



EOW REPORT

Wool Head 20 State Com #511H

Lea County, New Mexico

11/10/2019 - 12/22/2019

API:30-025-46491





Plan Vs. Actual





Advance Energy Partners
Project: Lea County, NM (NAD 83 NME)
Site: (Wool Head)Sec20_T-21-S_R-33-E
Well: Wool Head 20 State Com #511H
Wellbore: OWB
Design: AWB
Lat: 32° 27' 29.102 N
Long: 103° 35' 20.448 W
Pad GL: 3728.0
KB: KB @ 3754.5usft (H&P 466)



WELL DETAILS: Wool Head 20 State Com #511H

+N/-S	+E/-W	Northing	3728.0 Easting	Latitude	Longitude
0.0	0.0	531182.20	770916.10	32° 27' 29.102 N	103° 35' 20.448 W

SECTION DETAILS

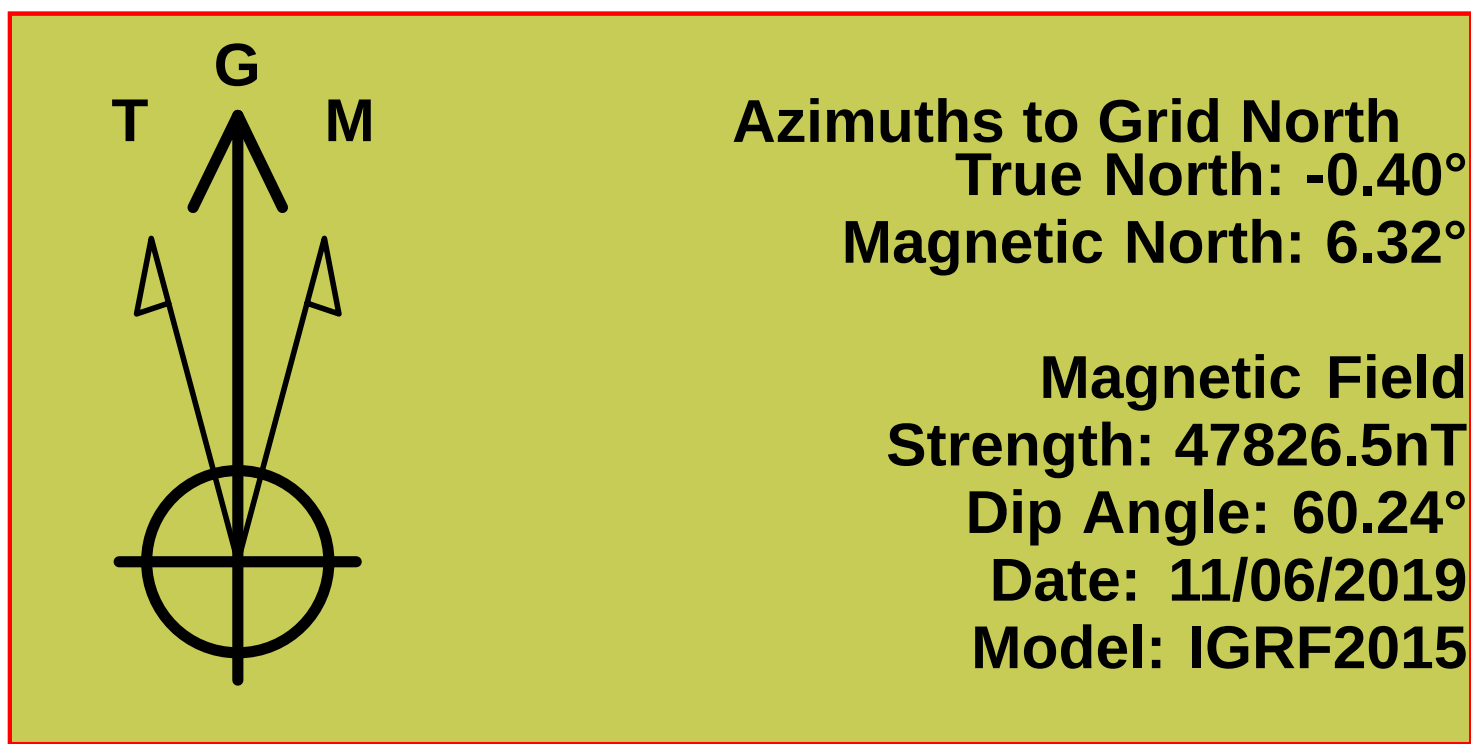
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Annotation
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
5400.0	0.00	0.00	5400.0	0.0	0.0	0.00	0.00	0.0	NUDGE- Build 1.00
5899.9	5.00	186.16	5899.3	-21.7	-2.3	1.00	186.16	-21.6	HOLD- 2385.6 at 5899.9 MD
8285.5	5.00	186.16	8275.7	-228.3	-24.7	0.00	0.00	-228.0	DROP- -1.00
8785.3	0.00	0.00	8775.0	-250.0	-27.0	1.00	180.00	-249.6	HOLD- 1762.6 at 8785.3 MD
10547.9	0.00	0.00	10537.6	-250.0	-27.0	0.00	0.00	-249.6	KOP- DLS 12.00 TFO 359.22
11302.2	90.52	359.22	11015.0	231.7	-33.6	12.00	359.22	232.2	EOC- 2516.3 hold at 11302.2 MD
13818.6	90.52	359.22	10992.4	2747.7	-67.8	0.00	0.00	2748.4	Start DLS 2.00 TFO -0.01
13861.8	91.38	359.22	10991.7	2791.0	-68.4	2.00	-0.01	2791.6	Start 4678.7 hold at 13861.8 MD
18540.6	91.38	359.22	10878.9	7467.9	-132.0	0.00	0.00	7469.0	TD at 18540.6

DESIGN TARGET DETAILS

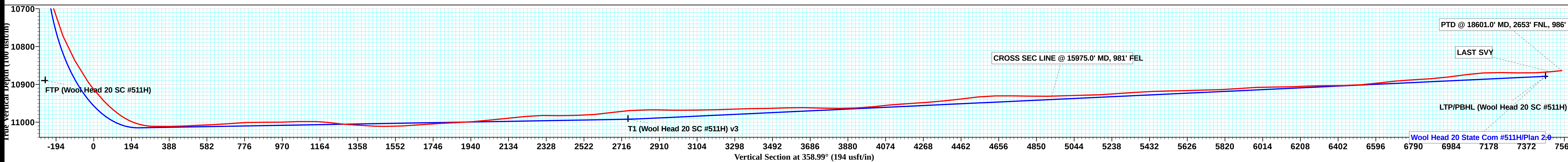
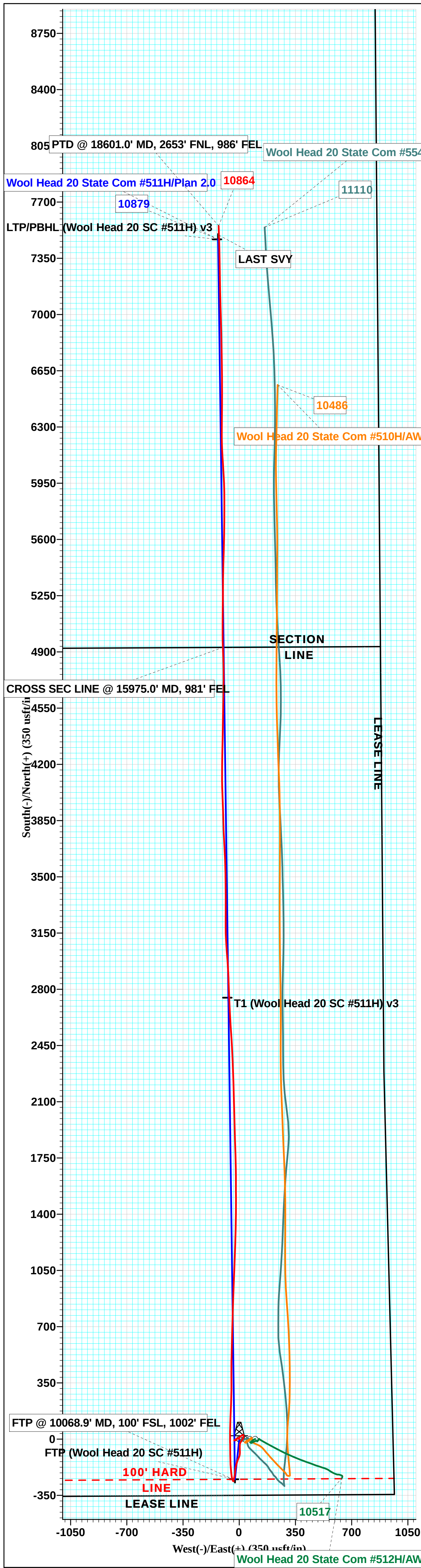
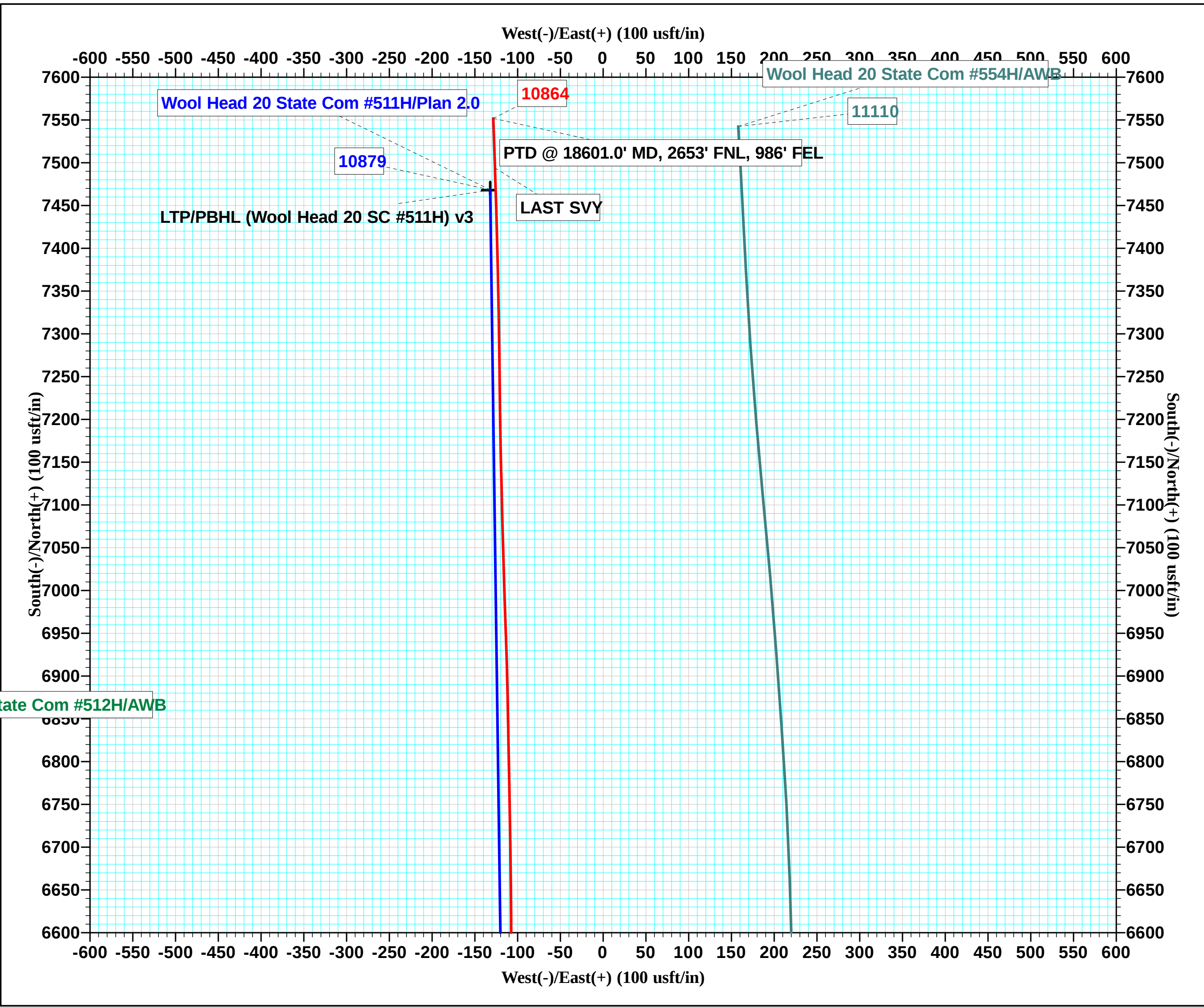
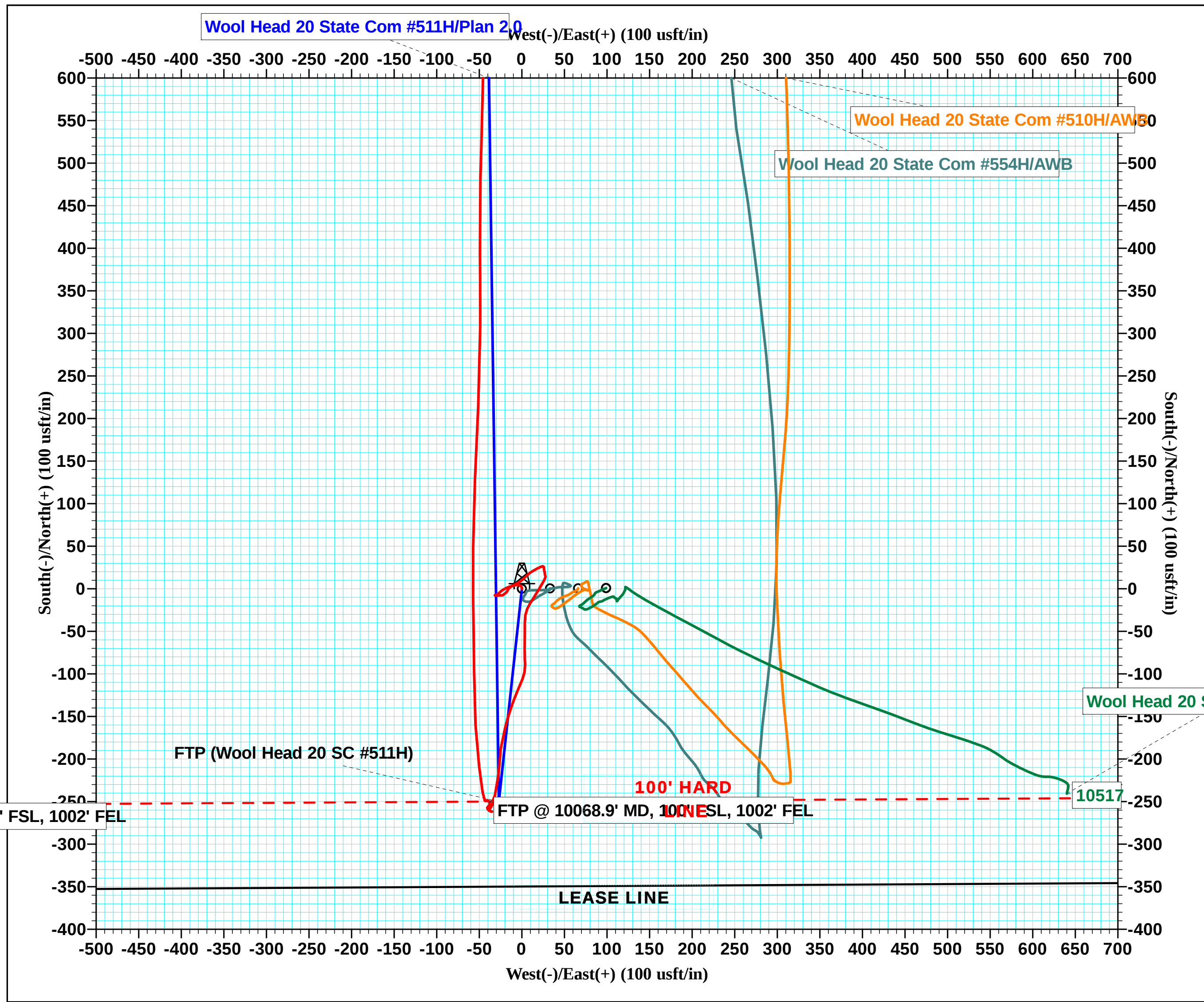
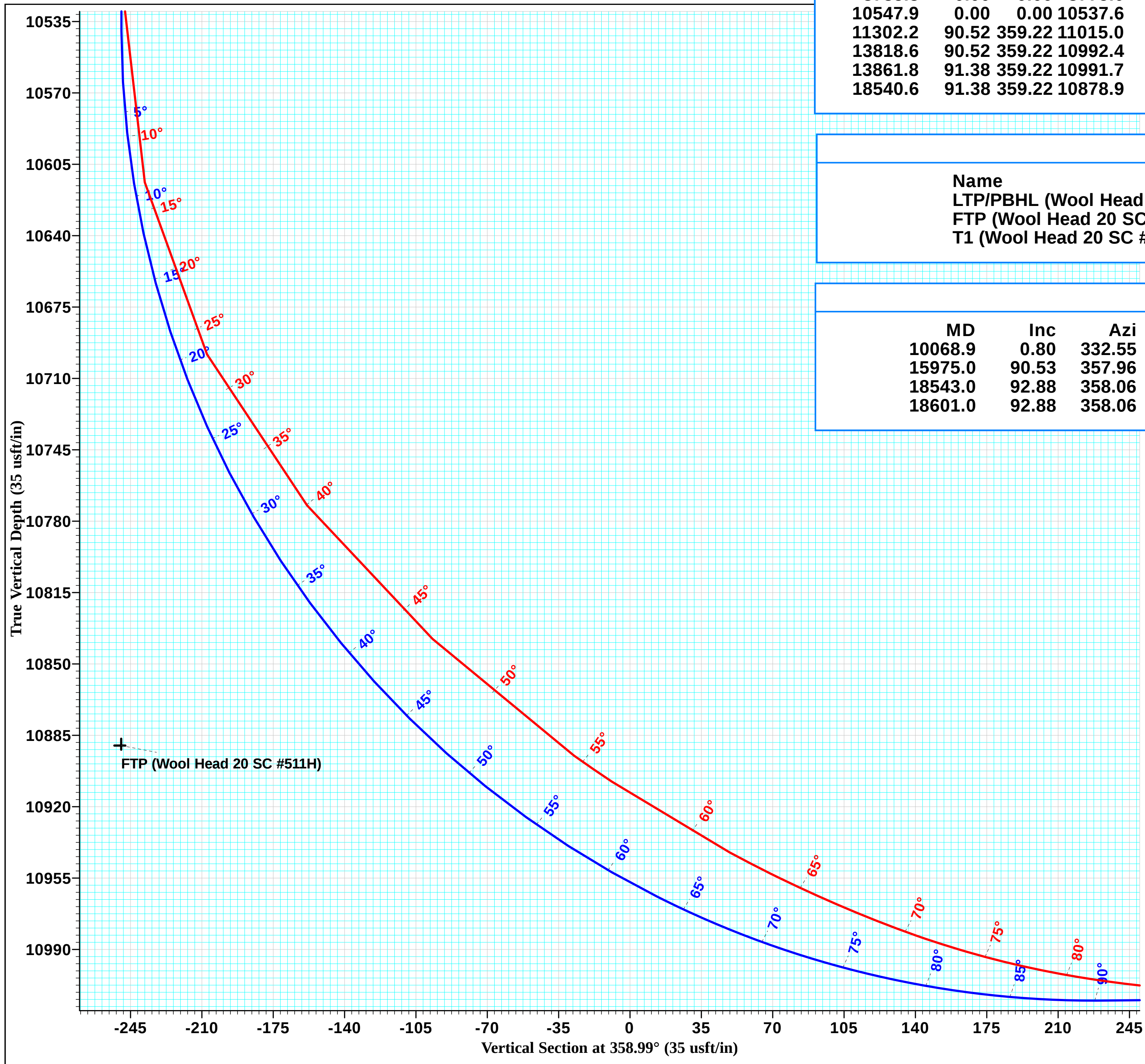
Name	TVD	+N/-S	+E/-W	Northing	Easting
LTP/PBHL (Wool Head 20 SC #511H) v3	10878.9	7467.9	-132.0	538650.10	770784.10
FTP (Wool Head 20 SC #511H)	10890.0	-250.1	-26.8	530932.10	770889.30
T1 (Wool Head 20 SC #511H) v3	10992.4	2747.7	-67.8	533929.90	770848.32

ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSec	Departure	Annotation
10068.9	0.80	332.55	10054.6	-250.2	-38.6	-249.5	430.8	FTP @ 10068.9' MD, 100' FSL, 1002' FEL
15975.0	90.53	357.96	10931.4	4928.0	-102.2	4929.1	5618.7	CROSS SEC LINE @ 15975.0' MD, 981' FEL
18543.0	92.88	358.06	10866.7	7494.0	-126.5	7495.0	8185.4	LAST SVY
18601.0	92.88	358.06	10863.7	7551.9	-128.4	7552.9	8243.3	PTD @ 18601.0' MD, 2653' FNL, 986' FEL



To convert a Magnetic Direction to a Grid Direction, Add 6.32°





Advance Energy Partners

**Lea County, NM (NAD 83 NME)
(Wool Head)Sec20_T-21-S_R-33-E
Wool Head 20 State Com #511H
OWB**

Design: AWB

Distance to Plan

02 January, 2020



Company:	Advance Energy Partners	Local Co-ordinate Reference:	Well Wool Head 20 State Com #511H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3754.5usft (H&P 466)
Site:	(Wool Head)Sec20_T-21-S_R-33-E	MD Reference:	KB @ 3754.5usft (H&P 466)
Well:	Wool Head 20 State Com #511H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 10_13

Project	Lea County, NM (NAD 83 NME)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	(Wool Head)Sec20_T-21-S_R-33-E		
Site Position:		Northing:	531,182.60 usft
From:	Map	Easting:	770,949.20 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 27' 29.104 N
		Longitude:	103° 35' 20.061 W
		Grid Convergence:	0.40 °

Well	Wool Head 20 State Com #511H		
Well Position	+N/-S	0.0 usft	Northing:
	+E/-W	0.0 usft	Easting:
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft
		Latitude:	32° 27' 29.102 N
		Longitude:	103° 35' 20.448 W
		Ground Level:	3,728.0 usft

Wellbore	OWB		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF2015	11/06/2019	6.72
			Dip Angle (°)
			60.24
			Field Strength (nT)
			47,826.50508107

Design	AWB		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)
	0.0	0.0	0.0
			Direction (°)
			358.99

Survey Program	Date 01/02/2020		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name
238.0	18,601.0	Intrepid MWD (OWB)	MWD
			Description
			OWSG MWD - Standard

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Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 10_13

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	Depth on Plan (usft)	Distance to Plan (usft)	High to Plan (usft)	Right to Plan (usft)	Toolface to Plan (°)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.00	
238.0	0.44	9.22	238.0	0.9	238.0	0.9	-0.9	0.0	180.00	
329.0	0.44	319.65	329.0	1.5	329.0	1.5	-1.2	-1.0	-140.55	
424.0	0.35	309.72	424.0	2.0	424.0	2.0	-1.6	-1.2	-143.46	
519.0	0.57	349.27	519.0	2.6	519.0	2.7	-2.7	0.3	173.90	
710.0	0.62	291.70	710.0	4.0	710.0	4.4	-3.3	-2.9	-137.80	
804.0	0.92	275.79	804.0	4.3	804.0	5.3	-3.6	-3.9	-132.66	
899.0	0.92	284.85	899.0	4.6	899.0	6.5	-5.6	-3.1	-150.93	
1,084.0	1.41	255.49	1,083.9	4.4	1,083.9	9.3	-6.9	-6.2	-138.13	
1,263.0	1.54	253.38	1,262.9	3.3	1,262.9	13.1	-11.3	-6.6	-149.90	
1,352.0	1.98	249.78	1,351.8	2.4	1,351.8	15.5	-13.6	-7.3	-151.68	
1,442.0	2.68	243.89	1,441.7	1.0	1,441.7	18.7	-16.4	-8.9	-151.68	
1,531.0	2.37	239.14	1,530.7	-0.8	1,530.7	22.1	-19.6	-10.4	-152.09	
1,620.0	2.02	225.78	1,619.6	-2.7	1,619.6	25.0	-20.0	-15.0	-143.08	
1,710.0	1.76	230.35	1,709.5	-4.7	1,709.5	27.5	-24.1	-13.3	-151.18	
1,770.0	1.80	239.85	1,769.5	-5.7	1,769.5	29.2	-27.8	-8.9	-162.16	
1,892.0	1.14	259.27	1,891.5	-6.9	1,891.5	32.3	-32.2	1.4	177.42	
1,982.0	0.70	110.47	1,981.5	-7.2	1,981.5	32.7	27.0	-18.4	-34.24	
2,071.0	2.33	88.23	2,070.4	-7.4	2,070.4	30.5	29.7	-7.0	-13.29	
2,161.0	2.51	90.70	2,160.4	-7.4	2,160.4	26.8	25.5	-8.2	-17.81	
2,250.0	1.36	73.29	2,249.3	-7.2	2,249.3	23.9	23.9	-0.8	-1.83	
2,340.0	0.79	36.03	2,339.3	-6.4	2,339.3	22.3	18.0	13.2	36.27	
2,430.0	0.88	51.67	2,429.3	-5.5	2,429.3	21.2	19.6	8.0	22.28	
2,520.0	1.05	52.99	2,519.3	-4.6	2,519.3	19.8	18.3	7.6	22.57	
2,609.0	0.84	43.23	2,608.3	-3.7	2,608.3	18.5	15.3	10.5	34.38	
2,699.0	0.92	29.26	2,698.2	-2.6	2,698.2	17.5	10.9	13.7	51.34	
2,789.0	0.97	26.71	2,788.2	-1.3	2,788.2	16.7	8.8	14.1	57.95	

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Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 10_13

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	Depth on Plan (usft)	Distance to Plan (usft)	High to Plan (usft)	Right to Plan (usft)	Toolface to Plan (°)	
2,878.0	0.84	28.56	2,877.2	0.0	2,877.2	15.9	7.9	13.8	60.34	
3,058.0	1.27	56.59	3,057.2	2.2	3,057.2	13.8	10.3	9.1	41.56	
3,148.0	1.54	60.55	3,147.2	3.3	3,147.2	12.2	8.7	8.5	44.22	
3,237.0	1.67	59.14	3,236.1	4.5	3,236.1	10.5	6.0	8.7	55.25	
3,327.0	1.71	63.54	3,326.1	5.7	3,326.1	9.2	4.0	8.3	64.18	
3,417.0	1.71	63.80	3,416.1	6.9	3,416.1	8.4	1.4	8.3	80.69	
3,506.0	1.54	54.13	3,505.0	8.1	3,505.0	8.5	-2.6	8.1	107.42	
3,596.0	1.54	50.88	3,595.0	9.6	3,595.0	9.6	-5.4	7.9	124.43	
3,686.0	1.54	48.16	3,685.0	11.1	3,685.0	11.2	-8.2	7.6	137.25	
3,776.0	1.36	45.96	3,774.9	12.6	3,774.9	13.0	-10.8	7.2	146.15	
3,865.0	1.41	50.44	3,863.9	14.0	3,863.9	14.8	-12.3	8.1	146.60	
3,955.0	1.41	48.68	3,953.9	15.4	3,953.9	16.7	-14.8	7.7	152.45	
4,045.0	1.49	45.70	4,043.8	17.0	4,043.8	18.8	-17.4	6.9	158.48	
4,135.0	1.58	51.32	4,133.8	18.5	4,133.8	21.0	-19.1	8.7	155.58	
4,224.0	1.67	61.43	4,222.8	19.9	4,222.8	23.2	-19.8	12.1	148.54	
4,314.0	1.76	57.21	4,312.7	21.2	4,312.7	25.6	-23.3	10.5	155.71	
4,404.0	1.71	62.39	4,402.7	22.5	4,402.7	28.0	-25.0	12.7	153.04	
4,493.0	2.02	63.01	4,491.6	23.8	4,491.6	30.6	-27.7	13.0	154.90	
4,583.0	2.33	66.26	4,581.6	25.2	4,581.6	33.7	-30.4	14.6	154.27	
4,673.0	1.19	84.37	4,671.5	26.0	4,671.5	36.1	-27.0	23.9	138.46	
4,762.0	0.79	157.58	4,760.5	25.5	4,760.5	36.5	14.2	33.6	67.10	
4,852.0	1.14	184.03	4,850.5	24.0	4,850.5	35.6	26.3	24.1	42.51	
4,942.0	1.19	165.93	4,940.5	22.2	4,940.5	34.5	15.7	30.8	62.96	
5,031.0	1.36	168.04	5,029.5	20.3	5,029.5	33.6	14.8	30.2	63.83	
5,198.0	1.45	172.08	5,196.4	16.3	5,196.4	31.9	12.8	29.2	66.28	
5,303.0	1.36	161.62	5,301.4	13.7	5,301.4	31.2	4.8	30.8	81.20	
5,392.0	3.60	210.40	5,390.3	10.4	5,390.3	28.8	22.8	17.5	37.54	

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5,482.0	5.41	209.79	5,480.0	4.3	5,479.9	23.8	16.0	17.5	47.53	
5,572.0	5.45	212.51	5,569.6	-2.9	5,569.6	19.0	10.1	16.1	57.84	
5,661.0	5.36	210.67	5,658.2	-10.0	5,658.4	15.4	4.2	14.9	74.15	
5,751.0	4.92	212.78	5,747.9	-16.8	5,748.4	12.8	1.0	12.7	85.69	
5,840.0	5.10	204.95	5,836.5	-23.5	5,837.4	10.6	-2.7	10.2	105.01	
5,930.0	5.58	187.55	5,926.1	-31.4	5,927.5	9.9	-6.4	7.6	130.03	
6,020.0	6.33	180.70	6,015.7	-40.7	6,017.4	11.2	-8.7	7.0	141.28	
6,110.0	6.07	180.34	6,105.1	-50.4	6,107.4	13.2	-10.7	7.7	144.24	
6,199.0	6.07	179.11	6,193.6	-59.8	6,196.4	15.1	-12.6	8.3	146.50	
6,289.0	6.24	181.75	6,283.1	-69.5	6,286.4	17.1	-14.0	9.7	145.27	
6,378.0	6.37	178.06	6,371.6	-79.2	6,375.3	19.3	-16.7	9.6	150.17	
6,468.0	6.11	177.62	6,461.0	-89.0	6,465.3	21.6	-18.8	10.6	150.66	
6,558.0	5.54	190.01	6,550.6	-98.1	6,555.3	22.8	-17.3	14.9	139.39	
6,648.0	5.67	203.28	6,640.2	-106.4	6,645.3	22.5	-14.7	17.1	130.58	
6,737.0	5.41	203.20	6,728.7	-114.2	6,734.2	21.7	-15.9	14.8	136.95	
6,827.0	5.41	202.14	6,818.3	-122.0	6,824.2	21.0	-17.1	12.3	144.27	
6,917.0	5.36	201.17	6,907.9	-129.8	6,914.2	20.7	-18.2	9.9	151.41	
7,007.0	5.27	198.62	6,997.6	-137.6	7,004.2	20.6	-19.3	7.2	159.49	
7,096.0	5.23	198.27	7,086.2	-145.2	7,093.1	20.6	-19.9	5.4	164.69	
7,186.0	5.05	196.16	7,175.8	-152.9	7,183.1	20.6	-20.4	3.2	171.10	
7,276.0	4.88	194.32	7,265.5	-160.4	7,273.1	20.5	-20.5	1.3	176.38	
7,366.0	4.84	191.86	7,355.2	-167.8	7,363.1	20.4	-20.3	-0.5	-178.53	
7,455.0	4.66	191.33	7,443.9	-175.0	7,452.1	20.0	-20.0	-1.4	-175.87	
7,545.0	4.53	192.12	7,533.6	-182.0	7,542.1	19.5	-19.4	-1.9	-174.32	
7,634.0	4.31	188.87	7,622.3	-188.7	7,631.1	18.7	-18.4	-3.6	-168.94	
7,724.0	4.00	182.80	7,712.1	-195.2	7,721.1	17.4	-16.6	-5.4	-161.93	
7,814.0	4.13	183.60	7,801.8	-201.5	7,811.1	15.9	-15.2	-4.8	-162.52	

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7,904.0	4.22	186.06	7,891.6	-208.1	7,901.1	14.6	-14.1	-4.0	-164.24	
7,993.0	4.40	187.81	7,980.3	-214.7	7,990.1	13.6	-13.1	-3.7	-164.39	
8,083.0	4.13	187.20	8,070.1	-221.3	8,080.1	12.6	-11.9	-4.0	-161.54	
8,172.0	4.18	190.19	8,158.9	-227.6	8,169.0	11.4	-10.8	-3.7	-160.96	
8,262.0	3.82	189.22	8,248.6	-233.8	8,259.0	10.2	-9.2	-4.4	-154.49	
8,352.0	3.74	189.92	8,338.4	-239.7	8,348.9	9.0	-7.7	-4.7	-148.45	
8,442.0	3.74	203.55	8,428.3	-245.2	8,438.8	9.4	-8.5	-3.9	-155.26	
8,531.0	3.38	187.02	8,517.1	-250.4	8,527.7	10.5	-7.8	-7.1	-137.66	
8,621.0	1.93	209.35	8,607.0	-254.4	8,617.6	11.5	-10.8	-3.9	-160.09	
8,710.0	1.49	213.13	8,696.0	-256.6	8,706.4	12.6	-12.0	-4.0	-161.70	
8,800.0	1.76	214.01	8,785.9	-258.7	8,796.3	14.7	-14.1	-4.0	-164.12	
8,890.0	0.66	104.67	8,875.9	-260.0	8,886.2	15.7	8.4	-13.3	-57.71	
8,979.0	1.32	108.80	8,964.9	-260.5	8,975.2	15.0	5.9	-13.8	-66.96	
9,069.0	0.53	129.28	9,054.9	-261.1	9,065.2	14.6	-0.7	-14.6	-92.80	
9,159.0	0.31	47.19	9,144.9	-261.2	9,155.2	14.4	14.1	-3.1	-12.54	
9,248.0	0.18	333.62	9,233.9	-260.9	9,244.2	14.1	6.8	12.4	61.31	
9,338.0	0.70	271.93	9,323.9	-260.8	9,334.2	14.4	-8.3	11.7	125.33	
9,428.0	0.88	286.43	9,413.9	-260.5	9,424.2	15.0	-6.3	13.6	115.02	
9,518.0	1.23	300.84	9,503.8	-259.8	9,514.2	15.5	-4.4	14.9	106.44	
9,608.0	1.71	317.89	9,593.8	-258.3	9,604.2	16.0	-2.1	15.8	97.56	
9,697.0	1.32	19.68	9,682.8	-256.3	9,693.1	15.4	11.3	10.5	42.93	
9,788.0	2.15	51.58	9,773.7	-254.3	9,784.1	13.0	12.5	3.5	15.61	
9,877.0	1.10	4.56	9,862.7	-252.5	9,873.1	11.1	4.0	10.3	68.88	
9,967.0	0.97	334.50	9,952.7	-250.9	9,963.0	11.0	-3.2	10.5	107.09	
10,057.0	0.79	333.19	10,042.7	-249.6	10,053.0	11.5	-4.9	10.4	114.98	
10,068.9	0.80	332.55	10,054.6	-249.5	10,064.9	11.6	-5.1	10.4	116.35	
FTP @ 10068.9' MD, 100' FSL, 1002' FEL										

Company:	Advance Energy Partners	Local Co-ordinate Reference:	Well Wool Head 20 State Com #511H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3754.5usft (H&P 466)
Site:	(Wool Head)Sec20_T-21-S_R-33-E	MD Reference:	KB @ 3754.5usft (H&P 466)
Well:	Wool Head 20 State Com #511H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 10_13

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	Depth on Plan (usft)	Distance to Plan (usft)	High to Plan (usft)	Right to Plan (usft)	Toolface to Plan (°)	
10,147.0	0.84	328.61	10,132.7	-248.5	10,143.0	12.1	-6.9	9.9	124.93	
10,236.0	0.79	290.38	10,221.7	-247.7	10,232.0	13.1	-12.7	3.1	166.28	
10,326.0	0.66	241.52	10,311.7	-247.7	10,322.0	14.1	-11.6	-8.0	-145.47	
10,416.0	0.53	215.06	10,401.7	-248.3	10,412.0	14.8	-7.7	-12.6	-121.56	
10,484.0	0.70	279.40	10,469.7	-248.5	10,480.0	15.4	-15.3	1.8	173.25	
10,539.0	1.71	281.07	10,524.6	-248.3	10,535.0	16.5	-16.4	2.3	172.14	
10,629.0	12.88	352.26	10,613.8	-238.0	10,625.4	19.7	-7.4	18.3	112.14	
10,719.0	27.16	352.43	10,698.2	-207.5	10,716.6	26.3	-15.6	21.2	126.35	
10,808.0	40.04	357.00	10,772.2	-158.5	10,808.4	36.4	-26.0	25.5	135.50	
10,898.0	46.42	359.82	10,837.7	-96.9	10,904.0	44.3	-34.9	27.3	141.99	
10,988.0	54.59	358.76	10,894.9	-27.5	11,001.5	46.7	-38.3	26.8	145.06	
11,078.0	61.67	0.69	10,942.4	48.9	11,099.0	43.5	-34.4	26.6	142.28	
11,167.0	69.32	2.36	10,979.3	129.7	11,193.4	33.9	-24.5	23.4	136.30	
11,257.0	80.26	2.72	11,002.9	216.3	11,285.9	21.6	-11.8	18.0	123.28	
11,347.0	89.27	0.26	11,011.1	305.7	11,375.7	14.7	-3.3	14.4	102.96	
11,436.0	90.46	359.29	11,011.3	394.7	11,464.7	13.7	-2.3	13.5	99.66	
11,526.0	91.43	1.49	11,009.8	484.7	11,554.6	12.0	-3.0	11.7	104.36	
11,557.0	92.00	1.75	11,008.9	515.6	11,585.6	11.0	-3.6	10.4	109.35	
11,647.0	90.59	1.13	11,006.8	605.5	11,675.5	8.4	-4.9	6.9	125.18	
11,737.0	92.79	1.84	11,004.2	695.4	11,765.4	7.5	-6.7	3.3	153.59	
11,827.0	91.30	1.49	11,001.0	785.2	11,855.3	9.1	-9.1	-0.5	-176.80	
11,916.0	89.49	2.19	11,000.4	874.1	11,944.2	10.0	-8.9	-4.6	-152.84	
12,006.0	90.73	2.19	11,000.2	964.0	12,034.1	12.4	-8.3	-9.2	-131.86	
12,096.0	91.30	2.10	10,998.6	1,053.8	12,124.0	16.5	-9.1	-13.8	-123.21	
12,185.0	88.70	1.75	10,998.6	1,142.7	12,212.9	19.8	-8.3	-18.0	-114.67	
12,275.0	86.37	1.84	11,002.5	1,232.5	12,302.6	22.4	-3.6	-22.1	-99.36	
12,365.0	88.04	2.01	11,006.9	1,322.3	12,392.4	26.4	1.6	-26.3	-86.57	

Company:	Advance Energy Partners	Local Co-ordinate Reference:	Well Wool Head 20 State Com #511H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3754.5usft (H&P 466)
Site:	(Wool Head)Sec20_T-21-S_R-33-E	MD Reference:	KB @ 3754.5usft (H&P 466)
Well:	Wool Head 20 State Com #511H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 10_13

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	Depth on Plan (usft)	Distance to Plan (usft)	High to Plan (usft)	Right to Plan (usft)	Toolface to Plan (°)	
12,454.0	88.22	0.34	11,009.8	1,411.2	12,481.2	29.8	5.3	-29.3	-79.76	
12,544.0	90.02	359.46	11,011.1	1,501.1	12,571.2	31.3	7.5	-30.4	-76.12	
12,634.0	91.43	0.08	11,010.0	1,591.1	12,661.2	32.1	7.2	-31.3	-77.04	
12,724.0	92.53	358.94	11,006.9	1,681.0	12,751.2	32.1	4.9	-31.7	-81.26	
12,813.0	91.43	358.23	11,003.8	1,770.0	12,840.1	30.8	2.6	-30.7	-85.17	
12,903.0	91.56	358.59	11,001.5	1,860.0	12,930.1	29.5	1.1	-29.5	-87.93	
12,993.0	91.91	357.79	10,998.7	1,949.9	13,020.1	27.9	-0.9	-27.8	-91.78	
13,083.0	93.58	359.29	10,994.4	2,039.8	13,110.0	27.1	-4.3	-26.8	-99.20	
13,172.0	92.31	357.79	10,989.9	2,128.7	13,198.9	27.0	-8.1	-25.7	-107.57	
13,261.0	93.80	358.67	10,985.1	2,217.5	13,287.8	27.0	-12.1	-24.2	-116.50	
13,351.0	89.58	357.79	10,982.5	2,307.5	13,377.7	26.6	-13.9	-22.6	-121.57	
13,441.0	89.98	357.18	10,982.8	2,397.4	13,467.7	23.6	-12.8	-19.9	-122.67	
13,530.0	90.86	356.21	10,982.2	2,486.4	13,556.6	20.4	-12.6	-16.0	-128.34	
13,620.0	92.18	356.30	10,979.8	2,576.2	13,646.5	18.1	-14.2	-11.3	-141.47	
13,709.0	94.59	357.27	10,974.5	2,665.0	13,735.3	20.1	-18.6	-7.5	-157.95	
13,799.0	91.82	357.71	10,969.5	2,754.8	13,825.2	23.4	-22.9	-4.8	-168.07	
13,889.0	90.55	358.15	10,967.6	2,844.8	13,915.4	22.9	-22.8	-2.8	-173.00	
13,979.0	89.10	356.65	10,967.9	2,934.7	14,005.4	20.3	-20.3	0.1	179.80	
14,068.0	90.20	355.25	10,968.4	3,023.6	14,094.2	18.4	-17.6	5.1	163.74	
14,158.0	90.46	357.00	10,967.9	3,113.5	14,184.0	18.9	-16.0	10.0	148.00	
14,249.0	90.51	0.52	10,967.2	3,204.5	14,275.0	18.1	-14.6	10.7	143.70	
14,339.0	91.52	359.82	10,965.6	3,294.4	14,365.0	16.8	-14.0	9.2	146.63	
14,428.0	90.20	359.99	10,964.2	3,383.4	14,454.0	15.5	-13.2	8.2	148.26	
14,518.0	90.42	359.38	10,963.7	3,473.4	14,543.9	13.7	-11.5	7.4	147.14	
14,608.0	91.47	358.32	10,962.2	3,563.4	14,633.9	13.5	-10.8	8.0	143.46	
14,697.0	89.36	357.00	10,961.6	3,652.4	14,722.9	14.0	-9.3	10.4	131.76	
14,787.0	89.05	356.92	10,962.9	3,742.3	14,812.8	15.2	-5.9	14.0	112.92	

Company:	Advance Energy Partners	Local Co-ordinate Reference:	Well Wool Head 20 State Com #511H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3754.5usft (H&P 466)
Site:	(Wool Head)Sec20_T-21-S_R-33-E	MD Reference:	KB @ 3754.5usft (H&P 466)
Well:	Wool Head 20 State Com #511H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 10_13

Survey									
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	Depth on Plan (usft)	Distance to Plan (usft)	High to Plan (usft)	Right to Plan (usft)	Toolface to Plan (°)
14,877.0	89.93	358.59	10,963.7	3,832.3	14,902.7	16.6	-2.9	16.3	100.23
14,966.0	91.30	358.32	10,962.7	3,921.2	14,991.7	17.6	-1.7	17.5	95.70
15,056.0	93.23	357.53	10,959.1	4,011.2	15,081.6	19.8	-3.1	19.5	99.04
15,146.0	92.84	359.11	10,954.4	4,101.0	15,171.6	21.7	-5.7	20.9	105.32
15,236.0	91.38	0.96	10,951.1	4,190.9	15,261.5	20.8	-6.9	19.6	109.35
15,325.0	92.66	1.05	10,947.9	4,279.8	15,350.5	18.6	-7.9	16.9	115.10
15,415.0	92.35	1.49	10,944.0	4,369.7	15,440.4	16.7	-9.7	13.6	125.31
15,505.0	93.98	0.61	10,939.0	4,459.5	15,530.3	16.5	-12.5	10.8	139.11
15,594.0	93.23	0.96	10,933.4	4,548.3	15,619.2	18.0	-15.9	8.4	152.30
15,684.0	90.46	1.22	10,930.5	4,638.1	15,709.2	17.5	-16.6	5.4	161.96
15,773.0	89.58	0.26	10,930.5	4,727.1	15,798.1	14.8	-14.5	3.1	168.07
15,863.0	89.45	358.85	10,931.3	4,817.1	15,888.0	11.9	-11.6	2.5	167.58
15,953.0	90.24	357.53	10,931.5	4,907.1	15,978.0	10.1	-9.2	4.2	155.54
15,975.0	90.53	357.96	10,931.4	4,929.1	16,000.0	10.0	-8.8	4.7	151.68
CROSS SEC LINE @ 15975.0' MD, 981' FEL									
16,043.0	91.43	359.29	10,930.2	4,997.0	16,068.0	9.9	-8.3	5.4	146.81
16,132.0	90.29	0.61	10,928.9	5,086.0	16,157.0	8.7	-7.5	4.3	150.18
16,222.0	91.38	1.05	10,927.5	5,176.0	16,246.9	6.9	-6.6	1.8	165.07
16,312.0	92.40	0.34	10,924.6	5,265.9	16,336.9	7.5	-7.4	-0.5	-175.85
16,402.0	91.65	0.43	10,921.4	5,355.8	16,426.9	8.8	-8.5	-2.4	-164.35
16,491.0	91.65	1.75	10,918.8	5,444.7	16,515.8	10.3	-8.9	-5.3	-149.28
16,581.0	90.11	1.66	10,917.5	5,534.6	16,605.7	12.2	-8.1	-9.2	-131.42
16,671.0	91.12	1.13	10,916.5	5,624.5	16,695.7	14.3	-6.9	-12.6	-118.67
16,761.0	90.59	0.43	10,915.1	5,714.4	16,785.6	16.2	-6.1	-15.0	-111.95
16,850.0	90.95	359.99	10,913.9	5,803.4	16,874.6	17.3	-5.1	-16.6	-107.14
16,940.0	92.75	359.29	10,911.0	5,893.4	16,964.6	18.2	-5.8	-17.2	-108.75
17,030.0	91.12	357.00	10,908.0	5,983.3	17,054.6	16.9	-6.7	-15.5	-113.45

Company:	Advance Energy Partners	Local Co-ordinate Reference:	Well Wool Head 20 State Com #511H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3754.5usft (H&P 466)
Site:	(Wool Head)Sec20_T-21-S_R-33-E	MD Reference:	KB @ 3754.5usft (H&P 466)
Well:	Wool Head 20 State Com #511H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 10_13

Survey									
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	Depth on Plan (usft)	Distance to Plan (usft)	High to Plan (usft)	Right to Plan (usft)	Toolface to Plan (°)
17,120.0	89.89	356.12	10,907.2	6,073.2	17,144.4	12.6	-5.4	-11.4	-115.24
17,209.0	91.08	357.27	10,906.5	6,162.1	17,233.3	8.4	-4.0	-7.4	-118.06
17,299.0	91.43	359.99	10,904.5	6,252.1	17,323.3	7.5	-3.8	-6.5	-119.98
17,389.0	89.93	0.78	10,903.4	6,342.0	17,413.3	8.8	-2.7	-8.3	-107.67
17,478.0	90.46	0.17	10,903.1	6,431.0	17,502.3	10.3	-0.8	-10.3	-94.52
17,568.0	92.18	0.08	10,901.0	6,521.0	17,592.2	11.7	-0.7	-11.7	-93.48
17,658.0	93.76	359.73	10,896.4	6,610.8	17,682.2	13.2	-3.2	-12.8	-104.07
17,748.0	92.79	359.03	10,891.2	6,700.7	17,772.2	14.4	-6.2	-13.0	-115.40
17,837.0	91.47	359.03	10,887.9	6,789.6	17,861.1	14.7	-7.4	-12.7	-120.00
17,927.0	92.09	358.76	10,885.1	6,879.6	17,951.1	14.6	-8.0	-12.2	-123.14
18,017.0	93.67	357.88	10,880.6	6,969.5	18,041.1	15.0	-10.3	-10.8	-133.74
18,106.0	94.20	358.50	10,874.5	7,058.2	18,130.0	17.0	-14.3	-9.2	-147.19
18,196.0	91.78	358.67	10,869.8	7,148.1	18,219.9	18.7	-16.8	-8.2	-153.98
18,286.0	89.41	359.46	10,868.9	7,238.1	18,309.9	17.5	-15.6	-8.0	-152.89
18,375.0	89.49	358.94	10,869.7	7,327.1	18,398.9	14.9	-12.6	-7.9	-147.74
18,465.0	91.03	358.50	10,869.3	7,417.1	18,488.9	13.0	-10.8	-7.2	-146.55
18,543.0	92.88	358.06	10,866.7	7,495.0	18,541.0	29.0	-25.0	-14.6	-149.68
LAST SVY									
18,601.0	92.88	358.06	10,863.7	7,552.9	18,541.0	85.0	-73.4	-42.9	-149.68
PTD @ 18601.0' MD, 2653' FNL, 986' FEL									

Company:	Advance Energy Partners	Local Co-ordinate Reference:	Well Wool Head 20 State Com #511H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3754.5usft (H&P 466)
Site:	(Wool Head)Sec20_T-21-S_R-33-E	MD Reference:	KB @ 3754.5usft (H&P 466)
Well:	Wool Head 20 State Com #511H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 10_13

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
10,068.9	10,054.6	-250.2	-38.6	FTP @ 10068.9' MD, 100' FSL, 1002' FEL
15,975.0	10,931.4	4,928.0	-102.2	CROSS SEC LINE @ 15975.0' MD, 981' FEL
18,543.0	10,866.7	7,494.0	-126.5	LAST SVY
18,601.0	10,863.7	7,551.9	-128.4	PTD @ 18601.0' MD, 2653' FNL, 986' FEL

Checked By: _____	Approved By: _____	Date: _____
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Advance Energy Partners

**Lea County, NM (NAD 83 NME)
(Wool Head)Sec20_T-21-S_R-33-E
Wool Head 20 State Com #511H**

OWB

Design: AWB

Standard Survey Report

02 January, 2020



Company:	Advance Energy Partners	Local Co-ordinate Reference:	Well Wool Head 20 State Com #511H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3754.5usft (H&P 466)
Site:	(Wool Head)Sec20_T-21-S_R-33-E	MD Reference:	KB @ 3754.5usft (H&P 466)
Well:	Wool Head 20 State Com #511H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 10_13

Project	Lea County, NM (NAD 83 NME)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	(Wool Head)Sec20_T-21-S_R-33-E		
Site Position:		Northing:	531,182.60 usft
From:	Map	Easting:	770,949.20 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 27' 29.104 N
		Longitude:	103° 35' 20.061 W
		Grid Convergence:	0.40 °

Well	Wool Head 20 State Com #511H		
Well Position	+N/-S	0.0 usft	Northing: 531,182.20 usft
	+E/-W	0.0 usft	Easting: 770,916.10 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft
		Latitude:	32° 27' 29.102 N
		Longitude:	103° 35' 20.448 W
		Ground Level:	3,728.0 usft

Wellbore	OWB		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF2015	11/06/2019	6.72
			Dip Angle (°) 60.24
			Field Strength (nT) 47,826.50508108

Design	AWB		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)
	0.0	0.0	0.0
			Direction (°) 358.99

Survey Program	Date	01/02/2020		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
238.0	18,601.0	Intrepid MWD (OWB)	MWD	OWSG MWD - Standard

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
238.0	0.44	9.22	238.0	0.9	0.1	0.9	0.18	0.18	0.00
329.0	0.44	319.65	329.0	1.5	0.0	1.5	0.41	0.00	-54.47
424.0	0.35	309.72	424.0	2.0	-0.5	2.0	0.12	-0.09	-10.45
519.0	0.57	349.27	519.0	2.6	-0.8	2.6	0.39	0.23	41.63
710.0	0.62	291.70	710.0	3.9	-1.9	4.0	0.30	0.03	-30.14
804.0	0.92	275.79	804.0	4.2	-3.2	4.3	0.39	0.32	-16.93
899.0	0.92	284.85	899.0	4.5	-4.7	4.6	0.15	0.00	9.54
1,084.0	1.41	255.49	1,083.9	4.3	-8.3	4.4	0.41	0.26	-15.87
1,263.0	1.54	253.38	1,262.9	3.0	-12.7	3.3	0.08	0.07	-1.18

Company:	Advance Energy Partners	Local Co-ordinate Reference:	Well Wool Head 20 State Com #511H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3754.5usft (H&P 466)
Site:	(Wool Head)Sec20_T-21-S_R-33-E	MD Reference:	KB @ 3754.5usft (H&P 466)
Well:	Wool Head 20 State Com #511H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 10_13

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,352.0	1.98	249.78	1,351.8	2.2	-15.3	2.4	0.51	0.49	-4.04
1,442.0	2.68	243.89	1,441.7	0.7	-18.7	1.0	0.82	0.78	-6.54
1,531.0	2.37	239.14	1,530.7	-1.1	-22.1	-0.8	0.42	-0.35	-5.34
1,620.0	2.02	225.78	1,619.6	-3.2	-24.8	-2.7	0.69	-0.39	-15.01
1,710.0	1.76	230.35	1,709.5	-5.2	-27.0	-4.7	0.33	-0.29	5.08
1,770.0	1.80	239.85	1,769.5	-6.2	-28.5	-5.7	0.50	0.07	15.83
1,892.0	1.14	259.27	1,891.5	-7.4	-31.4	-6.9	0.67	-0.54	15.92
1,982.0	0.70	110.47	1,981.5	-7.8	-31.8	-7.2	1.97	-0.49	-165.33
2,071.0	2.33	88.23	2,070.4	-7.9	-29.4	-7.4	1.91	1.83	-24.99
2,161.0	2.51	90.70	2,160.4	-7.9	-25.6	-7.4	0.23	0.20	2.74
2,250.0	1.36	73.29	2,249.3	-7.6	-22.7	-7.2	1.44	-1.29	-19.56
2,340.0	0.79	36.03	2,339.3	-6.8	-21.3	-6.4	0.97	-0.63	-41.40
2,430.0	0.88	51.67	2,429.3	-5.9	-20.4	-5.5	0.27	0.10	17.38
2,520.0	1.05	52.99	2,519.3	-4.9	-19.2	-4.6	0.19	0.19	1.47
2,609.0	0.84	43.23	2,608.3	-4.0	-18.1	-3.7	0.30	-0.24	-10.97
2,699.0	0.92	29.26	2,698.2	-2.9	-17.3	-2.6	0.25	0.09	-15.52
2,789.0	0.97	26.71	2,788.2	-1.6	-16.6	-1.3	0.07	0.06	-2.83
2,878.0	0.84	28.56	2,877.2	-0.3	-15.9	0.0	0.15	-0.15	2.08
3,058.0	1.27	56.59	3,057.2	2.0	-13.6	2.2	0.37	0.24	15.57
3,148.0	1.54	60.55	3,147.2	3.1	-11.8	3.3	0.32	0.30	4.40
3,237.0	1.67	59.14	3,236.1	4.3	-9.6	4.5	0.15	0.15	-1.58
3,327.0	1.71	63.54	3,326.1	5.6	-7.3	5.7	0.15	0.04	4.89
3,417.0	1.71	63.80	3,416.1	6.8	-4.9	6.9	0.01	0.00	0.29
3,506.0	1.54	54.13	3,505.0	8.1	-2.7	8.1	0.36	-0.19	-10.87
3,596.0	1.54	50.88	3,595.0	9.6	-0.8	9.6	0.10	0.00	-3.61
3,686.0	1.54	48.16	3,685.0	11.1	1.1	11.1	0.08	0.00	-3.02
3,776.0	1.36	45.96	3,774.9	12.7	2.7	12.6	0.21	-0.20	-2.44
3,865.0	1.41	50.44	3,863.9	14.1	4.3	14.0	0.13	0.06	5.03
3,955.0	1.41	48.68	3,953.9	15.6	6.0	15.4	0.05	0.00	-1.96
4,045.0	1.49	45.70	4,043.8	17.1	7.7	17.0	0.12	0.09	-3.31
4,135.0	1.58	51.32	4,133.8	18.7	9.5	18.5	0.19	0.10	6.24
4,224.0	1.67	61.43	4,222.8	20.1	11.6	19.9	0.34	0.10	11.36
4,314.0	1.76	57.21	4,312.7	21.5	13.9	21.2	0.17	0.10	-4.69
4,404.0	1.71	62.39	4,402.7	22.8	16.3	22.5	0.18	-0.06	5.76
4,493.0	2.02	63.01	4,491.6	24.2	18.8	23.8	0.35	0.35	0.70
4,583.0	2.33	66.26	4,581.6	25.6	21.9	25.2	0.37	0.34	3.61
4,673.0	1.19	84.37	4,671.5	26.4	24.5	26.0	1.39	-1.27	20.12
4,762.0	0.79	157.58	4,760.5	26.0	25.7	25.5	1.37	-0.45	82.26
4,852.0	1.14	184.03	4,850.5	24.5	25.8	24.0	0.62	0.39	29.39
4,942.0	1.19	165.93	4,940.5	22.7	26.0	22.2	0.41	0.06	-20.11
5,031.0	1.36	168.04	5,029.5	20.8	26.5	20.3	0.20	0.19	2.37
5,198.0	1.45	172.08	5,196.4	16.7	27.2	16.3	0.08	0.05	2.42
5,303.0	1.36	161.62	5,301.4	14.2	27.7	13.7	0.26	-0.09	-9.96
5,392.0	3.60	210.40	5,390.3	10.8	26.7	10.4	3.25	2.52	54.81

Company:	Advance Energy Partners	Local Co-ordinate Reference:	Well Wool Head 20 State Com #511H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3754.5usft (H&P 466)
Site:	(Wool Head)Sec20_T-21-S_R-33-E	MD Reference:	KB @ 3754.5usft (H&P 466)
Well:	Wool Head 20 State Com #511H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 10_13

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,482.0	5.41	209.79	5,480.0	4.7	23.1	4.3	2.01	2.01	-0.68
5,572.0	5.45	212.51	5,569.6	-2.6	18.7	-2.9	0.29	0.04	3.02
5,661.0	5.36	210.67	5,658.2	-9.7	14.3	-10.0	0.22	-0.10	-2.07
5,751.0	4.92	212.78	5,747.9	-16.6	10.1	-16.8	0.53	-0.49	2.34
5,840.0	5.10	204.95	5,836.5	-23.4	6.3	-23.5	0.79	0.20	-8.80
5,930.0	5.58	187.55	5,926.1	-31.3	4.1	-31.4	1.87	0.53	-19.33
6,020.0	6.33	180.70	6,015.7	-40.6	3.4	-40.7	1.15	0.83	-7.61
6,110.0	6.07	180.34	6,105.1	-50.4	3.4	-50.4	0.29	-0.29	-0.40
6,199.0	6.07	179.11	6,193.6	-59.8	3.4	-59.8	0.15	0.00	-1.38
6,289.0	6.24	181.75	6,283.1	-69.4	3.3	-69.5	0.37	0.19	2.93
6,378.0	6.37	178.06	6,371.6	-79.2	3.3	-79.2	0.48	0.15	-4.15
6,468.0	6.11	177.62	6,461.0	-89.0	3.7	-89.0	0.29	-0.29	-0.49
6,558.0	5.54	190.01	6,550.6	-98.0	3.2	-98.1	1.53	-0.63	13.77
6,648.0	5.67	203.28	6,640.2	-106.4	0.6	-106.4	1.44	0.14	14.74
6,737.0	5.41	203.20	6,728.7	-114.3	-2.7	-114.2	0.29	-0.29	-0.09
6,827.0	5.41	202.14	6,818.3	-122.1	-6.0	-122.0	0.11	0.00	-1.18
6,917.0	5.36	201.17	6,907.9	-130.0	-9.1	-129.8	0.12	-0.06	-1.08
7,007.0	5.27	198.62	6,997.6	-137.8	-12.0	-137.6	0.28	-0.10	-2.83
7,096.0	5.23	198.27	7,086.2	-145.5	-14.5	-145.2	0.06	-0.04	-0.39
7,186.0	5.05	196.16	7,175.8	-153.2	-16.9	-152.9	0.29	-0.20	-2.34
7,276.0	4.88	194.32	7,265.5	-160.7	-19.0	-160.4	0.26	-0.19	-2.04
7,366.0	4.84	191.86	7,355.2	-168.2	-20.7	-167.8	0.24	-0.04	-2.73
7,455.0	4.66	191.33	7,443.9	-175.4	-22.2	-175.0	0.21	-0.20	-0.60
7,545.0	4.53	192.12	7,533.6	-182.4	-23.7	-182.0	0.16	-0.14	0.88
7,634.0	4.31	188.87	7,622.3	-189.2	-24.9	-188.7	0.37	-0.25	-3.65
7,724.0	4.00	182.80	7,712.1	-195.7	-25.6	-195.2	0.60	-0.34	-6.74
7,814.0	4.13	183.60	7,801.8	-202.0	-25.9	-201.5	0.16	0.14	0.89
7,904.0	4.22	186.06	7,891.6	-208.6	-26.5	-208.1	0.22	0.10	2.73
7,993.0	4.40	187.81	7,980.3	-215.2	-27.3	-214.7	0.25	0.20	1.97
8,083.0	4.13	187.20	8,070.1	-221.8	-28.2	-221.3	0.30	-0.30	-0.68
8,172.0	4.18	190.19	8,158.9	-228.2	-29.2	-227.6	0.25	0.06	3.36
8,262.0	3.82	189.22	8,248.6	-234.4	-30.2	-233.8	0.41	-0.40	-1.08
8,352.0	3.74	189.92	8,338.4	-240.2	-31.2	-239.7	0.10	-0.09	0.78
8,442.0	3.74	203.55	8,428.3	-245.8	-32.9	-245.2	0.99	0.00	15.14
8,531.0	3.38	187.02	8,517.1	-251.1	-34.4	-250.4	1.22	-0.40	-18.57
8,621.0	1.93	209.35	8,607.0	-255.0	-35.4	-254.4	1.95	-1.61	24.81
8,710.0	1.49	213.13	8,696.0	-257.3	-36.8	-256.6	0.51	-0.49	4.25
8,800.0	1.76	214.01	8,785.9	-259.4	-38.2	-258.7	0.30	0.30	0.98
8,890.0	0.66	104.67	8,875.9	-260.7	-38.5	-260.0	2.30	-1.22	-121.49
8,979.0	1.32	108.80	8,964.9	-261.2	-37.0	-260.5	0.75	0.74	4.64
9,069.0	0.53	129.28	9,054.9	-261.8	-35.7	-261.1	0.94	-0.88	22.76
9,159.0	0.31	47.19	9,144.9	-261.9	-35.2	-261.2	0.64	-0.24	-91.21
9,248.0	0.18	333.62	9,233.9	-261.6	-35.1	-260.9	0.35	-0.15	-82.66

Company:	Advance Energy Partners	Local Co-ordinate Reference:	Well Wool Head 20 State Com #511H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3754.5usft (H&P 466)
Site:	(Wool Head)Sec20_T-21-S_R-33-E	MD Reference:	KB @ 3754.5usft (H&P 466)
Well:	Wool Head 20 State Com #511H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 10_13

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,338.0	0.70	271.93	9,323.9	-261.4	-35.7	-260.8	0.71	0.58	-68.54
9,428.0	0.88	286.43	9,413.9	-261.2	-36.9	-260.5	0.30	0.20	16.11
9,518.0	1.23	300.84	9,503.8	-260.5	-38.4	-259.8	0.49	0.39	16.01
9,608.0	1.71	317.89	9,593.8	-259.0	-40.1	-258.3	0.72	0.53	18.94
9,697.0	1.32	19.68	9,682.8	-257.1	-40.7	-256.3	1.79	-0.44	69.43
9,788.0	2.15	51.58	9,773.7	-255.0	-39.0	-254.3	1.37	0.91	35.05
9,877.0	1.10	4.56	9,862.7	-253.2	-37.6	-252.5	1.81	-1.18	-52.83
9,967.0	0.97	334.50	9,952.7	-251.6	-37.9	-250.9	0.61	-0.14	-33.40
10,057.0	0.79	333.19	10,042.7	-250.4	-38.5	-249.6	0.20	-0.20	-1.46
10,068.9	0.80	332.55	10,054.6	-250.2	-38.6	-249.5	0.09	0.05	-5.36
FTP @ 10068.9' MD, 100' FSL, 1002' FEL									
10,147.0	0.84	328.61	10,132.7	-249.3	-39.1	-248.5	0.09	0.06	-5.05
10,236.0	0.79	290.38	10,221.7	-248.5	-40.0	-247.7	0.60	-0.06	-42.96
10,326.0	0.66	241.52	10,311.7	-248.5	-41.1	-247.7	0.68	-0.14	-54.29
10,416.0	0.53	215.06	10,401.7	-249.1	-41.8	-248.3	0.33	-0.14	-29.40
10,484.0	0.70	279.40	10,469.7	-249.3	-42.3	-248.5	0.99	0.25	94.62
10,539.0	1.71	281.07	10,524.6	-249.1	-43.5	-248.3	1.84	1.84	3.04
10,629.0	12.88	352.26	10,613.8	-238.8	-46.2	-238.0	13.81	12.41	79.10
10,719.0	27.16	352.43	10,698.2	-208.4	-50.2	-207.5	15.87	15.87	0.19
10,808.0	40.04	357.00	10,772.2	-159.4	-54.4	-158.5	14.74	14.47	5.13
10,898.0	46.42	359.82	10,837.7	-97.9	-56.1	-96.9	7.41	7.09	3.13
10,988.0	54.59	358.76	10,894.9	-28.5	-56.9	-27.5	9.12	9.08	-1.18
11,078.0	61.67	0.69	10,942.4	47.9	-57.3	48.9	8.07	7.87	2.14
11,167.0	69.32	2.36	10,979.3	128.8	-55.1	129.7	8.76	8.60	1.88
11,257.0	80.26	2.72	11,002.9	215.4	-51.2	216.3	12.16	12.16	0.40
11,347.0	89.27	0.26	11,011.1	304.9	-48.9	305.7	10.37	10.01	-2.73
11,436.0	90.46	359.29	11,011.3	393.9	-49.3	394.7	1.72	1.34	-1.09
11,526.0	91.43	1.49	11,009.8	483.9	-48.7	484.7	2.67	1.08	2.44
11,557.0	92.00	1.75	11,008.9	514.9	-47.8	515.6	2.02	1.84	0.84
11,647.0	90.59	1.13	11,006.8	604.8	-45.5	605.5	1.71	-1.57	-0.69
11,737.0	92.79	1.84	11,004.2	694.7	-43.2	695.4	2.57	2.44	0.79
11,827.0	91.30	1.49	11,001.0	784.6	-40.6	785.2	1.70	-1.66	-0.39
11,916.0	89.49	2.19	11,000.4	873.6	-37.7	874.1	2.18	-2.03	0.79
12,006.0	90.73	2.19	11,000.2	963.5	-34.3	964.0	1.38	1.38	0.00
12,096.0	91.30	2.10	10,998.6	1,053.4	-30.9	1,053.8	0.64	0.63	-0.10
12,185.0	88.70	1.75	10,998.6	1,142.4	-27.9	1,142.7	2.95	-2.92	-0.39
12,275.0	86.37	1.84	11,002.5	1,232.2	-25.1	1,232.5	2.59	-2.59	0.10
12,365.0	88.04	2.01	11,006.9	1,322.1	-22.1	1,322.3	1.87	1.86	0.19
12,454.0	88.22	0.34	11,009.8	1,411.0	-20.3	1,411.2	1.89	0.20	-1.88
12,544.0	90.02	359.46	11,011.1	1,501.0	-20.4	1,501.1	2.23	2.00	-0.98
12,634.0	91.43	0.08	11,010.0	1,591.0	-20.8	1,591.1	1.71	1.57	0.69
12,724.0	92.53	358.94	11,006.9	1,680.9	-21.5	1,681.0	1.76	1.22	-1.27
12,813.0	91.43	358.23	11,003.8	1,769.8	-23.7	1,770.0	1.47	-1.24	-0.80
12,903.0	91.56	358.59	11,001.5	1,859.8	-26.2	1,860.0	0.43	0.14	0.40

Company:	Advance Energy Partners	Local Co-ordinate Reference:	Well Wool Head 20 State Com #511H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3754.5usft (H&P 466)
Site:	(Wool Head)Sec20_T-21-S_R-33-E	MD Reference:	KB @ 3754.5usft (H&P 466)
Well:	Wool Head 20 State Com #511H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 10_13

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
12,993.0	91.91	357.79	10,998.7	1,949.7	-29.1	1,949.9	0.97	0.39	-0.89
13,083.0	93.58	359.29	10,994.4	2,039.6	-31.4	2,039.8	2.49	1.86	1.67
13,172.0	92.31	357.79	10,989.9	2,128.4	-33.6	2,128.7	2.21	-1.43	-1.69
13,261.0	93.80	358.67	10,985.1	2,217.2	-36.4	2,217.5	1.94	1.67	0.99
13,351.0	89.58	357.79	10,982.5	2,307.1	-39.2	2,307.5	4.79	-4.69	-0.98
13,441.0	89.98	357.18	10,982.8	2,397.0	-43.1	2,397.4	0.81	0.44	-0.68
13,530.0	90.86	356.21	10,982.2	2,485.9	-48.2	2,486.4	1.47	0.99	-1.09
13,620.0	92.18	356.30	10,979.8	2,575.7	-54.1	2,576.2	1.47	1.47	0.10
13,709.0	94.59	357.27	10,974.5	2,664.4	-59.1	2,665.0	2.92	2.71	1.09
13,799.0	91.82	357.71	10,969.5	2,754.1	-63.0	2,754.8	3.12	-3.08	0.49
13,889.0	90.55	358.15	10,967.6	2,844.0	-66.3	2,844.8	1.49	-1.41	0.49
13,979.0	89.10	356.65	10,967.9	2,933.9	-70.4	2,934.7	2.32	-1.61	-1.67
14,068.0	90.20	355.25	10,968.4	3,022.7	-76.6	3,023.6	2.00	1.24	-1.57
14,158.0	90.46	357.00	10,967.9	3,112.5	-82.7	3,113.5	1.97	0.29	1.94
14,249.0	90.51	0.52	10,967.2	3,203.5	-84.7	3,204.5	3.87	0.05	3.87
14,339.0	91.52	359.82	10,965.6	3,293.5	-84.4	3,294.4	1.37	1.12	-0.78
14,428.0	90.20	359.99	10,964.2	3,382.4	-84.6	3,383.4	1.50	-1.48	0.19
14,518.0	90.42	359.38	10,963.7	3,472.4	-85.1	3,473.4	0.72	0.24	-0.68
14,608.0	91.47	358.32	10,962.2	3,562.4	-86.9	3,563.4	1.66	1.17	-1.18
14,697.0	89.36	357.00	10,961.6	3,651.3	-90.5	3,652.4	2.80	-2.37	-1.48
14,787.0	89.05	356.92	10,962.9	3,741.2	-95.3	3,742.3	0.36	-0.34	-0.09
14,877.0	89.93	358.59	10,963.7	3,831.1	-98.8	3,832.3	2.10	0.98	1.86
14,966.0	91.30	358.32	10,962.7	3,920.1	-101.2	3,921.2	1.57	1.54	-0.30
15,056.0	93.23	357.53	10,959.1	4,009.9	-104.5	4,011.2	2.32	2.14	-0.88
15,146.0	92.84	359.11	10,954.4	4,099.8	-107.1	4,101.0	1.81	-0.43	1.76
15,236.0	91.38	0.96	10,951.1	4,189.7	-107.0	4,190.9	2.62	-1.62	2.06
15,325.0	92.66	1.05	10,947.9	4,278.6	-105.5	4,279.8	1.44	1.44	0.10
15,415.0	92.35	1.49	10,944.0	4,368.5	-103.5	4,369.7	0.60	-0.34	0.49
15,505.0	93.98	0.61	10,939.0	4,458.4	-101.8	4,459.5	2.06	1.81	-0.98
15,594.0	93.23	0.96	10,933.4	4,547.2	-100.6	4,548.3	0.93	-0.84	0.39
15,684.0	90.46	1.22	10,930.5	4,637.1	-98.9	4,638.1	3.09	-3.08	0.29
15,773.0	89.58	0.26	10,930.5	4,726.1	-97.8	4,727.1	1.46	-0.99	-1.08
15,863.0	89.45	358.85	10,931.3	4,816.1	-98.5	4,817.1	1.57	-0.14	-1.57
15,953.0	90.24	357.53	10,931.5	4,906.0	-101.3	4,907.1	1.71	0.88	-1.47
15,975.0	90.53	357.96	10,931.4	4,928.0	-102.2	4,929.1	2.36	1.32	1.96
CROSS SEC LINE @ 15975.0' MD, 981' FEL									
16,043.0	91.43	359.29	10,930.2	4,996.0	-103.8	4,997.0	2.36	1.32	1.96
16,132.0	90.29	0.61	10,928.9	5,085.0	-103.9	5,086.0	1.96	-1.28	1.48
16,222.0	91.38	1.05	10,927.5	5,175.0	-102.6	5,176.0	1.31	1.21	0.49
16,312.0	92.40	0.34	10,924.6	5,264.9	-101.5	5,265.9	1.38	1.13	-0.79
16,402.0	91.65	0.43	10,921.4	5,354.8	-100.9	5,355.8	0.84	-0.83	0.10
16,491.0	91.65	1.75	10,918.8	5,443.8	-99.2	5,444.7	1.48	0.00	1.48
16,581.0	90.11	1.66	10,917.5	5,533.7	-96.5	5,534.6	1.71	-1.71	-0.10

Company:	Advance Energy Partners	Local Co-ordinate Reference:	Well Wool Head 20 State Com #511H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3754.5usft (H&P 466)
Site:	(Wool Head)Sec20_T-21-S_R-33-E	MD Reference:	KB @ 3754.5usft (H&P 466)
Well:	Wool Head 20 State Com #511H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 10_13

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
16,671.0	91.12	1.13	10,916.5	5,623.7	-94.3	5,624.5	1.27	1.12	-0.59
16,761.0	90.59	0.43	10,915.1	5,713.7	-93.1	5,714.4	0.98	-0.59	-0.78
16,850.0	90.95	359.99	10,913.9	5,802.7	-92.8	5,803.4	0.64	0.40	-0.49
16,940.0	92.75	359.29	10,911.0	5,892.6	-93.3	5,893.4	2.15	2.00	-0.78
17,030.0	91.12	357.00	10,908.0	5,982.5	-96.3	5,983.3	3.12	-1.81	-2.54
17,120.0	89.89	356.12	10,907.2	6,072.3	-101.7	6,073.2	1.68	-1.37	-0.98
17,209.0	91.08	357.27	10,906.5	6,161.2	-106.8	6,162.1	1.86	1.34	1.29
17,299.0	91.43	359.99	10,904.5	6,251.1	-108.9	6,252.1	3.05	0.39	3.02
17,389.0	89.93	0.78	10,903.4	6,341.1	-108.3	6,342.0	1.88	-1.67	0.88
17,478.0	90.46	0.17	10,903.1	6,430.1	-107.6	6,431.0	0.91	0.60	-0.69
17,568.0	92.18	0.08	10,901.0	6,520.1	-107.4	6,521.0	1.91	1.91	-0.10
17,658.0	93.76	359.73	10,896.4	6,610.0	-107.5	6,610.8	1.80	1.76	-0.39
17,748.0	92.79	359.03	10,891.2	6,699.8	-108.5	6,700.7	1.33	-1.08	-0.78
17,837.0	91.47	359.03	10,887.9	6,788.7	-110.0	6,789.6	1.48	-1.48	0.00
17,927.0	92.09	358.76	10,885.1	6,878.7	-111.8	6,879.6	0.75	0.69	-0.30
18,017.0	93.67	357.88	10,880.6	6,968.5	-114.4	6,969.5	2.01	1.76	-0.98
18,106.0	94.20	358.50	10,874.5	7,057.3	-117.2	7,058.2	0.92	0.60	0.70
18,196.0	91.78	358.67	10,869.8	7,147.1	-119.4	7,148.1	2.70	-2.69	0.19
18,286.0	89.41	359.46	10,868.9	7,237.1	-120.9	7,238.1	2.78	-2.63	0.88
18,375.0	89.49	358.94	10,869.7	7,326.1	-122.1	7,327.1	0.59	0.09	-0.58
18,465.0	91.03	358.50	10,869.3	7,416.0	-124.1	7,417.1	1.78	1.71	-0.49
18,543.0	92.88	358.06	10,866.7	7,494.0	-126.5	7,495.0	2.44	2.37	-0.56
LAST SVY									
18,601.0	92.88	358.06	10,863.7	7,551.9	-128.4	7,552.9	0.00	0.00	0.00
PTD @ 18601.0' MD, 2653' FNL, 986' FEL									

Design Targets									
Target Name	- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	
LTP/PBHL (Wool Hea	- Shape	0.00	0.00	10,878.9	7,467.9	-132.0	538,650.10	770,784.10	32° 28' 43.005 N 103° 35' 21.381 W
	- actual wellpath misses target center by 12.8usft at 18516.7usft MD (10867.8 TVD, 7467.7 N, -125.6 E)								
	- Point								
FTP (Wool Head 20 S	- Shape	0.00	0.00	10,890.0	-250.1	-26.8	530,932.10	770,889.30	32° 27' 26.629 N 103° 35' 20.781 W
	- actual wellpath misses target center by 148.5usft at 10831.3usft MD (10789.8 TVD, -144.2 N, -55.1 E)								
	- Point								
T1 (Wool Head 20 SC	- Shape	0.00	0.00	10,992.4	2,747.7	-67.8	533,929.90	770,848.32	32° 27' 56.295 N 103° 35' 21.015 W
	- actual wellpath misses target center by 23.2usft at 13791.5usft MD (10969.7 TVD, 2746.7 N, -62.7 E)								
	- Point								

Company:	Advance Energy Partners	Local Co-ordinate Reference:	Well Wool Head 20 State Com #511H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3754.5usft (H&P 466)
Site:	(Wool Head)Sec20_T-21-S_R-33-E	MD Reference:	KB @ 3754.5usft (H&P 466)
Well:	Wool Head 20 State Com #511H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 10_13

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
10,068.9	10,054.6	-250.2	-38.6	FTP @ 10068.9' MD, 100' FSL, 1002' FEL
15,975.0	10,931.4	4,928.0	-102.2	CROSS SEC LINE @ 15975.0' MD, 981' FEL
18,543.0	10,866.7	7,494.0	-126.5	LAST SVY
18,601.0	10,863.7	7,551.9	-128.4	PTD @ 18601.0' MD, 2653' FNL, 986' FEL

Checked By: _____ Approved By: _____ Date: _____



Anti-Collision Report



Advance Energy Partners

**Lea County, NM (NAD 83 NME)
(Wool Head)Sec20_T-21-S_R-33-E
Wool Head 20 State Com #511H**

**OWB
AWB**

Anticollision Report

02 January, 2020



Company:	Advance Energy Partners	Local Co-ordinate Reference:	Well Wool Head 20 State Com #511H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3754.5usft (H&P 466)
Reference Site:	(Wool Head)Sec20_T-21-S_R-33-E	MD Reference:	KB @ 3754.5usft (H&P 466)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Wool Head 20 State Com #511H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 10_13
Reference Design:	AWB	Offset TVD Reference:	Offset Datum

Reference	AWB		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0usft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 740.0 usft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Program		Date	01/02/2020		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
238.0	18,601.0	Intrepid MWD (OWB)	MWD	OWSG MWD - Standard	

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
(Wool Head)Sec20_T-21-S_R-33-E						
Wool Head 20 State Com #510H - OWB - AWB	4,759.8	4,757.5	53.1	20.8	1.642	CC
Wool Head 20 State Com #510H - OWB - AWB	5,300.0	5,297.3	55.4	19.3	1.535	ES, SF
Wool Head 20 State Com #512H - OWB - AWB	1,025.8	1,025.8	94.3	87.9	14.777	CC
Wool Head 20 State Com #512H - OWB - AWB	5,320.4	5,317.9	94.8	58.5	2.614	ES
Wool Head 20 State Com #512H - OWB - AWB	5,400.0	5,397.6	96.0	59.1	2.607	SF
Wool Head 20 State Com #554H - OWB - AWB	2,745.5	2,742.6	22.3	3.9	1.215	Level 2, CC
Wool Head 20 State Com #554H - OWB - AWB	5,384.0	5,381.7	22.4	-14.3	0.610	Level 1, SF
Wool Head 20 State Com #554H - OWB - AWB	5,400.0	5,397.6	22.5	-14.3	0.611	Level 1, ES

Offset Design:(Wool Head)Sec20_T-21-S_R-33-E - Wool Head 20 State Com #510H - OWB - AWB													Offset Site Error:	0.0 usft
Survey Program:		238-MWD		Offset		Semi Major Axis		Offset Wellbore Centre		Rule Assigned:		Offset Well Error:		0.0 usft
Reference	Measured	Vertical	Measured	Vertical	Reference	Offset	Highside			Between	Between	Minimum	Separation	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	(usft)	(usft)	Toolface (°)	+N/-S (usft)	+E/-W (usft)	Centres (usft)	Ellipses (usft)	Separation (usft)	Factor		
0.0	0.0	0.0	0.0	0.0	0.0	0.0	89.57	0.5	66.1	66.1				
100.0	100.0	98.1	98.1	0.1	0.2	80.62	0.3	66.0	66.0	65.7	0.29	229.050		
200.0	200.0	198.2	198.2	0.3	0.3	81.46	-0.1	65.8	65.7	65.1	0.63	104.843		
300.0	300.0	298.3	298.3	0.6	0.6	117.00	-0.9	65.5	65.4	64.2	1.20	54.753		
400.0	400.0	398.5	398.5	1.0	1.0	140.28	-1.5	64.8	65.3	63.3	1.91	34.190		
500.0	500.0	498.4	498.4	1.3	1.3	109.56	-1.9	64.0	64.9	62.3	2.62	24.756		
600.0	600.0	598.5	598.5	1.7	1.7	130.93	-2.2	63.3	64.6	61.3	3.33	19.391		
629.5	629.5	628.0	628.0	1.8	1.8	140.99	-2.4	63.1	64.6	61.1	3.54	18.231		
700.0	700.0	698.2	698.2	2.0	2.0	161.94	-2.9	62.7	64.8	60.8	4.05	16.026		
800.0	800.0	798.6	798.6	2.4	2.4	-179.26	-3.8	62.0	65.6	60.8	4.76	13.780		
900.0	900.0	898.1	898.1	2.7	2.7	171.94	-3.4	61.5	66.6	61.2	5.46	12.208		
1,000.0	999.9	999.3	999.3	3.1	3.1	-168.86	-3.4	60.4	67.3	61.1	6.16	10.923		
1,001.2	1,001.1	1,000.5	1,000.5	3.1	3.1	-168.84	-3.5	60.3	67.3	61.1	6.17	10.908		
1,100.0	1,099.9	1,099.4	1,099.3	3.4	3.4	-157.44	-5.0	58.2	67.5	60.6	6.87	9.816		
1,200.0	1,199.9	1,199.7	1,199.5	3.8	3.8	-155.48	-6.6	55.6	67.5	60.0	7.59	8.903		
1,300.0	1,299.8	1,300.1	1,299.9	4.2	4.2	-152.49	-8.0	52.7	67.3	59.0	8.30	8.113		
1,399.9	1,399.7	1,400.3	1,400.0	4.5	4.5	-147.23	-9.0	49.2	67.0	58.0	9.01	7.438		
1,400.0	1,399.8	1,400.4	1,400.1	4.5	4.5	-147.17	-9.0	49.1	67.0	58.0	9.01	7.435		
1,500.0	1,499.7	1,500.3	1,500.0	4.9	4.9	-142.08	-10.9	45.4	67.2	57.5	9.73	6.911		
1,578.6	1,578.2	1,578.4	1,578.0	5.1	5.2	-133.04	-12.7	42.6	67.1	56.8	10.29	6.523		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	Advance Energy Partners	Local Co-ordinate Reference:	Well Wool Head 20 State Com #511H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3754.5usft (H&P 466)
Reference Site:	(Wool Head)Sec20_T-21-S_R-33-E	MD Reference:	KB @ 3754.5usft (H&P 466)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Wool Head 20 State Com #511H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 10_13
Reference Design:	AWB	Offset TVD Reference:	Offset Datum

Offset Design:(Wool Head)Sec20_T-21-S_R-33-E - Wool Head 20 State Com #510H - OWB - AWB

Offset Site Error: 0.0 usft

Offset Well Error: 0.0 usft

Survey Program: 238-MWD		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned:		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Distance Between Centres (usft)	Between Ellipses (usft)			
1,600.0	1,599.6	1,599.5	1,599.1	5.2	5.2	-130.15	-13.2	42.0	67.2	56.7	10.44	6.434	
1,700.0	1,699.6	1,699.3	1,698.8	5.6	5.6	-130.74	-15.6	39.7	67.4	56.2	11.16	6.038	
1,800.0	1,799.5	1,799.3	1,798.8	5.9	6.0	-143.76	-17.7	37.4	67.7	55.8	11.87	5.701	
1,900.0	1,899.5	1,899.2	1,898.6	6.3	6.3	-157.49	-19.1	35.3	67.8	55.2	12.59	5.386	
2,000.0	1,999.5	1,996.9	1,996.4	6.6	6.7	0.47	-20.5	35.0	67.7	54.5	13.27	5.104	
2,100.0	2,099.4	2,095.5	2,094.9	7.0	7.0	13.55	-22.6	37.6	67.5	53.6	13.93	4.846	
2,194.8	2,194.2	2,190.6	2,189.8	7.3	7.3	17.26	-22.9	41.0	67.4	52.9	14.56	4.630	
2,200.0	2,199.3	2,195.7	2,195.0	7.3	7.3	17.40	-22.9	41.2	67.1	52.5	14.59	4.596	
2,300.0	2,299.3	2,296.0	2,295.2	7.6	7.7	43.66	-20.7	45.0	68.1	52.9	15.26	4.464	
2,400.0	2,399.3	2,396.0	2,395.1	8.0	8.0	52.81	-18.0	48.6	70.4	54.5	15.93	4.418	
2,500.0	2,499.3	2,496.0	2,495.0	8.3	8.3	45.38	-15.4	52.2	72.4	55.8	16.61	4.361	
2,600.0	2,599.3	2,596.3	2,595.2	8.7	8.7	52.48	-13.0	55.5	74.3	57.0	17.29	4.295	
2,700.0	2,699.2	2,696.6	2,695.4	9.0	9.0	66.70	-10.8	58.4	76.1	58.1	17.98	4.233	
2,800.0	2,799.2	2,796.5	2,795.3	9.3	9.3	68.44	-8.7	61.0	77.9	59.2	18.66	4.173	
2,900.0	2,899.2	2,896.4	2,895.2	9.7	9.7	61.45	-6.7	63.7	79.8	60.4	19.35	4.122	
3,000.0	2,999.2	2,996.2	2,994.9	10.0	10.0	44.21	-4.7	66.5	81.4	61.4	20.04	4.061	
3,100.0	3,099.2	3,096.0	3,094.6	10.4	10.4	35.14	-3.0	69.7	82.7	62.0	20.73	3.989	
3,200.0	3,199.1	3,196.5	3,195.0	10.7	10.7	33.86	-1.4	72.9	83.6	62.1	21.43	3.900	
3,300.0	3,299.1	3,297.7	3,296.2	11.1	11.1	31.99	-0.9	74.7	82.9	60.8	22.13	3.747	
3,400.0	3,399.1	3,397.7	3,396.2	11.4	11.4	31.91	-1.4	75.6	81.3	58.5	22.83	3.561	
3,500.0	3,499.0	3,497.2	3,495.7	11.8	11.8	42.19	-1.8	76.9	80.3	56.8	23.53	3.415	
3,600.0	3,599.0	3,597.3	3,595.8	12.1	12.1	47.39	-1.9	78.5	80.1	55.8	24.23	3.305	
3,700.0	3,698.9	3,699.0	3,697.4	12.5	12.5	51.66	-1.6	79.0	78.7	53.8	24.93	3.158	
3,800.0	3,798.9	3,800.1	3,798.6	12.8	12.8	53.72	-1.2	77.5	75.7	50.1	25.63	2.954	
3,900.0	3,898.9	3,900.2	3,898.6	13.2	13.2	52.65	-0.7	75.2	71.9	45.6	26.33	2.731	
4,000.0	3,998.9	4,000.0	3,998.4	13.6	13.5	56.80	-0.1	72.9	68.1	41.0	27.04	2.518	
4,100.0	4,098.8	4,099.8	4,098.2	13.9	13.9	56.05	1.2	71.0	64.5	36.7	27.74	2.325	
4,200.0	4,198.8	4,199.0	4,197.4	14.3	14.2	46.53	3.6	69.9	61.1	32.6	28.44	2.147	
4,300.0	4,298.7	4,298.2	4,296.5	14.6	14.6	48.06	5.1	70.1	58.8	29.6	29.14	2.017	
4,400.0	4,398.7	4,397.9	4,396.2	15.0	14.9	45.04	5.8	71.0	57.4	27.5	29.84	1.923	
4,500.0	4,498.6	4,497.7	4,496.0	15.3	15.2	45.30	6.4	72.2	56.1	25.5	30.54	1.835	
4,600.0	4,598.6	4,597.7	4,596.0	15.7	15.6	41.99	7.1	73.6	54.4	23.1	31.24	1.740	
4,700.0	4,698.5	4,697.7	4,696.0	16.0	15.9	11.51	8.0	75.0	53.3	21.4	31.94	1.669	
4,759.8	4,758.4	4,757.5	4,755.8	16.2	16.1	-33.64	8.6	75.9	53.1	20.8	32.36	1.642 CC	
4,800.0	4,798.5	4,797.6	4,795.9	16.4	16.3	-63.06	8.9	76.5	53.3	20.7	32.64	1.633	
4,900.0	4,898.5	4,897.6	4,895.9	16.7	16.6	-67.77	8.3	77.6	53.9	20.6	33.33	1.617	
5,000.0	4,998.5	4,997.5	4,995.7	17.1	17.0	-60.80	6.1	78.1	54.1	20.1	34.02	1.590	
5,100.0	5,098.5	5,097.4	5,095.6	17.4	17.3	-62.51	3.0	78.9	54.5	19.8	34.71	1.571	
5,200.0	5,198.4	5,197.4	5,195.6	17.7	17.7	-63.99	-0.2	79.5	55.0	19.6	35.40	1.553	
5,300.0	5,298.4	5,297.3	5,295.4	18.1	18.0	-53.16	-3.5	80.2	55.4	19.3	36.10	1.535 ES, SF	
5,400.0	5,398.3	5,397.3	5,395.3	18.4	18.4	-102.55	-7.0	80.9	57.2	20.4	36.79	1.555	
5,500.0	5,497.9	5,497.1	5,495.0	18.8	18.7	-107.07	-10.6	81.6	60.9	23.4	37.49	1.625	
5,600.0	5,597.5	5,596.7	5,594.6	19.1	19.1	-113.45	-14.3	82.3	65.7	27.6	38.18	1.722	
5,700.0	5,697.1	5,696.0	5,693.8	19.5	19.4	-117.32	-17.8	83.2	71.0	32.1	38.87	1.826	
5,800.0	5,796.7	5,793.7	5,791.4	19.8	19.8	-117.48	-21.1	85.8	78.0	38.4	39.54	1.971	
5,900.0	5,896.3	5,890.8	5,888.3	20.1	20.1	-105.13	-24.6	91.4	87.1	46.9	40.18	2.168	
6,000.0	5,995.8	5,989.7	5,986.8	20.5	20.5	-97.55	-28.5	98.9	96.2	55.3	40.87	2.354	
6,100.0	6,095.2	6,088.9	6,085.7	20.8	20.8	-99.38	-32.1	106.6	104.9	63.3	41.57	2.523	
6,200.0	6,194.6	6,188.1	6,184.5	21.2	21.2	-100.99	-35.5	114.4	113.9	71.6	42.28	2.695	
6,300.0	6,294.0	6,288.2	6,284.3	21.6	21.5	-105.54	-39.3	122.3	123.3	80.3	43.00	2.866	
6,400.0	6,393.4	6,387.2	6,382.8	21.9	21.9	-104.25	-43.4	130.1	132.5	88.8	43.71	3.032	
6,500.0	6,492.9	6,487.8	6,482.9	22.3	22.3	-109.04	-49.3	138.3	141.5	97.1	44.44	3.184	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	Advance Energy Partners	Local Co-ordinate Reference:	Well Wool Head 20 State Com #511H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3754.5usft (H&P 466)
Reference Site:	(Wool Head)Sec20_T-21-S_R-33-E	MD Reference:	KB @ 3754.5usft (H&P 466)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Wool Head 20 State Com #511H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 10_13
Reference Design:	AWB	Offset TVD Reference:	Offset Datum

Offset Design:(Wool Head)Sec20_T-21-S_R-33-E - Wool Head 20 State Com #510H - OWB - AWB

Offset Site Error: 0.0 usft

Offset Well Error: 0.0 usft

Survey Program: 238-MWD		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned: Distance Between		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Ellipses (usft)			
6,600.0	6,592.4	6,589.3	6,583.8	22.6	22.6	-123.24	-57.2	146.1	150.8	105.6	45.19	3.337	
6,700.0	6,691.9	6,690.5	6,684.6	23.0	23.0	-130.04	-63.9	152.2	160.7	114.8	45.92	3.499	
6,800.0	6,791.5	6,790.8	6,784.7	23.3	23.3	-129.31	-69.9	157.1	169.8	123.1	46.65	3.639	
6,900.0	6,891.0	6,890.8	6,884.4	23.7	23.7	-128.34	-75.7	161.8	178.4	131.0	47.37	3.766	
7,000.0	6,990.6	6,990.4	6,983.7	24.1	24.1	-126.11	-81.1	166.1	186.6	138.5	48.08	3.881	
7,100.0	7,090.2	7,089.5	7,082.6	24.4	24.4	-125.79	-86.2	170.6	194.7	145.9	48.80	3.991	
7,200.0	7,189.8	7,189.3	7,182.1	24.8	24.8	-123.79	-91.4	175.3	202.7	153.1	49.52	4.093	
7,300.0	7,289.4	7,287.5	7,280.1	25.2	25.2	-121.59	-97.1	180.4	210.5	160.2	50.23	4.190	
7,400.0	7,389.0	7,386.2	7,378.3	25.5	25.5	-119.16	-104.4	186.7	218.5	167.6	50.94	4.290	
7,500.0	7,488.7	7,486.0	7,477.6	25.9	25.9	-118.71	-111.9	193.2	226.5	174.8	51.67	4.383	
7,600.0	7,588.4	7,585.6	7,576.7	26.3	26.3	-116.63	-119.3	199.8	234.3	181.9	52.39	4.472	
7,700.0	7,688.1	7,685.6	7,676.2	26.6	26.6	-110.56	-126.4	206.1	241.5	188.3	53.12	4.545	
7,800.0	7,787.9	7,785.4	7,775.6	27.0	27.0	-109.21	-133.0	212.3	247.9	194.1	53.85	4.604	
7,900.0	7,887.6	7,885.2	7,875.0	27.3	27.4	-111.47	-139.3	218.4	254.6	200.0	54.58	4.665	
8,000.0	7,987.3	7,984.9	7,974.3	27.7	27.7	-113.14	-145.4	224.4	261.7	206.4	55.31	4.731	
8,100.0	8,087.1	8,086.2	8,075.2	28.1	28.1	-112.99	-151.8	230.3	268.5	212.4	56.05	4.790	
8,200.0	8,186.8	8,187.3	8,176.0	28.4	28.5	-115.00	-157.8	235.5	274.9	218.1	56.80	4.840	
8,300.0	8,286.6	8,286.7	8,275.2	28.8	28.8	-114.63	-162.9	240.2	280.9	223.4	57.52	4.884	
8,400.0	8,386.3	8,383.6	8,371.8	29.2	29.2	-122.11	-168.4	245.5	287.6	229.4	58.22	4.940	
8,500.0	8,486.1	8,481.3	8,469.0	29.5	29.6	-117.49	-175.0	252.2	296.1	237.2	58.93	5.025	
8,600.0	8,586.0	8,581.5	8,568.8	29.9	29.9	-125.39	-181.7	259.1	303.4	243.7	59.66	5.085	
8,700.0	8,686.0	8,682.0	8,668.9	30.3	30.3	-135.39	-188.1	265.8	310.5	250.2	60.39	5.142	
8,800.0	8,785.9	8,783.7	8,770.1	30.6	30.7	-135.85	-194.1	271.9	317.2	256.0	61.13	5.188	
8,900.0	8,885.9	8,884.1	8,870.3	31.0	31.1	-26.40	-199.9	277.4	321.8	260.0	61.85	5.203	
9,000.0	8,985.9	8,983.9	8,969.8	31.3	31.4	-30.91	-205.4	282.8	324.5	262.0	62.57	5.187	
9,100.0	9,085.9	9,088.0	9,073.6	31.7	31.8	-31.98	-210.8	287.6	327.2	263.9	63.31	5.169	
9,200.0	9,185.9	9,190.2	9,175.7	32.0	32.2	57.47	-216.0	291.3	329.6	265.6	64.03	5.148	
9,300.0	9,285.9	9,293.7	9,279.0	32.3	32.6	162.42	-221.0	294.1	331.9	267.1	64.76	5.126	
9,400.0	9,385.9	9,390.2	9,375.4	32.7	32.9	161.07	-224.6	295.9	334.6	269.1	65.44	5.113	
9,500.0	9,485.8	9,486.1	9,471.2	33.0	33.3	145.60	-227.0	299.5	339.5	273.4	66.11	5.136	
9,600.0	9,585.8	9,588.2	9,573.2	33.4	33.6	128.06	-228.5	303.3	344.8	278.0	66.82	5.160	
9,700.0	9,685.8	9,686.6	9,671.5	33.7	34.0	64.06	-229.0	306.4	348.4	280.9	67.50	5.162	
9,800.0	9,785.7	9,788.5	9,773.4	34.0	34.3	37.31	-228.8	309.8	349.6	281.4	68.20	5.126	
9,900.0	9,885.7	9,891.0	9,875.9	34.4	34.7	88.29	-228.4	312.5	351.0	282.1	68.90	5.094	
10,000.0	9,985.7	9,993.6	9,978.4	34.7	35.1	112.13	-227.9	314.3	353.2	283.6	69.60	5.074	
10,100.0	10,085.7	10,094.7	10,079.5	35.1	35.4	115.39	-227.1	315.6	355.1	284.8	70.29	5.052	
10,200.0	10,185.7	10,197.2	10,180.3	35.4	35.7	137.54	-210.4	315.0	356.7	285.7	70.96	5.026	
10,300.0	10,285.7	10,285.7	10,260.3	35.7	36.0	-179.08	-173.2	311.4	360.9	289.4	71.47	5.049	
10,400.0	10,385.7	10,359.0	10,320.9	36.1	36.1	-149.03	-132.3	307.3	373.3	301.8	71.41	5.227	
10,500.0	10,485.7	10,422.2	10,370.0	36.4	36.2	145.27	-92.6	303.9	396.9	326.4	70.52	5.628	
10,600.0	10,585.4	10,481.8	10,413.9	36.8	36.4	68.83	-52.5	301.5	431.0	361.9	69.07	6.240	
10,700.0	10,681.1	10,539.0	10,453.4	37.1	36.5	57.65	-11.1	299.5	463.3	396.0	67.27	6.888	
10,800.0	10,766.0	10,591.4	10,486.2	37.3	36.6	49.60	29.7	298.9	489.5	424.2	65.30	7.495	
10,900.0	10,839.1	10,628.0	10,506.4	37.6	36.7	45.78	60.2	300.0	510.5	447.7	62.87	8.121	
11,000.0	10,901.8	10,692.1	10,536.4	37.8	36.8	44.26	116.7	303.8	529.8	468.0	61.74	8.581	
11,100.0	10,952.5	10,749.5	10,557.4	38.0	37.0	42.20	169.9	308.6	546.5	485.9	60.68	9.007	
11,200.0	10,989.9	10,808.0	10,573.0	38.3	37.1	40.76	226.1	312.3	557.2	497.3	59.92	9.299	
11,300.0	11,008.5	10,873.5	10,582.9	38.6	37.3	40.42	290.7	314.0	559.3	499.6	59.70	9.368	
11,400.0	11,011.4	10,946.8	10,586.0	38.9	37.6	40.65	364.0	314.6	558.1	498.0	60.09	9.288	
11,500.0	11,010.4	11,045.2	10,585.8	39.2	37.9	40.69	462.4	314.0	557.2	496.5	60.64	9.188	
11,600.0	11,007.6	11,158.6	10,586.5	39.6	38.4	40.50	575.7	311.3	551.4	490.2	61.19	9.012	
11,700.0	11,005.7	11,258.2	10,587.2	40.1	38.9	40.18	675.2	307.0	545.1	483.4	61.70	8.835	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	Advance Energy Partners	Local Co-ordinate Reference:	Well Wool Head 20 State Com #511H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3754.5usft (H&P 466)
Reference Site:	(Wool Head)Sec20_T-21-S_R-33-E	MD Reference:	KB @ 3754.5usft (H&P 466)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Wool Head 20 State Com #511H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 10_13
Reference Design:	AWB	Offset TVD Reference:	Offset Datum

Offset Design:(Wool Head)Sec20_T-21-S_R-33-E - Wool Head 20 State Com #510H - OWB - AWB													Offset Site Error:	0.0 usft
Survey Program: 238-MWD													Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Distance Between Centres (usft)		Minimum Separation (usft)	Separation Factor	Warning	
							+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
11,800.0	11,001.7	11,381.4	10,589.9	40.7	39.7	39.77	798.1	299.6	534.5	472.2	62.35	8.573		
11,900.0	11,000.3	11,484.2	10,595.0	41.3	40.3	39.17	900.6	292.1	523.2	460.2	62.99	8.305		
12,000.0	11,000.3	11,568.6	10,599.1	41.9	40.9	38.82	984.8	287.6	513.6	450.0	63.62	8.073		
12,100.0	10,998.5	11,649.2	10,601.2	42.7	41.5	38.69	1,065.3	286.0	506.7	442.2	64.49	7.857		
12,177.2	10,998.4	11,715.6	10,601.4	43.2	42.0	38.47	1,131.7	285.8	504.6	439.4	65.17	7.742		
12,200.0	10,999.0	11,736.2	10,601.2	43.4	42.2	38.37	1,152.3	285.8	504.8	439.5	65.35	7.724		
12,300.0	11,003.9	11,829.3	10,598.9	44.2	43.0	37.63	1,245.4	285.7	508.6	442.7	65.98	7.709		
12,400.0	11,008.0	11,937.6	10,596.7	45.1	43.9	36.91	1,353.7	286.3	511.9	445.2	66.73	7.672		
12,500.0	11,010.8	12,038.0	10,596.6	46.0	44.8	36.64	1,454.1	286.3	513.7	445.9	67.80	7.577		
12,600.0	11,010.7	12,147.0	10,595.5	47.0	45.9	36.52	1,563.0	285.1	514.1	445.1	69.02	7.449		
12,700.0	11,007.9	12,250.4	10,595.3	47.9	46.9	36.48	1,666.4	282.0	510.5	440.2	70.32	7.259		
12,800.0	11,004.2	12,351.9	10,595.1	49.0	48.0	36.55	1,767.8	278.1	506.7	434.9	71.80	7.056		
12,900.0	11,001.5	12,450.4	10,593.7	50.0	49.1	36.45	1,866.2	273.4	504.5	431.3	73.20	6.893		
13,000.0	10,998.5	12,560.8	10,594.4	51.1	50.3	36.66	1,976.4	269.0	501.0	426.2	74.83	6.696		
13,100.0	10,993.4	12,668.1	10,598.0	52.2	51.5	37.21	2,083.7	265.2	493.6	416.8	76.77	6.429		
13,200.0	10,988.6	12,761.2	10,601.1	53.4	52.6	37.63	2,176.6	261.3	486.5	407.7	78.80	6.173		
13,300.0	10,983.2	12,844.4	10,602.0	54.6	53.6	38.02	2,259.7	259.0	481.2	400.3	80.91	5.947		
13,320.7	10,982.5	12,861.2	10,601.9	54.8	53.8	38.06	2,276.6	258.7	481.1	399.7	81.33	5.915		
13,400.0	10,982.7	12,936.2	10,600.7	55.8	54.7	38.17	2,351.5	258.0	483.7	400.9	82.79	5.842		
13,500.0	10,982.5	13,035.8	10,599.1	57.0	55.9	38.46	2,451.1	257.7	487.8	402.9	84.85	5.749		
13,600.0	10,980.5	13,147.3	10,599.5	58.2	57.3	39.33	2,562.6	258.1	490.2	402.8	87.41	5.608		
13,700.0	10,975.2	13,254.5	10,602.7	59.5	58.7	40.62	2,669.7	257.9	487.6	397.2	90.36	5.396		
13,800.0	10,969.5	13,350.2	10,605.6	60.8	60.0	41.53	2,765.4	257.2	483.3	390.0	93.24	5.183		
13,844.7	10,968.3	13,389.5	10,606.1	61.4	60.5	41.74	2,804.7	256.7	482.9	388.5	94.34	5.119		
13,900.0	10,967.5	13,441.1	10,605.7	62.1	61.2	41.86	2,856.3	255.9	483.3	387.7	95.54	5.058		
14,000.0	10,968.2	13,538.7	10,604.0	63.4	62.4	41.93	2,953.9	254.1	487.1	389.5	97.61	4.990		
14,100.0	10,968.3	13,637.0	10,602.5	64.8	63.8	42.28	3,052.2	252.9	492.5	392.5	100.04	4.924		
14,200.0	10,967.6	13,738.8	10,601.1	66.1	65.2	42.68	3,153.9	252.0	496.0	393.5	102.41	4.843		
14,300.0	10,966.4	13,843.8	10,600.9	67.5	66.6	42.72	3,259.0	251.2	494.8	390.3	104.49	4.735		
14,381.9	10,965.2	13,915.2	10,600.8	68.6	67.6	42.77	3,330.3	250.9	493.7	387.5	106.23	4.648		
14,400.0	10,964.4	13,930.3	10,600.5	68.9	67.8	42.83	3,345.5	251.0	493.6	386.9	106.67	4.628		
14,500.0	10,963.9	14,036.3	10,599.1	70.2	69.3	42.88	3,451.4	252.1	495.1	386.3	108.84	4.549		
14,600.0	10,962.4	14,138.7	10,599.4	71.6	70.7	43.21	3,553.8	252.8	495.6	384.2	111.37	4.450		
14,700.0	10,961.6	14,238.2	10,599.1	73.0	72.1	43.59	3,653.3	252.9	498.0	384.0	113.97	4.370		
14,800.0	10,963.1	14,339.0	10,599.1	74.5	73.5	43.93	3,754.1	252.8	502.6	386.1	116.54	4.313		
14,900.0	10,963.6	14,439.1	10,598.8	75.9	75.0	44.14	3,854.2	252.9	505.7	386.7	119.01	4.249		
15,000.0	10,961.7	14,535.2	10,598.1	77.3	76.4	44.35	3,950.3	251.9	506.2	384.7	121.52	4.166		
15,100.0	10,956.7	14,634.3	10,594.5	78.8	77.8	44.64	4,049.3	250.3	506.7	382.6	124.13	4.082		
15,200.0	10,952.1	14,732.7	10,589.6	80.3	79.3	44.47	4,147.5	246.3	505.1	379.0	126.08	4.006		
15,300.0	10,949.0	14,830.2	10,583.6	81.7	80.7	43.80	4,244.8	242.3	503.4	376.0	127.41	3.951		
15,400.0	10,944.6	14,929.6	10,577.9	83.2	82.2	43.26	4,344.0	239.0	500.7	371.8	128.90	3.884		
15,500.0	10,939.4	15,031.5	10,572.3	84.7	83.7	42.81	4,445.7	235.6	497.2	366.7	130.50	3.810		
15,600.0	10,933.1	15,133.6	10,568.0	86.1	85.2	42.63	4,547.6	233.2	493.2	360.7	132.51	3.722		
15,700.0	10,930.4	15,239.8	10,566.6	87.6	86.8	42.38	4,653.8	231.6	489.9	355.4	134.49	3.642		
15,741.9	10,930.3	15,278.0	10,566.2	88.2	87.4	42.29	4,692.0	231.3	489.5	354.2	135.28	3.618		
15,800.0	10,930.7	15,327.2	10,565.2	89.1	88.1	42.15	4,741.1	231.2	490.4	354.1	136.31	3.598		
15,900.0	10,931.5	15,417.1	10,560.1	90.6	89.5	41.76	4,830.9	231.1	496.1	358.2	137.98	3.596		
16,000.0	10,931.1	15,517.1	10,556.1	92.1	91.0	41.88	4,930.9	232.6	502.2	361.7	140.48	3.575		
16,100.0	10,929.1	15,617.2	10,550.7	93.6	92.5	41.90	5,030.7	233.8	506.4	363.7	142.65	3.550		
16,200.0	10,928.0	15,720.0	10,545.9	95.1	94.1	41.60	5,133.4	234.5	508.7	364.3	144.43	3.522		
16,300.0	10,925.1	15,817.9	10,540.8	96.6	95.6	41.32	5,231.2	234.7	509.6	363.3	146.26	3.484		
16,400.0	10,921.5	15,914.7	10,535.7	98.2	97.1	41.22	5,327.8	235.6	511.0	362.7	148.33	3.445		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	Advance Energy Partners	Local Co-ordinate Reference:	Well Wool Head 20 State Com #511H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3754.5usft (H&P 466)
Reference Site:	(Wool Head)Sec20_T-21-S_R-33-E	MD Reference:	KB @ 3754.5usft (H&P 466)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Wool Head 20 State Com #511H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 10_13
Reference Design:	AWB	Offset TVD Reference:	Offset Datum

Offset Design:(Wool Head)Sec20_T-21-S_R-33-E - Wool Head 20 State Com #510H - OWB - AWB

Offset Site Error: 0.0 usft

Offset Well Error: 0.0 usft

Survey Program: 238-MWD		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned: Distance		Minimum Separation (usft)	Separation Factor	Warning
Reference Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
16,500.0	10,918.6	16,021.3	10,529.8	99.7	98.7	40.92	5,434.3	236.0	511.9	361.9	150.07	3.411	
16,600.0	10,917.4	16,134.0	10,527.7	101.2	100.4	40.66	5,547.0	237.0	511.1	359.0	152.03	3.362	
16,700.0	10,916.0	16,231.2	10,525.5	102.7	101.9	40.36	5,644.1	236.3	509.8	356.1	153.74	3.316	
16,728.4	10,915.5	16,258.0	10,524.5	103.2	102.3	40.25	5,670.9	235.8	509.8	355.6	154.18	3.306	
16,800.0	10,914.7	16,329.2	10,521.2	104.3	103.4	39.89	5,742.0	234.3	510.3	355.2	155.16	3.289	
16,900.0	10,912.7	16,424.7	10,516.4	105.8	104.9	39.45	5,837.4	232.0	511.1	354.5	156.66	3.263	
17,000.0	10,908.7	16,521.3	10,510.1	107.4	106.4	39.16	5,933.7	229.7	512.8	354.3	158.52	3.235	
17,100.0	10,907.2	16,625.2	10,504.3	108.9	108.1	39.17	6,037.5	228.1	518.5	357.6	160.87	3.223	
17,200.0	10,906.6	16,719.0	10,500.8	110.5	109.5	39.52	6,131.1	228.7	525.1	361.4	163.77	3.207	
17,300.0	10,904.5	16,811.2	10,496.8	112.0	111.0	39.89	6,223.3	230.7	529.9	363.4	166.42	3.184	
17,400.0	10,903.4	16,924.1	10,492.8	113.6	112.7	39.91	6,336.1	233.4	532.8	364.0	168.79	3.157	
17,500.0	10,902.9	17,020.3	10,490.6	115.2	114.2	39.87	6,432.3	235.3	535.0	363.9	171.02	3.128	
17,600.0	10,899.7	17,106.3	10,486.7	116.7	115.6	39.94	6,518.1	237.7	537.7	364.3	173.37	3.101	
17,700.0	10,893.8	17,150.0	10,484.3	118.3	116.2	40.01	6,561.7	239.1	542.7	368.1	174.65	3.107	
17,800.0	10,889.1	17,150.0	10,484.3	119.9	116.2	40.14	6,561.7	239.1	565.5	394.3	171.23	3.303	
17,900.0	10,886.1	17,150.0	10,484.3	121.4	116.2	40.06	6,561.7	239.1	605.5	441.0	164.51	3.681	
18,000.0	10,881.7	17,150.0	10,484.3	123.0	116.2	39.05	6,561.7	239.1	657.9	501.3	156.56	4.202	
18,100.0	10,874.9	17,150.0	10,484.3	124.6	116.2	38.97	6,561.7	239.1	719.4	570.9	148.55	4.843	

Company:	Advance Energy Partners	Local Co-ordinate Reference:	Well Wool Head 20 State Com #511H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3754.5usft (H&P 466)
Reference Site:	(Wool Head)Sec20_T-21-S_R-33-E	MD Reference:	KB @ 3754.5usft (H&P 466)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Wool Head 20 State Com #511H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 10_13
Reference Design:	AWB	Offset TVD Reference:	Offset Datum

Offset Design:(Wool Head)Sec20_T-21-S_R-33-E - Wool Head 20 State Com #512H - OWB - AWB

Offset Site Error: 0.0 usft

Offset Well Error: 0.0 usft

Survey Program: 238-MWD		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned:		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Distance Between Centres (usft)	Between Ellipses (usft)			
0.0	0.0	0.0	0.0	0.0	0.0	89.54	0.8	99.0	99.0				
100.0	100.0	98.2	98.2	0.1	0.2	80.45	0.7	98.9	98.9	98.6	0.29	342.950	
200.0	200.0	198.4	198.4	0.3	0.3	80.84	0.5	98.6	98.5	97.8	0.63	156.954	
300.0	300.0	298.8	298.8	0.6	0.6	115.70	0.3	98.0	97.9	96.7	1.20	81.765	
400.0	400.0	398.8	398.8	1.0	1.0	138.40	0.0	97.1	97.5	95.5	1.91	51.011	
500.0	500.0	498.7	498.7	1.3	1.3	107.35	-0.3	96.3	97.1	94.5	2.63	36.983	
600.0	600.0	599.1	599.1	1.7	1.7	128.39	-0.6	95.4	96.5	93.2	3.34	28.890	
700.0	700.0	699.1	699.1	2.0	2.0	158.86	-1.0	94.1	96.1	92.0	4.06	23.694	
800.0	800.0	799.7	799.7	2.4	2.4	177.42	-1.9	92.6	95.9	91.2	4.77	20.112	
900.0	900.0	900.5	900.5	2.7	2.8	169.62	-2.9	90.3	95.3	89.8	5.49	17.378	
1,000.0	999.9	1,000.6	1,000.5	3.1	3.1	-170.49	-4.0	87.5	94.4	88.2	6.20	15.225	
1,025.8	1,025.7	1,025.8	1,025.7	3.2	3.2	-167.17	-4.4	86.9	94.3	87.9	6.38	14.777 CC	
1,100.0	1,099.9	1,098.6	1,098.5	3.4	3.5	-159.51	-5.4	85.9	95.0	88.1	6.90	13.767	
1,200.0	1,199.9	1,198.5	1,198.4	3.8	3.8	-157.96	-6.8	85.3	97.0	89.4	7.61	12.743	
1,300.0	1,299.8	1,299.6	1,299.4	4.2	4.2	-155.41	-8.0	84.1	98.5	90.1	8.33	11.827	
1,400.0	1,399.8	1,401.0	1,400.8	4.5	4.6	-149.65	-9.9	81.7	99.4	90.3	9.04	10.989	
1,500.0	1,499.7	1,501.4	1,501.1	4.9	4.9	-144.27	-12.1	77.9	99.6	89.9	9.76	10.209	
1,600.0	1,599.6	1,600.6	1,600.2	5.2	5.3	-132.11	-15.0	74.6	99.6	89.2	10.47	9.513	
1,666.9	1,666.5	1,667.0	1,666.6	5.5	5.5	-132.36	-16.7	72.8	99.7	88.7	10.95	9.100	
1,700.0	1,699.6	1,700.0	1,699.5	5.6	5.6	-132.65	-17.4	72.0	99.6	88.4	11.19	8.904	
1,800.0	1,799.5	1,799.9	1,799.4	5.9	6.0	-146.07	-19.0	69.9	100.0	88.1	11.90	8.406	
1,900.0	1,899.5	1,899.8	1,899.2	6.3	6.4	-160.30	-19.8	67.9	100.2	87.6	12.62	7.942	
2,000.0	1,999.5	1,996.7	1,996.1	6.6	6.7	-2.93	-20.7	67.6	99.9	86.6	13.29	7.517	
2,100.0	2,099.4	2,094.2	2,093.6	7.0	7.0	9.19	-22.2	70.2	99.5	85.6	13.94	7.141	
2,200.0	2,199.3	2,194.7	2,194.0	7.3	7.4	13.91	-24.1	73.7	99.2	84.6	14.61	6.787	
2,203.9	2,203.3	2,198.7	2,198.0	7.3	7.4	14.48	-24.2	73.8	99.2	84.5	14.64	6.775	
2,300.0	2,299.3	2,295.3	2,294.6	7.6	7.7	41.96	-24.0	76.6	99.8	84.5	15.29	6.528	
2,400.0	2,399.3	2,395.2	2,394.4	8.0	8.0	52.38	-22.5	79.7	101.8	85.8	15.96	6.379	
2,500.0	2,499.3	2,495.5	2,494.6	8.3	8.3	46.00	-20.9	82.7	103.4	86.8	16.63	6.217	
2,600.0	2,599.3	2,595.6	2,594.7	8.7	8.7	53.86	-19.2	85.5	104.8	87.5	17.31	6.053	
2,700.0	2,699.2	2,695.8	2,694.9	9.0	9.0	68.48	-17.2	88.1	106.4	88.4	17.99	5.914	
2,800.0	2,799.2	2,796.4	2,795.4	9.3	9.4	70.57	-15.4	90.3	107.7	89.1	18.68	5.767	
2,900.0	2,899.2	2,895.4	2,894.4	9.7	9.7	64.61	-15.2	92.6	109.4	90.1	19.36	5.652	
3,000.0	2,999.2	2,995.8	2,994.7	10.0	10.0	47.94	-14.1	95.2	110.8	90.8	20.06	5.527	
3,100.0	3,099.2	3,095.5	3,094.4	10.4	10.4	39.20	-12.7	97.6	111.5	90.8	20.75	5.376	
3,200.0	3,199.1	3,195.1	3,194.0	10.7	10.7	38.11	-11.5	100.6	112.2	90.7	21.43	5.233	
3,300.0	3,299.1	3,294.8	3,293.6	11.1	11.1	35.58	-10.1	103.6	112.7	90.6	22.12	5.096	
3,400.0	3,399.1	3,395.9	3,394.6	11.4	11.4	34.26	-9.2	106.7	113.1	90.3	22.83	4.957	
3,500.0	3,499.0	3,497.2	3,496.0	11.8	11.8	44.17	-9.6	108.2	112.4	88.9	23.53	4.776	
3,600.0	3,599.0	3,596.9	3,595.7	12.1	12.1	49.55	-10.6	109.0	111.6	87.3	24.23	4.604	
3,700.0	3,698.9	3,697.2	3,695.9	12.5	12.5	53.83	-11.1	110.0	111.0	86.0	24.94	4.449	
3,800.0	3,798.9	3,797.4	3,796.2	12.8	12.8	55.68	-11.5	110.8	110.4	84.8	25.64	4.306	
3,900.0	3,898.9	3,898.0	3,896.7	13.2	13.2	54.28	-11.8	111.0	109.3	82.9	26.35	4.148	
4,000.0	3,998.9	3,998.0	3,996.7	13.6	13.5	58.07	-12.1	111.1	108.1	81.0	27.05	3.994	
4,100.0	4,098.8	4,098.0	4,096.7	13.9	13.9	57.18	-12.1	111.3	106.9	79.1	27.76	3.850	
4,200.0	4,198.8	4,197.8	4,196.5	14.3	14.2	49.17	-12.8	111.2	105.4	76.9	28.46	3.703	
4,300.0	4,298.7	4,297.6	4,296.3	14.6	14.6	51.87	-13.8	111.3	103.9	74.7	29.17	3.560	
4,400.0	4,398.7	4,397.4	4,396.1	15.0	14.9	49.18	-14.5	111.6	102.5	72.6	29.87	3.430	
4,500.0	4,498.6	4,497.7	4,496.4	15.3	15.3	49.18	-14.2	112.2	100.8	70.2	30.58	3.295	
4,600.0	4,598.6	4,597.6	4,596.3	15.7	15.6	45.09	-12.9	112.9	98.4	67.1	31.28	3.145	
4,700.0	4,698.5	4,697.2	4,695.9	16.0	16.0	14.31	-11.4	114.2	96.9	64.9	31.97	3.030	
4,800.0	4,798.5	4,797.2	4,795.9	16.4	16.3	-59.57	-10.0	115.4	96.3	63.6	32.66	2.948	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	Advance Energy Partners	Local Co-ordinate Reference:	Well Wool Head 20 State Com #511H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3754.5usft (H&P 466)
Reference Site:	(Wool Head)Sec20_T-21-S_R-33-E	MD Reference:	KB @ 3754.5usft (H&P 466)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Wool Head 20 State Com #511H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 10_13
Reference Design:	AWB	Offset TVD Reference:	Offset Datum

Offset Design:(Wool Head)Sec20_T-21-S_R-33-E - Wool Head 20 State Com #512H - OWB - AWB													Offset Site Error:	0.0 usft
Survey Program: 238-MWD													Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Rule Assigned: Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
4,824.8	4,823.4	4,821.9	4,820.6	16.5	16.4	-60.94	-9.7	115.7	96.3	63.5	32.83	2.933		
4,900.0	4,898.5	4,896.9	4,895.6	16.7	16.7	-64.75	-8.6	116.9	96.5	63.2	33.35	2.894		
5,000.0	4,998.5	4,997.2	4,995.8	17.1	17.0	-60.29	-6.8	118.4	96.3	62.3	34.04	2.830		
5,100.0	5,098.5	5,097.4	5,096.0	17.4	17.4	-65.16	-5.0	119.5	95.9	61.1	34.73	2.760		
5,200.0	5,198.4	5,197.4	5,196.0	17.7	17.7	-69.94	-3.1	120.5	95.4	59.9	35.42	2.692		
5,300.0	5,298.4	5,297.5	5,296.0	18.1	18.0	-62.57	-1.1	121.3	94.8	58.7	36.11	2.626		
5,320.4	5,318.7	5,317.9	5,316.4	18.2	18.1	-82.85	-0.8	121.4	94.8	58.5	36.25	2.614 ES		
5,400.0	5,398.3	5,397.6	5,396.1	18.4	18.4	-114.29	0.4	121.8	96.0	59.1	36.80	2.607 SF		
5,500.0	5,497.9	5,497.6	5,496.1	18.8	18.7	-118.95	1.0	122.0	99.7	62.2	37.49	2.660		
5,600.0	5,597.5	5,597.0	5,595.5	19.1	19.1	-125.54	2.0	121.6	104.5	66.3	38.18	2.737		
5,700.0	5,697.1	5,693.3	5,691.8	19.5	19.4	-128.77	1.7	122.7	111.3	72.4	38.85	2.864		
5,800.0	5,796.7	5,789.1	5,787.4	19.8	19.8	-126.56	-2.3	128.1	121.7	82.2	39.49	3.082		
5,900.0	5,896.3	5,887.6	5,885.5	20.1	20.1	-111.89	-7.1	135.2	132.6	92.4	40.17	3.301		
6,000.0	5,995.8	5,986.3	5,983.8	20.5	20.5	-102.47	-11.7	142.8	142.2	101.3	40.86	3.480		
6,100.0	6,095.2	6,085.1	6,082.1	20.8	20.8	-102.42	-16.4	151.0	151.7	110.1	41.56	3.650		
6,200.0	6,194.6	6,181.8	6,178.2	21.2	21.2	-102.32	-21.4	160.0	161.9	119.7	42.21	3.836		
6,300.0	6,294.0	6,278.0	6,273.6	21.6	21.5	-104.95	-27.5	171.2	174.3	131.5	42.85	4.069		
6,400.0	6,393.4	6,376.9	6,371.5	21.9	21.9	-101.90	-34.3	183.9	187.6	144.0	43.56	4.307		
6,500.0	6,492.9	6,475.7	6,469.2	22.3	22.2	-105.93	-41.1	196.6	200.7	156.4	44.26	4.534		
6,600.0	6,592.4	6,575.1	6,567.6	22.6	22.6	-120.30	-47.8	209.3	215.2	170.3	44.99	4.785		
6,700.0	6,691.9	6,675.2	6,666.6	23.0	23.0	-126.89	-54.5	221.6	231.2	185.5	45.72	5.057		
6,800.0	6,791.5	6,775.0	6,765.6	23.3	23.3	-125.79	-60.9	233.3	246.7	200.2	46.45	5.311		
6,900.0	6,891.0	6,871.6	6,861.4	23.7	23.7	-124.46	-66.8	244.5	261.9	214.8	47.13	5.557		
7,000.0	6,990.6	6,964.9	6,953.6	24.1	24.1	-121.54	-73.1	257.1	278.6	230.8	47.74	5.835		
7,100.0	7,090.2	7,061.5	7,048.8	24.4	24.4	-120.35	-80.4	271.8	296.4	248.0	48.42	6.122		
7,200.0	7,189.8	7,160.0	7,145.9	24.8	24.8	-117.59	-87.6	286.7	314.0	264.9	49.14	6.391		
7,300.0	7,289.4	7,259.8	7,244.4	25.2	25.2	-115.02	-94.4	301.6	331.1	281.2	49.88	6.638		
7,400.0	7,389.0	7,358.1	7,341.3	25.5	25.6	-112.76	-100.8	316.0	347.5	296.9	50.59	6.869		
7,500.0	7,488.7	7,456.7	7,438.6	25.9	26.0	-112.54	-107.3	330.5	363.8	312.5	51.31	7.090		
7,600.0	7,588.4	7,557.0	7,537.7	26.3	26.3	-110.70	-113.9	345.1	379.8	327.7	52.06	7.295		
7,700.0	7,688.1	7,657.3	7,636.8	26.6	26.7	-104.88	-119.8	359.1	394.8	342.0	52.81	7.476		
7,800.0	7,787.9	7,756.8	7,735.2	27.0	27.1	-103.72	-125.2	372.7	408.8	355.3	53.54	7.636		
7,900.0	7,887.6	7,854.8	7,832.2	27.3	27.5	-106.11	-130.2	386.1	423.2	369.0	54.26	7.801		
8,000.0	7,987.3	7,953.6	7,929.9	27.7	27.9	-107.88	-135.1	399.7	438.1	383.1	54.98	7.968		
8,100.0	8,087.1	8,052.8	8,028.0	28.1	28.3	-107.90	-139.9	413.3	453.0	397.3	55.72	8.130		
8,200.0	8,186.8	8,152.7	8,127.0	28.4	28.7	-109.98	-144.8	426.9	467.9	411.4	56.46	8.287		
8,300.0	8,286.6	8,255.3	8,228.5	28.8	29.1	-109.54	-149.7	440.3	482.2	425.0	57.24	8.425		
8,400.0	8,386.3	8,357.0	8,329.3	29.2	29.5	-117.13	-154.6	452.9	495.9	437.9	58.00	8.551		
8,500.0	8,486.1	8,454.1	8,425.6	29.5	29.9	-112.97	-159.2	465.0	510.4	451.7	58.70	8.695		
8,600.0	8,586.0	8,557.0	8,527.7	29.9	30.3	-121.44	-163.7	477.0	523.1	463.6	59.47	8.795		
8,700.0	8,686.0	8,647.4	8,617.2	30.3	30.6	-132.14	-167.4	488.4	536.8	476.7	60.08	8.934		
8,800.0	8,785.9	8,746.9	8,715.8	30.6	31.0	-133.07	-171.7	501.8	551.3	490.5	60.81	9.067		
8,900.0	8,885.9	8,846.8	8,814.7	31.0	31.4	-24.20	-175.8	514.5	563.7	502.1	61.53	9.161		
9,000.0	8,985.9	8,943.8	8,910.8	31.3	31.8	-29.12	-180.1	527.6	574.7	512.5	62.21	9.238		
9,100.0	9,085.9	9,053.5	9,019.4	31.7	32.2	-30.53	-185.4	541.7	585.8	522.8	63.04	9.292		
9,200.0	9,185.9	9,158.3	9,123.4	32.0	32.6	58.59	-191.1	553.4	595.8	532.0	63.80	9.339		
9,300.0	9,285.9	9,264.0	9,228.3	32.3	33.1	163.42	-198.4	564.3	605.5	541.0	64.57	9.378		
9,400.0	9,385.9	9,358.5	9,322.1	32.7	33.4	162.05	-204.6	574.2	616.4	551.2	65.22	9.451		
9,500.0	9,485.8	9,461.7	9,424.6	33.0	33.8	146.63	-210.2	584.8	627.7	561.8	65.96	9.517		
9,600.0	9,585.8	9,569.5	9,531.8	33.4	34.2	129.10	-214.9	594.7	638.3	571.6	66.73	9.565		
9,700.0	9,685.8	9,674.2	9,636.1	33.7	34.6	65.19	-218.3	602.9	646.5	579.0	67.47	9.582		
9,800.0	9,785.7	9,775.3	9,736.9	34.0	35.0	38.49	-220.4	610.4	651.6	583.5	68.17	9.559		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	Advance Energy Partners	Local Co-ordinate Reference:	Well Wool Head 20 State Com #511H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3754.5usft (H&P 466)
Reference Site:	(Wool Head)Sec20_T-21-S_R-33-E	MD Reference:	KB @ 3754.5usft (H&P 466)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Wool Head 20 State Com #511H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 10_13
Reference Design:	AWB	Offset TVD Reference:	Offset Datum

Offset Design: (Wool Head)Sec20_T-21-S_R-33-E - Wool Head 20 State Com #512H - OWB - AWB													Offset Site Error:	0.0 usft
Survey Program: 238-MWD													Offset Well Error:	0.0 usft
Reference	Offset	Semi Major Axis	Highside	Offset Wellbore Centre	Rule Assigned:				Warning					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Toolface (°)	+N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
9,900.0	9,885.7	9,880.9	9,842.3	34.4	35.4	89.44	-220.8	617.6	657.3	588.4	68.91	9.538		
10,000.0	9,985.7	9,974.8	9,936.0	34.7	35.8	113.30	-221.5	624.0	664.5	594.9	69.56	9.552		
10,100.0	10,085.7	10,075.8	10,036.7	35.1	36.1	116.78	-223.7	631.2	672.2	601.9	70.27	9.566		
10,200.0	10,185.7	10,191.1	10,151.6	35.4	36.6	141.88	-227.4	638.8	679.5	608.5	71.06	9.563		
10,300.0	10,285.7	10,321.3	10,281.7	35.7	37.0	-168.42	-231.8	641.8	682.8	610.9	71.87	9.500		
10,400.0	10,385.7	10,432.0	10,392.4	36.1	37.4	-131.70	-235.7	641.1	683.0	610.4	72.58	9.409		
10,434.5	10,420.2	10,464.7	10,425.0	36.2	37.5	-160.83	-237.0	640.8	682.8	610.0	72.82	9.377		
10,500.0	10,485.7	10,528.5	10,488.8	36.4	37.7	168.95	-239.6	640.3	683.0	609.7	73.27	9.320		
10,600.0	10,585.4	10,555.0	10,515.3	36.8	37.8	99.83	-240.6	640.1	688.8	615.2	73.57	9.363		
10,700.0	10,681.1	10,555.0	10,515.3	37.1	37.8	93.19	-240.6	640.1	708.9	636.0	72.88	9.726		

Company:	Advance Energy Partners	Local Co-ordinate Reference:	Well Wool Head 20 State Com #511H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3754.5usft (H&P 466)
Reference Site:	(Wool Head)Sec20_T-21-S_R-33-E	MD Reference:	KB @ 3754.5usft (H&P 466)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Wool Head 20 State Com #511H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 10_13
Reference Design:	AWB	Offset TVD Reference:	Offset Datum

Offset Design:(Wool Head)Sec20_T-21-S_R-33-E - Wool Head 20 State Com #554H - OWB - AWB

Offset Site Error: 0.0 usft

Offset Well Error: 0.0 usft

Survey Program:		Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned:		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Distance Between Centres (usft)	Between Ellipses (usft)			
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	89.31	0.4	33.1	33.2				
100.0	100.0	97.5	97.5	0.1	0.2	80.55	0.3	80.55	0.3	33.1	33.1	32.8	0.29	114.730	
200.0	200.0	197.5	197.5	0.3	0.3	81.96	0.0	81.96	0.0	33.1	33.0	32.4	0.63	52.538	
300.0	300.0	297.6	297.6	0.6	0.6	118.35	-0.5	118.35	-0.5	32.9	32.9	31.7	1.19	27.561	
378.3	378.3	376.0	376.0	0.9	0.9	137.01	-1.0	137.01	-1.0	32.5	32.8	31.0	1.75	18.716	
400.0	400.0	397.6	397.6	1.0	1.0	142.59	-1.1	142.59	-1.1	32.4	32.9	31.0	1.91	17.246	
500.0	500.0	497.8	497.8	1.3	1.3	113.82	-2.2	113.82	-2.2	31.8	32.8	30.2	2.62	12.533	
600.0	600.0	597.8	597.8	1.7	1.7	136.98	-2.8	136.98	-2.8	30.7	32.4	29.1	3.33	9.731	
700.0	700.0	697.9	697.9	2.0	2.0	168.60	-3.2	168.60	-3.2	29.6	32.3	28.2	4.04	7.979	
800.0	800.0	798.4	798.4	2.4	2.4	-170.18	-4.5	-170.18	-4.5	27.2	31.5	26.8	4.76	6.628	
884.6	884.5	882.7	882.5	2.7	2.7	-173.82	-6.0	-173.82	-6.0	24.7	30.9	25.6	5.36	5.771	
900.0	900.0	898.0	897.9	2.7	2.7	-174.66	-6.2	-174.66	-6.2	24.4	31.0	25.5	5.47	5.660	
1,000.0	999.9	997.9	997.7	3.1	3.1	-153.85	-7.1	-153.85	-7.1	22.8	31.5	25.4	6.18	5.102	
1,100.0	1,099.9	1,097.9	1,097.8	3.4	3.5	-143.57	-7.8	-143.57	-7.8	21.4	32.4	25.5	6.89	4.698	
1,200.0	1,199.9	1,197.9	1,197.7	3.8	3.8	-142.46	-8.7	-142.46	-8.7	19.8	33.3	25.7	7.61	4.375	
1,300.0	1,299.8	1,297.9	1,297.7	4.2	4.2	-140.00	-10.0	-140.00	-10.0	18.2	34.4	26.1	8.32	4.133	
1,400.0	1,399.8	1,398.0	1,397.8	4.5	4.5	-135.63	-11.0	-135.63	-11.0	16.4	35.7	26.6	9.04	3.948	
1,500.0	1,499.7	1,498.0	1,497.8	4.9	4.9	-132.49	-12.3	-132.49	-12.3	14.5	37.4	27.6	9.75	3.832	
1,600.0	1,599.6	1,598.0	1,597.7	5.2	5.3	-122.39	-13.7	-122.39	-13.7	12.2	38.2	27.7	10.46	3.647	
1,700.0	1,699.6	1,698.1	1,697.8	5.6	5.6	-125.05	-14.7	-125.05	-14.7	10.2	38.2	27.1	11.18	3.422	
1,800.0	1,799.5	1,798.4	1,798.1	5.9	6.0	-139.86	-15.4	-139.86	-15.4	7.5	37.9	26.0	11.89	3.185	
1,900.0	1,899.5	1,898.4	1,898.0	6.3	6.3	-155.56	-15.1	-155.56	-15.1	4.7	37.1	24.5	12.60	2.941	
2,000.0	1,999.5	1,998.2	1,997.7	6.6	6.7	0.21	-14.1	0.21	-14.1	2.3	34.3	21.1	13.29	2.584	
2,100.0	2,099.4	2,097.5	2,097.1	7.0	7.0	10.59	-12.9	10.59	-12.9	1.1	29.7	15.8	13.96	2.130	
2,200.0	2,199.3	2,197.2	2,196.8	7.3	7.4	12.82	-11.6	12.82	-11.6	1.3	25.7	11.0	14.62	1.755	
2,300.0	2,299.3	2,297.1	2,296.7	7.6	7.7	39.63	-10.2	39.63	-10.2	1.8	23.7	8.5	15.29	1.553	
2,400.0	2,399.3	2,397.1	2,396.6	8.0	8.0	49.34	-8.7	49.34	-8.7	2.6	23.4	7.5	15.97	1.468 Level 3	
2,500.0	2,499.3	2,497.0	2,496.6	8.3	8.4	42.68	-7.3	42.68	-7.3	3.5	23.1	6.5	16.64	1.389 Level 3	
2,600.0	2,599.3	2,597.1	2,596.6	8.7	8.7	50.13	-5.9	50.13	-5.9	4.5	22.7	5.4	17.32	1.311 Level 3	
2,700.0	2,699.2	2,697.2	2,696.7	9.0	9.0	64.29	-4.2	64.29	-4.2	5.0	22.3	4.3	18.01	1.240 Level 2	
2,745.5	2,744.8	2,742.6	2,742.1	9.2	9.2	65.27	-3.5	65.27	-3.5	5.3	22.3	3.9	18.32	1.215 Level 2, CC	
2,800.0	2,799.2	2,797.0	2,796.5	9.3	9.4	66.77	-2.8	66.77	-2.8	5.8	22.4	3.7	18.70	1.196 Level 2	
2,900.0	2,899.2	2,896.6	2,896.0	9.7	9.7	61.49	-2.0	61.49	-2.0	8.0	23.8	4.4	19.37	1.230 Level 2	
3,000.0	2,999.2	2,996.2	2,995.5	10.0	10.0	46.54	-1.8	46.54	-1.8	11.7	26.5	6.5	20.05	1.324 Level 3	
3,100.0	3,099.2	3,096.0	3,095.2	10.4	10.4	39.54	-1.8	39.54	-1.8	16.7	29.8	9.1	20.73	1.438 Level 3	
3,200.0	3,199.1	3,196.2	3,195.4	10.7	10.7	40.07	-1.7	40.07	-1.7	21.2	32.2	10.7	21.43	1.501	
3,300.0	3,299.1	3,296.3	3,295.4	11.1	11.1	39.60	-1.6	39.60	-1.6	24.8	33.5	11.4	22.13	1.514	
3,400.0	3,399.1	3,396.5	3,395.5	11.4	11.4	39.61	-1.4	39.61	-1.4	28.3	34.6	11.7	22.83	1.515	
3,500.0	3,499.0	3,497.1	3,496.1	11.8	11.8	50.50	-1.2	50.50	-1.2	30.6	34.7	11.2	23.53	1.475 Level 3	
3,600.0	3,599.0	3,597.3	3,596.3	12.1	12.1	56.98	-0.8	56.98	-0.8	31.6	33.9	9.7	24.23	1.401 Level 3	
3,698.8	3,697.7	3,695.8	3,694.8	12.5	12.4	62.87	-0.5	62.87	-0.5	32.7	33.6	8.6	24.92	1.347 Level 3	
3,700.0	3,698.9	3,697.1	3,696.0	12.5	12.5	62.98	-0.5	62.98	-0.5	32.7	33.5	8.6	24.93	1.346 Level 3	
3,800.0	3,798.9	3,797.1	3,796.0	12.8	12.8	65.75	0.0	65.75	0.0	34.1	33.7	8.0	25.63	1.313 Level 3	
3,900.0	3,898.9	3,897.0	3,895.9	13.2	13.1	65.10	0.5	65.10	0.5	35.6	33.8	7.5	26.33	1.283 Level 3	
4,000.0	3,998.9	3,996.8	3,995.7	13.6	13.5	69.82	0.6	69.82	0.6	37.6	34.6	7.5	27.03	1.278 Level 3	
4,100.0	4,098.8	4,096.7	4,095.6	13.9	13.8	69.16	1.1	69.16	1.1	40.1	35.7	7.9	27.73	1.286 Level 3	
4,200.0	4,198.8	4,196.4	4,195.3	14.3	14.2	60.33	1.8	60.33	1.8	43.1	36.8	8.4	28.43	1.294 Level 3	
4,300.0	4,298.7	4,296.3	4,295.1	14.6	14.5	62.39	1.9	62.39	1.9	46.6	38.3	9.2	29.13	1.314 Level 3	
4,400.0	4,398.7	4,396.4	4,395.2	15.0	14.9	59.32	2.1	59.32	2.1	49.9	39.5	9.7	29.84	1.325 Level 3	
4,500.0	4,498.6	4,496.4	4,495.1	15.3	15.2	59.87	2.1	59.87	2.1	52.9	40.4	9.9	30.54	1.324 Level 3	
4,600.0	4,598.6	4,596.7	4,595.4	15.7	15.6	56.57	2.7	56.57	2.7	56.0	40.7	9.5	31.25	1.303 Level 3	
4,700.0	4,698.5	4,697.5	4,696.1	16.0	16.0	26.60	3.5	26.60	3.5	57.4	39.7	7.7	31.96	1.241 Level 2	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	Advance Energy Partners	Local Co-ordinate Reference:	Well Wool Head 20 State Com #511H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3754.5usft (H&P 466)
Reference Site:	(Wool Head)Sec20_T-21-S_R-33-E	MD Reference:	KB @ 3754.5usft (H&P 466)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Wool Head 20 State Com #511H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 10_13
Reference Design:	AWB	Offset TVD Reference:	Offset Datum

Offset Design:(Wool Head)Sec20_T-21-S_R-33-E - Wool Head 20 State Com #554H - OWB - AWB													Offset Site Error:	0.0 usft
Survey Program: 238-MWD													Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Distance Between Centres (usft)		Minimum Separation (usft)	Separation Factor	Warning	
							+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
4,800.0	4,798.5	4,797.9	4,796.5	16.4	16.3	-46.69	4.2	56.7	37.4	4.8	32.65	1.147	Level 2	
4,900.0	4,898.5	4,897.8	4,896.4	16.7	16.7	-52.05	4.9	55.5	35.0	1.6	33.34	1.049	Level 2	
5,000.0	4,998.5	4,997.7	4,996.3	17.1	17.0	-47.42	5.2	54.5	32.6	-1.5	34.03	0.957	Level 1	
5,100.0	5,098.5	5,097.8	5,096.4	17.4	17.3	-53.01	5.7	53.5	29.9	-4.8	34.72	0.862	Level 1	
5,200.0	5,198.4	5,197.7	5,196.3	17.7	17.7	-59.45	6.4	52.1	27.0	-8.4	35.41	0.762	Level 1	
5,300.0	5,298.4	5,297.8	5,296.4	18.1	18.0	-53.42	6.7	50.4	23.9	-12.2	36.10	0.663	Level 1	
5,384.0	5,382.4	5,381.7	5,380.2	18.4	18.3	-106.18	6.8	48.8	22.4	-14.3	36.68	0.610	Level 1, SF	
5,400.0	5,398.3	5,397.6	5,396.1	18.4	18.4	-111.10	6.8	48.6	22.5	-14.3	36.79	0.611	Level 1, ES	
5,500.0	5,497.9	5,497.1	5,495.6	18.8	18.7	-120.29	3.3	47.6	25.4	-12.1	37.48	0.677	Level 1	
5,600.0	5,597.5	5,596.8	5,595.1	19.1	19.1	-126.62	-2.3	47.4	30.2	-7.9	38.17	0.792	Level 1	
5,700.0	5,697.1	5,696.5	5,694.7	19.5	19.4	-130.32	-7.3	47.6	35.6	-3.3	38.86	0.916	Level 1	
5,800.0	5,796.7	5,796.2	5,794.2	19.8	19.8	-127.04	-14.0	48.3	40.8	1.3	39.55	1.032	Level 2	
5,900.0	5,896.3	5,895.9	5,893.4	20.1	20.1	-109.27	-23.4	50.0	45.7	5.5	40.25	1.136	Level 2	
6,000.0	5,995.8	5,995.5	5,992.6	20.5	20.5	-98.69	-32.7	52.2	49.0	8.1	40.95	1.197	Level 2	
6,100.0	6,095.2	6,095.0	6,091.6	20.8	20.8	-98.66	-41.6	55.2	52.4	10.7	41.65	1.258	Level 3	
6,200.0	6,194.6	6,193.9	6,190.0	21.2	21.2	-98.29	-50.5	59.4	56.8	14.5	42.34	1.343	Level 3	
6,300.0	6,294.0	6,291.5	6,287.0	21.6	21.5	-101.59	-58.6	66.2	64.2	21.2	42.98	1.494	Level 3	
6,400.0	6,393.4	6,391.4	6,386.3	21.9	21.9	-99.69	-66.2	74.6	72.9	29.2	43.71	1.669		
6,500.0	6,492.9	6,491.4	6,485.7	22.3	22.2	-104.44	-74.0	82.4	80.9	36.5	44.43	1.821		
6,600.0	6,592.4	6,590.9	6,584.5	22.6	22.6	-118.85	-81.7	90.2	90.4	45.3	45.14	2.003		
6,700.0	6,691.9	6,690.7	6,683.8	23.0	23.0	-125.44	-88.9	97.8	101.7	55.8	45.87	2.217		
6,800.0	6,791.5	6,790.5	6,783.2	23.3	23.3	-124.42	-95.8	104.6	112.3	65.7	46.59	2.411		
6,900.0	6,891.0	6,890.3	6,882.5	23.7	23.7	-123.20	-102.6	111.2	122.7	75.4	47.31	2.593		
7,000.0	6,990.6	6,990.2	6,982.0	24.1	24.0	-120.60	-109.5	117.5	132.4	84.3	48.04	2.756		
7,100.0	7,090.2	7,089.6	7,081.0	24.4	24.4	-120.01	-116.1	123.6	141.6	92.9	48.75	2.905		
7,200.0	7,189.8	7,188.3	7,179.2	24.8	24.8	-117.69	-122.7	130.1	151.0	101.5	49.46	3.053		
7,300.0	7,289.4	7,289.2	7,279.7	25.2	25.1	-115.63	-128.9	136.4	159.7	109.5	50.20	3.181		
7,400.0	7,389.0	7,388.4	7,378.6	25.5	25.5	-113.82	-134.8	142.4	167.8	116.9	50.92	3.296		
7,500.0	7,488.7	7,488.3	7,478.1	25.9	25.9	-114.04	-140.6	148.6	176.0	124.3	51.65	3.407		
7,600.0	7,588.4	7,588.8	7,578.3	26.3	26.2	-112.72	-146.1	154.1	183.3	130.9	52.38	3.500		
7,700.0	7,688.1	7,688.3	7,677.6	26.6	26.6	-107.38	-151.0	159.6	190.2	137.1	53.10	3.582		
7,800.0	7,787.9	7,788.5	7,777.4	27.0	27.0	-106.59	-155.9	165.0	196.3	142.5	53.83	3.647		
7,900.0	7,887.6	7,888.9	7,877.6	27.3	27.3	-109.23	-161.1	170.3	202.5	147.9	54.56	3.711		
8,000.0	7,987.3	7,990.4	7,978.9	27.7	27.7	-111.15	-166.9	175.1	208.4	153.1	55.31	3.768		
8,100.0	8,087.1	8,091.1	8,079.2	28.1	28.1	-111.19	-172.9	179.4	213.7	157.7	56.04	3.814		
8,200.0	8,186.8	8,192.6	8,180.5	28.4	28.4	-113.31	-179.1	183.0	218.6	161.9	56.78	3.851		
8,300.0	8,286.6	8,293.2	8,280.9	28.8	28.8	-113.12	-184.1	185.8	222.8	165.3	57.51	3.874		
8,400.0	8,386.3	8,390.8	8,378.4	29.2	29.2	-120.94	-188.8	188.7	227.3	169.1	58.22	3.904		
8,500.0	8,486.1	8,487.4	8,474.6	29.5	29.5	-116.43	-194.9	193.4	234.0	175.1	58.92	3.972		
8,600.0	8,586.0	8,586.7	8,573.5	29.9	29.9	-124.22	-201.6	199.2	240.3	180.7	59.64	4.030		
8,700.0	8,686.0	8,689.1	8,675.6	30.3	30.3	-133.94	-208.5	204.6	246.2	185.8	60.39	4.077		
8,800.0	8,785.9	8,791.6	8,777.8	30.6	30.6	-134.17	-215.0	208.6	250.8	189.7	61.13	4.104		
8,900.0	8,885.9	8,890.0	8,876.0	31.0	31.0	-24.56	-220.9	211.7	253.3	191.5	61.83	4.096		
9,000.0	8,985.9	8,986.2	8,971.9	31.3	31.3	-28.92	-226.1	215.6	254.9	192.4	62.51	4.078		
9,100.0	9,085.9	9,084.3	9,069.7	31.7	31.7	-29.78	-231.3	221.3	258.9	195.7	63.20	4.097		
9,200.0	9,185.9	9,188.9	9,174.1	32.0	32.1	59.98	-236.7	226.5	263.0	199.1	63.95	4.113		
9,300.0	9,285.9	9,291.4	9,276.4	32.3	32.5	165.05	-241.2	229.7	265.9	201.2	64.67	4.112		
9,400.0	9,385.9	9,390.8	9,375.7	32.7	32.8	164.12	-246.0	232.9	270.0	204.6	65.37	4.130		
9,500.0	9,485.8	9,489.2	9,473.9	33.0	33.2	149.13	-250.3	236.0	274.5	208.4	66.06	4.155		
9,600.0	9,585.8	9,585.5	9,570.0	33.4	33.5	132.18	-254.5	240.1	280.4	213.7	66.72	4.202		
9,700.0	9,685.8	9,689.0	9,673.3	33.7	33.9	69.18	-259.5	244.6	285.5	218.0	67.45	4.233		
9,800.0	9,785.7	9,784.8	9,768.9	34.0	34.3	43.32	-263.7	248.5	287.6	219.5	68.10	4.223		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



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Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Wool Head 20 State Com #511H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 10_13
Reference Design:	AWB	Offset TVD Reference:	Offset Datum

Offset Design:(Wool Head)Sec20_T-21-S_R-33-E - Wool Head 20 State Com #554H - OWB - AWB												Offset Site Error:	0.0 usft
Survey Program: 238-MWD												Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Distance Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,900.0	9,885.7	9,882.2	9,866.2	34.4	34.6	95.15	-267.6	253.6	292.1	223.4	68.77	4.248	
10,000.0	9,985.7	9,984.5	9,968.3	34.7	35.0	119.74	-271.2	259.0	298.1	228.6	69.49	4.290	
10,100.0	10,085.7	10,086.6	10,070.2	35.1	35.4	123.71	-274.5	263.5	303.6	233.4	70.21	4.324	
10,200.0	10,185.7	10,189.1	10,172.5	35.4	35.8	149.18	-278.2	267.1	308.3	237.3	70.92	4.346	
10,300.0	10,285.7	10,287.9	10,271.2	35.7	36.1	-160.97	-281.4	270.2	313.0	241.4	71.62	4.370	
10,400.0	10,385.7	10,387.4	10,370.6	36.1	36.5	-124.26	-283.9	274.0	317.8	245.5	72.32	4.394	
10,500.0	10,485.7	10,492.7	10,475.8	36.4	36.9	176.36	-286.2	277.2	322.0	248.9	73.06	4.407	
10,600.0	10,585.4	10,592.2	10,575.3	36.8	37.2	108.56	-288.9	279.0	327.5	253.7	73.74	4.441	
10,700.0	10,681.1	10,689.2	10,672.2	37.1	37.6	108.33	-291.6	280.6	338.2	263.9	74.35	4.549	
10,800.0	10,766.0	10,829.1	10,811.1	37.3	38.0	112.52	-280.6	278.8	355.8	281.4	74.47	4.779	
10,900.0	10,839.1	10,937.2	10,911.0	37.6	38.3	114.79	-240.1	277.1	370.4	296.1	74.32	4.984	
11,000.0	10,901.8	11,036.1	10,995.6	37.8	38.5	118.20	-189.0	279.6	389.5	315.3	74.19	5.250	
11,100.0	10,952.5	11,149.7	11,084.6	38.0	38.7	119.94	-119.0	287.5	414.1	340.6	73.46	5.637	
11,200.0	10,989.9	11,274.8	11,172.0	38.3	39.0	122.36	-30.0	296.4	439.1	367.1	72.03	6.097	
11,300.0	11,008.5	11,531.0	11,299.7	38.6	39.7	130.75	190.0	294.4	457.4	391.1	66.30	6.898	
11,400.0	11,011.4	11,721.2	11,331.6	38.9	40.3	134.83	376.1	275.5	457.9	393.4	64.47	7.102	
11,500.0	11,010.4	11,840.9	11,338.0	39.2	40.7	137.02	494.6	259.7	453.6	389.6	64.00	7.087	
11,600.0	11,007.6	11,933.3	11,339.5	39.6	41.1	138.99	585.8	245.6	444.9	381.5	63.42	7.015	
11,700.0	11,005.7	12,016.6	11,338.2	40.1	41.5	139.46	669.0	243.1	441.5	377.9	63.66	6.936	
11,800.0	11,001.7	12,127.9	11,332.3	40.7	42.2	139.60	780.1	243.6	438.9	374.4	64.48	6.806	
11,900.0	11,000.3	12,220.8	11,324.3	41.3	42.7	139.05	872.7	245.7	433.0	367.5	65.57	6.604	
12,000.0	11,000.3	12,301.2	11,318.1	41.9	43.3	138.30	952.7	251.0	429.2	362.4	66.78	6.426	
12,009.9	11,000.1	12,309.0	11,317.7	42.0	43.3	138.24	960.5	251.6	429.1	362.2	66.90	6.415	
12,100.0	10,998.5	12,394.9	11,315.2	42.7	43.9	137.81	1,046.0	258.2	430.7	362.7	68.04	6.330	
12,200.0	10,999.0	12,501.8	11,311.9	43.4	44.7	137.17	1,152.7	264.7	430.0	360.3	69.62	6.175	
12,300.0	11,003.9	12,602.0	11,308.6	44.2	45.5	136.20	1,252.7	269.6	425.2	353.7	71.44	5.951	
12,400.0	11,008.0	12,707.1	11,305.4	45.1	46.4	135.47	1,357.7	273.6	420.4	347.1	73.28	5.736	
12,500.0	11,010.8	12,805.6	11,300.8	46.0	47.3	134.46	1,456.0	277.9	417.7	342.3	75.35	5.543	
12,515.4	11,011.0	12,819.6	11,300.2	46.2	47.4	134.31	1,470.0	278.6	417.6	341.9	75.66	5.520	
12,600.0	11,010.7	12,900.3	11,296.9	47.0	48.1	133.51	1,550.5	283.3	419.4	342.0	77.39	5.419	
12,700.0	11,007.9	12,998.8	11,291.5	47.9	49.1	132.55	1,648.6	289.9	422.7	343.2	79.53	5.315	
12,800.0	11,004.2	13,083.2	11,287.9	49.0	49.9	131.70	1,732.6	297.5	430.7	349.1	81.58	5.279	
12,900.0	11,001.5	13,175.0	11,288.9	50.0	50.9	131.10	1,824.0	305.5	441.7	358.1	83.56	5.286	
13,000.0	10,998.5	13,309.2	11,294.6	51.1	52.3	131.70	1,957.8	305.4	448.6	363.4	85.20	5.265	
13,100.0	10,993.4	13,466.0	11,292.6	52.2	54.0	133.60	2,113.4	286.9	442.4	356.3	86.12	5.137	
13,200.0	10,988.6	13,555.1	11,285.6	53.4	55.0	133.73	2,201.8	278.5	435.7	348.1	87.60	4.974	
13,300.0	10,983.2	13,642.0	11,278.9	54.6	56.1	133.69	2,288.3	274.6	432.8	343.5	89.33	4.845	
13,400.0	10,982.7	13,724.3	11,273.6	55.8	57.0	133.03	2,370.4	272.8	430.0	338.4	91.57	4.696	
13,404.2	10,982.7	13,727.4	11,273.5	55.8	57.1	133.01	2,373.6	272.8	430.0	338.3	91.66	4.691	
13,500.0	10,982.5	13,811.0	11,273.1	57.0	58.1	132.62	2,457.2	272.5	433.0	339.3	93.72	4.620	
13,600.0	10,980.5	13,915.5	11,272.5	58.2	59.3	132.20	2,561.7	271.5	438.1	342.1	96.03	4.562	
13,700.0	10,975.2	14,041.9	11,268.0	59.5	60.9	131.90	2,687.9	269.6	442.7	344.2	98.55	4.492	
13,800.0	10,969.5	14,133.0	11,259.2	60.8	62.1	131.28	2,778.6	269.3	443.1	342.0	101.11	4.383	
13,825.2	10,968.7	14,155.1	11,257.1	61.1	62.4	131.06	2,800.6	269.4	443.0	341.2	101.81	4.351	
13,900.0	10,967.5	14,212.1	11,253.7	62.1	63.1	130.58	2,857.4	270.5	443.9	340.2	103.65	4.282	
14,000.0	10,968.2	14,295.5	11,252.9	63.4	64.2	129.99	2,940.8	272.8	448.7	342.5	106.22	4.224	
14,100.0	10,968.3	14,391.8	11,255.8	64.8	65.4	129.46	3,037.1	275.1	458.1	349.3	108.81	4.210	
14,200.0	10,967.6	14,514.1	11,257.3	66.1	67.1	129.03	3,159.3	276.1	464.0	352.3	111.64	4.156	
14,300.0	10,966.4	14,619.4	11,255.1	67.5	68.5	129.01	3,264.6	275.2	462.7	348.8	113.98	4.060	
14,400.0	10,964.4	14,723.6	11,253.9	68.9	69.9	129.23	3,368.7	273.2	462.0	345.9	116.05	3.981	
14,500.0	10,963.9	14,831.1	11,250.3	70.2	71.4	129.12	3,476.1	270.4	458.5	340.0	118.49	3.869	
14,600.0	10,962.4	14,932.4	11,245.7	71.6	72.8	128.87	3,577.3	267.7	455.8	334.7	121.05	3.765	

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14,700.0	10,961.6	15,039.1	11,239.5	73.0	74.3	128.21	3,683.8	264.3	453.3	329.2	124.05	3.654		
14,800.0	10,963.1	15,144.7	11,233.9	74.5	75.7	127.44	3,789.2	259.3	449.6	322.4	127.25	3.533		
14,900.0	10,963.6	15,246.2	11,227.2	75.9	77.2	126.91	3,890.2	254.2	444.0	313.7	130.32	3.407		
15,000.0	10,961.7	15,350.5	11,219.0	77.3	78.7	126.53	3,994.1	248.5	438.3	305.1	133.23	3.290		
15,100.0	10,956.7	15,434.9	11,212.2	78.8	79.9	126.26	4,078.1	245.6	436.9	300.9	135.93	3.214		
15,104.4	10,956.5	15,438.4	11,212.0	78.9	80.0	126.25	4,081.7	245.6	436.9	300.8	136.04	3.211		
15,200.0	10,952.1	15,515.3	11,207.9	80.3	81.1	126.19	4,158.4	245.6	437.5	299.2	138.26	3.164		
15,285.2	10,949.0	15,599.0	11,204.4	81.5	82.3	126.10	4,242.0	247.4	438.0	297.5	140.47	3.118		
15,300.0	10,949.0	15,612.5	11,203.8	81.7	82.5	126.05	4,255.5	247.8	437.4	296.5	140.86	3.105		
15,400.0	10,944.6	15,708.4	11,198.9	83.2	83.9	125.87	4,351.3	251.3	438.3	294.8	143.47	3.055		
15,500.0	10,939.4	15,803.6	11,194.1	84.7	85.3	125.60	4,446.1	256.1	440.9	294.8	146.07	3.018		
15,600.0	10,933.1	15,901.8	11,194.0	86.1	86.7	126.21	4,544.3	258.4	445.3	297.5	147.82	3.013		
15,700.0	10,930.4	16,011.7	11,196.2	87.6	88.3	126.91	4,654.2	258.8	446.9	297.2	149.72	2.985		
15,800.0	10,930.7	16,145.3	11,192.9	89.1	90.3	126.85	4,787.6	255.0	442.3	289.8	152.52	2.900		
15,900.0	10,931.5	16,253.0	11,185.6	90.6	91.9	126.32	4,894.9	248.3	434.1	278.5	155.64	2.789		
16,000.0	10,931.1	16,350.4	11,179.1	92.1	93.4	125.95	4,991.9	242.1	428.2	269.4	158.80	2.697		
16,100.0	10,929.1	16,449.6	11,171.7	93.6	94.9	125.84	5,090.7	236.0	420.9	259.2	161.63	2.604		
16,200.0	10,928.0	16,541.5	11,164.5	95.1	96.3	125.62	5,182.2	232.0	412.5	247.9	164.63	2.506		
16,300.0	10,925.1	16,630.0	11,159.7	96.6	97.6	125.72	5,270.5	229.1	407.3	240.3	166.99	2.439		
16,400.0	10,921.5	16,725.1	11,156.7	98.2	99.1	125.93	5,365.5	227.7	405.7	236.5	169.20	2.398		
16,500.0	10,918.6	16,829.5	11,153.1	99.7	100.6	126.28	5,469.8	225.4	402.1	230.6	171.44	2.345		
16,600.0	10,917.4	16,928.4	11,149.0	101.2	102.2	126.33	5,568.6	223.2	396.2	222.3	173.86	2.279		
16,700.0	10,916.0	17,022.1	11,146.9	102.7	103.6	126.61	5,662.2	220.9	391.9	216.0	175.93	2.228		
16,800.0	10,914.7	17,137.1	11,142.1	104.3	105.4	126.52	5,777.1	218.2	387.6	208.8	178.77	2.168		
16,900.0	10,912.7	17,229.8	11,136.1	105.8	106.8	126.18	5,869.6	216.4	383.5	201.6	181.89	2.108		
16,940.1	10,911.4	17,266.4	11,134.2	106.4	107.3	126.06	5,906.1	216.0	383.1	200.0	183.05	2.093		
17,000.0	10,908.7	17,319.5	11,131.8	107.4	108.2	125.93	5,959.1	216.0	384.1	199.5	184.70	2.080		
17,100.0	10,907.2	17,403.1	11,131.3	108.9	109.4	125.64	6,042.7	216.8	389.9	202.2	187.65	2.078		
17,200.0	10,906.6	17,489.8	11,134.6	110.5	110.8	125.35	6,129.4	219.1	399.4	209.3	190.19	2.100		
17,300.0	10,904.5	17,603.2	11,138.0	112.0	112.5	125.49	6,242.7	221.6	406.3	213.3	192.97	2.105		
17,400.0	10,903.4	17,702.7	11,140.7	113.6	114.1	125.93	6,342.1	222.6	408.7	213.8	194.93	2.097		
17,500.0	10,902.9	17,812.8	11,144.5	115.2	115.8	126.50	6,452.1	222.4	410.4	213.5	196.89	2.084		
17,600.0	10,899.7	17,930.0	11,142.4	116.7	117.6	126.84	6,569.3	220.7	410.0	210.7	199.27	2.057		
17,700.0	10,893.8	18,034.3	11,138.1	118.3	119.2	127.21	6,673.5	217.8	409.2	207.9	201.27	2.033		
17,800.0	10,889.1	18,142.0	11,133.7	119.9	120.9	127.54	6,781.0	212.6	406.9	203.7	203.26	2.002		
17,900.0	10,886.1	18,244.0	11,129.9	121.4	122.5	127.89	6,882.6	205.7	402.5	197.3	205.23	1.961		
18,000.0	10,881.7	18,348.0	11,126.6	123.0	124.2	128.47	6,986.3	197.9	399.5	192.8	206.72	1.932		
18,100.0	10,874.9	18,456.0	11,121.7	124.6	125.9	129.34	7,093.8	188.3	396.5	188.8	207.71	1.909		
18,200.0	10,869.7	18,550.6	11,116.8	126.2	127.4	129.84	7,187.9	179.8	391.5	182.2	209.26	1.871		
18,300.0	10,869.0	18,642.1	11,113.2	127.8	128.8	129.94	7,279.0	172.9	384.7	173.1	211.60	1.818		
18,400.0	10,869.9	18,732.9	11,111.4	129.3	130.3	130.08	7,369.6	167.1	379.3	165.3	214.00	1.772		
18,500.0	10,868.4	18,835.1	11,109.6	130.9	131.9	130.30	7,471.6	162.0	377.1	160.9	216.18	1.744		
18,571.1	10,865.7	18,906.0	11,108.0	132.1	133.0	130.61	7,542.4	158.0	376.5	159.1	217.37	1.732		
18,600.0	10,863.8	18,906.0	11,108.0	132.5	133.0	130.65	7,542.4	158.0	378.0	160.7	217.32	1.740		
18,601.0	10,863.7	18,906.0	11,108.0	132.5	133.0	130.65	7,542.4	158.0	378.1	160.8	217.30	1.740		

Company:	Advance Energy Partners	Local Co-ordinate Reference:	Well Wool Head 20 State Com #511H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3754.5usft (H&P 466)
Reference Site:	(Wool Head)Sec20_T-21-S_R-33-E	MD Reference:	KB @ 3754.5usft (H&P 466)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Wool Head 20 State Com #511H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 10_13
Reference Design:	AWB	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KB @ 3754.5usft (H&P 466)

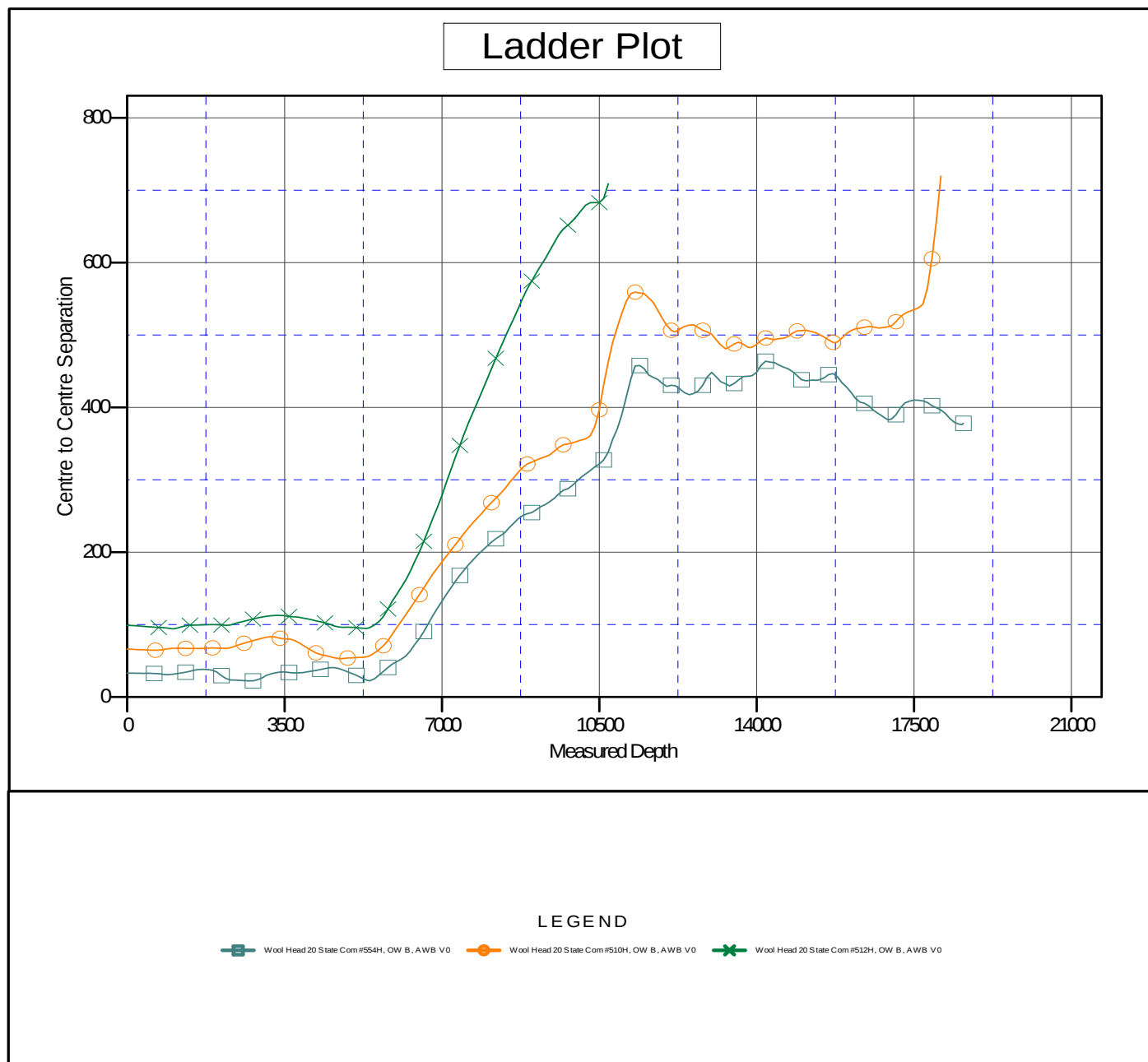
Offset Depths are relative to Offset Datum

Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: Wool Head 20 State Com #511H

Coordinate System is US State Plane 1983, New Mexico Eastern Zone

Grid Convergence at Surface is: 0.40°



Company:	Advance Energy Partners	Local Co-ordinate Reference:	Well Wool Head 20 State Com #511H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3754.5usft (H&P 466)
Reference Site:	(Wool Head)Sec20_T-21-S_R-33-E	MD Reference:	KB @ 3754.5usft (H&P 466)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Wool Head 20 State Com #511H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 10_13
Reference Design:	AWB	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KB @ 3754.5usft (H&P 466)

Offset Depths are relative to Offset Datum

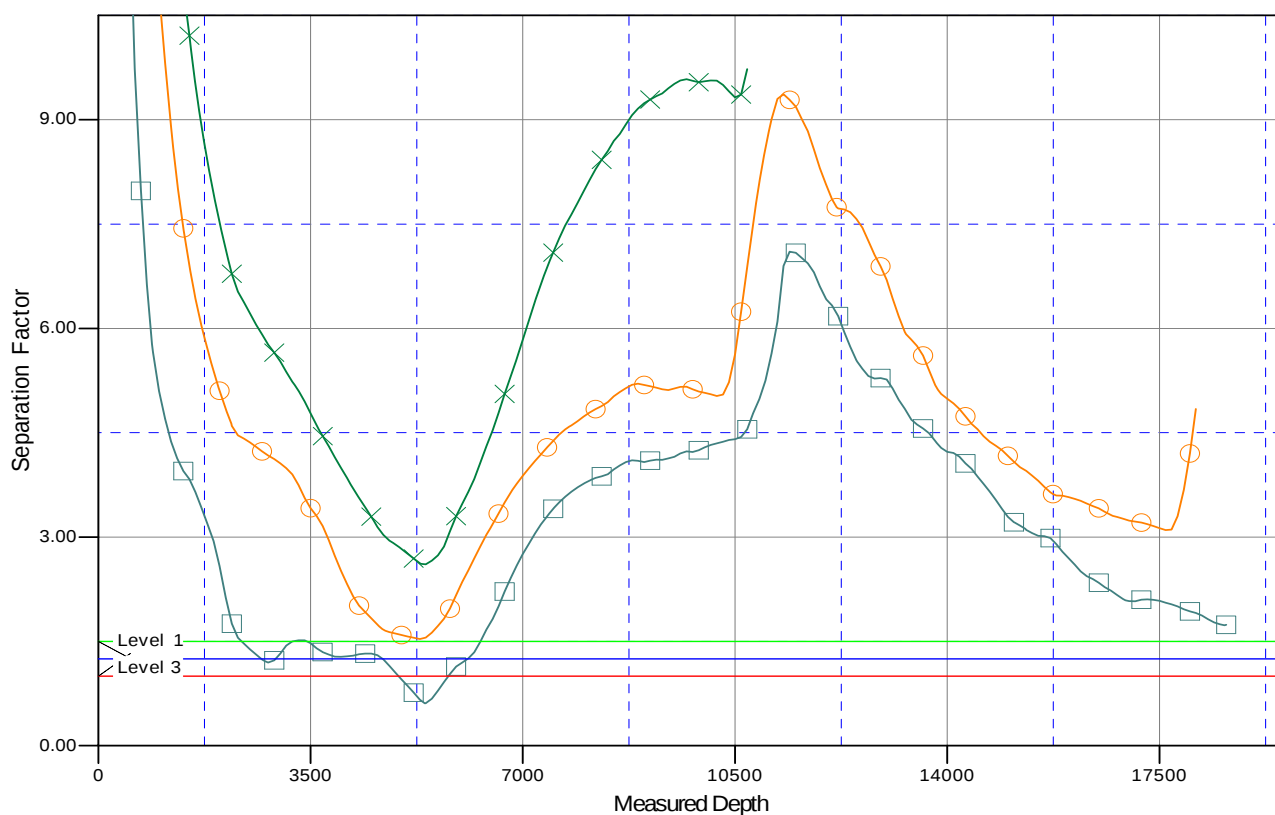
Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: Wool Head 20 State Com #511H

Coordinate System is US State Plane 1983, New Mexico Eastern Zone

Grid Convergence at Surface is: 0.40°

Separation Factor Plot



LEGEND

Wool Head 20 State Com #554H, OW B, AWB V0 Wool Head 20 State Com #510H, OW B, AWB V0 Wool Head 20 State Com #512H, OW B, AWB V0



Daily Reports





SDI Job #:	ID2388	Report Time:	2400	1 of 1
COMPANY:	Advance Energy Partners ,LLC	API JOB #		
LOCATION:		WORK ORDER#		
RIG NAME:	HP 466	FIELD:		
STATE:	New Mexico	Sec-Twn-Rng:		
COUNTY:	Lea	AFE# & District		
WELL NAME:	Wool Head 20 State Com. #511H			

From November 09, 2019 at 0000 to November 09, 2019 at 2400

DRILLING SUMMARY				Drilling Parameters							
Start Depth	0.00	Rotary Hours	0.00	WOB	0	Pick UP	0	Slack Off	0	SPM	
End Depth	0.00	Circulating Hours	0.00	RAB	0	SPP	0	FlowRate	0 - 0	0	
Total Drilled:	0.00	Avg. Total ROP:	NA	Mud Data							
Total Rotary Drilled:	0.00	Avg. Rotary ROP:	NA	Type				PV	0	SOLID	0
Total Drilled Sliding:	0.00	Avg. Slide ROP:	NA	Weight	0	GAS	0	YP	0	BHT°	0
Slide Hours:	0.00	Percent Rotary:	NA	Viscosity	0	SAND	0	PH	0	Flow T°	0
Below Rotary Hrs.	0.00	Percent Slide:	NA	Chlorides	0	WL	0			Oil %	0
PERSONNEL				Casing				BHA			
Lead Directional :	Bill Corley			Size	Lb/ft	Set Depth	N/A				
Second Directional :	Jasin Greer										
MWD Operator1	Ben Wallace										
MWD Operator2	Jonathan Aguilar										
Directional Company:	Intrepid										
Geologist:				Signature:							
Company Man:	Frank Calhoun / TJ Nash						Daily Cost	\$12,450.00			
Incl. In:	0	Azm. In:	0	Incl. Out:	0	Azm. Out:	0	Cummulative Cost:	\$12,450.00		

GENERAL COMMENT

Date	Start Time	End Time	Hours	Start Depth	End Depth	Activity Code	COMMENT
9-Nov-19	00:00	24:00	24.00	0	0	Standby	Standby



SDI Job #:	ID2388	Report Time:	2400	2 of 2
COMPANY:	Advance Energy Partners ,LLC	API JOB #		
LOCATION:	Lea County, New Mexico	WORK ORDER#	ID2388	
RIG NAME:	HP 466	FIELD:		
STATE:	New Mexico	Sec-Twn-Rng:	20-21S-33E	
COUNTY:	Lea	AFE# & District	NM0091	
WELL NAME:	Wool Head 20 State Com. #511H			

From November 10, 2019 at 0000 to November 10, 2019 at 2400

DRILLING SUMMARY						Drilling Parameters					
Start Depth	145.00	Rotary Hours	9.42	WOB	40	Pick UP	105	Slack Off	95	SPM	
End Depth	1750.00	Circulating Hours	0.00	RAB	100	SPP	2750	FlowRate	0 - 900	279	
Total Drilled:	1605.00	Avg. Total ROP:	139.57	Mud Data							
Total Rotary Drilled:	1530.00	Avg. Rotary ROP:	162.48	Type				PV	0	SOLID	0.5
Total Drilled Sliding:	75.00	Avg. Slide ROP:	36.00	Weight	8.3	GAS	0	YP	0	BHT°	0
Slide Hours:	2.08	Percent Rotary:	95.33	Viscosity	28	SAND	0	PH	9.5	Flow T°	106
Below Rotary Hrs.	18.00	Percent Slide:	4.67	Chlorides	0	WL	0			Oil %	0
PERSONNEL				Casing				BHA			
Lead Directional :	Bill Corley			Size	Lb/ft	Set Depth	BHA # 1:17.5" Baker DP606S, 9 5/8" 7/8, 5.9 ABH@ 1.50°, 17" Nortrak Stab, 8" UBHO, 8" NMDC, 8" NMDC, X/O ED 54 B - 6 5/8 Reg P, 30 Jts 5 1/2" HWDP,				
Second Directional :	Jason Greer			Signature:							
MWD Operator1	Ben Wallace										
MWD Operator2	Michael Walton										
Directional Company:	Intrepid										
Geologist:											
Company Man:	Frank Calhoun / TJ Nash							Daily Cost		\$16,350.00	
Incl. In:	0	Azm. In:	0	Incl. Out:	2.02	Azm. Out:	225.78	Cummulative Cost:		\$28,800.00	

GENERAL COMMENT

Date	Start Time	End Time	Hours	Start Depth	End Depth	Activity Code	COMMENT
10-Nov-19	00:00	06:00	6.00	0	0	Standby	Standby
10-Nov-19	06:00	07:30	1.50	0	0	Change BHA	Change BHA
10-Nov-19	07:30	11:45	4.25	145	145	Rig repair	Rig repair
10-Nov-19	11:45	12:15	0.50	145	303	Drilling	Drilling
10-Nov-19	12:15	16:05	3.83	303	877	Drilling	Drilling - (WOB:45;GPM :900;RPM:50)
10-Nov-19	16:05	19:20	3.25	877	1433	Drilling	Drilling - (WOB:45;GPM :900;RPM:60)
10-Nov-19	19:20	20:00	0.67	1433	1453	Sliding	Sliding - (WOB:25;GPM :900;TFO:70R))
10-Nov-19	20:00	20:35	0.58	1453	1515	Drilling	Drilling - (WOB:40;GPM :900;RPM:60)
10-Nov-19	20:35	21:20	0.75	1515	1550	Sliding	Sliding - (WOB:28;GPM :900;TFO:70R))
10-Nov-19	21:20	22:00	0.67	1550	1639	Drilling	Drilling - (WOB:40;GPM :900;RPM:60)
10-Nov-19	22:00	22:45	0.75	1639	1639	Rig repair	Rig repair - Standpipe gasket
10-Nov-19	22:45	23:00	0.25	1639	1700	Drilling	Drilling - (WOB:40;GPM :900;RPM:60)
10-Nov-19	23:00	23:40	0.67	1700	1720	Sliding	Sliding - (WOB:38;GPM :900;TFO:60R))
10-Nov-19	23:40	24:00	0.33	1720	1750	Drilling	Drilling - (WOB:40;GPM :900;RPM:60)



SDI Job #:	ID2388	Report Time:	2400	3 of 3
COMPANY:	Advance Energy Partners ,LLC	API JOB #		
LOCATION:	Lea County, New Mexico	WORK ORDER#	ID2388	
RIG NAME:	HP 466	FIELD:		
STATE:	New Mexico	Sec-Twn-Rng:	20-21S-33E	
COUNTY:	Lea	AFE# & District	NM0091	
WELL NAME:	Wool Head 20 State Com. #511H			

From November 11, 2019 at 0000 to November 11, 2019 at 2400

DRILLING SUMMARY					Drilling Parameters						
Start Depth	1750.00	Rotary Hours	1.17	WOB	45	Pick UP	105	Slack Off	95	SPM	
End Depth	1838.00	Circulating Hours	0.83	RAB	100	SPP	2900	FlowRate	900 - 900	279	
Total Drilled:	88.00	Avg. Total ROP:	75.43	Mud Data							
Total Rotary Drilled:	88.00	Avg. Rotary ROP:	75.43	Type				PV	0	SOLID	0.5
Total Drilled Sliding:	0.00	Avg. Slide ROP:	NA	Weight	8.3	GAS	0	YP	0	BHT°	0
Slide Hours:	0.00	Percent Rotary:	100.00	Viscosity	28	SAND	0	PH	9.5	Flow T°	106
Below Rotary Hrs.	4.75	Percent Slide:	.00	Chlorides	0	WL	0			Oil %	0
PERSONNEL				Casing					BHA		
Lead Directional :	Bill Corley			Size	Lb/ft	Set Depth		BHA # 1:17.5" Baker DP606S, 9 5/8" 7/8, 5.9 ABH@ 1.50°, 17" Nortrak Stab, 8" UBHO, 8" NMDC, 8" NMDC, X/O ED 54 B - 6 5/8 Reg P, 30 Jts 5 1/2" HWDP,			
Second Directional :	Jason Greer			Signature:							
MWD Operator1	Ben Wallace										
MWD Operator2	Michael Walton										
Directional Company:	Intrepid										
Geologist:											
Company Man:	Frank Calhoun / TJ Nash						Daily Cost		\$8,350.00		
Incl. In:	2.02	Azm. In:	225.78	Incl. Out:	0	Azm. Out:	0	Cummulative Cost:		\$37,150.00	

GENERAL COMMENT

Date	Start Time	End Time	Hours	Start Depth	End Depth	Activity Code	COMMENT
11-Nov-19	00:00	01:10	1.17	1750	1838	Drilling	Drilling - (WOB:45;GPM :900;RPM:60)
11-Nov-19	01:10	02:00	0.83	1838	1838	Circulating	Circulating
11-Nov-19	02:00	03:45	1.75	1838	1838	POOH	POOH
11-Nov-19	03:45	04:45	1.00	1838	1838	Other	L/D MWD, Stab & Bit
11-Nov-19	04:45	05:00	0.25	1838	1838	Standby	Casing and Cement Ops.



SDI Job #:	ID2388-1	Report Time:	2400	4 of 4
COMPANY:	Advance Energy Partners ,LLC	API JOB #	30-025-46491	
LOCATION:	Lea County, New Mexico	WORK ORDER#	ID2388	
RIG NAME:	HP 466	FIELD:	Delaware Basin	
STATE:	New Mexico	Sec-Twn-Rng:	20-21S-33E	
COUNTY:	Lea	AFE# & District	NM0091	
WELL NAME:	Wool Head 20 State Com. #511H			

From November 15, 2019 at 0000 to November 15, 2019 at 2400

DRILLING SUMMARY						Drilling Parameters							
Start Depth	1838.00	Rotary Hours	0.00	WOB	45	Pick UP	105	Slack Off	95	SPM			
End Depth	1838.00	Circulating Hours	2.67	RAB	100	SPP	2900	FlowRate	900 - 900	279			
Total Drilled:	0.00	Avg. Total ROP:	NA	Mud Data									
Total Rotary Drilled:	0.00	Avg. Rotary ROP:	NA	Type					PV	0	SOLID	0.5	
Total Drilled Sliding:	0.00	Avg. Slide ROP:	NA	Weight	8.3	GAS	0	YP	0	BHT°	0		
Slide Hours:	0.00	Percent Rotary:	NA	Viscosity	28	SAND	0	PH	9.5	Flow T°	106		
Below Rotary Hrs.	6.00	Percent Slide:	NA	Chlorides	0	WL	0			Oil %	0		
PERSONNEL				Casing					BHA				
Lead Directional :	Bill Corley			Size	Lb/ft	Set Depth	BHA # 2:12 1/4" D506WS, 8" 7/8, 5.9 FBH@1.5" w/12" NBS (XSH80014), 12" Nortrak Stab, 8" UBHO, 8" NMDC, 8" NMDC, X/O (6 5/8 P x XH B) , 18 - 6.5" D.C., X/O (ED54B x 4 1/2XH P), 30 Jts 5 1/2" HWDP,						
Second Directional :	Jason Greer			Signature:									
MWD Operator1	Ben Wallace												
MWD Operator2	Michael Walton												
Directional Company:	Intrepid												
Geologist:													
Company Man:	TJ Nash							Daily Cost		\$15,616.00			
Incl. In:	2.02	Azm. In:	225.78	Incl. Out:	2.02	Azm. Out:	225.78	Cummulative Cost:		\$15,616.00			

GENERAL COMMENT

Date	Start Time	End Time	Hours	Start Depth	End Depth	Activity Code	COMMENT
15-Nov-19	00:00	18:00	18.00	1838	1838	Standby	Standby
15-Nov-19	18:00	19:15	1.25	1838	1838	Change BHA	P/U BHA #2
15-Nov-19	19:15	21:20	2.08	1838	1838	TIH	P/U DC and TIH
15-Nov-19	21:20	24:00	2.67	1838	1838	Circulating	Drill Float equipment



SDI Job #:	ID2388-1	Report Time:	2400	5 of 5
COMPANY:	Advance Energy Partners ,LLC	API JOB #	30-025-46491	
LOCATION:	Lea County, New Mexico	WORK ORDER#	ID2388	
RIG NAME:	HP 466	FIELD:	Delaware Basin	
STATE:	New Mexico	Sec-Twn-Rng:	20-21S-33E	
COUNTY:	Lea	AFE# & District	NM0091	
WELL NAME:	Wool Head 20 State Com. #511H			

From November 16, 2019 at 0000 to November 16, 2019 at 2400

DRILLING SUMMARY						Drilling Parameters					
Start Depth	1838.00	Rotary Hours	14.42	WOB	55	Pick UP	150	Slack Off	145	SPM	
End Depth	5263.00	Circulating Hours	2.00	RAB	145	SPP	2500	FlowRate	678 - 900	210	
Total Drilled:	3425.00	Avg. Total ROP:	220.97	Mud Data							
Total Rotary Drilled:	3340.00	Avg. Rotary ROP:	231.68	Type				PV	0	SOLID	0.5
Total Drilled Sliding:	85.00	Avg. Slide ROP:	78.46	Weight	8.3	GAS	0	YP	0	BHT°	0
Slide Hours:	1.08	Percent Rotary:	97.52	Viscosity	28	SAND	0	PH	9.5	Flow T°	106
Below Rotary Hrs.	24.00	Percent Slide:	2.48	Chlorides	0	WL	0			Oil %	0
PERSONNEL				Casing				BHA			
Lead Directional :	Bill Corley			Size	Lb/ft	Set Depth	BHA # 2:12 1/4" D506WS, 8" 7/8, 5.9 FBH@1.5" w/12" NBS (XSH80014), 12" Nortrak Stab, 8" UBHO, 8" NMDC, 8" NMDC, X/O (6 5/8 P x XH B) , 18 - 6.5" D.C., X/O (ED54B x 4 1/2XH P), 30 Jts 5 1/2" HWDP,				
Second Directional :	Jason Greer			Signature:							
MWD Operator1	Ben Wallace										
MWD Operator2	Michael Walton										
Directional Company:	Intrepid										
Geologist:											
Company Man:	TJ Nash						Daily Cost		\$8,150.00		
Incl. In:	2.02	Azm. In:	225.78	Incl. Out:	1.45	Azm. Out:	172.08	Cummulative Cost:		\$23,766.00	

GENERAL COMMENT

Date	Start Time	End Time	Hours	Start Depth	End Depth	Activity Code	COMMENT
16-Nov-19	00:00	00:45	0.75	1838	1838	Circulating	Drilling Float Equipment and Shoe
16-Nov-19	00:45	01:35	0.83	1838	1970	Drilling	Drilling - (WOB:32;GPM :900;RPM:80)
16-Nov-19	01:35	01:55	0.33	1970	2000	Sliding	Sliding - (WOB:32;GPM :900;TFO:70M))
16-Nov-19	01:55	03:00	1.08	2000	2238	Drilling	Drilling - (WOB:32;GPM :900;RPM:80)
16-Nov-19	03:00	03:15	0.25	2238	2258	Sliding	Sliding - (WOB:28;GPM :900;TFO:270M))
16-Nov-19	03:15	13:10	9.92	2258	4654	Drilling	Drilling - (WOB:55;GPM :900;RPM:80)
16-Nov-19	13:10	13:30	0.33	4654	4679	Sliding	Sliding - (WOB:28;GPM :900;TFO:270M)
16-Nov-19	13:30	13:35	0.08	4679	4679	Other	Swab on #3
16-Nov-19	13:35	13:45	0.17	4679	4689	Sliding	Sliding - (WOB:28;GPM :678;TFO:245M))
16-Nov-19	13:45	16:20	2.58	4689	5263	Drilling	Drilling - (WOB:55;GPM :900;RPM:80)
16-Nov-19	16:20	17:35	1.25	5263	5263	Circulating	Circulating
16-Nov-19	17:35	21:00	3.42	5263	5263	POOH	POOH
16-Nov-19	21:00	21:30	0.50	5263	5263	Other	Rack Back BHA #2
16-Nov-19	21:30	24:00	2.50	5263	5263	Other	Casing Ops



SDI Job #:	ID2388-1	Report Time:	2400	6 of 6
COMPANY:	Advance Energy Partners ,LLC	API JOB #	30-025-46491	
LOCATION:	Lea County, New Mexico	WORK ORDER#	ID2388	
RIG NAME:	HP 466	FIELD:	Delaware Basin	
STATE:	New Mexico	Sec-Twn-Rng:	20-21S-33E	
COUNTY:	Lea	AFE# & District	NM0091	
WELL NAME:	Wool Head 20 State Com. #511H			

From November 17, 2019 at 0000 to November 17, 2019 at 2400

DRILLING SUMMARY						Drilling Parameters					
Start Depth	5263.00	Rotary Hours	0.00	WOB	55	Pick UP	150	Slack Off	145	SPM	
End Depth	5263.00	Circulating Hours	0.00	RAB	145	SPP	2500	FlowRate	900 - 900	210	
Total Drilled:	0.00	Avg. Total ROP:	NA	Mud Data							
Total Rotary Drilled:	0.00	Avg. Rotary ROP:	NA	Type				PV	0	SOLID	0.5
Total Drilled Sliding:	0.00	Avg. Slide ROP:	NA	Weight	8.3	GAS	0	YP	0	BHT°	0
Slide Hours:	0.00	Percent Rotary:	NA	Viscosity	28	SAND	0	PH	9.5	Flow T°	106
Below Rotary Hrs.	5.00	Percent Slide:	NA	Chlorides	0	WL	0			Oil %	0
PERSONNEL				Casing				BHA			
Lead Directional :	Bill Corley			Size	Lb/ft	Set Depth	BHA # 2:12 1/4" D506WS, 8" 7/8, 5.9 FBH@1.5" w/12" NBS (XSH80014), 12" Nortrak Stab, 8" UBHO, 8" NMDC, 8" NMDC, X/O (6 5/8 P x XH B) , 18 - 6.5" D.C., X/O (ED54B x 4 1/2XH P), 30 Jts 5 1/2" HWDP,				
Second Directional :	Jason Greer			Signature:							
MWD Operator1	Ben Wallace										
MWD Operator2	Michael Walton										
Directional Company:	Intrepid										
Geologist:											
Company Man:	TJ Nash						Daily Cost				
Incl. In:	1.45	Azm. In:	172.08	Incl. Out:	1.45	Azm. Out:	172.08	Cummulative Cost:		\$23,766.00	

GENERAL COMMENT

Date	Start Time	End Time	Hours	Start Depth	End Depth	Activity Code	COMMENT
17-Nov-19	00:00	05:00	5.00	5263	5263	Other	Casing Ops.



DAILY TOTALS		Assembly Totals									
Start Depth	5263.00	BHA #	Motor SN / R.S. SN	Slide Ftg	Slide Hrs	Rotate Ftg	Rotate Hrs	Circ Hrs	D & C Hrs	BHA Ftg	Avg ROP
End Depth	5263.00	2	XSH80014	0.00	0.00	0.00	0.00	.00	0.00	0.00	0.00
Below Rot Hrs.	23.98										
Total Drilled:	0.00	Drilling Parameters		Mud Record		Bit Record		Current BHA # 3			
Avg. Total ROP:	NA										
Slide Footage:	0.00	WOB: 25		Weight:	8.3	Bit No:	3	Security GT65DRM 7" 7/8 8.5 FBH @ 1.83 w/ 8 8 1/4" Nortrak Stab UBHO NMDC NMDC X-O (4 1/2 IF P x 4 1/2 XH B) 18 - 6.5" D.C. X/O (ED54B x 4 1/2XH P) 30 jts -5 1/2 HWDP			
Slide Hours	0.00	Rot Wt: 130		Visc:	28	Model	Security				
Avg. Slide ROP:	NA	Pick UP: 130		Chlorides:	0	SN.:	1338539				
Rotate Footage:	0.00	Slack Off: 130		YP:	0	MFG.	OTHER				
Rotary Hours	0.00	SPP: 1400		PV:	0	Type	PDC				
Avg. Rot ROP:	NA	Flow: 500 - 900		PH:	9.5	IADC					
Circ Hours	0.00	SPM: 154		GAS:	0	JETS	6-15				
Ream Hours	0.00	Rot. RPM -		SAND:	0	TFA:	1.035				
Rotary Hrs%:	NA	Mot RPM: -		WL:	0	Hole ID:	8.50				
Slide Hrs%:	NA	Incl. In: 1.45		SOLID:	0.5	Bit Hrs:					
Rotary Ftg%:	NA	Azm. In: 172.08		BHT°:	0	Bit Ftg:					
Slide Ftg%:	NA	Incl. Out: 1.45		Flow T°:	106	Pumps					
Cost Detail		Azm. Out: 172.08		Oil %:	0	Liner	0	0			
Descr.		Price				Stroke	0	0			
DAY RATE		8,150.00				Effic.	95.00%	95.00%			
Motor Redress		3,600.00				Gal/Stk	0.00	0.00			
Stab Redress		0.00				BBL/Stk	0.000	0.000			
Stabilizers		1,357.00									
Cost Breakdown											
Total Daily				\$13,107.00							
Total Job				\$13,107.00							

Start Time	End Time	Hours	Start Depth	End Depth	Delta Depth	ROP	Activity Code	COMMENT
00:00	19:30	19.50	5263	5263	0	.00	Other	Casing Opson 512H , Walk to 511H N/U and test
19:30	20:30	1.00	5263	5263	0	.00	Change BHA	P/U BHA # 3
20:30	22:30	2.00	5263	5263	0	.00	TIH	TIH T/ 2800
22:30	23:00	0.50	5263	5263	0	.00	Other	Drill Out DV Tool
23:00	23:30	0.50	5263	5263	0	.00	Other	Test Casing
23:30	23:59	0.48	5263	5263	0	.00	TIH	TIH T/ 3100



GENERAL COMMENT

Start Time	End Time	Hours	Start Depth	End Depth	Delta Depth	ROP	Activity Code	COMMENT
00:00	00:55	0.92	5263	5263	0	.00	TIH	TIH T/5200
00:55	01:15	0.33	5263	5263	0	.00	Other	Drill cement & FE
01:15	01:55	0.67	5263	5377	114	171.00	Drilling	Drilling - (WOB:40;GPM :750;RPM:50)
01:55	02:05	0.17	5377	5397	20	120.00	Sliding	Sliding - (WOB:35;GPM :750;TFO:200M))
02:05	07:35	5.50	5397	6389	992	180.36	Drilling	Drilling - (WOB:45;GPM :750;RPM:50)
07:35	08:00	0.42	6389	6389	0	.00	Circulating	Circulating toTOH for bit
08:00	10:40	2.67	6389	6389	0	.00	POOH	POOH
10:40	11:40	1.00	6389	6389	0	.00	Change BHA	Change BHA
11:40	15:00	3.33	6389	6389	0	.00	TIH	TIH
15:00	15:45	0.75	6389	6548	159	212.00	Drilling	Drilling - (WOB:30;GPM :600;RPM:40)
15:45	15:55	0.17	6548	6560	12	72.00	Sliding	Sliding - (WOB:35;GPM :750;TFO:270M))
15:55	23:59	8.07	6560	8412	1852	229.59	Drilling	Drilling - (WOB:37; :600;RPM:40)



SDI Job #:	ID2388-2	Report Time:	2400	9 of 10
COMPANY:	Advance Energy Partners ,LLC	API JOB #	30-025-46491	
LOCATION:	Lea County, New Mexico	WORK ORDER#	ID2388	
RIG NAME:	HP 466	FIELD:	Delaware Basin	
STATE:	New Mexico	Sec-Twn-Rng:	20-21S-33E	
COUNTY:	Lea	AFE# & District	NM0091	
WELL NAME:	Wool Head 20 State Com. #511H			

From November 25, 2019 at 0000 to November 25, 2019 at 2400

DRILLING SUMMARY						Drilling Parameters					
Start Depth	8412.00	Rotary Hours	16.33	WOB	42	Pick UP	320	Slack Off	255	SPM	
End Depth	10547.00	Circulating Hours	1.08	RAB	275	SPP	2500	FlowRate	600 - 650	195	
Total Drilled:	2135.00	Avg. Total ROP:	117.52	Mud Data							
Total Rotary Drilled:	2062.00	Avg. Rotary ROP:	126.24	Type				PV	0	SOLID	0.5
Total Drilled Sliding:	73.00	Avg. Slide ROP:	39.82	Weight	8.3	GAS	0	YP	0	BHT°	0
Slide Hours:	1.83	Percent Rotary:	96.58	Viscosity	28	SAND	0	PH	9.5	Flow T°	106
Below Rotary Hrs.	23.98	Percent Slide:	3.42	Chlorides	0	WL	0			Oil %	0
PERSONNEL				Casing				BHA			
Lead Directional :	Bill Corley			Size	Lb/ft	Set Depth		BHA # 4:8 1/2" Reed TKC66, 7" 7/8 8.5 FBH @ 1.83 w/ 8 1/4 NBS, 8 1/4" Nortrak Stab, UBHO, NMDC, NMDC, X-O (4 1/2 IF P x 4 1/2 XH B), 18 - 6.5" D.C., X/O (ED54B x 4 1/2XH P), 30 jts -5 1/2 HWDP, ,			
Second Directional :	James Merideth			Signature:							
MWD Operator1	Michael Walton										
MWD Operator2	Michael Walton										
Directional Company:	Intrepid										
Geologist:											
Company Man:	TJ Nash						Daily Cost		\$8,150.00		
Incl. In:	3.74	Azm. In:	108.6	Incl. Out:	0.7	Azm. Out:	279.4	Cummulative Cost:		\$29,407.00	

GENERAL COMMENT

Date	Start Time	End Time	Hours	Start Depth	End Depth	Activity Code	COMMENT
25-Nov-19	00:00	01:05	1.08	8412	8600	Drilling	Drilling - (WOB:37; :600;RPM:40)
25-Nov-19	01:05	01:40	0.58	8600	8622	Sliding	Sliding - (WOB:32; :600;TFO:10M))
25-Nov-19	01:40	03:50	2.17	8622	8873	Drilling	Drilling - (WOB:40; :650;RPM:30)
25-Nov-19	03:50	04:20	0.50	8873	8892	Sliding	Sliding - (WOB:28; :600;TFO:40M))
25-Nov-19	04:20	10:05	5.75	8892	9687	Drilling	Drilling - (WOB:40; :625;RPM:30)
25-Nov-19	10:05	10:35	0.50	9687	9707	Sliding	Sliding - (WOB:20; :600;TFO:90M))
25-Nov-19	10:35	11:55	1.33	9707	9867	Drilling	Drilling - (WOB:40; :625;RPM:30)
25-Nov-19	11:55	12:10	0.25	9867	9879	Sliding	Sliding - (WOB:20; :600;TFO:220M))
25-Nov-19	12:10	18:10	6.00	9879	10547	Drilling	Drilling - (WOB:42; :625;RPM:30)
25-Nov-19	18:10	19:15	1.08	10547	10547	Circulating	Circulating
25-Nov-19	19:15	23:00	3.75	10547	10547	POOH	POOH
25-Nov-19	23:00	23:30	0.50	10547	10547	Change BHA	R/B BHA # 4
25-Nov-19	23:30	23:59	0.48	10547	10547	TIH	TIH W/ Packer



SDI Job #:	ID2388-2	Report Time:	2400	10 of 10
COMPANY:	Advance Energy Partners ,LLC	API JOB #	30-025-46491	
LOCATION:	Lea County, New Mexico	WORK ORDER#	ID2388	
RIG NAME:	HP 466	FIELD:	Delaware Basin	
STATE:	New Mexico	Sec-Twn-Rng:	20-21S-33E	
COUNTY:	Lea	AFE# & District	NM0091	
WELL NAME:	Wool Head 20 State Com. #511H			

From November 26, 2019 at 0000 to November 26, 2019 at 2400

DRILLING SUMMARY					Drilling Parameters							
Start Depth	10547.00	Rotary Hours	0.00	WOB	42	Pick UP	320	Slack Off	255	SPM		
End Depth	10547.00	Circulating Hours	0.00	RAB	275	SPP	2500	FlowRate	625 - 625	195		
Total Drilled:	0.00	Avg. Total ROP:	NA	Mud Data								
Total Rotary Drilled:	0.00	Avg. Rotary ROP:	NA	Type				PV	0	SOLID	0.5	
Total Drilled Sliding:	0.00	Avg. Slide ROP:	NA	Weight	8.3	GAS	0	YP	0	BHT°	0	
Slide Hours:	0.00	Percent Rotary:	NA	Viscosity	28	SAND	0	PH	9.5	Flow T°	106	
Below Rotary Hrs.	3.50	Percent Slide:	NA	Chlorides	0	WL	0			Oil %	0	
PERSONNEL				Casing				BHA				
Lead Directional :	Bill Corley			Size	Lb/ft	Set Depth	N/A					
Second Directional :	James Merideth											
MWD Operator1	Michael Walton											
MWD Operator2	Michael Walton											
Directional Company:	Intrepid											
Geologist:				Signature:								
Company Man:	TJ Nash						Daily Cost					
Incl. In:	0.7	Azm. In:	279.4	Incl. Out:	0	Azm. Out:	0	Cummulative Cost:	\$29,407.00			

GENERAL COMMENT

Date	Start Time	End Time	Hours	Start Depth	End Depth	Activity Code	COMMENT
26-Nov-19	00:00	02:30	2.50	10547	10547	TIH	TIH Set Packer & POOH.
26-Nov-19	02:30	03:30	1.00	10547	10547	Other	N/U Down BOP's & skid rig to 554H



SDI Job #: ID2388-3
COMPANY: Advance Energy Partners ,LLC
LOCATION: Lea County, New Mexico
RIG NAME: HP 466
STATE: New Mexico
COUNTY: Lea
WELL NAME: Wool Head 20 State Com. #511H
Lead Directional : Jason Greer

Report Time: 2400 12 of 12
API JOB # 30-025-46491
WORK ORDER# ID2388
FIELD: Delaware Basin
Sec-Twn-Rng: 20-21S-33E
Range/Section NM0091
Company Man TJ Nash
2nd Dir Hand : Jason Mueller

From Monday, December 16, 2019 at 0000 to Monday, December 16, 2019 at 2400

DAILY TOTALS		Assembly Totals									
Start Depth	10547.00	BHA #	Motor SN / R.S. SN	Slide Ftg	Slide Hrs	Rotate Ftg	Rotate Hrs	Circ Hrs	D & C Hrs	BHA Ftg	Avg ROP
End Depth	11589.00	5	XSS67068	626.00	9.83	416.00	5.08	1.08	16.00	1,042.00	65.13
Below Rot Hrs.	24.00										
Total Drilled:	1042.00	Drilling Parameters		Mud Record		Bit Record		Current BHA # 5			
Avg. Total ROP:	69.85			OBM		Bit No: 5		8 1/2" GTD64C 6 3/4" 7/8 5.0 FBH @ 2.12 TS UBHO 6 3/4" NMDC 6 3/4" FLEX X-O (4 1/2 IF P x ED 54 B)			
Slide Footage:	626.00	WOB:	60	Weight:	9.6	Model	8 1/2" GTD64C				
Slide Hours	9.83	Rot Wt:	245	Visc:	61	SN.:	13291183				
Avg. Slide ROP:	63.66	Pick UP:	260	Chlorides:	53000	MFG.	OTHER				
Rotate Footage:	416.00	Slack Off:	240	YP:	9	Type	PDC				
Rotary Hours	5.08	SPP:	3450	PV:	18	IADC					
Avg. Rot ROP:	81.84	Flow:	0 - 625	PH:	0	JETS	6-22				
Circ Hours	1.08	SPM:	186	GAS:	0	TFA:	2.226				
Ream Hours	0.00	Rot. RPM	30 - 35	SAND:	0.01	Hole ID:	8.5				
Rotary Hrs%:	34.08	Mot RPM:	0 - 30	WL:	0	Bit Hrs:	14.92				
Slide Hrs%:	65.92	Incl. In:	0.7	SOLID:	9.7	Bit Ftg:	1042.00				
Rotary Ftg%:	39.92	Azm. In:	279.4	BHT°:	139	Pumps					
Slide Ftg%:	60.08	Incl. Out:	91.43	Flow T°:	85	Liner	6.5	5.5			
Cost Detail		Azm. Out:	1.49	Oil %:	66	Stroke	11	11			
Descr.	Price	Cost Breakdown					Effic.	95.00%	95.00%		
DAY RATE	8,150.00	Total Daily \$8,150.00					Gal/Stk	4.50	3.22		
		Total Job \$30,680.00					BBL/Stk	0.107	0.077		

GENERAL COMMENT

Start Time	End Time	Hours	Start Depth	End Depth	Delta Depth	ROP	Activity Code	COMMENT
00:00	02:00	2.00	10547	10547	0	.00	TIH	TIH
02:00	02:30	0.50	10547	10547	0	.00	Circulating	Fill Pipe, Sync MWD & Wash to Btm
02:30	04:00	1.50	10547	10587	40	26.67	Sliding	Sliding - (WOB:20;GPM :600;TFO:220M))
04:00	04:10	0.17	10587	10587	0	.00	Survey & Conn.	Survey & Conn.@10539' Inc 1.71° Azm 281.07°
04:10	05:45	1.58	10587	10677	90	56.84	Sliding	Sliding - (WOB:35;GPM :598;TFO:359 M))
05:45	05:55	0.17	10677	10677	0	.00	Survey & Conn.	Survey & Conn.@10629' Inc 12.88° Azm 352.26°
05:55	07:10	1.25	10677	10767	90	72.00	Sliding	Sliding - (WOB:35;GPM :598;TFO:359 M))
07:10	07:20	0.17	10767	10767	0	.00	Survey & Conn.	Survey & Conn.@10719' Inc 27.16° Azm 352.43°
07:20	07:50	0.50	10767	10811	44	88.00	Sliding	Sliding - (WOB:35;GPM :598;TFO:50R))
07:50	08:25	0.58	10811	10836	25	42.86	Drilling	Drilling - (WOB:42;GPM :625;RPM:30)
08:25	08:45	0.33	10836	10856	20	60.00	Sliding	Sliding - (WOB:35;GPM :598;TFO:20R))
08:45	08:55	0.17	10856	10856	0	.00	Survey & Conn.	Survey & Conn.@10808' Inc 40.04° Azm 357°
08:55	09:10	0.25	10856	10871	15	60.00	Drilling	Drilling - (WOB:45;GPM :625;RPM:30)
09:10	09:45	0.58	10871	10906	35	60.00	Sliding	Sliding - (WOB:35;GPM :598;TFO:0))

Start Time	End Time	Hours	Start Depth	End Depth	Delta Depth	ROP	Activity Code	COMMENT
09:45	10:00	0.25	10906	10921	15	60.00	Drilling	Drilling - (WOB:50; :625;RPM:30)
10:00	10:25	0.42	10921	10946	25	60.00	Sliding	Sliding - (WOB:35; :598;TFO:10R))
10:25	10:35	0.17	10946	10946	0	.00	Survey & Conn.	Survey & Conn.@10898' Inc 46.42° Azm 359.82°
10:35	10:45	0.17	10946	10961	15	90.00	Drilling	Drilling - (WOB:50; :625;RPM:30)
10:45	11:10	0.42	10961	10991	30	72.00	Sliding	Sliding - (WOB:50; :598;TFO:10R))
11:10	11:30	0.33	10991	11011	20	60.00	Drilling	Drilling - (WOB:50; :625;RPM:30)
11:30	11:50	0.33	11011	11036	25	75.00	Sliding	Sliding - (WOB:50; :598;TFO:0))
11:50	12:00	0.17	11036	11036	0	.00	Survey & Conn.	Survey & Conn.@10988' Inc 54.59° Azm 358.76°
12:00	12:10	0.17	11036	11051	15	90.00	Drilling	Drilling - (WOB:50; :625;RPM:30)
12:10	12:35	0.42	11051	11081	30	72.00	Sliding	Sliding - (WOB:50; :598;TFO:45R))
12:35	12:55	0.33	11081	11101	20	60.00	Drilling	Drilling - (WOB:55; :625;RPM:30)
12:55	13:15	0.33	11101	11126	25	75.00	Sliding	Sliding - (WOB:50; :598;TFO:15R))
13:15	13:25	0.17	11126	11126	0	.00	Survey & Conn.	Survey & Conn.@11078' Inc 61.67° Azm 0.69°
13:25	13:30	0.08	11126	11136	10	120.00	Drilling	Drilling - (WOB:55; :625;RPM:30)
13:30	13:55	0.42	11136	11171	35	84.00	Sliding	Sliding - (WOB:50; :598;TFO:20R))
13:55	14:15	0.33	11171	11181	10	30.00	Drilling	Drilling - (WOB:55; :625;RPM:30)
14:15	14:40	0.42	11181	11215	34	81.60	Sliding	Sliding - (WOB:60; :598;TFO:10R))
14:40	14:50	0.17	11215	11215	0	.00	Survey & Conn.	Survey & Conn.@11167' Inc 69.32° Azm 2.36°
14:50	15:00	0.17	11215	11225	10	60.00	Drilling	Drilling - (WOB:55; :625;RPM:30)
15:00	15:25	0.42	11225	11260	35	84.00	Sliding	Sliding - (WOB:60; :598;TFO:10L))
15:25	15:35	0.17	11260	11270	10	60.00	Drilling	Drilling - (WOB:55;GPM :625;RPM:30)
15:35	16:00	0.42	11270	11305	35	84.00	Sliding	Sliding - (WOB:60;GPM :598;TFO:0))
16:00	16:10	0.17	11305	11305	0	.00	Survey & Conn.	Survey & Conn.@11257' Inc 80.26° Azm 2.72°
16:10	16:20	0.17	11305	11325	20	120.00	Drilling	Drilling - (WOB:55;GPM :625;RPM:30)
16:20	16:30	0.17	11325	11340	15	90.00	Sliding	Sliding - (WOB:60;GPM :598;TFO:30L))
16:30	17:00	0.50	11340	11395	55	110.00	Drilling	Drilling - (WOB:55;GPM :625;RPM:35)
17:00	17:10	0.17	11395	11395	0	.00	Survey & Conn.	Survey & Conn.@11347' Inc 90.46° Azm 359.26°
17:10	17:45	0.58	11395	11484	89	152.57	Drilling	Drilling - (WOB:55;GPM :625;RPM:35)
17:45	17:55	0.17	11484	11484	0	.00	Survey & Conn.	Survey & Conn.@11436' Inc 90.46° Azm 359.29°
17:55	18:05	0.17	11484	11502	18	108.00	Drilling	Drilling - (WOB:55;GPM :600;RPM:35)
18:05	18:15	0.17	11502	11512	10	60.00	Sliding	Sliding - (WOB:60;GPM :600;TFO:120))
18:15	19:00	0.75	11512	11574	62	82.67	Drilling	Drilling - (WOB:55;GPM :600;RPM:35)
19:00	19:10	0.17	11574	11574	0	.00	Survey & Conn.	Survey & Conn.@11526' Inc 91.43° Azm 1.49°
19:10	19:15	0.08	11574	11581	7	84.00	Drilling	Drilling - (WOB:55;GPM :600;RPM:35)
19:15	19:25	0.17	11581	11589	8	48.00	Sliding	Sliding - (WOB:60;GPM :600;TFO:180))
19:25	20:00	0.58	11589	11589	0	.00	Circulating	Circulating - Loss Dif Psi. & ROP / Prep to POOH
20:00	24:00	4.00	11589	11589	0	.00	POOH	POOH



SDI Job #: ID2388-3
COMPANY: Advance Energy Partners ,LLC
LOCATION: Lea County, New Mexico
RIG NAME: HP 466
STATE: New Mexico
COUNTY: Lea
WELL NAME: Wool Head 20 State Com. #511H
Lead Directional : Jason Greer

Report Time: 2400 **13 of 13**
API JOB # 30-025-46491
WORK ORDER# ID2388
FIELD: Delaware Basin
Sec-Twn-Rng: 20-21S-33E
Range/Section NM0091
Company Man TJ Nash
2nd Dir Hand : Jason Mueller

From Tuesday, December 17, 2019 at 0000 to Tuesday, December 17, 2019 at 2400

DAILY TOTALS		Assembly Totals									
Start Depth	11589.00	BHA #	Motor SN / R.S. SN	Slide Ftg	Slide Hrs	Rotate Ftg	Rotate Hrs	Circ Hrs	D & C Hrs	BHA Ftg	Avg ROP
End Depth	13153.00	5	XSS67068	626.00	9.83	416.00	5.08	1.08	16.00	1,042.00	65.13
Below Rot Hrs.	24.00	6	ESS70020	257.00	4.75	1,307.00	6.42	2.42	13.58	1,564.00	0.00
Total Drilled:	1564.00	Drilling Parameters		Mud Record		Bit Record		Current BHA # 6			
Avg. Total ROP:	140.06			OBM		Bit No: 6		SKC616M w/ 6/22 7" 7/8 8.5 FBH @ 1.83 W/ SS UBHO 6 3/4" NMDC 6 3/4" NMDC X-O (ED 54 BX x 4 1/2 IF PN 39 Stnds DP X-O (4 1/2 IF BX x ED 54 PN) Agitator X-O (ED 54 BX x 4 1/2 IF PN			
Slide Footage:	257.00	WOB:	45	Weight:	9.9	Model	SKC616M w/				
Slide Hours	4.75	Rot Wt:	265	Visc:	69	SN.:	A255523				
Avg. Slide ROP:	54.11	Pick UP:	385	Chlorides:	45000	MFG.	REED				
Rotate Footage:	1307.00	Slack Off:	240	YP:	12	Type	PDC				
Rotary Hours	6.42	SPP:	4900	PV:	16	IADC					
Avg. Rot ROP:	203.69	Flow:	0 - 724	PH:	0	JETS	6-22				
Circ Hours	2.42	SPM:	225	GAS:	0	TFA:	2.226				
Ream Hours	1.50	Rot. RPM	40 - 40	SAND:	0.01	Hole ID:	8 1/2				
Rotary Hrs%:	57.46	Mot RPM:	0 - 40	WL:	8.2	Bit Hrs:	11.17				
Slide Hrs%:	42.54	Incl. In:	91.43	SOLID:	11	Bit Ftg:	1564.00				
Rotary Ftg%:	83.57	Azm. In:	1.49	BHT°:	157	Pumps					
Slide Ftg%:	16.43	Incl. Out:	93.58	Flow T°:	110	Liner	6.5	5.5			
Cost Detail		Azm. Out:	359.29	Oil %:	71	Stroke	11	11			
Descr.	Price	Cost Breakdown				Effic.	95.00%	95.00%			
DAY RATE	8,150.00	Total Daily		\$24,798.00		Gal/Stk	4.50	3.22			
Motor re-dress	3,600.00	Total Job		\$55,478.00		BBL/Stk	0.107	0.077			
Motor reline	12,438.00										
OTHER	610.00										

GENERAL COMMENT

Start Time	End Time	Hours	Start Depth	End Depth	Delta Depth	ROP	Activity Code	COMMENT
00:00	01:00	1.00	11589	11589	0	.00	POOH	POOH
01:00	02:00	1.00	11589	11589	0	.00	POOH	L/D BHA #5
02:00	02:30	0.50	11589	11589	0	.00	Change BHA	P/U & Tst BHA #6 - Good
02:30	03:00	0.50	11589	11589	0	.00	Other	Cln Rig Floor - OBM
03:00	04:30	1.50	11589	11589	0	.00	TIH	TIH
04:30	05:00	0.50	11589	11589	0	.00	Circulating	Test @ Agitator - Below=1350 & Above= 1540 @ 45 Gpm
05:00	08:00	3.00	11589	11589	0	.00	TIH	TIH
08:00	09:30	1.50	11589	11589	0	.00	Reaming	Wash and Ream
09:30	09:50	0.33	11589	11589	0	.00	Circulating	Relog last 30' of gamma
09:50	10:00	0.17	11589	11615	26	156.00	Drilling	Drilling - (WOB:30;GPM :695;RPM:40)
10:00	10:05	0.08	11615	11625	10	120.00	Drilling	Drilling - (WOB:42; :695;RPM:40)
10:05	10:20	0.25	11625	11640	15	60.00	Sliding	Sliding - (WOB:45; :600;TFO:180))
10:20	10:35	0.25	11640	11705	65	260.00	Drilling	Drilling - (WOB:42; :695;RPM:40)
10:35	10:45	0.17	11705	11705	0	.00	Survey & Conn.	Survey & Conn.@11647' Inc 90.59° Azm 1.13°

Start Time	End Time	Hours	Start Depth	End Depth	Delta Depth	ROP	Activity Code	COMMENT
10:45	11:00	0.25	11705	11772	67	268.00	Drilling	Drilling - (WOB:42; :695;RPM:40)
11:00	11:15	0.25	11772	11792	20	80.00	Sliding	Sliding - (WOB:45; :600;TFO:160L))
11:15	11:20	0.08	11792	11795	3	36.00	Drilling	Drilling - (WOB:42; :695;RPM:40)
11:20	11:30	0.17	11795	11795	0	.00	Survey & Conn.	Survey & Conn.@11737' Inc 92.79° Azm 1.84°
11:30	11:35	0.08	11795	11885	90	1080.00	Drilling	Drilling - (WOB:42;GPM :695;RPM:40)
11:35	11:40	0.08	11885	11885	0	.00	Survey & Conn.	Survey & Conn.@11827' Inc 91.3° Azm 1.49°
11:40	12:00	0.33	11885	11910	25	75.00	Sliding	Sliding - (WOB:45;GPM :600;TFO:180))
12:00	12:20	0.33	11910	11974	64	192.00	Drilling	Drilling - (WOB:42;GPM :695;RPM:40)
12:20	12:30	0.17	11974	11974	0	.00	Survey & Conn.	Survey & Conn.@11916' Inc 89.49° Azm 2.19°
12:30	12:40	0.17	11974	11992	18	108.00	Sliding	Sliding - (WOB:50;GPM :600;TFO:90L))
12:40	13:00	0.33	11992	12064	72	216.00	Drilling	Drilling - (WOB:42;GPM :695;RPM:40)
13:00	13:10	0.17	12064	12064	0	.00	Survey & Conn.	Survey & Conn.@12006' Inc 90.73° Azm 2.19°
13:10	13:15	0.08	12064	12069	5	60.00	Drilling	Drilling - (WOB:42;GPM :695;RPM:40)
13:15	13:30	0.25	12069	12094	25	100.00	Sliding	Sliding - (WOB:50;GPM :695;TFO:120L))
13:30	13:45	0.25	12094	12154	60	240.00	Drilling	Drilling - (WOB:42;GPM :695;RPM:40)
13:45	14:00	0.25	12154	12154	0	.00	Survey & Conn.	Survey & Conn.@12096' Inc 91.3° Azm 2.1°
14:00	14:20	0.33	12154	12189	35	105.00	Sliding	Sliding - (WOB:50;GPM :695;TFO:140L))
14:20	14:35	0.25	12189	12243	54	216.00	Drilling	Drilling - (WOB:42;GPM :695;RPM:40)
14:35	14:45	0.17	12243	12243	0	.00	Survey & Conn.	Survey & Conn.@12185' Inc 88.7° Azm 1.75°
14:45	15:00	0.25	12243	12293	50	200.00	Drilling	Drilling - (WOB:42;GPM :695;RPM:40)
15:00	15:40	0.67	12293	12316	23	34.50	Sliding	Sliding - (WOB:50;GPM :695;TFO:20))
15:40	15:45	0.08	12316	12333	17	204.00	Drilling	Drilling - (WOB:42;GPM :695;RPM:40)
15:45	16:00	0.25	12333	12333	0	.00	Rig Service-Inhole	Rig Service-Inhole
16:00	16:10	0.17	12333	12361	28	168.00	Drilling	Drilling - (WOB:42;GPM :695;RPM:40)
16:10	16:30	0.33	12361	12381	20	60.00	Sliding	Sliding - (WOB:50;GPM :695;TFO:-30))
16:30	16:45	0.25	12381	12423	42	168.00	Drilling	Drilling - (WOB:42;GPM :695;RPM:40)
16:45	16:55	0.17	12423	12423	0	.00	Survey & Conn.	Survey & Conn.@12365' Inc 88.04° Azm 2.01°
16:55	17:00	0.08	12423	12437	14	168.00	Drilling	Drilling - (WOB:42;GPM :695;RPM:40)
17:00	17:15	0.25	12437	12444	7	28.00	Sliding	Sliding - (WOB:40;GPM :695;TFO:-70))
17:15	17:20	0.08	12444	12444	0	.00	Circulating	Recycle - Pmps Dwn
17:20	17:50	0.50	12444	12457	13	26.00	Sliding	Sliding - (WOB:40;GPM :695;TFO:-70)
17:50	18:05	0.25	12457	12512	55	220.00	Drilling	Drilling - (WOB:42;GPM :695;RPM:40)
18:05	18:15	0.17	12512	12512	0	.00	Survey & Conn.	Survey & Conn.@12454' Inc 88.22° Azm 0.34°
18:15	18:20	0.08	12512	12524	12	144.00	Drilling	Drilling - (WOB:42;GPM :695;RPM:40)
18:20	18:35	0.25	12524	12536	12	48.00	Sliding	Sliding - (WOB:12;GPM :695;TFO:-30))
18:35	18:55	0.33	12536	12602	66	198.00	Drilling	Drilling - (WOB:42;GPM :695;RPM:40)
18:55	19:05	0.17	12602	12602	0	.00	Survey & Conn.	Survey & Conn.@12544' Inc 90.02° Azm 359.46°
19:05	19:30	0.42	12602	12692	90	216.00	Drilling	Drilling - (WOB:42;GPM :695;RPM:40)
19:30	19:40	0.17	12692	12692	0	.00	Survey & Conn.	Survey & Conn.@12634' Inc 91.43° Azm 0.08°
19:40	19:45	0.08	12692	12704	12	144.00	Drilling	Drilling - (WOB:42;GPM :695;RPM:40)
19:45	20:05	0.33	12704	12720	16	48.00	Sliding	Sliding - (WOB:40;GPM :695;TFO:-110))
20:05	20:25	0.33	12720	12782	62	186.00	Drilling	Drilling - (WOB:42;GPM :695;RPM:40)
20:25	20:35	0.17	12782	12782	0	.00	Survey & Conn.	Survey & Conn.@12724' Inc 92.53° Azm 358.94°
20:35	20:40	0.08	12782	12795	13	156.00	Drilling	Drilling - (WOB:42;GPM :724;RPM:40)
20:40	21:10	0.50	12795	12810	15	30.00	Sliding	Sliding - (WOB:40;GPM :724;TFO:-110))
21:10	21:30	0.33	12810	12871	61	183.00	Drilling	Drilling - (WOB:42;GPM :724;RPM:40)
21:30	21:40	0.17	12871	12871	0	.00	Survey & Conn.	Survey & Conn.@12813' Inc 91.43° Azm 358.23°
21:40	22:05	0.42	12871	12961	90	216.00	Drilling	Drilling - (WOB:45;GPM :724;RPM:45)

Start Time	End Time	Hours	Start Depth	End Depth	Delta Depth	ROP	Activity Code	COMMENT
22:05	22:15	0.17	12961	12961	0	.00	Survey & Conn.	Survey & Conn.@12903' Inc 91.56° Azm 358.59°
22:15	22:20	0.08	12961	12973	12	144.00	Drilling	Drilling - (WOB:45;GPM :724;RPM:45)
22:20	22:40	0.33	12973	12986	13	39.00	Sliding	Sliding - (WOB:40;GPM :724;TFO:-80))
22:40	23:00	0.33	12986	13051	65	195.00	Drilling	Drilling - (WOB:45;GPM :724;RPM:45)
23:00	23:10	0.17	13051	13051	0	.00	Survey & Conn.	Survey & Conn.@12993' Inc 91.91° Azm 357.79°
23:10	23:45	0.58	13051	13141	90	154.29	Drilling	Drilling - (WOB:45;GPM :724;RPM:45)
23:45	23:55	0.17	13141	13141	0	.00	Survey & Conn.	Survey & Conn.@13083' Inc 93.58° Azm 359.29°
23:55	24:00	0.08	13141	13153	12	144.00	Drilling	Drilling - (WOB:45;GPM :724;RPM:40)



SDI Job #: ID2388-3
 COMPANY: Advance Energy Partners ,LLC
 LOCATION: Lea County, New Mexico
 RIG NAME: HP 466
 STATE: New Mexico
 COUNTY: Lea
 WELL NAME: Wool Head 20 State Com. #511H
 Lead Directional : James Meredith

Report Time: 2400 14 of 14
 API JOB # 30-025-46491
 WORK ORDER# ID2388
 FIELD: Delaware Basin
 Sec-Twn-Rng: 20-21S-33E
 Range/Section NM0091
 Company Man Frank Calhoun
 2nd Dir Hand : Jason Mueller

From Wednesday, December 18, 2019 at 0000 to Wednesday, December 18, 2019 at 2400

DAILY TOTALS		Assembly Totals									
Start Depth	13153.00	BHA #	Motor SN / R.S. SN	Slide Ftg	Slide Hrs	Rotate Ftg	Rotate Hrs	Circ Hrs	D & C Hrs	BHA Ftg	Avg ROP
End Depth	13767.00	6	ESS70020	355.00	7.33	1,790.00	11.67	3.17	22.17	2,145.00	103.79
Below Rot Hrs.	24.00	7	ESS70017	0.00	0.00	33.00	0.83	.92	1.75	33.00	0.00
Total Drilled:	614.00	Drilling Parameters		Mud Record		Bit Record		Current BHA # 7			
Avg. Total ROP:	70.85			OBM		Bit No: 7		Baker DD506TWX			
Slide Footage:	98.00	WOB: 48		Weight: 9.9		Model Baker		7" 7/8 8.5 FBH @ 1.83 W/ SS			
Slide Hours	2.58	Rot Wt: 253		Visc: 69		SN.: 5293215		UBHO			
Avg. Slide ROP:	37.94	Pick UP: 292		Chlorides: 45000		MFG. BAKER		6 3/4" NMDC			
Rotate Footage:	516.00	Slack Off: 220		YP: 12		Type PDC		6 3/4" NMDC			
Rotary Hours	6.08	SPP: 4450		PV: 16		IADC		X-O (ED 54 BX x 4 1/2 IF PN			
Avg. Rot ROP:	84.82	Flow: 0 - 724		PH: 0		JETS 6-22		39 Stnds DP			
Circ Hours	1.67	SPM: 214		GAS: 0		TFA: 2.226		X-O (4 1/2 IF BX x ED 54 PN)			
Ream Hours	0.00	Rot. RPM 40 - 40		SAND: 0.01		Hole ID: 8.50		Agitator			
Rotary Hrs%:	70.19	Mot RPM: 0 - 0		WL: 8.2		Bit Hrs:		X-O (ED 54 BX x 4 1/2 IF PN			
Slide Hrs%:	29.81	Incl. In: 93.58		SOLID: 11		Bit Ftg:					
Rotary Ftg%:	84.04	Azm. In: 359.29		BHT°: 157		Pumps					
Slide Ftg%:	15.96	Incl. Out: 94.59		Flow T°: 110		Liner 6.5 5.5					
Cost Detail		Azm. Out: 357.24		Oil %: 71		Stroke 11 11					
Descr.	Price	Cost Breakdown									
DAY RATE	8,150.00	Total Daily				\$24,188.00					
Motor re-dress	3,600.00	Total Job				\$79,666.00					
Motor reline	12,438.00										
						Effic. 95.00% 95.00%					
						Gal/Stk 4.50 3.22					
						BBL/Stk 0.107 0.077					

GENERAL COMMENT

Start Time	End Time	Hours	Start Depth	End Depth	Delta Depth	ROP	Activity Code	COMMENT
00:00	00:40	0.67	13153	13180	27	40.50	Sliding	Sliding - (WOB:40;GPM :724;TFO:-130))
00:40	01:00	0.33	13180	13230	50	150.00	Drilling	Drilling - (WOB:45;GPM :724;RPM:40)
01:00	01:10	0.17	13230	13230	0	.00	Survey & Conn.	Survey & Conn.@13172' Inc 92.31° Azm 357.79°
01:10	01:40	0.50	13230	13295	65	130.00	Drilling	Drilling - (WOB:50;GPM :724;RPM:40)
01:40	02:10	0.50	13295	13309	14	28.00	Sliding	Sliding - (WOB:40;GPM :724;TFO:-168))
02:10	02:15	0.08	13309	13319	10	120.00	Drilling	Drilling - (WOB:50;GPM :724;RPM:40)
02:15	02:25	0.17	13319	13319	0	.00	Survey & Conn.	Survey & Conn.@13261' Inc 93.8° Azm 358.67°
02:25	02:30	0.08	13319	13331	12	144.00	Drilling	Drilling - (WOB:50;GPM :724;RPM:40)
02:30	03:05	0.58	13331	13358	27	46.29	Sliding	Sliding - (WOB:40;GPM :724;TFO:-168))
03:05	03:30	0.42	13358	13409	51	122.40	Drilling	Drilling - (WOB:50;GPM :724;RPM:40)
03:30	03:40	0.17	13409	13409	0	.00	Survey & Conn.	Survey & Conn.@13351' Inc 89.58° Azm 357.79°
03:40	04:30	0.83	13409	13499	90	108.00	Drilling	Drilling - (WOB:50;GPM :724;RPM:40)
04:30	04:40	0.17	13499	13499	0	.00	Survey & Conn.	@
04:40	05:35	0.92	13499	13588	89	97.09	Drilling	Drilling - (WOB:55;GPM :724;RPM:40)

Start Time	End Time	Hours	Start Depth	End Depth	Delta Depth	ROP	Activity Code	COMMENT
05:35	05:45	0.17	13588	13588	0	.00	Survey & Conn.	@
05:45	06:50	1.08	13588	13678	90	83.08	Drilling	Drilling - (WOB:55;GPM :724;RPM:40)
06:50	06:55	0.08	13678	13678	0	.00	Survey & Conn.	@
06:55	07:10	0.25	13678	13690	12	48.00	Drilling	Drilling - (WOB:55;GPM :724;RPM:40)
07:10	08:00	0.83	13690	13720	30	36.00	Sliding	Sliding - (WOB:52;GPM :724;TFO:140R))
08:00	08:45	0.75	13720	13734	14	18.67	Drilling	Drilling - (WOB:40;GPM :724;RPM:40)
08:45	09:30	0.75	13734	13734	0	.00	Circulating	Circulating
09:30	14:00	4.50	13734	13734	0	.00	POOH	POOH
14:00	15:00	1.00	13734	13734	0	.00	Change BHA	Change BHA
15:00	17:15	2.25	13734	13734	0	.00	TIH	TIH
17:15	18:40	1.42	13734	13734	0	.00	Rig Service-Inhole	Slip & Cut Drill Line
18:40	18:50	0.17	13734	13734	0	.00	Circulating	Fill Pipe & Tst MWD
18:50	22:15	3.42	13734	13734	0	.00	TIH	TIH
22:15	22:40	0.42	13734	13734	0	.00	Circulating	Fill Pipe & W/R F/13493-13700
22:40	23:00	0.33	13734	13734	0	.00	Circulating	Relog F/ 13700-13734
23:00	23:50	0.83	13734	13767	33	39.60	Drilling	Drilling - (WOB:48;GPM :689;RPM:40)
23:50	24:00	0.17	13767	13767	0	.00	Survey & Conn.	Survey & Conn.@13709' Inc 94.59° Azm 357.27°



SDI Job #: ID2388-3
 COMPANY: Advance Energy Partners ,LLC
 LOCATION: Lea County, New Mexico
 RIG NAME: HP 466
 STATE: New Mexico
 COUNTY: Lea
 WELL NAME: Wool Head 20 State Com. #511H
 Lead Directional : James Meredith

Report Time: 2400 15 of 16
 API JOB # 30-025-46491
 WORK ORDER# ID2388
 FIELD: Delaware Basin
 Sec-Twn-Rng: 20-21S-33E
 Range/Section NM0091
 Company Man Frank Calhoun
 2nd Dir Hand : Jason Mueller

From Thursday, December 19, 2019 at 0000 to Thursday, December 19, 2019 at 2400

DAILY TOTALS		Assembly Totals									
Start Depth	13767.00	BHA #	Motor SN / R.S. SN	Slide Ftg	Slide Hrs	Rotate Ftg	Rotate Hrs	Circ Hrs	D & C Hrs	BHA Ftg	Avg ROP
End Depth	14193.00	7	ESS70017	73.00	2.75	386.00	7.33	1.50	11.58	459.00	39.63
Below Rot Hrs.	24.00	8	XSS70016	0.00	0.00	0.00	0.00	.50	0.50	0.00	0.00
Total Drilled:	426.00	Drilling Parameters		Mud Record		Bit Record		Current BHA # 8			
Avg. Total ROP:	46.05	WOB: 0		OBM		Bit No: 8		Baker DD507TX 7" 7/8 8.5 FBH @ 1.83 W/ SS UBHO 6 3/4" NMDC 6 3/4" NMDC X-O (ED 54 BX x 4 1/2 IF PN 39 Stnds DP X-O (4 1/2 IF BX x ED 54 PN) Agitator X-O (ED 54 BX x 4 1/2 IF PN			
Slide Footage:	73.00	Rot Wt: 253		Weight: 9.6		Model Baker					
Slide Hours	2.75	Pick UP: 300		Visc: 72		SN.: 5307592					
Avg. Slide ROP:	26.55	Slack Off: 215		Chlorides: 46000		MFG. BAKER					
Rotate Footage:	353.00	SPP: 0		YP: 12		Type PDC					
Rotary Hours	6.50	Flow: 0 - 724		PV: 16		IADC					
Avg. Rot ROP:	54.31	SPM: 0		PH: 0		JETS 4-18,3-22					
Circ Hours	1.08	Rot. RPM 40 - 40		GAS: 0		TFA: 2.107					
Ream Hours	0.00	Mot RPM: 0 - 0		SAND: 0.01		Hole ID: 8.50					
Rotary Hrs%:	70.27	Incl. In: 94.59		WL: 8.2		Bit Hrs: 1.58					
Slide Hrs%:	29.73	Azm. In: 357.24		SOLID: 11		Bit Ftg: 204.00					
Rotary Ftg%:	82.86	Incl. Out: 90.2		BHT°: 157		Pumps					
Slide Ftg%:	17.14	Azm. Out: 355.25		Flow T°: 110		Liner 6.5 5.5					
Cost Detail				Oil %: 71		Stroke 11 11					
Descr.	Price	Cost Breakdown									
DAY RATE	8,150.00	Total Daily				\$24,188.00					
Motor re-dress	3,600.00	Total Job				\$103,854.00					
Motor reline	12,438.00										

GENERAL COMMENT

Start Time	End Time	Hours	Start Depth	End Depth	Delta Depth	ROP	Activity Code	COMMENT
00:00	00:10	0.17	13767	13780	13	78.00	Drilling	Drilling - (WOB:48;GPM :689;RPM:40)
00:10	00:50	0.67	13780	13795	15	22.50	Sliding	Sliding - (WOB:42;GPM :724;TFO:180))
00:50	01:50	1.00	13795	13857	62	62.00	Drilling	Drilling - (WOB:50;GPM :689;RPM:40)
01:50	02:00	0.17	13857	13857	0	.00	Survey & Conn.	Survey & Conn.@13799' Inc 91.82° Azm 357.71°
02:00	02:10	0.17	13857	13869	12	72.00	Drilling	Drilling - (WOB:55;GPM :705;RPM:40)
02:10	02:50	0.67	13869	13894	25	37.50	Sliding	Sliding - (WOB:45;GPM :724;TFO:150))
02:50	03:30	0.67	13894	13947	53	79.50	Drilling	Drilling - (WOB:55;GPM :705;RPM:40)
03:30	03:40	0.17	13947	13947	0	.00	Survey & Conn.	Survey & Conn.@13889' Inc 90.55° Azm 358.15°
03:40	03:50	0.17	13947	13959	12	72.00	Drilling	Drilling - (WOB:55;GPM :705;RPM:40)
03:50	04:05	0.25	13959	13967	8	32.00	Sliding	Sliding - (WOB:45;GPM :705;TFO:180))
04:05	04:55	0.83	13967	14037	70	84.00	Drilling	Drilling - (WOB:55;GPM :705;RPM:40)
04:55	05:05	0.17	14037	14037	0	.00	Survey & Conn.	@
05:05	06:35	1.50	14037	14126	89	59.33	Drilling	Drilling - (WOB:55;GPM :705;RPM:40)
06:35	06:40	0.08	14126	14126	0	.00	Survey & Conn.	@

Start Time	End Time	Hours	Start Depth	End Depth	Delta Depth	ROP	Activity Code	COMMENT
06:40	06:55	0.25	14126	14138	12	48.00	Drilling	Drilling - (WOB:55;GPM :705;RPM:40)
06:55	08:05	1.17	14138	14163	25	21.43	Sliding	Sliding - (WOB:52;GPM :705;TFO:115R))
08:05	09:50	1.75	14163	14193	30	17.14	Drilling	Drilling - (WOB:55;GPM :705;RPM:40)
09:50	11:30	1.67	14193	14193	0	.00	POOH	POOH T/ 12700
11:30	12:05	0.58	14193	14193	0	.00	Circulating	Circulating Due to Tight hole
12:05	17:00	4.92	14193	14193	0	.00	POOH	POOH
17:00	18:30	1.50	14193	14193	0	.00	Change BHA	P/U & Tst BHA #8
18:30	18:40	0.17	14193	14193	0	.00	TIH	TIH
18:40	19:00	0.33	14193	14193	0	.00	Rig Service-Inhole	Rig Service-Inhole
19:00	20:00	1.00	14193	14193	0	.00	TIH	TIH
20:00	20:30	0.50	14193	14193	0	.00	Circulating	Test Agit. @ 450 Gpm - Below=1204 / Above= 1590
20:30	24:00	3.50	14193	14193	0	.00	TIH	TIH



DAILY TOTALS		Assembly Totals									
Start Depth	14193.00	BHA #	Motor SN / R.S. SN	Slide Ftg	Slide Hrs	Rotate Ftg	Rotate Hrs	Circ Hrs	D & C Hrs	BHA Ftg	Avg ROP
End Depth	16166.00	8	XSS70016	219.00	5.58	1,754.00	13.42	1.00	20.00	1,973.00	98.65
Below Rot Hrs.	24.00										
Total Drilled:	1973.00	Drilling Parameters		Mud Record		Bit Record		Current BHA # 8			
Avg. Total ROP:	103.84			OBM		Bit No: 8		Baker DD507TX 7" 7/8 8.5 FBH @ 1.83 W/ SS UBHO 6 3/4" NMDC 6 3/4" NMDC X-O (ED 54 BX x 4 1/2 IF PN 39 Stnds DP X-O (4 1/2 IF BX x ED 54 PN) Agitator X-O (ED 54 BX x 4 1/2 IF PN			
Slide Footage:	219.00	WOB:	47	Weight:	9.4	Model	Baker				
Slide Hours	5.58	Rot Wt:	253	Visc:	58	SN.:	5307592				
Avg. Slide ROP:	39.22	Pick UP:	320	Chlorides:	45000	MFG.	BAKER				
Rotate Footage:	1754.00	Slack Off:	198	YP:	11	Type	PDC				
Rotary Hours	13.42	SPP:	4200	PV:	14	IADC					
Avg. Rot ROP:	130.73	Flow:	0 - 650	PH:	0	JETS	4-18,3-22				
Circ Hours	0.50	SPM:	201	GAS:	0	TFA:	2.107				
Ream Hours	0.00	Rot. RPM	60 - 60	SAND:	0.01	Hole ID:	8.50				
Rotary Hrs%:	70.61	Mot RPM:	0 - 0	WL:	7.2	Bit Hrs:	19.00				
Slide Hrs%:	29.39	Incl. In:	90.2	SOLID:	10.8	Bit Ftg:	1973.00				
Rotary Ftg%:	88.90	Azm. In:	355.25	BHT°:	166	Pumps					
Slide Ftg%:	11.10	Incl. Out:	91.43	Flow T°:	111	Liner	6.5	5.5			
Cost Detail		Azm. Out:	359.29	Oil %:	72	Stroke	11	11			
Descr.	Price	Cost Breakdown					Effic.	95.00%	95.00%		
DAY RATE	8,150.00	Total Daily \$8,150.00					Gal/Stk	4.50	3.22		
		Total Job \$112,004.00					BBL/Stk	0.107	0.077		

Start Time	End Time	Hours	Start Depth	End Depth	Delta Depth	ROP	Activity Code	COMMENT
00:00	01:00	1.00	14193	14193	0	.00	TIH	TIH
01:00	01:20	0.33	14193	14193	0	.00	Circulating	W/R F/ 14120-14193
01:20	01:35	0.25	14193	14216	23	92.00	Drilling	Drilling - (WOB:42;GPM :650;RPM:60)
01:35	01:45	0.17	14216	14216	0	.00	Survey & Conn.	Survey & Conn.@14158' Inc 90.46° Azm 357°
01:45	01:50	0.08	14216	14229	13	156.00	Drilling	Drilling - (WOB:42;GPM :650;RPM:60)
01:50	02:05	0.25	14229	14244	15	60.00	Sliding	Sliding - (WOB:45;GPM :650;TFO:100))
02:05	02:35	0.50	14244	14307	63	126.00	Drilling	Drilling - (WOB:42;GPM :650;RPM:60)
02:35	02:45	0.17	14307	14307	0	.00	Survey & Conn.	Survey & Conn.@14249' Inc 90.51° Azm 0.52°
02:45	03:15	0.50	14307	14397	90	180.00	Drilling	Drilling - (WOB:42;GPM :650;RPM:60)
03:15	03:25	0.17	14397	14397	0	.00	Survey & Conn.	Survey & Conn.@14339' Inc 91.52° Azm 359.82°
03:25	03:30	0.08	14397	14410	13	156.00	Drilling	Drilling - (WOB:42;GPM :650;RPM:60)
03:30	03:55	0.42	14410	14420	10	24.00	Sliding	Sliding - (WOB:42;GPM :650;TFO:150))
03:55	04:20	0.42	14420	14486	66	158.40	Drilling	Drilling - (WOB:42;GPM :650;RPM:60)
04:20	04:30	0.17	14486	14486	0	.00	Survey & Conn.	Survey & Conn.@14428' Inc 90.2° Azm 359.99°

Start Time	End Time	Hours	Start Depth	End Depth	Delta Depth	ROP	Activity Code	COMMENT
04:30	05:00	0.50	14486	14576	90	180.00	Drilling	Drilling - (WOB:42;GPM :650;RPM:60)
05:00	05:10	0.17	14576	14576	0	.00	Survey & Conn.	Survey & Conn.@14518' Inc 90.42° Azm 359.38°
05:10	05:40	0.50	14576	14666	90	180.00	Drilling	Drilling - (WOB:42;GPM :650;RPM:60)
05:40	05:50	0.17	14666	14666	0	.00	Survey & Conn.	Survey & Conn.@14608' Inc 91.47° Azm 358.32°
05:50	05:55	0.08	14666	14678	12	144.00	Drilling	Drilling - (WOB:42;GPM :650;RPM:60)
05:55	06:20	0.42	14678	14696	18	43.20	Sliding	Sliding - (WOB:40;GPM :650;TFO:150R))
06:20	07:30	1.17	14696	14857	161	138.00	Drilling	Drilling - (WOB:42;GPM :650;RPM:60)
07:30	07:50	0.33	14857	14877	20	60.00	Sliding	Sliding - (WOB:40;GPM :650;TFO:90R))
07:50	09:35	1.75	14877	15126	249	142.29	Drilling	Drilling - (WOB:42;GPM :650;RPM:60)
09:35	10:15	0.67	15126	15156	30	45.00	Sliding	Sliding - (WOB:45;GPM :650;TFO:110R))
10:15	10:35	0.33	15156	15204	48	144.00	Drilling	Drilling - (WOB:42;GPM :650;RPM:60)
10:35	10:40	0.08	15204	15204	0	.00	Survey & Conn.	Survey & Conn.@15146' Inc 92.84° Azm 359.11°
10:40	10:45	0.08	15204	15216	12	144.00	Drilling	Drilling - (WOB:42;GPM :650;RPM:60)
10:45	11:05	0.33	15216	15228	12	36.00	Sliding	Sliding - (WOB:38;GPM :650;TFO:110R))
11:05	11:35	0.50	15228	15294	66	132.00	Drilling	Drilling - (WOB:44;GPM :650;RPM:60)
11:35	11:40	0.08	15294	15294	0	.00	Survey & Conn.	Survey & Conn.@15236' Inc 91.38° Azm 0.96°
11:40	12:15	0.58	15294	15383	89	152.57	Drilling	Drilling - (WOB:44;GPM :650;RPM:60)
12:15	12:20	0.08	15383	15383	0	.00	Survey & Conn.	Survey & Conn.@15325' Inc 92.66° Azm 1.05°
12:20	12:30	0.17	15383	15395	12	72.00	Drilling	Drilling - (WOB:44;GPM :650;RPM:60)
12:30	13:00	0.50	15395	15413	18	36.00	Drilling	Drilling - (WOB:44;GPM :650;RPM:60)
13:00	13:30	0.50	15413	15473	60	120.00	Drilling	Drilling - (WOB:44;GPM :650;RPM:60)
13:30	13:35	0.08	15473	15473	0	.00	Survey & Conn.	Survey & Conn.@15415' Inc 92.35° Azm 1.49°
13:35	14:15	0.67	15473	15563	90	135.00	Drilling	Drilling - (WOB:44;GPM :650;RPM:60)
14:15	14:20	0.08	15563	15563	0	.00	Survey & Conn.	Survey & Conn.@15505' Inc 93.98° Azm 0.61°
14:20	14:30	0.17	15563	15575	12	72.00	Drilling	Drilling - (WOB:44;GPM :650;RPM:60)
14:30	15:20	0.83	15575	15600	25	30.00	Sliding	Sliding - (WOB:38;GPM :650;TFO:160R))
15:20	15:50	0.50	15600	15652	52	104.00	Drilling	Drilling - (WOB:44;GPM :650;RPM:60)
15:50	15:55	0.08	15652	15652	0	.00	Survey & Conn.	Survey & Conn.@15594' Inc 93.23° Azm 0.96°
15:55	16:00	0.08	15652	15664	12	144.00	Drilling	Drilling - (WOB:44;GPM :650;RPM:60)
16:00	16:45	0.75	15664	15694	30	40.00	Sliding	Sliding - (WOB:38;GPM :650;TFO:180))
16:45	17:10	0.42	15694	15732	38	91.20	Drilling	Drilling - (WOB:44;GPM :650;RPM:60)
17:10	17:20	0.17	15732	15732	0	.00	Survey & Conn.	Survey & Conn.@15684' Inc 90.46° Azm 1.22°
17:20	17:30	0.17	15732	15741	9	54.00	Sliding	Sliding - (WOB:45;GPM :650;TFO:180))
17:30	18:15	0.75	15741	15831	90	120.00	Drilling	Drilling - (WOB:44;GPM :650;RPM:60)
18:15	18:25	0.17	15831	15831	0	.00	Survey & Conn.	Survey & Conn.@15773' Inc 89.58° Azm 0.26°
18:25	18:30	0.08	15831	15845	14	168.00	Drilling	Drilling - (WOB:44;GPM :650;RPM:60)
18:30	18:50	0.33	15845	15857	12	36.00	Sliding	Sliding - (WOB:45;GPM :650;TFO:LS))
18:50	19:25	0.58	15857	15921	64	109.71	Drilling	Drilling - (WOB:44;GPM :650;RPM:60)
19:25	20:35	1.17	15921	15921	0	.00	Rig repair	Rig repair - TD Hyd Hose
20:35	20:45	0.17	15921	15921	0	.00	Survey & Conn.	Survey & Conn.@15863' Inc 89.45° Azm 358.85°
20:45	21:30	0.75	15921	16011	90	120.00	Drilling	Drilling - (WOB:47;GPM :650;RPM:60)
21:30	21:40	0.17	16011	16011	0	.00	Survey & Conn.	Survey & Conn.@15953' Inc 90.24° Azm 357.53°
21:40	21:50	0.17	16011	16023	12	72.00	Drilling	Drilling - (WOB:47;GPM :650;RPM:60)
21:50	22:30	0.67	16023	16043	20	30.00	Sliding	Sliding - (WOB:45;GPM :650;TFO:90))
22:30	22:55	0.42	16043	16101	58	139.20	Drilling	Drilling - (WOB:47;GPM :650;RPM:60)
22:55	23:05	0.17	16101	16101	0	.00	Survey & Conn.	Survey & Conn.@16043' Inc 91.43° Azm 359.29°
23:05	23:10	0.08	16101	16113	12	144.00	Drilling	Drilling - (WOB:47;GPM :650;RPM:60)
23:10	23:35	0.42	16113	16131	18	43.20	Sliding	Sliding - (WOB:45;GPM :650;TFO:120))

Start Time	End Time	Hours	Start Depth	End Depth	Delta Depth	ROP	Activity Code	COMMENT
23:35	23:45	0.17	16131	16131	0	.00	Circulating	Recycle - Pmp 2 Dwn
23:45	24:00	0.25	16131	16166	35	140.00	Drilling	Drilling - (WOB:47;GPM :650;RPM:60)



SDI Job #: ID2388-3
 COMPANY: Advance Energy Partners ,LLC
 LOCATION: Lea County, New Mexico
 RIG NAME: HP 466
 STATE: New Mexico
 COUNTY: Lea
 WELL NAME: Wool Head 20 State Com. #511H
 Lead Directional : James Meredith

Report Time: 2400 17 of 17
 API JOB # 30-025-46491
 WORK ORDER# ID2388
 FIELD: Delaware Basin
 Sec-Twn-Rng: 20-21S-33E
 Range/Section NM0091
 Company Man Frank Calhoun
 2nd Dir Hand : Jason Mueller

From Saturday, December 21, 2019 at 0000 to Saturday, December 21, 2019 at 2400

DAILY TOTALS		Assembly Totals									
Start Depth	16166.00	BHA #	Motor SN / R.S. SN	Slide Ftg	Slide Hrs	Rotate Ftg	Rotate Hrs	Circ Hrs	D & C Hrs	BHA Ftg	Avg ROP
End Depth	17797.00	8	XSS70016	419.00	11.67	3,185.00	29.42	1.08	42.17	3,604.00	85.47
Below Rot Hrs.	24.00										
Total Drilled:	1631.00	Drilling Parameters		Mud Record		Bit Record		Current BHA # 8			
Avg. Total ROP:	73.86	WOB: 47		OBM		Bit No: 8		Baker DD507TX 7" 7/8 8.5 FBH @ 1.83 W/ SS UBHO 6 3/4" NMDC 6 3/4" NMDC X-O (ED 54 BX x 4 1/2 IF PN 39 Stnds DP X-O (4 1/2 IF BX x ED 54 PN) Agitator X-O (ED 54 BX x 4 1/2 IF PN			
Slide Footage:	200.00	Rot Wt: 253		Weight: 9.6		Model Baker					
Slide Hours	6.08	Pick UP: 320		Visc: 56		SN.: 5307592					
Avg. Slide ROP:	32.88	Slack Off: 190		Chlorides: 45000		MFG. BAKER					
Rotate Footage:	1431.00	SPP: 4570		YP: 10		Type PDC					
Rotary Hours	16.00	Flow: 650 - 655		PV: 14		IADC					
Avg. Rot ROP:	89.44	SPM: 204		PH: 0		JETS 4-18,3-22					
Circ Hours	0.08	Rot. RPM 60 - 60		GAS: 0		TFA: 2.107					
Ream Hours	0.00	Mot RPM: 0 - 60		SAND: 0.01		Hole ID: 8.50					
Rotary Hrs%:	72.45	Incl. In: 91.43		WL: 7.2		Bit Hrs: 41.08					
Slide Hrs%:	27.55	Azm. In: 359.29		SOLID: 10.4		Bit Ftg: 3604.00					
Rotary Ftg%:	87.74	Incl. Out: 93.76		BHT°: 175		Pumps					
Slide Ftg%:	12.26	Azm. Out: 359.73		Flow T°: 111		Liner 6.5 5.5					
Cost Detail				Oil %: 72		Stroke 11 11					
Descr.	Price	Cost Breakdown				Effic. 95.00% 95.00%					
DAY RATE	8,150.00	Total Daily \$8,150.00				Gal/Stk 4.50 3.22					
		Total Job \$120,154.00				BBL/Stk 0.107 0.077					

Start Time	End Time	Hours	Start Depth	End Depth	Delta Depth	ROP	Activity Code	COMMENT
05:15	05:20	0.08	16549	16562	13	156.00	Drilling	Drilling - (WOB:47;GPM :655;RPM:60)
05:20	05:45	0.42	16562	16577	15	36.00	Sliding	Sliding - (WOB:47;GPM :655;TFO:150L))
05:45	06:25	0.67	16577	16639	62	93.00	Drilling	Drilling - (WOB:47;GPM :655;RPM:60)
06:25	06:30	0.08	16639	16639	0	.00	Survey & Conn.	Survey & Conn.@16581' Inc 90.11° Azm 1.66°
06:30	07:20	0.83	16639	16729	90	108.00	Drilling	Drilling - (WOB:47;GPM :655;RPM:60)
07:20	07:25	0.08	16729	16729	0	.00	Survey & Conn.	Survey & Conn.@16671' Inc 91.12° Azm 1.13°
07:25	07:35	0.17	16729	16741	12	72.00	Drilling	Drilling - (WOB:47;GPM :655;RPM:60)
07:35	08:10	0.58	16741	16759	18	30.86	Sliding	Sliding - (WOB:45;GPM :655;TFO:180))
08:10	08:55	0.75	16759	16819	60	80.00	Drilling	Drilling - (WOB:47;GPM :655;RPM:60)
08:55	09:00	0.08	16819	16819	0	.00	Survey & Conn.	Survey & Conn.@16761' Inc 90.59° Azm 0.43°
09:00	10:00	1.00	16819	16908	89	89.00	Drilling	Drilling - (WOB:47;GPM :655;RPM:60)
10:00	10:05	0.08	16908	16908	0	.00	Survey & Conn.	Survey & Conn.@16850' Inc 90.95° Azm 359.99°
10:05	11:00	0.92	16908	16998	90	98.18	Drilling	Drilling - (WOB:47;GPM :655;RPM:60)
11:00	11:05	0.08	16998	16998	0	.00	Survey & Conn.	Survey & Conn.@16940' Inc 92.75° Azm 359.29°
11:05	11:20	0.25	16998	17010	12	48.00	Sliding	Sliding - (WOB:45;GPM :655;TFO:180)
11:20	12:10	0.83	17010	17045	35	42.00	Sliding	Sliding - (WOB:42;GPM :655;TFO:180))
12:10	12:45	0.58	17045	17088	43	73.71	Drilling	Drilling - (WOB:47;GPM :655;RPM:60)
12:45	12:50	0.08	17088	17088	0	.00	Survey & Conn.	Survey & Conn.@17030' Inc 91.12° Azm 357°
12:50	13:45	0.92	17088	17178	90	98.18	Drilling	Drilling - (WOB:47;GPM :655;RPM:60)
13:45	13:50	0.08	17178	17178	0	.00	Survey & Conn.	Survey & Conn.@17120' Inc 89.89° Azm 356.12°
13:50	14:00	0.17	17178	17190	12	72.00	Drilling	Drilling - (WOB:47;GPM :655;RPM:60)
14:00	14:40	0.67	17190	17215	25	37.50	Sliding	Sliding - (WOB:48;GPM :655;TFO:100R))
14:40	15:25	0.75	17215	17267	52	69.33	Drilling	Drilling - (WOB:47;GPM :655;RPM:60)
15:25	15:30	0.08	17267	17267	0	.00	Survey & Conn.	Survey & Conn.@17209' Inc 91.08° Azm 357.27°
15:30	15:40	0.17	17267	17279	12	72.00	Drilling	Drilling - (WOB:47;GPM :655;RPM:60)
15:40	16:40	1.00	17279	17304	25	25.00	Sliding	Sliding - (WOB:50;GPM :655;TFO:110R))
16:40	17:30	0.83	17304	17357	53	63.60	Drilling	Drilling - (WOB:47;GPM :655;RPM:60)
17:30	17:35	0.08	17357	17357	0	.00	Survey & Conn.	Survey & Conn.@17299' Inc 91.43° Azm 359.99°
17:35	17:45	0.17	17357	17369	12	72.00	Drilling	Drilling - (WOB:47;GPM :655;RPM:60)
17:45	18:15	0.50	17369	17384	15	30.00	Sliding	Sliding - (WOB:50;GPM :655;TFO:180))
18:15	19:00	0.75	17384	17447	63	84.00	Drilling	Drilling - (WOB:47;GPM :655;RPM:60)
19:00	19:05	0.08	17447	17447	0	.00	Survey & Conn.	Survey & Conn.@17389' Inc 89.93° Azm 0.78°
19:05	19:55	0.83	17447	17505	58	69.60	Drilling	Drilling - (WOB:47;GPM :655;RPM:60)
19:55	20:00	0.08	17505	17505	0	.00	Circulating	Check Shot @ 17447 89.89 / .78
20:00	20:25	0.42	17505	17536	31	74.40	Drilling	Drilling - (WOB:47;GPM :655;RPM:60)
20:25	20:30	0.08	17536	17536	0	.00	Survey & Conn.	Survey & Conn.@17478' Inc 90.46° Azm 0.17°
20:30	21:20	0.83	17536	17626	90	108.00	Drilling	Drilling - (WOB:47;GPM :655;RPM:60)
21:20	21:25	0.08	17626	17626	0	.00	Survey & Conn.	Survey & Conn.@17568' Inc 92.18° Azm 0.08°
21:25	22:25	1.00	17626	17716	90	90.00	Drilling	Drilling - (WOB:47;GPM :655;RPM:60)
22:25	22:30	0.08	17716	17716	0	.00	Survey & Conn.	Survey & Conn.@17658' Inc 93.76° Azm 359.73°
22:30	22:40	0.17	17716	17728	12	72.00	Drilling	Drilling - (WOB:47;GPM :655;RPM:60)
22:40	23:25	0.75	17728	17748	20	26.67	Sliding	Sliding - (WOB:50;GPM :655;TFO:180))
23:25	24:00	0.58	17748	17797	49	84.00	Drilling	Drilling - (WOB:47;GPM :655;RPM:60)



SDI Job #: ID2388-3
 COMPANY: Advance Energy Partners ,LLC
 LOCATION: Lea County, New Mexico
 RIG NAME: HP 466
 STATE: New Mexico
 COUNTY: Lea
 WELL NAME: Wool Head 20 State Com. #511H
 Lead Directional : James Meredith

Report Time: 2400 18 of 18
 API JOB # 30-025-46491
 WORK ORDER# ID2388
 FIELD: Delaware Basin
 Sec-Twn-Rng: 20-21S-33E
 Range/Section NM0091
 Company Man Frank Calhoun
 2nd Dir Hand : Jason Mueller

From Sunday, December 22, 2019 at 0000 to Sunday, December 22, 2019 at 2400

DAILY TOTALS		Assembly Totals									
Start Depth	17797.00	BHA #	Motor SN / R.S. SN	Slide Ftg	Slide Hrs	Rotate Ftg	Rotate Hrs	Circ Hrs	D & C Hrs	BHA Ftg	Avg ROP
End Depth	18601.00	8	XSS70016	519.00	15.25	3,889.00	38.33	4.50	58.08	4,408.00	76.00
Below Rot Hrs.	24.00										
Total Drilled:	804.00	Drilling Parameters		Mud Record		Bit Record		Current BHA # 8			
Avg. Total ROP:	64.32			OBM		Bit No: 8		Baker DD507TX 7" 7/8 8.5 FBH @ 1.83 W/ SS UBHO 6 3/4" NMDC 6 3/4" NMDC X-O (ED 54 BX x 4 1/2 IF PN 39 Stnds DP X-O (4 1/2 IF BX x ED 54 PN) Agitator X-O (ED 54 BX x 4 1/2 IF PN			
Slide Footage:	100.00	WOB:	0	Weight:	9.6	Model	Baker				
Slide Hours	3.58	Rot Wt:	253	Visc:	56	SN.:	5307592				
Avg. Slide ROP:	27.91	Pick UP:	320	Chlorides:	45000	MFG.	BAKER				
Rotate Footage:	704.00	Slack Off:	190	YP:	10	Type	PDC				
Rotary Hours	8.92	SPP:	0	PV:	14	IADC					
Avg. Rot ROP:	78.95	Flow:	0 - 750	PH:	0	JETS	4-18,3-22				
Circ Hours	3.42	SPM:	0	GAS:	0	TFA:	2.107				
Ream Hours	0.00	Rot. RPM	60 - 60	SAND:	0.01	Hole ID:	8.50				
Rotary Hrs%:	71.33	Mot RPM:	0 - 0	WL:	7.2	Bit Hrs:	53.58				
Slide Hrs%:	28.67	Incl. In:	93.76	SOLID:	10.4	Bit Ftg:	4408.00				
Rotary Ftg%:	87.56	Azm. In:	359.73	BHT°:	175	Pumps					
Slide Ftg%:	12.44	Incl. Out:	92.88	Flow T°:	111	Liner	6.5	5.5			
Cost Detail		Azm. Out:	358.06	Oil %:	72	Stroke	11	11			
Descr.	Price	Cost Breakdown					Effic.	95.00%	95.00%		
DAY RATE	8,150.00	Total Daily \$8,150.00					Gal/Stk	4.50	3.22		
		Total Job \$128,304.00					BBL/Stk	0.107	0.077		

Start Time	End Time	Hours	Start Depth	End Depth	Delta Depth	ROP	Activity Code	COMMENT
05:20	06:00	0.67	18114	18164	50	75.00	Drilling	Drilling - (WOB:40;GPM :655;RPM:60)
06:00	06:05	0.08	18164	18164	0	.00	Survey & Conn.	Survey & Conn.@0' Inc 0° Azm 0°
06:05	06:15	0.17	18164	18176	12	72.00	Drilling	Drilling - (WOB:40;GPM :655;RPM:60)
06:15	07:20	1.08	18176	18211	35	32.31	Sliding	Sliding - (WOB:42;GPM :655;TFO:160R))
07:20	08:05	0.75	18211	18254	43	57.33	Drilling	Drilling - (WOB:40;GPM :655;RPM:60)
08:05	08:10	0.08	18254	18254	0	.00	Survey & Conn.	Survey & Conn.@0' Inc 0° Azm 0°
08:10	08:25	0.25	18254	18266	12	48.00	Drilling	Drilling - (WOB:40;GPM :655;RPM:60)
08:25	09:10	0.75	18266	18286	20	26.67	Sliding	Sliding - (WOB:42;GPM :655;TFO:160R))
09:10	10:00	0.83	18286	18344	58	69.60	Drilling	Drilling - (WOB:40;GPM :655;RPM:60)
10:00	10:05	0.08	18344	18344	0	.00	Survey & Conn.	Survey & Conn.@0' Inc 0° Azm 0°
10:05	11:05	1.00	18344	18433	89	89.00	Drilling	Drilling - (WOB:40;GPM :655;RPM:60)
11:05	11:10	0.08	18433	18433	0	.00	Survey & Conn.	Survey & Conn.@0' Inc 0° Azm 0°
11:10	12:20	1.17	18433	18523	90	77.14	Drilling	Drilling - (WOB:40;GPM :655;RPM:60)
12:20	12:25	0.08	18523	18523	0	.00	Survey & Conn.	Survey & Conn.@0' Inc 0° Azm 0°
12:25	13:25	1.00	18523	18601	78	78.00	Drilling	Drilling - (WOB:40;GPM :655;RPM:60)
13:25	13:30	0.08	18601	18601	0	.00	MWD Survey	MWD Survey@0' Inc 0° Azm 0°
13:30	16:40	3.17	18601	18601	0	.00	Circulating	Circulating
16:40	16:55	0.25	18601	18601	0	.00	Other	Flow Check
16:55	23:00	6.08	18601	18601	0	.00	POOH	POOH
23:00	24:00	1.00	18601	18601	0	.00	POOH	L/D Directional Tools



BHA's



BHA # 1

Intrepid Directional



SDI Job #: ID2388 Work Order: ID2388

COMPANY: Advance Energy Partners ,LLC

LOCATION: Lea County, New Mexico

RIG NAME: HP 466

STATE: New Mexico

COUNTY: Lea

WELL NAME: Wool Head 20 State Com. #511H

FIELD: Bone Springs

Sec-Twn-Rng: 20-21S-33E

PO #/ DISTRICT NM0091

Lead DD: Bill Corley

Co. Man: Frank Calhoun / TJ Nash

BHA TYPE: Steerable Assembly

BHA WT: 58531 Wt @ Jars: N/A

Time and Depths		Motor Data	Drilling Parameters	
Date In:	10-Nov-19 @ 07:30	9 5/8, 7/8 5.9 ABH@1.5° w/	SO/PU:	62 - 95 / 62-105
Date Out:	11-Nov-19 @ 05:00	MFG.: Intrepid	Rot Strg Wt:	62-100
Hrs In Hole:	21.25	PAD OD: 10.45	WOB:	12 - 45
Start Depth:	145.00	NB Stab: 14.5	TORQ:	8000 - 25000
End Depth:	1838.00	Bit to Bend: 8.75	SPP:	1200 - 3000
Total Drilled:	1693.00	Bent Hsg/Sub°: 1.5 / 0	Motor RPM:	149
Avg. Total ROP:	133.66	Lobe/Stage: 7/8 / 5.9	Rotary RPM:	30 - 60
Circ Hrs: Tot/Only	13.50 / .83	Rev/GAL: 0.166	Flow Rate:	400 - 900
Percent Slide:	4.43	Rotor Jet: 0	Avg Diff:	
Percent Hrs:	16.45	Prop BUR:	Stall Pres.:	
Slide Hours:	2.08	Act BUR:	Off Bot Pres.:	
Total Sliding:	75.00			
Avg. Slide ROP:	36.00			
Percent Rotary:	95.57			
Percent Hrs:	83.55			
Rotary Hours:	10.58			
Total Rotary:	1618.00			
Avg. Rotary ROP:	152.88			
Reason POOH:				

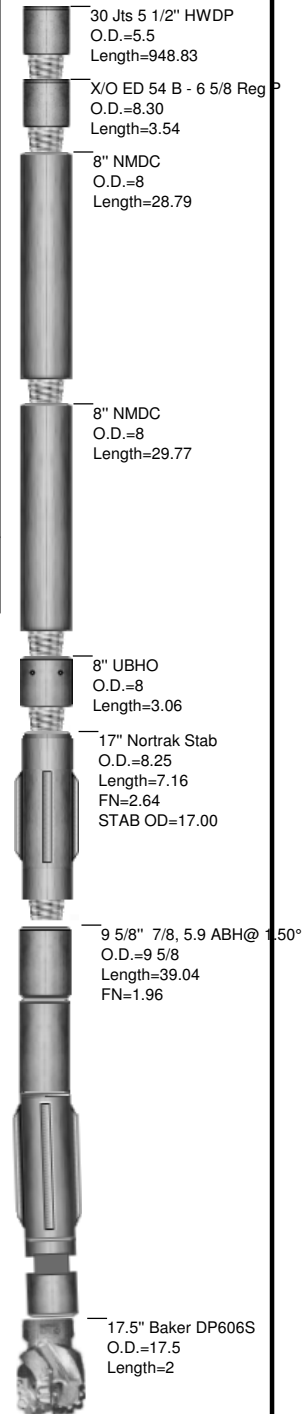
MWD Spacing	Gamma: 0	Restiv: 0	Sensor: 68	Last Casing	O.D.
	GYRO: 0	DNSC: 0	Sonic: 0	Shoe @:	Hanger @:

INC IN: .0 INC OUT: .0 AZM IN: .00 AZM OUT: .00

9 5/8" MTR 7/8 5.9 ABH @ 1.50° w/ 14 1/2" NBS
 BTB - 8.75
 Flow: 400-900
 RPM: 66-150
 Max Diff: 1330 psi.
 Max Torq: 22,020
 RPG: 0.166
 Bit to Sensor: 68'

BHA Detail

Description	Serial #	I.D.	O.D.	Length	Sum	Top Conn	MFG.
17.5" Baker DP606S	5296623	3	17.5	2.00	2.00	6 5/8 REGP	BAKER
9 5/8" 7/8, 5.9 ABH@ 1.50°	XSH96028		9 5/8	39.04	41.04	6 5/8 REGB	Intrepid
17" Nortrak Stab	AWSS5143	2 7/8	8.25	7.16	48.20	6 5/8 REGB	Amega West
8" UBHO	BT801172	3 1/4	8	3.06	51.26	6 5/8 REGB	Intrepid
8" NMDC	BT801135	3 3/8	8	29.77	81.03	6 5/8 REGB	Intrepid
8" NMDC	BT80655	3 7/16	8	28.79	109.82	6 5/8 REGB	Intrepid
X/O ED 54 B - 6 5/8 Reg P	RENTAL	2.75	8.30	3.54	113.36	ED54B	Rig
30 Jts 5 1/2" HWDP	RIG	3.375	5.5	948.83	1062.19	ED54B	RIG



Well Information

BHA # 3



SDI Job #: ID2388-2
COMPANY: Advance Energy Partners ,LLC
LOCATION: Lea County, New Mexico
RIG NAME: HP 466
STATE: New Mexico
COUNTY: Lea
WELL NAME: Wool Head 20 State Com. #511H

FIELD: Delaware Basin
Sec-Twn-Rng: 20-21S-33E
PO #/ DISTRICT: NM0091
Lead DD: Bill Corley
Co. Man: TJ Nash
BHA TYPE: Steerable Assembly

BHA Summary Information

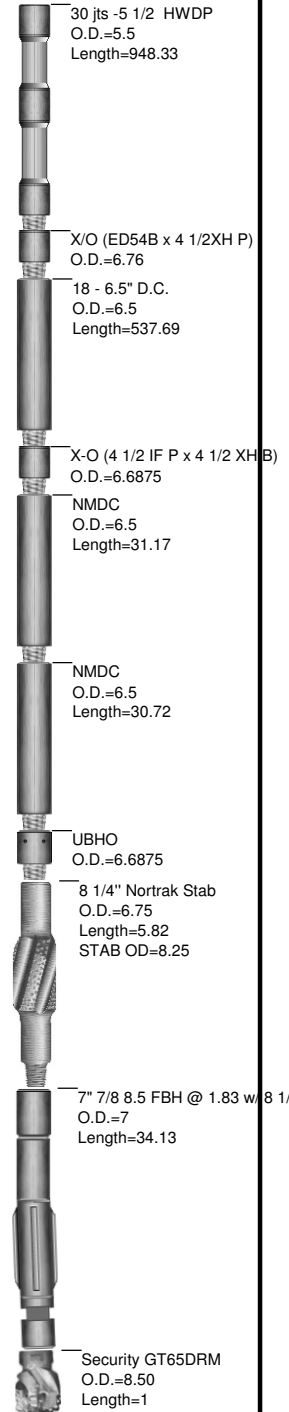
TIME IN - OUT				Rotary Hours				6.17		Start Depth		5263.00		RPM Range	Flow Rate		
Start Time		End Time		Circ Hrs Tot/Only				6.75 / .42		End Depth		6389.00					
23-Nov-19 @ 20:30		24-Nov-19 @ 11:40		Slide Hours				.17		Percent Rotary:		98.22		50 -50	750 -750		
				Below Rotary Hrs.				15.15		Percent Slide:		1.78					
Total Drilled:				1126.00		Avg. Total ROP:				177.79		Incl.		Azimuth			
Total Rotary Drilled:				1106.00		Avg. Rotary ROP:				179.35		IN	OUT	IN		OUT	
Total Drilled Sliding:				20.00		Avg. Slide ROP:				120.00		.0	.0	.00		.00	
SPP	2700 -3000		Weights		SO	130 -200		PU		130 -200		RAB		130 -200		Reason POOH	
Bit Data						Motor Data						Mud Data					
OTHER		Security GT65DRM				7" MTR 7/8 8.5 FBH @ 1.83° w/ 8.25" NBS						Type					
Type Bit			PDC			Model: SuperHawk				Pad OD		WT 8.3 GAS 0 Solids 0.5					
TFA		1.035				MFG. Intrepid				7 3/16		Vis 28 SAND 0 T ° 106					
JETS		15	15	15	15	15	Bend ° 1.83		Stator/Rotor 7/8		PV 0 PH 9.5 Chlor 0						
		15	0	0	0	0	Bit to Bend 4.04		Motor Diff 800		YP 0 WL 0 Oil % 0						
Bit Coding			IADC#			Rev/GAL 0.26						BHT° 0					
IR	OR	DL	Loc	BS	G	ODL	NB Stab 8.25		Pumps		PUMP1		PUMP1				
0	0						Rotor Jet 0		NAME								
									Model								
Bit Drop:		401 PSI @ 750 GPM				Sensor Offsets				Type							
Comments				Sensor	63	Sonic	0	Liner				.00		.00			
				Gamma	53	DNsc	5263	Stroke				.00		.00			
				Restiv	0	GYRO	0	Efficiency				.00		.00			

7" MTR 7/8 8.5 FBH @ 1.83° w/ 8.25" NBS
 BTB - 4.04
 Flow: 500-750
 RPM: 130-200
 Max Diff: 1910 psi.
 Max Torq: 18,710
 RPG: 0.26
 Bit to Sensor: 63'
 Bit Runs = 0

BHA Detail

#	Description	Serial #	I.D.	O.D.	Length	Sum	Top Conn
1	Security GT65DRM	1338539	2.5	8.50	1.00	1.00	4 1/2 REGP
2	7" 7/8 8.5 FBH @ 1.83 w/ 8 1/4 NBS	XSS70078		7	34.13	35.13	4 1/2 IFB
3	8 1/4" Nortrak Stab	BT675261	2.75	6.75	5.82	40.95	4 1/2 IFB
4	UBHO	X67UBO23	2.75	6.6875	3.54	44.49	4 1/2 IFB
5	NMDC	BT675004	3.25	6.5	30.72	75.21	4 1/2 IFB
6	NMDC	AMDC6021	3.25	6.5	31.17	106.38	4 1/2 IFB
7	X-O (4 1/2 IF P x 4 1/2 XH B)	BT6751494	2.75	6.6875	3.11	109.49	4 1/2 XHB
8	18 - 6.5" D.C.	Rig	2.625	6.5	537.69	647.18	4 1/2 XHB
9	X/O (ED54B x 4 1/2XH P)	BD15088	2.88	6.76	3.60	650.78	ED54B
10	30 jts -5 1/2 HWDP	HWDP-3.375-	3.375	5.5	948.33	1599.11	ED54B
11					0.00	1599.11	

Winsurv2 BHA Report - License:NP1553



BHA # 4

Intrepid Directional



SDI Job #: ID2388-2 Work Order: ID2388 FIELD: Delaware Basin
 COMPANY: Advance Energy Partners ,LLC Sec-Twn-Rng: 20-21S-33E
 LOCATION: Lea County, New Mexico PO #/ DISTRICT NM0091
 RIG NAME: HP 466 Lead DD: Bill Corley
 STATE: New Mexico Co. Man: TJ Nash
 COUNTY: Lea BHA TYPE: Steerable Assembly
 WELL NAME: Wool Head 20 State Com. #511H BHA WT: 94845 Wt @ Jars: N/A

Time and Depths	Motor Data	Drilling Parameters
Date In: 24-Nov-19 @ 11:40	7in. 7/8 8.5 FBH @ 1.83 w/ 8	SO/PU: 214 - 255 / 250-320
Date Out: 25-Nov-19 @ 23:30	MFG.: Intrepid	Rot Strg Wt: 224-275
Hrs In Hole: 35.82	PAD OD: 7 3/16	WOB: 20 - 42
Start Depth: 6389.00	NB Stab: 8.25	TORQ: 0 - 18000
End Depth: 10547.00	Bit to Bend: 4.04	SPP: 2050 - 2650
Total Drilled: 4158.00	Bent Hsg/Sub°: 1.83 / 0	Motor RPM: 156 - 195
Avg. Total ROP: 153.15	Lobe/Stage: 7/8 / 8.5	Rotary RPM: 30 - 40
Circ Hrs: Tot/Only 28.23 / 1.08	Rev/GAL: 0.26	Flow Rate: 600 - 750
Percent Slide: 2.04	Rotor Jet: 0	Avg Diff:
Percent Hrs: 7.37	Prop BUR: 10	Stall Pres.:
Slide Hours: 2.00	Act BUR: 14	Off Bot Pres.:
Total Sliding: 85.00		
Avg. Slide ROP: 42.50		
Percent Rotary: 97.96		
Percent Hrs: 92.63		
Rotary Hours: 25.15		
Total Rotary: 4073.00		
Avg. Rotary ROP: 161.95		
Reason POOH:		

MWD Spacing	Gamma: 0	Restiv: 0	Sensor: 0	Last Casing	O.D.
	GYRO: 0	DNSC: 0	Sonic: 0	Shoe @:	Hanger @:

INC IN: .0 INC OUT: .0 AZM IN: .00 AZM OUT: .00

7" MTR 7/8 8.5 FBH @ 1.83° w/ 8.25" NBS
 BTB - 4.04
 Flow: 500-750
 RPM: 130-200
 Max Diff: 1910 psi.
 Max Torq: 18,710
 RPG: 0.26
 Bit to Sensor: 63'
 Bit Runs = 0

BHA Detail

Description	Serial #	I.D.	O.D.	Length	Sum	Top Conn	MFG.
8 1/2" Reed TKC66	E267946	2.8125	8.5	1.00	1.00	4 1/2 REGP	REED
7" 7/8 8.5 FBH @ 1.83 w/ 8 1/4 NBS	XSS70078		7	34.13	35.13	4 1/2 IFB	Intrepid
8 1/4" Nortrak Stab	BT675261	2.75	6.75	5.82	40.95	4 1/2 IFB	BT
UBHO	X67UBO23	2.75	6.6875	3.54	44.49	4 1/2 IFB	Intrepid
NMDC	BT675004	3.25	6.5	30.72	75.21	4 1/2 IFB	BT
NMDC	AMDC6021	3.25	6.5	31.17	106.38	4 1/2 IFB	AWS
X-O (4 1/2 IF P x 4 1/2 XH B)	BT6751494	2.75	6.6875	3.11	109.49	4 1/2 XHB	BT
18 - 6.5" D.C.	Rig	2.625	6.5	537.69	647.18	4 1/2 XHB	RIG
X/O (ED54B x 4 1/2XH P)	BD15088	2.88	6.76	3.60	650.78	ED54B	Rig
30 jts -5 1/2 HWDP	HWDP-3.375-	3.375	5.5	948.33	1599.11	ED54B	Rig
				0.00	1599.11		

30 jts -5 1/2 HWDP
 O.D.=5.5
 Length=948.33

X/O (ED54B x 4 1/2XH P)
 O.D.=6.76

18 - 6.5" D.C.
 O.D.=6.5
 Length=537.69

X-O (4 1/2 IF P x 4 1/2 XH B)
 O.D.=6.875

NMDC
 O.D.=6.5
 Length=31.17

NMDC
 O.D.=6.5
 Length=30.72

UBHO
 O.D.=6.6875

8 1/4" Nortrak Stab
 O.D.=6.75
 Length=5.82
 STAB OD=8.25

7" 7/8 8.5 FBH @ 1.83 w/ 8 1/4 NBS
 O.D.=7
 Length=34.13

8 1/2" Reed TKC66
 O.D.=8.5
 Length=1

BHA # 5



SDI Job #: ID2388-3 Work Order: ID2388
 COMPANY: Advance Energy Partners ,LLC
 LOCATION: Lea County, New Mexico
 RIG NAME: HP 466
 STATE: New Mexico
 COUNTY: Lea
 WELL NAME: Wool Head 20 State Com. #511H

FIELD: Delaware Basin
 Sec-Twn-Rng: 20-21S-33E
 PO #/ DISTRICT NM0091
 Lead DD: Jason Greer
 Co. Man: TJ Nash
 BHA TYPE: Building Assembly
 BHA WT: 5048 Wt @ Jars: N/A

Time and Depths	Motor Data	Drilling Parameters
Date In: 15-Dec-19 @ 21:30	6 3/4, 7/8 5.0 FBH @ 2.12 TS	SO/PU: 240 - 242 / 260-292
Date Out: 17-Dec-19 @ 02:30	MFG.: Intrepid	Rot Strg Wt: 245-248
Hrs In Hole: 29.00	PAD OD: 7 1/2	WOB: 0 - 60
Start Depth: 10547.00	NB Stab: 0	TORQ: 0 - 23
End Depth: 11589.00	Bit to Bend: 4.15	SPP: 2750 - 3450
Total Drilled: 1042.00	Bent Hsg/Sub°: 2.12 /	Motor RPM: 172 - 173
Avg. Total ROP: 69.85	Lobe/Stage: 7/8 / 5	Rotary RPM: 30 - 35
Circ Hrs: Tot/Only 16.00 / 1.08	Rev/GAL: 5.0 0.288	Flow Rate: 580 - 625
Percent Slide: 60.08	Rotor Jet: 0	Avg Diff: 650
Percent Hrs: 65.92	Prop BUR: 12	Stall Pres.: 1910
Slide Hours: 9.83	Act BUR: 14.5	Off Bot Pres.: 2650
Total Sliding: 626.00		
Avg. Slide ROP: 63.66		
Percent Rotary: 39.92		
Percent Hrs: 34.08		
Rotary Hours: 5.08		
Total Rotary: 416.00		
Avg. Rotary ROP: 81.84		
Reason POOH: PR		

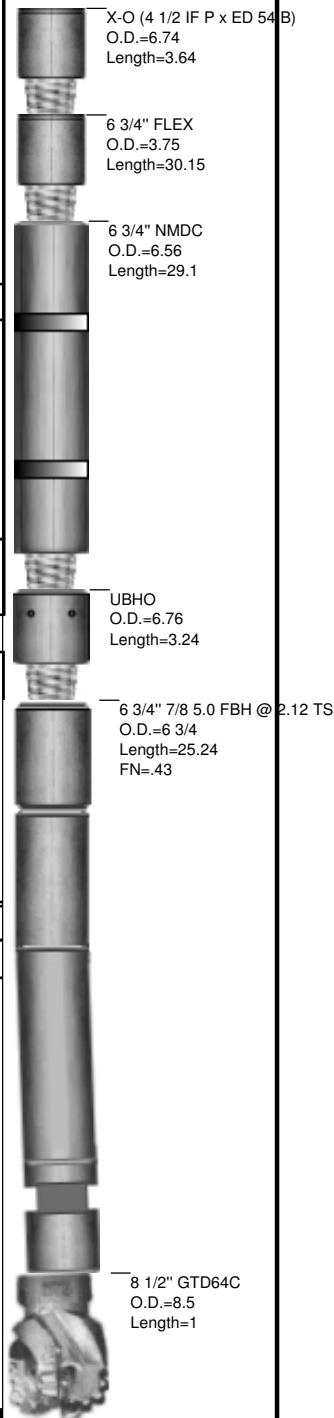
MWD Spacing	Gamma: 36	Restiv: 0	Sensor: 48	Last Casing	O.D. 9 5/8
	GYRO: 0	DNSC: 10547	Sonic: 0	Shoe @:	5253 Hanger @:

INC IN: .0 INC OUT: .0 AZM IN: .00 AZM OUT: .00

6 3/4" 7/8 5.0 FBH @ 2.12° TS
 BTB - 4.15
 Flow: 300-600
 RPM: 86-180
 Max Diff: 1130 psi.
 Max Torq: 10,460
 RPG: 0.288
 Bit to Sensor: 48'
 Bit to Gamma: 36'
 Bit Runs = 0

BHA Detail

Description	Serial #	I.D.	O.D.	Length	Sum	Top Conn	MFG.
8 1/2" GTD64C	13291183		8.5	1.00	1.00	4 1/2 REGP	Haliburton
6 3/4" 7/8 5.0 FBH @ 2.12 TS	XSS67068		6 3/4	25.24	26.24	4 1/2 IFB	Intrepid
UBHO	BT675918	3.25	6.76	3.24	29.48	4 1/2 IFB	Intrepid
6 3/4" NMDC	BT67512454	3.25	6.56	29.10	58.58	4 1/2 IFB	Intrepid
6 3/4" FLEX	BT675-112	3.25	3.75	30.15	88.73	4 1/2 IFB	Other
X-O (4 1/2 IF P x ED 54 B)	BT15201	3	6.74	3.64	92.37	ED 54B	RIG



BHA # 6



SDI Job #: ID2388-3 Work Order: ID2388 FIELD: Delaware Basin
 COMPANY: Advance Energy Partners ,LLC Sec-Twn-Rng: 20-21S-33E
 LOCATION: Lea County, New Mexico PO #/ DISTRICT NM0091
 RIG NAME: HP 466 Lead DD: James Meredith
 STATE: New Mexico Co. Man: Frank Calhoun
 COUNTY: Lea BHA TYPE: Steerable Assembly
 WELL NAME: Wool Head 20 State Com. #511H BHA WT: 88788 Wt @ Jars: N/A

Time and Depths	Motor Data	Drilling Parameters
Date In: 17-Dec-19 @ 02:30	7" 7/8 8.5 FBH @ 1.83 W/ SS	SO/PU: 220 - 240 / 260-385
Date Out: 18-Dec-19 @ 15:00	MFG.: Intrepid	Rot Strg Wt: 245-265
Hrs In Hole: 36.50	PAD OD: 7 1/8	WOB: 0 - 55
Start Depth: 11589.00	NB Stab: 0	TORQ: 25 - 20000
End Depth: 13734.00	Bit to Bend: 4.3	SPP: 0 - 5100
Total Drilled: 2145.00	Bent Hsg/Sub°: 1.83 /	Motor RPM: 156 - 188
Avg. Total ROP: 112.89	Lobe/Stage: 7/8 / 8.5	Rotary RPM: 40 - 40
Circ Hrs: Tot/Only 22.17 / 3.17	Rev/GAL: 8.5 0.26	Flow Rate: 0 - 724
Percent Slide: 16.55	Rotor Jet: 0	Avg Diff: 850
Percent Hrs: 38.60	Prop BUR: 8	Stall Pres.: 0
Slide Hours: 7.33	Act BUR: 10	Off Bot Pres.: 0
Total Sliding: 355.00		
Avg. Slide ROP: 48.41		
Percent Rotary: 83.45		
Percent Hrs: 61.40		
Rotary Hours: 11.67		
Total Rotary: 1790.00		
Avg. Rotary ROP: 153.43		
Reason POOH:		

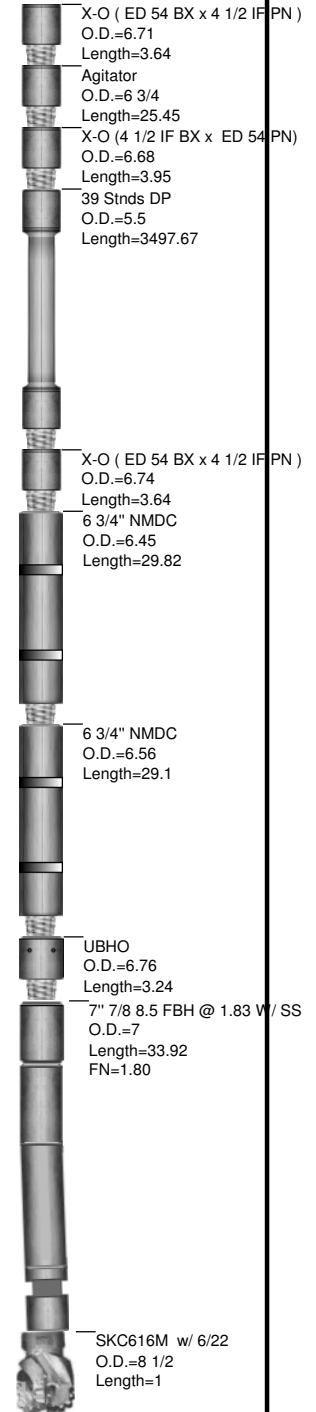
MWD Spacing	Gamma: 48	Restiv: 0	Sensor: 58	Last Casing	O.D. 9 5/8
	GYRO: 0	DNSC: 11589	Sonic: 0	Shoe @:	5253 Hanger @:

INC IN: .0 INC OUT: .0 AZM IN: .00 AZM OUT: .00

7" MTR 7/8 8.5 FBH @ 1.83° w/ SS
 BTB - 4.30
 Flow: 500-750
 RPM: 130-200
 Max Diff: 1910 psi.
 Max Torq: 18710
 RPG: 0.26
 Bit to Sensor: 58'
 Bit to Gamma: 47'
 Bit Runs = 0

BHA Detail

Description	Serial #	I.D.	O.D.	Length	Sum	Top Conn	MFG.
SKC616M w/ 6/22	A255523		8 1/2	1.00	1.00	4 1/2 REGP	REED
7" 7/8 8.5 FBH @ 1.83 W/ SS	ESS70020		7	33.92	34.92	4 1/2 IFB	Intrepid
UBHO	BT675918	3.25	6.76	3.24	38.16	4 1/2 IFB	Intrepid
6 3/4" NMDC	BT67512454	3.25	6.56	29.10	67.26	4 1/2 IFB	Intrepid
6 3/4" NMDC	BT7012	3.25	6.45	29.82	97.08	4 1/2 IFB	Intrepid
X-O (ED 54 BX x 4 1/2 IF PN)	BT15201	3	6.74	3.64	100.72	ED 54B	RIG
39 Stnds DP	Rig 1		5.5	3,497.67	3598.39	ED 54B	Rig
X-O (4 1/2 IF BX x ED 54 PN)	BD8072	3 1/4	6.68	3.95	3602.34	4 1/2 IFB	RIG
Agitator	1586717-4	2 1/2	6 3/4	25.45	3627.79	4 1/2 IFB	NOV
X-O (ED 54 BX x 4 1/2 IF PN)	BD15147	3 1/4	6.71	3.64	3631.43	ED 54B	RIG



BHA # 7



SDI Job #: ID2388-3 Work Order: ID2388
 COMPANY: Advance Energy Partners ,LLC
 LOCATION: Lea County, New Mexico
 RIG NAME: HP 466
 STATE: New Mexico
 COUNTY: Lea
 WELL NAME: Wool Head 20 State Com. #511H

FIELD: Delaware Basin
 Sec-Twn-Rng: 20-21S-33E
 PO #/ DISTRICT: NM0091
 Lead DD: James Meredith
 Co. Man: Frank Calhoun
 BHA TYPE: Steerable Assembly
 BHA WT: 89283 Wt @ Jars: N/A

Time and Depths	Motor Data	Drilling Parameters
Date In: 18-Dec-19 @ 15:00	7" 7/8 8.5 FBH @ 1.83 W/ SS	SO/PU: 215 - 220 / 292-300
Date Out: 19-Dec-19 @ 18:30	MFG.: Intrepid	Rot Strg Wt: 253-253
Hrs In Hole: 27.50	PAD OD: 4.11	WOB: 0 - 55
Start Depth: 13734.00	NB Stab: 0	TORQ: 25.4 - 30
End Depth: 14193.00	Bit to Bend: 4.06	SPP: 2975 - 4730
Total Drilled: 459.00	Bent Hsg/Sub°: 1.83 /	Motor RPM: 183 - 188
Avg. Total ROP: 45.52	Lobe/Stage: 7/8 / 8.5	Rotary RPM: 40 - 40
Circ Hrs: Tot/Only 11.58 / 1.50	Rev/GAL: 0.26	Flow Rate: 400 - 724
Percent Slide: 15.90	Rotor Jet: 0	Avg Diff: 500
Percent Hrs: 27.27	Prop BUR: 10	Stall Pres.: Off Bot Pres.:
Slide Hours: 2.75	Act BUR: 7	
Total Sliding: 73.00		
Avg. Slide ROP: 26.55		
Percent Rotary: 84.10		
Percent Hrs: 72.73		
Rotary Hours: 7.33		
Total Rotary: 386.00		
Avg. Rotary ROP: 52.64		
Reason POOH:		

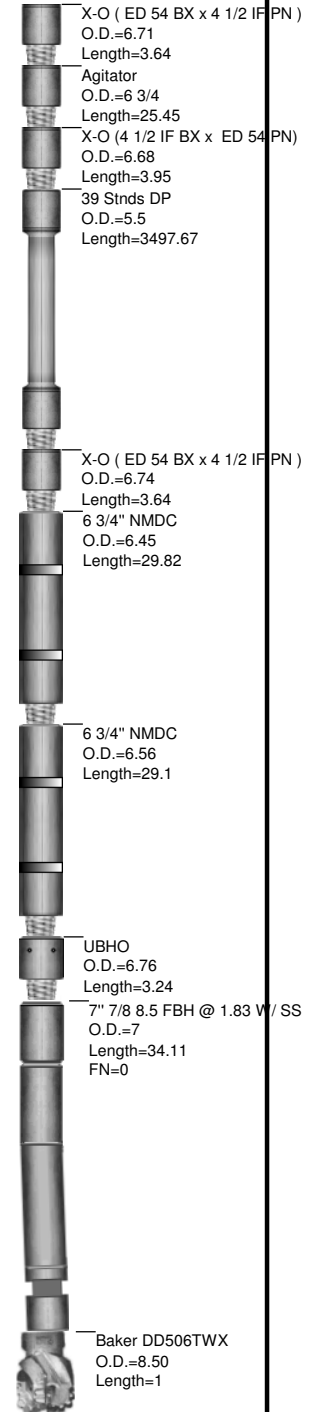
MWD Spacing	Gamma: 47	Restiv: 0	Sensor: 58	Last Casing	O.D. 9 5/8
	GYRO: 0	DNSC: 13734	Sonic: 0	Shoe @:	5253 Hanger @:

INC IN: .0 INC OUT: .0 AZM IN: .00 AZM OUT: .00

7" MTR 7/8 8.5 FBH @ 1.83° w/ SS
 BTB - 4.06
 Flow: 500-750
 RPM: 130-200
 Max Diff: 1910 psi.
 Max Torq: 18710
 RPG: 0.26
 Bit to Sensor: 58'
 Bit to Gamma: 47' Total Runs on Bit = 1

BHA Detail

Description	Serial #	I.D.	O.D.	Length	Sum	Top Conn	MFG.
Baker DD506TWX	5293215		8.50	1.00	1.00	4 1/2 REGP	BAKER
7" 7/8 8.5 FBH @ 1.83 W/ SS	ESS70017		7	34.11	35.11	4 1/2 IFB	Intrepid
UBHO	BT675918	3.25	6.76	3.24	38.35	4 1/2 IFB	Intrepid
6 3/4" NMDC	BT67512454	3.25	6.56	29.10	67.45	4 1/2 IFB	Intrepid
6 3/4" NMDC	BT7012	3.25	6.45	29.82	97.27	4 1/2 IFB	Intrepid
X-O (ED 54 BX x 4 1/2 IF PN)	BT15201	3	6.74	3.64	100.91	ED 54B	RIG
39 Stnds DP	Rig 1		5.5	3,497.67	3598.58	ED 54B	Rig
X-O (4 1/2 IF BX x ED 54 PN)	BD8072	3 1/4	6.68	3.95	3602.53	4 1/2 IFB	RIG
Agitator	1586717-4	2 1/2	6 3/4	25.45	3627.98	4 1/2 IFB	NOV
X-O (ED 54 BX x 4 1/2 IF PN)	BD15147	3 1/4	6.71	3.64	3631.62	ED 54B	RIG



BHA # 8



SDI Job #: ID2388-3 Work Order: ID2388
 COMPANY: Advance Energy Partners ,LLC
 LOCATION: Lea County, New Mexico
 RIG NAME: HP 466
 STATE: New Mexico
 COUNTY: Lea
 WELL NAME: Wool Head 20 State Com. #511H

FIELD: Delaware Basin
 Sec-Twn-Rng: 20-21S-33E
 PO #/ DISTRICT: NM0091
 Lead DD: James Meredith
 Co. Man: Frank Calhoun
 BHA TYPE: Steerable Assembly
 BHA WT: 89280 Wt @ Jars: N/A

Time and Depths	Motor Data	Drilling Parameters
Date In: 19-Dec-19 @ 18:30	7" 7/8 8.5 FBH @ 1.83 W/ SS	SO/PU: 190 - 215 / 300-320
Date Out: 22-Dec-19 @ 24:00	MFG.: Intrepid	Rot Strg Wt: 253-253
Hrs In Hole: 77.50	PAD OD: 7.20	WOB: 0 - 50
Start Depth: 14193.00	NB Stab: 0	TORQ: 31 - 36
End Depth: 18601.00	Bit to Bend: 4.05	SPP: 1590 - 4600
Total Drilled: 4408.00	Bent Hsg/Sub°: 1.83 /	Motor RPM: 169 - 170
Avg. Total ROP: 82.26	Lobe/Stage: 7/8 / 8.5	Rotary RPM: 60 - 60
Circ Hrs: Tot/Only 58.08 / 4.50	Rev/GAL: 0.26	Flow Rate: 450 - 750
Percent Slide: 11.77	Rotor Jet: 0	Avg Diff: 550
Percent Hrs: 28.46	Prop BUR: 10	Stall Pres.: 1910
Slide Hours: 15.25	Act BUR: 11	Off Bot Pres.: 4000
Total Sliding: 519.00		
Avg. Slide ROP: 34.03		
Percent Rotary: 88.23		
Percent Hrs: 71.54		
Rotary Hours: 38.33		
Total Rotary: 3889.00		
Avg. Rotary ROP: 101.45		
Reason POOH: TD		

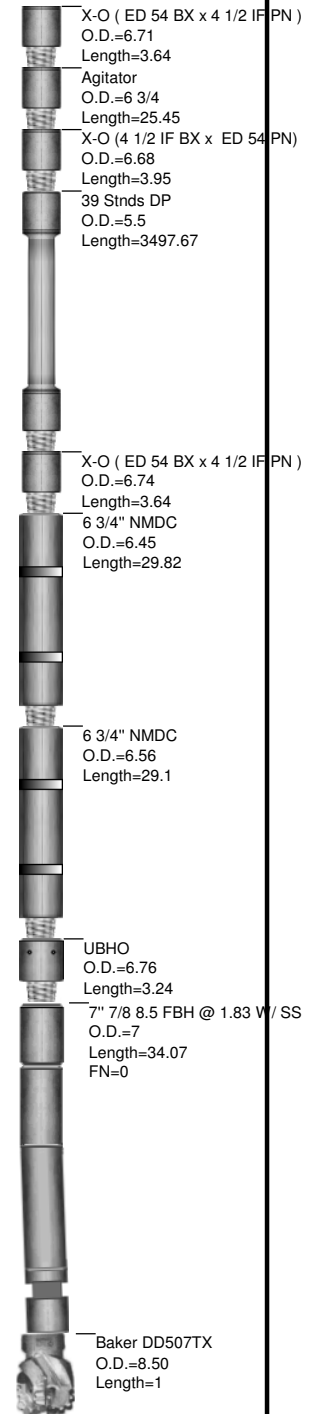
MWD Spacing	Gamma: 47	Restiv: 0	Sensor: 58	Last Casing	O.D. 9 5/8
	GYRO: 0	DNSC: 14193	Sonic: 0	Shoe @:	5253 Hanger @:

INC IN: .0 INC OUT: .0 AZM IN: .00 AZM OUT: .00

7" MTR 7/8 8.5 FBH @ 1.83° w/ SS
 BTB - 4.05
 Flow: 500-750
 RPM: 130-200
 Max Diff: 1910 psi.
 Max Torq: 18710
 RPG: 0.26
 Bit to Sensor: 58'
 Bit to Gamma: 47' Total Runs on Bit = 1

BHA Detail

Description	Serial #	I.D.	O.D.	Length	Sum	Top Conn	MFG.
Baker DD507TX	5307592		8.50	1.00	1.00	P	
7" 7/8 8.5 FBH @ 1.83 W/ SS	XSS70016		7	34.07	35.07	4 1/2 IFB	Intrepid
UBHO	BT675918	3.25	6.76	3.24	38.31	4 1/2 IFB	Intrepid
6 3/4" NMDC	BT67512454	3.25	6.56	29.10	67.41	4 1/2 IFB	Intrepid
6 3/4" NMDC	BT7012	3.25	6.45	29.82	97.23	4 1/2 IFB	Intrepid
X-O (ED 54 BX x 4 1/2 IF PN)	BT15201	3	6.74	3.64	100.87	ED 54B	RIG
39 Stnds DP	Rig 1		5.5	3,497.67	3598.54	ED 54B	Rig
X-O (4 1/2 IF BX x ED 54 PN)	BD8072	3 1/4	6.68	3.95	3602.49	4 1/2 IFB	RIG
Agitator	1586717-4	2 1/2	6 3/4	25.45	3627.94	4 1/2 IFB	NOV
X-O (ED 54 BX x 4 1/2 IF PN)	BD15147	3 1/4	6.71	3.64	3631.58	ED 54B	RIG



BHA # 1**Mud Motor Report**

SDI Job #: ID2388
COMPANY: Advance Energy Partners ,LLC
LOCATION: Lea County, New Mexico
RIG NAME: HP 466
STATE: New Mexico
COUNTY: Lea
WELL NAME: Wool Head 20 State Com. #51

FIELD: Bone Springs
Sec-Twn-Rng: 20-21S-33E
SD District
Lead DD: Bill Corley
Co. Man: Frank Calhoun / TJ Nash

Motor Failed?: NO

Time and Depths (This BHA)	Motor Data	Drilling Parameters
Date In: 10-Nov-19 @ 07:30 Date Out: 11-Nov-19 @ 05:00 Hrs In Hole: 21.25 Start Depth: 145.00 End Depth: 1838.00 Total Drilled: 1693.00 Avg. Total ROP: 133.66 Circ Hrs:Tot/Only 13.50 / .83 Percent Slide: 4.43 Percent Hrs: 16.45 Slide Hours: 2.08 Total Sliding: 75.00 Avg. Slide ROP: 36.00 Percent Rotary: 95.57 Percent Hrs: 83.55 Rot / Total Hrs: 10.58 / 12.67 Rotary Drilled: 1618.00 Avg. Rotary ROP: 152.88 Reason POOH:	Desc: 9 5/8, 7/8 5.9 ABH@1.5° w/ 14.5 MFG.: Intrepid BHA Circ/ All BHA: 13.50 / 13.50 Motor SN: XSH96028 PAD OD: 10.45 NB Stab: 14.5 Bit to Bend: 8.75 Bent Hsg / Sub: 1.5 / 0 ° Lobe/Stage: 7/8 / 5.9 Rev/GAL: 0.166 Rotor Jet: 0 Prop BUR: Act BUR: Stator Clearance: Lower Stab OD: 14.5 Upper Stab OD: 17 Extended Motor? NO Number of Stalls: 0 Stall Duration: 0	SO/PU: 62 - 95 62-105 Rot Wt: 62-100 WOB: 12 - 45 TORQ: 8000 - 25000 SPP: 1200 - 3000 Motor RPM: 149 Rotary RPM: 30 - 60 Flow Rate: 400 - 900 Avg Diff: Stall Pres.: Off Bot Pres.:
		Bit Record Other / 17.5" Baker DP606S Run #: 1 Type Bit: PDC IADC#: TFA: 0.994 JETS: 9-12 Bit Drop: 627 PSI @ 900 GPM Cond.:

Mud Data

Type WT: 8.3 Vis: 28 WL: 0 PV: 0 Flow T °: 106
SAND 0 Chlor: 0 GAS 0 SOL: 0.5 Oil %: 0 YP: 0 PH: 9.5 Bottom Hole T °: 0

Formation:**EXPANDED REASON PULLED:**

TD Surface Casing Point

BHA PERFORMANCE:

BHA performed well allowing for maximum rotation period

ADDITIONAL COMMENTS: (Expands to next page if necessary)

Bit graded 2-3

BHA # 3**Mud Motor Report**

SDI Job #: ID2388-2
COMPANY: Advance Energy Partners ,LLC
LOCATION: Lea County, New Mexico
RIG NAME: HP 466
STATE: New Mexico
COUNTY: Lea
WELL NAME: Wool Head 20 State Com. #51

FIELD: Delaware Basin
Sec-Twn-Rng: 20-21S-33E
SD District
Lead DD: Bill Corley
Co. Man: TJ Nash

Motor Failed?: NO

Time and Depths (This BHA)	Motor Data	Drilling Parameters
Date In: 23-Nov-19 @ 20:30 Date Out: 24-Nov-19 @ 11:40 Hrs In Hole: 15.15 Start Depth: 5263.00 End Depth: 6389.00 Total Drilled: 1126.00 Avg. Total ROP: 177.79 Circ Hrs:Tot/Only 6.75 / .42 Percent Slide: 1.78 Percent Hrs: 2.63 Slide Hours: .17 Total Sliding: 20.00 Avg. Slide ROP: 120.00 Percent Rotary: 98.22 Percent Hrs: 97.37 Rot / Total Hrs: 6.17 / 6.33 Rotary Drilled: 1106.00 Avg. Rotary ROP: 179.35 Reason POOH:	Desc: 7" MTR 7/8 8.5 FBH @ 1.83° w/ MFG.: Intrepid BHA Circ/ All BHA: 6.75 / 7.67 Motor SN: XSS70078 PAD OD: 7 3/16 NB Stab: 8.25 Bit to Bend: 4.04 Bent Hsg / Sub: 1.83 / 0 ° Lobe/Stage: 7/8 / 8.5 Rev/GAL: 0.26 Rotor Jet: 0 Prop BUR: 12 Act BUR: 14 Stator Clearance: Lower Stab OD: 8.25 Upper Stab OD: 8.25 Extended Motor? NO Number of Stalls: 0 Stall Duration: 0	SO/PU: 130 - 200 130-200 Rot Wt: 130-200 WOB: 35 - 45 TORQ: 0 - 14000 SPP: 2700 - 3000 Motor RPM: 195 Rotary RPM: 50 - 50 Flow Rate: 750 - 750 Avg Diff: 800 Stall Pres.: Off Bot Pres.:
		Bit Record OTHER / Security GT65DRM Run #: 3 Type Bit: PDC IADC#: TFA: 1.035 JETS: 6-15 Bit Drop: 401 PSI @ 750 GPM Cond.:

Mud Data

Type WT: 8.3 Vis: 28 WL: 0 PV: 0 Flow T °: 106
SAND 0 Chlor: 0 GAS 0 SOL: 0.5 Oil %: 0 YP: 0 PH: 9.5 Bottom Hole T °: 0

Formation:**EXPANDED REASON PULLED:**

TOH for Low ROP

BHA PERFORMANCE:

BHA was performing well until a sudden change in ROP, dropping from 200-300 down to 50 ROP

ADDITIONAL COMMENTS: (Expands to next page if necessary)

bit DBR motor drained good

BHA # 4**Mud Motor Report**

SDI Job #: ID2388-2
COMPANY: Advance Energy Partners ,LLC
LOCATION: Lea County, New Mexico
RIG NAME: HP 466
STATE: New Mexico
COUNTY: Lea
WELL NAME: Wool Head 20 State Com. #51

FIELD: Delaware Basin
Sec-Twn-Rng: 20-21S-33E
SD District
Lead DD: Bill Corley
Co. Man: TJ Nash

Motor Failed?: NO

Time and Depths (This BHA)	Motor Data	Drilling Parameters
Date In: 24-Nov-19 @ 11:40 Date Out: 25-Nov-19 @ 23:30 Hrs In Hole: 35.82 Start Depth: 6389.00 End Depth: 10547.00 Total Drilled: 4158.00 Avg. Total ROP: 153.15 Circ Hrs:Tot/Only 28.23 / 1.08 Percent Slide: 2.04 Percent Hrs: 7.37 Slide Hours: 2.00 Total Sliding: 85.00 Avg. Slide ROP: 42.50 Percent Rotary: 97.96 Percent Hrs: 92.63 Rot / Total Hrs: 25.15 / 27.15 Rotary Drilled: 4073.00 Avg. Rotary ROP: 161.95 Reason POOH:	Desc: 7in. 7/8 8.5 FBH @ 1.83 w/ 8 1/4 MFG.: Intrepid BHA Circ/ All BHA: 28.23 / 34.98 Motor SN: XSS70078 PAD OD: 7 3/16 NB Stab: 8.25 Bit to Bend: 4.04 Bent Hsg / Sub: 1.83 / 0 ° Lobe/Stage: 7/8 / 8.5 Rev/GAL: 0.26 Rotor Jet: 0 Prop BUR: 10 Act BUR: 14 Stator Clearance: Lower Stab OD: 8.25 Upper Stab OD: 8.25 Extended Motor? NO Number of Stalls: 0 Stall Duration: 0	SO/PU: 214 - 255 250-320 Rot Wt: 224-275 WOB: 20 - 42 TORQ: 0 - 18000 SPP: 2050 - 2650 Motor RPM: 156 - 195 Rotary RPM: 30 - 40 Flow Rate: 600 - 750 Avg Diff: Stall Pres.: Off Bot Pres.: Bit Record REED / 8 1/2" Reed TKC66 Run #: 4 Type Bit: PDC IADC#: TFA: 1.035 JETS: 6-15 Bit Drop: 401 PSI @ 750 GPM Cond.:

Mud Data									
Type	WT:	8.3	Vis:	28	WL:	0	PV:	0	Flow T °: 106
SAND 0 Chlor: 0 GAS 0 SOL:	0.5	Oil %:	0	YP:	0	PH:	9.5	Bottom Hole T °:	0

Formation:**EXPANDED REASON PULLED:**

TD KOP

BHA PERFORMANCE:

Motor performed very strong yielding 11-14's. Was very easy to steer well

ADDITIONAL COMMENTS: (Expands to next page if necessary)

Bit Graded 1-3

BHA # 5**Mud Motor Report**

SDI Job #: ID2388-3
COMPANY: Advance Energy Partners ,LLC
LOCATION: Lea County, New Mexico
RIG NAME: HP 466
STATE: New Mexico
COUNTY: Lea
WELL NAME: Wool Head 20 State Com. #51

FIELD: Delaware Basin
Sec-Twn-Rng: 20-21S-33E
SD District
Lead DD: Jason Greer
Co. Man: TJ Nash

Motor Failed?: NO

Time and Depths (This BHA)	Motor Data	Drilling Parameters
Date In: 15-Dec-19 @ 21:30 Date Out: 17-Dec-19 @ 02:30 Hrs In Hole: 29.00 Start Depth: 10547.00 End Depth: 11589.00 Total Drilled: 1042.00 Avg. Total ROP: 69.85 Circ Hrs:Tot/Only 16.00 / 1.08 Percent Slide: 60.08 Percent Hrs: 65.92 Slide Hours: 9.83 Total Sliding: 626.00 Avg. Slide ROP: 63.66 Percent Rotary: 39.92 Percent Hrs: 34.08 Rot / Total Hrs: 5.08 / 14.92 Rotary Drilled: 416.00 Avg. Rotary ROP: 81.84 Reason POOH: PR	Desc: 6 3/4, 7/8 5.0 FBH @ 2.12 TS MFG.: Intrepid BHA Circ/ All BHA: 16.00 / 16.00 Motor SN: XSS67068 PAD OD: 7 1/2 NB Stab: 0 Bit to Bend: 4.15 Bent Hsg / Sub: 2.12 / Lobe/Stage: 7/8 5.0 / 5 Rev/GAL: 0.288 Rotor Jet: 0 Prop BUR: 12 Act BUR: 14.5 Stator Clearance: Lower Stab OD: Upper Stab OD: Extended Motor? NO Number of Stalls: 3 Stall Duration: 3	SO/PU: 240 - 242 / 260-292 Rot Wt: 245-248 WOB: 0 - 60 TORQ: 0 - 23 SPP: 2750 - 3450 Motor RPM: 172 - 173 Rotary RPM: 30 - 35 Flow Rate: 580 - 625 Avg Diff: 650 Stall Pres.: 1910 Off Bot Pres.: 2650
		Bit Record Haliburton / 8 1/2" GTD64C Run #: 5 Type Bit: PDC IADC#: TFA: 2.226 JETS: 6-22 Bit Drop: 70 PSI @ 625 GPM Cond.: 1-5-RG-S-X-1-WT-PR-Bad

Mud Data

Type OBM **WT:** 9.6 **Vis:** 61 **WL:** 0 **PV:** 18 **Flow T °:** 85
SAND: 0.01 **Chlor:** 53000 **GAS:** 0 **SOL:** 9.7 **Oil %:** 66 **YP:** 9 **PH:** 0 **Bottom Hole T °:** 139

Formation:**EXPANDED REASON PULLED:**

Loss of Pressure while Drilling

BHA PERFORMANCE:

Very well in the Curve - Great Build Rates & Good TF Control / Curve Drilled in 12.4 Hrs. Start of Lateral we Lost Pmp Psi & ROP fell off, Desicion made to POOH

ADDITIONAL COMMENTS: (Expands to next page if necessary)

Bit started Ring Out, Bit Box had 1/4 Turn axiel Play, Drained Good 1/4" Squat No other Visual Damage

BHA # 6**Mud Motor Report**

SDI Job #: ID2388-3
COMPANY: Advance Energy Partners ,LLC
LOCATION: Lea County, New Mexico
RIG NAME: HP 466
STATE: New Mexico
COUNTY: Lea
WELL NAME: Wool Head 20 State Com. #51

FIELD: Delaware Basin
Sec-Twn-Rng: 20-21S-33E
SD District
Lead DD: James Meredith
Co. Man: Frank Calhoun

Motor Failed?: NO

Time and Depths (This BHA)	Motor Data	Drilling Parameters
Date In: 17-Dec-19 @ 02:30 Date Out: 18-Dec-19 @ 15:00 Hrs In Hole: 36.50 Start Depth: 11589.00 End Depth: 13734.00 Total Drilled: 2145.00 Avg. Total ROP: 112.89 Circ Hrs:Tot/Only 22.17 / 3.17 Percent Slide: 16.55 Percent Hrs: 38.60 Slide Hours: 7.33 Total Sliding: 355.00 Avg. Slide ROP: 48.41 Percent Rotary: 83.45 Percent Hrs: 61.40 Rot / Total Hrs: 11.67 / 19.00 Rotary Drilled: 1790.00 Avg. Rotary ROP: 153.43 Reason POOH:	Desc: 7" 7/8 8.5 FBH @ 1.83 W/ SS MFG.: Intrepid BHA Circ/ All BHA: 22.17 / 22.17 Motor SN: ESS70020 PAD OD: 7 1/8 NB Stab: 0 Bit to Bend: 4.3 Bent Hsg / Sub: 1.83 / Lobe/Stage: 7/8 8.5 / 8.5 Rev/GAL: 0.26 Rotor Jet: 0 Prop BUR: 8 Act BUR: 10 Stator Clearance: Lower Stab OD: Upper Stab OD: Extended Motor? NO Number of Stalls: 2 Stall Duration: 1	SO/PU: 220 - 240 / 260-385 Rot Wt: 245-265 WOB: 0 - 55 TORQ: 25 - 20000 SPP: 0 - 5100 Motor RPM: 156 - 188 Rotary RPM: 40 - 40 Flow Rate: 0 - 724 Avg Diff: 850 Stall Pres.: Off Bot Pres.: 0
		Bit Record REED / SKC616M w/ 6/22 Run #: 6 Type Bit: PDC IADC#: TFA: 2.226 JETS: 6-22 Bit Drop: 96 PSI @ 724 GPM Cond.:

Mud Data

Type OBM **WT:** 9.9 **Vis:** 69 **WL:** 8.2 **PV:** 16 **Flow T °:** 110
SAND: 0.01 **Chlor:** 45000 **GAS:** 0 **SOL:** 11 **Oil %:** 71 **YP:** 12 **PH:** 0 **Bottom Hole T °:** 157

Formation:**EXPANDED REASON PULLED:**

Poor ROP & Diff spikes

BHA PERFORMANCE:

Statrted drilling lateral at 250+ FPH , Slidig 50-60 FPH with very good TF control , After drilling 1500' of lateral the ROP decreased to 50-60 FPH Showing signs of bit wear. WOB was ran constant at 50-55K as per AEP.

ADDITIONAL COMMENTS: (Expands to next page if necessary)

Motor was tight & Drained well. Bit was DBR missing the upper 3-3 1/2" of three blades.

BHA # 7**Mud Motor Report**

SDI Job #:	ID2388-3	FIELD:	Delaware Basin
COMPANY:	Advance Energy Partners ,LLC	Sec-Twn-Rng:	20-21S-33E
LOCATION:	Lea County, New Mexico	SD District	
RIG NAME:	HP 466	Lead DD:	James Meredith
STATE:	New Mexico	Co. Man:	Frank Calhoun
COUNTY:	Lea		
WELL NAME:	Wool Head 20 State Com. #51		

Motor Failed?: NO

Time and Depths (This BHA)	Motor Data	Drilling Parameters
Date In: 18-Dec-19 @ 15:00	Desc: 7" 7/8 8.5 FBH @ 1.83 W/ SS	SO/PU: 215 - 220 / 292-300
Date Out: 19-Dec-19 @ 18:30	MFG.: Intrepid	Rot Wt: 253-253
Hrs In Hole: 27.50	BHA Circ/ All BHA: 11.58 / 11.58	WOB: 0 - 55
Start Depth: 13734.00	Motor SN: ESS70017	TORQ: 25.4 - 30
End Depth: 14193.00	PAD OD: 4.11	SPP: 2975 - 4730
Total Drilled: 459.00	NB Stab: 0	Motor RPM: 183 - 188
Avg. Total ROP: 45.52	Bit to Bend: 4.06	Rotary RPM: 40 - 40
Circ Hrs:Tot/Only 11.58 / 1.50	Bent Hsg / Sub: 1.83 /	Flow Rate: 400 - 724
Percent Slide: 15.90	Lobe/Stage: 7/8 / 8.5	Avg Diff: 500
Percent Hrs: 27.27	Rev/GAL: 0.26	Stall Pres.:
Slide Hours: 2.75	Rotor Jet: 0	Off Bot Pres.:
Total Sliding: 73.00	Prop BUR: 10	
Avg. Slide ROP: 26.55	Act BUR: 7	
Percent Rotary: 84.10	Stator Clearance:	
Percent Hrs: 72.73	Lower Stab OD:	
Rot / Total Hrs: 7.33 / 10.08	Upper Stab OD:	
Rotary Drilled: 386.00	Extended Motor? NO	
Avg. Rotary ROP: 52.64	Number of Stalls: 0	
Reason POOH:	Stall Duration:	

Bit Record

BAKER / Baker DD506TWX

Run #: 7
Type Bit: PDC
IADC#: TFA: 2.226
JETS: 6-22
Bit Drop: 94 PSI @ 724 GPM
Cond.:

Mud Data

Type OBM	WT: 9.6	Vis: 72	WL: 8.2	PV: 16	Flow T °: 110
SAND: 0.01	Chlor: 46000	GAS: 0	SOL: 11	Oil %: 71	YP: 12
				PH: 0	Bottom Hole T °: 157

Formation:**EXPANDED REASON PULLED:**

ROP

BHA PERFORMANCE:

Poor ROP from the start , Previous run we left 3 bit blades in the hole. Sliding with 55k WOB only generated 150 PSI Diff. Rotating with 55-60k WOB with 30-40 FPH ROP.

ADDITIONAL COMMENTS: (Expands to next page if necessary)

Motor is tight and drained fine. Bit is DBR missing one blade & rung out.

BHA # 8**Mud Motor Report**

SDI Job #: ID2388-3
 COMPANY: Advance Energy Partners ,LLC
 LOCATION: Lea County, New Mexico
 RIG NAME: HP 466
 STATE: New Mexico
 COUNTY: Lea

FIELD: Delaware Basin
 Sec-Twn-Rng: 20-21S-33E
 SD District
 Lead DD: James Meredith
 Co. Man: Frank Calhoun

WELL NAME: Wool Head 20 State Com. #51 **Motor Failed?: NO**

Time and Depths (This BHA)	Motor Data	Drilling Parameters
Date In: 19-Dec-19 @ 18:30	Desc: 7" 7/8 8.5 FBH @ 1.83 W/ SS	SO/PU: 190 - 215 / 300-320
Date Out: 22-Dec-19 @ 24:00	MFG.: Intrepid	Rot Wt: 253-253
Hrs In Hole: 77.50	BHA Circ/ All BHA: 58.08 / 58.08	WOB: 0 - 50
Start Depth: 14193.00	Motor SN: XSS70016	TORQ: 31 - 36
End Depth: 18601.00	PAD OD: 7.20	SPP: 1590 - 4600
Total Drilled: 4408.00	NB Stab: 0	Motor RPM: 169 - 170
Avg. Total ROP: 82.26	Bit to Bend: 4.05	Rotary RPM: 60 - 60
Circ Hrs:Tot/Only 58.08 / 4.50	Bent Hsg / Sub: 1.83 /	Flow Rate: 450 - 750
Percent Slide: 11.77	Lobe/Stage: 7/8 / 8.5	Avg Diff: 550
Percent Hrs: 28.46	Rev/GAL: 0.26	Stall Pres.: 1910
Slide Hours: 15.25	Rotor Jet: 0	Off Bot Pres.: 4000
Total Sliding: 519.00	Prop BUR: 10	Bit Record BAKER / Baker DD507TX Run #: 8 Type Bit: PDC IADC#: TFA: 2.107 JETS: 4-18,3-22 Bit Drop: 112 PSI @ 750 GPM Cond.: 1-3-BT-G-X-1-WT-TD- Fair
Avg. Slide ROP: 34.03	Act BUR: 11	
Percent Rotary: 88.23	Stator Clearance:	
Percent Hrs: 71.54	Lower Stab OD:	
Rot / Total Hrs: 38.33 / 53.58	Upper Stab OD:	
Rotary Drilled: 3889.00	Extended Motor? NO	
Avg. Rotary ROP: 101.45	Number of Stalls: 2	
Reason POOH: TD	Stall Duration: 2	

Mud Data

Type OBM WT: 9.6 Vis: 56 WL: 7.2 PV: 14 Flow T °: 111
 SAND: 0.01 Chlor: 45000 GAS: 0 SOL: 10.4 Oil %: 72 YP: 10 PH: 0 Bottom Hole T °: 175

Formation:**EXPANDED REASON PULLED:**

Well TD

BHA PERFORMANCE:

Good, Tracked pretty good with fairly consistant yeilds

ADDITIONAL COMMENTS: (Expands to next page if necessary)

Motor Looked Good & Drained Good @ Surface, Bit Had 3 Busted Cutters on Gauge Row



SDI Job #: ID2388
COMPANY: Advance Energy Partners ,LLC
LOCATION: Lea County, New Mexico
RIG NAME: HP 466
STATE: New Mexico
COUNTY: Country
WELL NAME: Wool Head 20 State Com. #511H

FIELD: Bone Springs
Sec-Twn-Rng: 20-21S-33E
SD District

MOTOR INFORMATION

Desc: 9 5/8, 7/8 5.9 ABH@1.5° w/ 14.5 NBS
Bent Hsg/Sub: 1.5 / 0 **Bit to Bend:** 8.75
PAD OD: 10.45 **NB Stab:** 14.5

Slide Report for BHA # 1

Note: Surveys listed are interpolated from the actual surveys

#	Date	Drill Mode	Start Time	End Time	Hours	Start MD	End MD	Depth Drilled	WOB	ROP	RPM	Surf. Torque	Flow Rate	SPP	TFO	INC	AZM	DLS	Note
1	10-Nov	Drilling	11:45	12:15	0.50	145	303	158	12	316.0	30	8000	400	1200		0.00	0.00	0.00	
1	10-Nov	Drilling	12:15	16:05	3.83	303	877	574	45	149.7	50	16000	900	3000		0.00	0.00	0.00	
1	10-Nov	Drilling	16:05	19:20	3.25	877	1433	556	45	171.1	60	25000	900	3000		0.00	0.00	0.00	
1	10-Nov	Sliding	19:20	20:00	0.67	1433	1453	20	25	30.0	60	25000	900	2600	70R	0.00	0.00	0.00	
1	10-Nov	Drilling	20:00	20:35	0.58	1453	1515	62	40	106.3	60	25000	900	3000		0.00	0.00	0.00	
1	10-Nov	Sliding	20:35	21:20	0.75	1515	1550	35	28	46.7	60	25000	900	3000	70R	0.00	0.00	0.00	
1	10-Nov	Drilling	21:20	22:00	0.67	1550	1639	89	40	133.5	60	25000	900	3000		0.00	0.00	0.00	
1	10-Nov	Drilling	22:45	23:00	0.25	1639	1700	61	40	244.0	60	25000	900	3000		0.00	0.00	0.00	
1	10-Nov	Sliding	23:00	23:40	0.67	1700	1720	20	38	30.0	60	25000	900	2750	60R	0.00	0.00	0.00	
1	10-Nov	Drilling	23:40	24:00	0.33	1720	1750	30	40	90.0	60	25000	900	2750		0.00	0.00	0.00	
1	11-Nov	Drilling	00:00	01:10	1.17	1750	1838	88	45	75.4	60	25000	900	2900		0.00	0.00	0.00	

Total Drilled: 1693 **Avg. Total ROP:** 133.66

DEPTH% - TIME %

Total Rotary Drilled: 1618 **Avg. Rotary ROP:** 152.88 **Percent Rotary:** 95.57 - 83.55

Total Drilled Sliding: 75 **Avg. Slide ROP:** 36.00 **Percent Slide:** 4.43 - 16.45



SDI Job #: ID2388-2
COMPANY: Advance Energy Partners ,LLC
LOCATION: Lea County, New Mexico
RIG NAME: HP 466
STATE: New Mexico
COUNTY: Lea
WELL NAME: Wool Head 20 State Com. #511H
Survey File:

FIELD: Delaware Basin
Sec-Twn-Rng: 20-21S-33E
Range/Section /NM0091

MOTOR INFORMATION

Desc: 7in. 7/8 8.5 FBH @ 1.83 w/ 8 1/4 NBS
Bent Hsg/Sub: 1.83 **0** **Bit to Bend:** 4.04
PAD OD: 7 3/16 **NB Stab:** 8.25

Slide Report for BHA # 4 with Surveys included

Note: Sliding and Drilling Surveys are LOGICAL expectations.

#	Date	Hrs	Start MD	End MD	DMD	WOB	ROP	RPM	Surf Torq	Flow Rate	SPP On B	SPP Off B	Delta SPP	TFO cTFO	Survey MD	INC	AZM	Surv DLS	Mot DLS	Rot DLS	Q	Drill Mode
4	24-Nov	0.75	6389	6548	159	30	212.0	40	0	600	2350	1600	750		6548	0.00	0.00	0.00	0.00	0.00	0	Drilling
4	24-Nov	0.17	6548	6560	12	35	72.0	40	0	750	2350	1600	750	270M	6560	0.00	0.00	0.00	0.00	0.00	0	Sliding
4	24-Nov	8.07	6560	8412	1852	37	229.6	40	18000	600	2650	1700	950		8412	0.00	0.00	0.00	0.00	0.00	0	Drilling
4	25-Nov	1.08	8412	8600	188	37	173.5	40	15000	600	2300	1700	600		8600	0.00	0.00	0.00	0.00	0.00	0	Drilling
4	25-Nov	0.58	8600	8622	22	32	37.7			600	2050	1700	350	10M	8622	0.00	0.00	0.00	0.00	0.00	0	Sliding
4	25-Nov	2.17	8622	8873	251	40	115.8	30	15000	650	2550	2100	450		8873	0.00	0.00	0.00	0.00	0.00	0	Drilling
4	25-Nov	0.50	8873	8892	19	28	38.0			600	2350	2100	250	40M	8892	0.00	0.00	0.00	0.00	0.00	0	Sliding
4	25-Nov	5.75	8892	9687	795	40	138.3	30	16000	625	2500	2000	500		9687	0.00	0.00	0.00	0.00	0.00	0	Drilling
4	25-Nov	0.50	9687	9707	20	20	40.0	30	16000	600	2500	2000	500	90M	9707	0.00	0.00	0.00	0.00	0.00	0	Sliding
4	25-Nov	1.33	9707	9867	160	42	120.0	30	16000	625	2500	2000	500		9867	0.00	0.00	0.00	0.00	0.00	0	Drilling
4	25-Nov	0.25	9867	9879	12	20	48.0	30	16000	600	2500	2000	500	220M	9879	0.00	0.00	0.00	0.00	0.00	0	Sliding
4	25-Nov	6.00	9879	10547	668	42	111.3	30	16000	625	2500	2000	500		10547	0.00	0.00	0.00	0.00	0.00	0	Drilling

Total Drilled:	4158	Avg. Total ROP:	153.15	DEPTH% - TIME %
Total Rotary Drilled:	4073	Avg. Rotary ROP:	161.95	Percent Rotary: 97.96 - 92.63
Total Drilled Sliding:	85	Avg. Slide ROP:	42.50	Percent Slide: 2.04 - 7.37



SDI Job #: ID2388-3
COMPANY: Advance Energy Partners ,LLC
LOCATION: Lea County, New Mexico
RIG NAME: HP 466
STATE: New Mexico
COUNTY: Lea
WELL NAME: Wool Head 20 State Com. #511H
Survey File:

FIELD: Delaware Basin
Sec-Twn-Rng: 20-21S-33E
Range/Section /NM0091

MOTOR INFORMATION

Desc: 6 3/4, 7/8 5.0 FBH @ 2.12 TS
Bent Hsg/Sub: 2.12 0 **Bit to Bend:** 4.15
PAD OD: 7 1/2 **NB Stab:**

Slide Report for BHA # 5 with Surveys included

Note: Sliding and Drilling Surveys are LOGICAL expectations.

#	Date	Hrs	Start MD	End MD	DMD	WOB	ROP	RPM	Surf Torq	Flow Rate	SPP On B	SPP Off B	Delta SPP	TFO cTFO	Survey MD	INC	AZM	Surv DLS	Mot DLS	Rot DLS	Q	Drill Mode
5	16-Dec	1.50	10547	10587	40	20	26.7	0	0	600	2750	2100	650	6 M	10587	3.53	6.07	8.55	0.00	0.00	0	Sliding
5	16-Dec	0.33	10587	10600	13	35	39.0	0	0	598	2750	2100	650	359 M	10600	6.90	290.00	8.55	0.00	0.00	5	Sliding
					61									69	10600	6.90	290.00	8.55			6	Survey & Conn.

Total Drilled:	53	Avg. Total ROP:	28.91	DEPTH% - TIME %
Total Rotary Drilled:	0	Avg. Rotary ROP:	NA	Percent Rotary: .00 - .00
Total Drilled Sliding:	53	Avg. Slide ROP:	28.91	Percent Slide: 100.00 - 100.00



SDI Job #: ID2388-3
COMPANY: Advance Energy Partners ,LLC
LOCATION: Lea County, New Mexico
RIG NAME: HP 466
STATE: New Mexico
COUNTY: Lea
WELL NAME: Wool Head 20 State Com. #511H
Survey File:

FIELD: Delaware Basin
Sec-Twn-Rng: 20-21S-33E
Range/Section /NM0091

MOTOR INFORMATION

Desc: 7" 7/8 8.5 FBH @ 1.83 W/ SS
Bent Hsg/Sub: 1.83 0 **Bit to Bend:** 4.3
PAD OD: 7 1/8 **NB Stab:**

Slide Report for BHA # 6 with Surveys included

Note: Sliding and Drilling Surveys are LOGICAL expectations.

#	Date	Hrs	Start MD	End MD	DMD	WOB	ROP	RPM	Surf Torq	Flow Rate	SPP On B	SPP Off B	Delta SPP	TFO cTFO	Survey MD	INC	AZM	Surv DLS	Mot DLS	Rot DLS	Q	Drill Mode
6	17-Dec	0.17	11589	11615	26	30	156.0	40	20000	695	4500	3850	650		11615	-0.09	359.96	1.71	0.00	0.00	0	Drilling
6	17-Dec	0.08	11615	11625	10	42	120.0	40	20000	695	4800	3850	950		11625	-0.17	359.93	1.71	0.00	0.00	0	Drilling
6	17-Dec	0.25	11625	11640	15	45	60.0	40	20000	600	4800	3850	950	180	11640	-1.44	359.37	1.71	0.00	0.00	0	Sliding
6	17-Dec	0.25	11640	11647	7	42	260.0	40	20000	695	4800	3850	950		11647	90.59	1.13	1.71	0.00	0.00	5	Drilling
					90									18	11647	90.59	1.13	1.71			6	Survey & Conn.
			11647	11705	58	42	260.0	40	20000	695	4800	3850			11705	90.73	1.18	2.57		2.57	4	Drilling
6	17-Dec	0.25	11705	11737	32	42	268.0	40	20000	695	4800	3850	950		11737	92.79	1.84	2.57	0.00	2.57	5	Drilling
					90									-167	11737	92.79	1.84	2.57			6	Survey & Conn.
			11737	11772	35	42	268.0	40	20000	695	4800	3850			11772	92.72	1.82	1.70			0	Drilling
6	17-Dec	0.25	11772	11792	20	45	80.0	40	20000	600	4800	3850	950	160L	11792	91.37	1.51	1.70	0.00	0.00	0	Sliding
6	17-Dec	0.08	11792	11795	3	42	36.0	40	20000	695	4800	3850	950		11795	91.36	1.50	1.70	0.00	0.00	0	Drilling
6	17-Dec	0.08	11795	11827	32	42	1080.0	40	20000	695	4800	3850	950		11827	91.30	1.49	1.70	0.00	0.00	5	Drilling
					90									159	11827	91.30	1.49	1.70			6	Survey & Conn.
			11827	11885	58	42	1080.0	40	20000	695	4800	3850			11885	91.14	1.55	2.18			0	Drilling
6	17-Dec	0.33	11885	11910	25	45	75.0	40	20000	600	4800	3850	950	180	11910	89.51	2.18	2.18	0.00	0.00	0	Sliding
6	17-Dec	0.33	11910	11916	6	42	192.0	40	20000	695	4800	3850	950		11916	89.49	2.19	2.18	0.00	0.00	5	Drilling
					89										11916	89.49	2.19	2.18			6	Survey & Conn.
			11916	11974	58	42	192.0	40	20000	695	4800	3850			11974	89.59	2.19	1.38			0	Drilling
6	17-Dec	0.17	11974	11992	18	50	108.0	40	20000	600	4800	3850	950	90L	11992	90.71	2.19	1.38	0.00	0.00	0	Sliding
6	17-Dec	0.33	11992	12006	14	42	216.0	40	20000	695	4800	3850	950		12006	90.73	2.19	1.38	0.00	0.00	5	Drilling
					90									-9	12006	90.73	2.19	1.38			6	Survey & Conn.
			12006	12064	58	42	216.0	40	20000	695	4800	3850			12064	90.78	2.18	0.64			0	Drilling
6	17-Dec	0.08	12064	12069	5	42	60.0	40	20000	695	4800	3850	950		12069	90.82	2.18	0.64	0.00	0.00	0	Drilling
6	17-Dec	0.25	12069	12094	25	50	100.0	40	20000	695	4800	3850	950	120L	12094	91.33	2.09	0.64	0.00	0.00	0	Sliding
6	17-Dec	0.25	12094	12096	2	42	240.0	40	20000	695	4800	3850	950		12096	91.30	2.10	0.64	0.00	0.00	5	Drilling

Slide Report for BHA # 6 with Surveys included

Note: Sliding and Drilling Surveys are LOGICAL expectations.

#	Date	Hrs	Start MD	End MD	DMD	WOB	ROP	RPM	Surf Torq	Flow Rate	SPP On B	SPP Off B	Delta SPP	TFO cTFO	Survey MD	INC	AZM	Surv DLS	Mot DLS	Rot DLS	Q	Drill Mode
					90									-172	12096	91.30	2.10	0.64			6	Survey & Conn.
			12096	12154	58	42	240.0	40	20000	695	4800	3850			12154	91.04	2.07	2.95			0	Drilling
6	17-Dec	0.33	12154	12185	31	50	105.0	40	20000	695	4800	3850	950	140L	12185	88.70	1.75	2.95	0.00	0.00	5	Sliding
					89									178	12185	88.70	1.75	2.95			6	Survey & Conn.
			12185	12189	4	50	105.0	40	20000	695	4800	3850		140L	12189	86.60	1.83	2.59			0	Sliding
6	17-Dec	0.25	12189	12243	54	42	216.0	40	20000	695	4800	3850	950		12243	86.46	1.84	2.59	0.00	0.00	0	Drilling
6	17-Dec	0.25	12243	12275	32	42	200.0	40	20000	695	4800	3850	950		12275	86.37	1.84	2.59	0.00	0.00	5	Drilling
					90									6	12275	86.37	1.84	2.59			6	Survey & Conn.
			12275	12293	18	42	200.0	40	20000	695	4800	3850			12293	86.42	1.84	1.87			0	Drilling
6	17-Dec	0.67	12293	12316	23	50	34.5	40	20000	695	4800	3850	950	20	12316	87.70	1.98	1.87	0.00	0.00	0	Sliding
6	17-Dec	0.08	12316	12333	17	42	204.0	40	20000	695	4800	3850	950		12333	87.76	1.98	1.87	0.00	0.00	0	Drilling
6	17-Dec	0.17	12333	12361	28	42	168.0	40	20000	695	4800	3850	950		12361	87.93	2.00	1.87	0.00	0.00	0	Drilling
6	17-Dec	0.33	12361	12365	4	50	60.0	0	0	695	4800	3850	950	-30	12365	88.04	2.01	1.87	0.00	0.00	5	Sliding
					90									-84	12365	88.04	2.01	1.87			6	Survey & Conn.
			12365	12381	16	50	60.0	0	0	695	4800	3850		-30	12381	88.12	1.28	1.89			0	Sliding
6	17-Dec	0.25	12381	12423	42	42	168.0	40	28	695	4800	3850	950		12423	88.13	1.16	1.89	0.00	0.00	0	Drilling
6	17-Dec	0.08	12423	12437	14	42	168.0	40	28	695	4800	3850	950		12437	88.15	0.99	1.89	0.00	0.00	0	Drilling
6	17-Dec	0.25	12437	12444	7	40	28.0	0	0	695	4800	3850	950	-70	12444	88.22	0.37	1.89	0.00	0.00	0	Sliding
6	17-Dec	0.50	12444	12454	10	40	26.0	0	0	695	4800	3850	950	-70	12454	88.22	0.34	1.89	0.00	0.00	5	Sliding
					89									-26	12454	88.22	0.34	1.89			6	Survey & Conn.
			12454	12457	3	40	26.0	0	0	695	4800	3850		-70	12457	88.54	64.98	2.23			0	Sliding
6	17-Dec	0.25	12457	12512	55	42	220.0	40	28	695	4800	3850	950		12512	88.68	91.32	2.23	0.00	0.00	0	Drilling
6	17-Dec	0.08	12512	12524	12	42	144.0	40	28	695	4800	3850	950		12524	88.78	112.86	2.23	0.00	0.00	0	Drilling
6	17-Dec	0.25	12524	12536	12	12	48.0	0	0	695	4800	3850	950	-30	12536	90.40	76.07	2.23	0.00	0.00	0	Sliding
6	17-Dec	0.33	12536	12544	8	42	198.0	40	28	695	4700	3850	850		12544	90.02	359.46	2.23	0.00	0.00	5	Drilling
					90									24	12544	90.02	359.46	2.23			6	Survey & Conn.
			12544	12602	58	42	198.0	40	28	695	4700	3850			12602	90.11	336.30	1.71		1.71	4	Drilling
6	17-Dec	0.42	12602	12634	32	42	216.0	40	28	695	4700	3850	850		12634	91.43	0.08	1.71	0.00	1.71	5	Drilling
					90									-46	12634	91.43	0.08	1.71			6	Survey & Conn.
			12634	12692	58	42	216.0	40	28	695	4700	3850			12692	91.52	28.21	1.76			0	Drilling
6	17-Dec	0.08	12692	12704	12	42	144.0	40	30	695	4800	3850	950		12704	91.60	55.12	1.76	0.00	0.00	0	Drilling
6	17-Dec	0.33	12704	12720	16	40	48.0	40	30	695	4800	3850	950	-110	12720	92.59	18.10	1.76	0.00	0.00	0	Sliding
6	17-Dec	0.33	12720	12724	4	42	186.0	40	30	695	4800	3850	950		12724	92.53	358.94	1.76	0.00	0.00	5	Drilling
					90									-147	12724	92.53	358.94	1.76			6	Survey & Conn.

Slide Report for BHA # 6 with Surveys included

Note: Sliding and Drilling Surveys are LOGICAL expectations.

#	Date	Hrs	Start MD	End MD	DMD	WOB	ROP	RPM	Surf Torq	Flow Rate	SPP On B	SPP Off B	Delta SPP	TFO cTFO	Survey MD	INC	AZM	Surv DLS	Mot DLS	Rot DLS	Q	Drill Mode
			12724	12782	58	42	186.0	40	30	695	4800	3850			12782	92.44	358.88	1.47			0	Drilling
6	17-Dec	0.08	12782	12795	13	42	156.0	40	30	724	4900	3950	950		12795	92.35	358.83	1.47	0.00	0.00	0	Drilling
6	17-Dec	0.50	12795	12810	15	40	30.0	0	0	724	4900	3950	950	-110	12810	91.36	358.19	1.47	0.00	0.00	0	Sliding
6	17-Dec	0.33	12810	12813	3	42	183.0	40	30	724	4900	3950	950		12813	91.43	358.23	1.47	0.00	0.00	5	Drilling
					89									70	12813	91.43	358.23	1.47			6	Survey & Conn.
			12813	12871	58	42	183.0	40	30	724	4900	3950			12871	91.44	358.25	0.43		0.43	4	Drilling
6	17-Dec	0.42	12871	12903	32	45	216.0	40	30	724	4900	4200	700		12903	91.45	358.29	0.43	0.00	0.43	5	Drilling
					90									-66	12903	91.56	358.59	0.43			6	Survey & Conn.
			12903	12961	58	45	216.0	40	30	724	4900	4200			12961	91.59	358.53	0.97			0	Drilling
6	17-Dec	0.08	12961	12973	12	45	144.0	40	30	724	4900	4200	700		12973	91.61	358.48	0.97	0.00	0.00	0	Drilling
6	17-Dec	0.33	12973	12986	13	40	39.0	0	0	724	4900	4200	700	-80	12986	91.92	357.76	0.97	0.00	0.00	0	Sliding
6	17-Dec	0.33	12986	12993	7	45	195.0	40	30	724	4900	4200	700		12993	91.91	357.79	0.97	0.00	0.00	5	Drilling
					90									42	12993	91.91	357.79	0.97			6	Survey & Conn.
			12993	13051	58	45	195.0	40	30	724	4900	4200			13051	92.02	357.89	2.49		2.49	4	Drilling
6	17-Dec	0.58	13051	13083	32	45	154.3	40	30	724	4900	4200	700		13083	93.58	359.29	2.49	0.00	2.49	5	Drilling
					90									-130	13083	93.58	359.29	2.49			6	Survey & Conn.
			13083	13141	58	45	154.3	40	30	724	4900	4200			13141	93.47	359.17	2.21			0	Drilling
6	17-Dec	0.08	13141	13153	12	45	144.0	40	30	724	4900	4200	700		13153	93.35	359.02	2.21	0.00	0.00	0	Drilling
6	18-Dec	0.67	13153	13172	19	40	40.5	0	0	724	4900	4200	700	-130	13172	92.31	357.79	2.21	0.00	0.00	5	Sliding
					89									31	13172	92.31	357.79	2.21			6	Survey & Conn.
			13172	13180	8	40	40.5	0	0	724	4900	4200		-130	13180	93.65	358.58	1.94			0	Sliding
6	18-Dec	0.33	13180	13230	50	45	150.0	40	30	724	4900	4200	700		13230	93.74	358.64	1.94	0.00	0.00	0	Drilling
6	18-Dec	0.50	13230	13261	31	50	130.0	40	30	724	4900	4200	700		13261	93.80	358.67	1.94	0.00	0.00	5	Drilling
					89									-168	13261	93.80	358.67	1.94			6	Survey & Conn.
			13261	13295	34	50	130.0	40	30	724	4900	4200			13295	93.54	358.62	4.79			0	Drilling
6	18-Dec	0.50	13295	13309	14	40	28.0	0	0	724	4900	4200	700	-168	13309	91.98	358.29	4.79	0.00	0.00	0	Sliding
6	18-Dec	0.08	13309	13319	10	50	120.0	40	30	724	4900	4200	700		13319	91.79	358.25	4.79	0.00	0.00	0	Drilling
6	18-Dec	0.08	13319	13331	12	50	144.0	40	30	724	4900	4250	650		13331	91.37	358.16	4.79	0.00	0.00	0	Drilling
6	18-Dec	0.58	13331	13351	20	40	46.3	0	0	724	4900	4250	650	-168	13351	89.58	357.79	4.79	0.00	0.00	5	Sliding
					90										13351	89.58	357.79	4.79			6	Survey & Conn.
			13351	13358	7	40	46.3	0	0	724	4900	4250		-168	13358	89.58	357.79	0.00			0	Sliding
6	18-Dec	0.42	13358	13409	51	50	122.4	40	30	724	4950	4250	700		13409	89.58	357.79	0.00	0.00	0.00	5	Drilling
					58										13409	89.58	357.79	0.00			6	Survey & Conn.
6	18-Dec	0.83	13409	13499	90	50	108.0	40	30	724	5100	4250	850		13499	0.00	0.00	0.00	0.00	0.00	0	Drilling

Slide Report for BHA # 6 with Surveys included

Note: Sliding and Drilling Surveys are LOGICAL expectations.

#	Date	Hrs	Start MD	End MD	DMD	WOB	ROP	RPM	Surf Torq	Flow Rate	SPP On B	SPP Off B	Delta SPP	TFO cTFO	Survey MD	INC	AZM	Surv DLS	Mot DLS	Rot DLS	Q	Drill Mode
6	18-Dec	0.92	13499	13588	89	55	97.1	40	30	724	5100	4250	850		13588	0.00	0.00	0.00	0.00	0.00	0	Drilling
6	18-Dec	1.08	13588	13678	90	55	83.1	40	30	724	5100	4250	850		13678	0.00	0.00	0.00	0.00	0.00	0	Drilling
6	18-Dec	0.25	13678	13690	12	55	48.0	40	27	724	5100	4250	850		13690	0.00	0.00	0.00	0.00	0.00	0	Drilling
6	18-Dec	0.83	13690	13720	30	52	36.0			724	4625	4250	375	140R	13720	0.00	0.00	0.00	0.00	0.00	0	Sliding
6	18-Dec	0.75	13720	13734	14	40	18.7	40	25	724	4900	4250	650		13734	0.00	0.00	0.00	0.00	0.00	0	Drilling

Total Drilled: 2145 Avg. Total ROP: 112.89

DEPTH% - TIME %

Total Rotary Drilled: 1790 Avg. Rotary ROP: 153.43 Percent Rotary: 83.45 - 61.40

Total Drilled Sliding: 355 Avg. Slide ROP: 48.41 Percent Slide: 16.55 - 38.60



SDI Job #: ID2388-3
COMPANY: Advance Energy Partners ,LLC
LOCATION: Lea County, New Mexico
RIG NAME: HP 466
STATE: New Mexico
COUNTY: Country
WELL NAME: Wool Head 20 State Com. #511H

FIELD: Delaware Basin
Sec-Twn-Rng: 20-21S-33E
SD District

MOTOR INFORMATION

Desc: 7" 7/8 8.5 FBH @ 1.83 W/ SS
Bent Hsg/Sub: $\frac{1.8}{3}$ / 0 **Bit to Bend:** 4.06
PAD OD: 4.11 **NB Stab:**

Slide Report for BHA # 7

Note: Surveys listed are interpolated from the actual surveys

#	Date	Drill Mode	Start Time	End Time	Hours	Start MD	End MD	Depth Drilled	WOB	ROP	RPM	Surf. Torque	Flow Rate	SPP	TFO	INC	AZM	DLS	Note
7	18-Dec	Drilling	23:00	23:50	0.83	13734	13767	33	48	39.6	40	25.4	689	4450		92.80	358.00	3.12	
7	19-Dec	Drilling	00:00	00:10	0.17	13767	13780	13	48	78.0	40	25.4	689	4450		92.40	358.00	3.12	
7	19-Dec	Sliding	00:10	00:50	0.67	13780	13795	15	42	22.5	0	0	724	4450	180	91.94	358.00	3.12	
7	19-Dec	Drilling	00:50	01:50	1.00	13795	13857	62	50	62.0	40	25.4	689	4450		91.00	358.00	1.49	
7	19-Dec	Drilling	02:00	02:10	0.17	13857	13869	12	55	72.0	40	28	705	4730		90.83	358.00	1.49	
7	19-Dec	Sliding	02:10	02:50	0.67	13869	13894	25	45	37.5	0	0	705	4730	150	90.55	358.00	0.00	
7	19-Dec	Drilling	02:50	03:30	0.67	13894	13947	53	55	79.5	40	28	705	4730		90.55	358.00	0.00	
7	19-Dec	Drilling	03:40	03:50	0.17	13947	13959	12	55	72.0	40	28	705	4730		90.55	358.00	0.00	
7	19-Dec	Sliding	03:50	04:05	0.25	13959	13967	8	45	32.0	0	0	705	4730	180	90.55	358.00	0.00	
7	19-Dec	Drilling	04:05	04:55	0.83	13967	14037	70	55	84.0	40	28	705	4730		90.55	358.00	0.00	
7	19-Dec	Drilling	05:05	06:35	1.50	14037	14126	89	55	59.3	40	30	705	4600		0.00	0.00	0.00	
7	19-Dec	Drilling	06:40	06:55	0.25	14126	14138	12	55	48.0	40	30	705	4500		0.00	0.00	0.00	
7	19-Dec	Sliding	06:55	08:05	1.17	14138	14163	25	52	21.4			705	4300	115R	0.00	0.00	0.00	
7	19-Dec	Drilling	08:05	09:50	1.75	14163	14193	30	55	17.1	40	28	705	4550		0.00	0.00	0.00	

Total Drilled:	459	Avg. Total ROP:	45.52	DEPTH% - TIME %
Total Rotary Drilled:	386	Avg. Rotary ROP:	52.64	Percent Rotary: 84.10 - 72.73
Total Drilled Sliding:	73	Avg. Slide ROP:	26.55	Percent Slide: 15.90 - 27.27



SDI Job #: ID2388-3
COMPANY: Advance Energy Partners ,LLC
LOCATION: Lea County, New Mexico
RIG NAME: HP 466
STATE: New Mexico
COUNTY: Lea
WELL NAME: Wool Head 20 State Com. #511H
Survey File:

FIELD: Delaware Basin
Sec-Twn-Rng: 20-21S-33E
Range/Section /NM0091

MOTOR INFORMATION

Desc: 7" 7/8 8.5 FBH @ 1.83 W/ SS
Bent Hsg/Sub: 1.83 0 **Bit to Bend:** 4.05
PAD OD: 7.20 **NB Stab:**

Slide Report for BHA # 8 with Surveys included

Note: Sliding and Drilling Surveys are LOGICAL expectations.

#	Date	Hrs	Start MD	End MD	DMD	WOB	ROP	RPM	Surf Torq	Flow Rate	SPP On B	SPP Off B	Delta SPP	TFO cTFO	Survey MD	INC	AZM	Surv DLS	Mot DLS	Rot DLS	Q	Drill Mode
8	20-Dec	0.25	14193	14216	23	42	92.0	60	31	650	4560	3750	810		14216	90.49	359.00	3.87	0.00	0.00	0	Drilling
8	20-Dec	0.08	14216	14229	13	42	156.0	60	31	650	4560	3750	810		14229	90.50	0.00	3.87	0.00	0.00	0	Drilling
8	20-Dec	0.25	14229	14244	15	45	60.0	0	0	650	4560	3750	810	100	14244	90.51	0.00	3.87	0.00	0.00	0	Sliding
8	20-Dec	0.50	14244	14307	63	42	126.0	60	31	650	4560	3750	810		14307	91.16	1.00	1.37	0.00	0.00	0	Drilling
8	20-Dec	0.50	14307	14397	90	42	180.0	60	31	650	4560	3750	810		14397	90.66	0.00	1.50	0.00	0.00	0	Drilling
8	20-Dec	0.08	14397	14410	13	42	156.0	60	31	650	4560	3750	810		14410	90.47	0.00	1.50	0.00	0.00	0	Drilling
8	20-Dec	0.42	14410	14420	10	42	24.0	0	0	650	4560	3750	810	150	14420	90.32	0.00	1.50	0.00	0.00	0	Sliding
8	20-Dec	0.42	14420	14486	66	42	158.4	60	31	650	4560	3750	810		14486	90.34	0.00	0.72	0.00	0.00	0	Drilling
8	20-Dec	0.50	14486	14576	90	42	180.0	60	31	650	4560	3750	810		14576	91.10	0.00	1.66	0.00	0.00	0	Drilling
8	20-Dec	0.50	14576	14666	90	42	180.0	60	31	650	4560	3750	810		14666	90.09	359.00	2.80	0.00	0.00	0	Drilling
8	20-Dec	0.08	14666	14678	12	42	144.0	60	31	650	4560	3750	810		14678	89.81	359.00	2.80	0.00	0.00	0	Drilling
8	20-Dec	0.42	14678	14696	18	40	43.2			650	4050	3750	300	150R	14696	89.38	0.00	2.80	0.00	0.00	0	Sliding
8	20-Dec	1.17	14696	14857	161	42	138.0	60	31	650	4550	3750	800		14857	89.73	358.00	2.10	0.00	0.00	0	Drilling
8	20-Dec	0.33	14857	14877	20	40	60.0			650	4075	3750	325	90R	14877	89.93	359.00	2.10	0.00	0.00	0	Sliding
8	20-Dec	1.75	14877	15126	249	42	142.3	60	34	650	4400	3750	650		15126	92.93	359.00	1.81	0.00	0.00	0	Drilling
8	20-Dec	0.67	15126	15156	30	45	45.0			650	3950	3750	200	110R	15156	92.68	359.00	2.62	0.00	0.00	0	Sliding
8	20-Dec	0.33	15156	15204	48	42	144.0	60	34	650	4450	3750	700		15204	91.90	0.00	2.62	0.00	0.00	0	Drilling
8	20-Dec	0.08	15204	15216	12	42	144.0	60	34	650	4450	3750	700		15216	91.70	1.00	2.62	0.00	0.00	0	Drilling
8	20-Dec	0.33	15216	15228	12	38	36.0			650	4000	3750	250	110R	15228	91.51	1.00	2.62	0.00	0.00	0	Sliding
8	20-Dec	0.50	15228	15294	66	44	132.0	60	31	650	4450	3750	700		15294	92.21	1.00	1.44	0.00	0.00	0	Drilling
8	20-Dec	0.58	15294	15383	89	44	152.6	60	31	650	4450	3750	700		15383	92.46	1.00	0.60	0.00	0.00	0	Drilling
8	20-Dec	0.17	15383	15395	12	44	72.0	60	31	650	4450	3750	700		15395	92.42	1.00	0.60	0.00	0.00	0	Drilling
8	20-Dec	0.50	15395	15413	18	44	36.0			650	4075	3750	325	120R	15413	92.36	1.00	0.60	0.00	0.00	0	Drilling
8	20-Dec	0.50	15413	15473	60	44	120.0	60	34	650	4300	3750	550		15473	93.40	2.00	2.06	0.00	0.00	0	Drilling
8	20-Dec	0.67	15473	15563	90	44	135.0	60	34	650	4300	3750	550		15563	93.49	1.00	0.93	0.00	0.00	0	Drilling

Slide Report for BHA # 8 with Surveys included

Note: Sliding and Drilling Surveys are LOGICAL expectations.

#	Date	Hrs	Start MD	End MD	DMD	WOB	ROP	RPM	Surf Torq	Flow Rate	SPP On B	SPP Off B	Delta SPP	TFO cTFO	Survey MD	INC	AZM	Surv DLS	Mot DLS	Rot DLS	Q	Drill Mode
8	20-Dec	0.17	15563	15575	12	44	72.0	60	34	650	4300	3750	550		15575	93.39	1.00	0.93	0.00	0.00	0	Drilling
8	20-Dec	0.83	15575	15600	25	38	30.0			650	3950	3750	200	160R	15600	93.05	1.00	3.09	0.00	0.00	0	Sliding
8	20-Dec	0.50	15600	15652	52	44	104.0	60	34	650	4300	3750	550		15652	91.44	1.00	3.09	0.00	0.00	0	Drilling
8	20-Dec	0.08	15652	15664	12	44	144.0	60	34	650	4300	3750	550		15664	91.08	1.00	3.09	0.00	0.00	0	Drilling
8	20-Dec	0.75	15664	15694	30	38	40.0			650	4000	3750	250	180	15694	90.36	1.00	1.46	0.00	0.00	0	Sliding
8	20-Dec	0.42	15694	15732	38	44	91.2	60	34	650	4350	3750	600		15732	89.99	2.00	1.46	0.00	0.00	0	Drilling
8	20-Dec	0.17	15732	15741	9	45	54.0			650	3975	3750	225	180	15741	89.90	2.00	1.46	0.00	0.00	0	Sliding
8	20-Dec	0.75	15741	15831	90	44	120.0	60	34	650	4200	3750	450		15831	89.50	1.00	1.57	0.00	0.00	0	Drilling
8	20-Dec	0.08	15831	15845	14	44	168.0	60	34	650	4200	3750	450		15845	89.48	1.00	1.57	0.00	0.00	0	Drilling
8	20-Dec	0.33	15845	15857	12	45	36.0	0	0	650	4200	3750	450	LS	15857	89.46	2.00	1.57	0.00	0.00	0	Sliding
8	20-Dec	0.58	15857	15921	64	44	109.7	60	34	650	4200	3750	450		15921	89.96	0.00	1.71	0.00	0.00	0	Drilling
8	20-Dec	0.75	15921	16011	90	47	120.0	60	34	650	4200	3750	450		16011	91.01	359.00	2.36	0.00	0.00	0	Drilling
8	20-Dec	0.17	16011	16023	12	47	72.0	60	34	650	4200	3750	450		16023	91.17	359.00	2.36	0.00	0.00	0	Drilling
8	20-Dec	0.67	16023	16043	20	45	30.0	0	0	650	4200	3750	450	90	16043	91.43	359.00	2.36	0.00	0.00	0	Sliding
8	20-Dec	0.42	16043	16101	58	47	139.2	60	34	650	4200	3750	450		16101	90.69	0.00	1.96	0.00	0.00	0	Drilling
8	20-Dec	0.08	16101	16113	12	47	144.0	60	34	650	4200	3750	450		16113	90.53	0.00	1.96	0.00	0.00	0	Drilling
8	20-Dec	0.42	16113	16131	18	45	43.2	0	0	650	4200	3750	450	120	16131	90.30	1.00	1.96	0.00	0.00	0	Sliding
8	20-Dec	0.25	16131	16166	35	47	140.0	60	35	650	4200	3750	450		16166	90.70	1.00	1.31	0.00	0.00	0	Drilling
8	21-Dec	0.17	16166	16190	24	47	144.0	60	35	650	4200	3750	450		16190	90.99	1.00	1.31	0.00	0.00	0	Drilling
8	21-Dec	0.83	16190	16280	90	47	108.0	60	35	650	4200	3750	450		16280	92.04	2.00	1.38	0.00	0.00	0	Drilling
8	21-Dec	0.83	16280	16370	90	47	108.0	60	35	655	4200	3650	550		16370	91.92	0.00	0.84	0.00	0.00	0	Drilling
8	21-Dec	0.17	16370	16382	12	47	72.0	60	35	655	4200	3650	550		16382	91.82	0.00	0.84	0.00	0.00	0	Drilling
8	21-Dec	0.50	16382	16400	18	47	36.0	0	0	655	4200	3650	550	145	16400	91.67	0.00	0.84	0.00	0.00	0	Sliding
8	21-Dec	0.75	16400	16460	60	47	80.0	60	35	655	4200	3650	550		16460	91.65	1.00	1.48	0.00	0.00	0	Drilling
8	21-Dec	0.17	16460	16475	15	47	90.0	60	35	655	4200	3650	550		16475	91.65	2.00	1.48	0.00	0.00	0	Drilling
8	21-Dec	0.58	16475	16492	17	47	29.1	0	0	655	4200	3650	550	150	16492	91.63	2.00	1.71	0.00	0.00	0	Sliding
8	21-Dec	0.50	16492	16549	57	47	114.0	60	35	655	4200	3650	550		16549	90.66	2.00	1.71	0.00	0.00	0	Drilling
8	21-Dec	0.08	16549	16562	13	47	156.0	60	35	655	4200	3650	550		16562	90.44	2.00	1.71	0.00	0.00	0	Drilling
8	21-Dec	0.42	16562	16577	15	47	36.0			655	3950	3650	300	150L	16577	90.18	2.00	1.71	0.00	0.00	0	Sliding
8	21-Dec	0.67	16577	16639	62	47	93.0	60	35	655	4500	4000	500		16639	90.76	2.00	1.27	0.00	0.00	0	Drilling
8	21-Dec	0.83	16639	16729	90	47	108.0	60	35	655	4500	4000	500		16729	90.78	2.00	0.98	0.00	0.00	0	Drilling
8	21-Dec	0.17	16729	16741	12	47	72.0	60	35	655	4500	4000	500		16741	90.71	2.00	0.98	0.00	0.00	0	Drilling
8	21-Dec	0.58	16741	16759	18	45	30.9			655	4225	4000	225	180	16759	90.60	2.00	0.98	0.00	0.00	0	Sliding
8	21-Dec	0.75	16759	16819	60	47	80.0	60	35	655	4525	4000	525		16819	90.82	1.00	0.64	0.00	0.00	0	Drilling

Slide Report for BHA # 8 with Surveys included

Note: Sliding and Drilling Surveys are LOGICAL expectations.

#	Date	Hrs	Start MD	End MD	DMD	WOB	ROP	RPM	Surf Torq	Flow Rate	SPP On B	SPP Off B	Delta SPP	TFO cTFO	Survey MD	INC	AZM	Surv DLS	Mot DLS	Rot DLS	Q	Drill Mode
8	21-Dec	1.00	16819	16908	89	47	89.0	60	35	655	4525	4000	525		16908	92.11	0.00	2.15	0.00	0.00	0	Drilling
8	21-Dec	0.92	16908	16998	90	47	98.2	60	35	655	4525	4000	525		16998	91.70	1.00	3.12	0.00	0.00	0	Drilling
8	21-Dec	0.25	16998	17010	12	45	48.0	60	35	655	4525	4000	525	180	17010	91.48	1.00	3.12	0.00	0.00	0	Sliding
8	21-Dec	0.83	17010	17045	35	42	42.0			655	4300	4000	300	180	17045	90.92	357.00	1.68	0.00	0.00	0	Sliding
8	21-Dec	0.58	17045	17088	43	47	73.7	60	34	655	4525	4000	525		17088	90.33	358.00	1.68	0.00	0.00	0	Drilling
8	21-Dec	0.92	17088	17178	90	47	98.2	60	34	655	4600	4150	450		17178	90.67	357.00	1.86	0.00	0.00	0	Drilling
8	21-Dec	0.17	17178	17190	12	47	72.0	60	34	655	4600	4150	450		17190	90.83	357.00	1.86	0.00	0.00	0	Drilling
8	21-Dec	0.67	17190	17215	25	48	37.5			655	4400	4150	250	100R	17215	91.10	357.00	3.05	0.00	0.00	0	Sliding
8	21-Dec	0.75	17215	17267	52	47	69.3	60	34	655	4600	4150	450		17267	91.31	359.00	3.05	0.00	0.00	0	Drilling
8	21-Dec	0.17	17267	17279	12	47	72.0	60	34	655	4600	4150	450		17279	91.35	359.00	3.05	0.00	0.00	0	Drilling
8	21-Dec	1.00	17279	17304	25	50	25.0			655	4450	4150	300	110R	17304	91.35	0.00	1.88	0.00	0.00	0	Sliding
8	21-Dec	0.83	17304	17357	53	47	63.6	60	34	655	4600	4150	450		17357	90.46	0.00	1.88	0.00	0.00	0	Drilling
8	21-Dec	0.17	17357	17369	12	47	72.0	60	34	655	4600	4150	450		17369	90.26	1.00	1.88	0.00	0.00	0	Drilling
8	21-Dec	0.50	17369	17384	15	50	30.0	0	0	655	4570	4000	570	180	17384	90.01	1.00	1.88	0.00	0.00	0	Sliding
8	21-Dec	0.75	17384	17447	63	47	84.0	60	34	655	4570	4000	570		17447	90.28	1.00	0.91	0.00	0.00	0	Drilling
8	21-Dec	0.83	17447	17505	58	47	69.6	60	34	655	4570	4000	570		17505	90.98	0.00	1.91	0.00	0.00	0	Drilling
8	21-Dec	0.42	17505	17536	31	47	74.4	60	34	655	4570	4000	570		17536	91.57	0.00	1.91	0.00	0.00	0	Drilling
8	21-Dec	0.83	17536	17626	90	47	108.0	60	34	655	4570	4000	570		17626	93.20	0.00	1.80	0.00	0.00	0	Drilling
8	21-Dec	1.00	17626	17716	90	47	90.0	60	34	655	4570	4000	570		17716	93.13	0.00	1.33	0.00	0.00	0	Drilling
8	21-Dec	0.17	17716	17728	12	47	72.0	60	34	655	4570	4000	570		17728	93.01	0.00	1.33	0.00	0.00	0	Drilling
8	21-Dec	0.75	17728	17748	20	50	26.7	0	0	655	4570	4000	570	180	17748	92.79	359.00	1.48	0.00	0.00	0	Sliding
8	21-Dec	0.58	17748	17797	49	47	84.0	60	34	655	4570	4000	570		17797	92.06	359.00	1.48	0.00	0.00	0	Drilling
8	22-Dec	0.08	17797	17806	9	47	108.0	60	36	655	4570	4000	570		17806	91.93	359.00	1.48	0.00	0.00	0	Drilling
8	22-Dec	0.17	17806	17819	13	47	78.0	60	36	655	4570	4000	570		17819	91.74	359.00	1.48	0.00	0.00	0	Drilling
8	22-Dec	0.58	17819	17837	18	40	30.9	0	0	655	4570	4000	570	160	17837	91.47	359.00	0.75	0.00	0.00	0	Sliding
8	22-Dec	0.67	17837	17895	58	47	87.0	60	36	655	4570	4000	570		17895	91.87	359.00	0.75	0.00	0.00	0	Drilling
8	22-Dec	0.92	17895	17985	90	47	98.2	60	36	655	4570	4000	570		17985	93.11	359.00	2.01	0.00	0.00	0	Drilling
8	22-Dec	1.08	17985	18075	90	47	83.1	60	36	655	4570	4000	570		18075	94.02	358.00	0.92	0.00	0.00	0	Drilling
8	22-Dec	0.17	18075	18087	12	47	72.0	60	36	655	4570	4000	570		18087	94.09	358.00	0.92	0.00	0.00	0	Drilling
8	22-Dec	0.25	18087	18092	5	40	20.0	0	0	655	4570	4000	570	160	18092	94.12	358.00	0.92	0.00	0.00	0	Sliding
8	22-Dec	0.92	18092	18114	22	40	24.0	0	0	655	4570	4000	570	160	18114	93.98	359.00	2.70	0.00	0.00	0	Sliding
8	22-Dec	0.67	18114	18164	50	40	75.0	60	36	655	4570	4000	570	160	18164	92.64	359.00	2.70	0.00	0.00	0	Drilling
8	22-Dec	0.17	18164	18176	12	40	72.0	60	36	655	4570	4000	570		18176	92.32	359.00	2.70	0.00	0.00	0	Drilling
8	22-Dec	1.08	18176	18211	35	42	32.3			655	4200	4000	200	160R	18211	91.39	359.00	2.78	0.00	0.00	0	Sliding

Slide Report for BHA # 8 with Surveys included

Note: Sliding and Drilling Surveys are LOGICAL expectations.

#	Date	Hrs	Start MD	End MD	DMD	WOB	ROP	RPM	Surf Torq	Flow Rate	SPP On B	SPP Off B	Delta SPP	TFO cTFO	Survey MD	INC	AZM	Surv DLS	Mot DLS	Rot DLS	Q	Drill Mode
8	22-Dec	0.75	18211	18254	43	40	57.3	60	36	655	4550	4000	550		18254	90.25	359.00	2.78	0.00	0.00	0	Drilling
8	22-Dec	0.25	18254	18266	12	40	48.0	60	36	655	4550	4000	550		18266	89.94	359.00	2.78	0.00	0.00	0	Drilling
8	22-Dec	0.75	18266	18286	20	42	26.7			655	4200	4000	200	160R	18286	89.41	359.00	2.78	0.00	0.00	0	Sliding
8	22-Dec	0.83	18286	18344	58	40	69.6	60	36	655	4550	4000	550		18344	89.46	0.00	0.59	0.00	0.00	0	Drilling
8	22-Dec	1.00	18344	18433	89	40	89.0	60	36	655	4550	4000	550		18433	90.48	359.00	1.78	0.00	0.00	0	Drilling
8	22-Dec	1.17	18433	18523	90	40	77.1	60	36	655	4550	4000	550		18523	92.41	359.00	2.44	0.00	0.00	0	Drilling
8	22-Dec	1.00	18523	18601	78	40	78.0	60	36	655	4550	4000	550		18601	92.88	358.00	0.00	0.00	0.00	0	Drilling

Total Drilled: 4408 **Avg. Total ROP:** 82.26 **DEPTH% - TIME %**

Total Rotary Drilled: 3889 **Avg. Rotary ROP:** 101.45 **Percent Rotary:** 88.23 - 71.54

Total Drilled Sliding: 519 **Avg. Slide ROP:** 34.03 **Percent Slide:** 11.77 - 28.46



Final Logs





Gamma Ray

Intrepid-DDS
10314 TX-191
Midland, TX 79707

1" = 100'
MD FT

Company: Advanced Energy Partners
Well: Wool Head State Com #511H
Field: Delaware Basin
API: 30-025-46491
County: Lea County
State New Mexico
Country USA
Rig: H&P #466

Well Location NAD 1927

Latitude: 32° 27' 29.102 N Longitude: 103° 35' 20.448 W
Y: 531182.20 X: 770916.10

Section: 20 Township: 21-S Range: 33-E Intrepid-DDS

Company: Advanced Energy Partners
Well: Wool Head State Com #511H
Field: Delaware Basin
API: 30-025-46491
County: Lea County
State: New Mexico
Country: USA
Rig: H&P #466
AFE: NM0091
Job: ID2386

Permanent Datum: Mean Sea Level Kelly Bushing Elev: N/A
Log Measured From: Rotary Table Drill Floor Elev: 3754.0
Height of Reference: 26 Ground Level Elev: 3728

Depth Drilled: 1.0 to: 18601.0
Depth Logged: 5100.0 to: 18601.01
Date Logged: 09 Nov 2019 20:44 to: 22 Dec 2019 13:56

Disclaimer: Intrepid-dds uses its best efforts to provide customers with accurate information and interpretations with services performed but does not warrant the accuracy of information or interpretations.

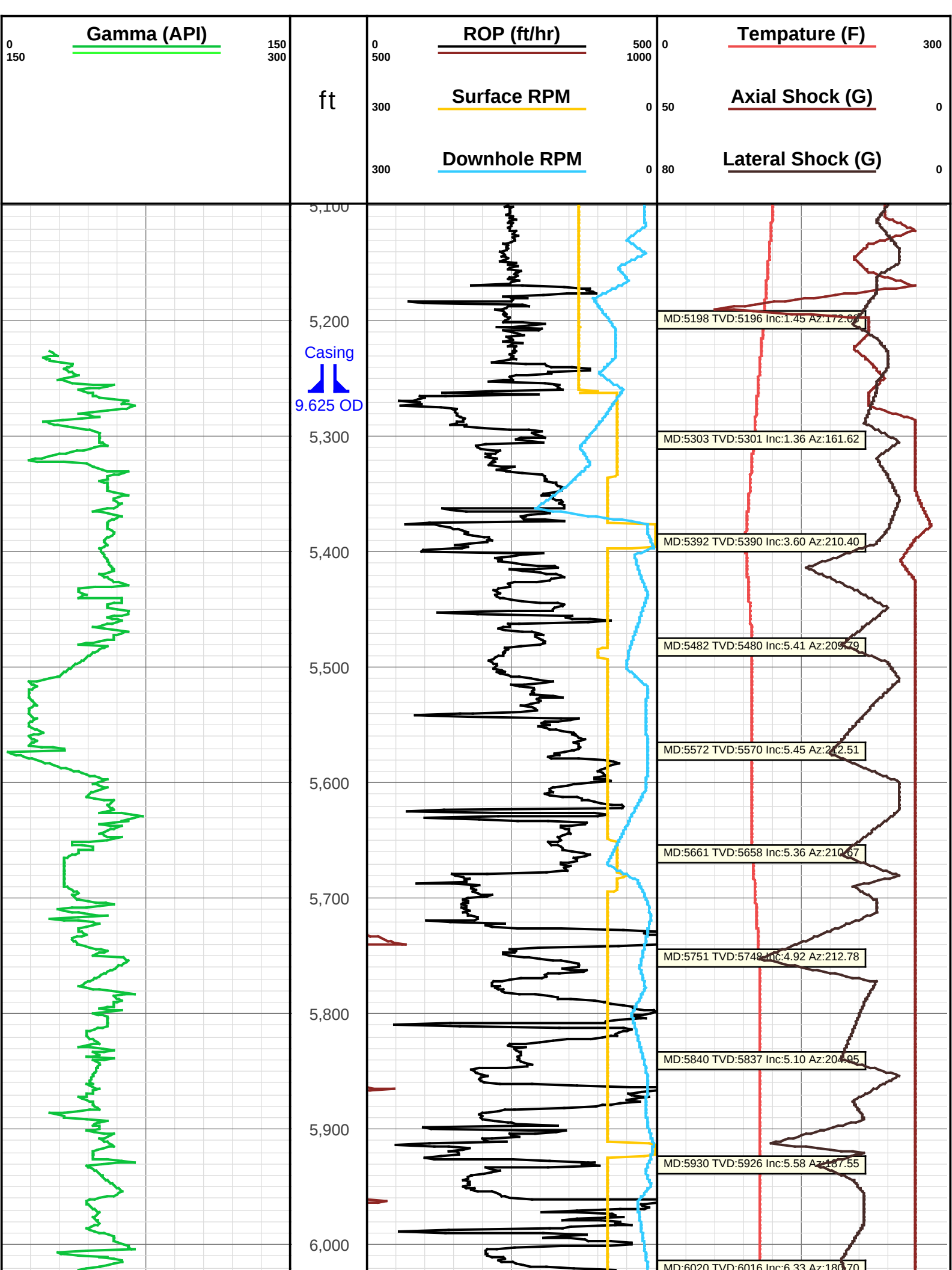
Hole Data			Casing Data		
Size	From (MD)	To (MD)	Size	From (MD)	To (MD)
17.5	100	1838	13.375	100	1838
12.5	1838	5263	9.625	1838	5263
8.5	5263	18601	5.5	5263	18601

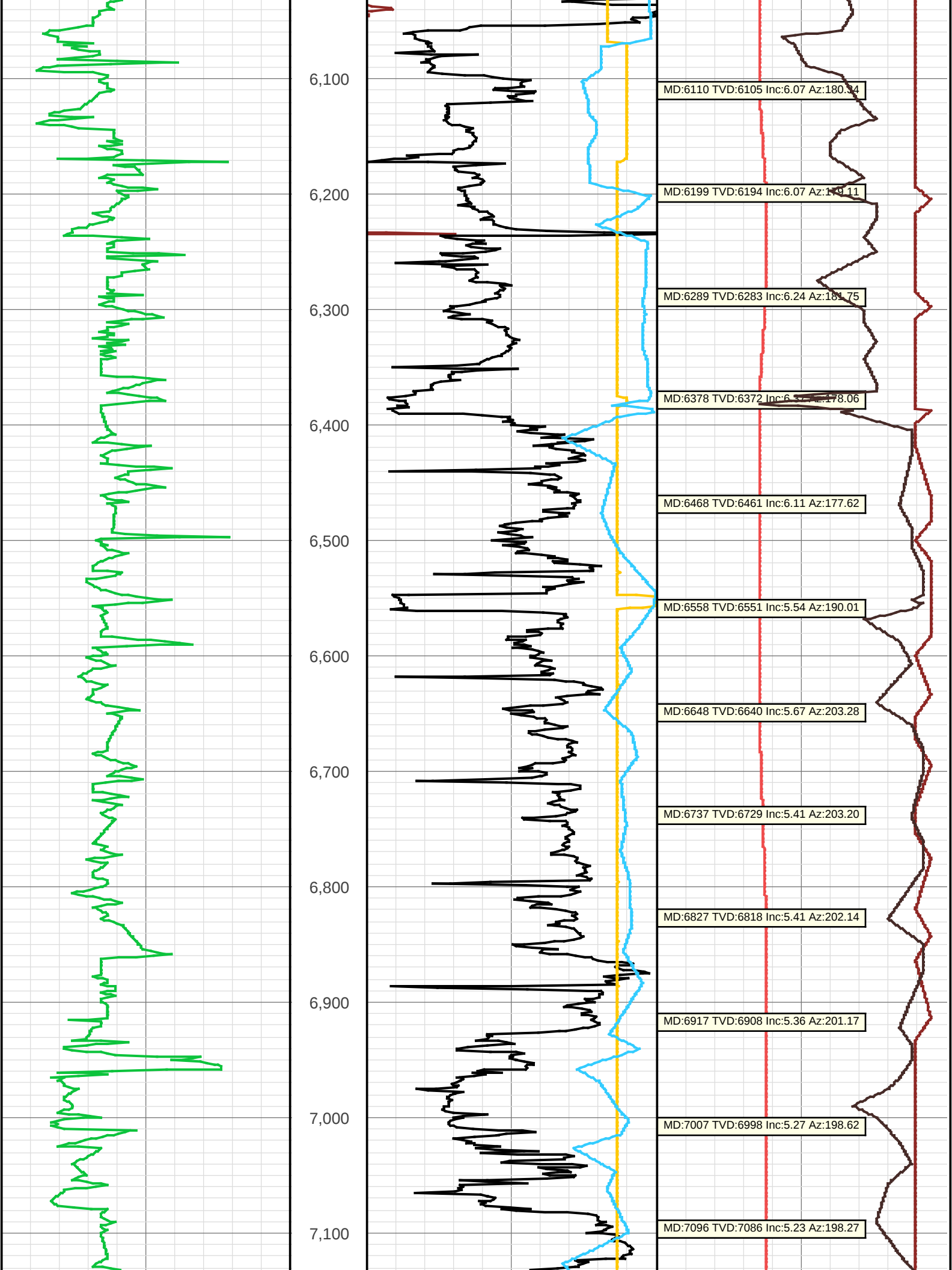
Run Data								
Run Name	MWD Run 1	MWD Run 2	MWD Run 3	MWD Run 4	MWD Run 5	MWD Run 6	MWD Run 7	MWD Run 8
Start Date	10 Nov 2019	15 Nov 2019	23 Nov 2019	24 Nov 2019	15 Dec 2019	17 Dec 2019	18 Dec 2019	19 Dec 2019
Start Time	7:00	1:30	21:00	11:30	21:00	2:50	15:00	18:00
End Date	11 Nov 2019	16 Nov 2019	24 Nov 2019	25 Nov 2019	17 Dec 2019	18 Dec 2019	19 Dec 2019	22 Dec 2019
End Time	04:00	17:15	10:30	23:30	1:00	14:00	17:00	13:30
Depth In	1.0	1838	5182	6389	10547	11589	13734	14193
Depth Out	1838	5263	6389	10547	11589	13734	14193	18601
Log Top			5182	6336	10538	11553	13687	14146
Log Bottom			6336	10538	11553	13687	14146	18554
Hole Size	17.5	12.75	8.5	8.5	8.5	8.5	8.5	8.5

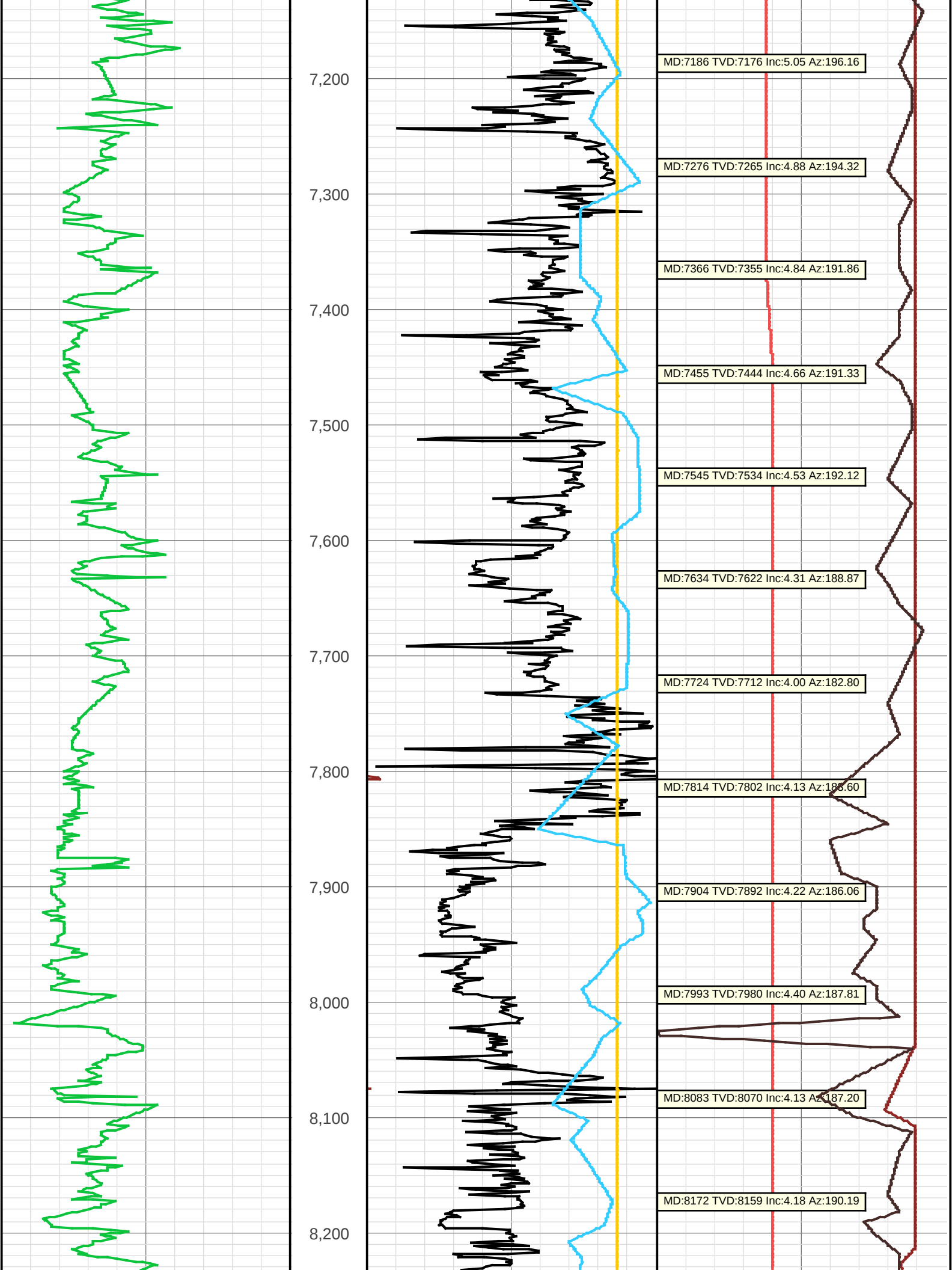
Tool Data								
Run Name	MWD Run 1	MWD Run 2	MWD Run 3	MWD Run 4	MWD Run 5	MWD Run 6	MWD Run 7	MWD Run 8
Directional Sensor SN	20081-R	20081-R	20120-R	20125-R	20120-R	20224-R	20120	20120
Directional Offset	68	65	63	63	48	58	58	58
Gamma Sensor SN	N/A	N/A	352-R	907-R	352-R	809-R	352	352
Gamma Offset			53	53	36	47	47	47
Gamma Corr. Factor	1.0	1.0	3.661	3.682	3.72	3.76	3.72	3.72

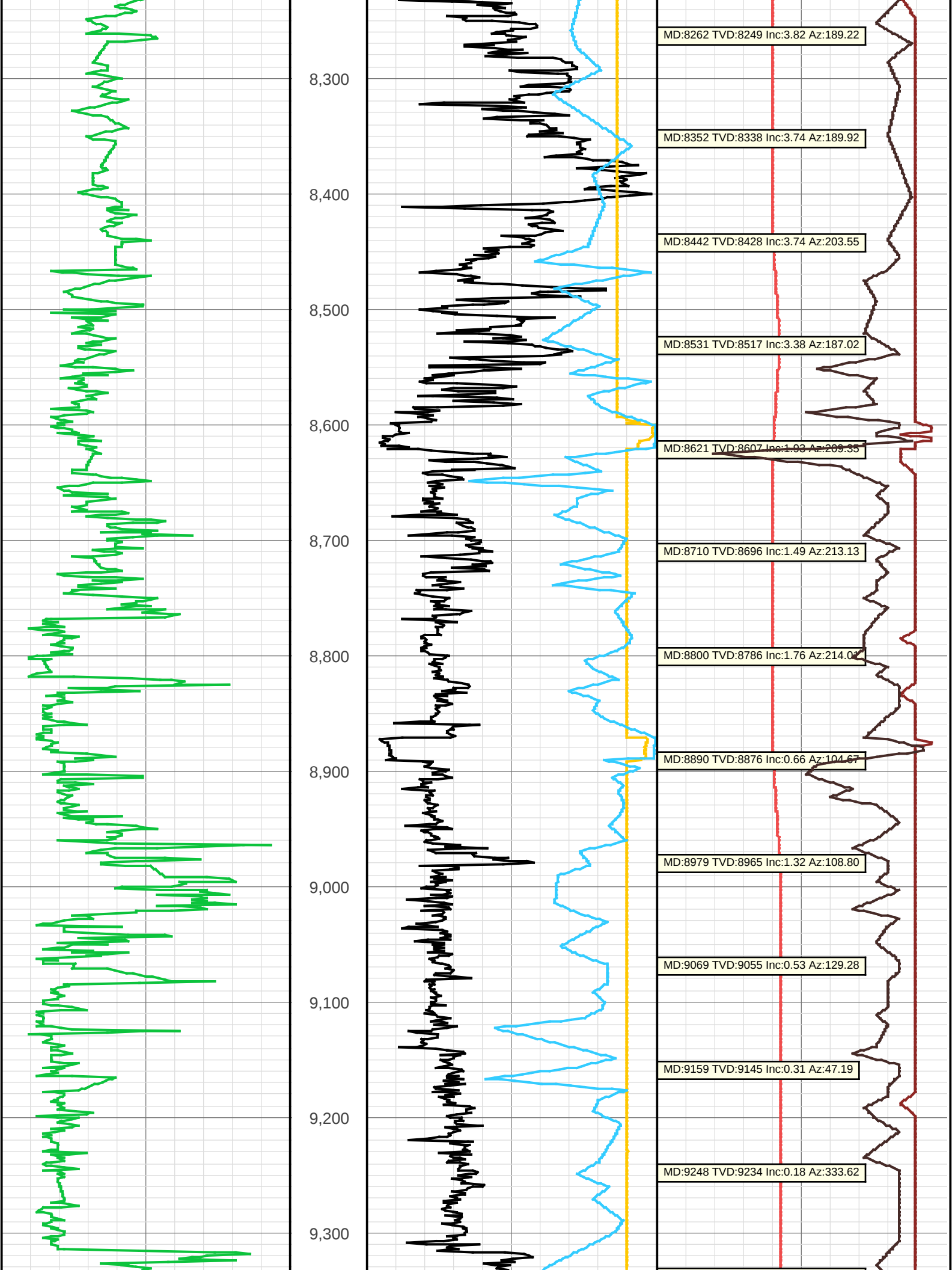
Mud Data								
Run Name	MWD Run 1	MWD Run 2	MWD Run 3	MWD Run 4	MWD Run 5	MWD Run 6	MWD Run 7	MWD Run 8
Mud Type	Water Based	Water Based	Water Based	Water Based	Oil Based	Oil Based	Oil Based	Oil Based
Mud Density (lb/gal)	9.7	10.4	10.6	10.6	9.5	9.6	9.6	9.6
Funnel Visc. (s/qt)	N/A	28	28	1	68	69	68	57
Plastic Visc. (cP)	N/A	2	2	1	19	16	16	13
pH	N/A	10.0	10.0	10.1	N/A	N/A	N/A	N/A
Chlor. Whole Mud (mg/L)	N/A	187,000	178,000	75,000	73,000	45000	46000	44000
API Filtrate (cm3/30)	N/A	99/2	2	99/2	N/A	8.2	7.2	7.2
Max MWD Temp (F)	113.4	127.7	113.4	134.9	139.6	169.6	162.6	182.0

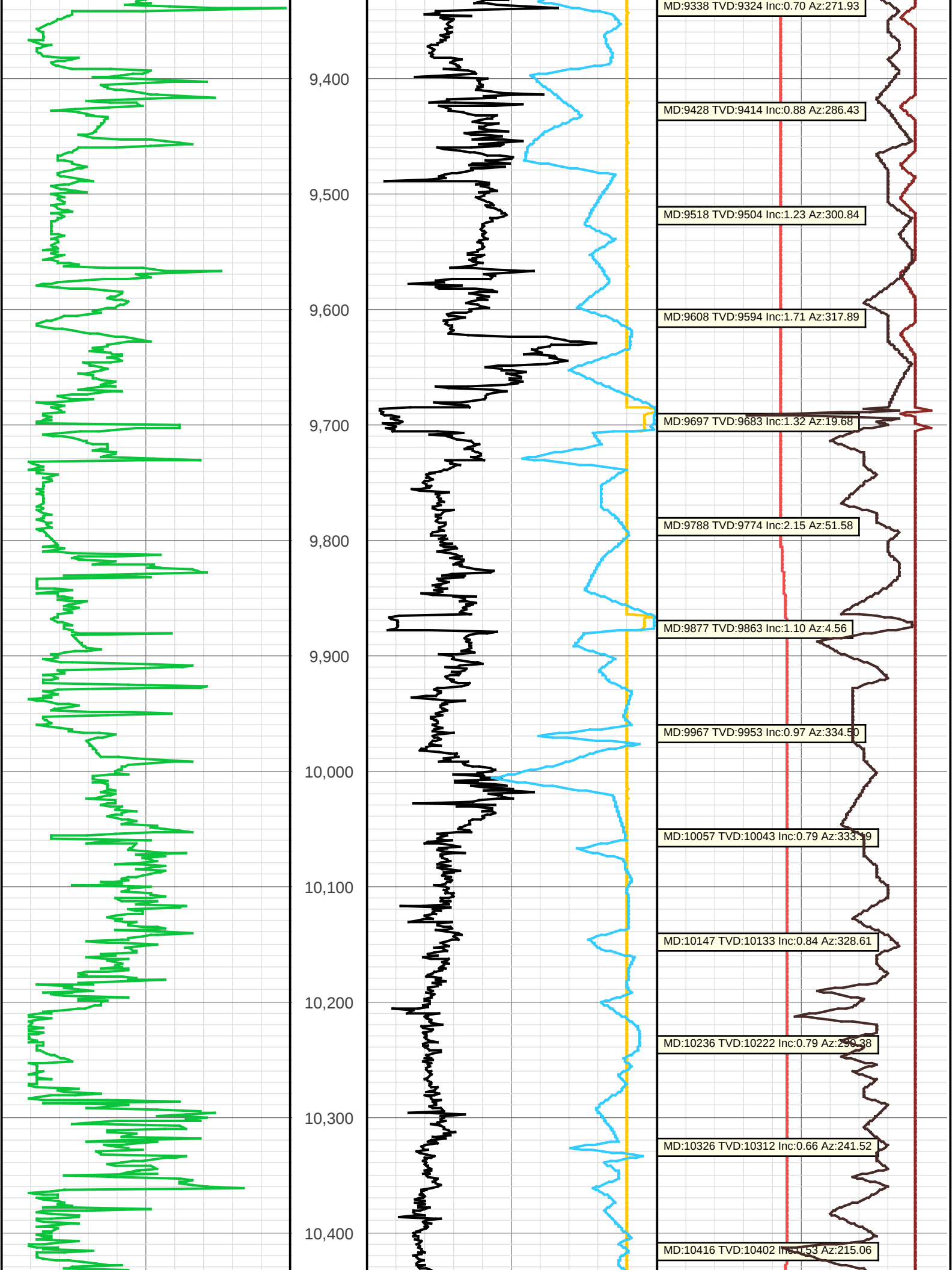
Personnel								
Run Name	MWD Run 1	MWD Run 2	MWD Run 3	MWD Run 4	MWD Run 5	MWD Run 6	MWD Run 7	MWD Run 8
MWD Operator 1	Ben Wallace	Ben Wallace	Michael Walton	Michael Walton	Ben Wallace	Ben Wallace	Ben Wallace	Ben Wallace
MWD Operator 2	Michael Walton	Michael Walton	Josphe Hatley	Josphe Hatley	Michael Walton	Michael Walton	Mike Walton	Mike Walton
MWD Operator 3								

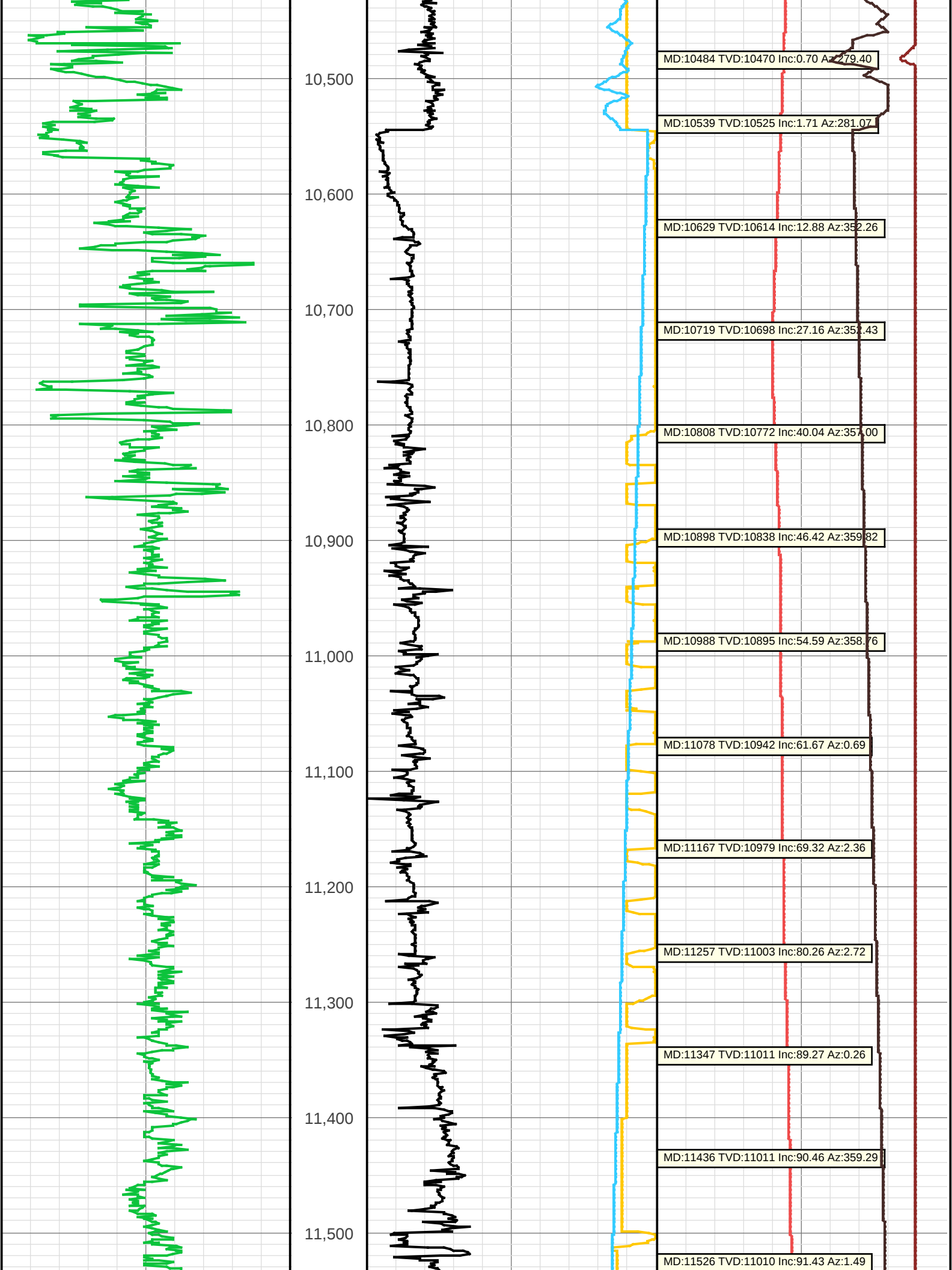


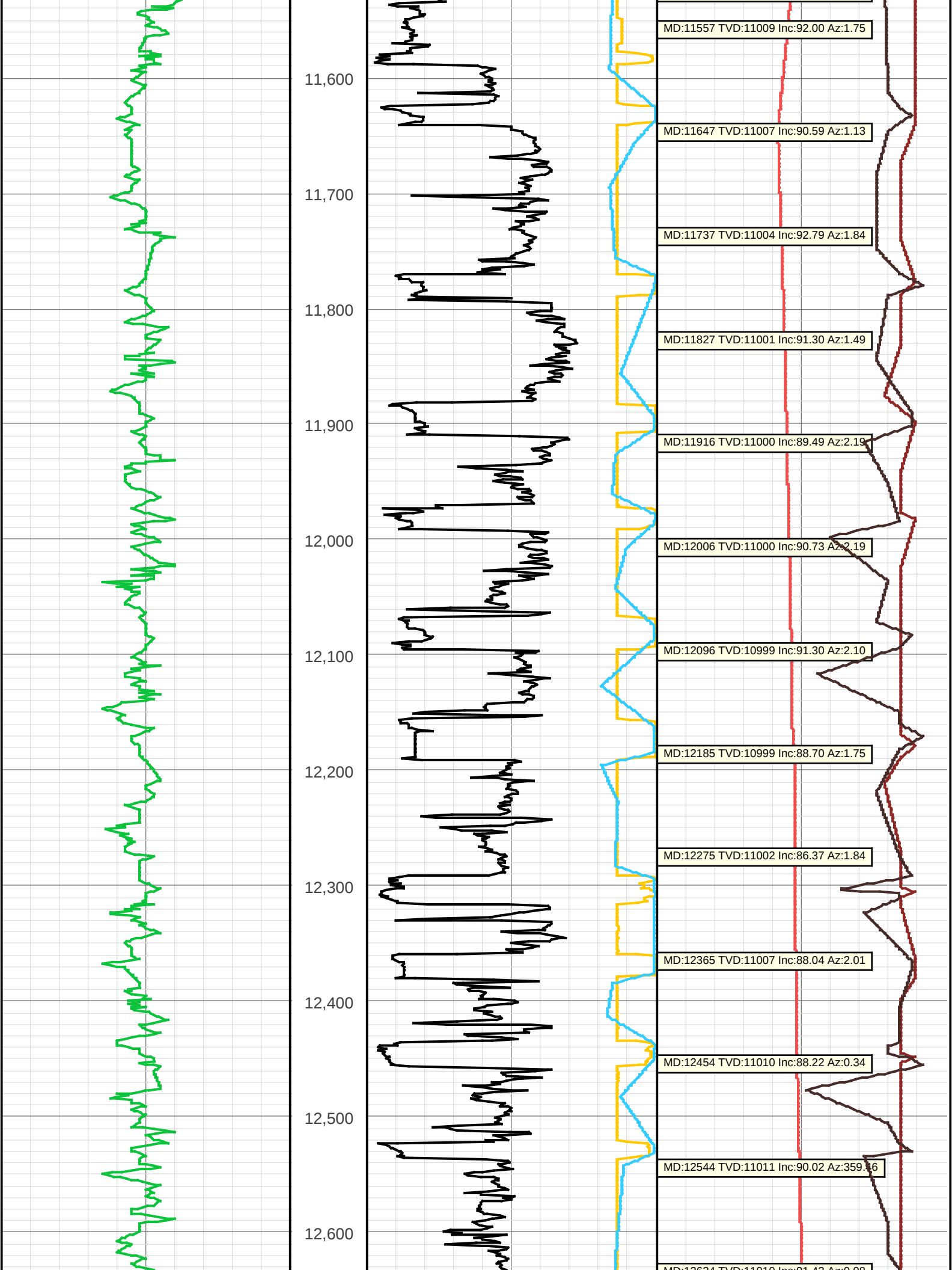


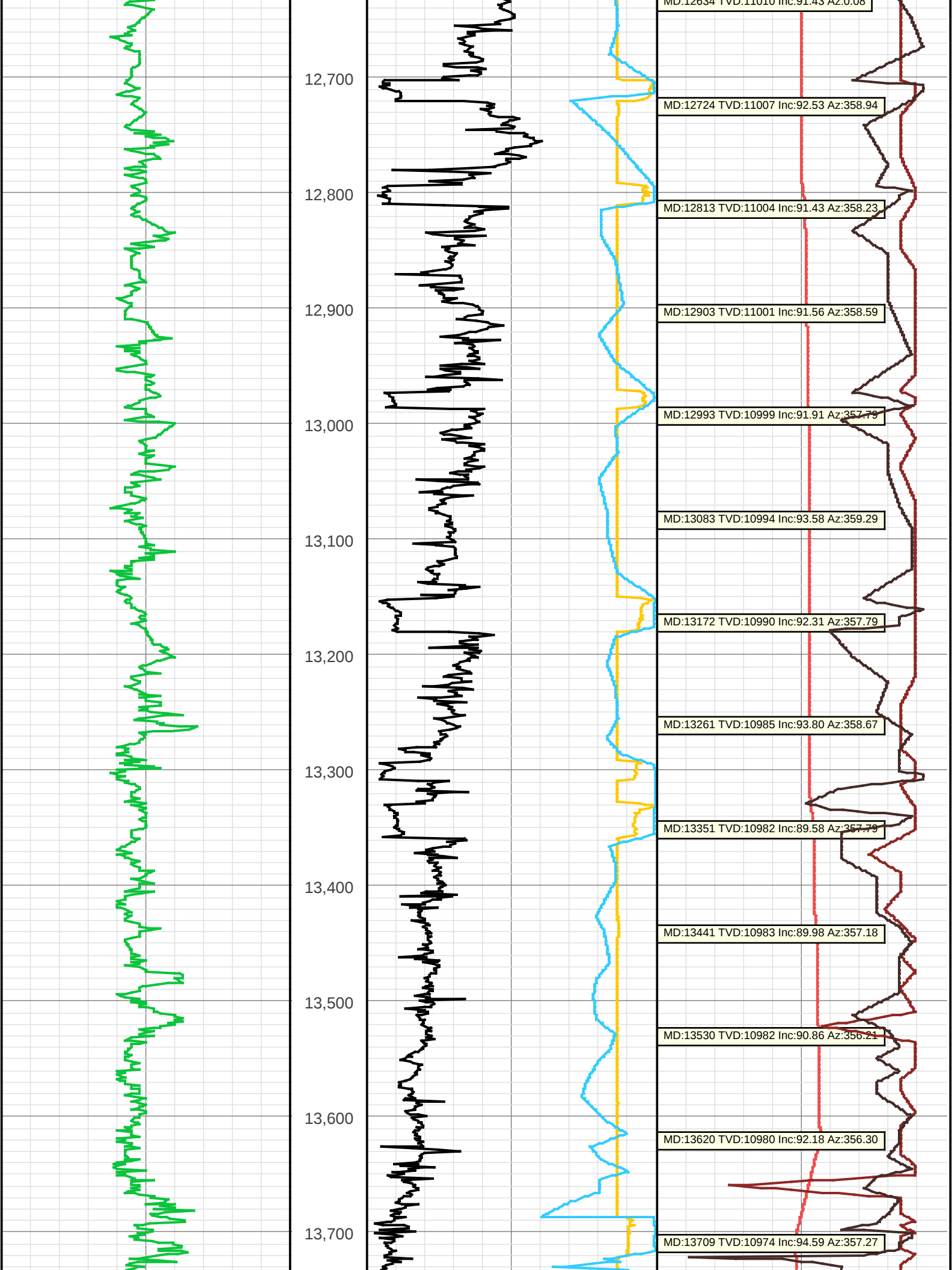


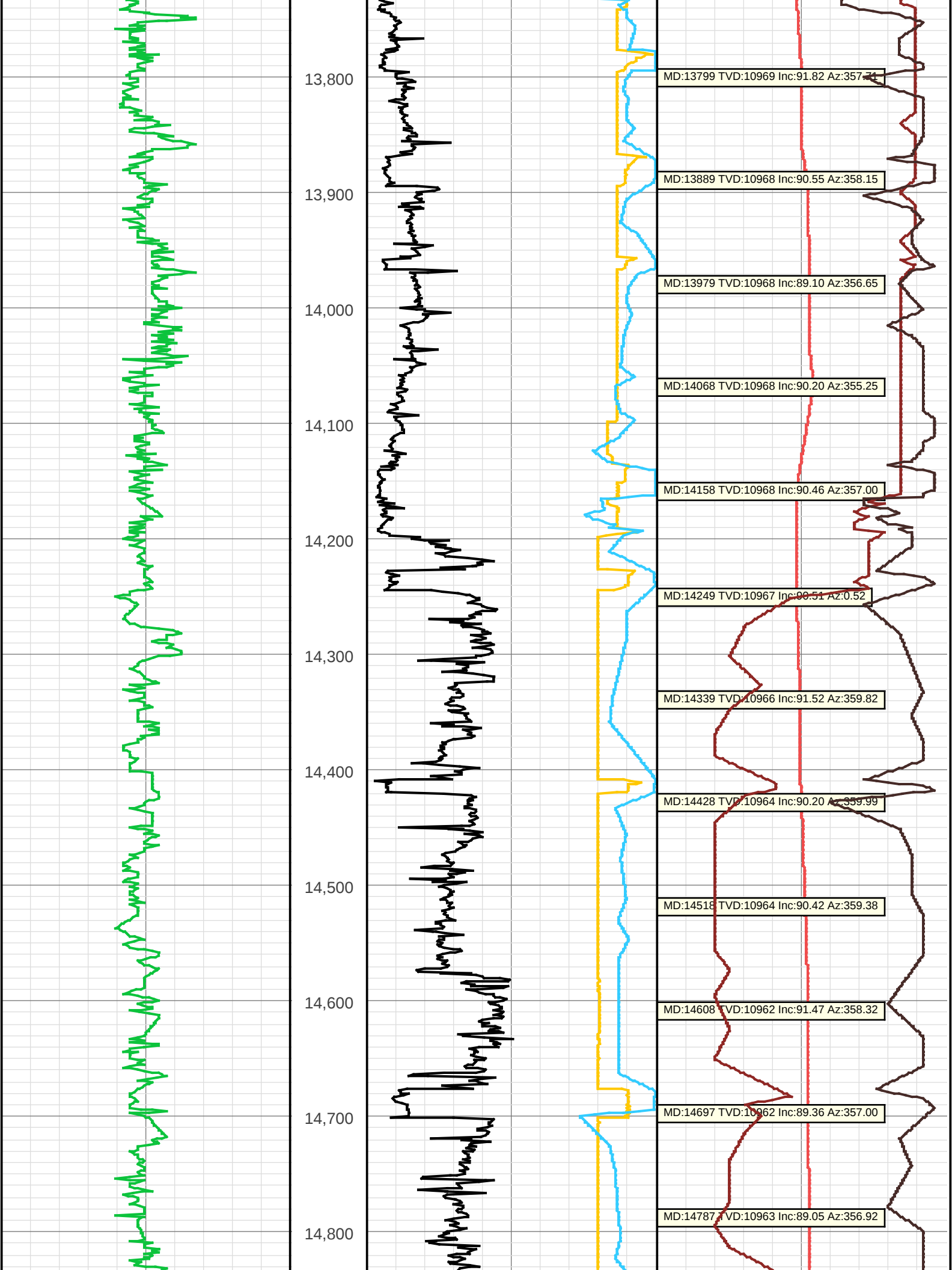


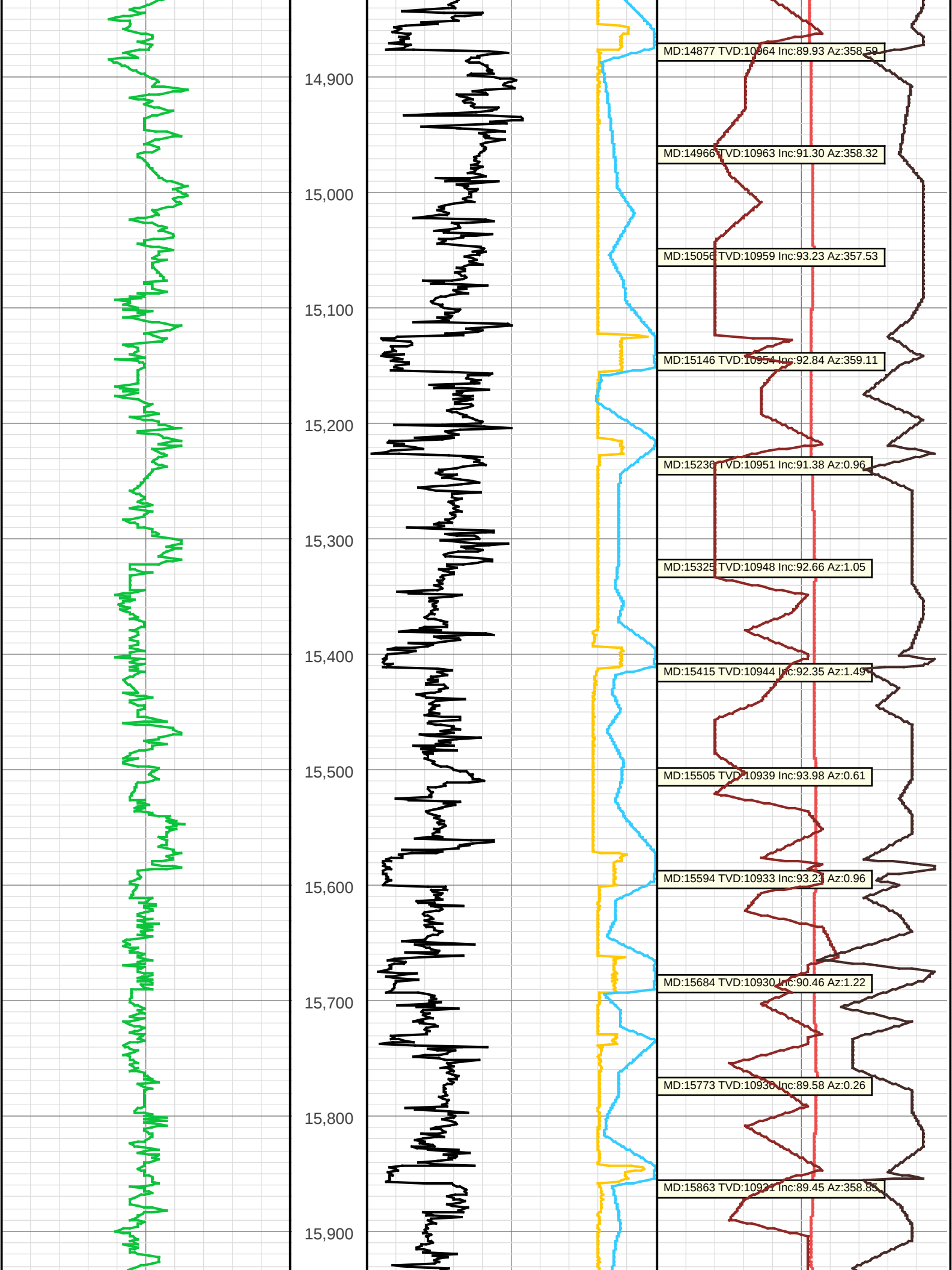


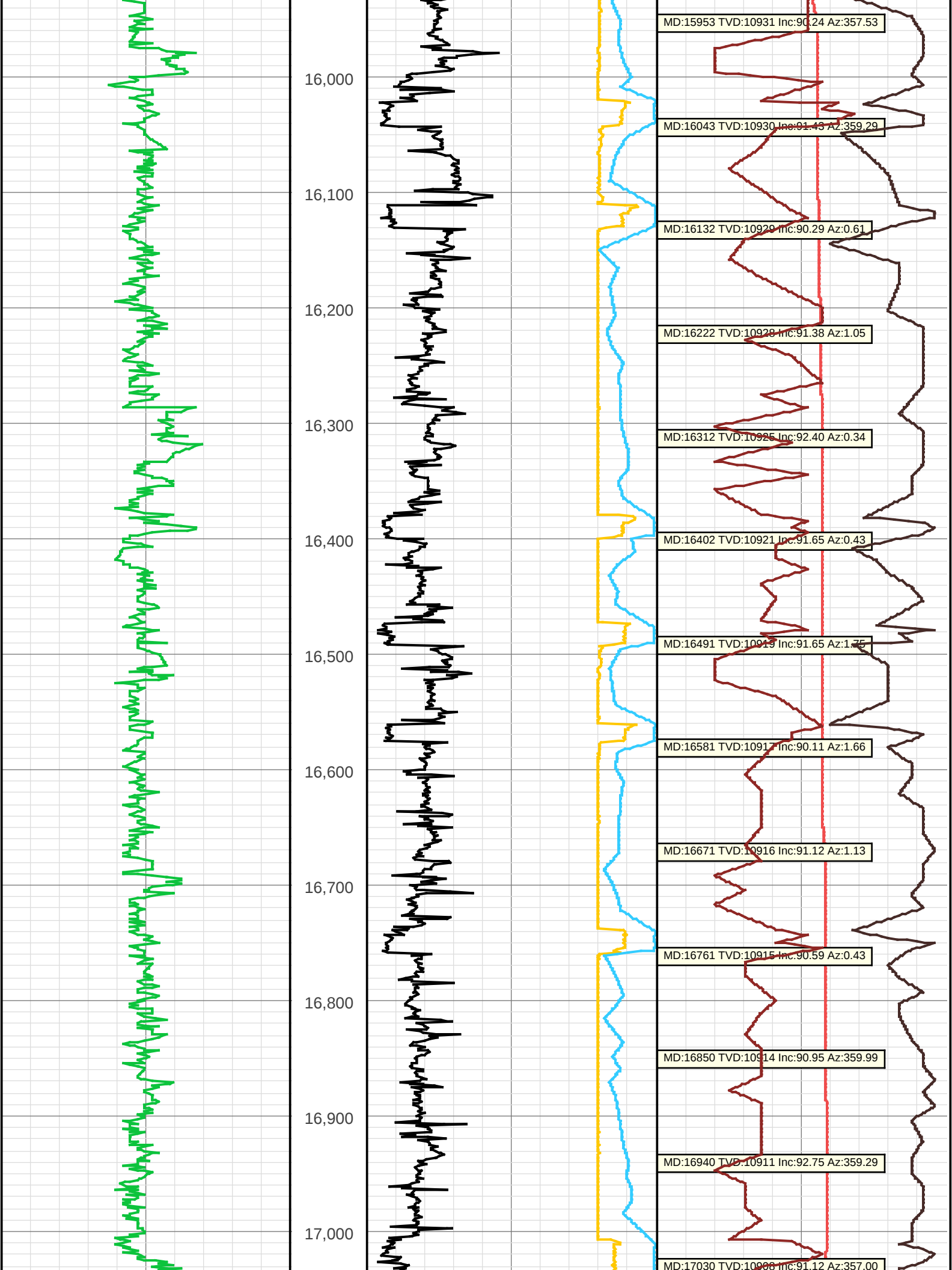


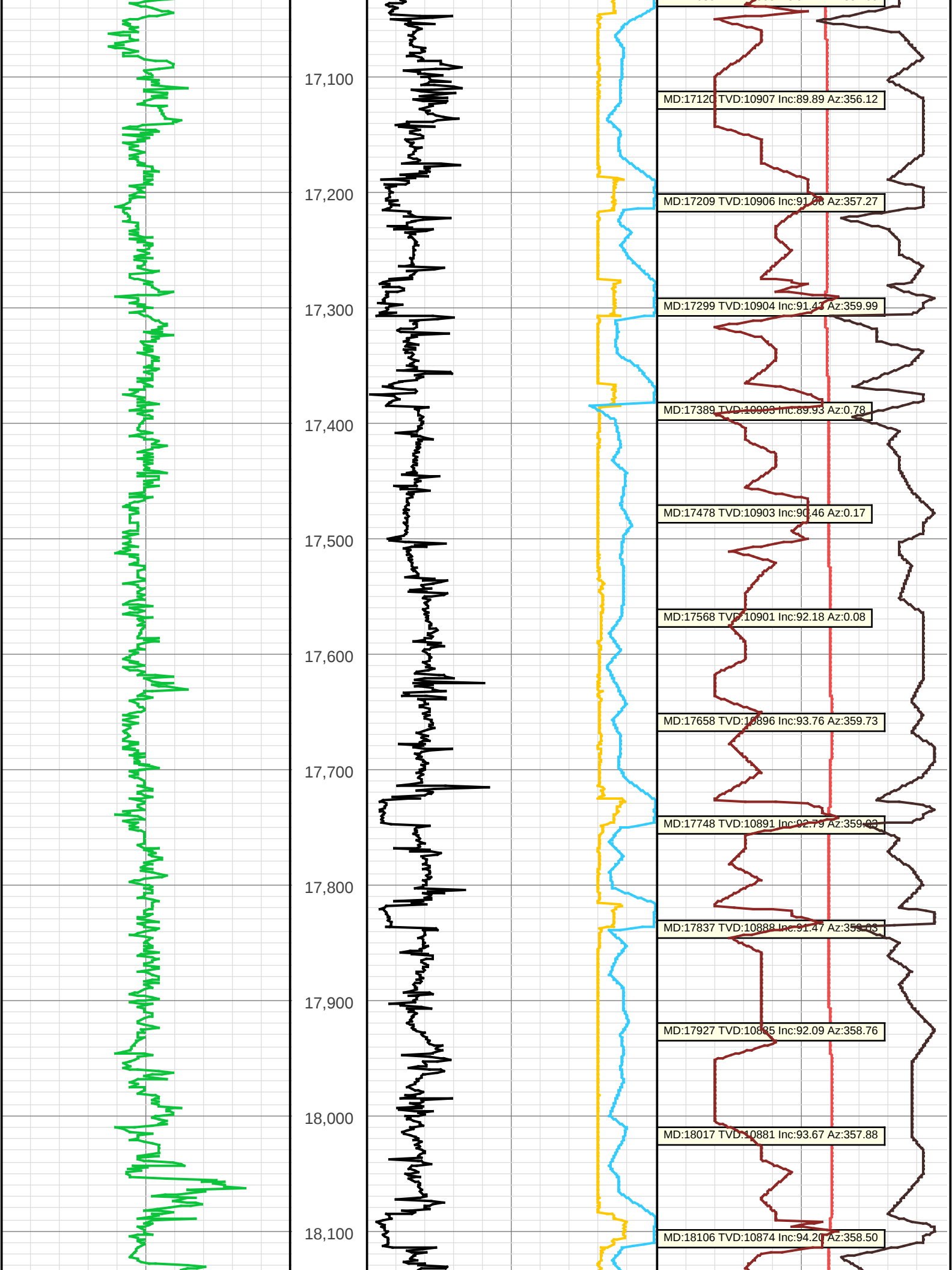


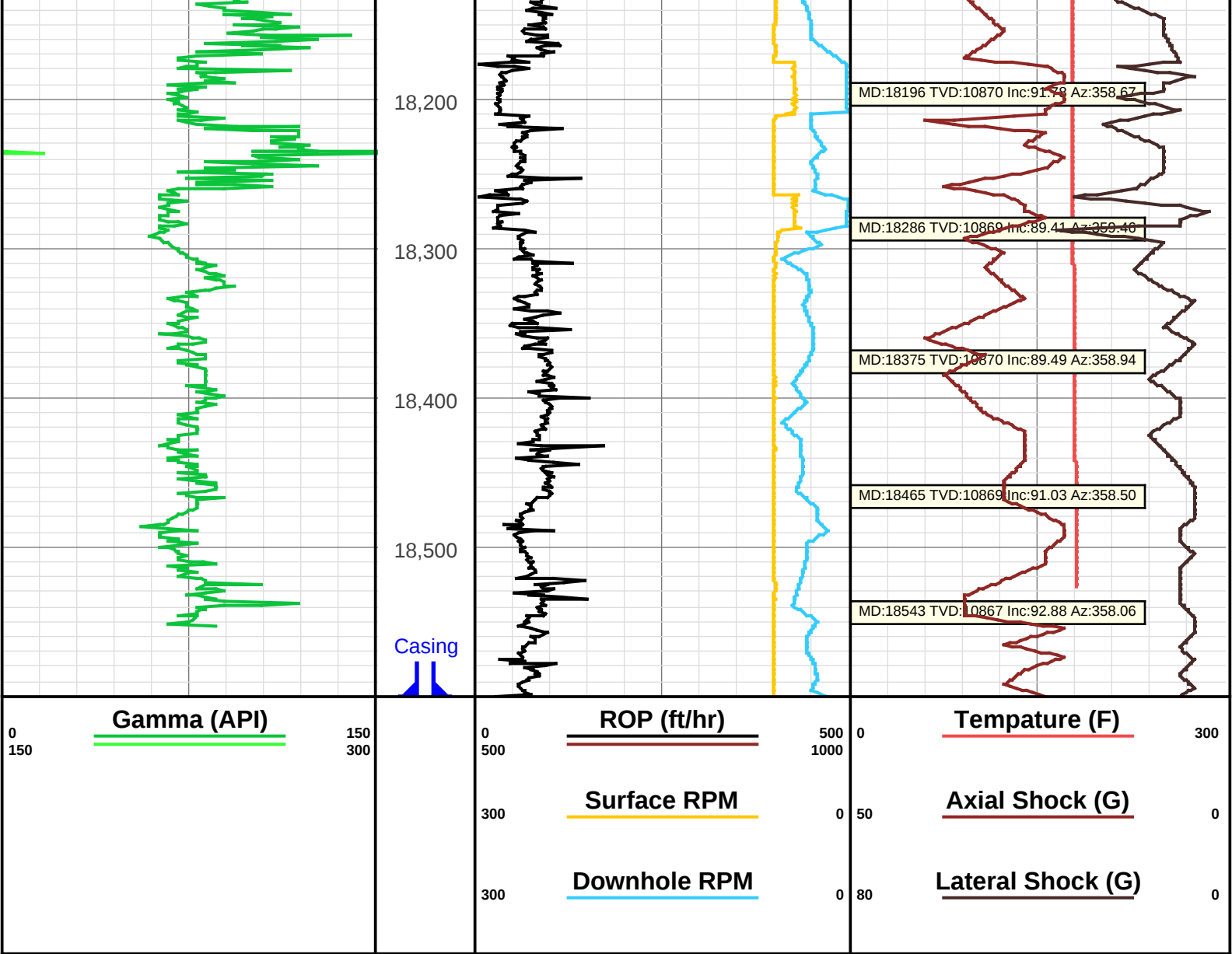












MD:18196 TVD:10870 Inc:91.78 Az:358.67

MD:18286 TVD:10869 Inc:89.41 Az:359.46

MD:18375 TVD:10870 Inc:89.49 Az:358.94

MD:18465 TVD:10869 Inc:91.03 Az:358.50

MD:18543 TVD:10867 Inc:92.88 Az:358.06



Gamma Ray

Intrepid-DDS
10314 TX-191
Midland, TX 79707

1" = 100'
TVD FT

Company: Advanced Energy Partners
Well: Wool Head State Com #511H
Field: Delaware Basin
API: 30-025-46491
County: Lea County
State New Mexico
Country USA
Rig: H&P #466

Well Location NAD 1927
Latitude: 32° 27' 29.102 N Longitude: 103° 35' 20.448 W
Y: 531182.20 X: 770916.10

Section: 20 Township: 21-S Range: 33-E Intrepid-DDS

Company: Advanced Energy Partners
Well: Wool Head State Com #511H
Field: Delaware Basin
API: 30-025-46491
County: Lea County
State: New Mexico
Country: USA
Rig: H&P #466
AFE: NM0091
Job: ID2386

Permanent Datum: Mean Sea Level
Log Measured From: Rotary Table
Height of Reference: 26
Kelly Bushing Elev: N/A
Drill Floor Elev: 3754.0
Ground Level Elev: 3728

Depth Drilled: 1.0 to: 18601.0
Depth Logged: 5100.0 to: 18601.01
Date Logged: 09 Nov 2019 20:44 to: 22 Dec 2019 13:57

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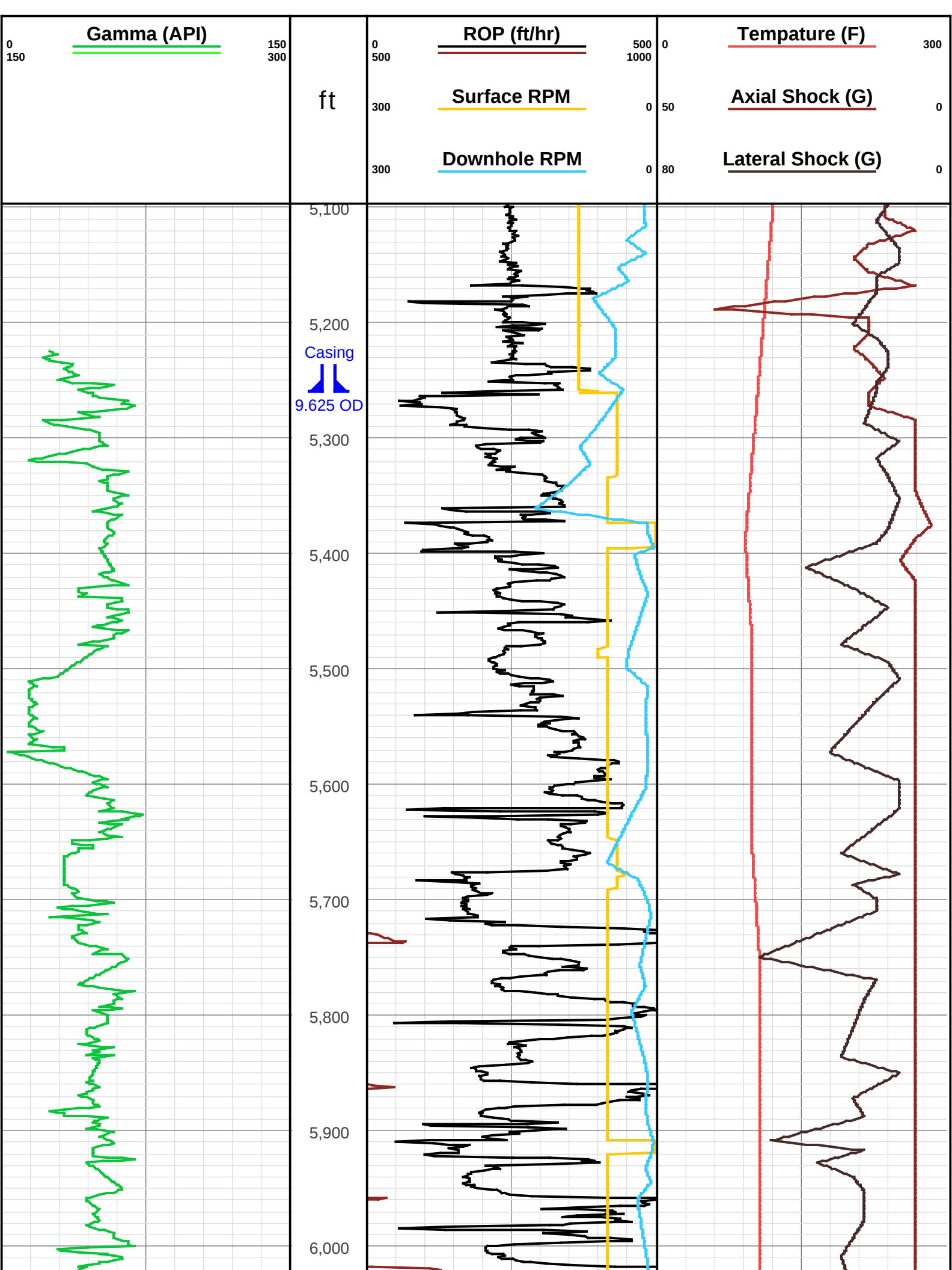
Hole Data			Casing Data		
Size	From (MD)	To (MD)	Size	From (MD)	To (MD)
17.5	100	1838	13.375	100	1838
12.5	1838	5263	9.625	1838	5263
8.5	5263	18601	5.5	5263	18601

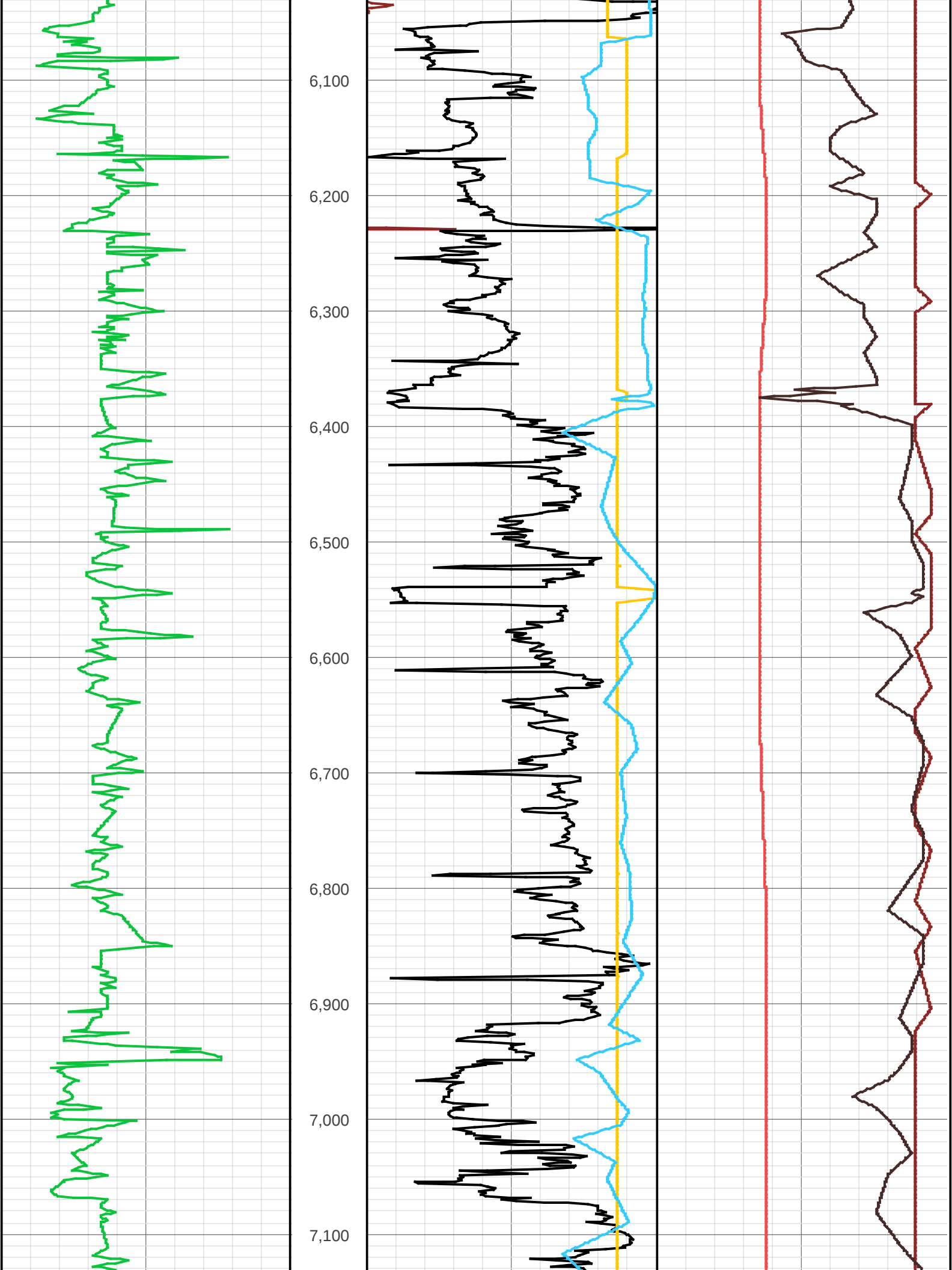
Run Data								
Run Name	MWD Run 1	MWD Run 2	MWD Run 3	MWD Run 4	MWD Run 5	MWD Run 6	MWD Run 7	MWD Run 8
Start Date	10 Nov 2019	15 Nov 2019	23 Nov 2019	24 Nov 2019	15 Dec 2019	17 Dec 2019	18 Dec 2019	19 Dec 2019
Start Time	7:00	1:30	21:00	11:30	21:00	2:50	15:00	18:00
End Date	11 Nov 2019	16 Nov 2019	24 Nov 2019	25 Nov 2019	17 Dec 2019	18 Dec 2019	19 Dec 2019	22 Dec 2019
End Time	04:00	17:15	10:30	23:30	1:00	14:00	17:00	13:30
Depth In	1.0	1838	5182	6389	10547	11589	13734	14193
Depth Out	1838	5263	6389	10547	11589	13734	14193	18601
Log Top			5182	6336	10538	11553	13687	14146
Log Bottom			6336	10538	11553	13687	14146	18554
Hole Size	17.5	12.75	8.5	8.5	8.5	8.5	8.5	8.5

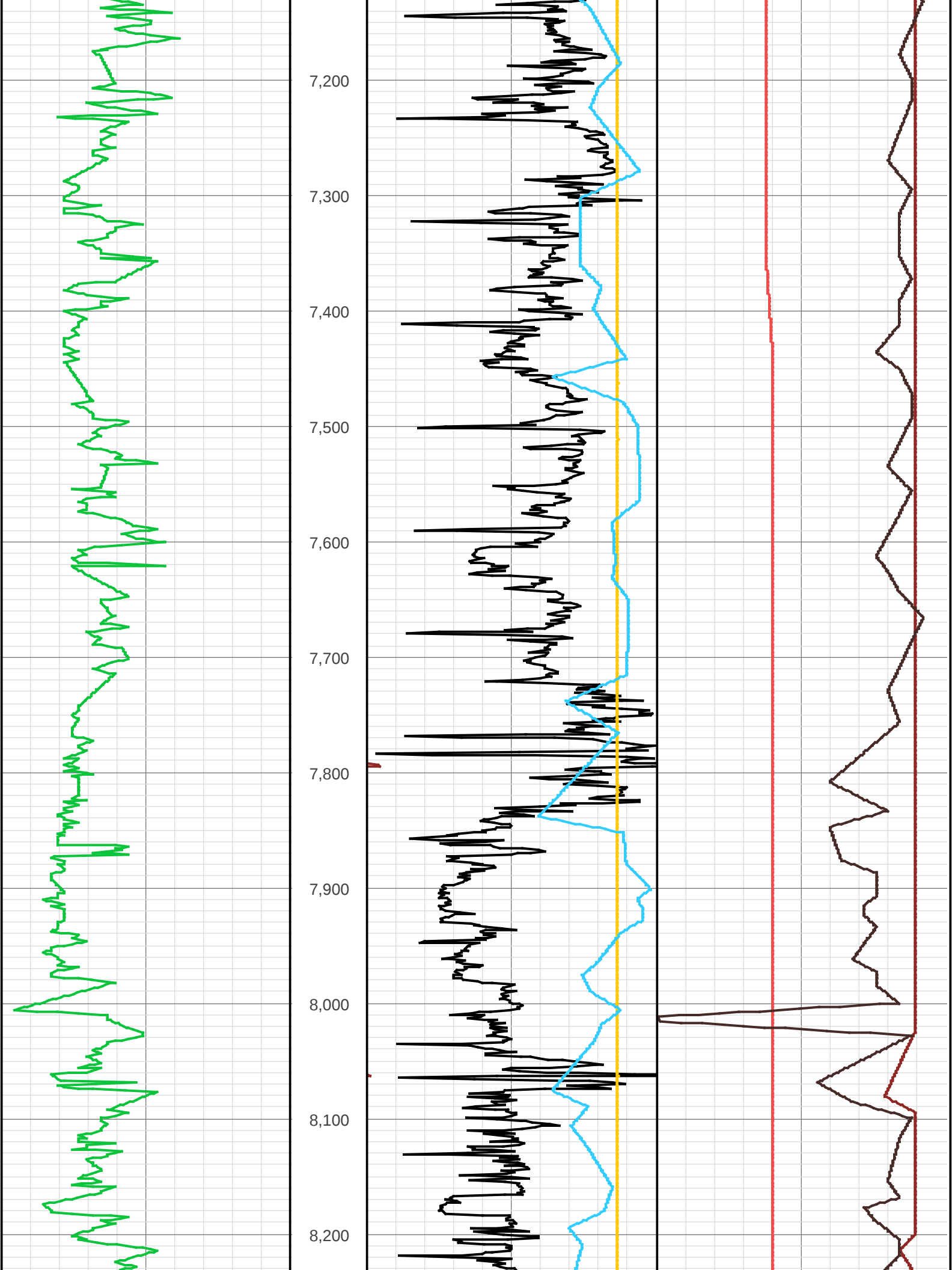
Tool Data								
Run Name	MWD Run 1	MWD Run 2	MWD Run 3	MWD Run 4	MWD Run 5	MWD Run 6	MWD Run 7	MWD Run 8
Directional Sensor SN	20081-R	20081-R	20120-R	20125-R	20120-R	20224-R	20120	20120
Directional Offset	68	65	63	63	48	58	58	58
Gamma Sensor SN	N/A	N/A	352-R	907-R	352-R	809-R	352	352
Gamma Offset			53	53	36	47	47	47
Gamma Corr. Factor	1.0	1.0	3.661	3.682	3.72	3.76	3.72	3.72

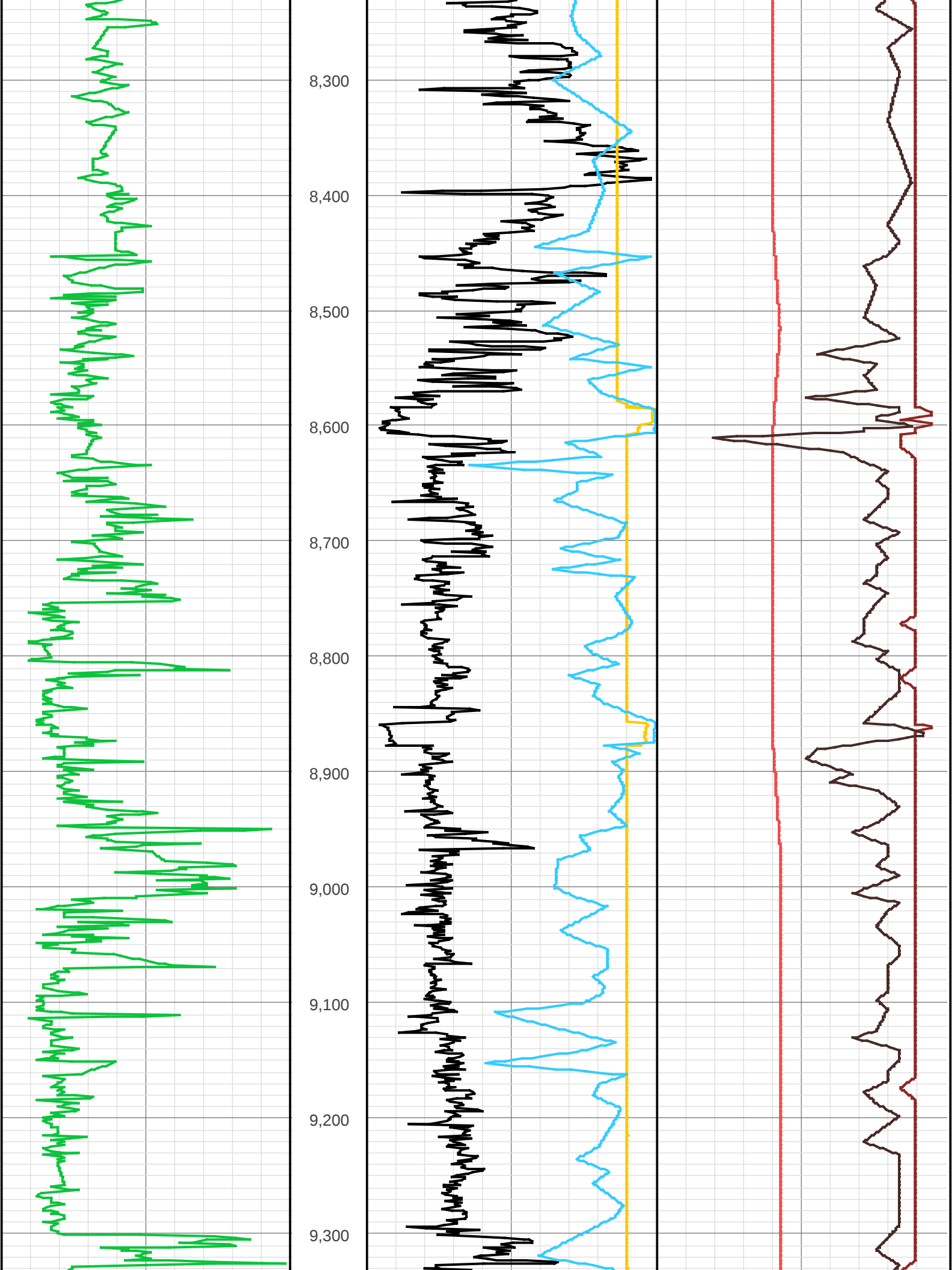
Mud Data								
Run Name	MWD Run 1	MWD Run 2	MWD Run 3	MWD Run 4	MWD Run 5	MWD Run 6	MWD Run 7	MWD Run 8
Mud Type	Water Based	Water Based	Water Based	Water Based	Oil Based	Oil Based	Oil Based	Oil Based
Mud Density (lb/gal)	9.7	10.4	10.6	10.6	9.5	9.6	9.6	9.6
Funnel Visc. (s/qt)	N/A	28	28	1	68	69	68	57
Plastic Visc. (cP)	N/A	2	2	1	19	16	16	13
pH	N/A	10.0	10.0	10.1	N/A	N/A	N/A	N/A
Chlor. Whole Mud (mg/L)	N/A	187,000	178,000	75,000	73,000	45000	46000	44000
API Filtrate (cm3/30)	N/A	99/2	2	99/2	N/A	8.2	7.2	7.2
Max MWD Temp (F)	113.4	127.7	113.4	134.9	139.6	169.6	162.6	182.0

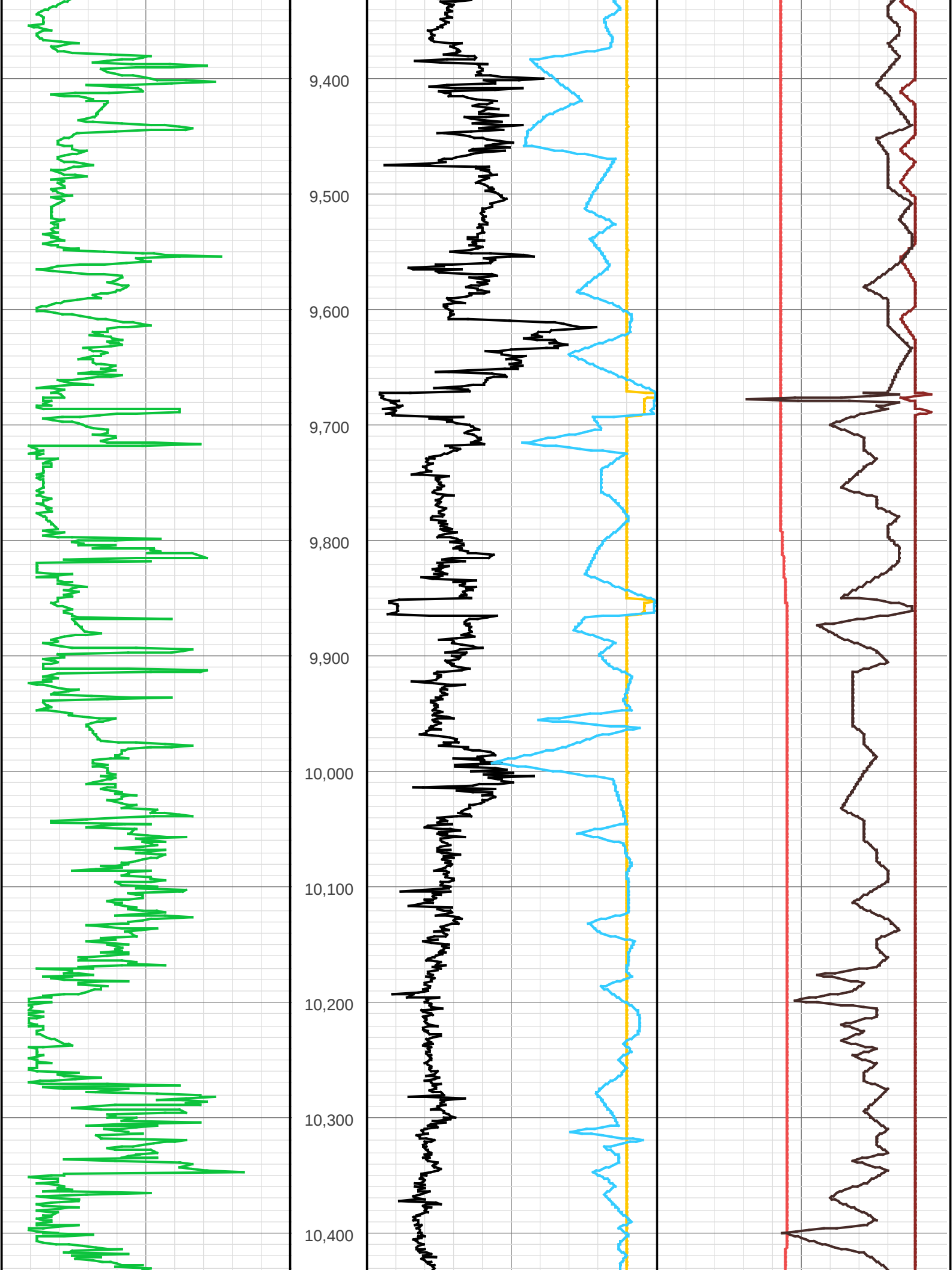
Personnel								
Run Name	MWD Run 1	MWD Run 2	MWD Run 3	MWD Run 4	MWD Run 5	MWD Run 6	MWD Run 7	MWD Run 8
MWD Operator 1	Ben Wallace	Ben Wallace	Michael Walton	Michael Walton	Ben Wallace	Ben Wallace	Ben Wallace	Ben Wallace
MWD Operator 2	Michael Walton	Michael Walton	Josphe Hatley	Josphe Hatley	Michael Walton	Michael Walton	Mike Walton	Mike Walton
MWD Operator 3								

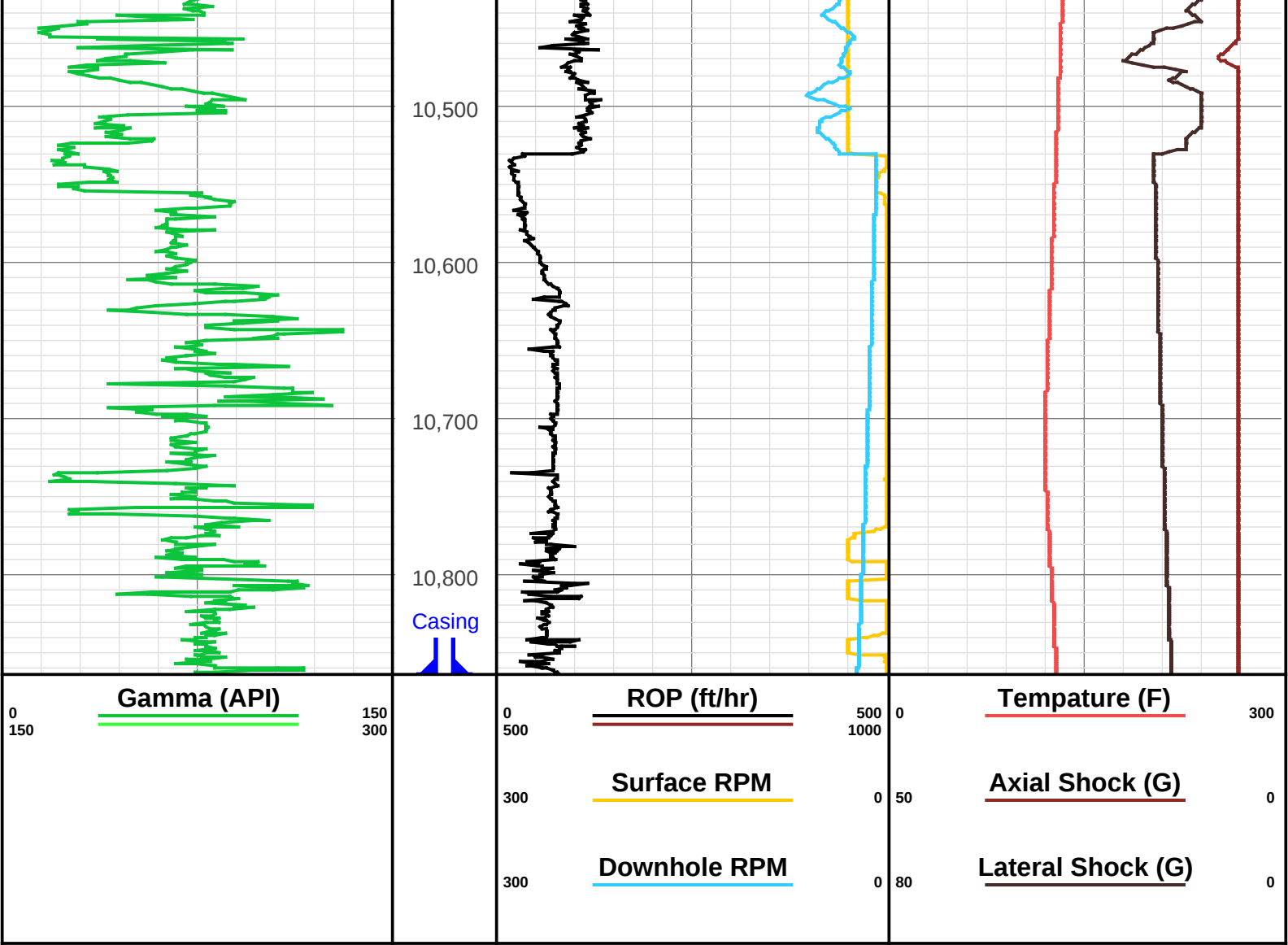














Gamma Ray

Intrepid-DDS
10314 TX-191
Midland, TX 79707

2" = 100'
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Permanent Datum: Mean Sea Level
Log Measured From: Rotary Table
Height of Reference: 26
Kelly Bushing Elev: N/A
Drill Floor Elev: 3754.0
Ground Level Elev: 3728

Depth Drilled: 1.0 to: 18601.0
Depth Logged: 5100.0 to: 18601.01
Date Logged: 09 Nov 2019 20:44 to: 22 Dec 2019 13:56

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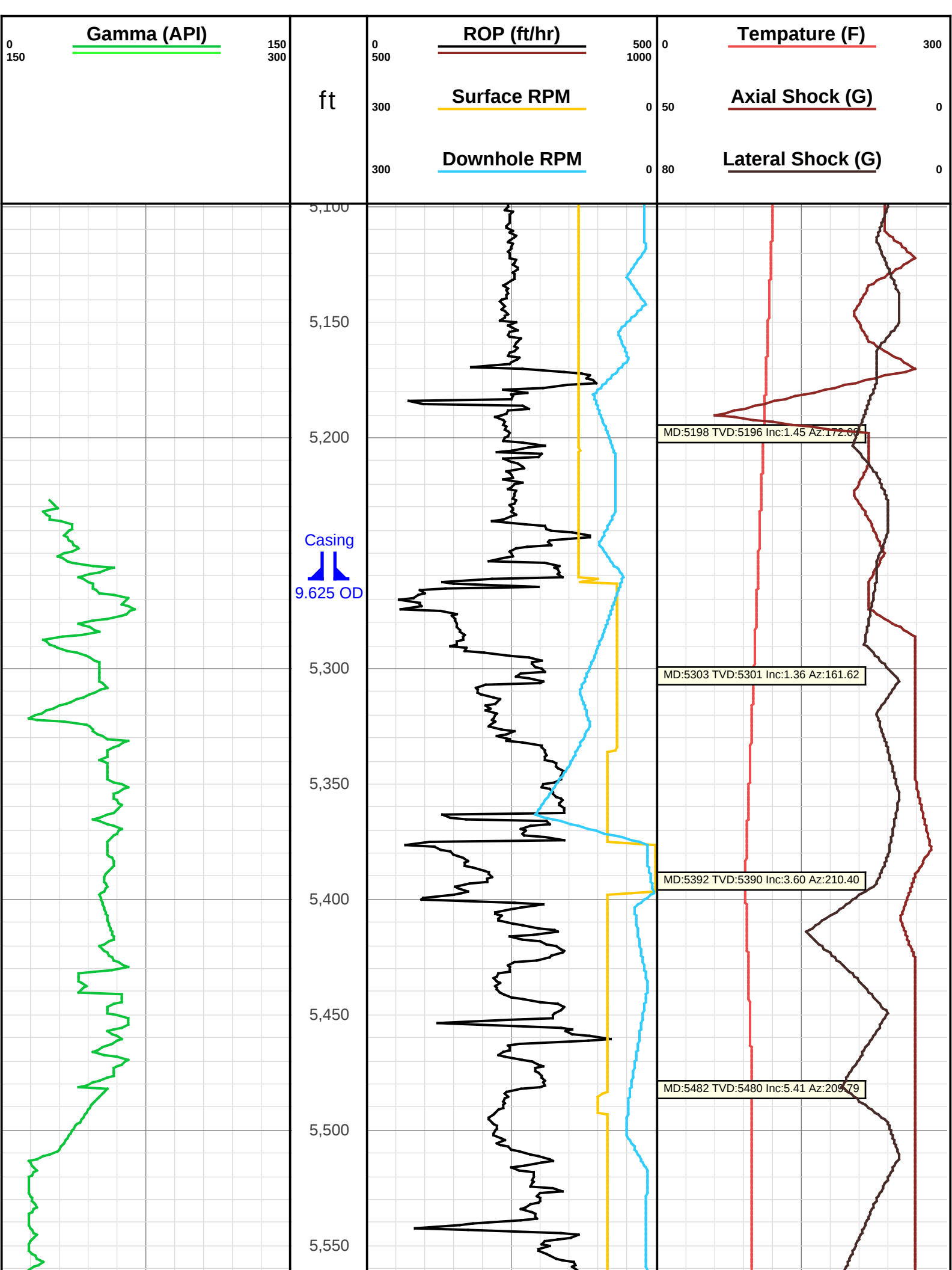
Hole Data			Casing Data		
Size	From (MD)	To (MD)	Size	From (MD)	To (MD)
17.5	100	1838	13.375	100	1838
12.5	1838	5263	9.625	1838	5263
8.5	5263	18601	5.5	5263	18601

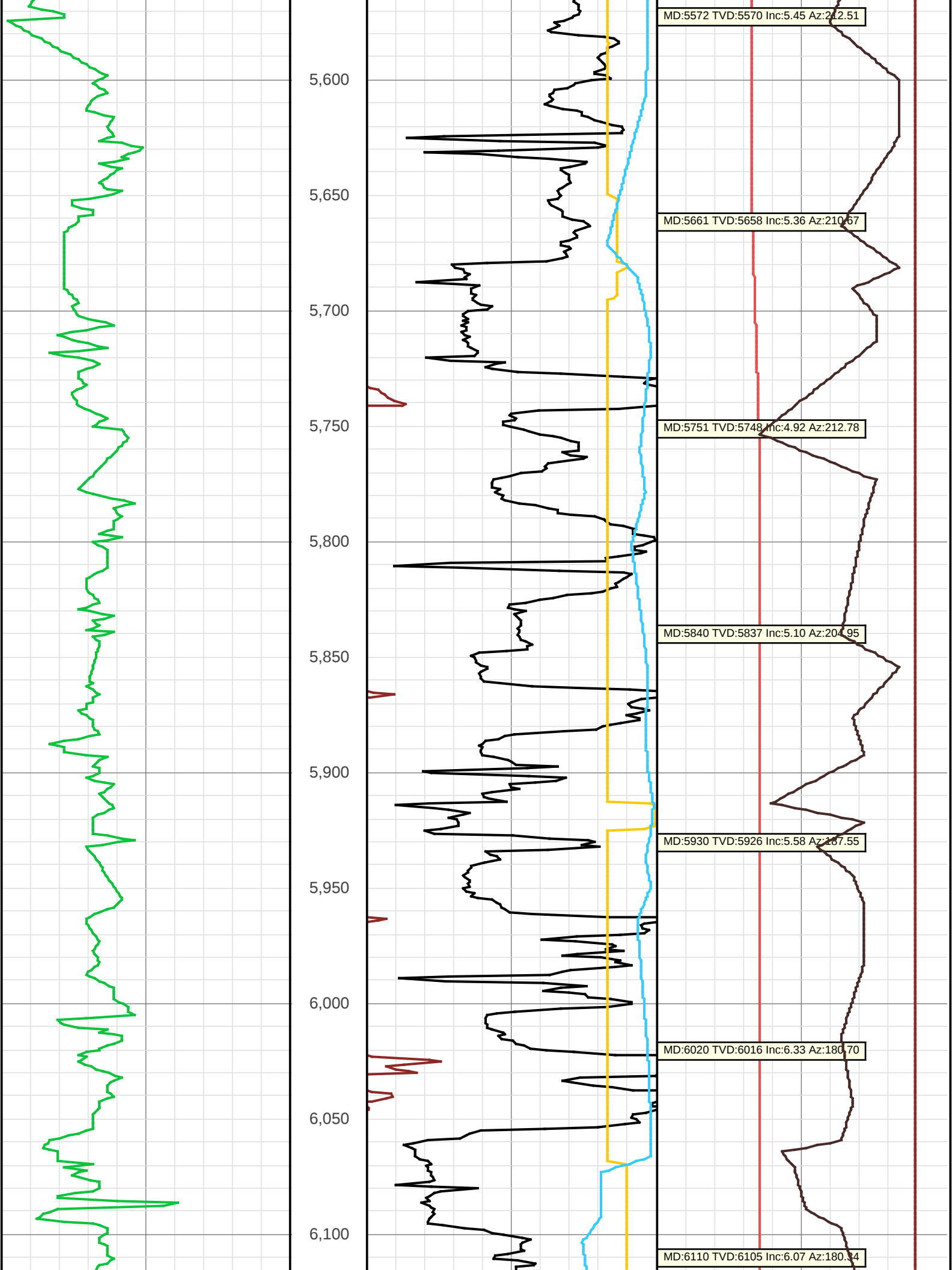
Run Data								
Run Name	MWD Run 1	MWD Run 2	MWD Run 3	MWD Run 4	MWD Run 5	MWD Run 6	MWD Run 7	MWD Run 8
Start Date	10 Nov 2019	15 Nov 2019	23 Nov 2019	24 Nov 2019	15 Dec 2019	17 Dec 2019	18 Dec 2019	19 Dec 2019
Start Time	7:00	1:30	21:00	11:30	21:00	2:50	15:00	18:00
End Date	11 Nov 2019	16 Nov 2019	24 Nov 2019	25 Nov 2019	17 Dec 2019	18 Dec 2019	19 Dec 2019	22 Dec 2019
End Time	04:00	17:15	10:30	23:30	1:00	14:00	17:00	13:30
Depth In	1.0	1838	5182	6389	10547	11589	13734	14193
Depth Out	1838	5263	6389	10547	11589	13734	14193	18601
Log Top			5182	6336	10538	11553	13687	14146
Log Bottom			6336	10538	11553	13687	14146	18554
Hole Size	17.5	12.75	8.5	8.5	8.5	8.5	8.5	8.5

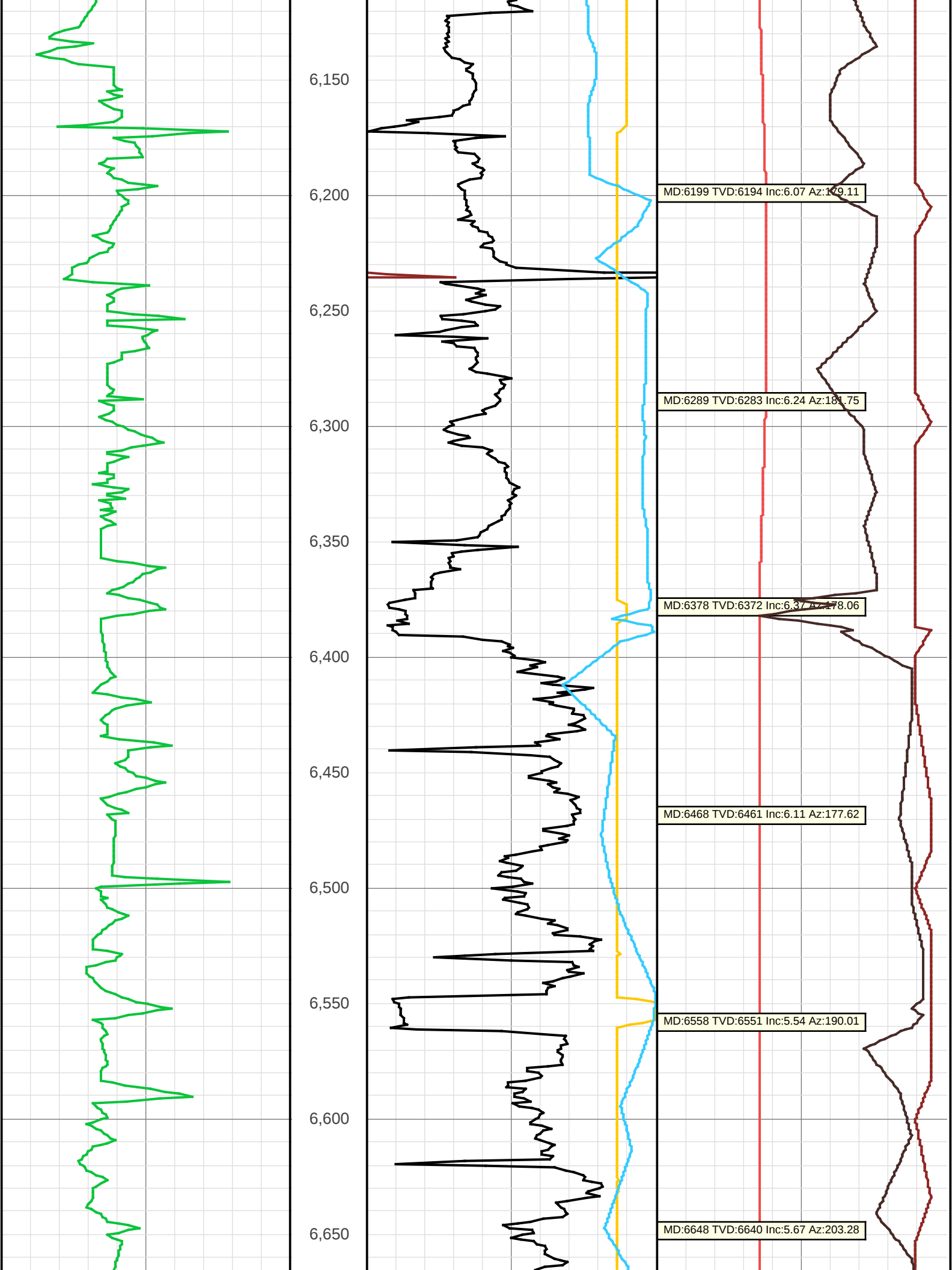
Tool Data								
Run Name	MWD Run 1	MWD Run 2	MWD Run 3	MWD Run 4	MWD Run 5	MWD Run 6	MWD Run 7	MWD Run 8
Directional Sensor SN	20081-R	20081-R	20120-R	20125-R	20120-R	20224-R	20120	20120
Directional Offset	68	65	63	63	48	58	58	58
Gamma Sensor SN	N/A	N/A	352-R	907-R	352-R	809-R	352	352
Gamma Offset			53	53	36	47	47	47
Gamma Corr. Factor	1.0	1.0	3.661	3.682	3.72	3.76	3.72	3.72

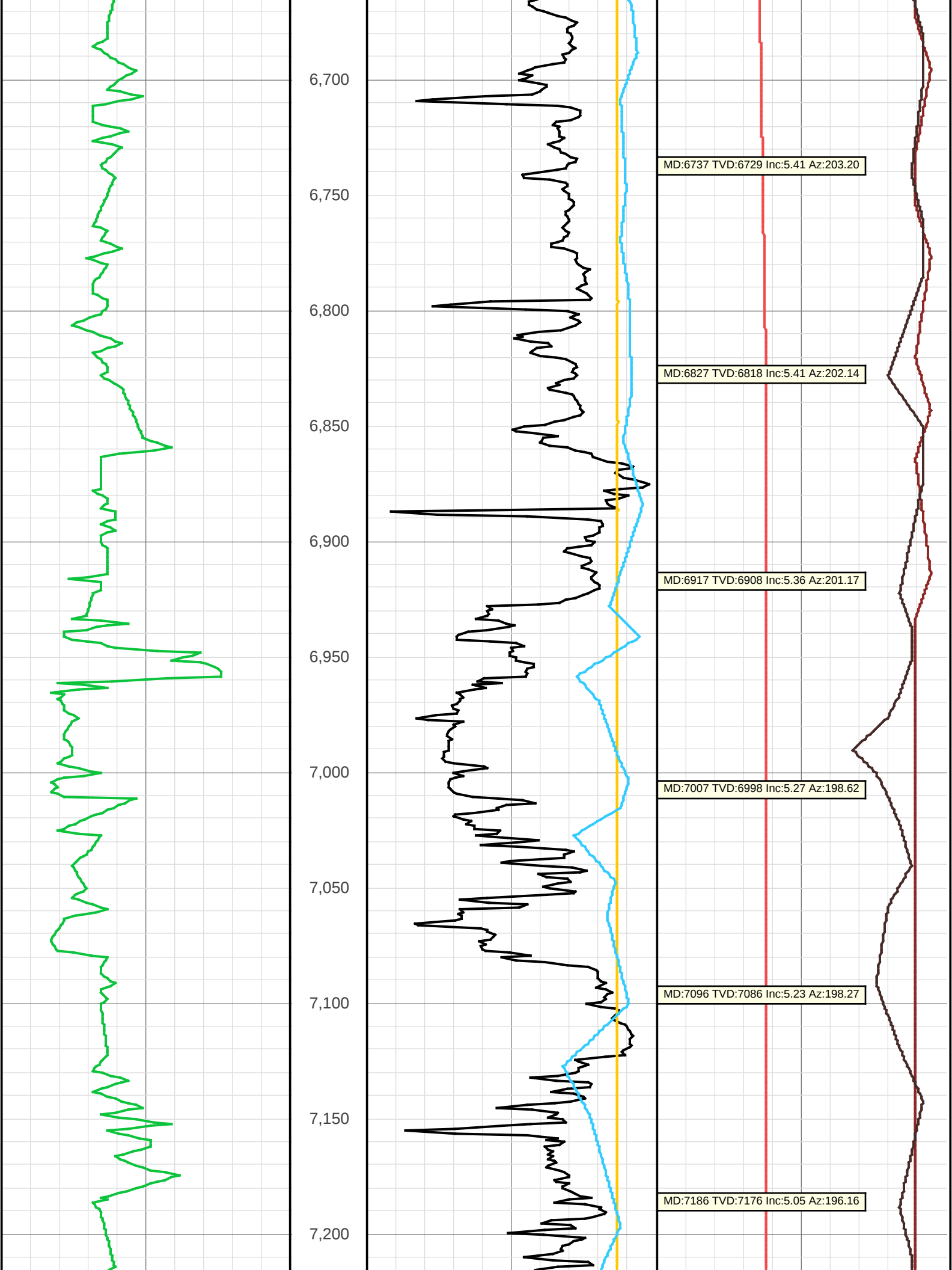
Mud Data								
Run Name	MWD Run 1	MWD Run 2	MWD Run 3	MWD Run 4	MWD Run 5	MWD Run 6	MWD Run 7	MWD Run 8
Mud Type	Water Based	Water Based	Water Based	Water Based	Oil Based	Oil Based	Oil Based	Oil Based
Mud Density (lb/gal)	9.7	10.4	10.6	10.6	9.5	9.6	9.6	9.6
Funnel Visc. (s/qt)	N/A	28	28	1	68	69	68	57
Plastic Visc. (cP)	N/A	2	2	1	19	16	16	13
pH	N/A	10.0	10.0	10.1	N/A	N/A	N/A	N/A
Chlor. Whole Mud (mg/L)	N/A	187,000	178,000	75,000	73,000	45000	46000	44000
API Filtrate (cm3/30)	N/A	99/2	2	99/2	N/A	8.2	7.2	7.2
Max MWD Temp (F)	113.4	127.7	113.4	134.9	139.6	169.6	162.6	182.0

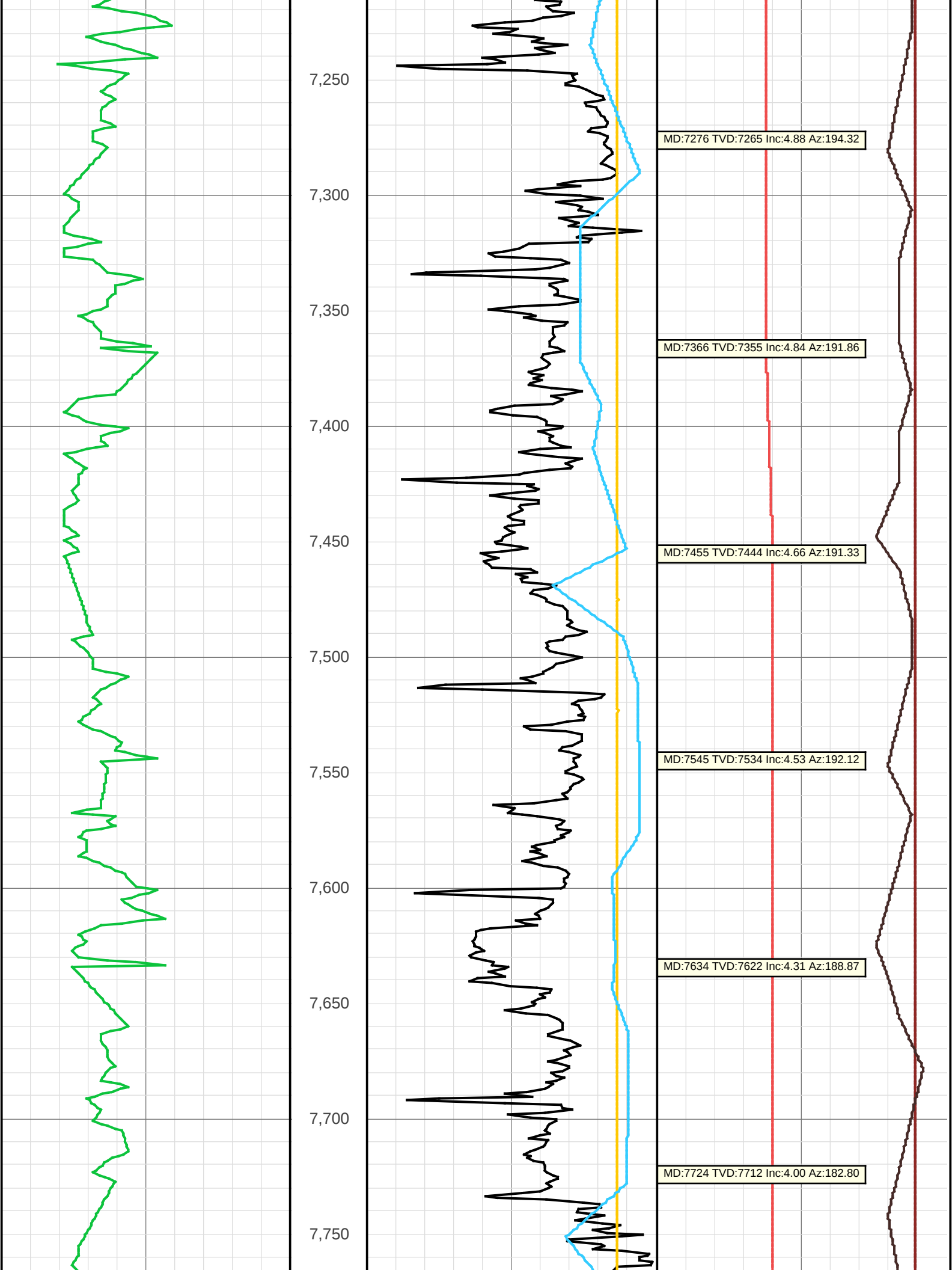
Personnel								
Run Name	MWD Run 1	MWD Run 2	MWD Run 3	MWD Run 4	MWD Run 5	MWD Run 6	MWD Run 7	MWD Run 8
MWD Operator 1	Ben Wallace	Ben Wallace	Michael Walton	Michael Walton	Ben Wallace	Ben Wallace	Ben Wallace	Ben Wallace
MWD Operator 2	Michael Walton	Michael Walton	Josphe Hatley	Josphe Hatley	Michael Walton	Michael Walton	Mike Walton	Mike Walton
MWD Operator 3								

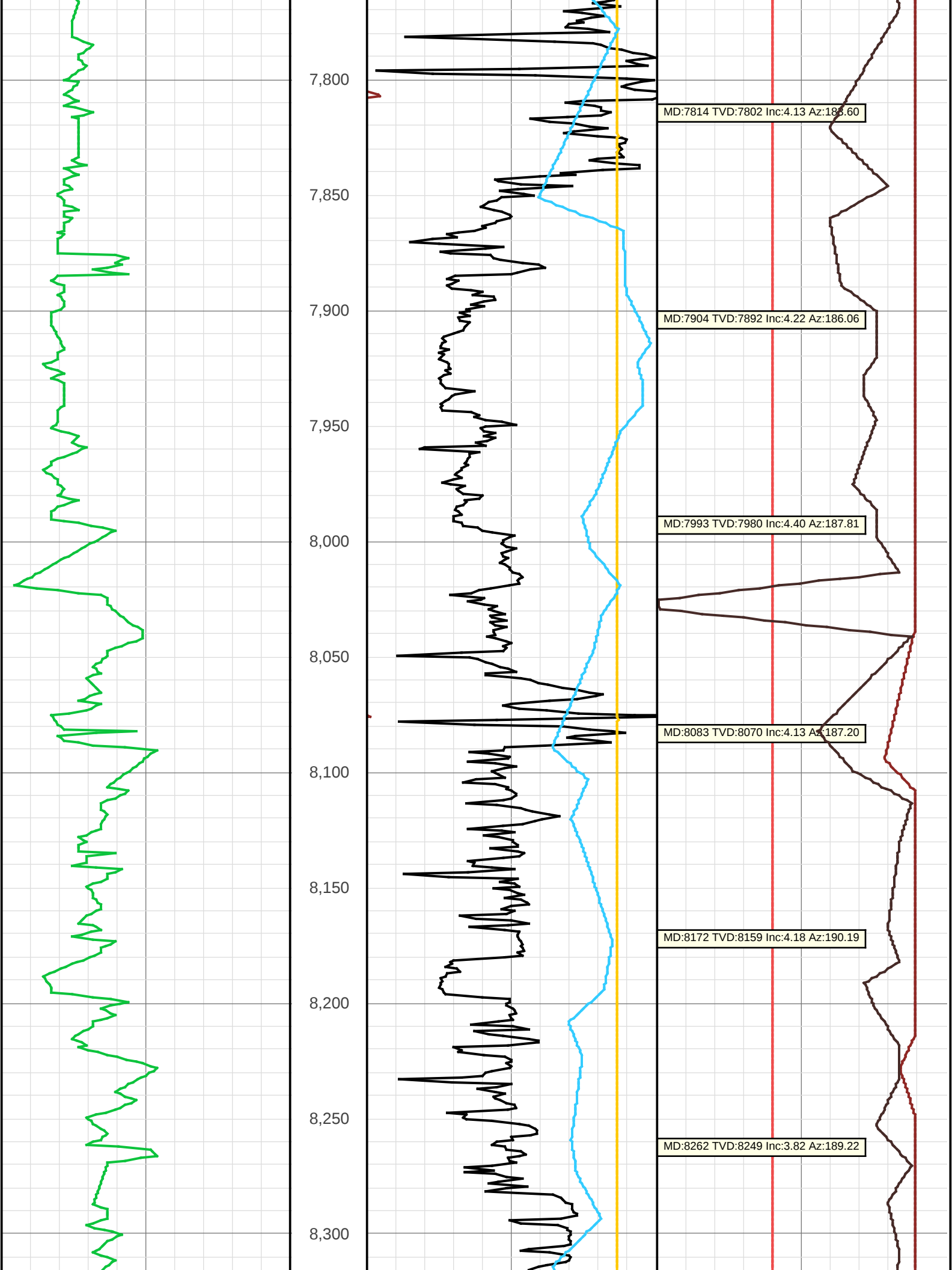


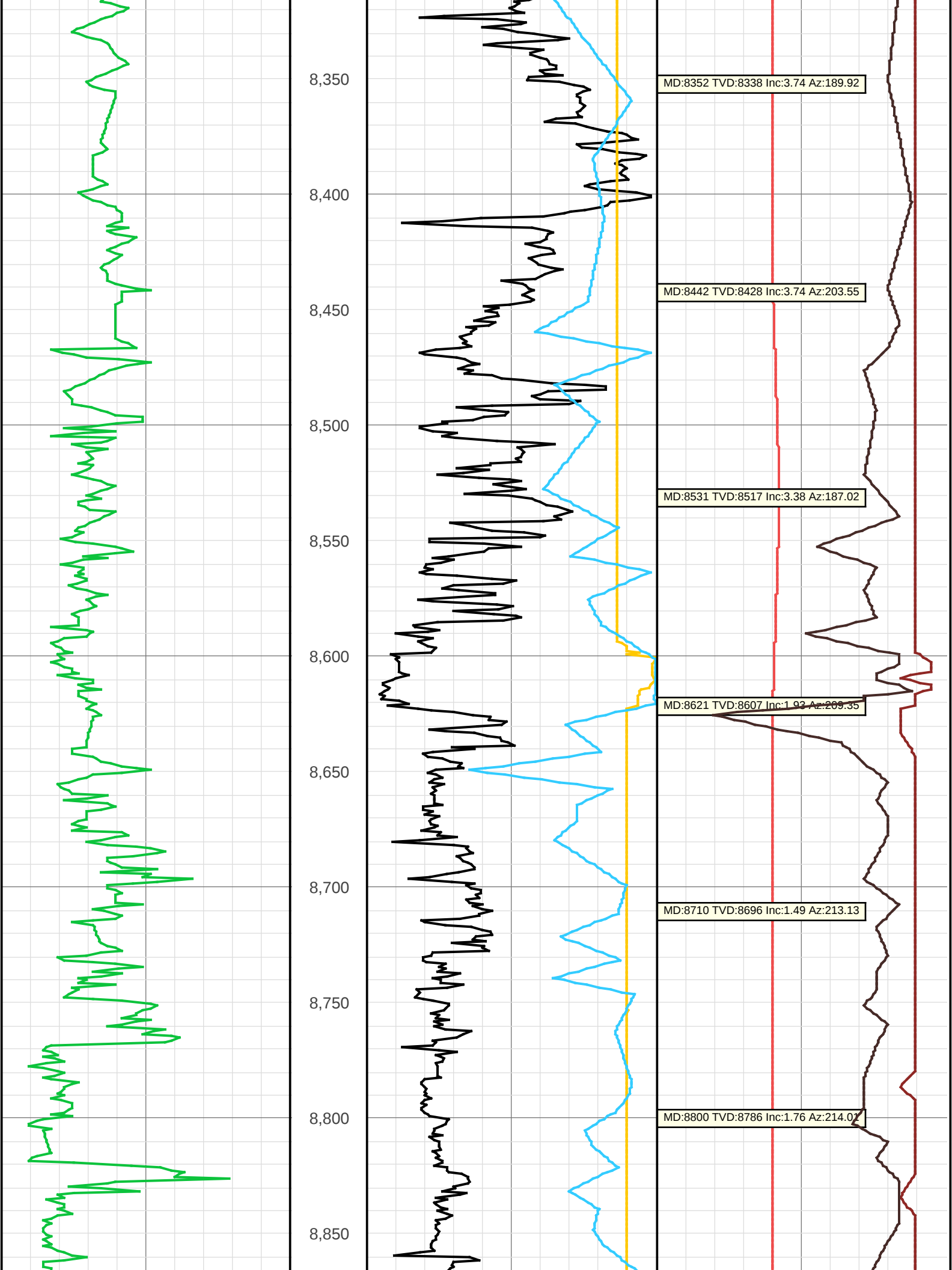


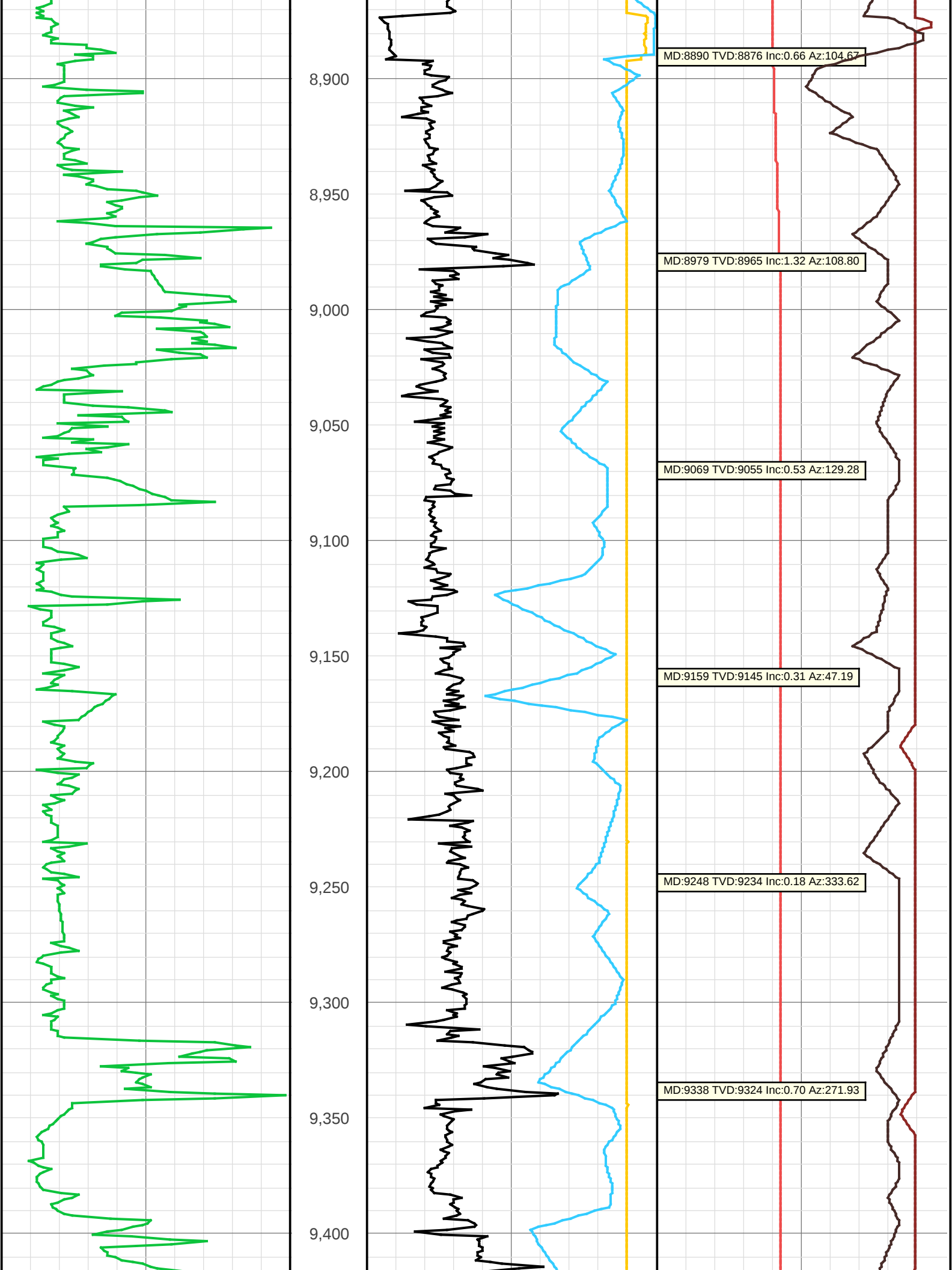


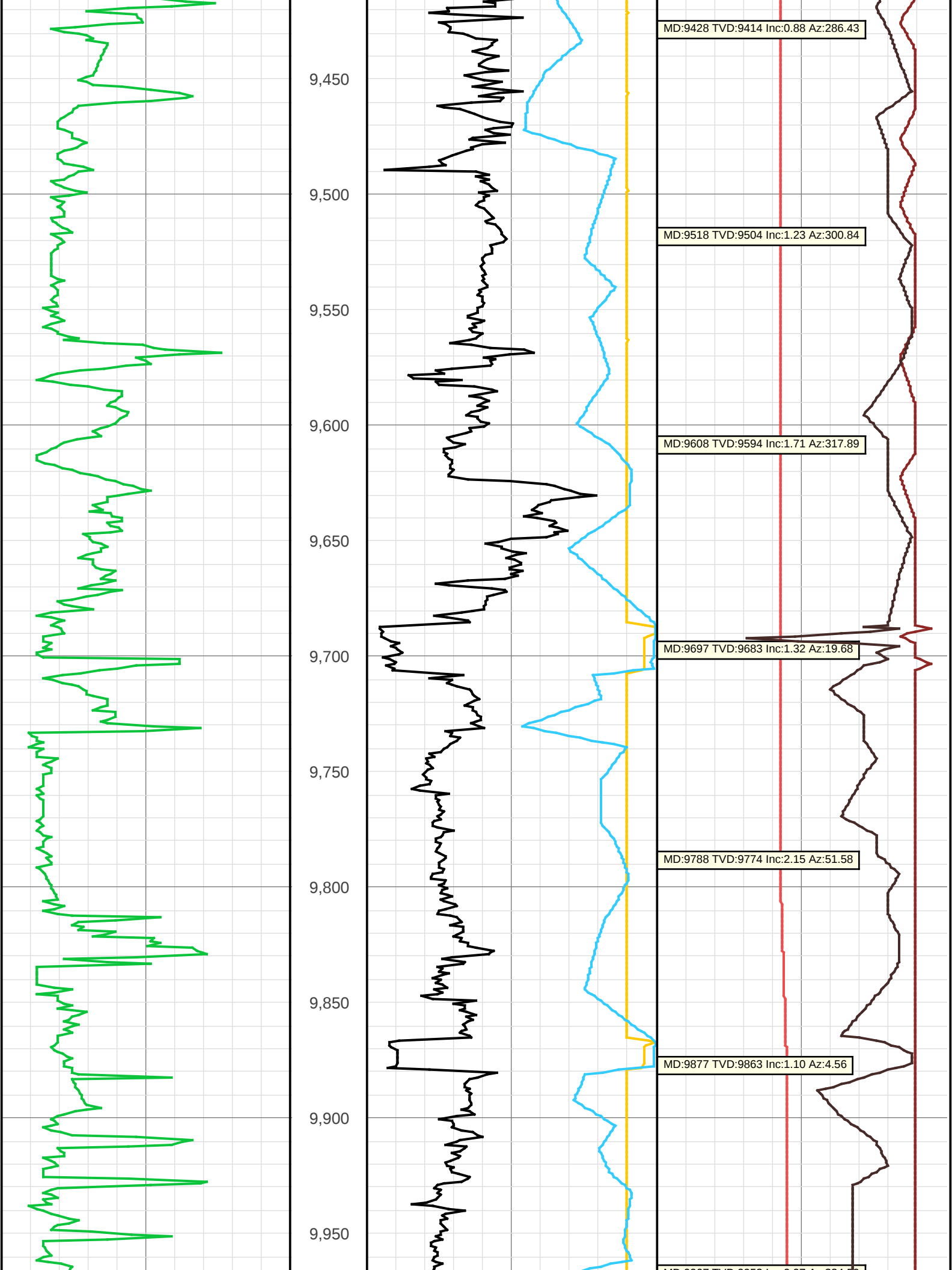


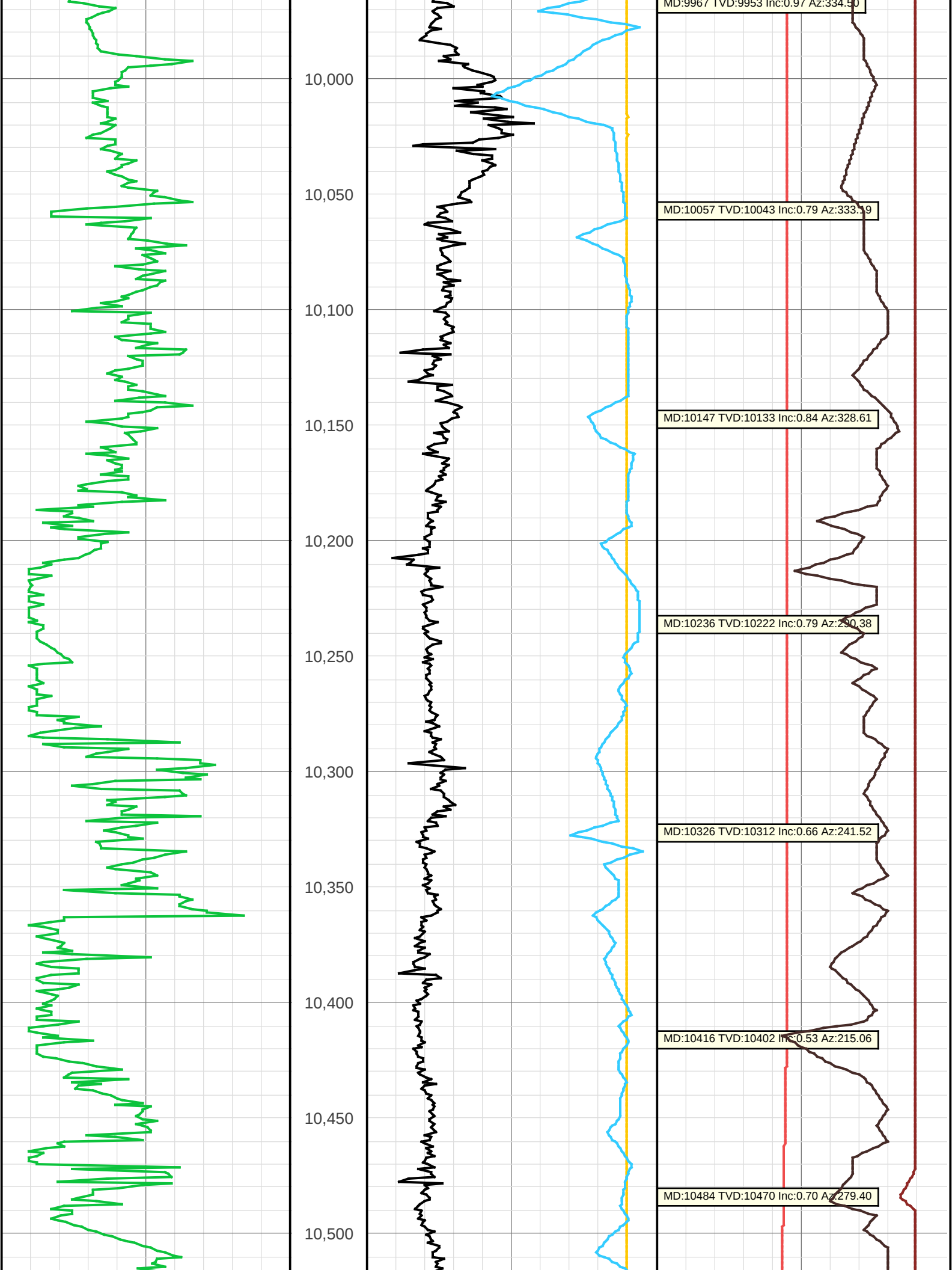


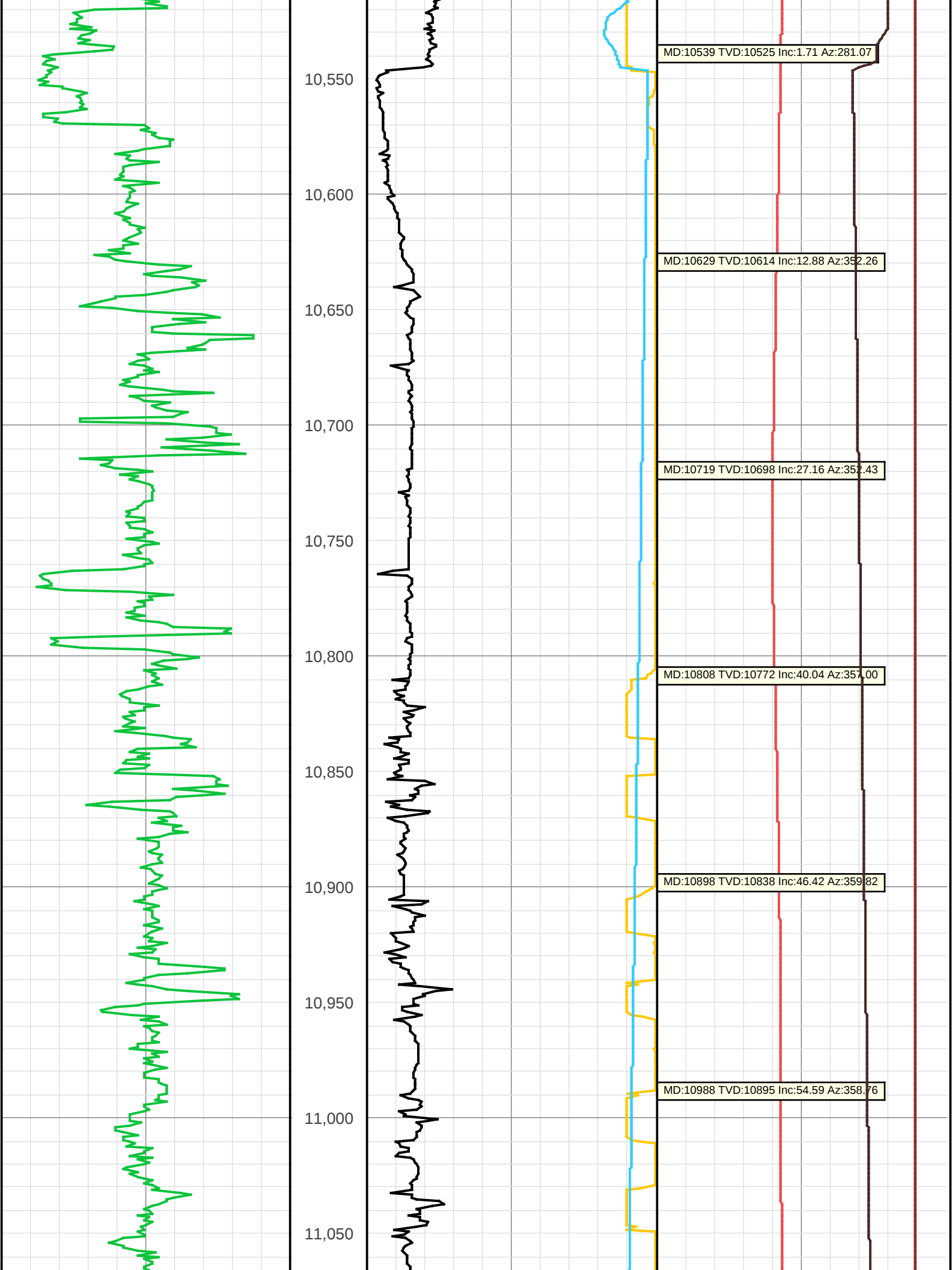


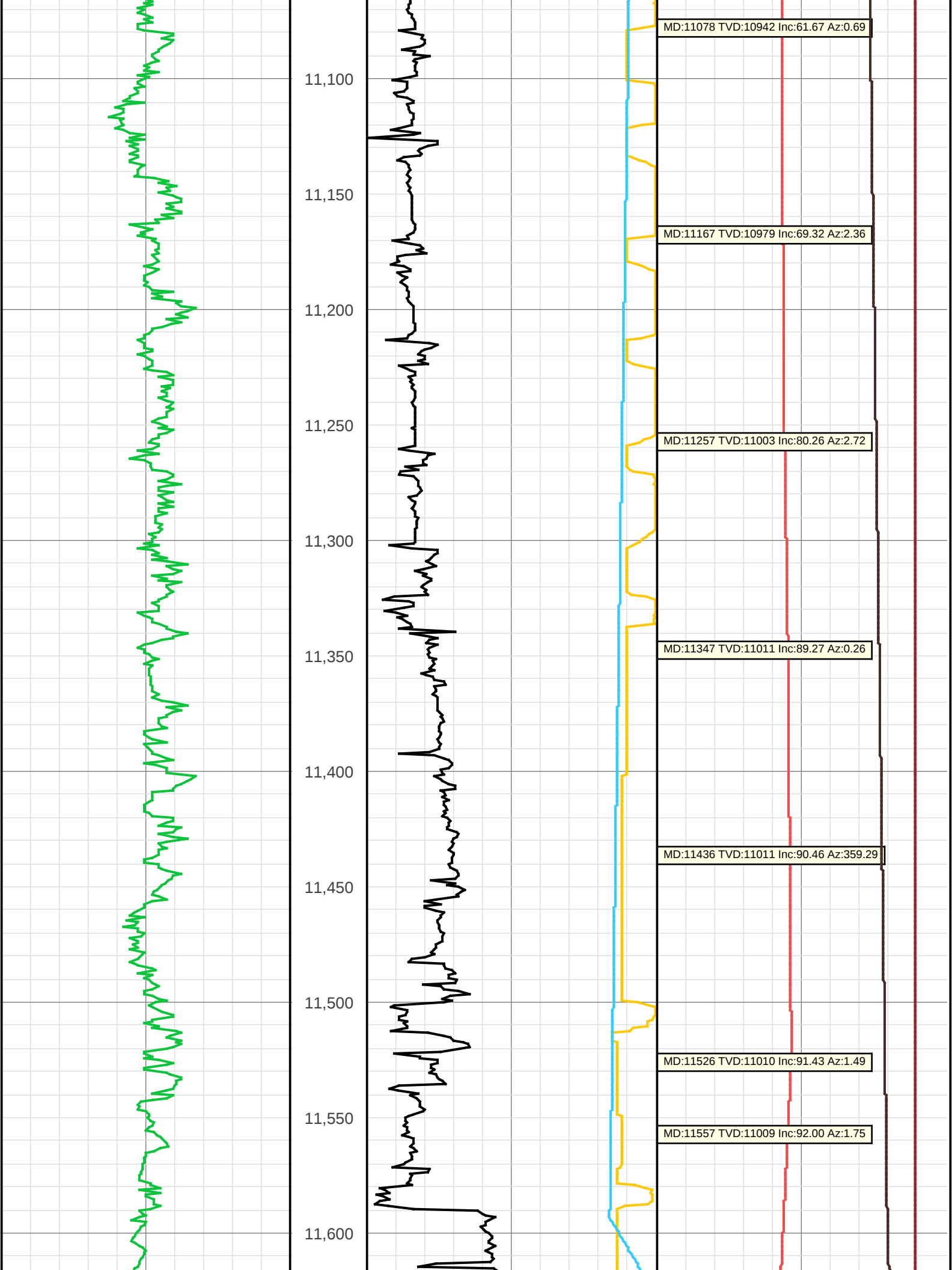


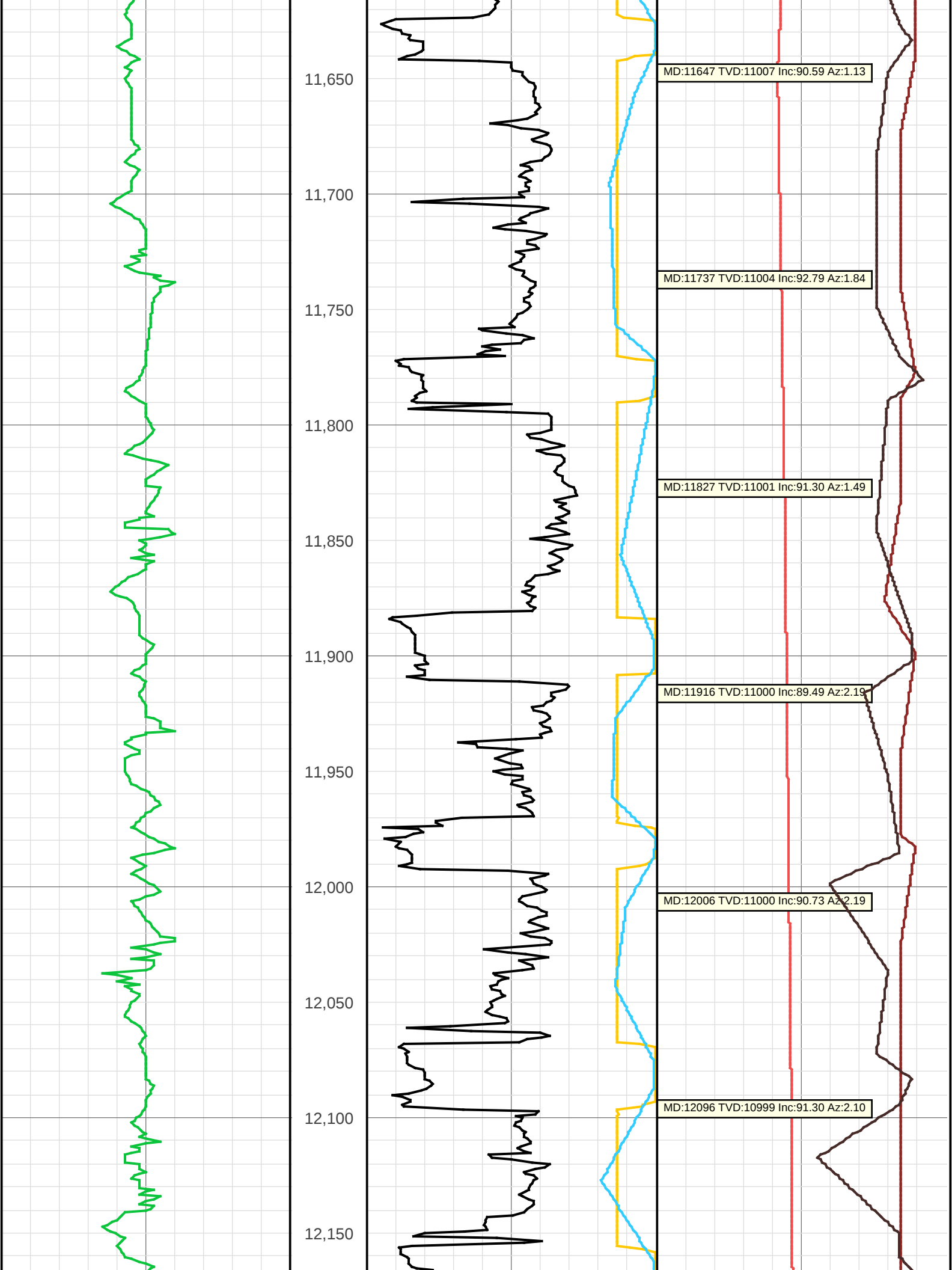


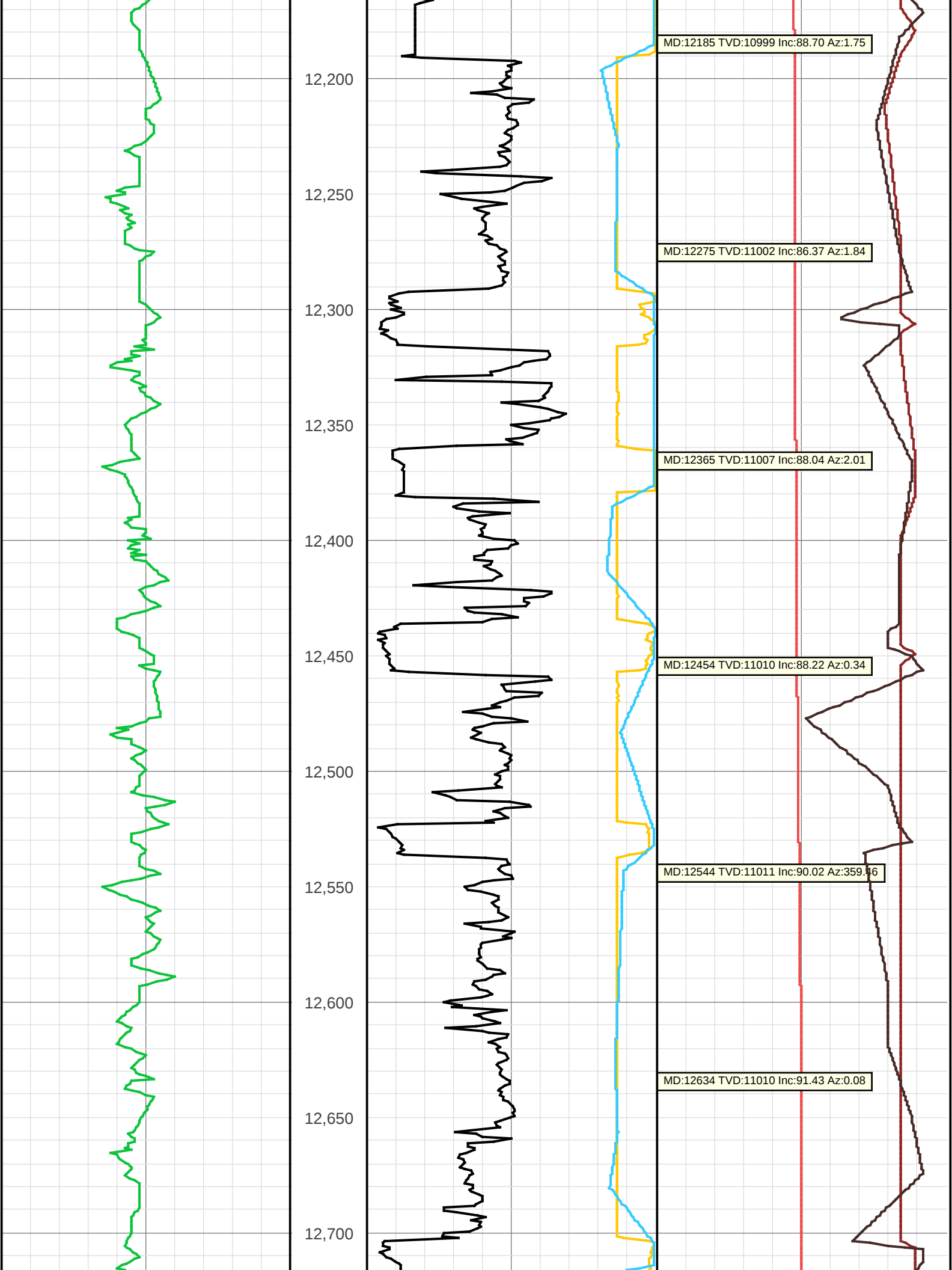


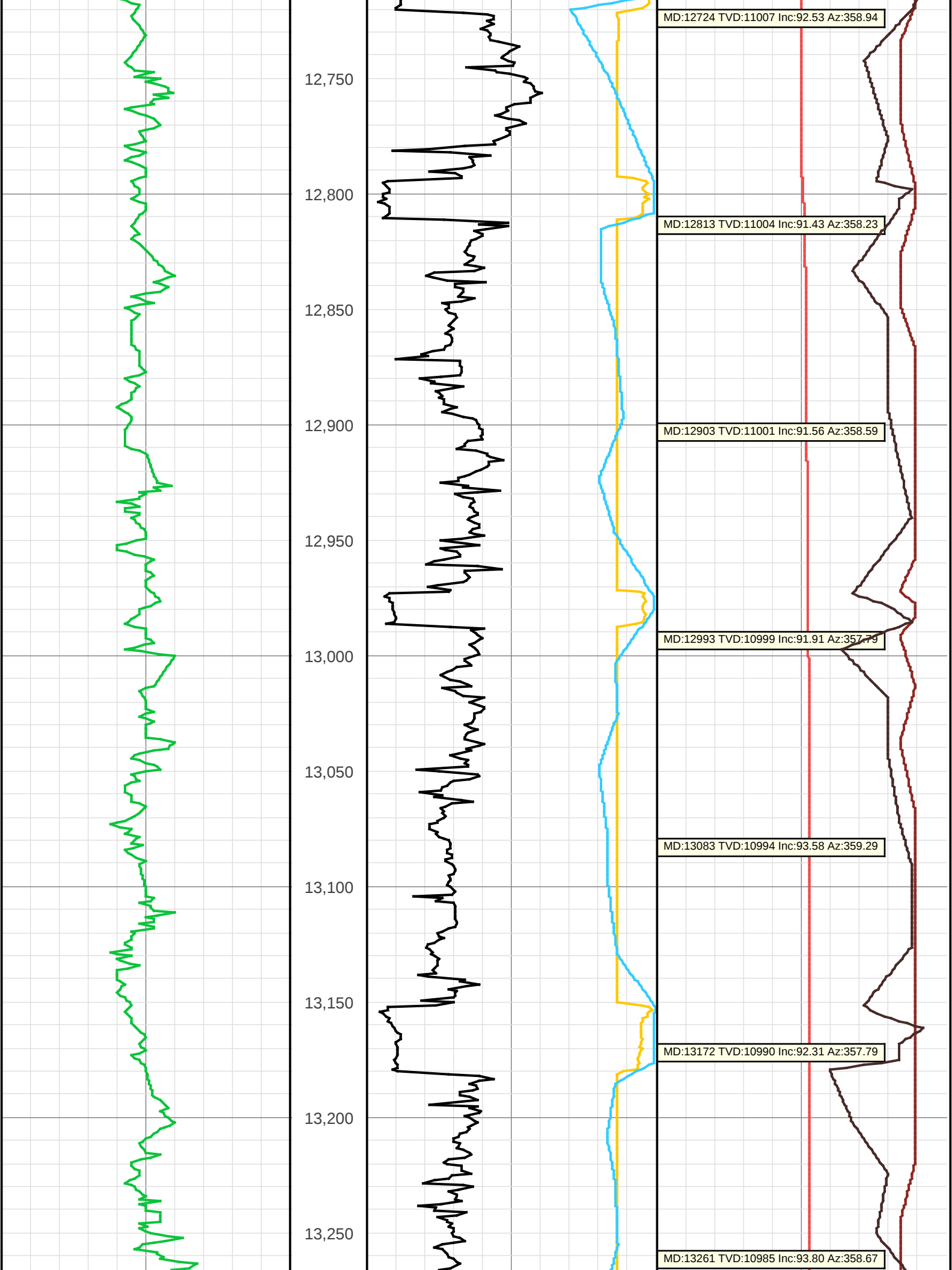


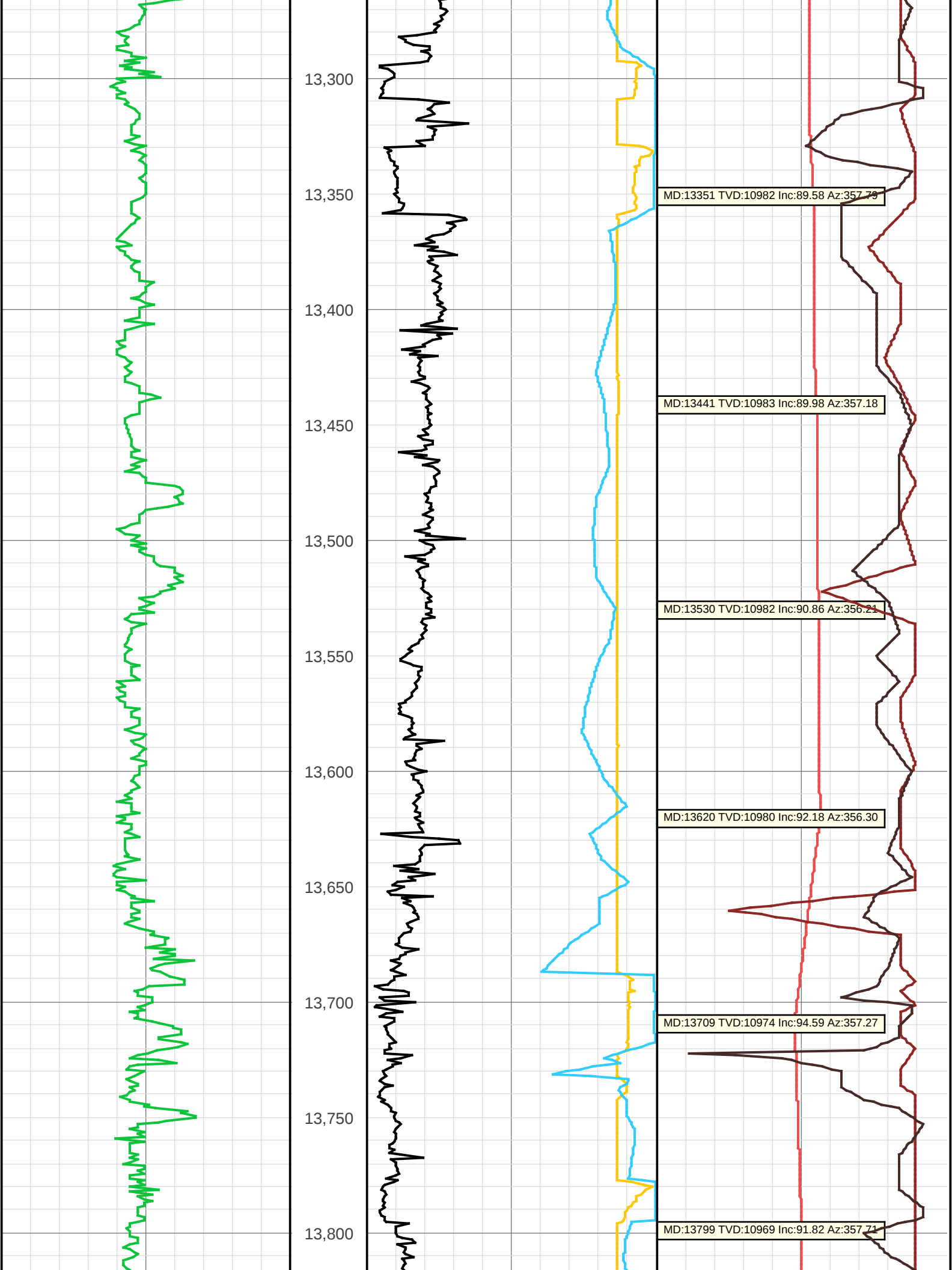


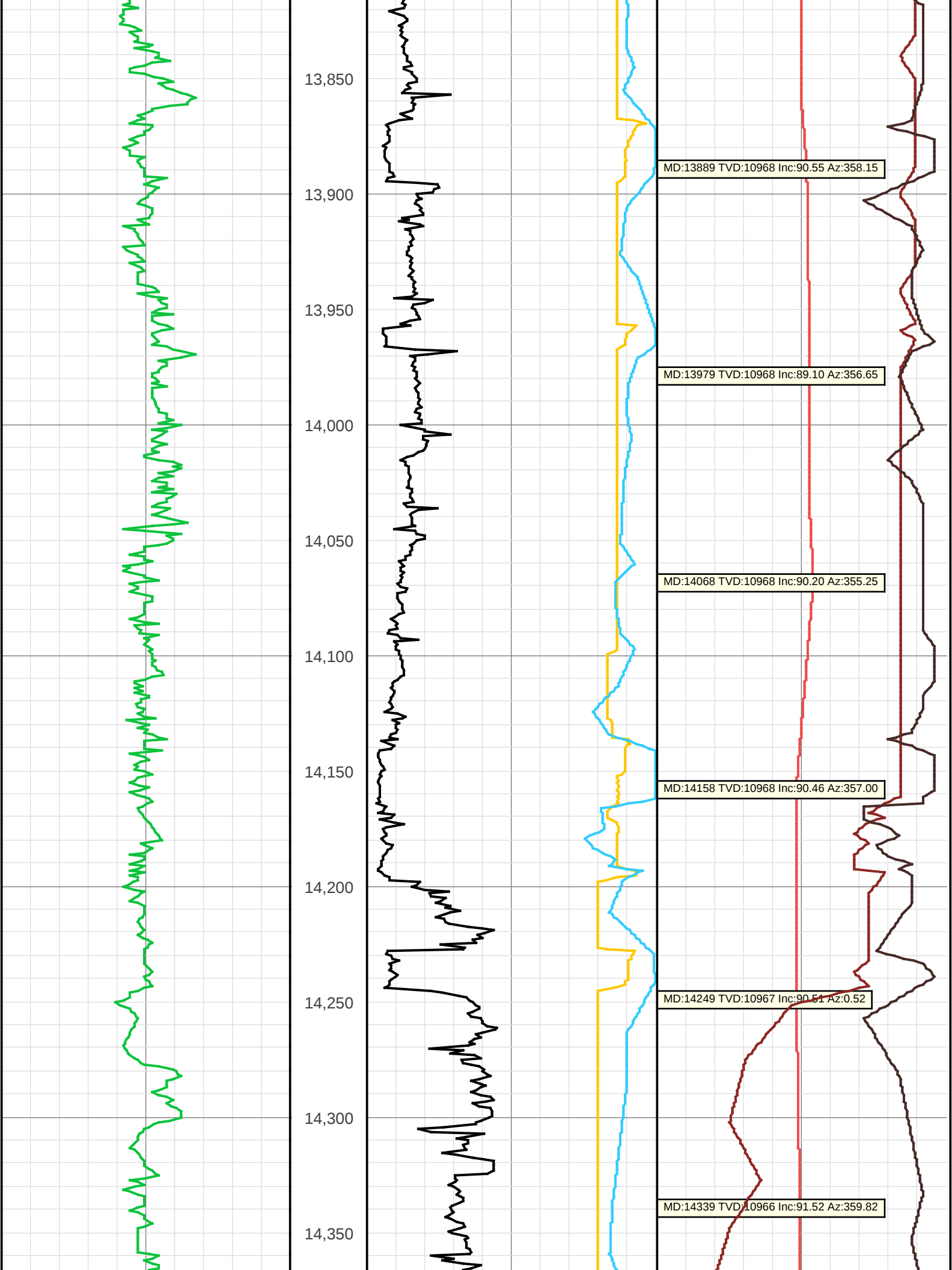


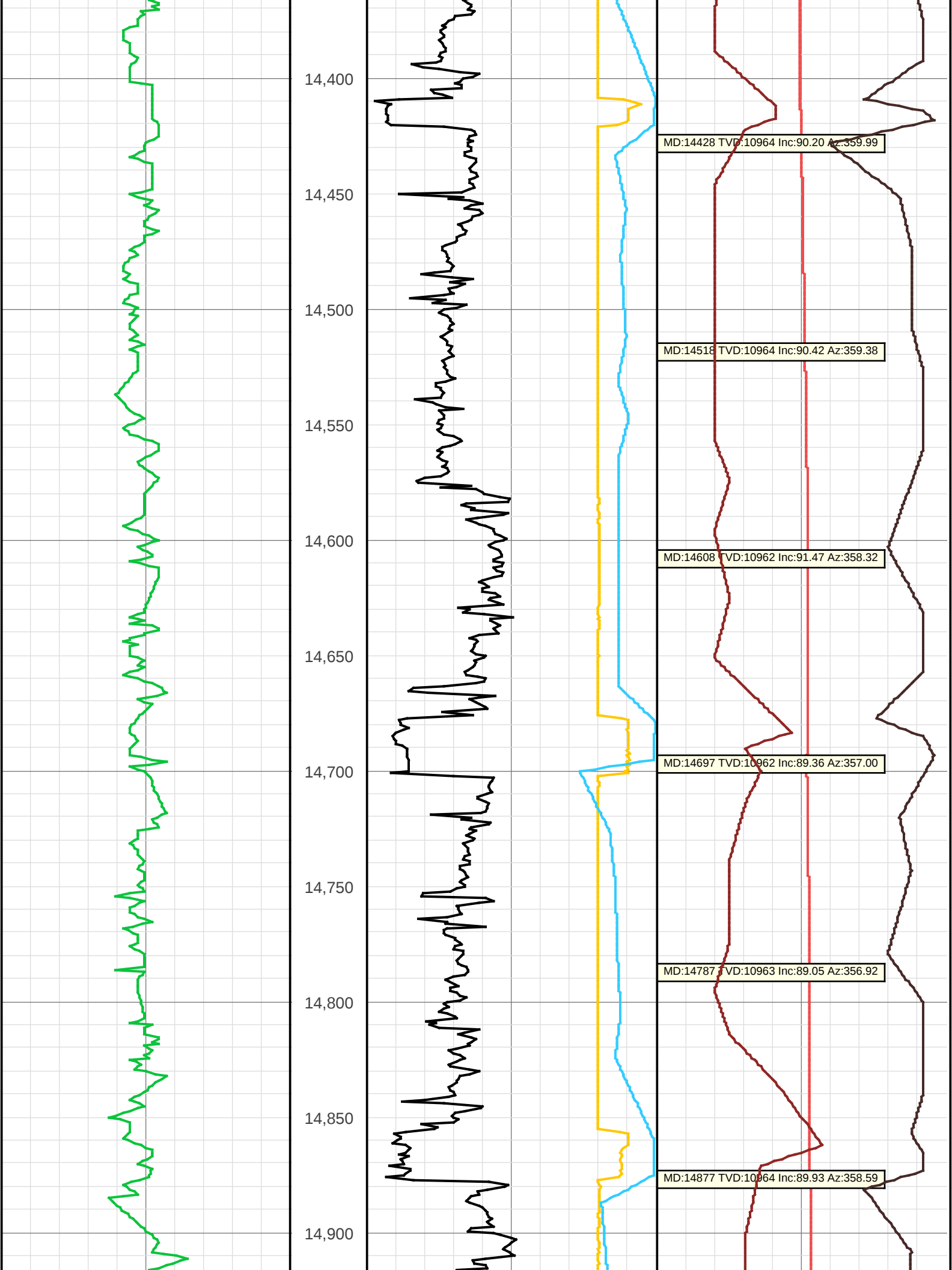


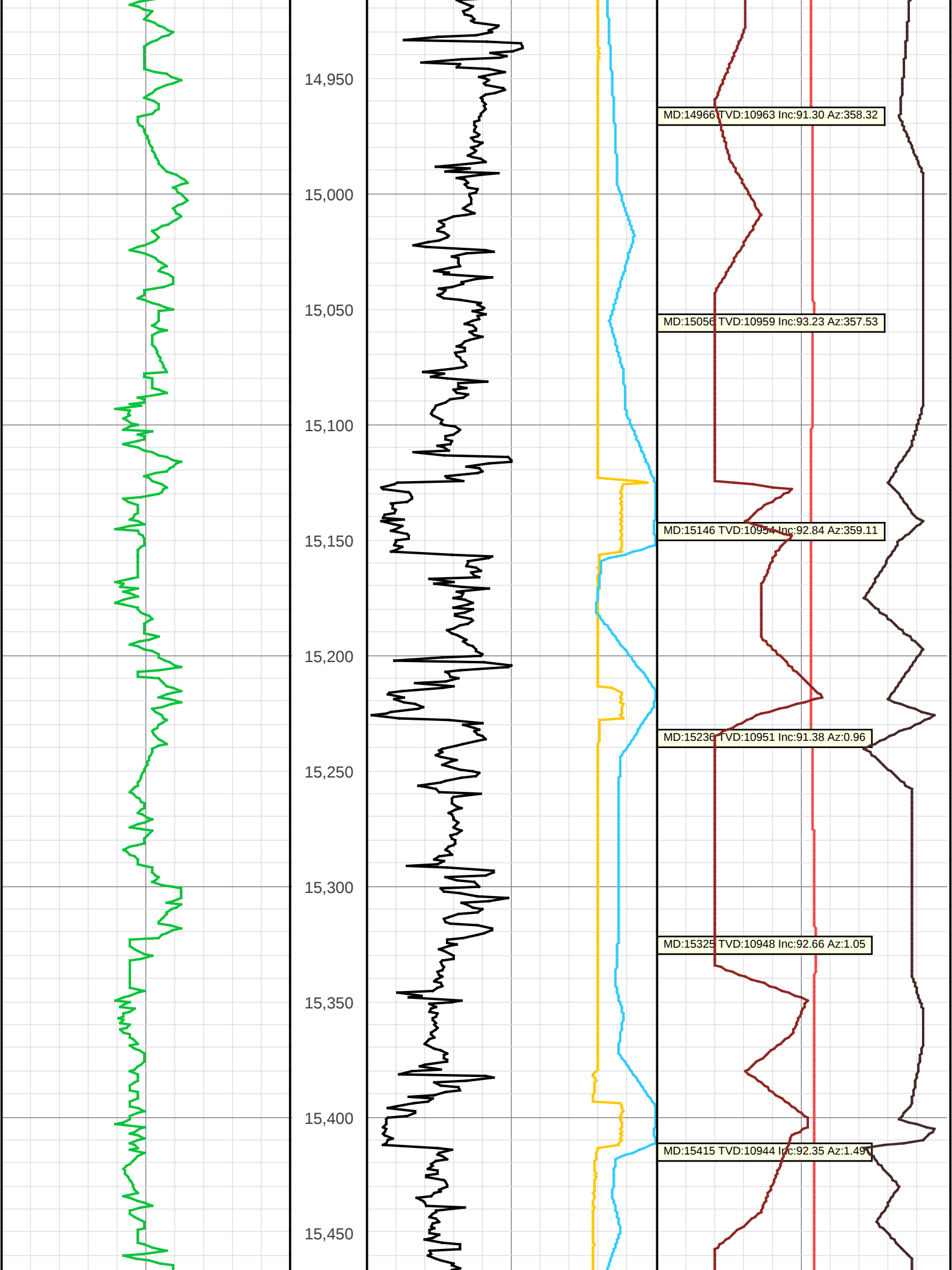


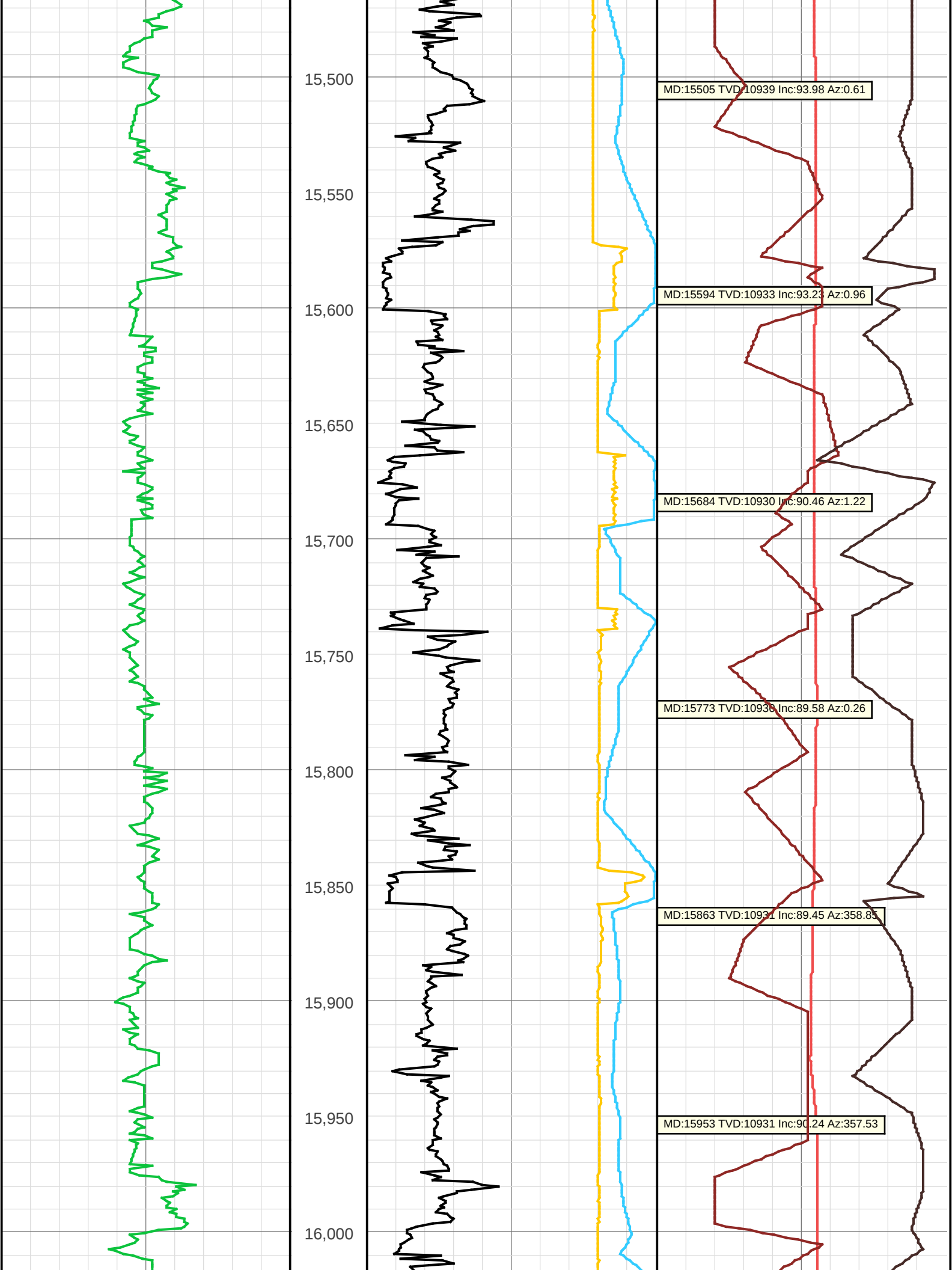


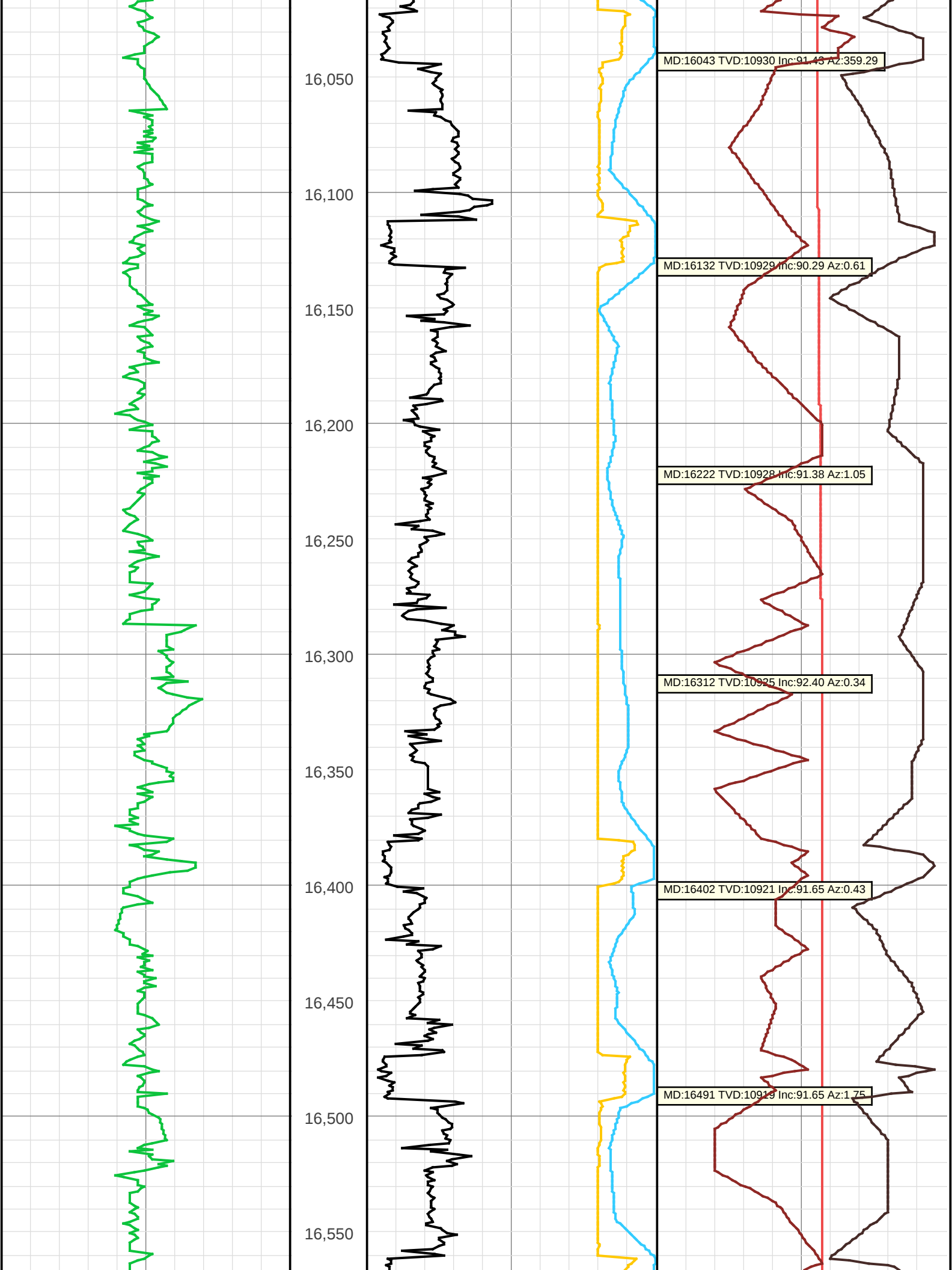


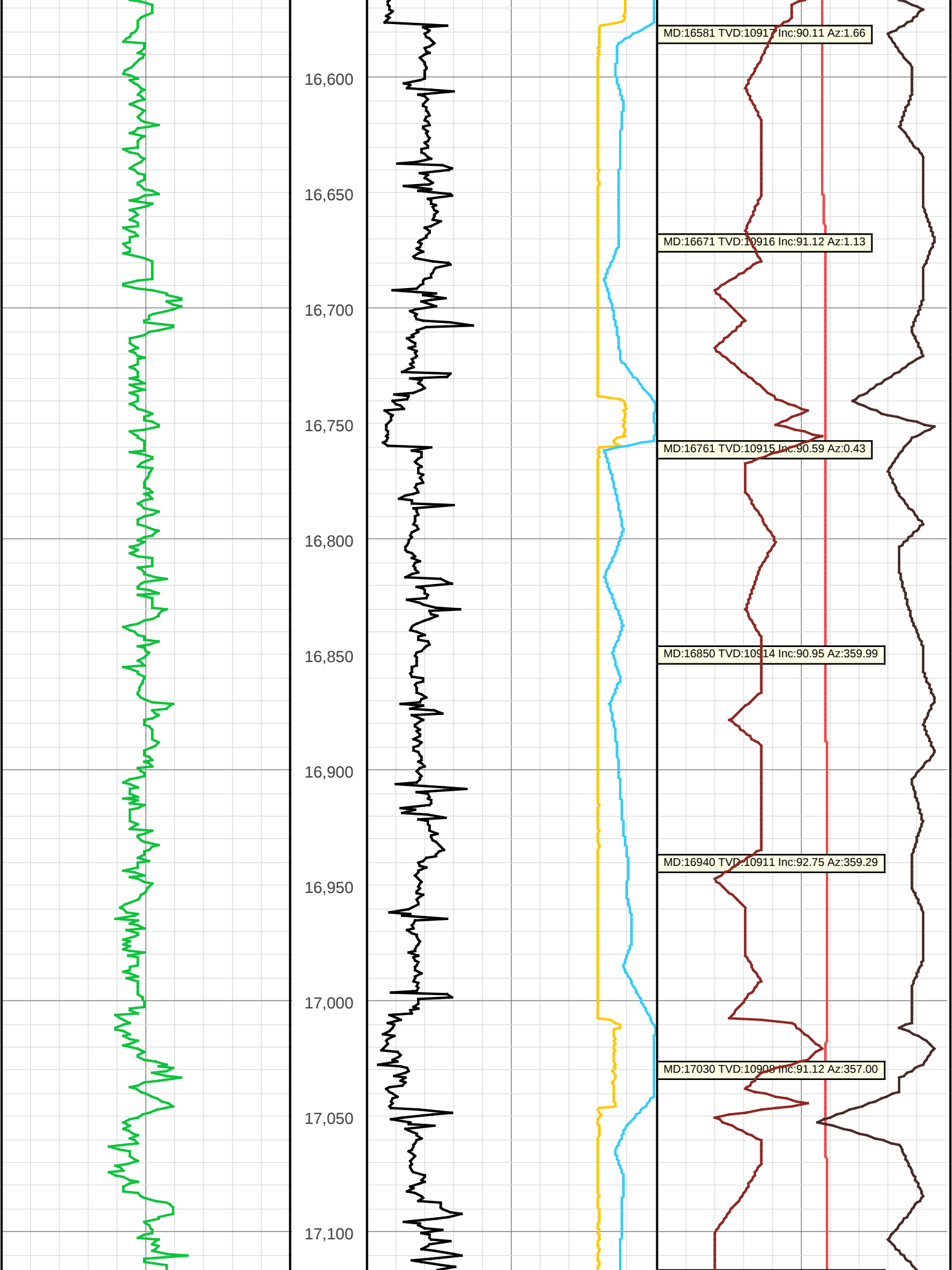


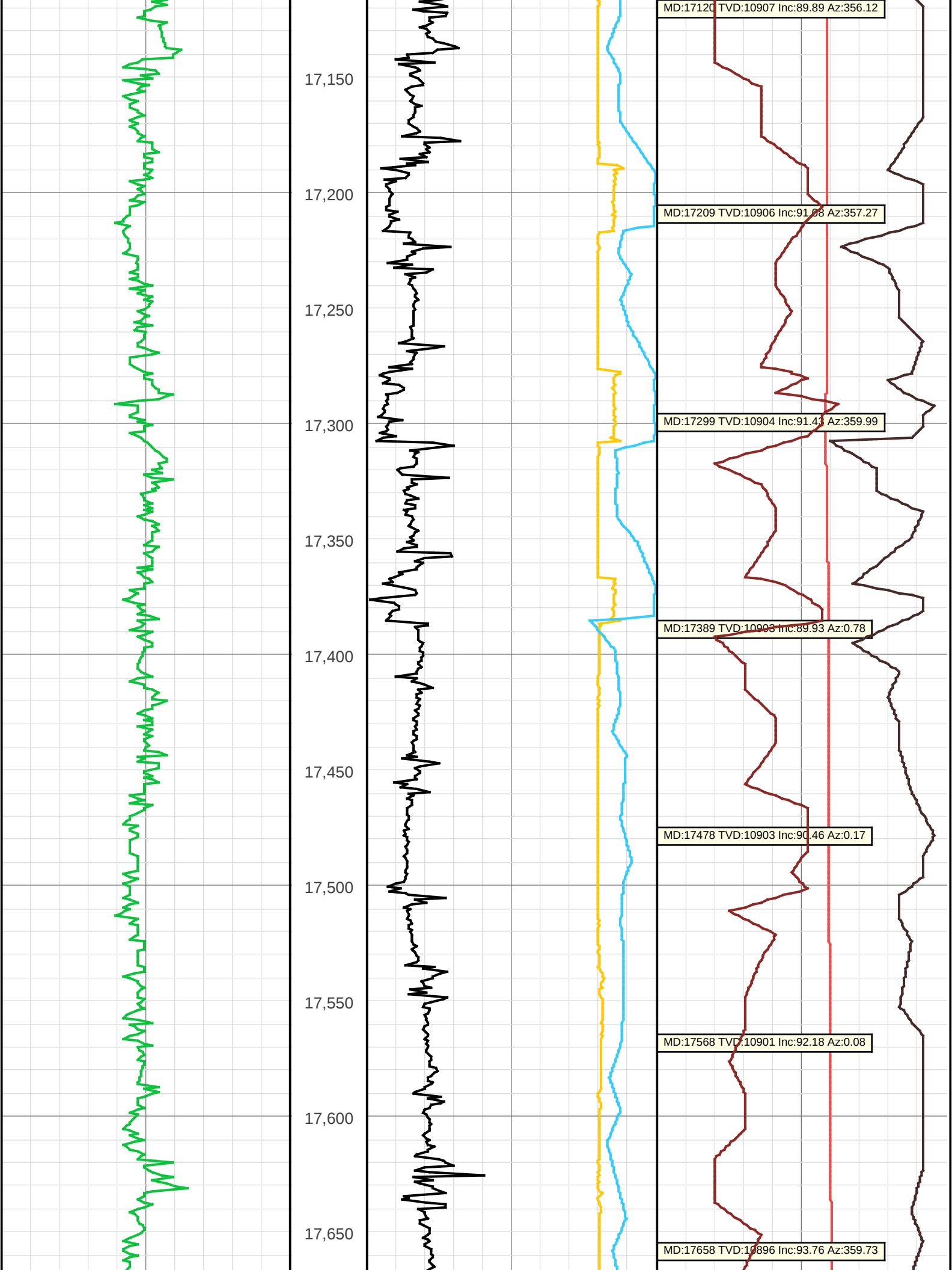


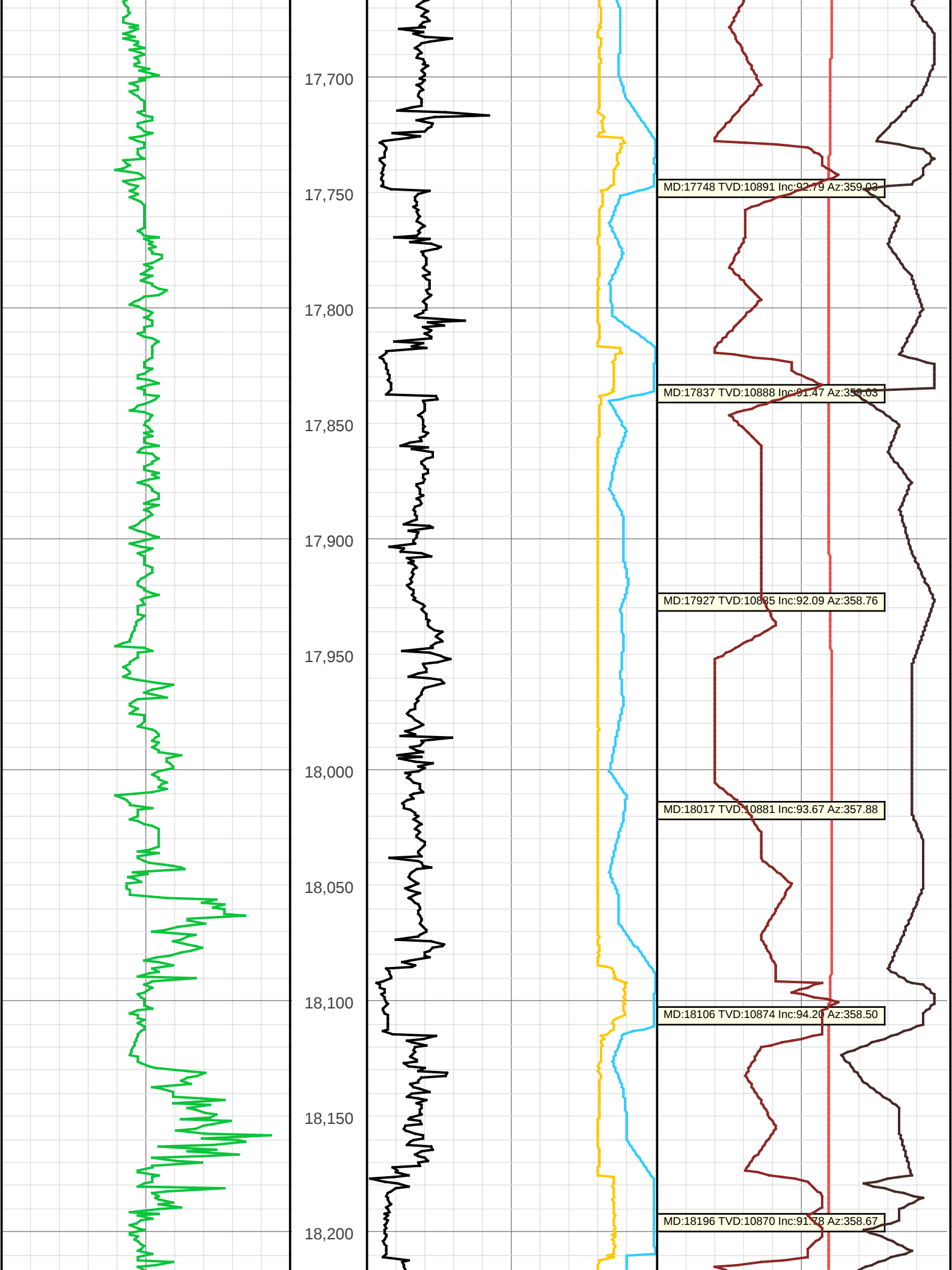


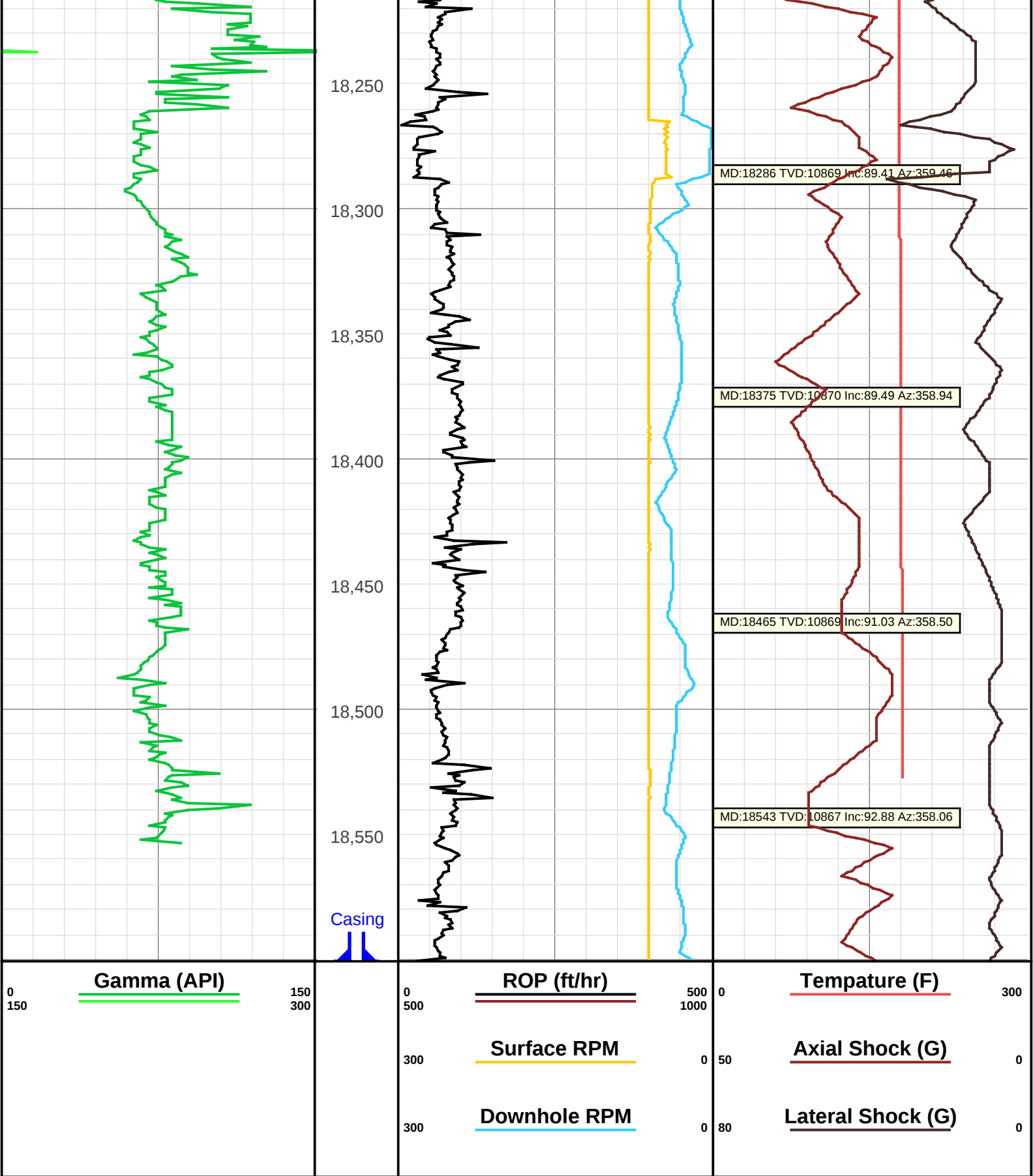














Gamma Ray

Intrepid-DDS
10314 TX-191
Midland, TX 79707

2" = 100'
TVD FT

Company: Advanced Energy Partners
Well: Wool Head State Com #511H
Field: Delaware Basin
API: 30-025-46491
County: Lea County
State New Mexico
Country USA
Rig: H&P #466

Well Location NAD 1927
Latitude: 32° 27' 29.102 N Longitude: 103° 35' 20.448 W
Y: 531182.20 X: 770916.10

Section: 20 Township: 21-S Range: 33-E Intrepid-DDS

Company: Advanced Energy Partners
Well: Wool Head State Com #511H
Field: Delaware Basin
API: 30-025-46491
County: Lea County
State: New Mexico
Country: USA
Rig: H&P #466
AFE: NM0091
Job: ID2386

Permanent Datum: Mean Sea Level
Log Measured From: Rotary Table
Height of Reference: 26
Kelly Bushing Elev: N/A
Drill Floor Elev: 3754.0
Ground Level Elev: 3728

Depth Drilled: 1.0 to: 18601.0
Depth Logged: 5100.0 to: 18601.01
Date Logged: 09 Nov 2019 20:44 to: 22 Dec 2019 13:57

Disclaimer: Intrepid-dds uses its best efforts to provide customers with accurate information and interpretations with services performed but does not warrant the accuracy of information or interpretations.

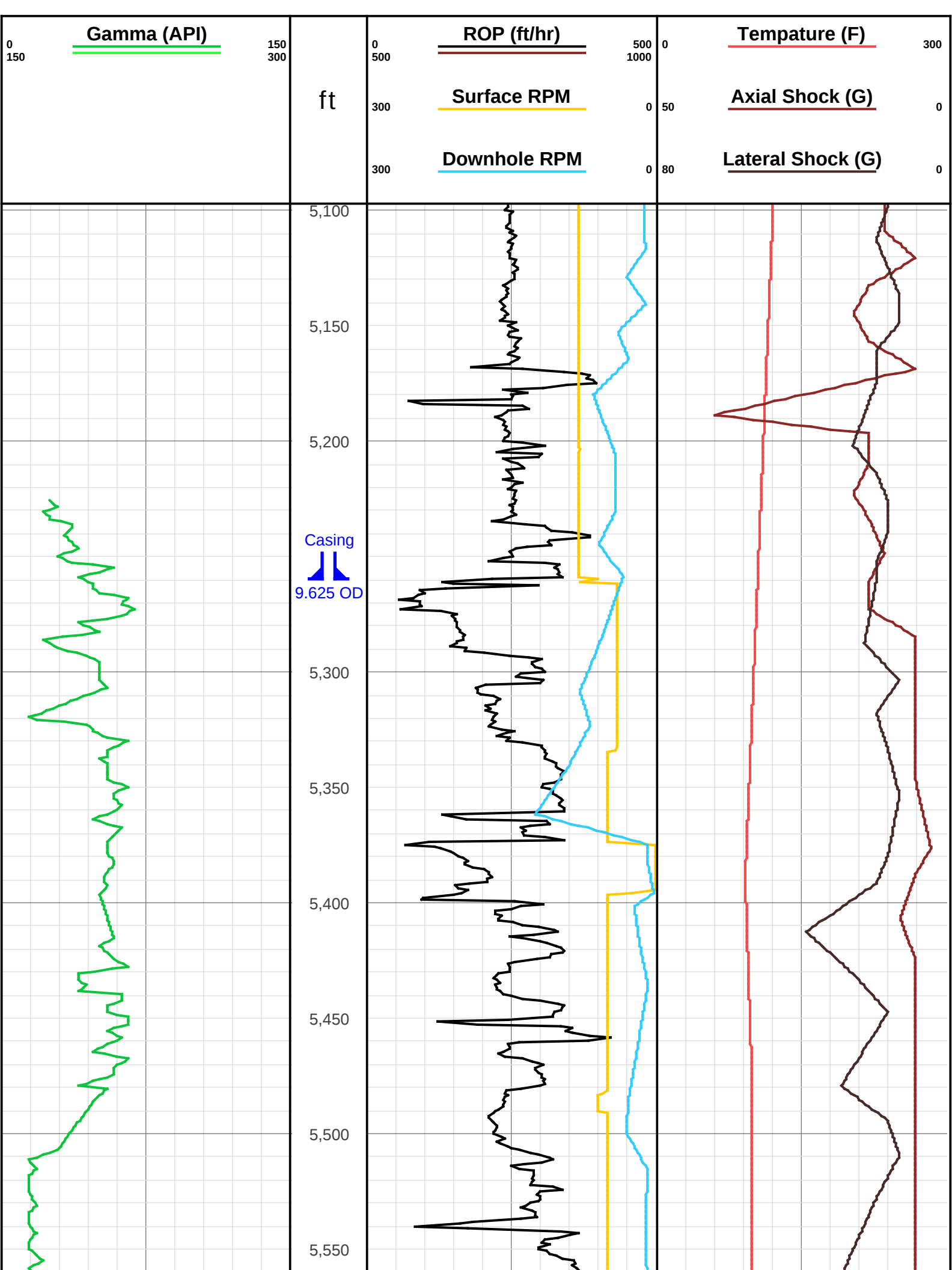
Hole Data			Casing Data		
Size	From (MD)	To (MD)	Size	From (MD)	To (MD)
17.5	100	1838	13.375	100	1838
12.5	1838	5263	9.625	1838	5263
8.5	5263	18601	5.5	5263	18601

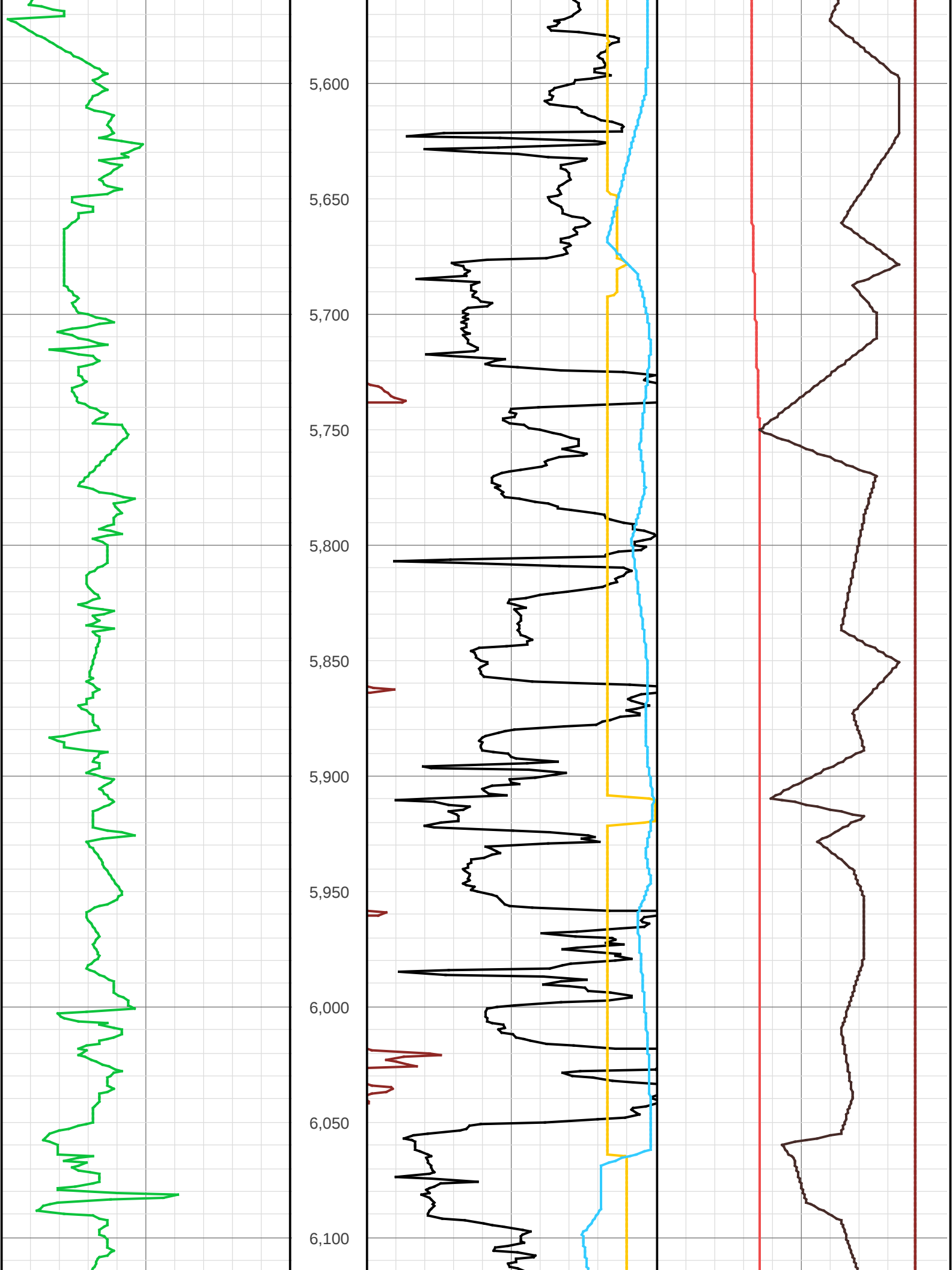
Run Data								
Run Name	MWD Run 1	MWD Run 2	MWD Run 3	MWD Run 4	MWD Run 5	MWD Run 6	MWD Run 7	MWD Run 8
Start Date	10 Nov 2019	15 Nov 2019	23 Nov 2019	24 Nov 2019	15 Dec 2019	17 Dec 2019	18 Dec 2019	19 Dec 2019
Start Time	7:00	1:30	21:00	11:30	21:00	2:50	15:00	18:00
End Date	11 Nov 2019	16 Nov 2019	24 Nov 2019	25 Nov 2019	17 Dec 2019	18 Dec 2019	19 Dec 2019	22 Dec 2019
End Time	04:00	17:15	10:30	23:30	1:00	14:00	17:00	13:30
Depth In	1.0	1838	5182	6389	10547	11589	13734	14193
Depth Out	1838	5263	6389	10547	11589	13734	14193	18601
Log Top			5182	6336	10538	11553	13687	14146
Log Bottom			6336	10538	11553	13687	14146	18554
Hole Size	17.5	12.75	8.5	8.5	8.5	8.5	8.5	8.5

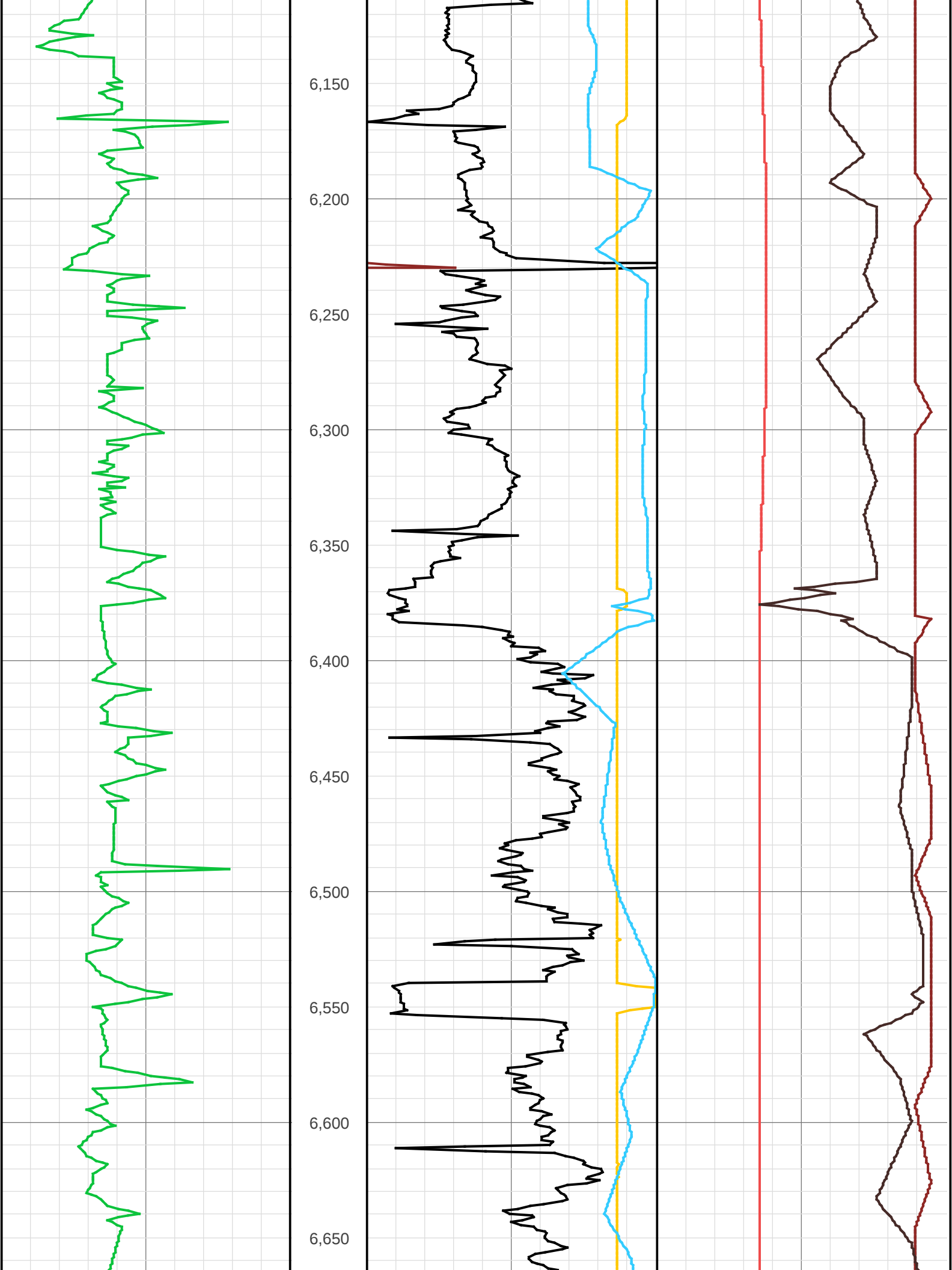
Tool Data								
Run Name	MWD Run 1	MWD Run 2	MWD Run 3	MWD Run 4	MWD Run 5	MWD Run 6	MWD Run 7	MWD Run 8
Directional Sensor SN	20081-R	20081-R	20120-R	20125-R	20120-R	20224-R	20120	20120
Directional Offset	68	65	63	63	48	58	58	58
Gamma Sensor SN	N/A	N/A	352-R	907-R	352-R	809-R	352	352
Gamma Offset			53	53	36	47	47	47
Gamma Corr. Factor	1.0	1.0	3.661	3.682	3.72	3.76	3.72	3.72

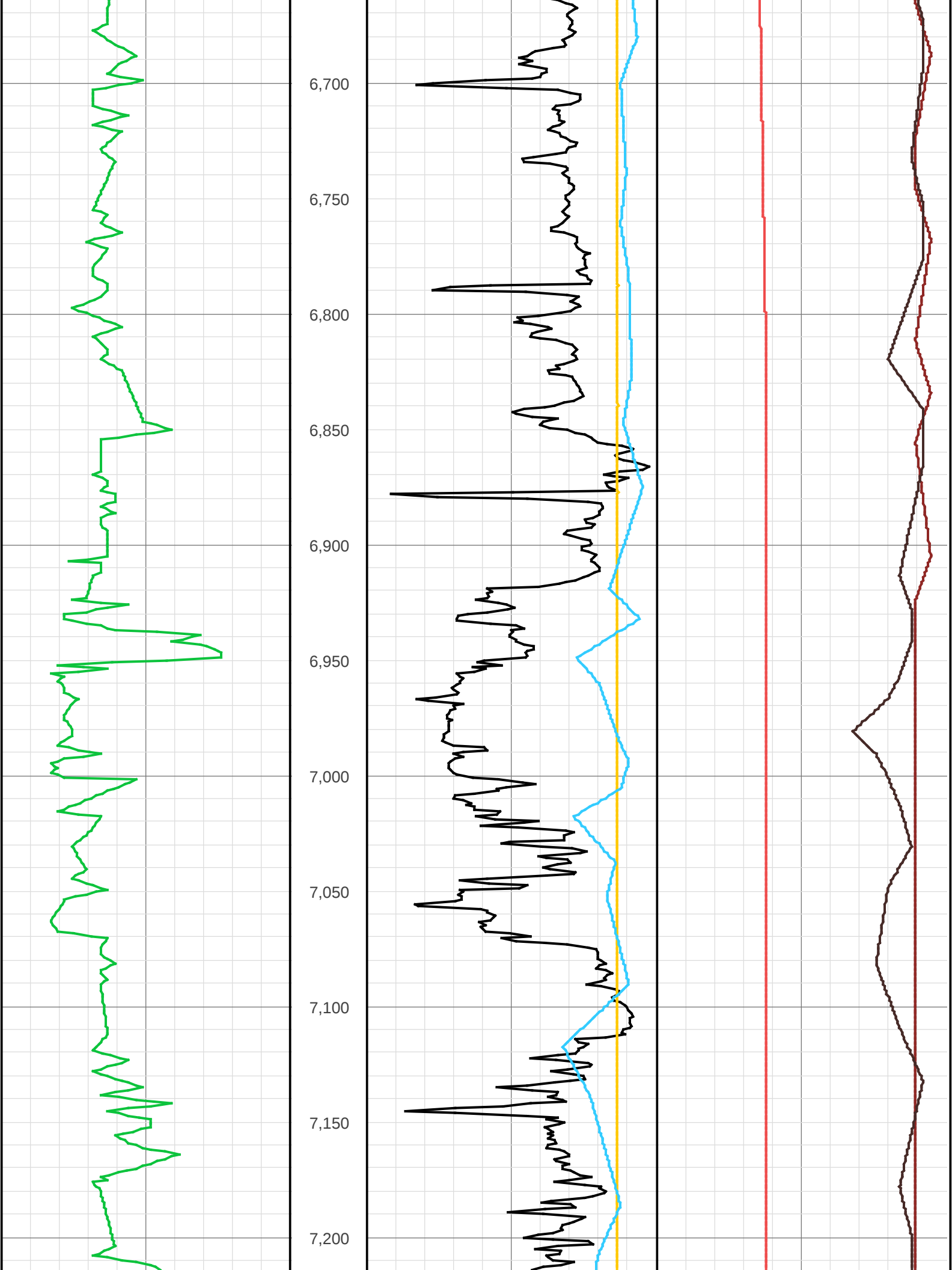
Mud Data								
Run Name	MWD Run 1	MWD Run 2	MWD Run 3	MWD Run 4	MWD Run 5	MWD Run 6	MWD Run 7	MWD Run 8
Mud Type	Water Based	Water Based	Water Based	Water Based	Oil Based	Oil Based	Oil Based	Oil Based
Mud Density (lb/gal)	9.7	10.4	10.6	10.6	9.5	9.6	9.6	9.6
Funnel Visc. (s/qt)	N/A	28	28	1	68	69	68	57
Plastic Visc. (cP)	N/A	2	2	1	19	16	16	13
pH	N/A	10.0	10.0	10.1	N/A	N/A	N/A	N/A
Chlor. Whole Mud (mg/L)	N/A	187,000	178,000	75,000	73,000	45000	46000	44000
API Filtrate (cm3/30)	N/A	99/2	2	99/2	N/A	8.2	7.2	7.2
Max MWD Temp (F)	113.4	127.7	113.4	134.9	139.6	169.6	162.6	182.0

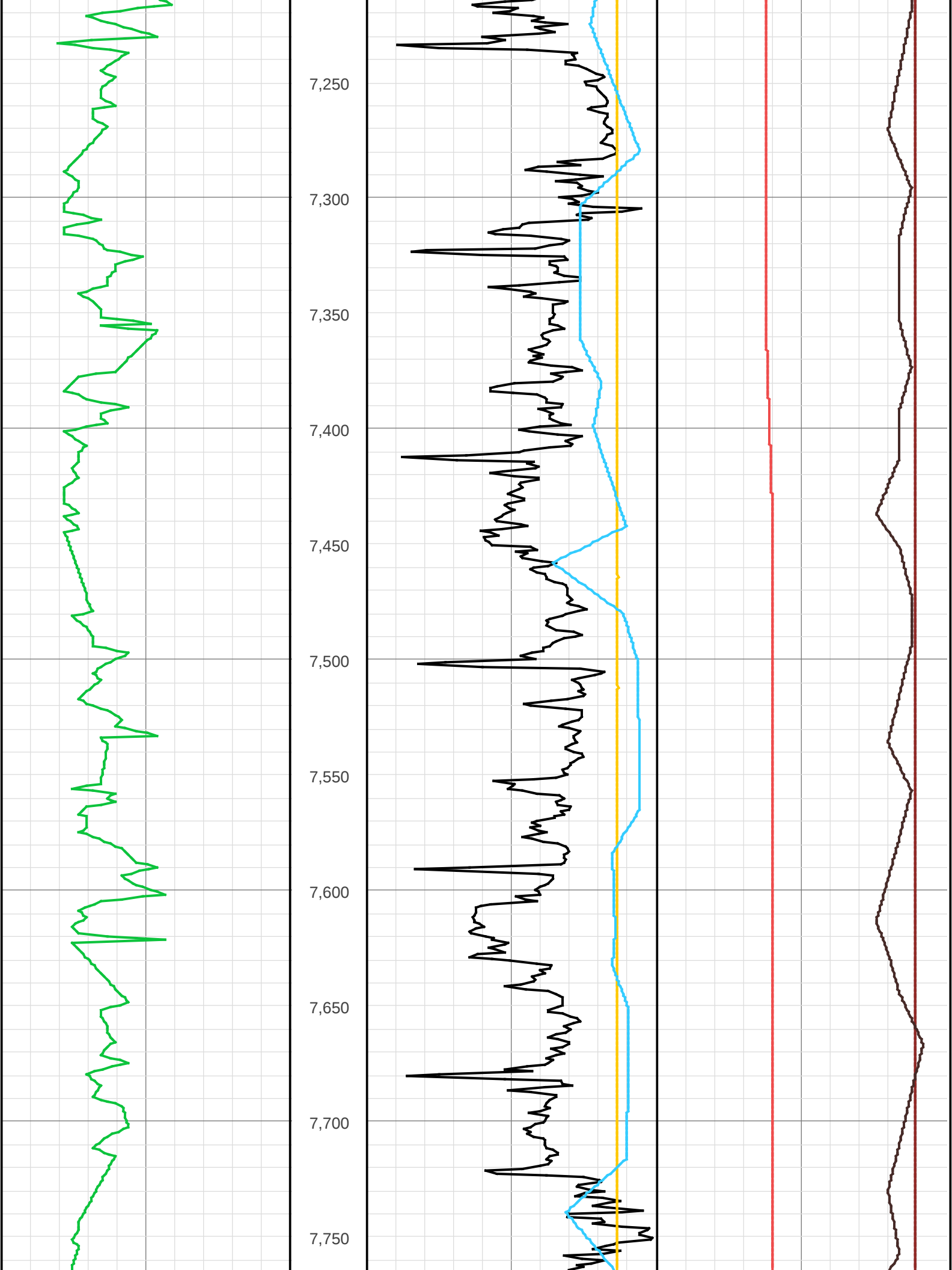
Personnel								
Run Name	MWD Run 1	MWD Run 2	MWD Run 3	MWD Run 4	MWD Run 5	MWD Run 6	MWD Run 7	MWD Run 8
MWD Operator 1	Ben Wallace	Ben Wallace	Michael Walton	Michael Walton	Ben Wallace	Ben Wallace	Ben Wallace	Ben Wallace
MWD Operator 2	Michael Walton	Michael Walton	Josphe Hatley	Josphe Hatley	Michael Walton	Michael Walton	Mike Walton	Mike Walton
MWD Operator 3								

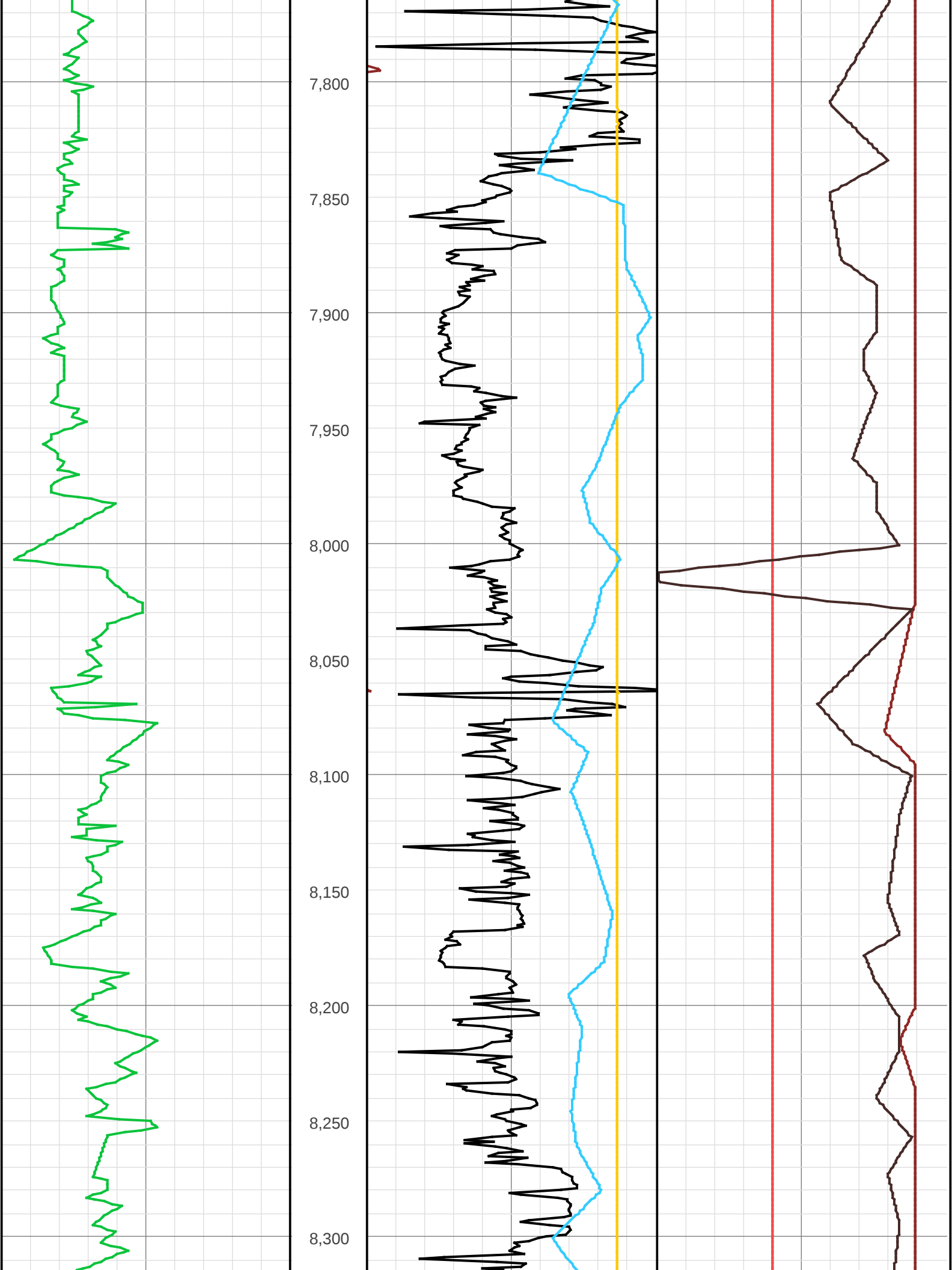


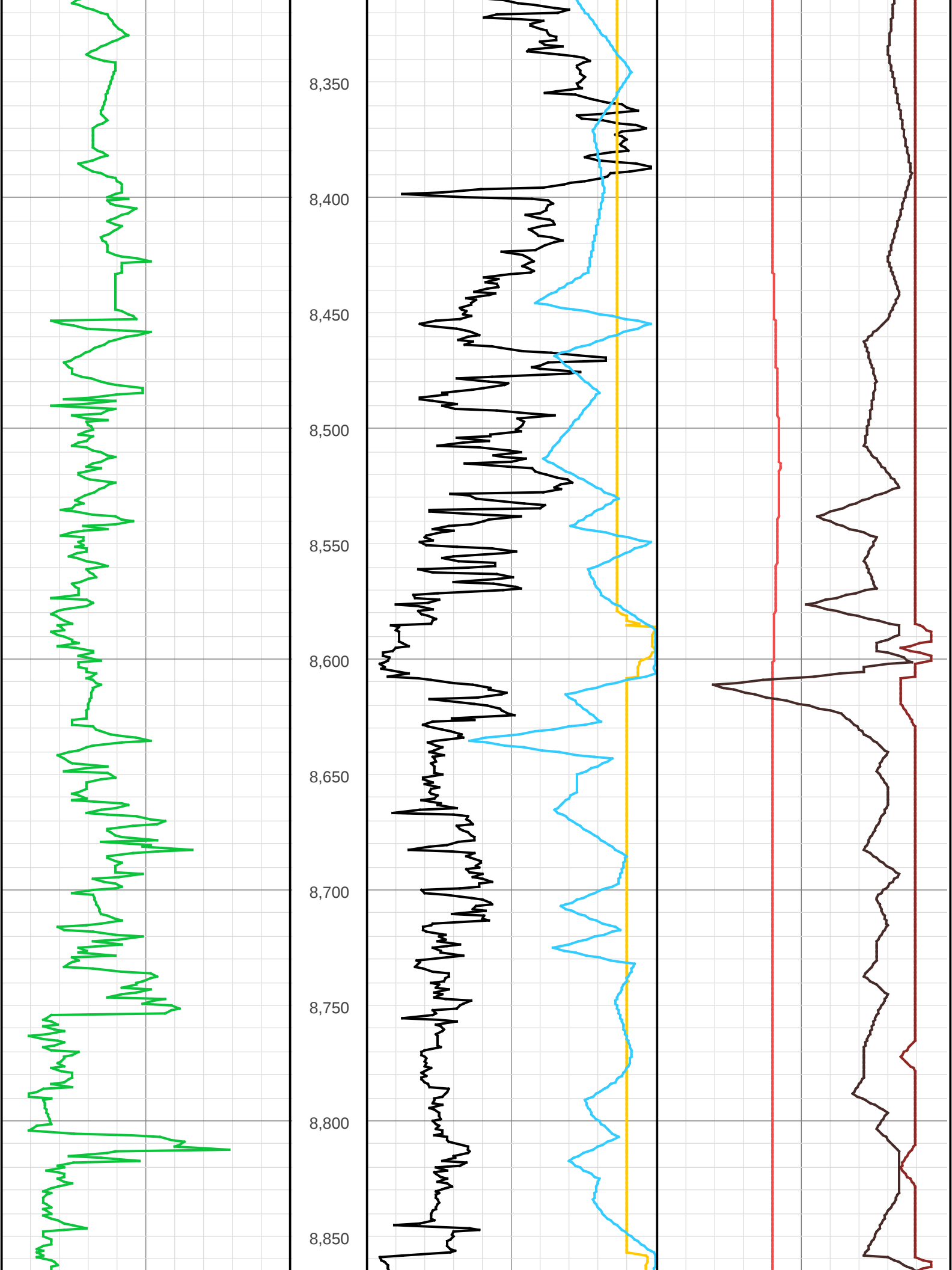


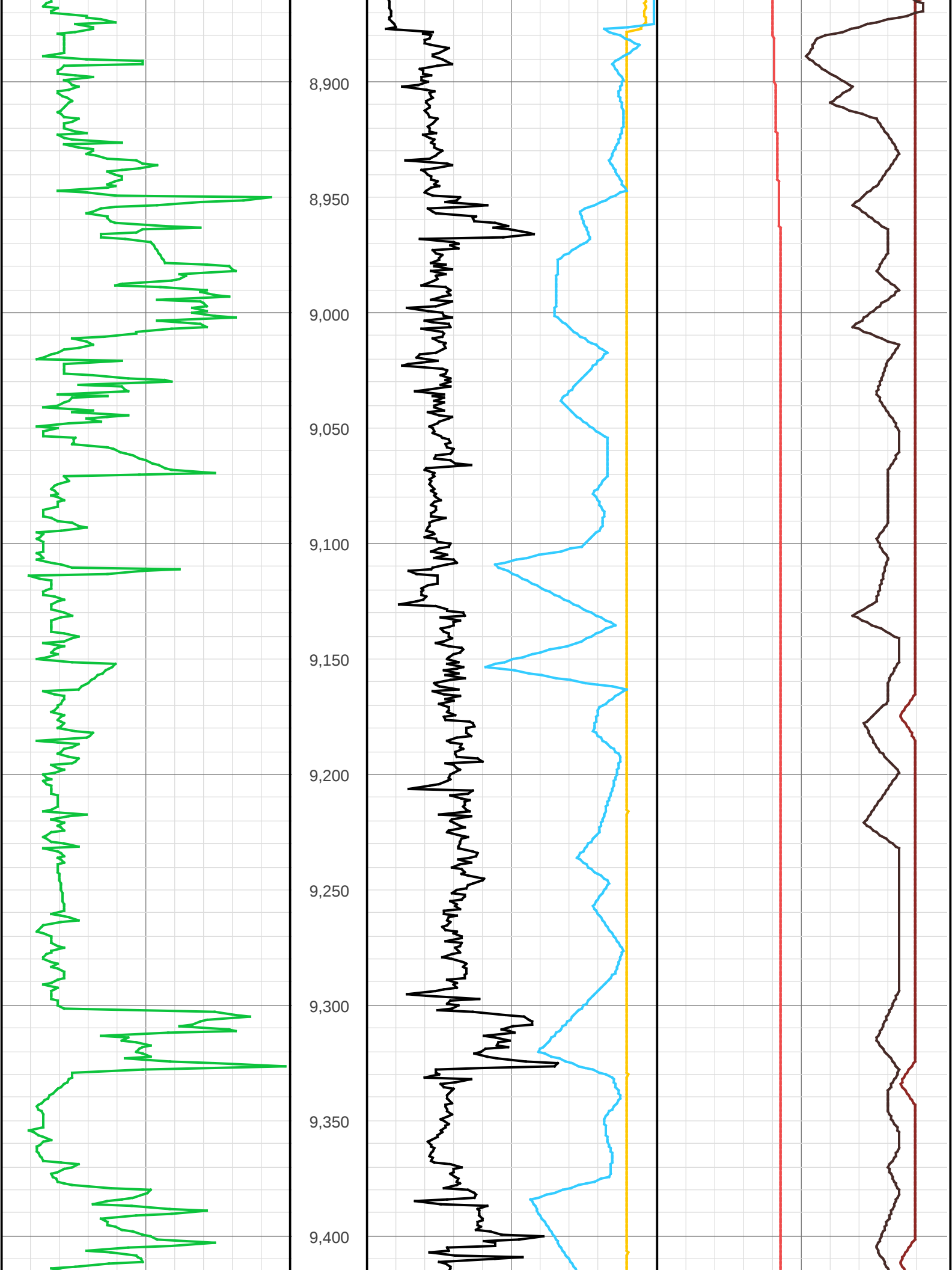


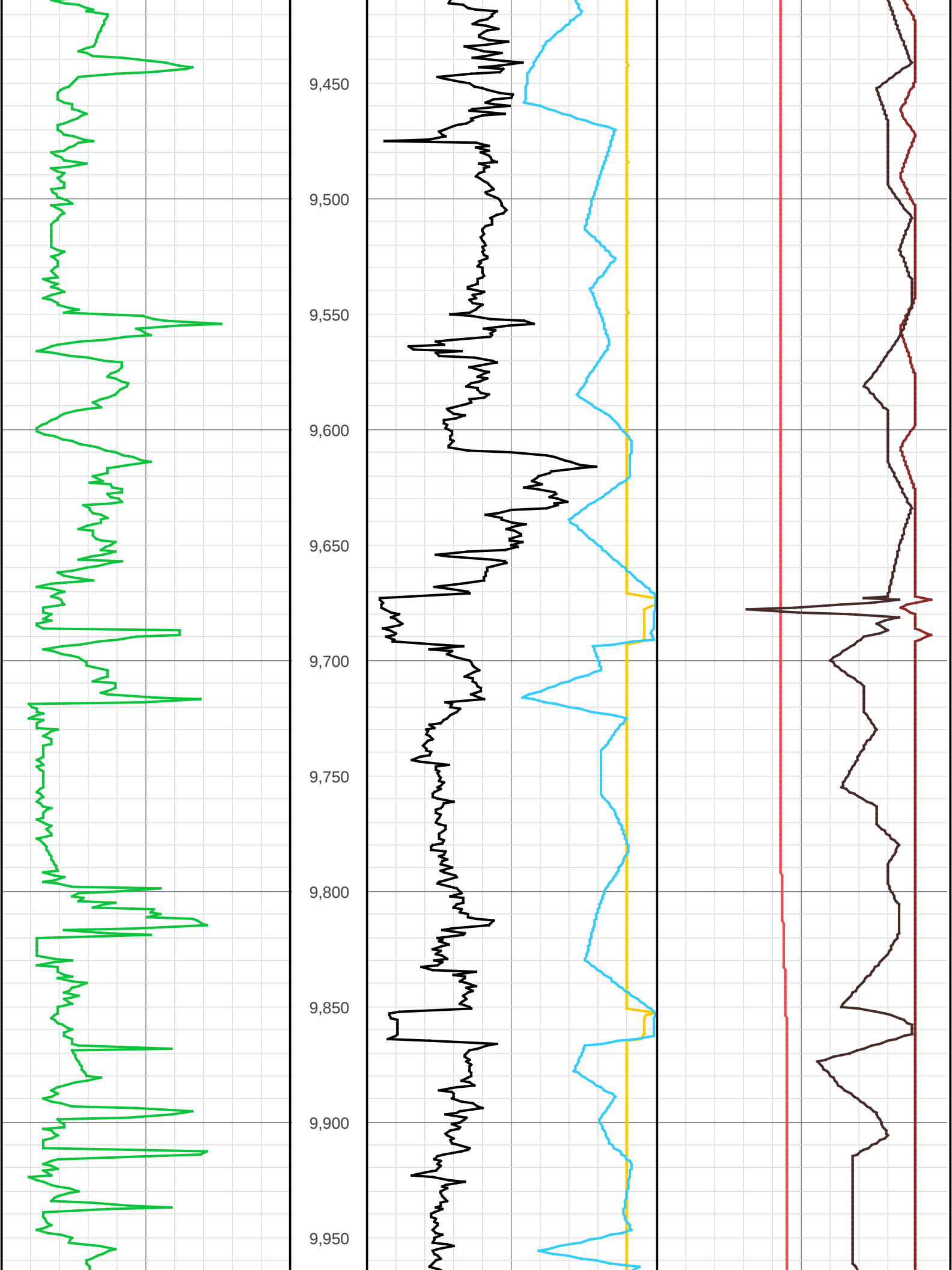


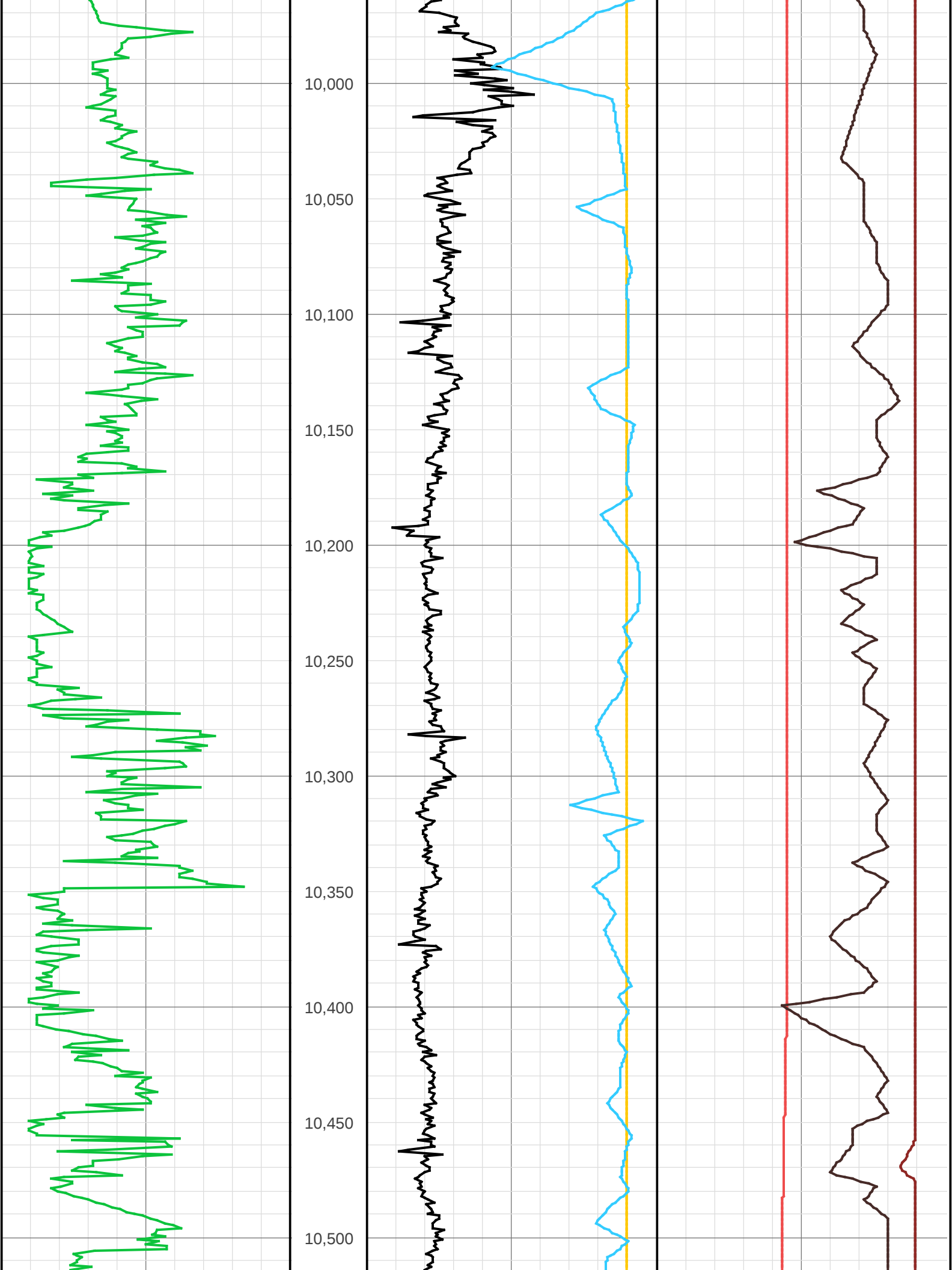


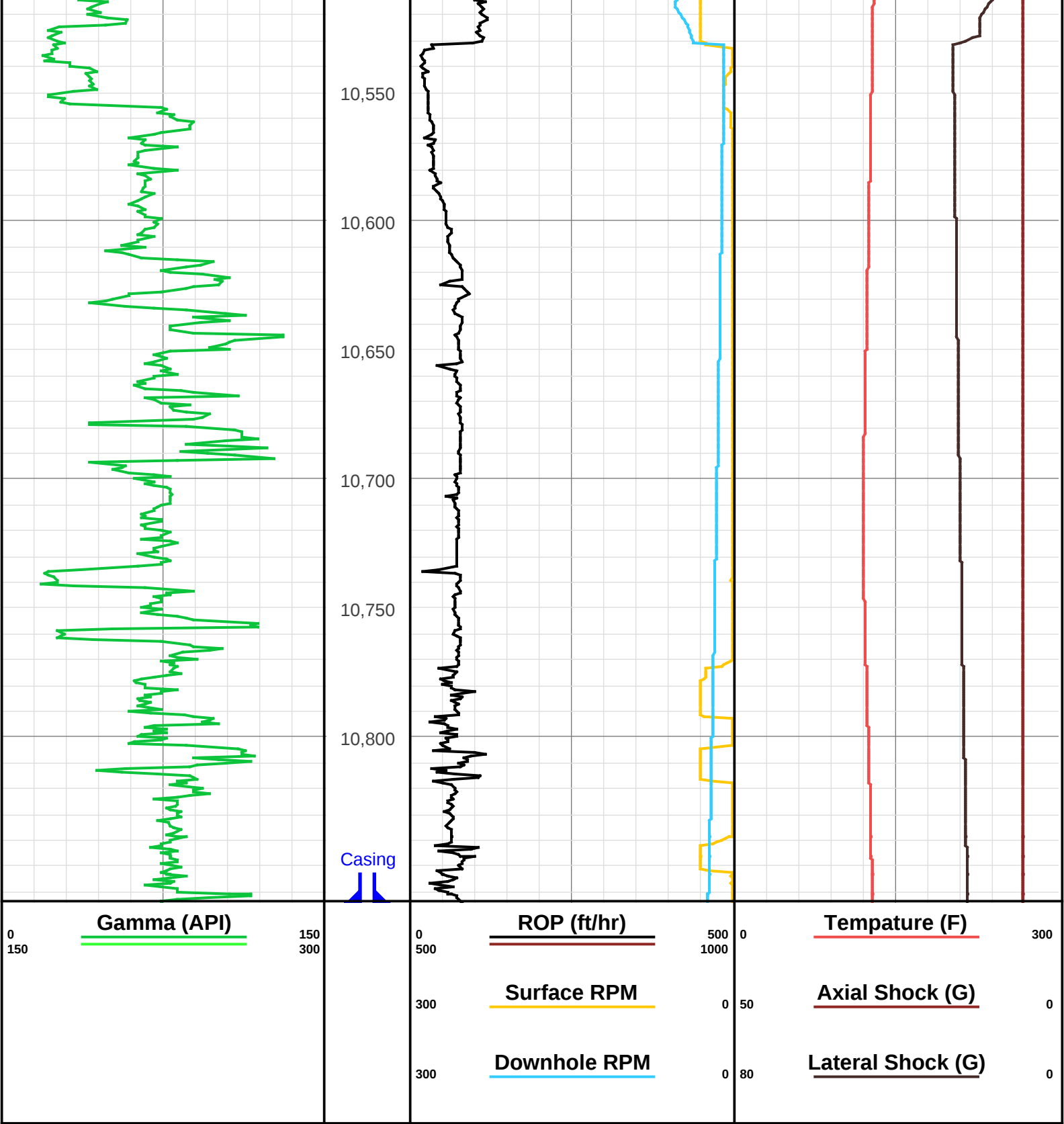














Gamma Ray

Intrepid-DDS
10314 TX-191
Midland, TX 79707

5" = 100'
MD FT

Company: Advanced Energy Partners
Well: Wool Head State Com #511H
Field: Delaware Basin
API: 30-025-46491
County: Lea County
State New Mexico
Country USA
Rig: H&P #466

Well Location NAD 1927
Latitude: 32° 27' 29.102 N Longitude: 103° 35' 20.448 W
Y: 531182.20 X: 770916.10
Section: 20 Township: 21-S Range: 33-E Intrepid-DDS

Permanent Datum: Mean Sea Level Kelly Bushing Elev: N/A
Log Measured From: Rotary Table Drill Floor Elev: 3754.0
Height of Reference: 26 Ground Level Elev: 3728

Depth Drilled: 1.0 to: 18601.0
Depth Logged: 5100.0 to: 18601.01
Date Logged: 09 Nov 2019 20:44 to: 22 Dec 2019 13:57

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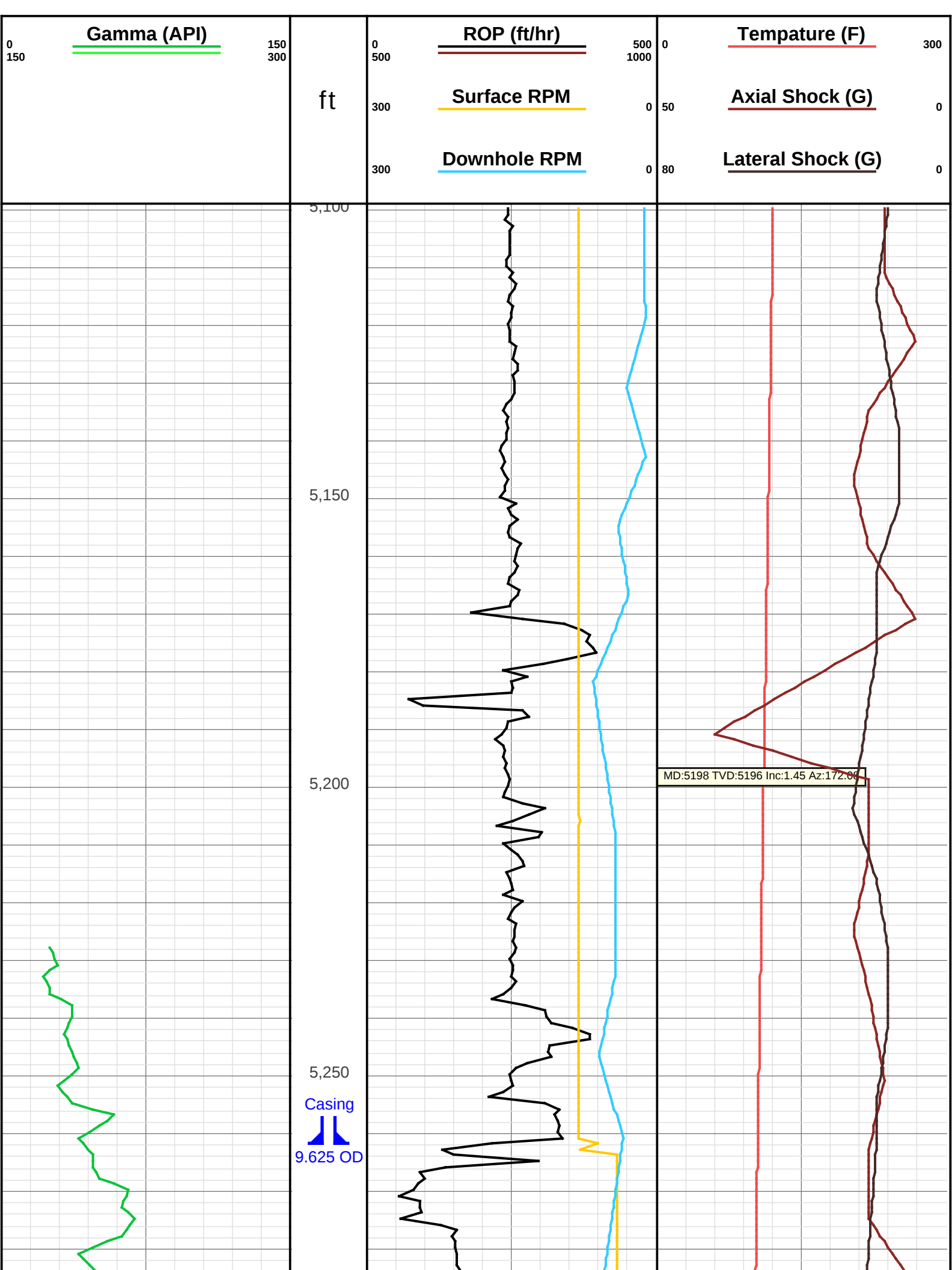
Hole Data			Casing Data		
Size	From (MD)	To (MD)	Size	From (MD)	To (MD)
17.5	100	1838	13.375	100	1838
12.5	1838	5263	9.625	1838	5263
8.5	5263	18601	5.5	5263	18601

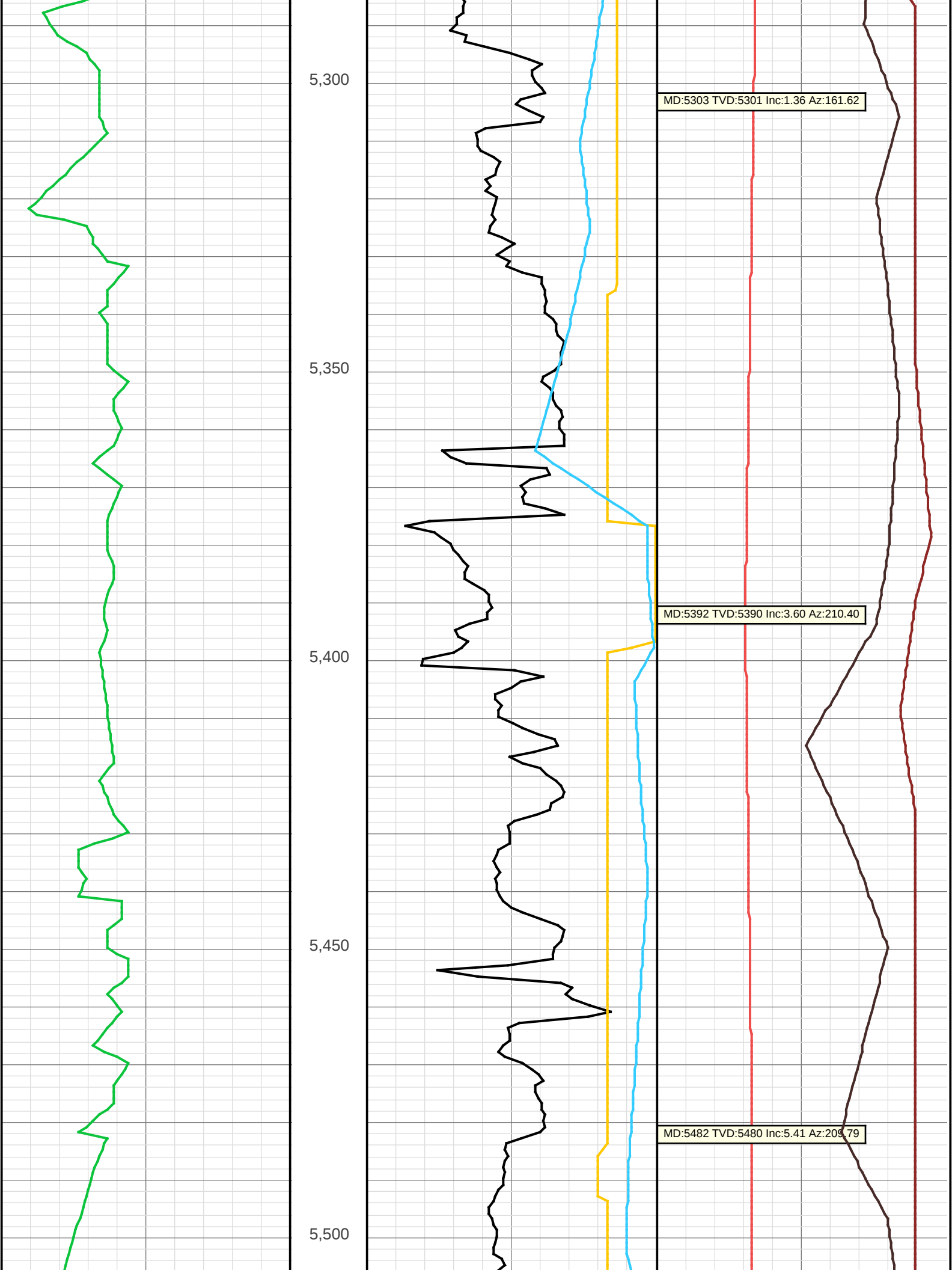
Run Data								
Run Name	MWD Run 1	MWD Run 2	MWD Run 3	MWD Run 4	MWD Run 5	MWD Run 6	MWD Run 7	MWD Run 8
Start Date	10 Nov 2019	15 Nov 2019	23 Nov 2019	24 Nov 2019	15 Dec 2019	17 Dec 2019	18 Dec 2019	19 Dec 2019
Start Time	7:00	1:30	21:00	11:30	21:00	2:50	15:00	18:00
End Date	11 Nov 2019	16 Nov 2019	24 Nov 2019	25 Nov 2019	17 Dec 2019	18 Dec 2019	19 Dec 2019	22 Dec 2019
End Time	04:00	17:15	10:30	23:30	1:00	14:00	17:00	13:30
Depth In	1.0	1838	5182	6389	10547	11589	13734	14193
Depth Out	1838	5263	6389	10547	11589	13734	14193	18601
Log Top			5182	6336	10538	11553	13687	14146
Log Bottom			6336	10538	11553	13687	14146	18554
Hole Size	17.5	12.75	8.5	8.5	8.5	8.5	8.5	8.5

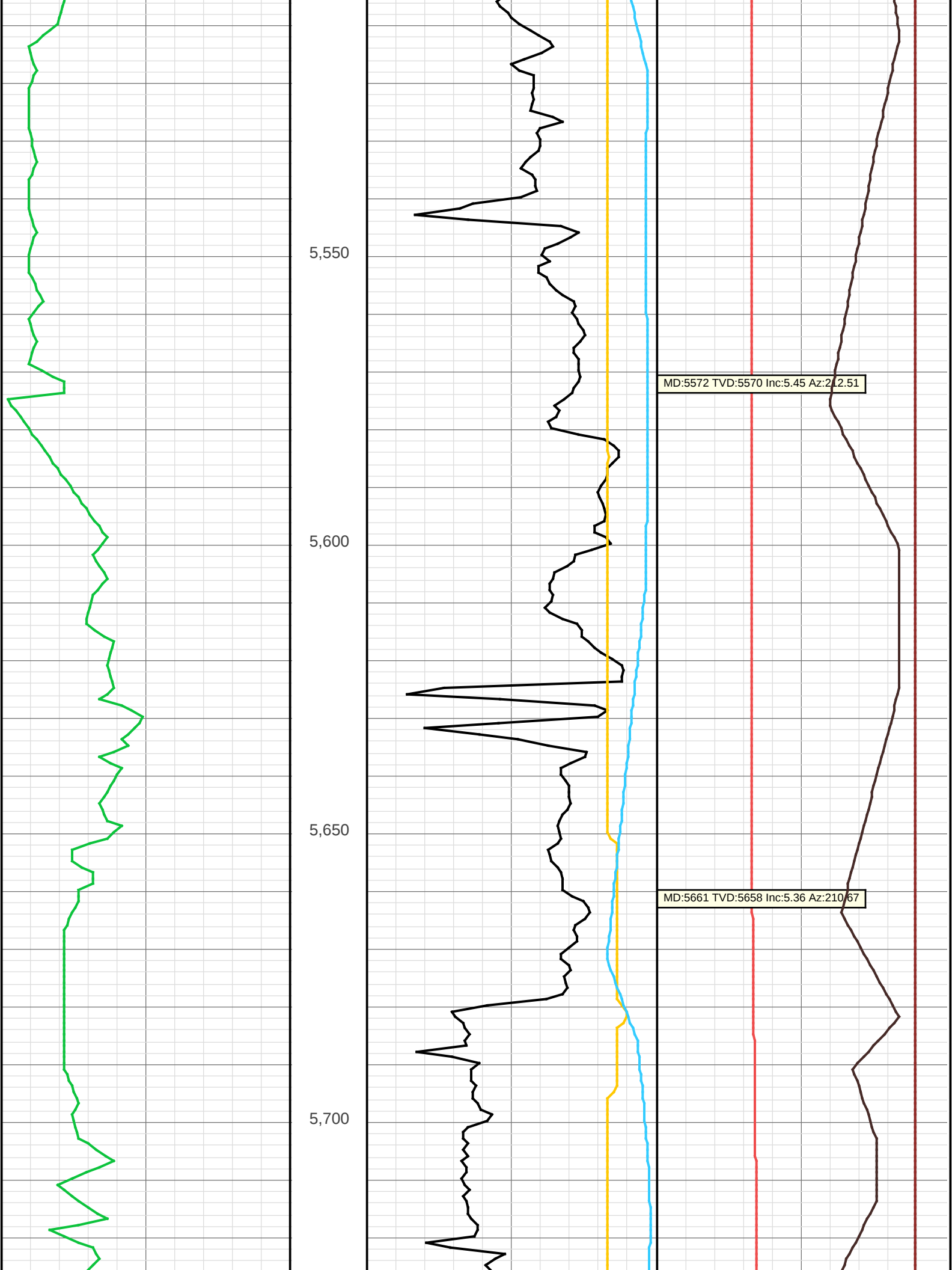
Tool Data								
Run Name	MWD Run 1	MWD Run 2	MWD Run 3	MWD Run 4	MWD Run 5	MWD Run 6	MWD Run 7	MWD Run 8
Directional Sensor SN	20081-R	20081-R	20120-R	20125-R	20120-R	20224-R	20120	20120
Directional Offset	68	65	63	63	48	58	58	58
Gamma Sensor SN	N/A	N/A	352-R	907-R	352-R	809-R	352	352
Gamma Offset			53	53	36	47	47	47
Gamma Corr. Factor	1.0	1.0	3.661	3.682	3.72	3.76	3.72	3.72

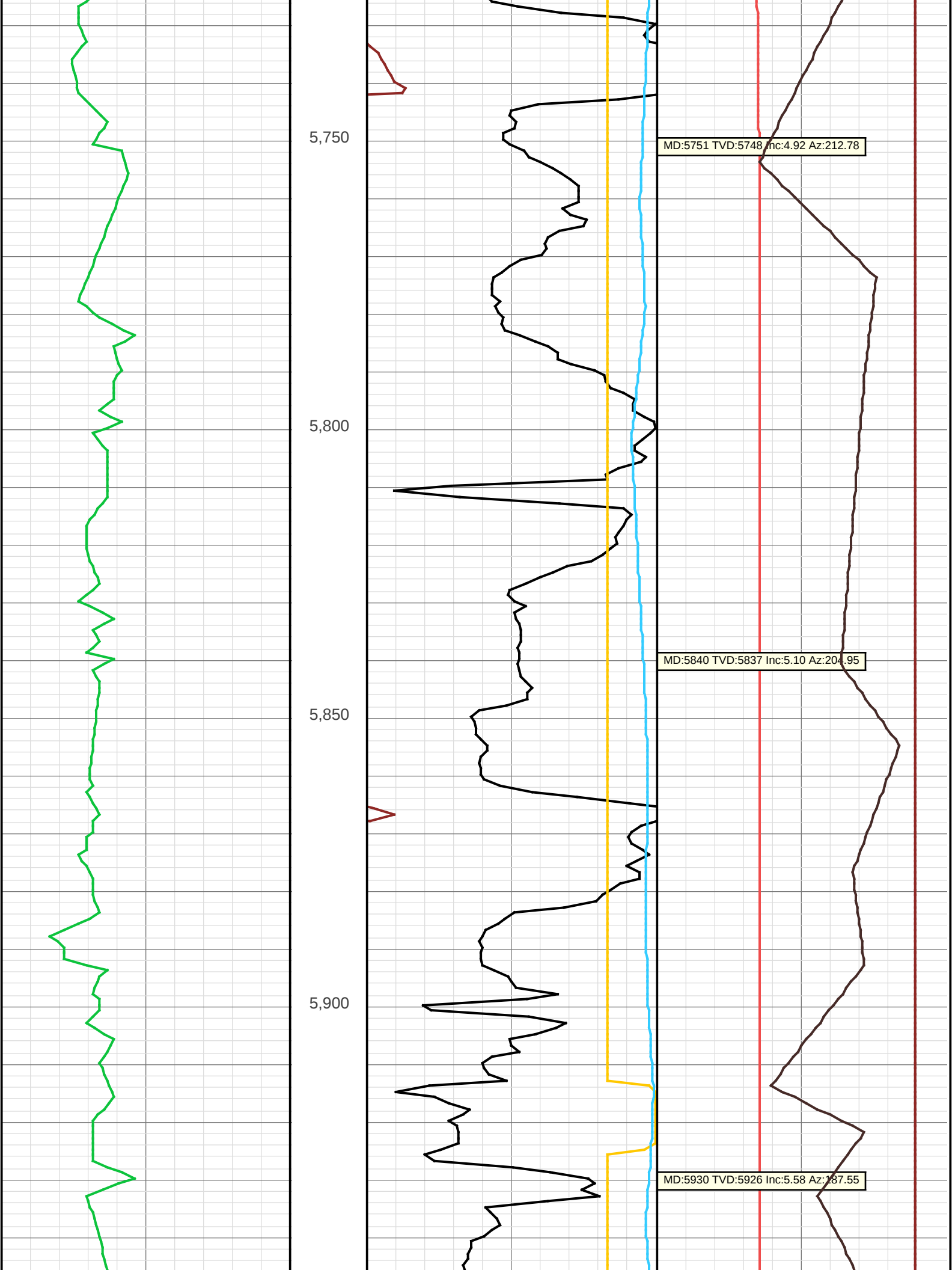
Mud Data								
Run Name	MWD Run 1	MWD Run 2	MWD Run 3	MWD Run 4	MWD Run 5	MWD Run 6	MWD Run 7	MWD Run 8
Mud Type	Water Based	Water Based	Water Based	Water Based	Oil Based	Oil Based	Oil Based	Oil Based
Mud Density (lb/gal)	9.7	10.4	10.6	10.6	9.5	9.6	9.6	9.6
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Plastic Visc. (cP)	N/A	2	2	1	19	16	16	13
pH	N/A	10.0	10.0	10.1	N/A	N/A	N/A	N/A
Chlor. Whole Mud (mg/L)	N/A	187,000	178,000	75,000	73,000	45000	46000	44000
API Filtrate (cm3/30)	N/A	99/2	2	99/2	N/A	8.2	7.2	7.2
Max MWD Temp (F)	113.4	127.7	113.4	134.9	139.6	169.6	162.6	182.0

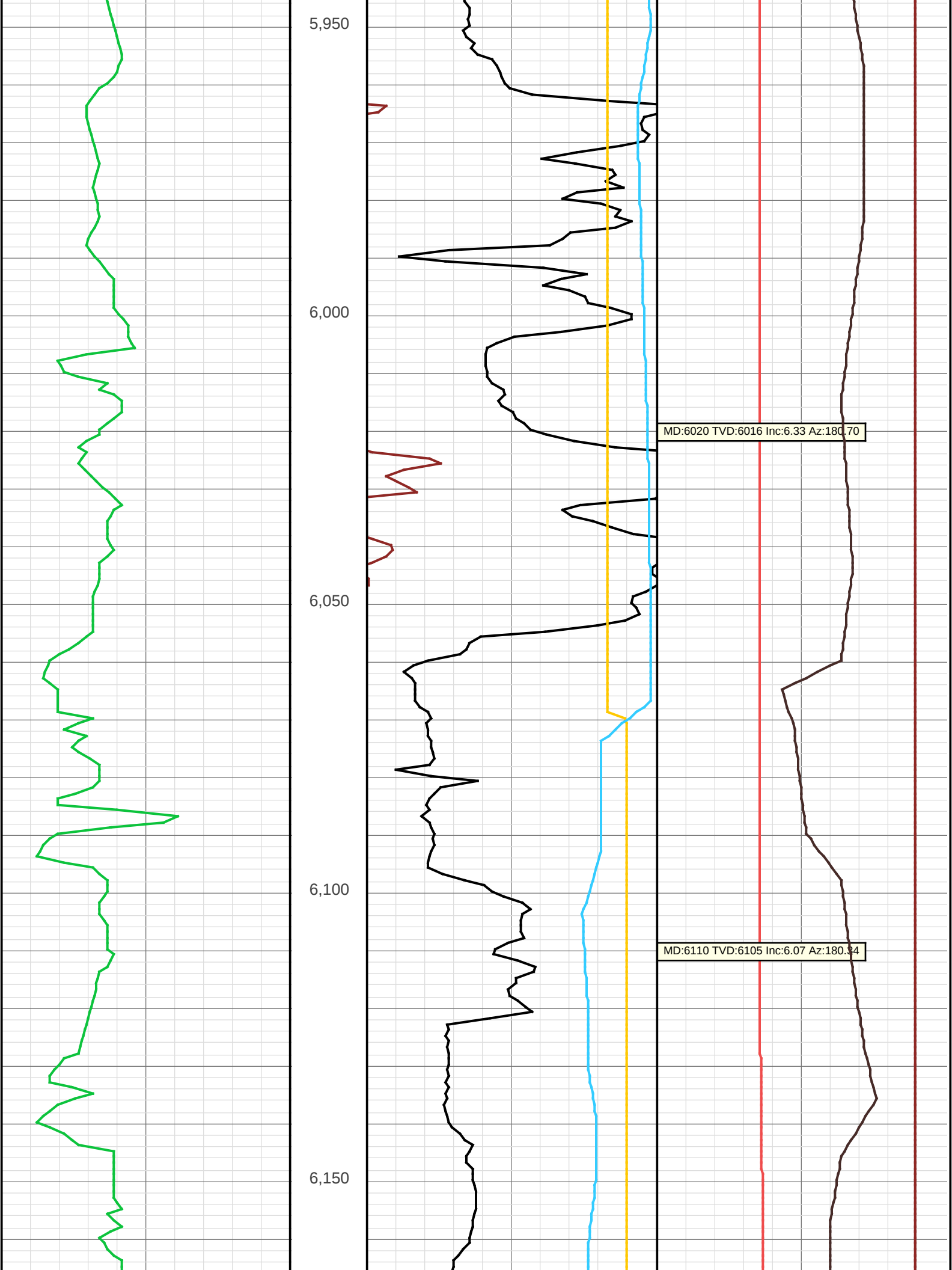
Personnel								
Run Name	MWD Run 1	MWD Run 2	MWD Run 3	MWD Run 4	MWD Run 5	MWD Run 6	MWD Run 7	MWD Run 8
MWD Operator 1	Ben Wallace	Ben Wallace	Michael Walton	Michael Walton	Ben Wallace	Ben Wallace	Ben Wallace	Ben Wallace
MWD Operator 2	Michael Walton	Michael Walton	Josphe Hatley	Josphe Hatley	Michael Walton	Michael Walton	Mike Walton	Mike Walton
MWD Operator 3								

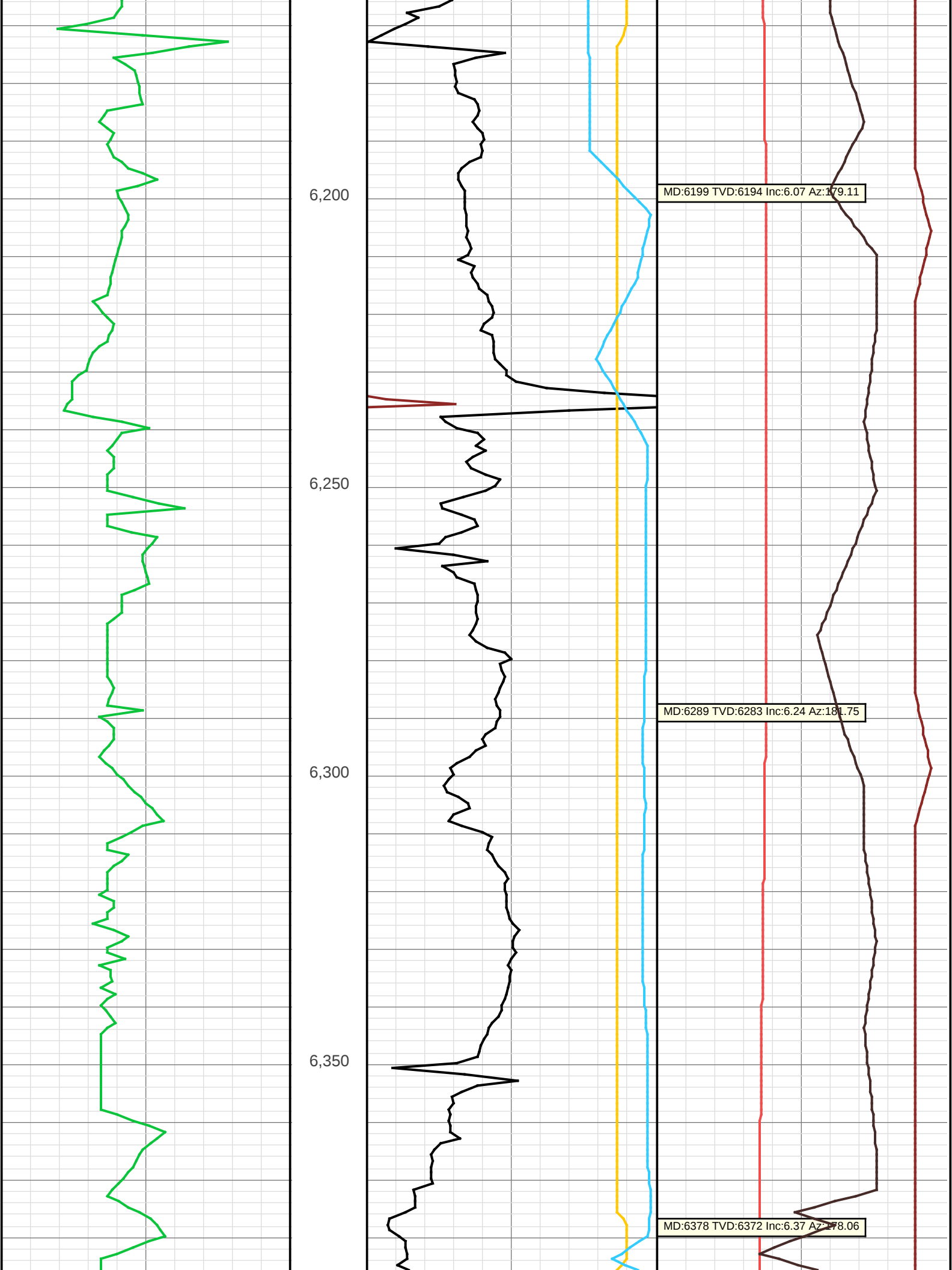


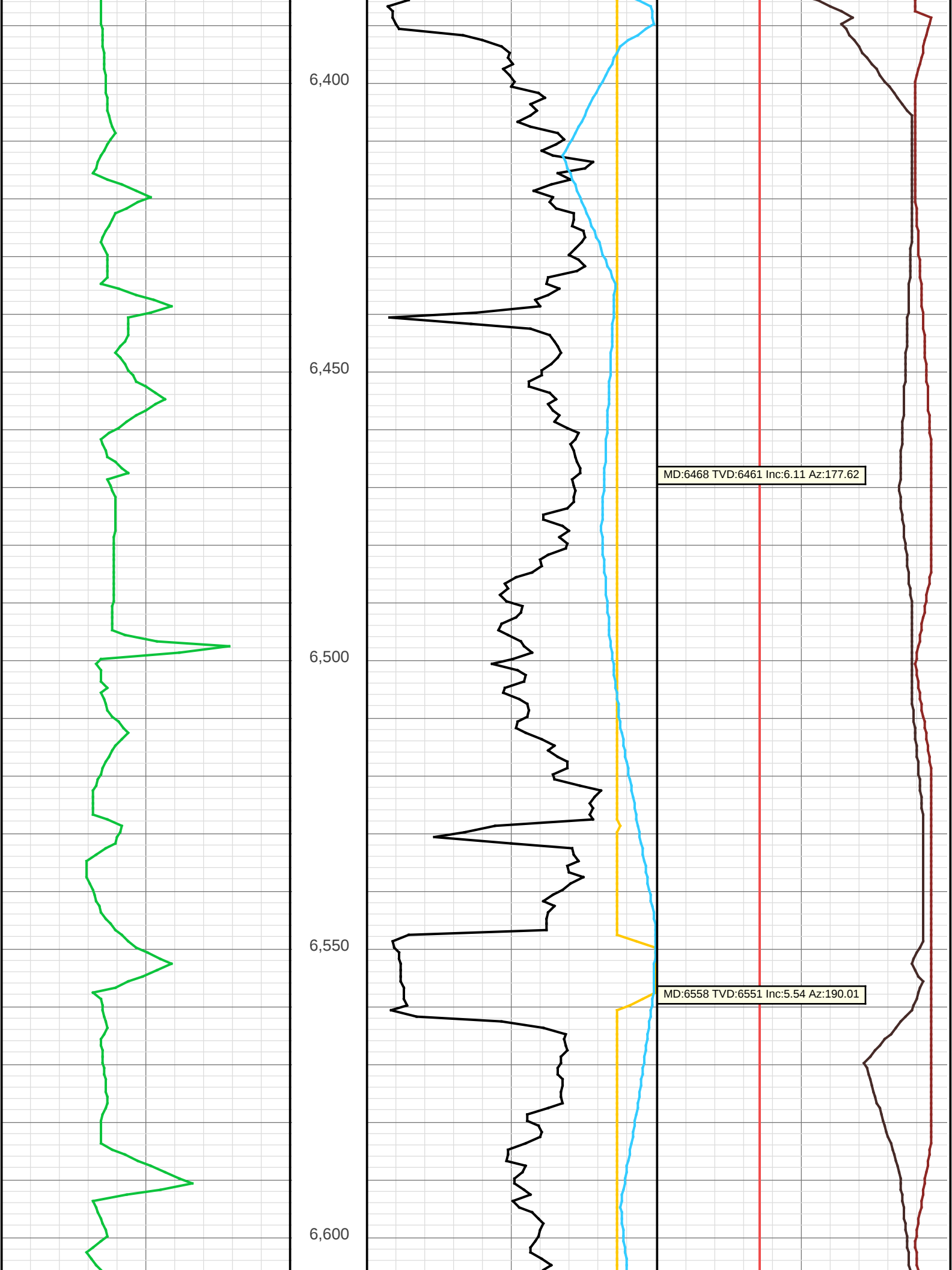


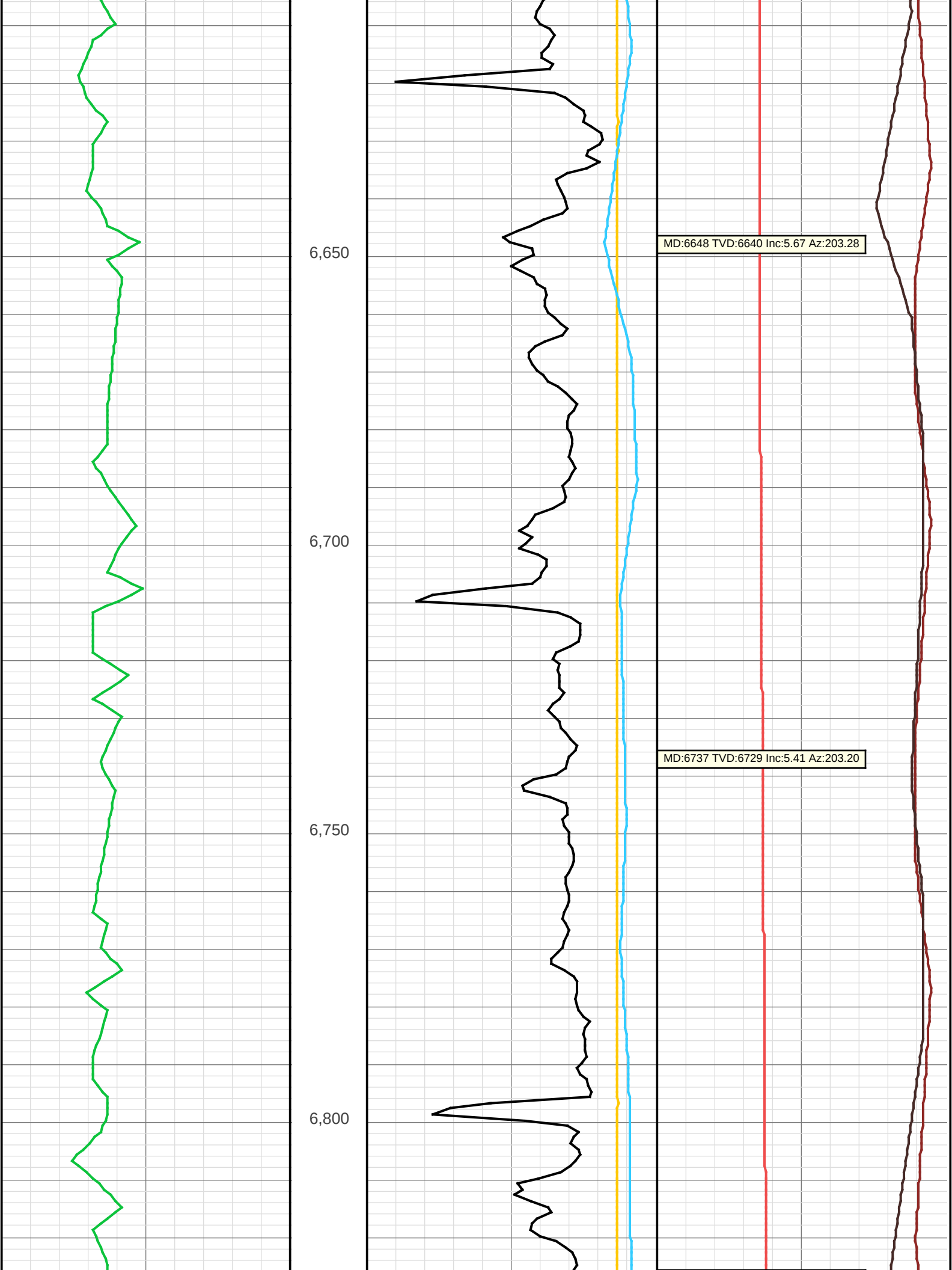


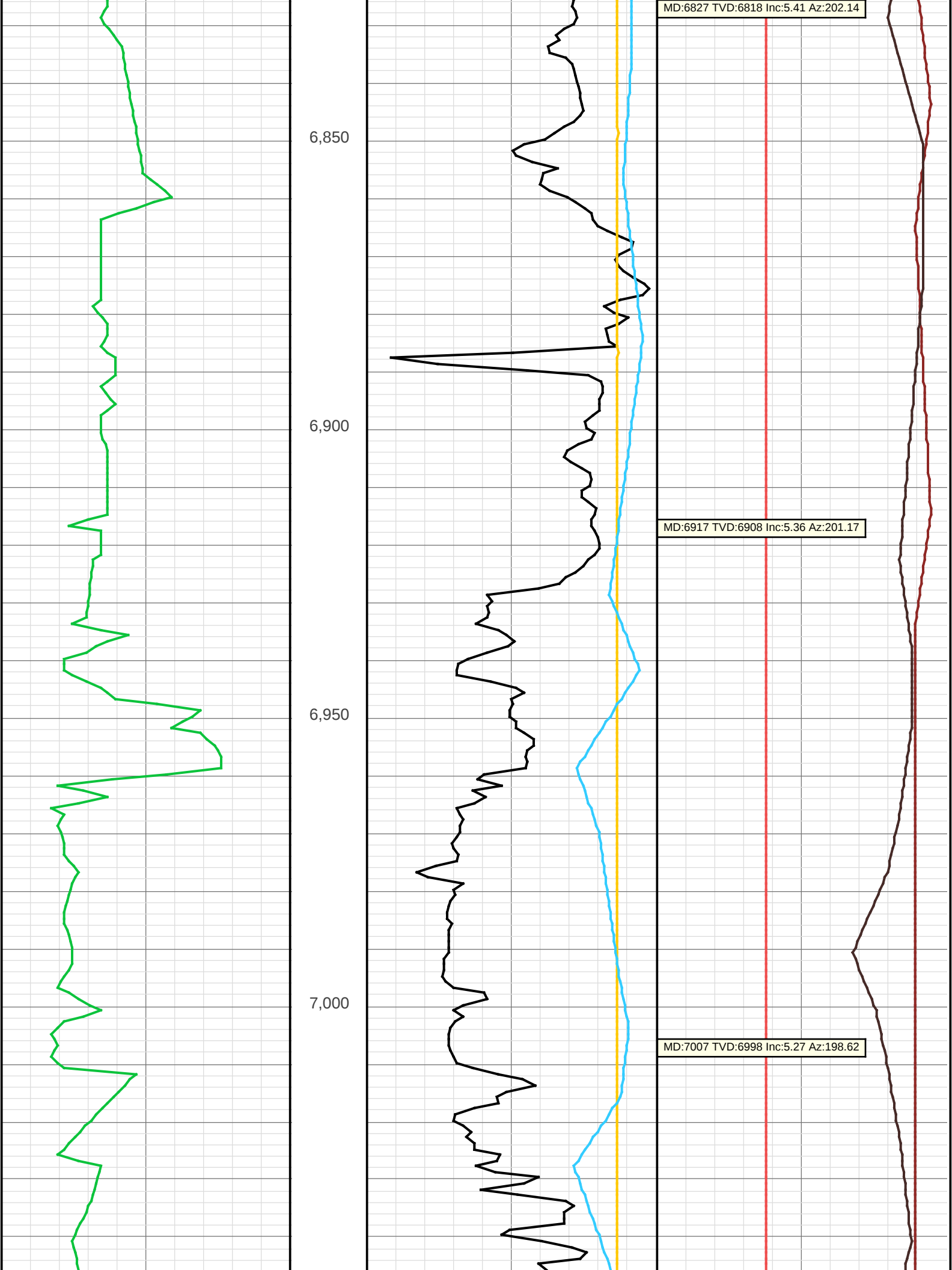


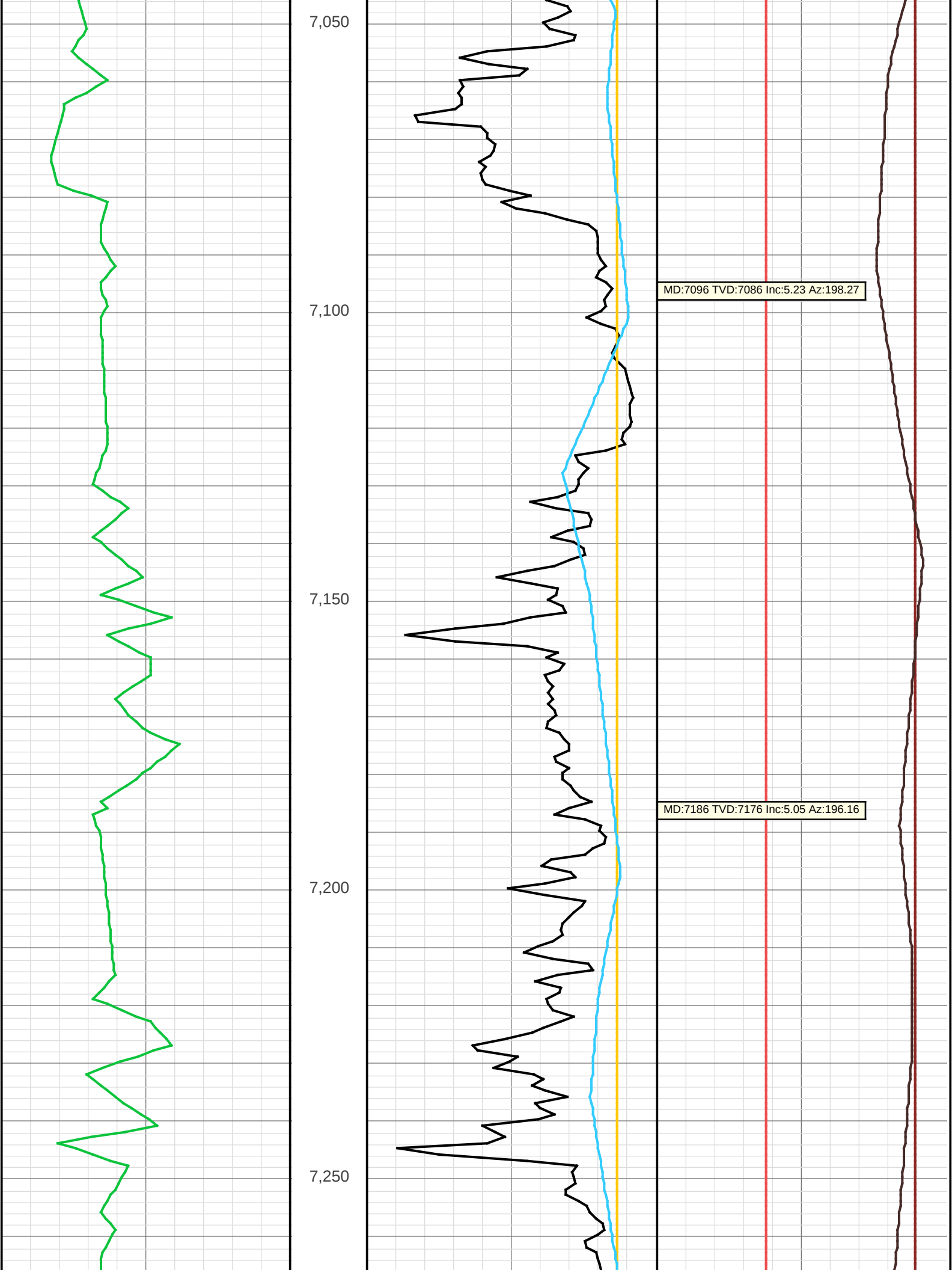


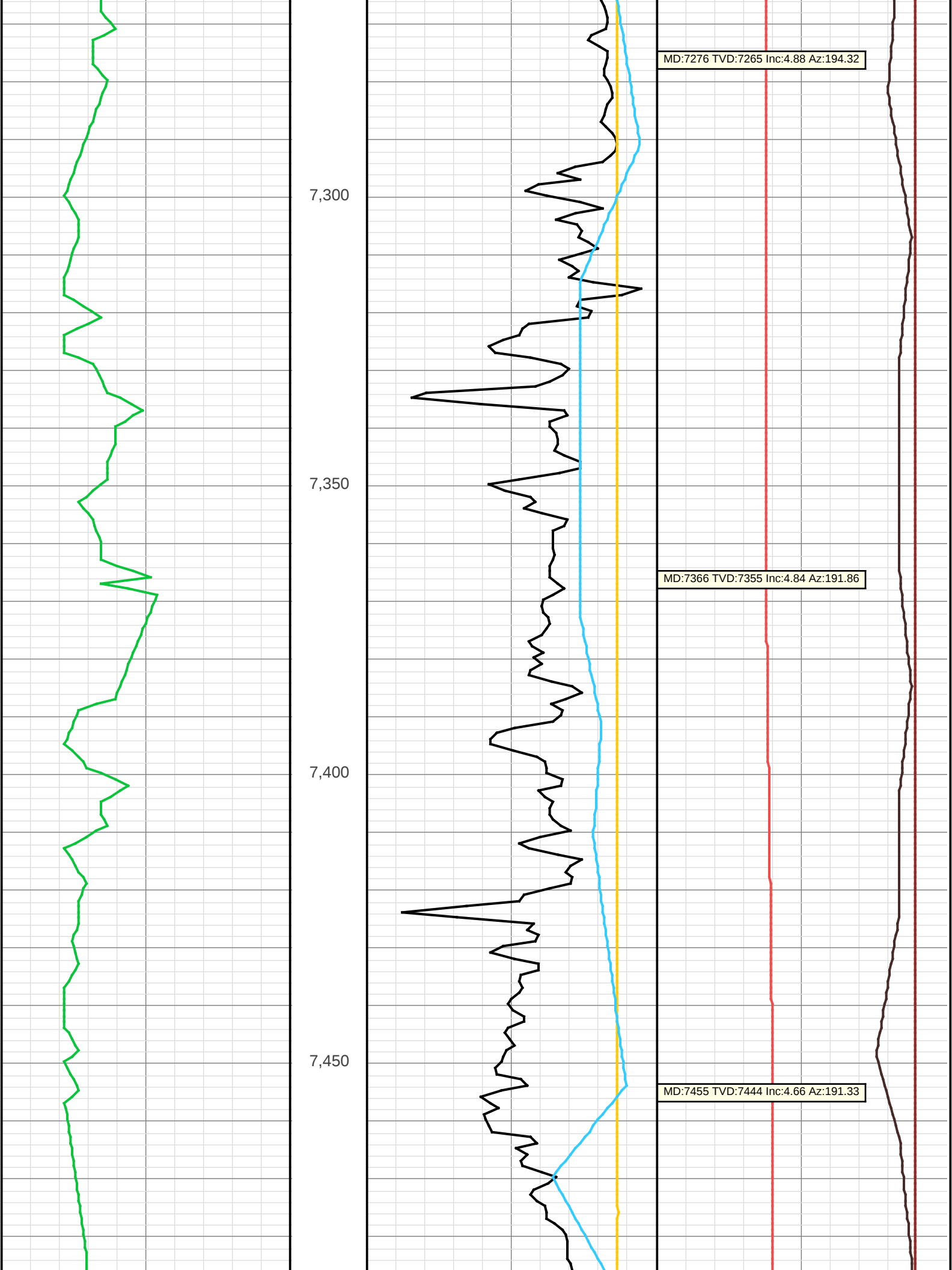


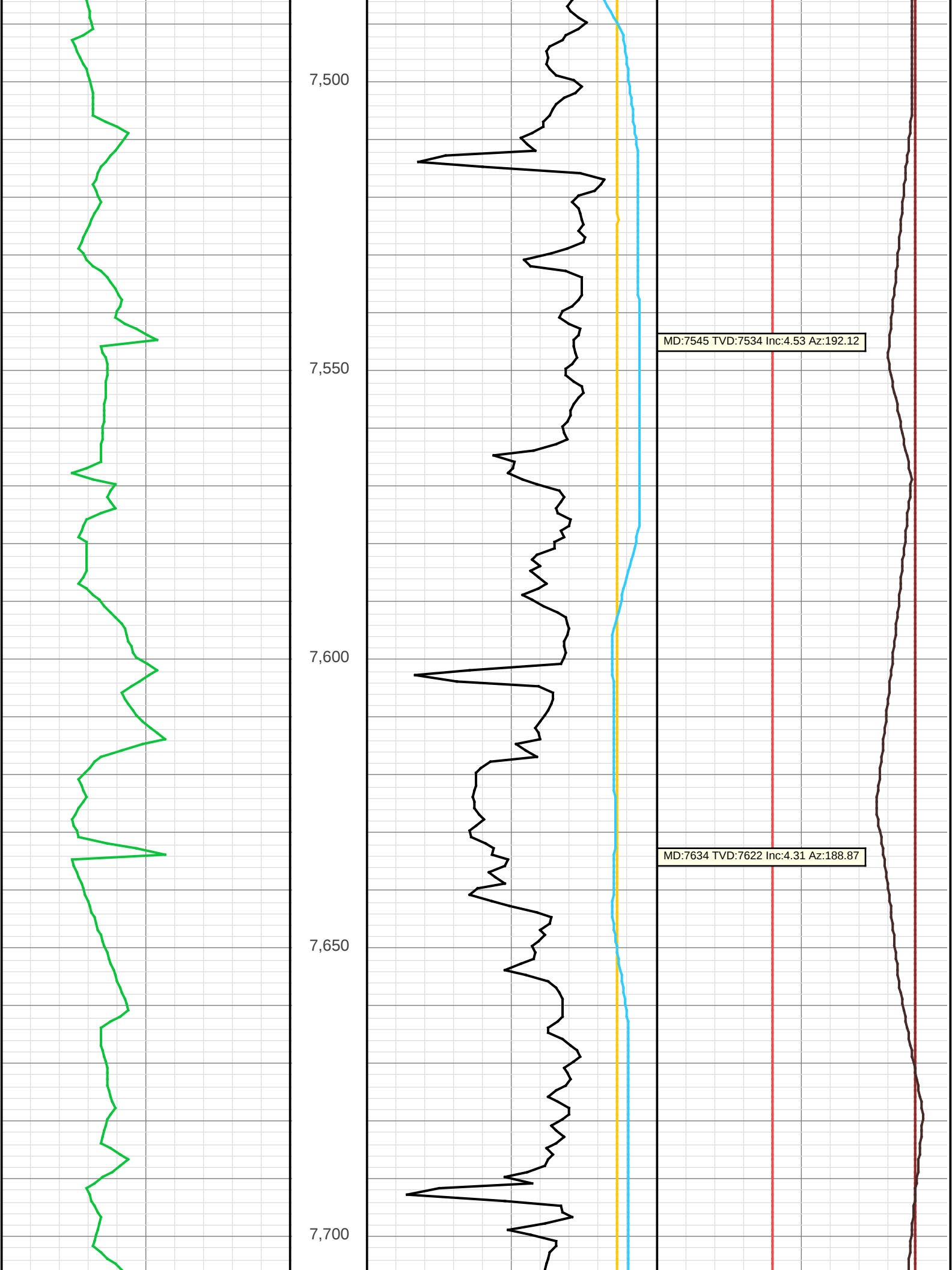


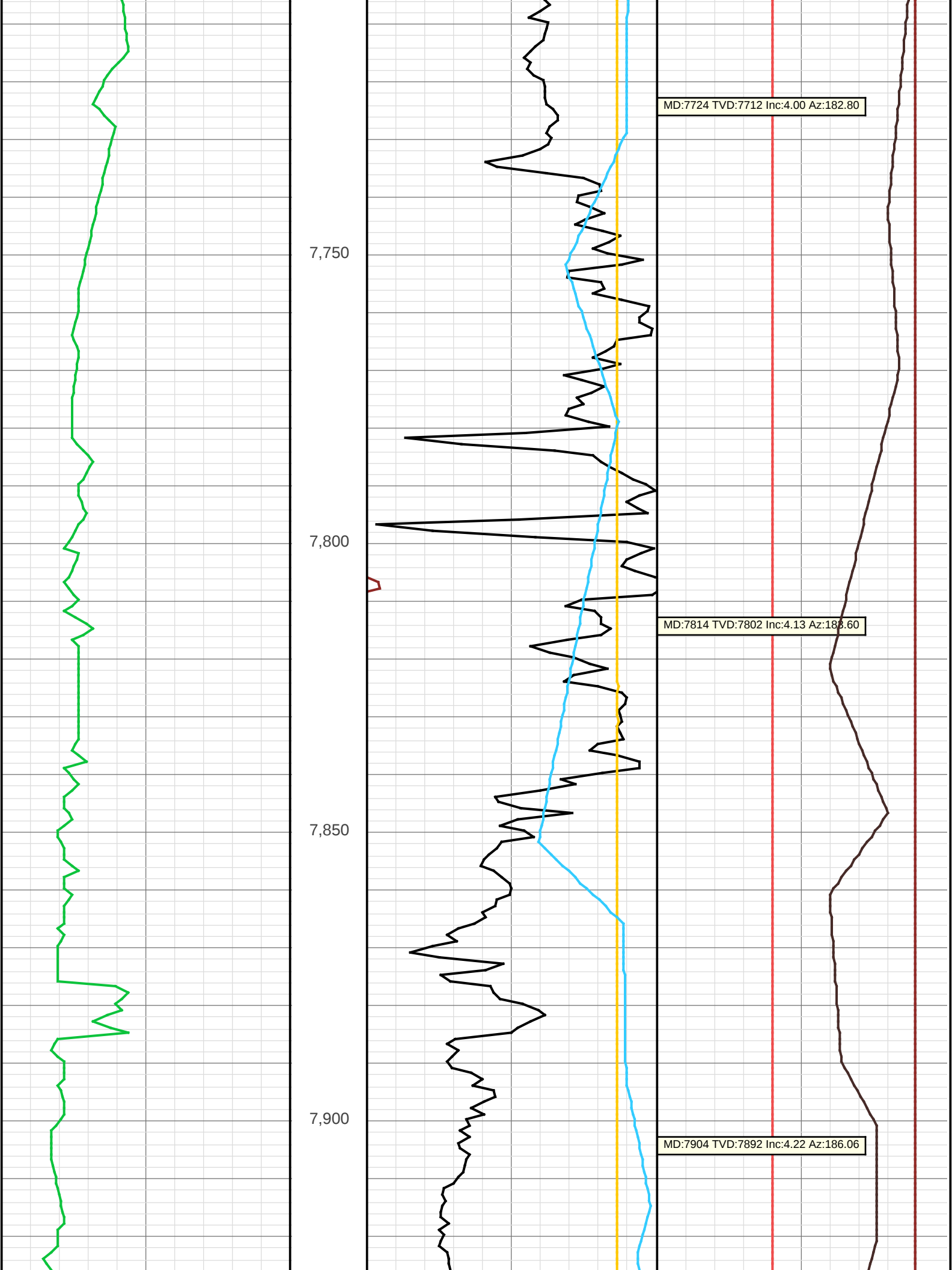


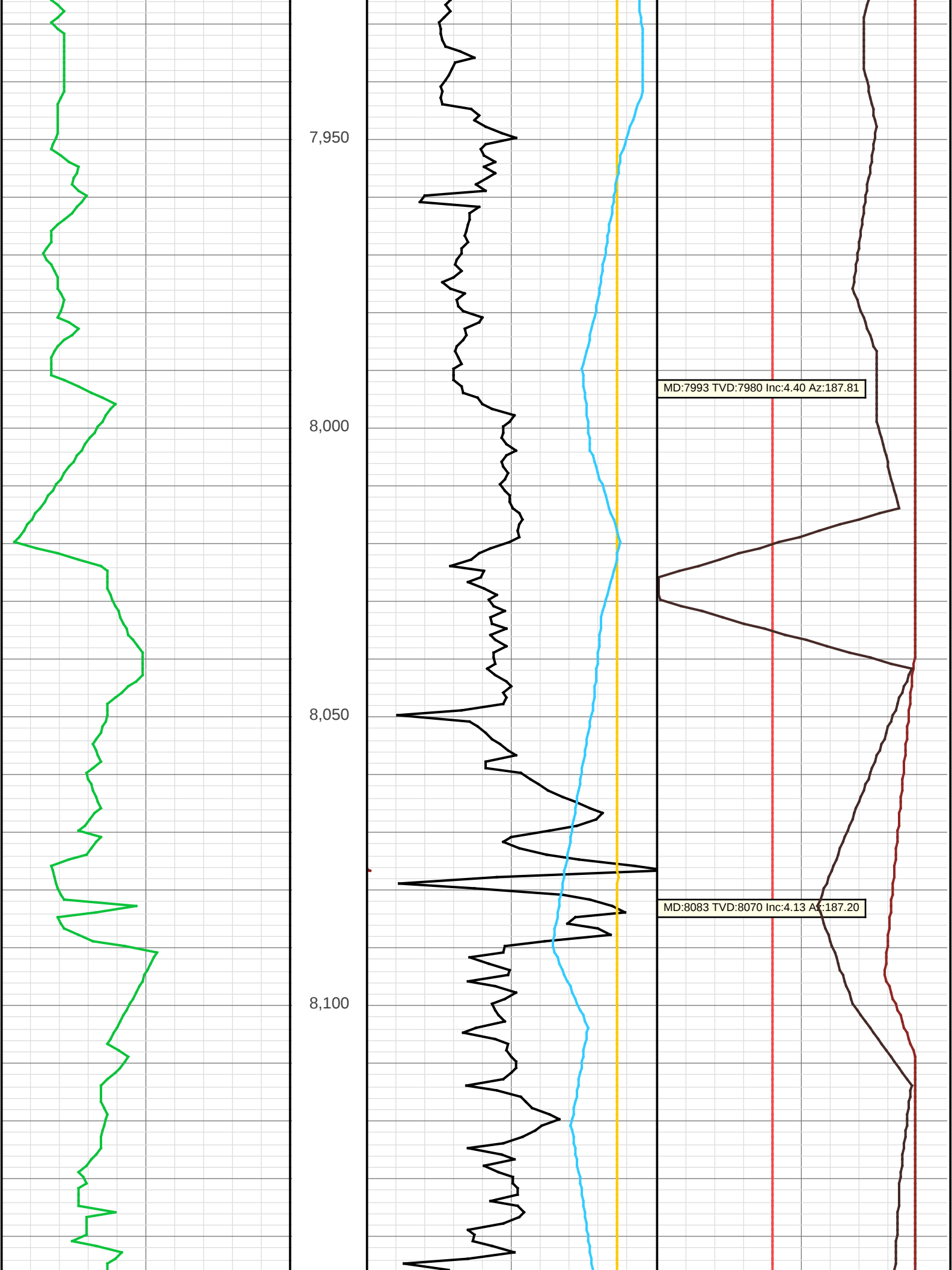


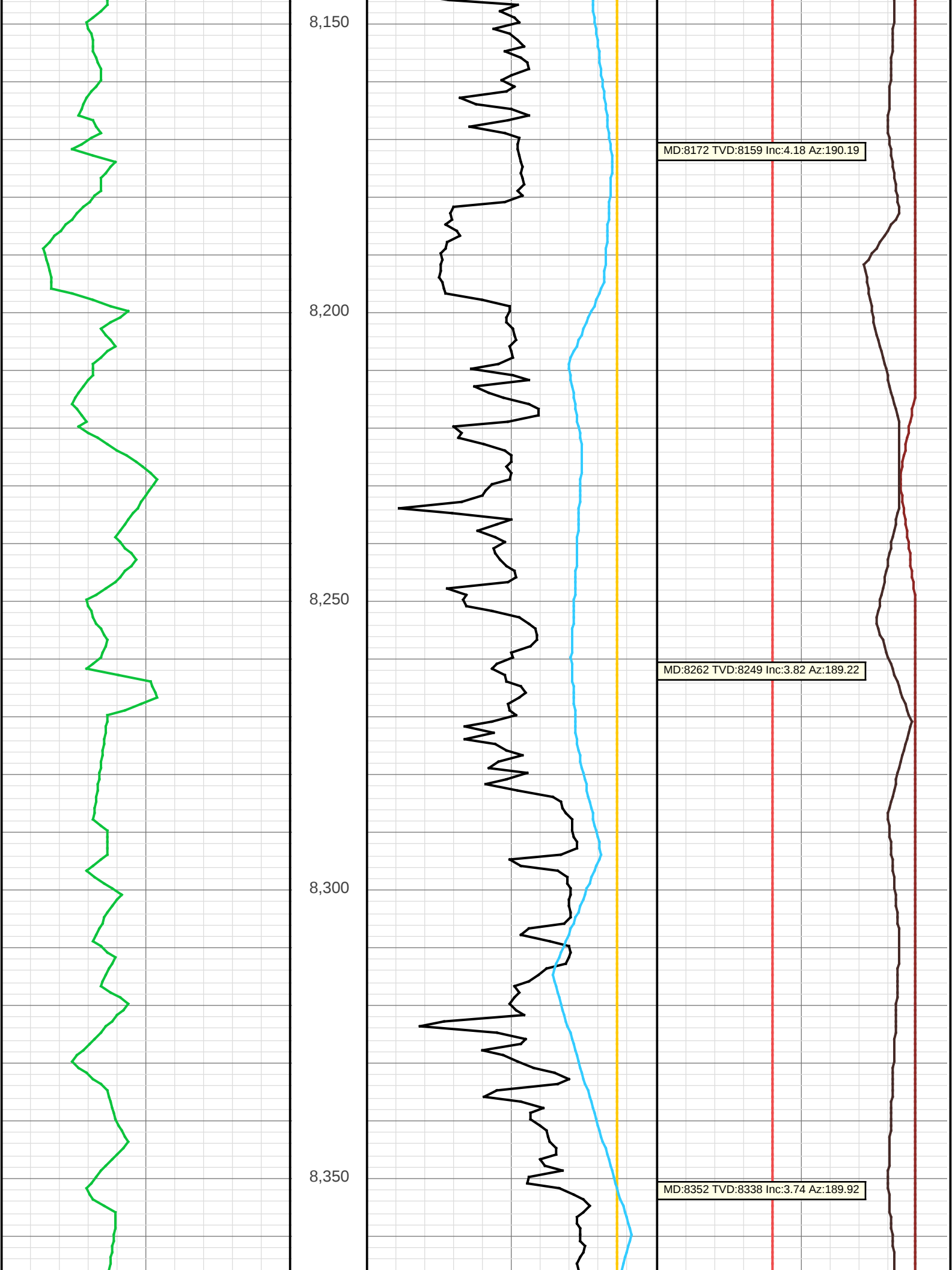


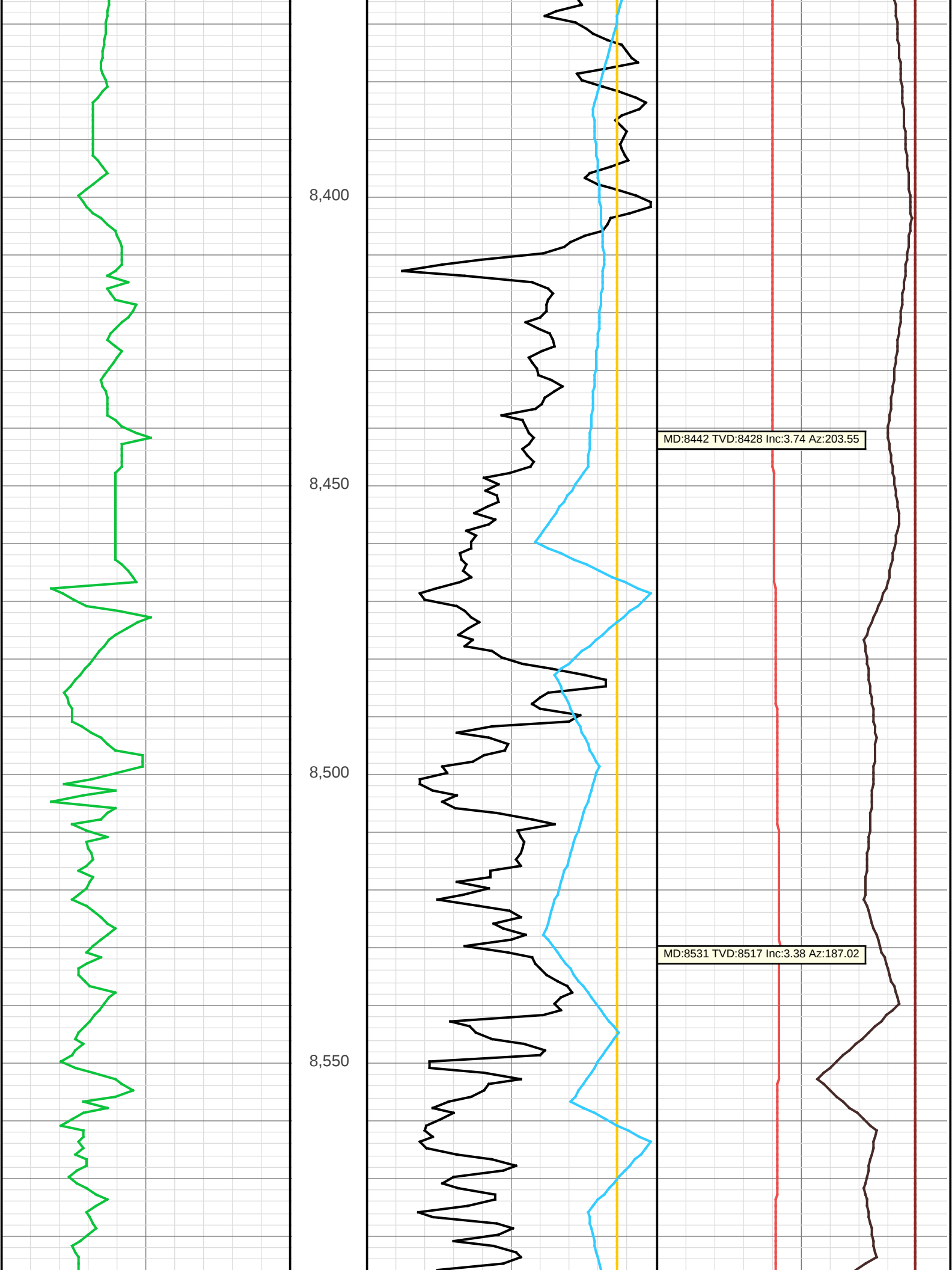


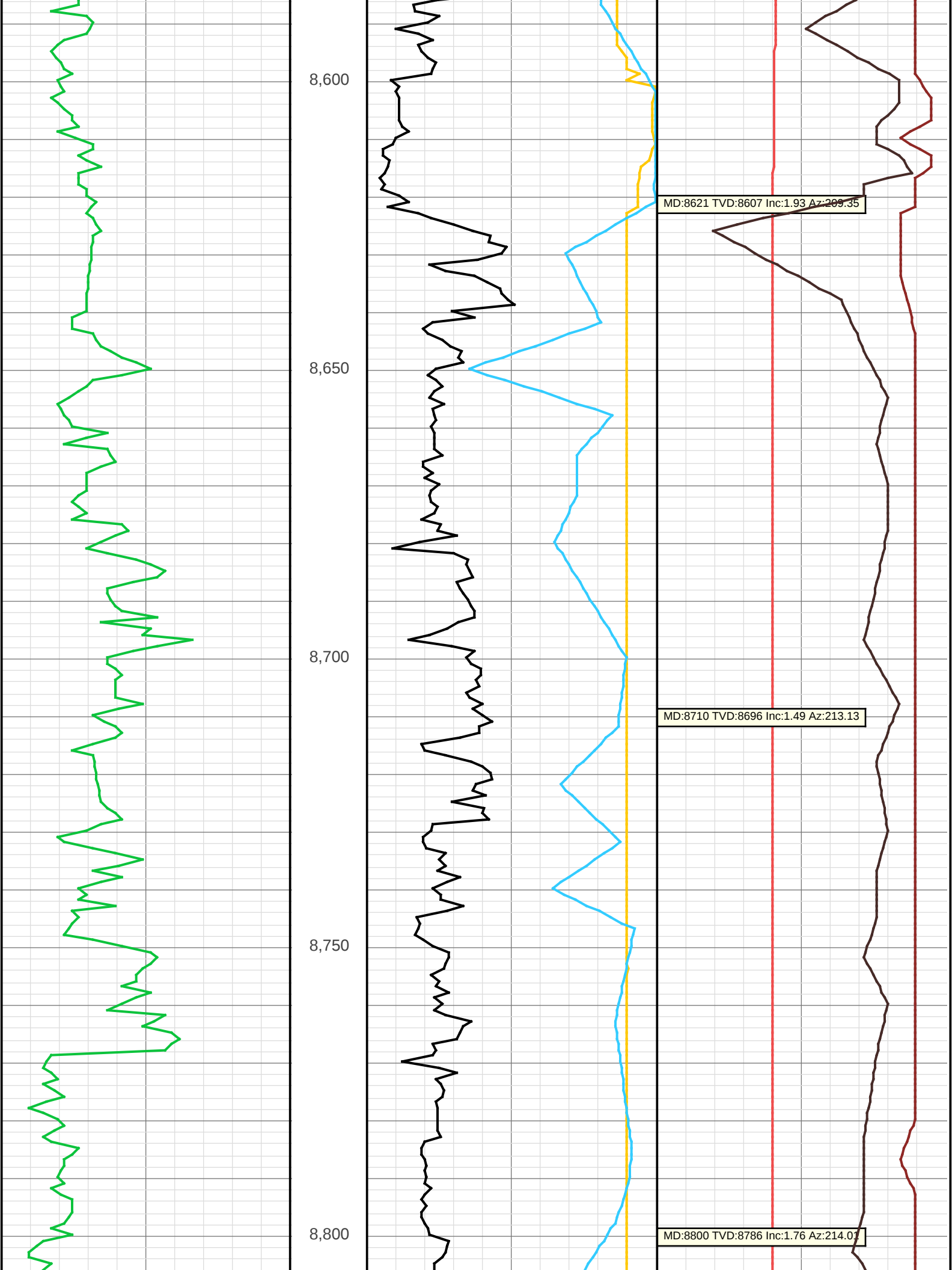


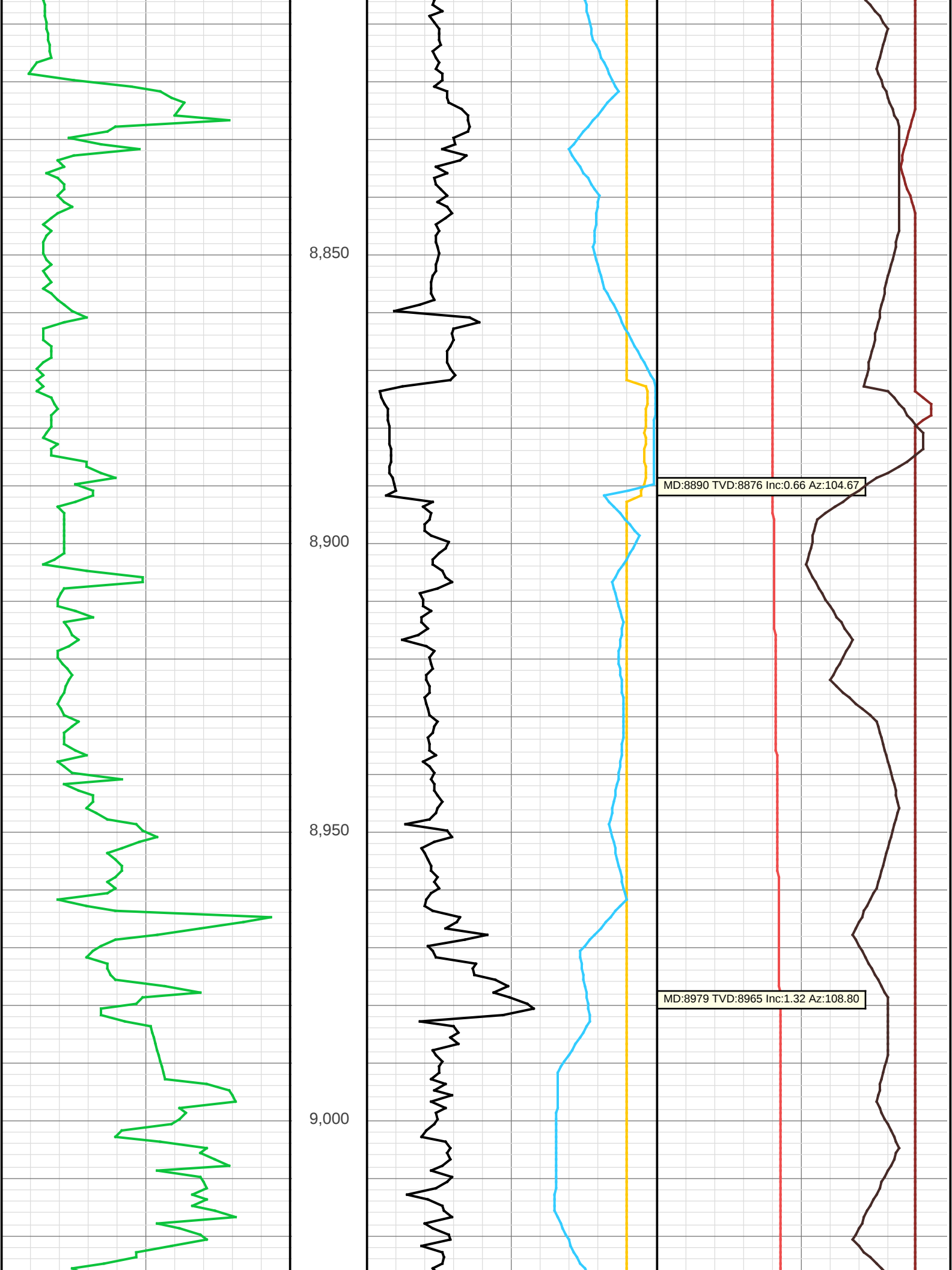


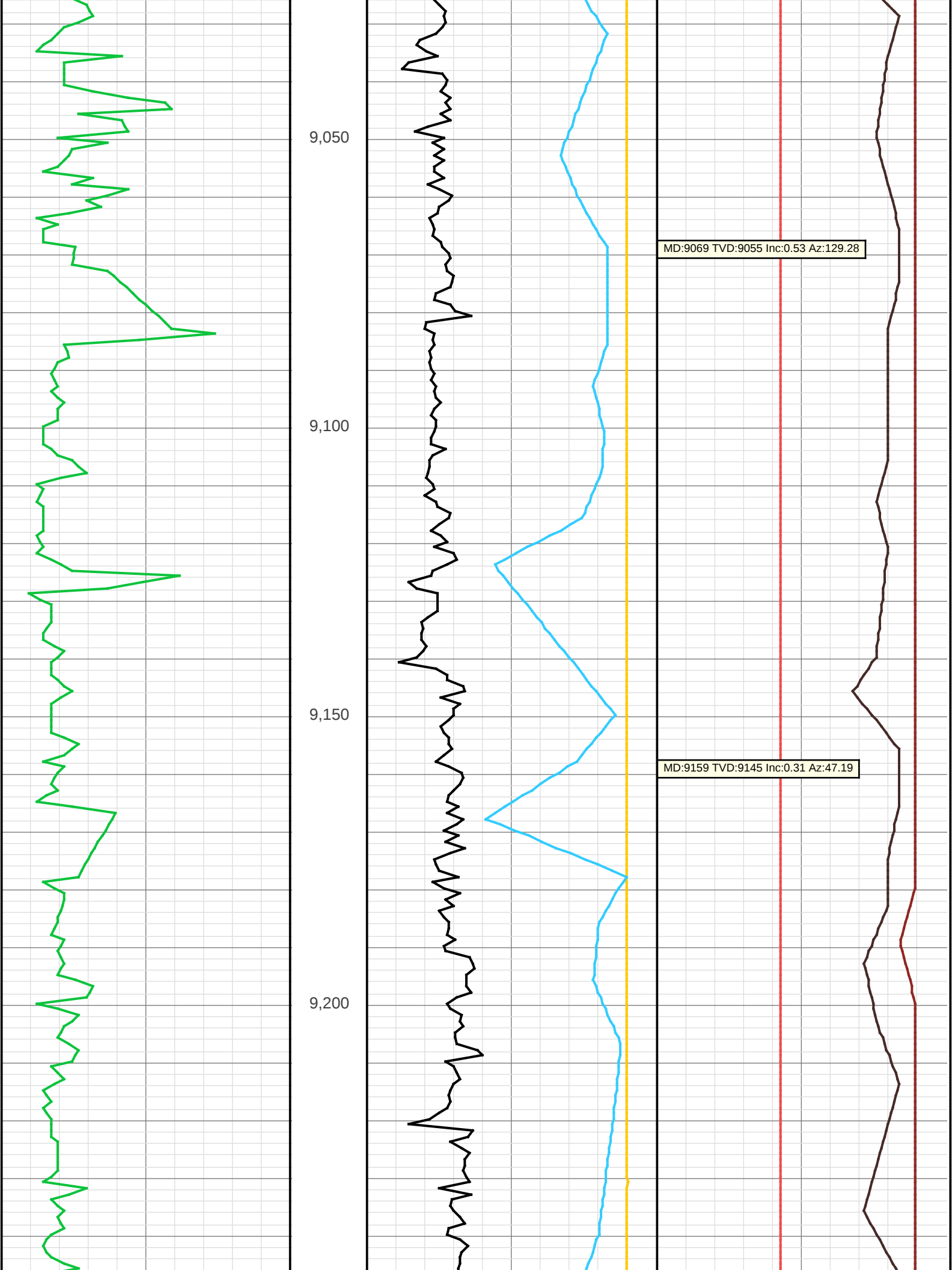


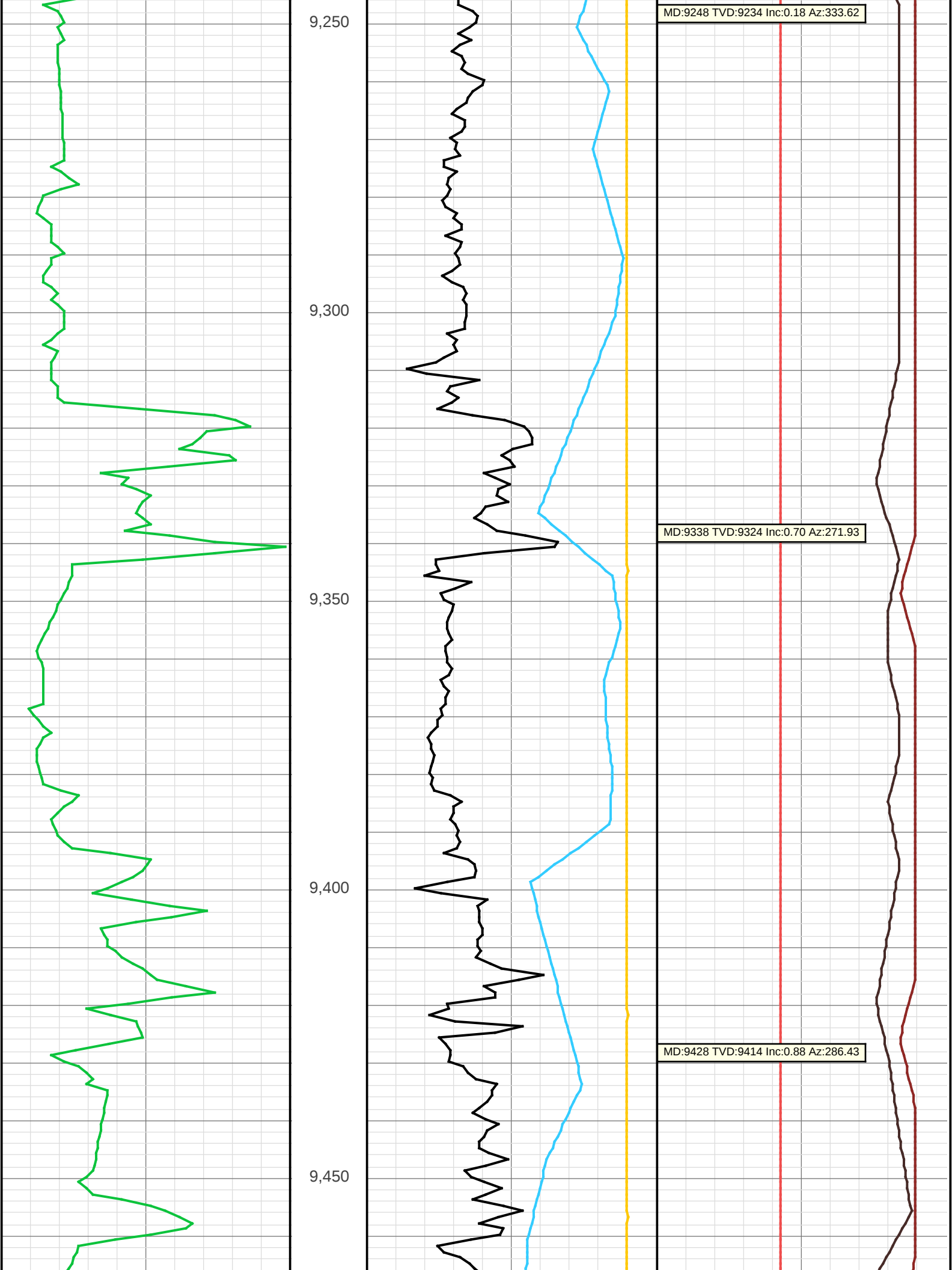


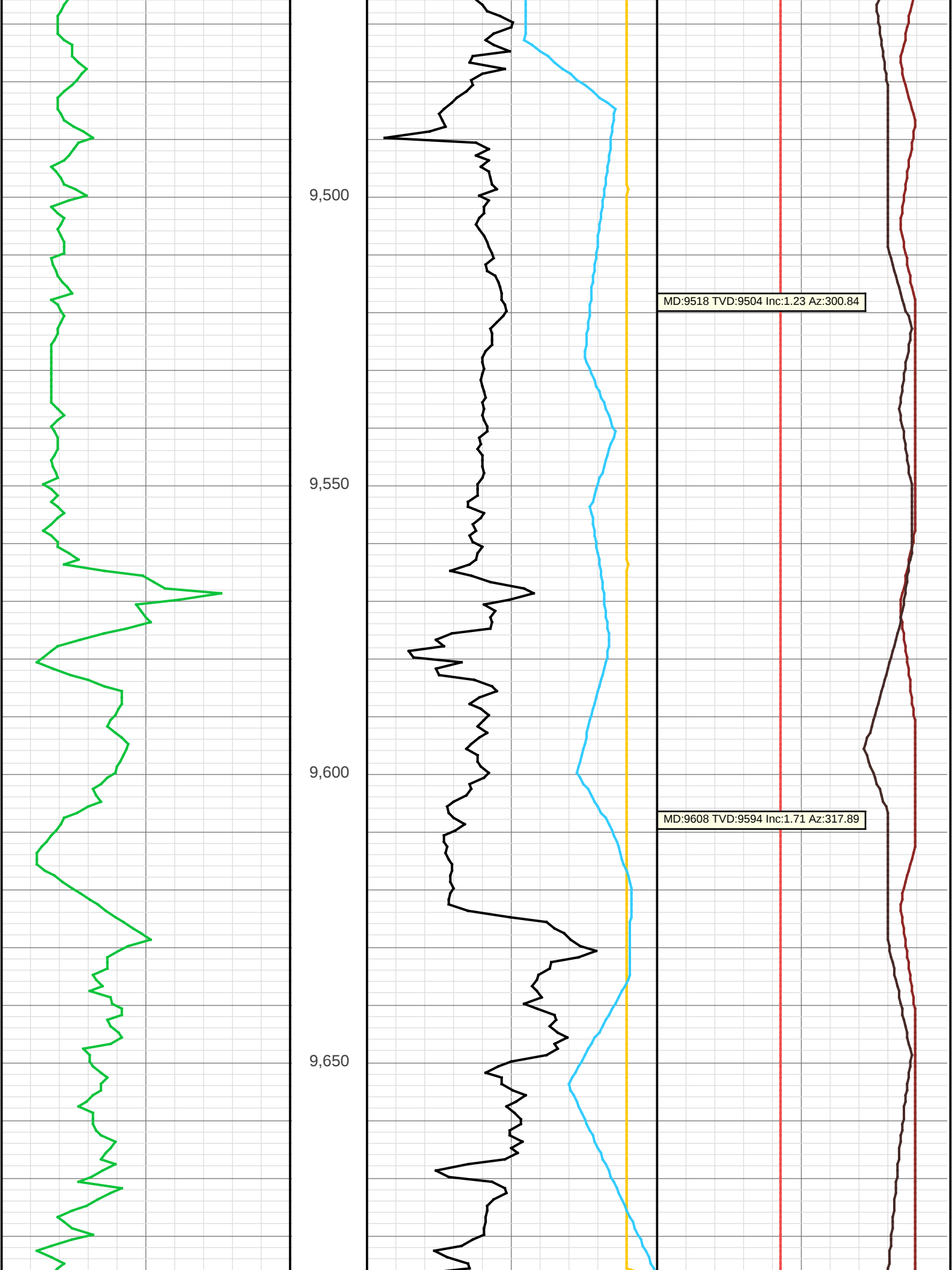


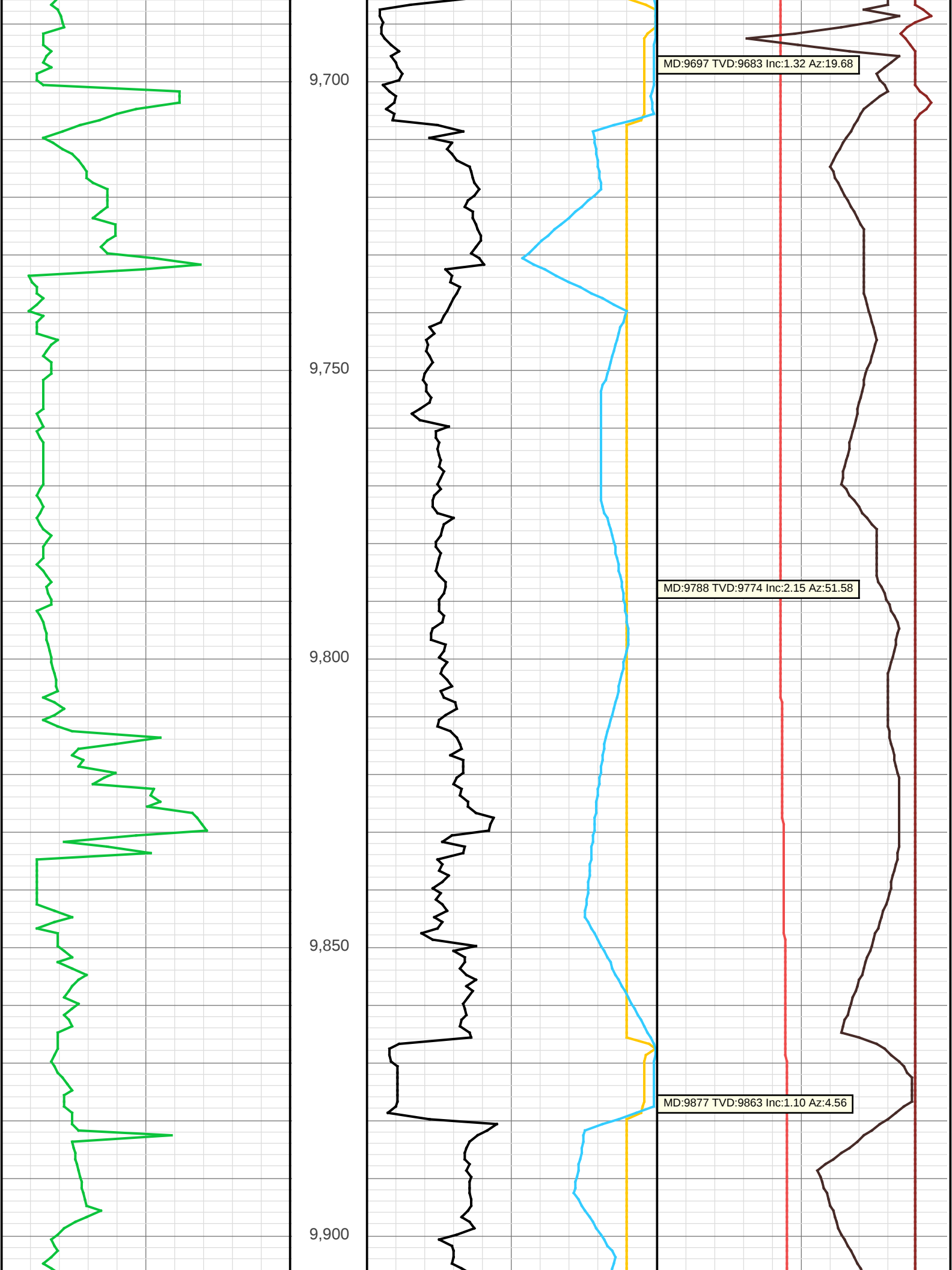


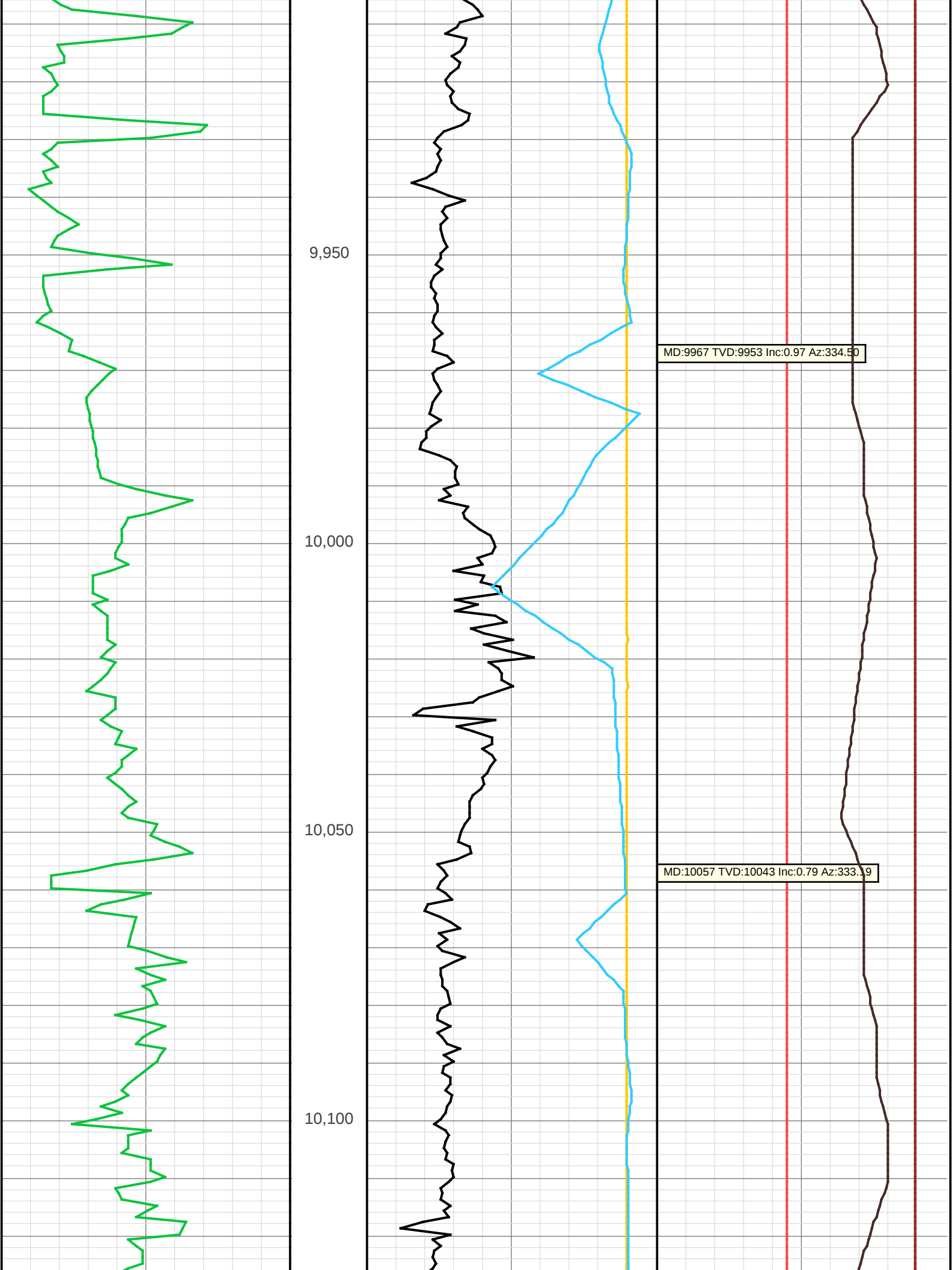


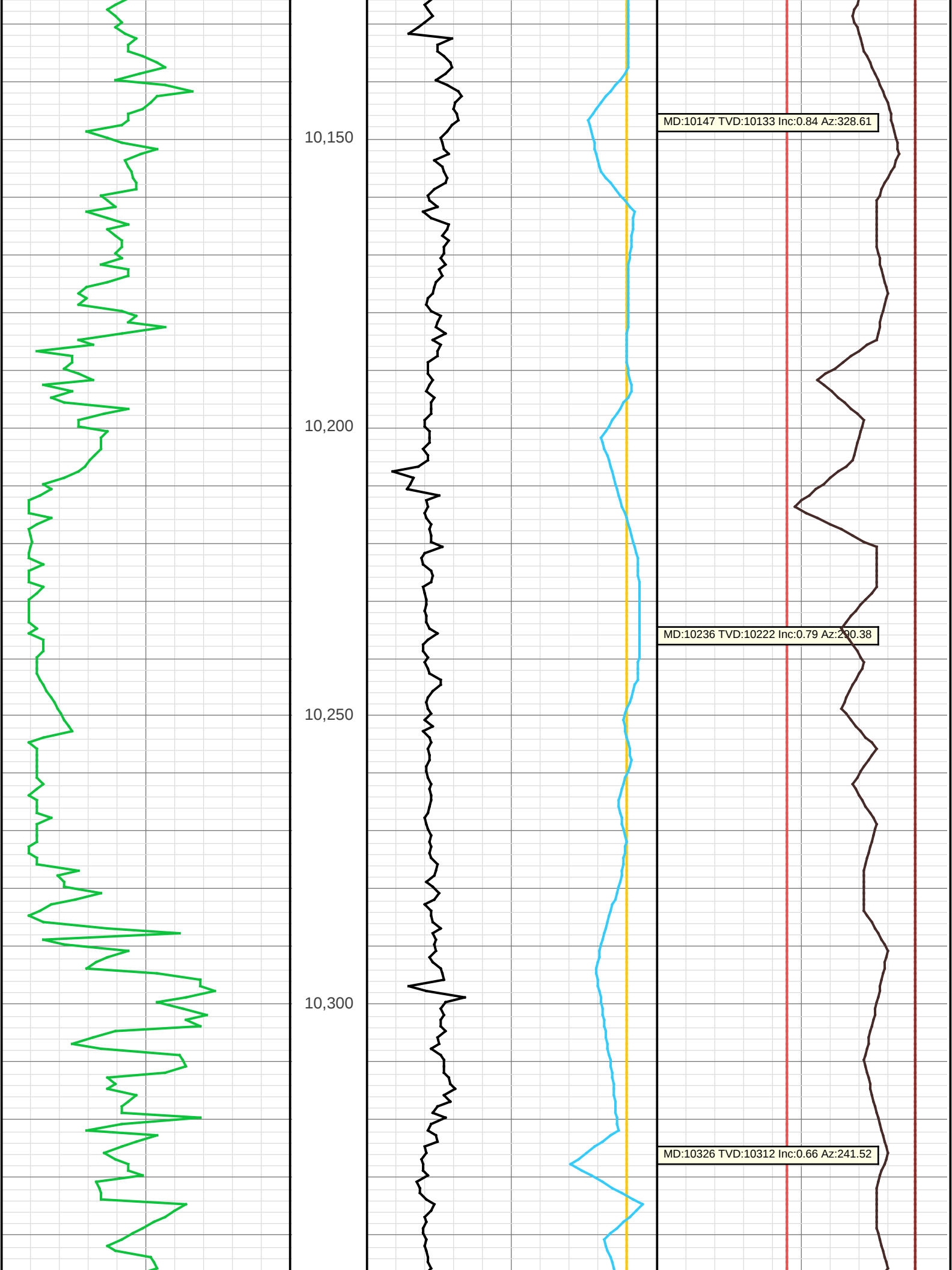


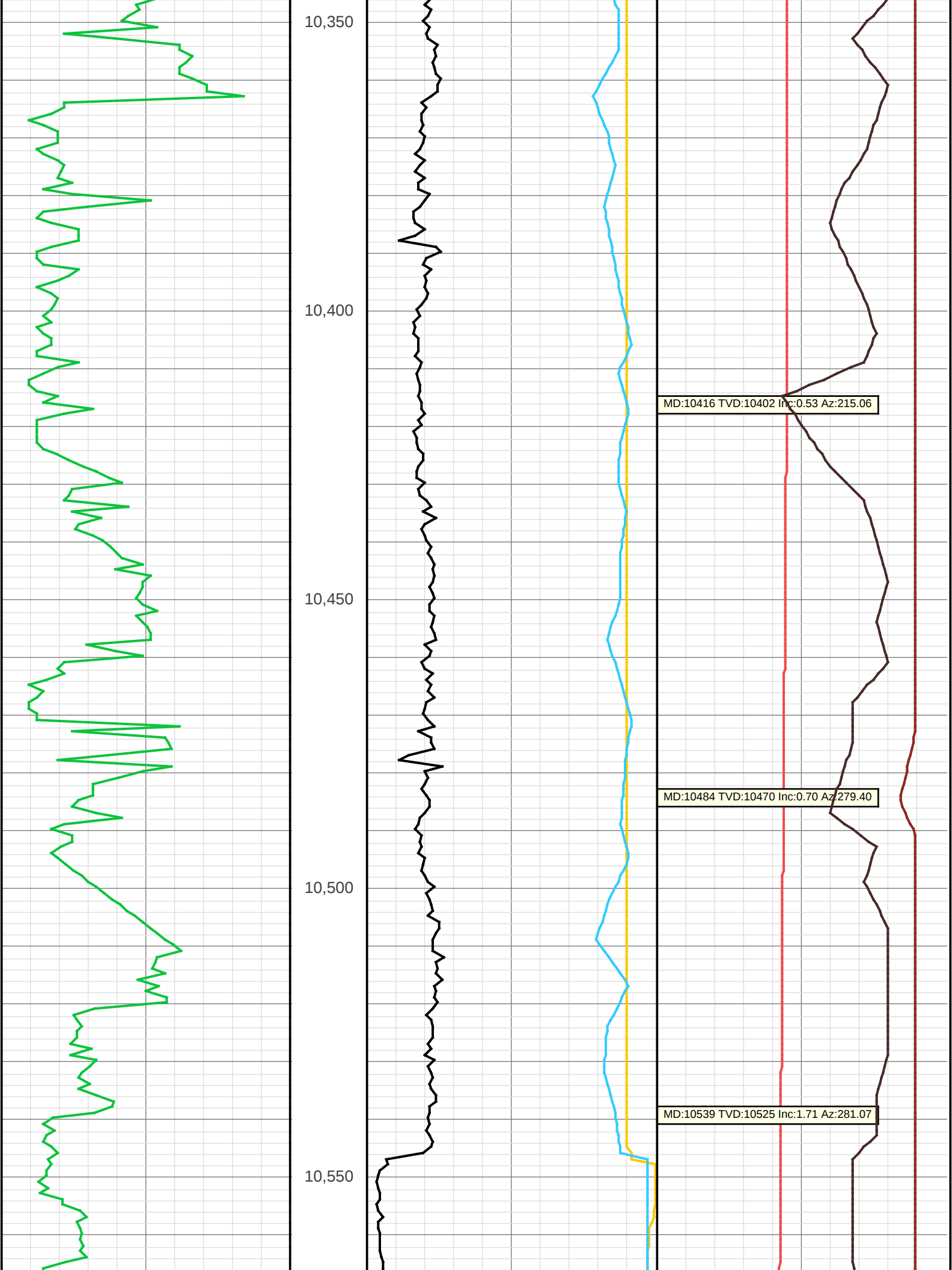


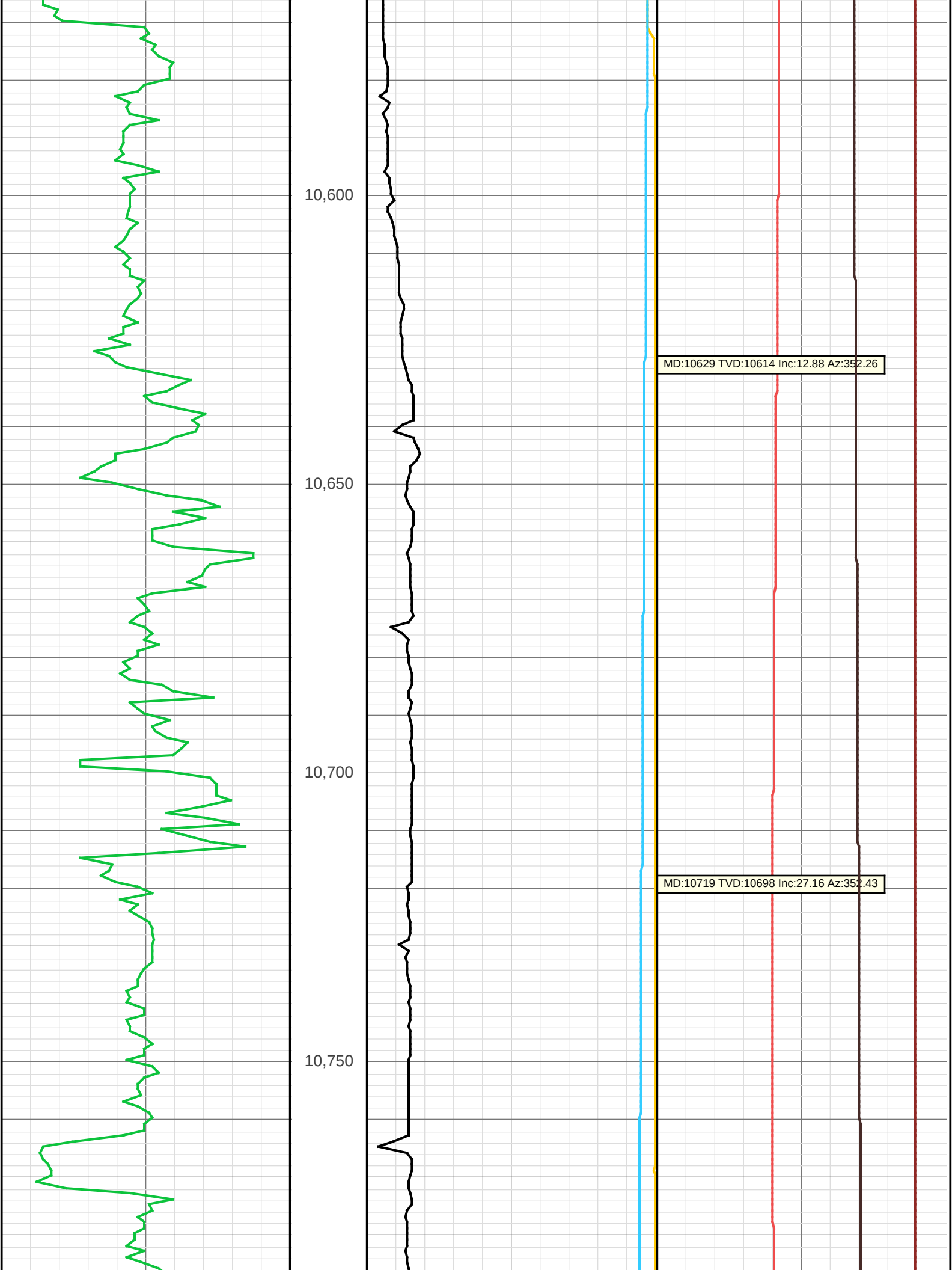


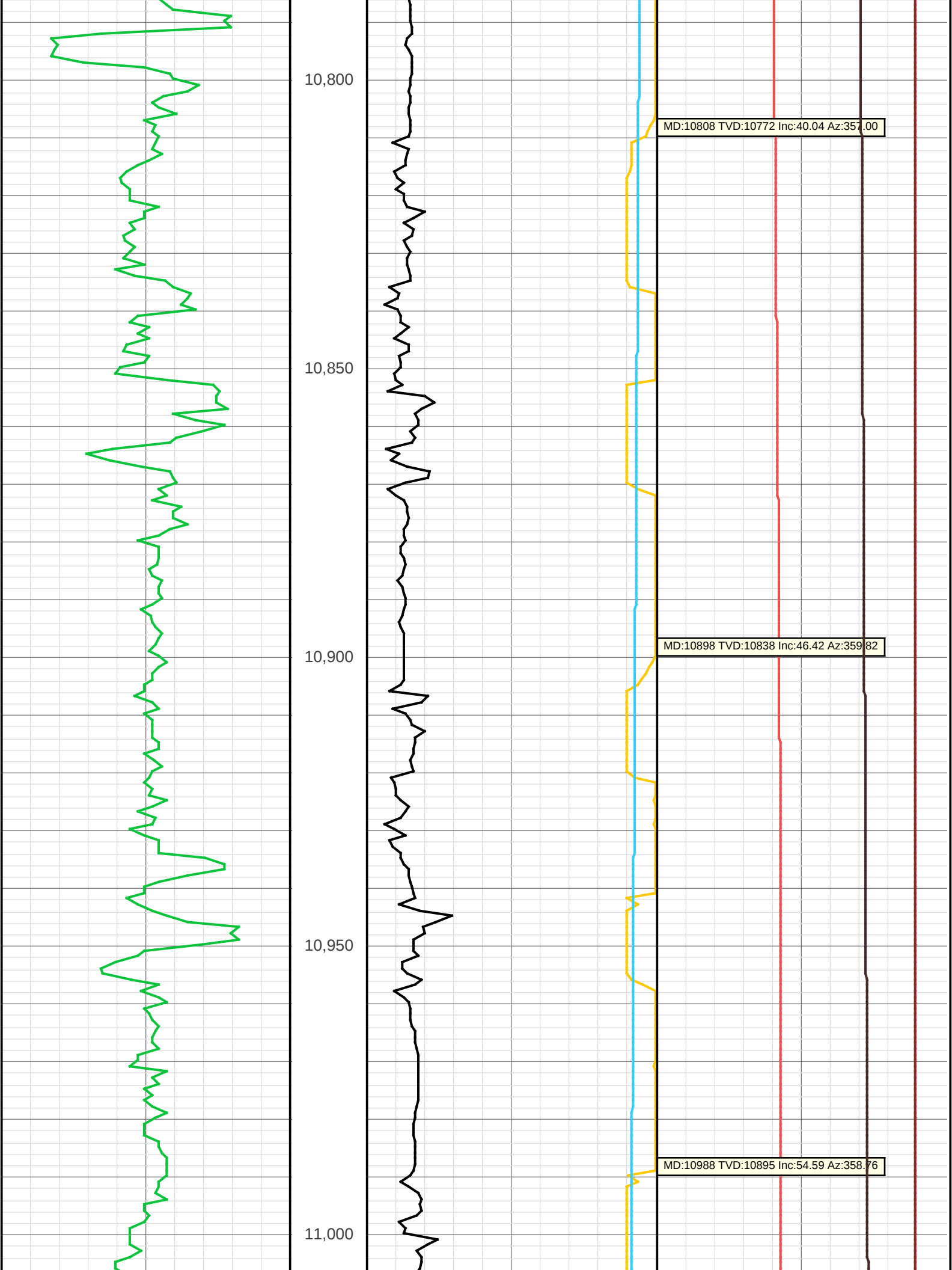


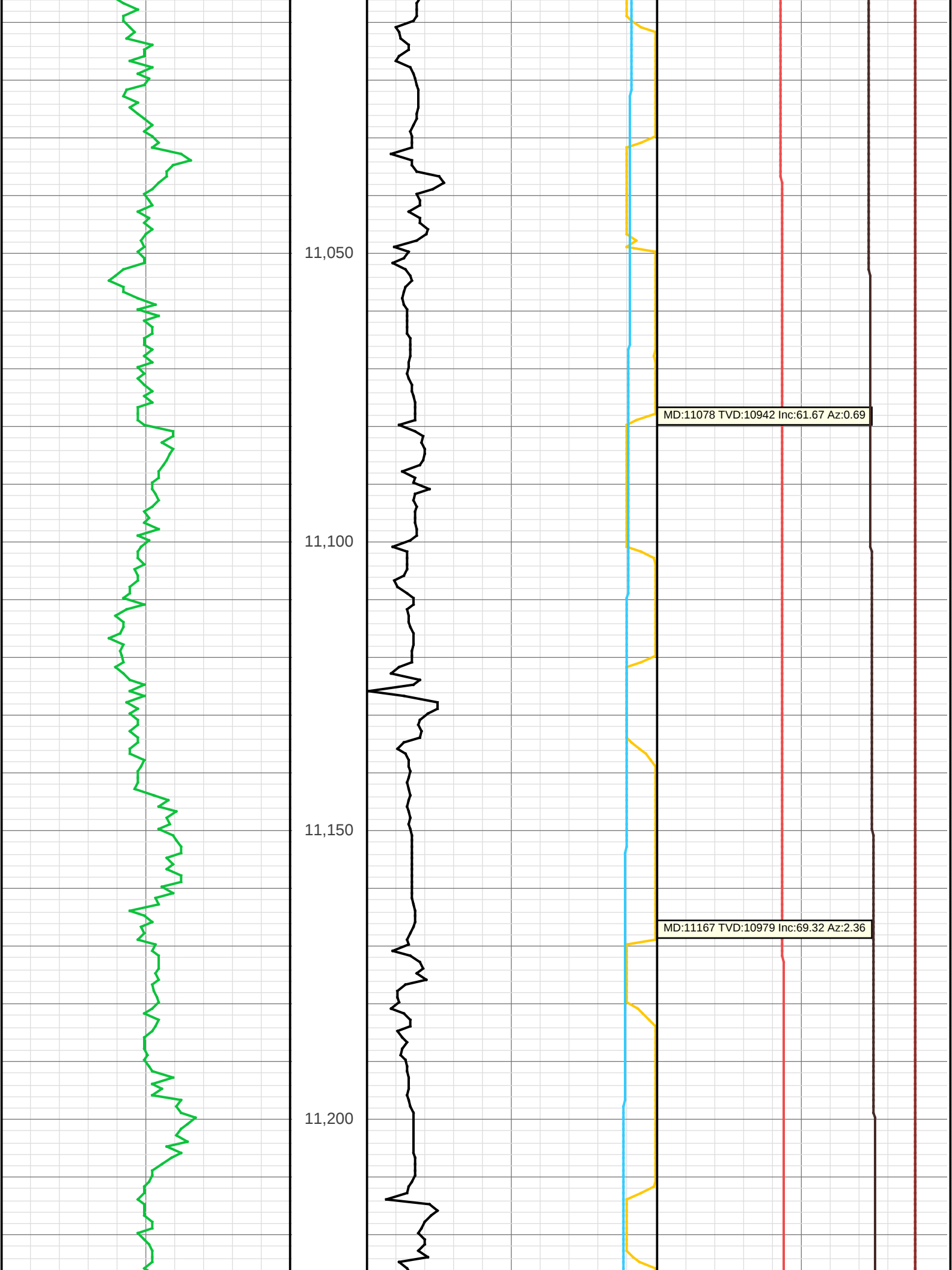


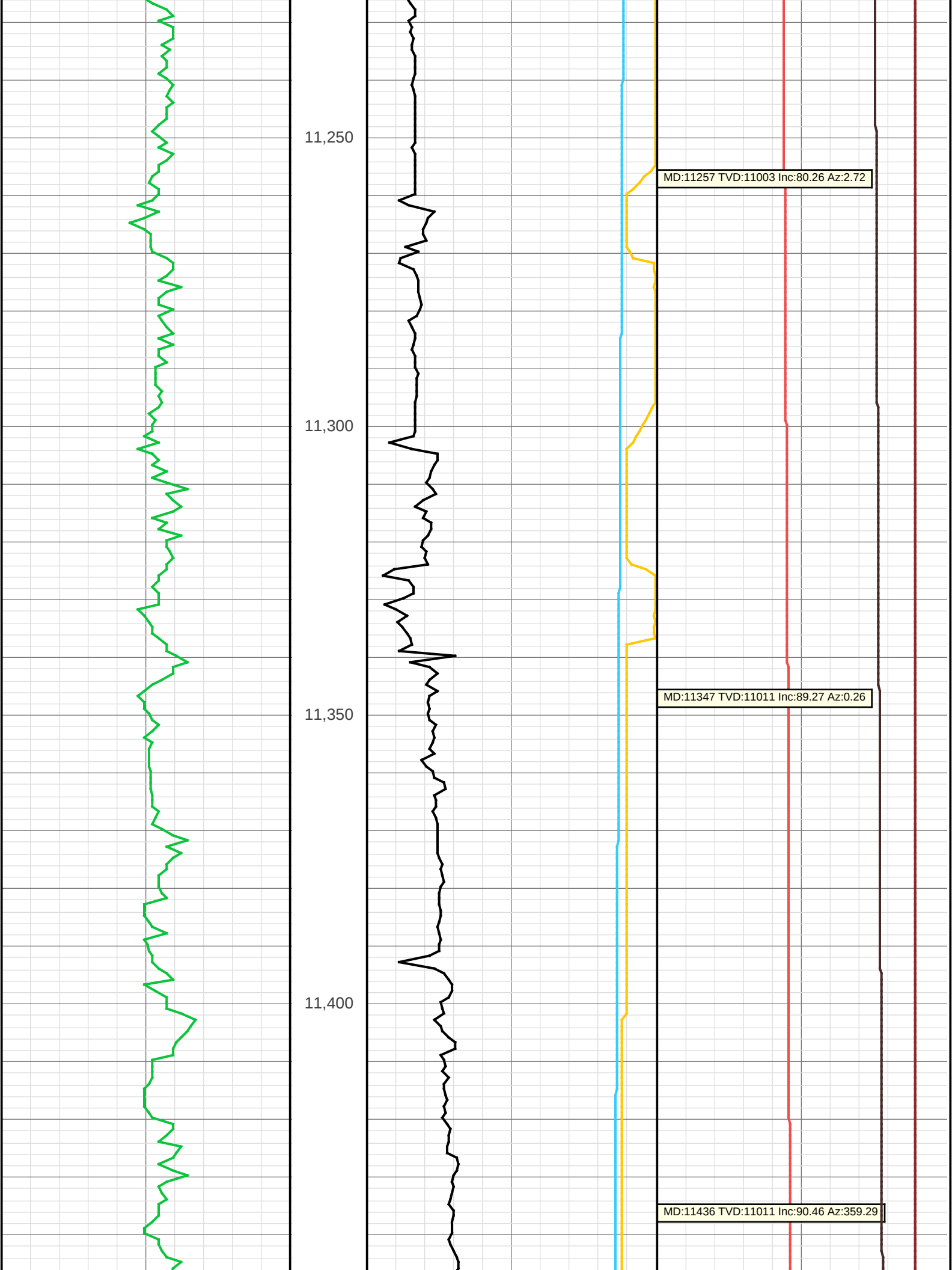


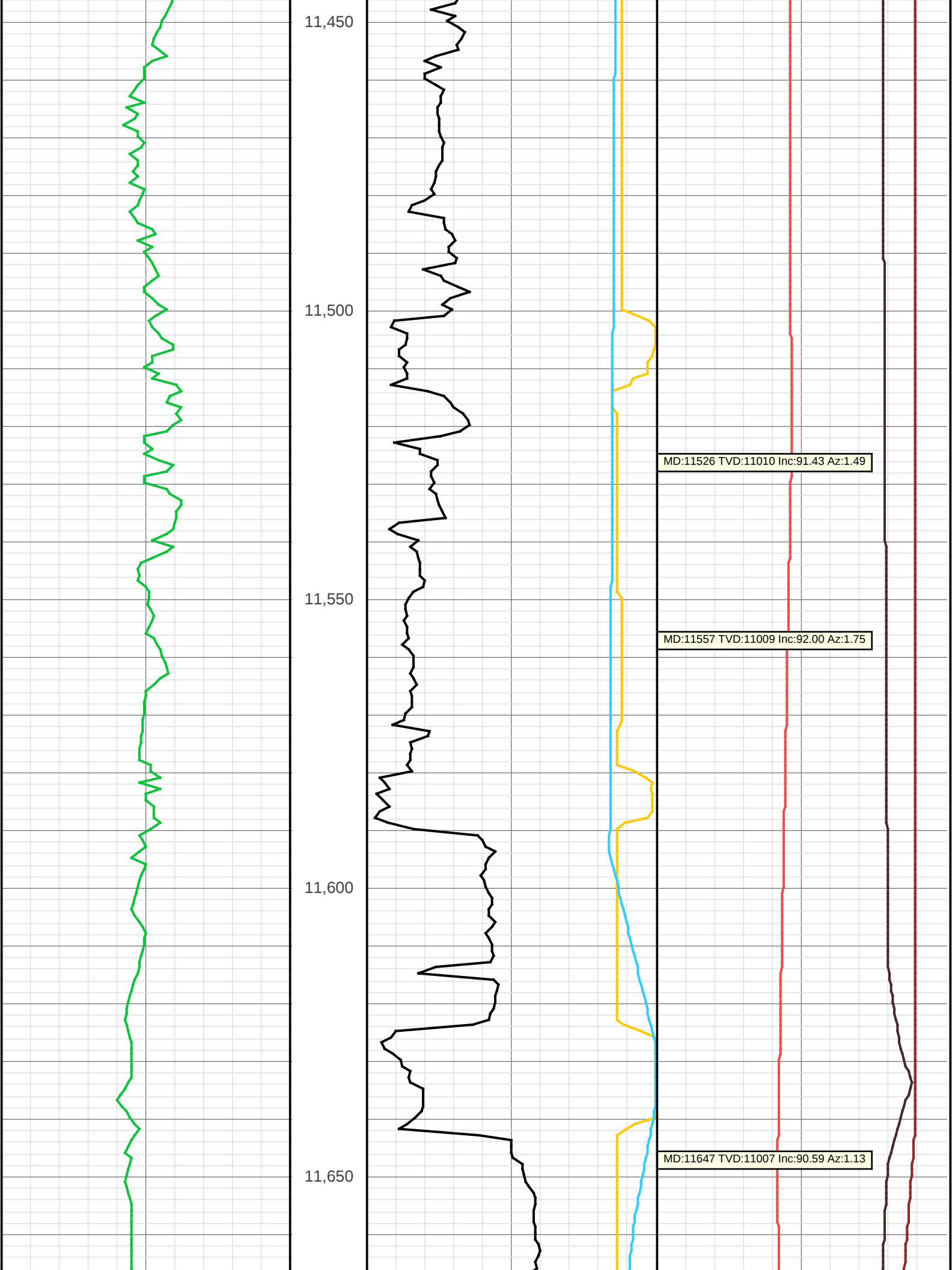


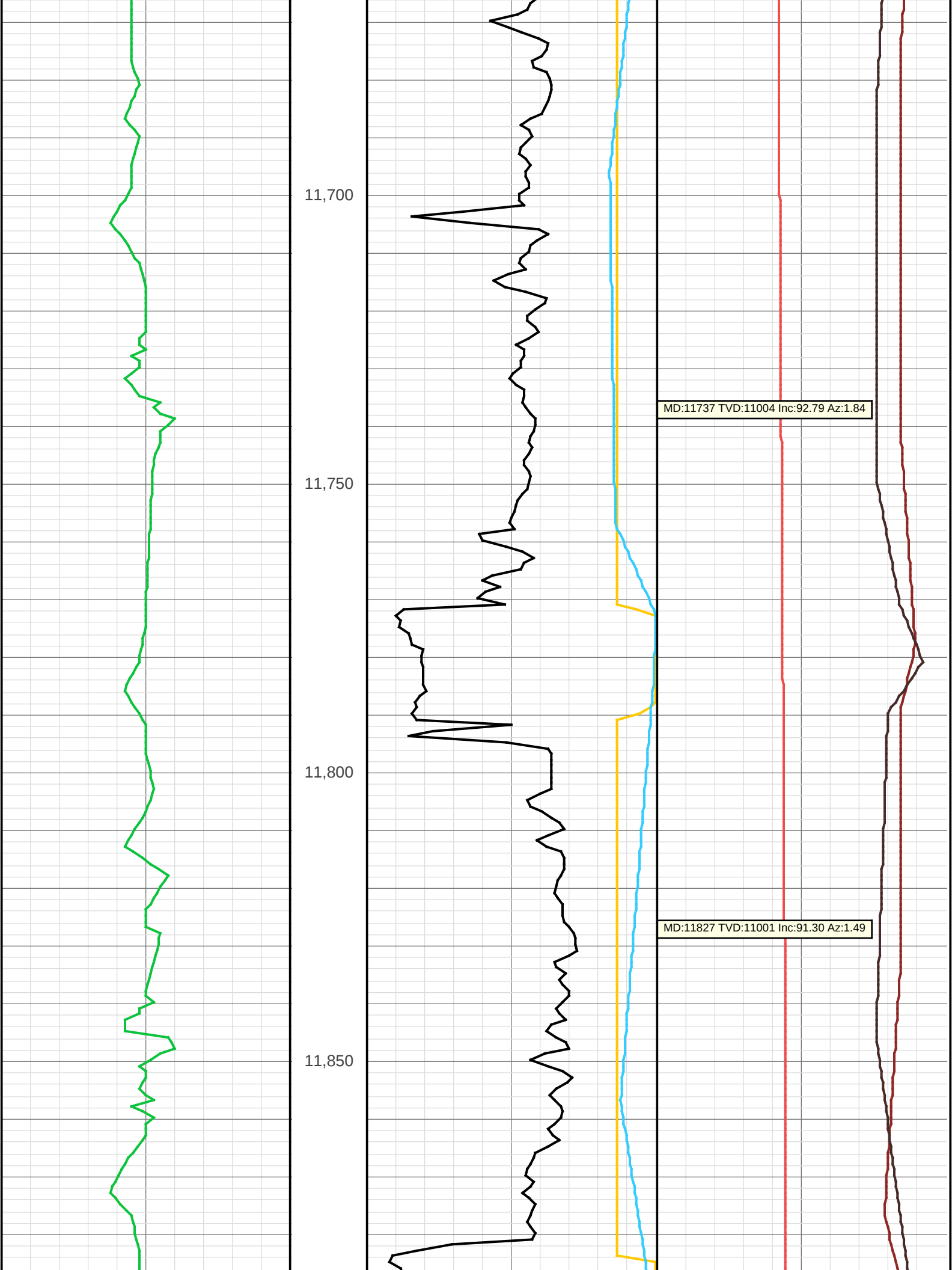


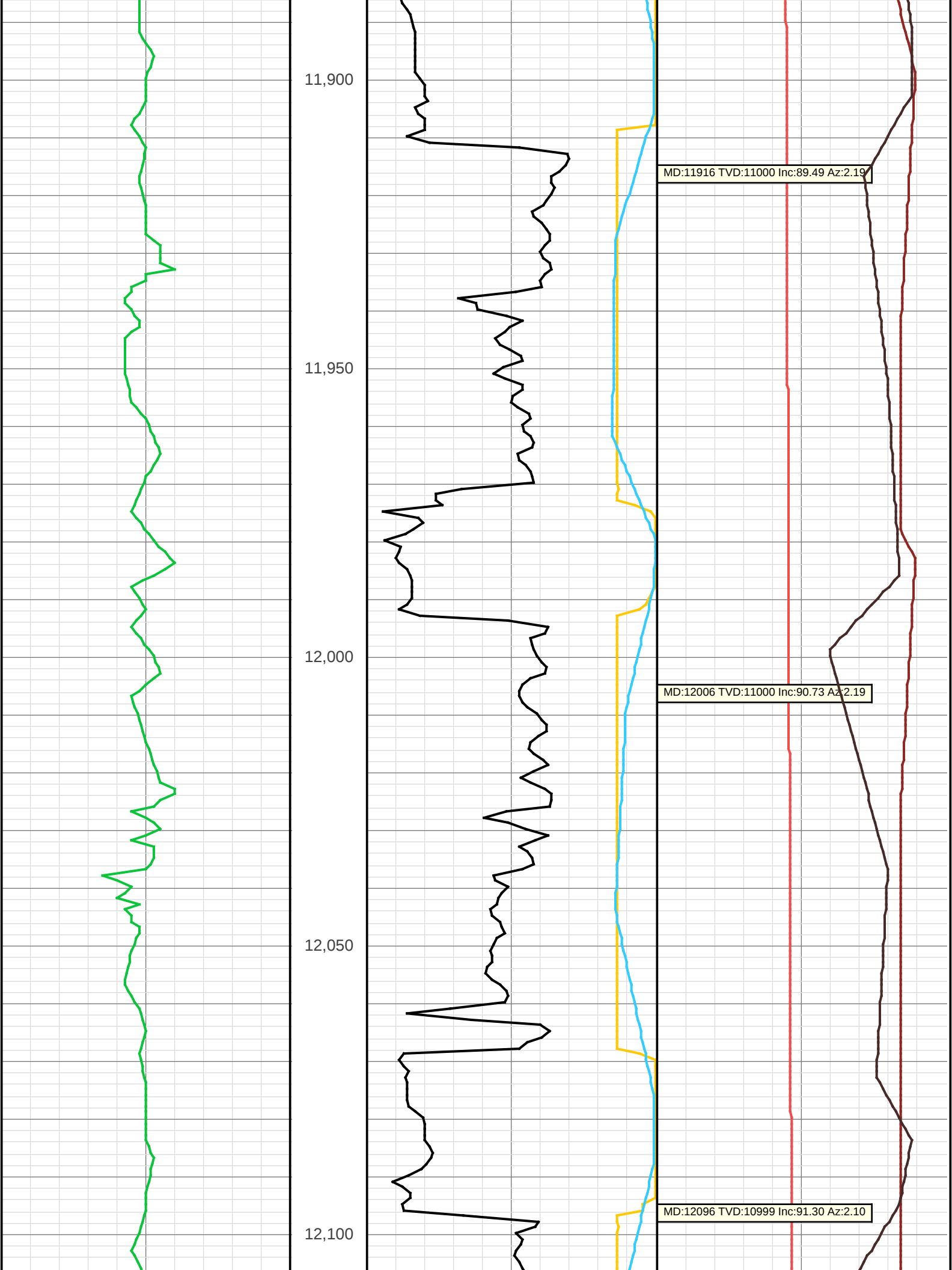


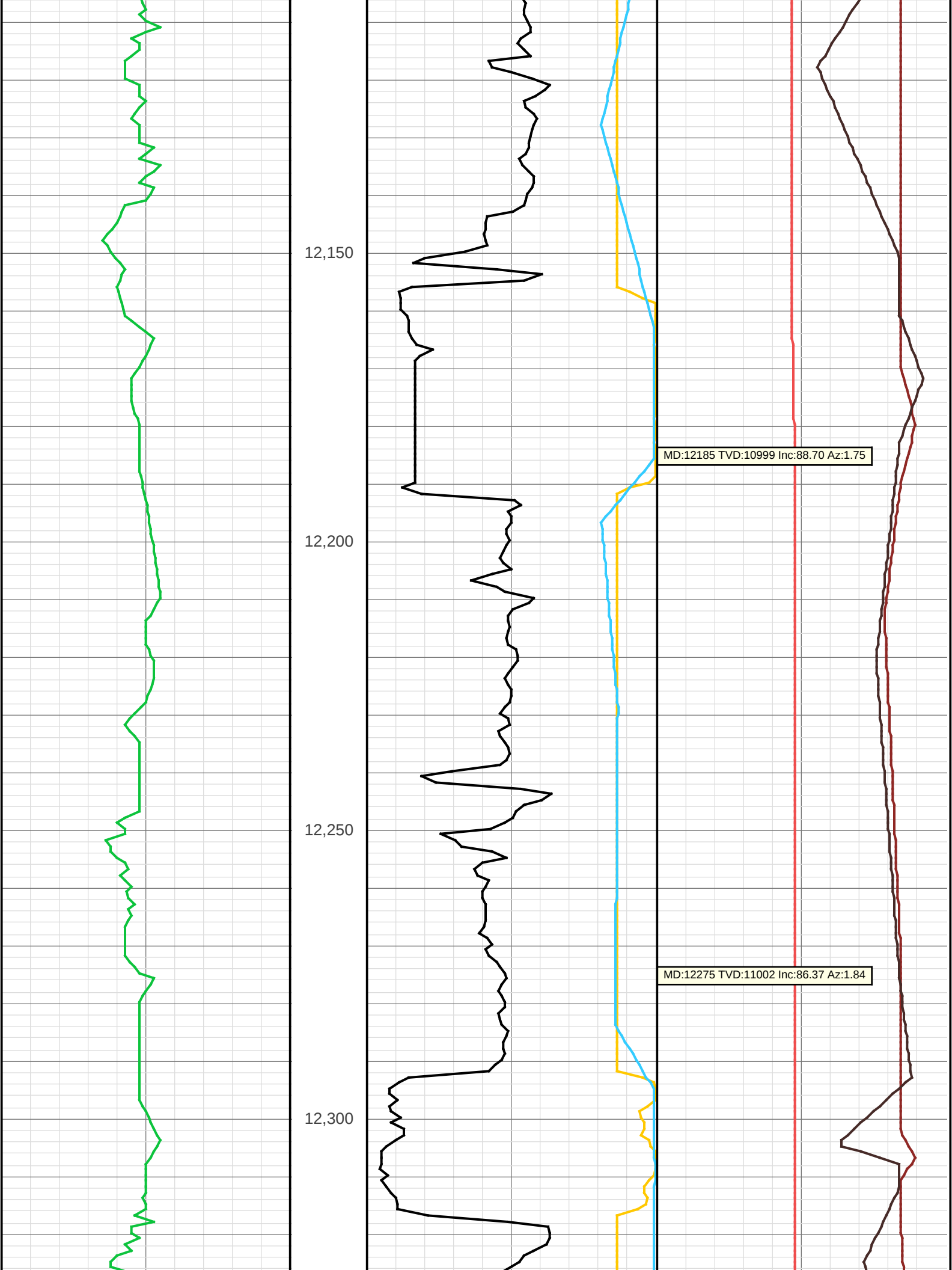


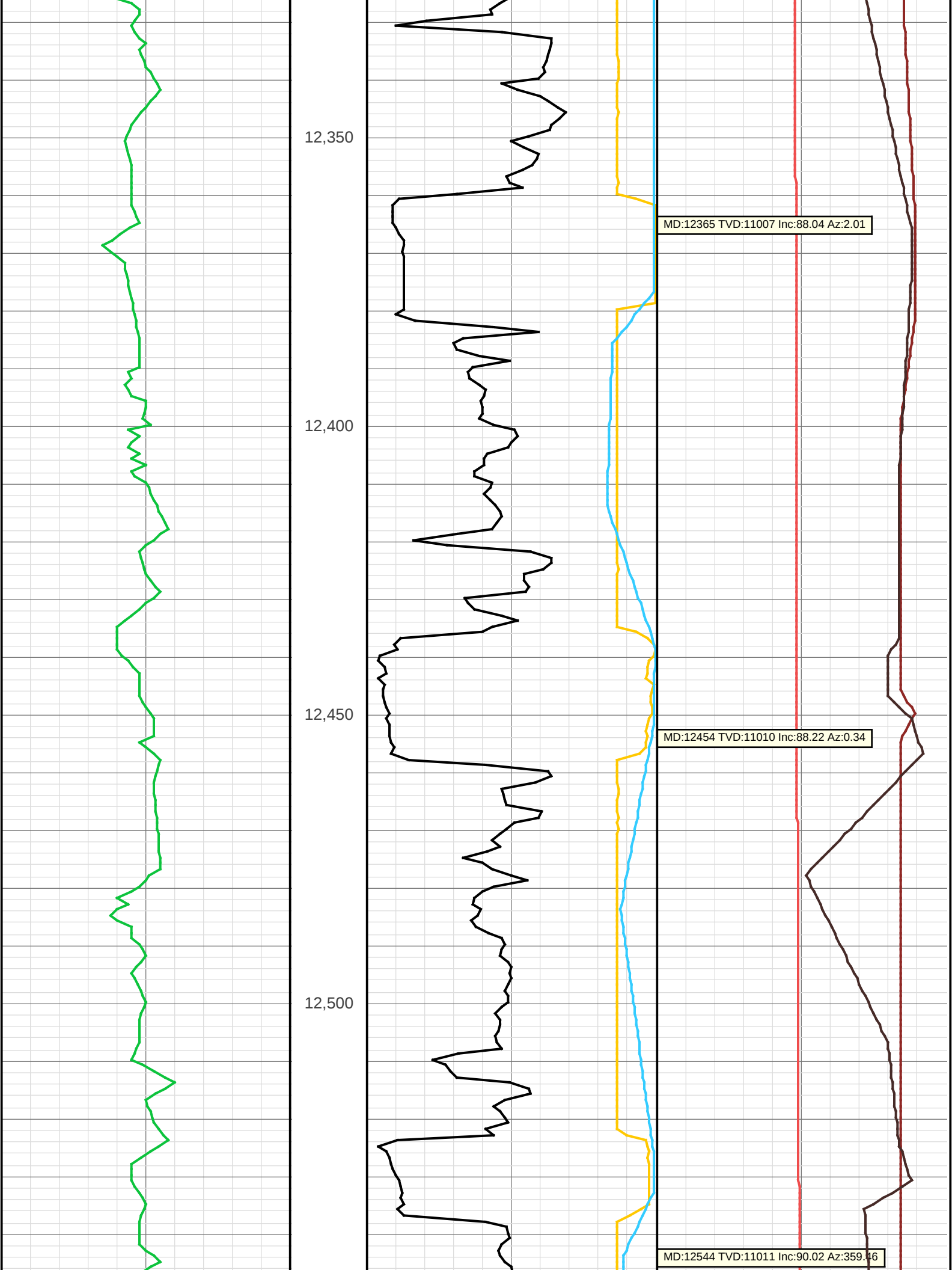


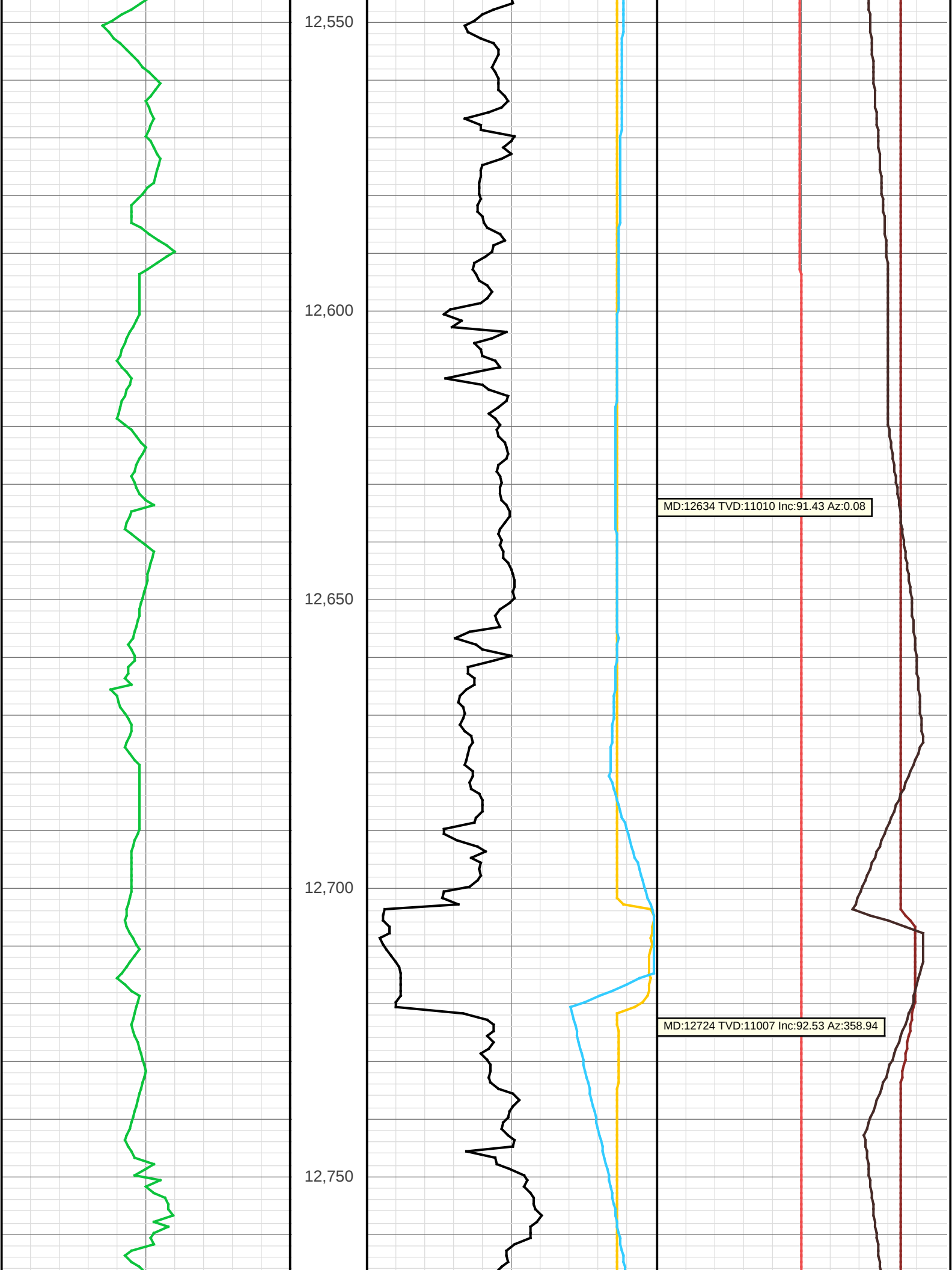


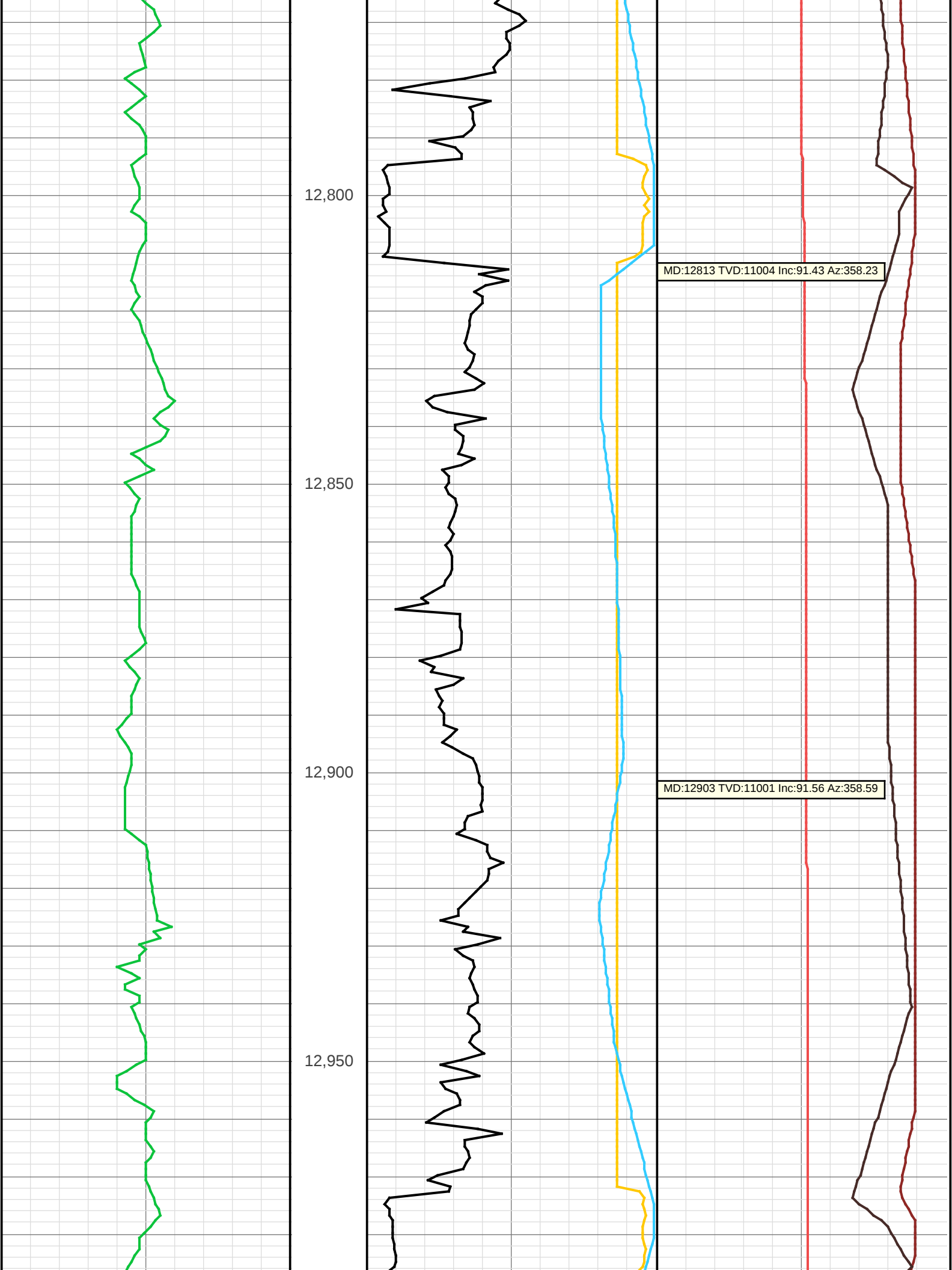


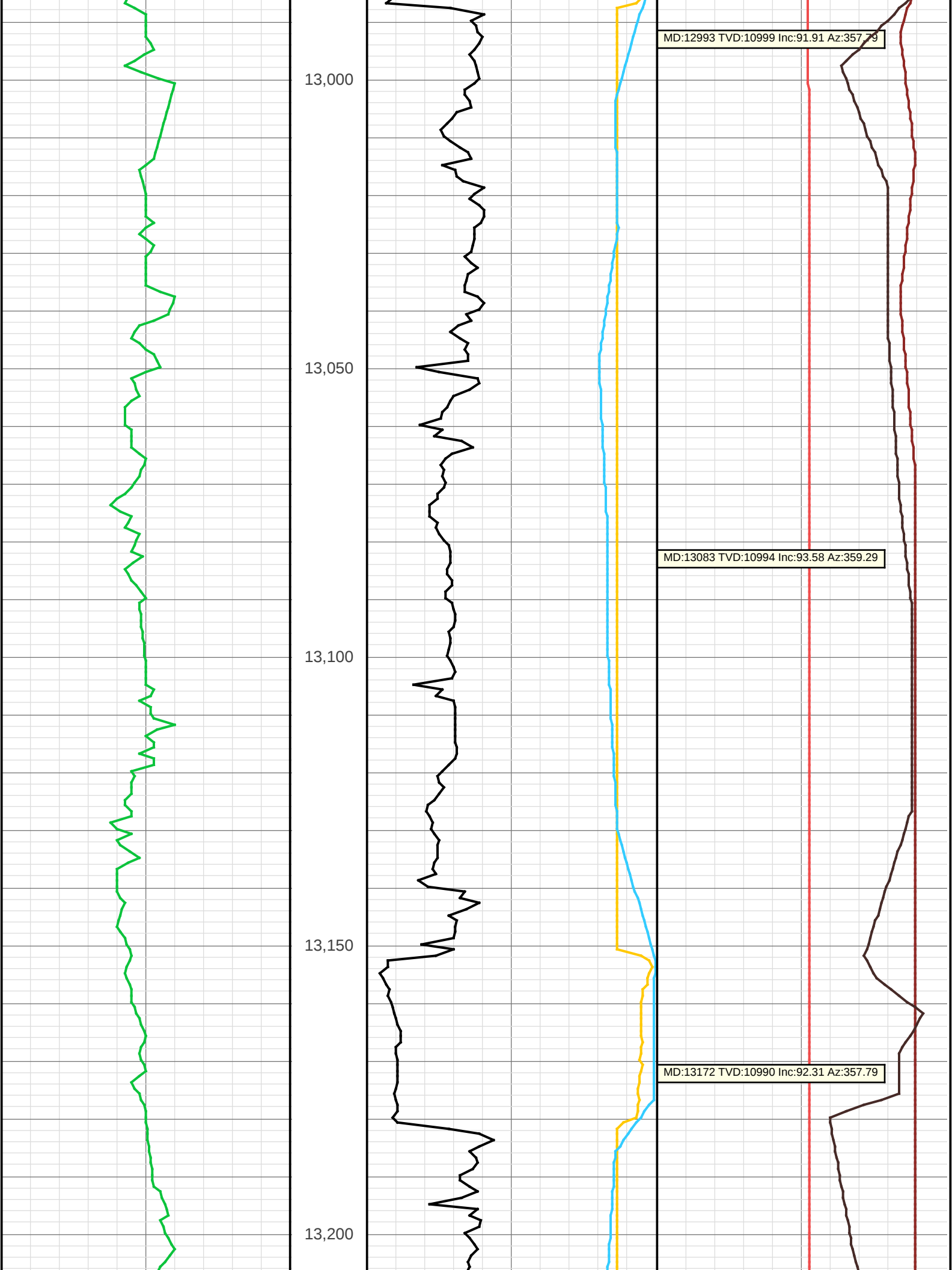


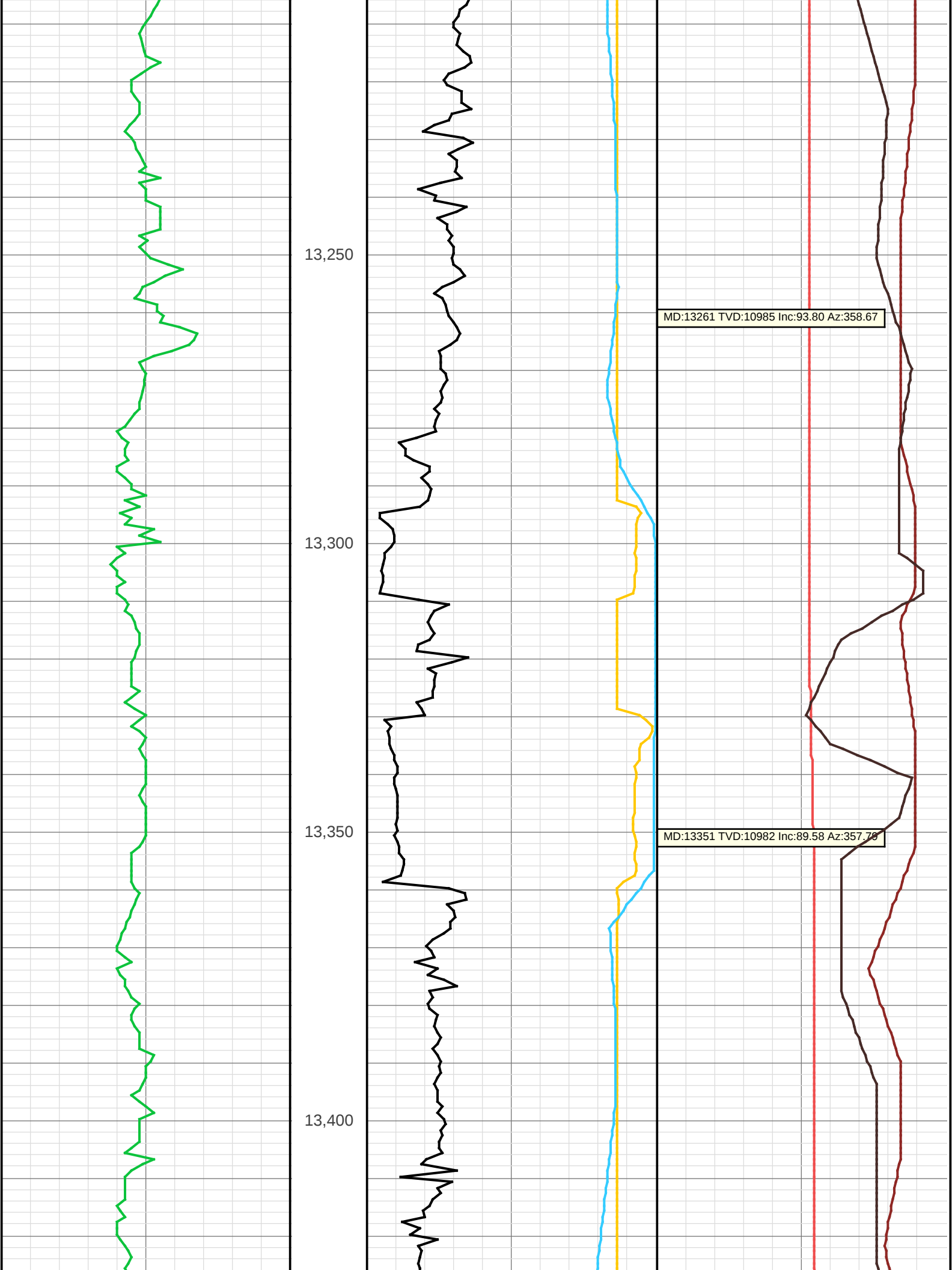


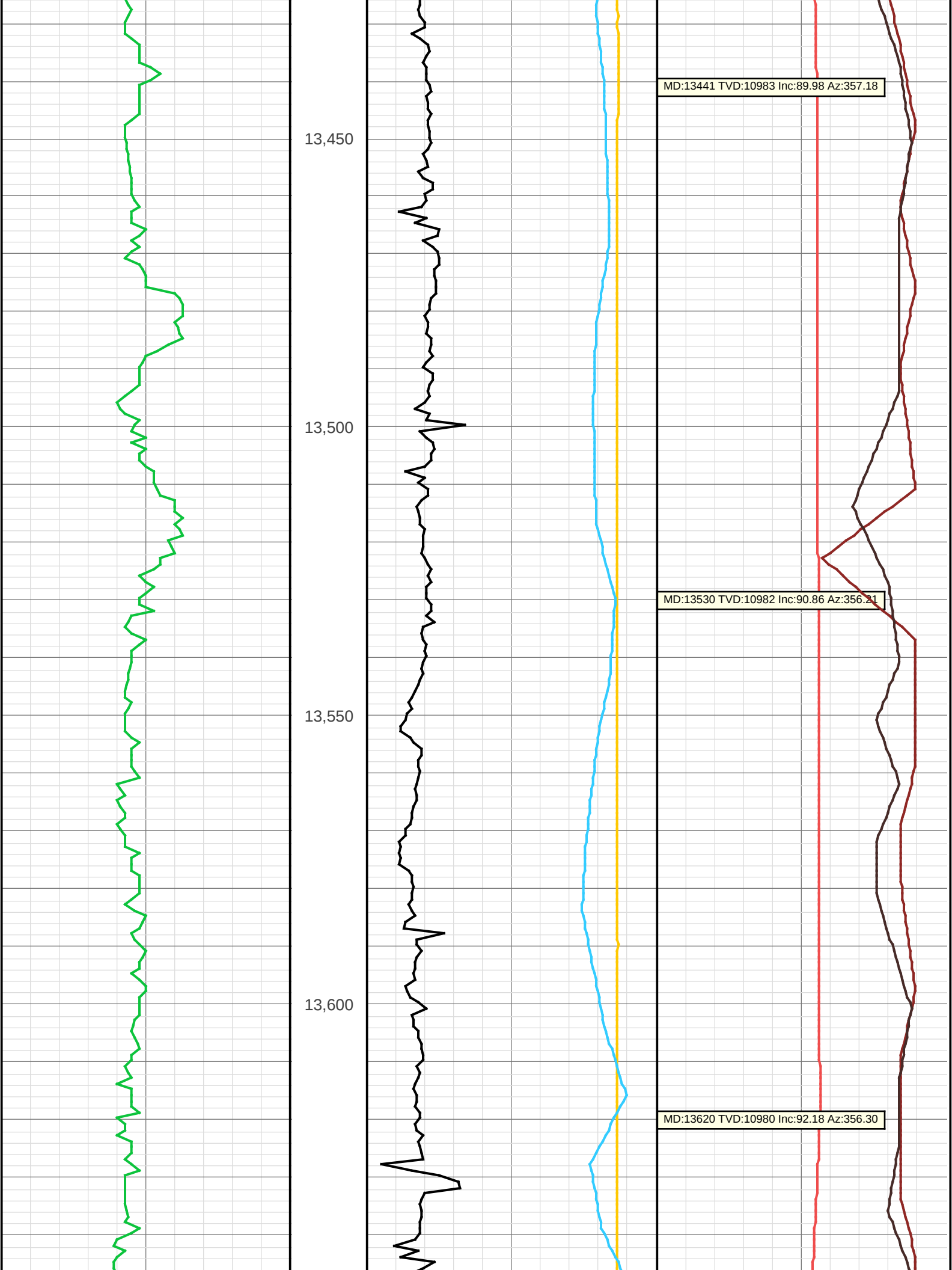


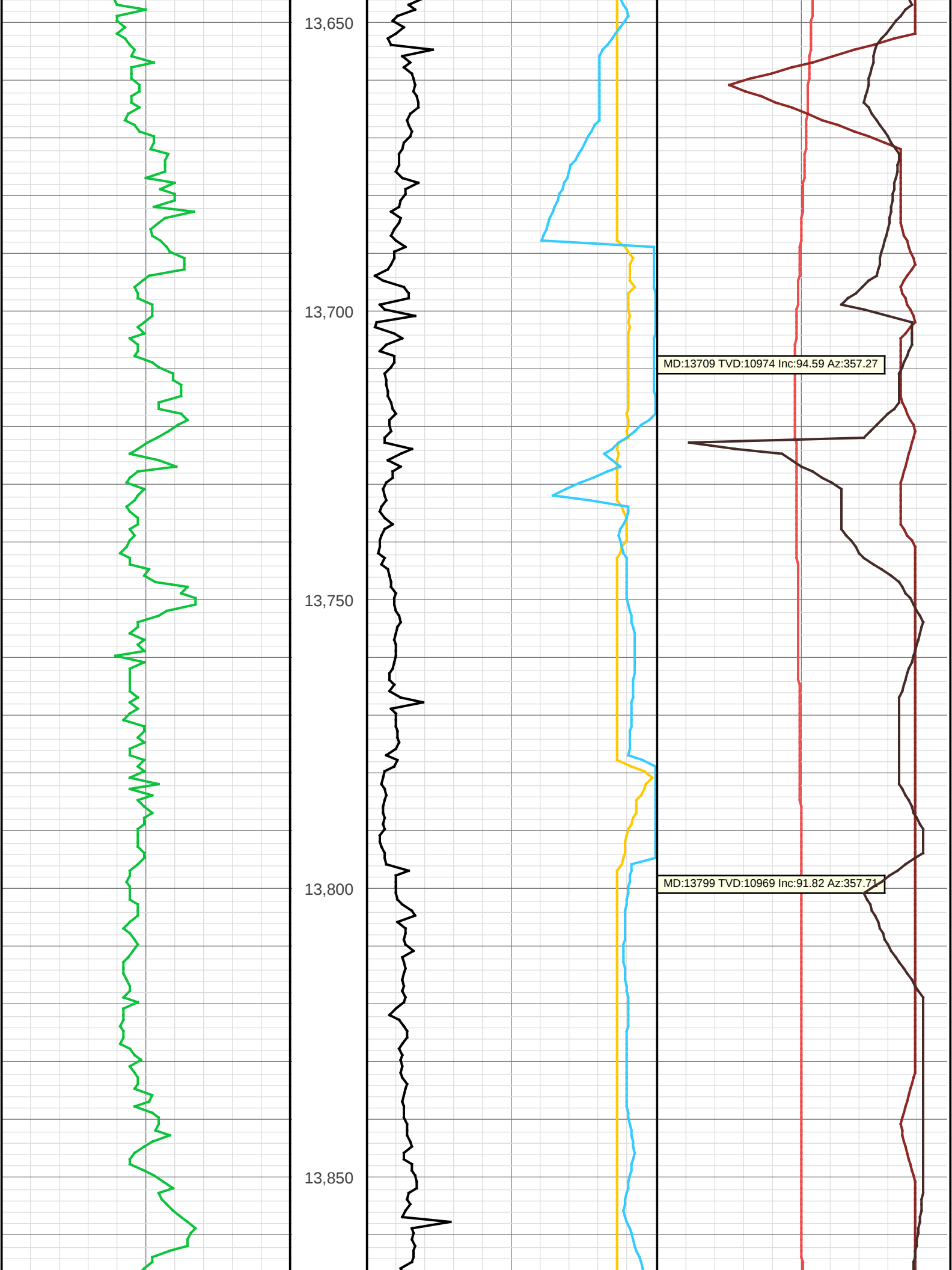


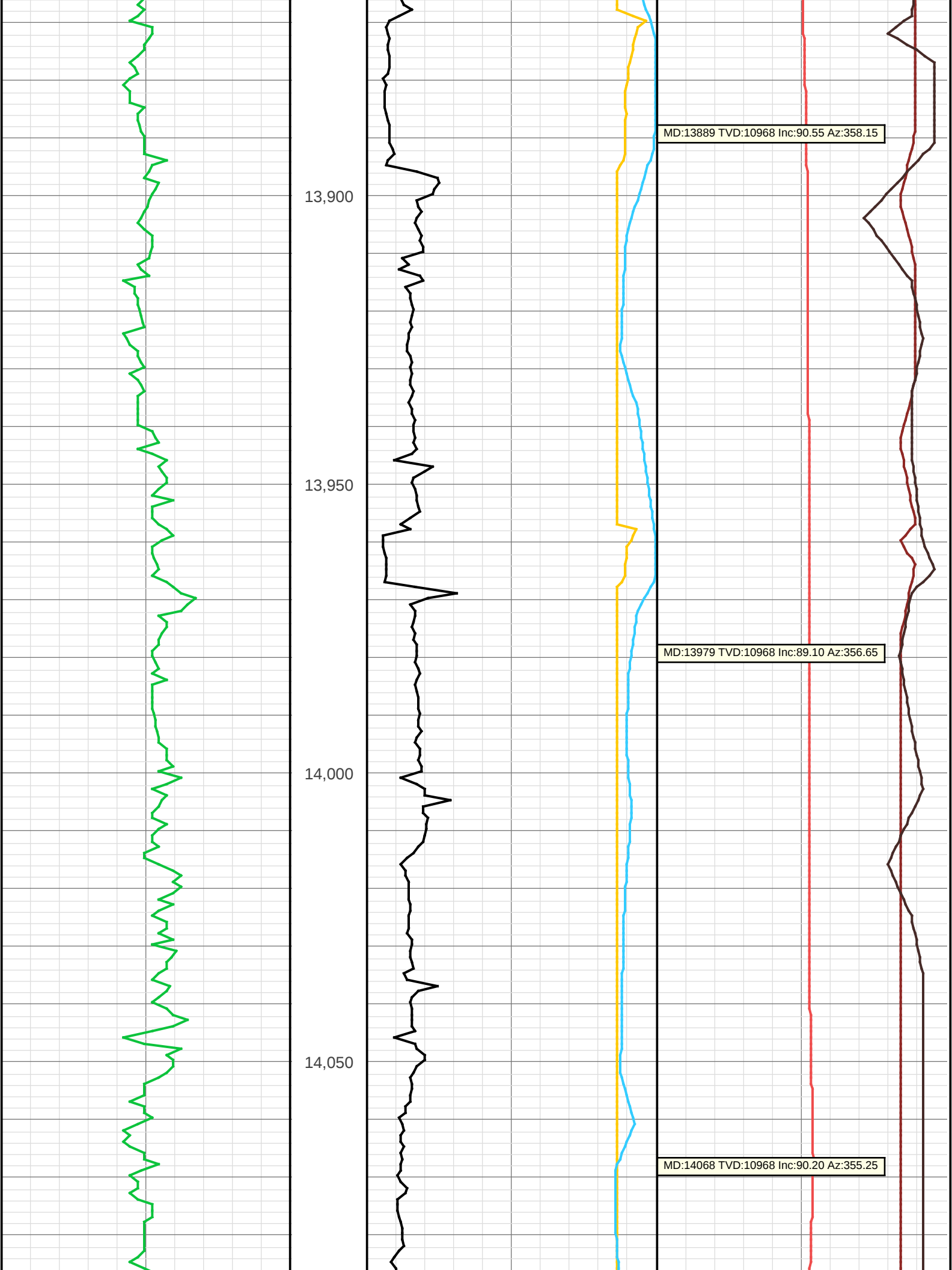


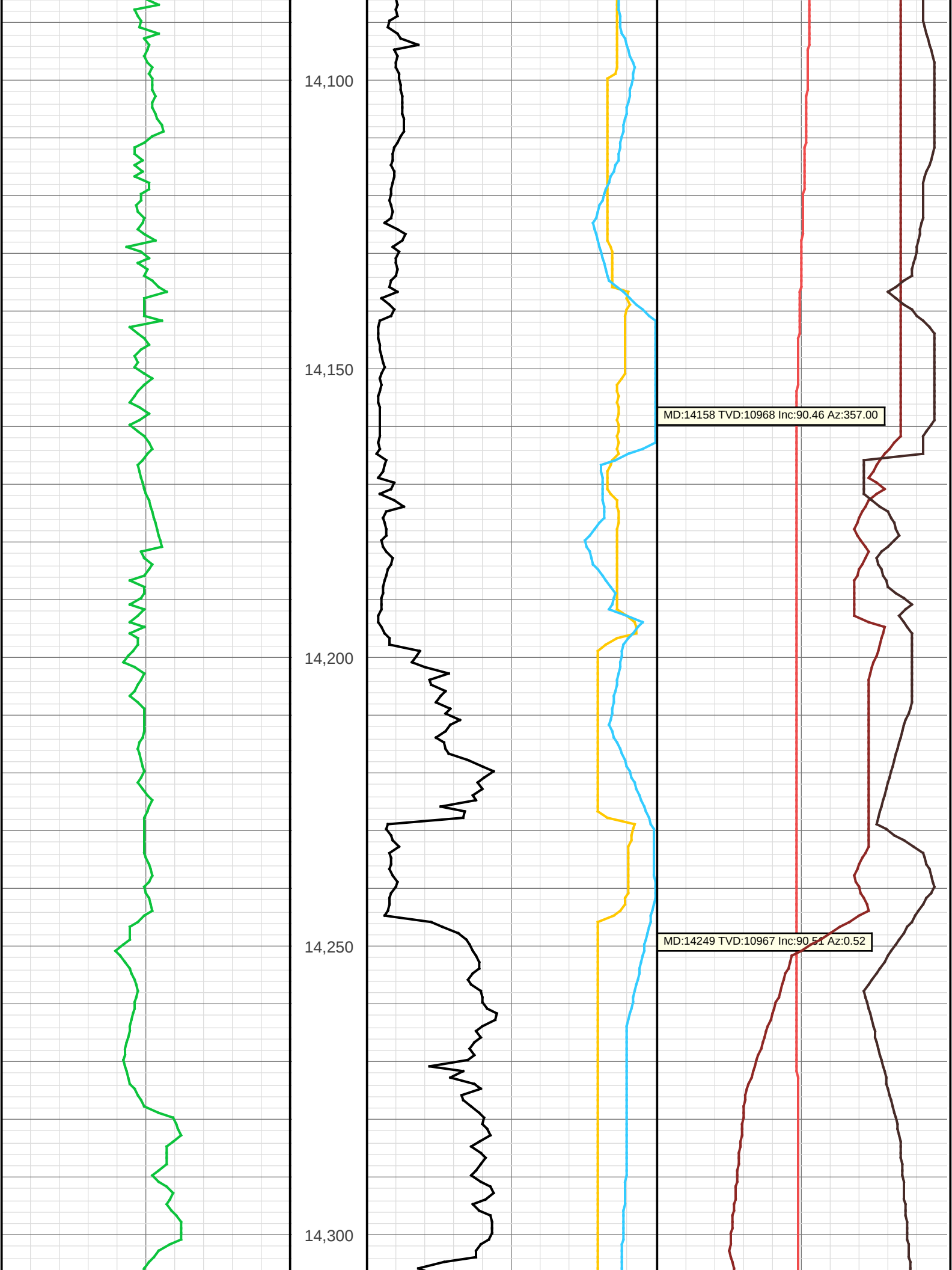


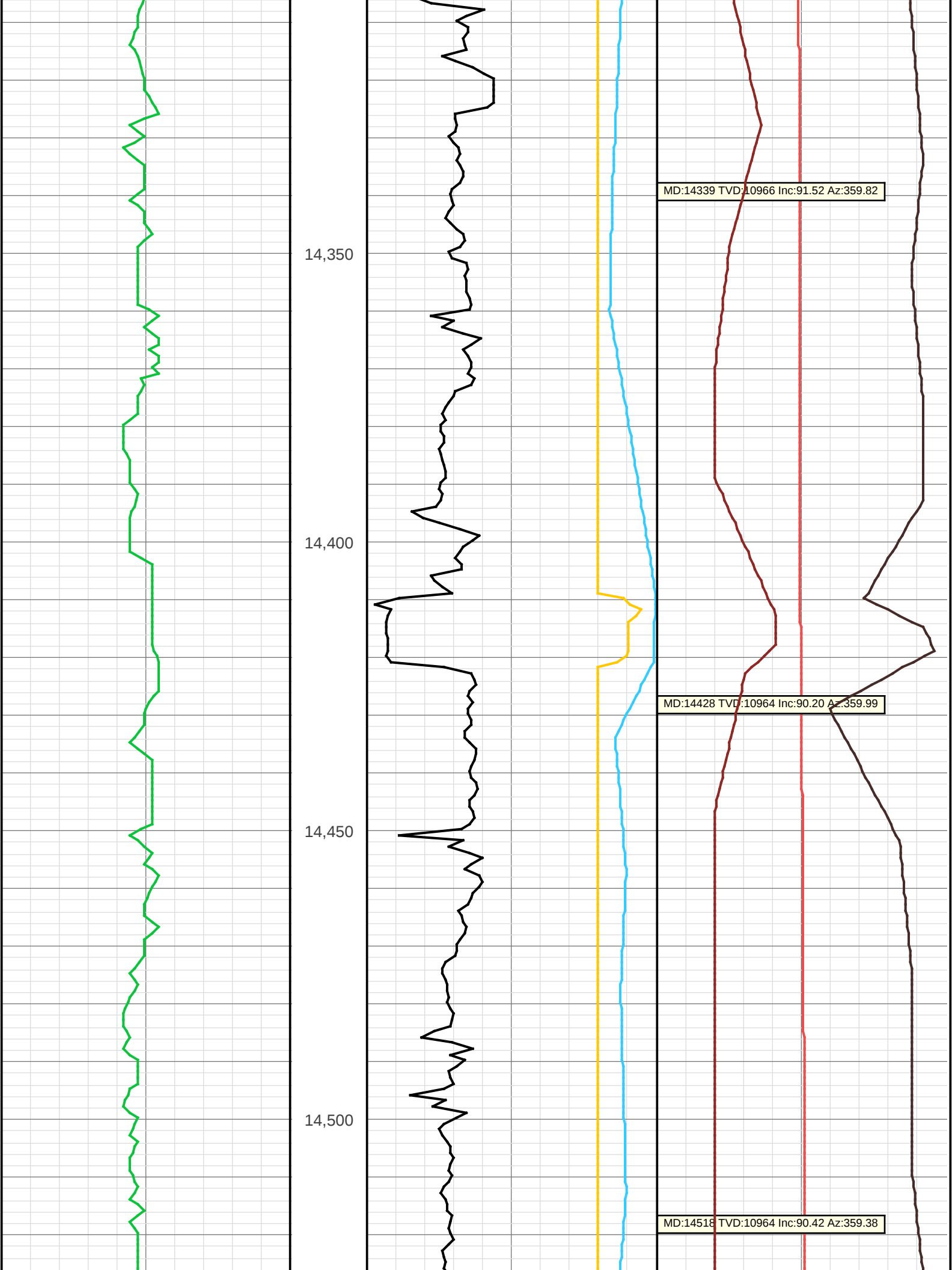


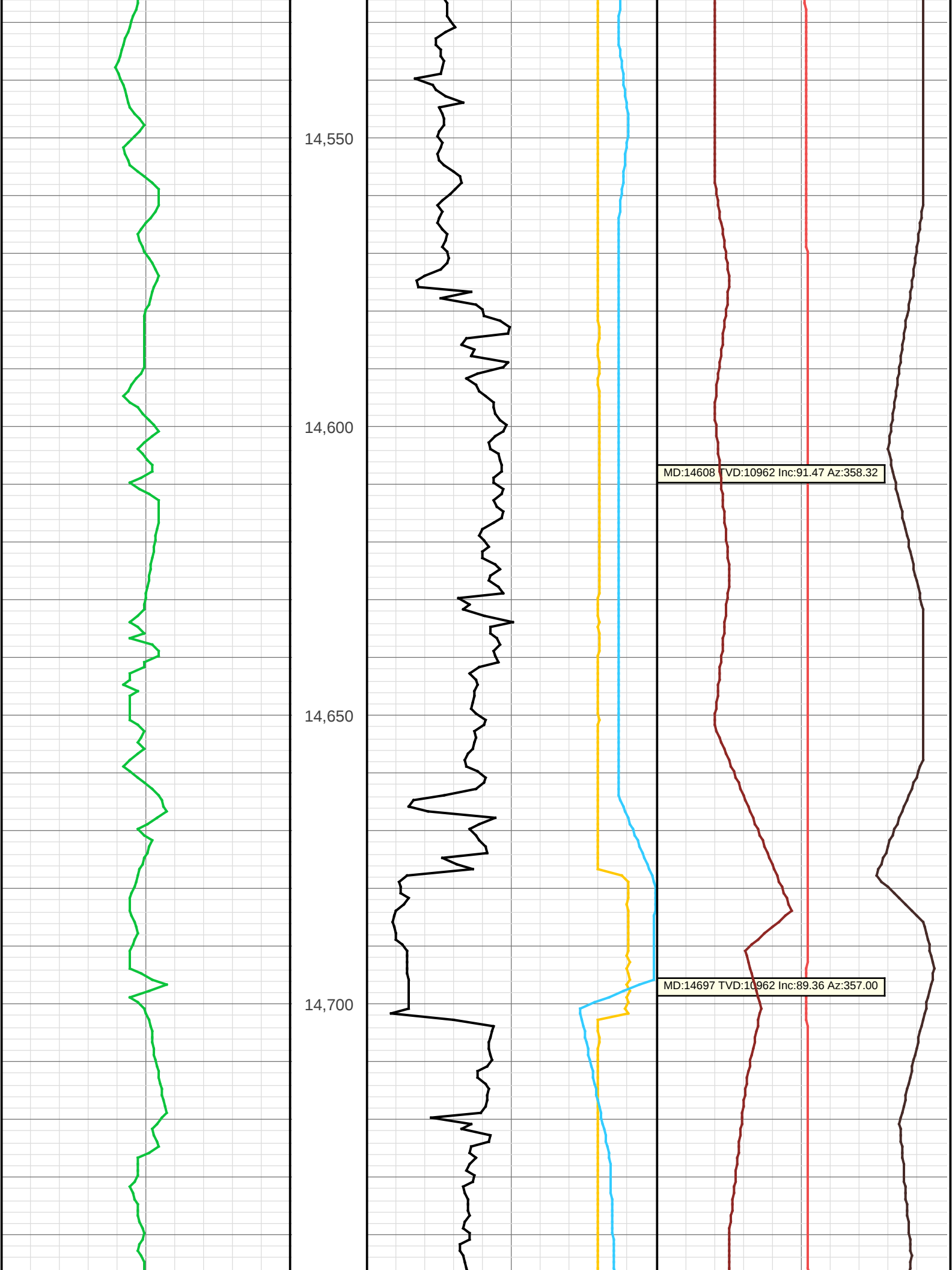


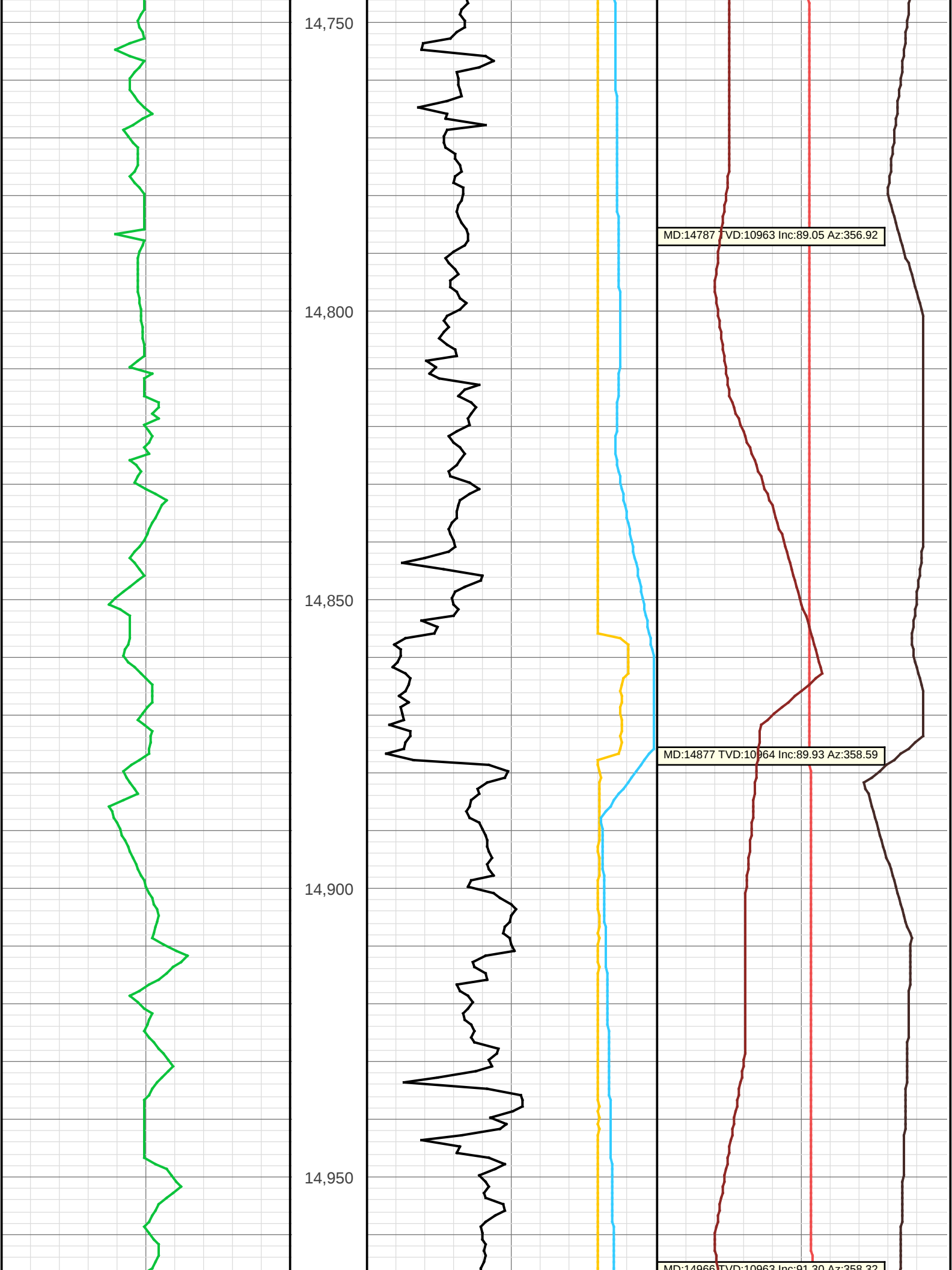


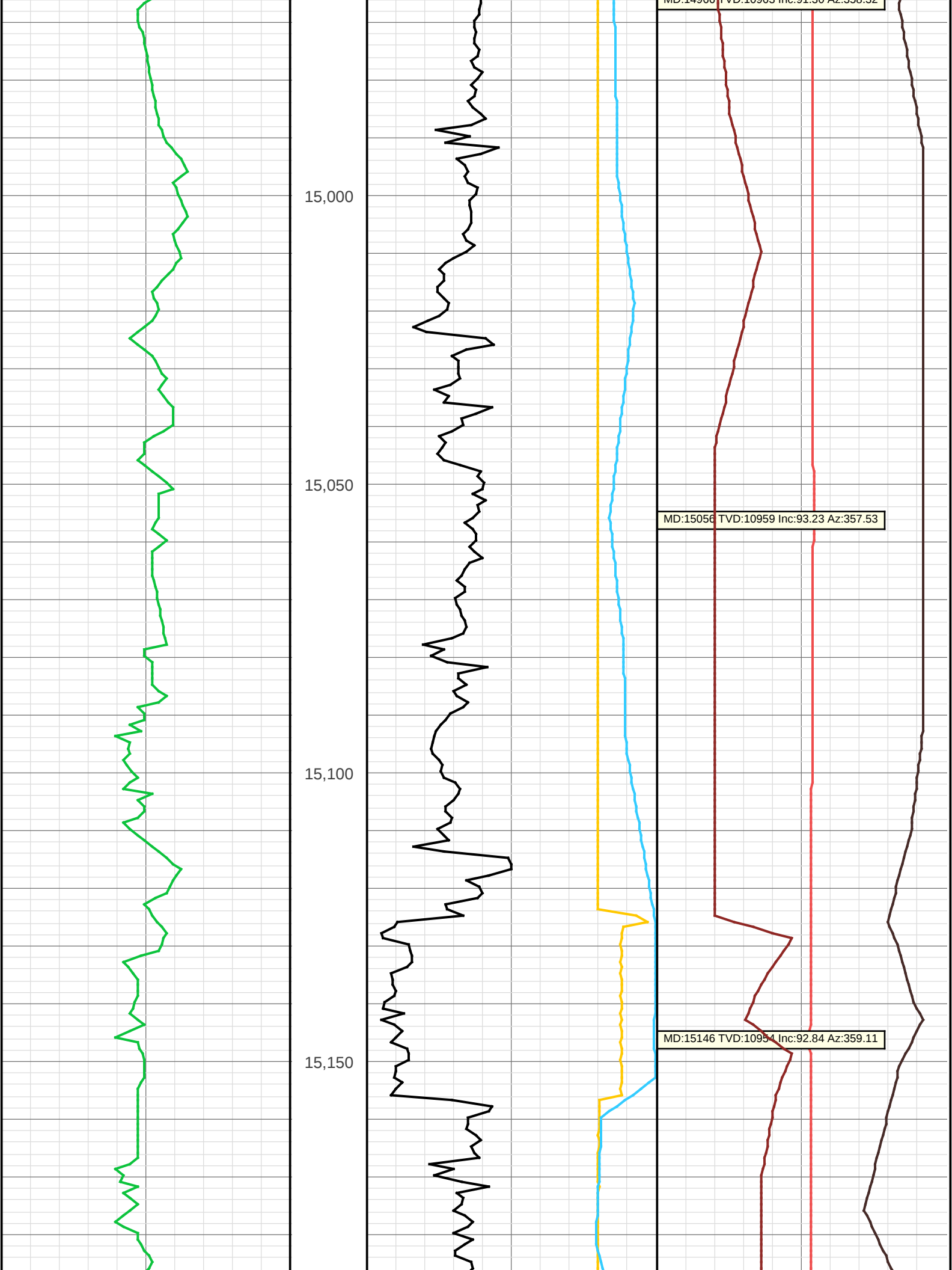


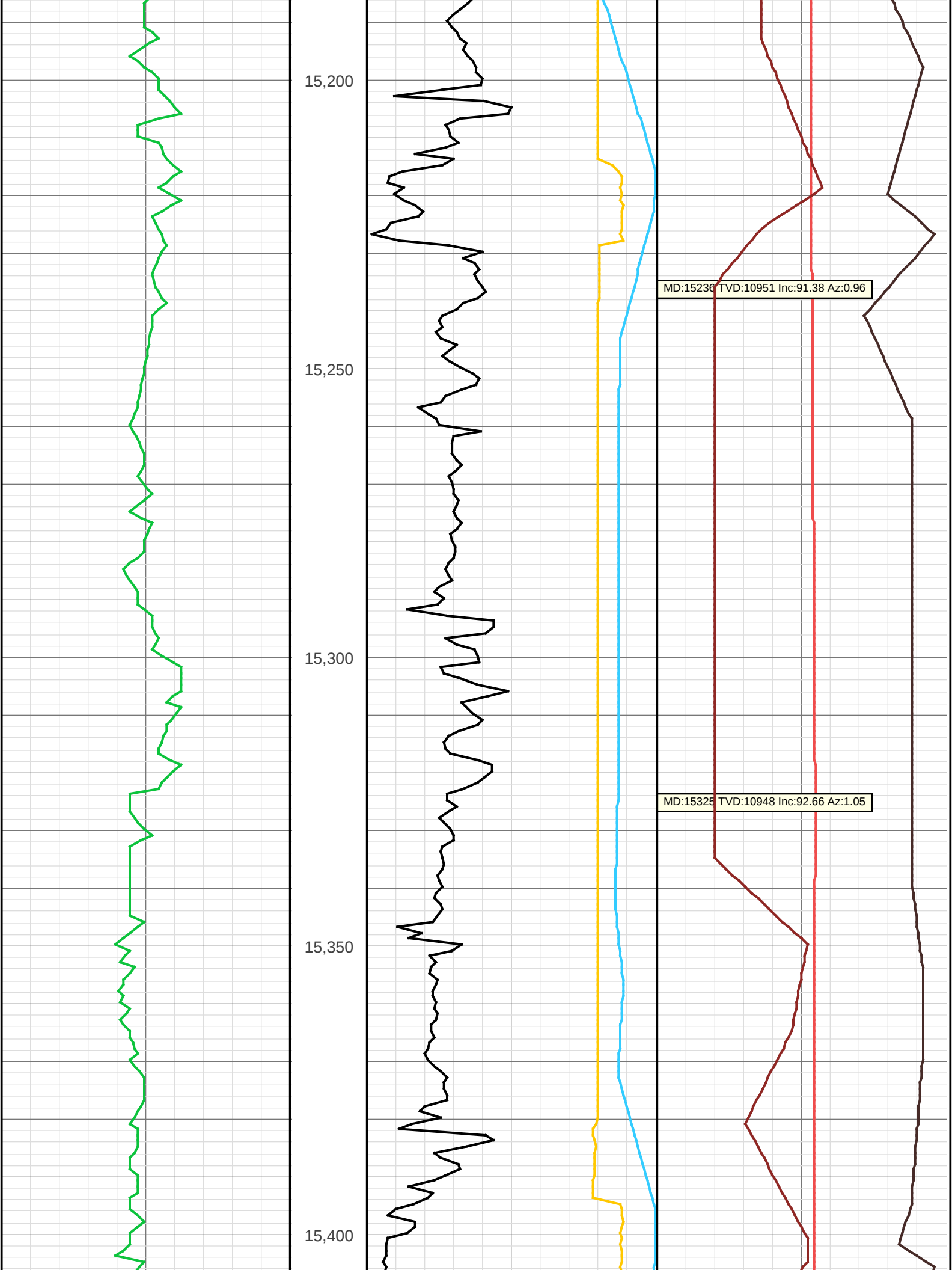


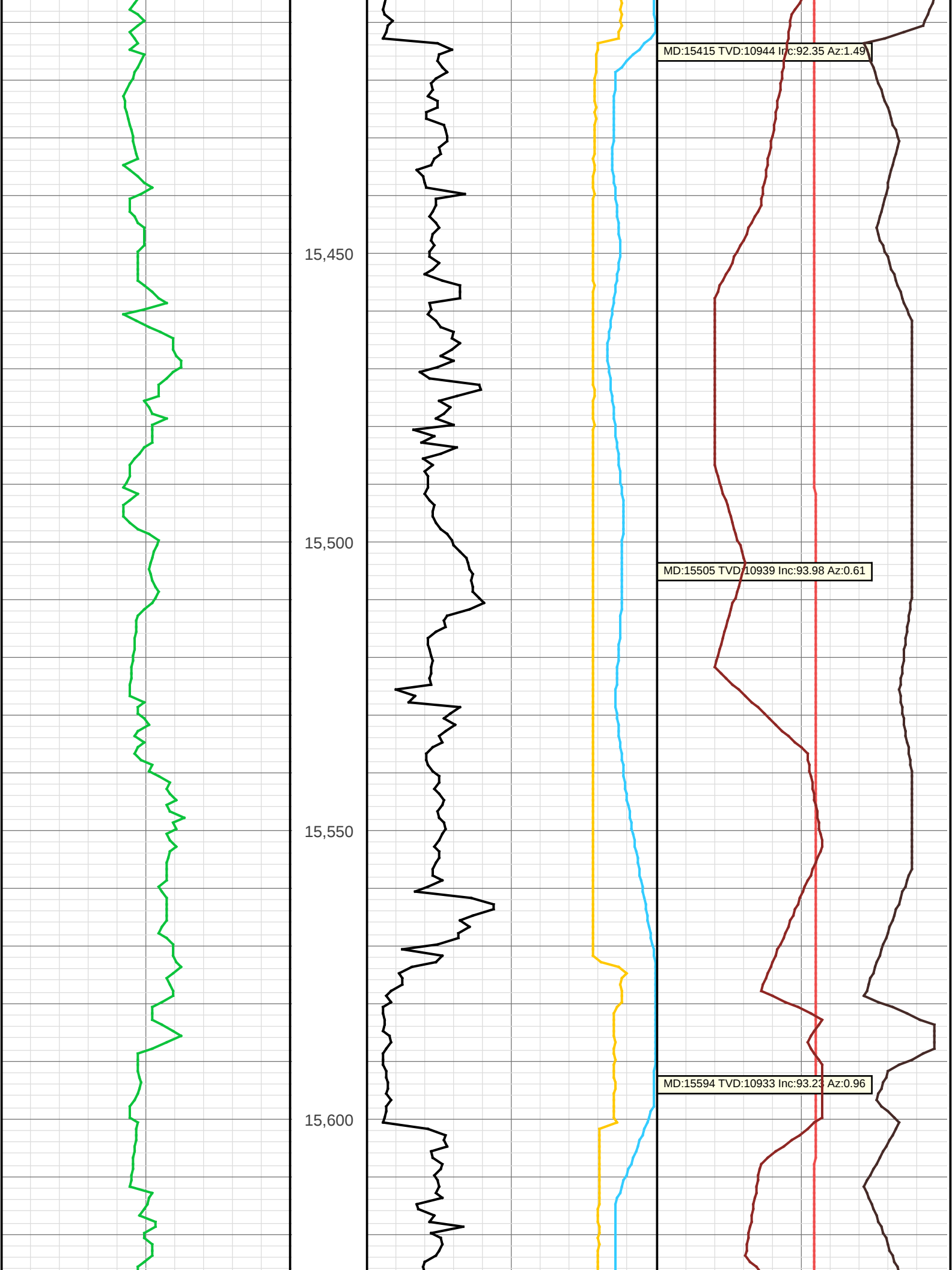


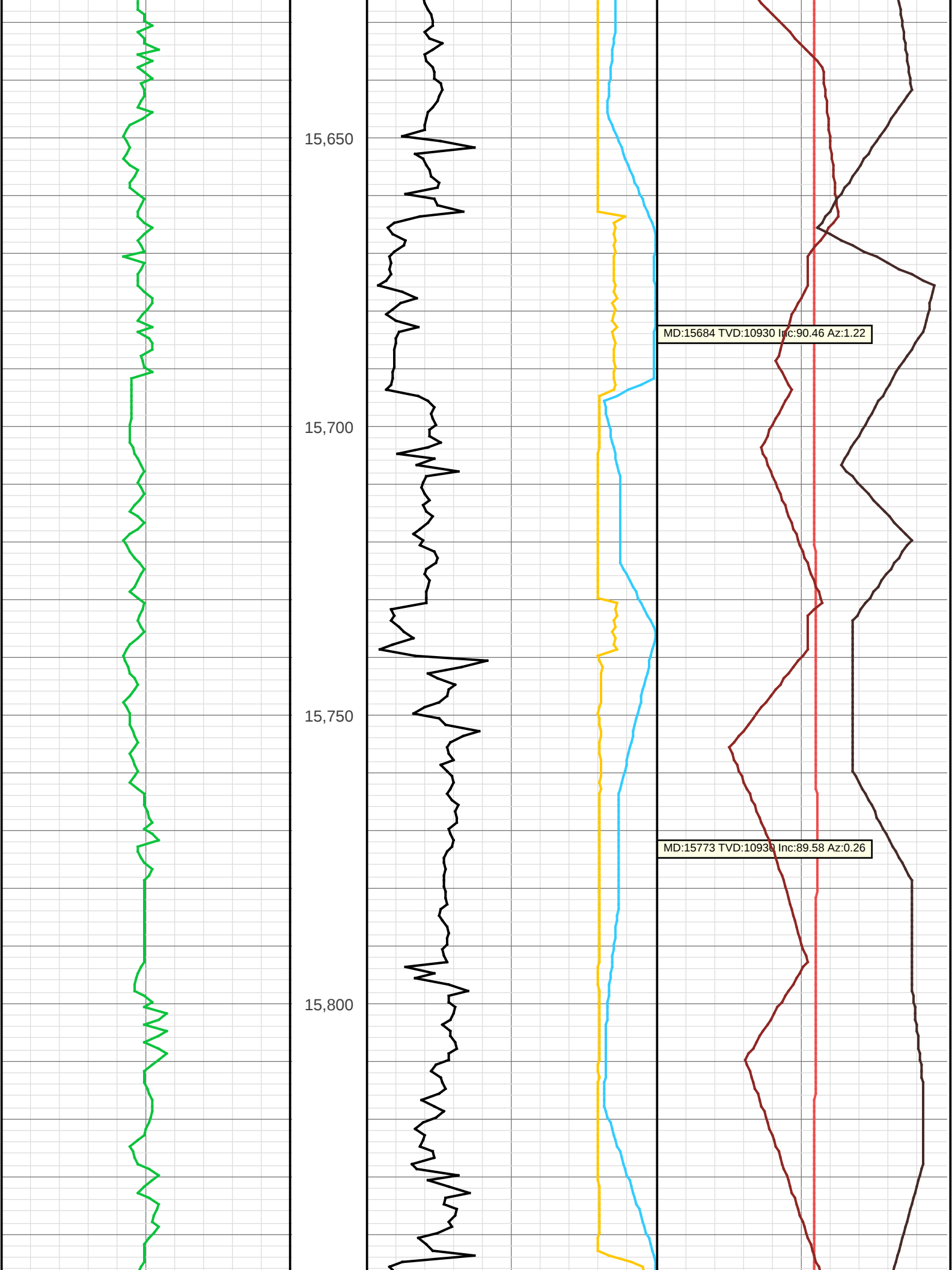


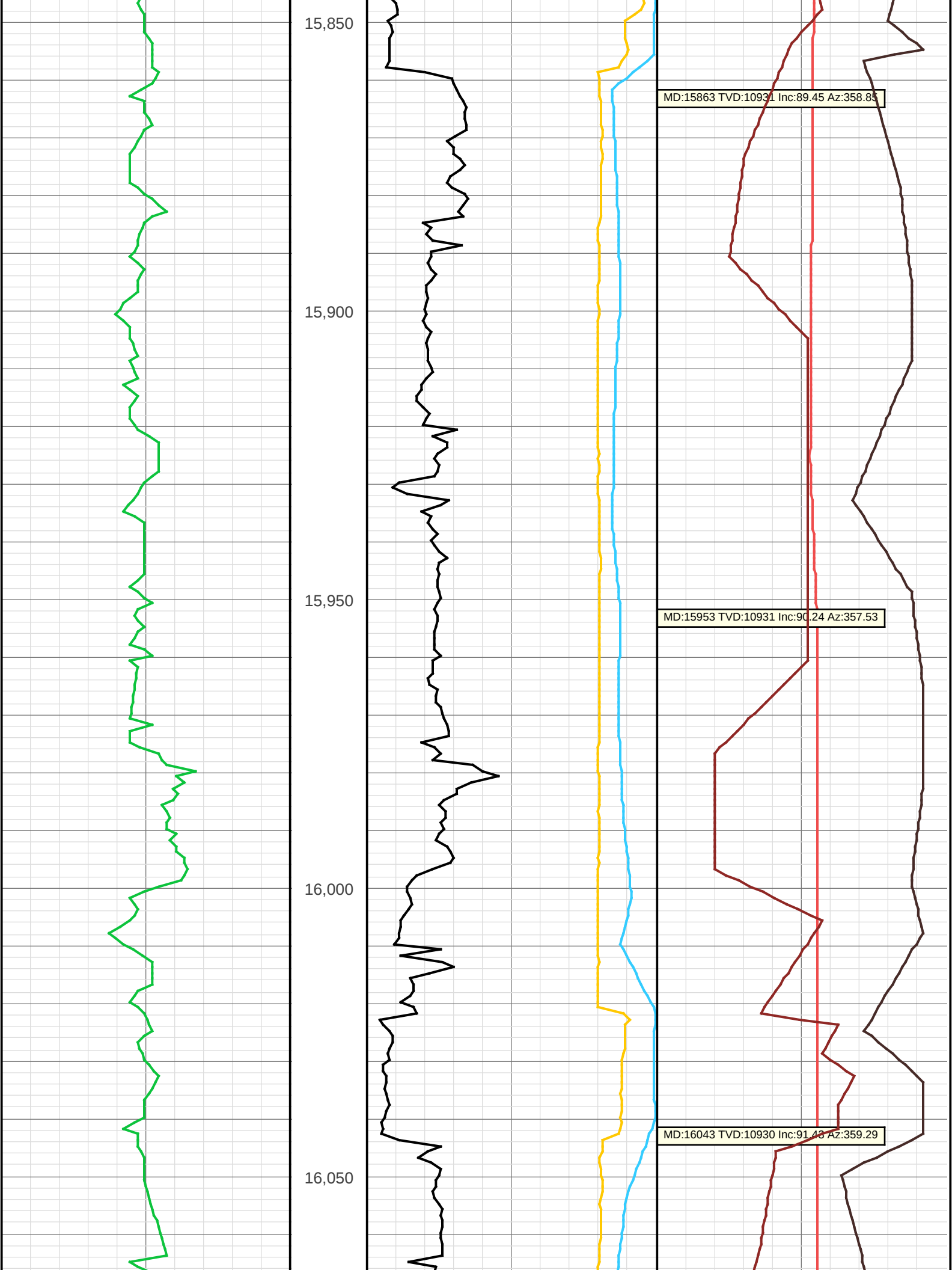


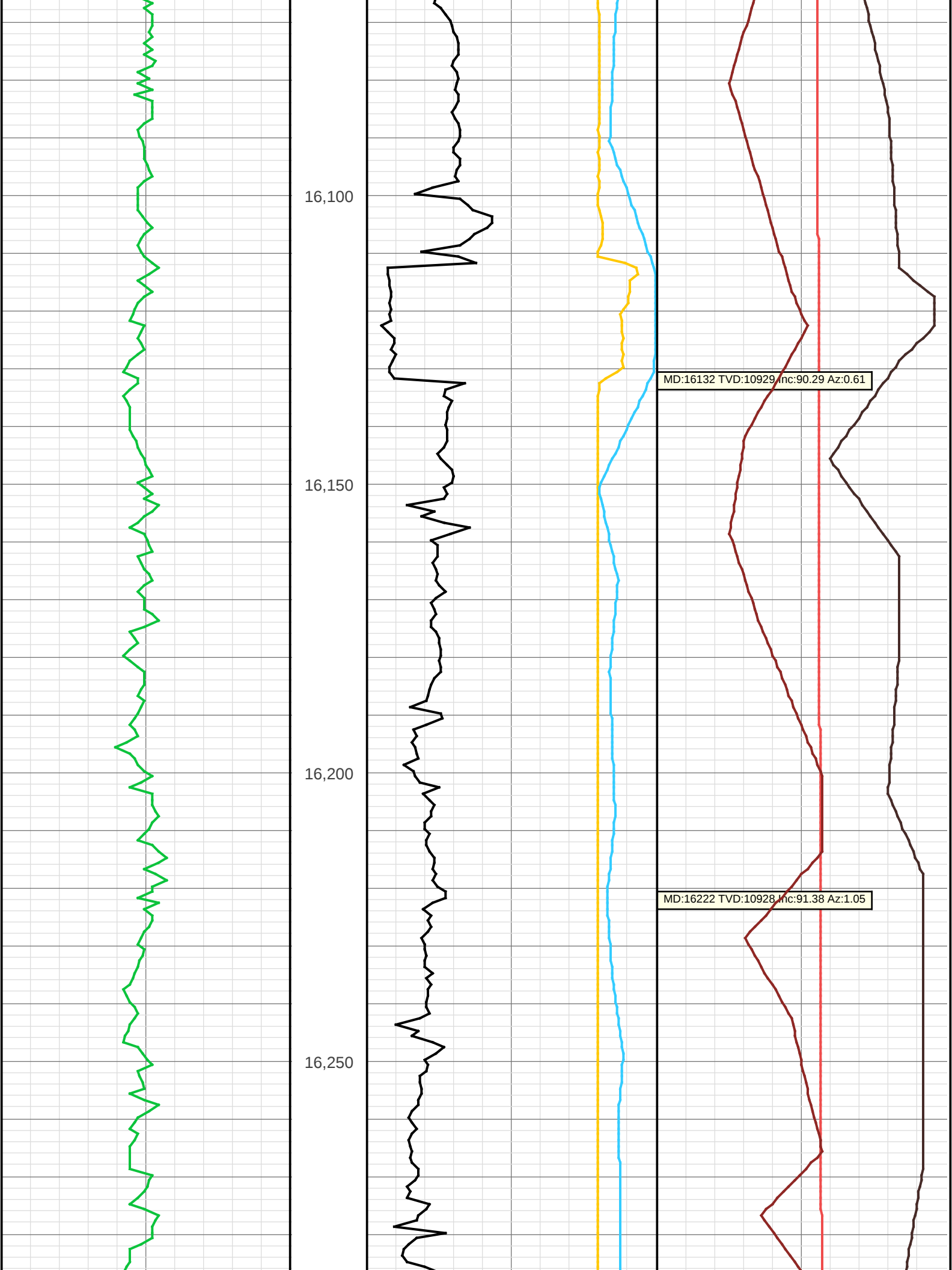


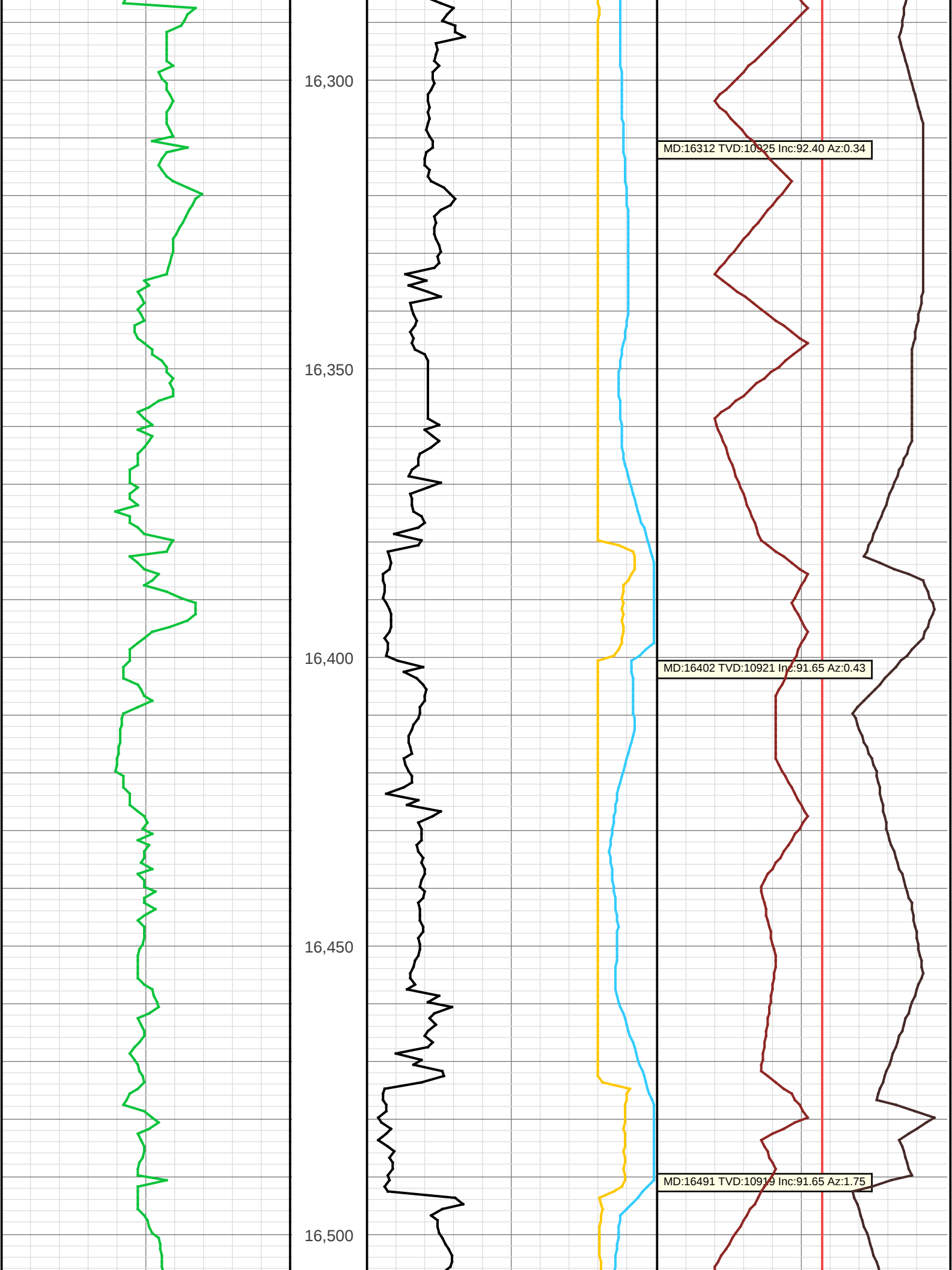


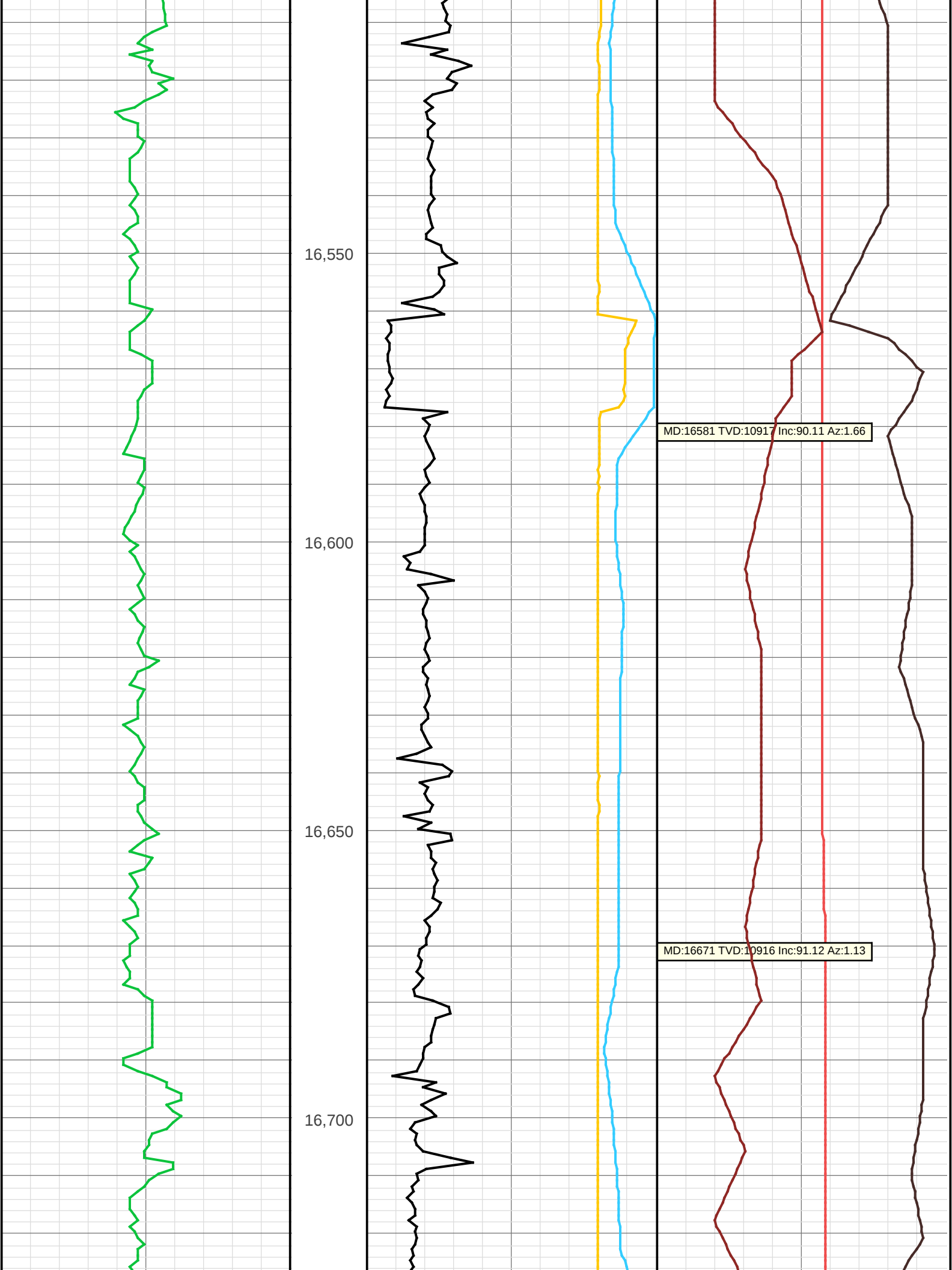


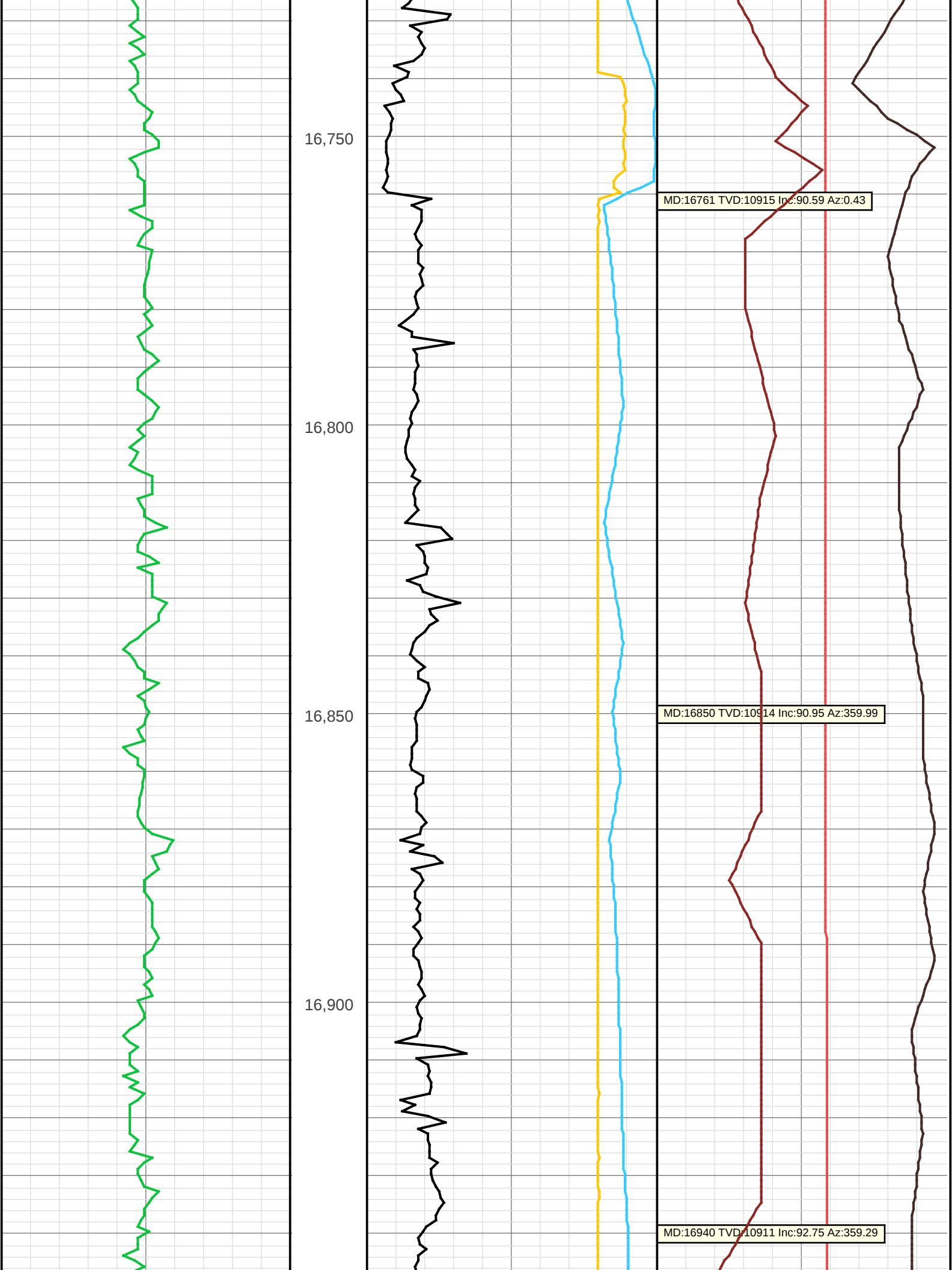


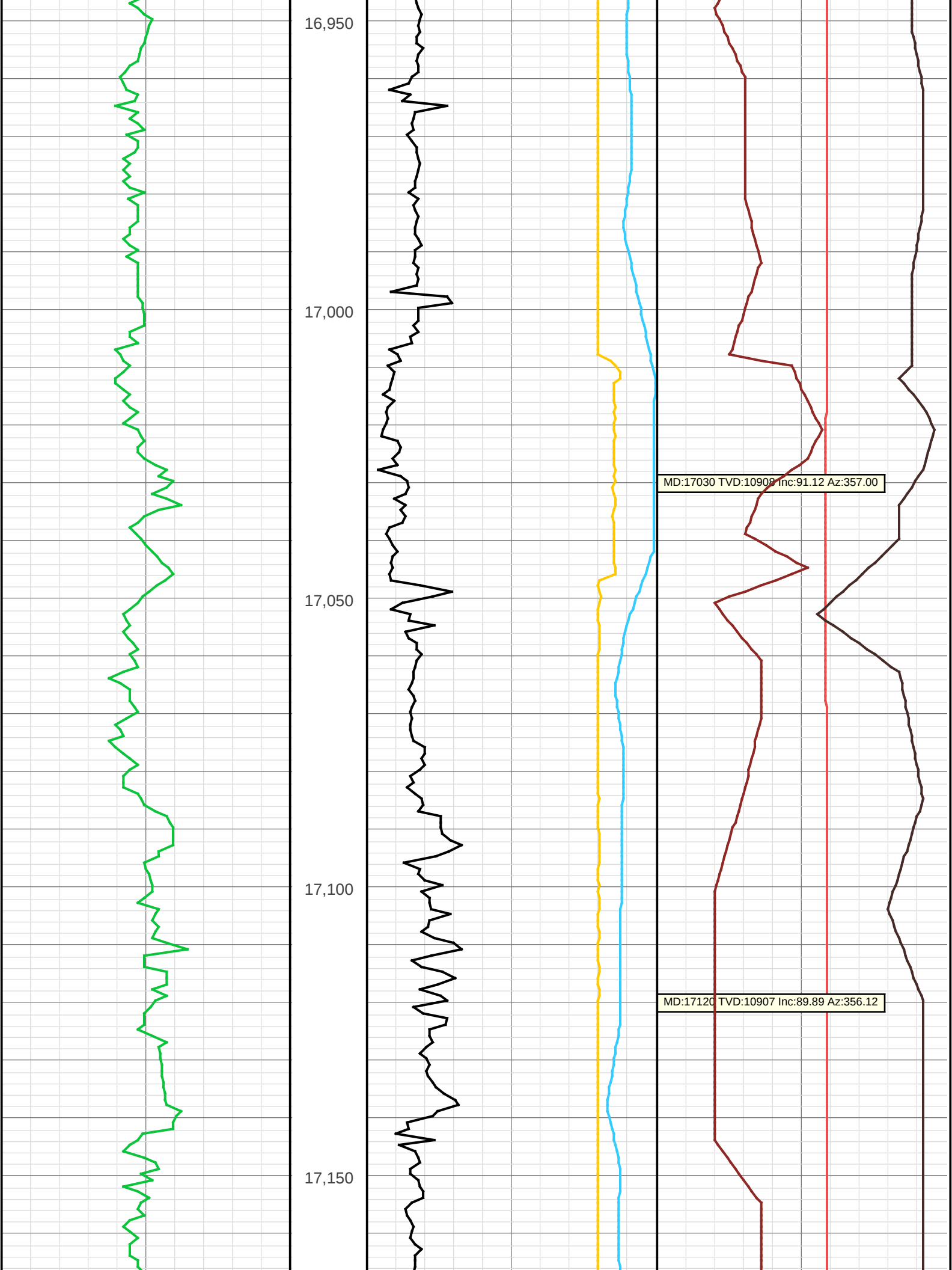


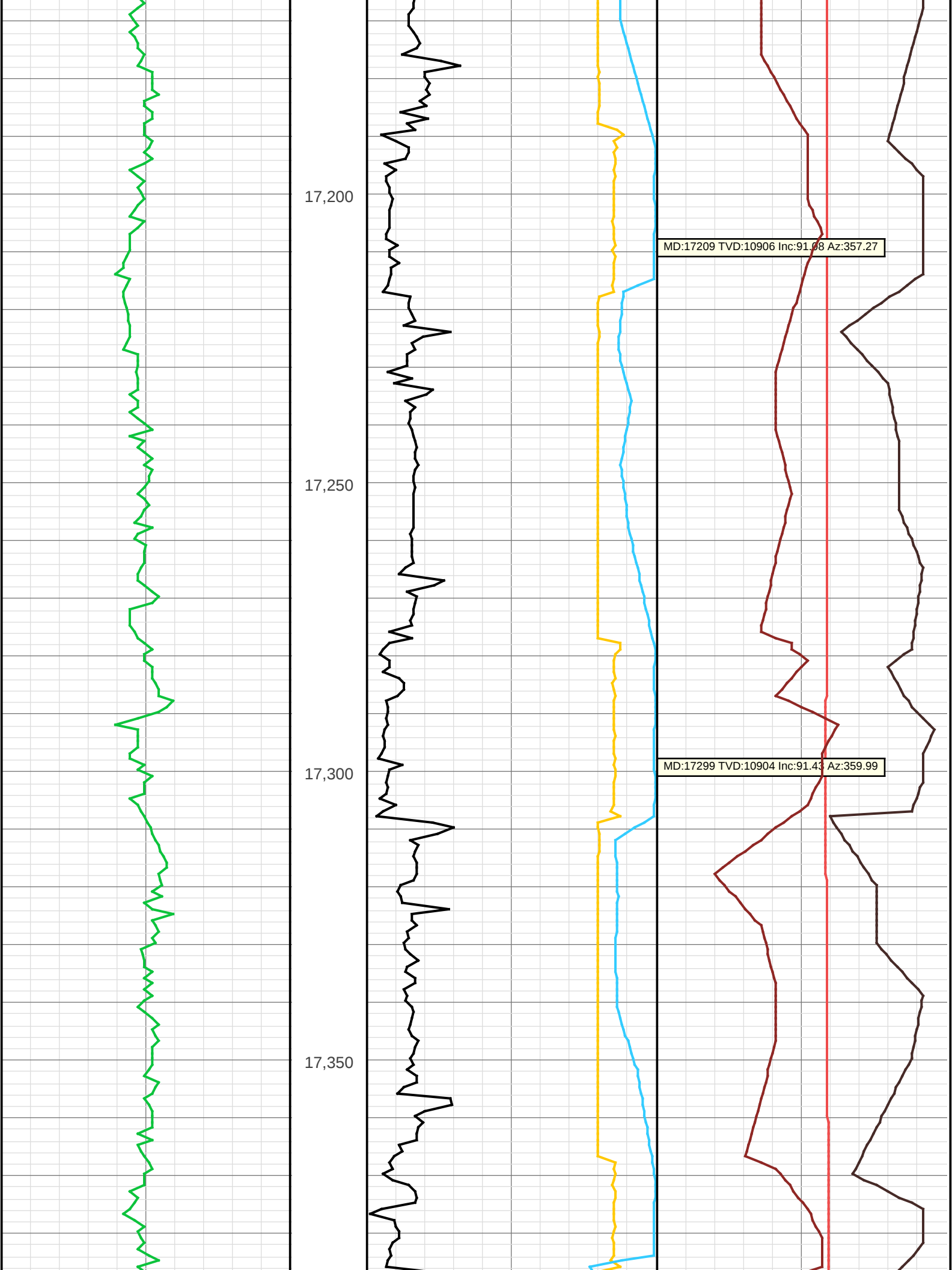


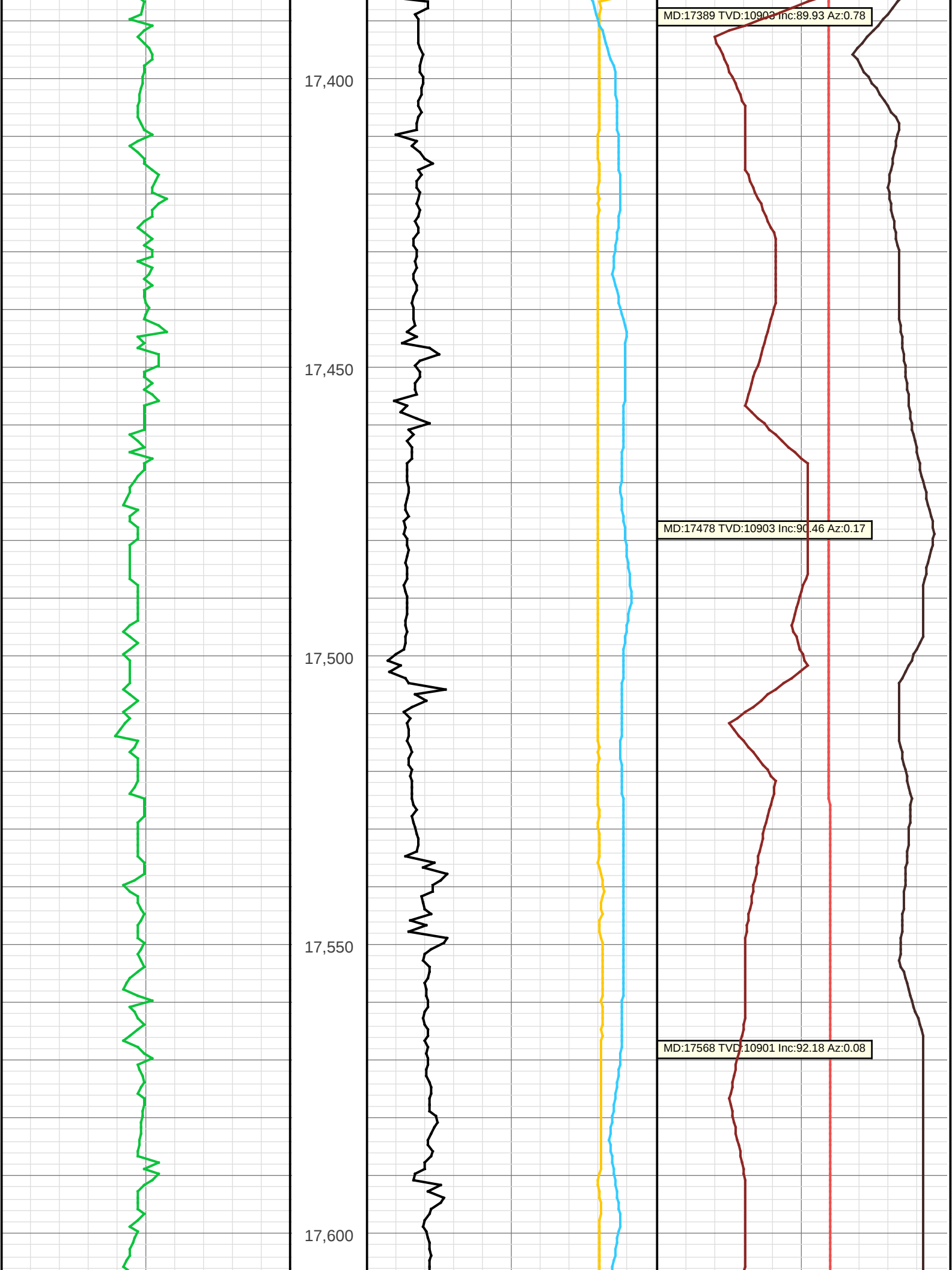


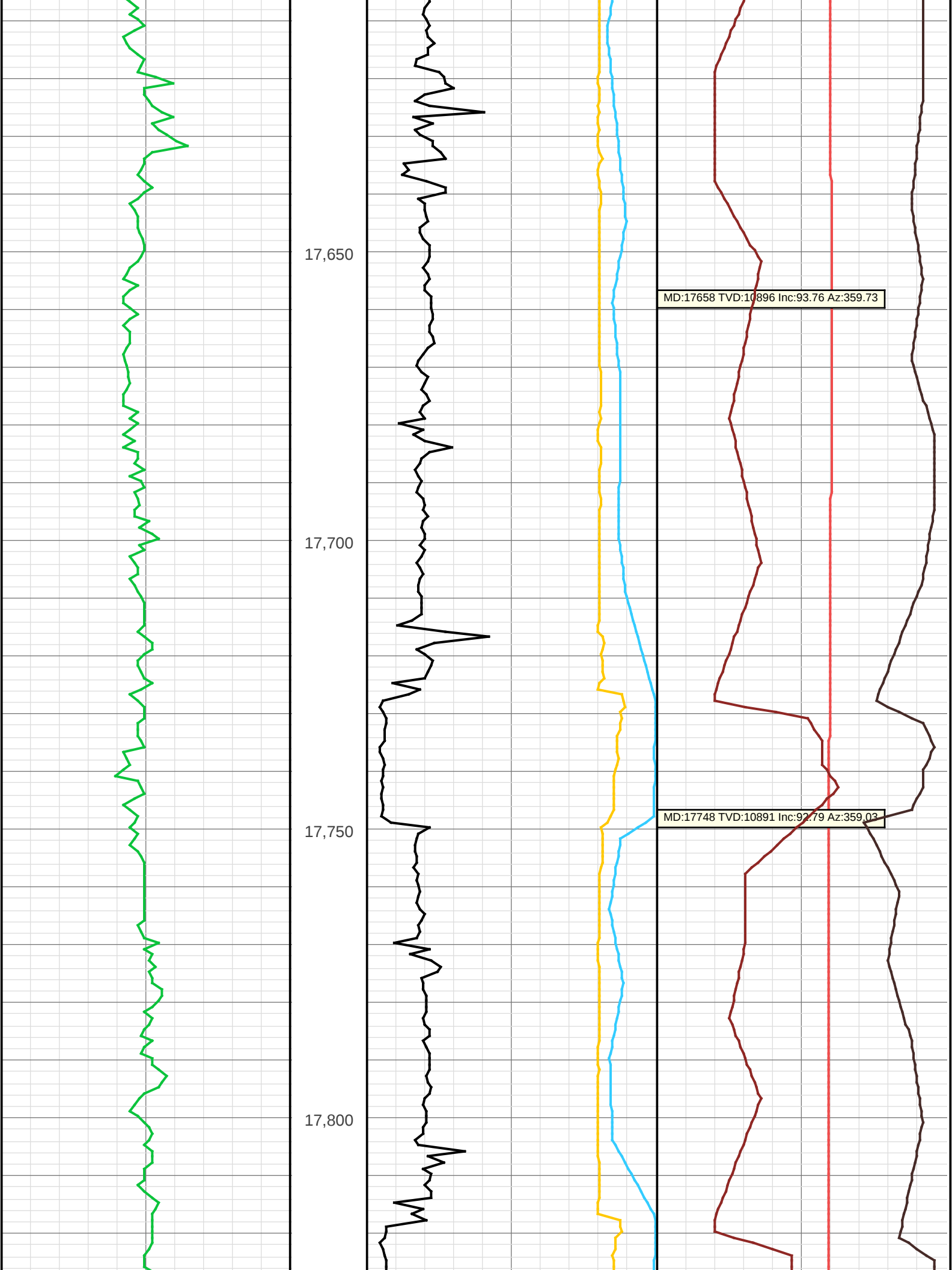


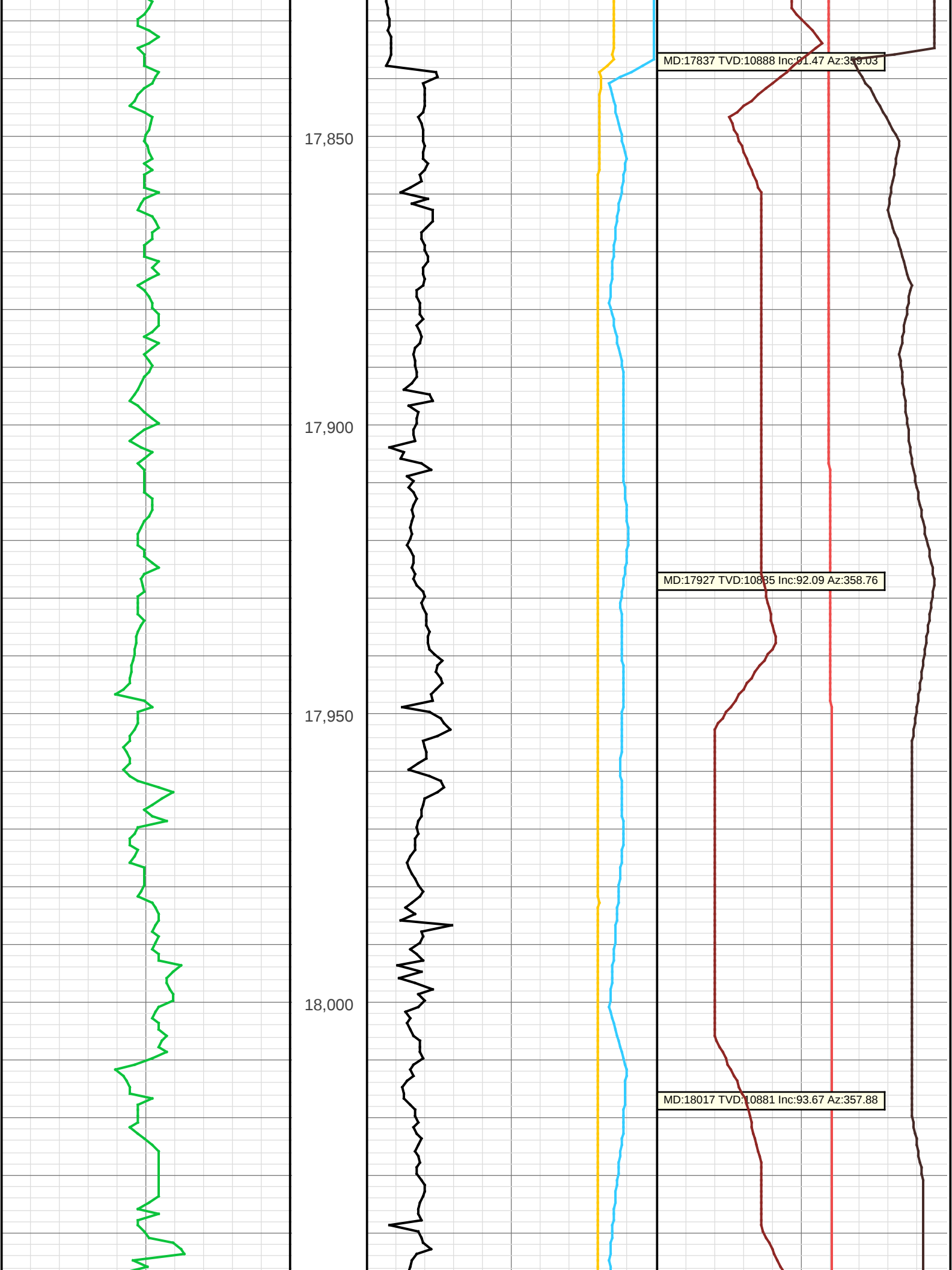


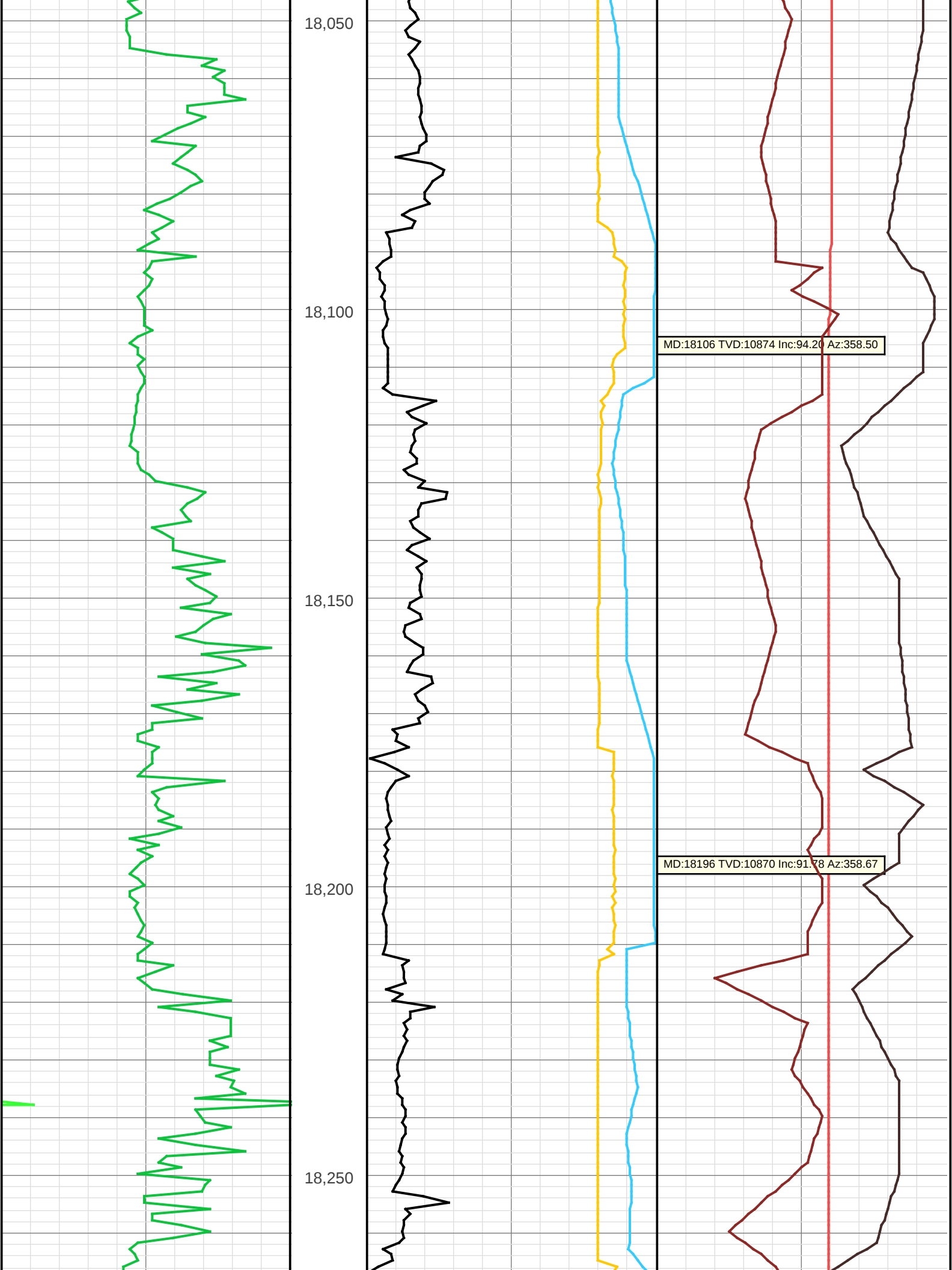


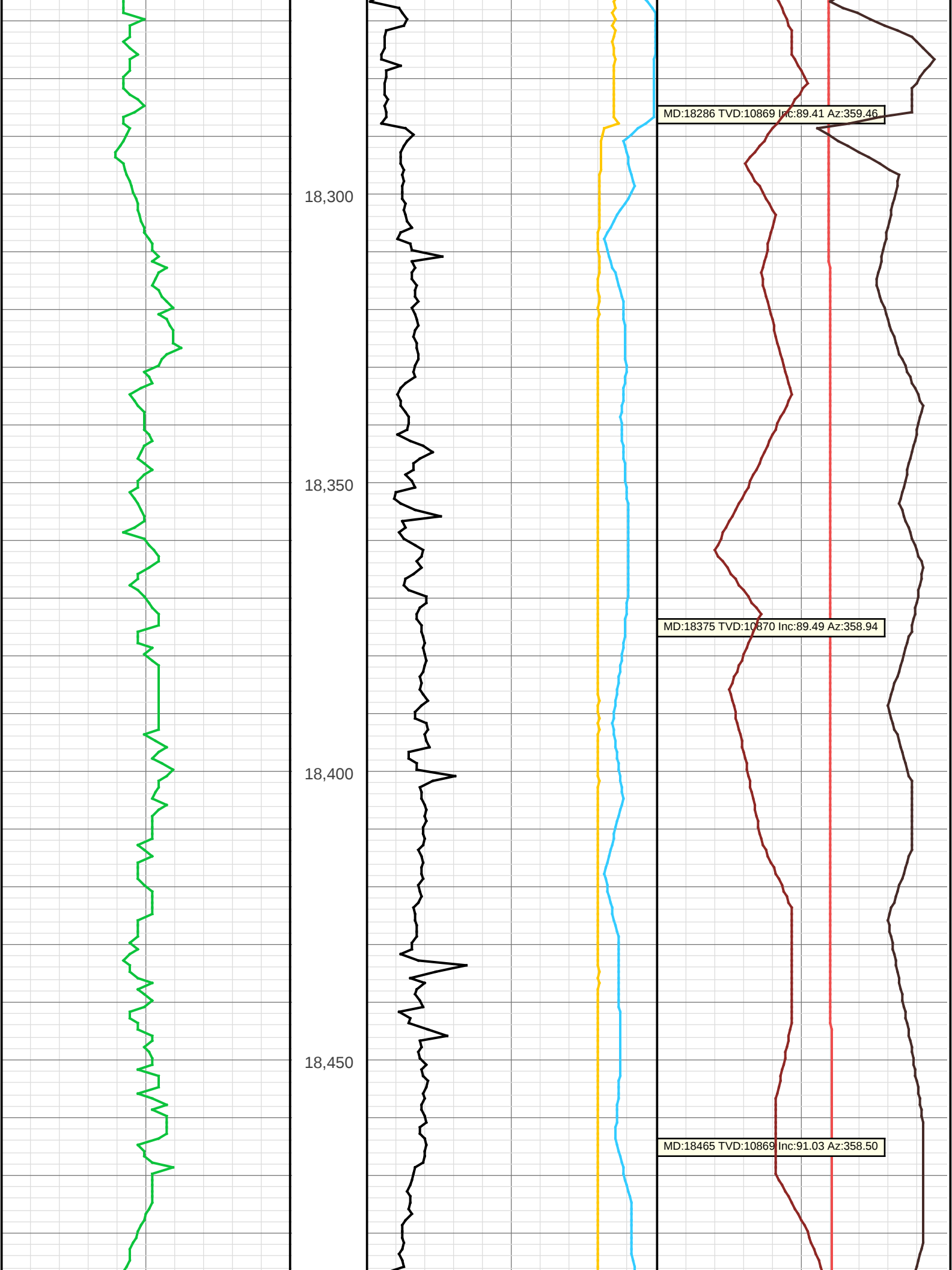


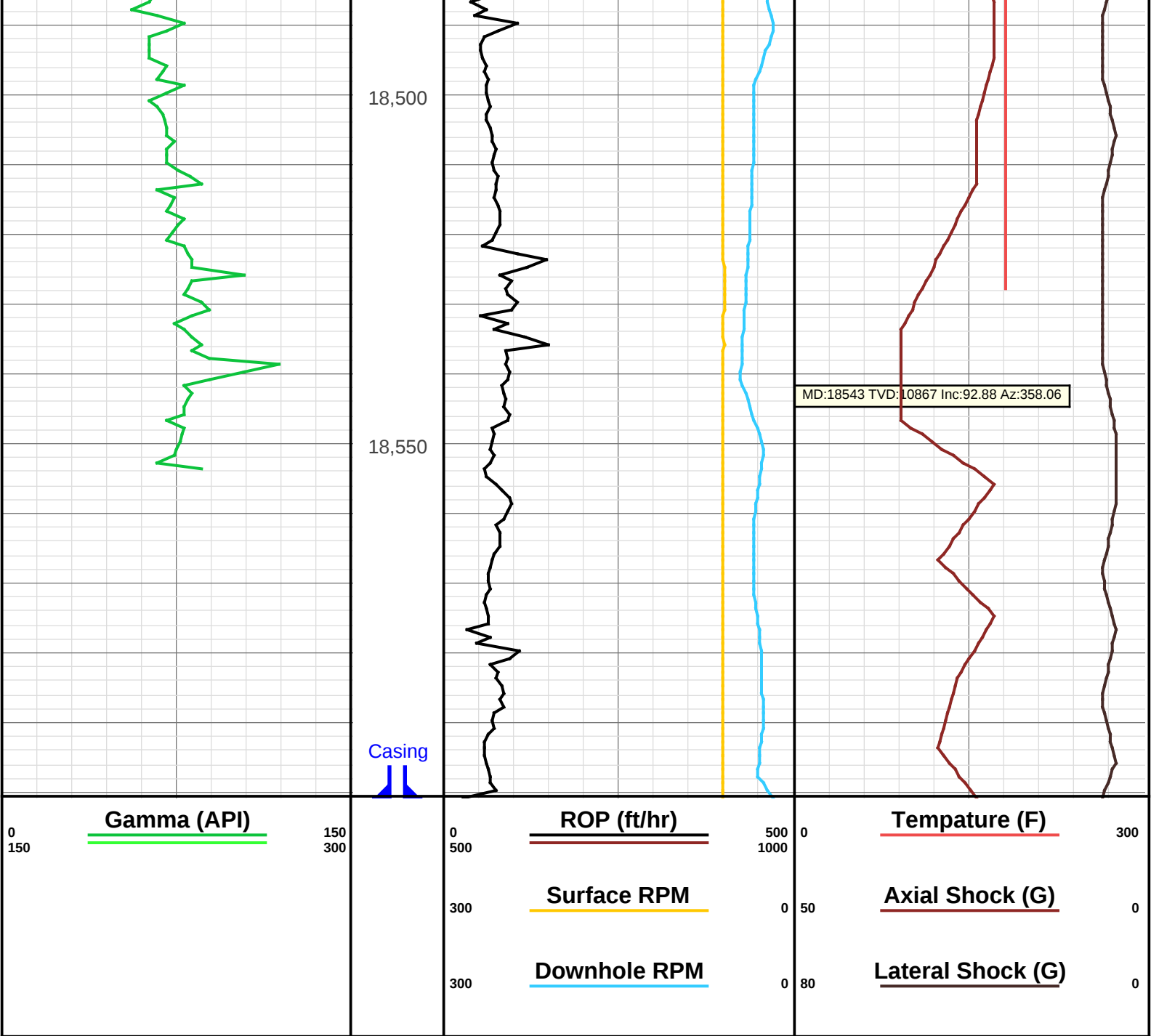














Gamma Ray

Intrepid-DDS
10314 TX-191
Midland, TX 79707

5" = 100'
TVD FT

Company: Advanced Energy Partners
Well: Wool Head State Com #511H
Field: Delaware Basin
API: 30-025-46491
County: Lea County
State New Mexico
Country USA
Rig: H&P #466

Well Location NAD 1927
Latitude: 32° 27' 29.102 N Longitude: 103° 35' 20.448 W
Y: 531182.20 X: 770916.10

Section: 20 Township: 21-S Range: 33-E Intrepid-DDS

Company: Advanced Energy Partners
Well: Wool Head State Com #511H
Field: Delaware Basin
API: 30-025-46491
County: Lea County
State: New Mexico
Country: USA
Rig: H&P #466
AFE: NM0091
Job: ID2386

Permanent Datum: Mean Sea Level
Log Measured From: Rotary Table
Height of Reference: 26
Kelly Bushing Elev: N/A
Drill Floor Elev: 3754.0
Ground Level Elev: 3728

Depth Drilled: 1.0 to: 18601.0
Depth Logged: 5100.0 to: 18601.01
Date Logged: 09 Nov 2019 20:44 to: 22 Dec 2019 13:57

Disclaimer: Intrepid-dds uses its best efforts to provide customers with accurate information and interpretations with services performed but does not warrant the accuracy of information or interpretations.

Hole Data			Casing Data		
Size	From (MD)	To (MD)	Size	From (MD)	To (MD)
17.5	100	1838	13.375	100	1838
12.5	1838	5263	9.625	1838	5263
8.5	5263	18601	5.5	5263	18601

Run Data								
Run Name	MWD Run 1	MWD Run 2	MWD Run 3	MWD Run 4	MWD Run 5	MWD Run 6	MWD Run 7	MWD Run 8
Start Date	10 Nov 2019	15 Nov 2019	23 Nov 2019	24 Nov 2019	15 Dec 2019	17 Dec 2019	18 Dec 2019	19 Dec 2019
Start Time	7:00	1:30	21:00	11:30	21:00	2:50	15:00	18:00
End Date	11 Nov 2019	16 Nov 2019	24 Nov 2019	25 Nov 2019	17 Dec 2019	18 Dec 2019	19 Dec 2019	22 Dec 2019
End Time	04:00	17:15	10:30	23:30	1:00	14:00	17:00	13:30
Depth In	1.0	1838	5182	6389	10547	11589	13734	14193
Depth Out	1838	5263	6389	10547	11589	13734	14193	18601
Log Top			5182	6336	10538	11553	13687	14146
Log Bottom			6336	10538	11553	13687	14146	18554
Hole Size	17.5	12.75	8.5	8.5	8.5	8.5	8.5	8.5

Tool Data								
Run Name	MWD Run 1	MWD Run 2	MWD Run 3	MWD Run 4	MWD Run 5	MWD Run 6	MWD Run 7	MWD Run 8
Directional Sensor SN	20081-R	20081-R	20120-R	20125-R	20120-R	20224-R	20120	20120
Directional Offset	68	65	63	63	48	58	58	58
Gamma Sensor SN	N/A	N/A	352-R	907-R	352-R	809-R	352	352
Gamma Offset			53	53	36	47	47	47
Gamma Corr. Factor	1.0	1.0	3.661	3.682	3.72	3.76	3.72	3.72

Mud Data								
Run Name	MWD Run 1	MWD Run 2	MWD Run 3	MWD Run 4	MWD Run 5	MWD Run 6	MWD Run 7	MWD Run 8
Mud Type	Water Based	Water Based	Water Based	Water Based	Oil Based	Oil Based	Oil Based	Oil Based
Mud Density (lb/gal)	9.7	10.4	10.6	10.6	9.5	9.6	9.6	9.6
Funnel Visc. (s/qt)	N/A	28	28	1	68	69	68	57
Plastic Visc. (cP)	N/A	2	2	1	19	16	16	13
pH	N/A	10.0	10.0	10.1	N/A	N/A	N/A	N/A
Chlor. Whole Mud (mg/L)	N/A	187,000	178,000	75,000	73,000	45000	46000	44000
API Filtrate (cm3/30)	N/A	99/2	2	99/2	N/A	8.2	7.2	7.2
Max MWD Temp (F)	113.4	127.7	113.4	134.9	139.6	169.6	162.6	182.0

Personnel								
Run Name	MWD Run 1	MWD Run 2	MWD Run 3	MWD Run 4	MWD Run 5	MWD Run 6	MWD Run 7	MWD Run 8
MWD Operator 1	Ben Wallace	Ben Wallace	Michael Walton	Michael Walton	Ben Wallace	Ben Wallace	Ben Wallace	Ben Wallace
MWD Operator 2	Michael Walton	Michael Walton	Josphe Hatley	Josphe Hatley	Michael Walton	Michael Walton	Mike Walton	Mike Walton
MWD Operator 3								

