00	7.10	149.36	1144.35	-37.22	-48.73	37.43	2.61
1239.00	8.77	152.45	1235.47	-43.31	-59.84	43.57	1.87
1329.00	9.06	152.28	1324.38	-49.73	-72.19	50.04	0.33
1420.00	10.70	144.96	1414.03	-57.85	-85.45	58.22	2.26
1510.00	11.75	139.05	1502.31	-68.60	-99.22	69.03	1.73
1601.00	13.15	139.20	1591.17	-81.37	-114.05	81.87	1.54
1692.00	14.84	140.68	1679.47	-95.45	-130.91	96.02	1.89
1782.00	16.09	142.90	1766.21	-110.20	-149.77	110.85	1.54
1873.00	17.98	149.13	1853.22	-124.92	-171.89	125.66	2.88
1964.00	20.47	151.28	1939.13	-139.66	-197.91	140.52	2.85
2055.00	19.21	150.79	2024.73	-154.50	-224.94	155.47	1.40
2146.00	21.16	148.34	2110.14	-170.32	-251.99	171.40	2.33
2237.00	20.31	147.99	2195.24	-187.19	-279.36	188.40	0.95
2328.00	21.74	147.09	2280.18	-204.60	-306.90	205.92	1.61
2422.00	21.31	144.65	2367.63	-223.82	-335.45	225.27	1.06
2516.00	21.47	146.79	2455.16	-243.00	-363.77	244.57	0.85
2610.00	21.19	146.33	2542.72	-261.71	-392.30	263.41	0.34
2704.00	20.28	152.36	2630.64	-278.57	-420.88	280.38	2.47

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
2799.00	18.58	150.89	2720.22	-293.45	-448.69	295.39	1.87
2893.00	16.91	147.38	2809.75	-308.00	-473.29	310.04	2.11
2987.00	15.24	147.67	2900.07	-321.88	-495.25	324.02	1.77
3081.00	13.43	144.41	2991.14	-334.76	-514.57	336.98	2.11
3176.00	13.39	138.37	3083.56	-348.41	-531.76	350.71	1.47
3270.00	12.94	145.58	3175.09	-361.52	-548.58	363.89	1.81
3363.00	12.05	146.13	3265.89	-372.75	-565.23	375.19	0.97
3458.00	10.67	152.39	3359.03	-382.28	-581.26	384.79	1.95
3552.00	9.50	156.21	3451.58	-389.38	-596.07	391.95	1.43
3646.00	7.27	158.67	3544.57	-394.61	-608.71	397.24	2.41
3739.00	4.73	149.59	3637.05	-398.66	-617.50	401.32	2.91
3833.00	2.58	138.37	3730.86	-402.00	-622.42	404.69	2.40
3928.00	1.43	40.86	3825.82	-404.19	-623.12	406.88	3.27
4021.00	1.59	29.57	3918.79	-405.59	-621.12	408.27	0.36
4115.00	2.16	18.10	4012.74	-406.79	-618.31	409.46	0.72
4209.00	0.86	0.75	4106.70	-407.36	-615.92	410.02	1.45
4303.00	1.31	354.61	4200.68	-407.28	-614.14	409.93	0.50
4397.00	1.83	22.31	4294.65	-407.76	-611.68	410.40	0.96
4491.00	1.02	76.19	4388.62	-409.14	-610.10	411.78	1.57
4586.00	0.61	93.89	4483.61	-410.47	-609.93	413.10	0.50

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
4680.00	0.52	113.43	4577.61	-411.36	-610.13	414.00	0.22
4774.00	0.68	73.85	4671.60	-412.29	-610.15	414.92	0.46
4868.00	1.07	87.70	4765.59	-413.70	-609.96	416.34	0.48
4962.00	0.93	74.18	4859.58	-415.32	-609.72	417.95	0.29
5056.00	1.26	31.27	4953.56	-416.60	-608.62	419.23	0.92
5150.00	1.10	26.93	5047.54	-417.56	-606.93	420.18	0.19
5245.00	1.03	39.09	5142.53	-418.52	-605.45	421.13	0.25
5340.00	3.02	284.12	5237.48	-416.64	-604.17	419.25	3.77
5435.00	12.11	275.13	5331.56	-404.27	-602.66	406.87	9.63
5529.00	21.82	282.63	5421.37	-377.35	-597.95	379.93	10.56
5623.00	31.36	278.08	5505.34	-336.02	-590.67	338.57	10.37
5717.00	36.39	275.18	5583.37	-284.02	-584.71	286.54	5.62
5812.00	43.04	269.78	5656.42	-223.46	-582.29	225.97	7.89
5905.00	56.23	269.34	5716.52	-152.76	-582.86	155.27	14.19
5999.00	63.49	267.25	5763.69	-71.55	-585.33	74.07	7.96
6093.00	70.08	266.92	5800.71	14.70	-589.72	-12.16	7.02
6187.00	78.22	265.81	5826.37	104.89	-595.47	-102.32	8.73
6245.00	80.50	265.25	5837.08	161.73	-599.92	-159.15	4.05
6309.00	85.86	267.10	5844.67	225.13	-604.16	-222.53	8.86
6402.00	86.54	271.01	5850.83	317.90	-605.69	-315.29	4.26

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS %/100ft
6496.00	87.55	269.79	5855.68	411.77	-605.03	-409.16	1.68
6589.00	90.50	270.58	5857.26	504.74	-604.73	-502.14	3.29
6683.00	90.07	271.65	5856.80	598.71	-602.91	-596.12	1.23
6777.00	88.12	272.10	5858.28	692.63	-599.84	-690.05	2.13
6870.00	88.59	270.54	5860.96	785.55	-597.69	-782.98	1.74
6964.00	89.70	268.32	5862.36	879.53	-598.62	-876.96	2.64
7016.00	88.76	268.35	5863.06	931.51	-600.13	-928.93	1.81
7058.00	88.89	268.52	5863.92	973.49	-601.28	-970.91	0.53
7093.00	90.87	268.47	5864.00	1008.48	-602.20	-1005.89	5.66
7151.00	91.51	268.76	5862.79	1066.46	-603.60	-1063.86	1.21
7245.00	91.81	268.28	5860.06	1160.40	-606.02	-1157.79	0.60
7338.00	91.61	268.72	5857.28	1253.33	-608.46	-1250.72	0.52
7431.00	91.27	269.00	5854.94	1346.29	-610.30	-1343.67	0.47
7526.00	91.34	269.66	5852.77	1441.26	-611.42	-1438.64	0.70
7619.00	89.33	268.72	5852.22	1534.25	-612.74	-1531.62	2.39
7713.00	88.29	268.88	5854.18	1628.22	-614.70	-1625.58	1.12
7806.00	89.50	268.54	5855.98	1721.18	-616.80	-1718.54	1.35
7901.00	88.89	268.25	5857.32	1816.14	-619.46	-1813.49	0.70
7995.00	89.29	268.71	5858.81	1910.11	-621.96	-1907.45	0.64
8089.00	88.79	269.36	5860.38	2004.09	-623.54	-2001.42	0.88

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS %/100ft
8183.00	89.50	269.26	5861.78	2098.07	-624.67	-2095.40	0.76
8276.00	89.60	269.37	5862.52	2191.07	-625.77	-2188.39	0.16
8370.00	89.09	269.02	5863.59	2285.06	-627.09	-2282.38	0.65
8464.00	88.59	268.90	5865.49	2379.03	-628.80	-2376.34	0.55
8558.00	87.82	268.51	5868.44	2472.97	-630.92	-2470.27	0.92
8652.00	88.19	269.36	5871.71	2566.90	-632.67	-2564.19	0.99
8747.00	89.26	269.99	5873.83	2661.87	-633.20	-2659.17	1.31
8840.00	87.72	267.93	5876.28	2754.82	-634.89	-2752.11	2.77
8935.00	89.66	267.99	5878.45	2849.75	-638.27	-2847.02	2.05
9029.00	91.48	268.29	5877.51	2943.70	-641.32	-2940.96	1.96
9123.00	90.03	266.40	5876.27	3037.60	-645.67	-3034.85	2.53
9217.00	90.47	268.04	5875.86	3131.51	-650.23	-3128.73	1.80
9311.00	91.85	268.04	5873.95	3225.44	-653.45	-3222.66	1.47
9405.00	91.85	270.26	5870.91	3319.38	-654.84	-3316.59	2.37
9499.00	90.54	267.42	5868.96	3413.34	-656.75	-3410.54	3.33
9592.00	90.94	270.48	5867.76	3506.31	-658.45	-3503.51	3.32
9686.00	87.65	273.52	5868.91	3600.21	-655.17	-3597.42	4.77
9780.00	86.62	273.78	5873.61	3693.87	-649.19	-3691.11	1.13
9873.00	88.16	272.45	5877.85	3786.61	-644.15	-3783.87	2.19
9965.00	90.50	271.92	5878.92	3878.52	-640.65	-3875.79	2.61

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS %/100ft
10058.00	89.33	270.32	5879.06	3971.48	-638.83	-3968.77	2.14
10151.00	90.87	272.81	5878.90	4064.43	-636.29	-4061.72	3.15
10244.00	90.20	273.46	5878.02	4157.26	-631.20	-4154.58	1.01
10337.00	92.35	272.49	5875.96	4250.08	-626.37	-4247.42	2.53
10431.00	90.64	270.47	5873.51	4344.00	-623.94	-4341.35	2.82
10484.00	90.74	270.27	5872.87	4396.99	-623.59	-4394.35	0.42
10525.00	92.45	271.88	5871.73	4437.96	-622.82	-4435.32	5.72
10619.00	89.76	270.69	5869.92	4531.90	-620.72	-4529.27	3.12
10710.00	88.59	269.69	5871.22	4622.89	-620.42	-4620.26	1.69
10801.00	86.64	269.39	5875.01	4713.80	-621.15	-4711.17	2.17
10892.00	87.68	268.70	5879.52	4804.68	-622.66	-4802.04	1.37
10982.00	87.61	268.90	5883.21	4894.60	-624.54	-4891.95	0.24
11073.00	89.50	265.95	5885.51	4985.48	-628.62	-4982.81	3.85
11165.00	88.86	266.61	5886.83	5077.30	-634.59	-5074.61	1.00
11255.00	87.05	268.59	5890.04	5167.17	-638.36	-5164.46	2.98
11346.00	85.01	269.07	5896.34	5257.93	-640.22	-5255.22	2.30
11403.00	86.04	270.45	5900.79	5314.76	-640.45	-5312.05	3.03
11436.00	87.99	267.52	5902.51	5347.70	-641.04	-5344.99	10.67
11528.00	91.14	266.87	5903.20	5439.60	-645.54	-5436.87	3.50
11618.00	90.77	268.14	5901.70	5529.51	-649.46	-5526.77	1.46

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS %/100ft
11709.00	90.94	266.50	5900.35	5620.42	-653.72	-5617.65	1.81
11800.00	90.94	267.56	5898.86	5711.30	-658.43	-5708.52	1.17
11891.00	89.23	269.23	5898.72	5802.27	-660.99	-5799.47	2.63
11981.00	90.84	272.64	5898.67	5892.23	-659.52	-5889.45	4.19
12072.00	92.18	275.98	5896.27	5982.90	-652.69	-5980.14	3.96
12163.00	90.57	272.77	5894.09	6073.56	-645.76	-6070.84	3.94
12253.00	90.30	273.28	5893.40	6163.41	-641.01	-6160.71	0.64
12344.00	89.50	270.03	5893.56	6254.35	-638.37	-6251.66	3.68
12434.00	88.96	269.62	5894.77	6344.34	-638.65	-6341.65	0.76
12526.00	89.90	271.73	5895.69	6436.32	-637.57	-6433.63	2.51
12617.00	90.27	272.35	5895.56	6527.25	-634.33	-6524.57	0.80
12708.00	90.64	273.05	5894.84	6618.12	-630.04	-6615.47	0.87
12799.00	89.87	270.31	5894.44	6709.06	-627.37	-6706.42	3.13
12889.00	88.46	269.37	5895.76	6799.05	-627.62	-6796.41	1.88
12983.00	88.69	269.60	5898.09	6893.02	-628.47	-6890.37	0.34
13077.00	88.99	269.46	5899.99	6987.00	-629.24	-6984.35	0.35
13171.00	89.20	269.27	5901.47	7080.98	-630.28	-7078.33	0.29
13265.00	89.93	270.30	5902.19	7174.98	-630.63	-7172.33	1.35
13359.00	90.37	268.86	5901.94	7268.98	-631.31	-7266.32	1.60
13453.00	89.10	268.88	5902.38	7362.96	-633.17	-7360.30	1.35



MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
13547.00	90.10	268.89	5903.04	7456.95	-635.00	-7454.28	1.07
13641.00	89.06	269.56	5903.73	7550.94	-636.26	-7548.27	1.31
13735.00	90.10	268.61	5904.41	7644.93	-637.76	-7642.25	1.50
13829.00	88.66	269.76	5905.43	7738.91	-639.09	-7736.23	1.96
13922.00	88.93	268.61	5907.39	7831.89	-640.41	-7829.20	1.27
14015.00	90.23	270.11	5908.07	7924.88	-641.44	-7922.19	2.14
14108.00	88.42	269.24	5909.16	8017.87	-641.97	-8015.17	2.16
14201.00	89.26	268.41	5911.03	8110.83	-643.87	-8108.13	1.27
14294.00	89.16	267.84	5912.31	8203.79	-646.90	-8201.07	0.63
14387.00	88.63	268.27	5914.11	8296.73	-650.06	-8294.00	0.74
14480.00	88.83	267.54	5916.18	8389.66	-653.46	-8386.92	0.81
14572.00	89.46	271.11	5917.55	8481.63	-654.54	-8478.89	3.94
14665.00	90.20	270.29	5917.82	8574.61	-653.40	-8571.88	1.19
14757.00	87.65	271.19	5919.54	8666.58	-652.21	-8663.84	2.94
14850.00	87.59	270.54	5923.41	8759.48	-650.81	-8756.75	0.71
14943.00	89.43	269.50	5925.83	8852.44	-650.78	-8849.72	2.27
15035.00	89.30	270.34	5926.85	8944.43	-650.90	-8941.71	0.92
15129.00	88.66	270.57	5928.52	9038.41	-650.16	-9035.69	0.72
15221.00	89.29	268.91	5930.17	9130.39	-650.58	-9127.67	1.93
15314.00	89.50	268.52	5931.15	9223.37	-652.67	-9220.64	0.47

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
15407.00	88.83	267.22	5932.51	9316.31	-656.12	-9313.57	1.57
15500.00	90.20	267.48	5933.30	9409.22	-660.42	-9406.46	1.51
15592.00	90.20	267.13	5932.98	9501.14	-664.74	-9498.36	0.38
15685.00	90.90	268.33	5932.08	9594.07	-668.43	-9591.28	1.50
15779.00	91.11	269.23	5930.43	9688.04	-670.43	-9685.24	0.98
15873.00	91.51	270.03	5928.29	9782.02	-671.04	-9779.21	0.95
15911.00	91.17	270.05	5927.40	9820.01	-671.01	-9817.20	0.89

2" = 100' TVD