

UGOU021 Initial Processing Report

GTO-19-C031-02 SCAN Acquisition Seismic Processing Order #2

11 NOVEMBER 2020

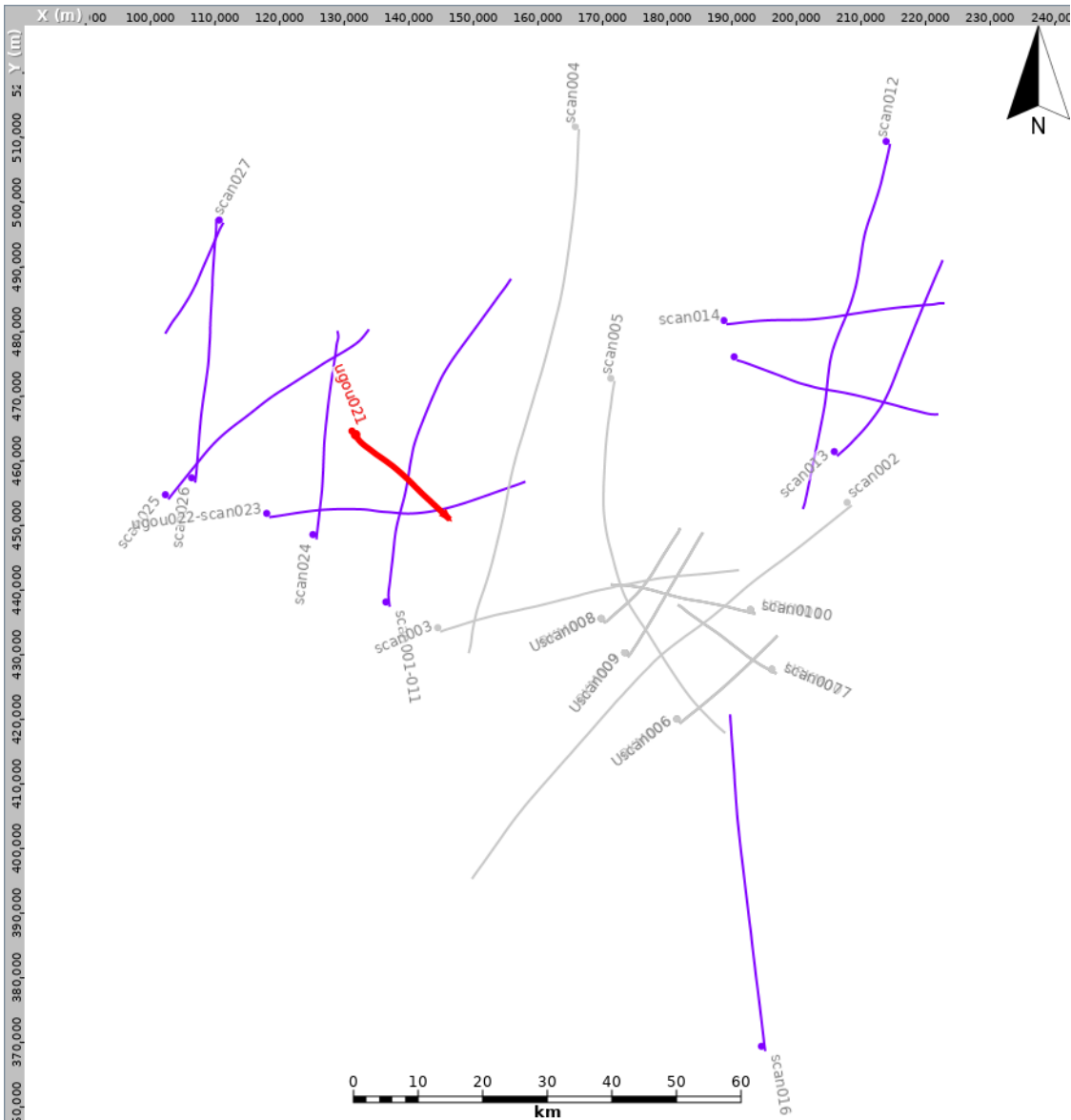
Energie Beheer Nederland B.V.

2D Seismic PreSTM Processing, Onshore Netherlands

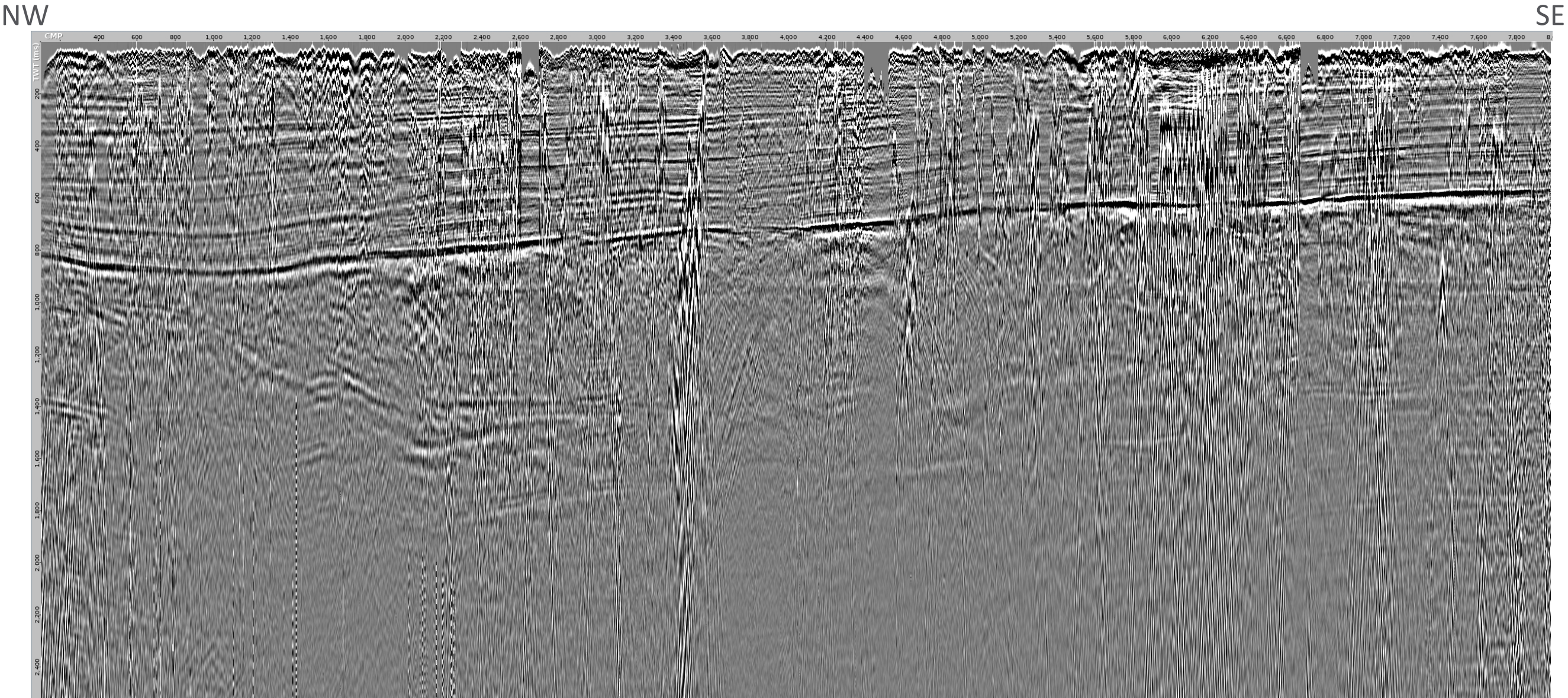
- This report shows examples through the initial noise attenuation processing.

Processing sequence

- Data reformat: SEGY to internal format
- Geometry: Crooked line with 2.5 m CDP interval
- Weak shots: 0-500 m offsets only
- Spherical divergence correction: T
- Geophone response correction:
- Refraction statics: Delay time using $V_0 = 1000$ m/s $V_R = 1700$ m/s $SRD = NAP$
- Noise attenuation: +/-1250 m/s Weiner dip filter
- Edits: Kill invalid shots and receivers
- Noise attenuation: Despike
- Noise attenuation: Wavelet (D20) transform filter (muting the largest 10% of coefficients by 90% in scales 6-10)
- SCAC 1: Source and receiver components designed on NMO corrected gathers over 200-2200 ms
- Noise attenuation: TFDN
- Inverse Q: $Q = 100$ phase and amplitude using 40 Hz reference frequency and 12 dB gain stabilisation
- DBS: Surface consistent with 160 ms operator length with 16 ms predictive gap
0.1% white noise stabilisation - Design window: 200-3000 ms
- Velocity analysis: 1 km interval
- Noise attenuation: 1.75 ms/tr (2857 m/s) dip filter and wavelet transform filter on shots
- Stack: 1/N with 55° mute
- Static: Static to shift from floating to final datum (NAP)



STACKS



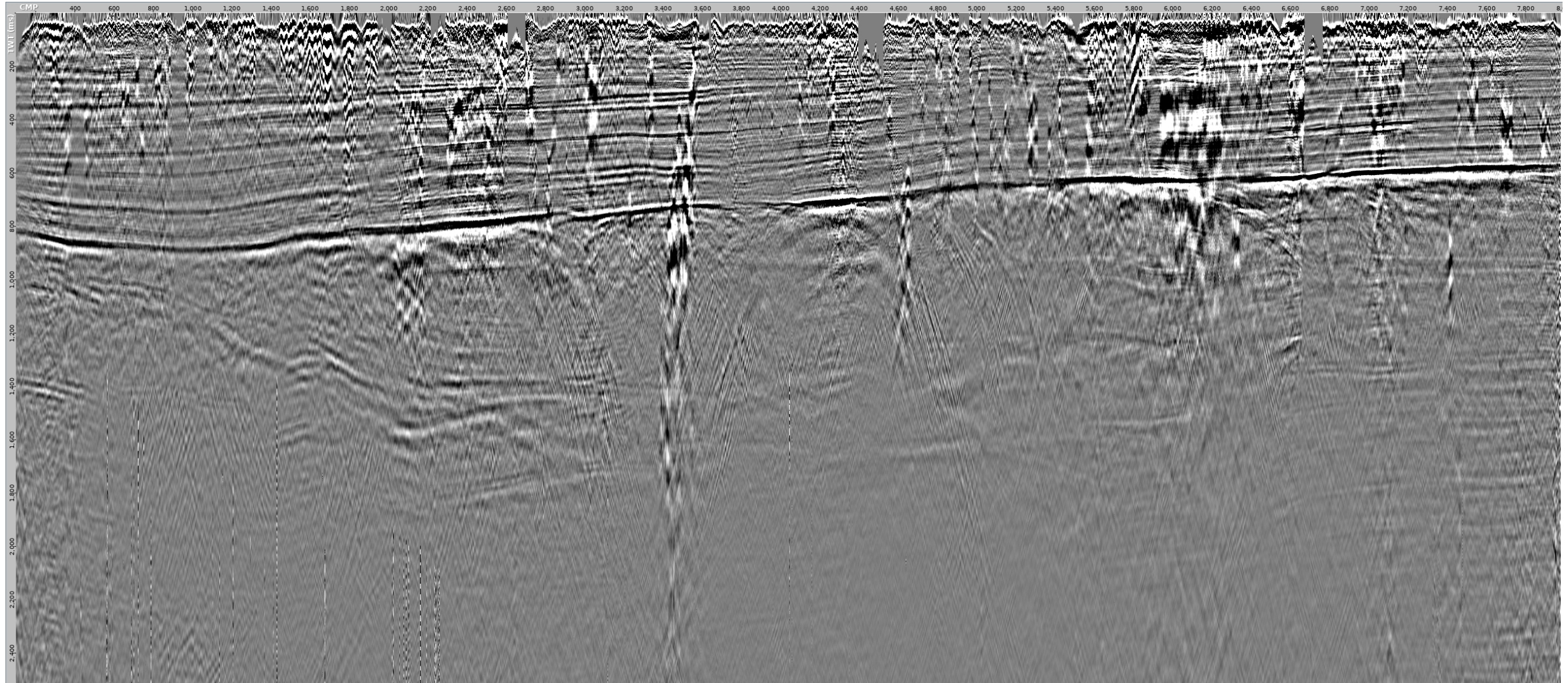
UGOU021 stack with dip filter on shots

No DBS applied



NW

SE



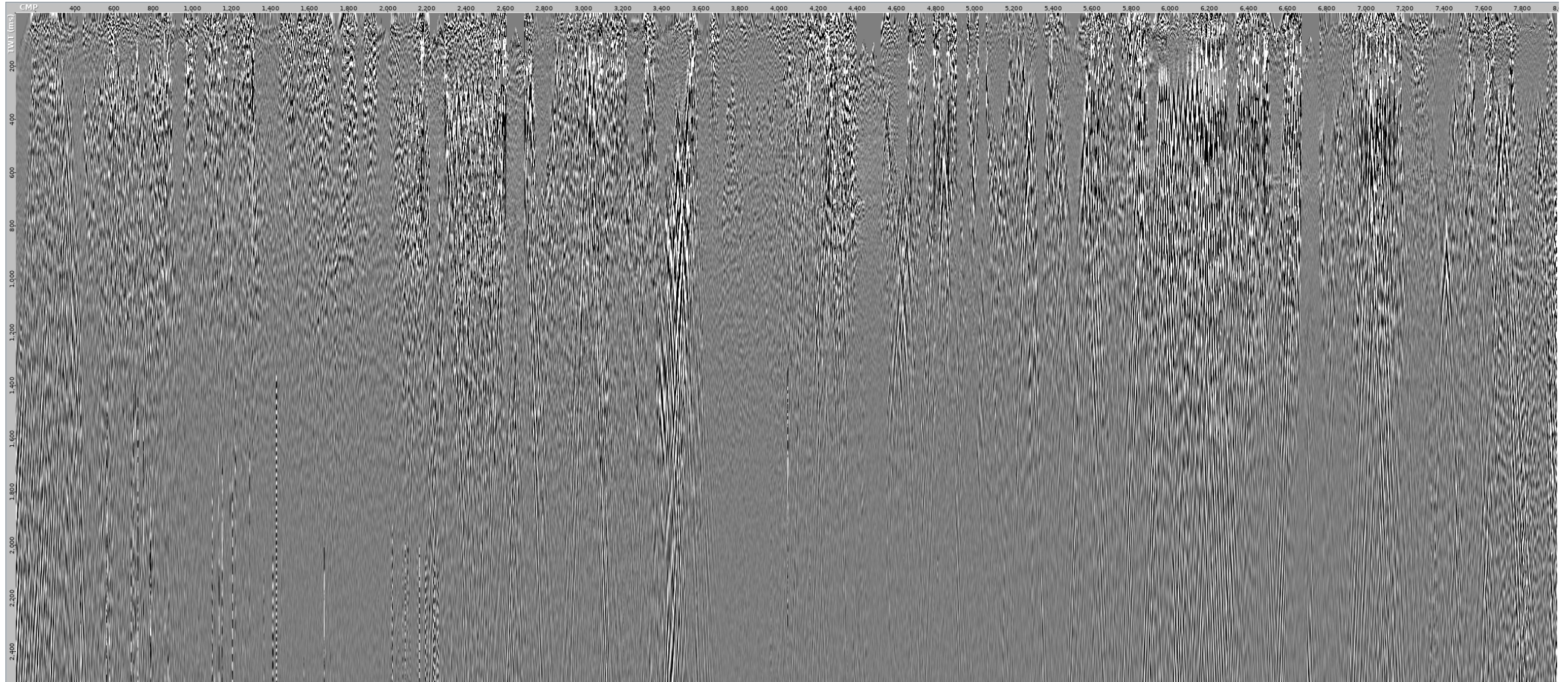
UGOU021 stack difference after dip filter on shots

No DBS applied



NW

SE



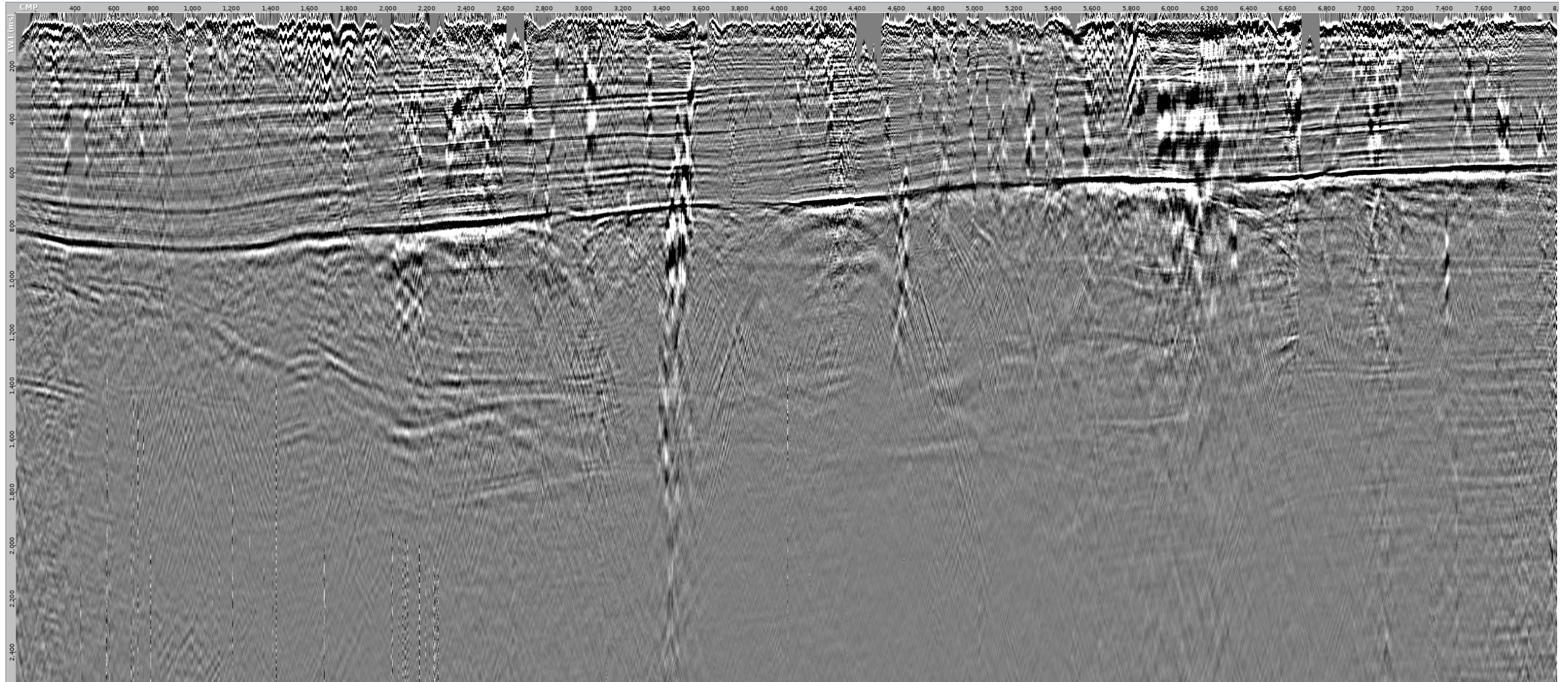
UGOU021 stack with dip filter on shots (REPEAT SLIDE)

No DBS applied



NW

SE



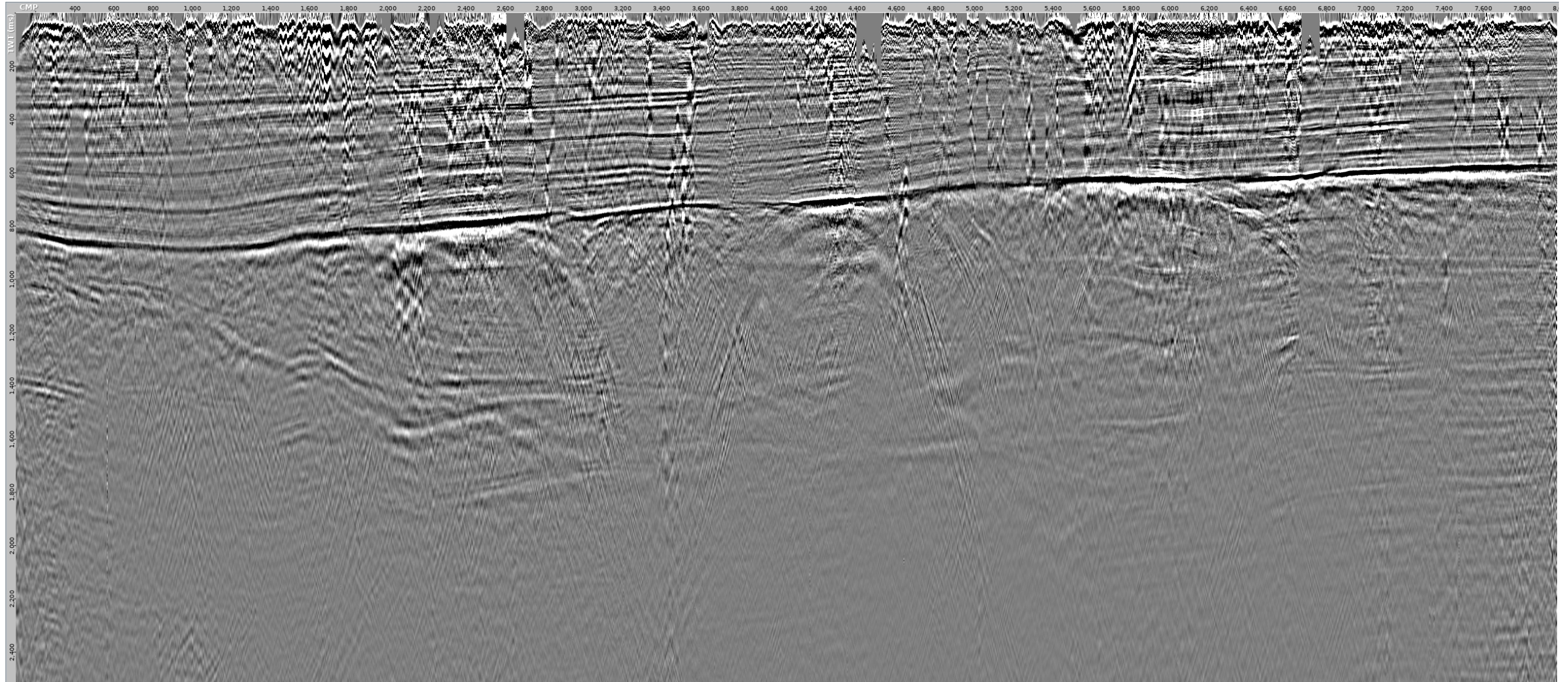
UGOU021 stack with wavelet transform filter on shots

No DBS applied



NW

SE



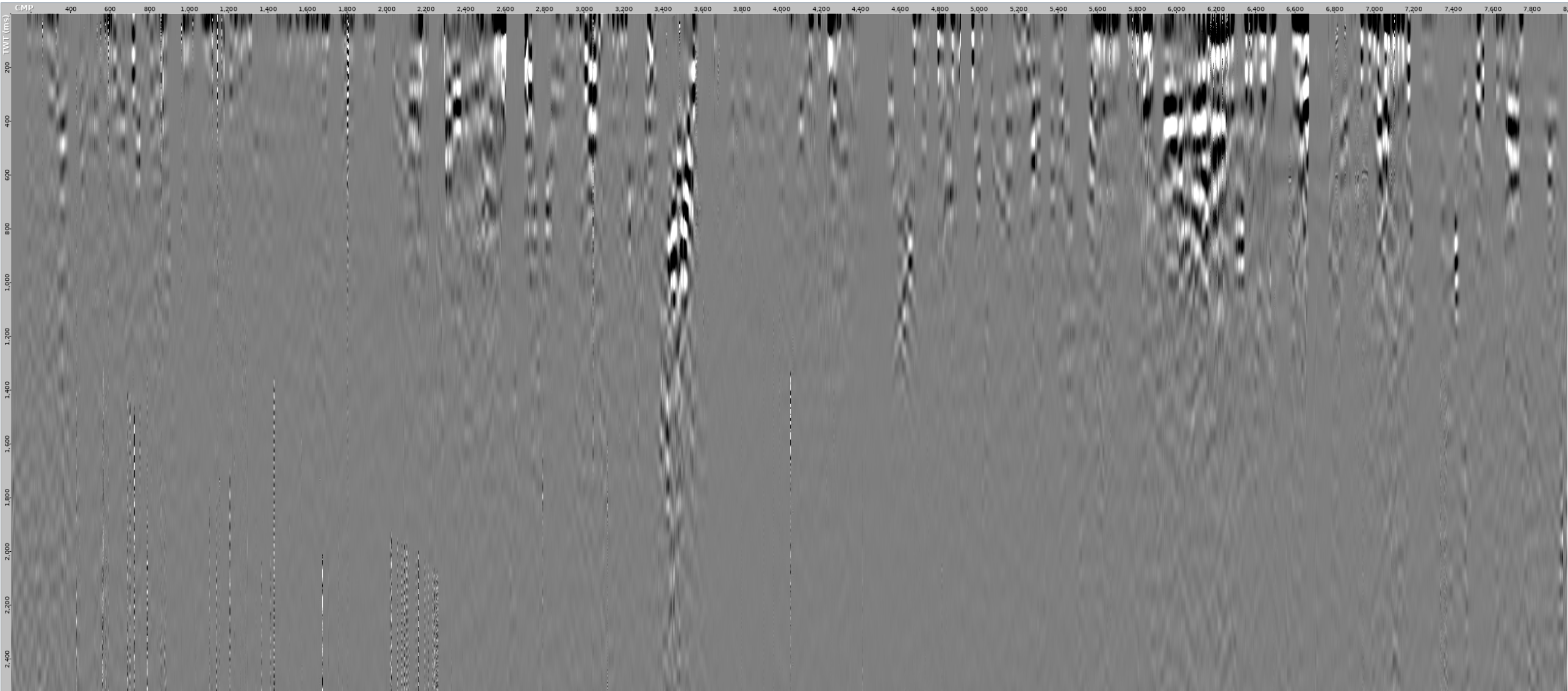
UGOU021 stack difference after wavelet transform filter on shots

No DBS applied



NW

SE



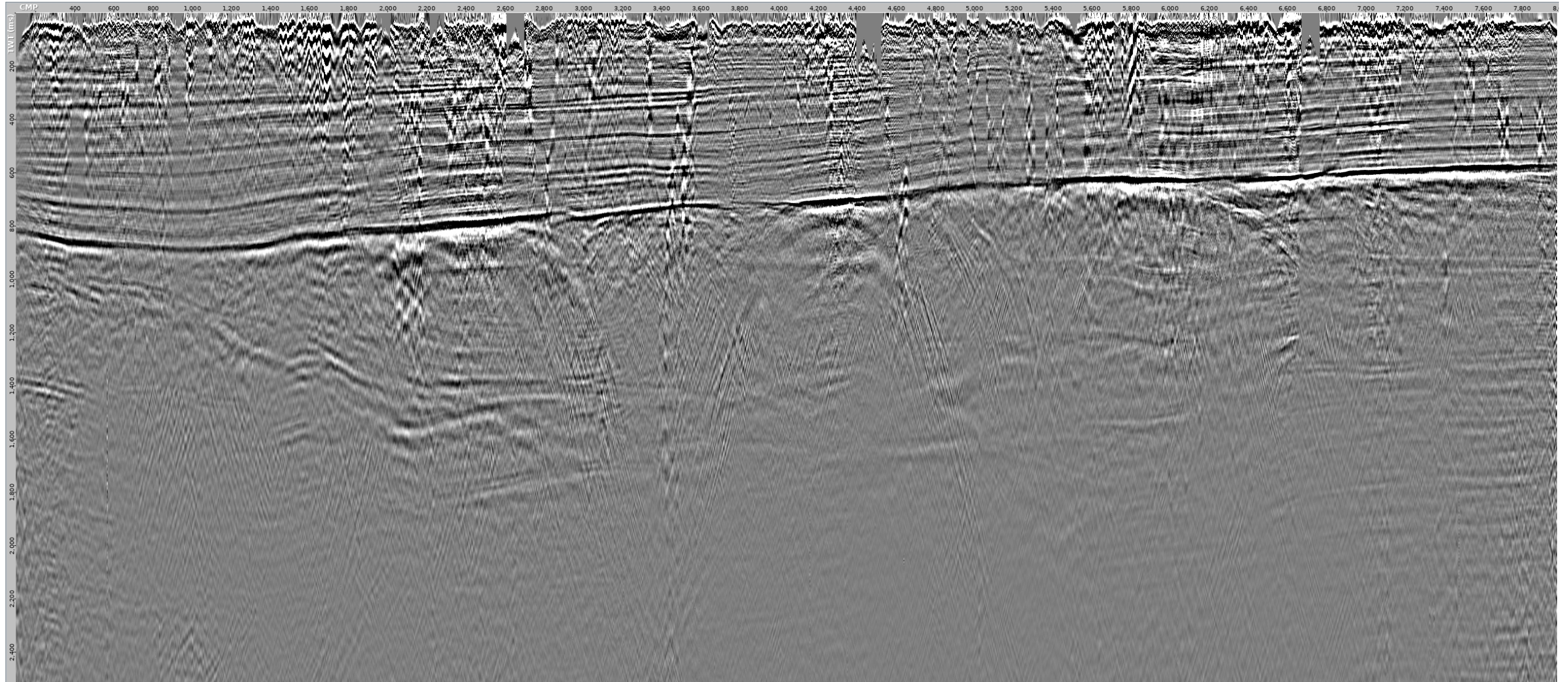
UGOU021 stack with wavelet transform filter on shots (REPEAT)

No DBS applied



NW

SE



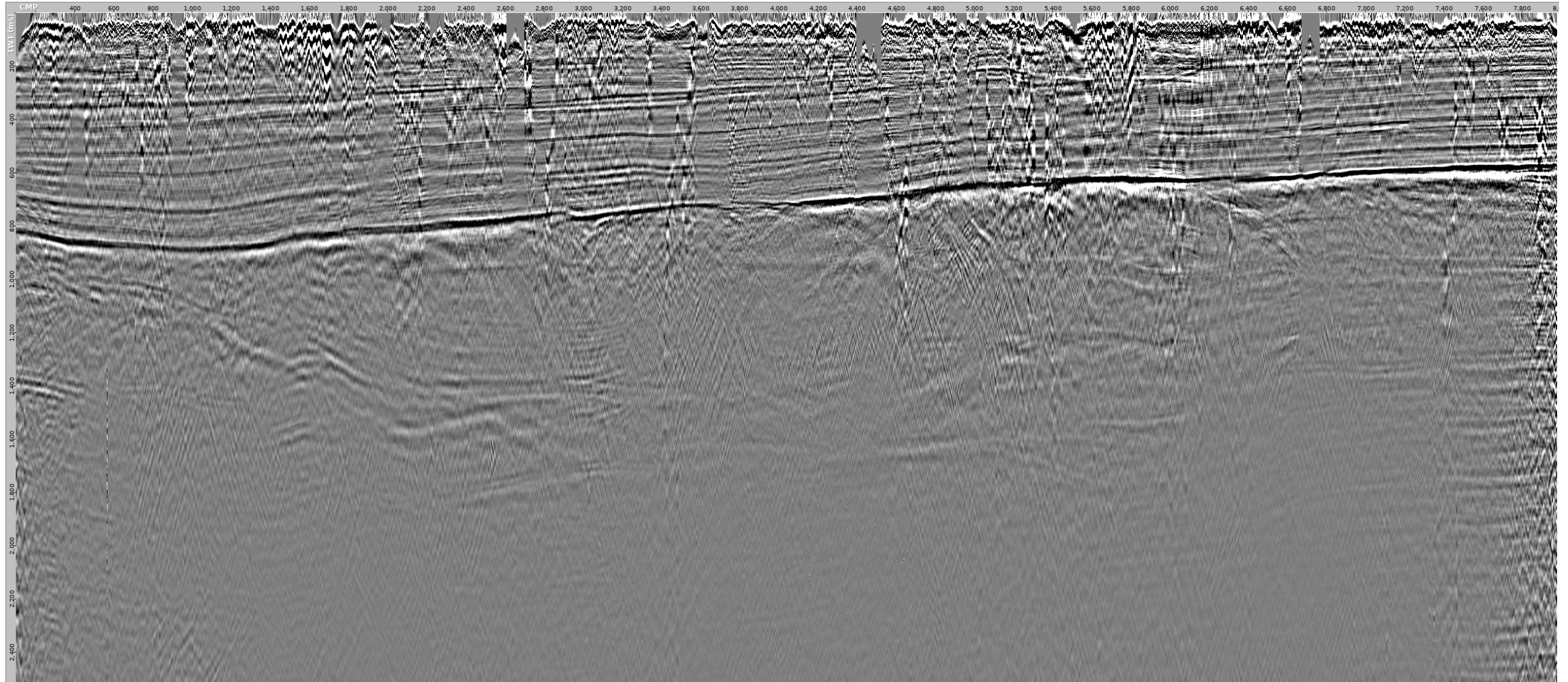
UGOU021 stack with initial pass of surface consistent amplitude correction (SCAC1)

No DBS applied



NW

SE



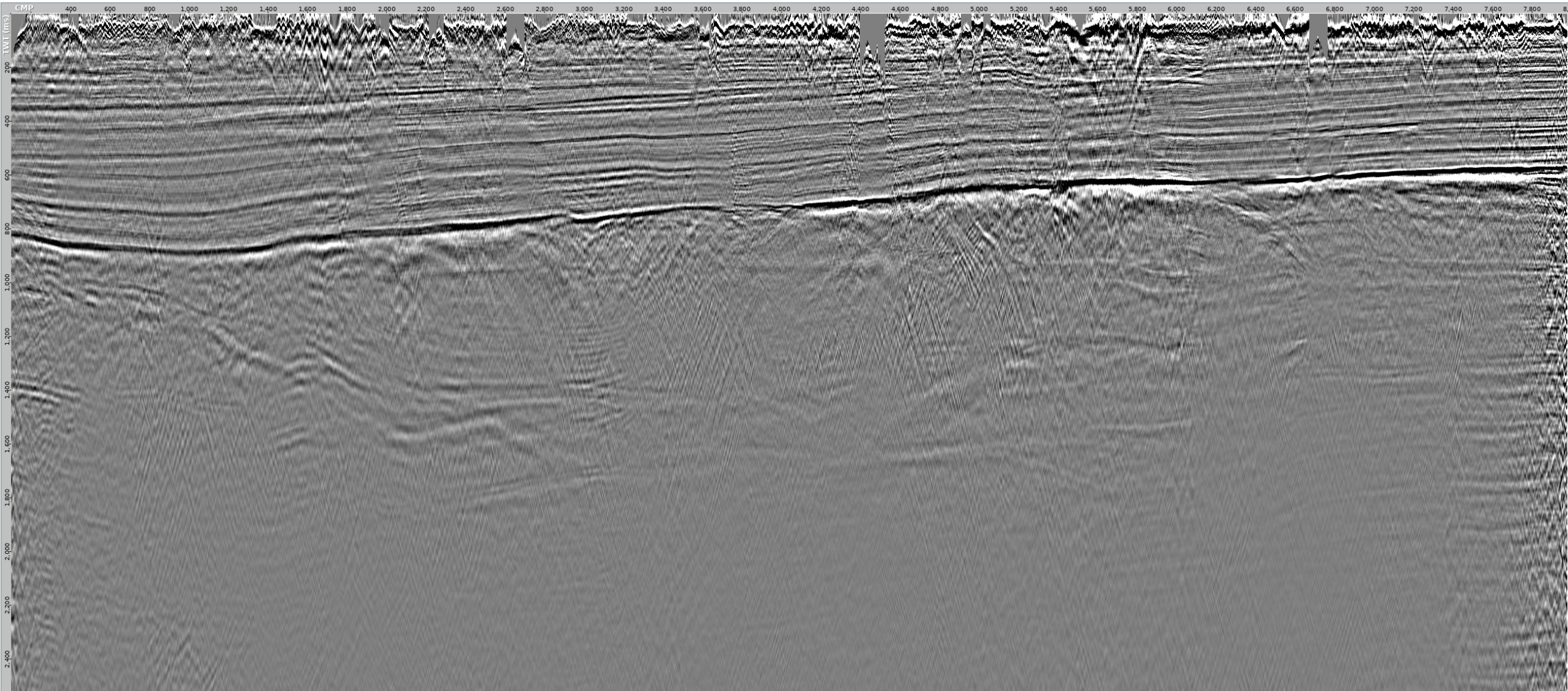
UGOU021 SCAC1 stack with TFDN on shots

No DBS applied



NW

SE



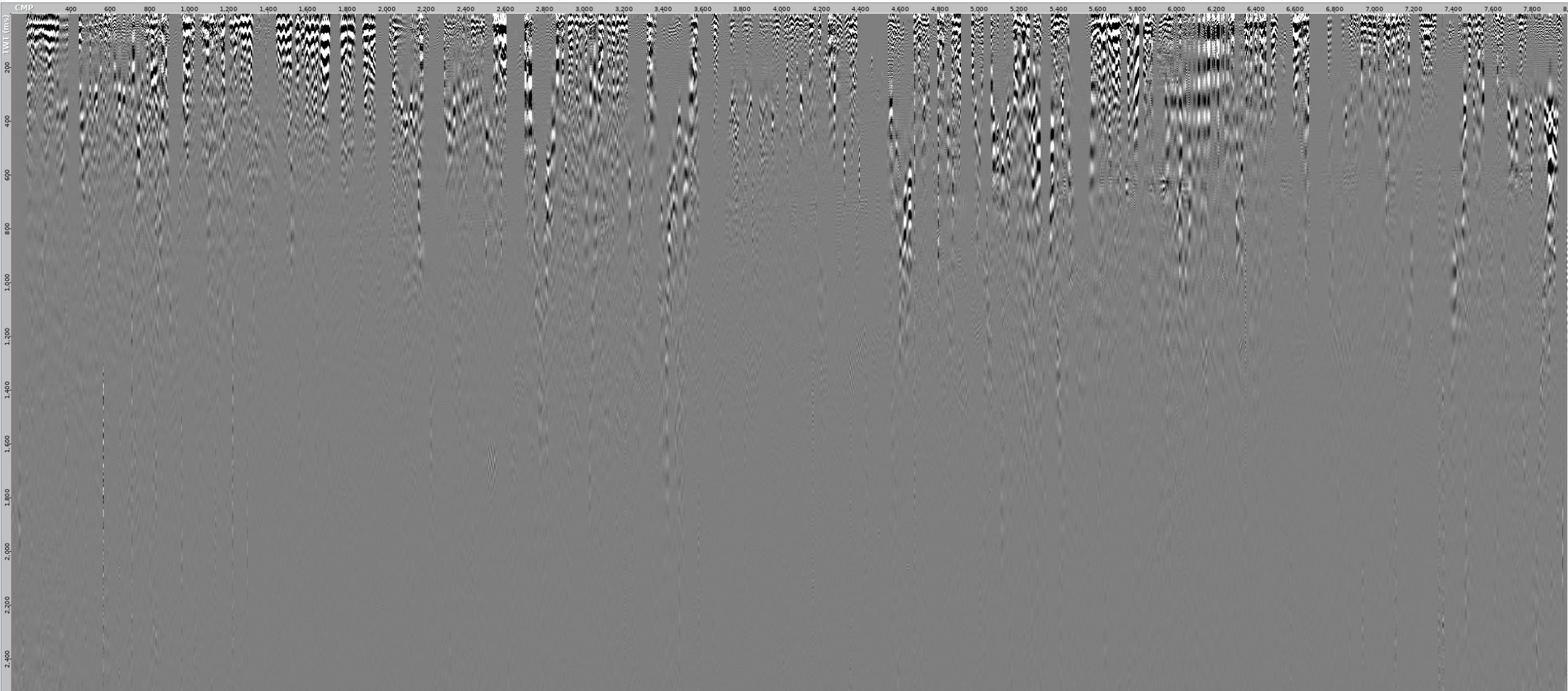
UGOU021 SCAC1 stack showing difference after TFDN on shots

No DBS applied



NW

SE



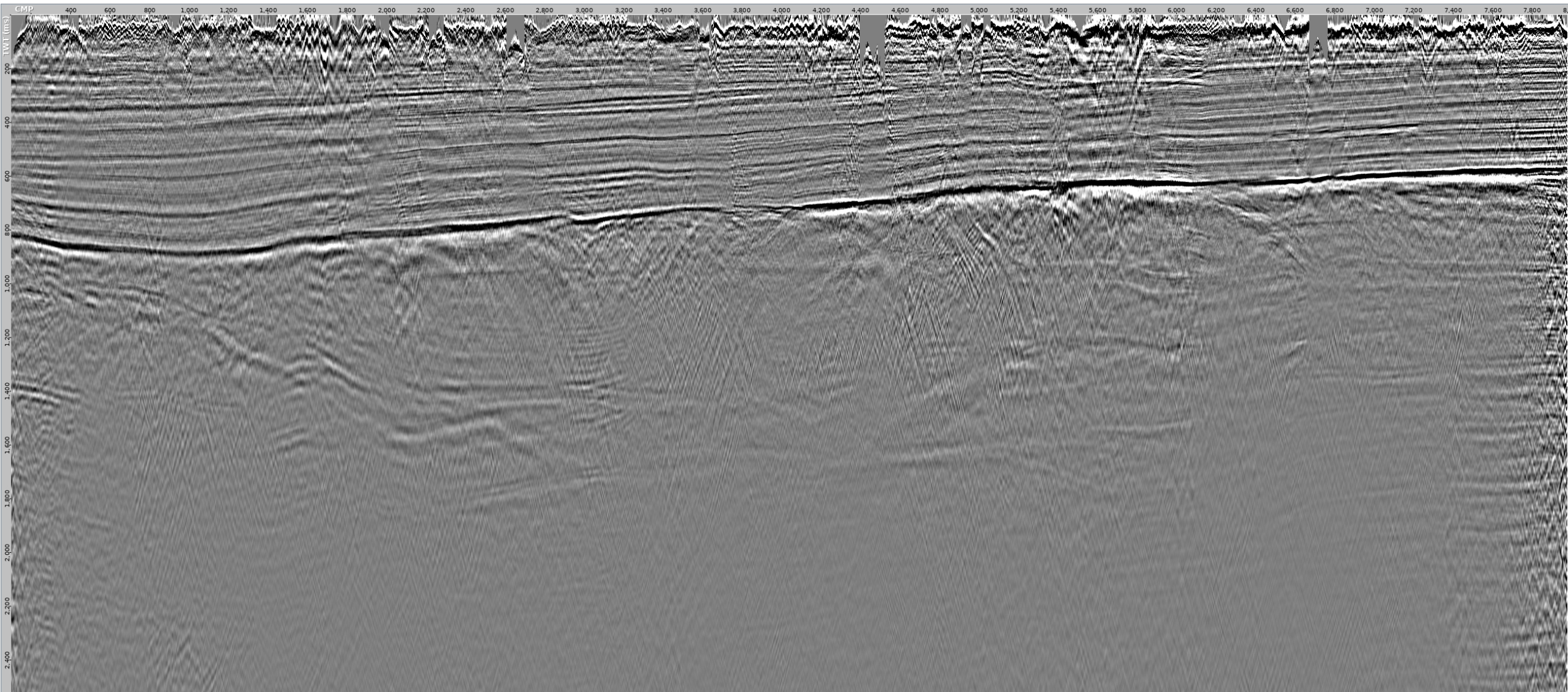
UGOU021 SCAC1 stack with TFDN on shots (REPEAT SLIDE)

No DBS applied



NW

SE

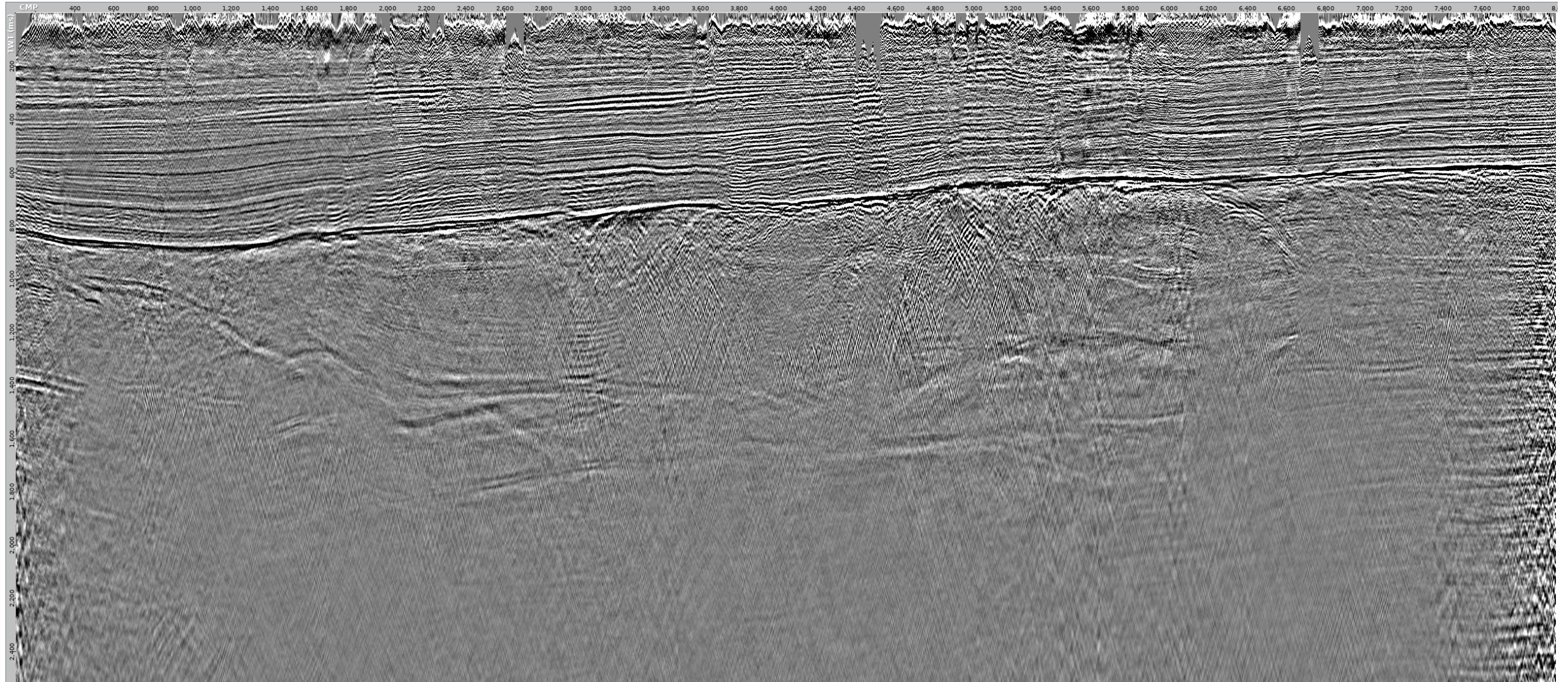


UGOU021 stack with surface consistent deconvolution



NW

SE

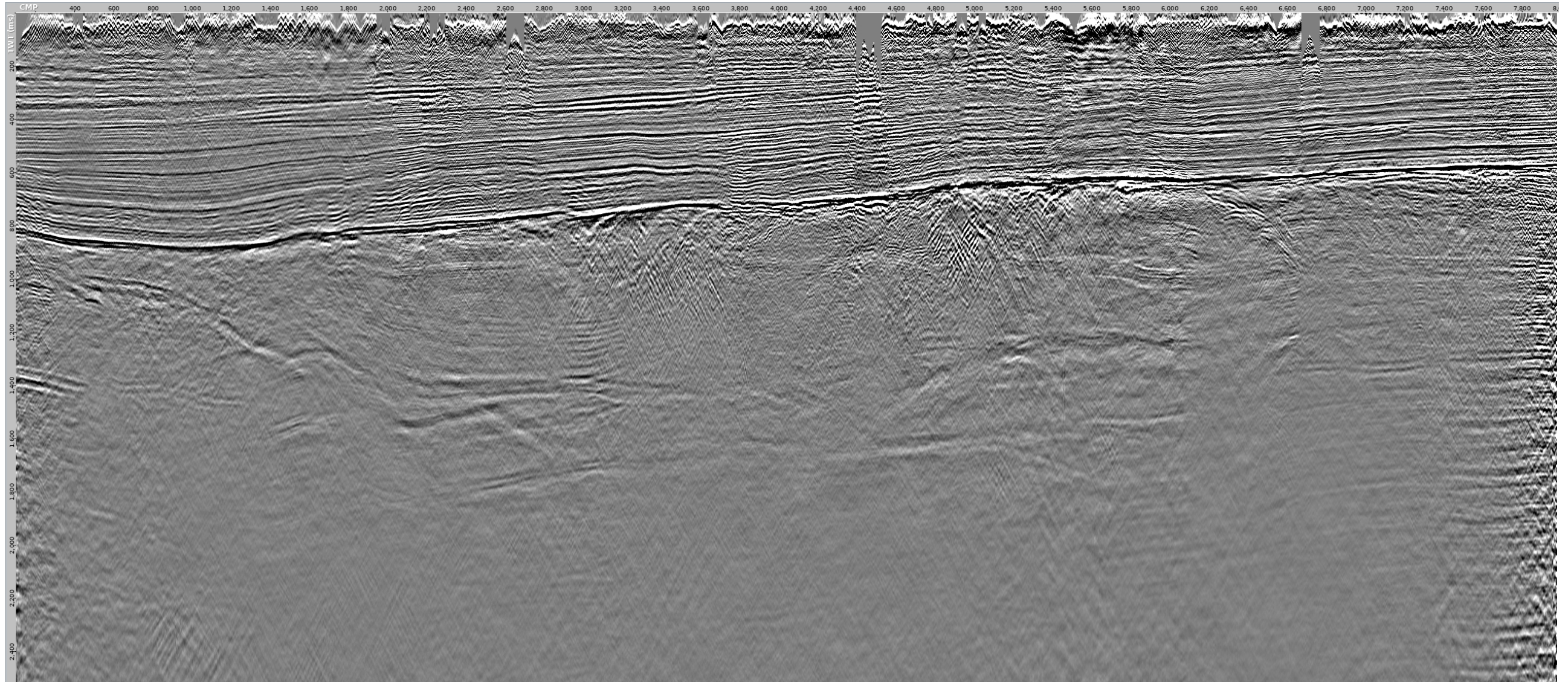


UGOU021 stack with 3rd pass noise attenuation on shots



NW

SE

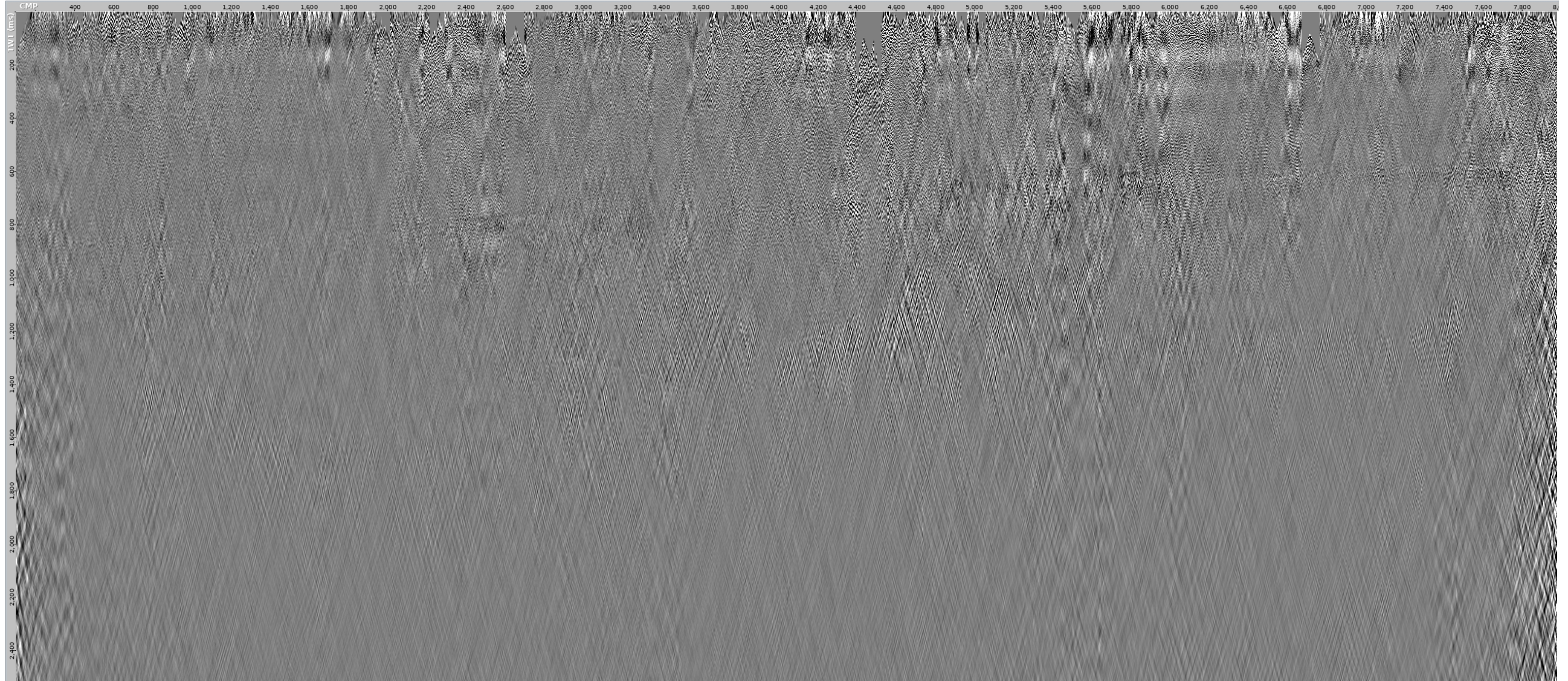


UGOU021 stack difference after 3rd pass noise attenuation on shots



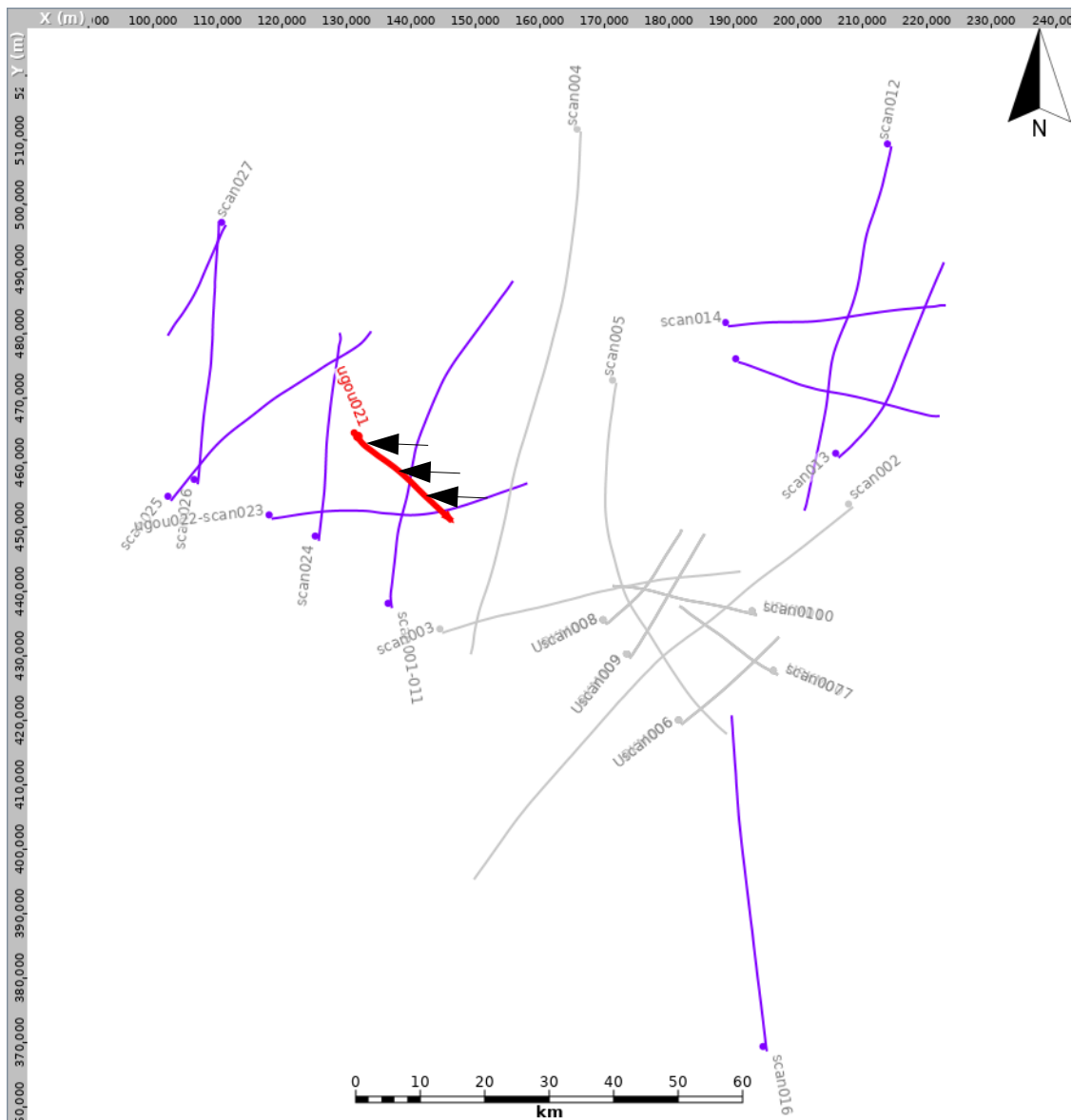
NW

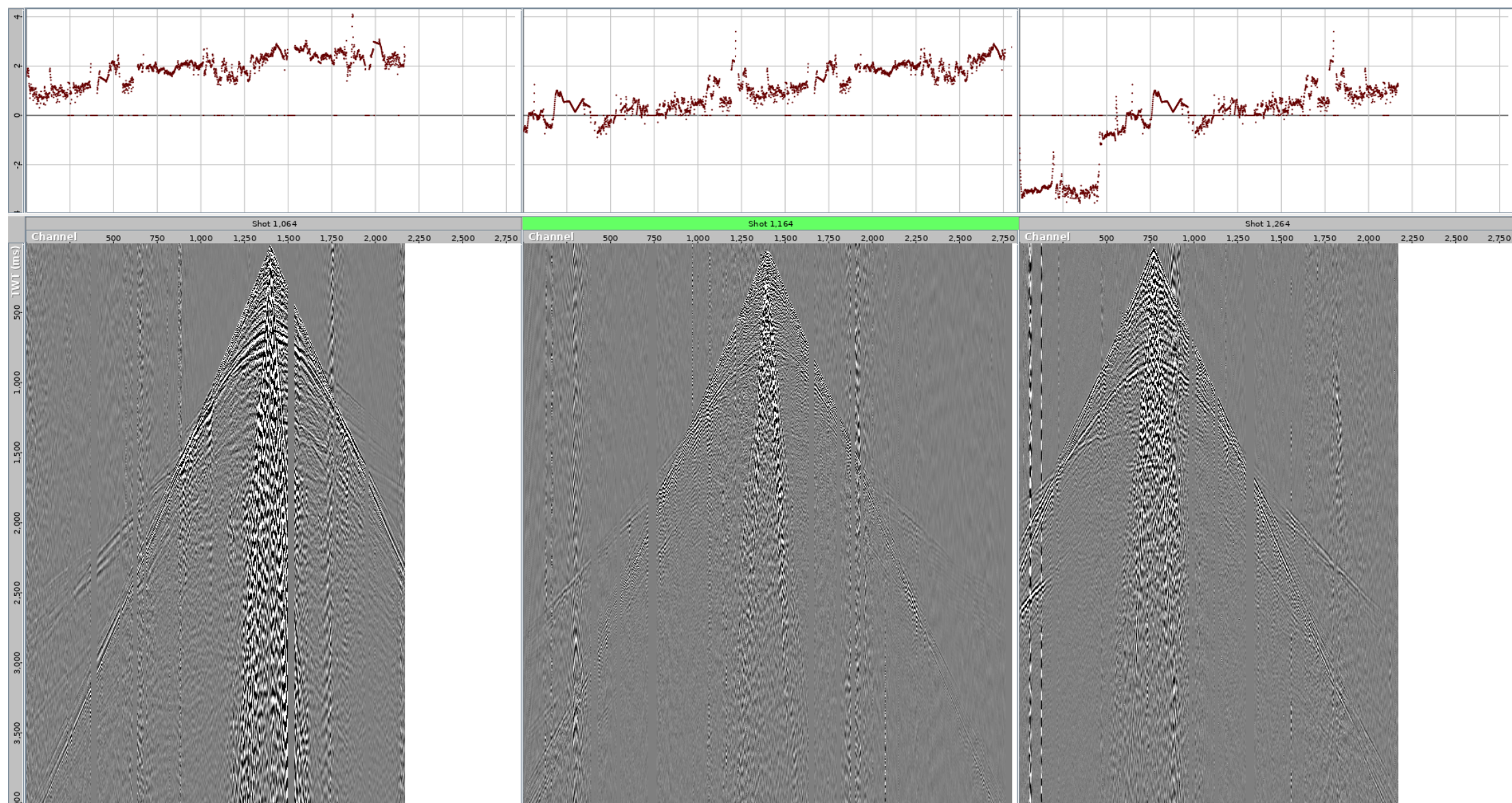
SE



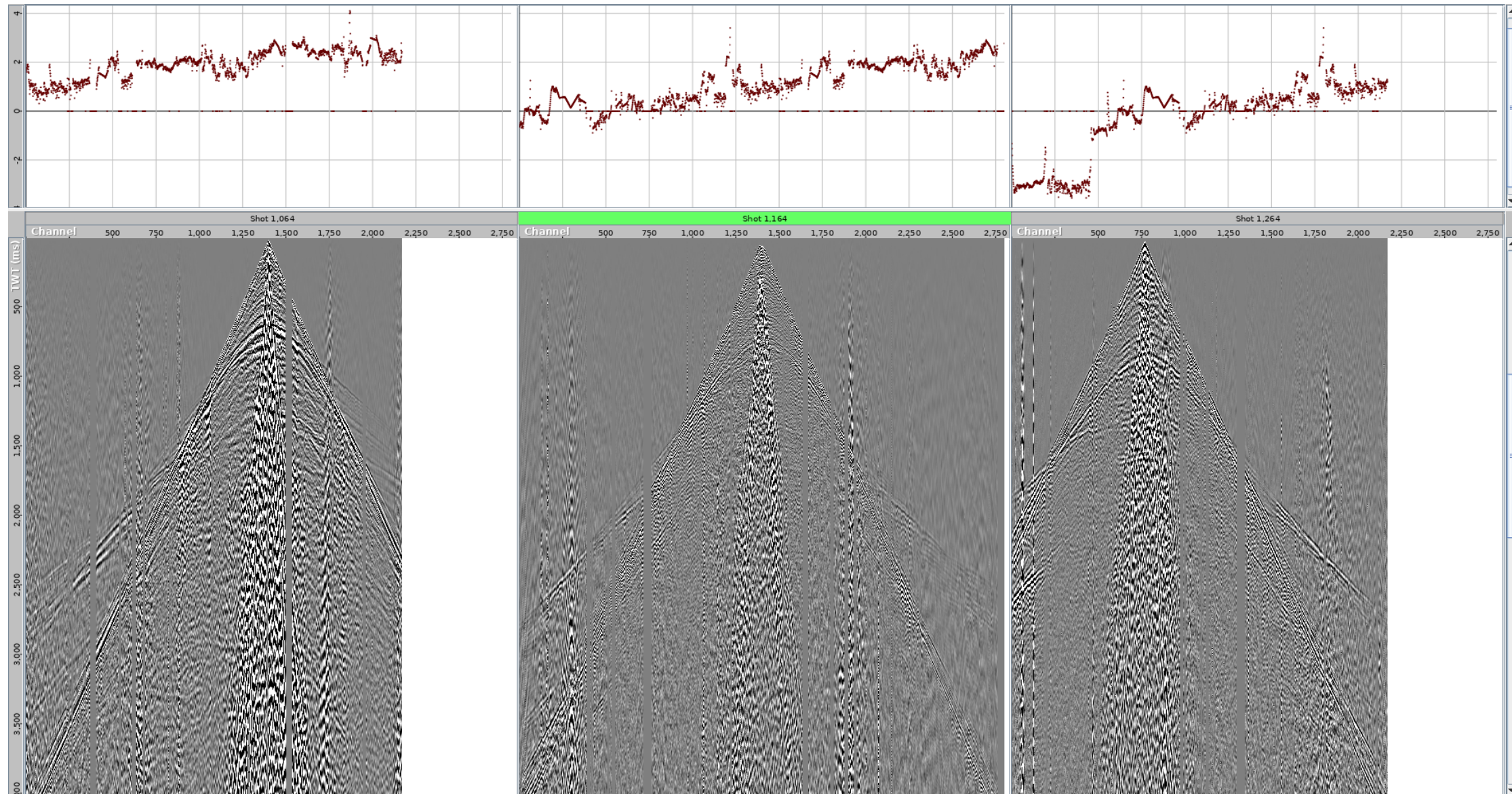
SHOTS

Map with the approximate location of displayed shots

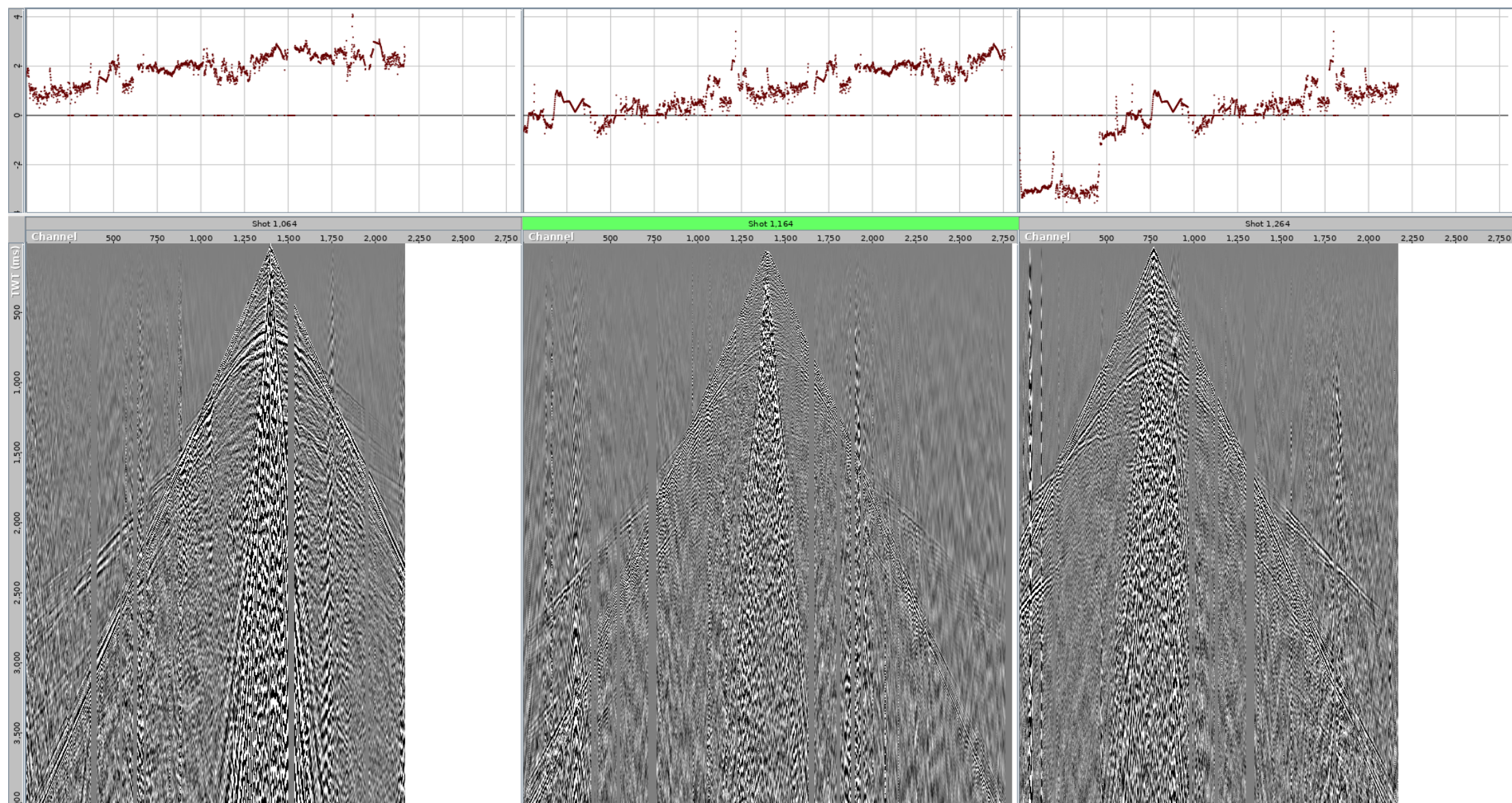




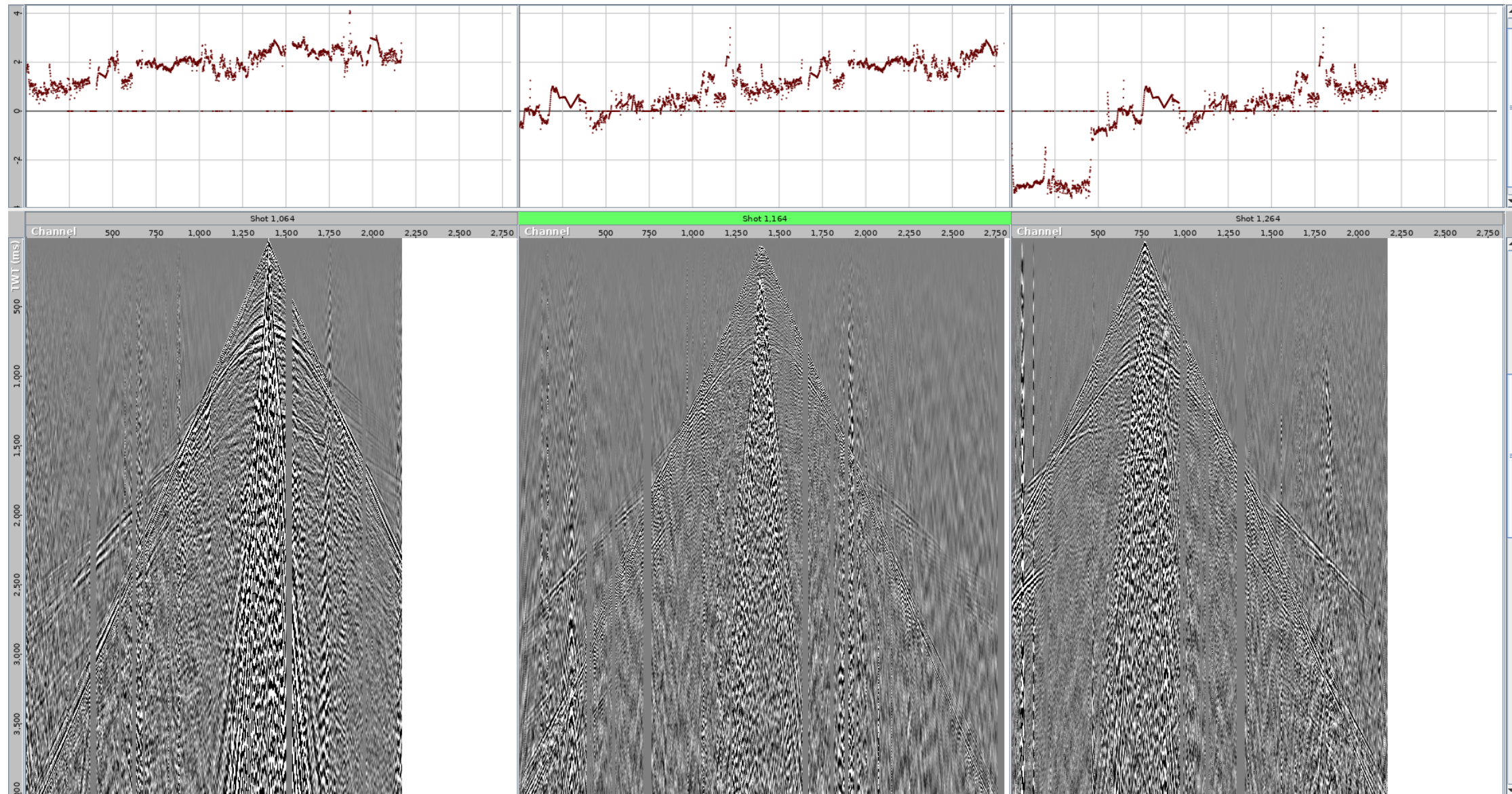
UGOU021 raw shots with true amplitude recovery (T)



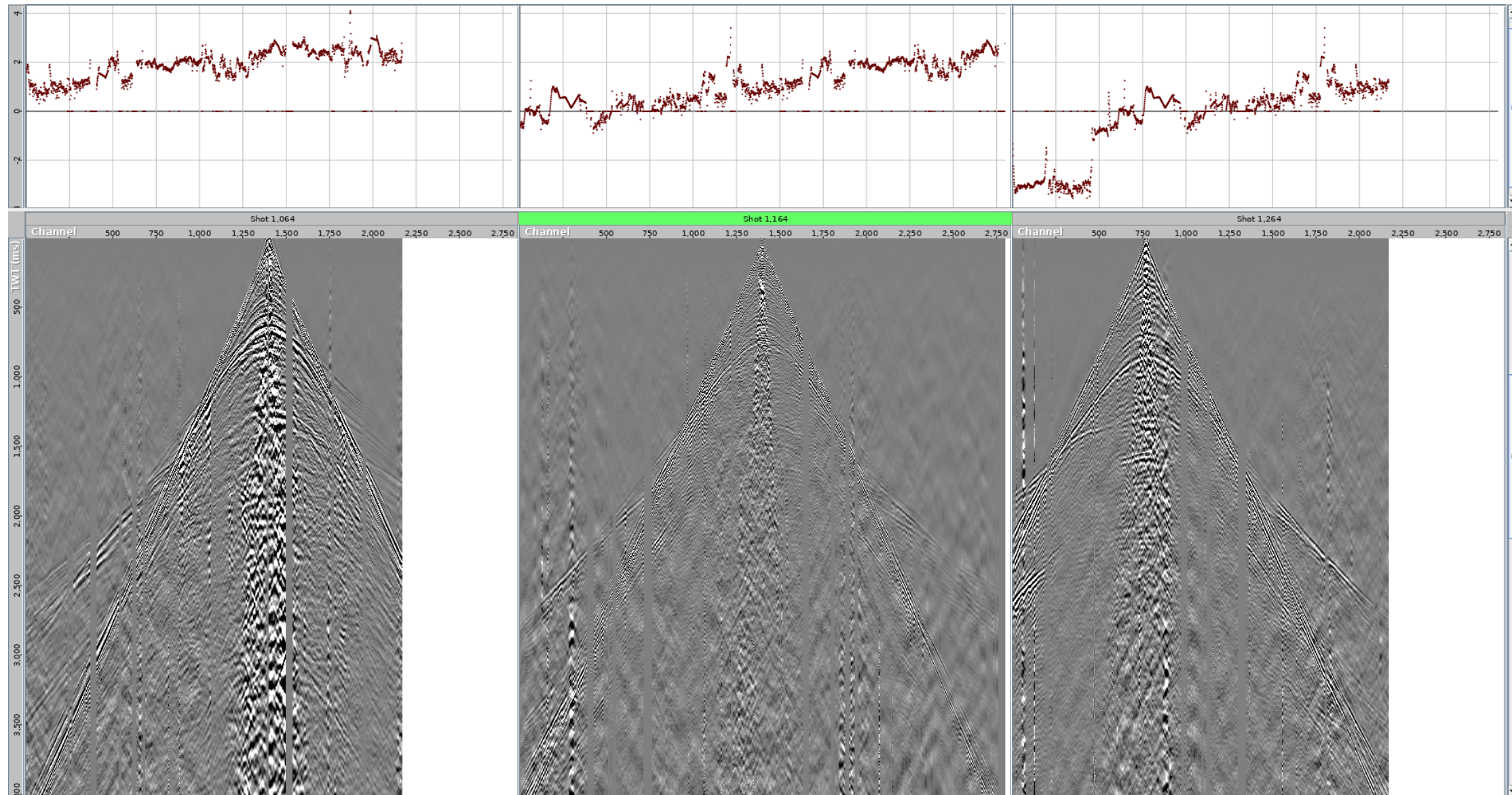
UGOU021 raw shots with true geophone response correction



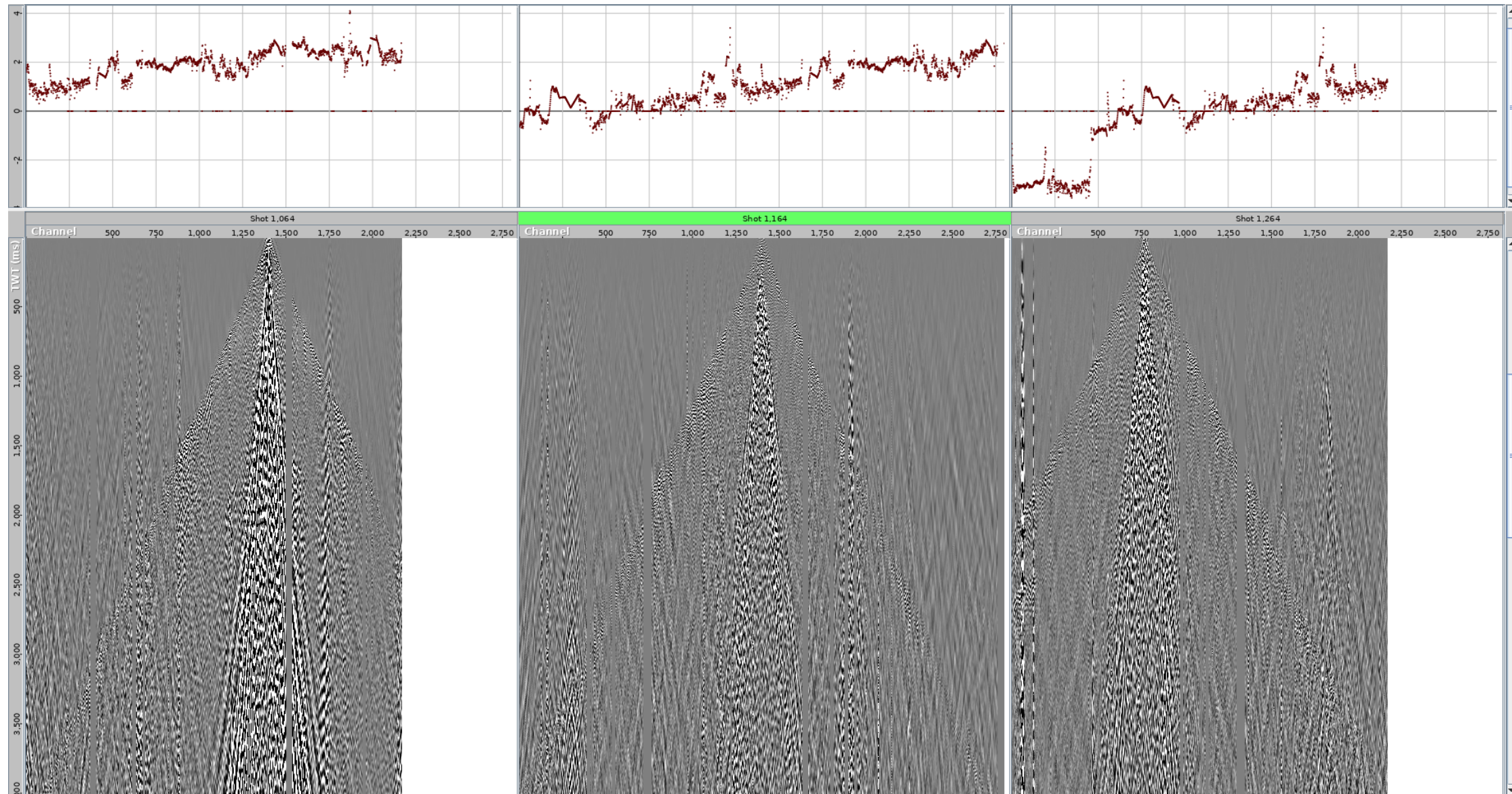
UGOU021 raw shots with deviation from mean statics applied



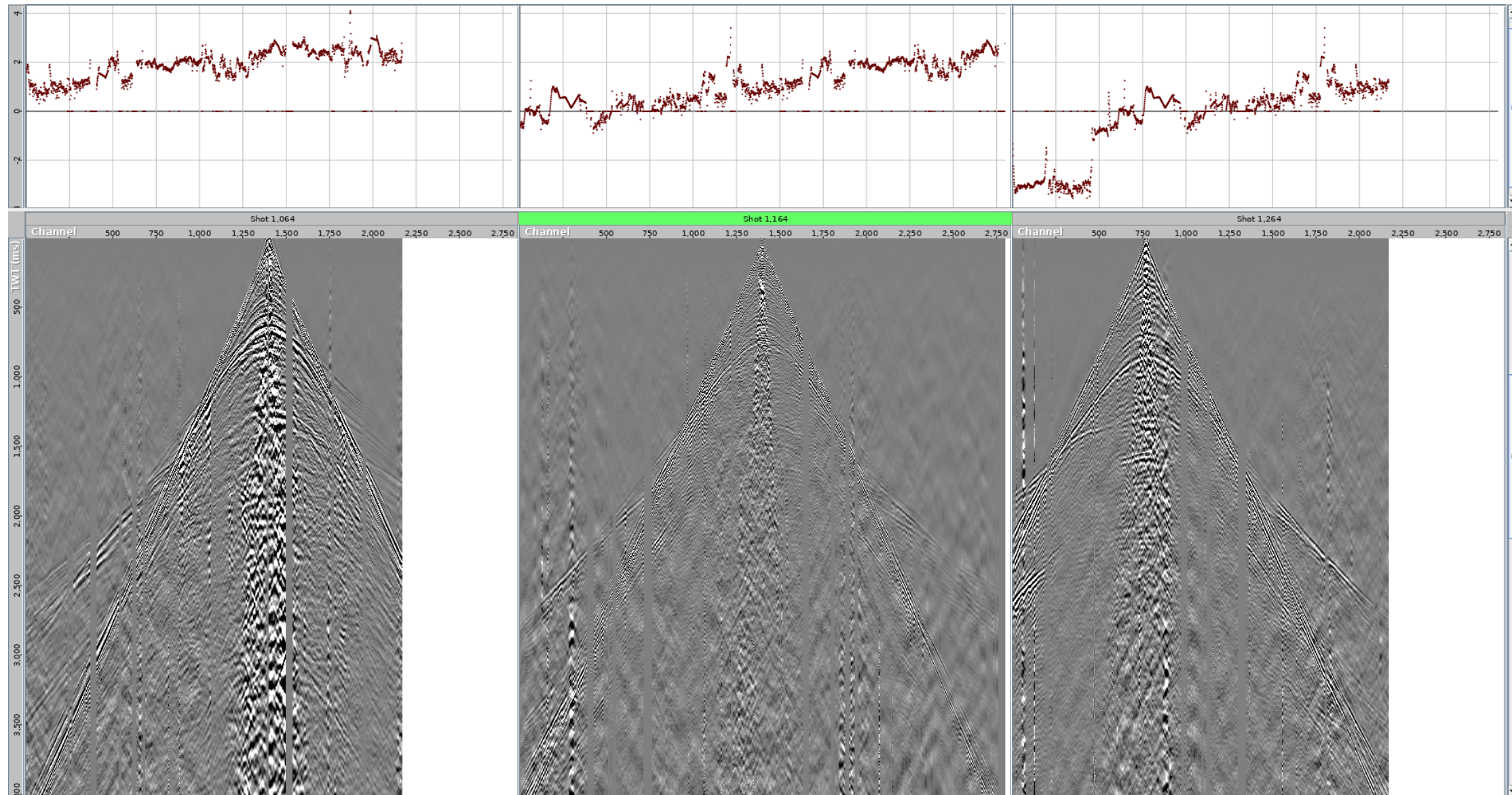
UGOU021 shots after the initial dip filter



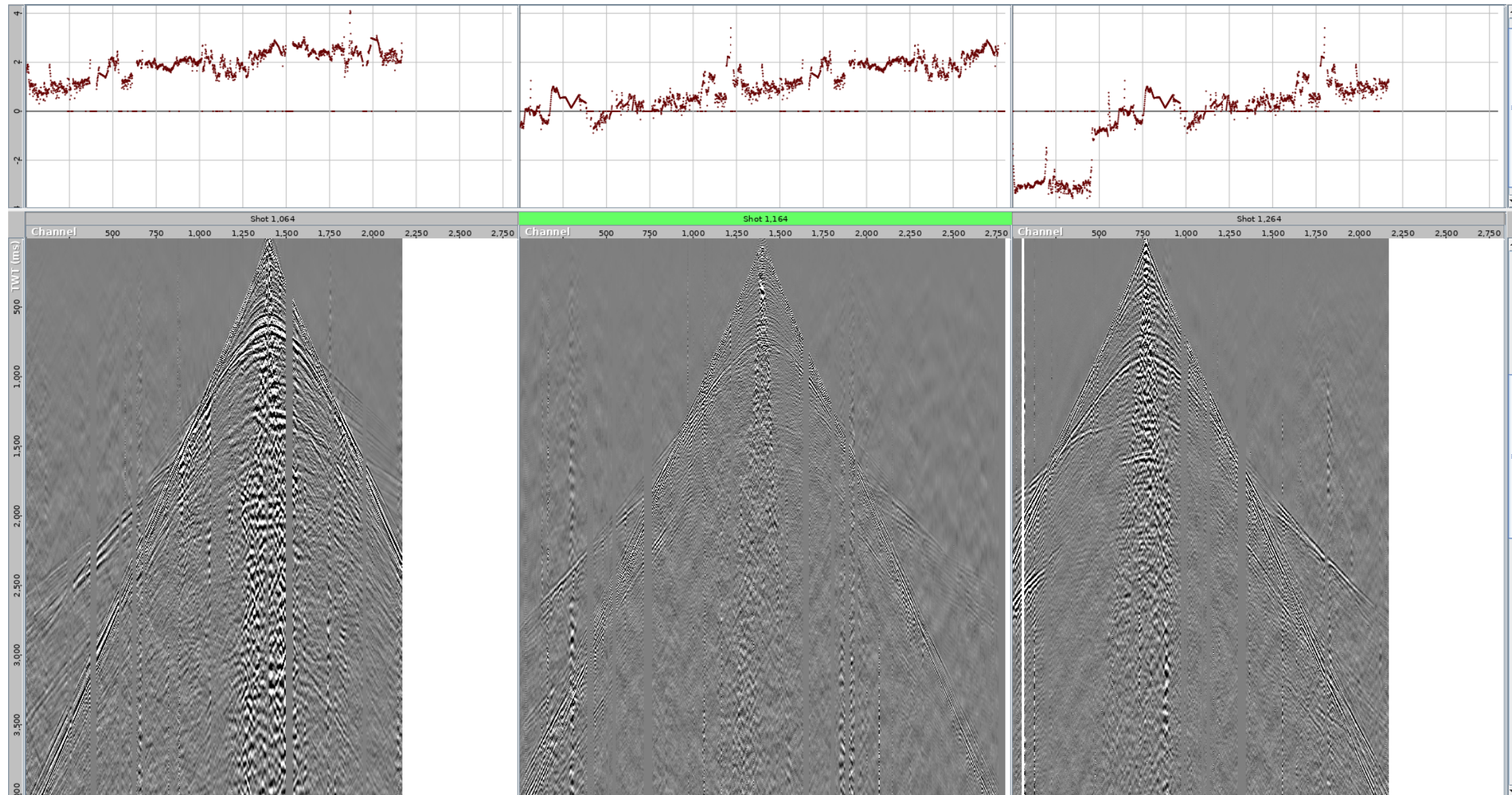
UGOU021 shots showing difference after the initial dip filter



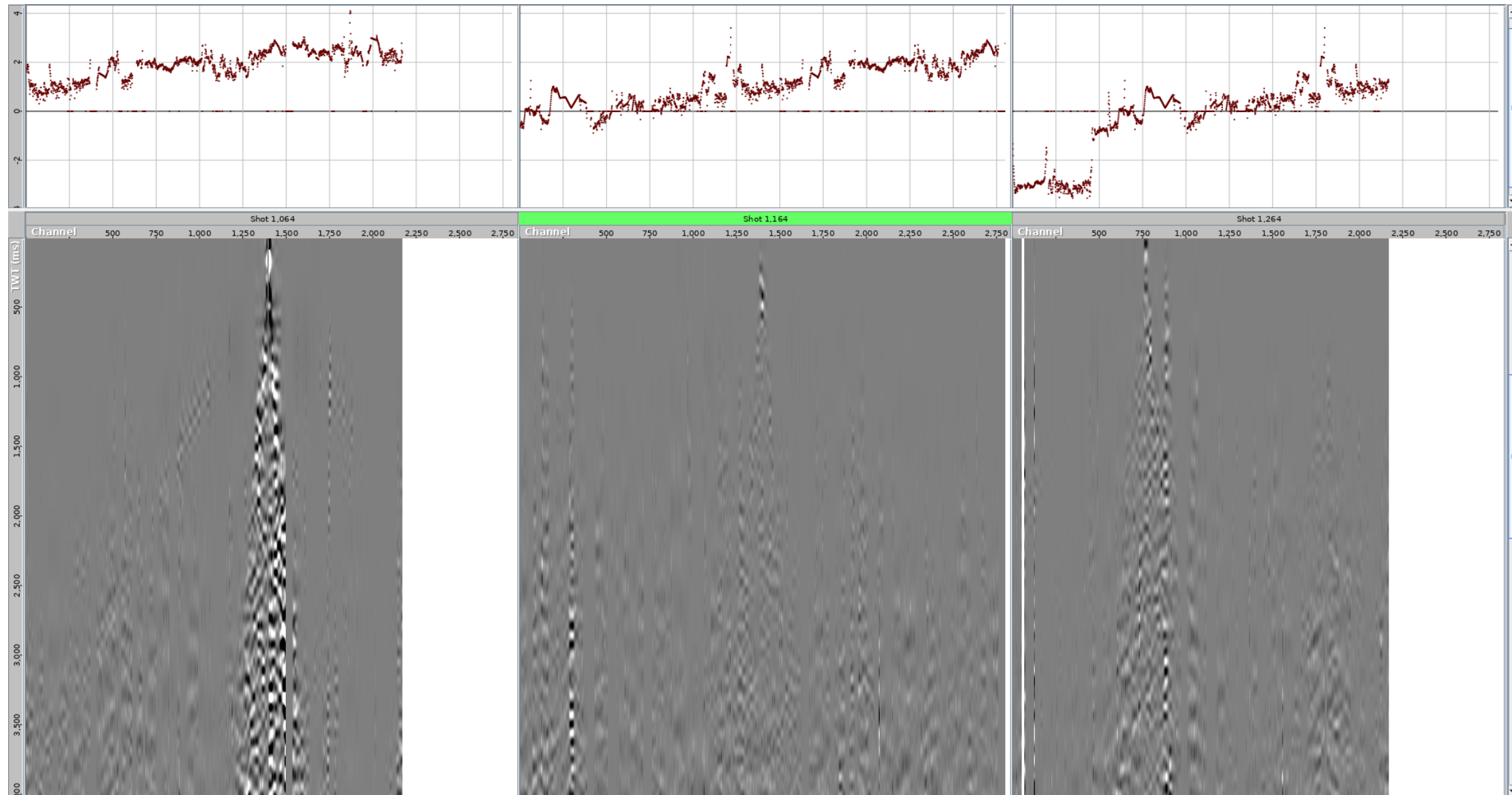
UGOU021 shots after the initial dip filter (REPEAT)



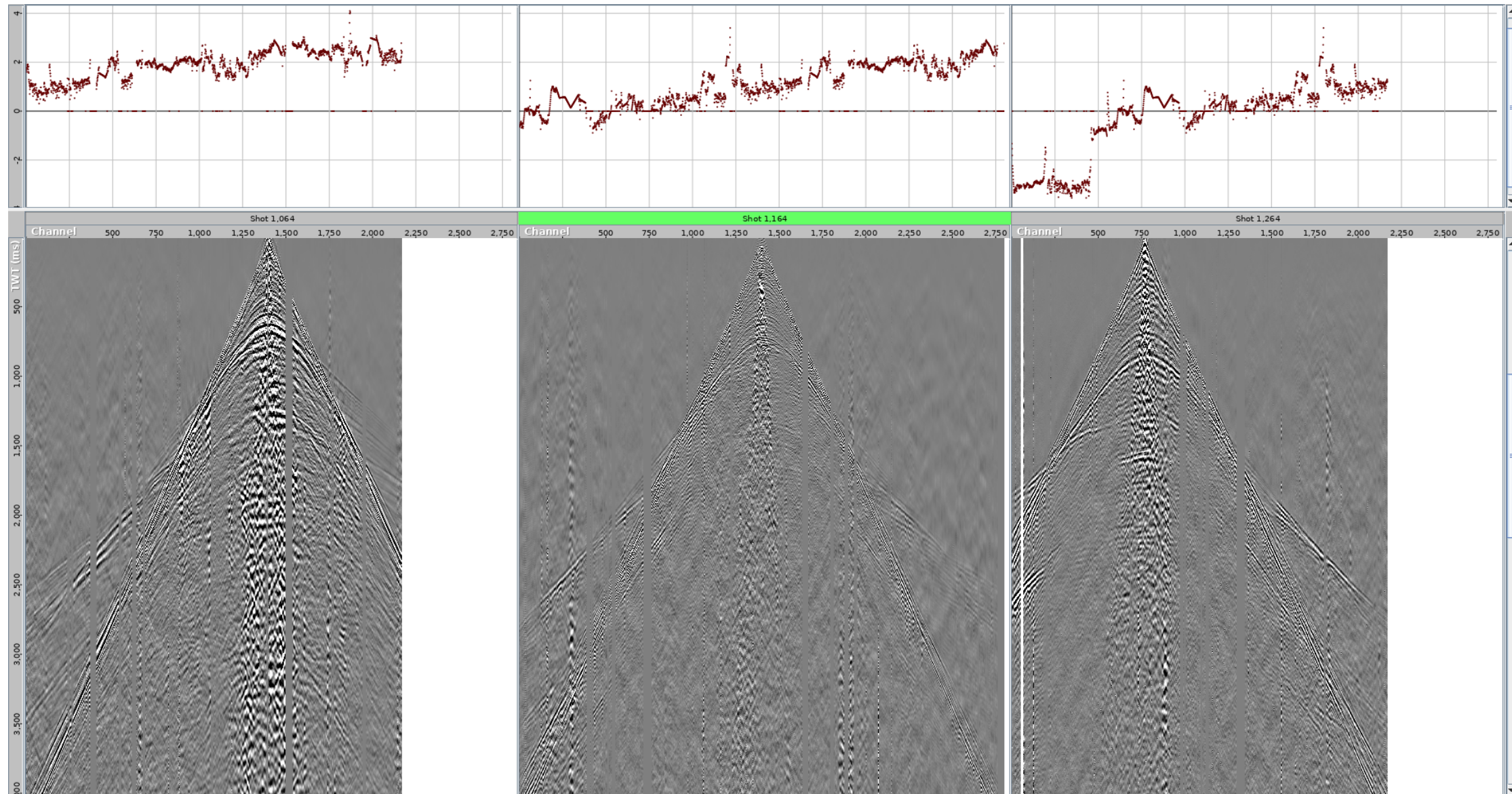
UGOU021 shots after despiking and wavelet transform filter on shots



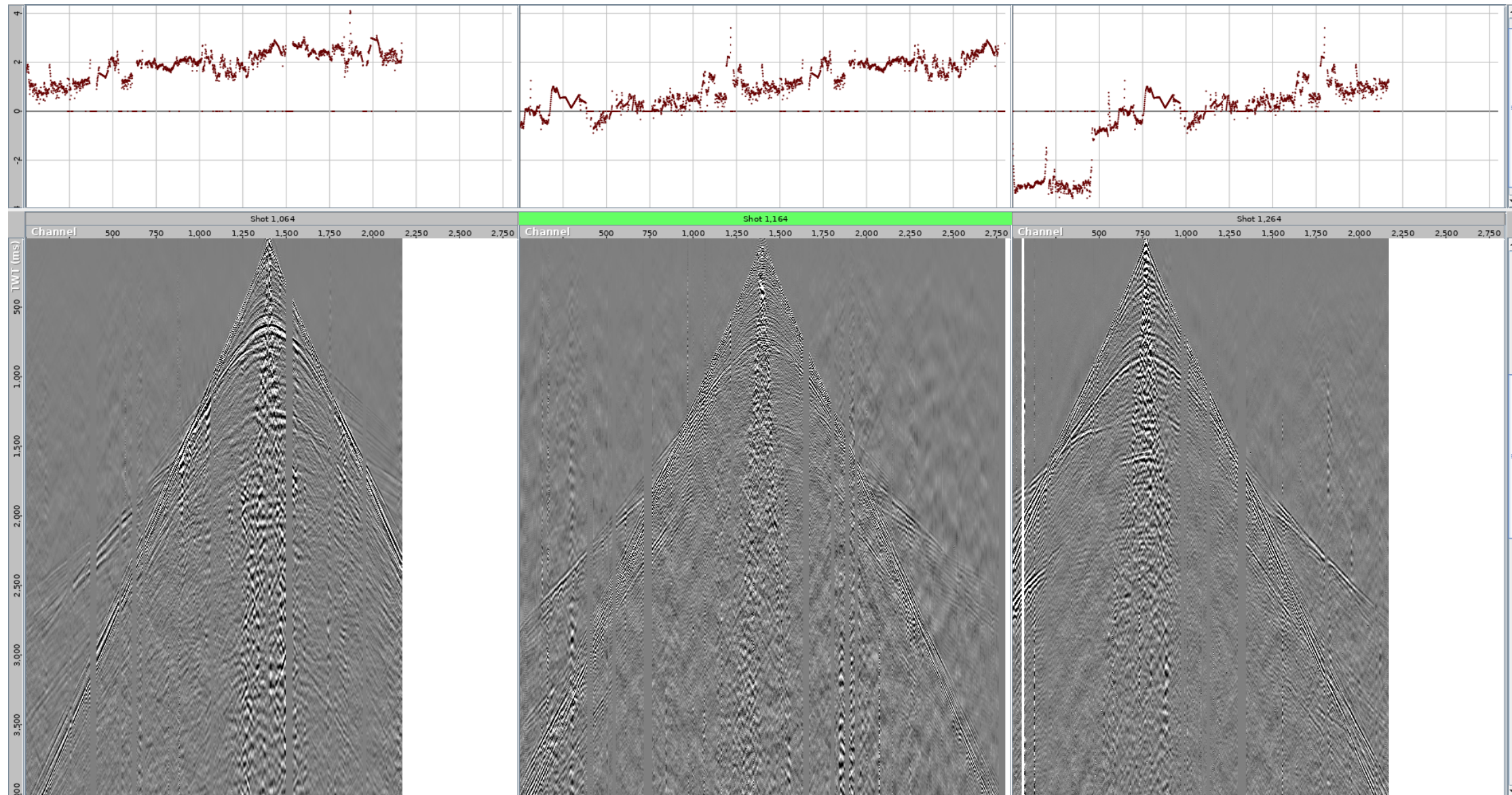
UGOU021 shots showing difference after despiking and wavelet transform filter on shots



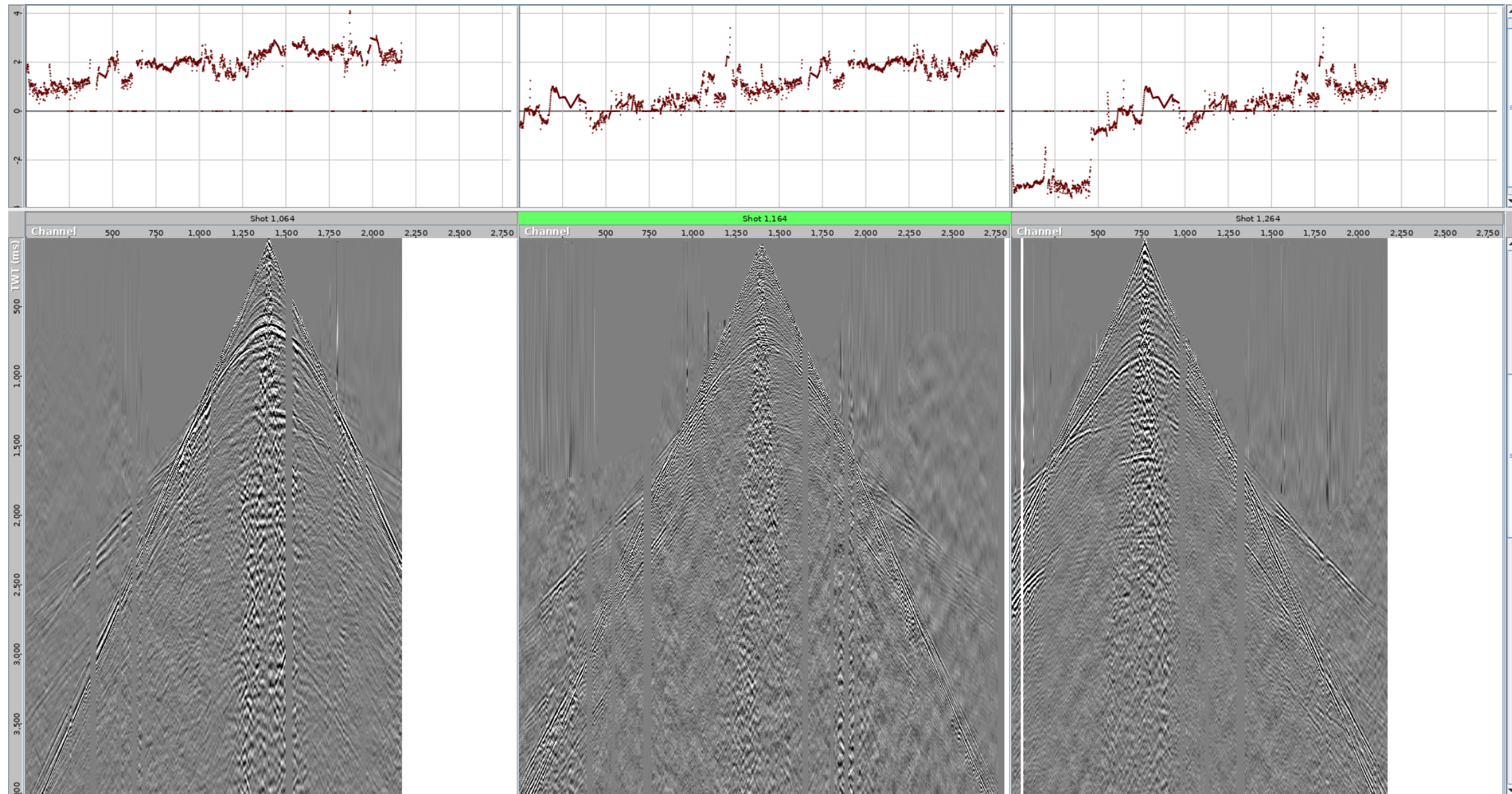
UGOU021 shots after despiking and wavelet transform filter on shots (REPEAT)



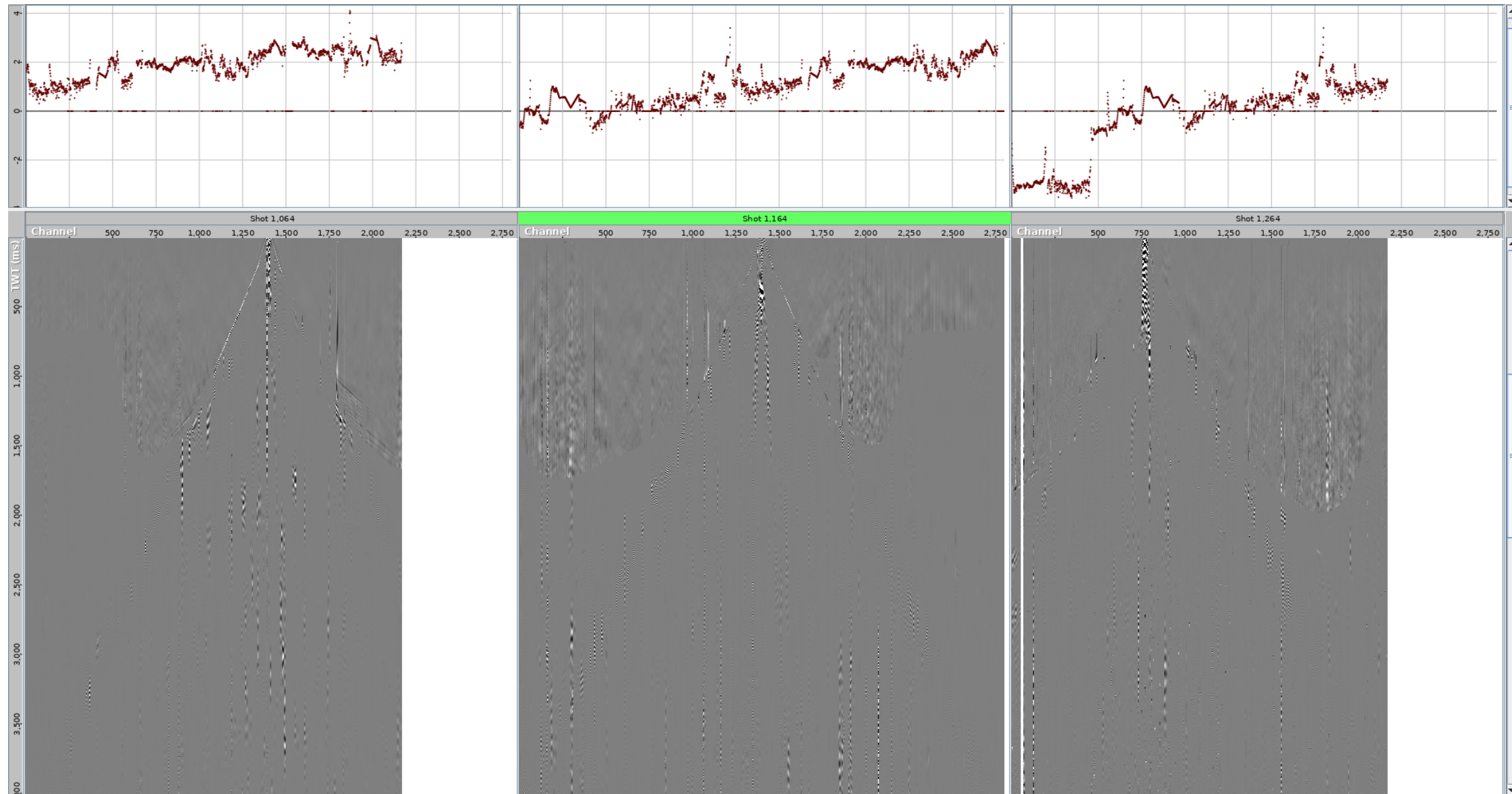
UGOU021 shots with initial pass of SCAC



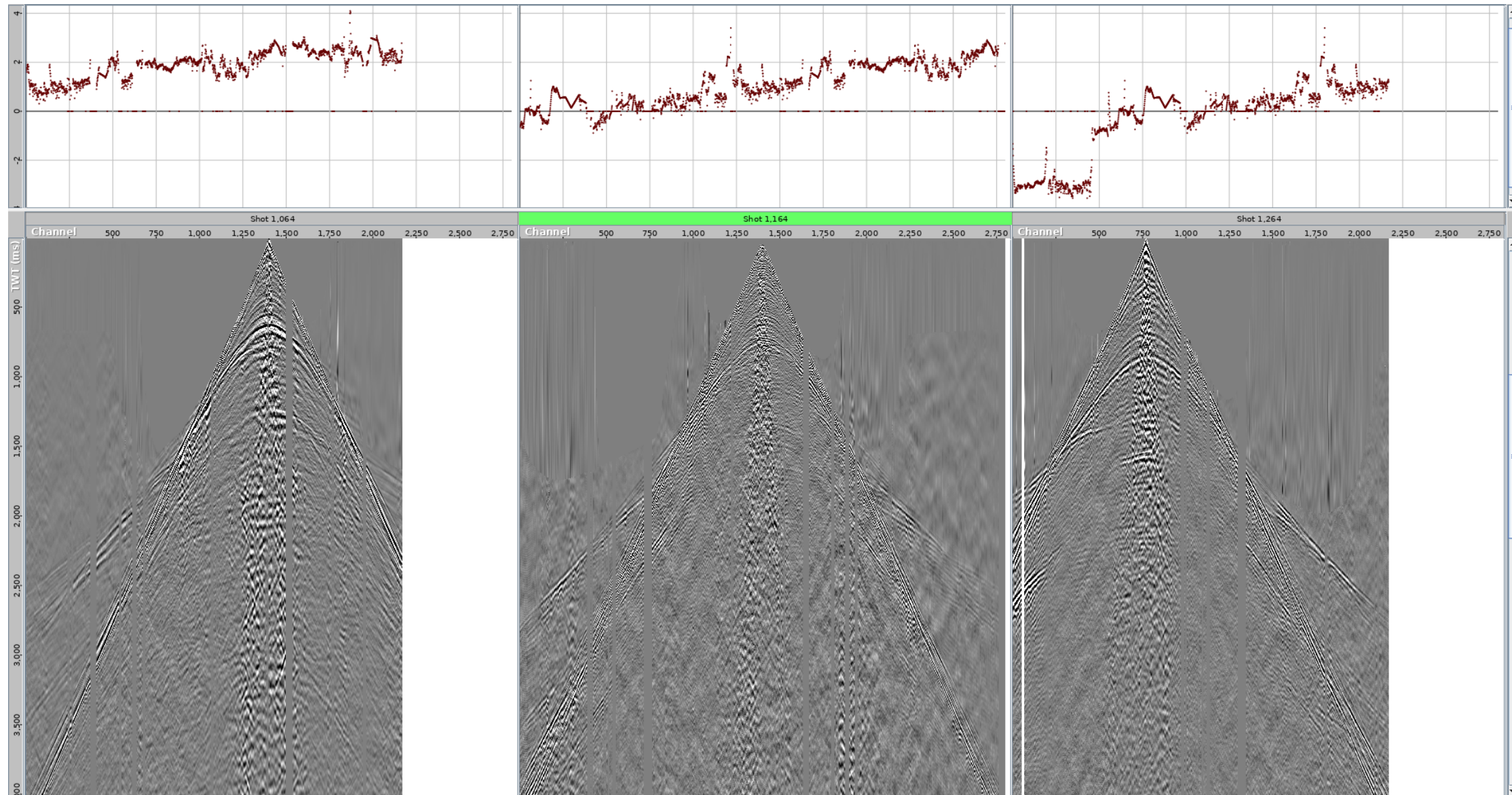
UGOU021 shots with TFDN on shots



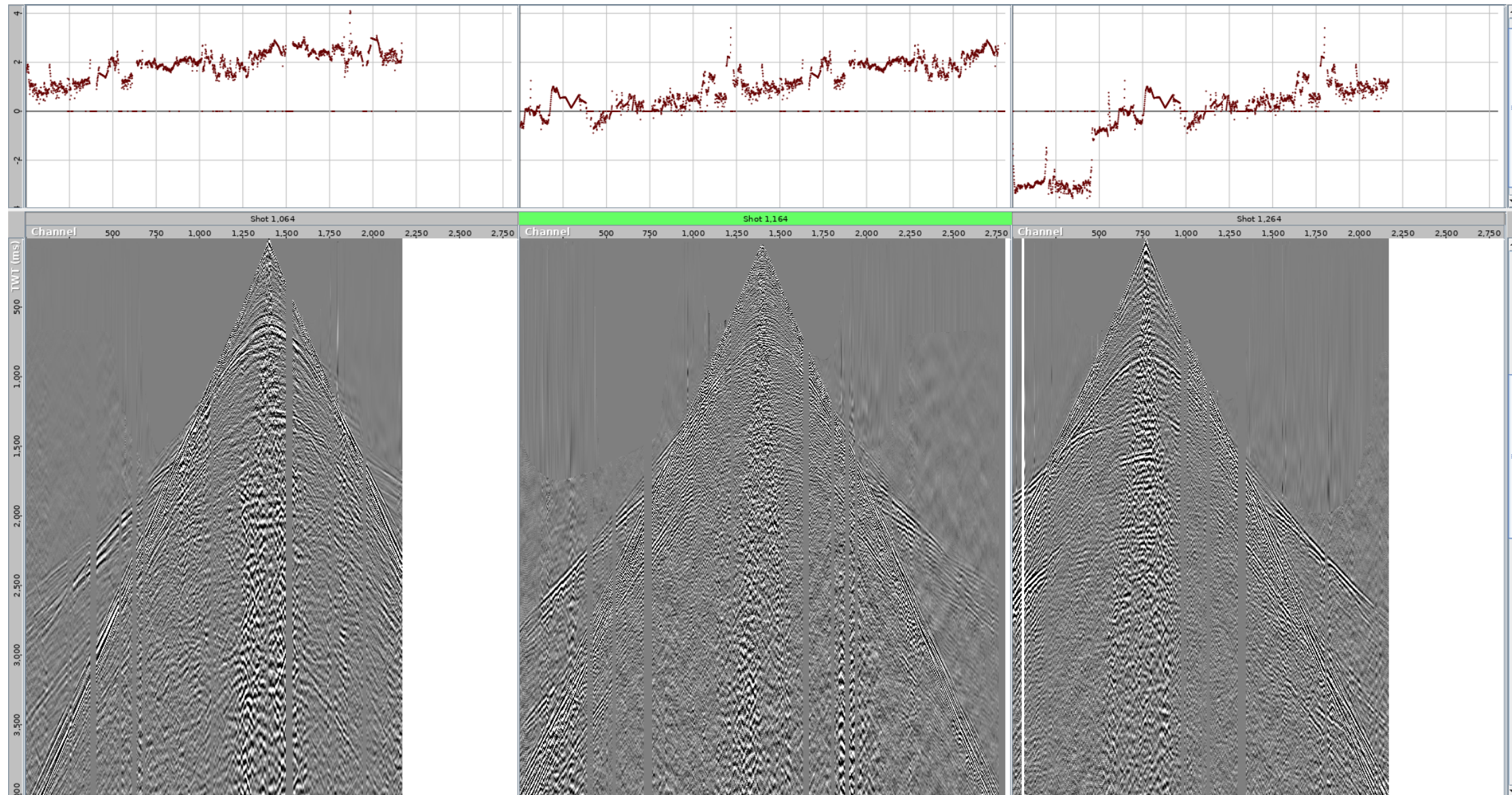
UGOU021 shots showing difference after TFDN on shots



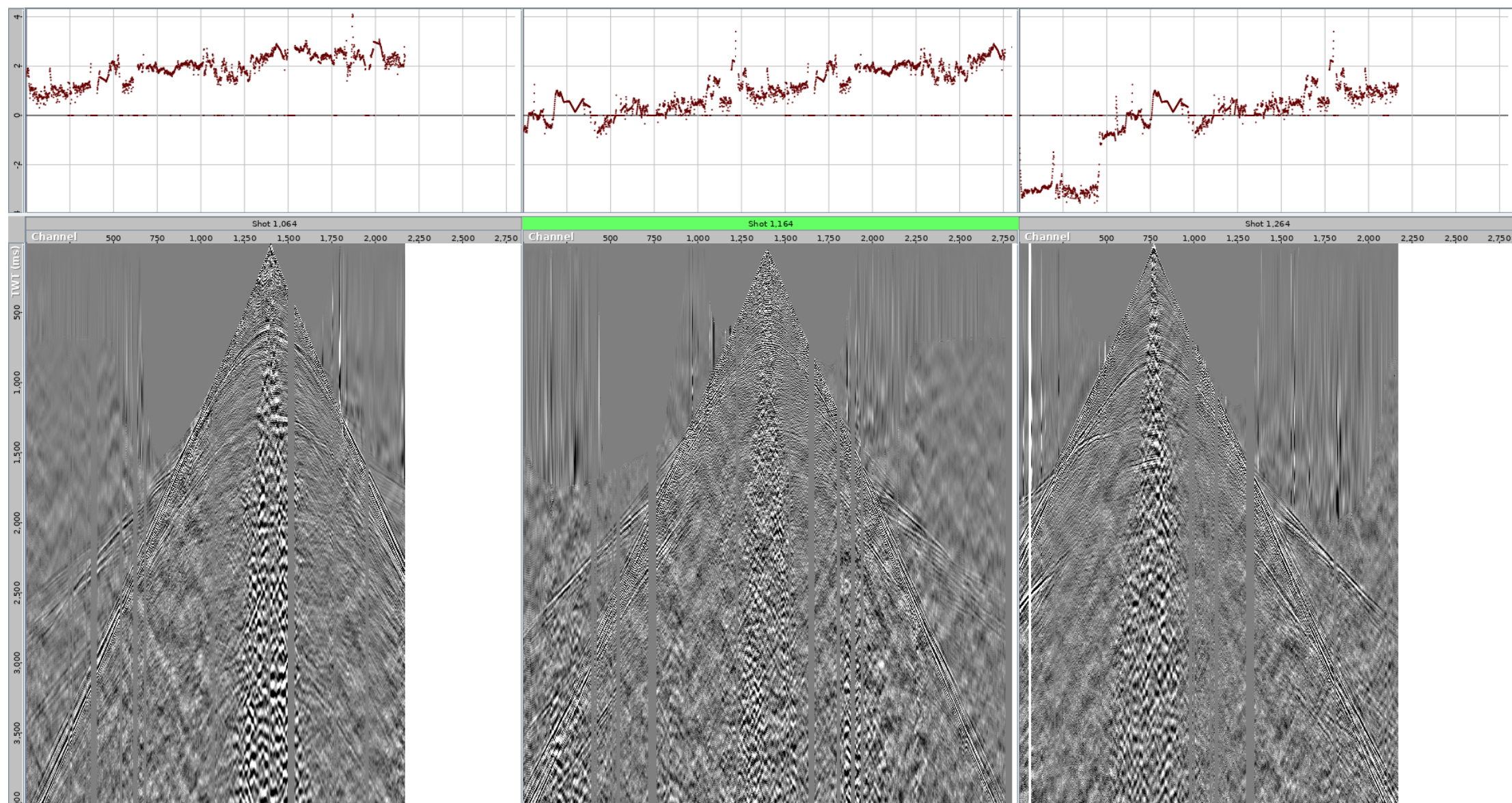
UGOU021 shots with TFDN on shots (REPEAT SLIDE)



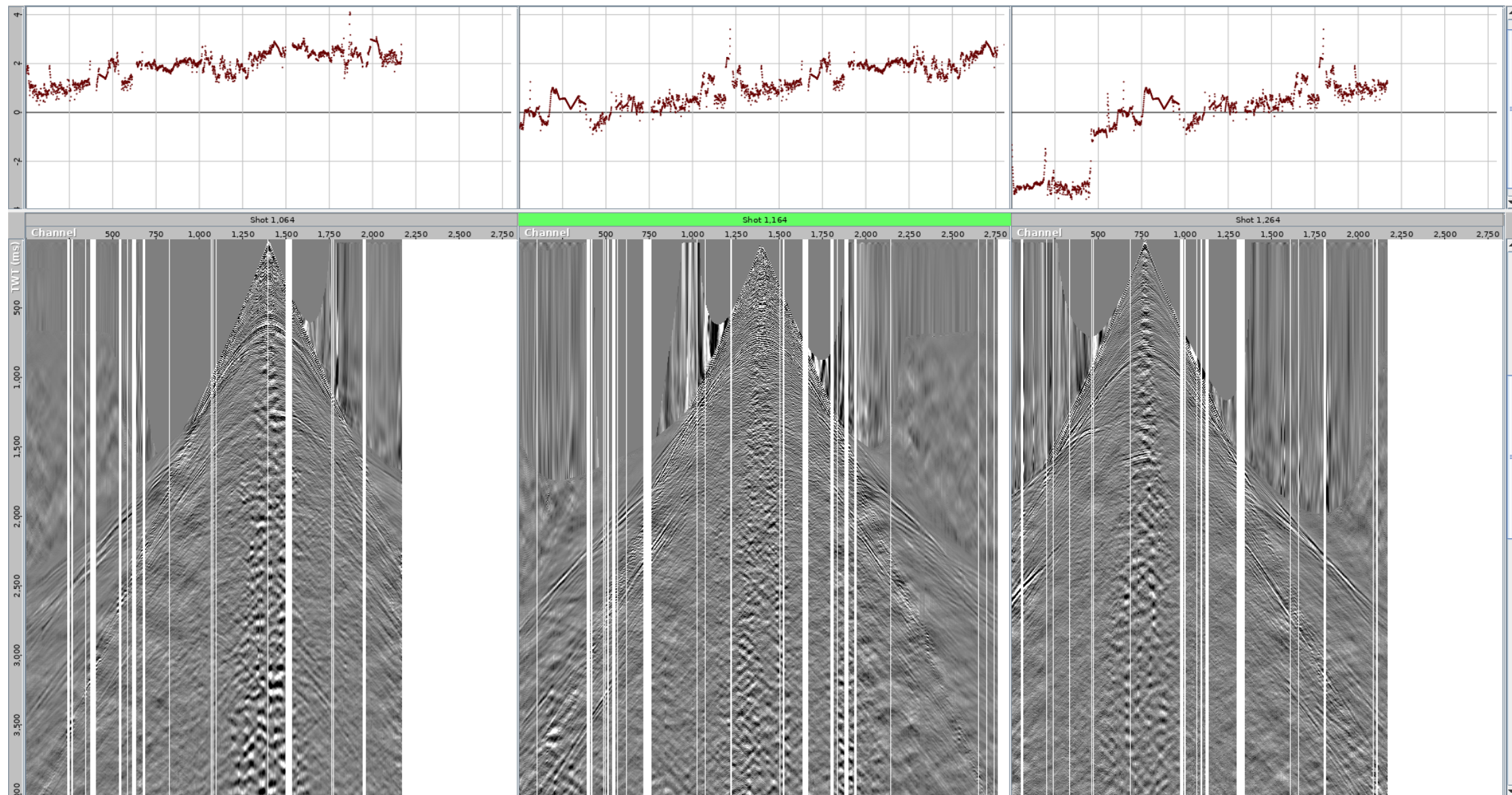
UGOU021 shots with phase and amplitude Q compensation



UGOU021 shots with surface consistent DBS



UGOU021 shots with noise attenuation after SC DBS



UGOU021 shots showing difference after noise attenuation after SC DBS

