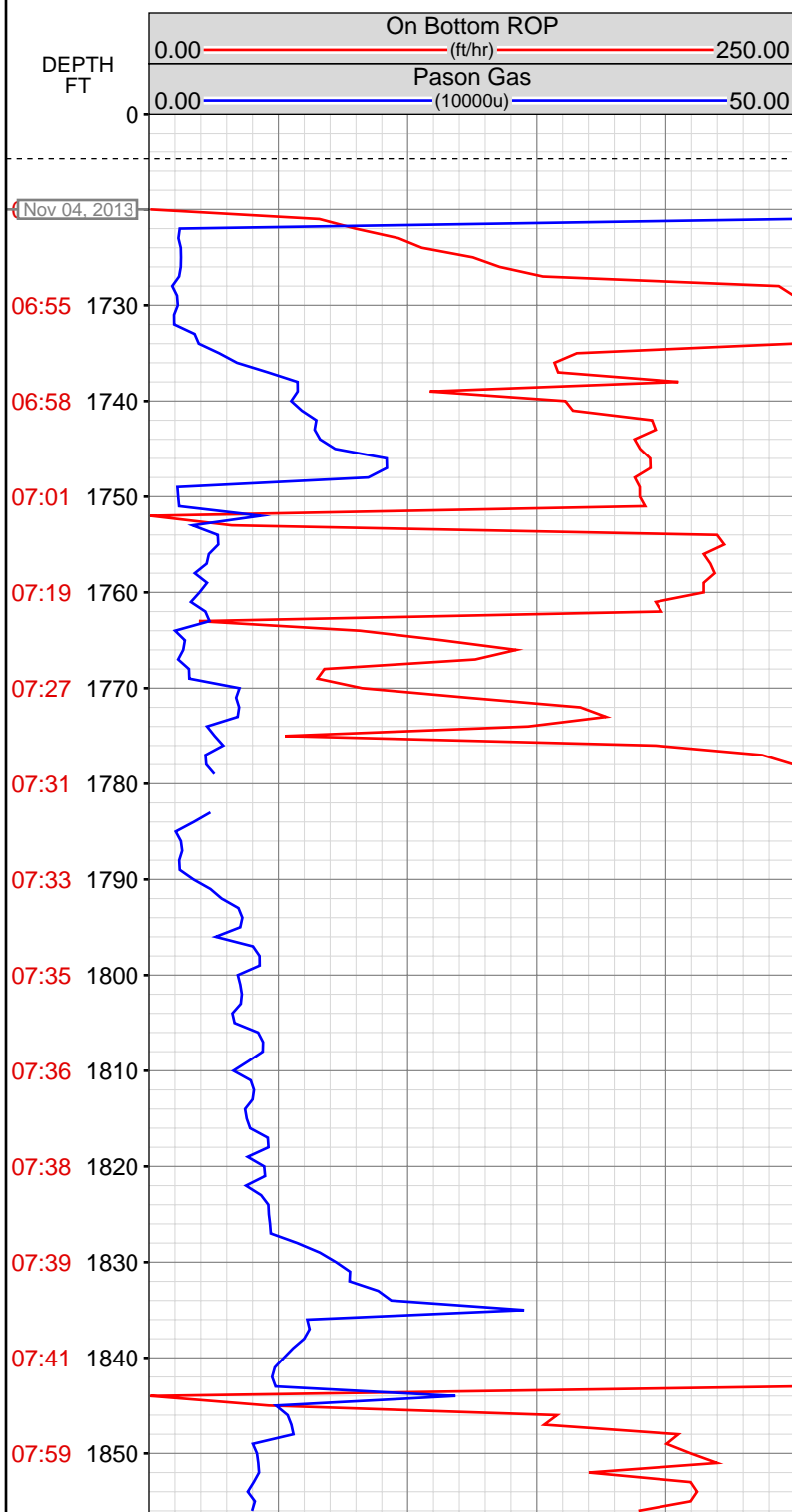


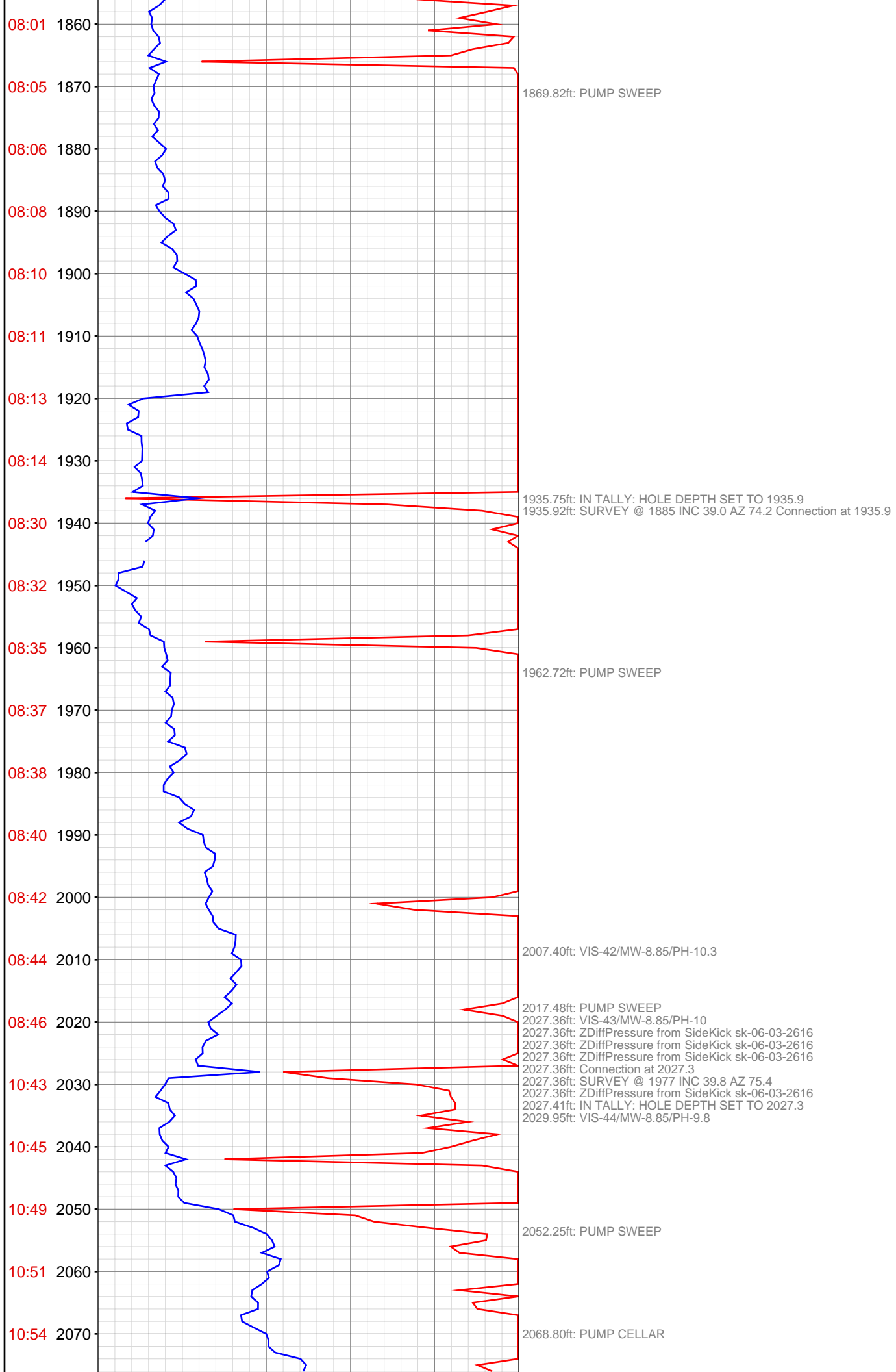
OPERATOR: EnCana Oil & Gas (USA), Inc.
WELL: Federal 31-7A
FIELD:
LOCATION: SEC 31, T007S, R95W
COUNTRY: USA
RIG: Pat-UTI 308

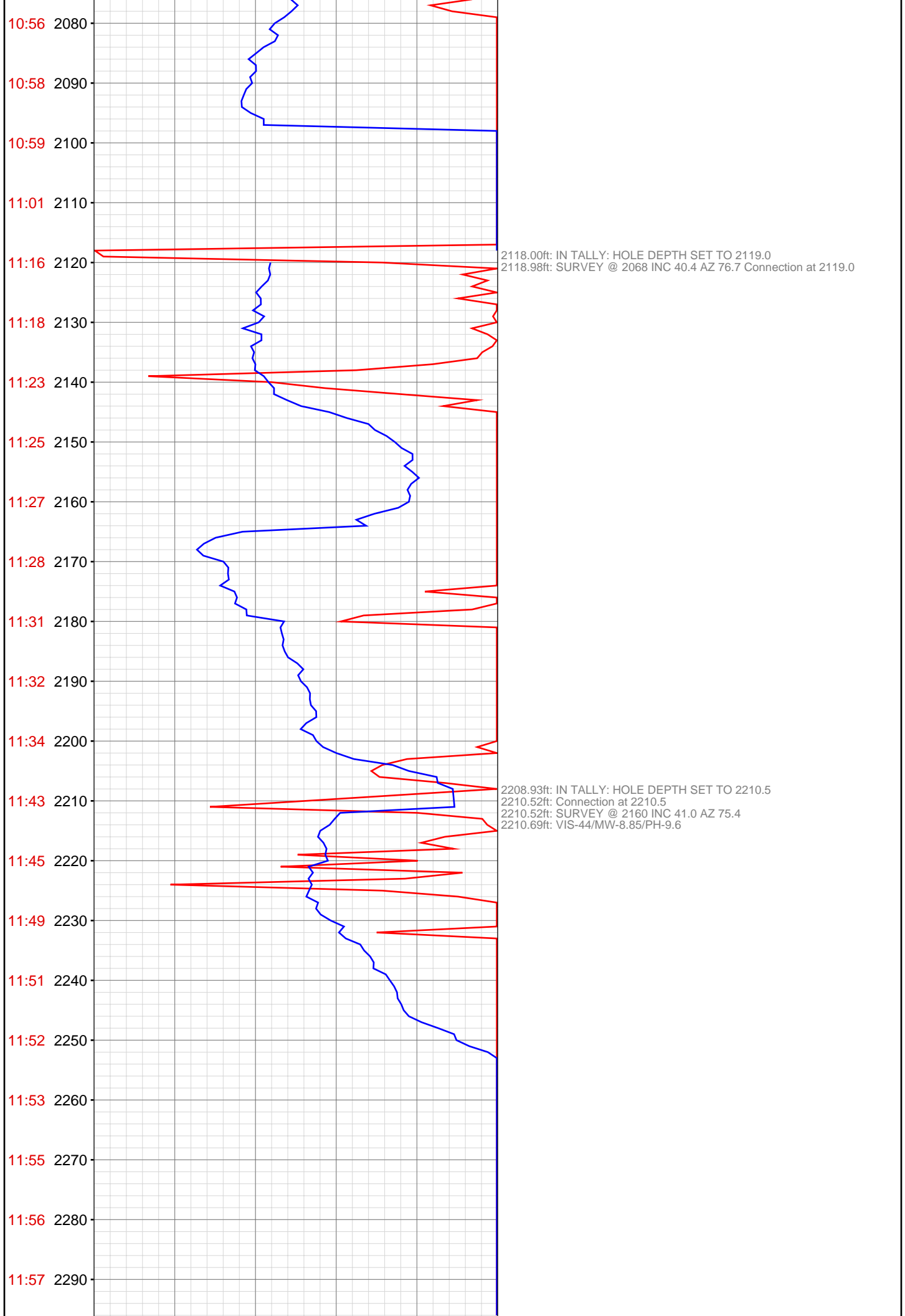
CONTRACTOR: Patterson-UTI Drilling Company
UNIQUE WELL ID: 05-045-20514
SPUD DATE: Nov 03, 2013 19:00
RELEASE DATE:

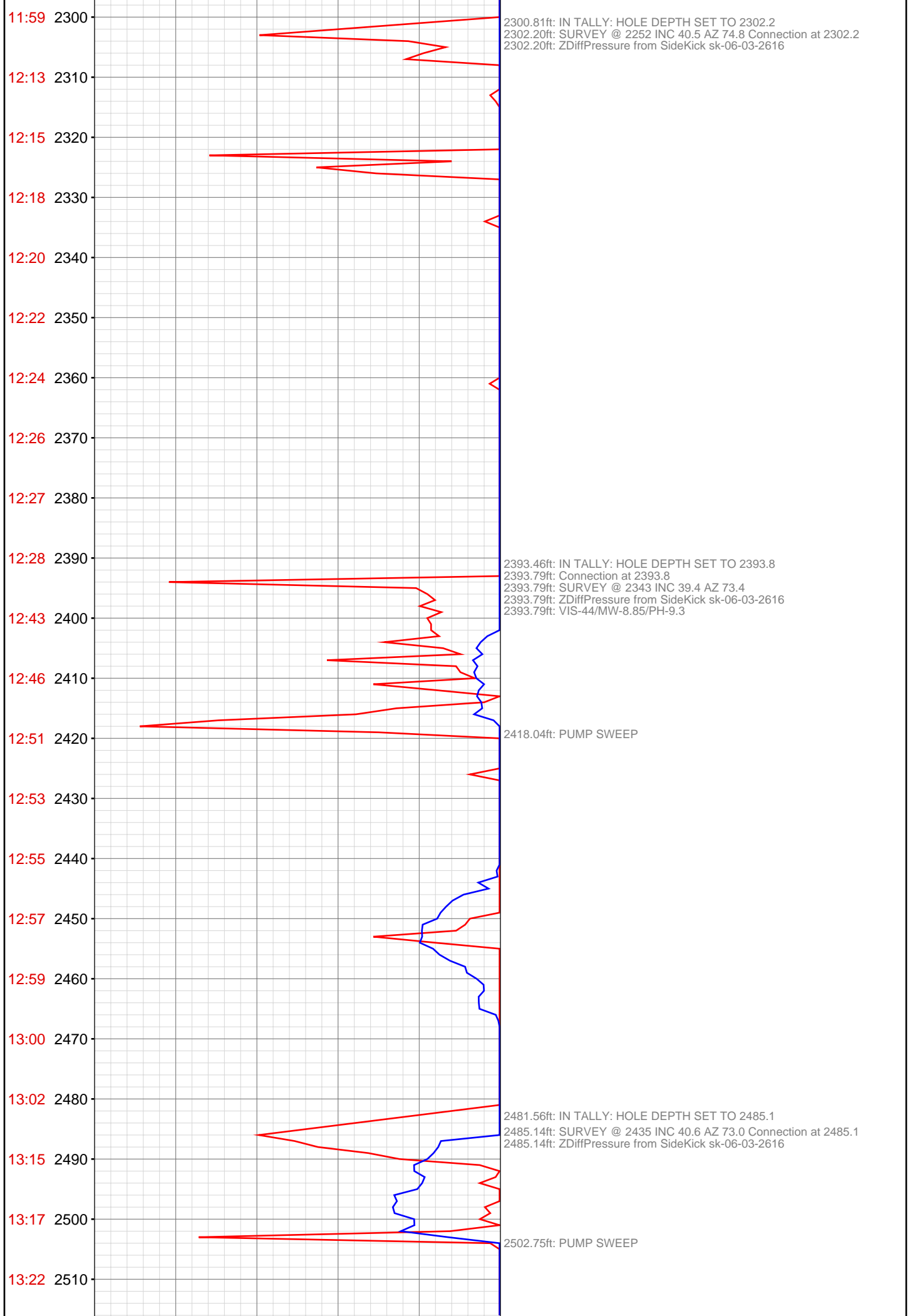


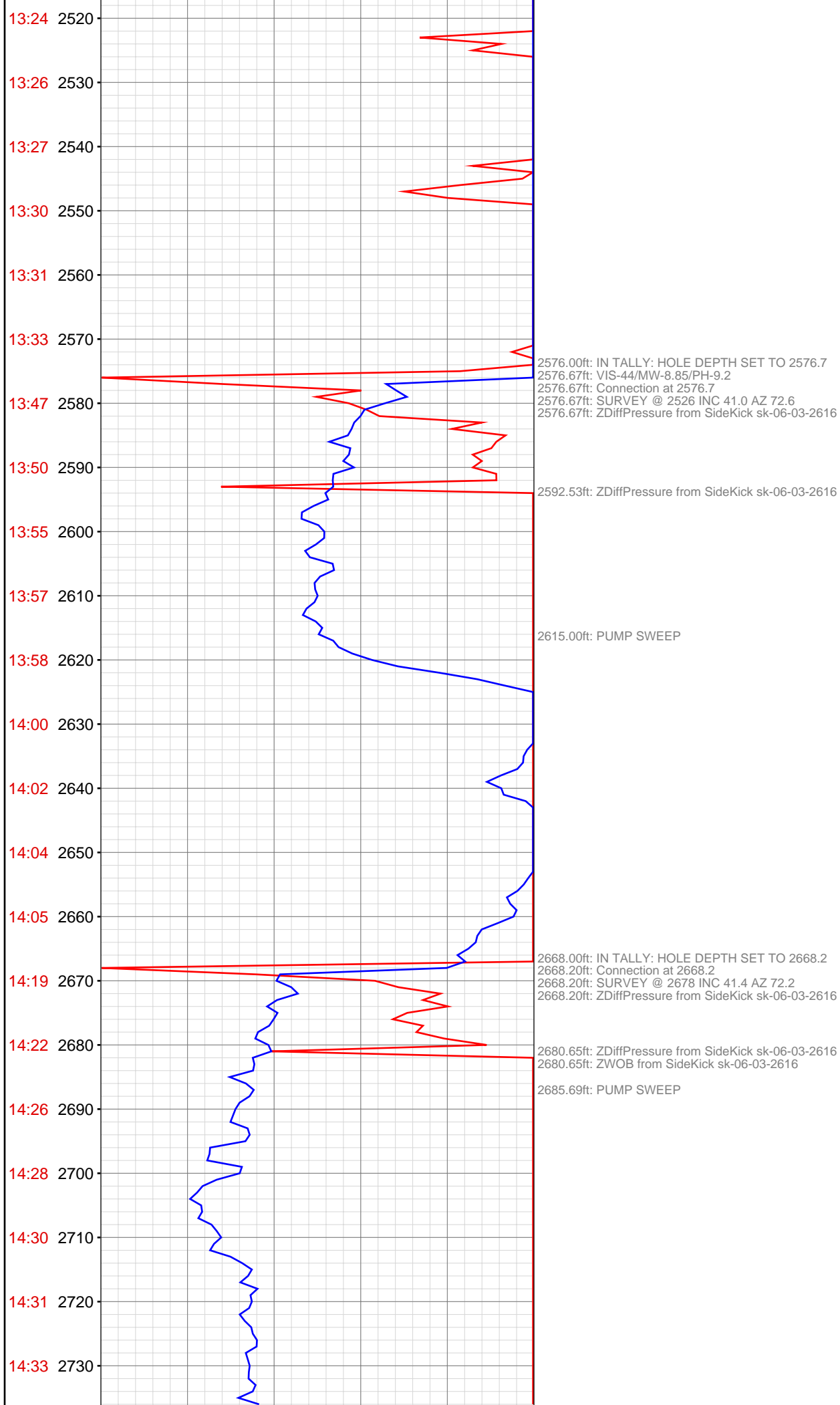
MEMOS

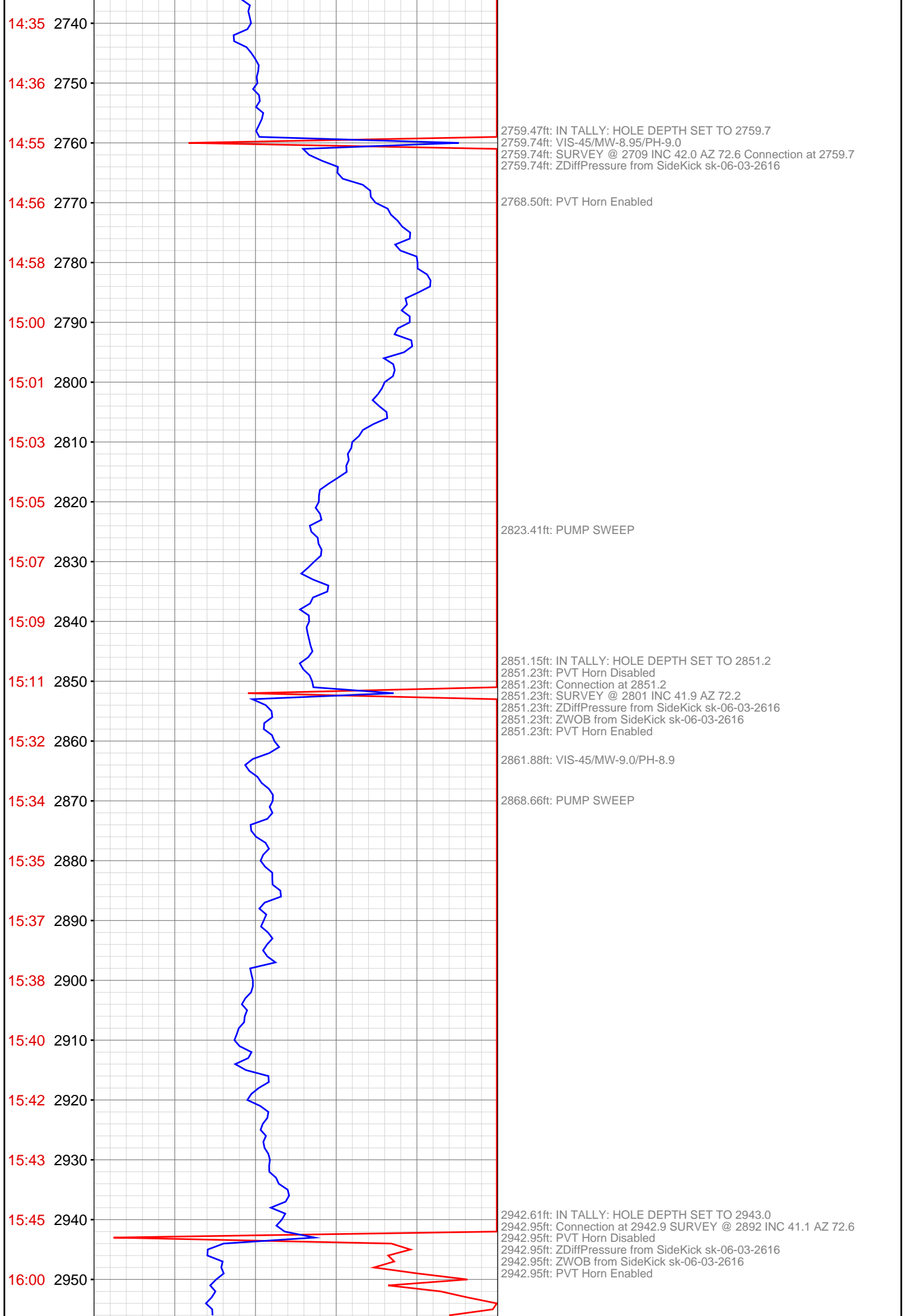
0.00ft: HOLE DEPTH CHANGED TO 1720.0 FEET
1720.00ft: VIS-34/MW-8.9/PH-9.0
1720.00ft: VIS-33/MW-8.95/PH-8.8
1720.00ft: VIS-35/MW-8.65/PH-8.1
1720.00ft: IN VIS 42 /MW 8.65 /PH 8.1
1720.00ft: TRANSFERED 40 BBLs FROM TANK 8 TO ACTIVE
1720.00ft: TRANSFERED 55 BBLs FROM UPRIGHT TO TANK 8
1720.00ft: ROT RUBBER IN
1720.00ft: BIT DEPTH CHANGED TO 715.0 FEET
1720.00ft: CIRCULATE
1720.00ft: VIS 41 /MW 8.65 /PH 8.0
1720.00ft: BIT DEPTH CHANGED TO 1474.0 FEET
1720.00ft: PVT: Flow alarm reactivated: unmuted PVT: Volume alarm reactivated: unmuted
1720.00ft: ZDIFF from DHC
1720.00ft: ZWOB from DHC
1720.00ft: PVT: Flow alarm muted PVT: Volume alarm muted
1720.00ft: PVT: Flow alarm reactivated: unmuted
1720.00ft: PVT: Volume alarm reactivated: unmuted
1720.00ft: ZDIFF from DHC
1720.00ft: PVT: Flow alarm muted
1720.00ft: PVT: Volume alarm muted
1720.00ft: ZWOB from SideKick sk-06-03-2616
1720.00ft: ZDIFFPressure from SideKick sk-06-03-2616
1720.00ft: PVT: Flow alarm reactivated: unmuted PVT: Volume alarm reactivated: unmuted
1720.00ft: PVT: Flow alarm muted PVT: Volume alarm muted
1720.00ft: IN VIS 39 /MW 8.65 /PH 9.4
1720.00ft: IN VIS 39 /MW 8.7 /PH 10.6 /H2O OFF
1720.00ft: IN VIS 44 /MW 8.75 /PH 10.8
1720.00ft: PULL ROT RUBBER
1720.00ft: BIT DEPTH CHANGED TO 1295.0 FEET
1720.00ft: IN VIS 40 /MW 8.75 /PH 10.7
1720.00ft: ZDIFFPressure from SideKick sk-06-03-2616
1720.00ft: ZWOB from SideKick sk-06-03-2616
1720.00ft: IN VIS 45 /MW 8.75 /PH 11.3
1720.00ft: VIS-40/MW-8.75/PH-10.9
1720.50ft: VIS-42/MW-8.8/PH-10.9
1720.50ft: ZDIFFPressure from SideKick sk-06-03-2616
1742.49ft: PUMP SWEEP
1752.00ft: IN TALLY: HOLE DEPTH SET TO 1752.8
1752.82ft: SURVEY @ 1702 INC 38.3 AZ 71.6
1752.82ft: Connection at 1752.8
1752.82ft: ZDIFFPressure from SideKick sk-06-03-2616
1776.58ft: PUMP SWEEP
1844.00ft: IN TALLY: HOLE DEPTH SET TO 1844.6
1844.57ft: VIS-42/MW-8.8/PH-10.6
1844.57ft: SURVEY @ 1794 INC 38.5 AZ 72.6
1844.57ft: Connection at 1844.6
1844.57ft: ZDIFFPressure from SideKick sk-06-03-2616

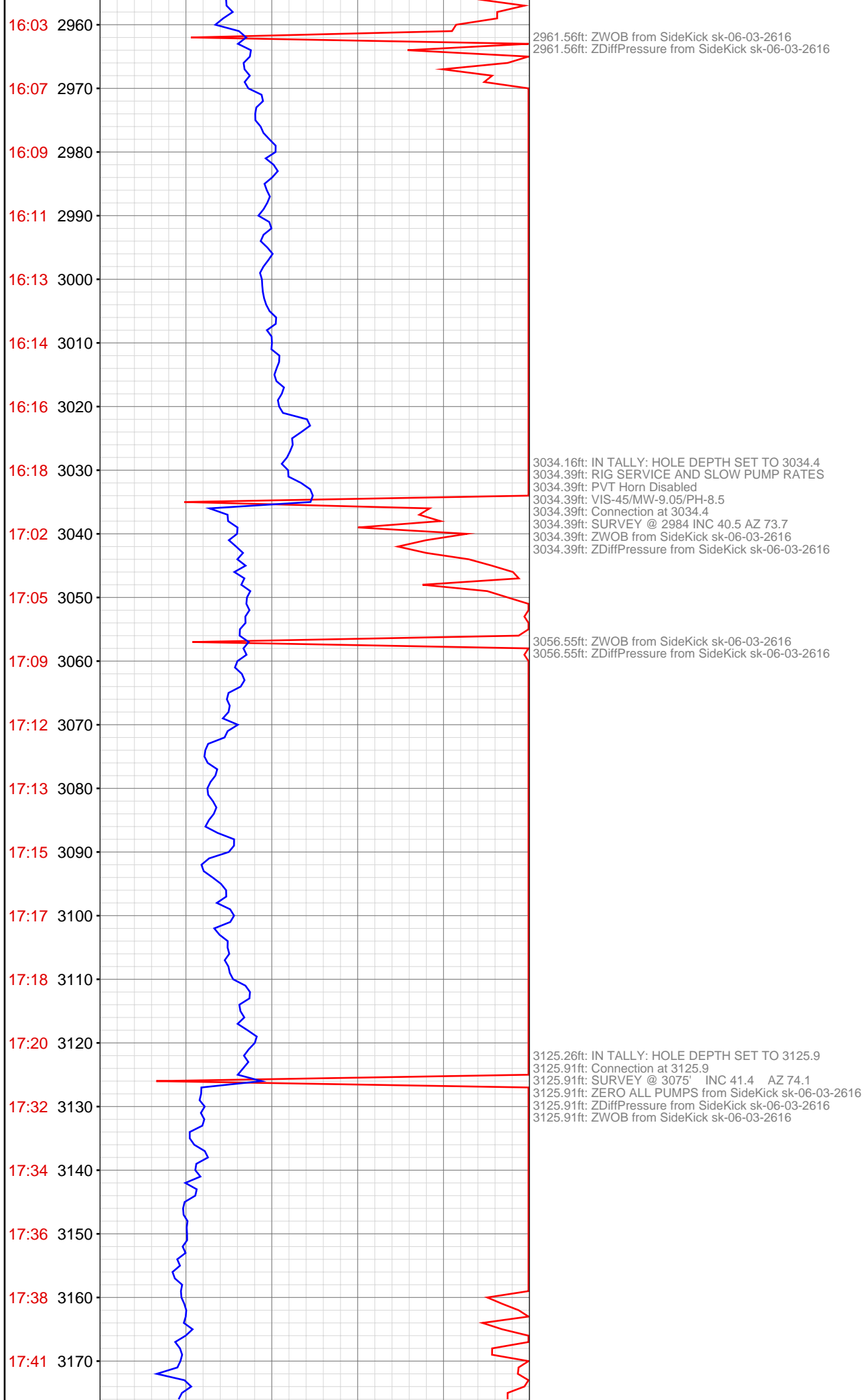


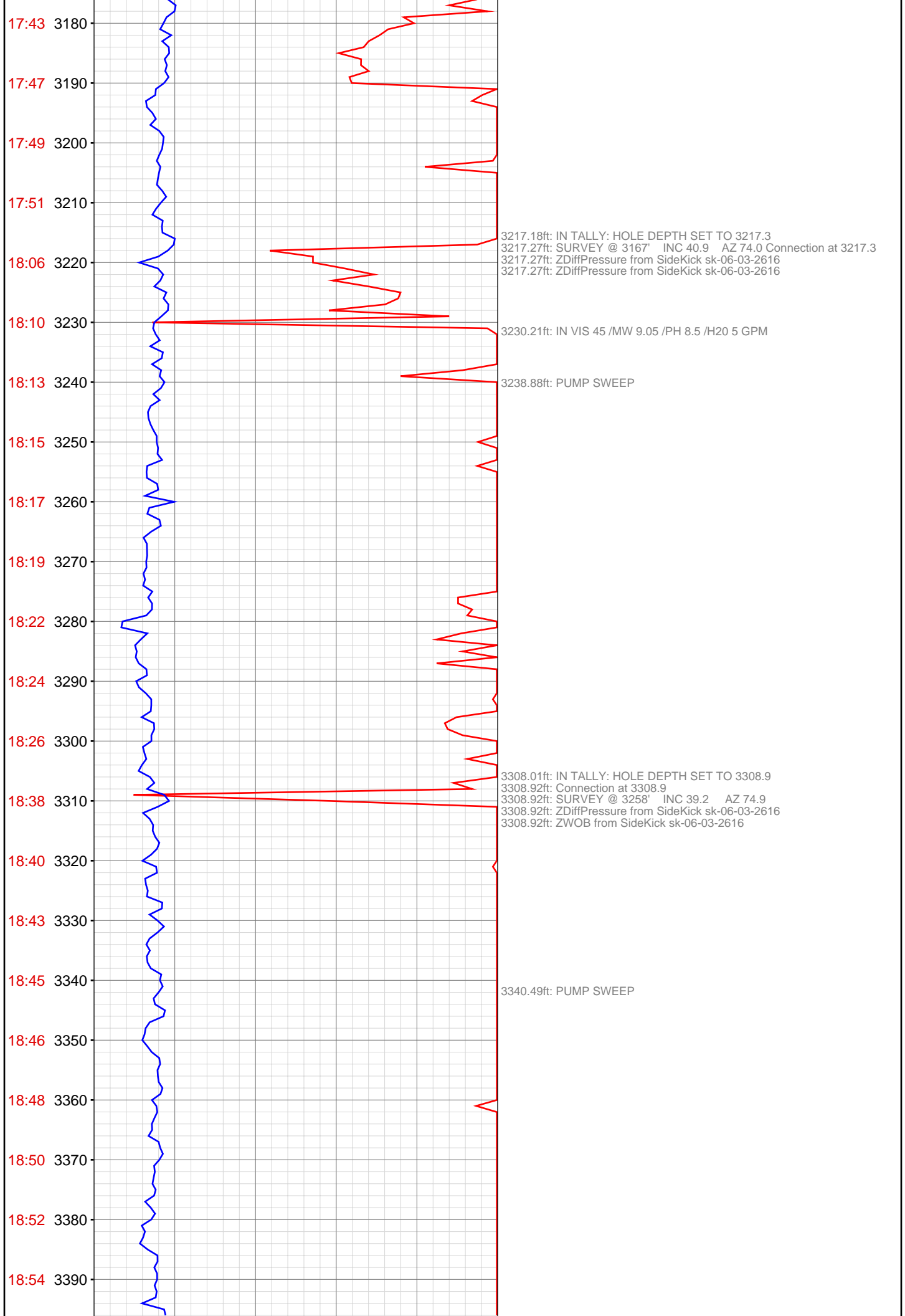


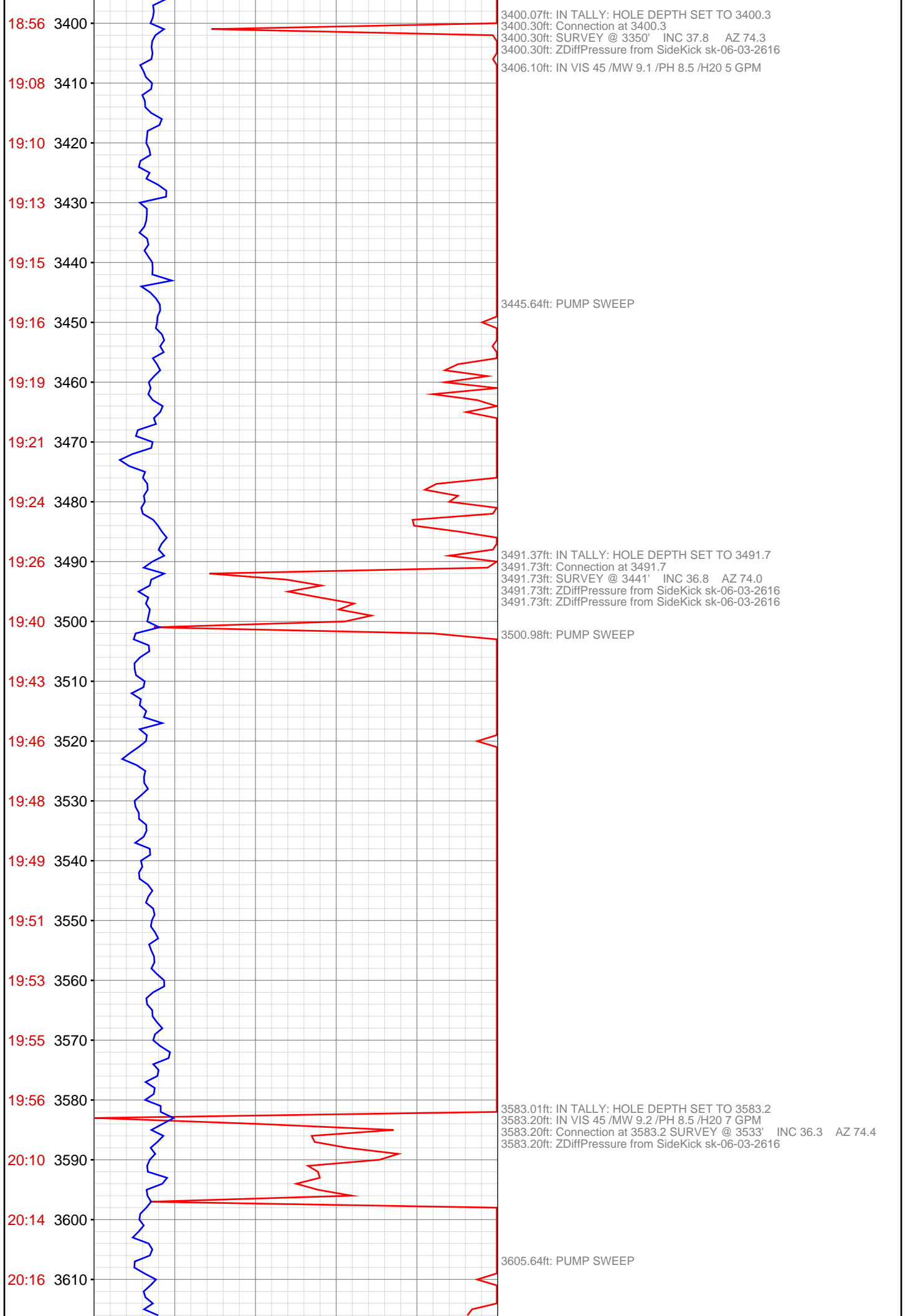


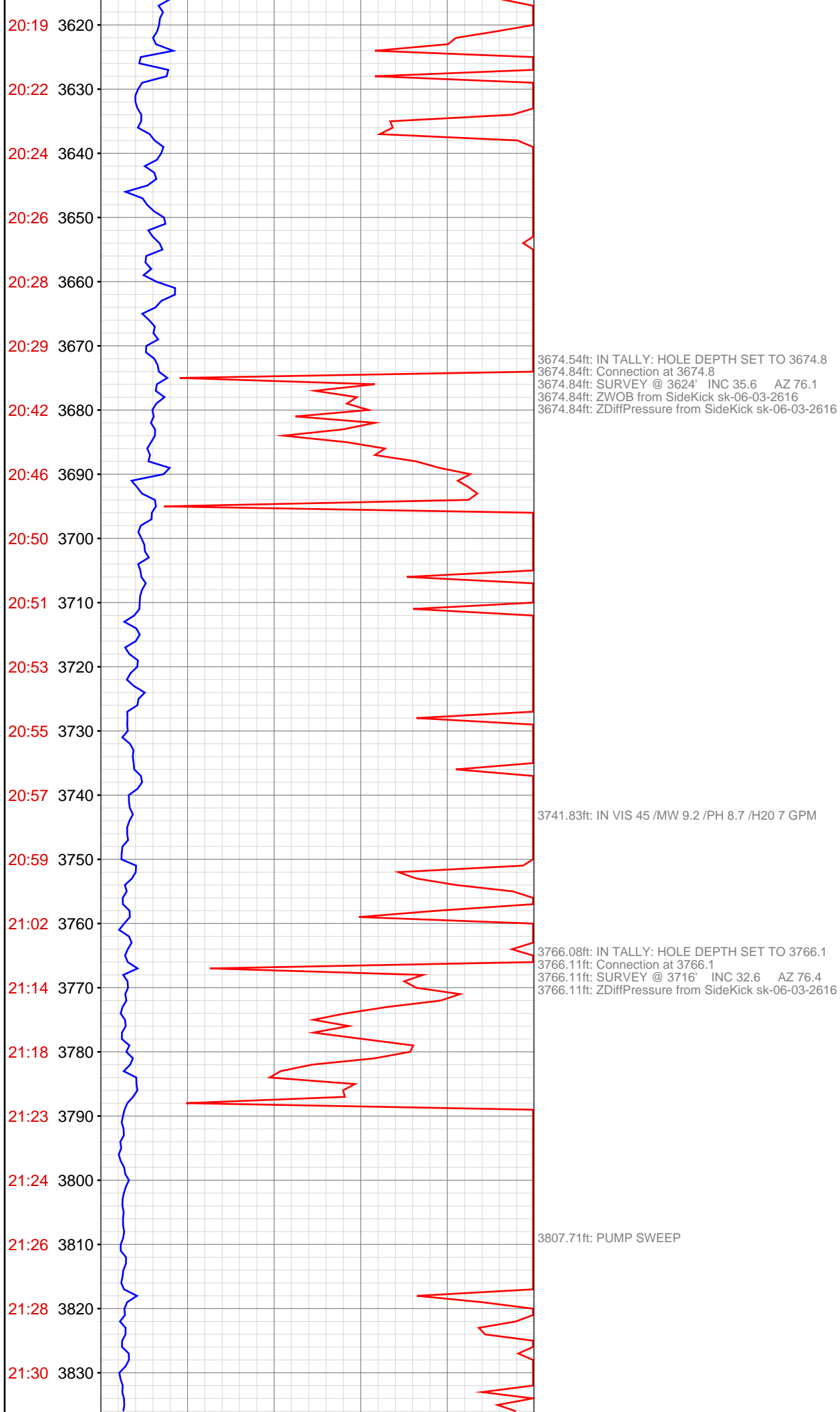


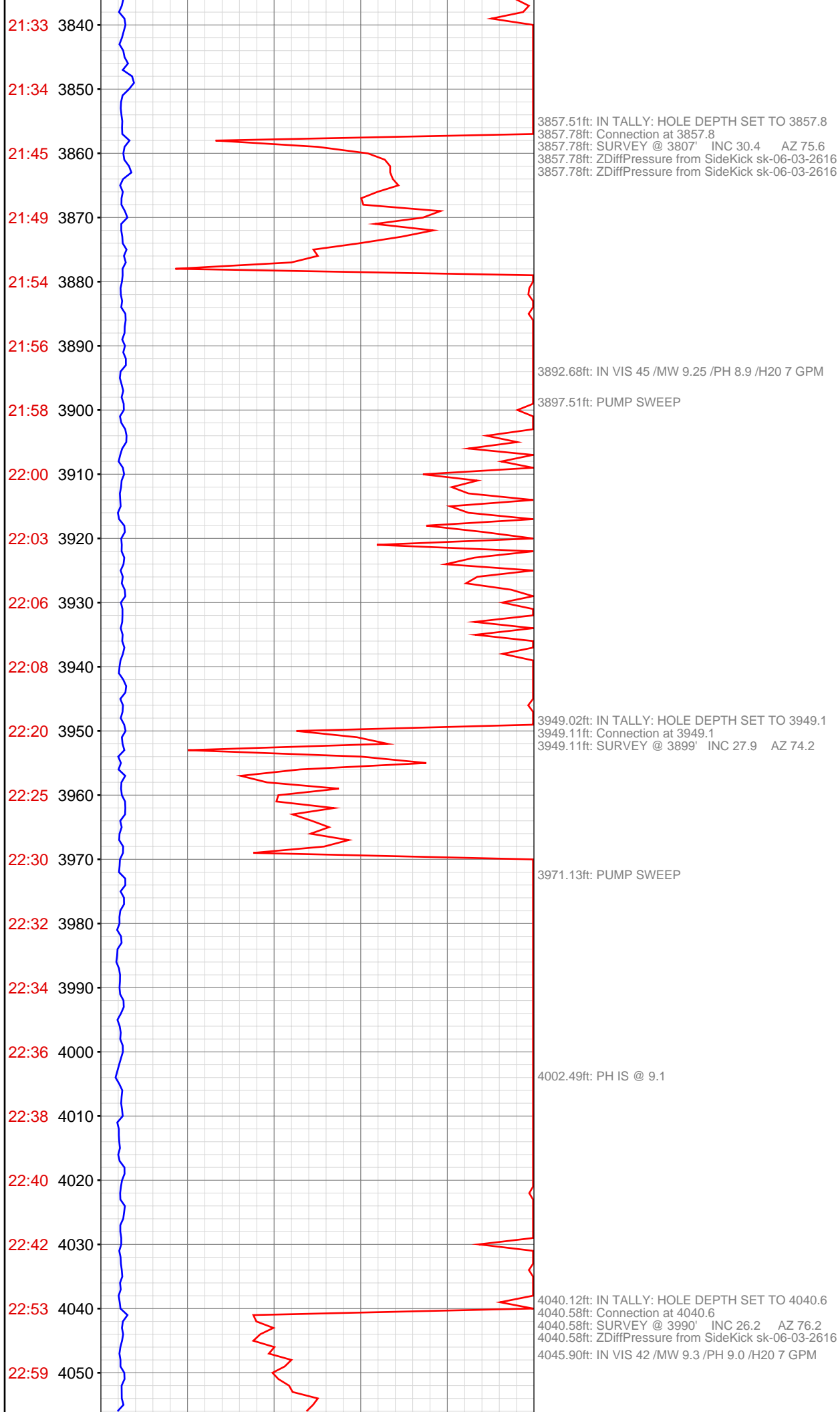


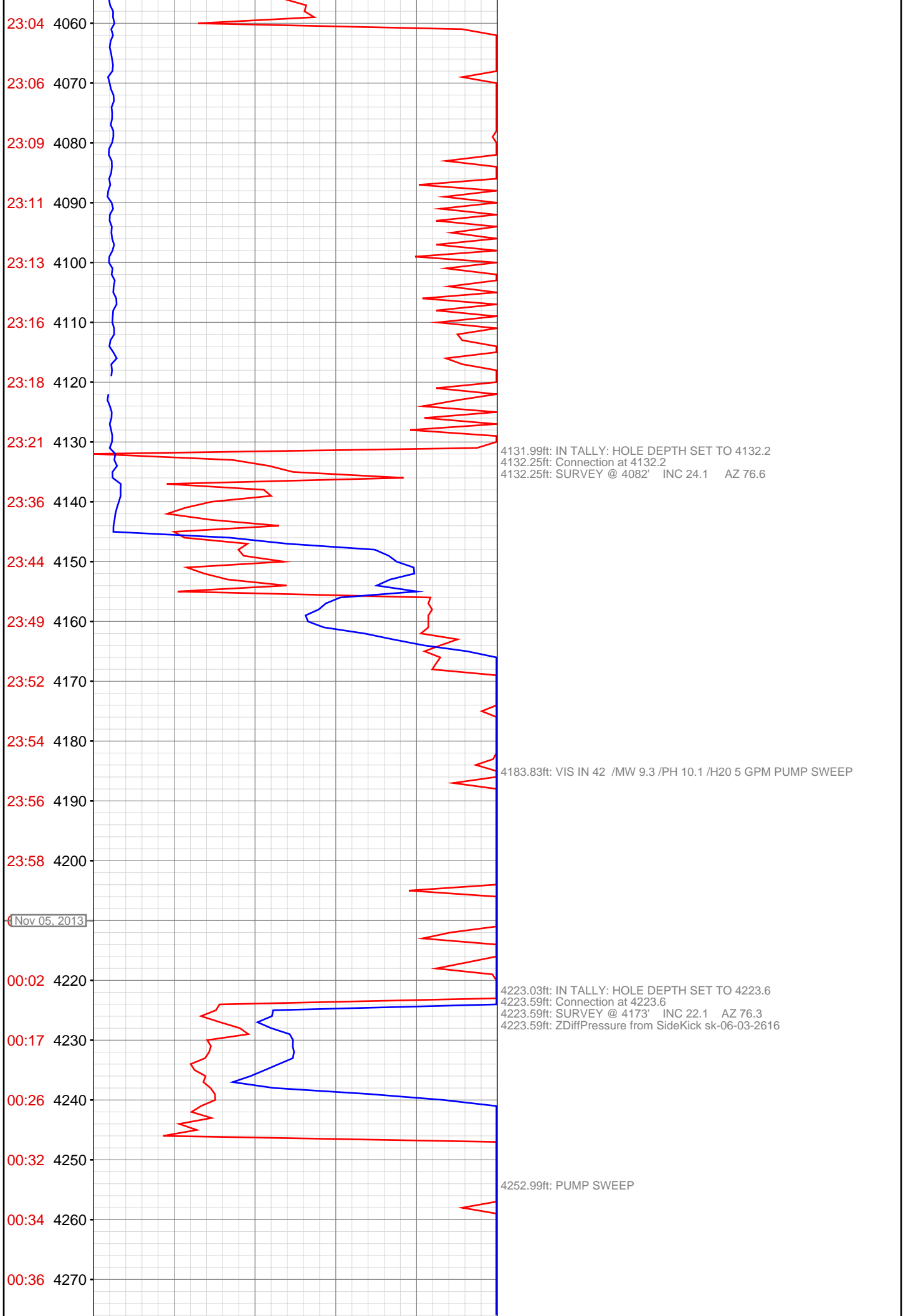


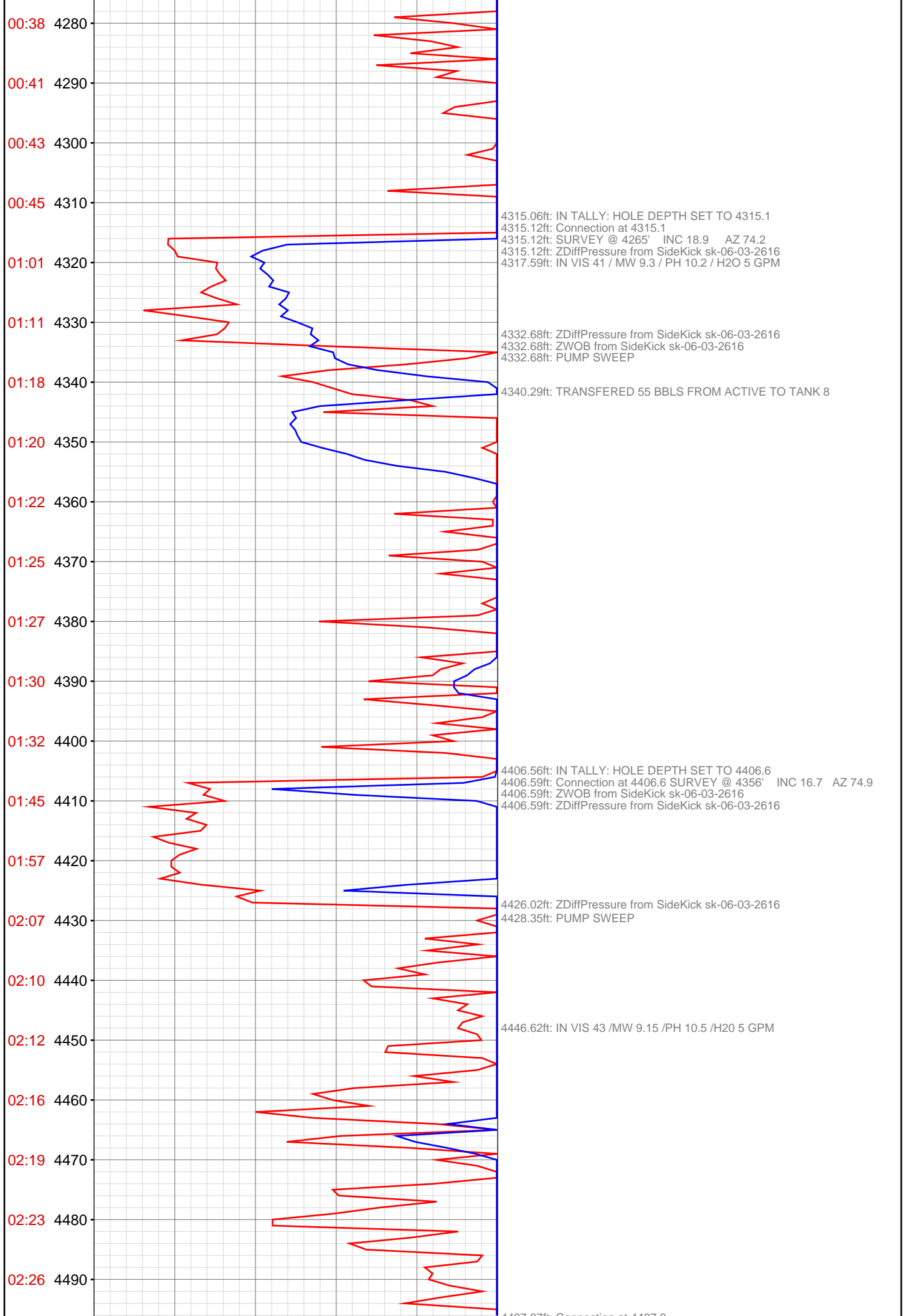


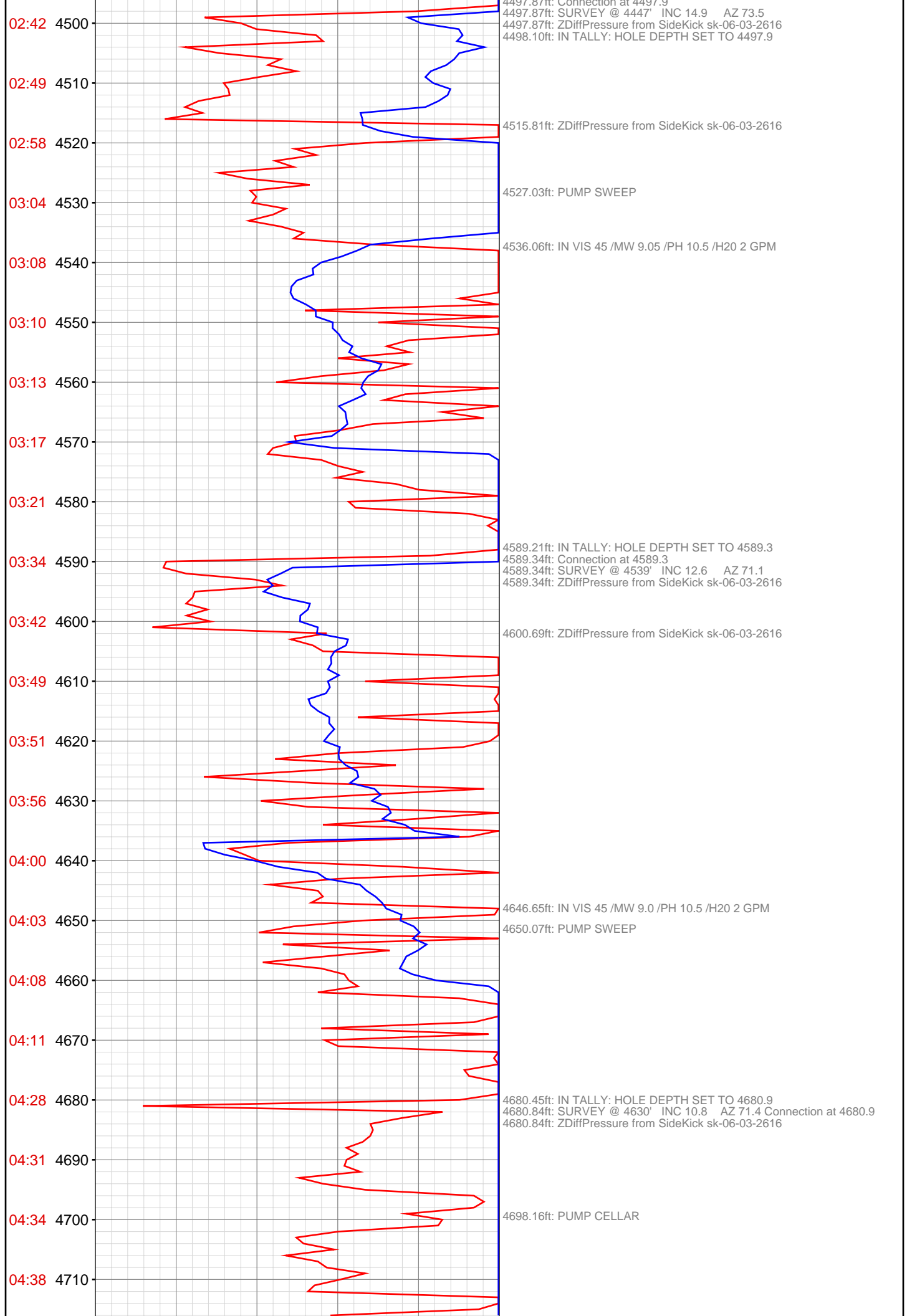


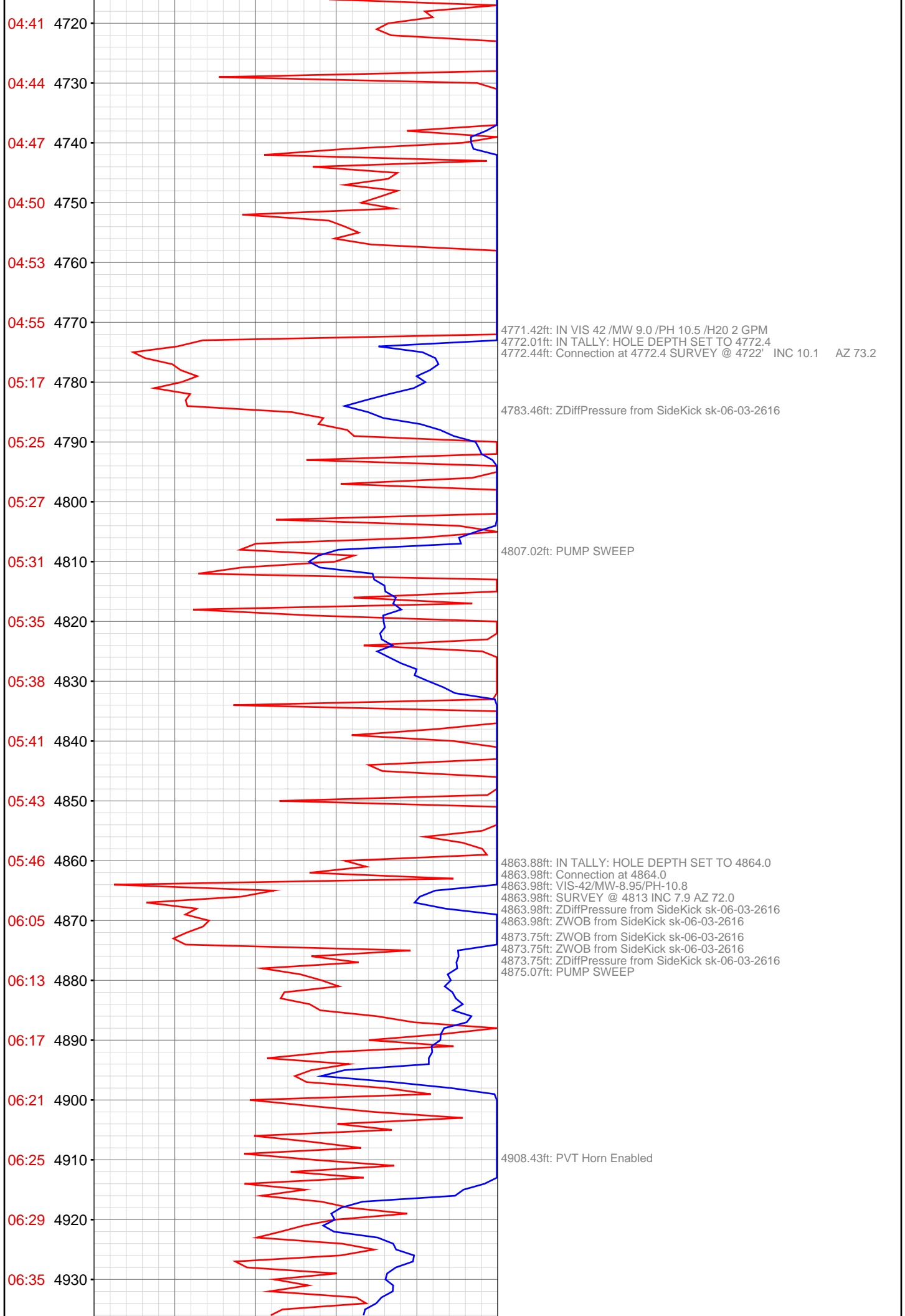


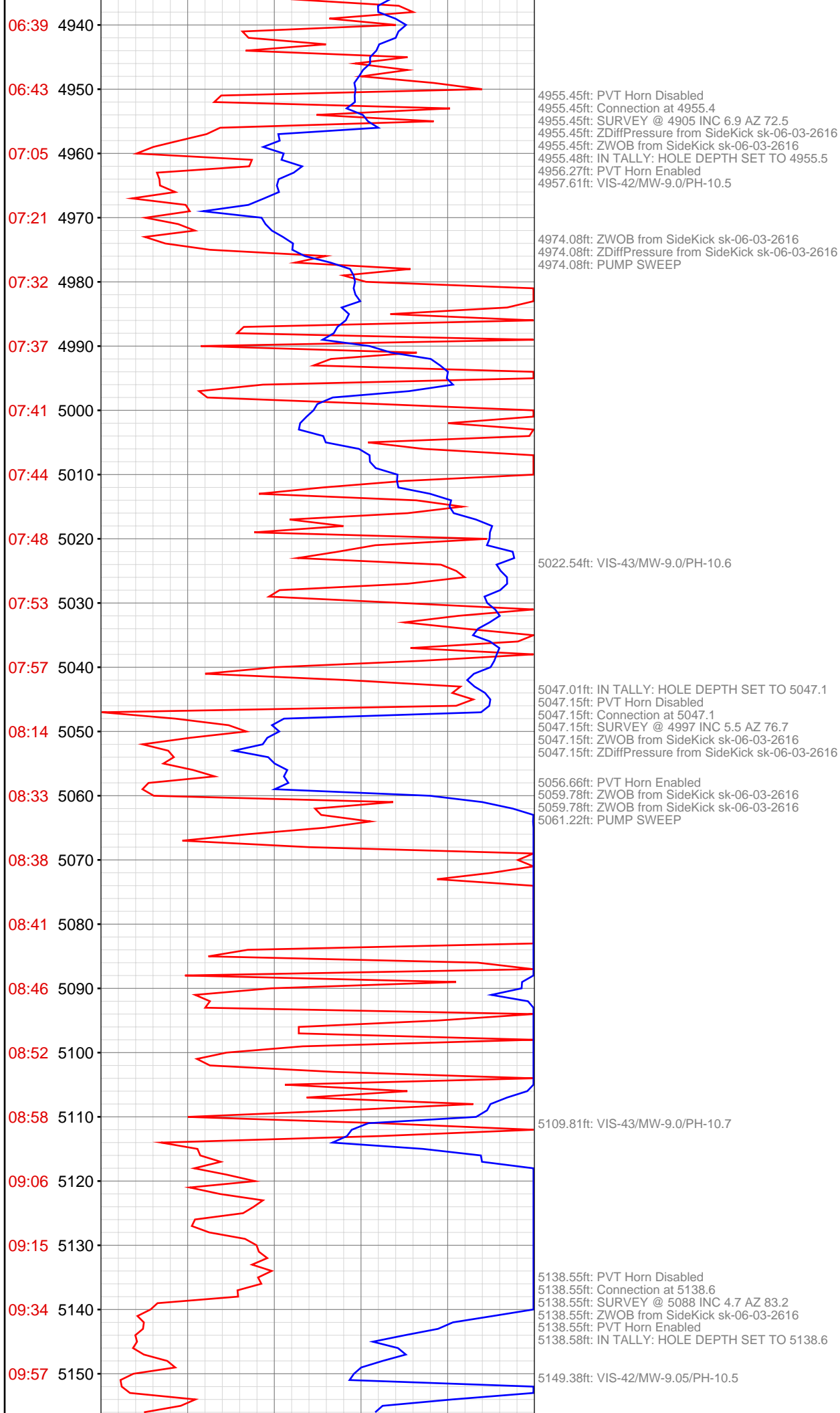


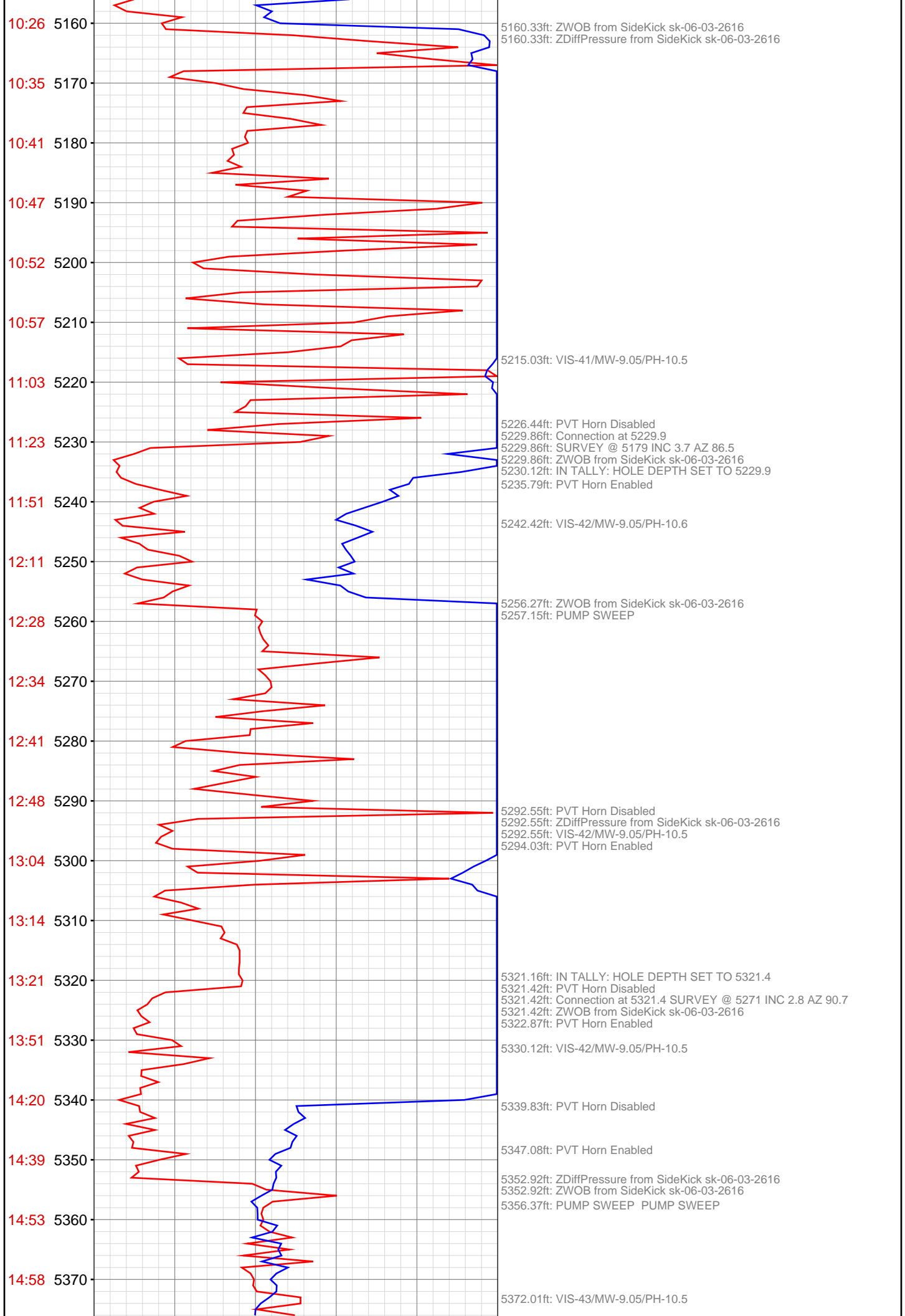


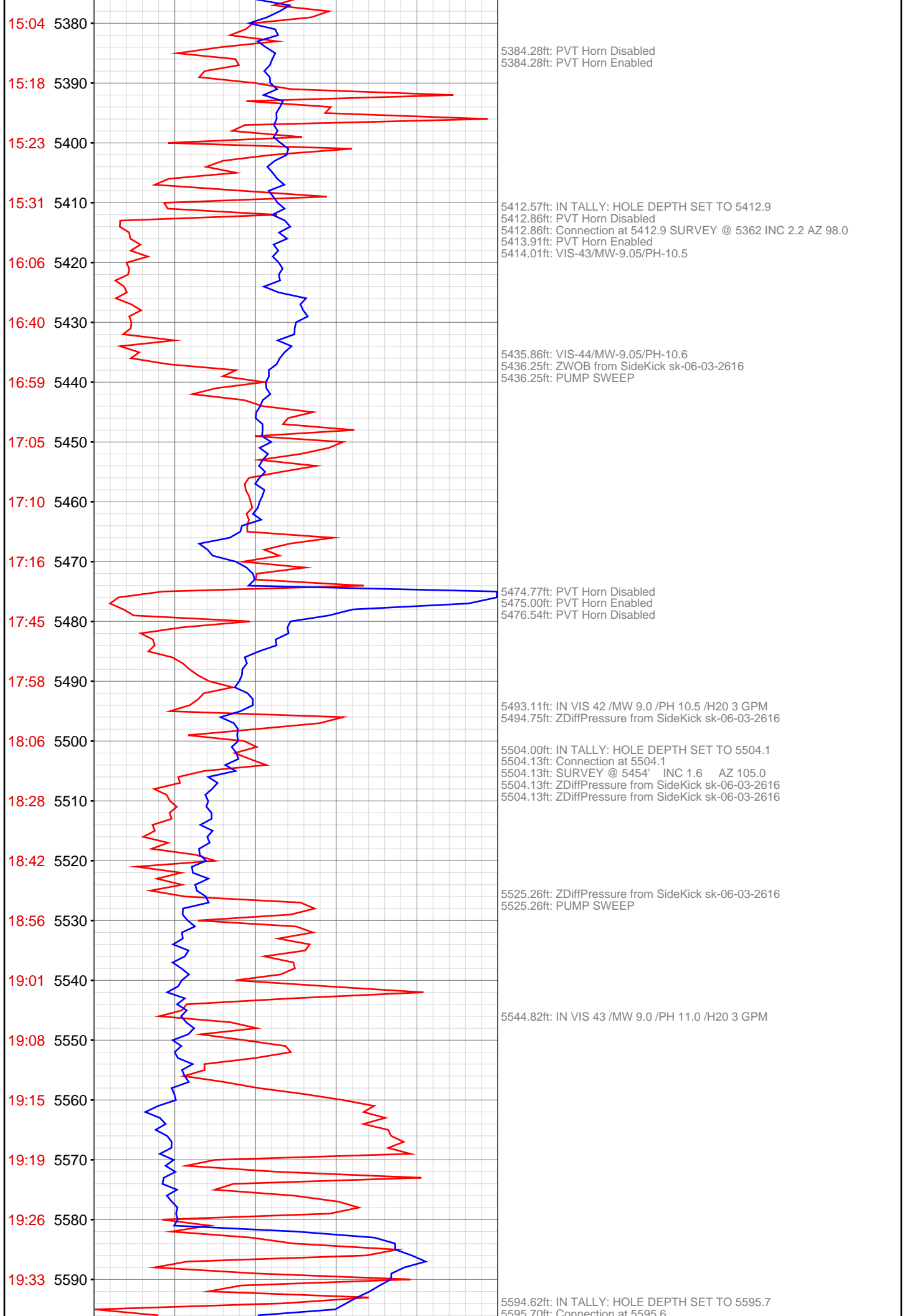


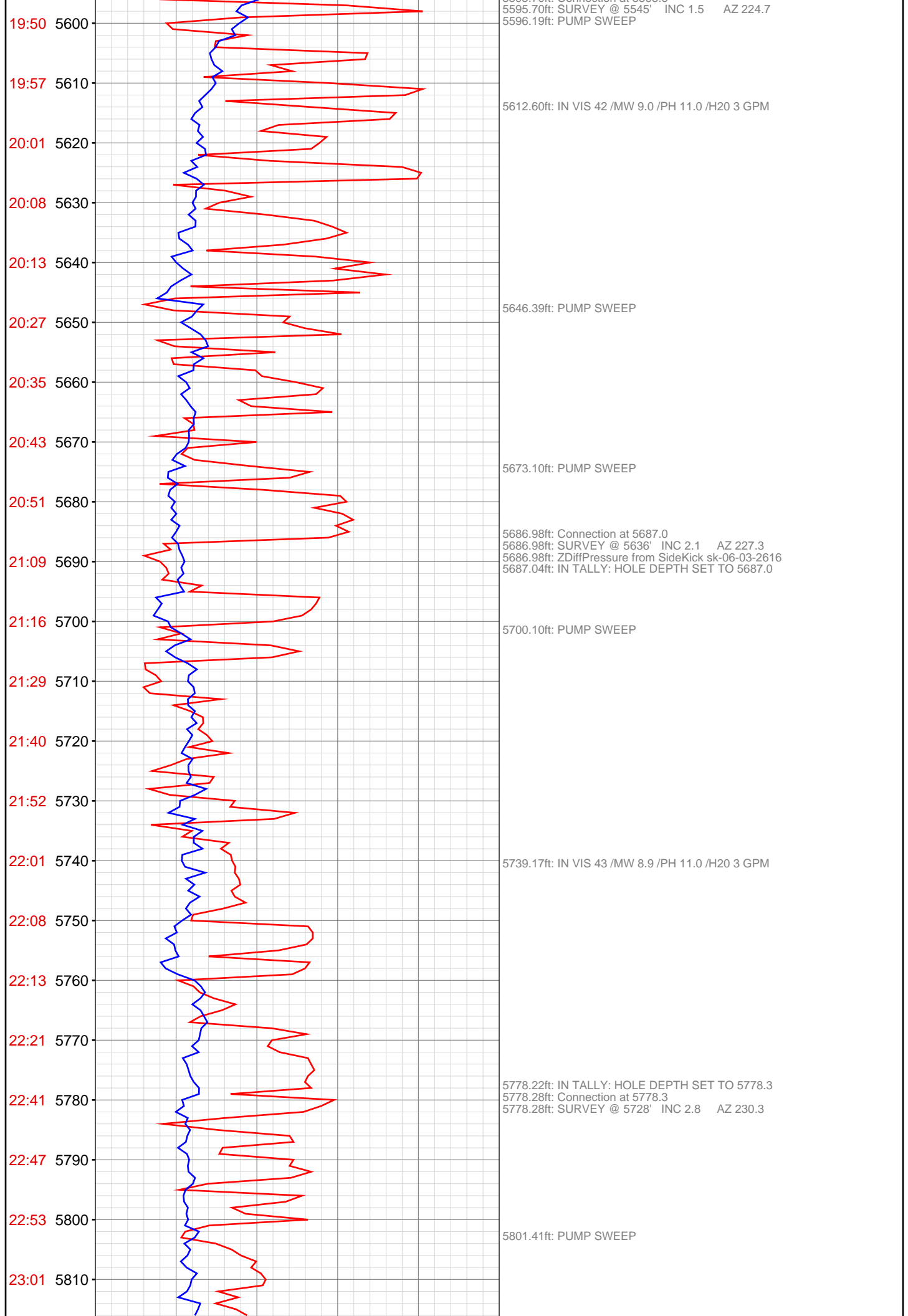


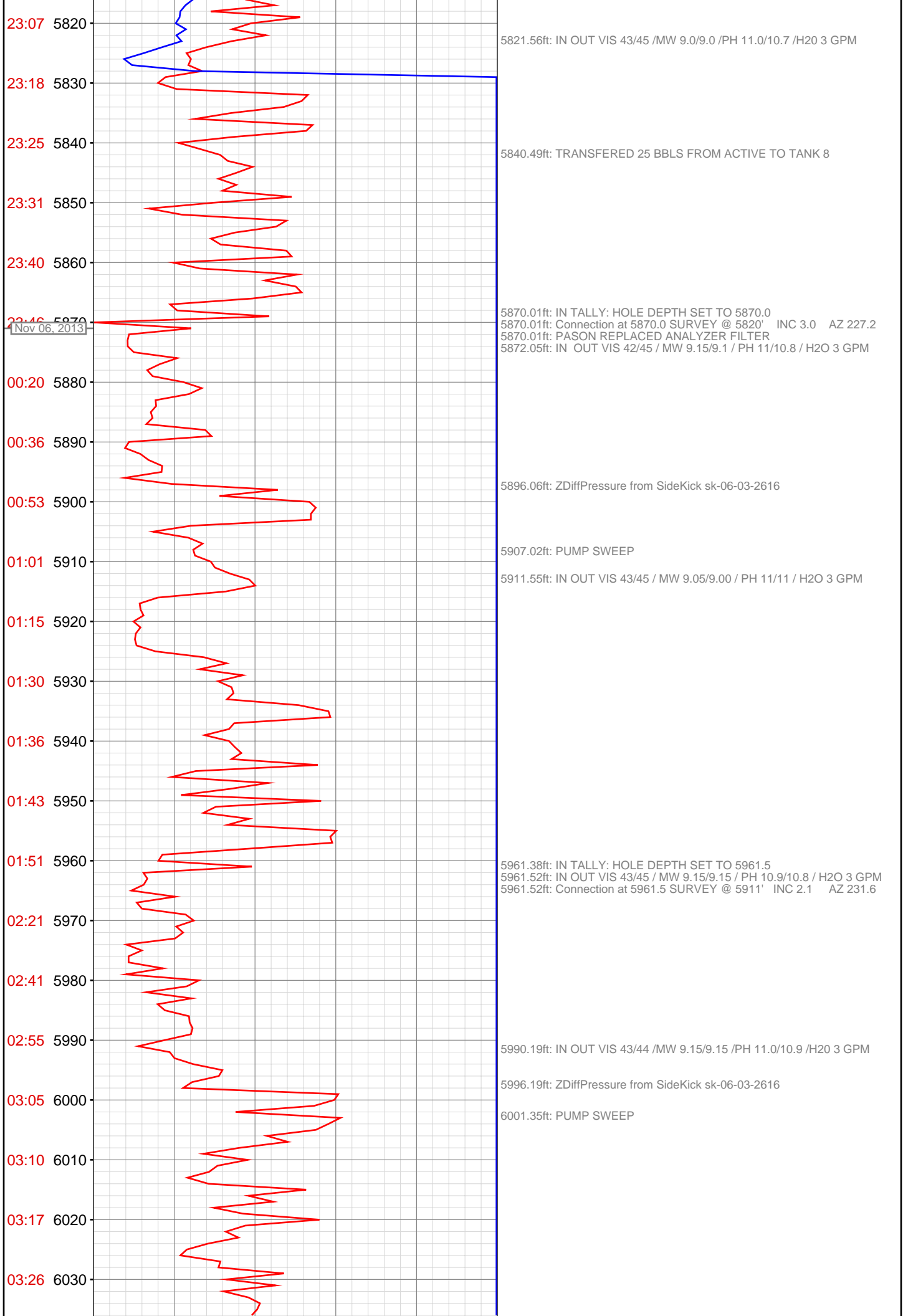


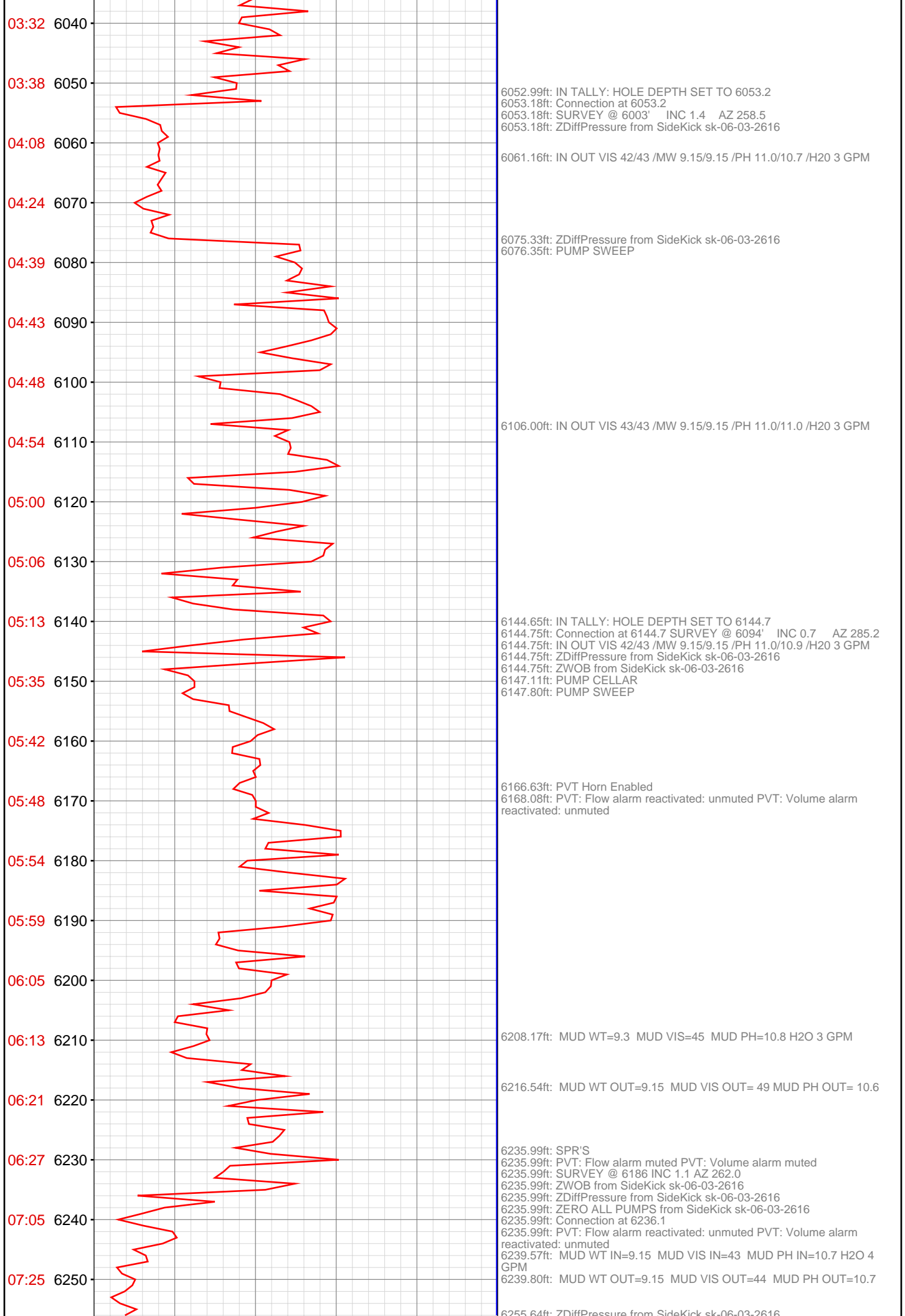


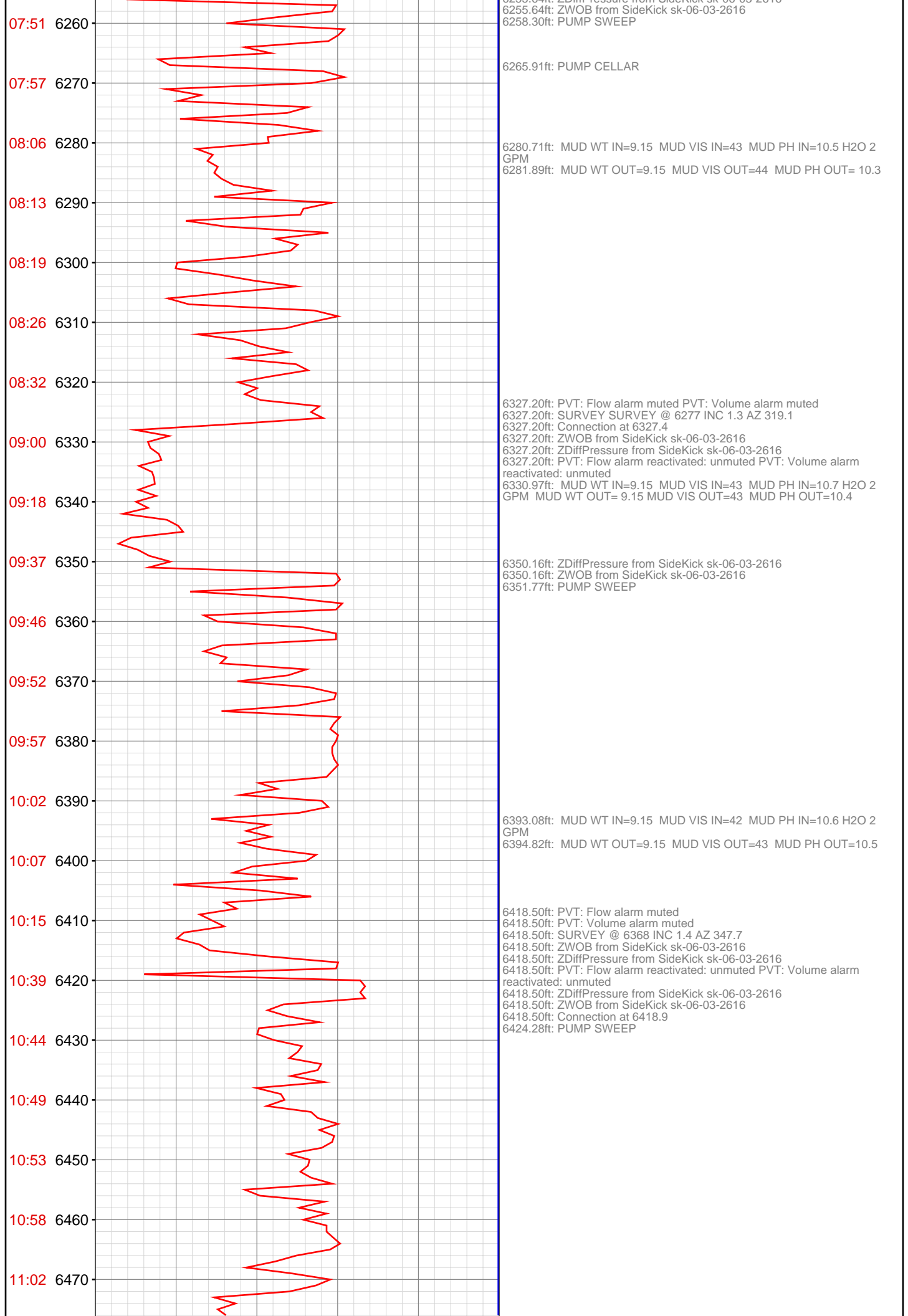




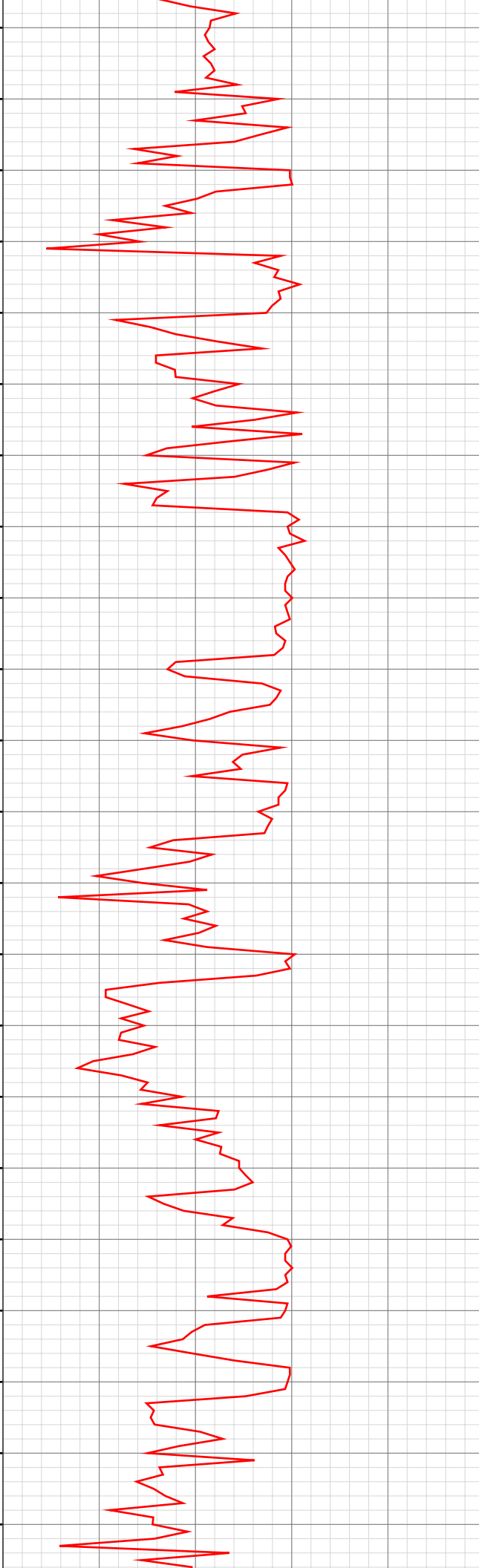








11:09 6480
11:15 6490
11:20 6500
11:27 6510
11:49 6520
11:56 6530
12:02 6540
12:07 6550
12:11 6560
12:16 6570
12:22 6580
12:26 6590
12:33 6600
13:05 6610
13:13 6620
13:23 6630
13:29 6640
13:34 6650
13:38 6660
13:43 6670
13:50 6680
13:58 6690



6483.46ft: MUD WT IN=9.2 MUD VIS IN=42 MUD PH IN=10.4 H2O 2 GPM
6485.30ft: MUD WT OUT=9.15 MUD VIS OUT=43 MUD PH OUT= 10.5

6510.01ft: PVT: Flow alarm muted
6510.01ft: SURVEY @ 6460 INC 0.6 AZ 321.5
6510.01ft: ZWOB from SideKick sk-06-03-2616
6510.01ft: ZDiffPressure from SideKick sk-06-03-2616
6510.01ft: Connection at 6510.6
6510.01ft: ZERO ALL PUMPS from SideKick sk-06-03-2616
6510.01ft: PVT: Flow alarm reactivated: unmuted
6513.88ft: PUMP SWEEP

6537.20ft: MUD WT IN= 9.2 MUD VIS IN=43 MUD PH IN=10.6 H2O 2 GPM
6538.91ft: MUD WT OUT=9.2 MUD VIS OUT=43 MUD PH OUT=10.4

6601.25ft: PVT: Flow alarm muted
6601.25ft: SURVEY @ 6552 INC 1.1 AZ 285.8 Connection at 6602.1
6601.25ft: ZDiffPressure from SideKick sk-06-03-2616
6601.25ft: ZWOB from SideKick sk-06-03-2616
6601.25ft: ZDiffPressure from SideKick sk-06-03-2616
6601.25ft: ZERO ALL PUMPS from SideKick sk-06-03-2616
6602.46ft: PUMP SWEEP
6608.66ft: PVT: Flow alarm reactivated: unmuted

6618.73ft: MUD WT IN=9.25 MUD VIS IN=43 MUD PH IN=10.7 H2O 2 GPM
MUD WT OUT=9.2 MUD VIS OUT=44 MUD PH OUT=10.4

6692.52ft: MUD WT IN=9.25 MUD VIS IN=43 MUD PH IN=10.8 H2O 2 GPM
6692.52ft: MUD WT OUT=9.25 MUD VIS OUT=45 MUD PH OUT=10.5
6692.52ft: PVT: Flow alarm muted
6692.52ft: SURVEY @ 6643 INC 1.6 AZ 281.2
6692.52ft: ZWOB from SideKick sk-06-03-2616
6692.52ft: ZDiffPressure from SideKick sk-06-03-2616
6692.52ft: ZDiffPressure from SideKick sk-06-03-2616
6692.52ft: PVT: Flow alarm reactivated: unmuted

6692.52ft: Connection at 6693.4
6692.52ft: ZERO ALL PUMPS from SideKick sk-06-03-2616
6694.62ft: PUMP SWEEP

6780.12ft: MUD WT IN=9.25 MUD VIS IN=43 MUD PH IN=10.6 H2O 2 GPM MUD WT OUT=9.25 MUD VIS OUT=44 MUD PH OUT=10.3
6784.06ft: RIG SERVICE
6784.06ft: PVT: Flow alarm muted
6784.06ft: SURVEY @ 6734 INC 1.5 AZ 282.3
6784.06ft: Connection at 6784.8
6784.06ft: ZDiffPressure from SideKick sk-06-03-2616
6784.06ft: ZWOB from SideKick sk-06-03-2616
6784.09ft: PVT: Flow alarm reactivated: unmuted

6800.75ft: FLOW CHECK
6800.75ft: RISER ON TANK 6 STUCK
6800.75ft: MUD WT IN=9.3 MUD VIS IN=42 MUD PH IN=10.5 H2O 2 GPM
6800.75ft: ZWOB from SideKick sk-06-03-2616
6800.75ft: ZDiffPressure from SideKick sk-06-03-2616
6800.75ft: MUD WT OUT=9.25 MUD VIS OUT=43 MUD PH OUT=10.4

6815.49ft: PASON BALL STUCK TANK 7

6857.91ft: MUD WT IN=9.35 MUD VIS IN=43 MUD PH IN=10.7 H2O 2 GPM
6859.25ft: MUD WT OUT=9.25 MUD VIS OUT=44 MUD PH OUT=10.4

6875.16ft: PVT: Flow alarm muted
6875.16ft: SURVEY @ 6826 INC 1.7 AZ 278.3
6875.16ft: Connection at 6876.3
6875.16ft: ZDiffPressure from SideKick sk-06-03-2616
6875.16ft: ZWOB from SideKick sk-06-03-2616
6875.16ft: PVT: Flow alarm reactivated: unmuted
6876.05ft: IN TALLY: HOLE DEPTH SET TO 6876.3
6893.57ft: PUMP SWEEP
6896.10ft: ZERO ALL PUMPS from SideKick sk-11-11-1355
6899.05ft: MUD WT IN=9.45 MUD VIS=40 MUD PH=9.5 H2O TRICKLE
6900.00ft: MUD WT OUT=9.4 MUD VIS OUT=43 MUD PH OUT=10.4
6900.43ft: VIS/33/MW-8.9/PH-9.4
6900.43ft: VIS/33/MW-8.9/PH-9.2
6900.43ft: VIS-35/MW-8.9/PH-9.0
6900.43ft: HOLE DEPTH CHANGED TO 0.0 FEET
6933.96ft: PUMP SWEEP
6941.34ft: ZERO ALL PUMPS from SideKick sk-11-11-1355
6945.08ft: PVT: Flow alarm muted PVT: Volume alarm muted
6945.08ft: SURVEY @ 6895' INC 1.9 AZ 265.1
6945.08ft: PUMP SWEEP
6945.08ft: ZERO ALL PUMPS from SideKick sk-11-11-1355
6945.08ft: PVT: Flow alarm reactivated: unmuted PVT: Volume alarm reactivated: unmuted
6945.08ft: PUMP SWEEP
6945.08ft: ZERO ALL PUMPS from SideKick sk-11-11-1355

