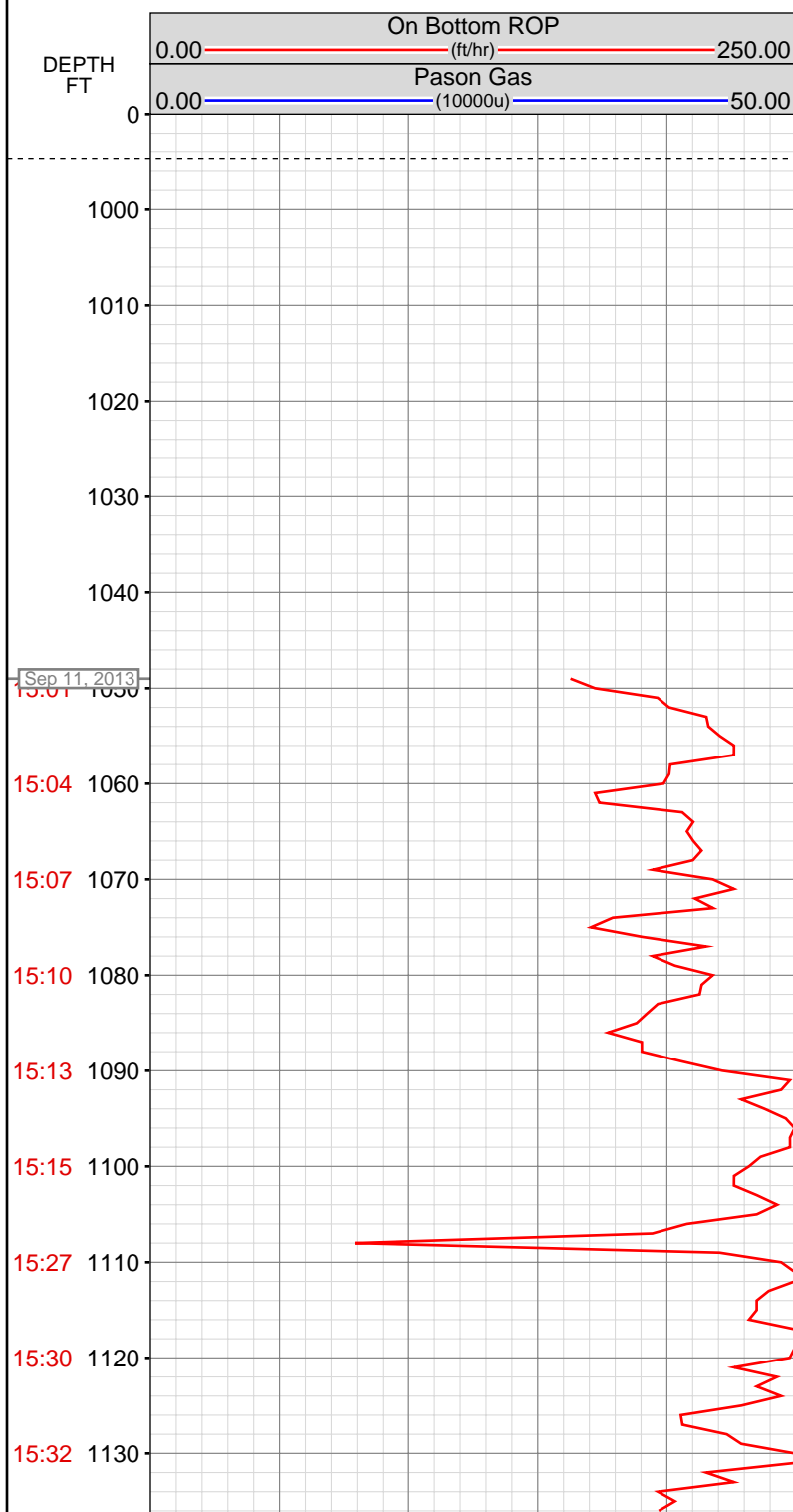


OPERATOR: EnCana Oil & Gas (USA), Inc.
WELL: Hagen Federal 22-2D
FIELD:
LOCATION: 1/3 SE SW SEC 05/06, T074S, R05W3
COUNTRY: USA
RIG: Pat-UTI 303

CONTRACTOR: Patterson-UTI Drilling Company
UNIQUE WELL ID: 05-045-22015
SPUD DATE: Sep 11, 2013 15:00
RELEASE DATE: Sep 16, 2013 02:00

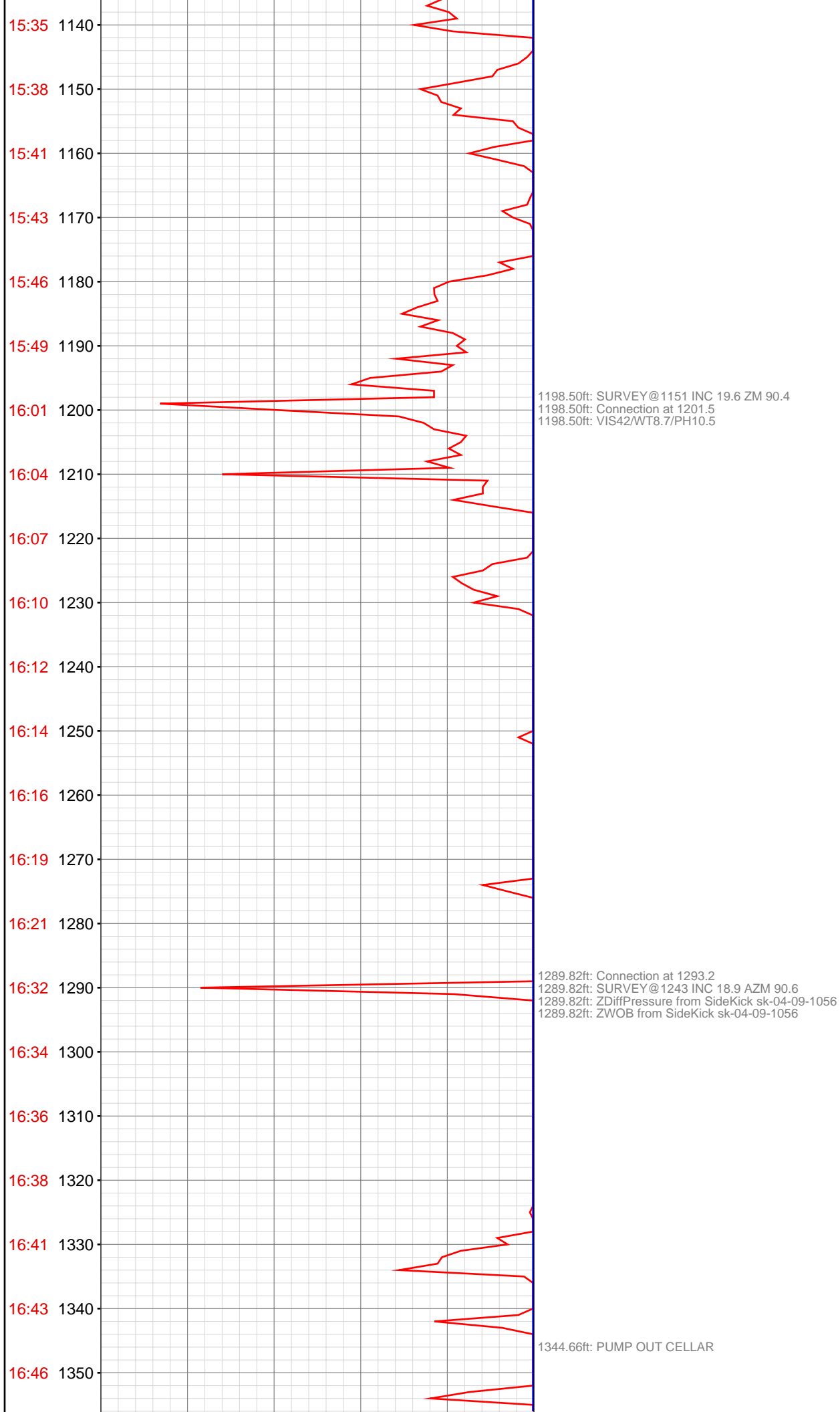


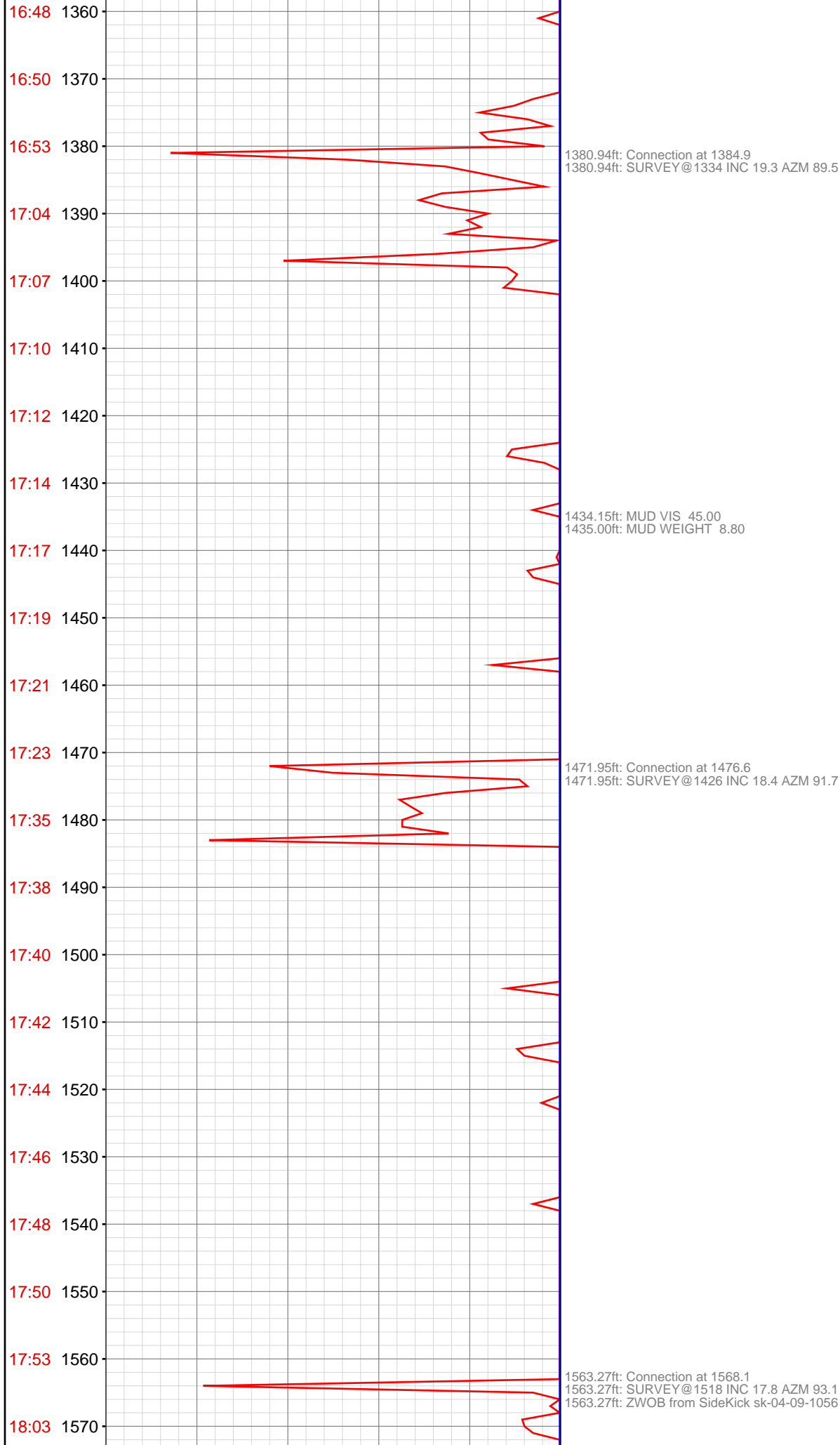
MEMOS

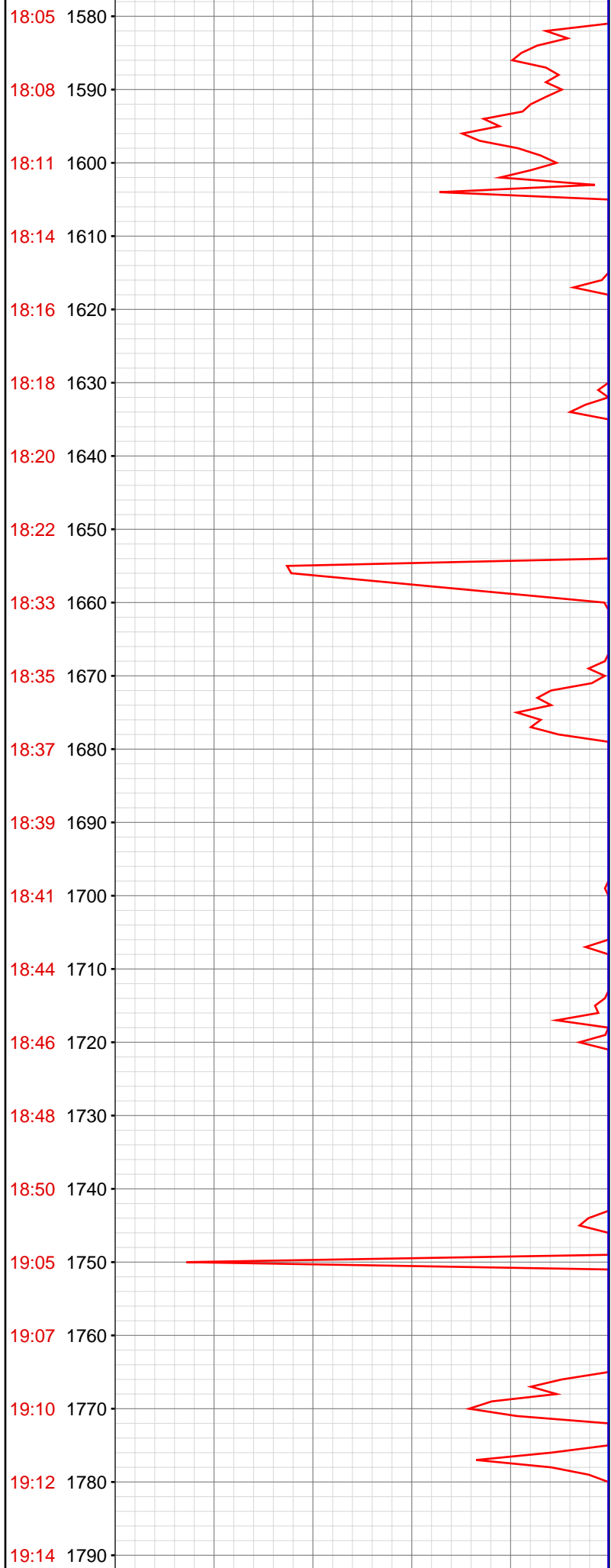
0.00ft: MW-8.6 VIS-36 PH-9.2
0.00ft: MW-8.6 VIS-44 PH-9.2
0.00ft: CORRECTION VIS-44
0.00ft: HOLE DEPTH CHANGED TO 1000.0 FEET
1000.00ft: MW-8.7 VIS-41 PH-9.1
1000.00ft: VIS41/WT8.7/PH9
1000.00ft: VIS43/WT8.7
1000.00ft: VIS43/WT8.7/PH9.1
1000.00ft: HOLE DEPTH CHANGED TO 1048.0 FEET

1048.00ft: ZWOB from SideKick sk-04-09-1056
1048.00ft: ZDiffPressure from SideKick sk-04-09-1056
1048.00ft: PVT:Flow and volume alarm reactivated: un-muted
1048.00ft: Connection at 1019.1
1048.00ft: VIS44/WT8.7
1048.00ft: ZDiffPressure from SideKick sk-04-09-1056

1107.14ft: SURVEY@1060 INC 19.3 AZM 91.8 Connection at 1110.1
1107.14ft: ZDiffPressure from SideKick sk-04-09-1056
1107.14ft: ZDiffPressure from SideKick sk-04-09-1056
1107.14ft: PVT:Flow and volume alarm muted

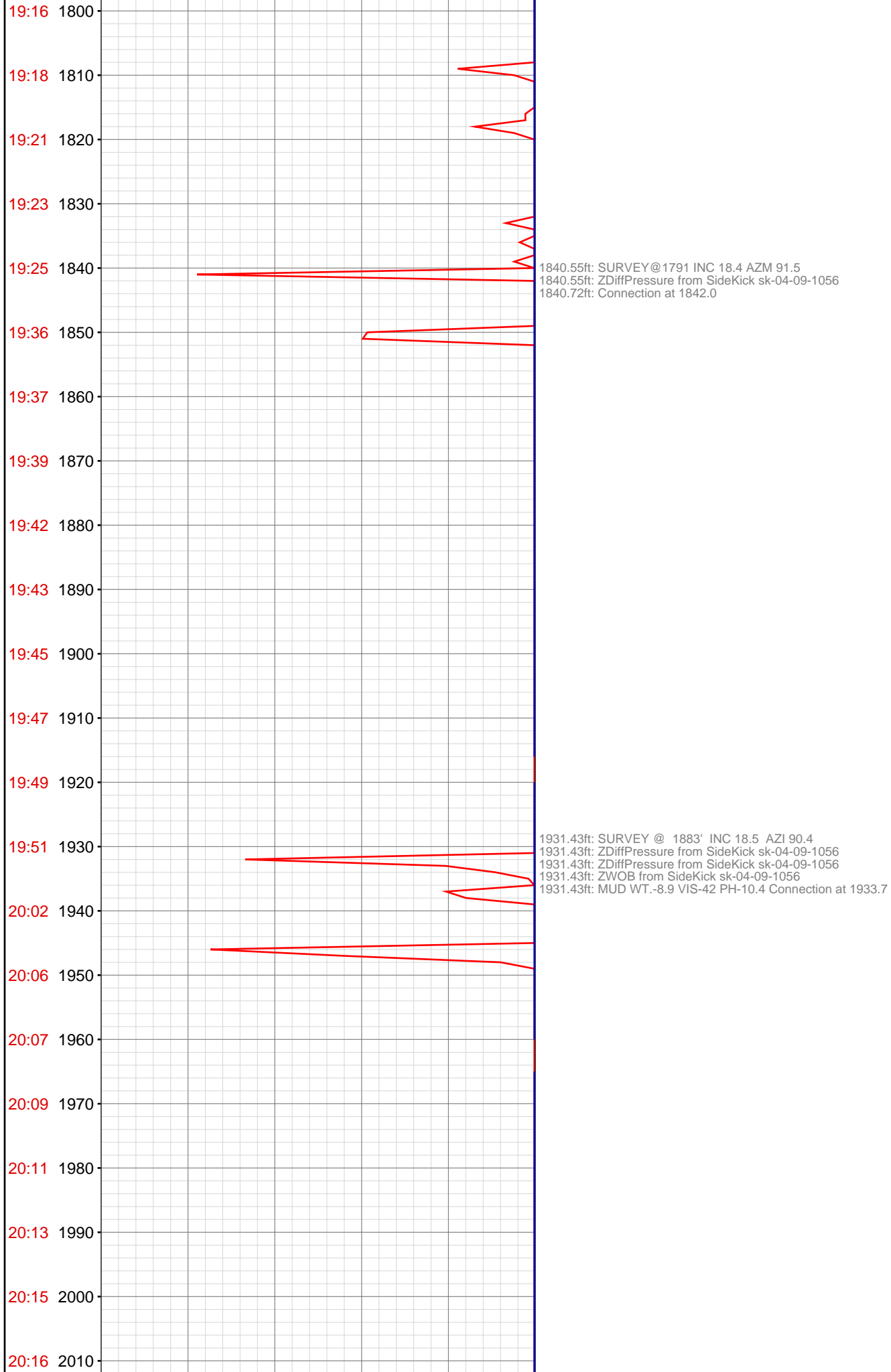




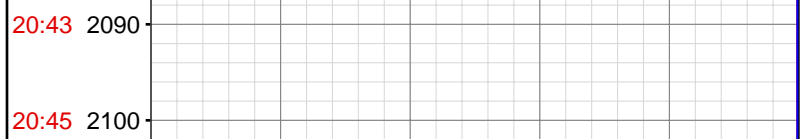
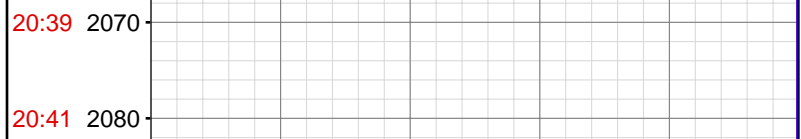
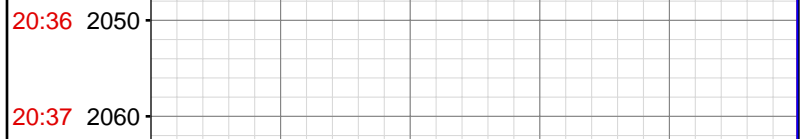


1654.85ft: SURVEY@1609 INC 18 AZM 92.4
1654.85ft: ZDiffPressure from SideKick sk-04-09-1056
1654.85ft: ZWOB from SideKick sk-04-09-1056
1654.85ft: Connection at 1659.2
1656.02ft: IN TALLY: HOLE DEPTH SET TO 1659.2

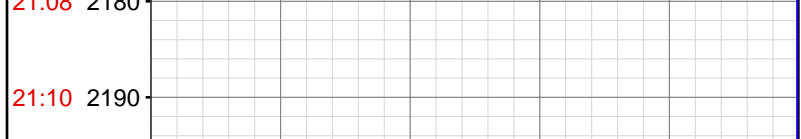
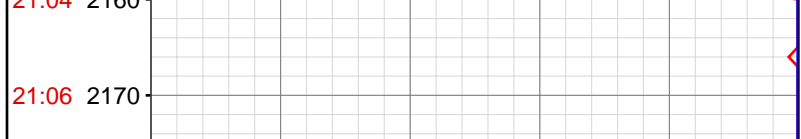
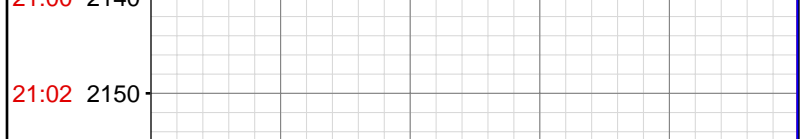
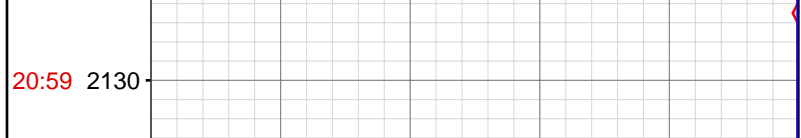
1749.48ft: IN/OUT-MUD WT.-8.9\8.95 VIS-43\39 PH-10.5\10.6
SURVEY@1700 INC 1700 INC 18.3 AZM 92.3
1749.48ft: ZDiffPressure from SideKick sk-04-09-1056
1749.48ft: Connection at 1750.8



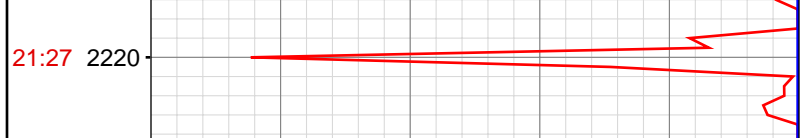
20:18 2020
2023.03ft: SURVEY @ 1975' INC 17 AZI 91.1
2023.03ft: ZDiffPressure from SideKick sk-04-09-1056
2023.03ft: Connection at 2025.4

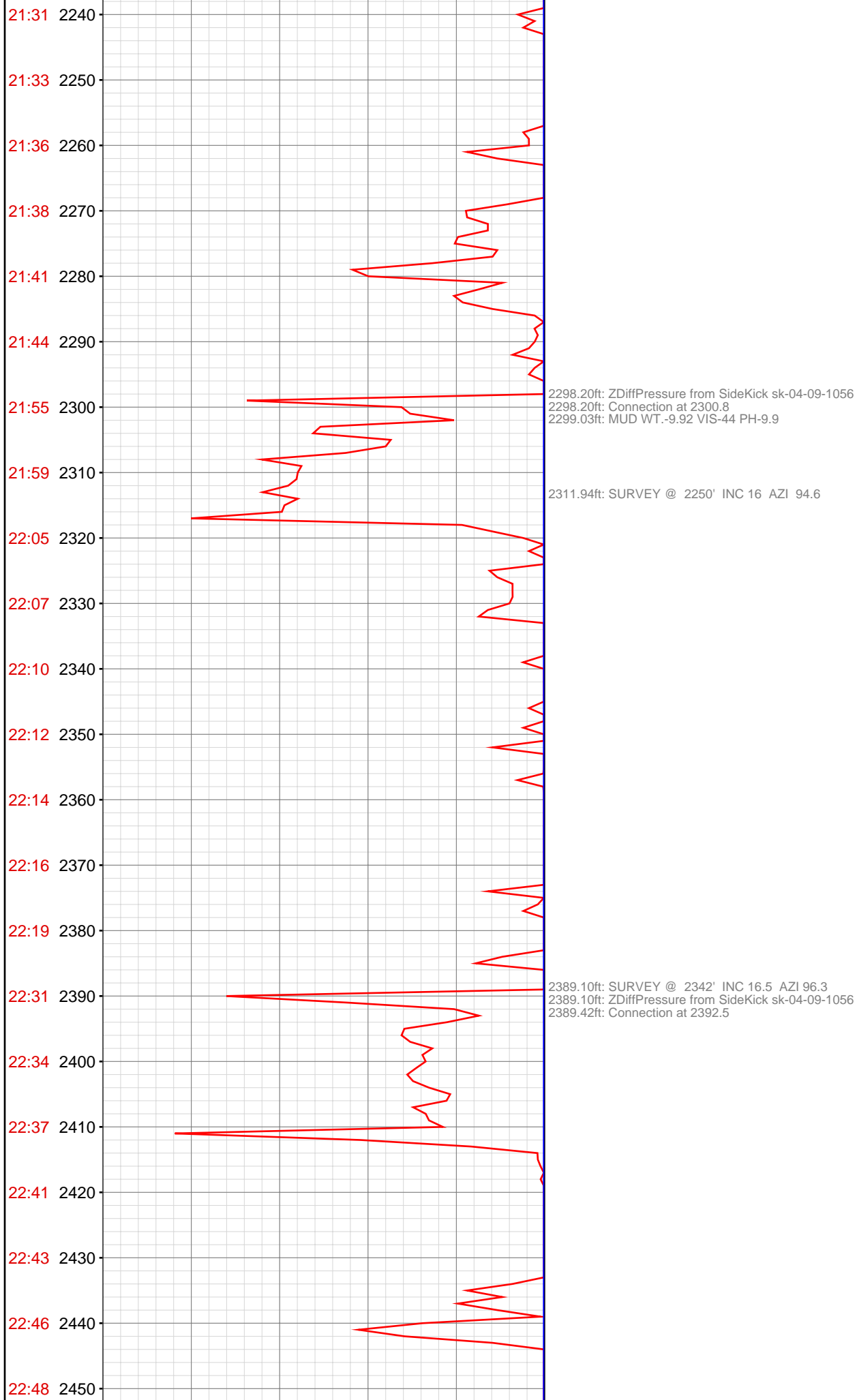


20:47 2110
2114.07ft: MUD WT.-8.95 VIS-44 PH-10.0
2114.07ft: ZWOB from SideKick sk-04-09-1056
2114.07ft: ZDiffPressure from SideKick sk-04-09-1056
2114.07ft: Connection at 2117.0
20:57 2120
2115.00ft: IN TALLY: HOLE DEPTH SET TO 2117.0



21:23 2210
2207.06ft: SURVEY @ 2159' INC 16 AZI 93.2
2207.06ft: ZDiffPressure from SideKick sk-04-09-1056
2207.06ft: ZWOB from SideKick sk-04-09-1056
2207.06ft: Connection at 2209.0





22:50 2460
22:52 2470
22:55 2480
23:06 2490
23:10 2500
23:14 2510
23:16 2520
23:18 2530
23:20 2540
23:22 2550
23:24 2560
23:25 2570
23:37 2580
23:40 2590
23:44 2600
23:47 2610
23:49 2620
23:51 2630
23:53 2640
23:55 2650
23:57 2660
00:08 2670

2480.30ft: MUD WT.-9.1 VIS-43 PH-9.4
2480.30ft: SURVEY @ 2433' INC 17.1 AZI 96.9
2480.30ft: Connection at 2484.0
2480.30ft: ZDiffPressure from SideKick sk-04-09-1056
2481.22ft: IN TALLY: HOLE DEPTH SET TO 2484.0

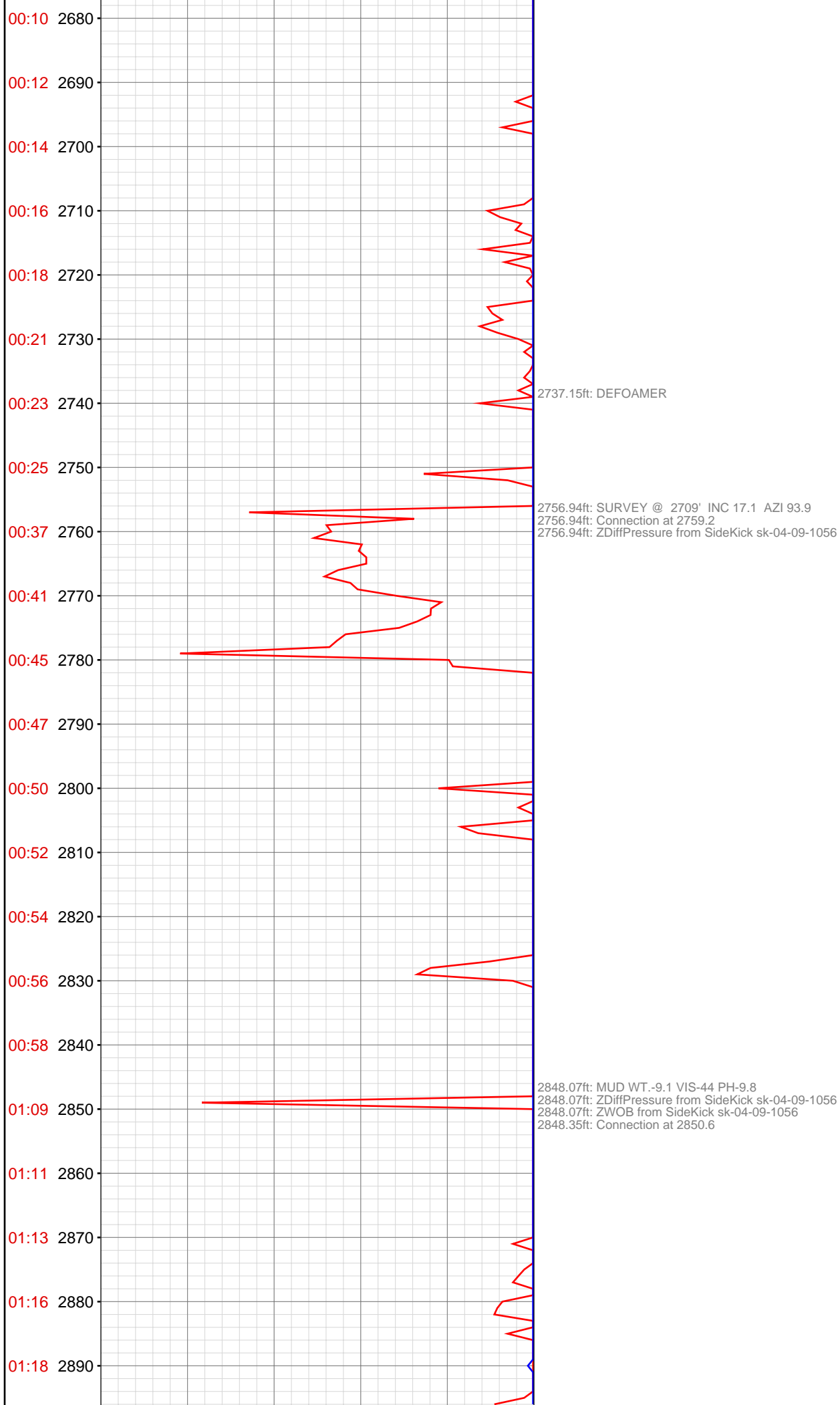
2574.11ft: SURVEY @ 2525' INC 17.6 AZI 97.4
2574.11ft: Connection at 2575.7
2574.11ft: ZDiffPressure from SideKick sk-04-09-1056

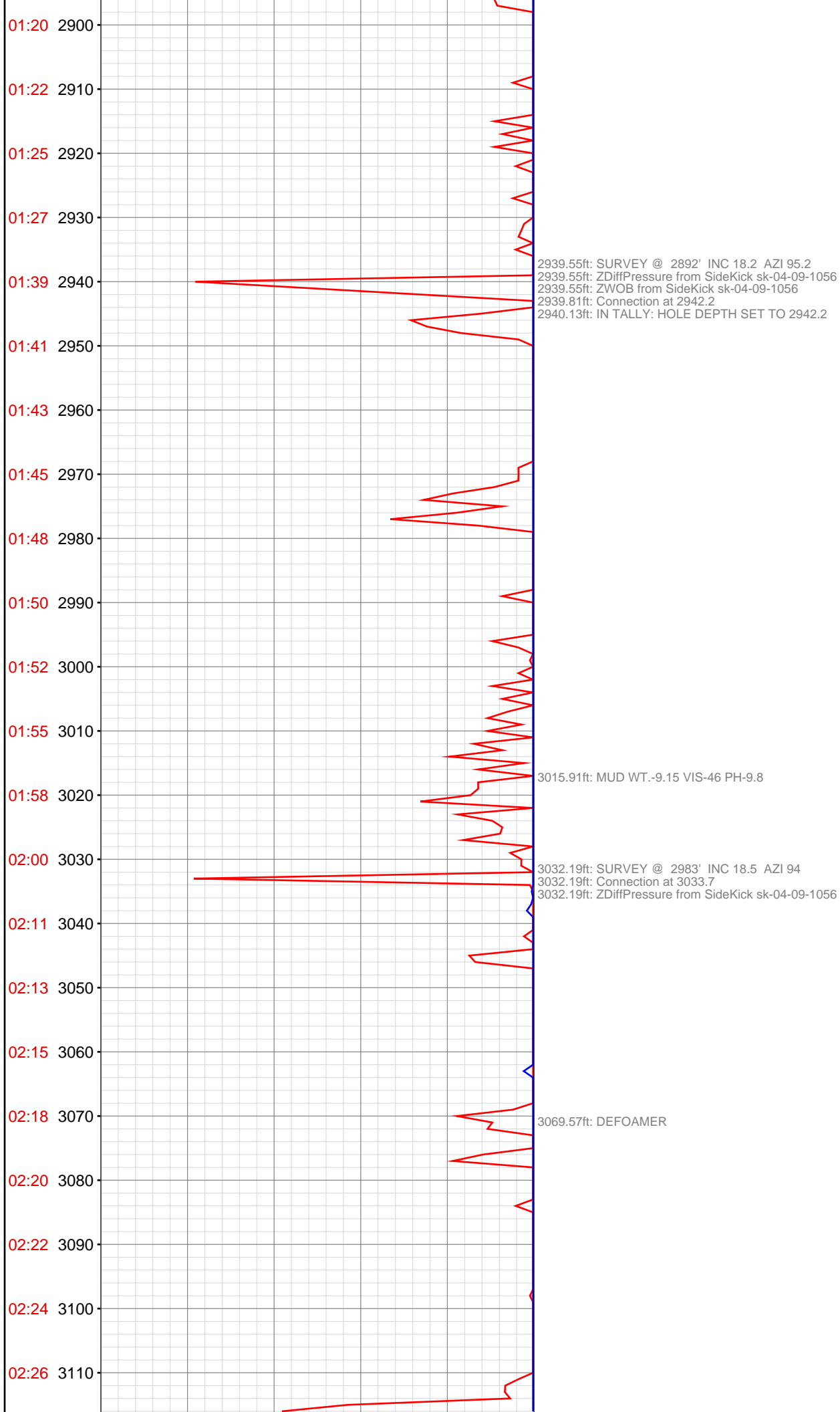
2587.80ft: STARTED DEFOAMER

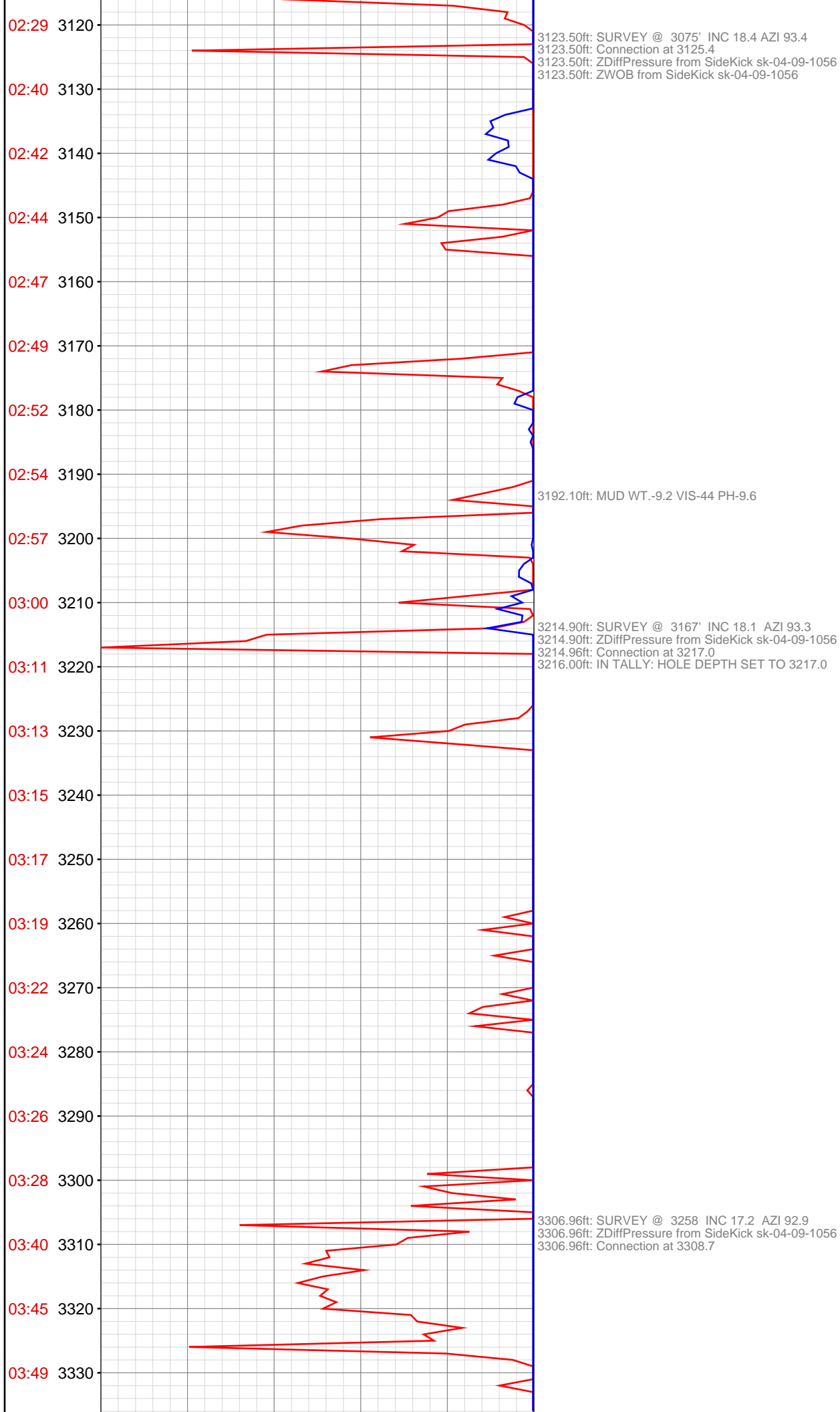
2650.67ft: MUD WT.-9.1 VIS-43 PH-9.9

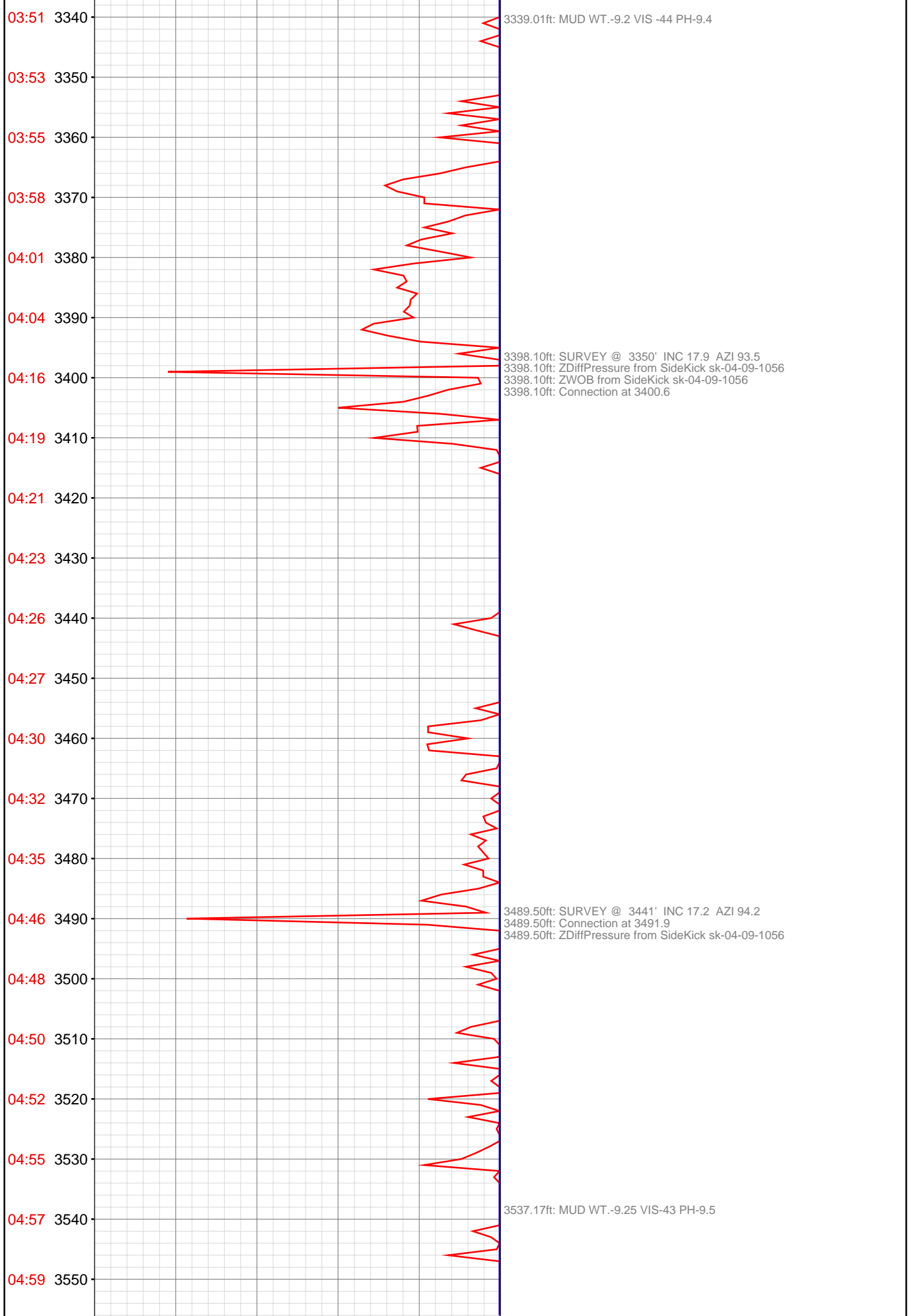
2665.55ft: SURVEY @ 2617' INC 17.8 AZI 94.1
2665.55ft: ZDiffPressure from SideKick sk-04-09-1056
2665.55ft: Connection at 2667.3
2665.55ft: ZWOB from SideKick sk-04-09-1056

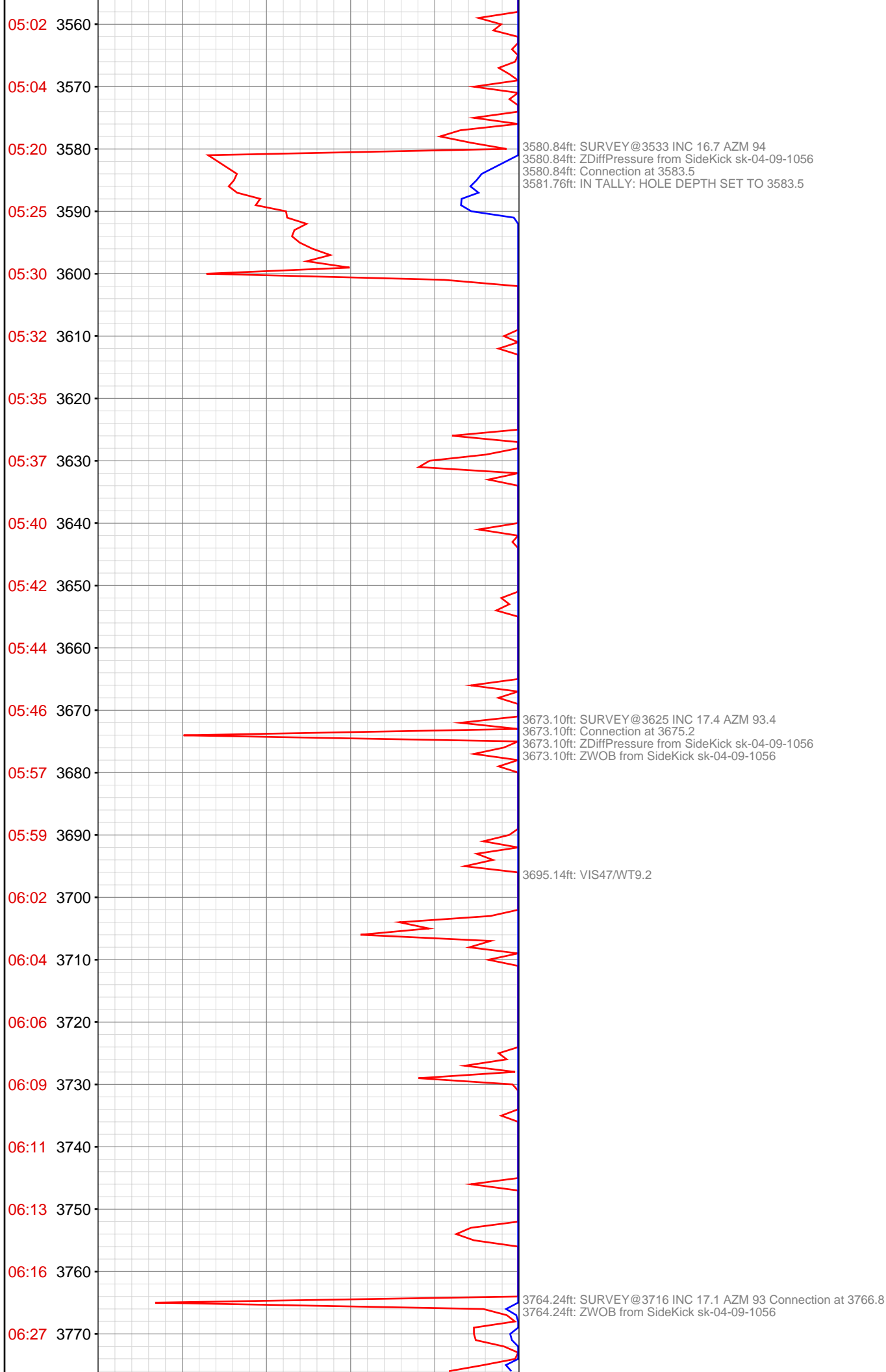
Sep 12, 2013

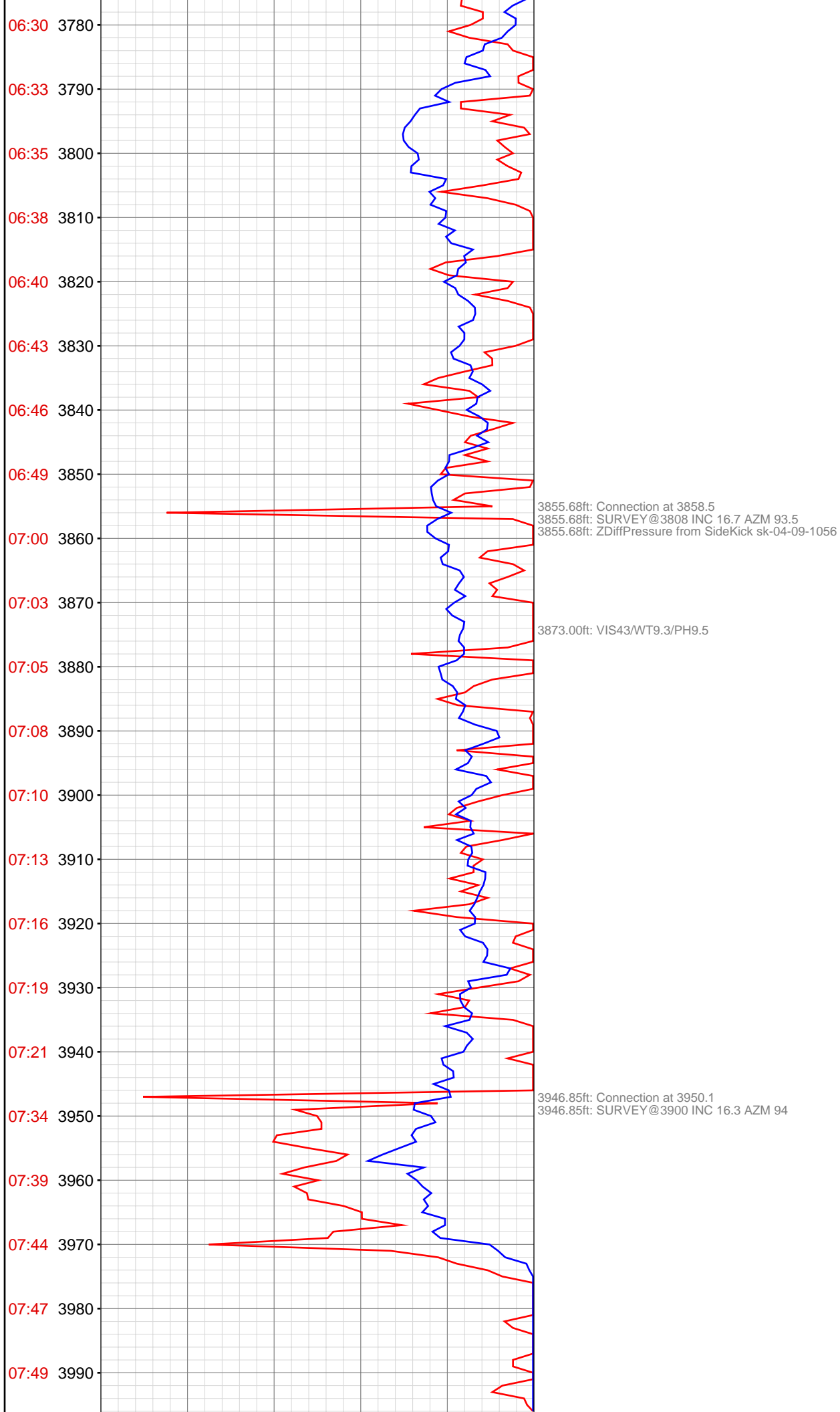


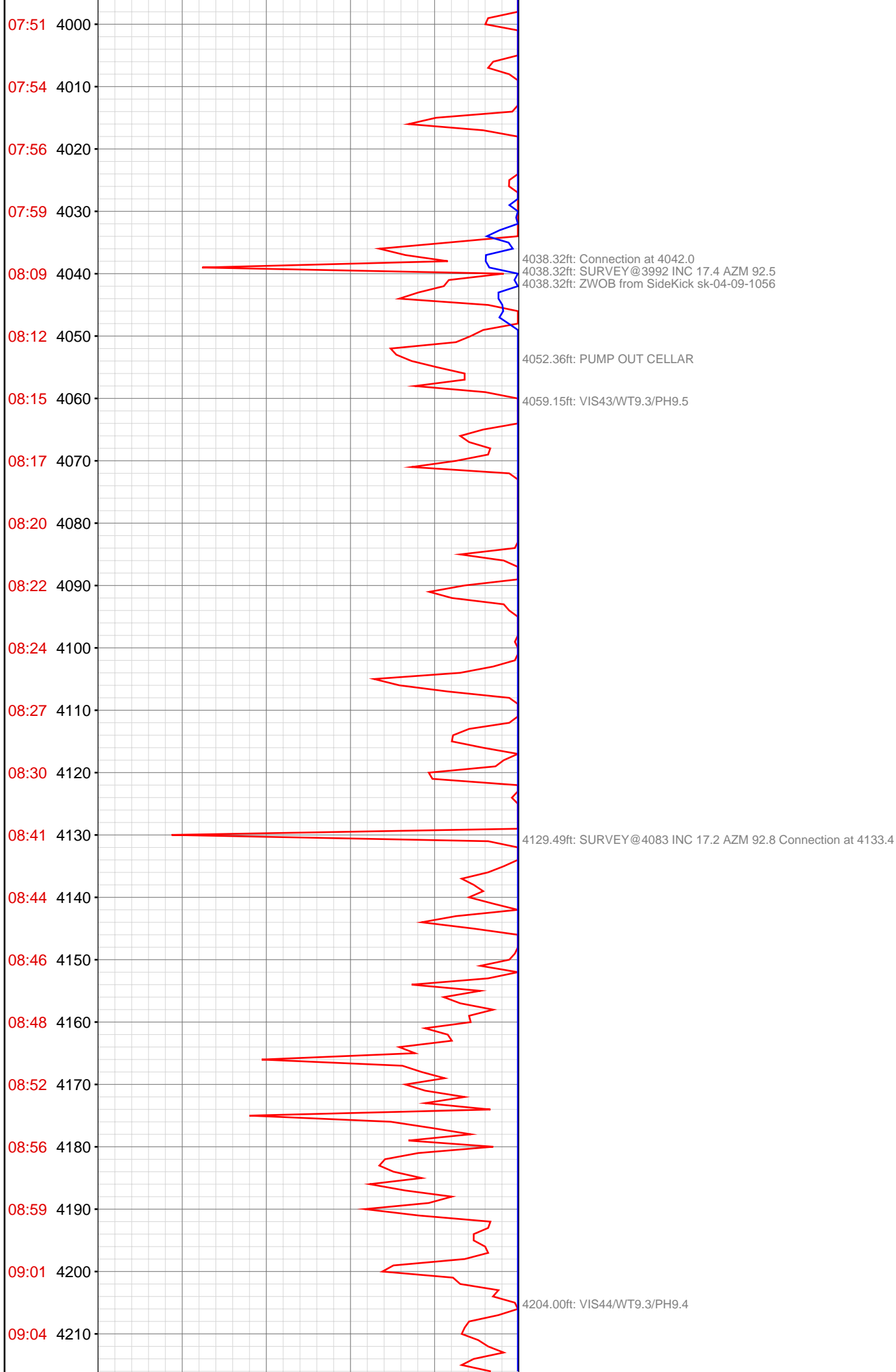


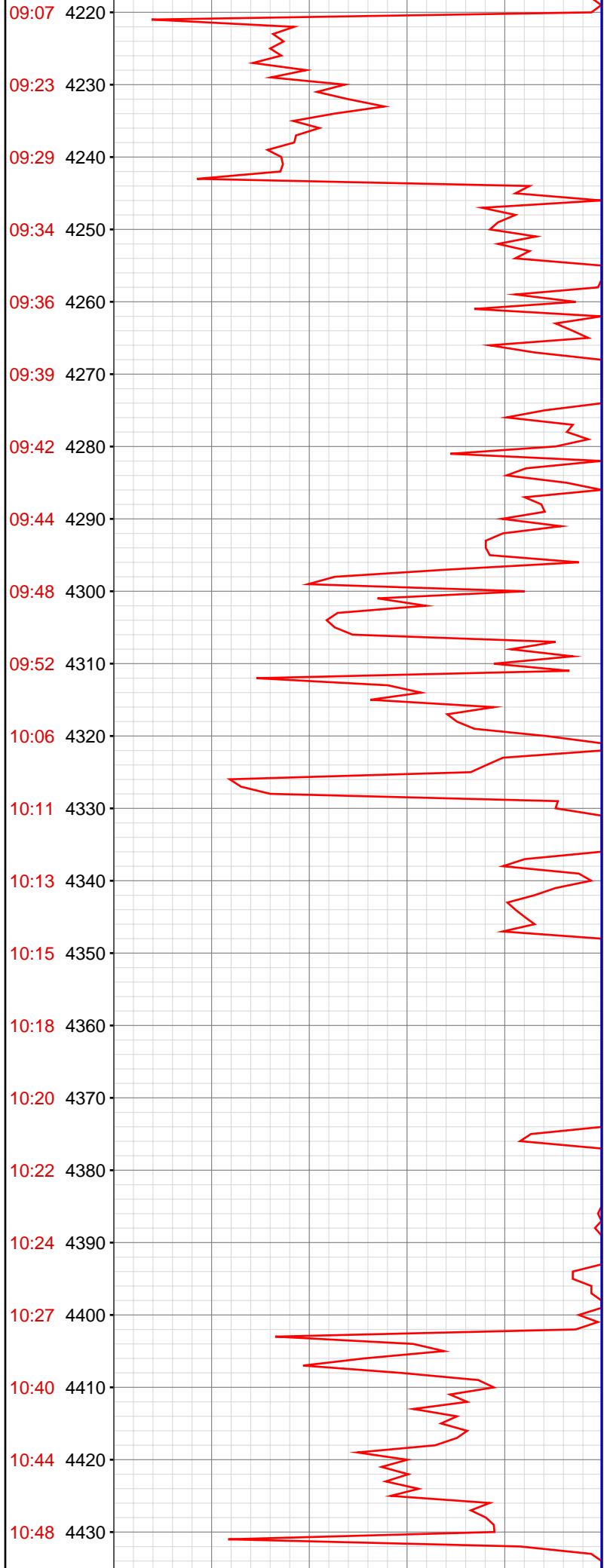








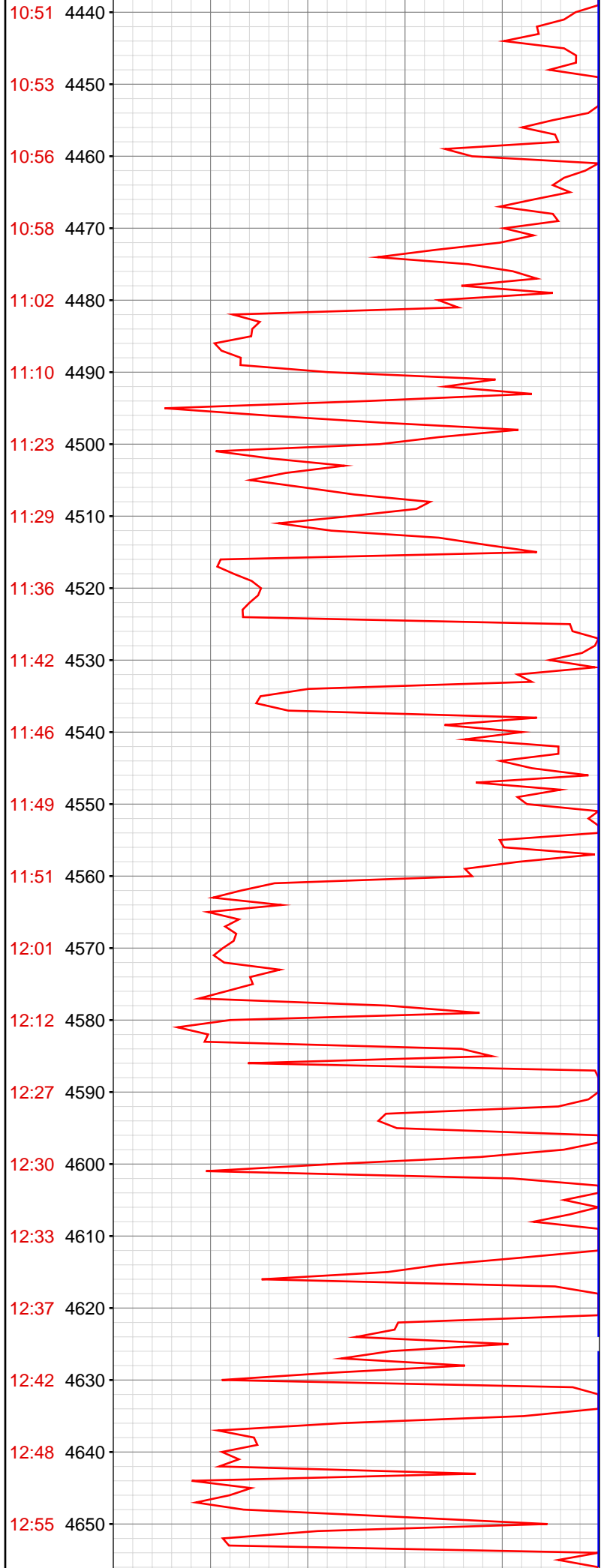




4220.37ft: Connection at 4225.1
4220.47ft: SURVEY@4175 INC 16.3 AZM 92.8

4311.29ft: Connection at 4316.9
4311.29ft: SURVEY24266 INC 17 AZM 90.6 TVD 4096
4311.29ft: VIS42/WT9.3
4311.29ft: ZDiffPressure from SideKick sk-04-09-1056
4311.29ft: ZWOB from SideKick sk-04-09-1056

4402.69ft: Connection at 4408.7
4402.69ft: SURVEY@4358 INC 16.2 AZM 89.5

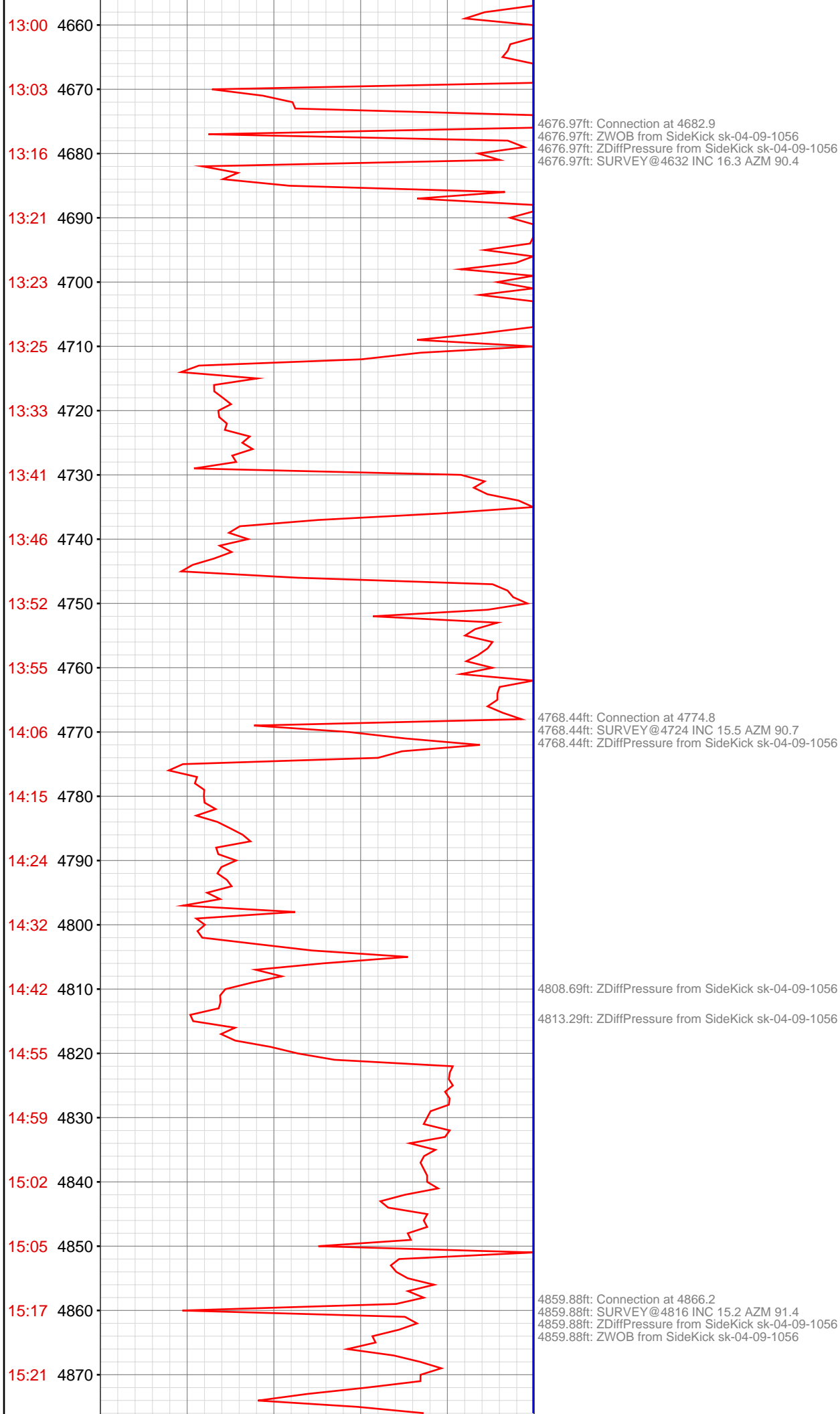


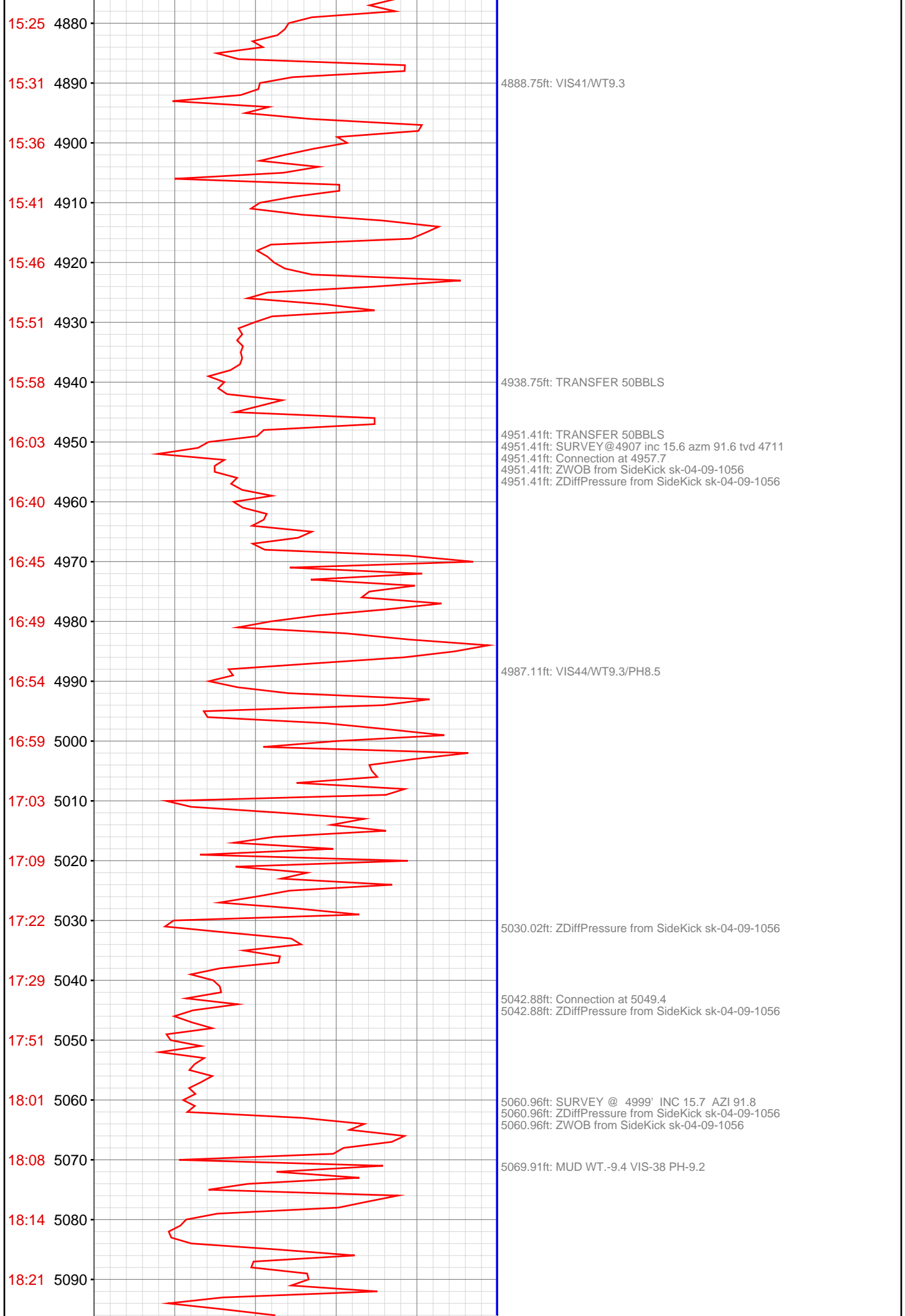
4494.03ft: Connection at 4500.2
4494.03ft: SURVEY24450 INC 16.7 AZM 91.6
4494.03ft: SURVEY @4450 INC 16.7 AZM 91.6
4494.03ft: ZWOB from SideKick sk-04-09-1056
4494.03ft: ZDiffPressure from SideKick sk-04-09-1056

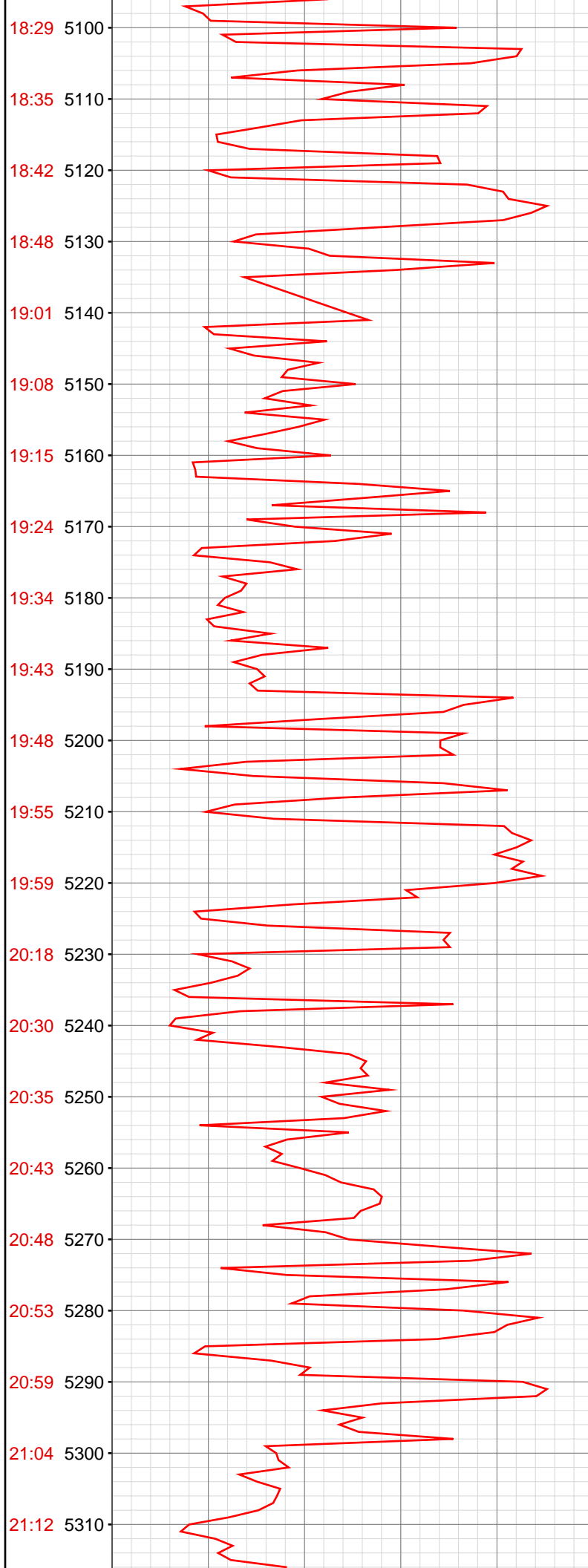
4569.00ft: MUD VIS 45.00
4569.09ft: MUD WEIGHT 9.35

4585.33ft: SURVEY@4541 INC 16.4 AZM 91.1 TVD 4359 Connection at 4591.8

4641.60ft: VIS43/WT9.35







5134.12ft: SURVEY @ 5090' INC 14.4 AZI 91.8
5134.12ft: ZDiffPressure from SideKick sk-04-09-1056
5134.12ft: Connection at 5140.7
5135.27ft: IN TALLY: HOLE DEPTH SET TO 5140.7

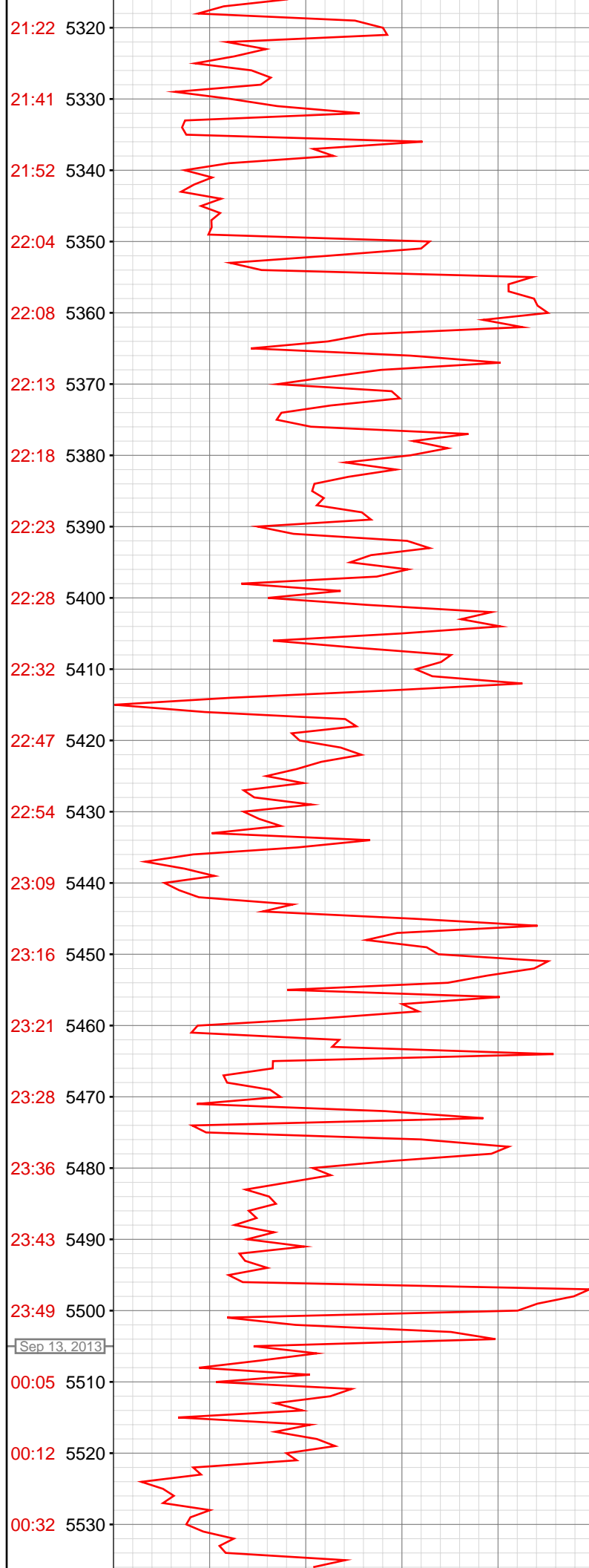
5147.31ft: MUD WT.-9.4 VIS-38 PH-9.5

5160.93ft: ZDiffPressure from SideKick sk-04-09-1056

5230.77ft: SURVEY @ 5182' INC 12.9 AZI 92.2
5230.77ft: MUD WT.-9.45 VIS-40 PH-9.0
5230.77ft: ZDiffPressure from SideKick sk-04-09-1056
5230.77ft: Connection at 5232.3

5253.84ft: ZWOB from SideKick sk-04-09-1056

5285.60ft: MUD WT.-9.45 VIS-41 PH-8.8



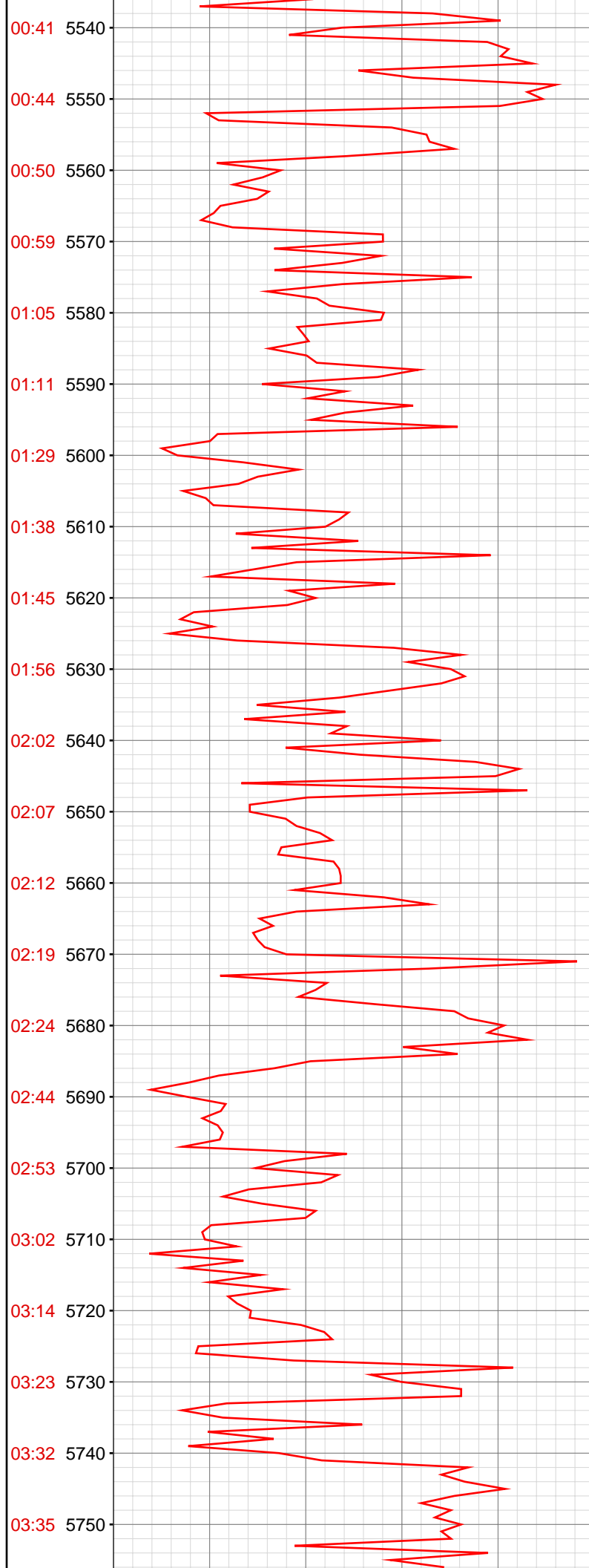
5321.56ft: SURVEY @ 5273' INC 11.9 AZI 91.9
5321.56ft: ZDiffPressure from SideKick sk-04-09-1056
5321.56ft: Connection at 5323.6

5344.69ft: MUD WT.-9.5 VIS-42 PH-9.0

5413.16ft: Connection at 5415.1
5413.16ft: ZDiffPressure from SideKick sk-04-09-1056
5414.99ft: IN TALLY: HOLE DEPTH SET TO 5415.1

5434.12ft: MUD WT.-9.5 VIS-43 PH-9.1

5504.99ft: MUD WT.-9.5 VIS-44 PH-9.4 SURVEY @ 5456' INC 9 AZI 90.7
5504.99ft: ZDiffPressure from SideKick sk-04-09-1056
5504.99ft: Connection at 5506.7



5536.42ft: ZDIFF from DHC
5536.42ft: ZDiffPressure from SideKick sk-04-09-1056

5563.85ft: MUD WT.-9.55 VIS-44 PH-9.7

5596.33ft: SURVEY @ 5548' INC 7.7 AZI 92.3
5596.33ft: ZDiffPressure from SideKick sk-04-09-1056

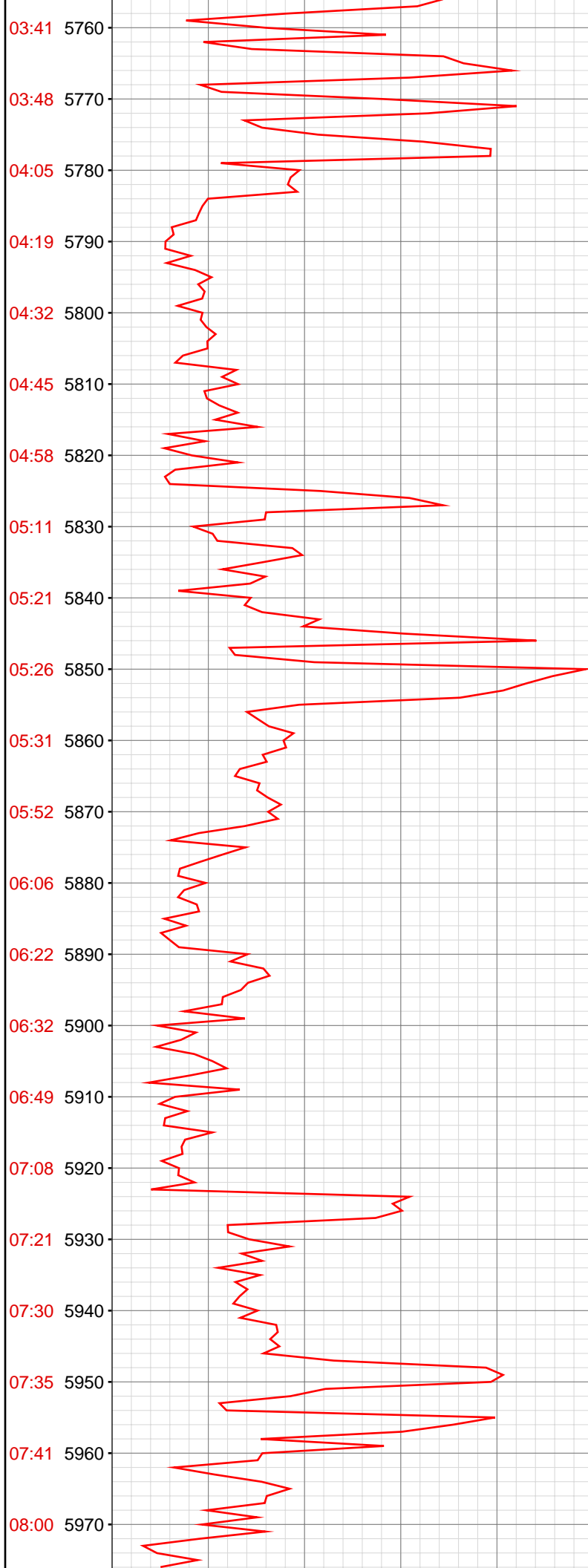
5624.93ft: ZDiffPressure from SideKick sk-04-09-1056

5631.89ft: MUD WT.-9.6 VIS-43 PH-10.2

5687.30ft: ZWOB from SideKick sk-04-09-1056
5687.30ft: SURVEY @ 5639' INC 6.5 AZI 90.7
5687.30ft: ZDiffPressure from SideKick sk-04-09-1056
5687.30ft: Connection at 5598.3
5687.99ft: Connection at 5689.7

5704.36ft: MUD WT.-9.6 VIS-46 PH-10.0

5724.61ft: ZDiffPressure from SideKick sk-04-09-1056



5778.45ft: MUD WT.-9.6 VIS-44 PH-9.7
5778.45ft: ZDiffPressure from SideKick sk-04-09-1056
5778.45ft: SURVEY @ 5731' INC 5.3 AZI 89.1

5818.08ft: MUD WT.-9.6 VIS-43 PH-9.9
5823.46ft: ZDiffPressure from SideKick sk-04-09-1056
5823.46ft: ZDiffPressure from SideKick sk-04-09-1056
5823.46ft: ZWOB from SideKick sk-04-09-1056

5861.55ft: Connection at 5781.3

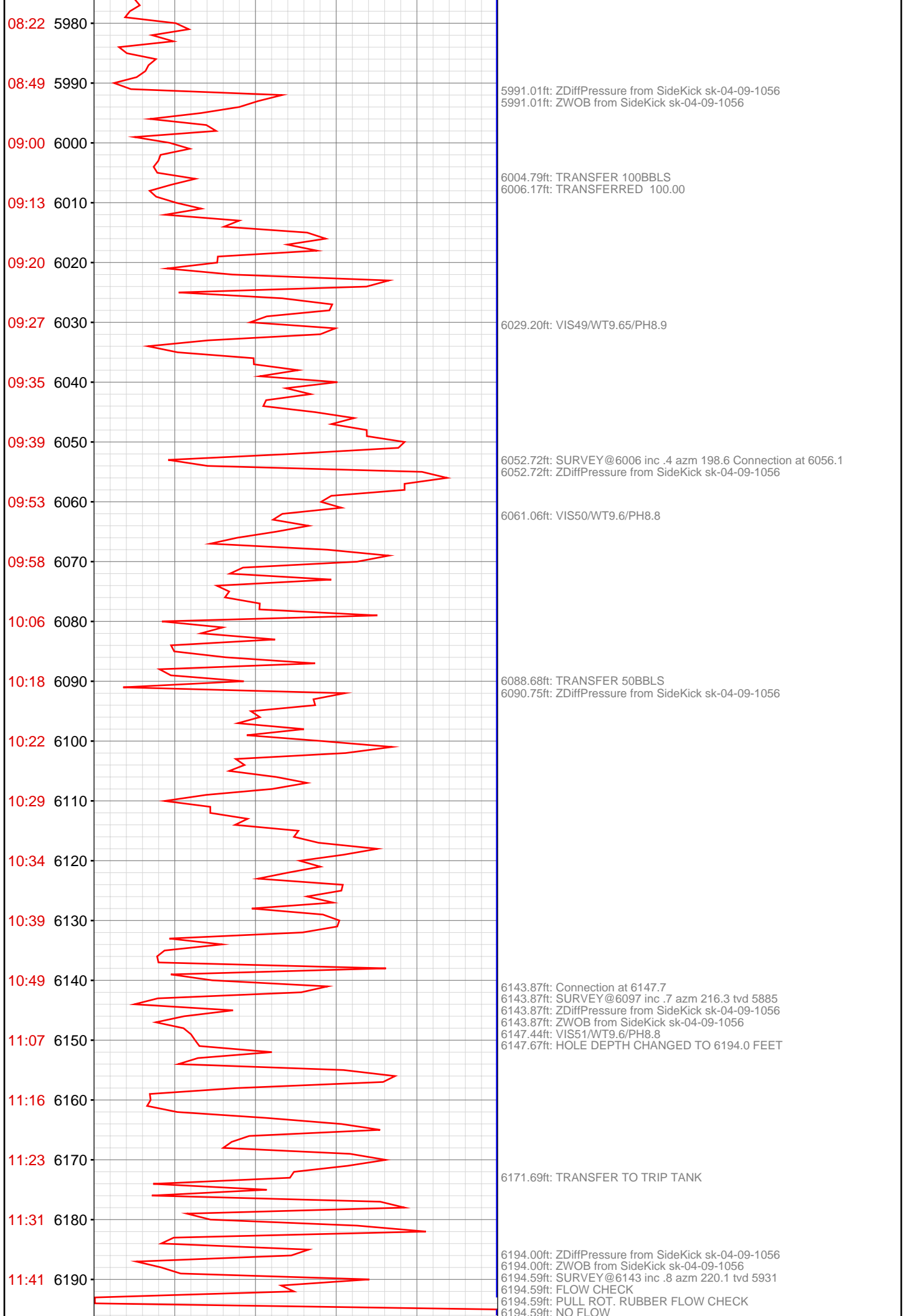
5869.85ft: Connection at 5873.0
5869.85ft: SURVEY@5823 INC 3.7 AZM 81.7
5869.85ft: ZDiffPressure from SideKick sk-04-09-1056

5887.04ft: VIS40/WT9.6/PH9.5

5915.62ft: VIS41/WT9.6/PH9.5

5922.93ft: ZDiffPressure from SideKick sk-04-09-1056

5961.09ft: Connection at 5964.7
5961.09ft: SURVEY@5914 INC 1.7 AZM 74.9
5961.09ft: ZDiffPressure from SideKick sk-04-09-1056
5962.14ft: VIS41/WT9.6



6194.59ft: VIS49/WT9.65/PH9
6194.59ft: INSTALL ROT. RUBBER
6194.59ft: ZWOB from SideKick sk-04-09-1056
6194.59ft: IN VIS 44 WT 9.5+ PH 9.2
6194.59ft: IN TALLY: HOLE DEPTH SET TO 6147.7

6237.86ft: SURVEY @ 6188' INC 1 AZI 220.1
6237.86ft: ZDiffPressure from SideKick sk-04-09-1056
6237.86ft: Connection at 6238.9
6240.58ft: MUD WT.-9.75 VIS-46 PH-9.2

6266.08ft: ZDiffPressure from SideKick sk-04-09-1056
6266.08ft: ZWOB from SideKick sk-04-09-1056

6293.24ft: MUD WT.-9.9 VIS-44 PH-9.5
6296.46ft: ZDiffPressure from SideKick sk-04-09-1056

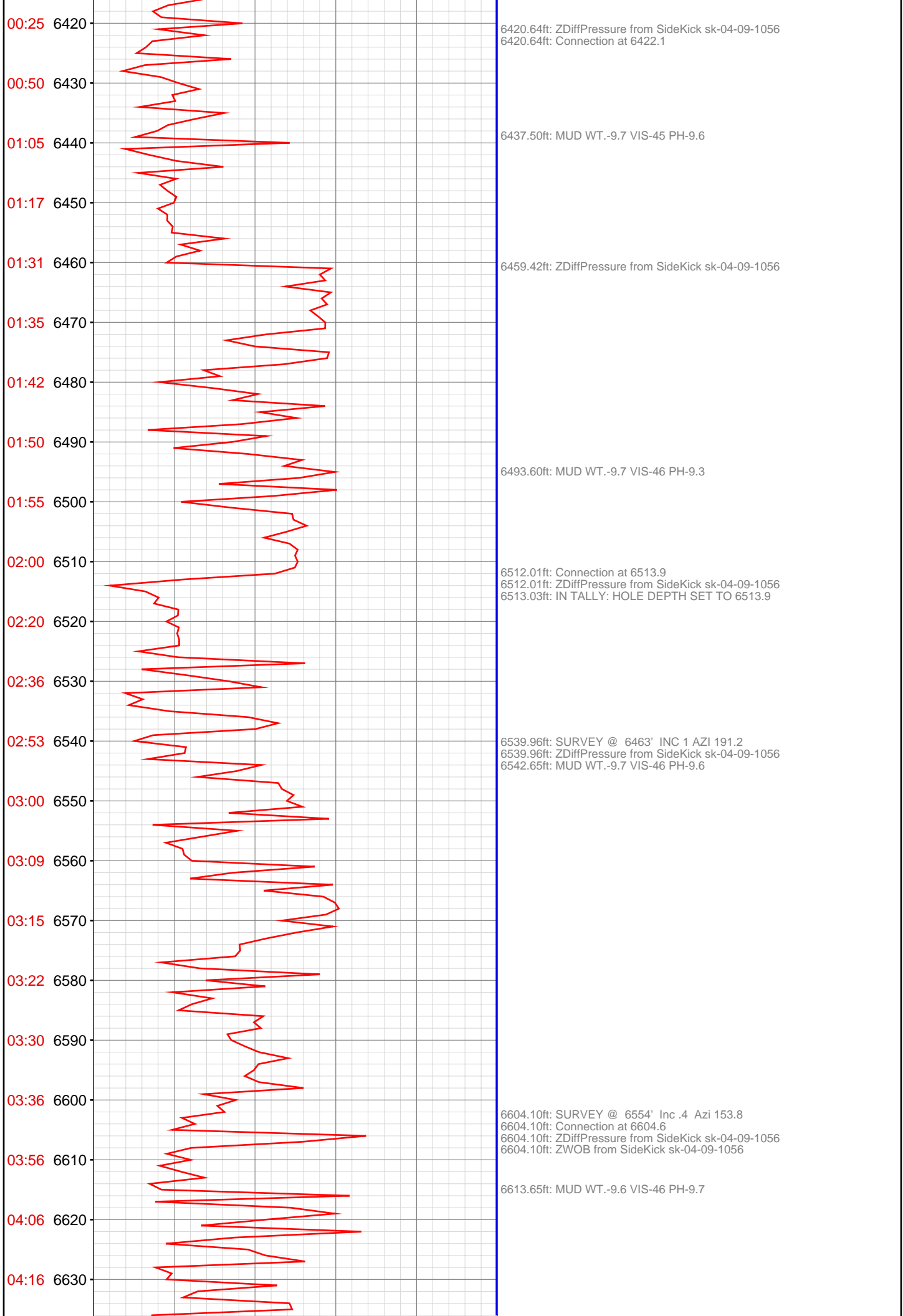
6329.07ft: SURVEY @ 6280' Inc .7 Azi 202.1
6329.07ft: ZDiffPressure from SideKick sk-04-09-1056
6329.07ft: ZWOB from SideKick sk-04-09-1056 Connection at 6330.7
6333.50ft: MUD WT.-9.9 VIS-45 PH-9.4

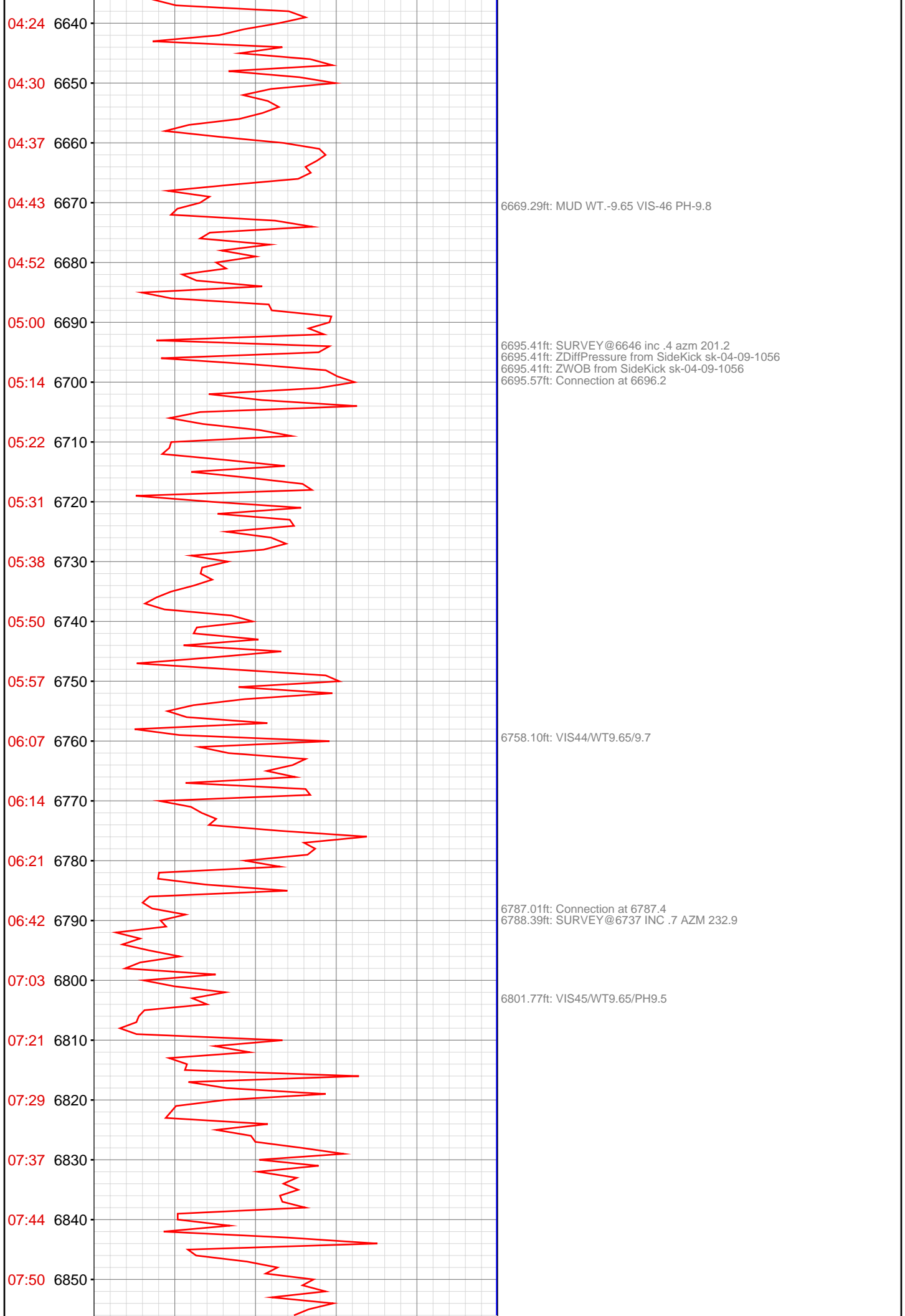
6378.67ft: ZDiffPressure from SideKick sk-04-09-1056

6389.14ft: MUD WT.-9.9 VIS-46 PH-9.7

6401.64ft: DEFOAMER

Sep 14, 2013





07:55 6860

08:03 6870

08:22 6880

08:28 6890

08:34 6900

08:41 6910

08:49 6920

09:01 6930

09:09 6940

09:17 6950

09:25 6960

09:40 6970

09:48 6980

09:54 6990

09:58 7000

10:06 7010

10:11 7020

10:20 7030

10:25 7040

10:31 7050

10:39 7060

10:57 7070

6858.46ft: VIS43/WT9.6/PH9.5

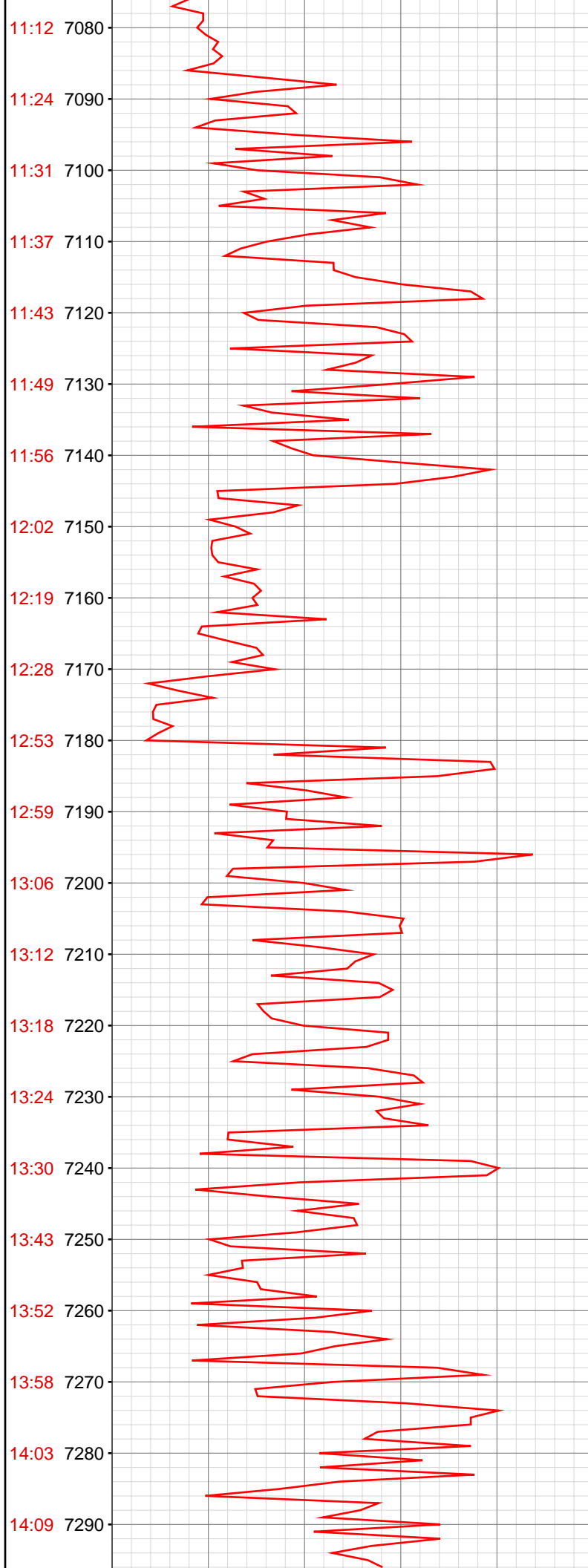
6878.22ft: Connection at 6879.0
6878.22ft: SURVEY@6828 inc .6 azm 283.2
6878.22ft: ZWOB from SideKick sk-04-09-1056
6878.22ft: ZDiffPressure from SideKick sk-04-09-1056

6937.73ft: VIS43/WT9.7/PH9.4

6969.29ft: Connection at 6970.3
6970.34ft: SURVEY@6920 inc 1 azm 278.4

7060.73ft: Connection at 7062.0
7060.73ft: SURVEY@7012 INC 1.5 AZM 269.4

7070.57ft: VIS45/WT9.7/PH9.5

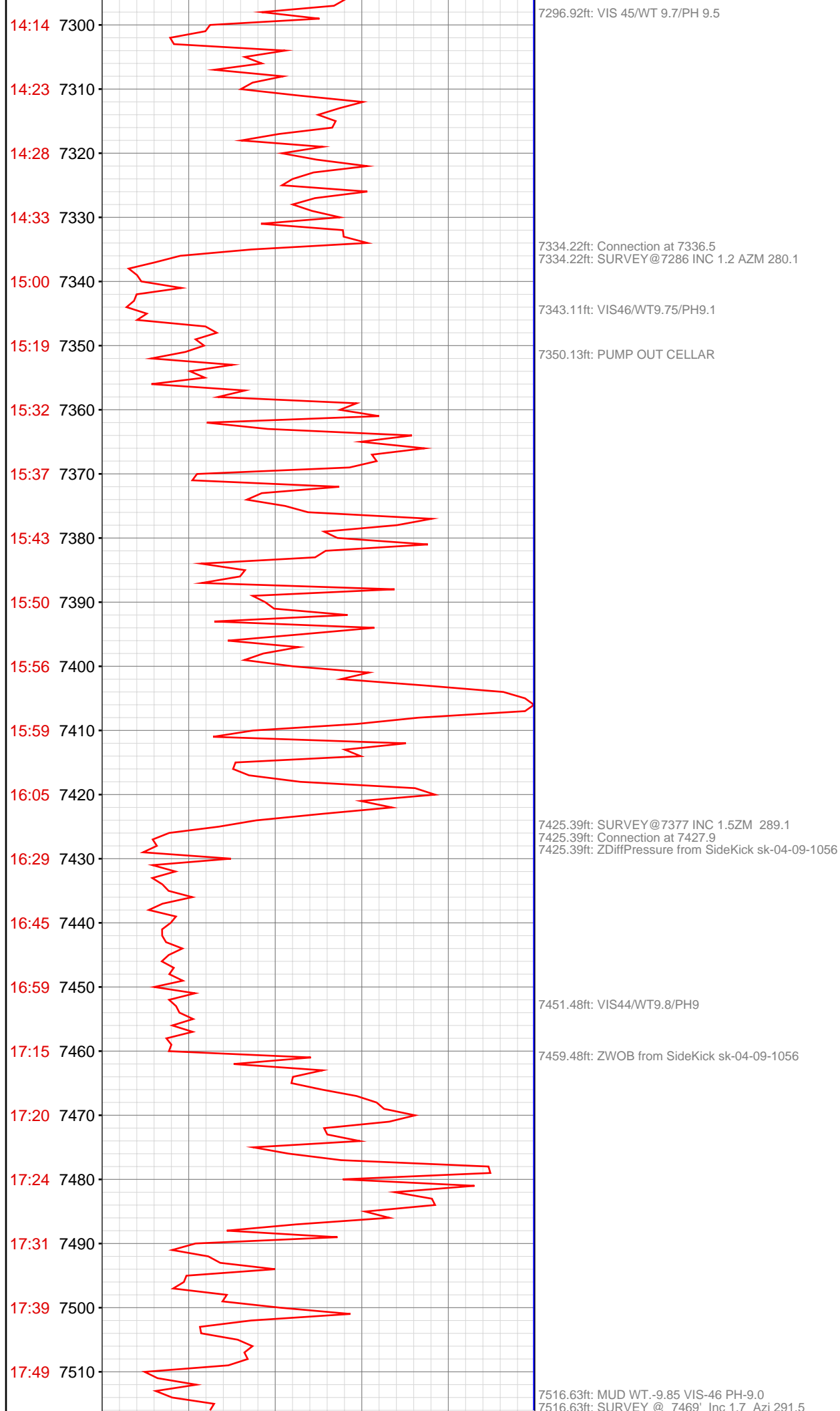


7144.72ft: VIS43/WT9.7/PH9.7

7151.51ft: Connection at 7153.6
7151.71ft: ZDiffPressure from SideKick sk-04-09-1056
7152.07ft: SURVEY@7103 INC 1.5 AZM 255.5

7202.17ft: VIS43/WT9.7/PH9.4

7242.78ft: Connection at 7245.0
7242.78ft: SURVEY@7194 inc .7 azm 280.1



7516.63ft: Connection at 7519.4
7516.63ft: ZWOB from SideKick sk-04-09-1056
7516.63ft: ZDiffPressure from SideKick sk-04-09-1056
7517.68ft: IN TALLY: HOLE DEPTH SET TO 7519.4

7598.85ft: MUD WT.-9.9 VIS-44 PH-9.5

7609.58ft: ZDiffPressure from SideKick sk-04-09-1056
7609.58ft: Connection at 7611.0

7667.03ft: MUD WT.-9.9 VIS-46 PH-9.7

7700.92ft: SURVEY @ 7652' INC 1.6 AZI 265.2 MUD WT.-9.85 VIS-46
PH-9.3 H2O-8 GPM
7700.92ft: ZDiffPressure from SideKick sk-04-09-1056
7700.92ft: ZWOB from SideKick sk-04-09-1056
7700.92ft: Connection at 7702.7

