

HALLIBURTON

**BOREHOLE COMPENSATED
SONIC ARRAY TOOL
CEMENT BOND LOG**

COMPANY ENTEK GRB, LLC.
WELL SLATER DOME FEDERAL 24-9DL (ST#1)
FIELD SOUTH SLATER DOME
COUNTY MOFFAT
STATE CO

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API No. 05081076240000
 Location SURFACE HOLE LOCATION:
 2257' FSL & 431' FEL
 BOTTOM HOLE LOCATION @ 6657' MD, 6607.5' TVD:
 566' S & 281' W FROM WELLHEAD

Sec. 24 Twp. 12N Rge. 89W
 Elev. 7050.0 ft
 19.5 ft above perm. Datum
 Elev.: K.B. 7069.5 ft
 D.F. 7068.5 ft
 G.L. 7050.0 ft

Other Services:
 RWCH
 DSNT/SDLT
 ACRT
 XRM1

**COGCC Document No. 2055941
Received 06/23/2014**

| | | |
|--------------------------|-------------------------|-------------------------|
| Date | 11-Sep-11 | 20-Sep-11 |
| Run No. | ONE | TWO |
| Depth - Driller | 6657.00 ft | 8105.00 ft |
| Depth - Logger | 6650.0 ft | 8090.0 ft |
| Bottom - Logged Interval | 6648.0 ft | 6592.0 ft |
| Top - Logged Interval | 100.0 ft | 100.0 ft |
| Casing - Driller | 9.625 in | 7.000 in @ 6598.0 ft |
| Casing - Logger | 2513.0 ft | 6592.0 ft |
| Bit Size | 8.750 in | 6.250 in |
| Type Fluid in Hole | WBM | WBM |
| Density | 9.2 ppg | 9.5 ppg |
| PH | 10.05 pH | 10.50 pH |
| Source of Sample | MUD TANK | MUD TANK |
| Rm @ Meas. Temperature | 0.810 ohmm @ 66.30 degF | 0.770 ohmm @ 66.70 degF |
| Rmf @ Meas. Temperature | 1.14 ohmm @ 63.00 degF | 0.62 ohmm @ 72.10 degF |
| Rmc @ Meas. Temperature | 0.740 ohmm @ 57.90 degF | 1.350 ohmm @ 69.20 degF |
| Source Rmf | MEAS | MEAS |
| Rm @ BHT | 0.34 ohmm @ 162.0 degF | 0.28 ohmm @ 195.0 degF |
| Time Since Circulation | 10.2 hr | 10.3 hr |
| Time on Bottom | 11-Sep-11 03:47 | 20-Sep-11 08:49 |
| Max. Rec. Temperature | 162.0 degF @ 6650.0 ft | 195.0 degF @ 8090.0 ft |
| Equipment Location | 11170614 RS, WY | 11170614 RS, WY |
| Recorded By | J. MAYNE | D. CULVER |
| Witnessed By | BILL EUCKER | JUBAL TERRY |

Fold here

Service Ticket No.: 8479706 API Serial No.: 05081076240000 PGM Version: WL INSITE R3.2.3 (Build 5)

| CHANGE IN MUD TYPE OR ADDITIONAL SAMPLE | | | | RESISTIVITY SCALE CHANGES | | | |
|---|------------|---|--|----------------------------|-----------------|---------------|-----------------|
| Date | Sample No. | | | Type Log | Depth | Scale Up Hole | Scale Down Hole |
| Type Fluid in Hole | | | | | | | |
| Density | Viscosity | | | | | | |
| Ph | Fluid Loss | | | | | | |
| Source of Sample | | | | RESISTIVITY EQUIPMENT DATA | | | |
| Rm @ Meas. Temp | @ | @ | | Run No. | Tool Type & No. | Pad Type | Tool Pos. |
| Rmf @ Meas. Temp. | @ | @ | | TWO | ACRT- | N/A | 0.0" S.O. |
| Rmc @ Meas. Temp. | @ | @ | | | E104_S103 | | |
| Source Rmf | Rmc | | | | | | |
| Rm @ BHT | @ | @ | | | | | |
| Rmf @ BHT | @ | @ | | | | | |
| Rmc @ BHT | @ | @ | | | | | |

EQUIPMENT DATA

| GAMMA | | ACOUSTIC | | DENSITY | | NEUTRON | |
|--------------------|----------|--------------|----------|-------------|----------|-------------|-------------|
| Run No. | TWO | Run No. | TWO | Run No. | TWO | Run No. | TWO |
| Serial No. | 11602914 | Serial No. | 11105782 | Serial No. | 10947725 | Serial No. | 11020488 |
| Model No. | GTET | Model No. | BSAT | Model No. | SDLT-I | Model No. | DSNT-I |
| Diameter | 3.625" | No. of Cent. | 0 | Diameter | 4.5" | Diameter | 3.625" |
| Detector Model No. | 102-A | Spacing | 0.5 | Log Type | GAM/GAM | Log Type | THERM/THERM |
| Type | SCINT | Source Type | Cs137 | Source Type | Cs137 | Source Type | Am241Be |
| Length | 8" | Serial No. | 5235GW | Serial No. | 5235GW | Serial No. | 08-018 |
| Distance to Source | 10' | Strength | 1.78 Ci | Strength | 1.78 Ci | Strength | 15 Ci |

LOGGING DATA

GENERAL GAMMA ACOUSTIC DENSITY NEUTRON

| Run | GENERAL | | Speed ft/min | GAMMA | | ACOUSTIC | | Matrix | DENSITY | | NEUTRON | | Matrix | |
|-----|---------|-------|-----------------|-------|-----|----------|------|--------------|---------|------|-----------|-----|--------|------|
| | Depth | | | Scale | | Scale | | | Scale | | Scale | | | |
| | No. | From | | To | L | R | L | | R | L | R | L | | R |
| TWO | 8090' | 6592' | REC | 0 | 150 | 30% | -10% | 55.5 usec/ft | 30% | -10% | 2.68 g/cc | 30% | -10% | SAND |
| TWO | 6592' | 6350' | REC | 0 | 150 | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

DIRECTIONAL INFORMATION

| | | | |
|-------------------|---|-----|---|
| Maximum Deviation | @ | KOP | @ |
|-------------------|---|-----|---|

Remarks: RWCH-GTET-DSNT-SDLT-BSAT-ACRT RAN IN COMBINATION

RWCH-GTET-XRMI RAN IN COMBINATION

ANNULAR HOLE VOLUME CALCULATED FOR 4.5" CASING

BOREHOLE RUGOSITY, TENSION PULLS AND WASHOUTS MAY EFFECT LOG QUALITY

BOWSPRIND DECENTRALIZER AND STANDOFF NOT RAN DUE TO HOLE SIZE

LATITUDE: 40.979345

LONGITUDE: -107.319226

TODAY'S CREW: A. FULGHUM, K. TUELLER & L. DAVIS RIG: DHS 18

*** THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES, ROCK SPRINGS, WY (307) 352-8600 ***

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PARAMETERS REPORT

| Depth (ft) | Tool Name | Mnemonic | Description | Value | Units |
|------------|-----------|----------|---|---------|-------|
| TOP | | | | | |
| | SHARED | BS | Bit Size | 6.250 | in |
| | SHARED | UBS | Use Bit Size instead of Caliper for all applications. | No | |
| | SHARED | MDBS | Mud Base | Water | |
| | SHARED | MDWT | Borehole Fluid Weight | 9.500 | ppg |
| | SHARED | WAGT | Weighting Agent | Natural | |
| | SHARED | BSAL | Borehole salinity | 0.00 | ppm |
| | SHARED | FSAL | Formation Salinity NaCl | 0.00 | ppm |
| | SHARED | KPCT | Percent K in Mud by Weight? | 0.00 | % |
| | SHARED | RMUD | Mud Resistivity | 2.000 | ohmm |
| | SHARED | TRM | Temperature of Mud | 75.0 | degF |
| | SHARED | CSD | Logging Interval is Cased? | Yes | |
| | SHARED | CSOD | Inner Casing OD size | 7.000 | in |
| | SHARED | CSWT | Casing Weight | 23.00 | lbpf |
| | SHARED | ISOC | Is Outer Casing Present? | No | |
| | SHARED | CSCM | Casing Cemented | Yes | |
| | SHARED | CMWT | Cement Weight | 16.500 | ppg |
| | SHARED | ST | Surface Temperature | 75.0 | degF |
| | SHARED | TD | Total Well Depth | 8105.00 | ft |
| | SHARED | BHT | Bottom Hole Temperature | 200.0 | degF |
| | SHARED | SVTM | Navigation and Survey Master Tool | NONE | |
| | SHARED | AZTM | High Res Z Accelerometer Master Tool | GTET | |
| | SHARED | TEMM | Temperature Master Tool | NONE | |
| | SHARED | BHSM | Borehole Size Master Tool | NONE | |

| | | | | |
|-----------------|------|--|-----------|------|
| Rwa / CrossPlot | XPOK | Process Crossplot? | Yes | |
| Rwa / CrossPlot | FCHO | Select Source of F | Automatic | |
| Rwa / CrossPlot | AFAC | Archie A factor | 0.6200 | |
| Rwa / CrossPlot | MFAC | Archie M factor | 2.1500 | |
| Rwa / CrossPlot | RMFR | Rmf Reference | 0.10 | ohmm |
| Rwa / CrossPlot | TMFR | Rmf Ref Temp | 75.00 | degF |
| Rwa / CrossPlot | RWA | Resistivity of Formation Water | 0.05 | ohmm |
| Rwa / CrossPlot | ADP | Use Air Porosity to calculate CrossplotPhi | No | |
| GTET | GROK | Process Gamma Ray? | Yes | |
| GTET | GRSO | Gamma Tool Standoff | 0.000 | in |
| GTET | GEOK | Process Gamma Ray EVR? | No | |
| GTET | TPOS | Tool Position | Centered | |
| CBL-BSAT | TTLV | Travel Time threshold. | 5.0 | mV |
| CBL-BSAT | TTOF | CBL Travel Time Offset from Calibration. | 0 | us |
| CBL-BSAT | ISFM | Is foam cement type? | No | |
| CBL-BSAT | CSTR | Compressive Strength | 1000.00 | psia |
| CBL-BSAT | BIOK | Calculate Bond Index? | Yes | |
| CBL-BSAT | ISMD | Is borehole fluid Mud? | No | |

BOTTOM

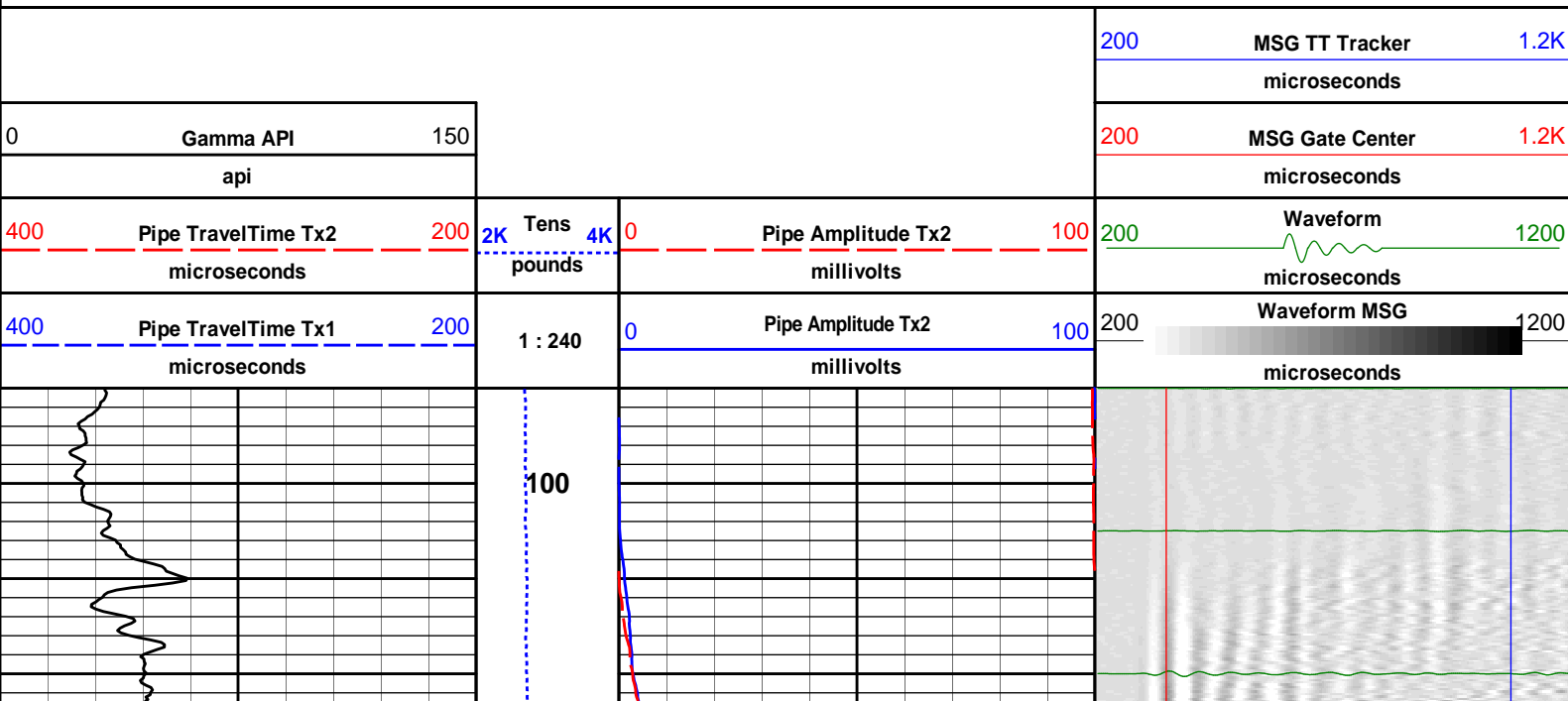
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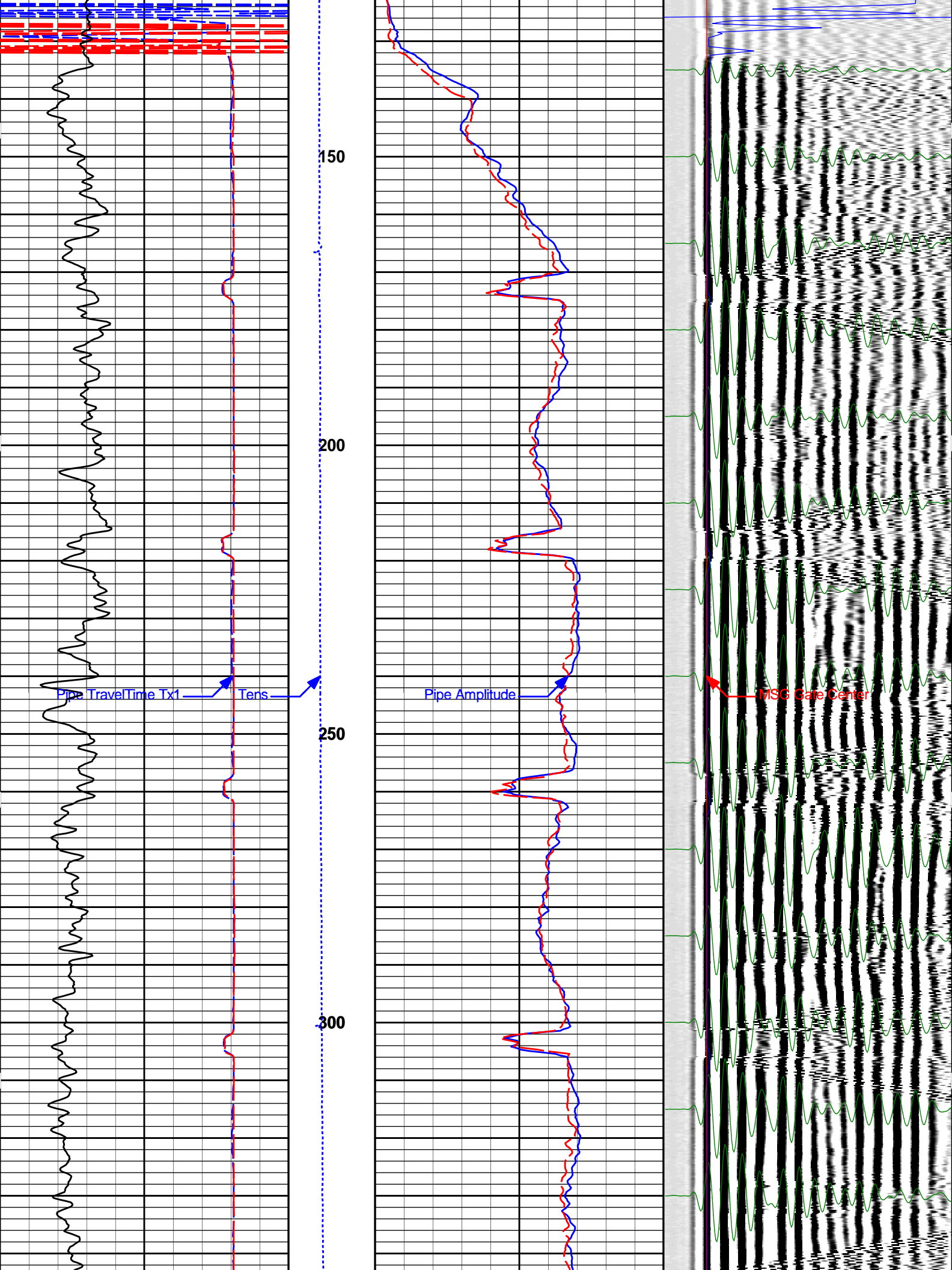
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Plot Time: 20-Sep-11 20:29:06
 Plot Range: 90 ft to 6640.42 ft
 Data: SL_DM_24_9DL\Well Based\MAIN_CBL*
 Plot File: \CBL\BSAT_CBL_M

MAIN PASS 5" = 100'





Pipe TravelTime Tx1

Tens

Pipe Amplitude

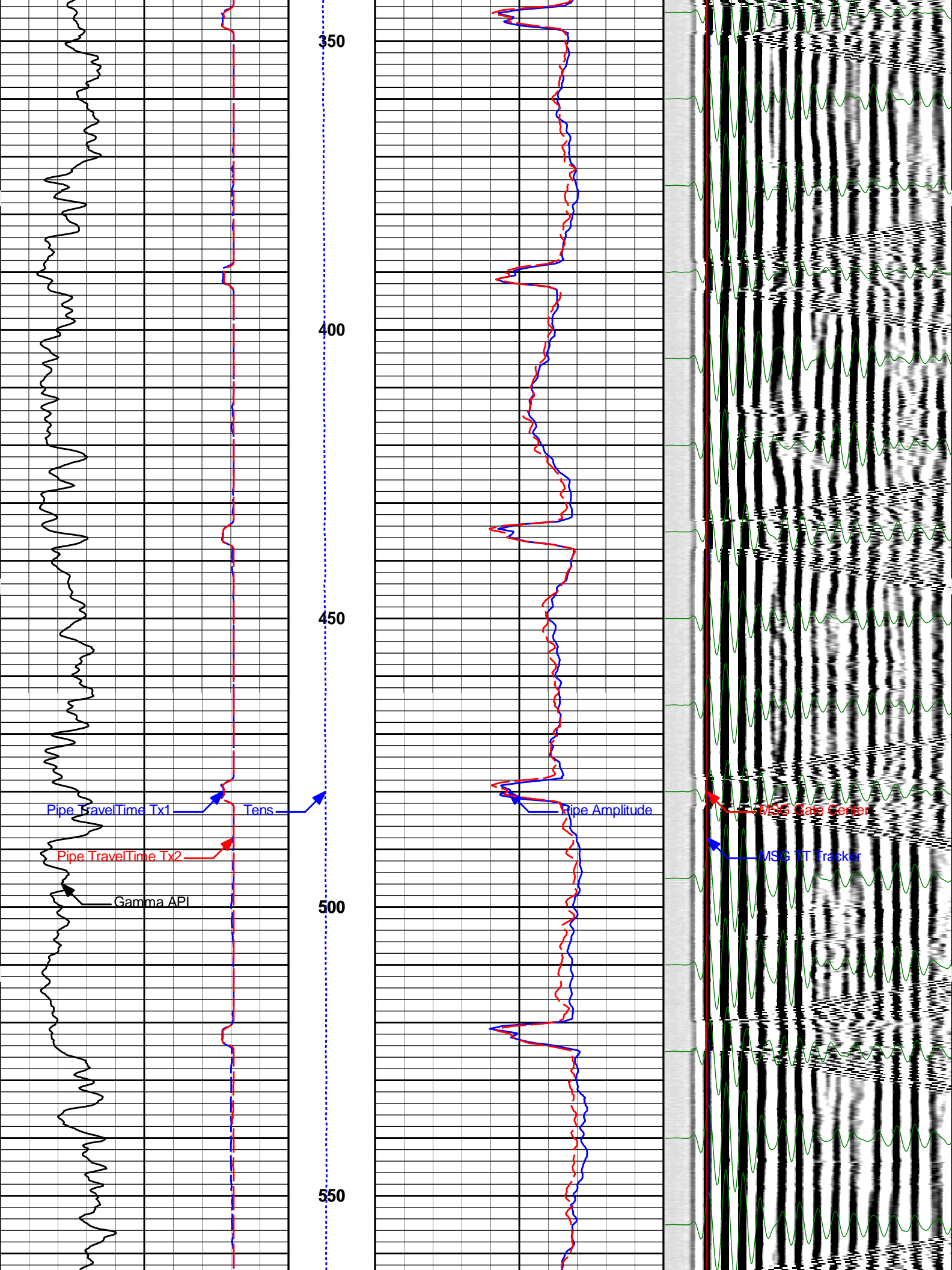
MSG Gate Center

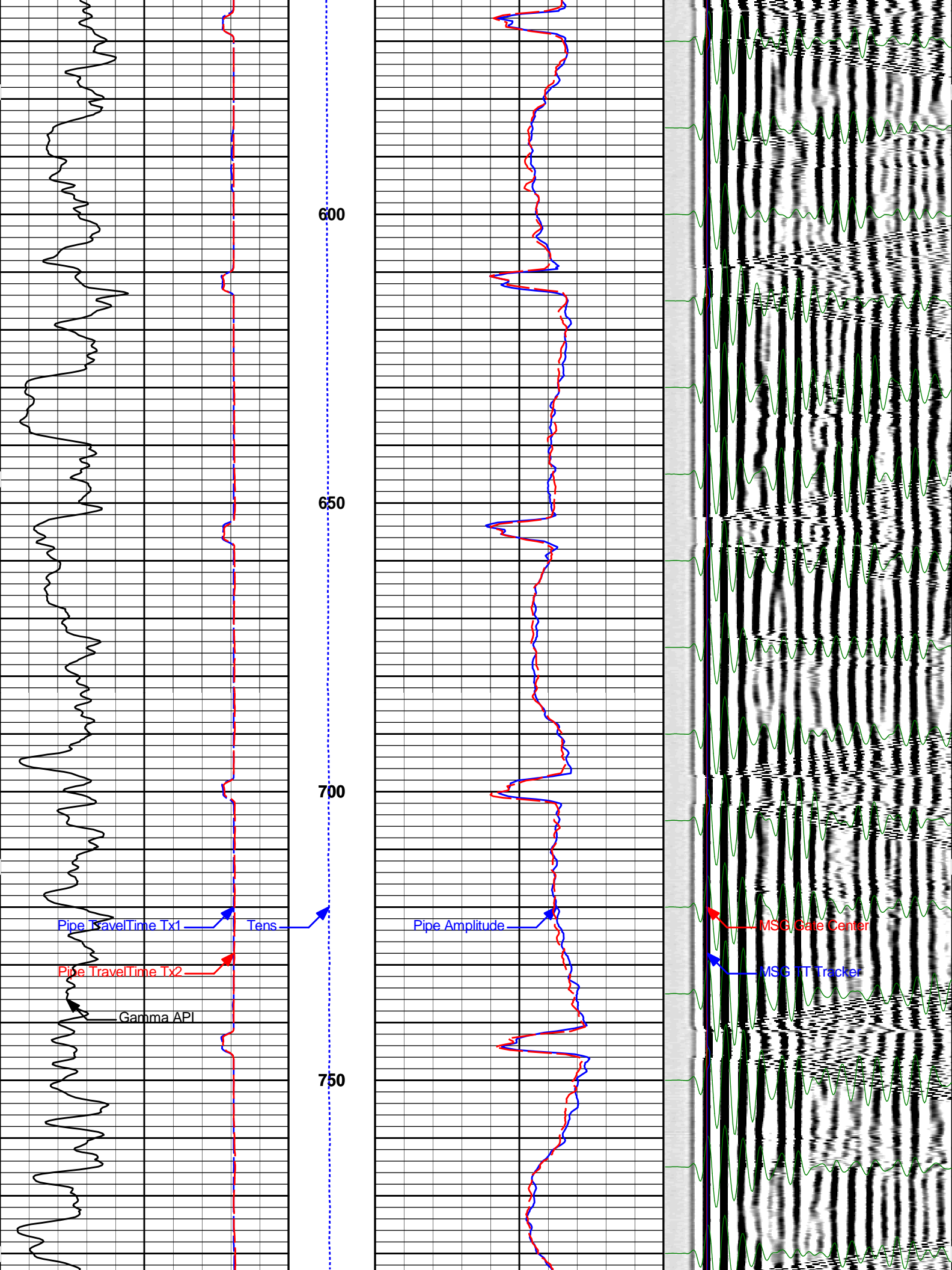
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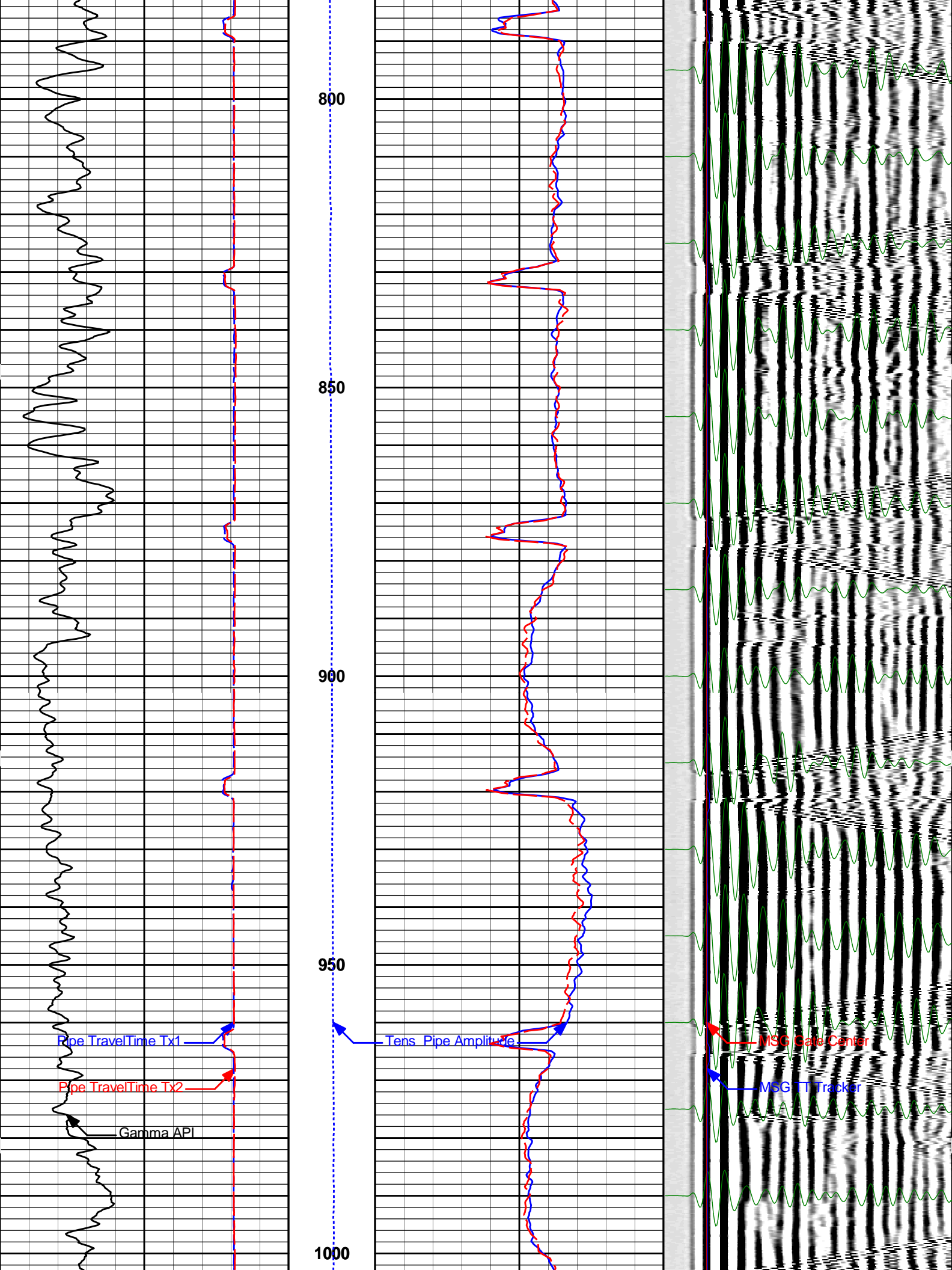
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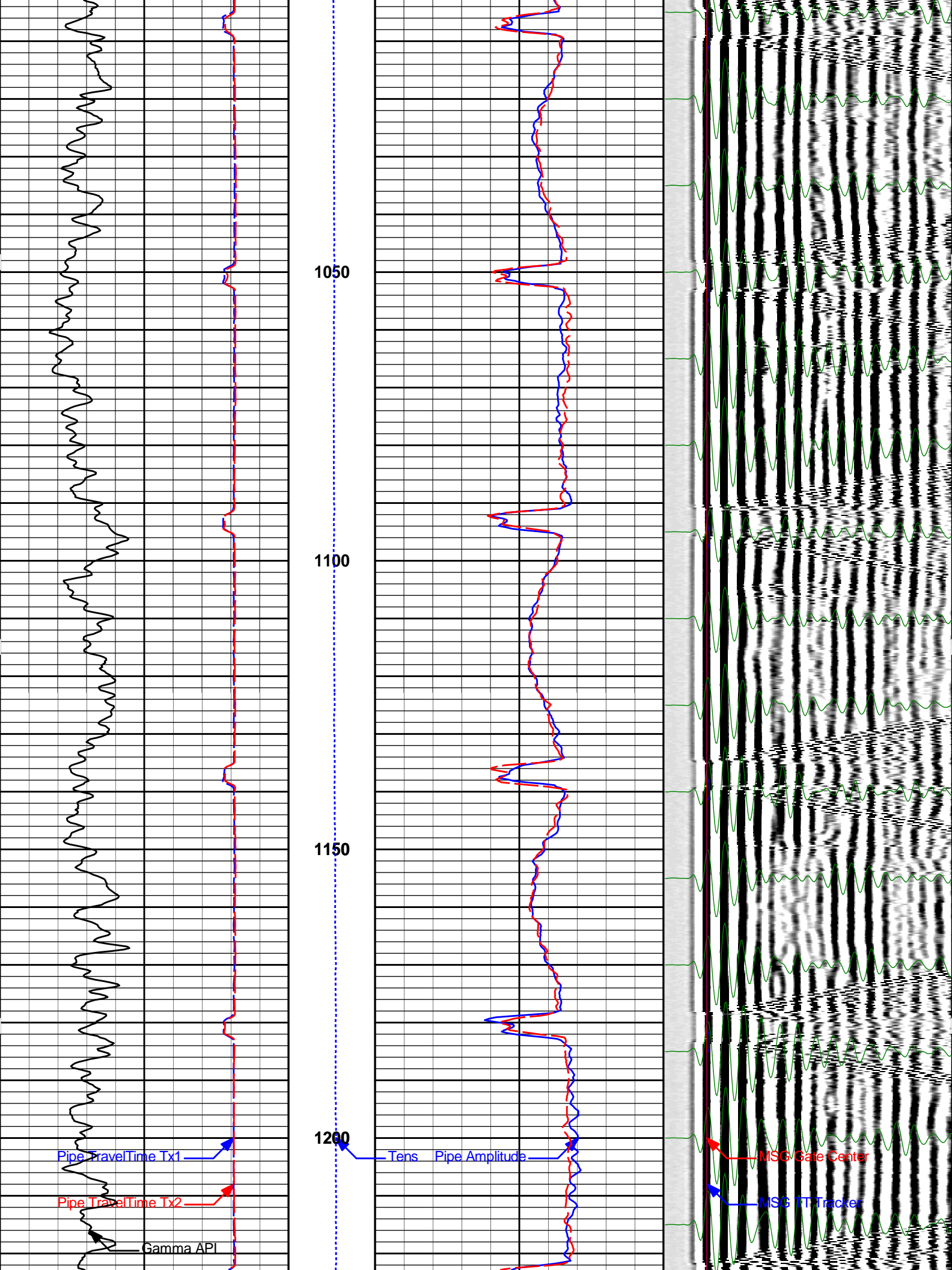
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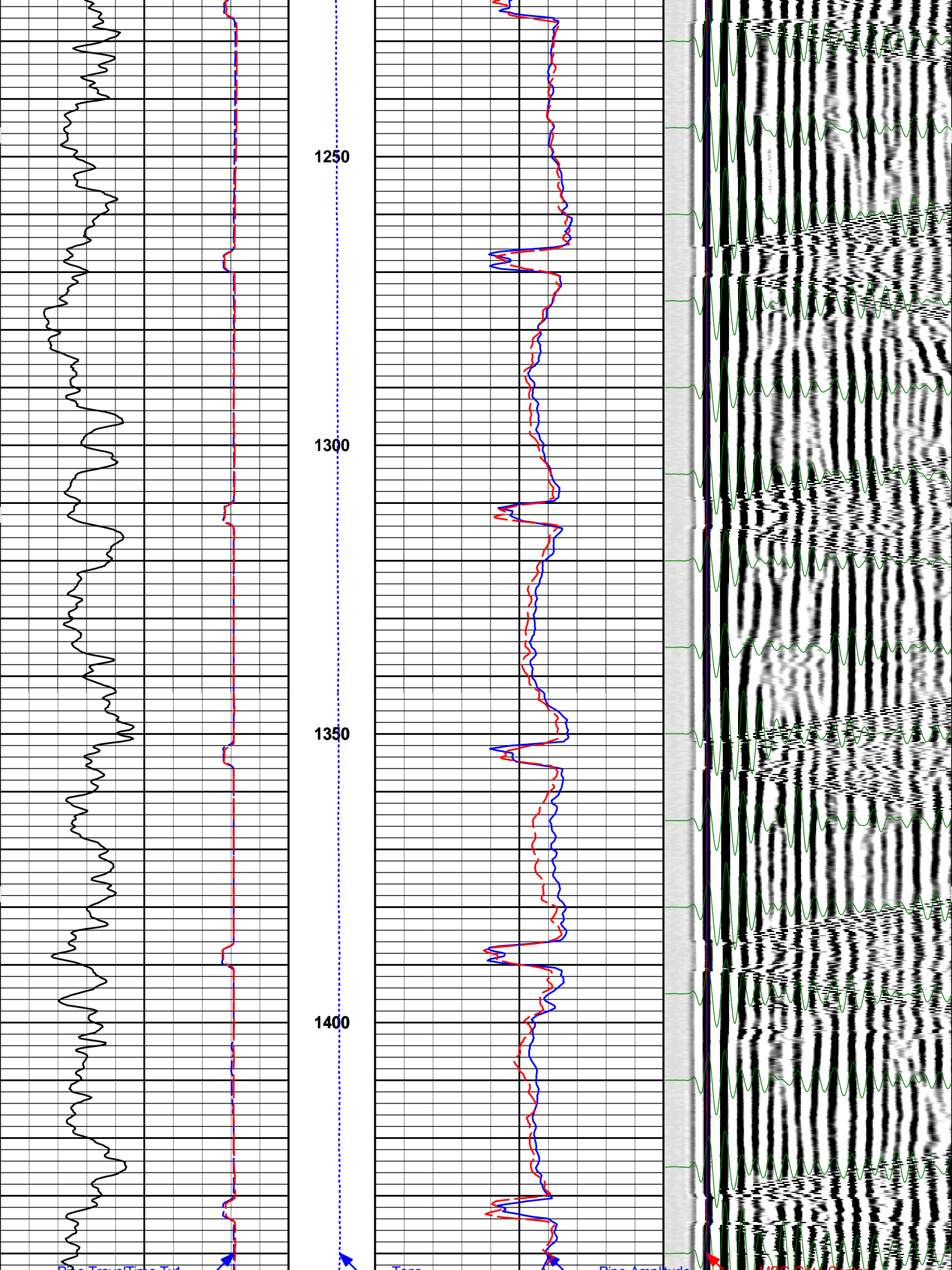
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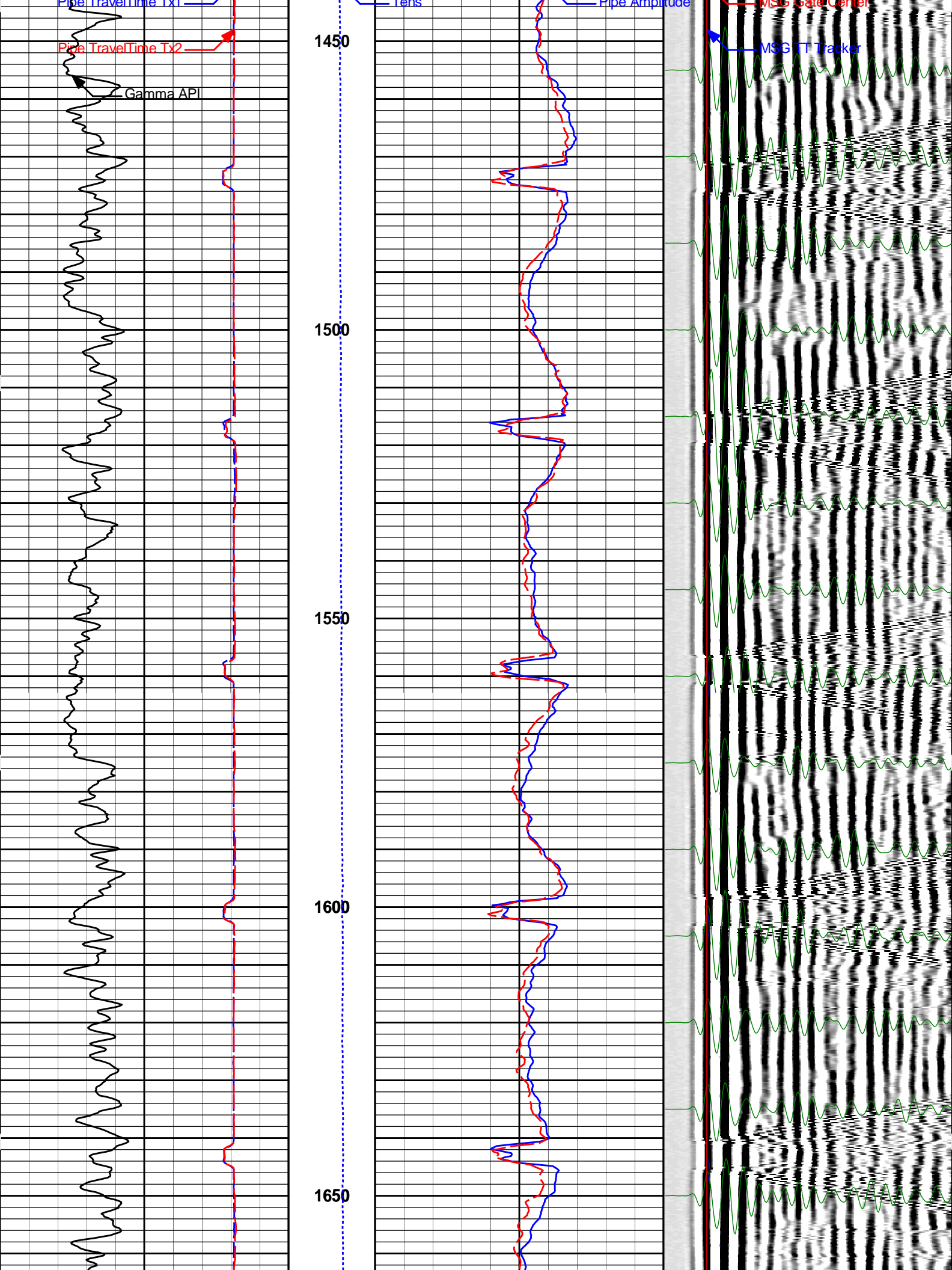


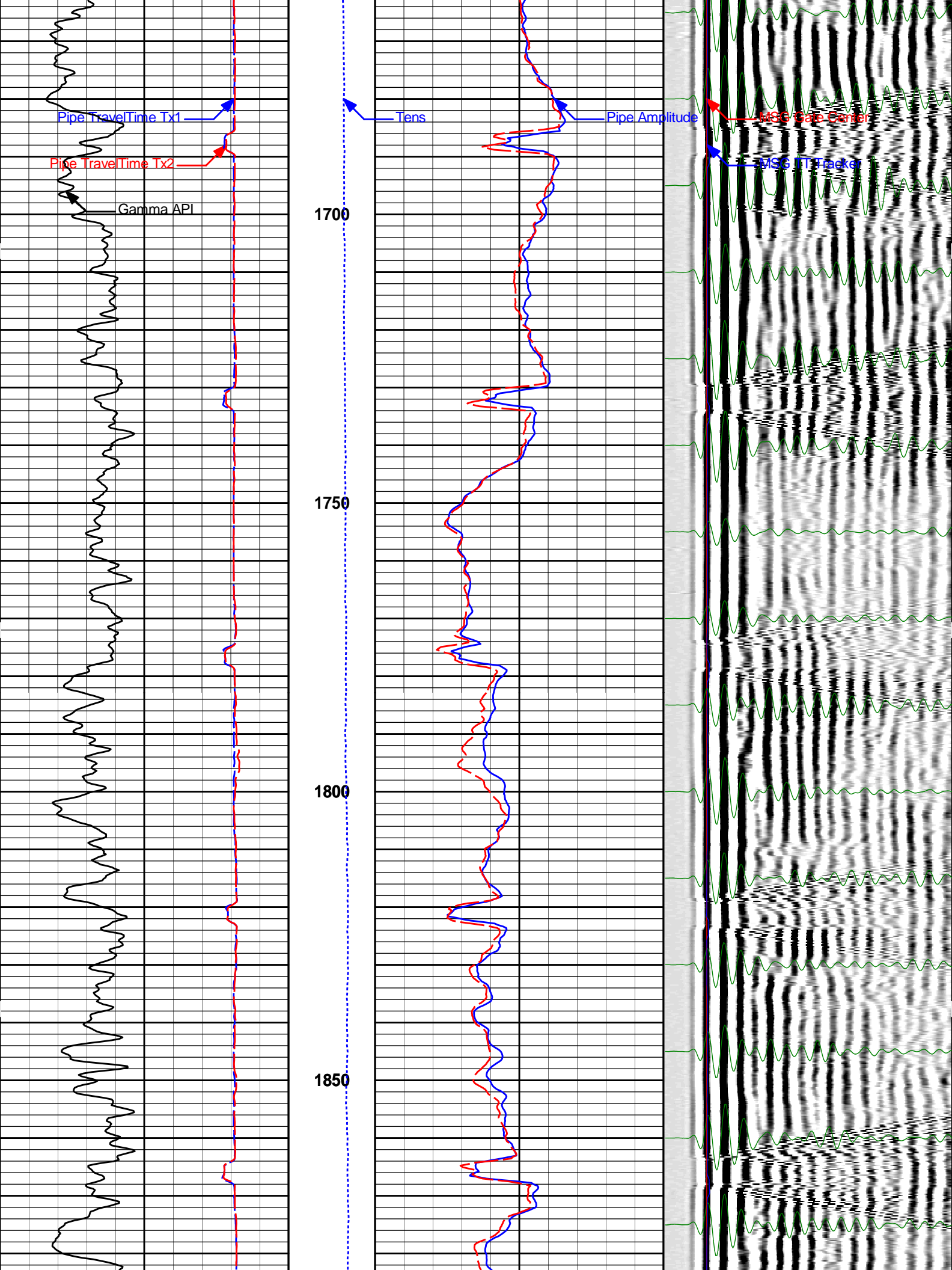


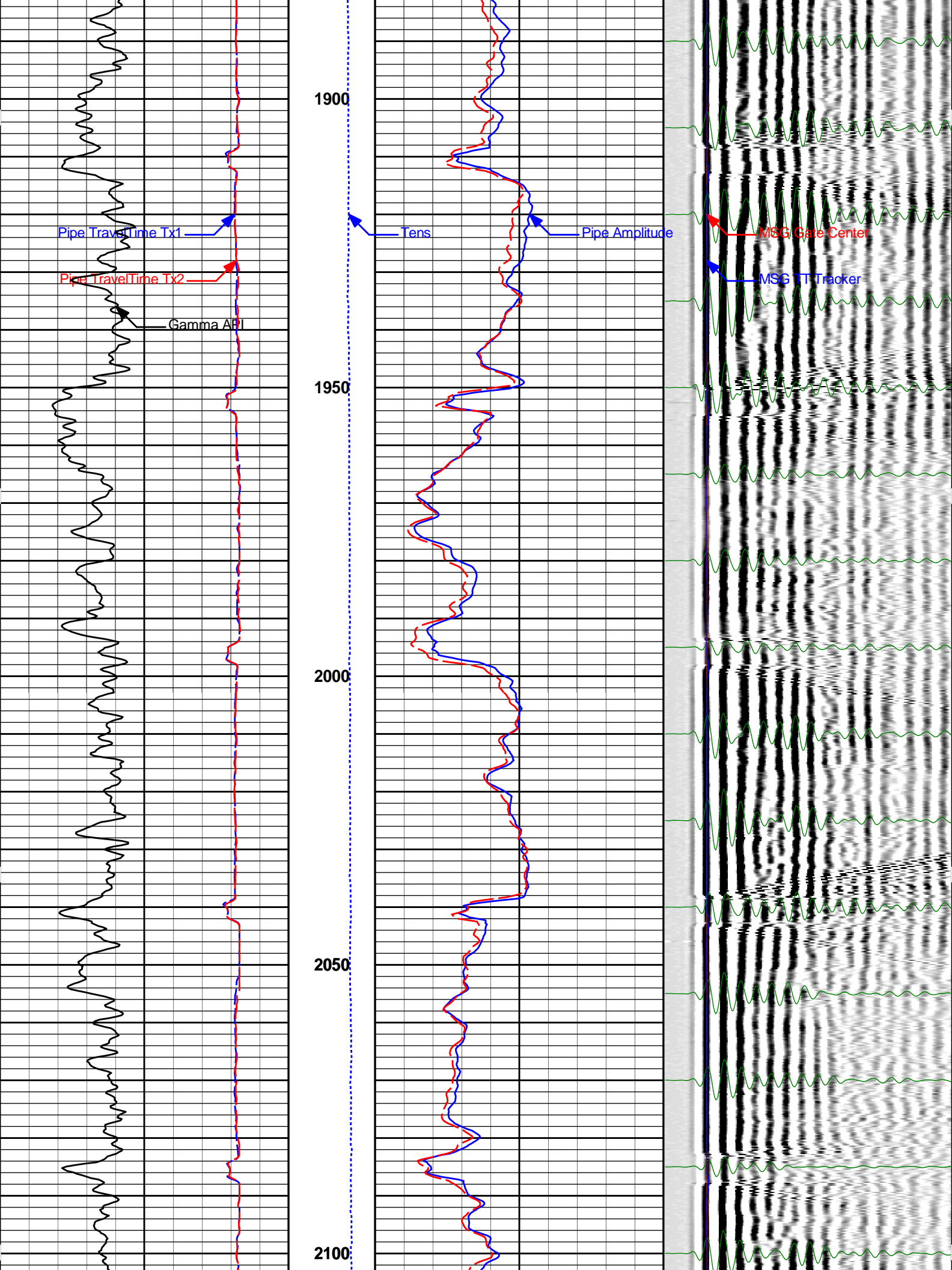


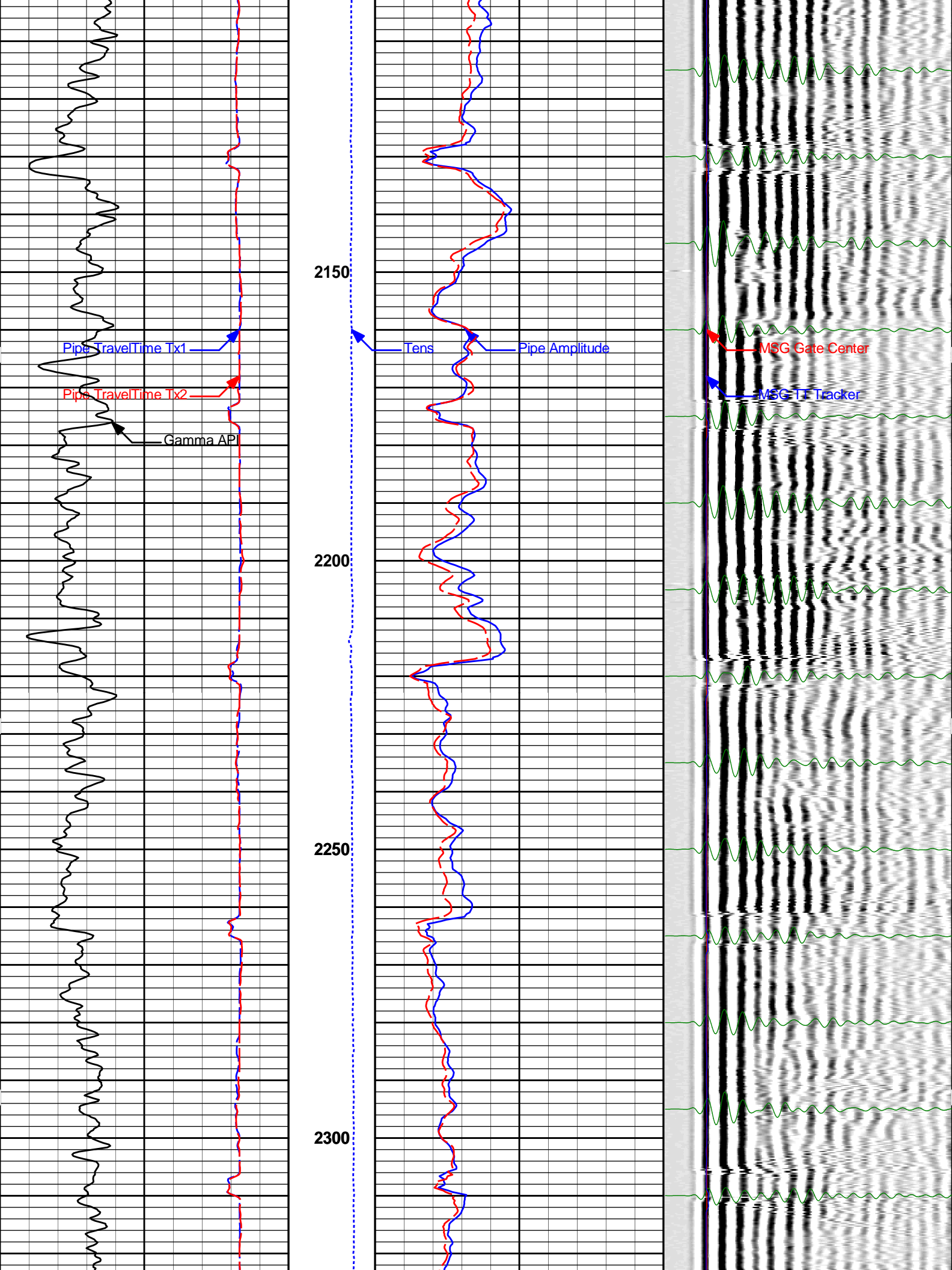


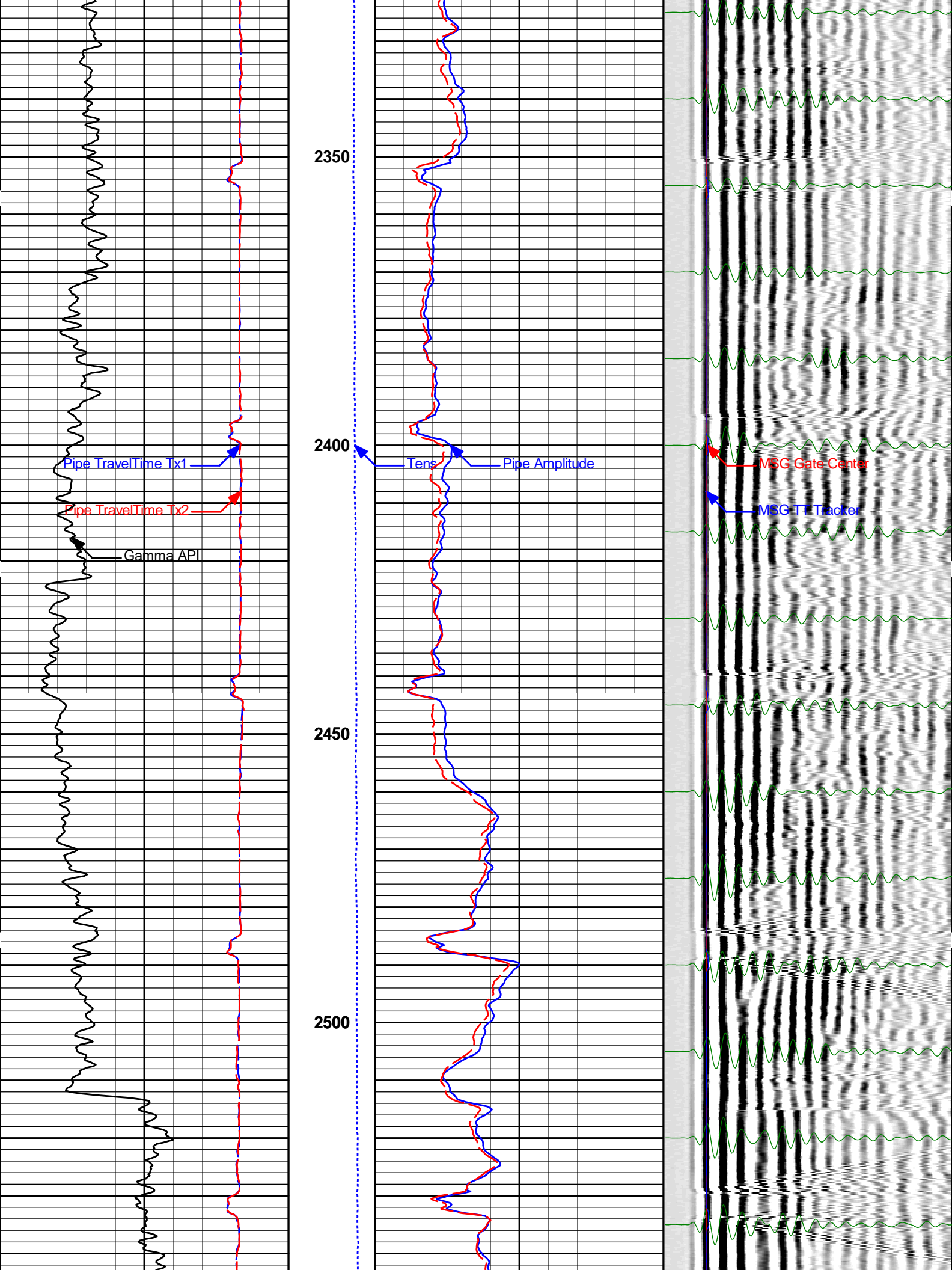


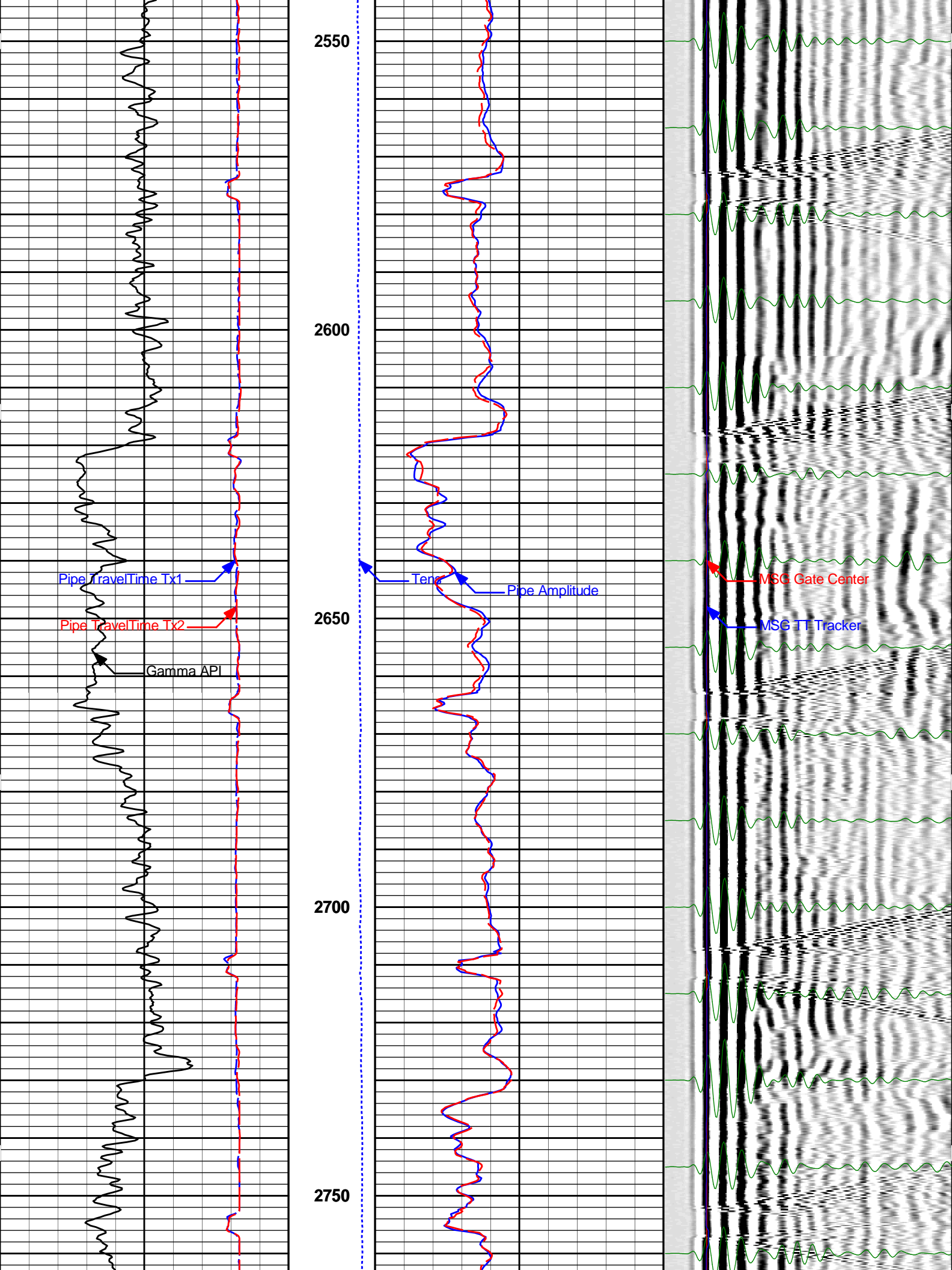


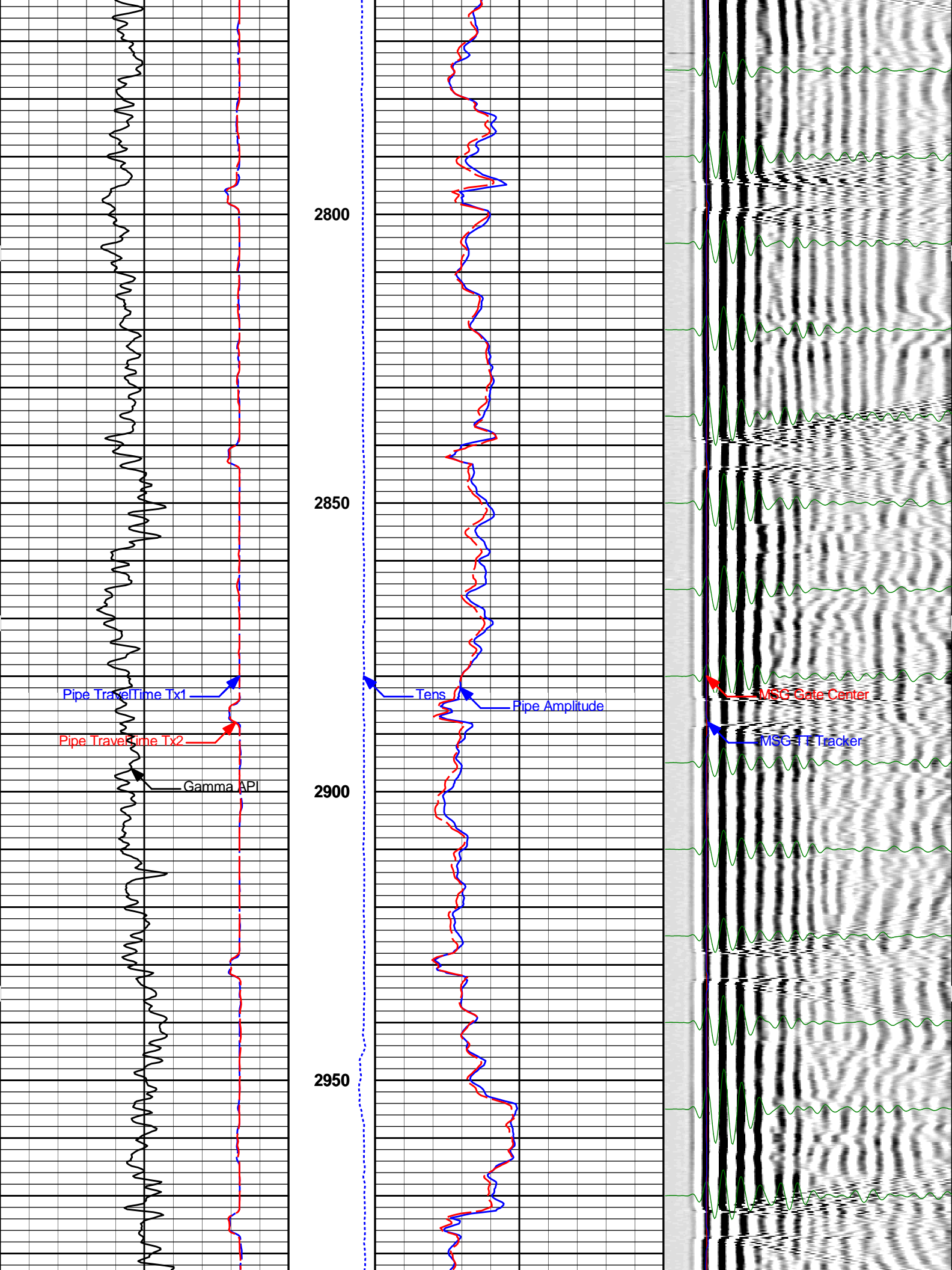


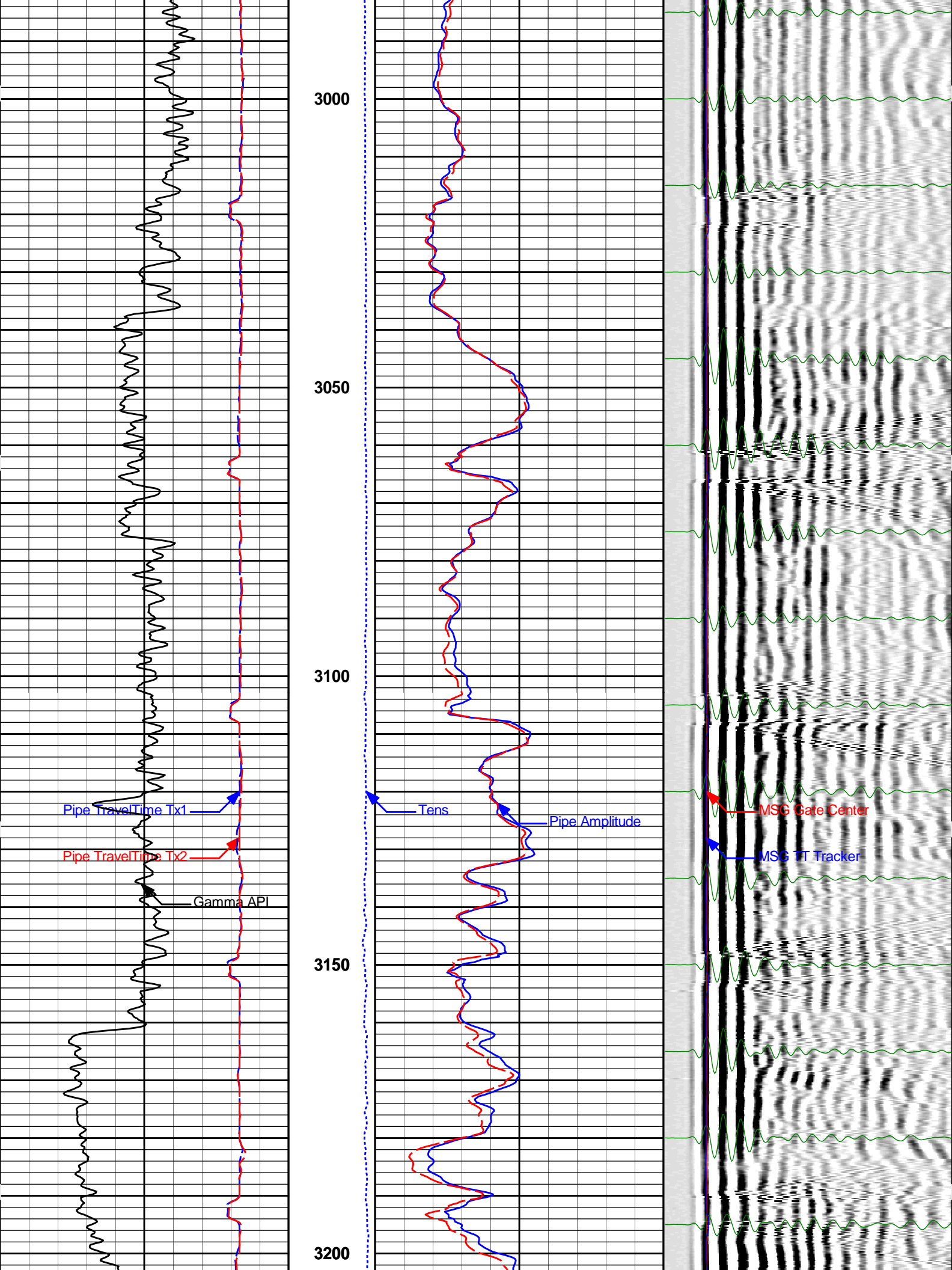


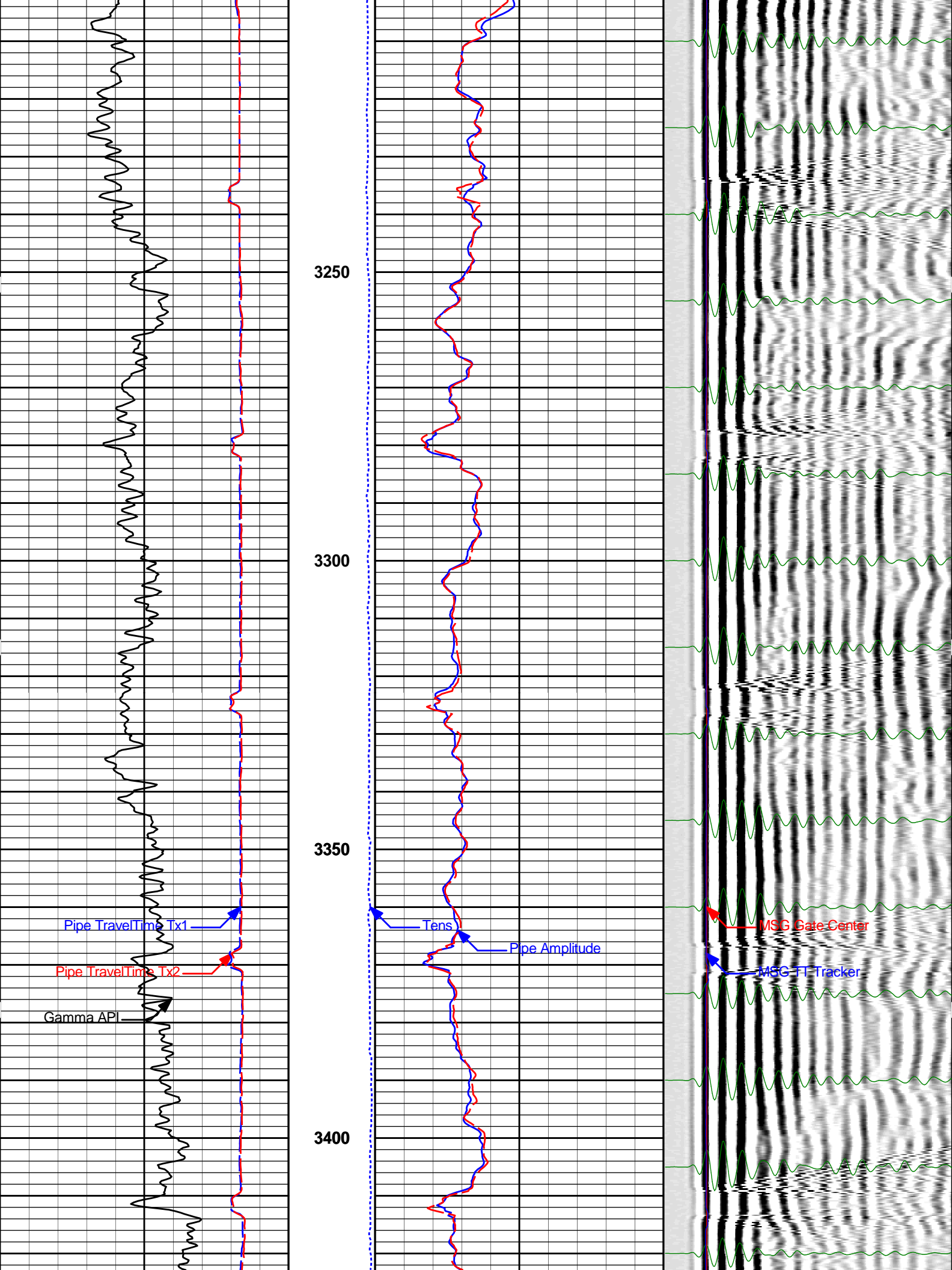








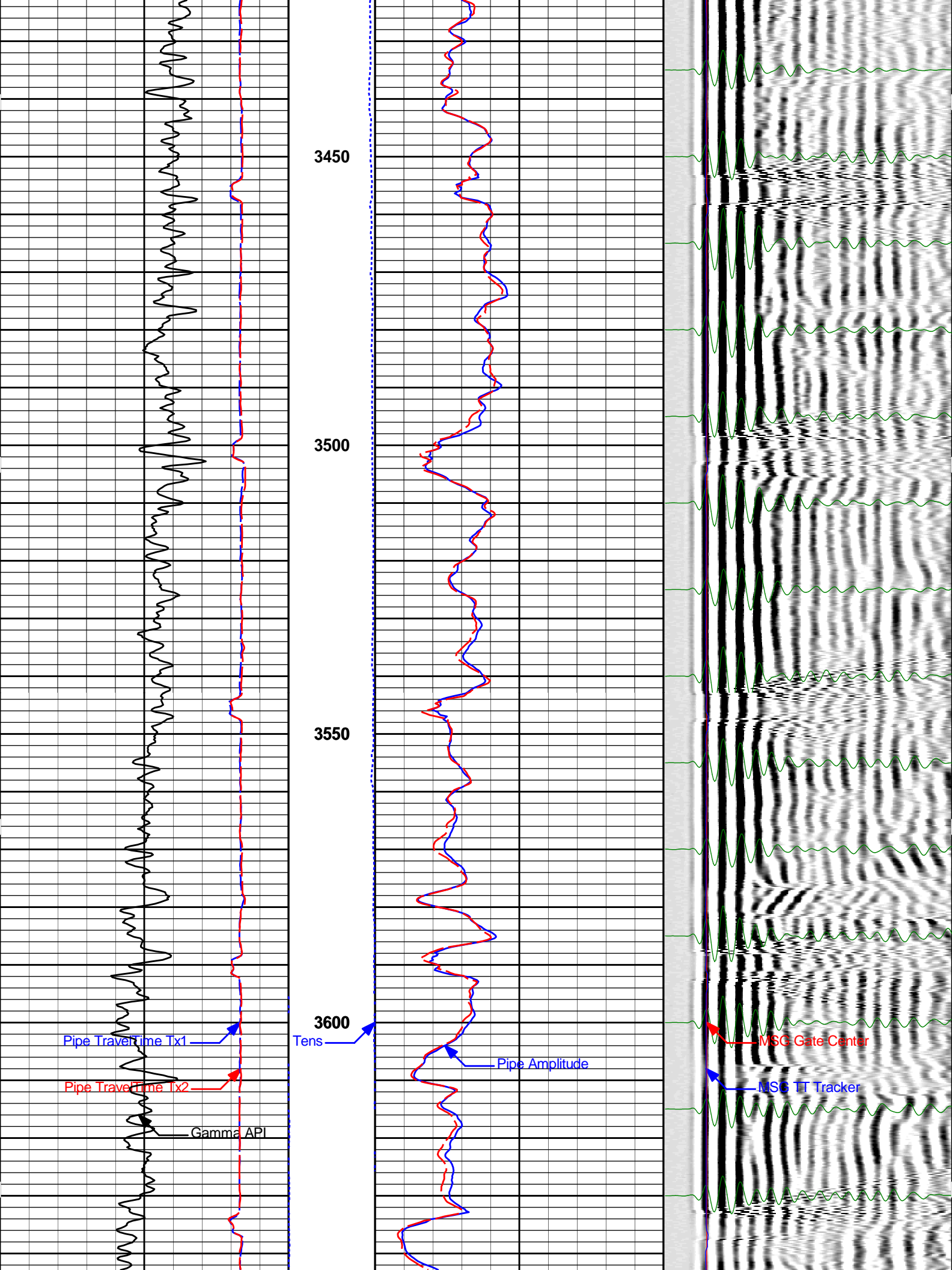


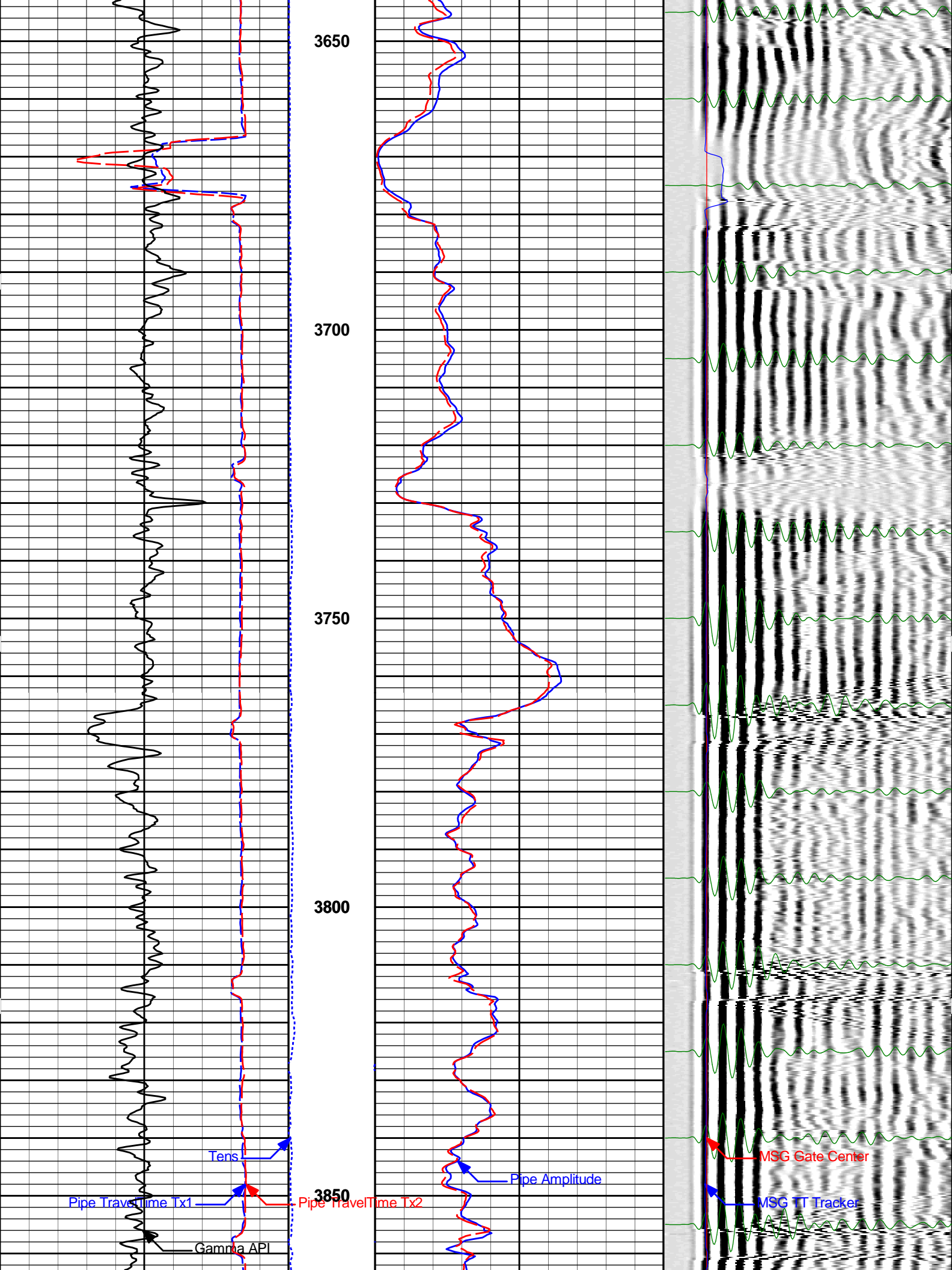


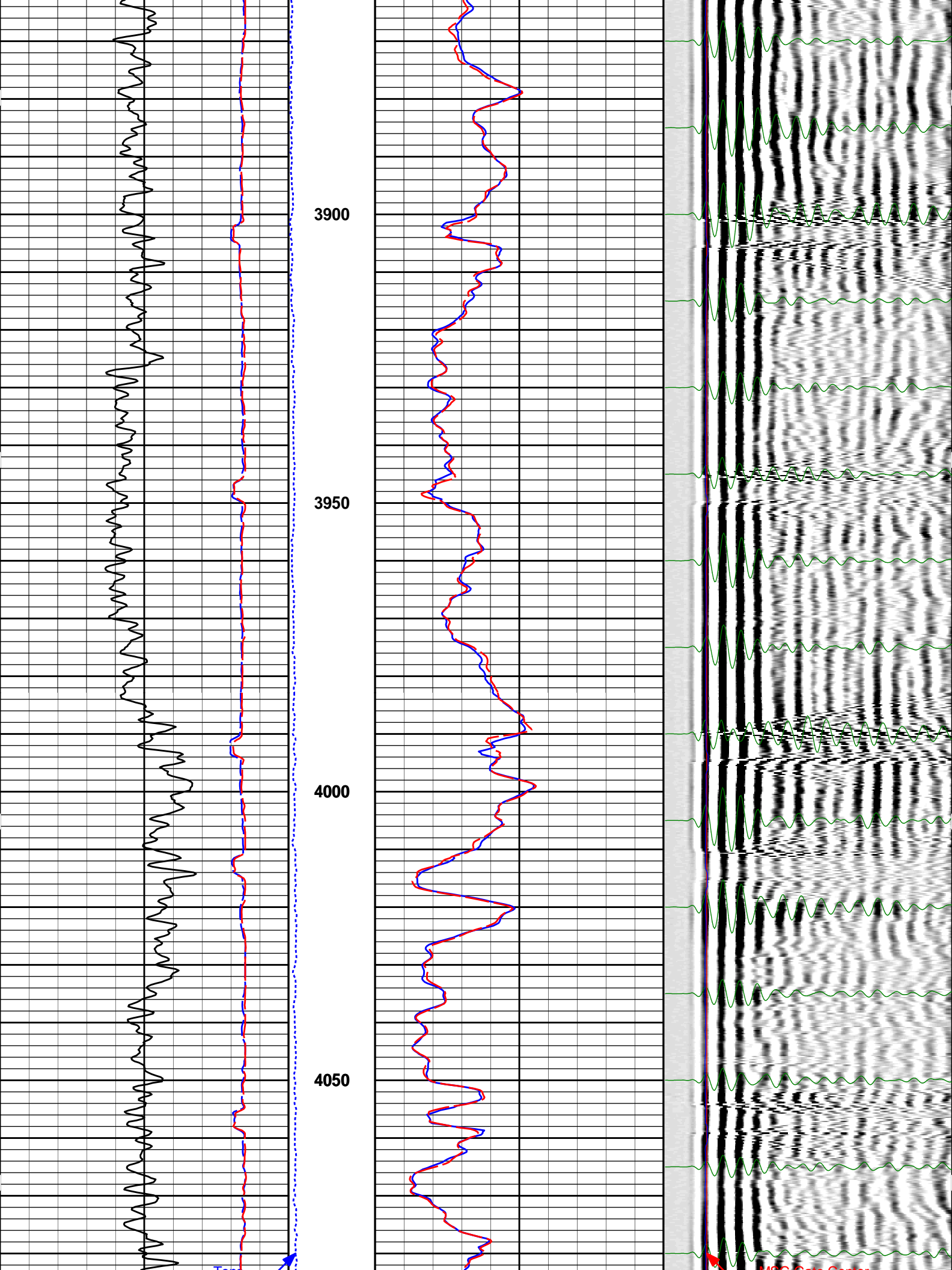
Pipe TravelTime Tx1
Pipe TravelTime Tx2
Gamma API

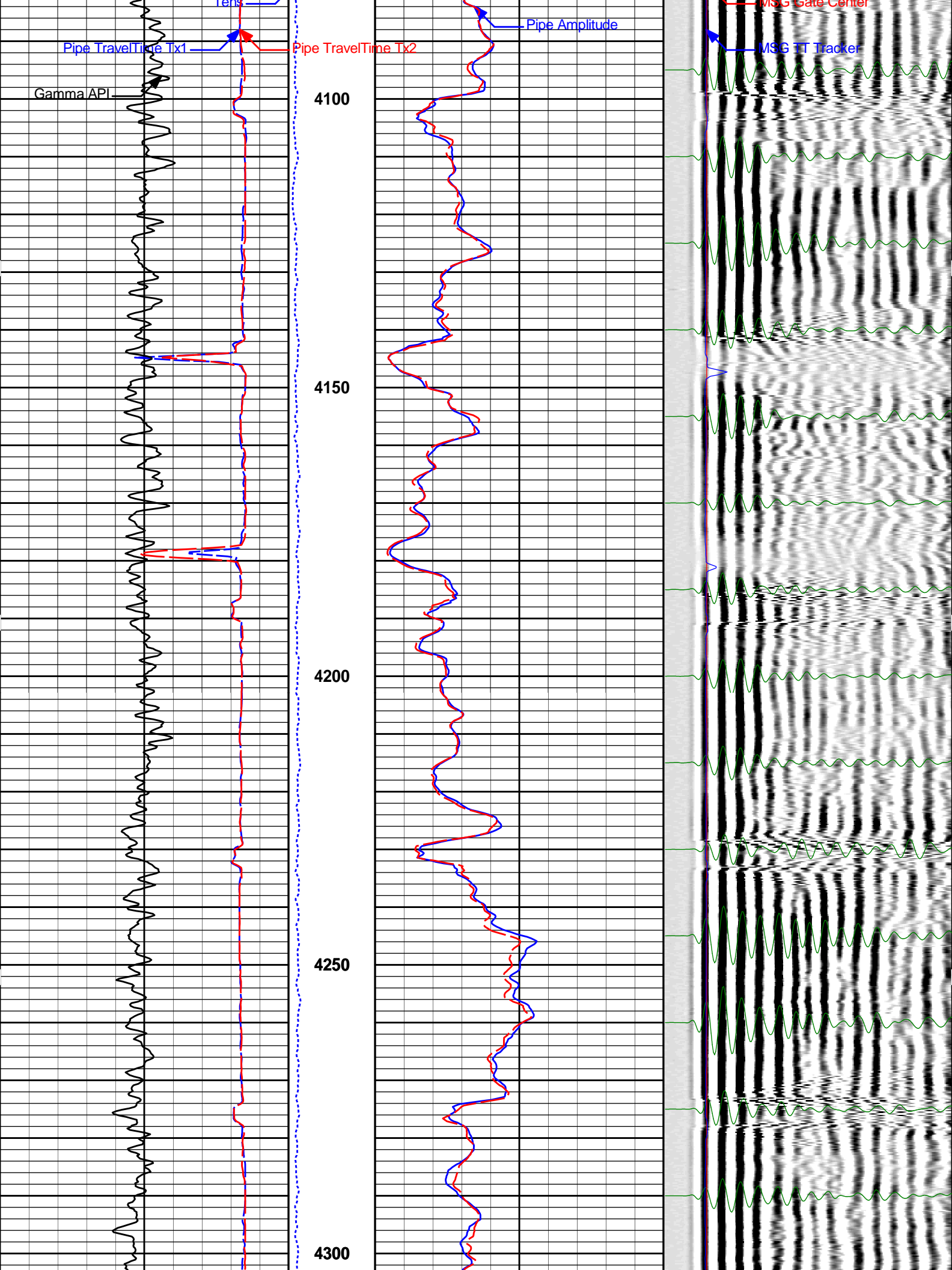
Tens
Pipe Amplitude

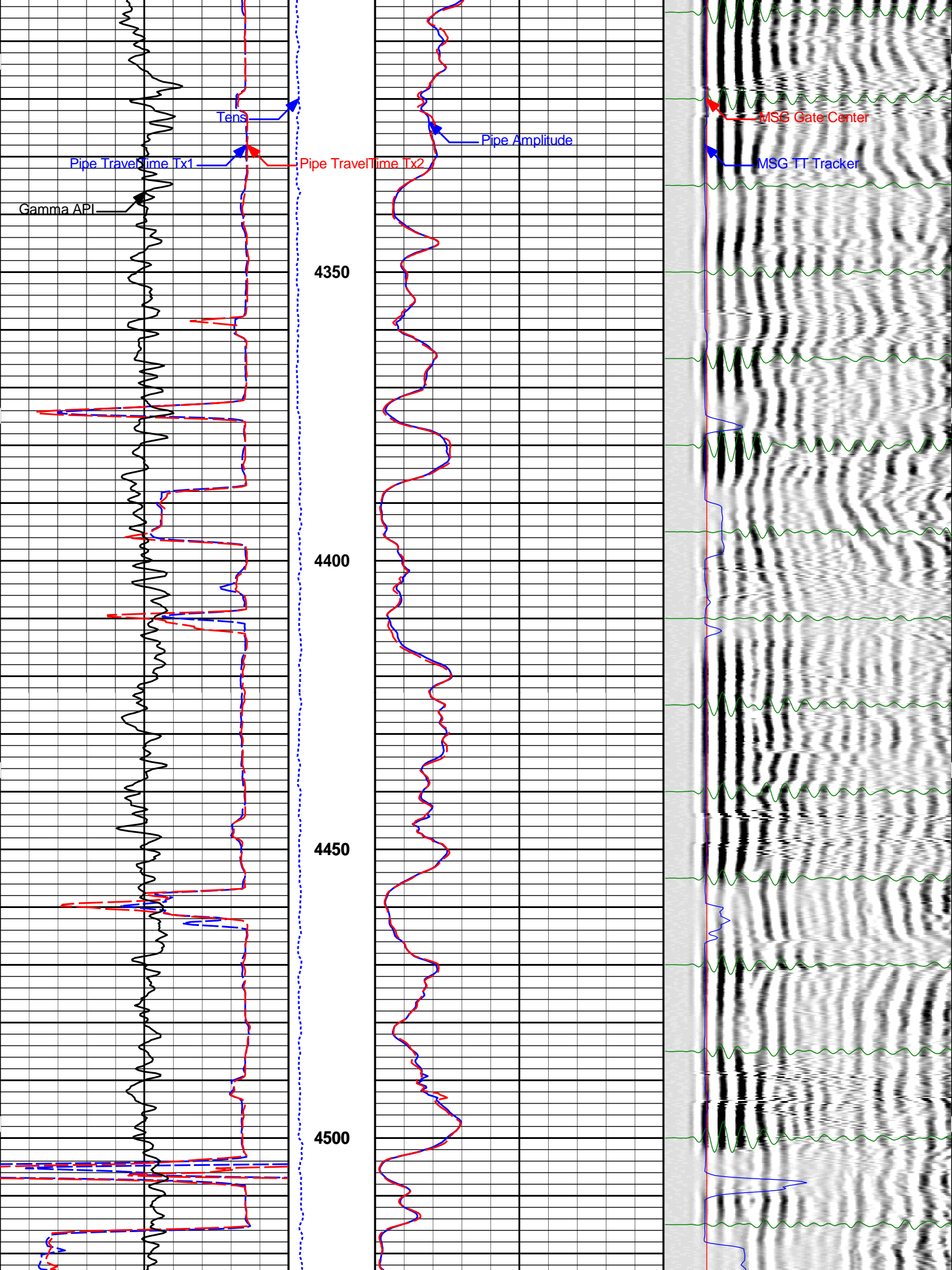
MSG Gate Center
MSG FT Tracker

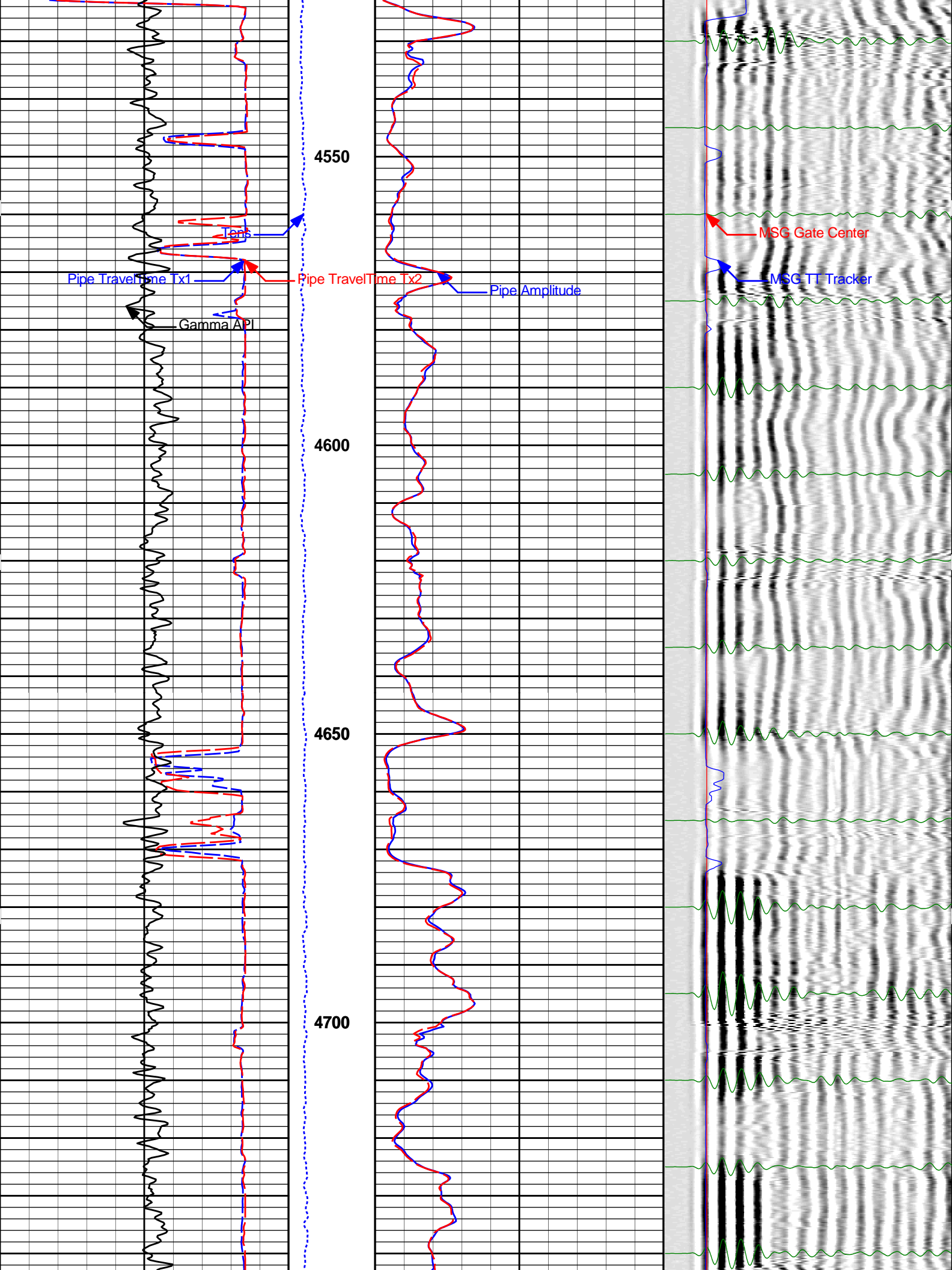


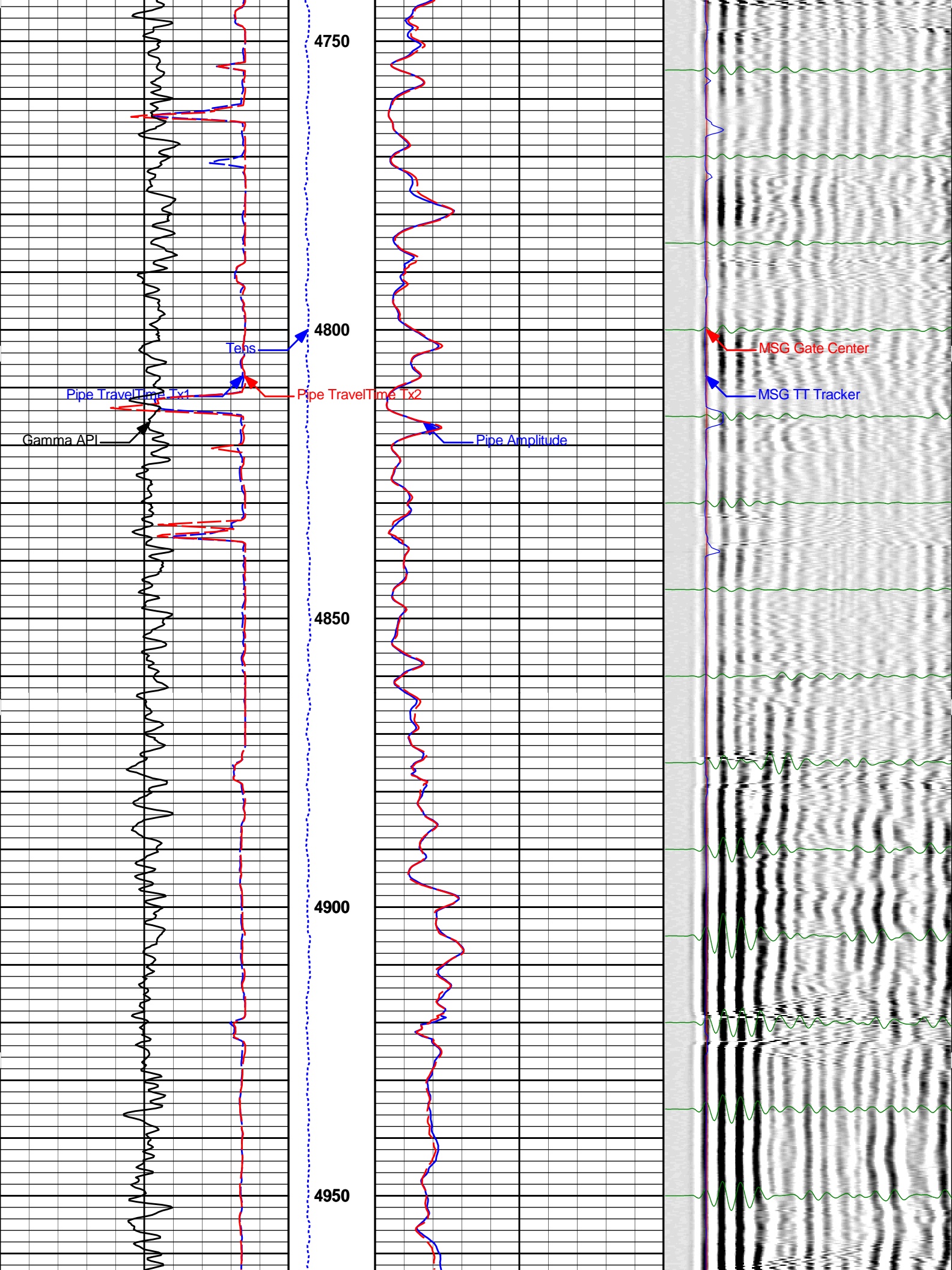


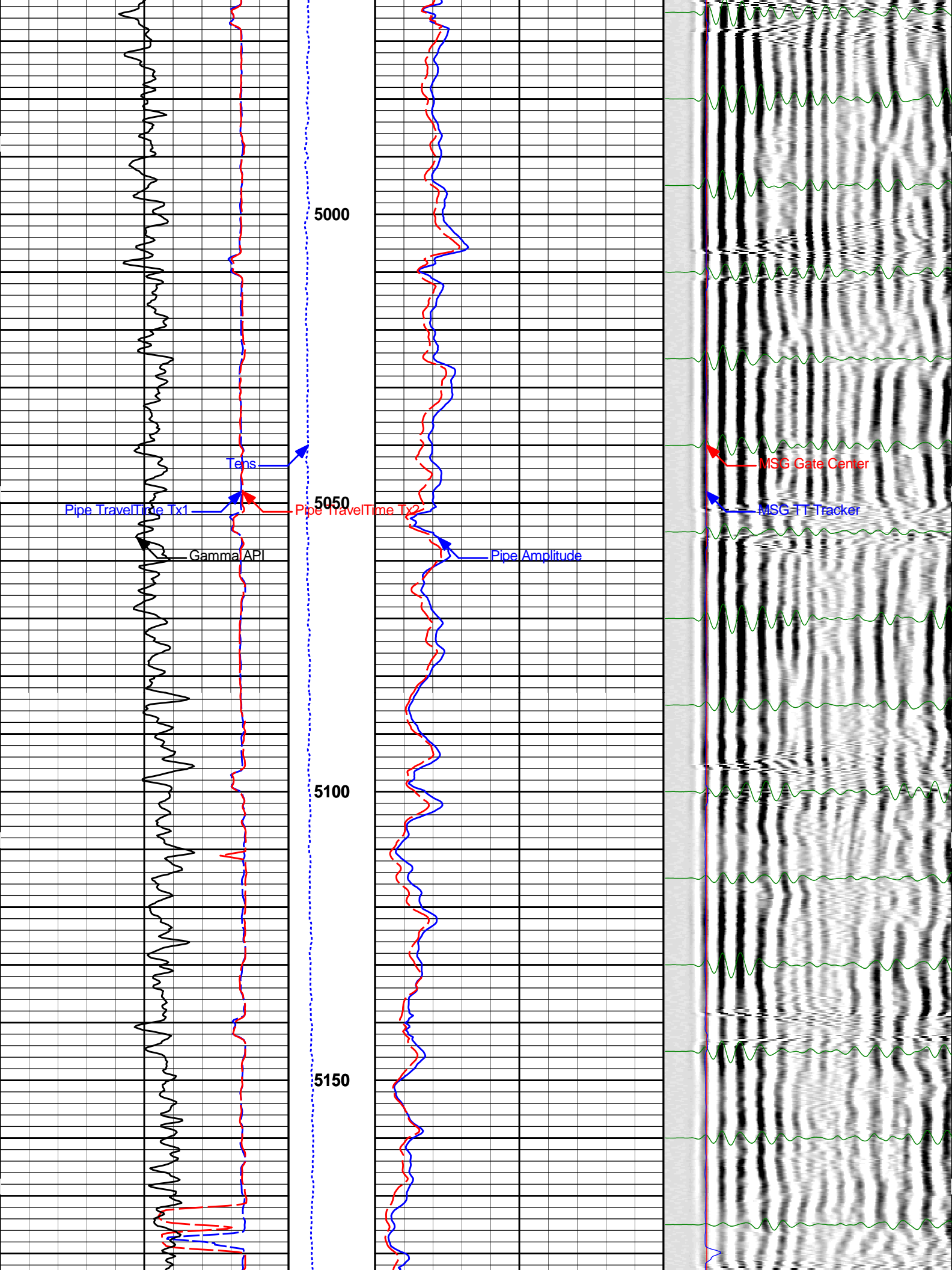


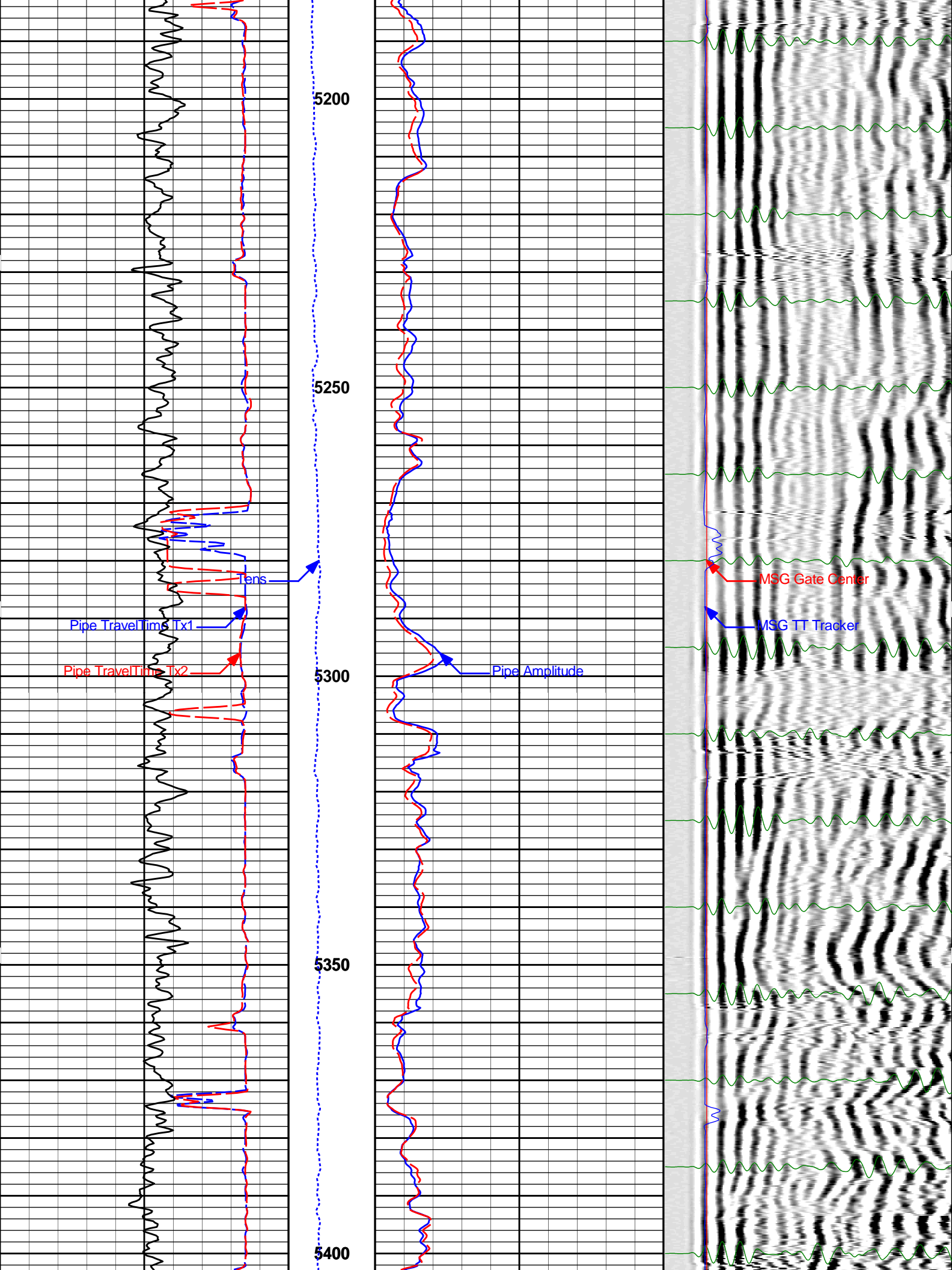


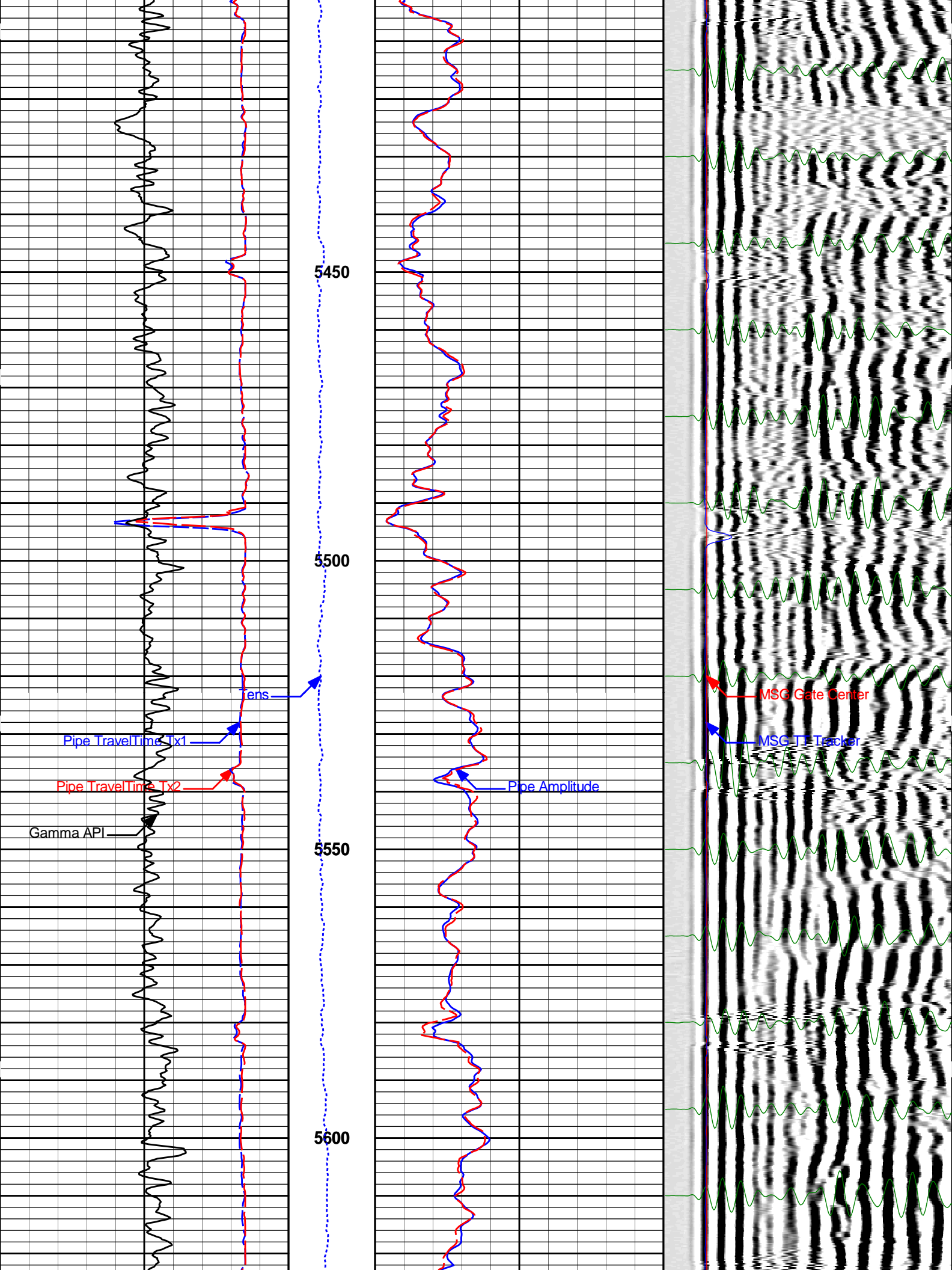


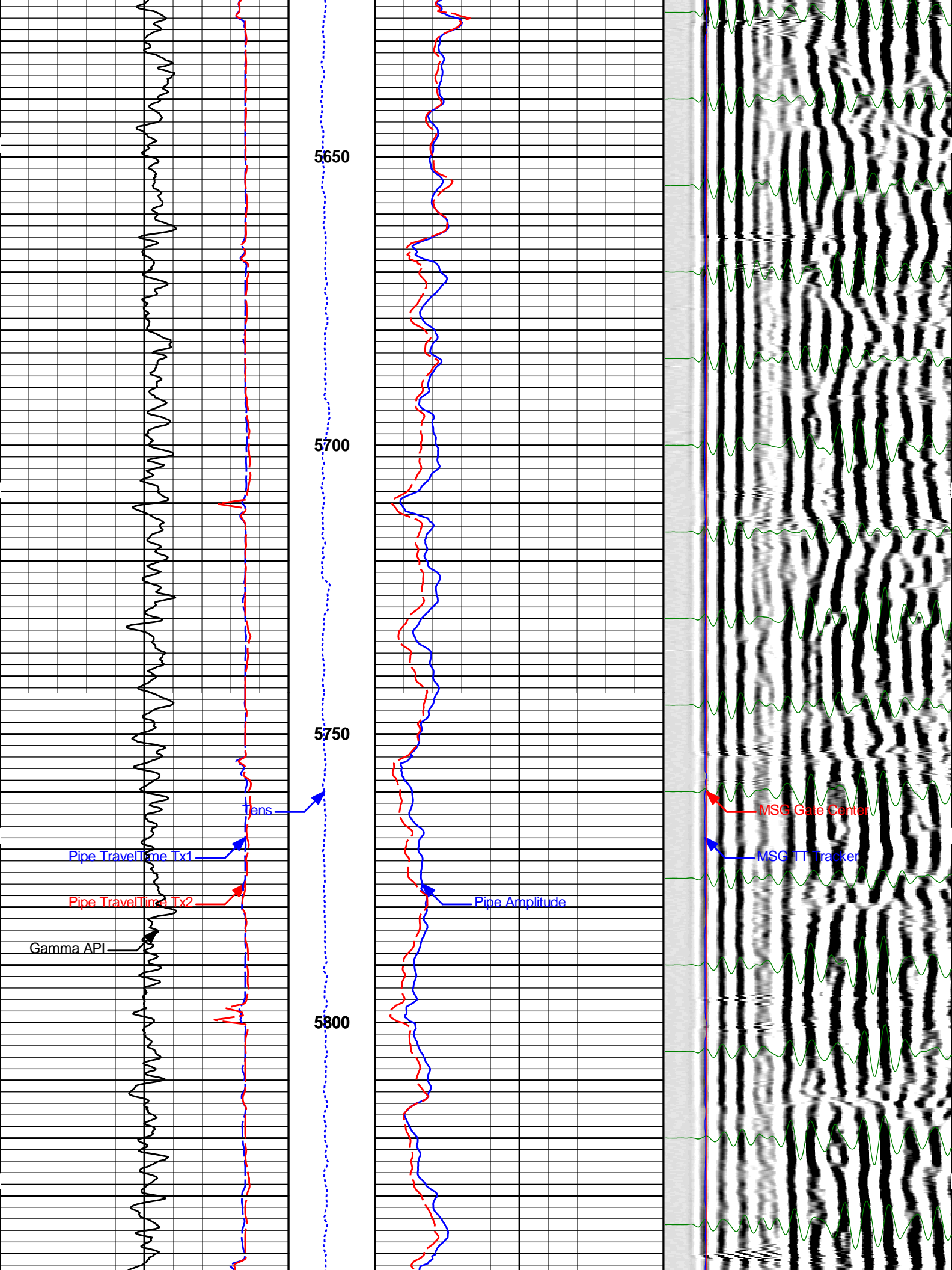


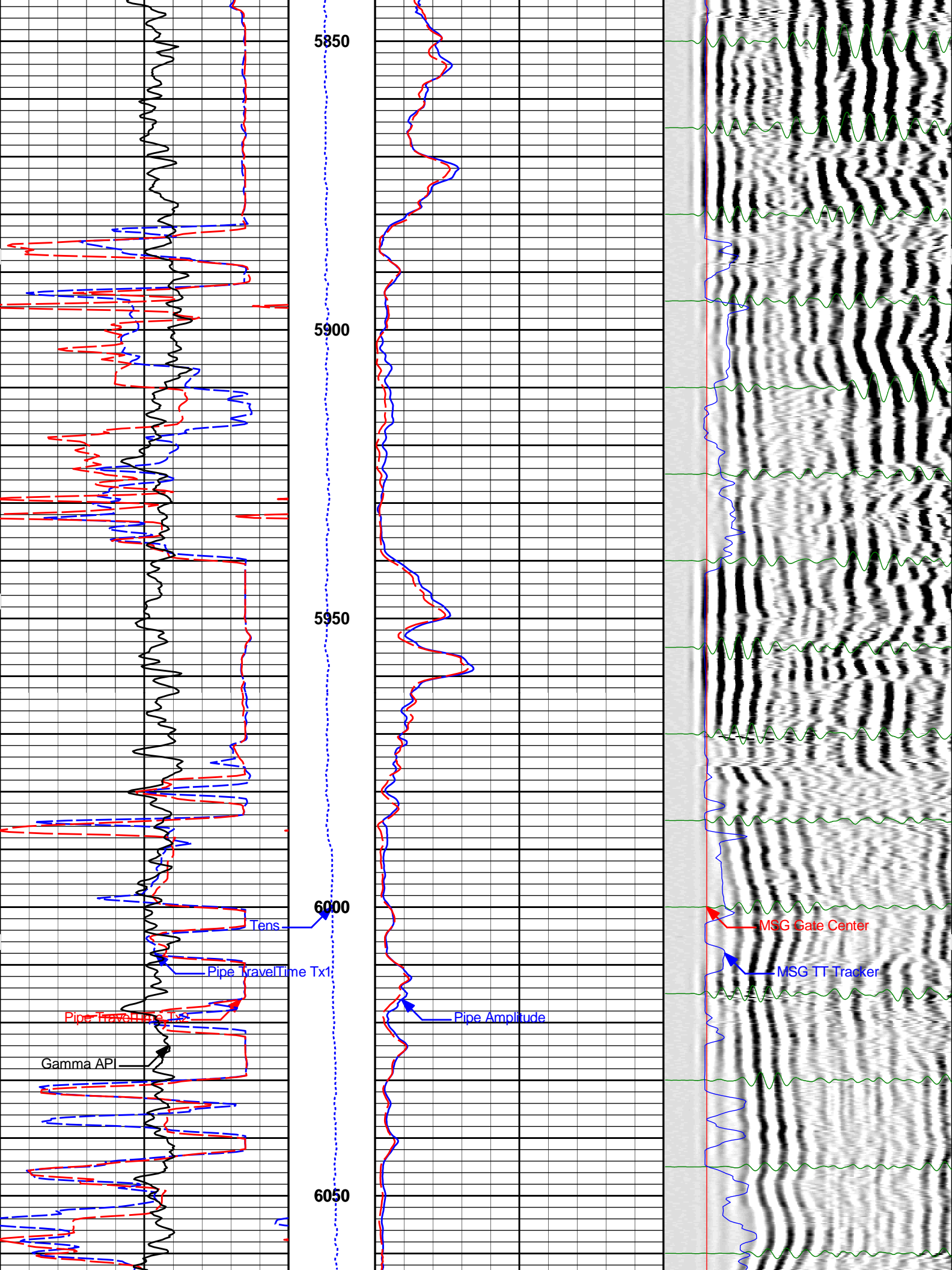


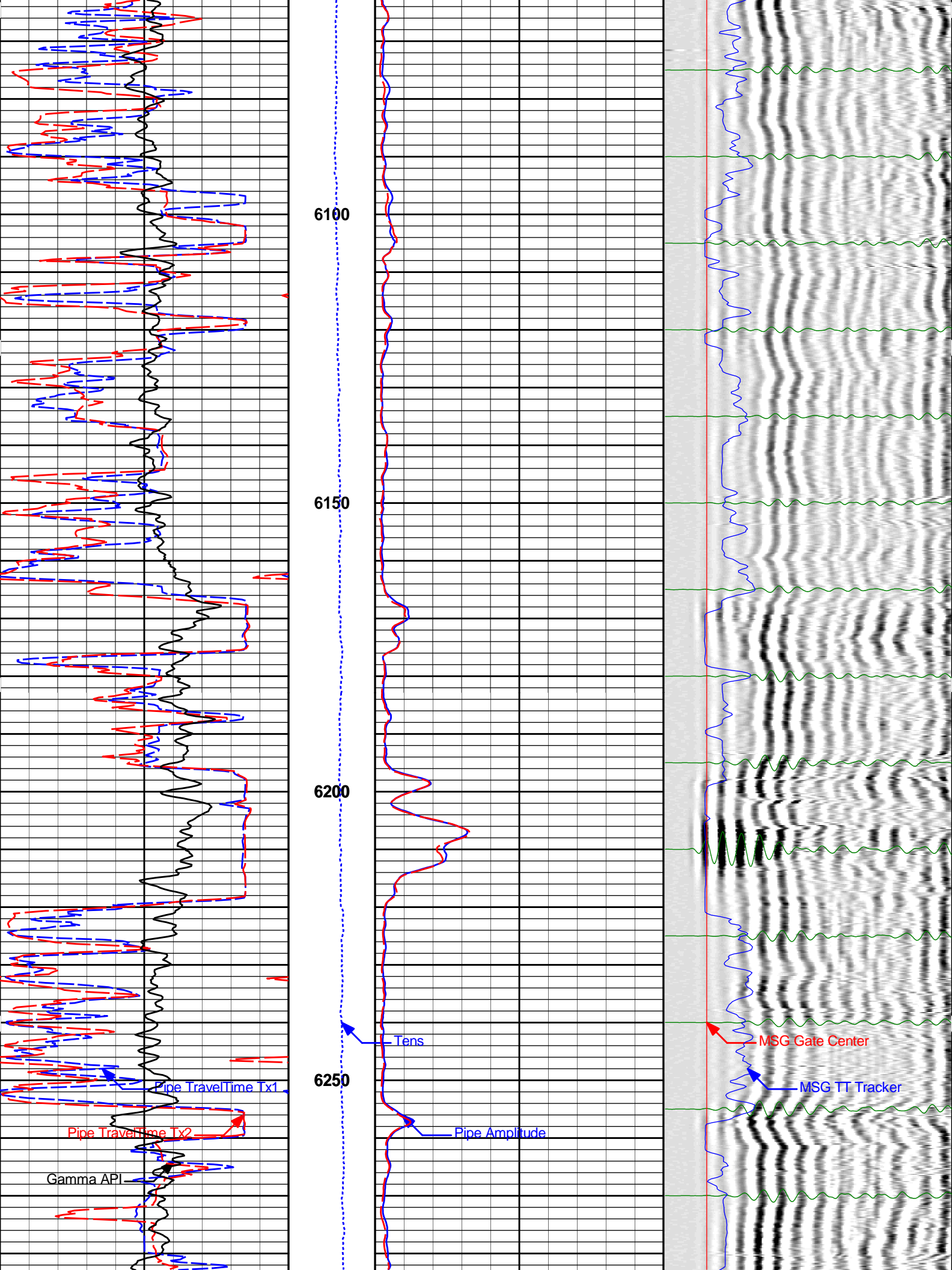


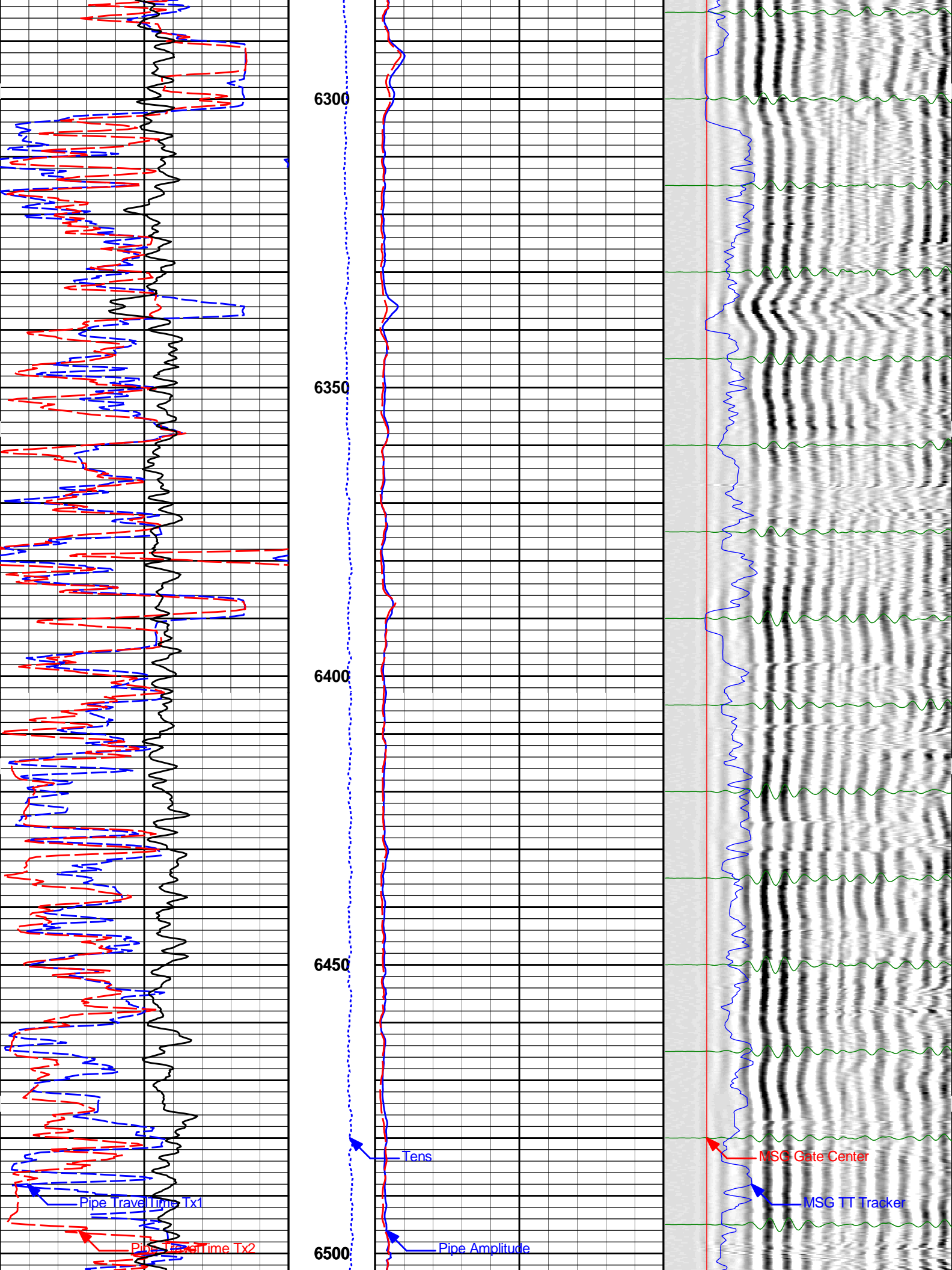


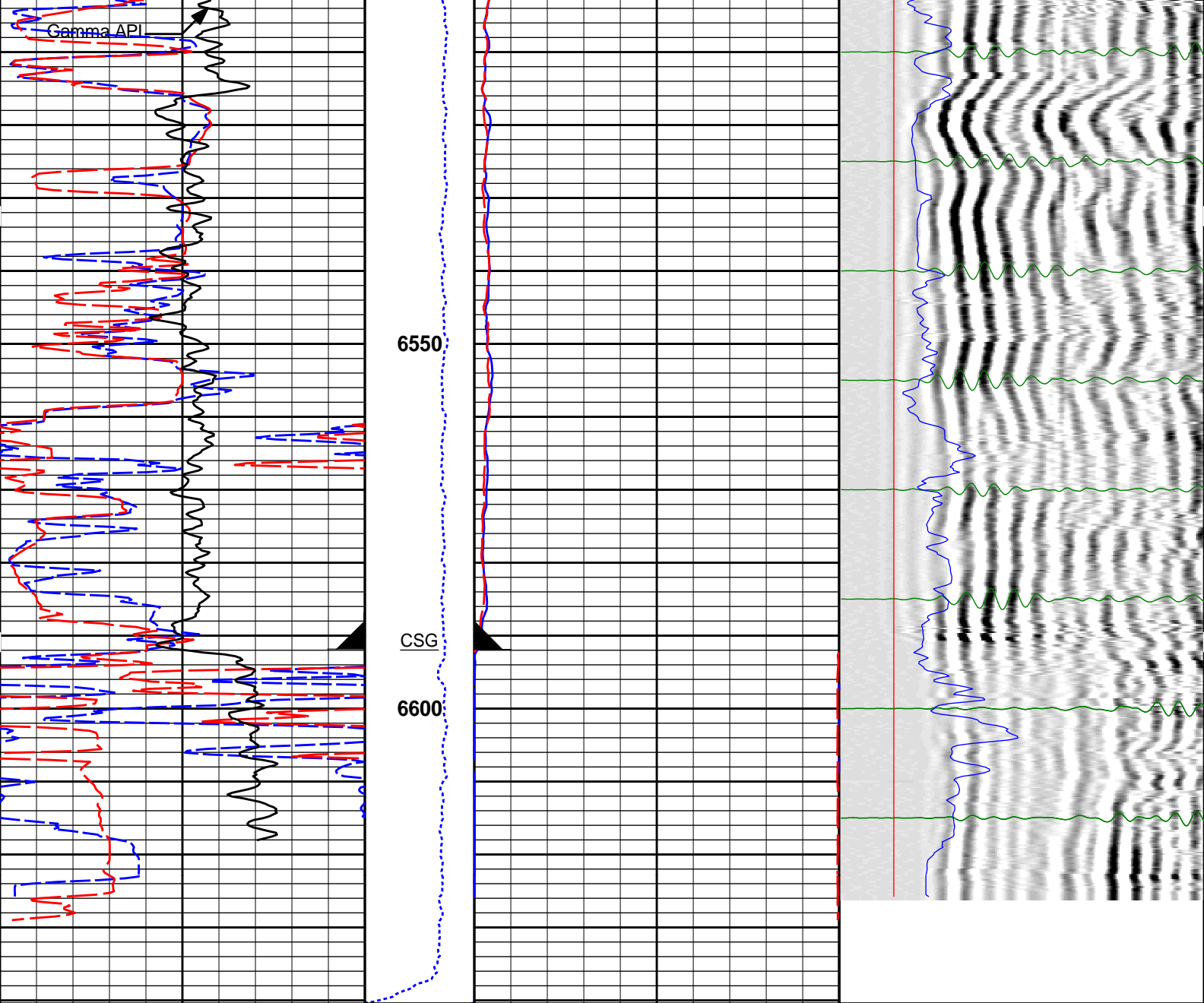












| | | | | | | | | | |
|-----|---------------------|-----|------------|---|--------------------|-----|-----|-----------------|------|
| 400 | Pipe TravelTime Tx1 | 200 | 1 : 240 | 0 | Pipe Amplitude Tx2 | 100 | 200 | Waveform MSG | 1200 |
| | microseconds | | | | millivolts | | | microseconds | |
| 400 | Pipe TravelTime Tx2 | 200 | 2K Tens 4K | 0 | Pipe Amplitude Tx2 | 100 | 200 | Waveform | 1200 |
| | microseconds | | pounds | | millivolts | | | microseconds | |
| 0 | Gamma API | 150 | | | | | 200 | MSG Gate Center | 1.2K |
| | api | | | | | | | microseconds | |
| | | | | | | | 200 | MSG TT Tracker | 1.2K |
| | | | | | | | | microseconds | |

HALLIBURTON

Plot Time: 20-Sep-11 20:29:34
 Plot Range: 90 ft to 6640.42 ft
 Data: SL_DM_24_9DL\Well Based\MAIN_CBL\
 Plot File: \CBL\BSAT_CBL_M

MAIN PASS 5" = 100'

Tank Serial Number: ROCK SPRINGS

Reference value assigned to Tank: 51.650

Snow Block S/N: 11170614

Calibration Tank Water Temperature: 77 degF

Min. Tool Housing Outside Diameter: 3.625 in

| CALIBRATION CONSTANTS | | | |
|-----------------------|-------------|-----------|----------------------------|
| Measurement | Prev. Value | New Value | Control Limit On New Value |
| Gain: | 0.976 | 0.975 | 0.900 - 1.100 |

| WATER TANK SUMMARY (Horizontal Water Tank) | | | | |
|--|----------------------------------|------------------------|--------|-------------------------|
| Measurement | Current Reading (Previous Coef.) | Calibrated (New Coef.) | Change | Control Limit On Change |
| Porosity (dec): | 0.2108 | 0.2108 | 0.0001 | +/- 0.0020 |
| Calibrated Ratio: | 9.72 | 9.72 | 0.002 | +/- 0.050 |

| VERIFIER | | |
|----------------------------|--------|-------------------|
| Measurement | Value | Control Limit |
| Snow-Block Porosity (dec): | 0.0743 | 0.02000 - 0.09000 |

| PASS/FAIL SUMMARY | |
|-------------------|--------|
| Background Check: | Passed |
| Gain-Range Check: | Passed |
| Snow-Block Check: | Passed |

DUAL SPACED NEUTRON FIELD CALIBRATION

Tool Name: DSNT - 11020488

Reference Calibration Date: 14-Sep-11 13:39:15

Engineer: D. CULVER

Calibration Date: 20-Sep-11 04:55:30

Software Version: WL INSITE R3.2.3 (Build 5)

Calibration Version: 1

Logging Source S/N: 08-018

Snow Block S/N: 11170614

| NEUTRON FIELD-CHECK SUMMARY | | | | |
|-----------------------------|--------|--------|------------|-------------------------|
| | Shop | Field | Difference | Control Limit On Change |
| Snow-Block Porosity (dec): | 0.0743 | 0.0776 | 0.0033 | +/- 0.0150 |

| PASS/FAIL SUMMARY | |
|------------------------|--------|
| Block Change Check: | Passed |
| Snow Block Stat Check: | Passed |
| Temperature Check: | Passed |

DUAL SPACED NEUTRON POST CALIBRATION

Tool Name: DSNT - 11020488

Reference Calibration Date: 20-Sep-11 04:55:30

Engineer: D. CULVER

Calibration Date: 20-Sep-11 12:22:55

Software Version: WL INSITE R3.2.3 (Build 5)

Calibration Version: 1

Logging Source S/N: 08-018

Snow Block S/N: 11170614

| NEUTRON POST-CHECK SUMMARY | | | | |
|----------------------------|-------------|------------|------------|-------------------------|
| | Field Value | Post Value | Difference | Control Limit On Change |
| Snow-Block Porosity (dec): | 0.0776 | 0.0661 | -0.0115 | +/- 0.0150 |

PASS/FAIL SUMMARY

| | |
|------------------------|--------|
| Block Change Check: | Passed |
| Snow Block Stat Check: | Passed |
| Temperature Check: | Passed |

SPECTRAL DENSITY SHOP CALIBRATION

Tool Name: SDLT - 10947725

Reference Calibration Date: 20-Aug-11 14:09:53

Engineer: J. MAYNE

Calibration Date: 14-Sep-11 12:41:23

Software Version: WL INSITE R3.2.3 (Build 5)

Calibration Version: 1

Logging Source S/N: 5235GW

Aluminum Block S/N: 63069

Density: 2.588g/cc

Pe: 3.160

Magnesium Block S/N: 63376

Density: 1.687g/cc

Pe: 2.594

DENSITY CALIBRATION SUMMARY

| Measurement | Previous Value | New Value | Control Limit |
|----------------------|----------------|-----------|---------------|
| Near Bar Gain | 0.9978 | 1.0055 | 0.90 - 1.10 |
| Near Dens Gain | 0.9786 | 0.9811 | 0.90 - 1.10 |
| Near Peak Gain | 0.9757 | 0.9828 | 0.90 - 1.10 |
| Near Lith Gain | 0.9671 | 0.9530 | 0.90 - 1.10 |
| Far Bar Gain | 1.0050 | 1.0029 | 0.90 - 1.10 |
| Far Dens Gain | 0.9934 | 0.9963 | 0.90 - 1.10 |
| Far Peak Gain | 0.9879 | 0.9928 | 0.90 - 1.10 |
| Far Lith Gain | 0.9712 | 0.9791 | 0.90 - 1.10 |
| <hr/> | | | |
| Near Bar Offset | 0.0801 | 0.0031 | NONE |
| Near Dens Offset | 0.2258 | 0.1997 | NONE |
| Near Peak Offset | 0.2272 | 0.1667 | NONE |
| Near Lith Offset | 0.2560 | 0.3876 | NONE |
| Far Bar Offset | -0.0706 | -0.0584 | NONE |
| Far Dens Offset | 0.0167 | -0.0150 | NONE |
| Far Peak Offset | 0.0393 | -0.0066 | NONE |
| Far Lith Offset | 0.1438 | 0.0806 | NONE |
| <hr/> | | | |
| Near Bar Background | 939.02 | 936.24 | 700 - 1450 |
| Near Dens Background | 310.92 | 309.36 | 230 - 480 |
| Near Peak Background | 134.11 | 132.95 | 100 - 210 |
| Near Lith Background | 165.74 | 163.05 | 125 - 260 |
| Far Bar Background | 543.90 | 544.68 | 450 - 900 |
| Far Dens Background | 209.23 | 212.42 | 175 - 345 |
| Far Peak Background | 83.88 | 84.30 | 70 - 140 |
| Far Lith Background | 87.24 | 86.95 | 75 - 145 |

CALIBRATION BLOCK SUMMARY

| Measurement | Current Reading (Previous Coef) | Calibrated (New Coef) | Change | Control Limit On Change |
|------------------|------------------------------------|--------------------------|--------|----------------------------|
| MAGNESIUM | | | | |
| Density (g/cc) | 1.686 | 1.687 | 0.001 | +/- 0.015 |
| Pe | 2.635 | 2.551 | -0.084 | +/- 0.150 |
| ALUMINUM | | | | |
| Density (g/cc) | 2.585 | 2.588 | 0.003 | +/- 0.01500 |
| Pe | 3.244 | 3.115 | -0.129 | +/- 0.150 |

TOOL SUMMARY

| Measurement | Near Detector | | Far Detector | |
|----------------------------|---------------|----------------|--------------|----------------|
| | Value | Control Limits | Value | Control Limits |
| QUALITY | | | | |
| Background | -0.0017 | +/- 0.0110 | -0.0001 | +/- 0.0140 |
| Magnesium Block | -0.0001 | +/- 0.0110 | -0.0034 | +/- 0.0140 |
| Aluminum Block | -0.0017 | +/- 0.0110 | -0.0010 | +/- 0.0140 |
| Resolution | 9.35 | 6.00 - 11.50 | 9.11 | 6.00 - 11.50 |
| Internal Verifier(B+D+P+L) | 1542 | 1200 - 2700 | 928 | 800 - 1700 |

| PASS/FAIL SUMMARY | |
|--------------------------------|--------|
| Background Quality Check: | Passed |
| Background Range Check: | Passed |
| Background Resolution Check: | Passed |
| Background Verification Check: | Passed |
| Magnesium Quality Check: | Passed |
| Aluminum Quality Check: | Passed |
| Gains Check: | Passed |
| Changes in Calibration Blocks: | Passed |

SPECTRAL DENSITY FIELD CHECK

Tool Name: SDLT - 10947725

Reference Calibration Date: 14-Sep-11 12:41:23

Engineer: D. CULVER

Calibration Date: 20-Sep-11 04:52:19

Software Version: WL INSITE R3.2.3 (Build 5)

Calibration Version: 1

Pad Temperature: 81.0 degF

| DENSITY FIELD CALIBRATION SUMMARY | | | | |
|-----------------------------------|----------|----------|--------|-------------------|
| Measurement | Shop | Field | Change | Control Limit +/- |
| Near (B+D+P+L) cps | 1541.590 | 1550.072 | 8.482 | 15.807 |
| Far (B+D+P+L) cps | 928.352 | 927.207 | -1.145 | 16.491 |
| Near Resolution | 9.35 | 9.40 | 0.050 | 0.50 |
| Far Resolution | 9.11 | 9.40 | 0.290 | 1.00 |

| PASS/FAIL SUMMARY | |
|-------------------------|--------|
| Bkg Quality Check: | Passed |
| Bkg Resolution Check: | Passed |
| Bkg Verification Check: | Passed |

SPECTRAL DENSITY POST CHECK

Tool Name: SDLT - 10947725

Reference Calibration Date: 20-Sep-11 04:52:19

Engineer: D. CULVER

Calibration Date: 20-Sep-11 12:18:43

Software Version: WL INSITE R3.2.3 (Build 5)

Calibration Version: 1

Pad Temperature: 71.7 degF

| DENSITY POST CALIBRATION SUMMARY | | | | |
|----------------------------------|----------|----------|---------|-------------------|
| Measurement | Field | Post | Change | Control Limit +/- |
| Near (B+D+P+L) cps | 1550.072 | 1546.238 | -3.834 | 15.807 |
| Far (B+D+P+L) cps | 927.207 | 917.005 | -10.202 | 16.491 |
| Near Resolution | 9.40 | 9.46 | 0.060 | 0.50 |
| Far Resolution | 9.40 | 9.25 | -0.150 | 1.00 |

| PASS/FAIL SUMMARY | |
|-------------------------|--------|
| Bkg Quality Check: | Passed |
| Bkg Resolution Check: | Passed |
| Bkg Verification Check: | Passed |

Bkg Resolution Check:

Passed

Bkg Verification Check:

Passed

DENSITY CALIPER SHOP CALIBRATION

Tool Name: SDLT - 10947725

Reference Calibration Date: 14-Sep-11 13:07:04

Engineer: B. PEDERSEN

Calibration Date: 14-Sep-11 13:12:32

Software Version: WL INSITE R3.2.3 (Build 5)

Calibration Version: 1

CALIBRATION COEFFICIENTS

| Measurement | Previous Value | New Value | Control Limit On New Value |
|-------------|----------------|--------------|----------------------------|
| Pad Offset | -1756.88 | -1340.29 | -7000.00 - -1000.00 |
| Pad Gain | 0.0003850 | 0.0003724 | 0.000200 - 0.000600 |
| Arm Offset | -2002.21 | -2410.62 | -5000.00 - 3000.00 |
| Arm Gain | 0.0005208 | 0.0005348 | 0.000300 - 0.000700 |
| Arm Power | -0.000002905 | -0.000003940 | -0.000010 - 0.000010 |

The ring diameter is computed from: $\text{DIAMETER} = \text{PAD EXTENSION} + \text{ARM EXTENSION} + \text{TOOL DIAMETER}$

Tool Diameter: 4.50 in

CALIBRATION RINGS

| Measurement | Current Reading (Previous Coeff.) | Calibrated (New Coeff.) | Change | Control Limit On New Value |
|------------------|-----------------------------------|-------------------------|--------|----------------------------|
| PAD EXTENSION: | | | | |
| Small Ring (in) | 1.91 | 2.00 | 0.09 | +/- 0.20 |
| Medium Ring (in) | 3.72 | 3.75 | 0.03 | +/- 0.20 |
| RING DIAMETER: | | | | |
| Small Ring (in) | 6.51 | 6.50 | -0.01 | +/- 0.20 |
| Medium Ring (in) | 8.23 | 8.25 | 0.02 | +/- 0.20 |
| Large Ring (in) | 15.00 | 15.00 | 0.00 | +/- 0.20 |

PASS/FAIL SUMMARY

Calibration-Coefficients Range Check: Passed

Ring-Measurement Check: Passed

PASS/FAIL SUMMARY

Calibration-Coefficients Range Check: Passed

SDLT CALIPER FIELD CALIBRATION

Tool Name: SDLT - 10947725

Reference Calibration Date: 14-Sep-11 13:12:32

Engineer: D. CULVER

Calibration Date: 20-Sep-11 04:52:49

Software Version: WL INSITE R3.2.3 (Build 5)

Calibration Version: 1

MEASURED CALIPER VALUES

| Measurement | Shop | Field | Change | Control Limit On New Value |
|---------------|------|-------|--------|----------------------------|
| Pad Extension | 3.75 | 3.72 | -0.03 | +/- 0.10 |
| Ring Diameter | 8.25 | 8.29 | 0.04 | +/- 0.15 |

PASS/FAIL SUMMARY

Pad Extension Check: Passed

Diameter Check: Passed

SDLT CALIPER POST CALIBRATION

Tool Name: SDLT - 10947725

Reference Calibration Date: 20-Sep-11 04:52:49

Engineer: D. CULVER

Calibration Date: 20-Sep-11 12:20:44

Software Version: WL INSITE R3.2.3 (Build 5)

Calibration Version: 1

MEASURED CALIPER VALUES

| Measurement | Field | Post | Change | Control Limit On New Value |
|---------------|-------|------|--------|----------------------------|
| Pad Extension | 3.72 | 3.73 | 0.01 | +/- 0.10 |
| Ring Diameter | 8.29 | 8.32 | 0.02 | +/- 0.15 |

| PASS/FAIL SUMMARY | |
|----------------------|--------|
| Pad Extension Check: | Passed |
| Diameter Check: | Passed |

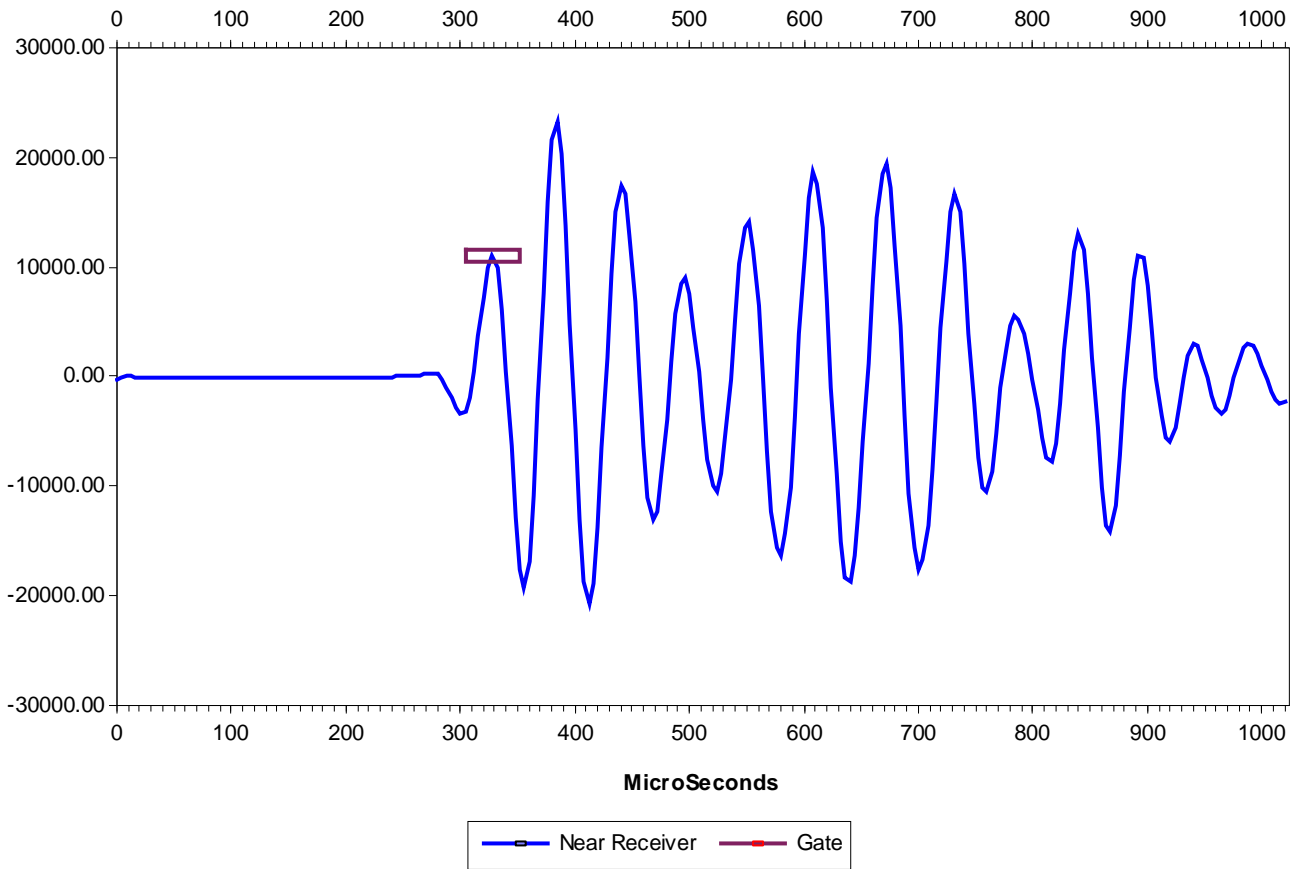
CBL-BSAT SHOP CALIBRATION

| | |
|---|---|
| Tool Name: CBL-BSAT - 11105782 | Reference Calibration Date: 20-Sep-11 11:26:28 |
| Engineer: D. CULVER | Calibration Date: 20-Sep-11 11:26:52 |
| Software Version: WL INSITE R3.2.3 (Build 5) | Calibration Version: 1 |
| Calibration Type: Well @ 240.00 ft | Calibration Depth: 240.00 ft |
| Casing Weight: 23.00 lbpf | Casing OD: 7.000 in |

| Sensor | Measured | Calibrated | Difference | Units |
|-------------------|----------|------------|------------|-------|
| Amplitude Tx1 | 62.60 | 62.20 | -0.40 | mV |
| Amplitude Tx2 | 62.50 | 62.20 | -0.40 | mV |
| Pipe Reference TT | ---- | 237.00 | ---- | us |

| Sensor | Raw Value | Units |
|------------------|-----------|-------|
| Amplitude Tx1 | 11,010.00 | mV |
| Amplitude Tx2 | 11,789.90 | mV |
| Pipe TT from Tx1 | 328.00 | us |
| Pipe TT from Tx2 | 326.00 | us |

Calibration - CBL Waveform



ARRAY COMPENSATED TRUE RESISTIVITY SHOP CALIBRATION

| | |
|------------------------------------|---|
| Tool Name: ACRt - E104_S103 | Reference Calibration Date: 03-Aug-11 15:55:03 |
|------------------------------------|---|

| TYPICAL GAIN RANGE | | | | | | | | | |
|--------------------|--------|----------|-------|--------|----------|-------|--------|----------|-------|
| Subarray | R12KHz | | | R36KHz | | | R72KHz | | |
| | Lower | (mmho/m) | Upper | Lower | (mmho/m) | Upper | Lower | (mmho/m) | Upper |
| A1 (80") | 0.95 | 1.0046 | 1.05 | 0.95 | 1.0095 | 1.05 | 0.95 | 1.0074 | 1.05 |
| A2 (50") | 0.95 | 1.0153 | 1.05 | 0.95 | 1.0202 | 1.05 | 0.95 | 1.0190 | 1.05 |
| A3 (29") | 0.95 | 1.0076 | 1.05 | 0.95 | 1.0125 | 1.05 | 0.95 | 1.0096 | 1.05 |
| A4 (17") | 0.95 | 1.0032 | 1.05 | 0.95 | 1.0052 | 1.05 | 0.95 | 1.0061 | 1.05 |
| A5 (10") | N/A | N/A | N/A | 0.95 | 0.9965 | 1.05 | 0.95 | 0.9955 | 1.05 |
| A6 (6") | N/A | N/A | N/A | 0.95 | 0.9867 | 1.05 | 0.95 | 0.9852 | 1.05 |

| TYPICAL SONDE OFFSET RANGE | | | | | | | | | |
|----------------------------|--------|----------|-------|--------|----------|-------|--------|----------|-------|
| Subarray | R12KHz | | | R36KHz | | | R72KHz | | |
| | Lower | (mmho/m) | Upper | Lower | (mmho/m) | Upper | Lower | (mmho/m) | Upper |
| A1 (80") | -5 | -0.633 | 2 | -6 | -3.759 | -2 | -8 | -4.917 | -2 |
| A2 (50") | -7 | -2.168 | -1 | -6 | -3.799 | -2 | -7 | -4.661 | -2 |
| A3 (29") | -27 | -11.666 | -9 | -9 | -3.689 | -3 | -7 | -3.084 | -1 |
| A4 (17") | -180 | -101.514 | -60 | -45 | -33.552 | -15 | -39 | -26.985 | -13 |
| A5 (10") | N/A | N/A | N/A | -150 | -81.104 | -50 | -80 | -39.905 | -10 |
| A6 (6") | N/A | N/A | N/A | 175 | 278.383 | 525 | 90 | 141.437 | 270 |

| TRANSMITTER CURRENT GAIN | | | | |
|--------------------------|-------|--------|-------|--|
| Signal | Lower | R | Upper | |
| 12K | 0.6 | 0.9047 | 1.3 | |
| 36K | 1.0 | 1.8964 | 2.0 | |
| 72K | 1.0 | 1.1449 | 2.0 | |

| R-MUD VERIFICATION | | | |
|--------------------|---------------|------------------|---------------|
| Signal | Lower (ohm-m) | Measured (ohm-m) | Upper (ohm-m) |
| Mud Cell | 0.95 | 0.998 | 1.05 |

| CALIBRATION SUMMARY | | | | | | |
|----------------------|----------|----------|----------|------------|------------|-------|
| Sensor | Shop | Field | Post | Difference | Tolerance | Units |
| GTET-11602914 | | | | | | |
| Gamma Ray Calibrator | 263.5 | 261.8 | 258.1 | 3.7 | +/- 9.00 | api |
| DSNT-11020488 | | | | | | |
| Snow-Block Porosity | 0.0743 | 0.0776 | 0.0661 | 0.0115 | +/- 0.0150 | decp |
| SDLT-10947725 | | | | | | |
| Near(B+D+P+L) | 1541.590 | 1550.072 | 1546.238 | 3.834 | +/-15.807 | cps |
| Far(B+D+P+L) | 928.352 | 927.207 | 917.005 | 10.202 | +/-16.491 | cps |
| Pad Extension | 3.75 | 3.72 | 3.73 | -0.01 | +/-0.10 | in |
| Ring Diameter | 8.25 | 8.29 | 8.32 | -0.030 | +/-0.15 | in |
| ACRt-E104_S103 | | | | | | |
| Mud Cell | 0.998 | ----- | ----- | 0.000 | ----- | ohm-m |

Data: SL_DM_24_9DL\0004 TRIPLEVDLE Date: 20-Sep-11 12:23:50

HALLIBURTON

CUSTOMER EVENT LOG

| Event Type | Time & Date | Depth (ft) | Event Description |
|------------|--------------------|------------|--------------------------------------|
| | 20-Sep-11 17:57:28 | 0.00 | Logging 001 20-Sep-11 17:57 Dn @0.0f |
| | 20-Sep-11 18:01:25 | 269.67 | Halting 001 20-Sep-11 17:57 Dn @0.0f |

| | | |
|--------------------|---------|---|
| 20-Sep-11 18:05:35 | 183.25 | Logging 002 20-Sep-11 18:05 Dn @183.3f |
| 20-Sep-11 18:38:47 | 6522.08 | Halting 002 20-Sep-11 18:05 Dn @183.3f |
| 20-Sep-11 18:41:07 | 6648.75 | Logging 003 20-Sep-11 18:41 Up @6648.8f |
| 20-Sep-11 20:26:18 | 76.61 | Halting 003 20-Sep-11 18:41 Up @6648.8f |

Data: SL_DM_24_9DL\0006 CBL\HW11182

Date: 20-Sep-11 20:26:38

HALLIBURTON

TOOL STRING DIAGRAM REPORT

| Description | Overbody Description | O.D. | Diagram | Sensors @ Delays | Length | Accumulated Length |
|-----------------------------------|----------------------|---------------|---------|--|----------|--------------------|
| RWCH-11280120 135.00 lbs | | Ø 3.625 in → | | Load Cell @ 30.19 ft BH Temperature @ 29.63 ft | 6.25 ft | 33.88 ft |
| GTET-11602914 165.00 lbs | | Ø 3.625 in → | | GammaRay @ 21.57 ft | 8.52 ft | 27.63 ft |
| Centralizer 29-CENT1 12.00 lbs | | Ø 4.000 in* → | | | | 19.11 ft |
| CBL-BSAT-11105782 300.00 lbs | | Ø 3.625 in → | | Tx1 Amp & TT @ 13.09 ft Tx1 MSG @ 12.09 ft Tx2 MSG @ 9.09 ft Tx2 Amp & TT @ 8.09 ft | 15.77 ft | |
| BTM_CENT 35.00 lbs | | Ø 3.625 in → | | | 3.00 ft | 3.33 ft |
| Bull Nose-BullNose 5.00 lbs | | Ø 2.750 in → | | | 0.33 ft | 0.33 ft |
| | | | | | 0.00 ft | |

| Mnemonic | Tool Name | Serial Number | Weight (lbs) | Length (ft) | Accumulated Length (ft) | Max.Log. Speed (fpm) |
|----------|---------------------------------|---------------|--------------|-------------|-------------------------|----------------------|
| RWCH | Releasable Wireline Cable Head | 11280120 | 135.00 | 6.25 | 27.63 | 300.00 |
| GTET | Gamma Telemetry Tool | 11602914 | 165.00 | 8.52 | 19.11 | 60.00 |
| CBL-BSAT | Borehole Sonic Array Tool - CBL | 11105782 | 300.00 | 15.77 | 3.33 | 60.00 |
| OBCFN | Centralizer - 29 in Overbody | CENT1 | 12.00 | 2.42 * | 16.33 | 300.00 |

| | | | | | | |
|------|--------------------|----------|-------|------|------|--------|
| CENT | Bottom Centralizer | BTM_CENT | 35.00 | 3.00 | 0.33 | 300.00 |
| BLNS | Bull Nose | BullNose | 5.00 | 0.33 | 0.00 | 300.00 |

| | | | | | | |
|--------------|--|--|---------------|--------------|--|--|
| Total | | | 652.00 | 33.88 | | |
|--------------|--|--|---------------|--------------|--|--|

* Not included in Total Length and Length Accumulation.

Data: SL_DM_24_9DL\0006 CBL\IDLE Date: 20-Sep-11 17:44:28

| | | | |
|---------|-----------------------------------|-------|----|
| COMPANY | ENTEK GRB, LLC. | | |
| WELL | SLATER DOME FEDERAL 24-9DL (ST#1) | | |
| FIELD | SOUTH SLATER DOME | | |
| COUNTY | MOFFAT | STATE | CO |

HALLIBURTON

**BOREHOLE COMPENSATED
SONIC ARRAY TOOL
CEMENT BOND LOG**