

CONFIDENTIAL



Heaven Hill 3-6HU

MD
1"=100'

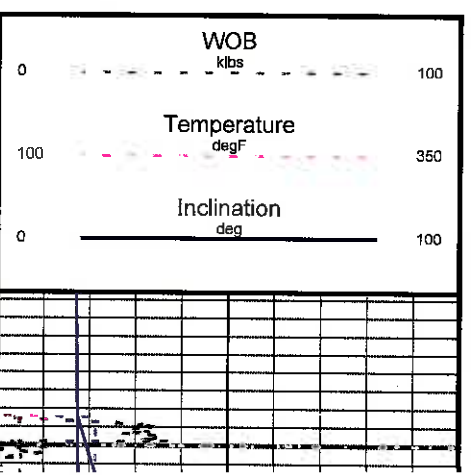
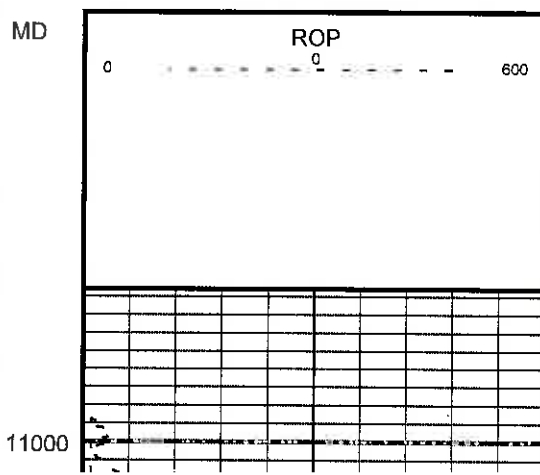
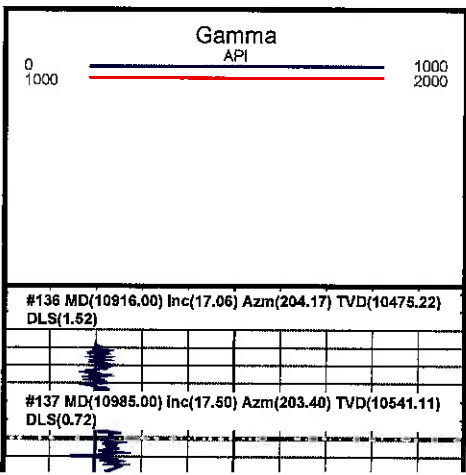
Company: Tug Hill Op
Well Name: Heaven Hill 3-6HU
API: 4705161468
Country/Parish: Marshall Co.
State: West Virginia
Country: USA
Job number: THO-18-1099A
Field: Ulica
Rig Id: Nabors B28
Survey Company: NZone Guidance LLC

Log measurements: FT
Depth measured from: 10916 ft
Maximum temperature: 240.7
Depth **Date**
 Start: 10916 ft 10/09/2018
 End: 23854 ft 10/25/2018

Casing **Depth** **Size**
Surface: 10916 ft 13 3/8"
Intermediate: 9 5/8"
Intermediate2: 23854 ft 4.75"
Mud Type: OBM
Density: 13.35
Viscosity: 55 SEC/QT
Rm: **Rmf:** **Rmc:**
Elevations
KB: 1352
GL: 1326
DF: 1352

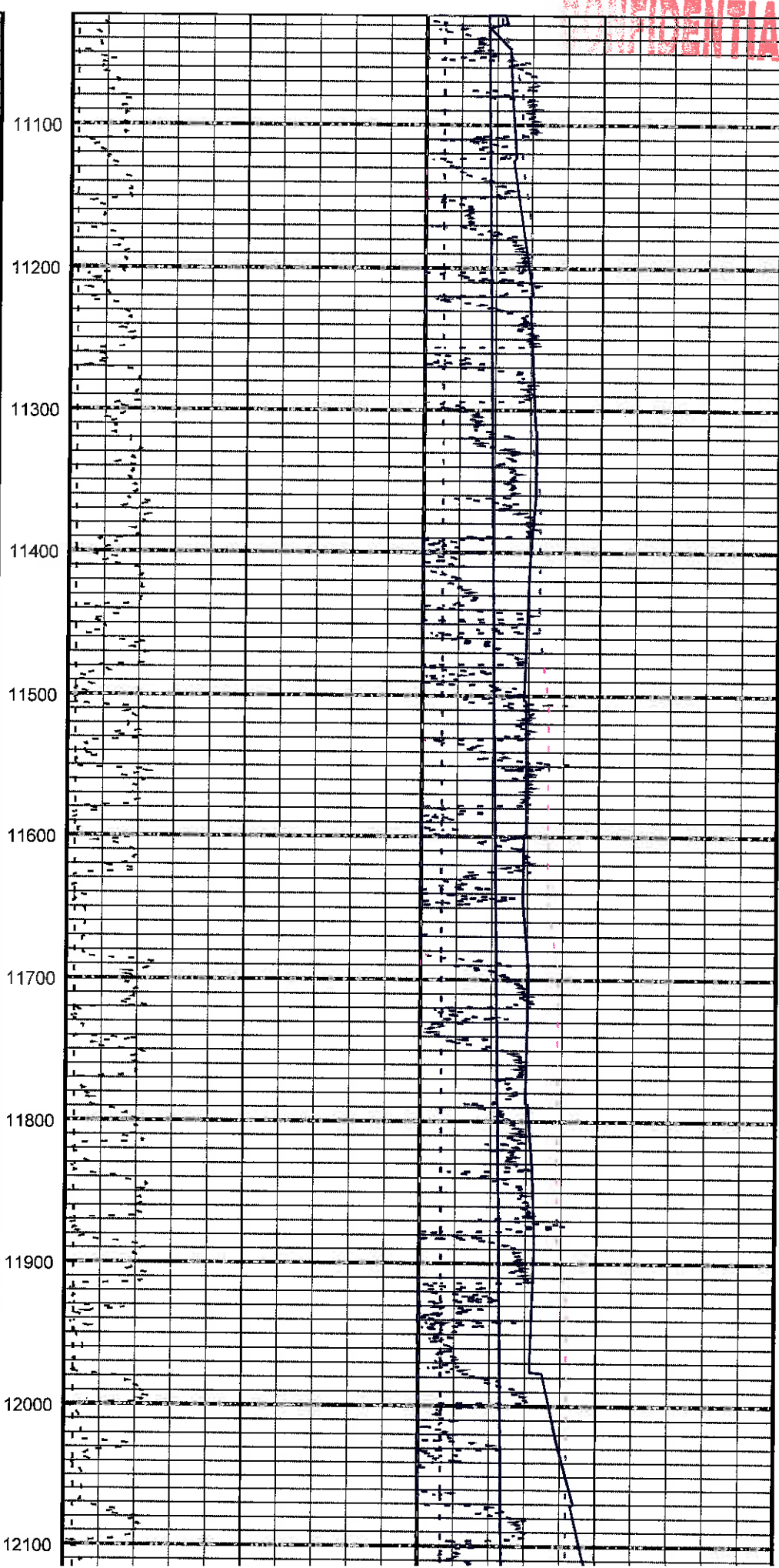
| Run | Bit Size | Offsets | | Depths | | Dates | |
|-----|----------|----------|----------|----------|----------|------------|------------|
| | | Gamma | Survey | Start | End | Start | End |
| 1 | 8.50" | 36.00 ft | 47.00 ft | 10916 ft | 23854 ft | 10/10/2018 | 10/25/2018 |
| 2 | | | | ft | ft | | |
| 3 | | | | ft | ft | | |
| 4 | | | | | | | |
| 5 | | | | | | | |
| 6 | | | | | | | |
| 7 | | | | | | | |
| 8 | | | | | | | |
| 9 | | | | | | | |
| 10 | | | | | | | |

NZone Guidance LLC uses its best efforts to provide its customers with accurate information and interpretations in conjunction with services performed but will not be held liable or responsible for the accuracy of such information or interpretation.



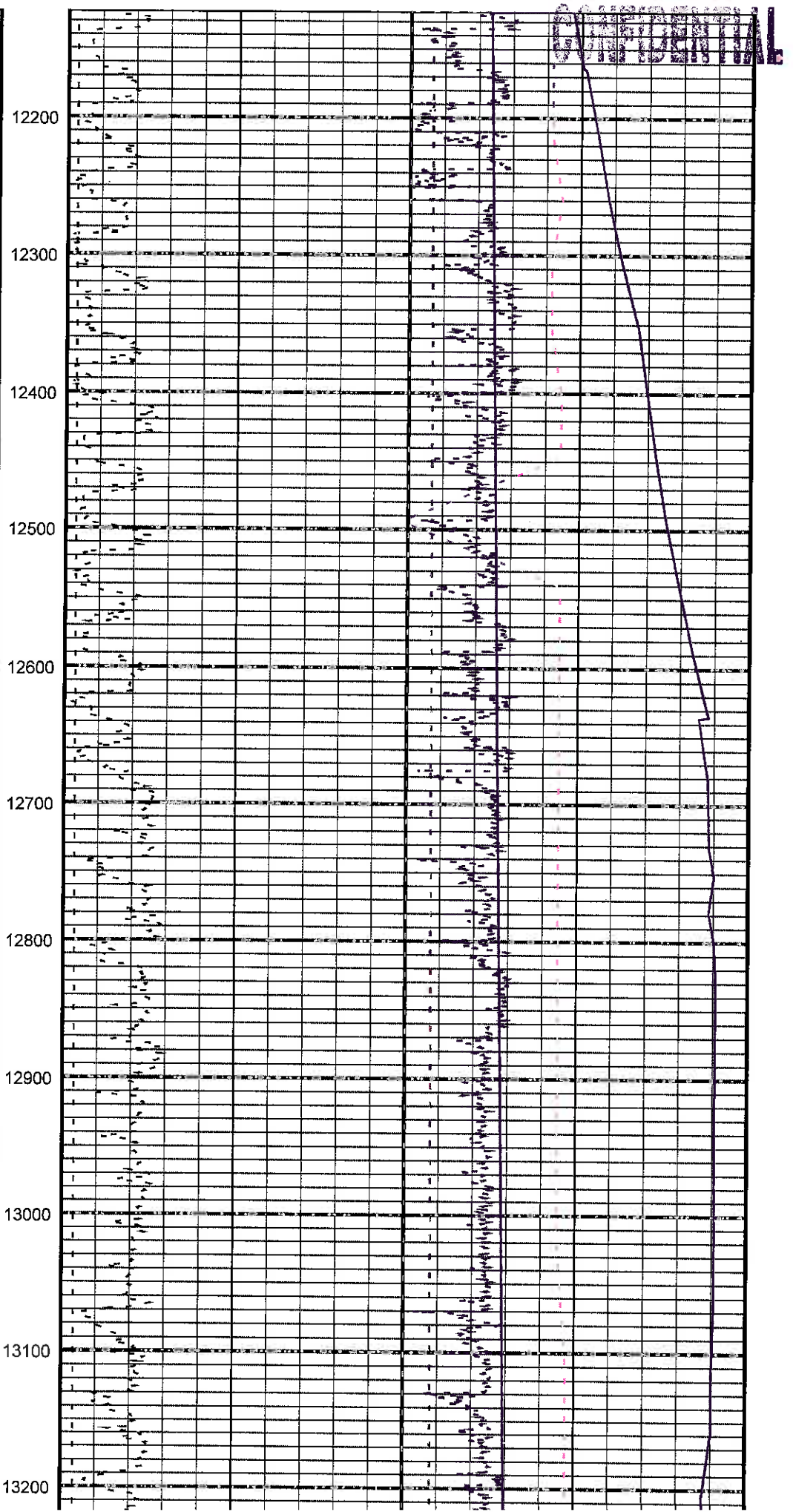
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| #138 MD(11029.00) Inc(22.90) Azm(203.60) TVD(10582.38) DLS(12.27) |
| #139 MD(11076.00) Inc(24.20) Azm(207.60) TVD(10625.47) DLS(4.38) |
| #140 MD(11126.00) Inc(24.80) Azm(211.90) TVD(10670.06) DLS(3.84) |
| #141 MD(11172.00) Inc(27.60) Azm(212.30) TVD(10712.23) DLS(5.97) |
| #142 MD(11220.00) Inc(29.60) Azm(210.80) TVD(10754.37) DLS(4.43) |
| #143 MD(11267.00) Inc(30.50) Azm(210.80) TVD(10795.05) DLS(1.92) |
| #144 MD(11315.00) Inc(31.70) Azm(216.70) TVD(10836.16) DLS(6.72) |
| #145 MD(11362.00) Inc(31.50) Azm(217.80) TVD(10876.19) DLS(1.30) |
| #146 MD(11409.00) Inc(30.00) Azm(212.10) TVD(10916.59) DLS(6.97) |
| #147 MD(11456.00) Inc(29.30) Azm(205.90) TVD(10957.45) DLS(6.69) |
| #148 MD(11504.00) Inc(29.30) Azm(201.30) TVD(10999.31) DLS(4.69) |
| #149 MD(11551.00) Inc(29.40) Azm(195.70) TVD(11040.29) DLS(5.84) |
| #150 MD(11599.00) Inc(28.80) Azm(192.70) TVD(11082.23) DLS(3.29) |
| #151 MD(11646.00) Inc(28.70) Azm(188.70) TVD(11123.44) DLS(4.10) |
| #152 MD(11693.00) Inc(30.40) Azm(179.30) TVD(11164.35) DLS(10.49) |
| #153 MD(11740.00) Inc(30.00) Azm(172.80) TVD(11204.98) DLS(7.01) |
| #154 MD(11788.00) Inc(30.30) Azm(165.70) TVD(11246.50) DLS(7.45) |
| #155 MD(11835.00) Inc(31.70) Azm(160.70) TVD(11286.79) DLS(6.23) |
| #156 MD(11882.00) Inc(32.40) Azm(159.40) TVD(11326.63) DLS(2.09) |
| #157 MD(11929.00) Inc(31.80) Azm(155.60) TVD(11366.45) DLS(4.48) |
| #158 MD(11977.00) Inc(34.80) Azm(150.20) TVD(11406.57) DLS(8.78) |
| #159 MD(12024.00) Inc(38.90) Azm(149.00) TVD(11444.17) DLS(8.86) |
| #160 MD(12070.00) Inc(43.80) Azm(147.20) TVD(11478.70) DLS(10.96) |
| #161 MD(12117.00) Inc(47.20) Azm(146.80) TVD(11511.64) |

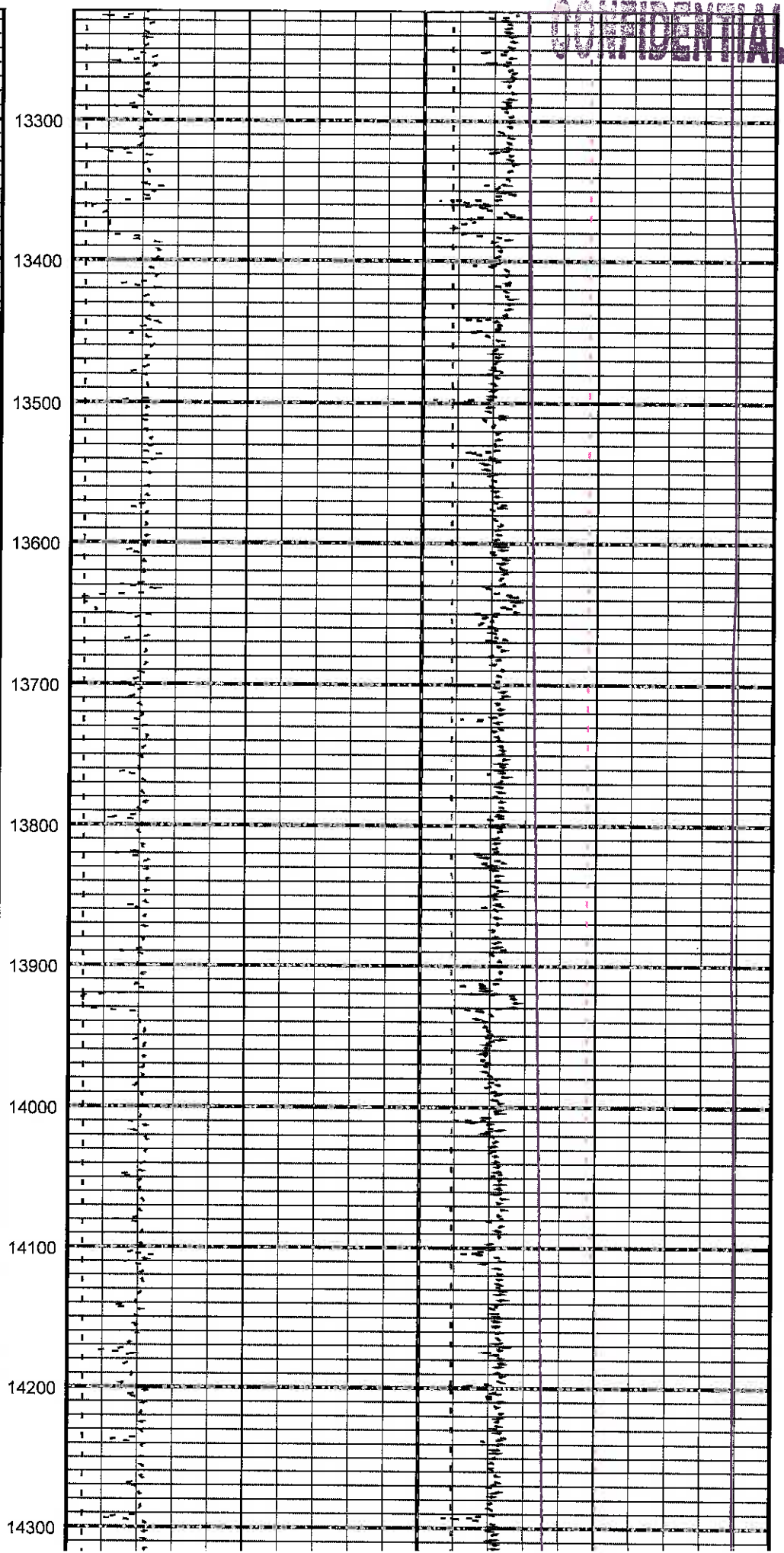
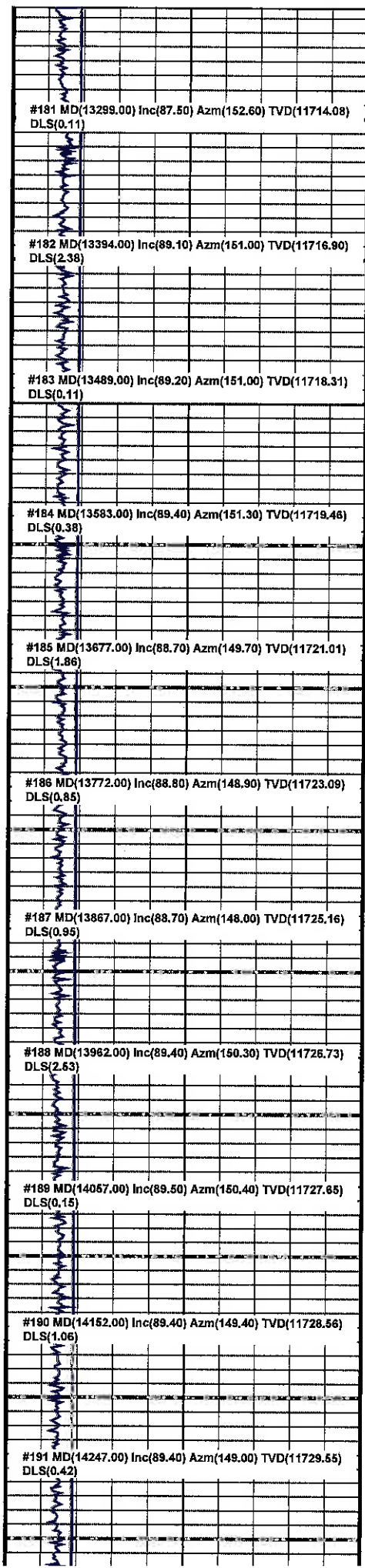


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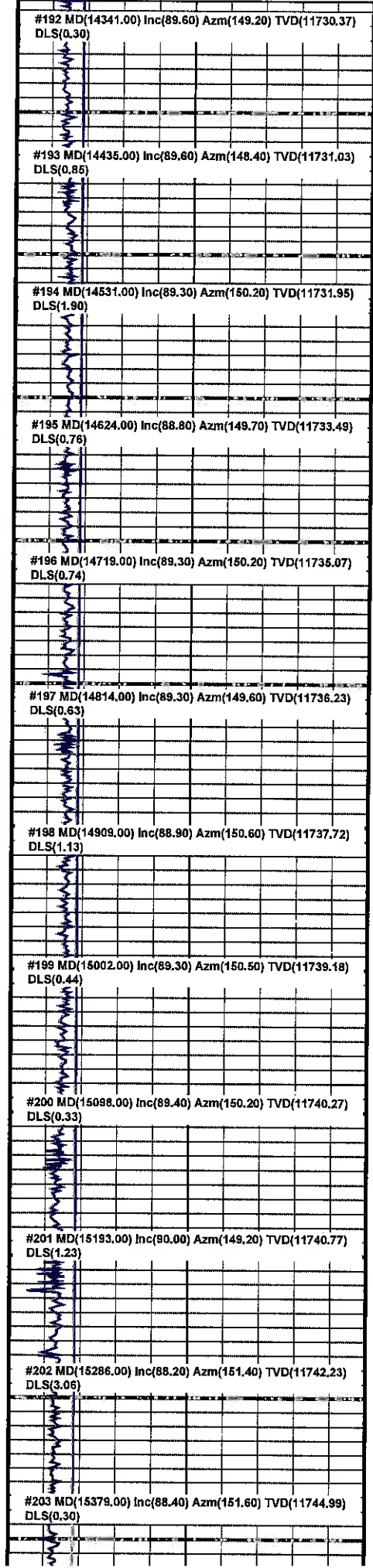
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|-------------------|------------|-------------|---------------|------------|
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| #163 MD(12212.00) | Inc(55.00) | Azm(148.10) | TVD(11571.08) | DLS(7.67) |
| #164 MD(12289.00) | Inc(58.20) | Azm(148.40) | TVD(11596.95) | DLS(6.83) |
| #165 MD(12306.00) | Inc(62.30) | Azm(148.80) | TVD(11620.27) | DLS(8.75) |
| #166 MD(12353.00) | Inc(67.20) | Azm(149.40) | TVD(11640.31) | DLS(10.49) |
| #167 MD(12400.00) | Inc(69.90) | Azm(150.00) | TVD(11657.49) | DLS(5.87) |
| #168 MD(12447.00) | Inc(72.60) | Azm(151.20) | TVD(11672.64) | DLS(6.04) |
| #169 MD(12484.00) | Inc(75.60) | Azm(153.40) | TVD(11685.56) | DLS(7.98) |
| #170 MD(12541.00) | Inc(79.70) | Azm(153.40) | TVD(11695.61) | DLS(8.72) |
| #171 MD(12588.00) | Inc(83.50) | Azm(152.30) | TVD(11702.47) | DLS(8.41) |
| #172 MD(12636.00) | Inc(85.50) | Azm(150.60) | TVD(11707.07) | DLS(5.46) |
| #173 MD(12683.00) | Inc(88.30) | Azm(149.00) | TVD(11709.61) | DLS(6.86) |
| #174 MD(12731.00) | Inc(88.60) | Azm(148.80) | TVD(11710.91) | DLS(0.75) |
| #175 MD(12752.00) | Inc(90.10) | Azm(148.60) | TVD(11711.15) | DLS(7.21) |
| #176 MD(12826.00) | Inc(90.70) | Azm(150.70) | TVD(11710.63) | DLS(2.95) |
| #177 MD(12920.00) | Inc(90.50) | Azm(150.60) | TVD(11709.65) | DLS(0.24) |
| #178 MD(13015.00) | Inc(90.70) | Azm(149.70) | TVD(11708.65) | DLS(0.97) |
| #179 MD(13110.00) | Inc(90.10) | Azm(151.90) | TVD(11707.99) | DLS(2.40) |
| #180 MD(13205.00) | Inc(87.50) | Azm(152.70) | TVD(11709.98) | DLS(2.86) |



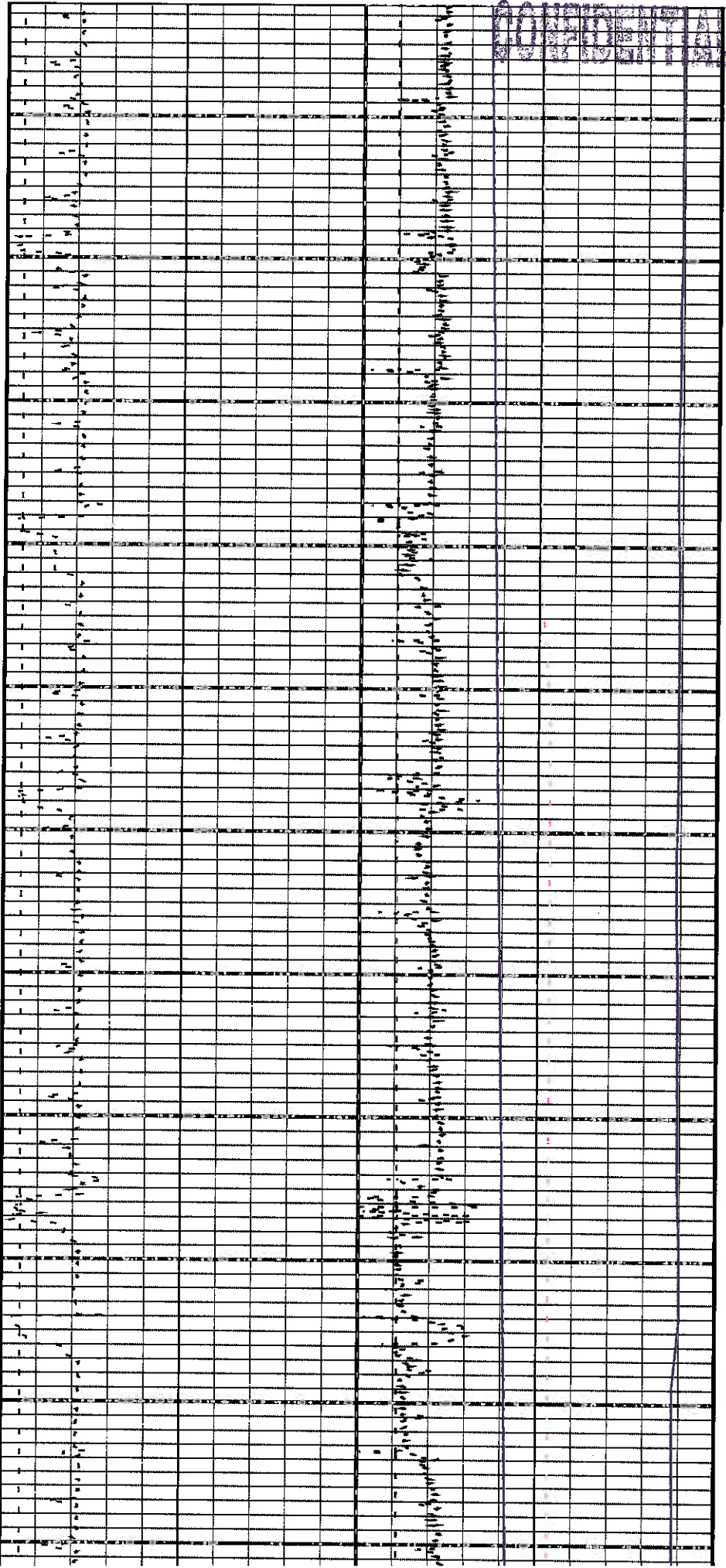
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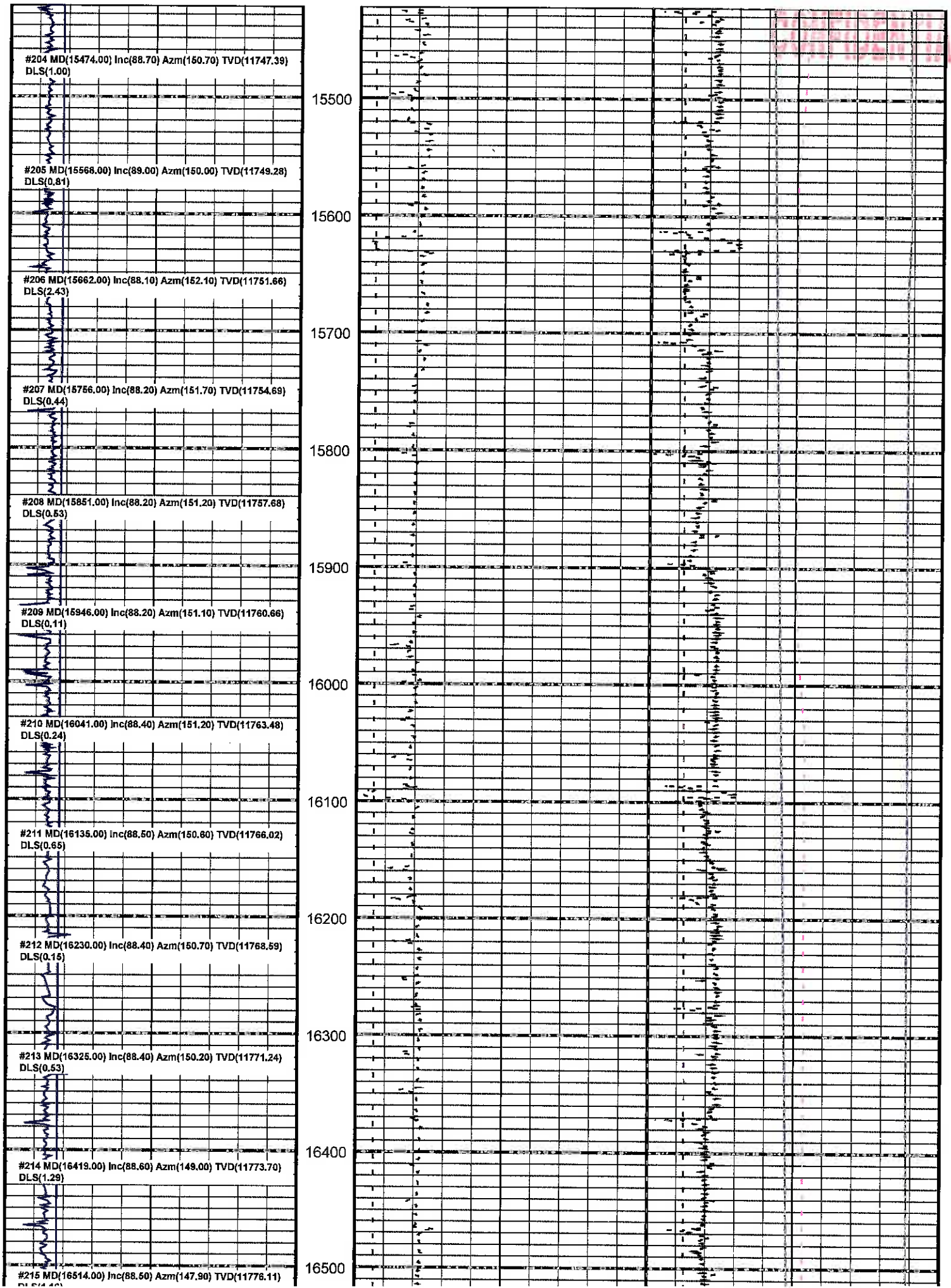


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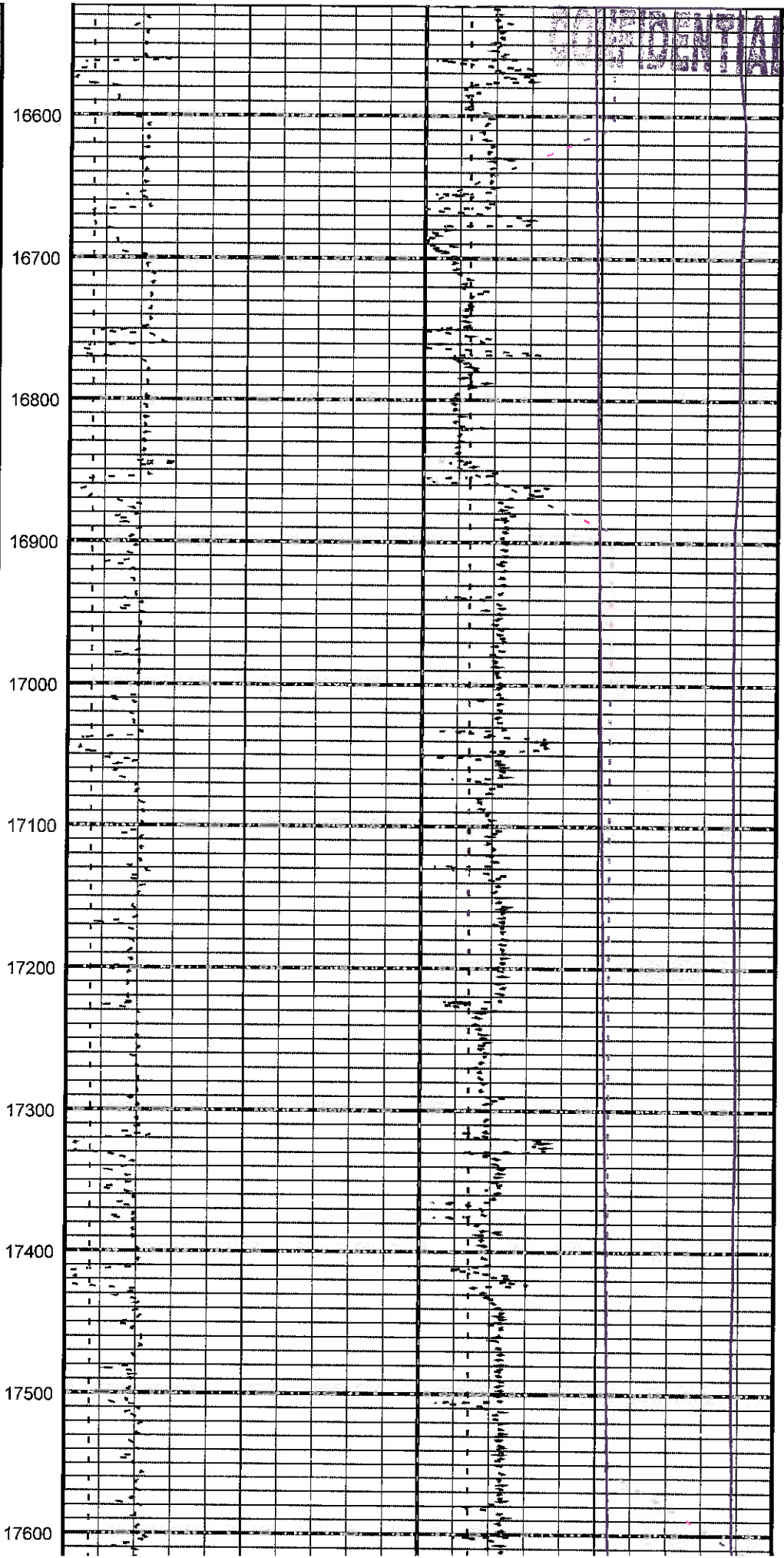
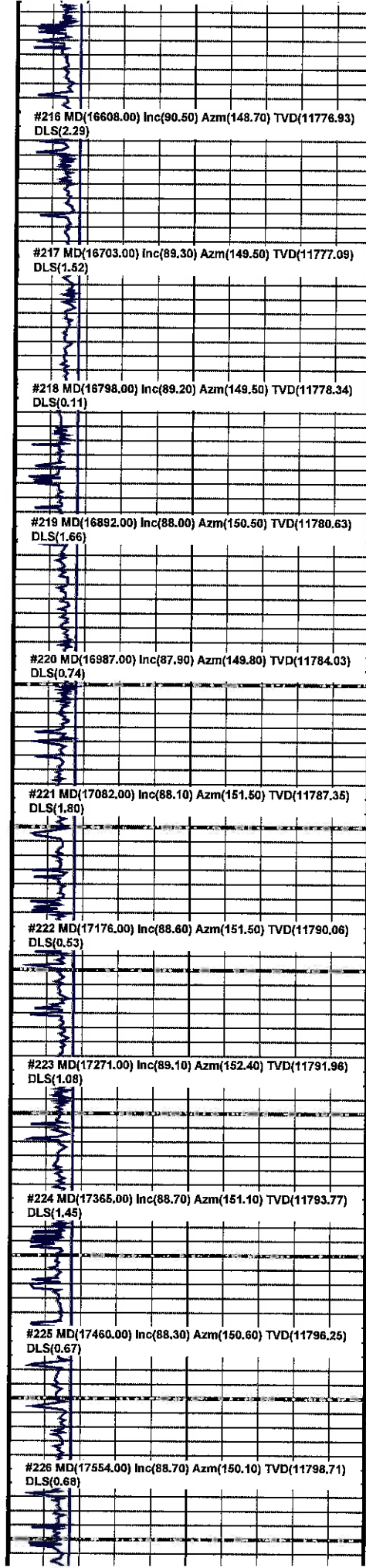


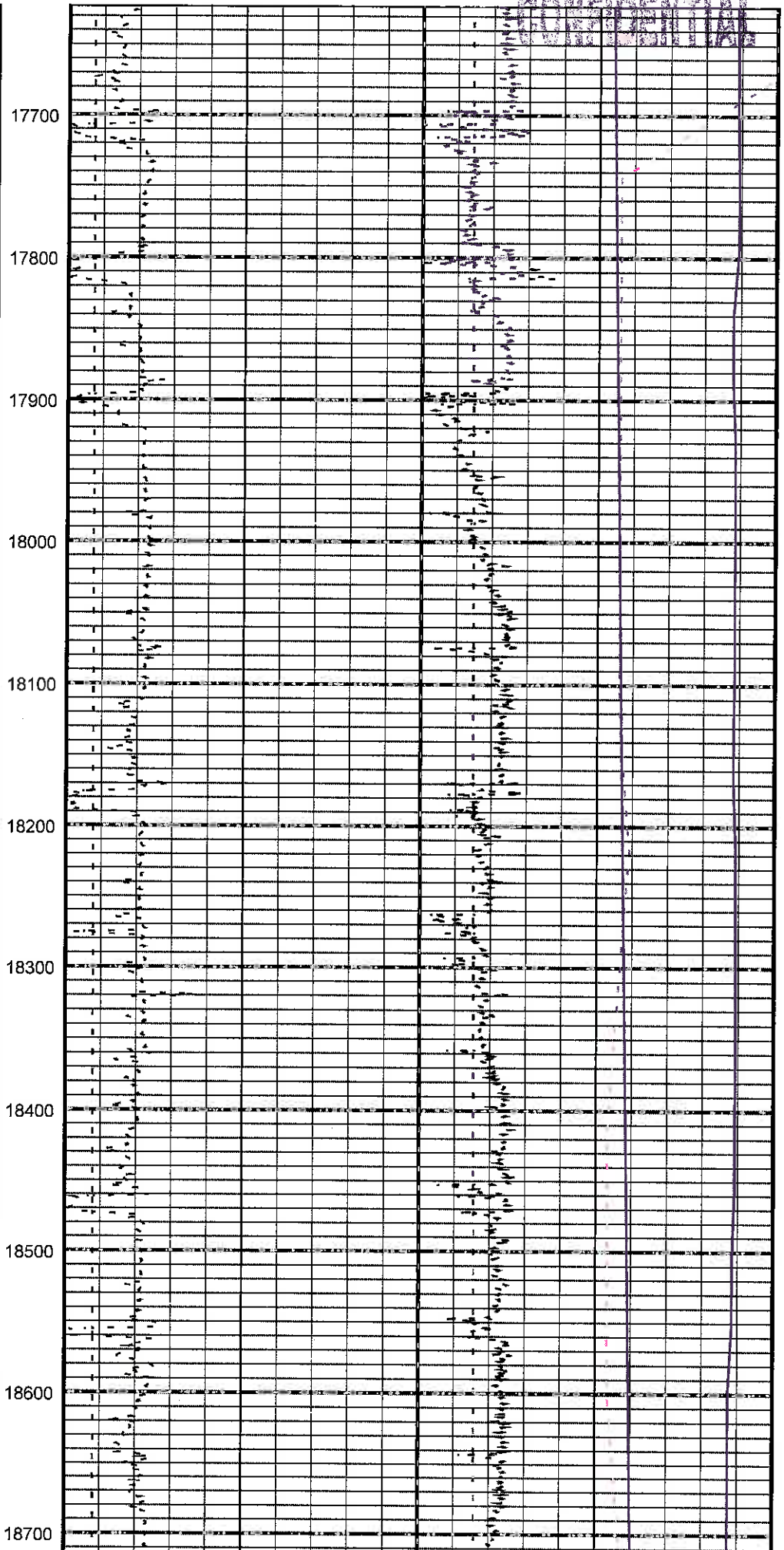
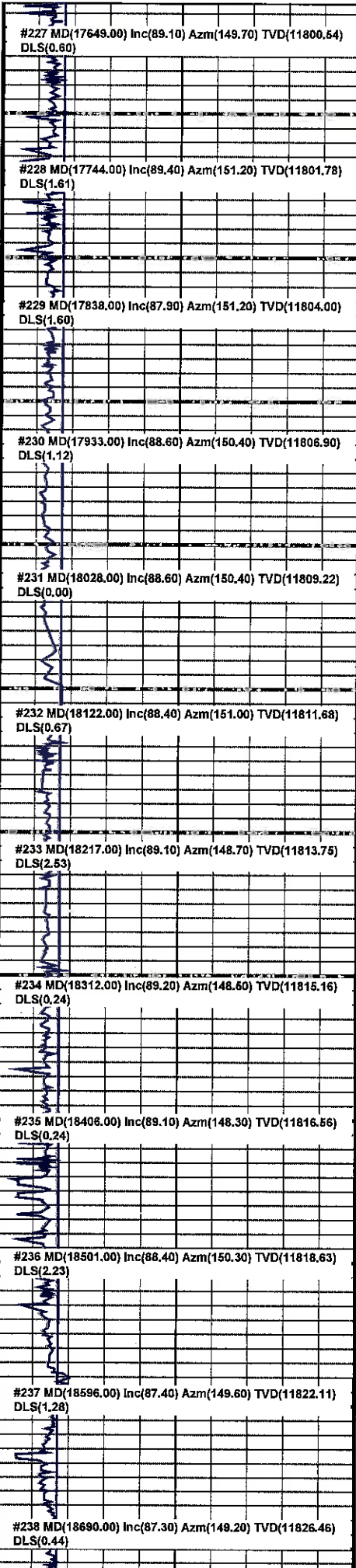
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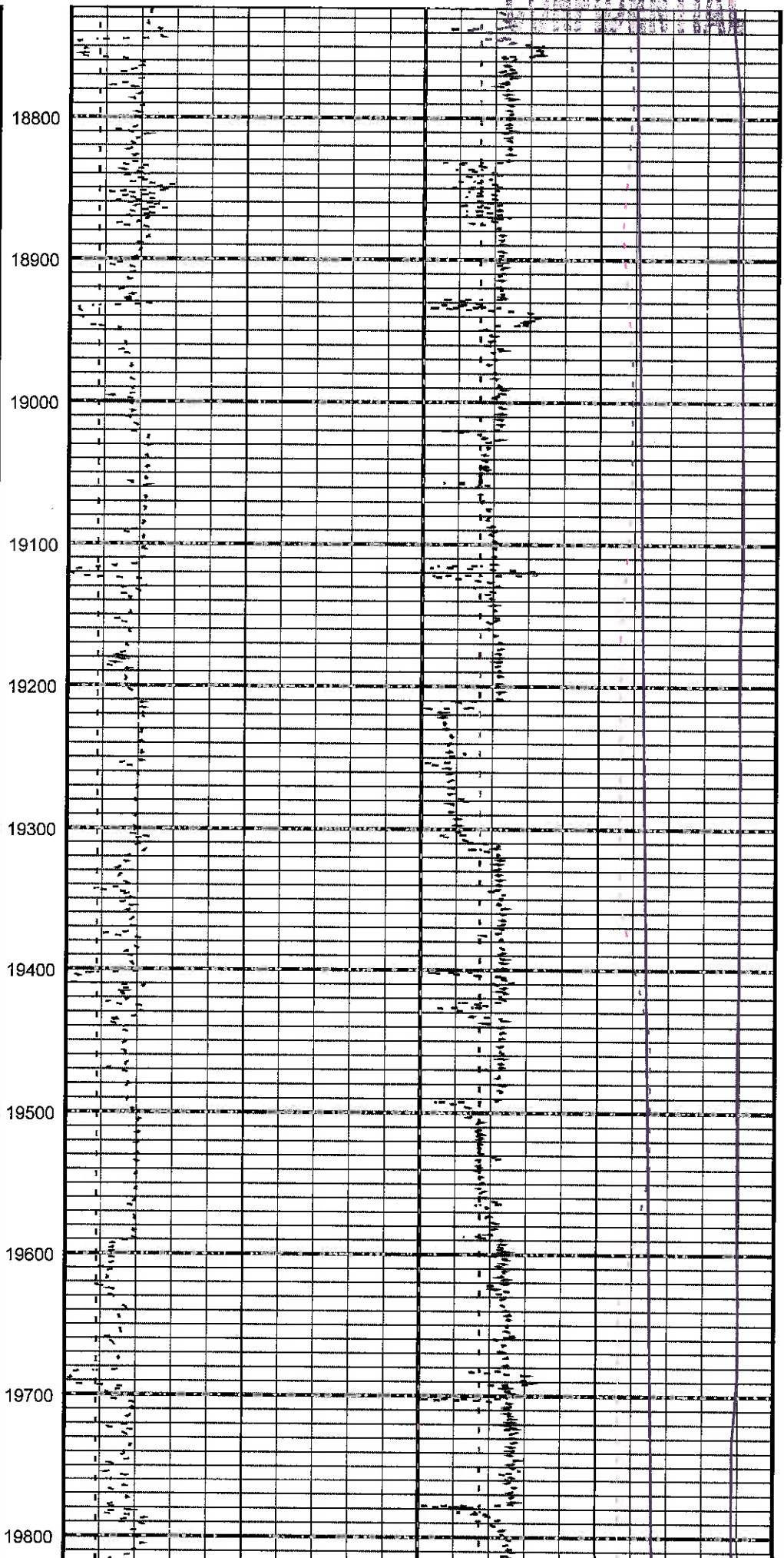
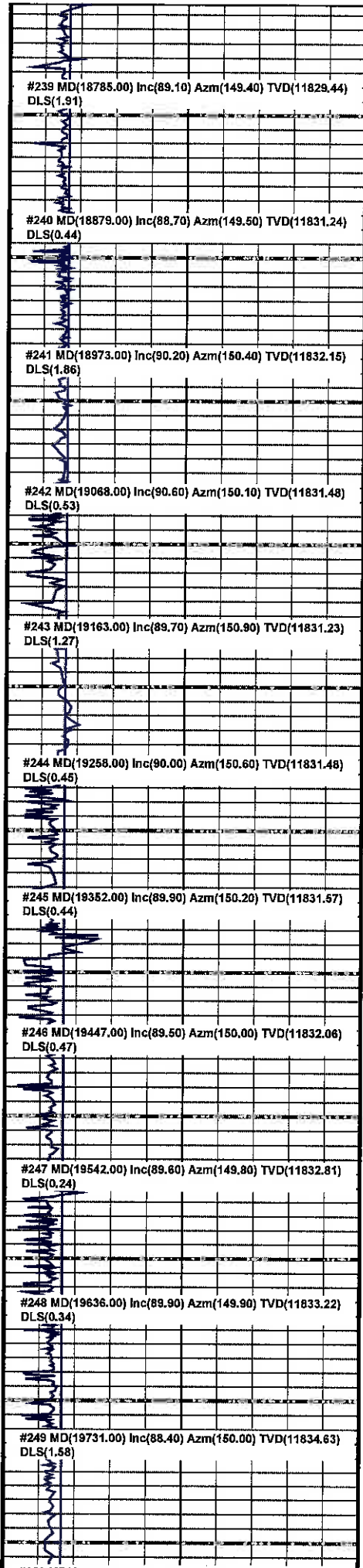




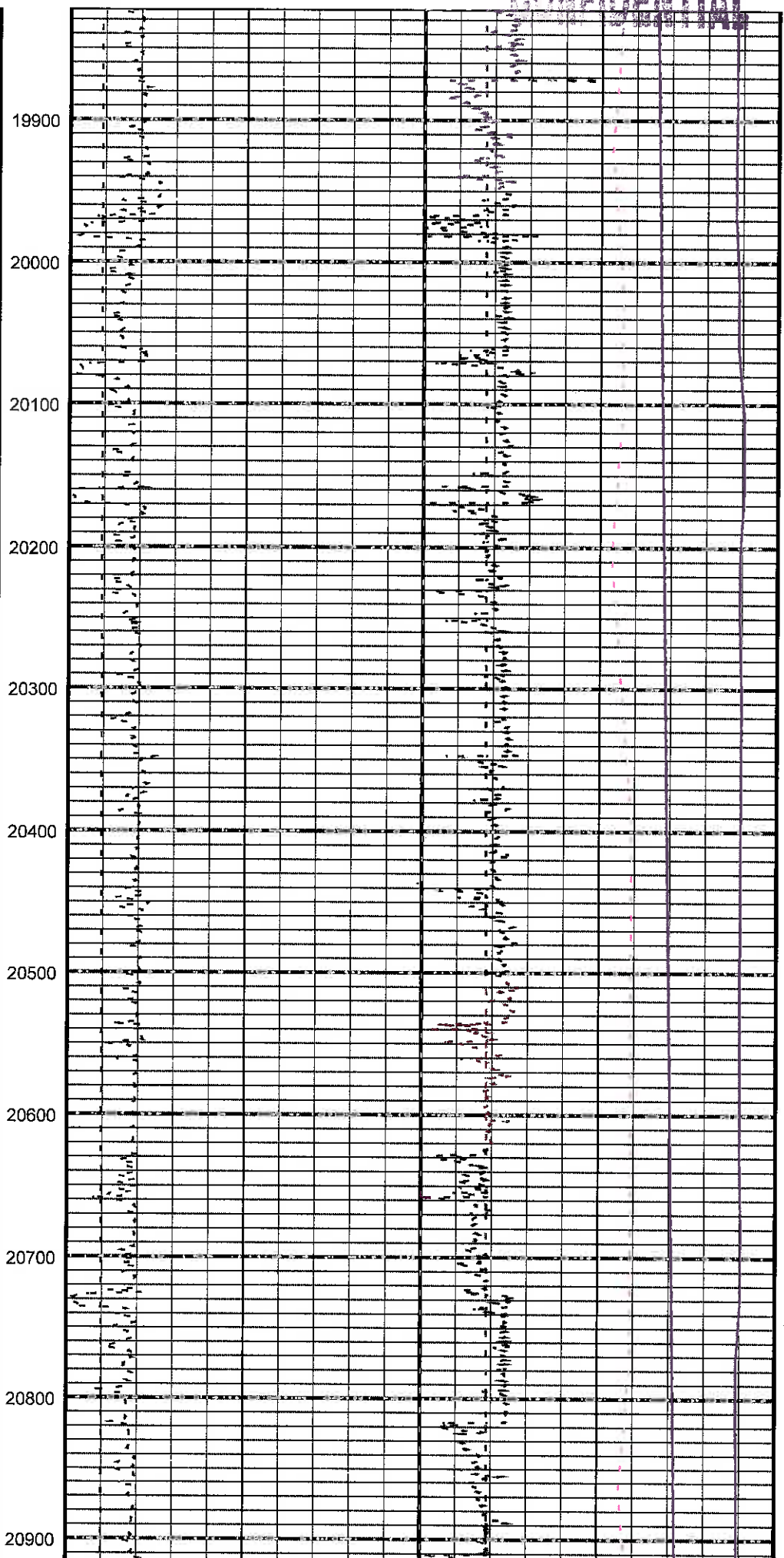
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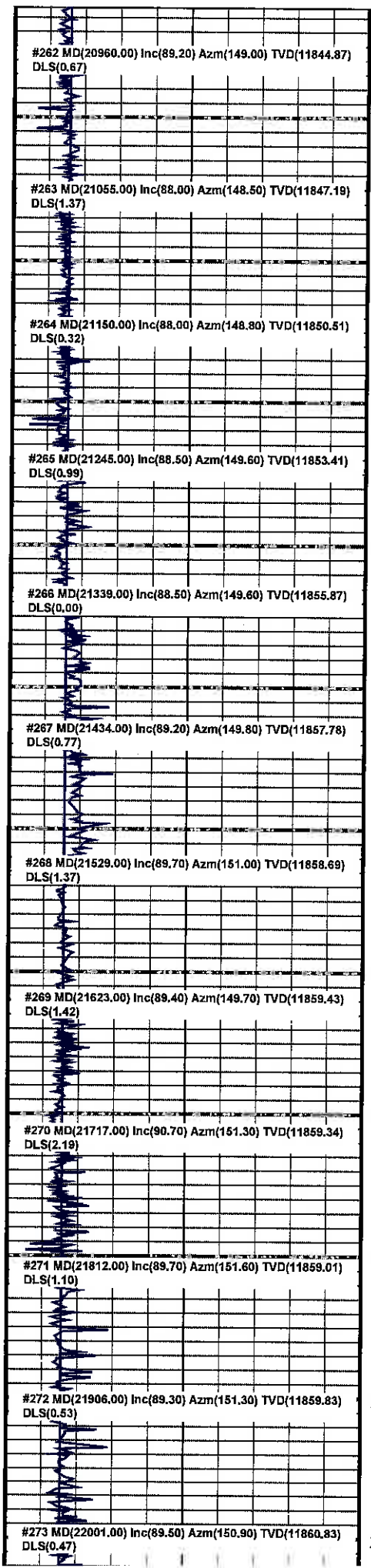




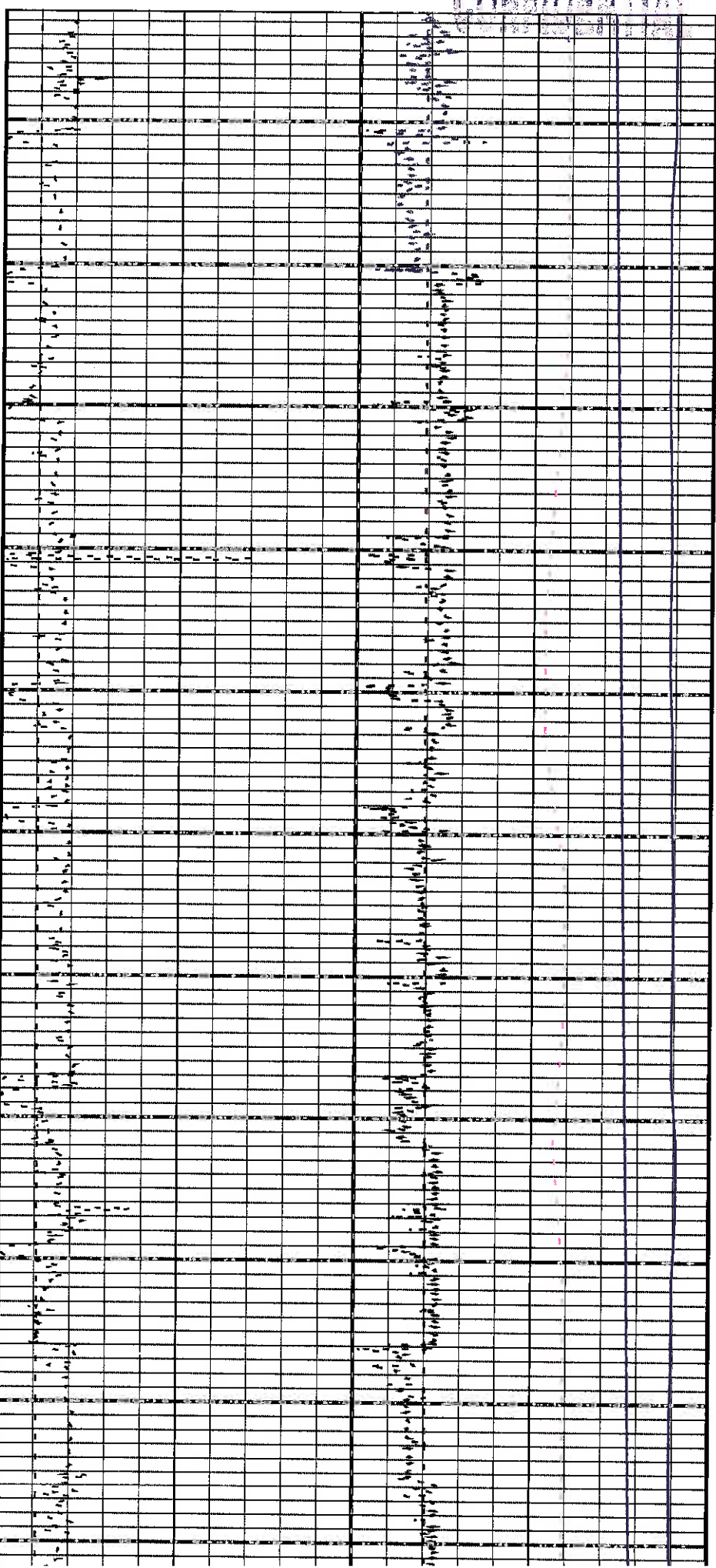


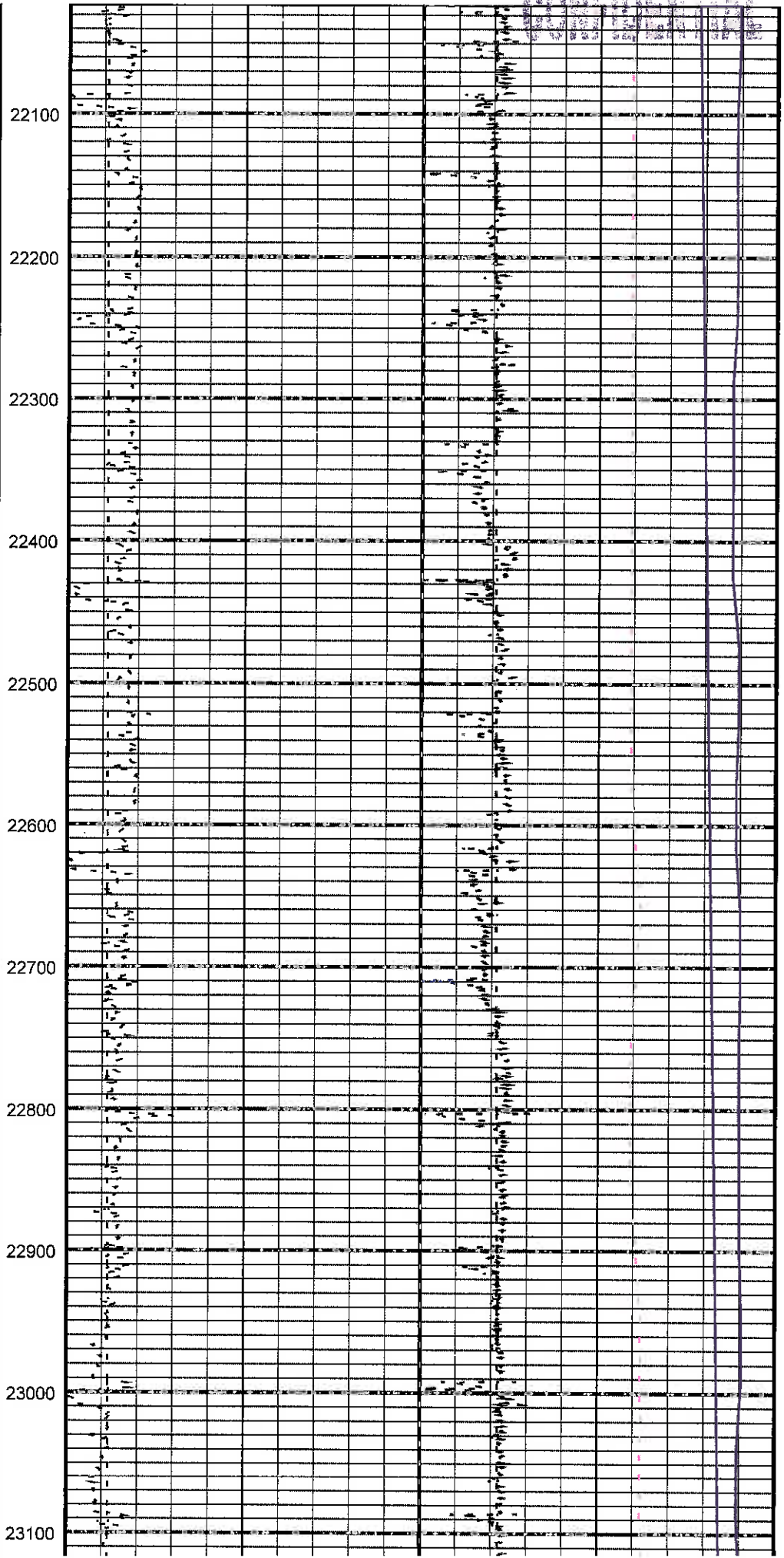
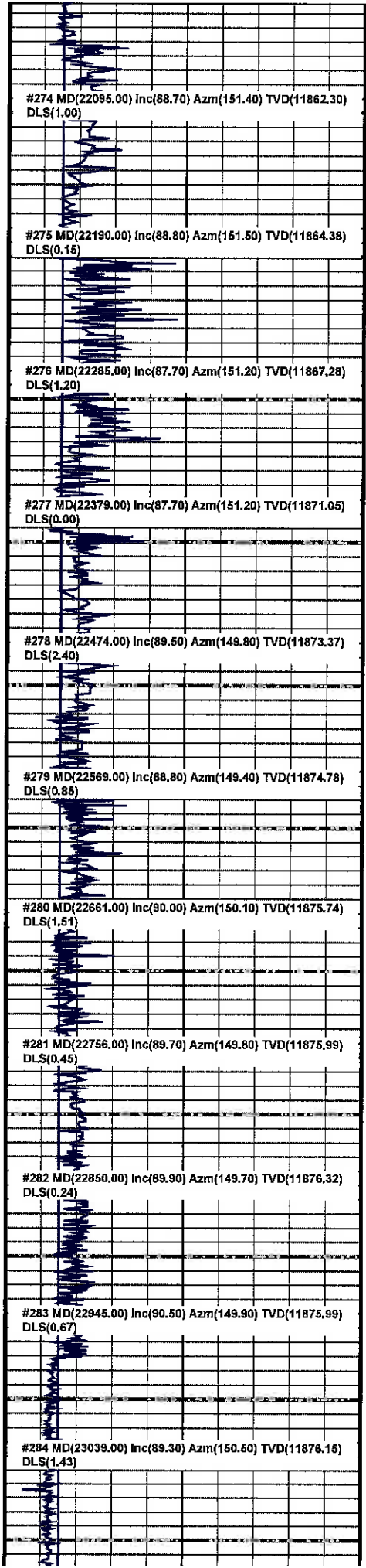
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| DLS(0.42) |
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| #252 MD(20015.00) Inc(89.10) Azm(151.70) TVD(11842.31) DLS(1.86) |
| #253 MD(20110.00) Inc(90.70) Azm(152.70) TVD(11842.48) DLS(1.99) |
| #254 MD(20205.00) Inc(89.80) Azm(150.60) TVD(11842.23) DLS(2.50) |
| #255 MD(20300.00) Inc(90.10) Azm(150.10) TVD(11842.48) DLS(0.74) |
| #256 MD(20394.00) Inc(90.00) Azm(150.40) TVD(11842.40) DLS(0.34) |
| #257 MD(20488.00) Inc(89.90) Azm(149.80) TVD(11842.48) DLS(0.65) |
| #258 MD(20583.00) Inc(90.00) Azm(149.30) TVD(11842.56) DLS(0.54) |
| #259 MD(20677.00) Inc(90.40) Azm(149.50) TVD(11842.23) DLS(0.48) |
| #260 MD(20771.00) Inc(89.20) Azm(150.10) TVD(11842.56) DLS(1.43) |
| #261 MD(20865.00) Inc(89.40) Azm(149.60) TVD(11843.71) DLS(0.57) |





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