

2" = 100' TVD

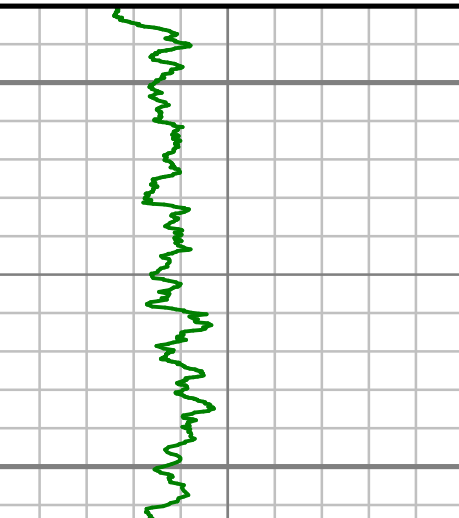

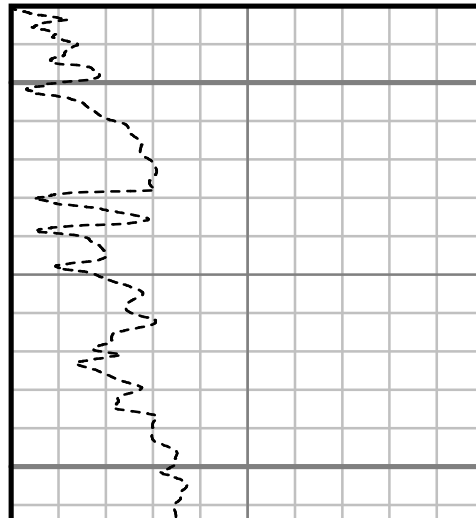
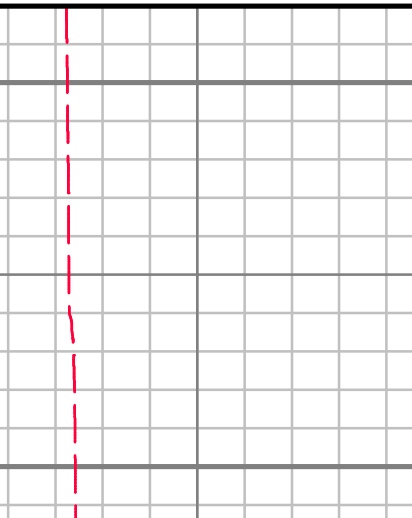
COMPANY : HIGHPOINT RESOURCES									
WELL : ANSCHUTZ EQUUS FARMS FED 5-61-34-4148B									
FIELD : WATTENBERG									
COUNTY : WELD									
STATE : COLORADO									
COUNTRY : U.S.A.									
UWI : 05-123-48187									
WELL LOCATION									
LAT:40°21'17.020"N LONG:104°11'11.600"W									
N:1374778.83 ft E:3366038.78 ft									
SEC:34									
TWP:5N									
RANGE:61W									
OTHER SERVICES									
NAD83									
DIRECTIONAL									
ROP									
DEPTH REF. : RKB									
REF. HEIGHT : 16.500 ft									
RKB to Ground Level									
GROUND LEVEL : 4479.600 ft									
G.I. to MEAN SEA LEVEL									
BOREHOLE RECORD									
DEVIATION RECORD									
HOLE SIZE in									
FROM ft									
TO ft									
INCLINATION deg									
FROM ft									
TO ft									
13.5									
0									
982									
1 - 5									
0									
932									
8.75									
982									
6237									
5 - 16									
932									
1513									
6.125									
6237									
15900									
16 - 0									
1513									
3084									
5248									
0									
3084									
5248									
0 - 90									
5248									
6262									
90									
6262									
15900									
CASING RECORD									
CASING SIZE in									
FROM ft									
TO ft									
13.5									
0									
960									
7									
960									
6237									
DRILLING CO.: CADE									
RIG: 24									
LWD UNIT NO.: KIT MUD PUDISTRICT: CASPER									
SPUD DATE: 01/15/2019									
LWD START DATE: 03/18/2019									
LWD END DATE: 03/27/2019									
DEPTH: 982 ft									
DEPTH: 15900 ft									
TOTAL DEPTH: 15900 ft									

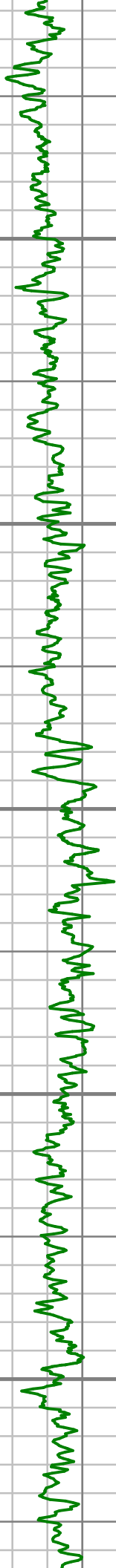
Run Data						
RUN NUMBER	001	002	003			
START DATE	03/18/2019	03/22/2019	03/25/2019			
START TIME	00:55	02:10	09:45			
END DATE	03/21/2019	03/25/2019	03/27/2019			
END TIME	07:30	09:00	04:40			
DEPTH IN (ft)	982	6237	15020			
DEPTH OUT (ft)	6237	15020	15900			
LOG TOP (ft)	982	6237	15020			
LOG BOTTOM (ft)	6237	15020	15900			
HOLE SIZE (in)	8.75	6.125	6.125			
MUD DATA @ (ft)	6192	13581	15555			
MUD TYPE	WATER-BASED	WATER-BASED	WATER-BASED			
DENSITY (lb / gal)	9.9	9.0	8.8			
VISCOSITY (s / qt)	42	30	28			
pH	-	-	-			
FLUID LOSS (cm3 / 30)	-	-	-			
SALINITY (mg/L)	-	-	-			
Rm (ohmm @ deg F)	-	-	-			
Rmf (ohmm @ deg F)	-	-	-			
MAX TEMP (deg F)	163.46	230.43	227.94			
Rm @ MAX TEMP (ohmm)	-	-	-			
LWD ENGINEER #1	M. BAILY	M. BAILY	M. BAILY			
LWD ENGINEER #2	P. FLAVIUS	P. FLAVIUS	P. FLAVIUS			
LWD ENGINEER #3	-	-	-			
LOG WITNESS #1	A. ROWE	A. ROWE	A. ROWE			
LOG WITNESS #2	-	-	-			

Remarks
HIGHPOINT RESOURCES AFE# 20406D
SCIENTIFIC DRILLING INTERNATIONAL JOB# OP.017332
ALL REFERENCES IN THE DEPTH TRACK ARE AT BIT DEPTH.
ALL DATA IS MEMORY DATA UNLESS STATED OTHERWISE.
FLAT AVERAGE FILTER OF 1.00 FT APPLIED TO GAMMA RAY TOTAL CURVE
FLAT AVERAGE FILTER OF 1.00 FT APPLIED TO RATE OF PENETRATION CURVE
FLAT AVERAGE FILTER OF 1.00 FT APPLIED TO TOOL TEMPERATURE CURVE
RUN #1: MWD / GAMMA RAY LOGGING RUN
SENSORS S/N: PULSER = 128-301 / CONT = 303 / MWD EYE = 1450 / GAMMA RAY = 1291
BIT TO SENSOR OFFSETS: SURVEY = 60.28 FT. / GAMMA RAY = 56.28 FT.
RUN #2: MWD / GAMMA RAY LOGGING RUN
SENSORS S/N: PULSER = 78-281 / CONT = 151 / MWD EYE = 1806 / GAMMA RAY = 1484
BIT TO SENSOR OFFSETS: SURVEY = 57.66 FT. / GAMMA RAY = 53.66 FT.
RUN #3: MWD / GAMMA RAY LOGGING RUN
SENSORS S/N: PULSER = 78-281 / CONT = 151 / MWD EYE = 1806 / GAMMA RAY = 1484
BIT TO SENSOR OFFSETS: SURVEY = 55.79 FT. / GAMMA RAY = 51.79 FT.
MNEMONICS LIST:
GR = GAMMA RAY TOTAL
ROP = RATE OF PENETRATION
T-TEMP = TOOL TEMPERATURE

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 05-61-34-4148B
HEREFORD FIELD
WELD COUNTY, COLORADO
API # 05-123-48187

Gamma Ray Total (GR)	TRUE VERTICAL DEPTH 1:600 (ft)	Rate of Penetration (ROP)	Tool Temperature (T-TEMP)
0 Unit = aapi 200		0 Unit = ft/hr 1000	0 Unit = °F 300
			



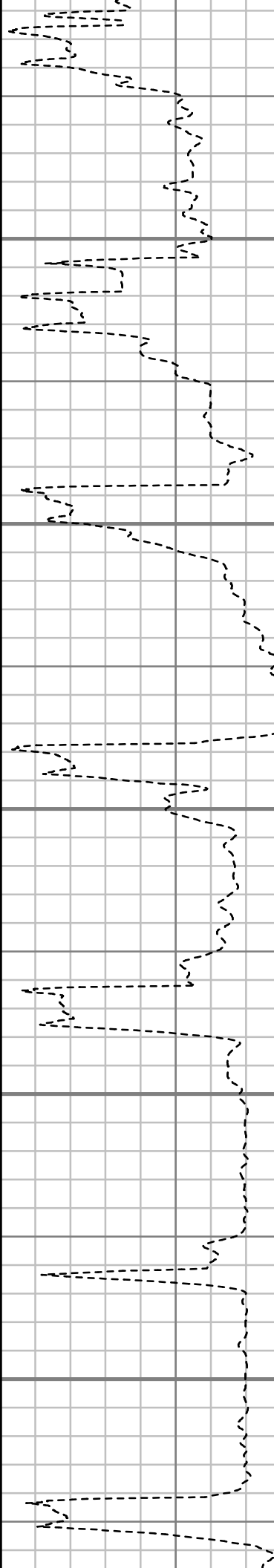
1200

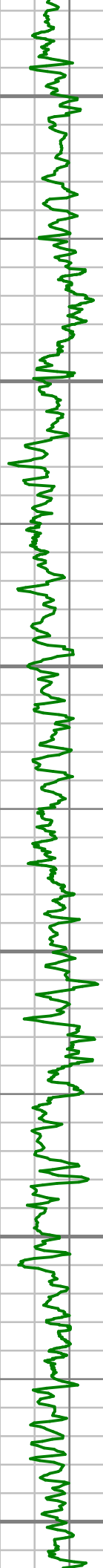
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1400

1500

1600





1700

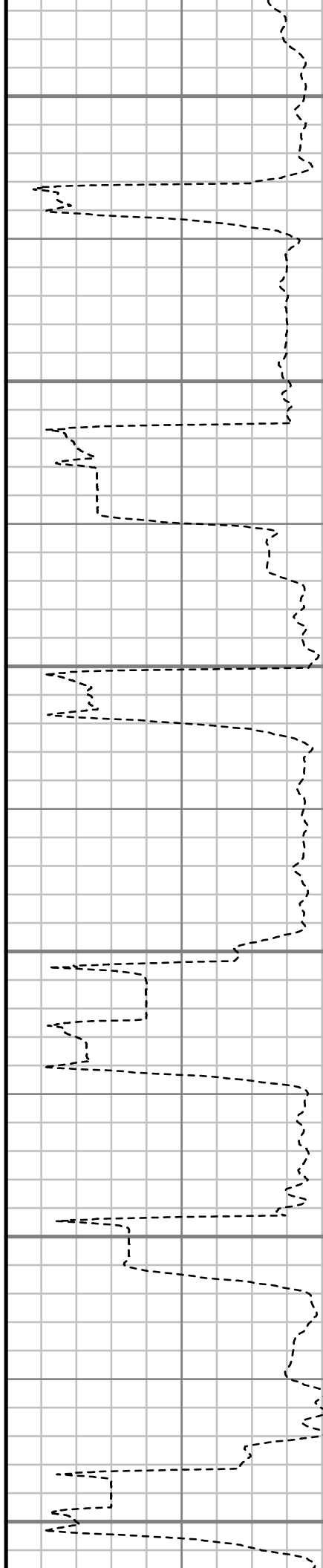
1800

1900

2000

2100

2200





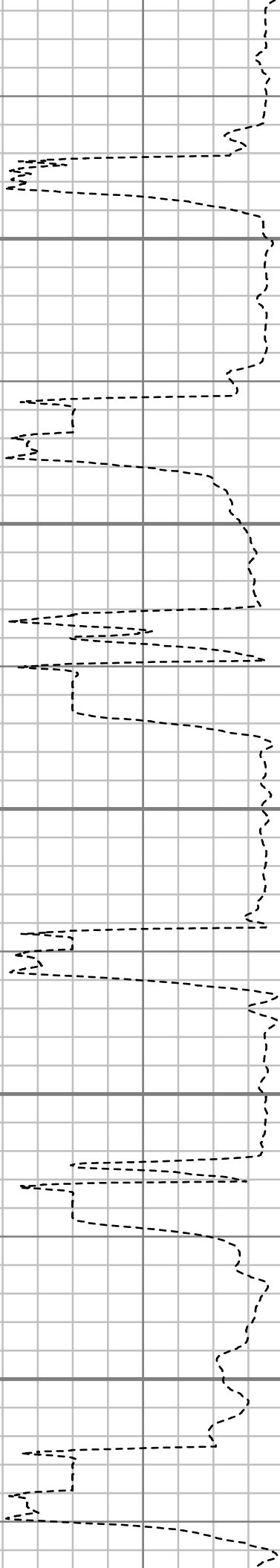
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2400

2500

2600

2700





2800

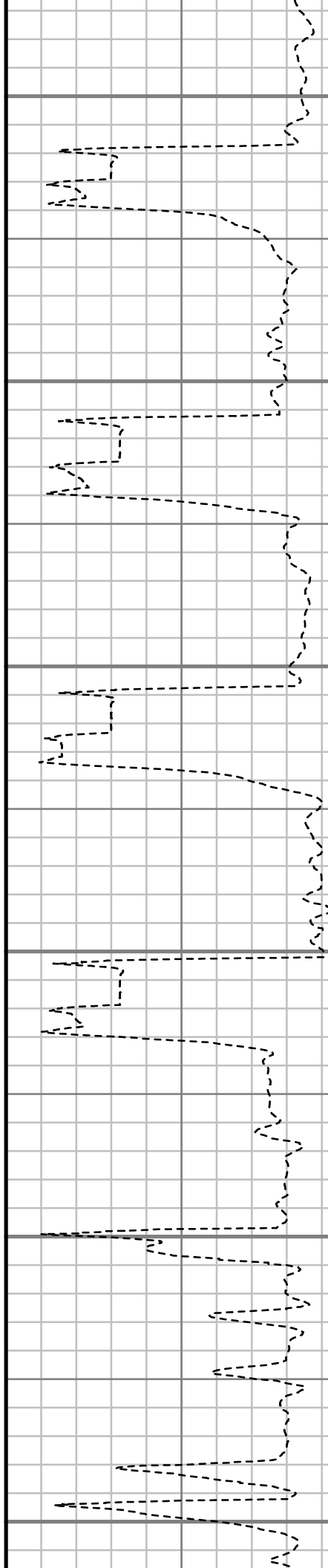
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3000

3100

3200

3300





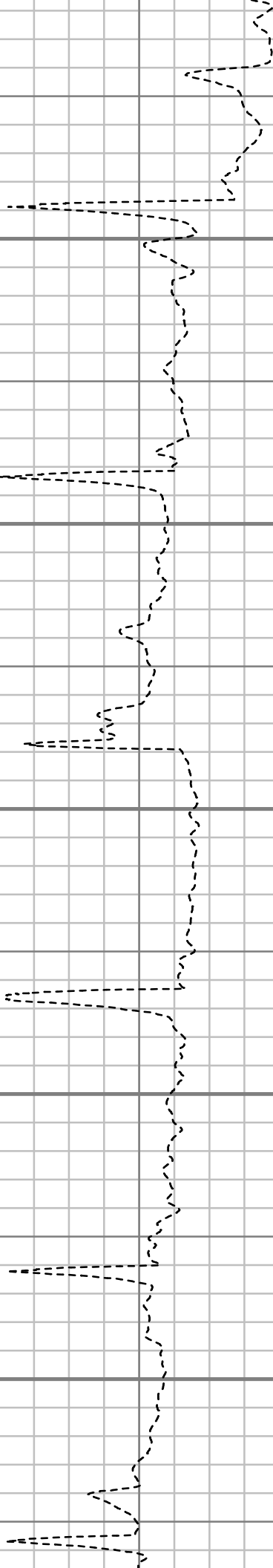
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3500

3600

3700

3800





3900

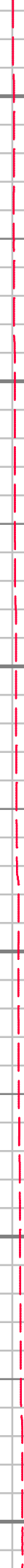
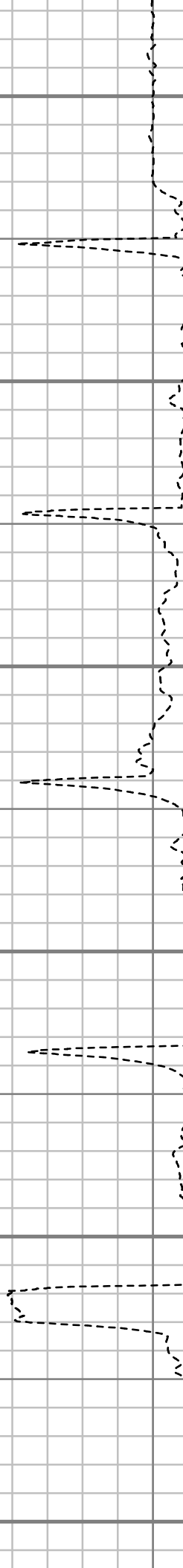
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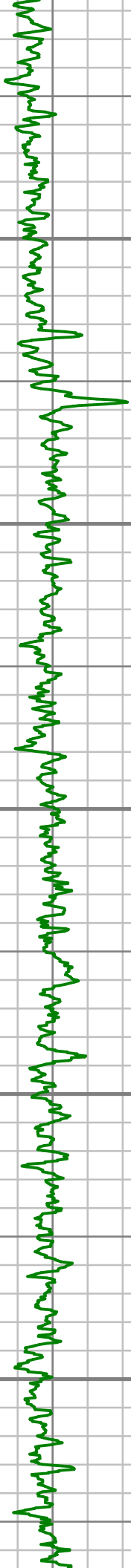
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4200

4300

4400





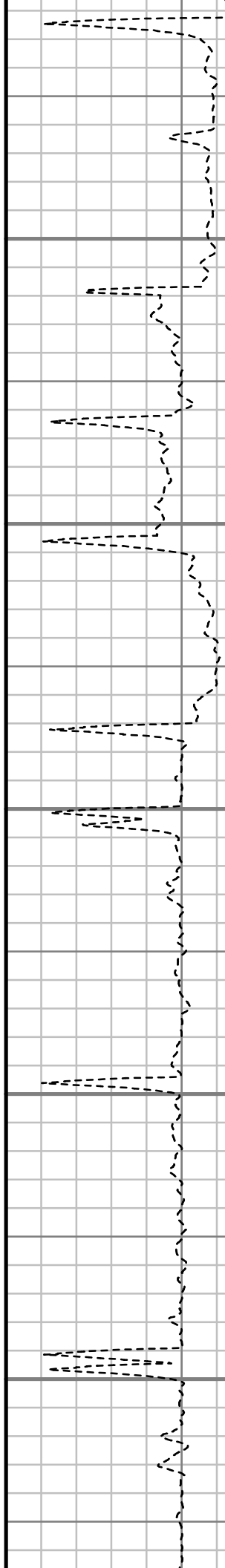
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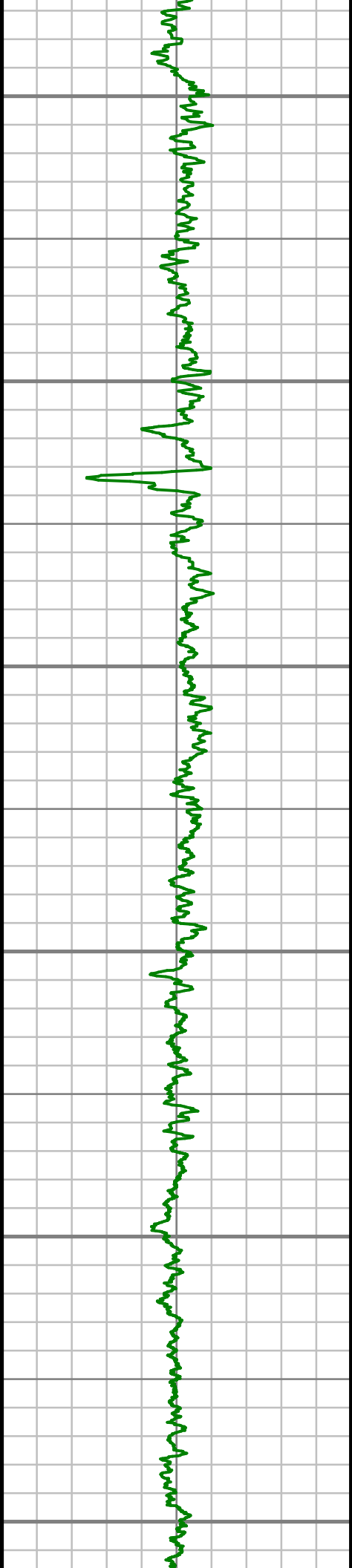
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4700

4800

4900





5000

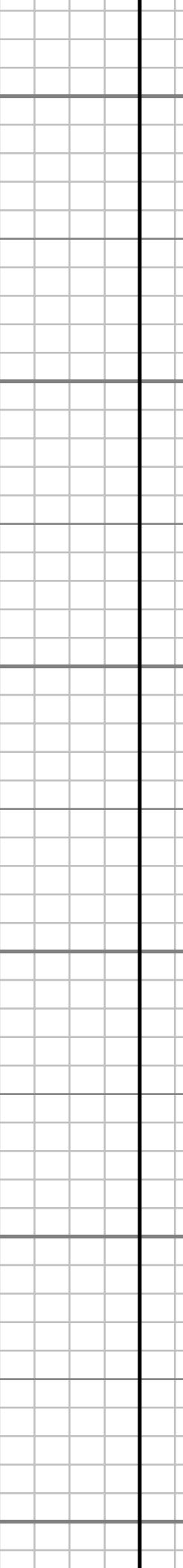
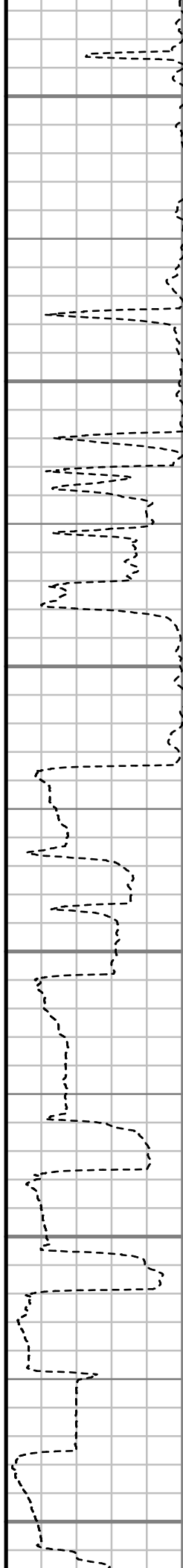
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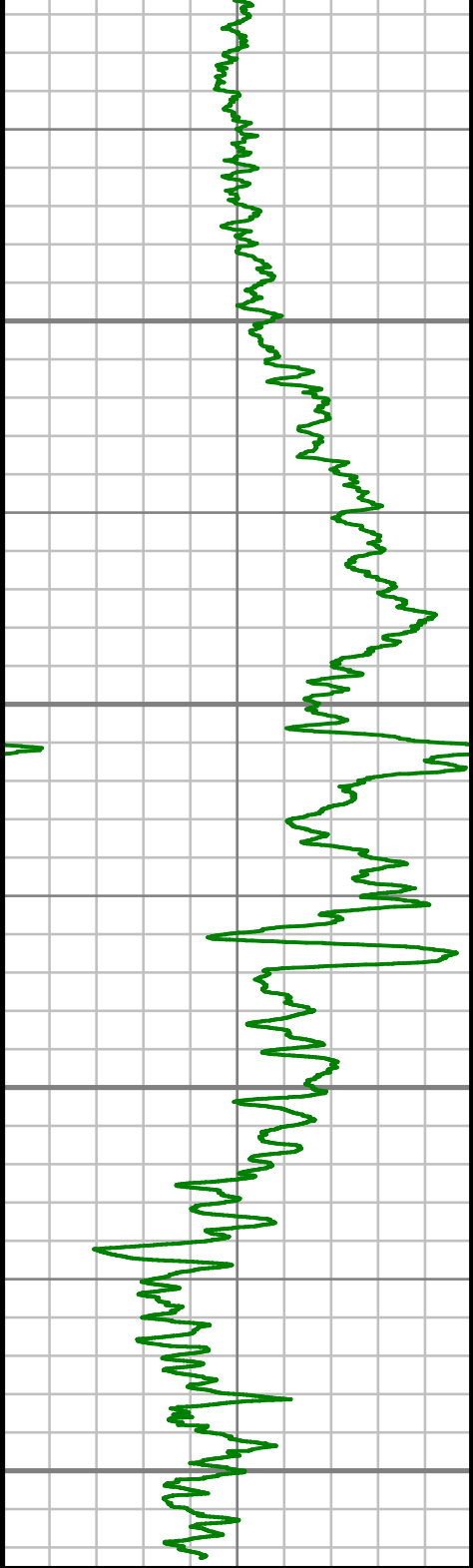
5200

5300

5400

5500





Gamma Ray Total (GR)

0 Unit = aapi 200

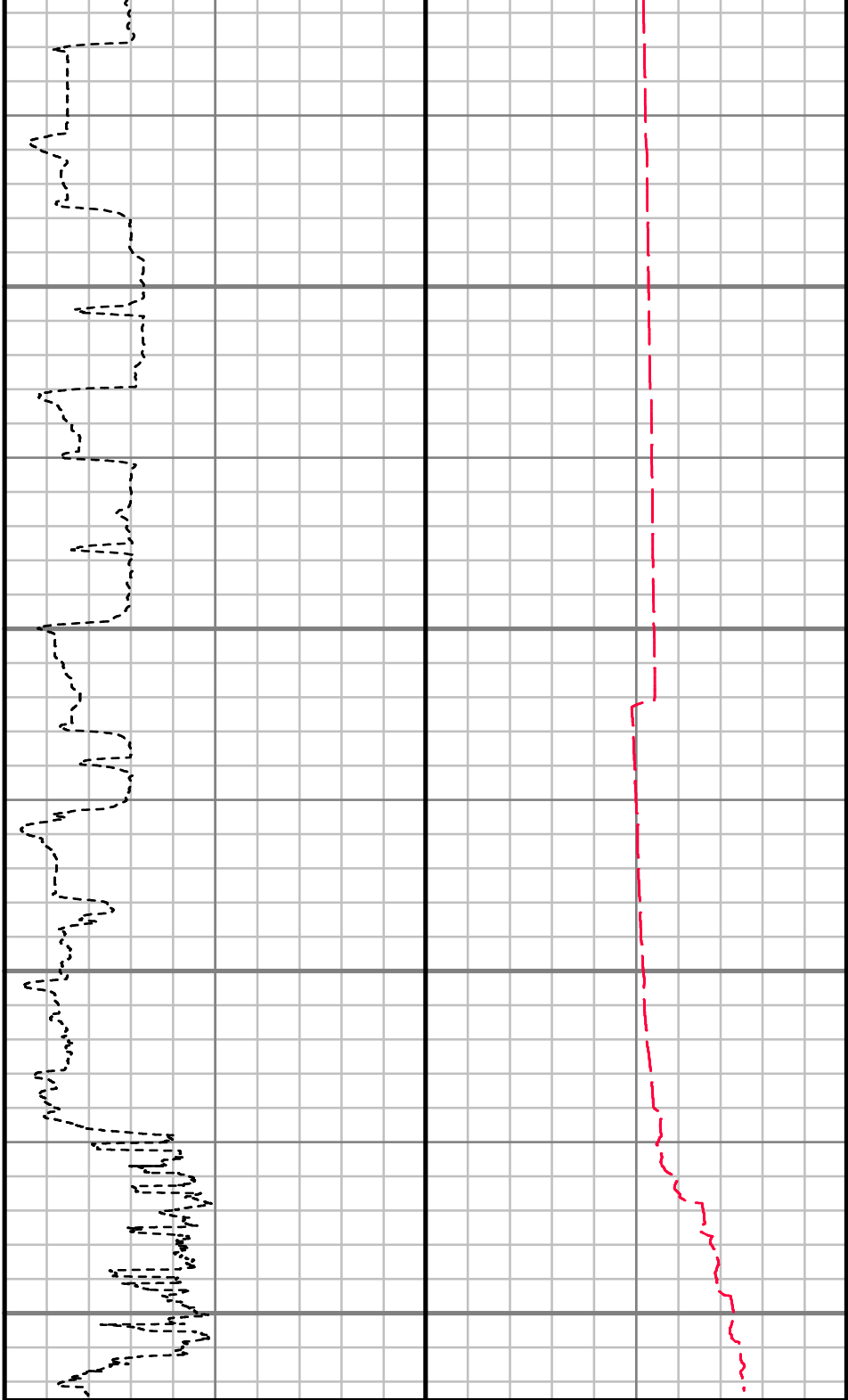
5600

5700

5800

5900

TRUE VERTICAL DEPTH
1:600 (ft)



Rate of Penetration (ROP)

0 Unit = ft/hr 1000

Tool Temperature (T-TEMP)

0 Unit = °F 300

SURVEY REPORT

CHUTZ EQUUS FARMS FED 5-61-34-4148B

ANSCHUTZ EQUUS FARMS FED 5-61-34-41

CUSTOMER HIGHPOINT RESOURCES
PROJECT ANSCHUTZ EQUUS FARMS FED
5-61-34-4148B
FIELD WATTENBERG

WELL INFORMATION

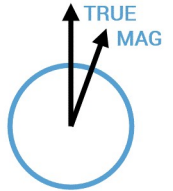
Lat/Long 40° 21' 17.02" N, 104° 11' 11.6" W
Northing 1,374,778.83 ft
Easting 3,366,038.78 ft
UWI 05-123-48187

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
933-15842 ft	HDGM2018	18 Mar 2019	8.1°	add 8.1°

WELL NOTES

OPERATORS

M. BAILY, M. SMITH, P. FLAVIUS

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
932.50	5.58	106.04	931.69	-23.87	-0.34	23.87	Invalid
1059.00	7.26	110.85	1057.39	-37.23	-4.88	37.25	1.39
1150.00	8.84	100.71	1147.50	-49.46	-8.23	49.49	2.33
1241.00	10.87	102.64	1237.15	-64.69	-11.41	64.74	2.27
1332.00	12.96	101.67	1326.19	-83.04	-15.35	83.11	2.30
1422.00	14.94	99.64	1413.53	-104.35	-19.34	104.43	2.27
1513.00	16.25	94.50	1501.18	-128.59	-22.30	128.69	2.09
1604.00	15.03	91.24	1588.81	-153.08	-23.55	153.18	1.65
1695.00	13.93	91.96	1676.92	-175.82	-24.18	175.92	1.23
1785.00	14.16	90.62	1764.23	-197.64	-24.67	197.75	0.44
1876.00	16.06	93.78	1852.08	-221.33	-25.62	221.45	2.27
1967.00	15.12	100.13	1939.74	-245.57	-28.54	245.69	2.14
2058.00	14.37	105.96	2027.74	-268.09	-33.73	268.24	1.83
2149.00	14.31	107.51	2115.91	-289.65	-40.22	289.83	0.43
2240.00	12.50	104.20	2204.43	-309.90	-46.03	310.11	2.16
2330.00	11.14	108.97	2292.52	-327.55	-51.24	327.78	1.86
2424.00	9.82	108.80	2384.95	-343.70	-56.78	343.95	1.41
2519.00	9.42	109.27	2478.61	-358.69	-61.95	358.96	0.43
2613.00	8.60	115.95	2571.45	-372.24	-67.56	372.53	1.41
2707.00	8.09	112.76	2664.46	-384.63	-73.20	384.95	0.73

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
2801.00	6.74	118.46	2757.67	-395.56	-78.39	395.90	1.64
2896.00	5.68	120.58	2852.11	-404.49	-83.43	404.85	1.15
2990.00	3.34	115.50	2945.82	-410.95	-86.98	411.32	2.52
3084.00	1.78	128.76	3039.72	-414.55	-89.07	414.94	1.76
3179.00	0.31	128.17	3134.70	-415.90	-90.16	416.29	1.55
3272.00	0.13	68.20	3227.70	-416.20	-90.27	416.59	0.29
3366.00	0.12	233.03	3321.70	-416.22	-90.29	416.61	0.27
3461.00	0.24	149.72	3416.70	-416.24	-90.53	416.64	0.27
3555.00	0.34	156.69	3510.70	-416.45	-90.96	416.85	0.11
3649.00	0.39	207.49	3604.70	-416.41	-91.50	416.81	0.34
3742.00	0.80	230.09	3697.69	-415.76	-92.20	416.16	0.50
3836.00	0.64	246.71	3791.68	-414.77	-92.83	415.17	0.28
3930.00	0.40	259.60	3885.68	-413.96	-93.10	414.36	0.28
4024.00	0.68	252.07	3979.68	-413.09	-93.33	413.50	0.31
4118.00	0.60	235.21	4073.67	-412.16	-93.78	412.57	0.22
4212.00	0.56	180.40	4167.67	-411.75	-94.52	412.16	0.57
4306.00	0.60	174.81	4261.66	-411.79	-95.47	412.20	0.07
4400.00	1.44	40.85	4355.65	-412.61	-95.07	413.02	2.03
4494.00	1.56	34.20	4449.62	-414.11	-93.12	414.51	0.22
4589.00	1.17	21.17	4544.59	-415.19	-91.15	415.59	0.52

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
4683.00	1.12	45.51	4638.58	-416.20	-89.61	416.59	0.52
4776.00	1.15	13.71	4731.56	-417.08	-88.06	417.46	0.67
4871.00	0.90	0.98	4826.54	-417.33	-86.39	417.70	0.36
4964.00	1.10	10.17	4919.53	-417.50	-84.79	417.87	0.27
5059.00	1.13	352.17	5014.51	-417.55	-82.97	417.91	0.37
5153.00	0.60	338.75	5108.50	-417.25	-81.60	417.60	0.60
5248.00	0.62	38.00	5203.50	-417.39	-80.73	417.74	0.63
5343.00	6.04	270.72	5298.33	-412.70	-80.27	413.05	6.77
5390.00	14.14	272.04	5344.56	-404.48	-80.03	404.83	17.25
5437.00	19.55	271.72	5389.53	-390.87	-79.59	391.22	11.50
5531.00	28.15	272.50	5475.42	-352.93	-78.15	353.27	9.16
5626.00	35.53	269.72	5556.07	-302.87	-77.31	303.21	7.91
5720.00	40.44	267.85	5630.14	-245.05	-78.58	245.39	5.37
5814.00	45.79	270.30	5698.74	-180.84	-79.55	181.18	5.96
5907.00	57.38	269.85	5756.42	-108.09	-79.47	108.44	12.46
6002.00	68.38	267.90	5799.67	-23.69	-81.20	24.04	11.73
6096.00	76.88	265.12	5827.72	65.78	-86.71	-65.41	9.47
6175.00	84.41	266.55	5840.55	143.49	-92.36	-143.10	9.71
6262.00	87.72	267.75	5846.52	230.19	-96.67	-229.77	4.04
6305.00	87.65	267.86	5848.26	273.13	-98.32	-272.70	0.31

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS %/100ft
6399.00	88.49	269.52	5851.42	367.05	-100.46	-366.62	1.98
6492.00	87.65	269.11	5854.55	460.00	-101.57	-459.56	1.01
6586.00	90.57	271.01	5856.01	553.97	-101.48	-553.54	3.71
6680.00	88.62	270.43	5856.67	647.95	-100.30	-647.52	2.16
6773.00	89.83	270.18	5857.93	740.93	-99.80	-740.51	1.33
6867.00	89.03	269.21	5858.86	834.93	-100.30	-834.50	1.34
6961.00	89.09	269.24	5860.40	928.91	-101.57	-928.48	0.08
7055.00	88.72	268.73	5862.19	1022.88	-103.23	-1022.45	0.66
7148.00	89.13	269.56	5863.93	1115.86	-104.61	-1115.42	0.99
7241.00	88.49	267.97	5865.87	1208.83	-106.61	-1208.38	1.84
7334.00	90.60	270.01	5866.60	1301.80	-108.24	-1301.35	3.16
7428.00	90.57	270.39	5865.64	1395.80	-107.91	-1395.34	0.40
7523.00	90.94	270.13	5864.39	1490.78	-107.48	-1490.33	0.47
7616.00	91.28	269.32	5862.59	1583.77	-107.92	-1583.31	0.94
7709.00	91.31	271.37	5860.50	1676.73	-107.36	-1676.28	2.20
7803.00	89.93	271.53	5859.48	1770.68	-104.99	-1770.25	1.47
7898.00	89.56	270.83	5859.90	1865.65	-103.03	-1865.22	0.83
7992.00	89.60	271.17	5860.58	1959.63	-101.38	-1959.21	0.36
8086.00	88.59	272.31	5862.07	2053.56	-98.53	-2053.15	1.61
8180.00	88.39	271.91	5864.55	2147.44	-95.08	-2147.05	0.48

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS %/100ft
8273.00	88.56	271.89	5867.02	2240.35	-91.99	-2239.97	0.18
8367.00	88.56	271.33	5869.39	2334.27	-89.35	-2333.90	0.60
8461.00	88.66	271.26	5871.67	2428.20	-87.23	-2427.85	0.13
8555.00	88.53	270.77	5873.98	2522.15	-85.57	-2521.81	0.54
8649.00	89.19	270.03	5875.85	2616.13	-84.92	-2615.79	1.06
8743.00	90.17	269.51	5876.38	2710.12	-85.30	-2709.78	1.17
8837.00	90.57	269.82	5875.77	2804.12	-85.85	-2803.78	0.54
8932.00	91.11	269.51	5874.38	2899.11	-86.40	-2898.77	0.65
9026.00	89.16	269.31	5874.16	2993.10	-87.36	-2992.76	2.08
9119.00	89.09	268.80	5875.58	3086.09	-88.90	-3085.73	0.56
9214.00	89.13	269.46	5877.05	3181.07	-90.35	-3180.71	0.70
9308.00	89.20	269.56	5878.42	3275.06	-91.15	-3274.70	0.13
9402.00	89.33	269.61	5879.63	3369.05	-91.83	-3368.69	0.15
9496.00	88.99	269.17	5881.01	3463.04	-92.84	-3462.67	0.59
9589.00	89.60	270.00	5882.15	3556.03	-93.52	-3555.66	1.11
9683.00	89.80	270.38	5882.65	3650.02	-93.21	-3649.66	0.45
9777.00	88.89	269.98	5883.72	3744.01	-92.91	-3743.65	1.05
9870.00	88.29	269.41	5886.01	3836.99	-93.40	-3836.62	0.89
9962.00	88.83	269.48	5888.32	3928.95	-94.29	-3928.58	0.59
10055.00	88.39	269.05	5890.58	4021.92	-95.49	-4021.55	0.66

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS %/100ft
10148.00	89.56	269.56	5892.24	4114.90	-96.62	-4114.53	1.37
10241.00	89.06	269.01	5893.36	4207.89	-97.78	-4207.51	0.80
10334.00	90.54	269.36	5893.68	4300.89	-99.10	-4300.50	1.63
10428.00	90.30	268.96	5893.00	4394.88	-100.47	-4394.49	0.49
10522.00	90.13	268.76	5892.64	4488.87	-102.34	-4488.47	0.28
10616.00	89.70	268.55	5892.78	4582.85	-104.54	-4582.44	0.52
10707.00	89.60	269.40	5893.34	4673.84	-106.17	-4673.42	0.94
10798.00	90.00	269.46	5893.65	4764.83	-107.08	-4764.42	0.45
10889.00	90.00	269.79	5893.65	4855.83	-107.68	-4855.42	0.37
10979.00	90.37	270.34	5893.36	4945.83	-107.57	-4945.41	0.74
11070.00	90.94	270.13	5892.33	5036.82	-107.20	-5036.41	0.67
11162.00	91.34	269.81	5890.50	5128.80	-107.24	-5128.39	0.56
11252.00	91.64	269.51	5888.15	5218.77	-107.77	-5218.36	0.47
11343.00	90.20	269.96	5886.69	5309.76	-108.19	-5309.34	1.66
11434.00	90.54	269.20	5886.10	5400.76	-108.86	-5400.34	0.91
11525.00	89.63	270.29	5885.97	5491.75	-109.27	-5491.33	1.55
11616.00	90.13	269.83	5886.15	5582.75	-109.17	-5582.33	0.75
11706.00	88.36	269.55	5887.34	5672.74	-109.66	-5672.32	2.00
11798.00	89.16	268.76	5889.33	5764.71	-111.01	-5764.29	1.22
11888.00	88.66	267.61	5891.04	5854.66	-113.87	-5854.22	1.40

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS %/100ft
11979.00	89.43	269.39	5892.56	5945.62	-116.25	-5945.17	2.14
12069.00	89.56	269.04	5893.35	6035.61	-117.48	-6035.16	0.42
12160.00	89.16	269.10	5894.36	6126.60	-118.96	-6126.14	0.45
12251.00	88.96	269.23	5895.85	6217.58	-120.28	-6217.12	0.26
12341.00	88.73	268.64	5897.67	6307.56	-121.95	-6307.09	0.71
12432.00	88.49	268.76	5899.88	6398.51	-124.02	-6398.04	0.29
12523.00	88.16	268.85	5902.54	6489.46	-125.92	-6488.98	0.38
12614.00	89.63	270.76	5904.30	6580.44	-126.23	-6579.95	2.65
12705.00	89.70	271.64	5904.83	6671.41	-124.33	-6670.93	0.97
12797.00	89.40	270.93	5905.56	6763.37	-122.27	-6762.91	0.83
12887.00	88.89	270.43	5906.90	6853.35	-121.20	-6852.89	0.79
12981.00	90.91	270.87	5907.06	6947.33	-120.14	-6946.88	2.19
13074.00	91.54	271.14	5905.08	7040.29	-118.51	-7039.84	0.74
13168.00	92.65	271.63	5901.64	7134.18	-116.24	-7133.75	1.29
13262.00	90.23	270.86	5899.27	7228.11	-114.19	-7227.69	2.70
13357.00	88.89	269.44	5899.99	7323.11	-113.94	-7322.68	2.06
13451.00	89.03	270.55	5901.70	7417.09	-113.95	-7416.67	1.19
13545.00	88.29	269.79	5903.90	7511.06	-113.67	-7510.64	1.12
13639.00	88.52	269.74	5906.51	7605.02	-114.05	-7604.60	0.25
13733.00	89.50	270.05	5908.13	7699.01	-114.22	-7698.59	1.08

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
13827.00	89.60	270.59	5908.88	7793.00	-113.70	-7792.58	0.59
13920.00	90.03	270.95	5909.18	7885.98	-112.45	-7885.57	0.60
14013.00	89.73	270.75	5909.37	7978.97	-111.06	-7978.56	0.38
14105.00	89.87	270.33	5909.69	8070.96	-110.19	-8070.56	0.48
14199.00	89.63	269.90	5910.10	8164.95	-109.99	-8164.55	0.52
14291.00	89.93	270.05	5910.45	8256.95	-110.04	-8256.55	0.36
14384.00	89.46	269.64	5910.94	8349.95	-110.29	-8349.55	0.67
14477.00	89.09	269.81	5912.11	8442.94	-110.73	-8442.54	0.44
14570.00	89.20	270.06	5913.50	8535.93	-110.84	-8535.53	0.29
14663.00	89.40	270.24	5914.64	8628.92	-110.60	-8628.52	0.29
14755.00	89.56	271.04	5915.47	8720.91	-109.58	-8720.51	0.90
14847.00	89.90	268.83	5915.90	8812.90	-109.68	-8812.51	2.44
14940.00	90.54	268.82	5915.55	8905.89	-111.59	-8905.49	0.68
15033.00	91.24	269.13	5914.11	8998.86	-113.25	-8998.46	0.82
15126.00	89.26	270.44	5913.70	9091.86	-113.60	-9091.45	2.55
15219.00	90.10	270.73	5914.22	9184.84	-112.65	-9184.44	0.95
15311.00	88.96	269.81	5914.97	9276.84	-112.22	-9276.44	1.59
15405.00	89.23	269.75	5916.46	9370.82	-112.58	-9370.43	0.29
15497.00	89.83	270.59	5917.21	9462.82	-112.30	-9462.42	1.13
15590.00	89.13	269.72	5918.06	9555.81	-112.05	-9555.42	1.21

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
15683.00	89.73	270.07	5918.98	9648.80	-112.22	-9648.41	0.76
15777.00	88.22	268.70	5920.66	9742.78	-113.23	-9742.38	2.17
15842.00	88.46	269.10	5922.54	9807.75	-114.48	-9807.35	0.72

2" = 100' TVD