

LONQUIST & CO. LLC

PETROLEUM
ENGINEERS

ENERGY
ADVISORS

AUSTIN · HOUSTON · WICHITA · DENVER · CALGARY

July 22, 2019

Mr. William V. Jones,
District 4 Supervisor
New Mexico Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

**RE: WESTERN REFINING COMPANY, LP
SHELL STATE NO. 13 ANNUAL RADIOACTIVE TRACER SURVEY (2019)**

Mr. Jones,

Attached, please find the Radioactive Tracer Survey that was run on the Shell State No. 13 disposal well located at the Western Refining facility, Plant No. 4, 10 miles north of Jal, NM on July 9, 2019.

The Radioactive Tracer Survey indicates all fluid is going into the perforations. There was no indication of channeling or fluid migration behind the casing.

If you have any questions or require any additional information, please contact me at (832) 797-3238.

Sincerely,



Krystyn Strong
Petroleum Engineer
Lonquist & Co., LLC
(713) 987-4292
(832) 797-3238
krystyn@lonquist.com

Submit 1 Copy To Appropriate District Office
District I – (575) 393-6161
1625 N. French Dr., Hobbs, NM 88240
District II – (575) 748-1283
811 S. First St., Artesia, NM 88210
District III – (505) 334-6178
1000 Rio Brazos Rd., Aztec, NM 87410
District IV – (505) 476-3460
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources

Form C-103
Revised July 18, 2013

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

| |
|---|
| WELL API NO. 30-025-10920 |
| 5. Indicate Type of Lease STATE <input checked="" type="checkbox"/> FEE <input type="checkbox"/> |
| 6. State Oil & Gas Lease No. |
| 7. Lease Name or Unit Agreement Name Shell State |
| 8. Well Number 13 |
| 9. OGRID Number 248440 |
| 10. Pool name or Wildcat 96108 SWD; Grayburg |

| | |
|---|--|
| SUNDRY NOTICES AND REPORTS ON WELLS (DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.) | |
| 1. Type of Well: Oil Well <input type="checkbox"/> Gas Well <input checked="" type="checkbox"/> Other | |
| 2. Name of Operator Western Refining Company, LP | |
| 3. Address of Operator PO Box 1345 Jal, NM 88252 | |
| 4. Well Location Unit Letter <u>L</u> : <u>1980</u> feet from the <u>S</u> line and <u>660</u> feet from the <u>W</u> line Section <u>32</u> Township <u>23S</u> Range <u>37E</u> NMPM Lea County | |
| 11. Elevation (Show whether DR, RKB, RT, GR, etc.) | |

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

| NOTICE OF INTENTION TO: | | SUBSEQUENT REPORT OF: | |
|--|---|--|--|
| PERFORM REMEDIAL WORK <input type="checkbox"/> | PLUG AND ABANDON <input type="checkbox"/> | REMEDIAL WORK <input type="checkbox"/> | ALTERING CASING <input type="checkbox"/> |
| TEMPORARILY ABANDON <input type="checkbox"/> | CHANGE PLANS <input type="checkbox"/> | COMMENCE DRILLING OPNS. <input type="checkbox"/> | P AND A <input type="checkbox"/> |
| PULL OR ALTER CASING <input type="checkbox"/> | MULTIPLE COMPL <input type="checkbox"/> | CASING/CEMENT JOB <input type="checkbox"/> | |
| DOWNHOLE COMMINGLE <input type="checkbox"/> | | | |
| CLOSED-LOOP SYSTEM <input type="checkbox"/> | | | |
| OTHER: <input checked="" type="checkbox"/> | | OTHER: <input type="checkbox"/> | |

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 19.15.7.14 NMAC. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

The annual radioactive tracer survey will be conducted on Tuesday, 7/9/2019, in order to confirm all fluids are going into the perforated interval.

Spud Date:

Rig Release Date:

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE Will H. George TITLE Consulting Engineer DATE 6/28/19
Type or print name Will George E-mail address: will@lonquist.com PHONE: 512-600-0718

For State Use Only

APPROVED BY: _____ TITLE _____ DATE _____
Conditions of Approval (if any): _____

Submit 1 Copy To Appropriate District
Office
District I – (575) 393-6161
1625 N. French Dr., Hobbs, NM 88240
District II – (575) 748-1283
811 S. First St., Artesia, NM 88210
District III – (505) 334-6178
1000 Rio Brazos Rd., Aztec, NM 87410
District IV – (505) 476-3460
1220 S. St. Francis Dr., Santa Fe, NM
87505

State of New Mexico
Energy, Minerals and Natural Resources

Form C-103
Revised July 18, 2013

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

| |
|---|
| WELL API NO. 30-025-10920 |
| 5. Indicate Type of Lease STATE <input checked="" type="checkbox"/> FEE <input type="checkbox"/> |
| 6. State Oil & Gas Lease No. |
| 7. Lease Name or Unit Agreement Name Shell State |
| 8. Well Number 13 |
| 9. OGRID Number 248440 |
| 10. Pool name or Wildcat 96108 SWD; Grayburg |

| | |
|--|--|
| SUNDRY NOTICES AND REPORTS ON WELLS (DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.) | |
| 1. Type of Well: Oil Well <input type="checkbox"/> Gas Well <input checked="" type="checkbox"/> Other - SWD | |
| 2. Name of Operator Western Refining Company, LP | |
| 3. Address of Operator PO Box 1345 Jal, NM 88252 | |
| 4. Well Location Unit Letter <u>L</u> : <u>1980</u> feet from the <u>S</u> line and <u>660</u> feet from the <u>W</u> line Section <u>32</u> Township <u>23S</u> Range <u>37E</u> NMPM Lea County | |
| 11. Elevation (Show whether DR, RKB, RT, GR, etc.) | |

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

| NOTICE OF INTENTION TO: | | SUBSEQUENT REPORT OF: | |
|--|---|---|--|
| PERFORM REMEDIAL WORK <input type="checkbox"/> | PLUG AND ABANDON <input type="checkbox"/> | REMEDIAL WORK <input type="checkbox"/> | ALTERING CASING <input type="checkbox"/> |
| TEMPORARILY ABANDON <input type="checkbox"/> | CHANGE PLANS <input type="checkbox"/> | COMMENCE DRILLING OPNS. <input type="checkbox"/> | P AND A <input type="checkbox"/> |
| PULL OR ALTER CASING <input type="checkbox"/> | MULTIPLE COMPL <input type="checkbox"/> | CASING/CEMENT JOB <input type="checkbox"/> | |
| DOWNHOLE COMMINGLE <input type="checkbox"/> | | | |
| CLOSED-LOOP SYSTEM <input type="checkbox"/> | | | |
| OTHER: <input type="checkbox"/> | | OTHER: Annual Radioactive Tracer Survey <input checked="" type="checkbox"/> | |

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 19.15.7.14 NMAC. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

The annual radioactive tracer survey was conducted on Tuesday, 7/9/2019, and indicated all fluid is going into the perforated interval. There was no indication of channeling or fluid migration behind the casing. The following activities were performed during this operation:

1. MIRU Wireline
2. Tag TD @ 3,924'
3. Record base density log from TD to 2,500'
4. Inject radioactive tracer material and follow downhole into perforations
5. Perform channel check
6. Record post survey density log
7. RDMO Wireline

Spud Date:

Rig Release Date:

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE Krystyn Strong TITLE Consulting Engineer DATE 7/11/2019
Type or print name Krystyn Strong E-mail address: krystyn@lonquist.com PHONE: 713-987-4292
For State Use Only

APPROVED BY: _____ TITLE _____ DATE _____
Conditions of Approval (if any): _____



RADIOACTIVE TRACER SURVEY

[illegible]

<<< Fold Here >>>

All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions set out in our current Price Schedule.

Comments

THANKS FOR USING QES WIRELINE!
YOUR CREW WAS K.DEWAR & G. CASTRO
WELL HEAD CONNECTION 2" LP



R/A TRACER LOG INTERPRETATION

07/17/2019

PLANT: WESTERN REFINING

C/O: LONQUIST

WELL NAME: SHELL STATE 13 SWD # 1

RE: Radioactive Tubing & Packer Survey ran on 07/09/2019

A Pre Base Log was run from 3933' to 2500' to detect and record background gamma counts.

Iodine 131 was then ejected at a depth of 2650' and pumped down the 2 7/8" Slimhole casing and into the permitted interval. Overlapping logging passes tracked the R/A tracer material as it moved down in the wellbore.

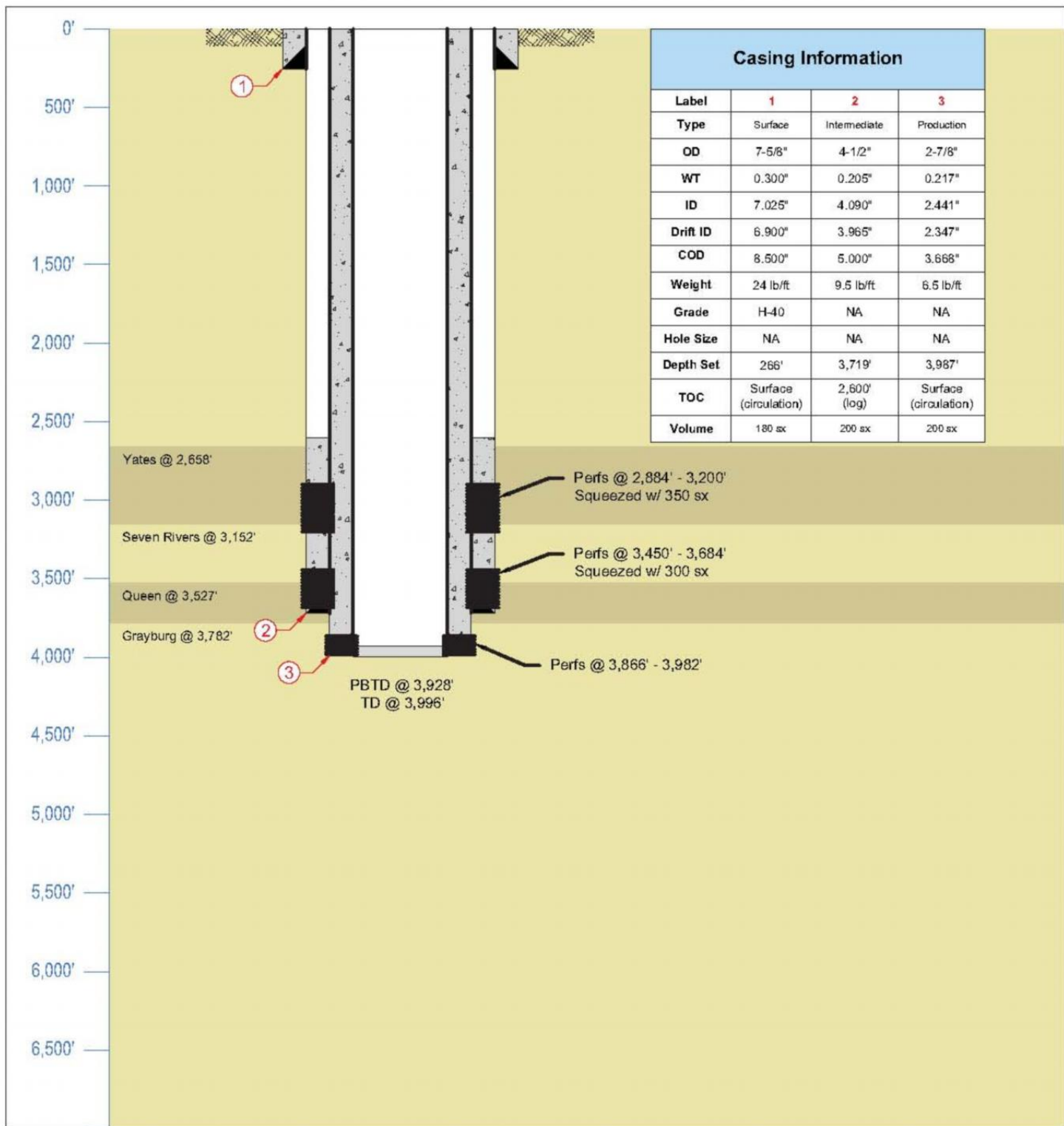
The flow profile log was then repeated and this survey also showed R/A material going out into the permitted interval.

A Stationary Time Drive surveys were run with the tool at 3850'. No indications of upward migration were recorded.

A Post Base log was then run from 3940' to 2500' and noted that all R/A material was flushed out of the wellbore into the permitted interval.

A handwritten signature in black ink, reading 'John Croce'.

John Croce
Industrial Logging Department
4119 Chance Ln.
Rosharon, TX 77583



| | | | | |
|--|------------------------------|----------------------------|----------------------------|----------------|
| <div>LONQUIST</div> <div>FIELD SERVICE</div> <div>AUSTIN WICHITA HOUSTON CALGARY</div> | Western Refining Company, LP | | Shell State No. 13 | |
| | Country: USA | State/Province: New Mexico | County/Parish: Lea | |
| | Location: | Site: | Survey/STR: 32, 23-S, 37-E | |
| | API No: 30-025-10920 | Field: Langlie Mattix | Well Type/Status: SWD | |
| | Texas License F-9147 | State ID No: | Project No: | Date: 11/16/17 |
| 3345 Bee Cave Road, Suite 201 Austin, Texas 78746 Tel: 512.732.9812 Fax: 512.732.9816 | Drawn: WHG | Reviewed: ETB | Approved: ETB | |
| | Rev No: 1 | Notes: | | |

C:\USERS\WGEORGE\Documents\1. WILL DOCS\VF1310 WESTERN REFINING SHELL STATE No. 13 SWD\WBS\WBS SHELL STATE No. 13 20171116.DWG, 11/16/2017 10:20:06 AM, WGEORGE, AutoCAD PDF (GENERAL DOCUMENTATION).PC3

| Sensor | Offset (ft) | Schematic | Description | Length (ft) | O.D. (in) | Weight (lb) |
|--------|-------------|-----------|-------------|-------------|-----------|-------------|
| | | | | | | |

Radioactive Tracer Summary Sheet

WELL INFORMATION

| | |
|---------------------|----------------------|
| DATE: | 7/9/19 |
| COMPANY: | WESTERN REFINING |
| WELL NAME: | SHELL STATE 13 SWD 1 |
| PLANT LOCATION: | LANGLIE MATTIX |
| COUNTY or PARISH: | LEA |
| STATE of TEST: | NEW MEXICO |
| EQUIPMENT LOCATION: | ROSHARON |
| LOGGING ENGINEER: | KURT DEWAR |



WELL CONNECTION
2" LP

[illegible]

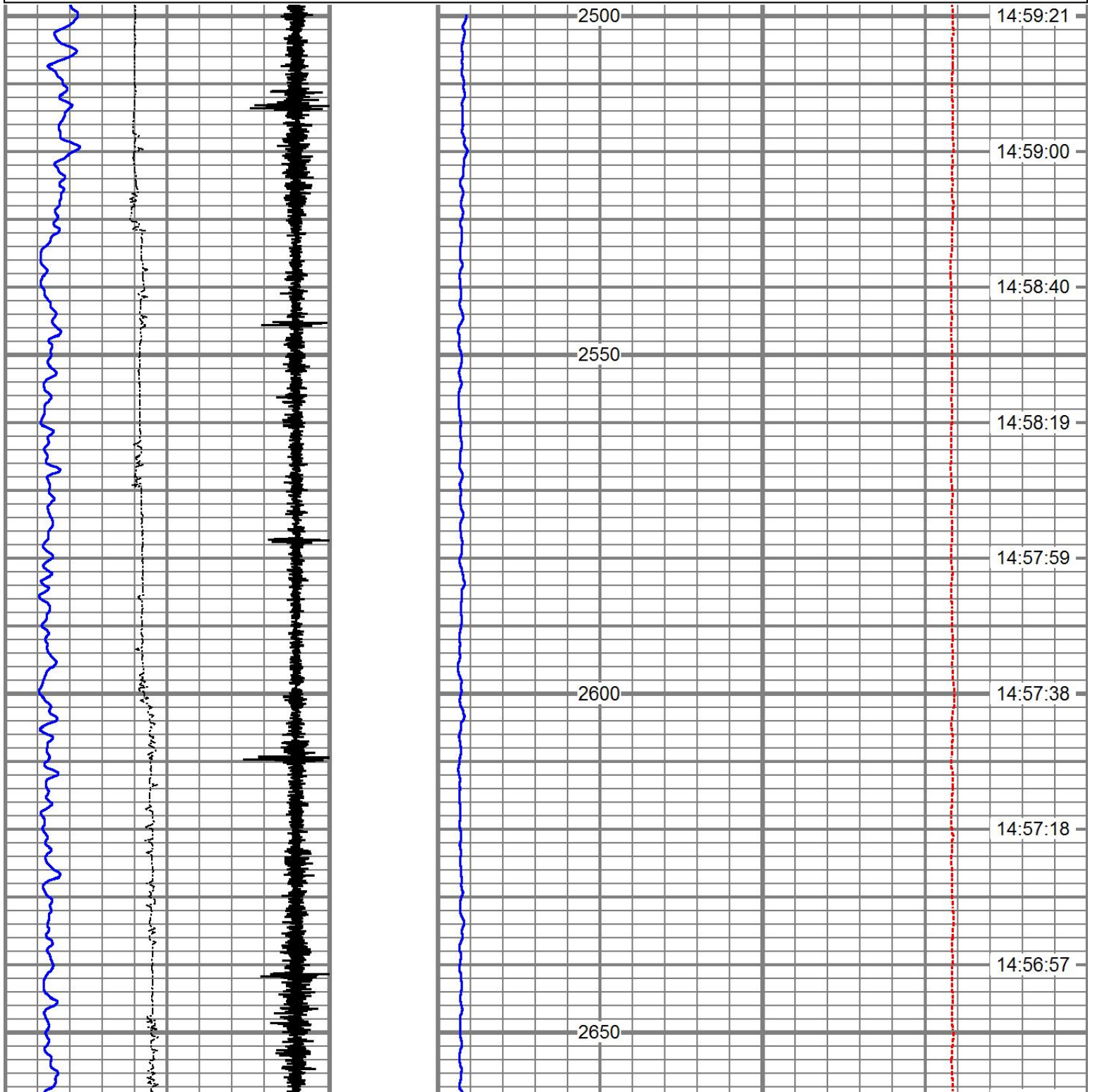


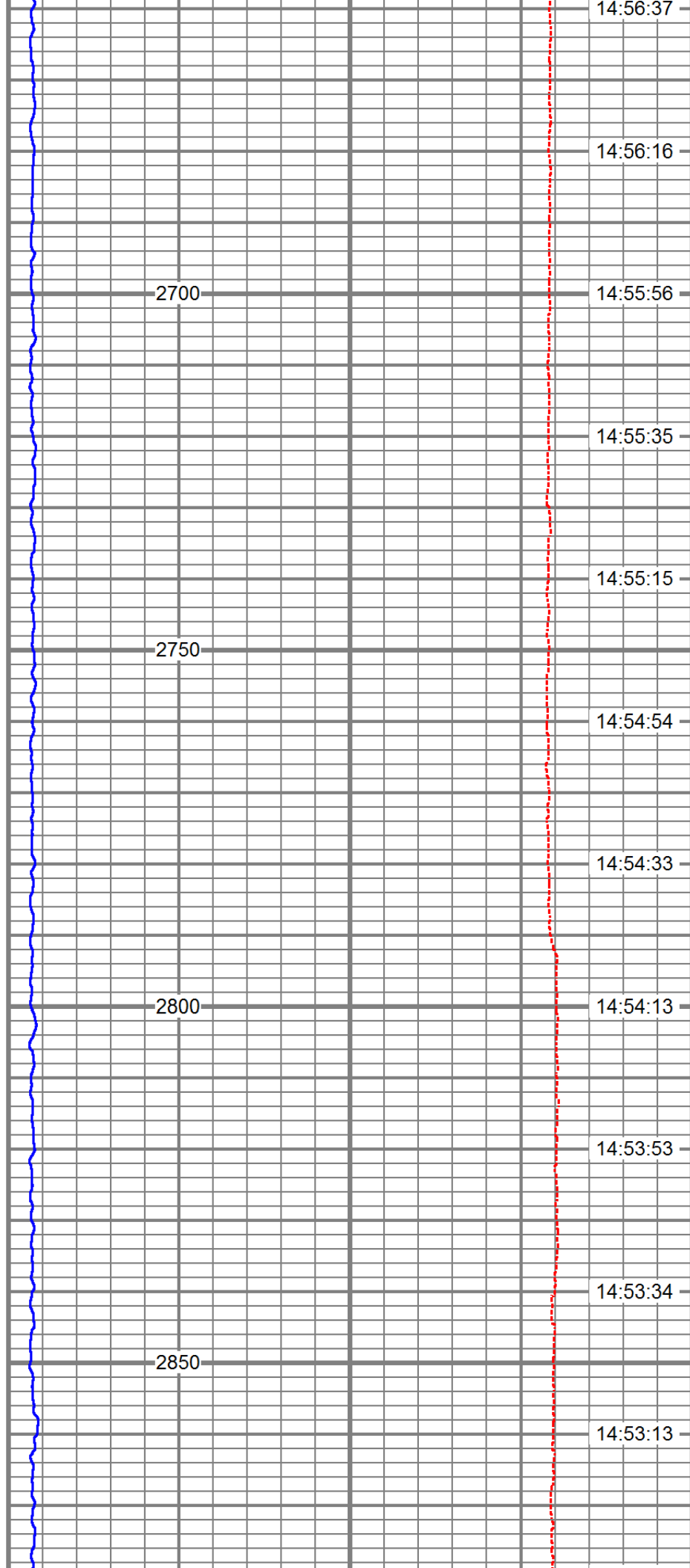
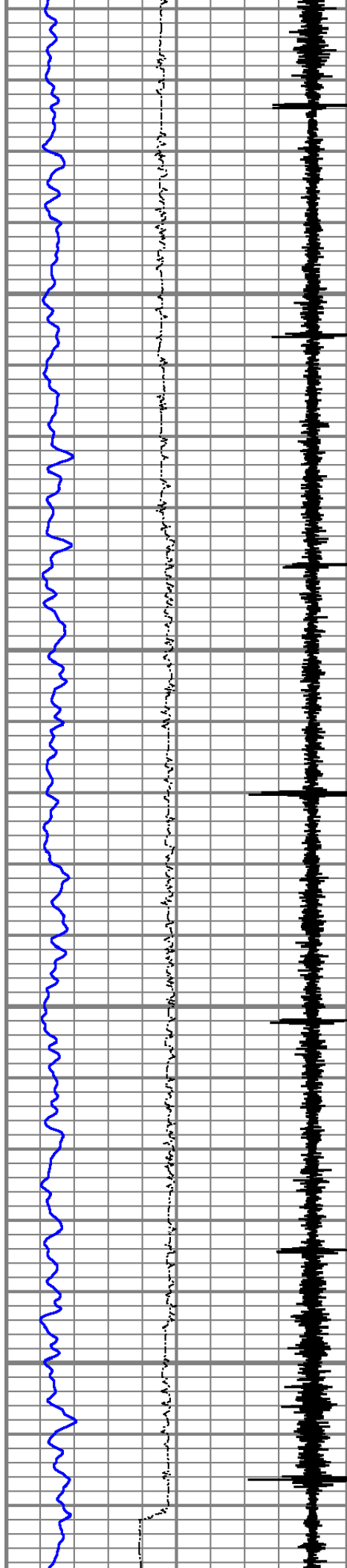
RUN # 1

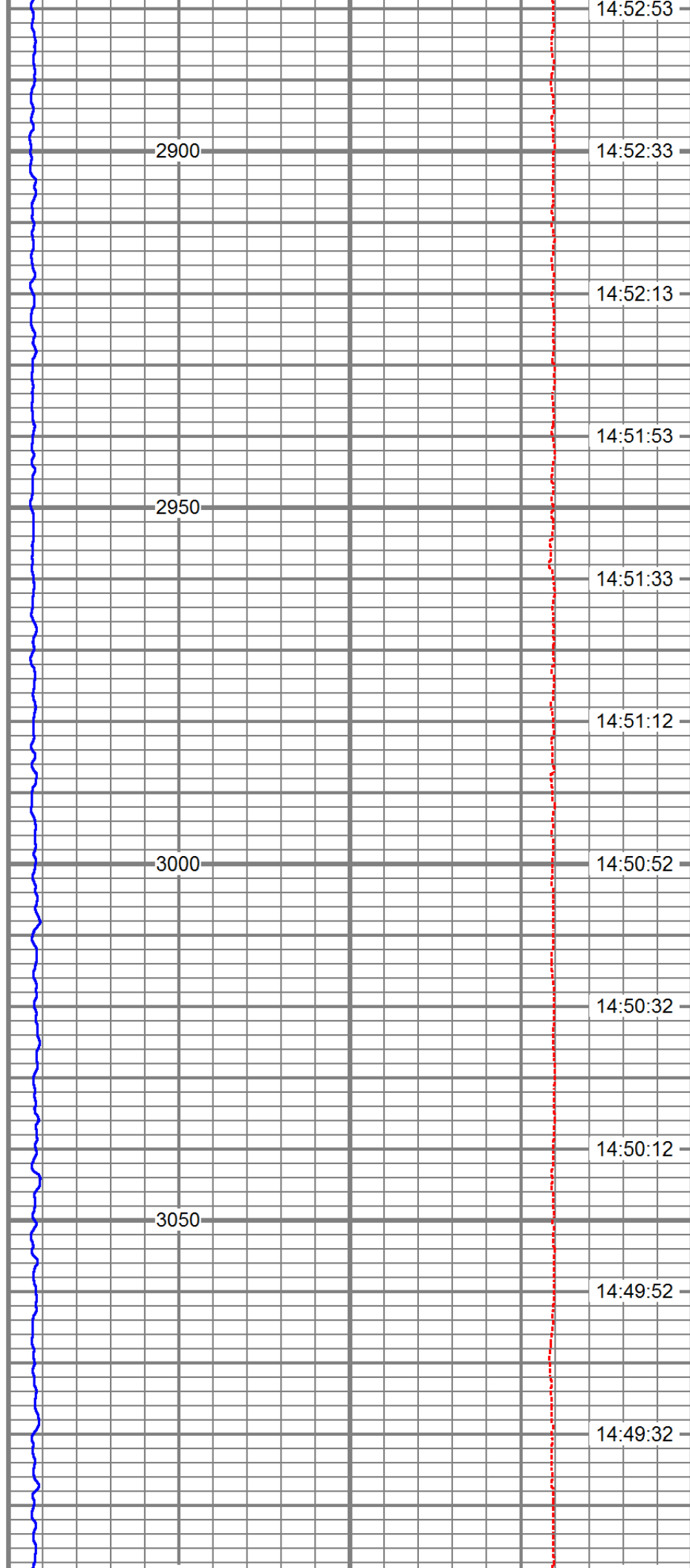
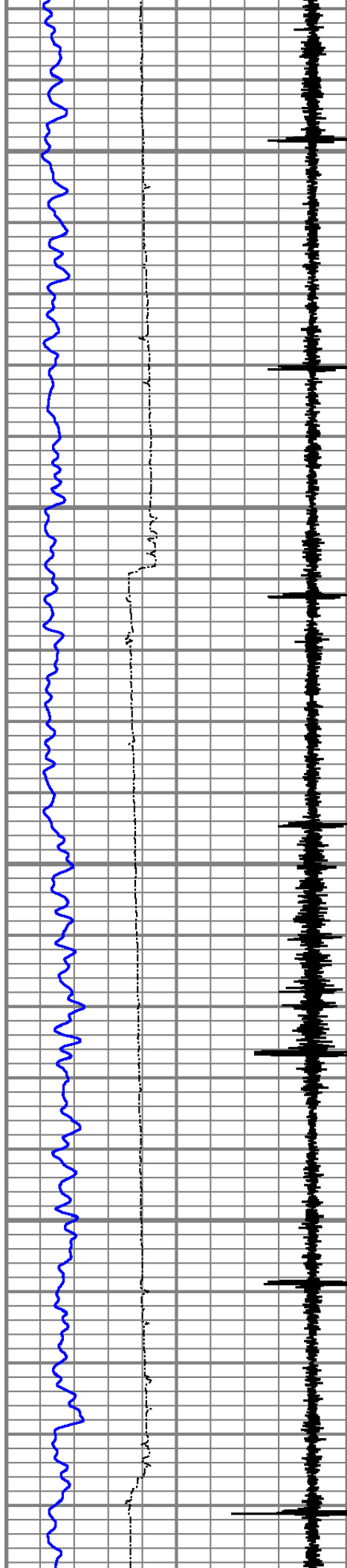
PRE SURVEY BASE LOG
0 GPM @ 0 PSI

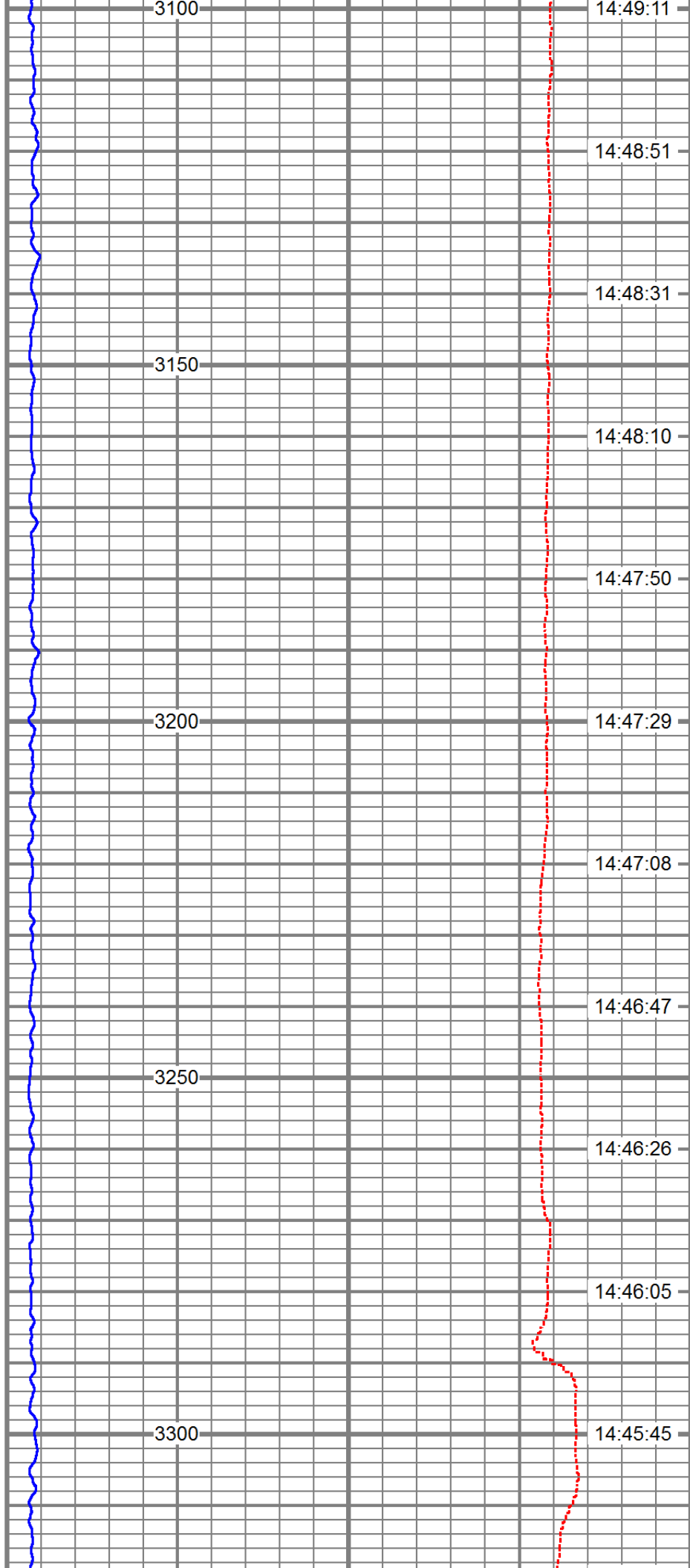
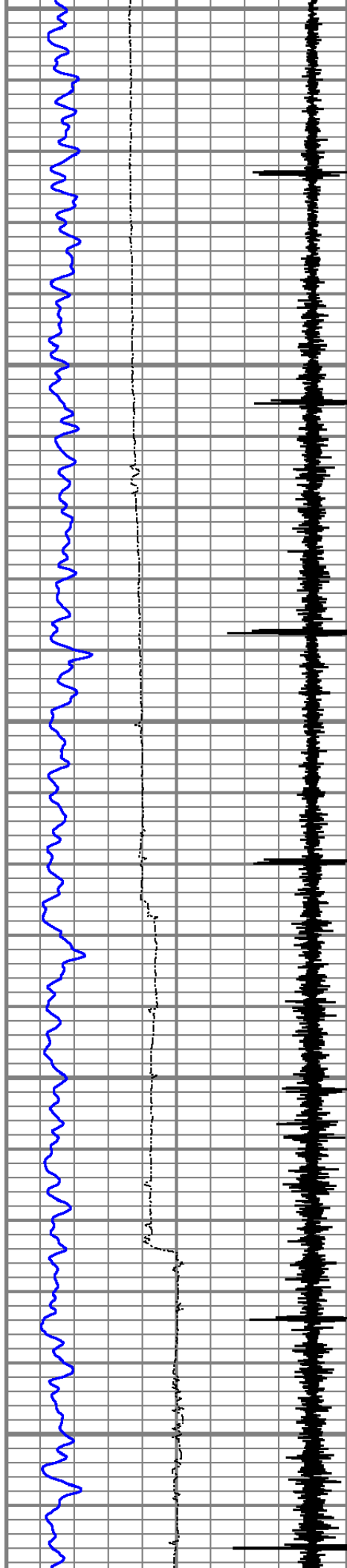
Database File western refshellstate13swd1 rat 2019.db
Dataset Pathname prebse/pass1
Presentation Format tracergw
Dataset Creation Tue Jul 09 14:34:33 2019
Charted by Depth in Feet scaled 1:240

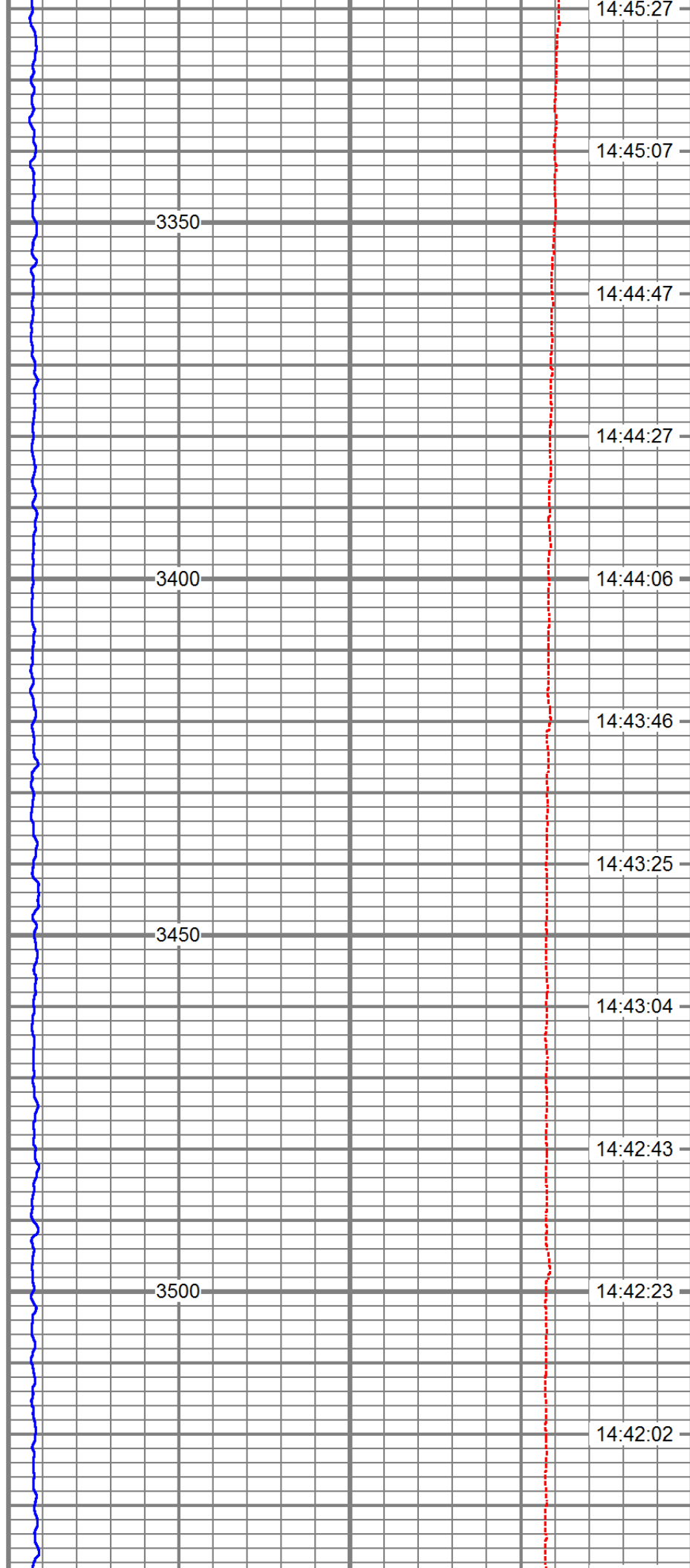
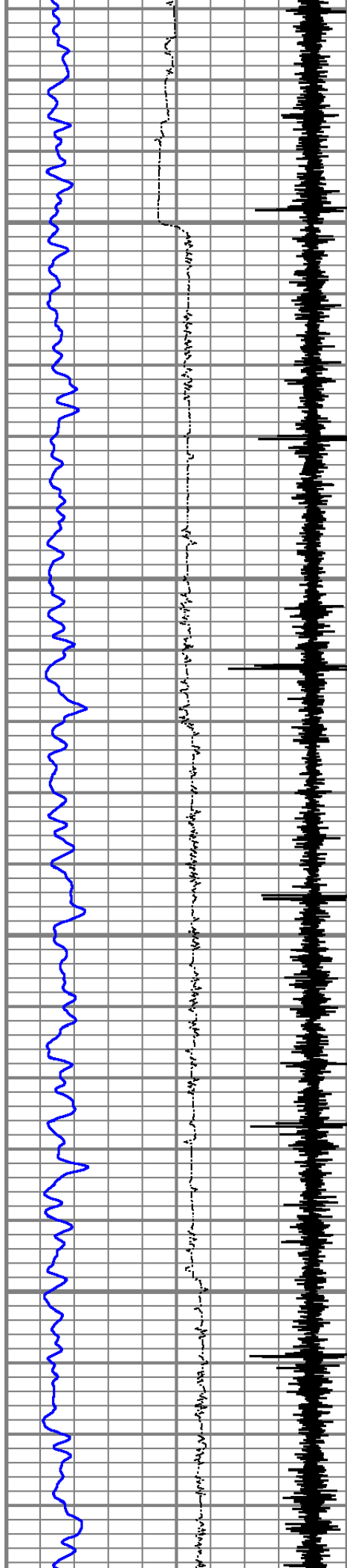
| | | | | | |
|-----|-------------------|------|---|-------------------|-----------|
| -18 | CCL | 2 | 0 | Lower Det. (GAPI) | 1000 |
| 0 | LTEN (lb) | 1000 | 0 | LSPD (ft/min) | -100 |
| 0 | UPPER DET. (GAPI) | 100 | | | TOD (sec) |

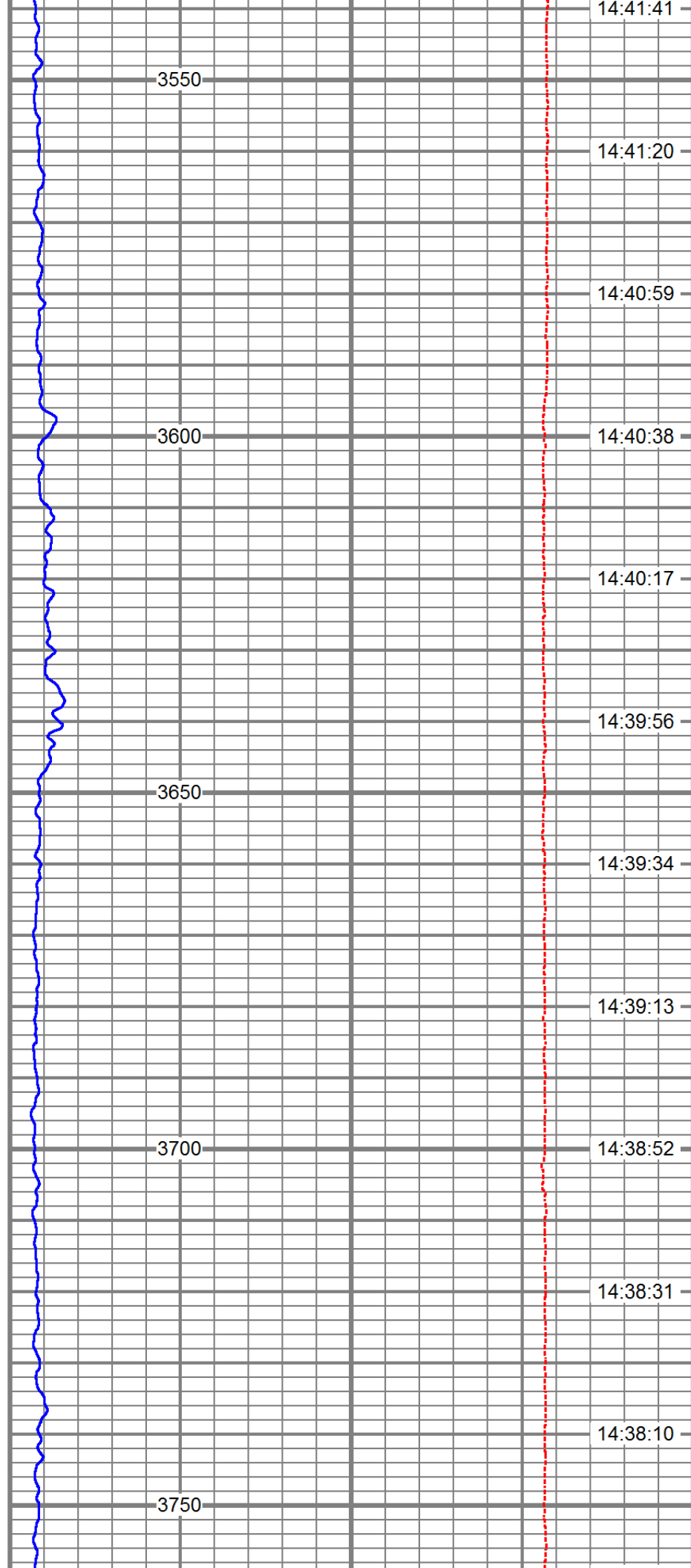
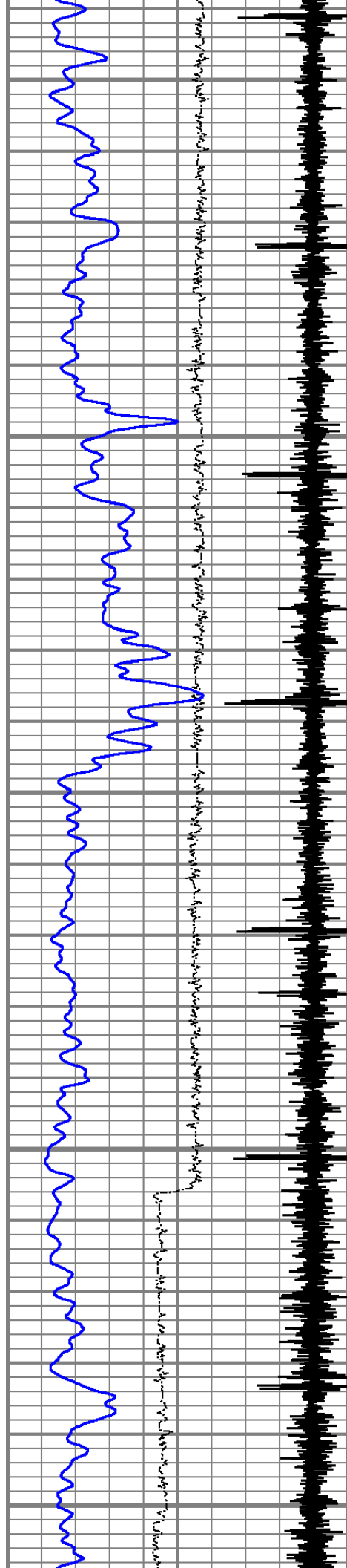


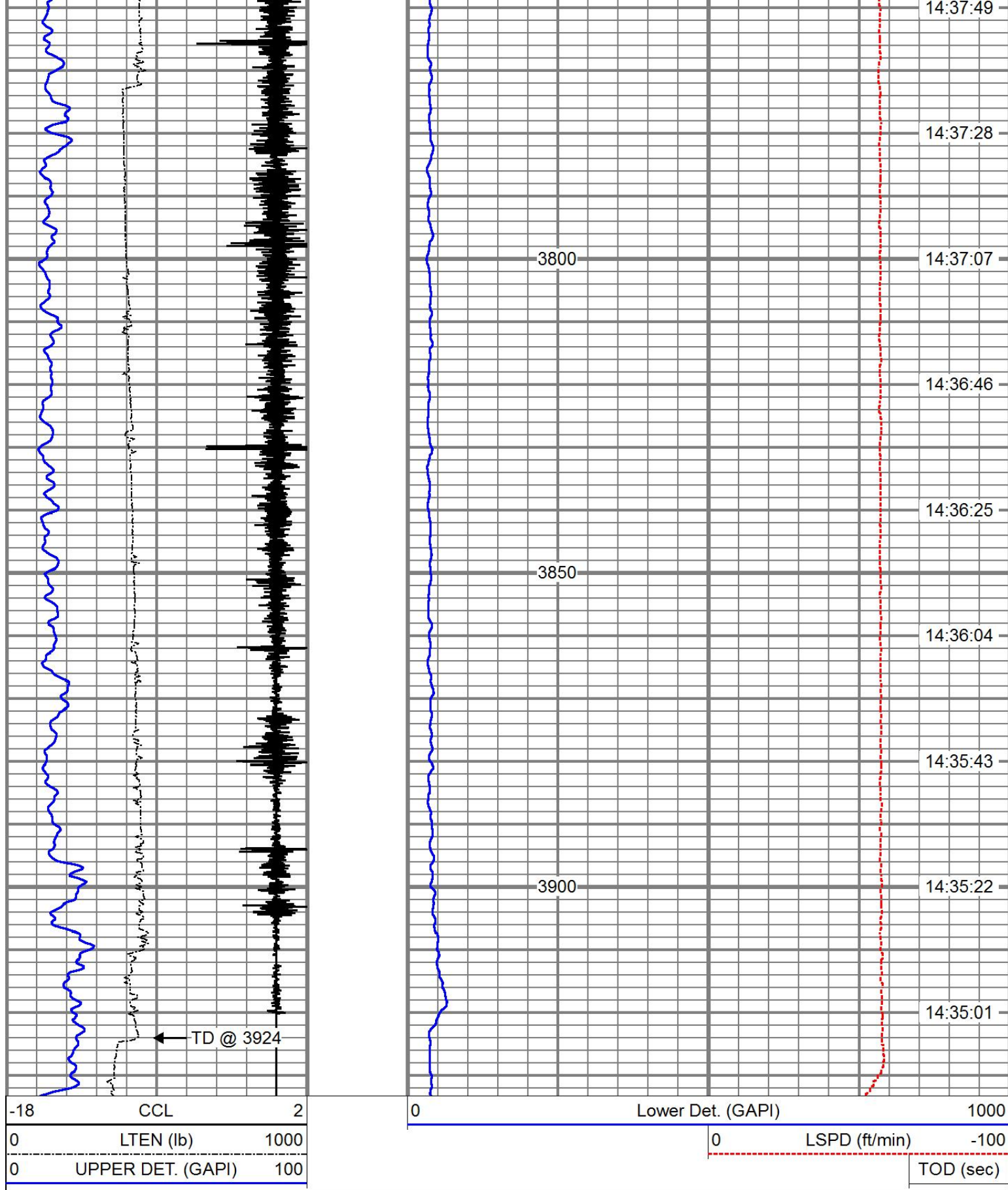








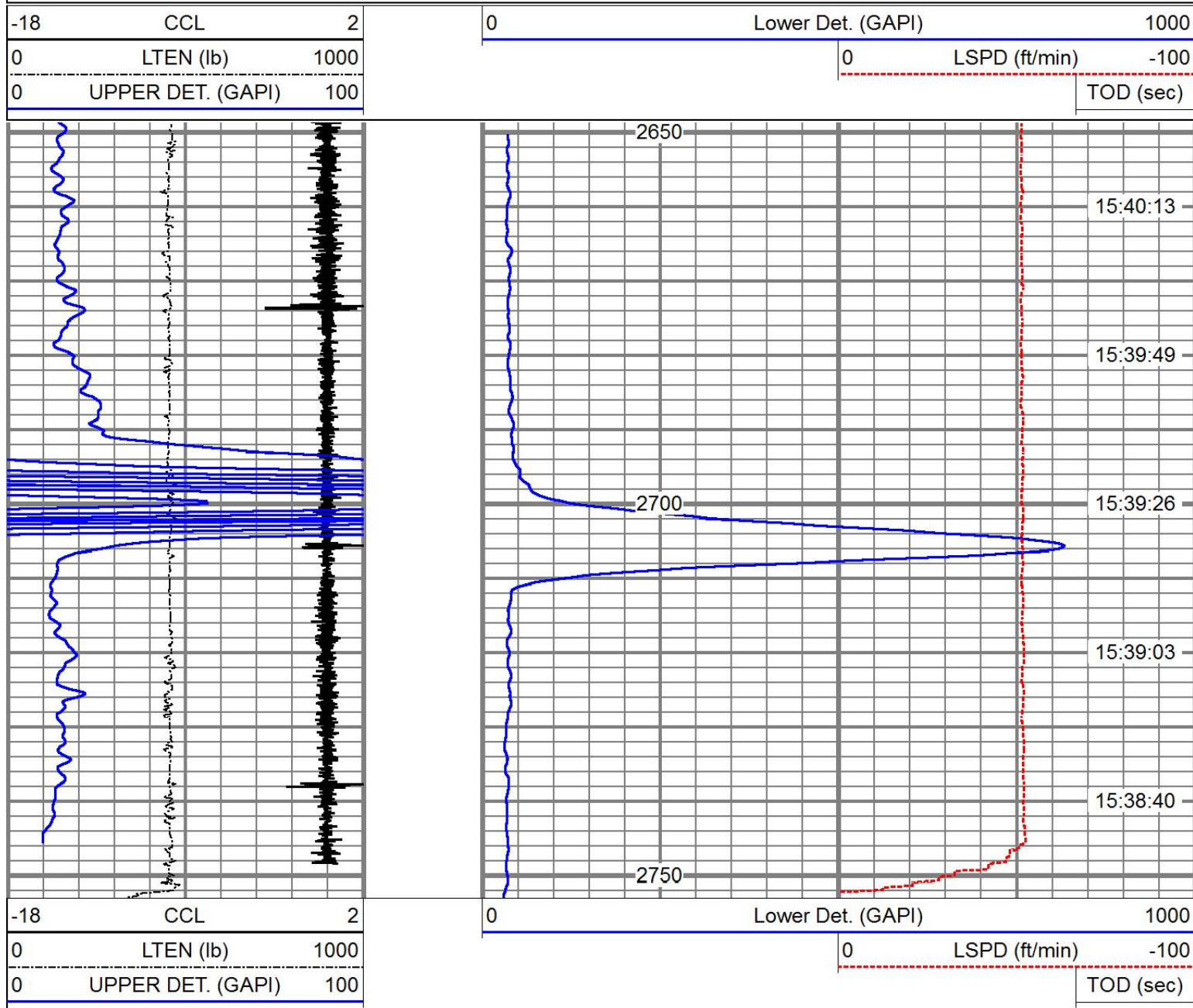




RUN # 2

SLUG # 1 CHASE # 1 EJECT @ 2650
16 GPM @ 0 PSI

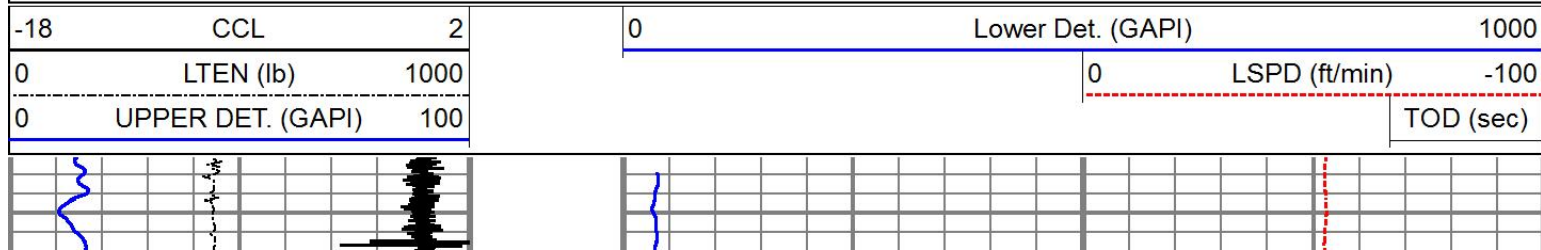
Dataset Pathname slug1/pass1
 Presentation Format tracergw
 Dataset Creation Tue Jul 09 15:38:23 2019
 Charted by Depth in Feet scaled 1:240

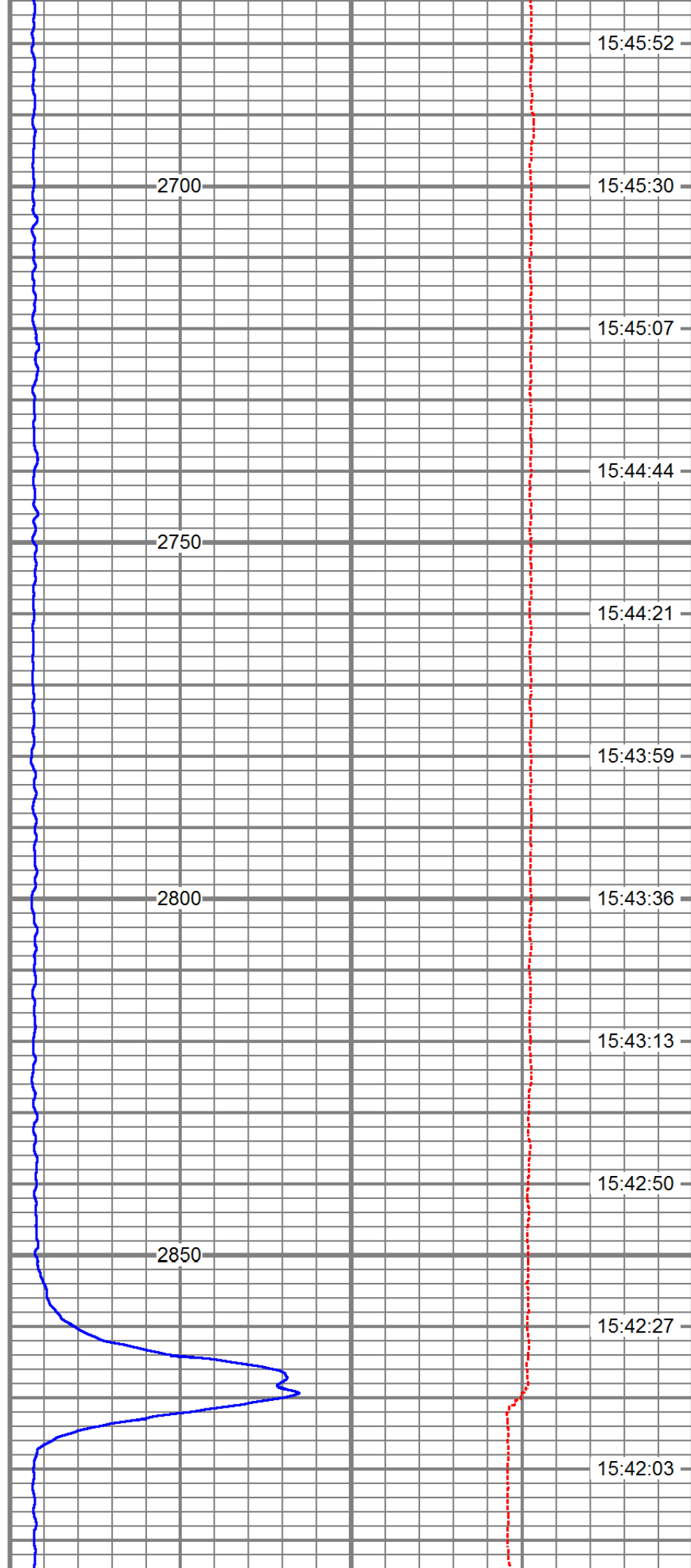
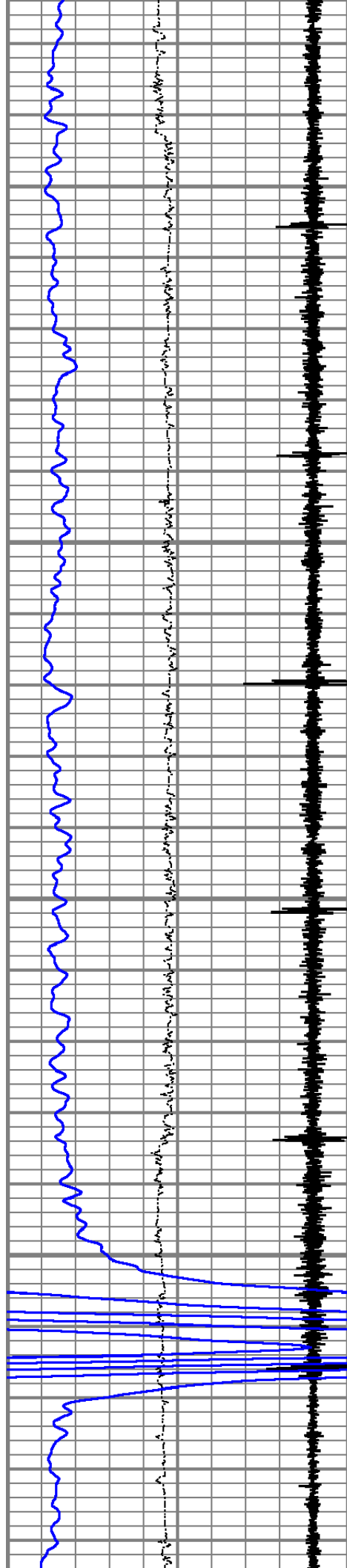


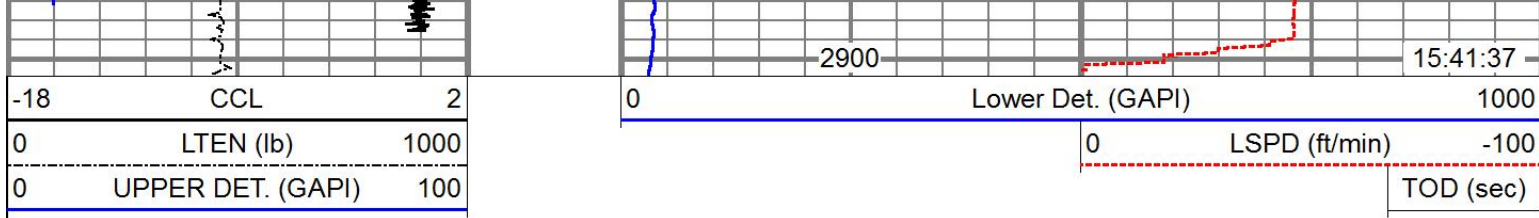
RUN # 3

SLUG # 1 CHASE # 2
 16 GPM @ 0 PSI

Database File western refshellstate13swd1 rat 2019.db
 Dataset Pathname slug1/pass2
 Presentation Format tracergw
 Dataset Creation Tue Jul 09 15:41:32 2019
 Charted by Depth in Feet scaled 1:240





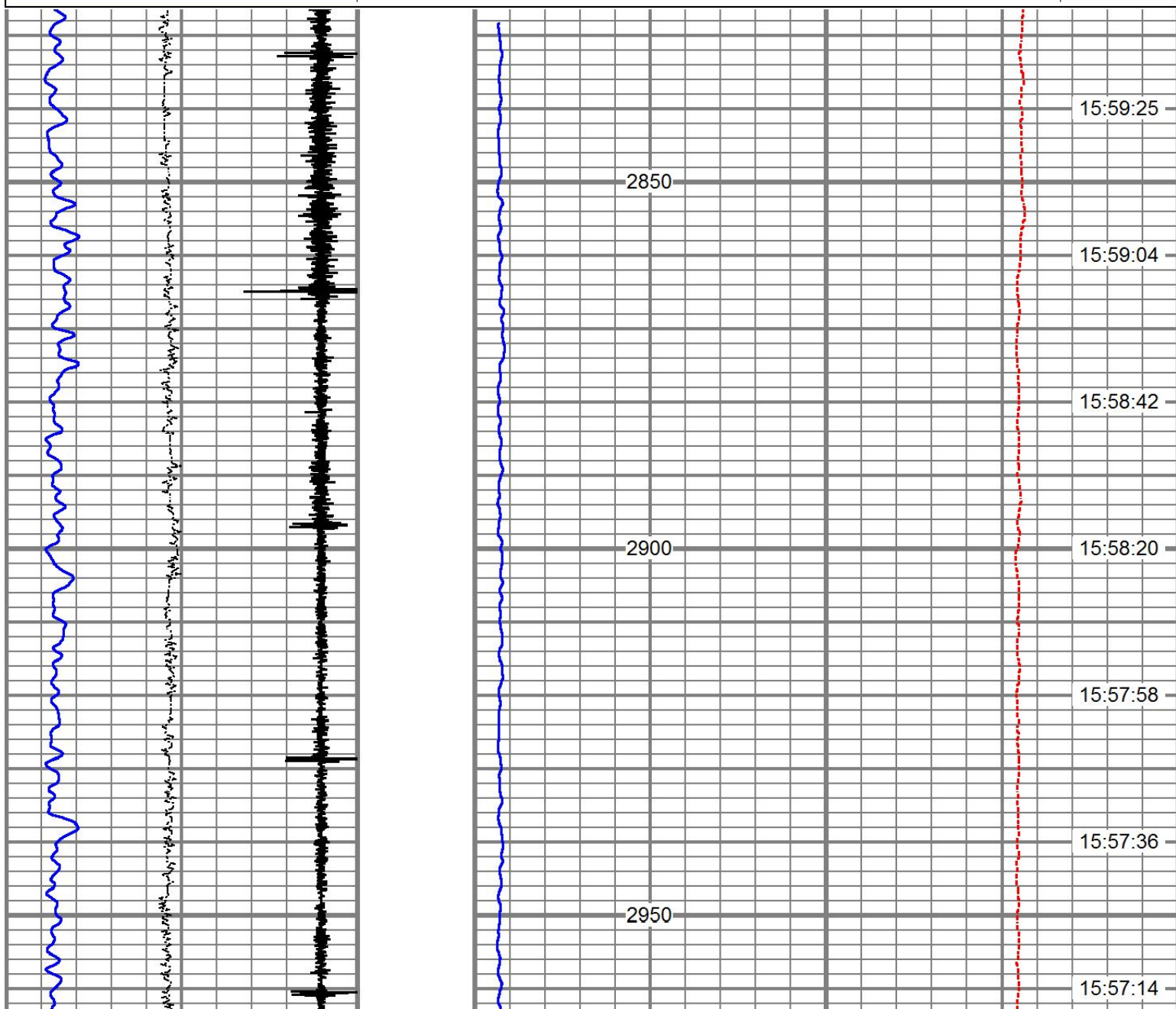
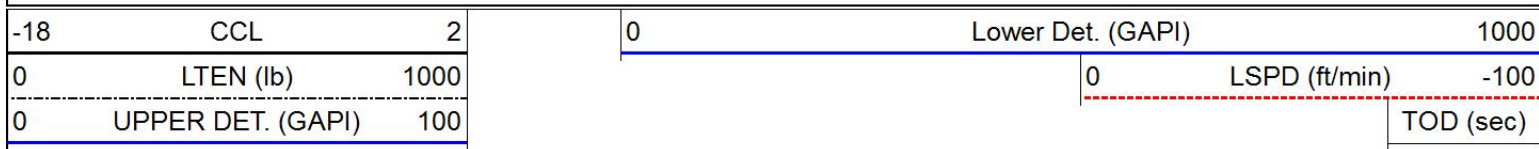


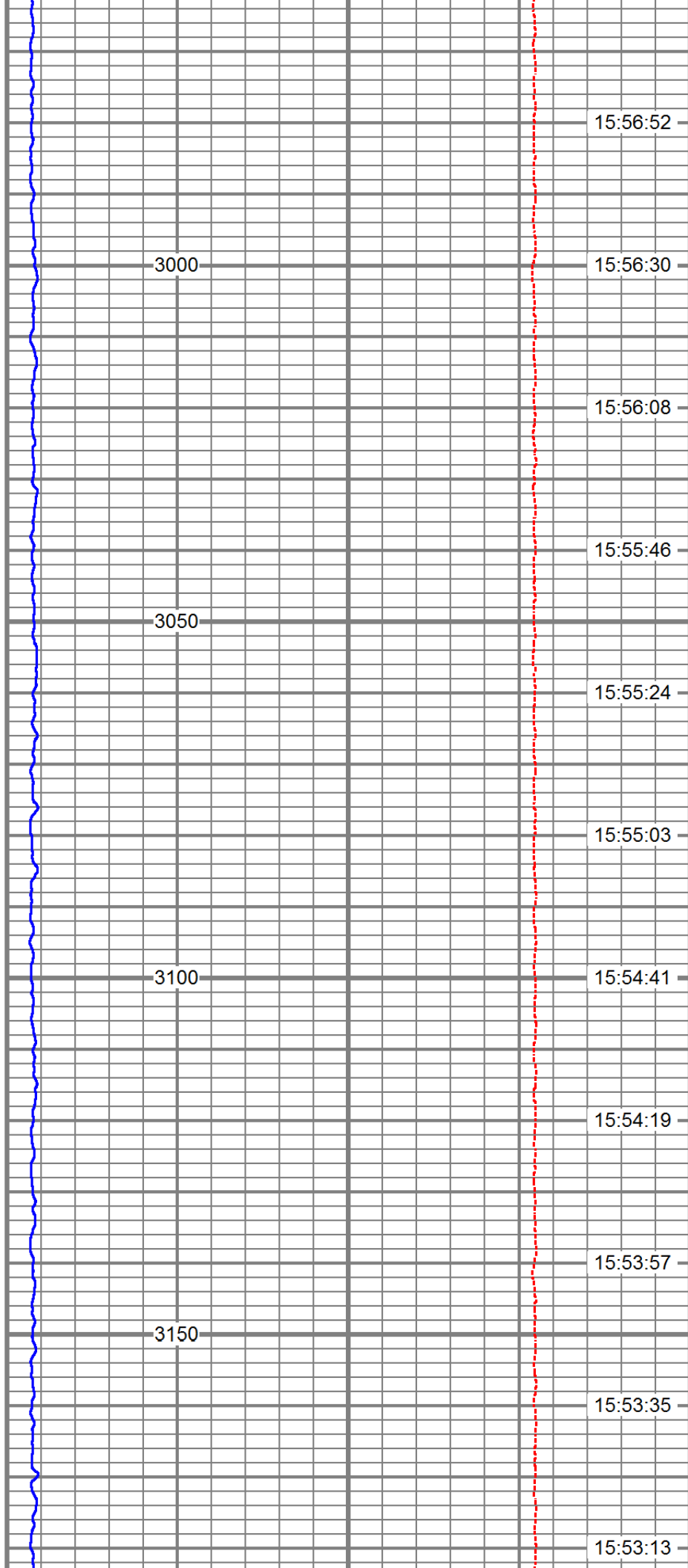
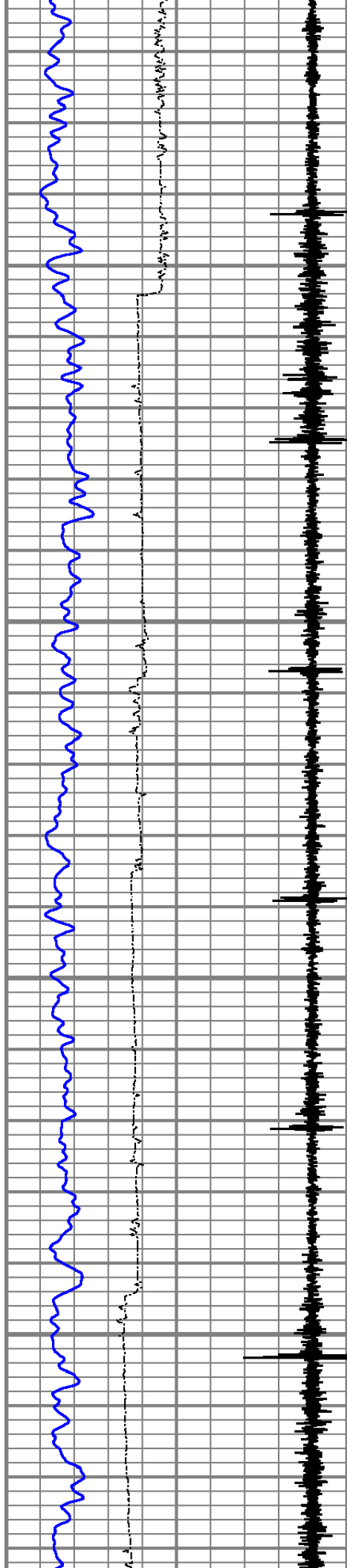
RUN # 4

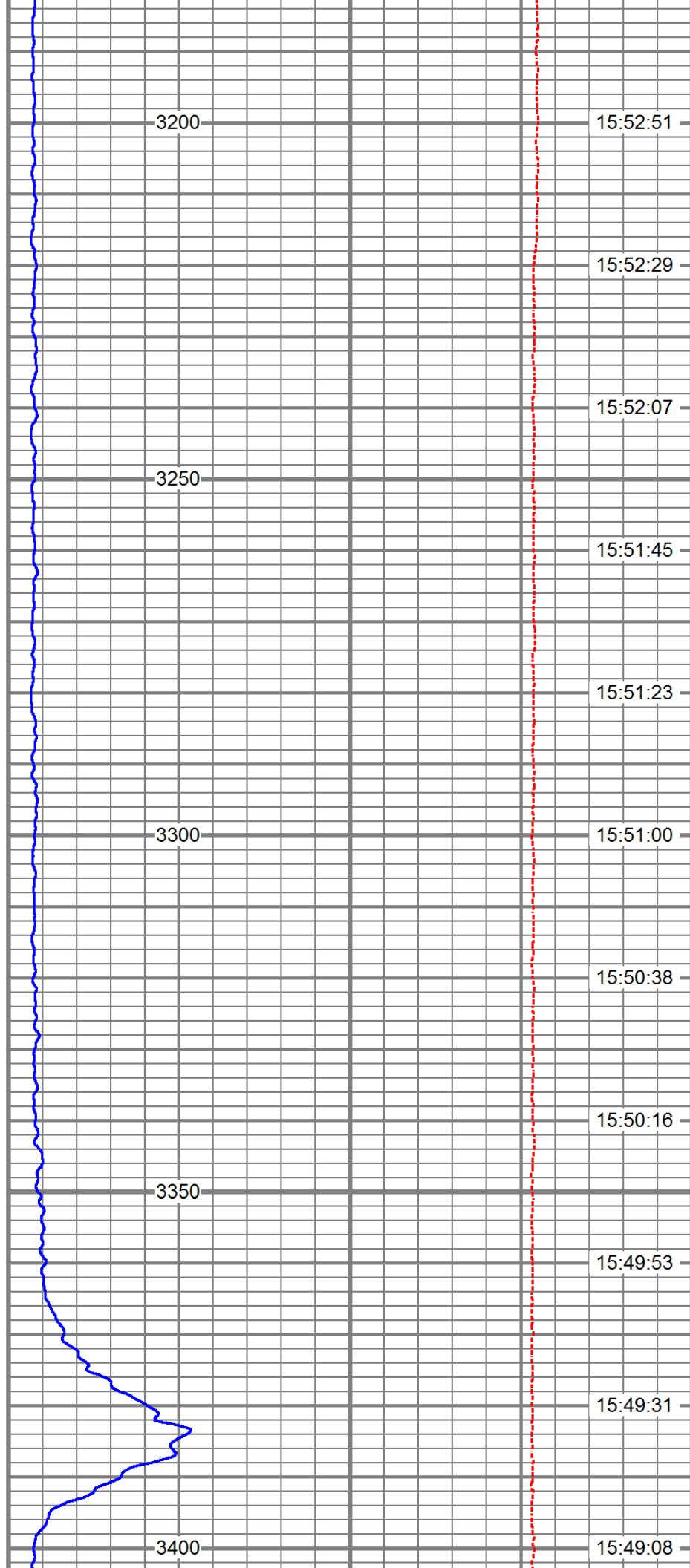
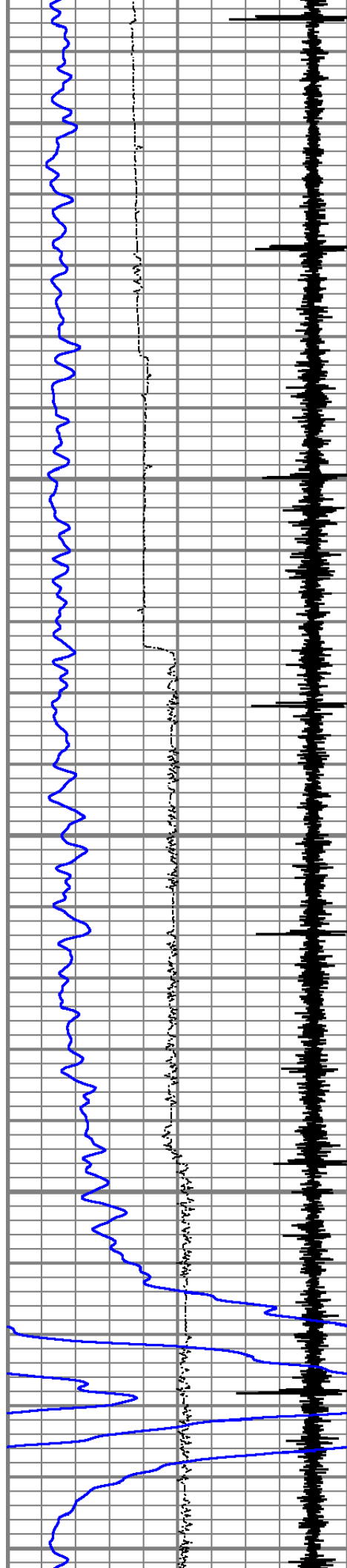
SLUG # 1 CHASE # 3

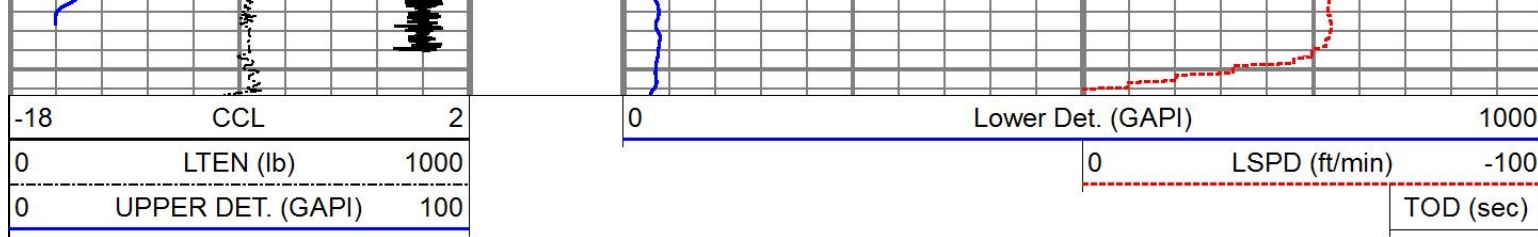
16 GPM @ 0 PSI

Database File western refshellstate13swd1 rat 2019.db
 Dataset Pathname slug1/pass3
 Presentation Format tracergw
 Dataset Creation Tue Jul 09 15:48:54 2019
 Charted by Depth in Feet scaled 1:240





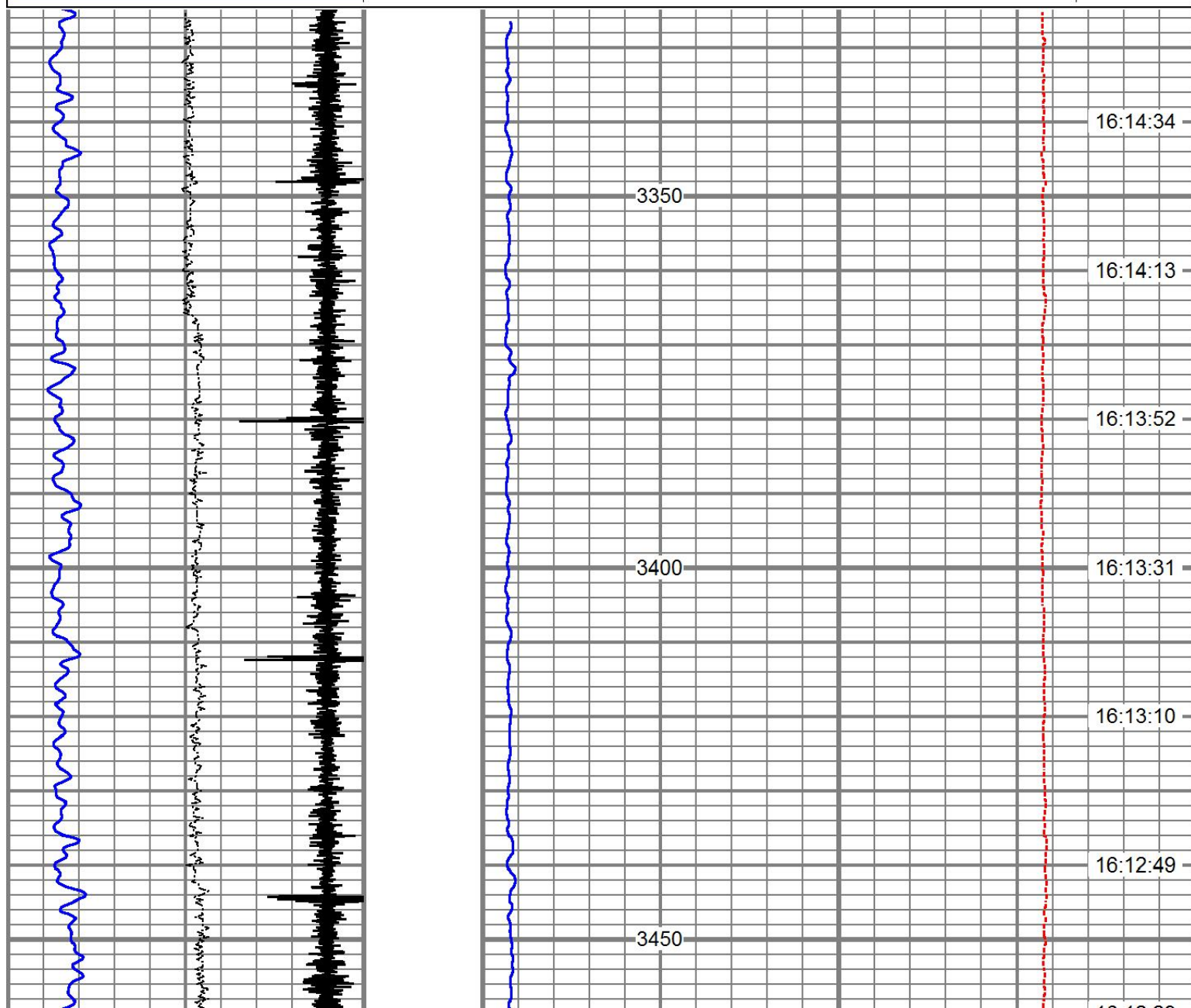
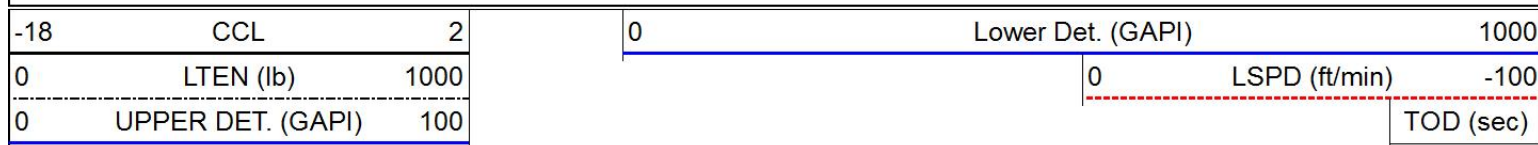


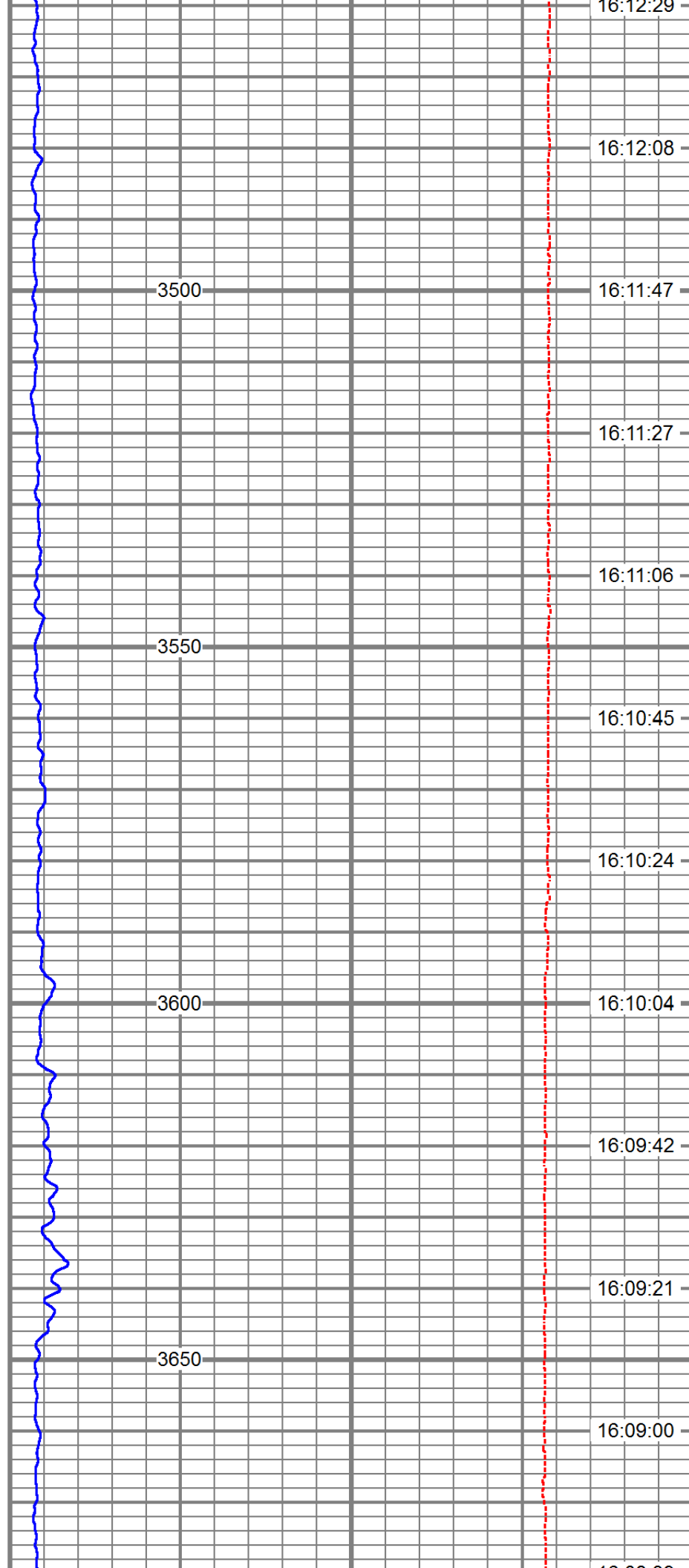
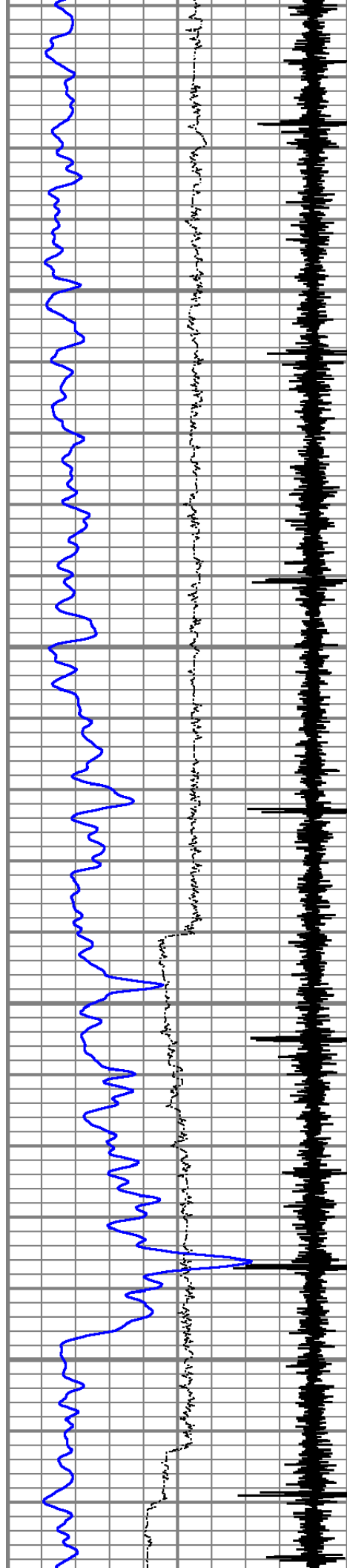


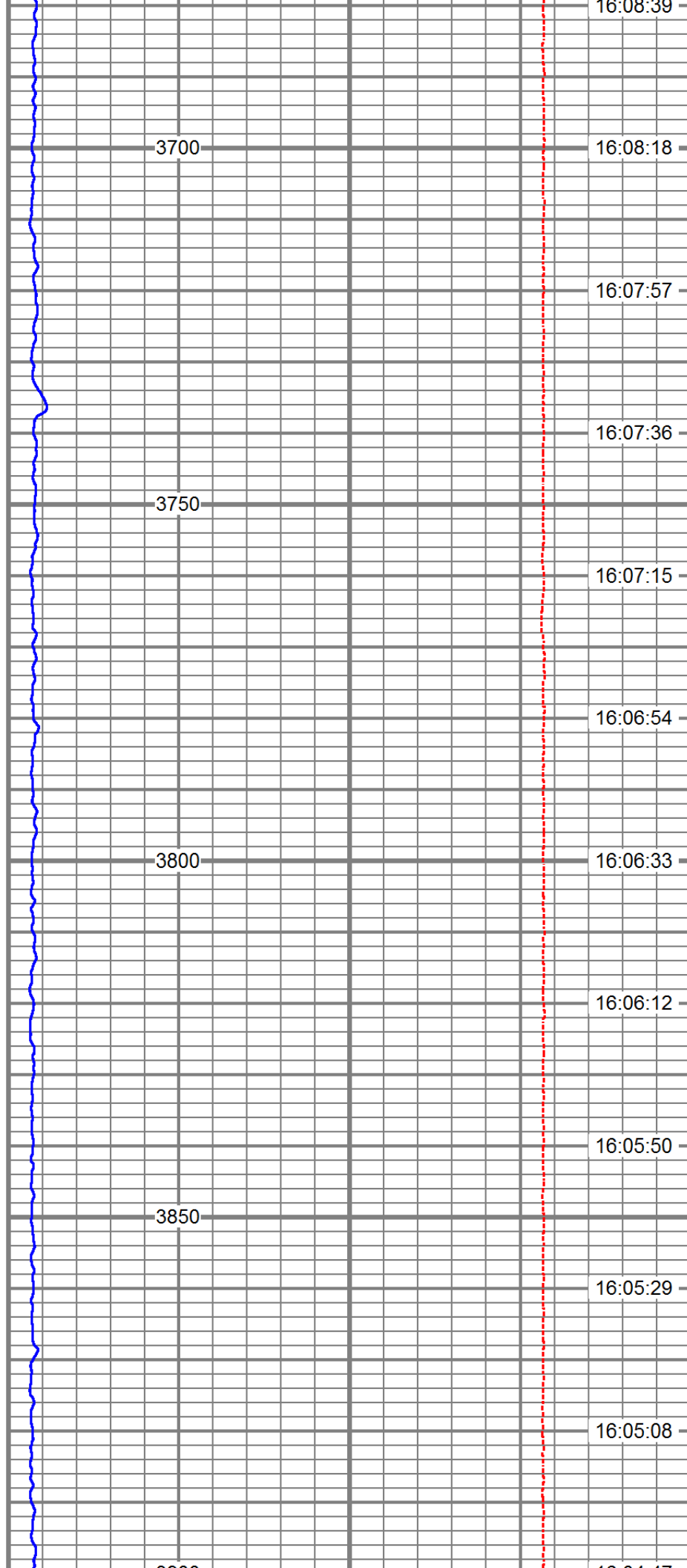
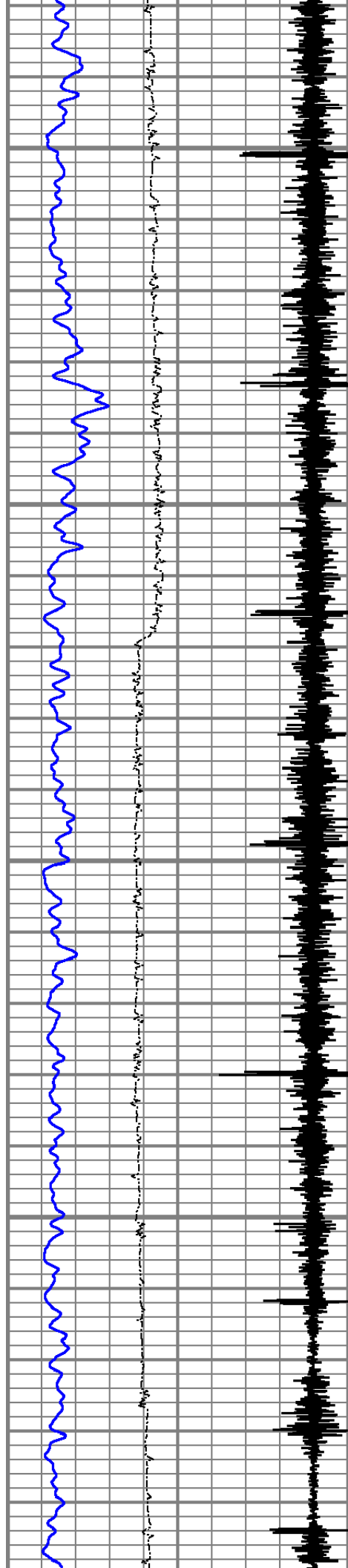
RUN # 5

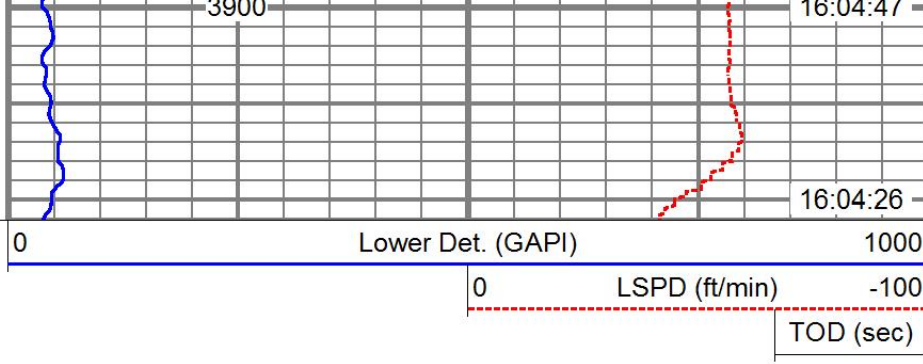
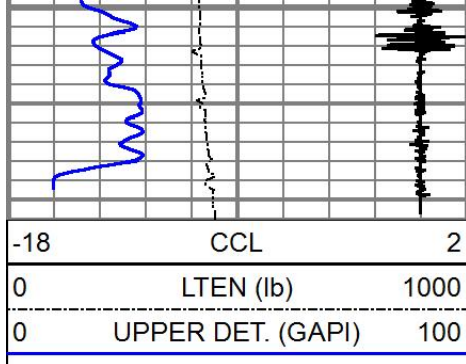
SLUG # 1 CHASE # 4 DISSIPATING
16 GPM @ 0 PSI

Database File western ref\shellstate13swd1 rat 2019.db
Dataset Pathname slug1/pass4
Presentation Format tracergw
Dataset Creation Tue Jul 09 16:04:14 2019
Charted by Depth in Feet scaled 1:240



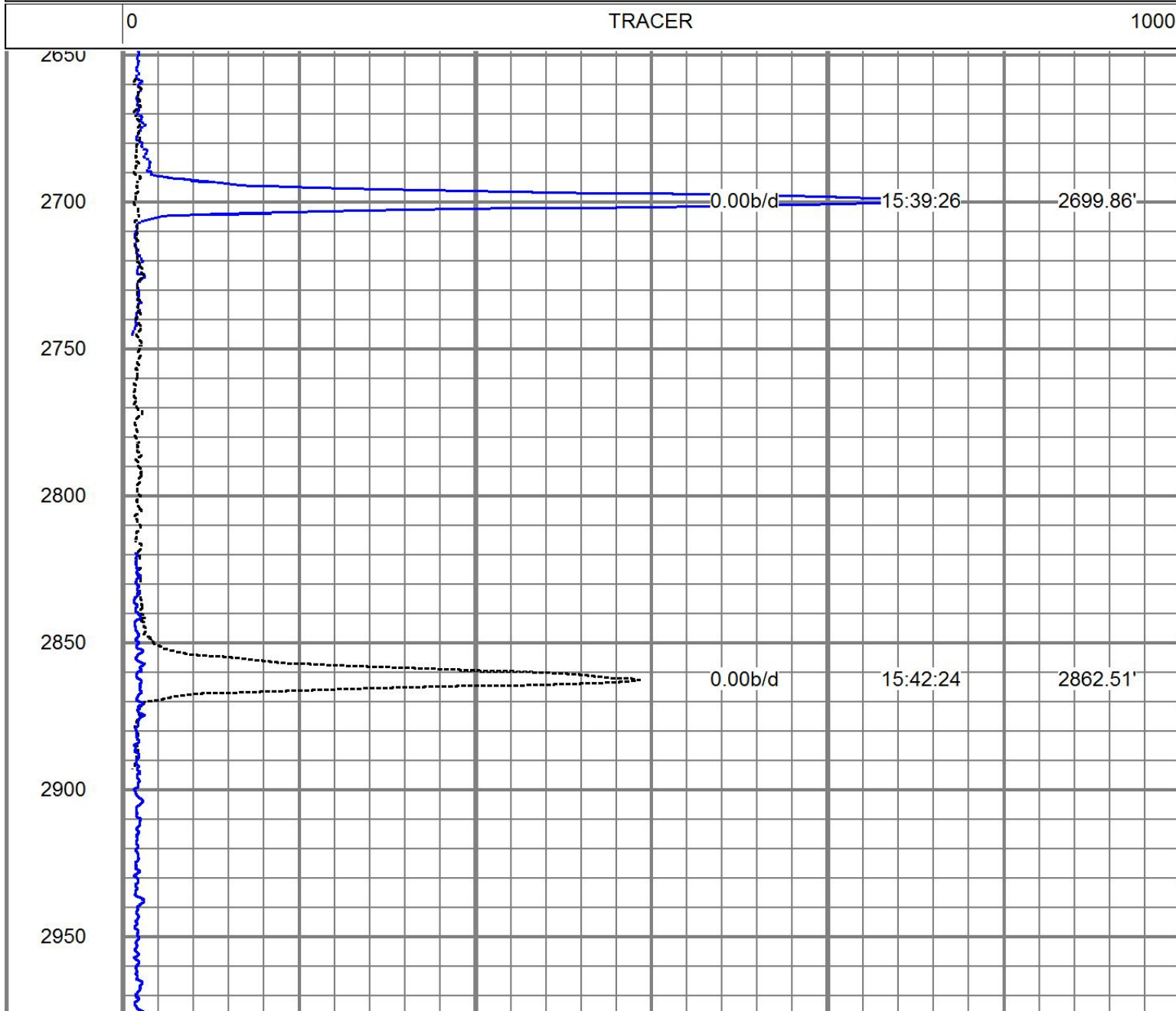




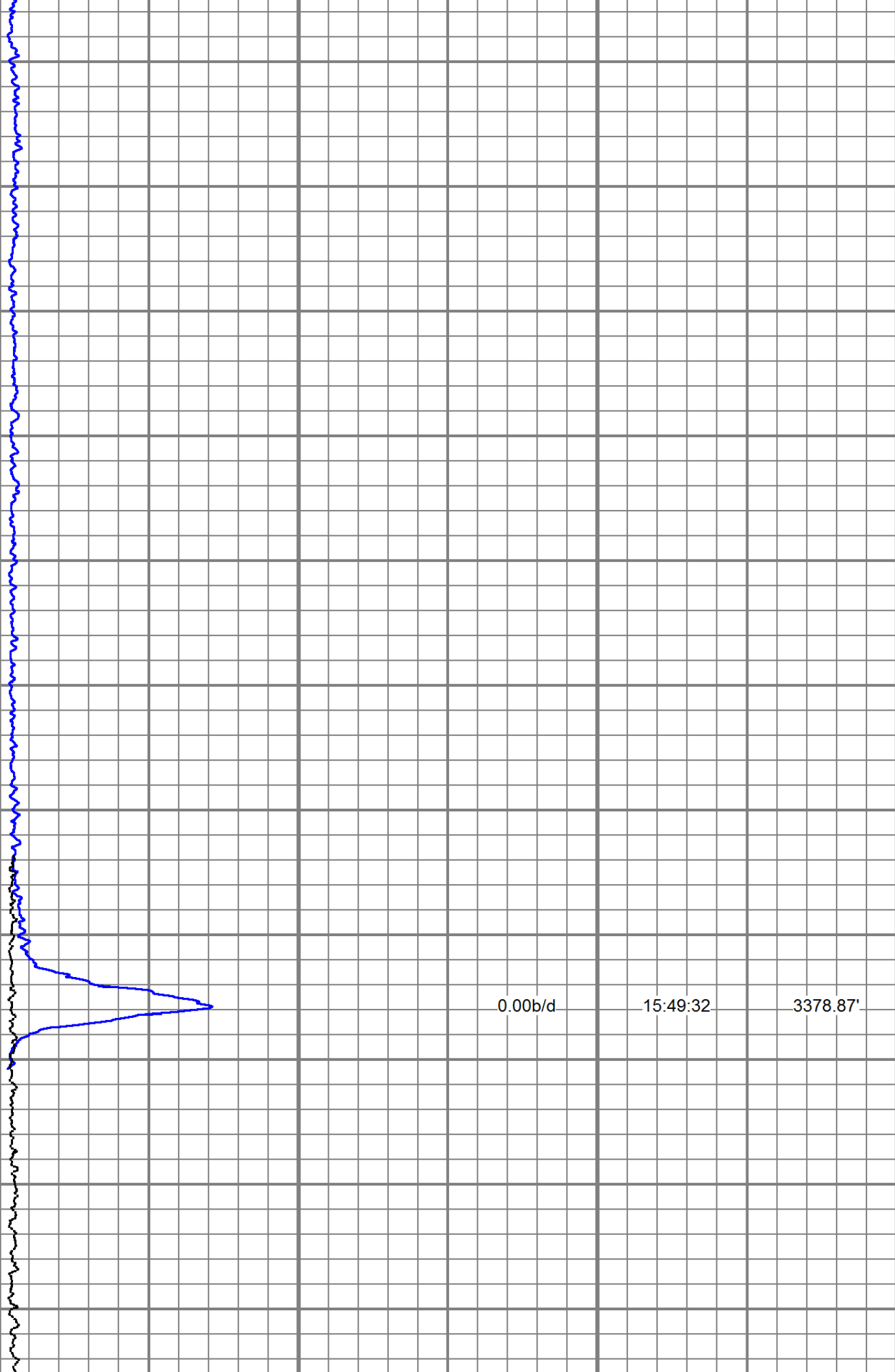


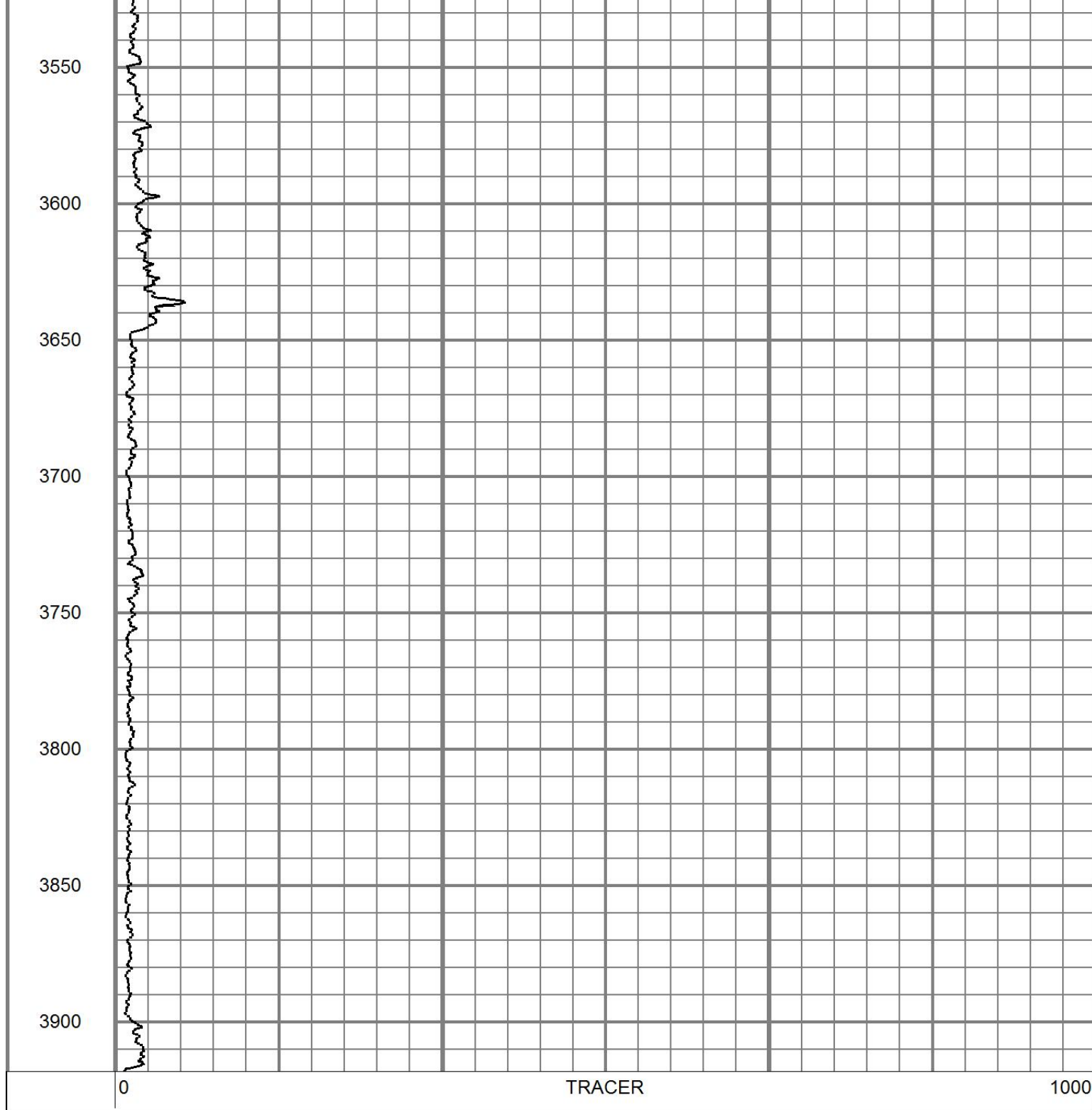
SLUG 1 MERGED

Database File western ref\shellstate13swd1 rat 2019.db
 Dataset Pathname slug1/_profile1_
 Presentation Format trcprof
 Dataset Creation Tue Jul 09 17:26:59 2019
 Charted by Depth in Feet scaled 1:600



3000
3050
3100
3150
3200
3250
3300
3350
3400
3450
3500



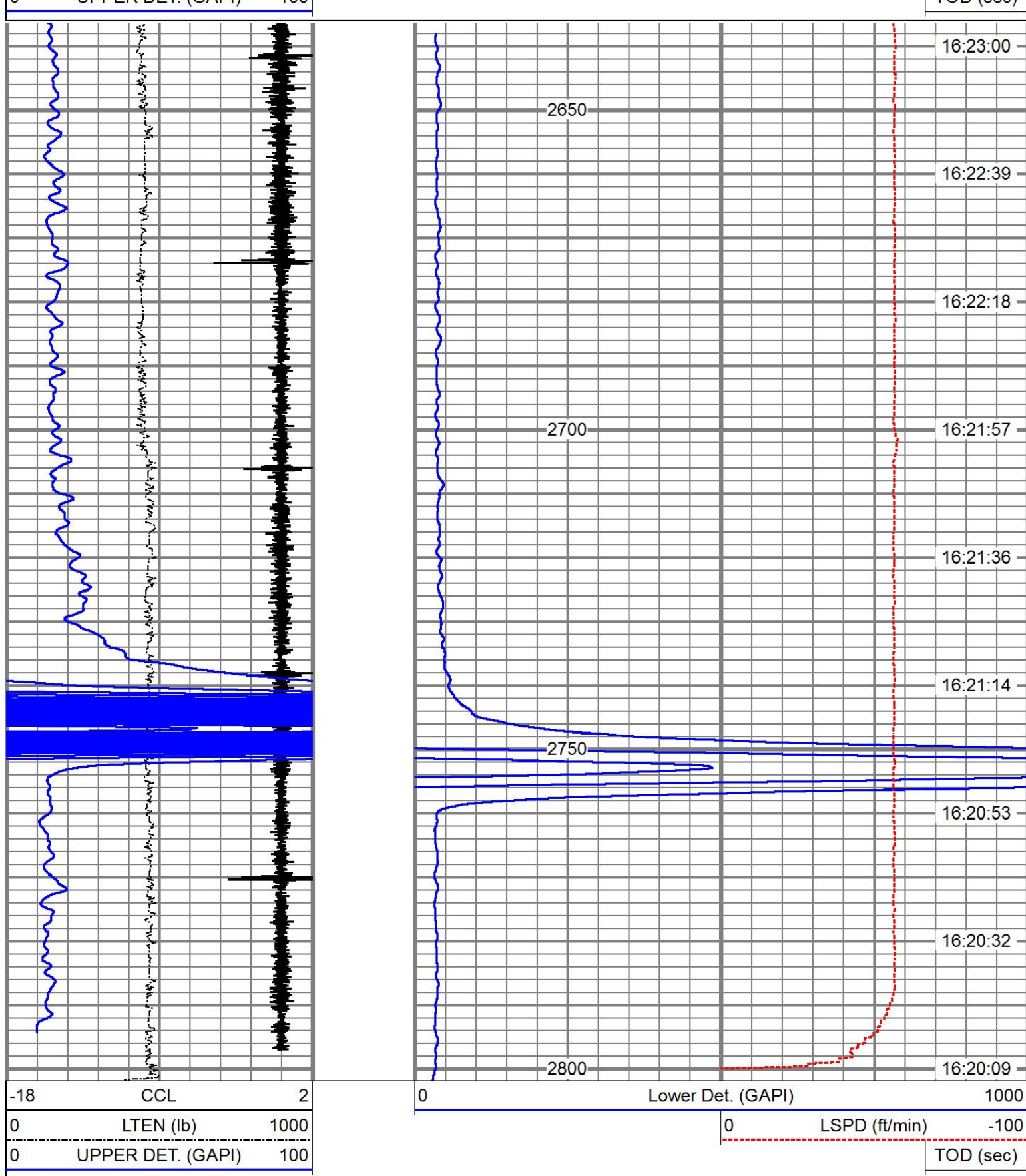


RUN # 6

SLUG # 2 CHASE # 1 EJECT @ 2650
16 GPM @ 0 PSI

Database File western ref\shellstate13swd1 rat 2019.db
Dataset Pathname slug2/pass1
Presentation Format tracergw
Dataset Creation Tue Jul 09 16:20:06 2019
Charted by Depth in Feet scaled 1:240

| | | | | | |
|-----|-------------------|------|---|-------------------|-----------|
| -18 | CCL | 2 | 0 | Lower Det. (GAPI) | 1000 |
| 0 | LTEN (lb) | 1000 | 0 | LSPD (ft/min) | -100 |
| 0 | UPPER DET. (GAPI) | 100 | | | TOD (sec) |

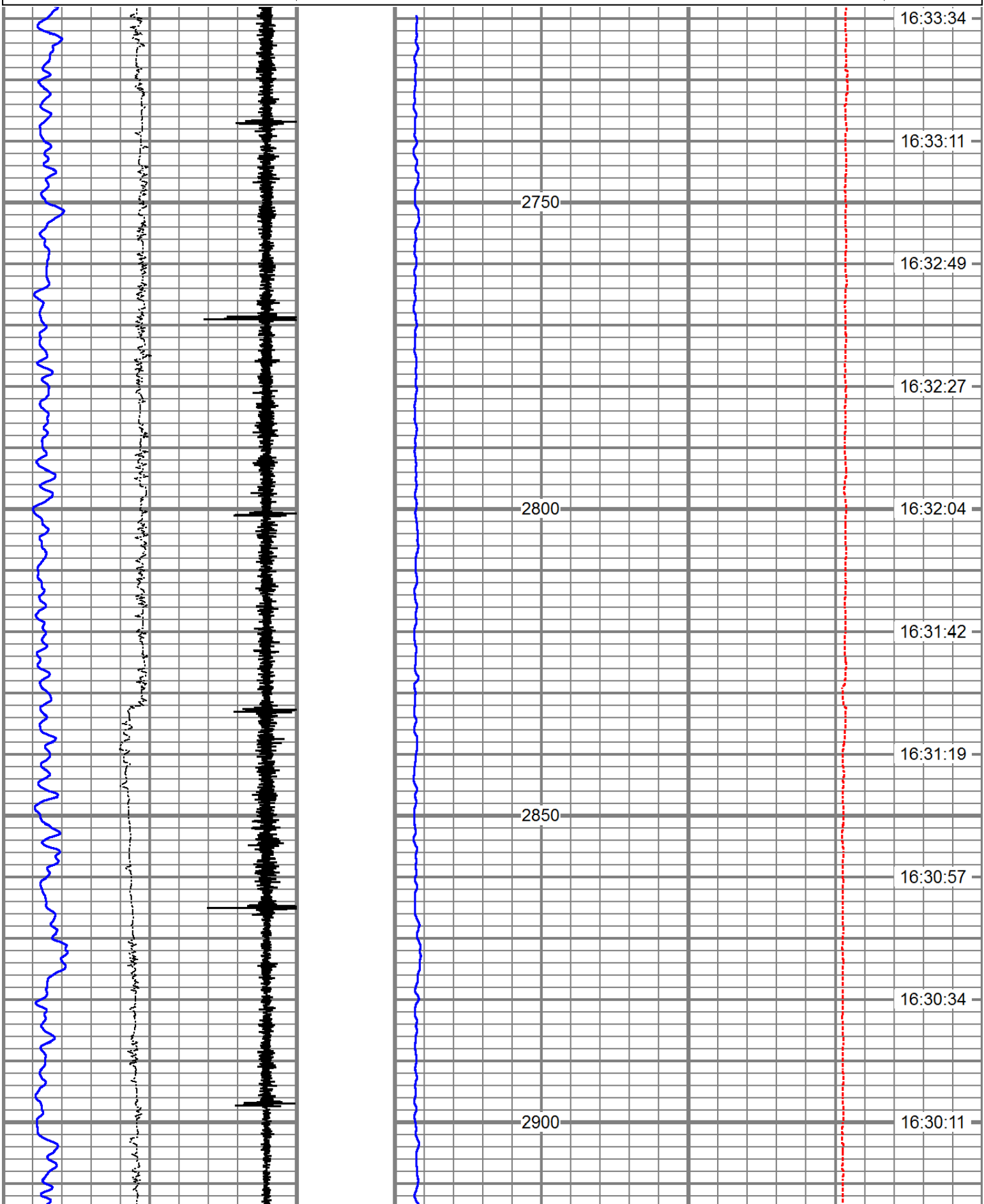


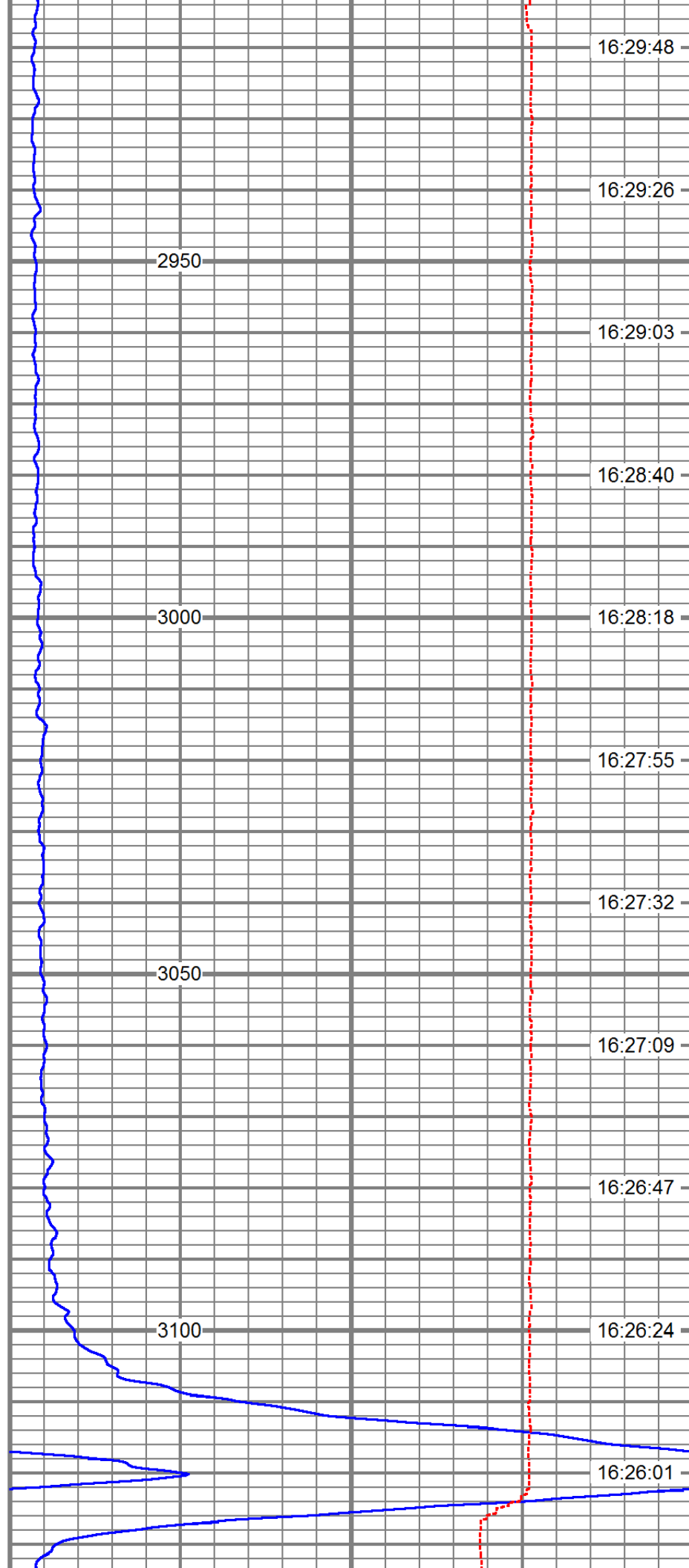
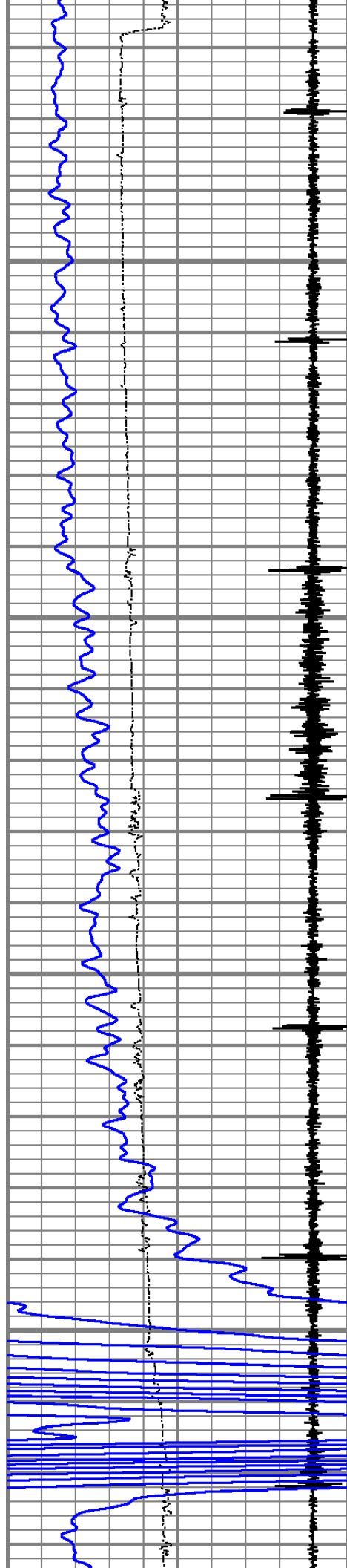
RUN # 7

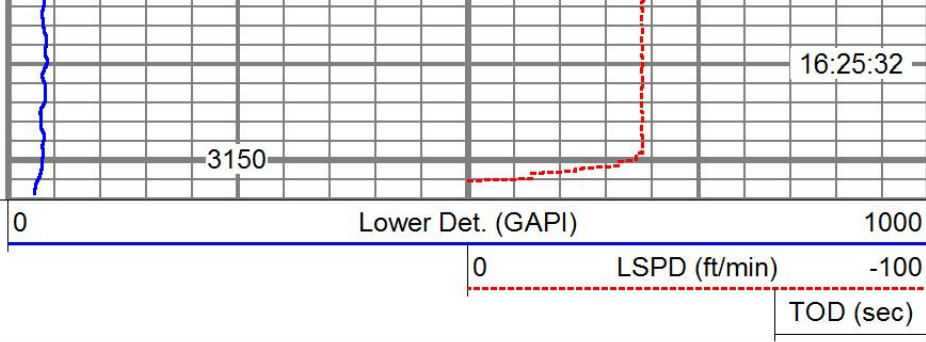
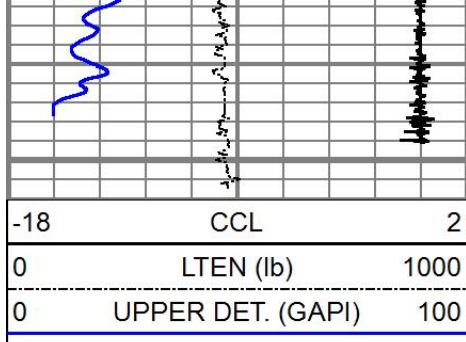
SLUG # 2 CHASE # 2
16 GPM @ 0 PSI

Database File western refshellstate13swd1 rat 2019.db
Dataset Pathname slug2/pass2
Presentation Format traceraw

| | | | | | |
|-----|-------------------|------|---|-------------------|-----------|
| -18 | CCL | 2 | 0 | Lower Det. (GAPI) | 1000 |
| 0 | LTEN (lb) | 1000 | 0 | LSPD (ft/min) | -100 |
| 0 | UPPER DET. (GAPI) | 100 | | | TOD (sec) |



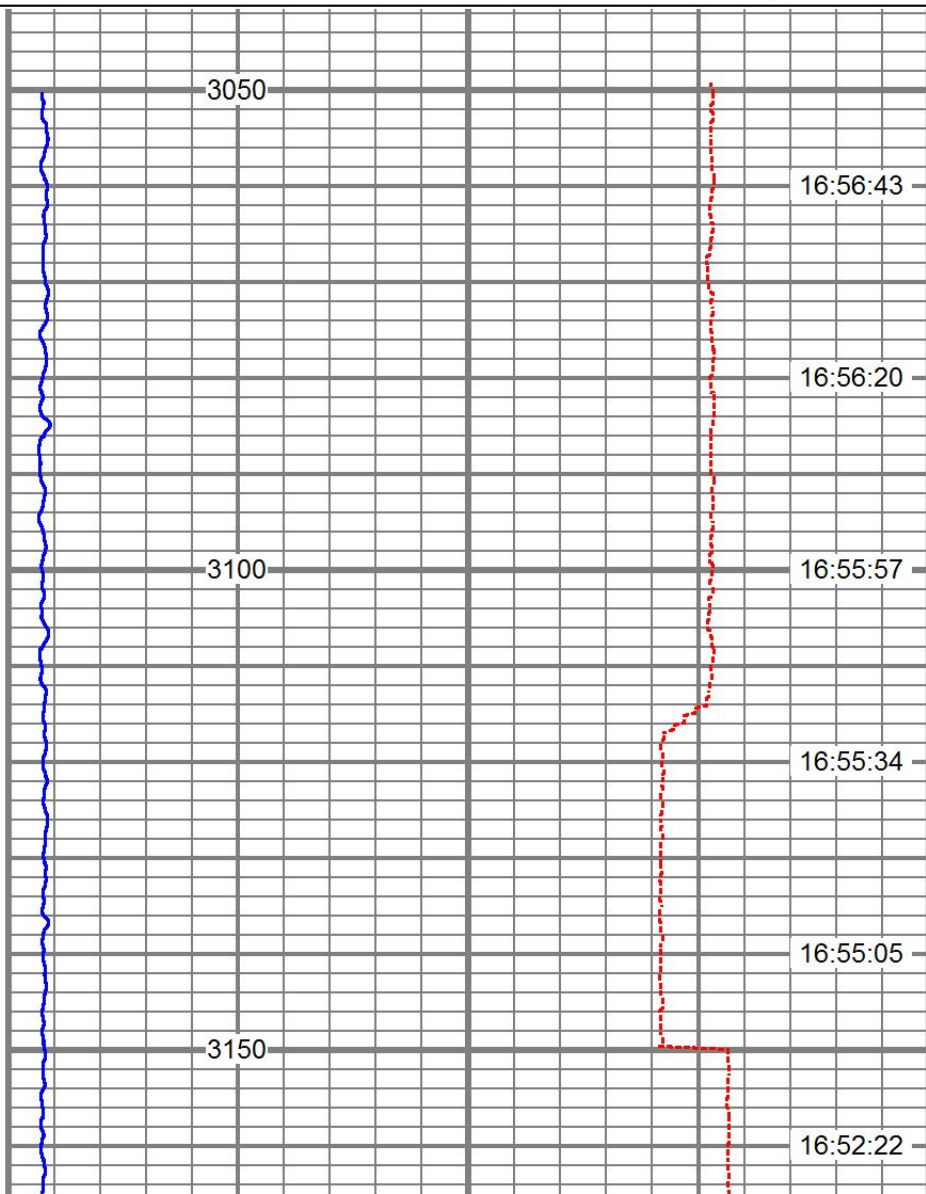
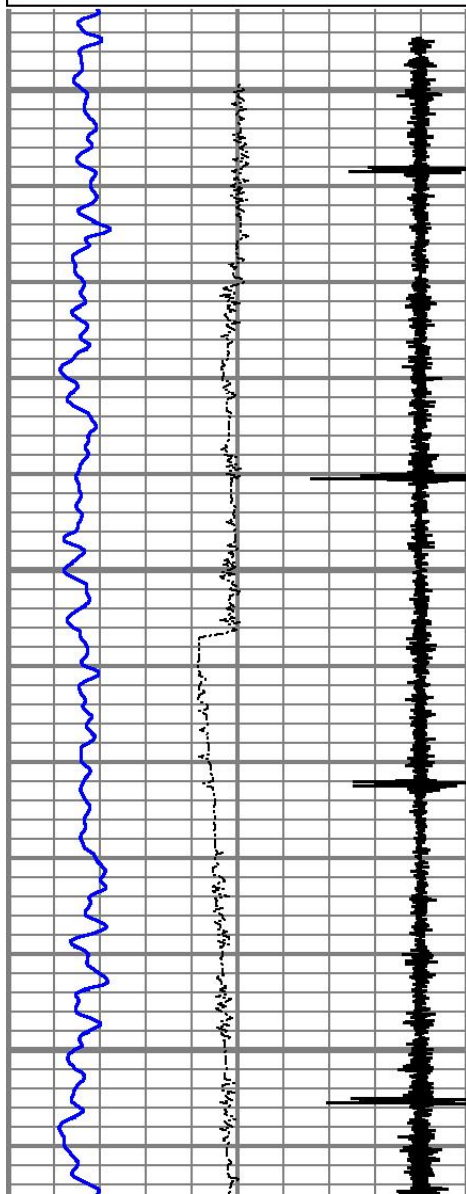
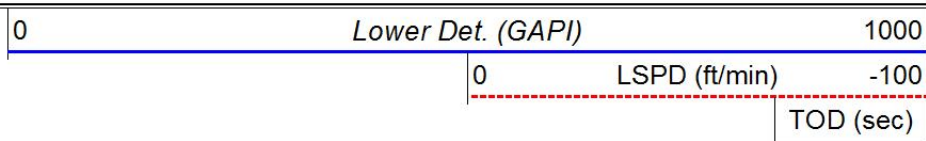
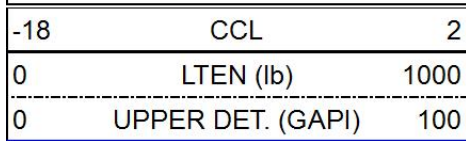


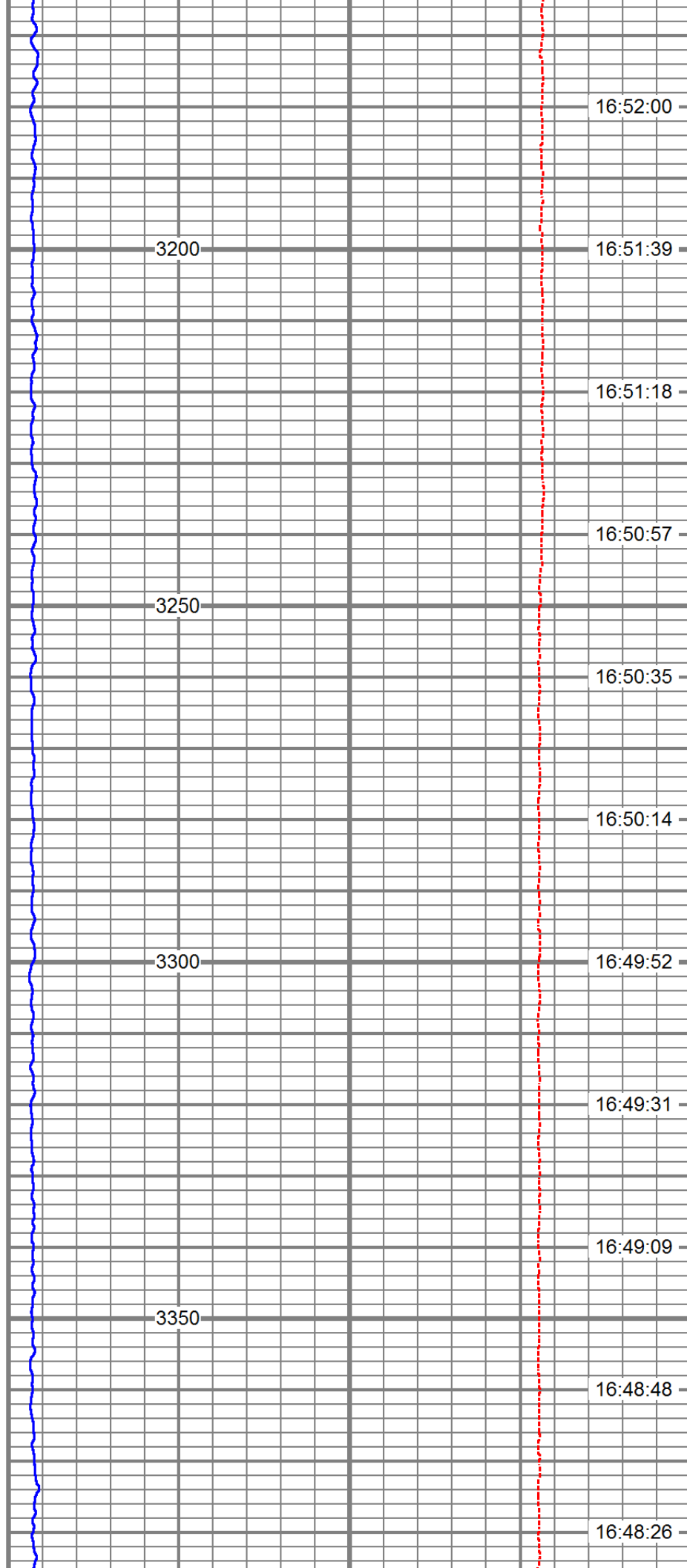
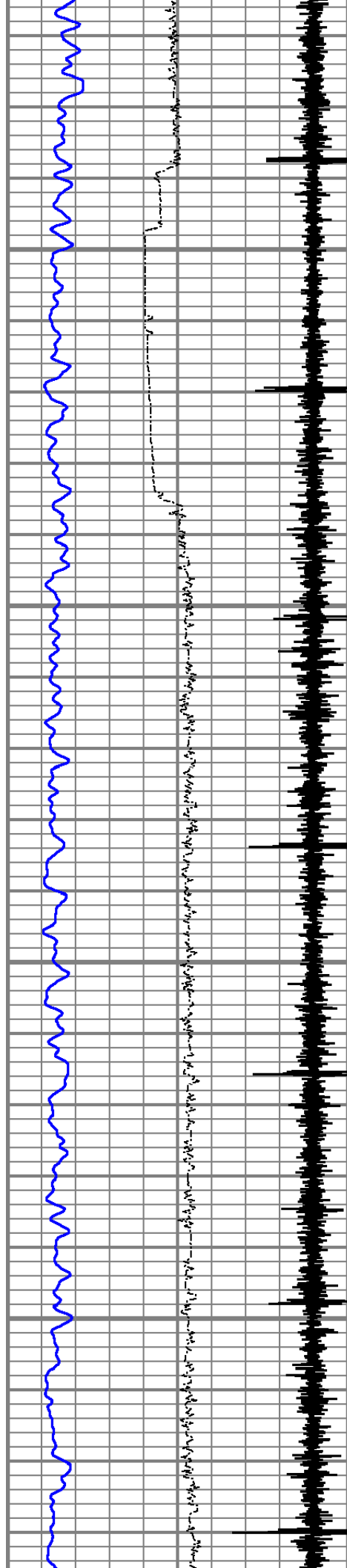


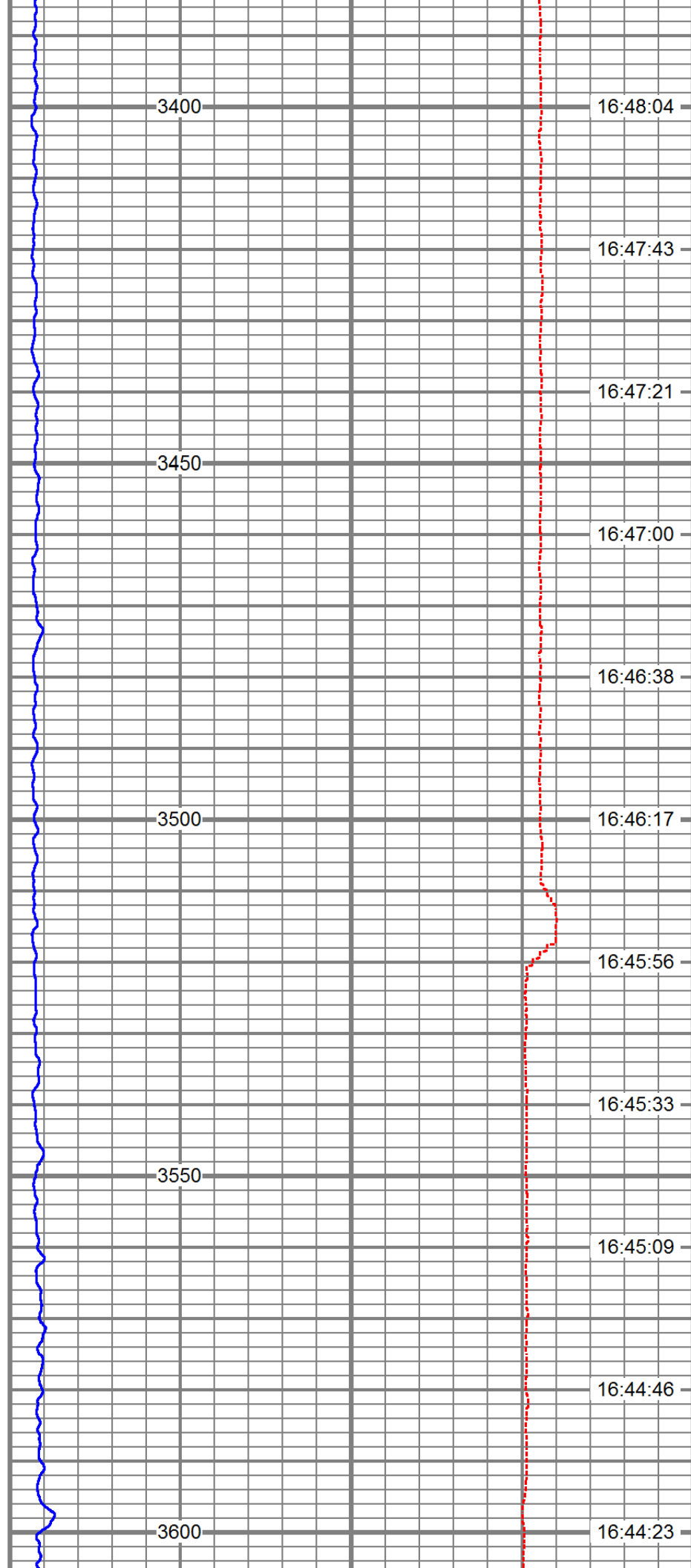
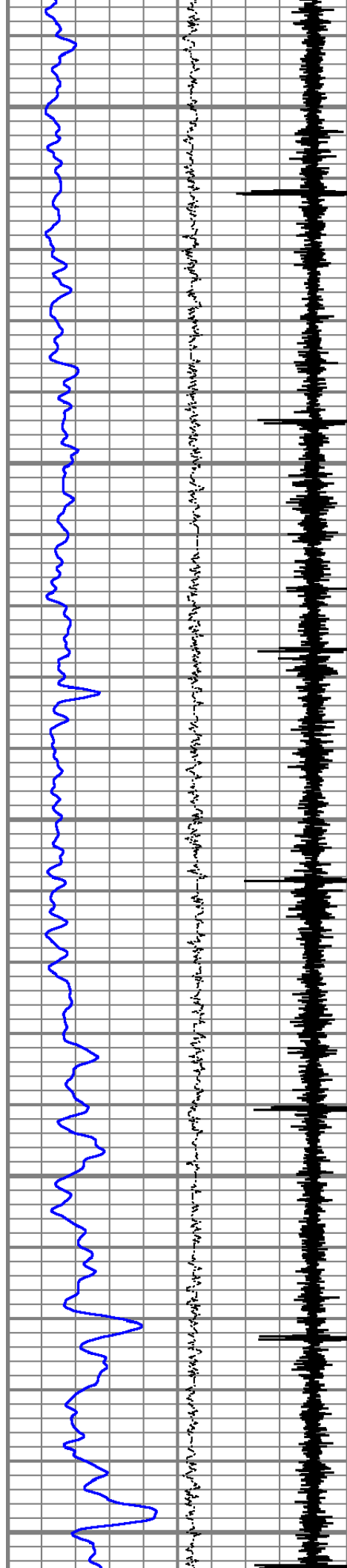
RUN # 8

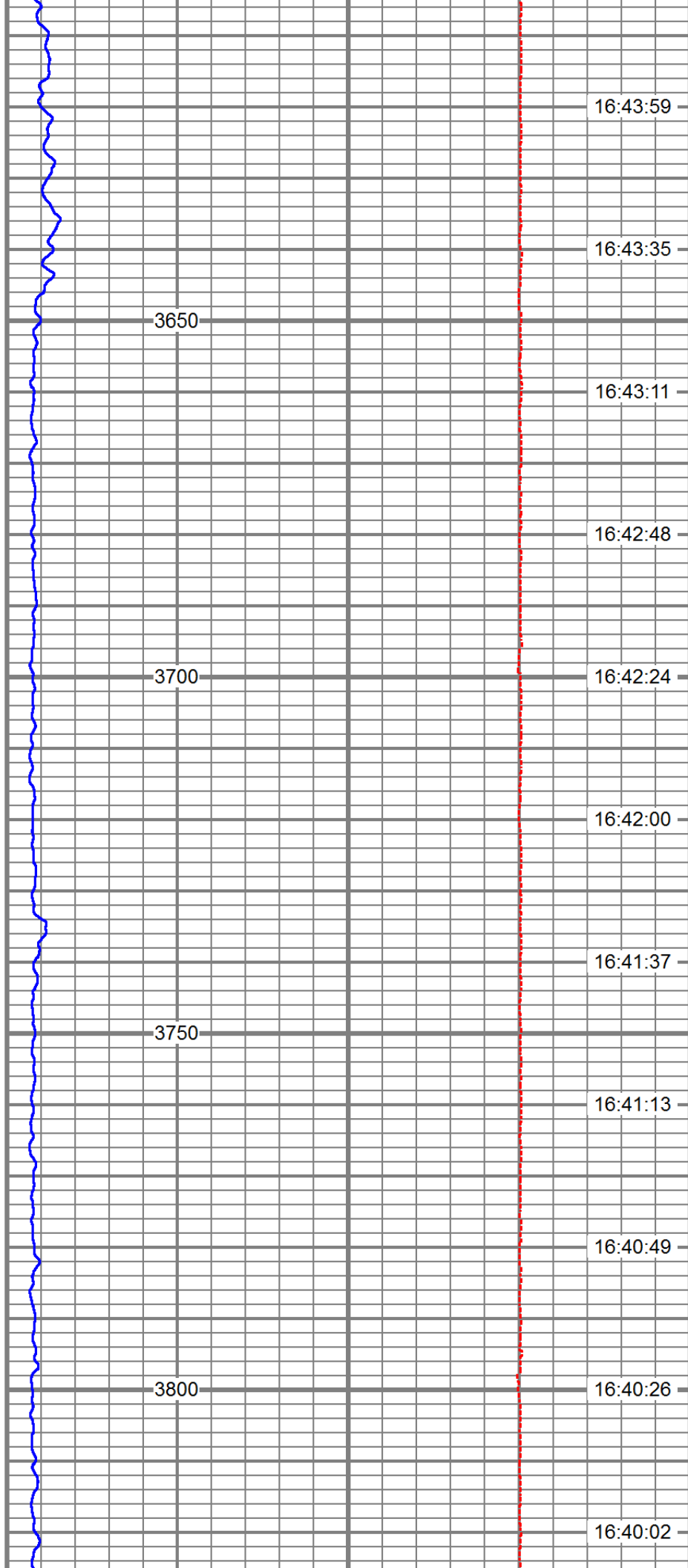
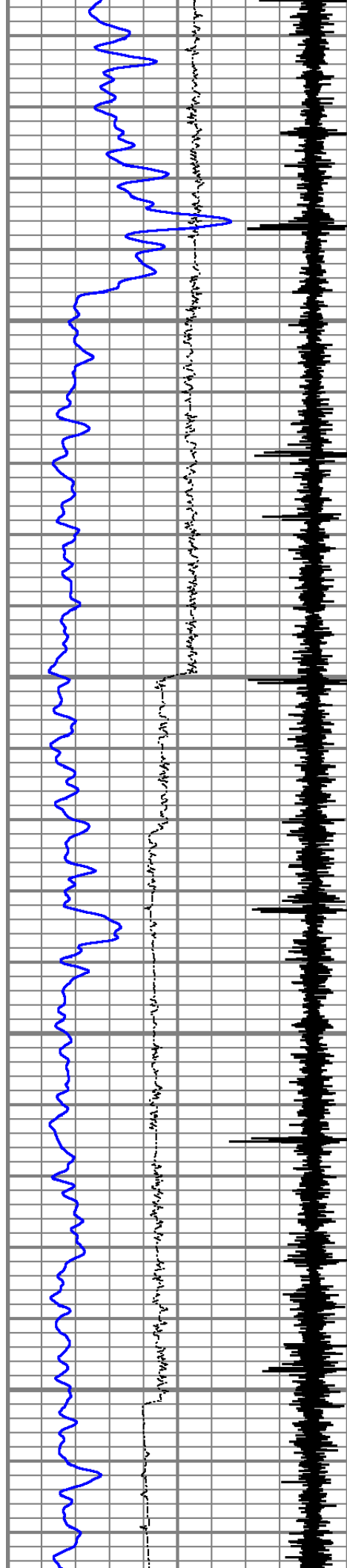
SLUG # 2 CHASE # 3
22 GPM @ 0 PSI

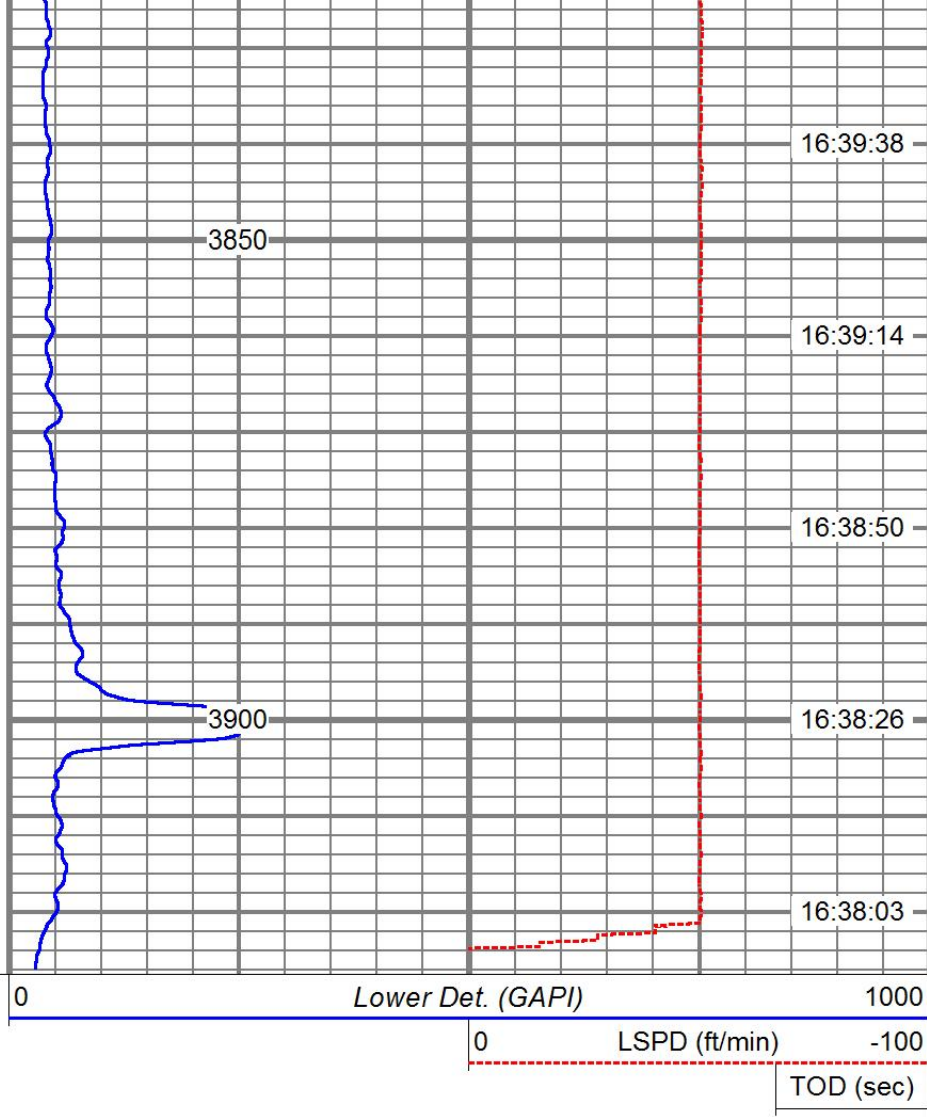
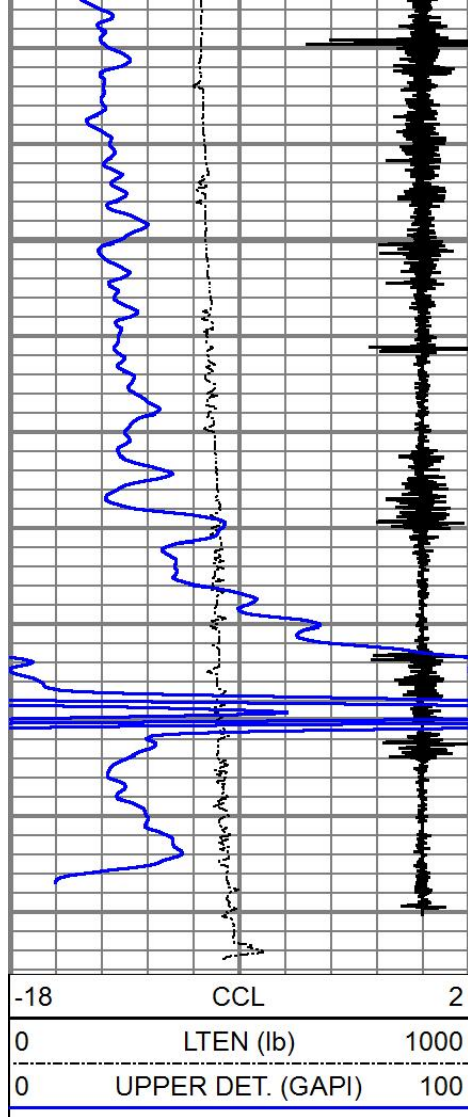
Database File western refshellstate13swd1 rat 2019.db
Dataset Pathname slug2/pass3_merge
Presentation Format tracergw
Dataset Creation Thu Jul 11 09:57:44 2019
Charted by Depth in Feet scaled 1:240







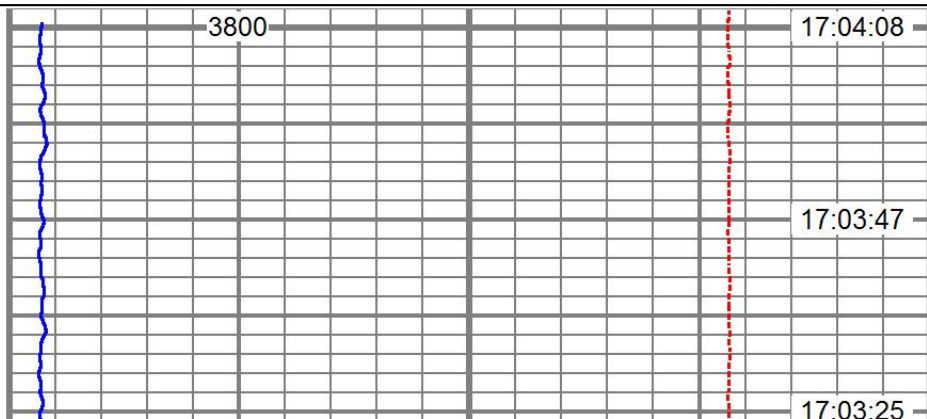
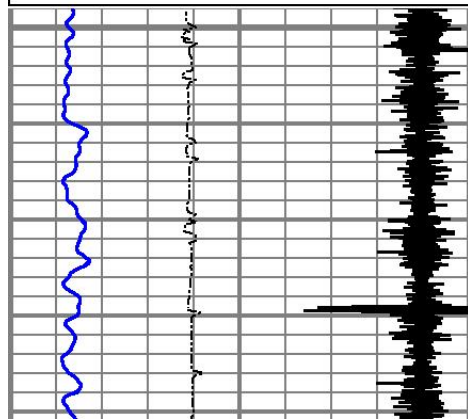
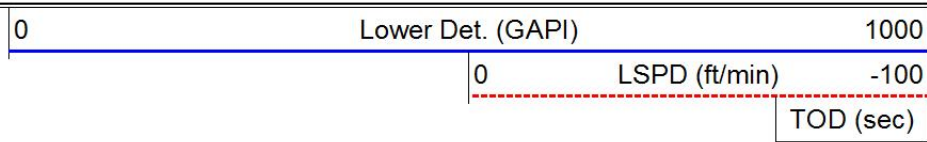
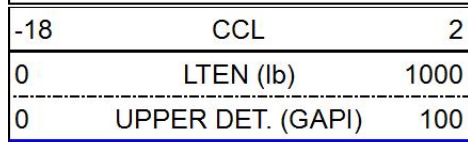


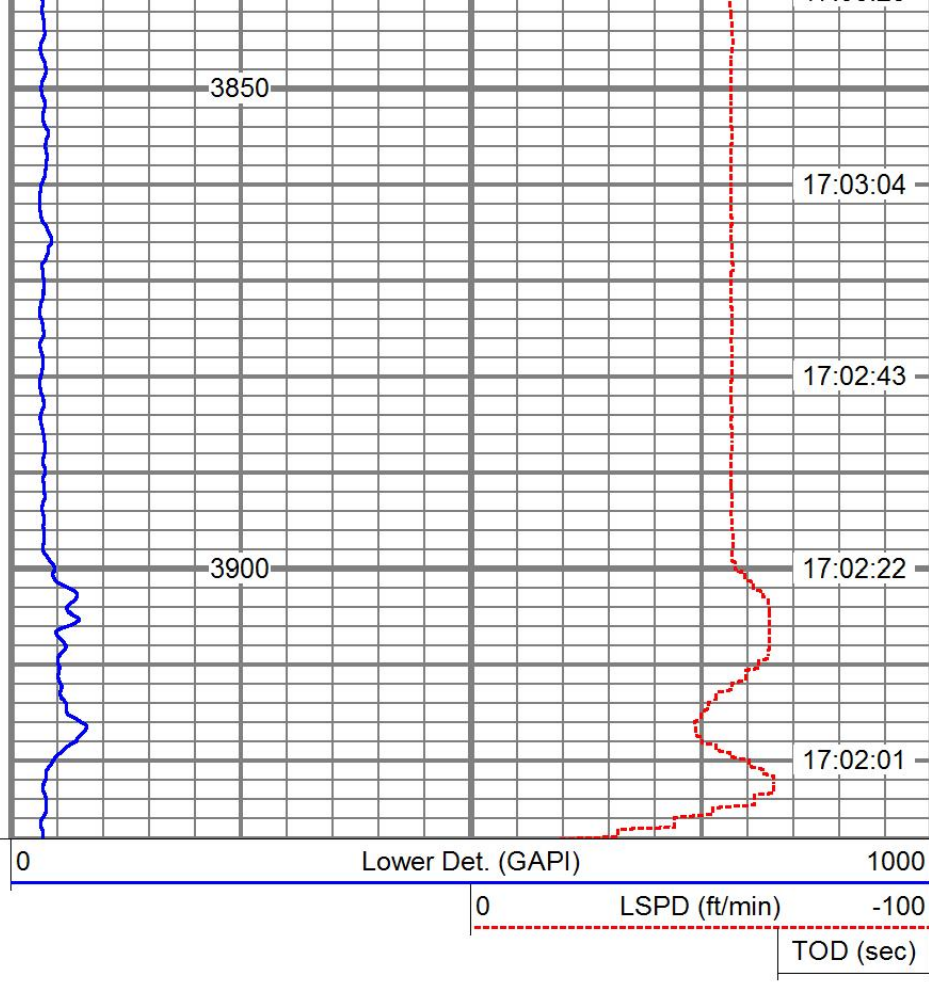
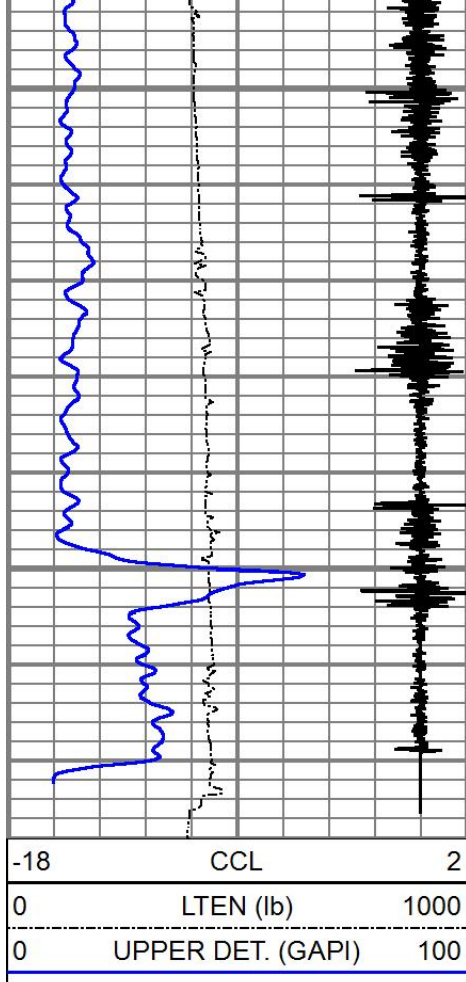


RUN # 10

SLUG # 2 CHASE # 4 DISSIPATING
22 GPM @ 0 PSI

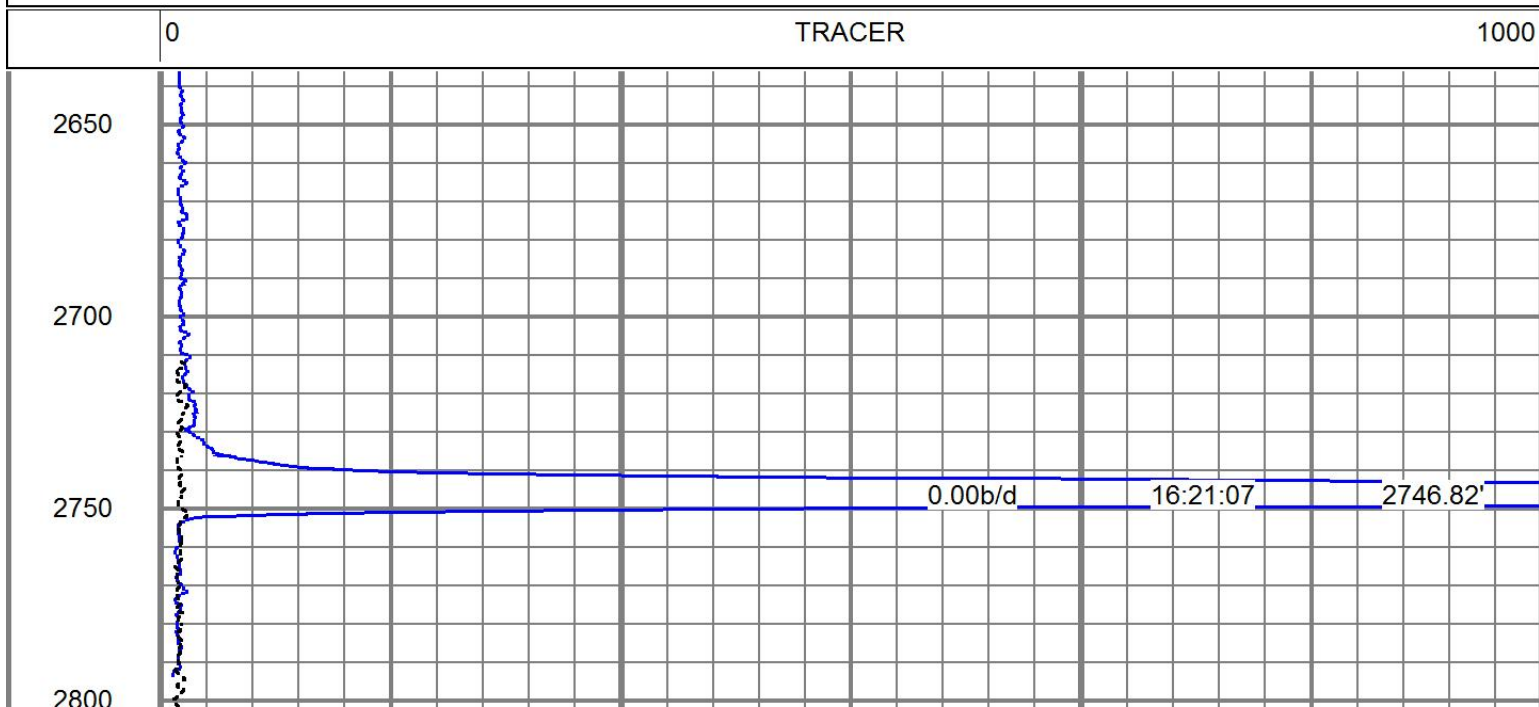
Database File western ref\shellstate13swd1 rat 2019.db
Dataset Pathname slug2/pass5
Presentation Format tracergw
Dataset Creation Tue Jul 09 17:01:48 2019
Charted by Depth in Feet scaled 1:240





SLUG 2 MERGED

Database File western ref\shellstate13swd1 rat 2019.db
 Dataset Pathname slug2/_profile1_
 Presentation Format trcprof
 Dataset Creation Tue Jul 09 17:28:46 2019
 Charted by Depth in Feet scaled 1:600



2850

2900

2950

3000

3050

3100

3150

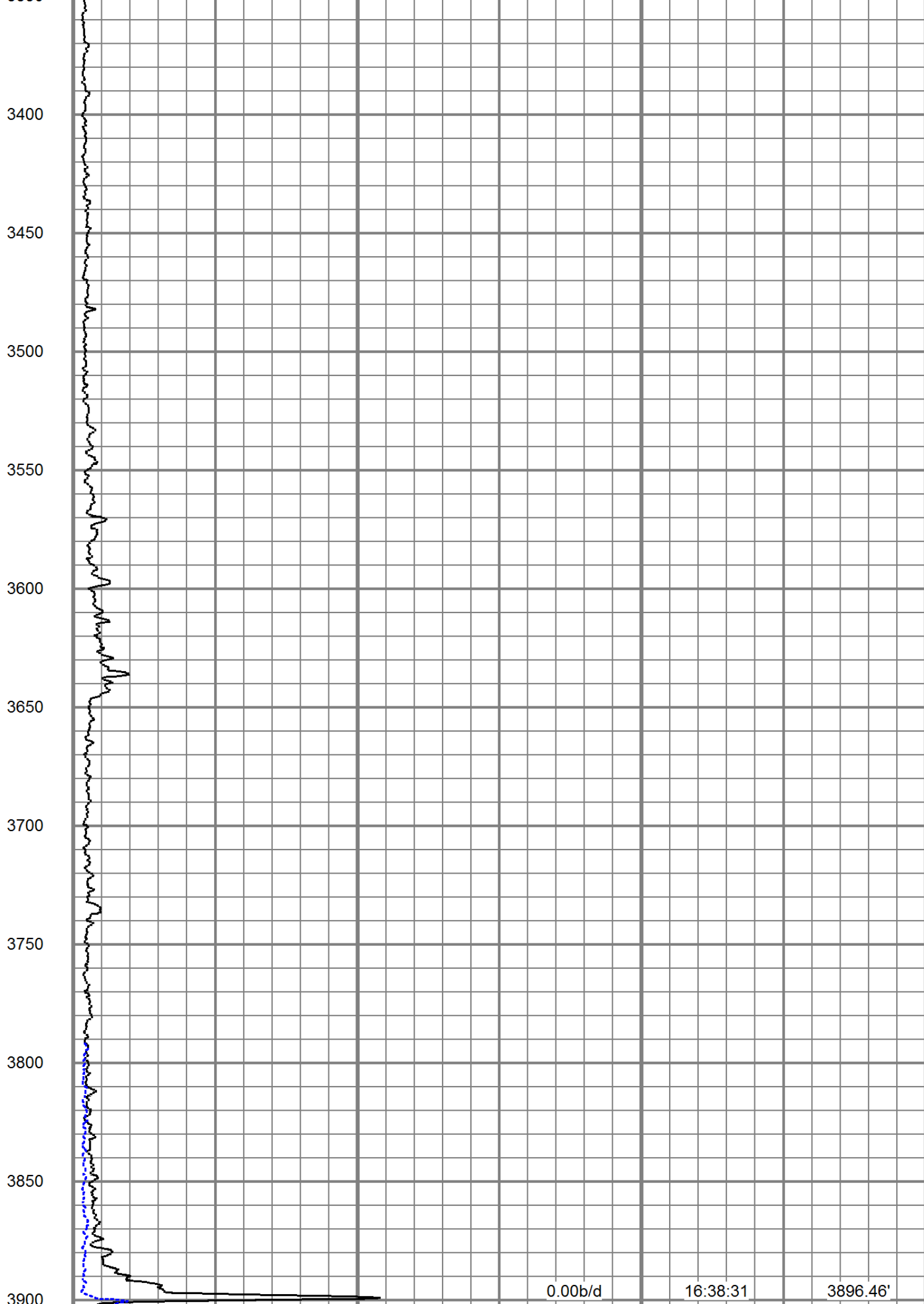
3200

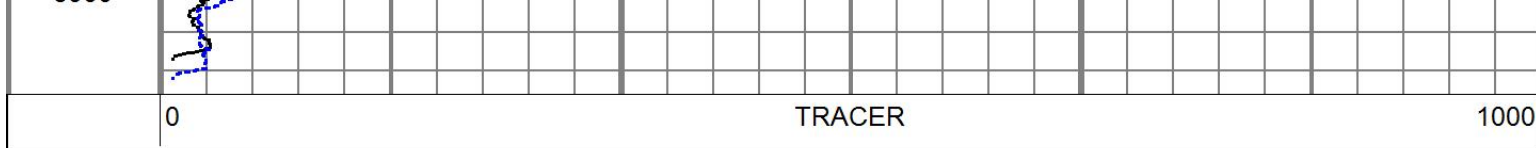
3250

3300

3350

0.00b/d 16:26:06 3115.43'





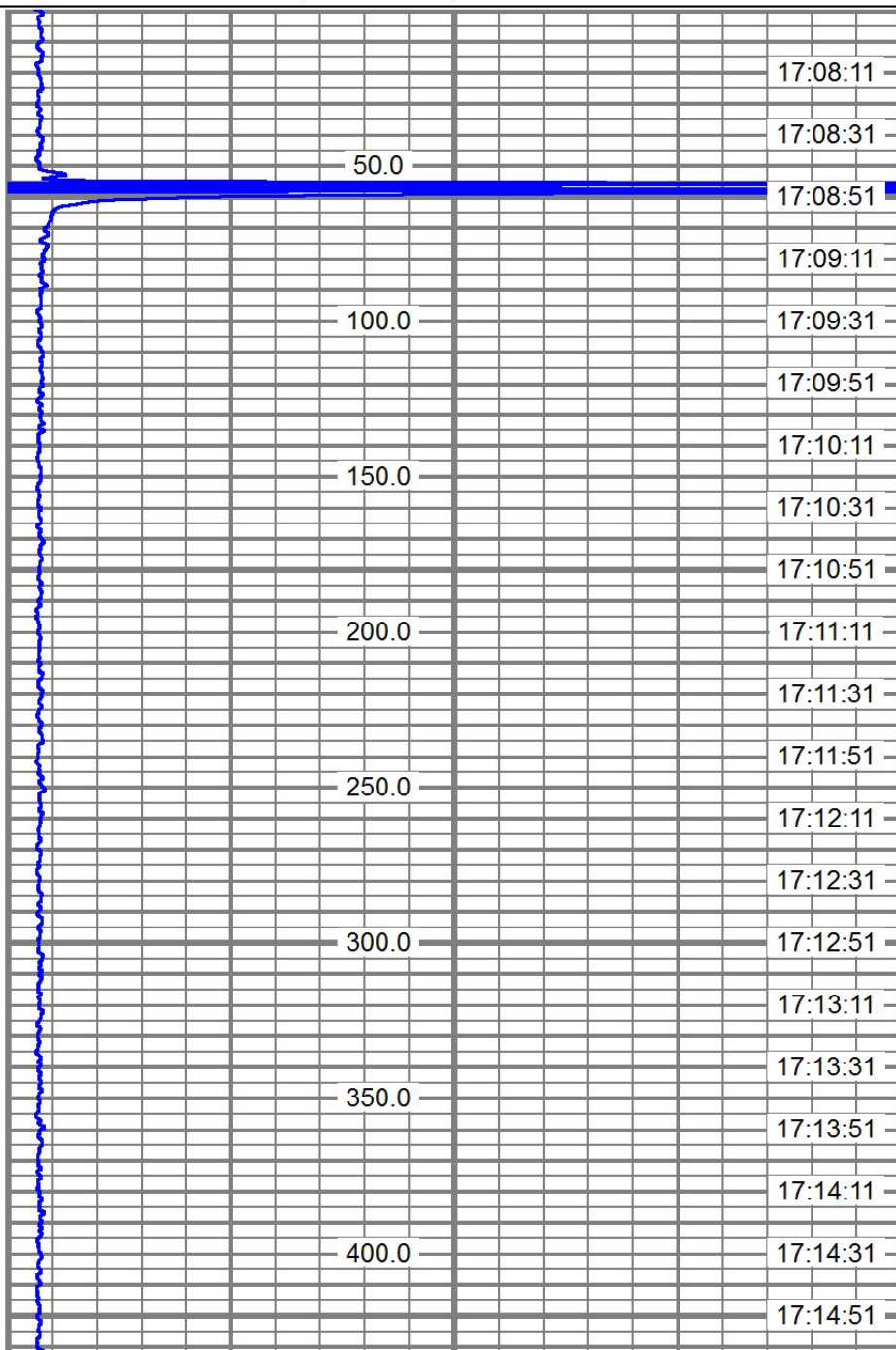
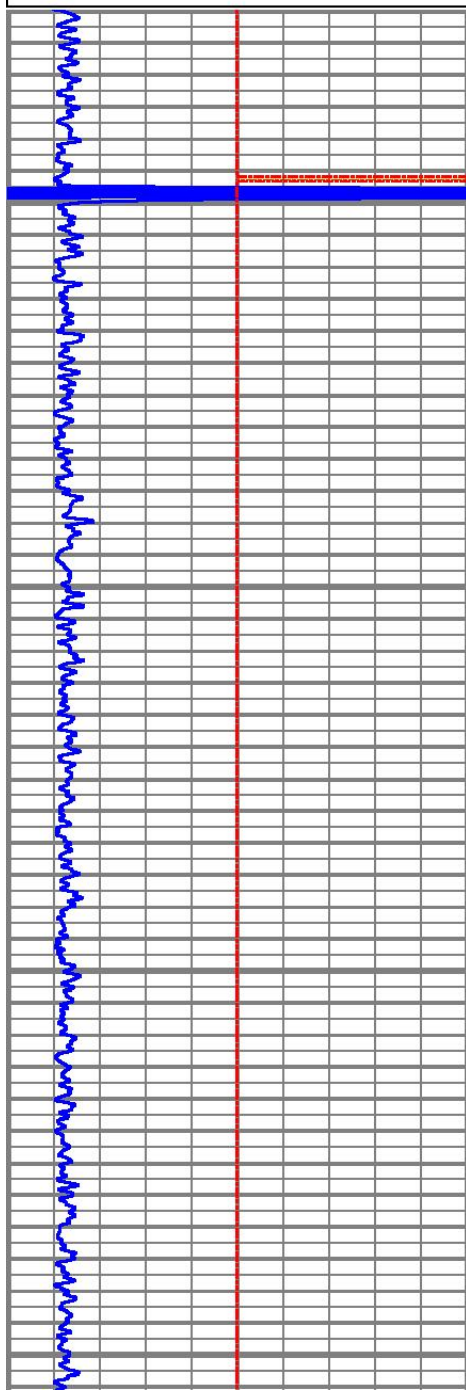
RUN # 11

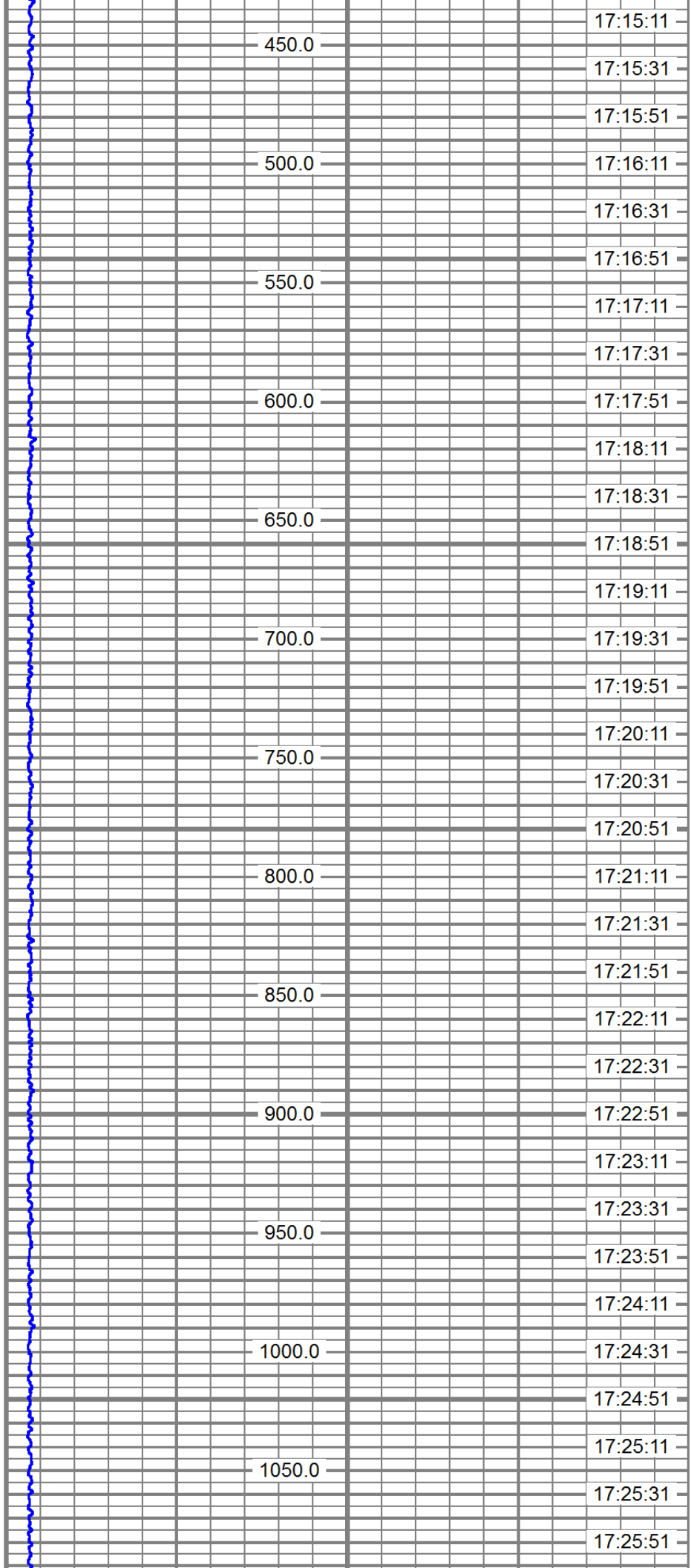
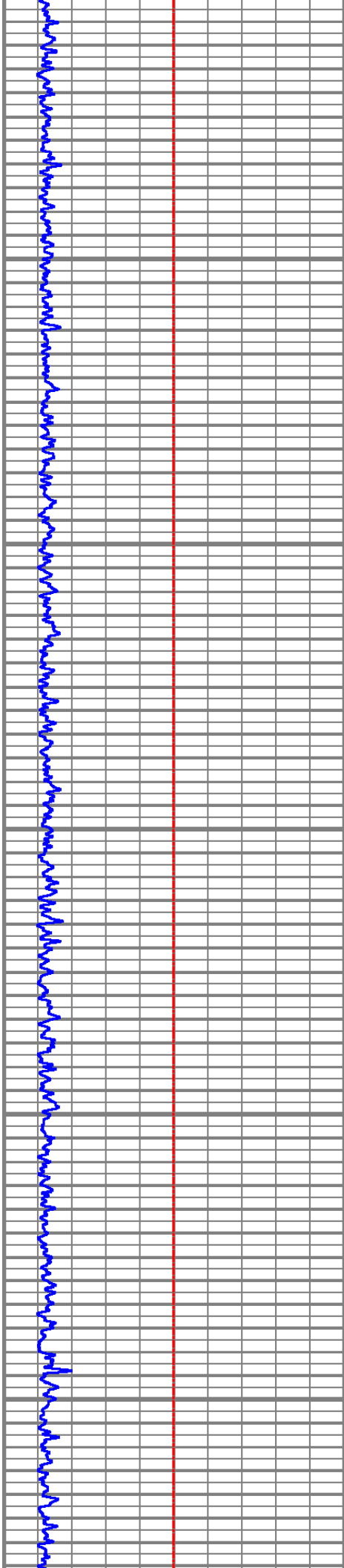
TIME DRIVE # 1 @ 3850
22 GPM @ 0 PSI

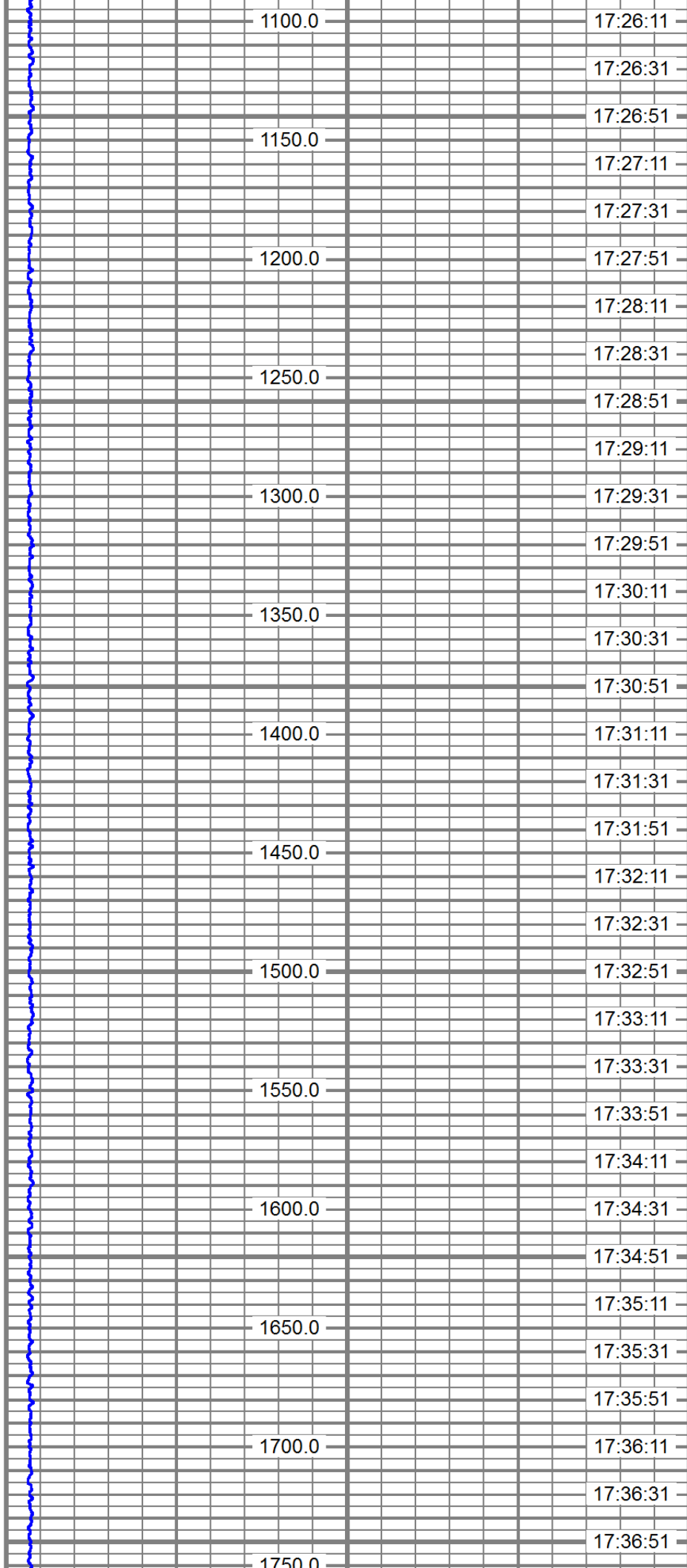
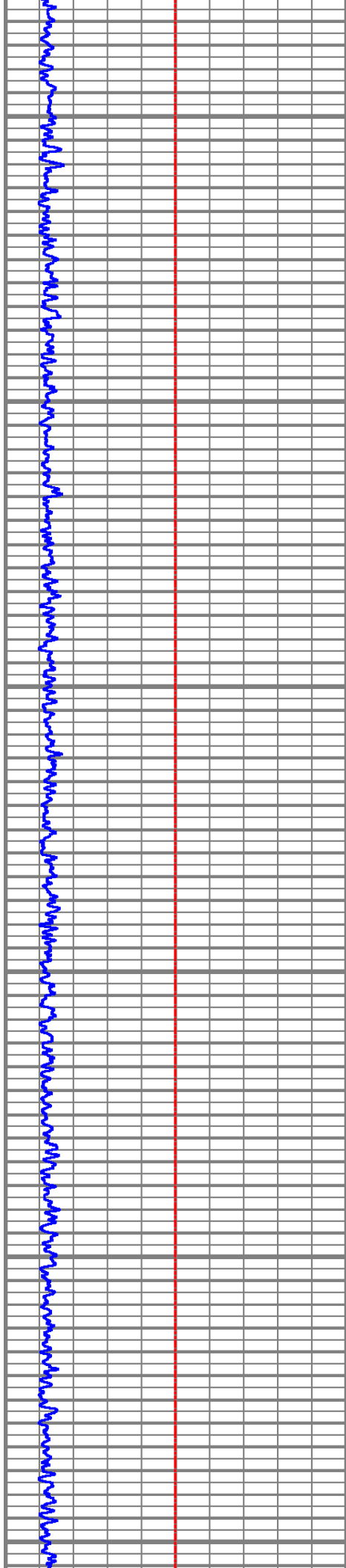
Database File western refshellstate13swd1 rat 2019.db
Dataset Pathname td/pass1
Presentation Format tratmd
Dataset Creation Tue Jul 09 17:07:52 2019
Charted by Time scaled 60/hour

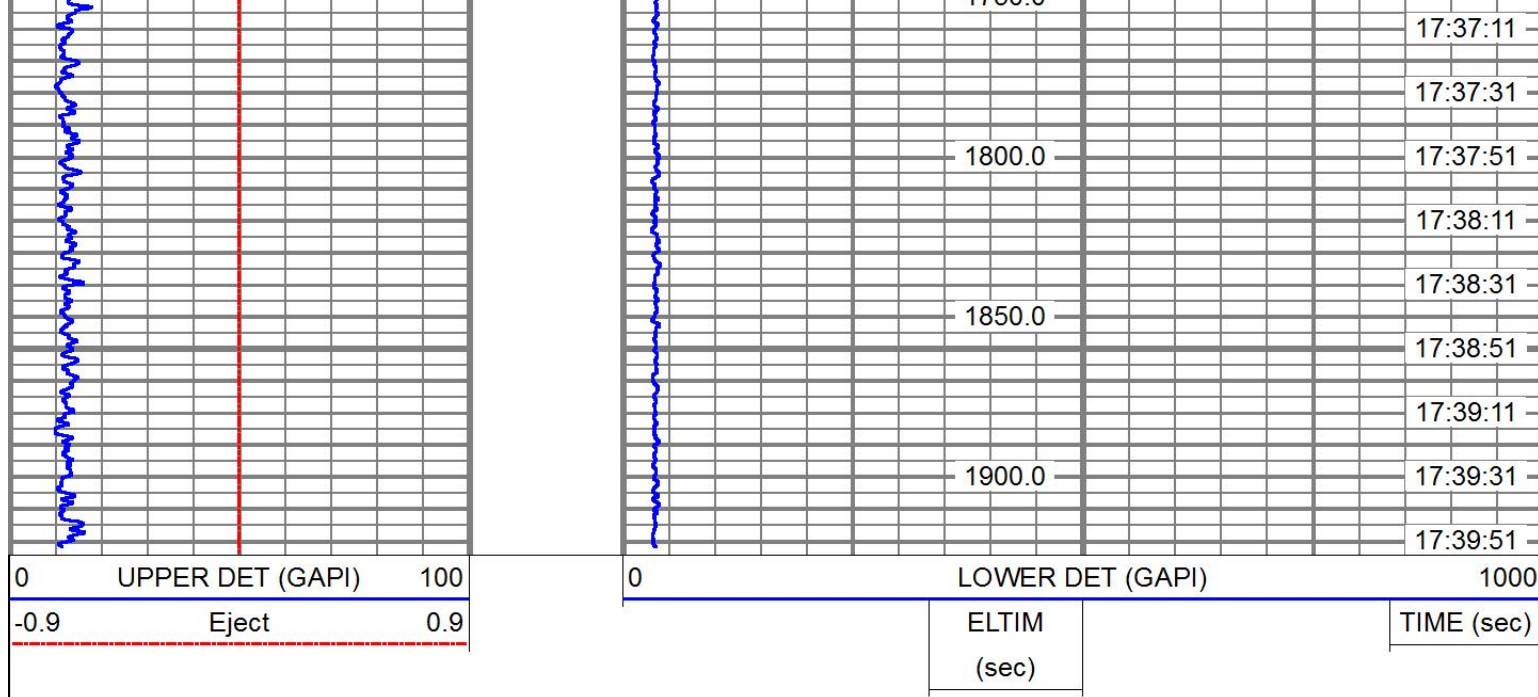
0 UPPER DET (GAPI) 100
-0.9 Eject 0.9

0 LOWER DET (GAPI) 1000
ELTIM (sec) TIME (sec)





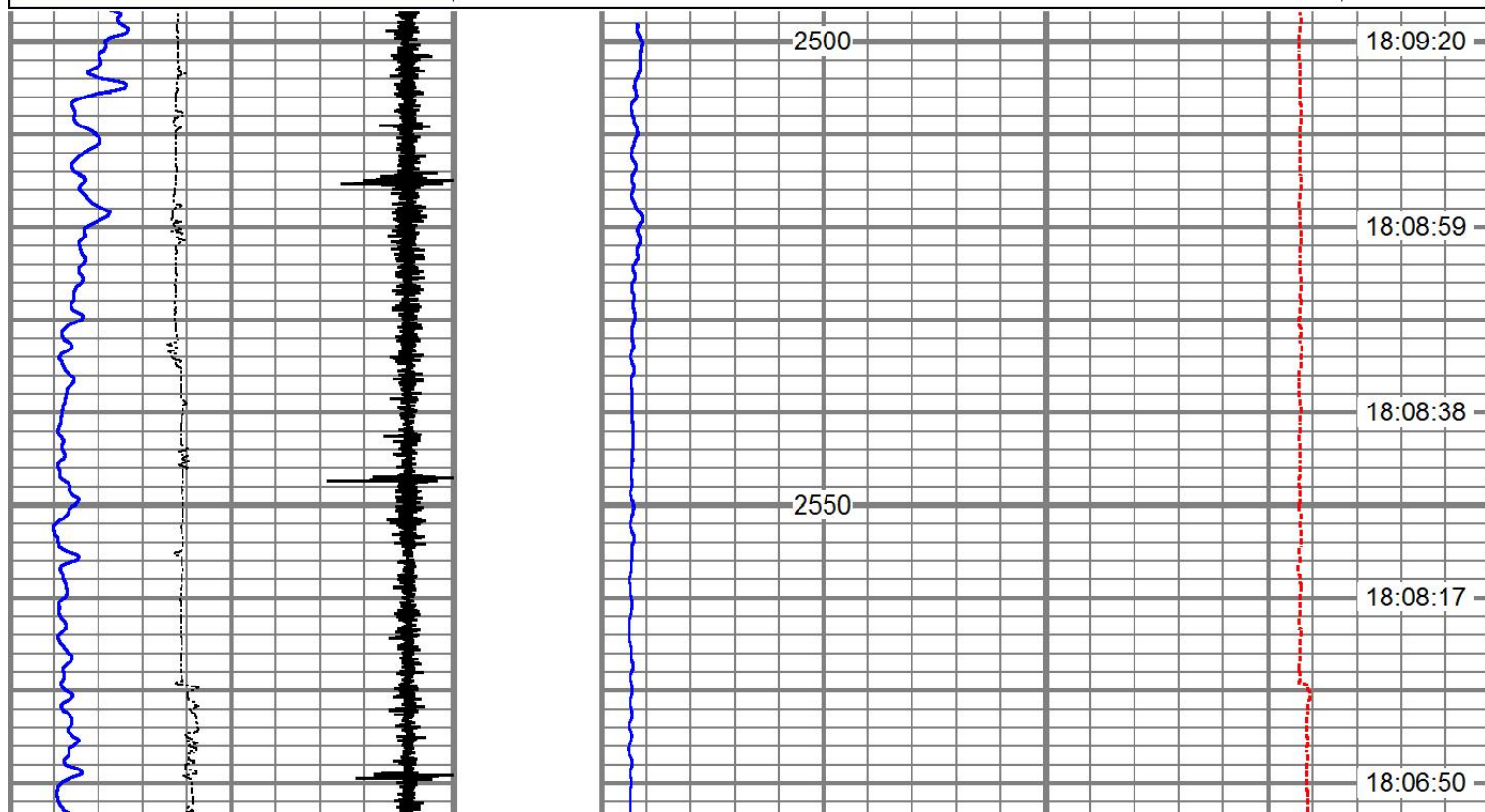
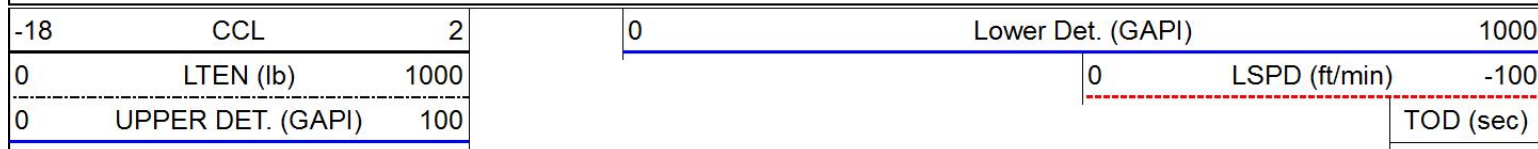


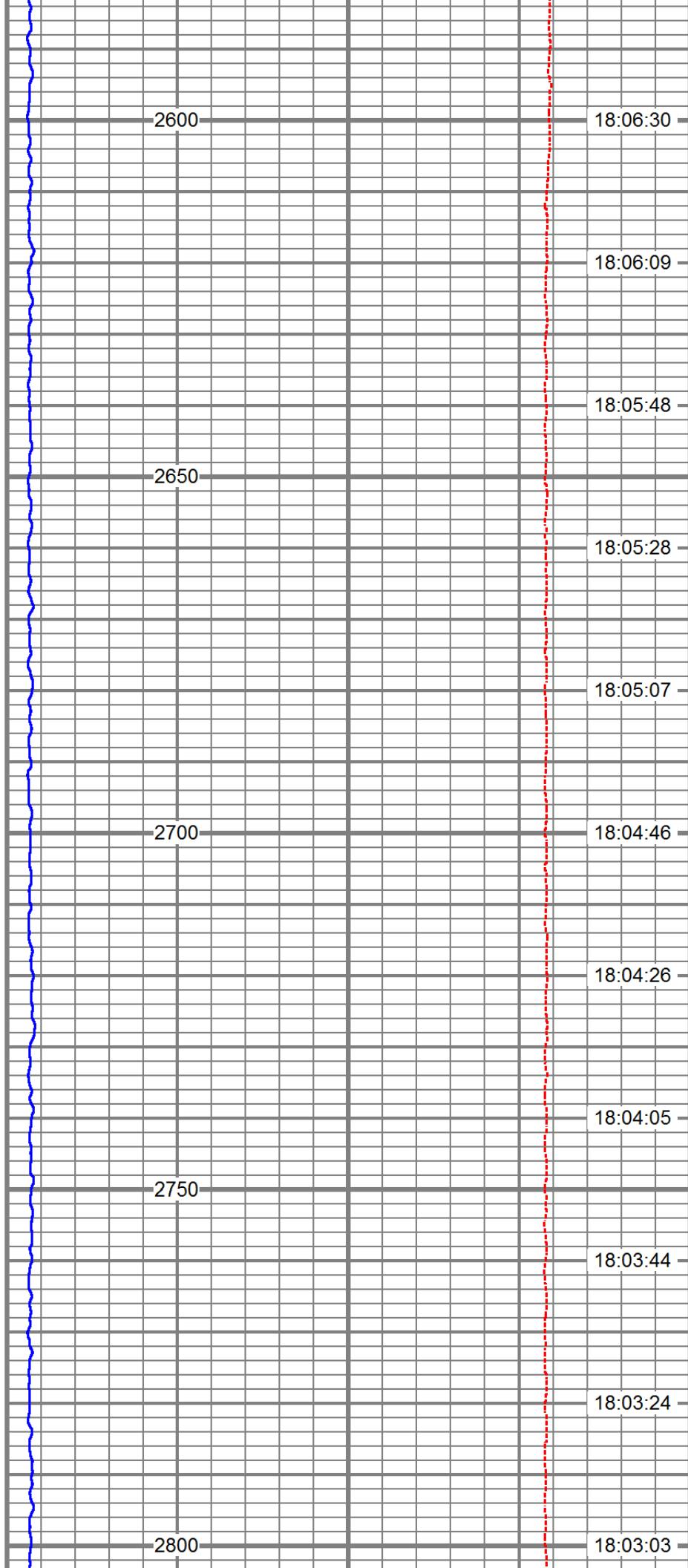
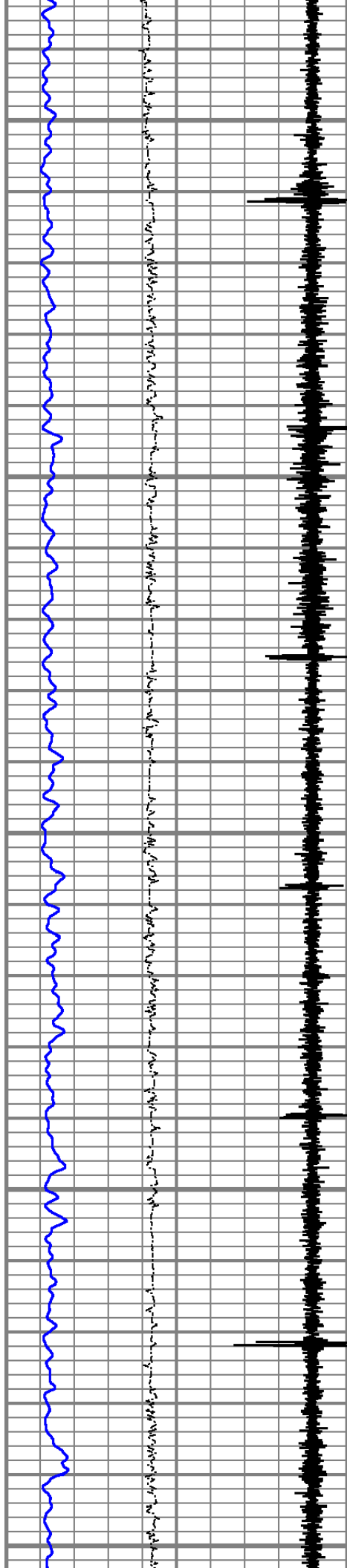


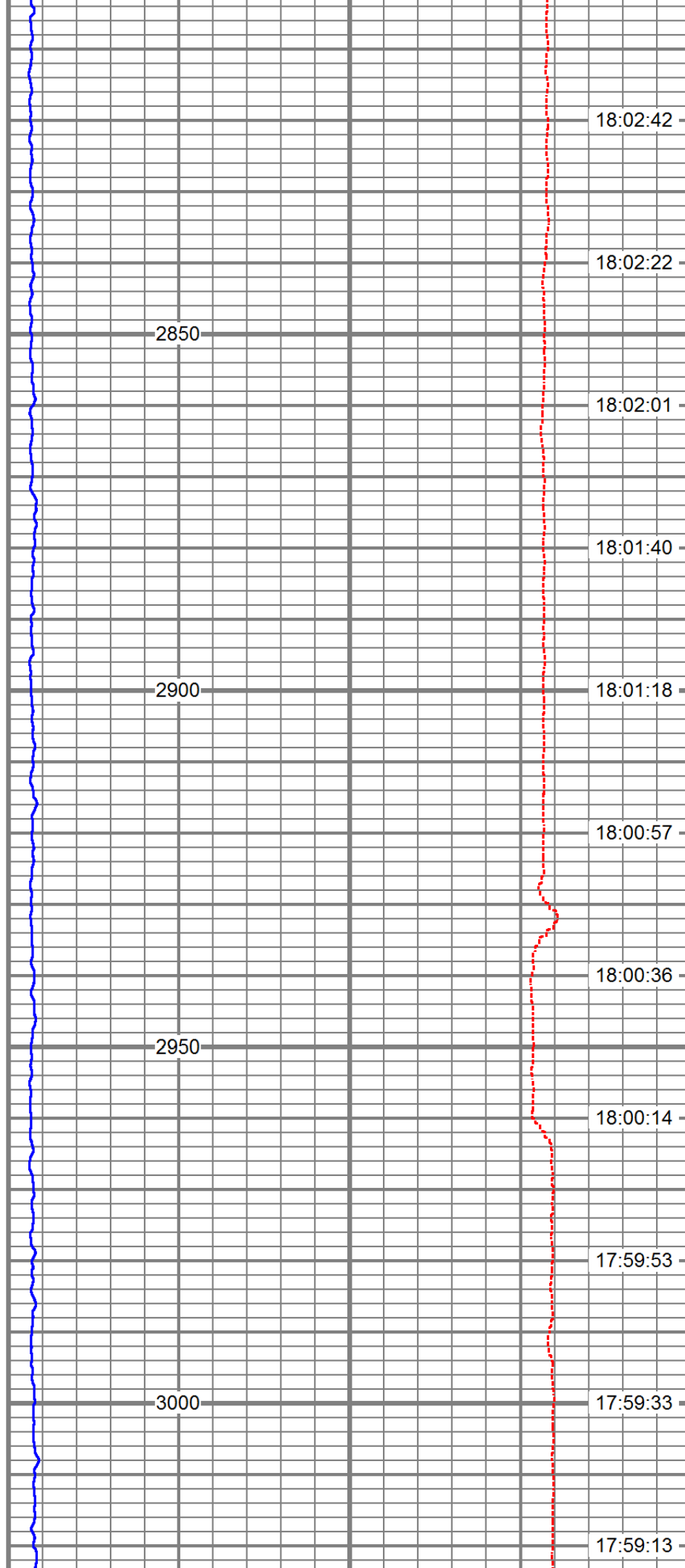
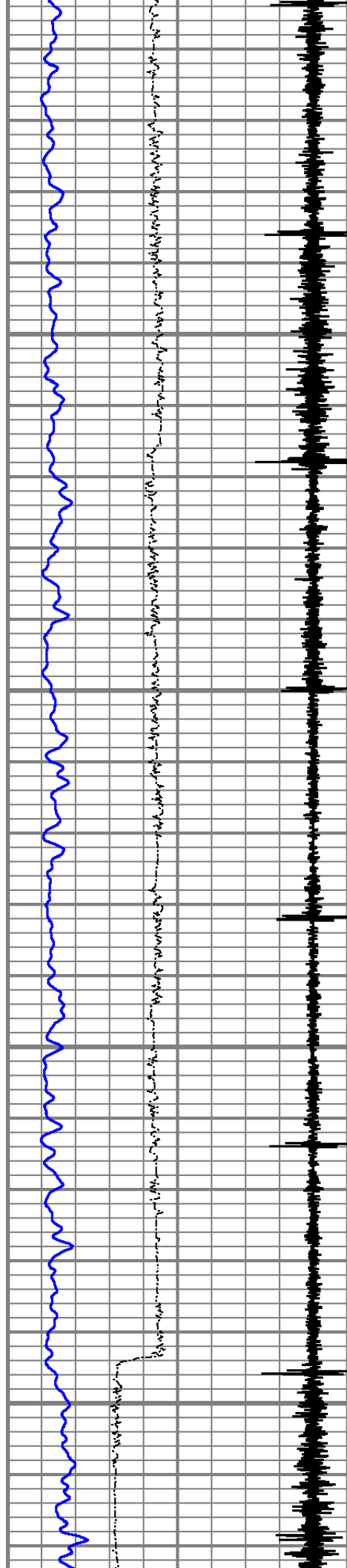
RUN # 12

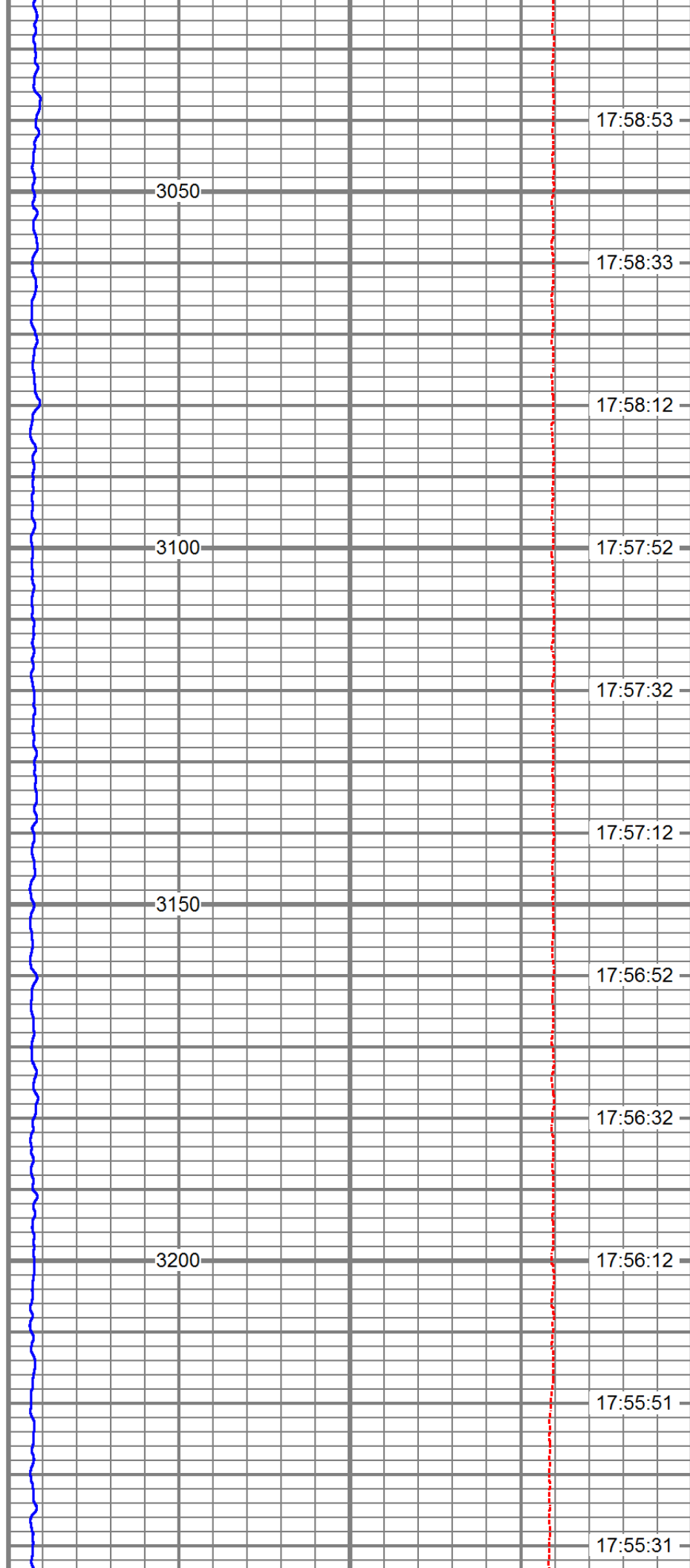
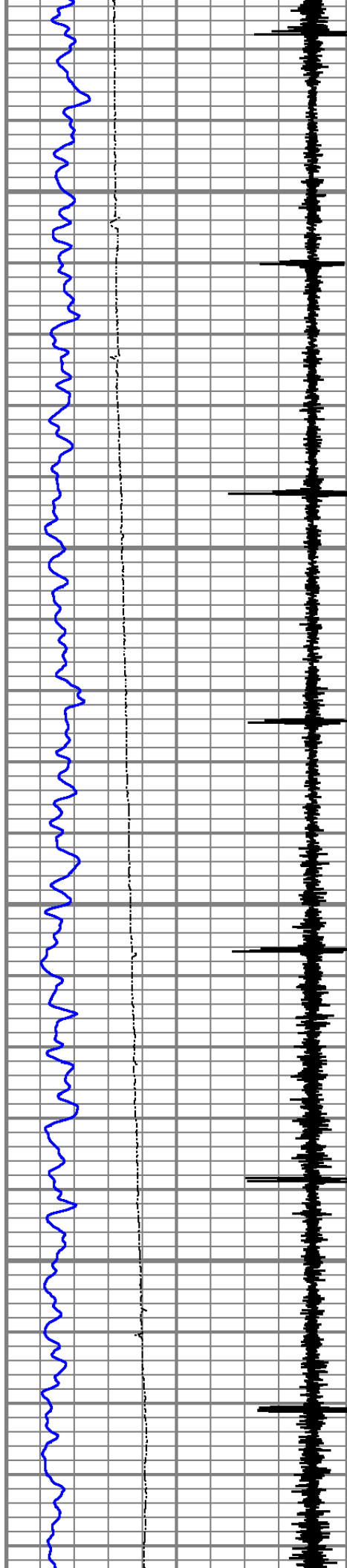
POST SURVEY BASE LOG
0 GPM @ 0 PSI

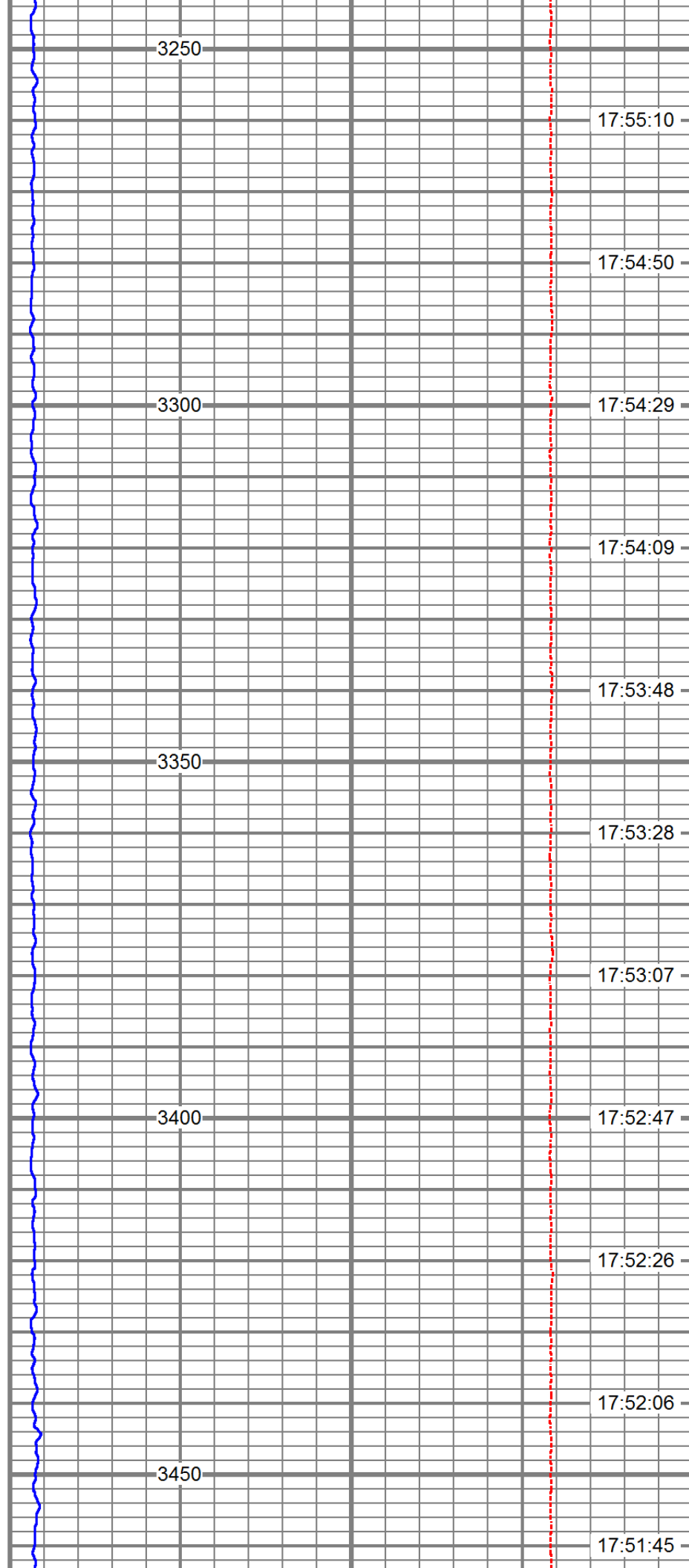
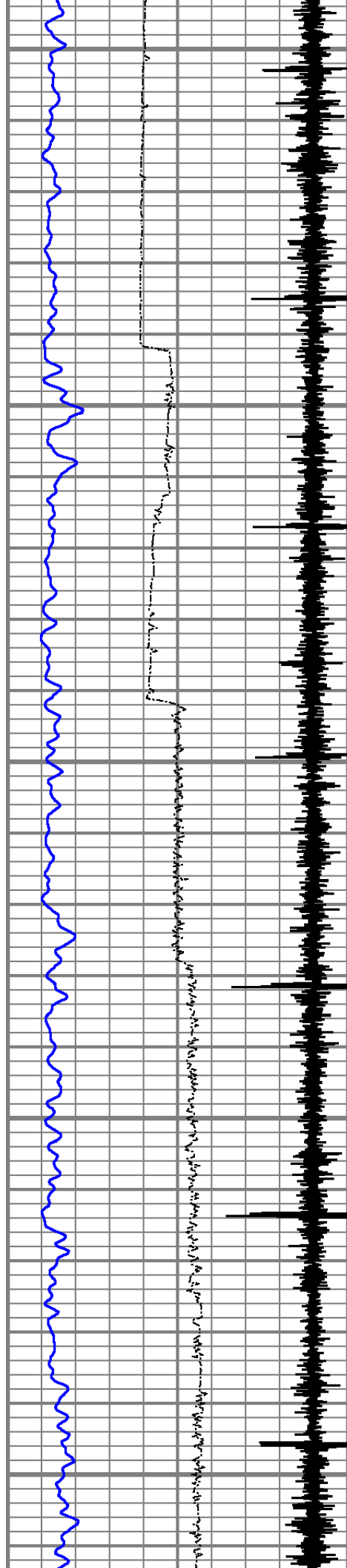
Database File western ref\shellstate13swd1 rat 2019.db
Dataset Pathname pstbse/pass1
Presentation Format tracergw
Dataset Creation Tue Jul 09 17:43:34 2019
Charted by Depth in Feet scaled 1:240

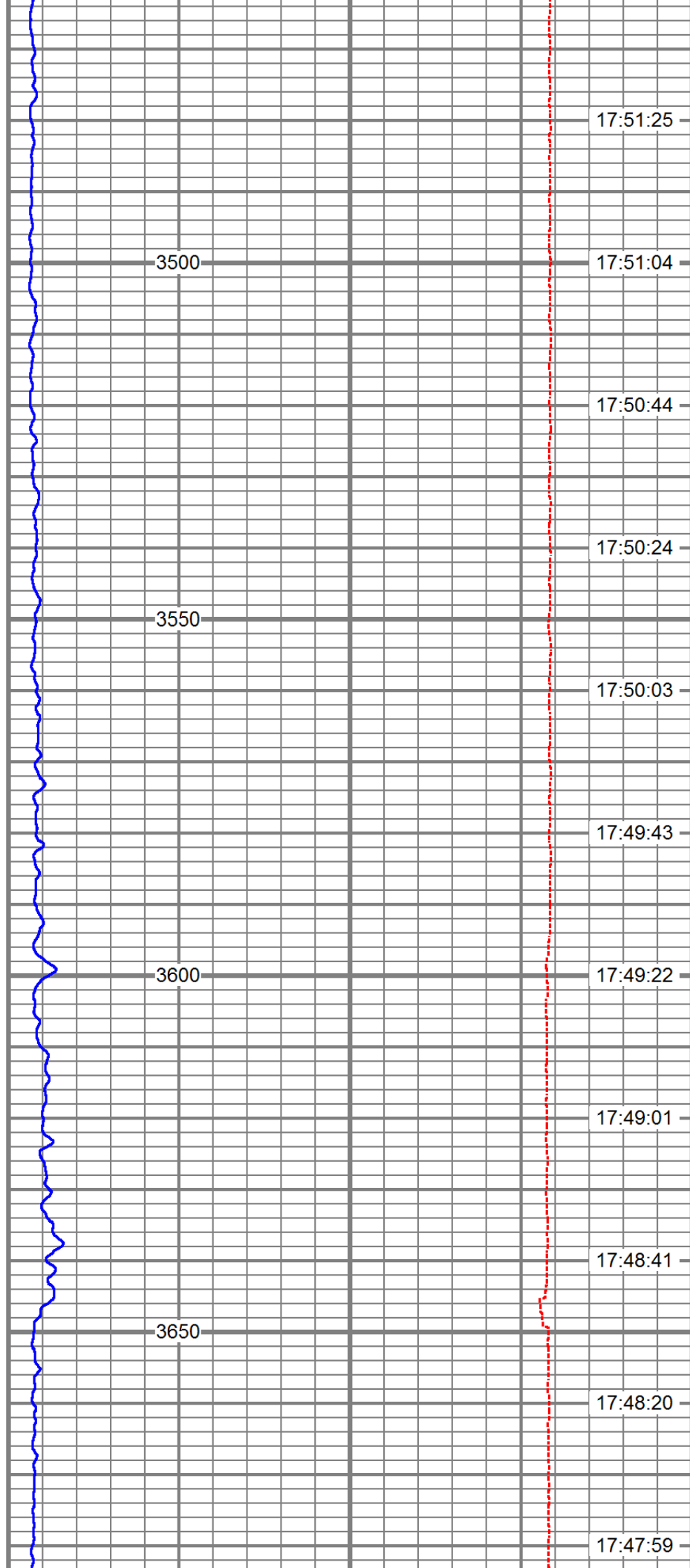
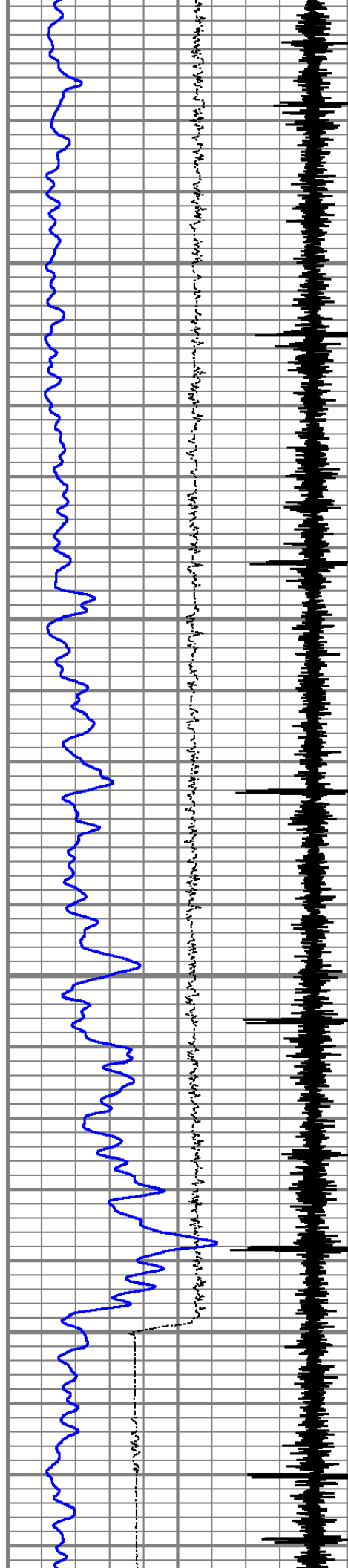


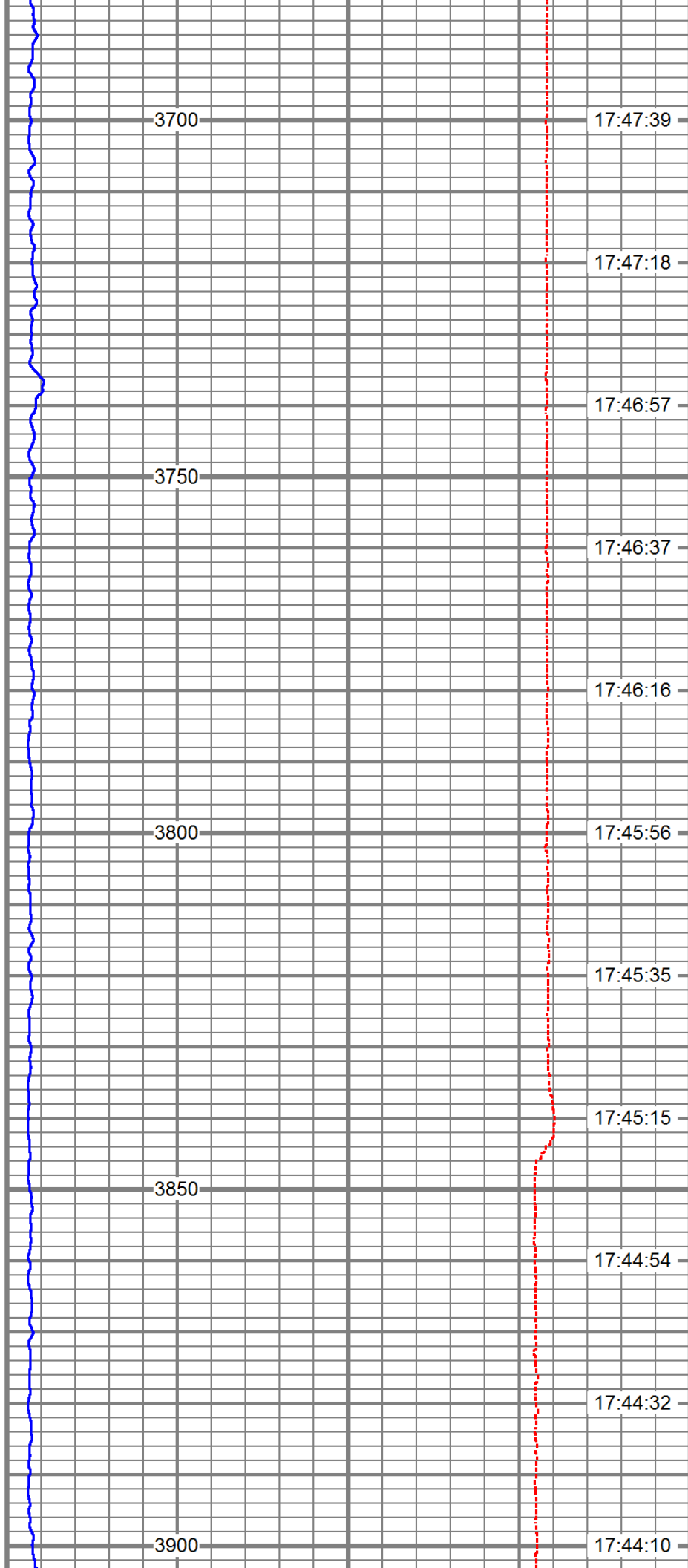
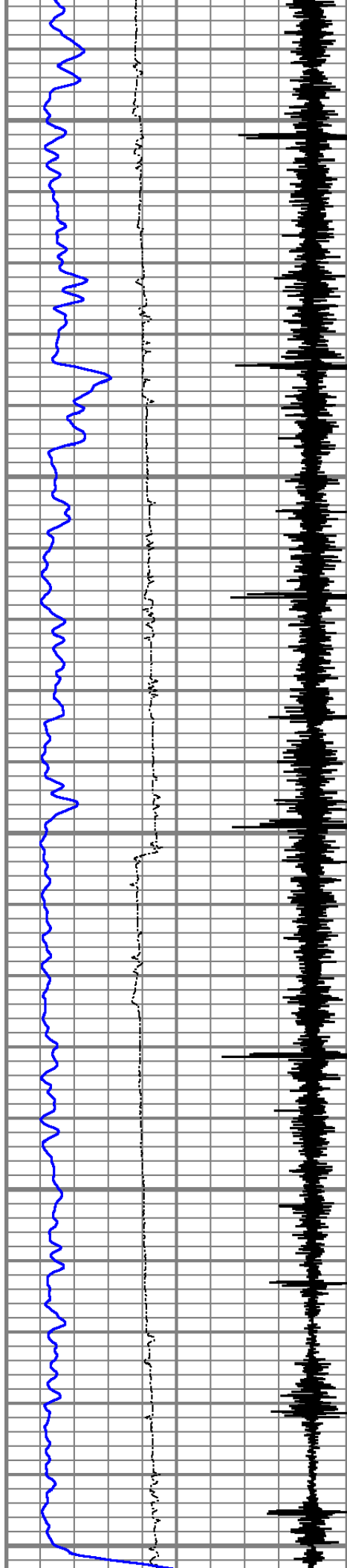


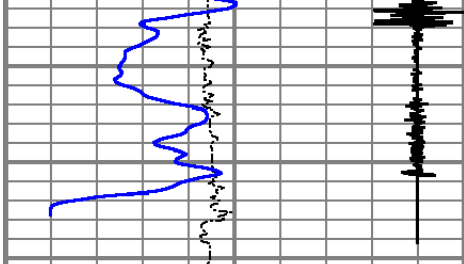




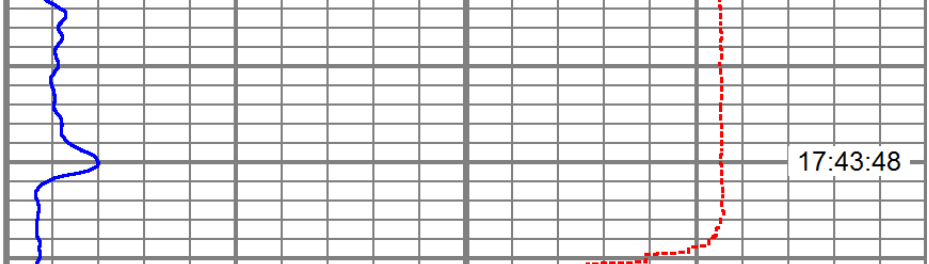








| | | |
|-----|-------------------|------|
| -18 | CCL | 2 |
| 0 | LTEN (lb) | 1000 |
| 0 | UPPER DET. (GAPI) | 100 |



| | | |
|---|-------------------|------|
| 0 | Lower Det. (GAPI) | 1000 |
| 0 | LSPD (ft/min) | -100 |
| | TOD (sec) | |