

Seismic (re-) Processing Services at AmsterdamPG



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- Introduction to AmsterdamPG
- North Sea (re-)processing examples
- Processing specials
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Who we are

- Amsterdam Petroleum Geoscience is a consultancy providing geoscience advice to the exploration and production sector (E&P) of the international petroleum industry.
- We are independent, but part of T&A Survey, a Netherlands-based and experienced (20 yr) geotechnical and geophysical consultancy.



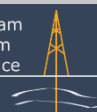
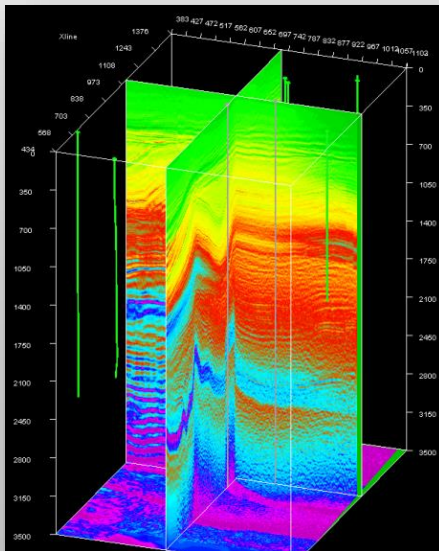
What we do

We focus on activities that support valuation of pre-development subsurface assets and identification of new opportunities.



Key services

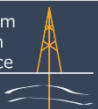
- Seismic services
- Training
- Well site geology
- Log analysis/petrophysics
- Geothermal exploration



Who do we work for

A selection of our clients

- Chevron E&P Netherlands
- Dyas E&P
- GEOREX Numeric, France
- Akzo Nobel
- Eneco Energy
- FloraHolland Geothermal



Our partners

- GLOBE Claritas - Seismic processing software platform
 - AmsterdamPG is their European agent
- DMT Engineering
- Severn Subsea Technologies
- HS Trading
 - AmsterdamPG agent in USA



Our core values

- Engaging directly with clients
- Small company, small overhead
- Everything inhouse, fast turnover
- Latest techniques & developments
- Balanced mix of talents
- Sharp rates



What we offer

- AmsterdamPG has a staff of experienced senior to junior geophysicists
- Advanced processing center; multiple workstations with access to CLOUD Claritas online processing clusters
- Re-processing of 3D and 2D data; not only pre-stack but also poststack



North Sea case

Client: Eneco Energy

Region: West Netherlands Basin

Target: Deep Triassic Bunter

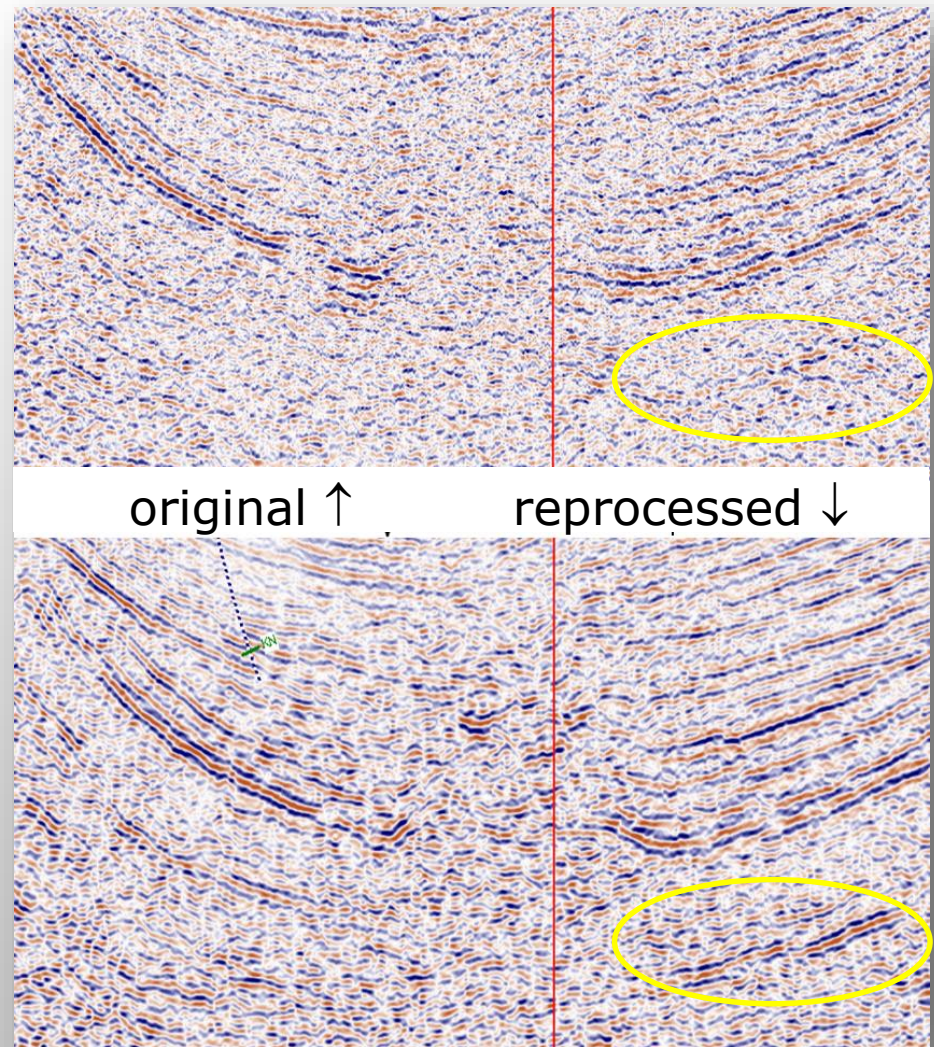
Type of data: 3D, prestack

Problem: poor signal at Triassic

Action: update statics, velocity model and apply PSTM

Result: clear Triassic and faults

Value: validation of businesscase



North Sea case

Client: FloraHolland Geothermal

Region: West Netherlands Basin

Target: Deep Triassic Bunter

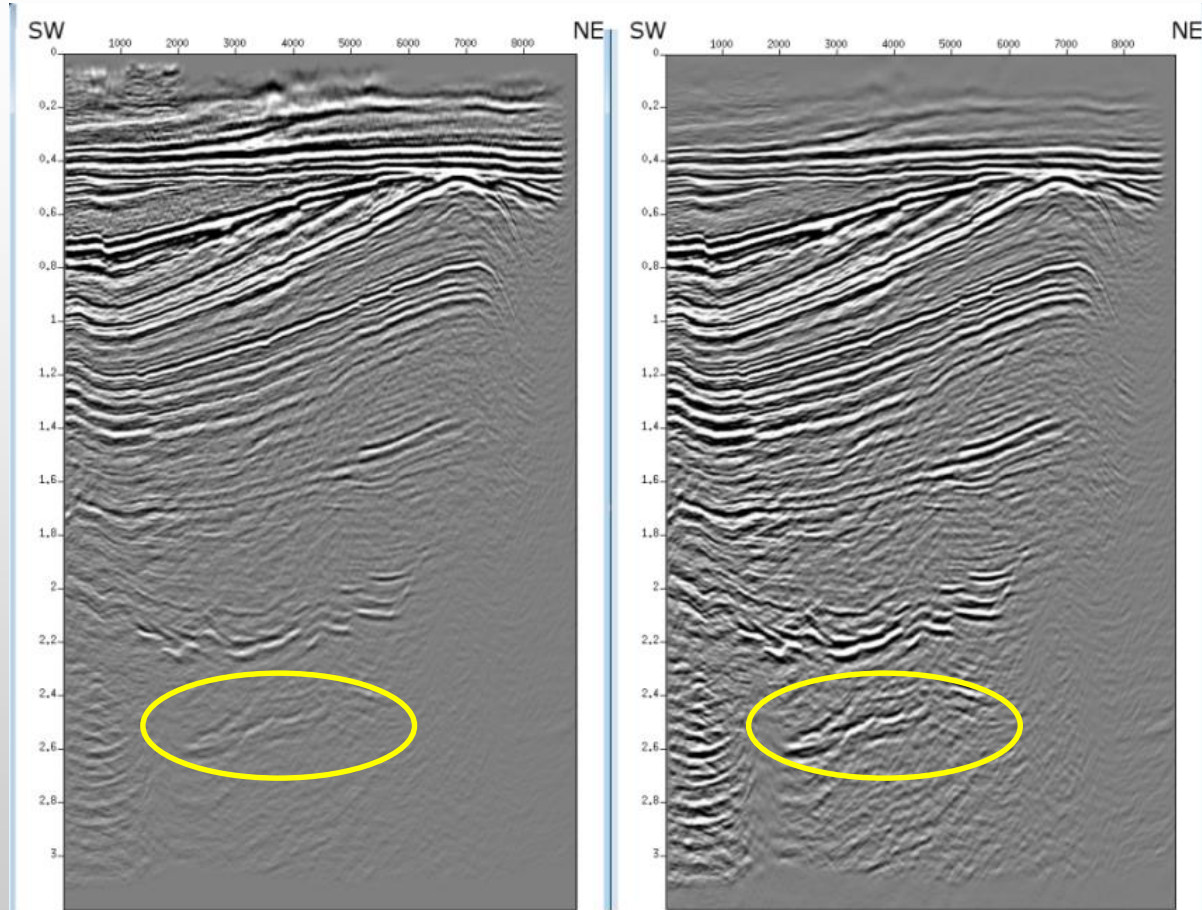
Type of data: 3D, poststack

Problem: poor signal at Triassic

Action: apply post-PSTM gain recovery and coherency filter

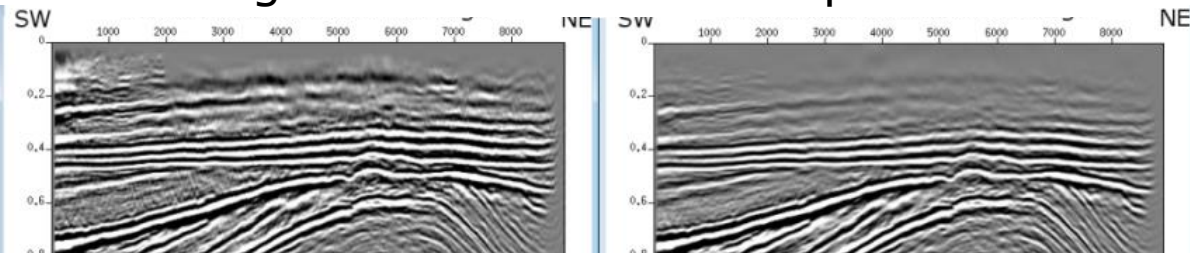
Result: clear Triassic and faults

Value: validation of businesscase



original

reprocessed



North Sea

Client: FloraHolland Geothermal

Region: West Netherlands Basin

Target: Deep Triassic Bunter

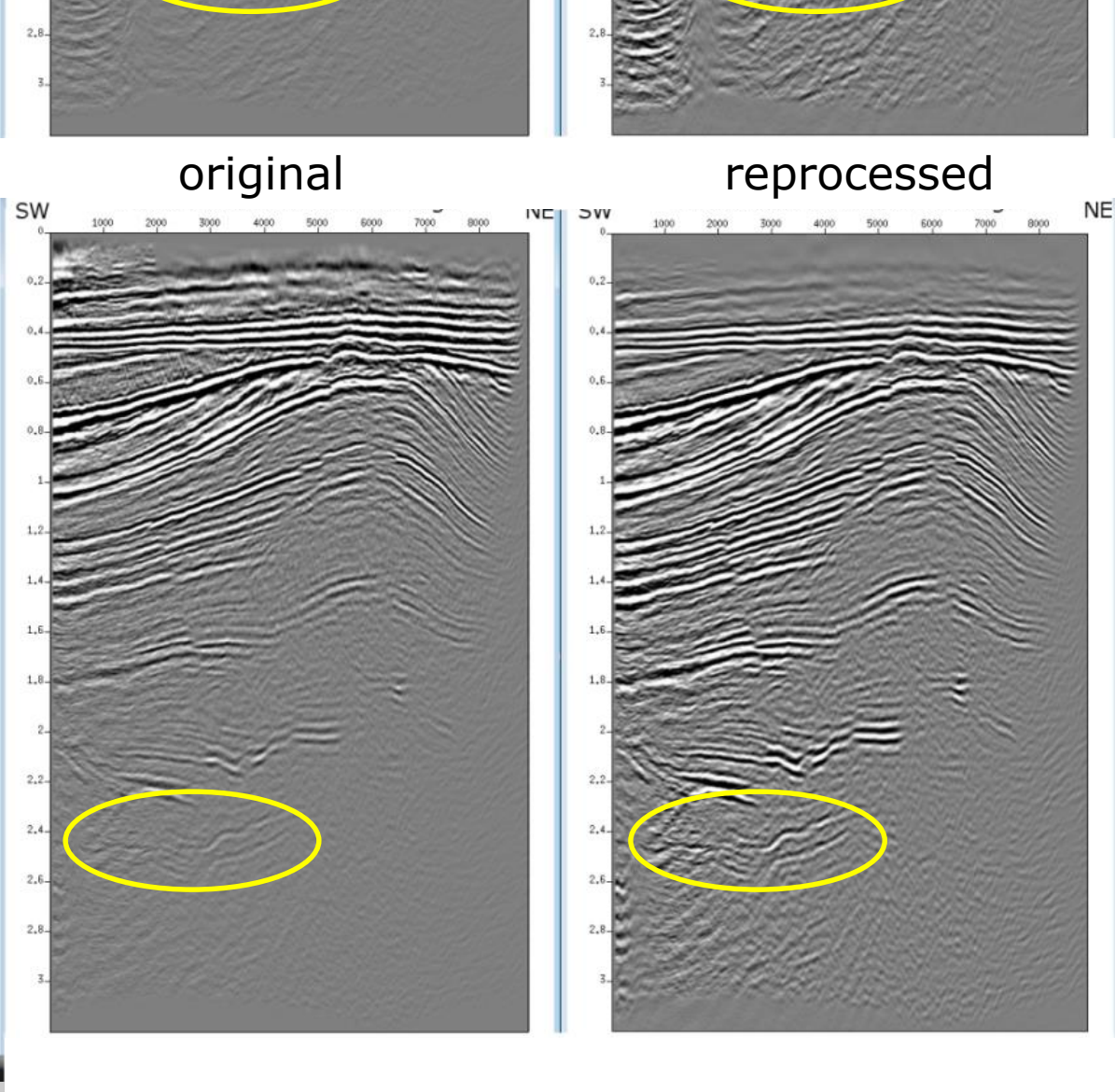
Type of data: 3D, poststack

Problem: poor signal at Triassic

Action: apply post-PSTM gain recovery and coherency filter

Result: clear Triassic and faults

Value: validation of businesscase



Groningen case

Client: Akzo Nobel

Region: Northeast Netherlands

Target: Röt and Zechstein salt

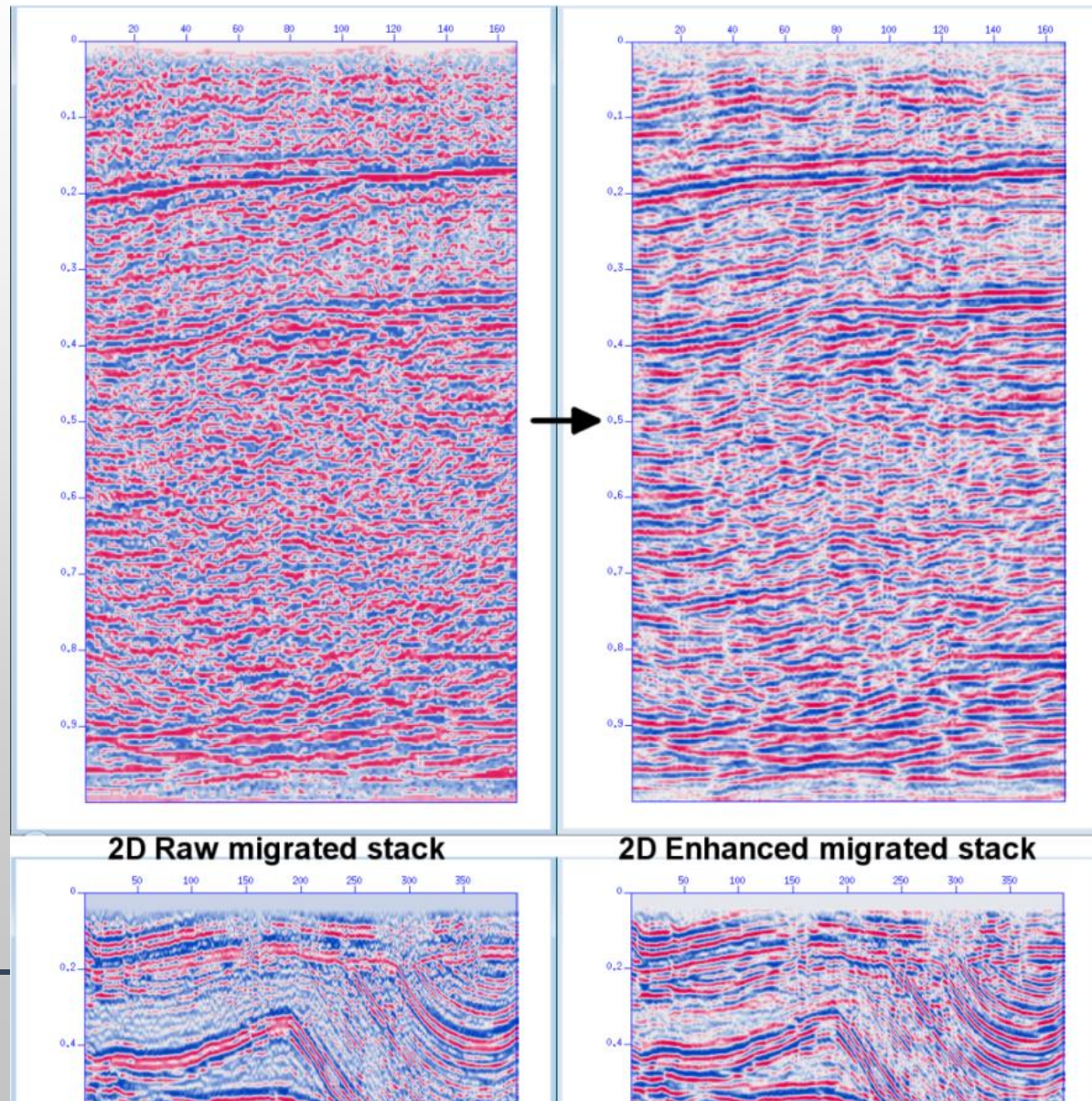
Type of data: 2D, poststack

Problem: poor signal everywhere,
large uncertainty in salt volume

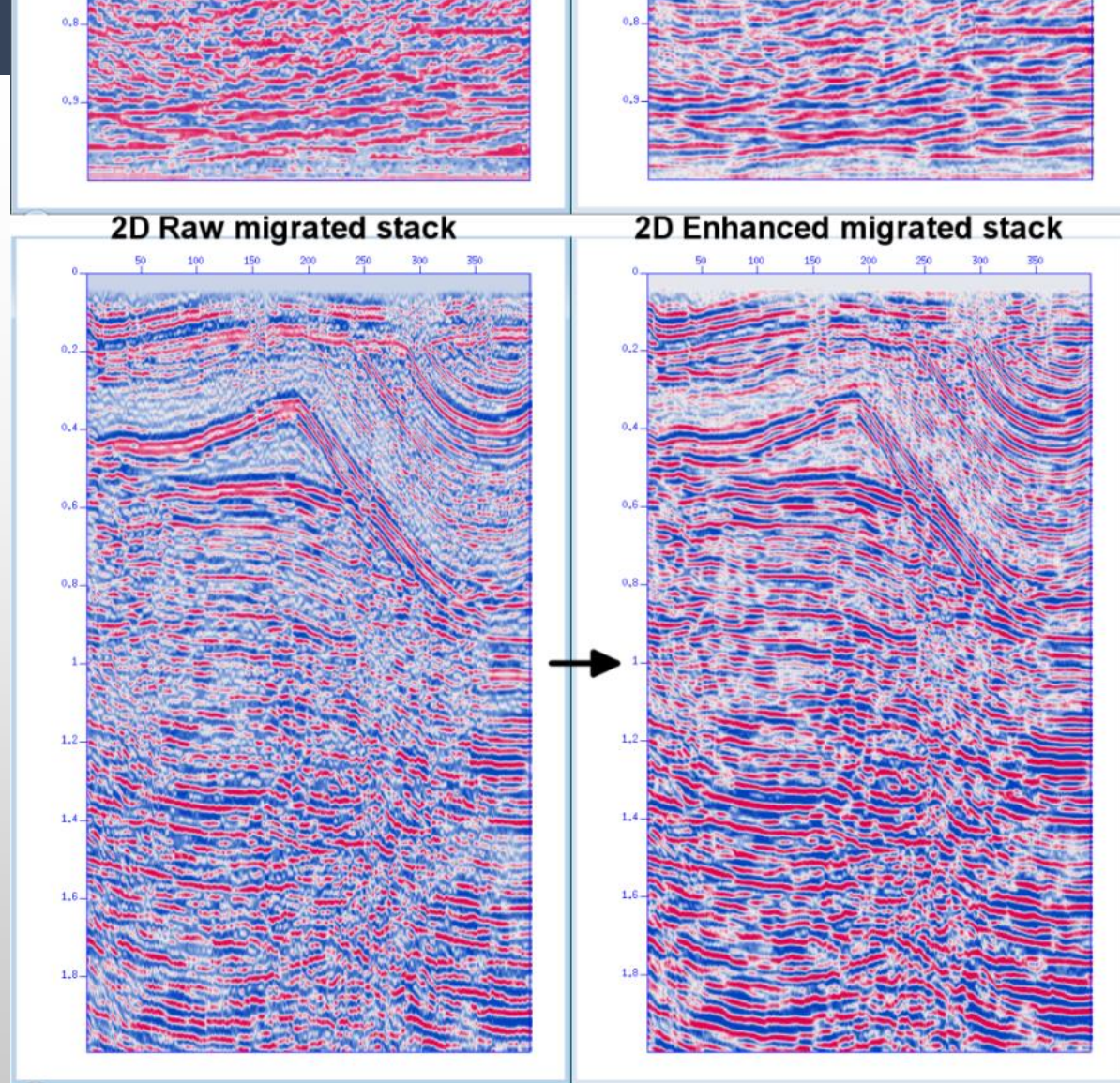
Action: apply poststack time-variant filter and coherency filter

Result: clear Röt and Zechstein

Value: less risk in salt estimates



Groningen



Client: Akzo Nobel

Region: Northeast Netherlands

Target: Röt and Zechstein salt

Type of data: 2D, poststack

Problem: poor signal everywhere,
large uncertainty in salt volume

Action: apply poststack time-
variant filter and coherency filter

Result: clear Röt and Zechstein

Value: less risk in salt estimates



Slochteren case

Client: Province of Utrecht

Region: IJsselmeer-Zandvoort High

Target: Slochteren

Type of data: 2D, poststack

Problem: poor fault visibility

Action: update velocity model,
migration and coherency filter

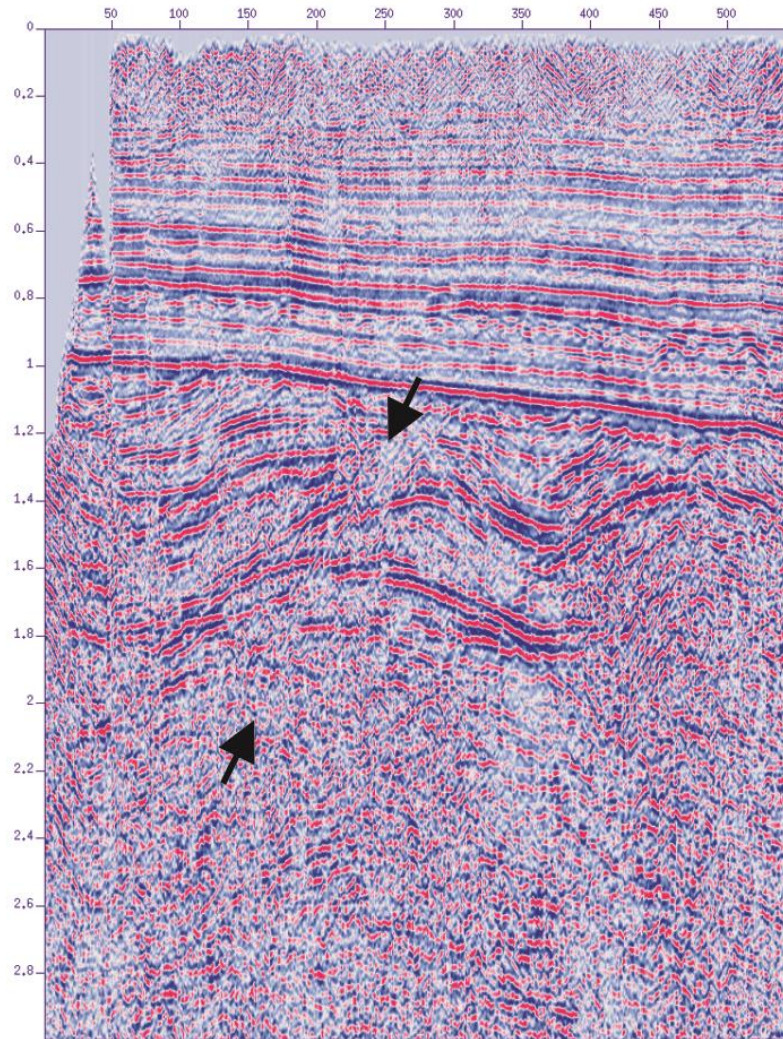
Result: clear faulted Slochteren

Value: geothermal appraisal plan



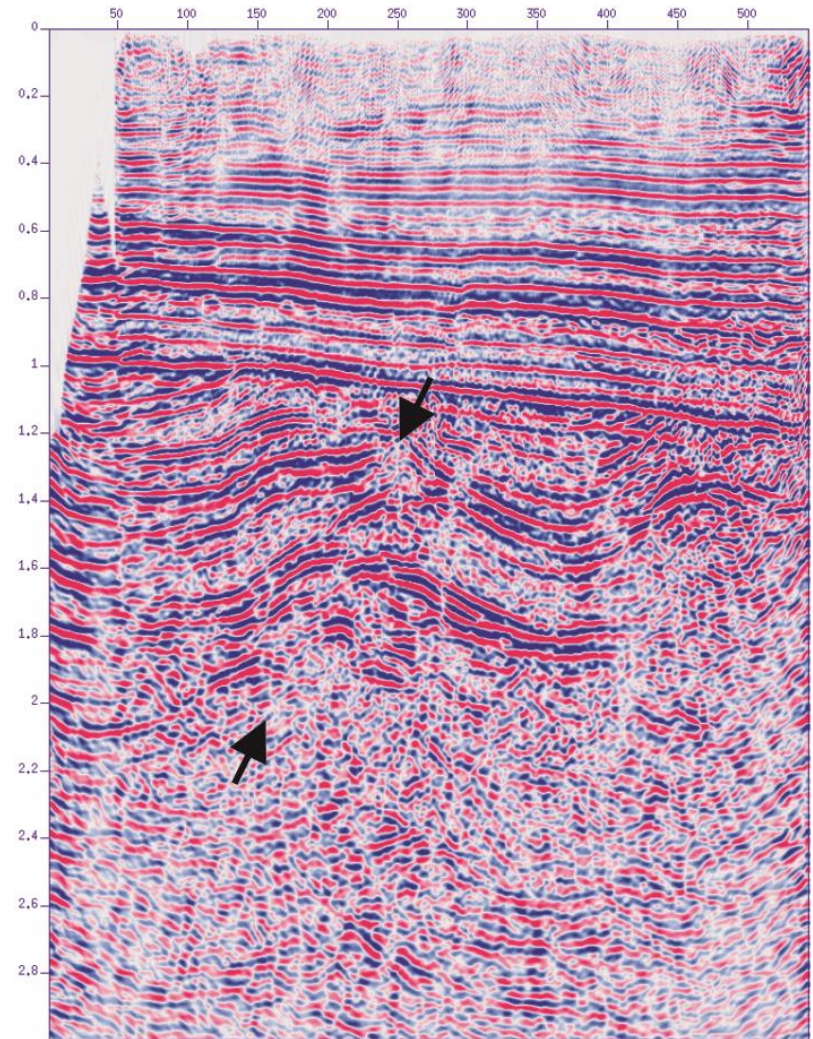
Slochteren case

a)



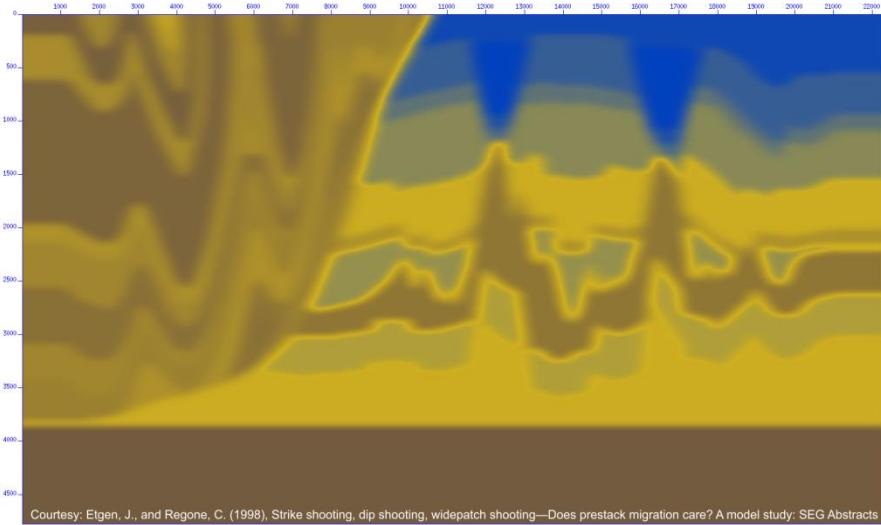
original

b)

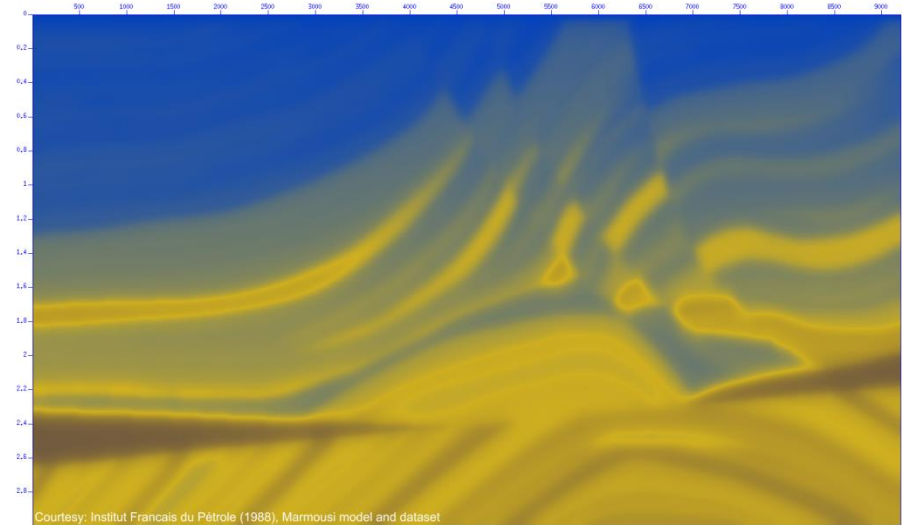
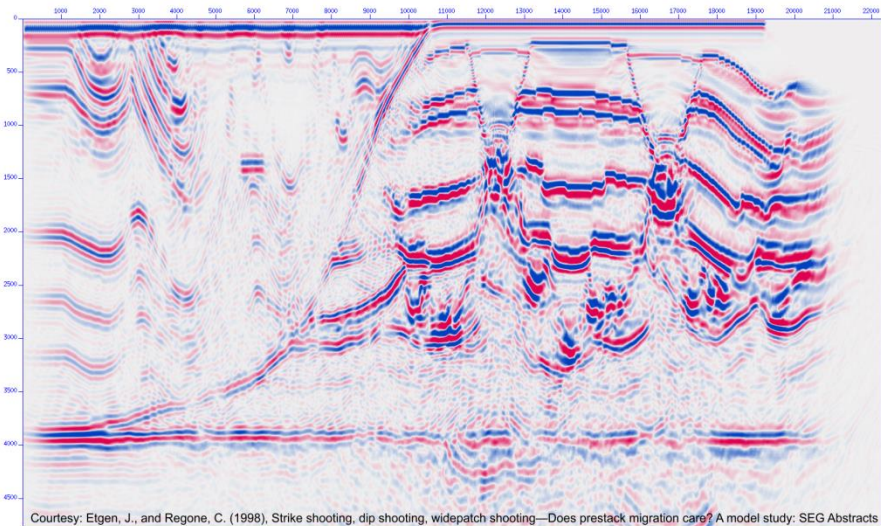


reprocessed

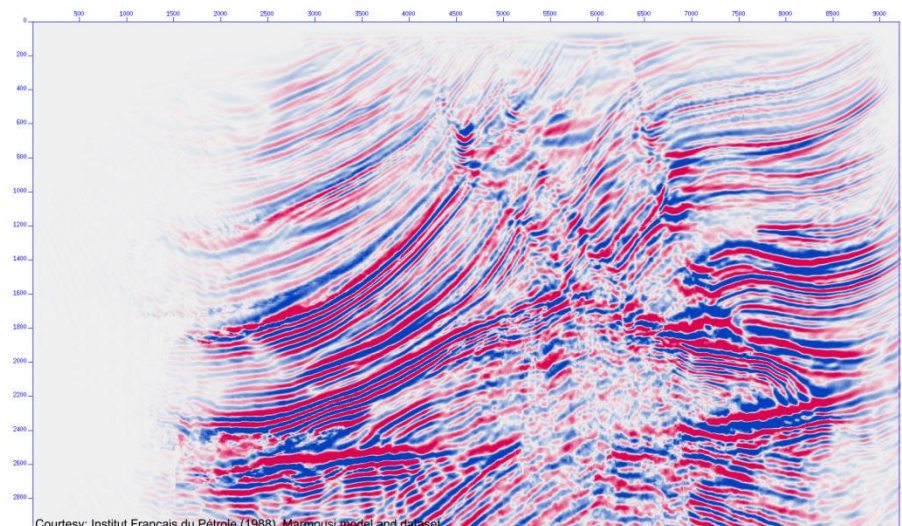
Processing specials: PSDM



BP Amoco model (above) and prestack depth migrated image (below)

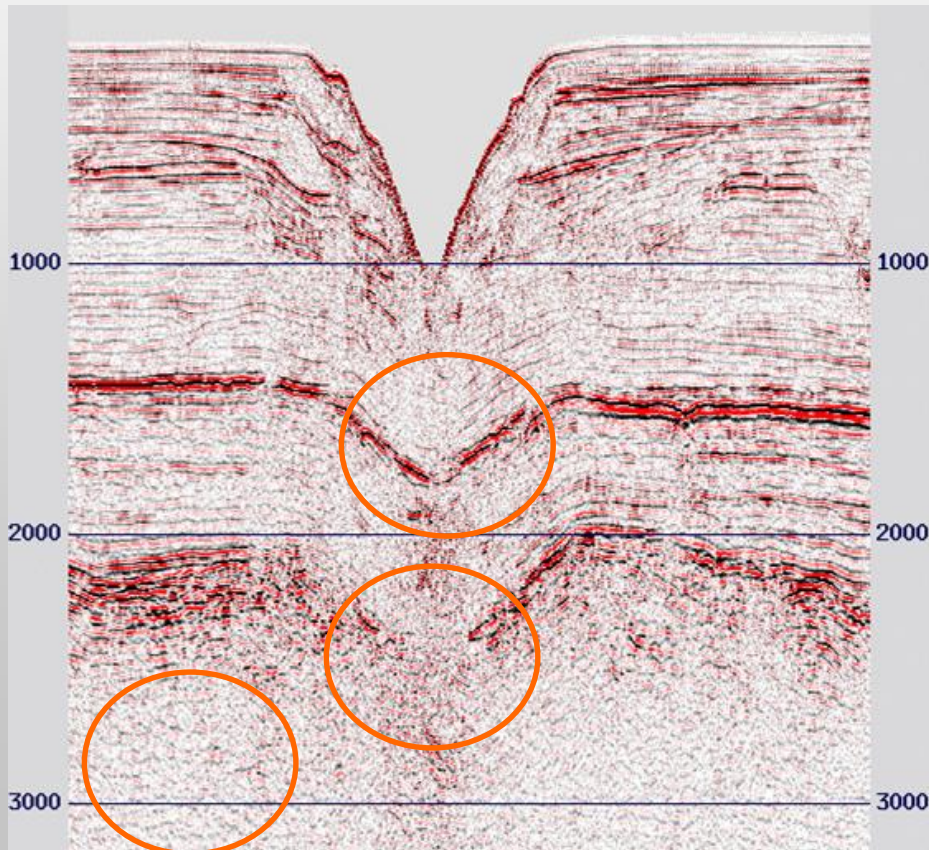


Marmousi model (above) and prestack depth migrated image (below)

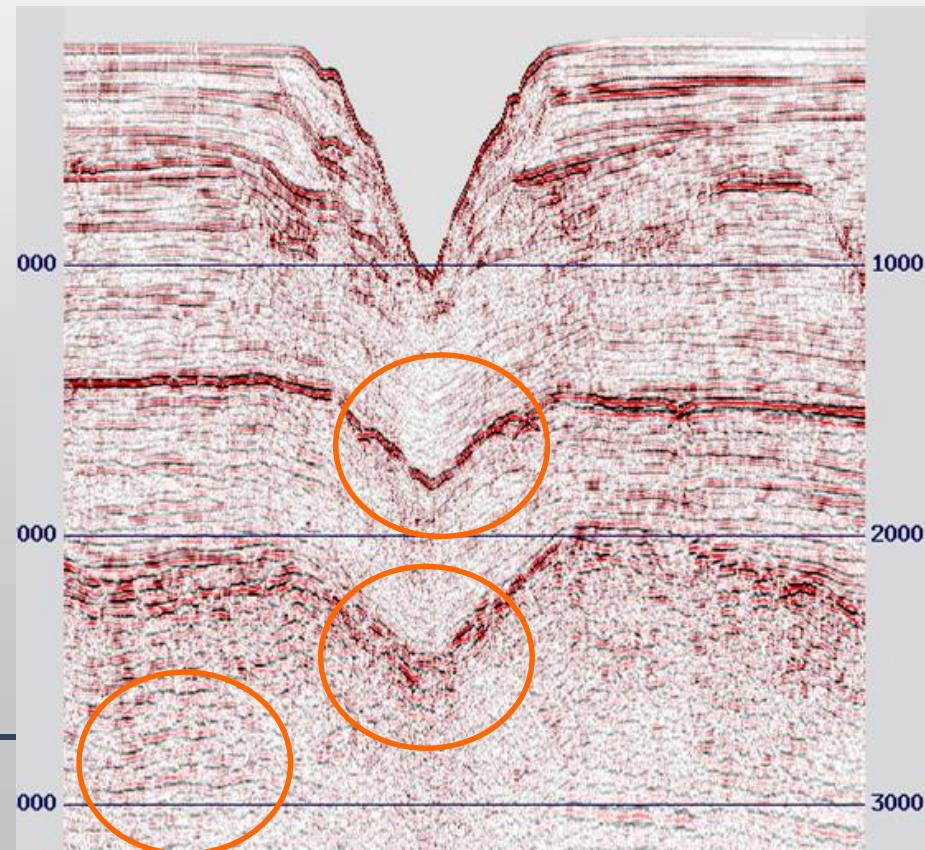


Processing specials: Imaging Under Channel

Original



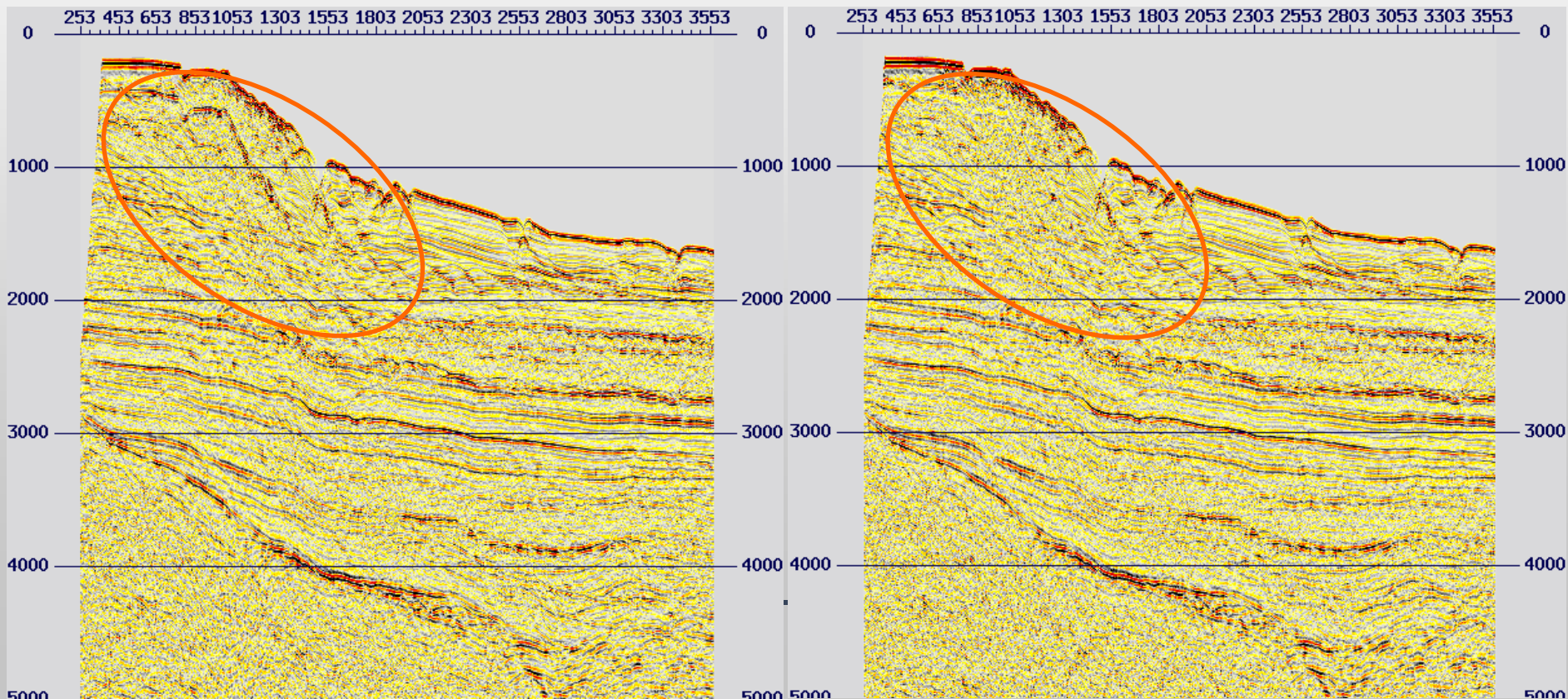
Claritas Velsect + PSDM



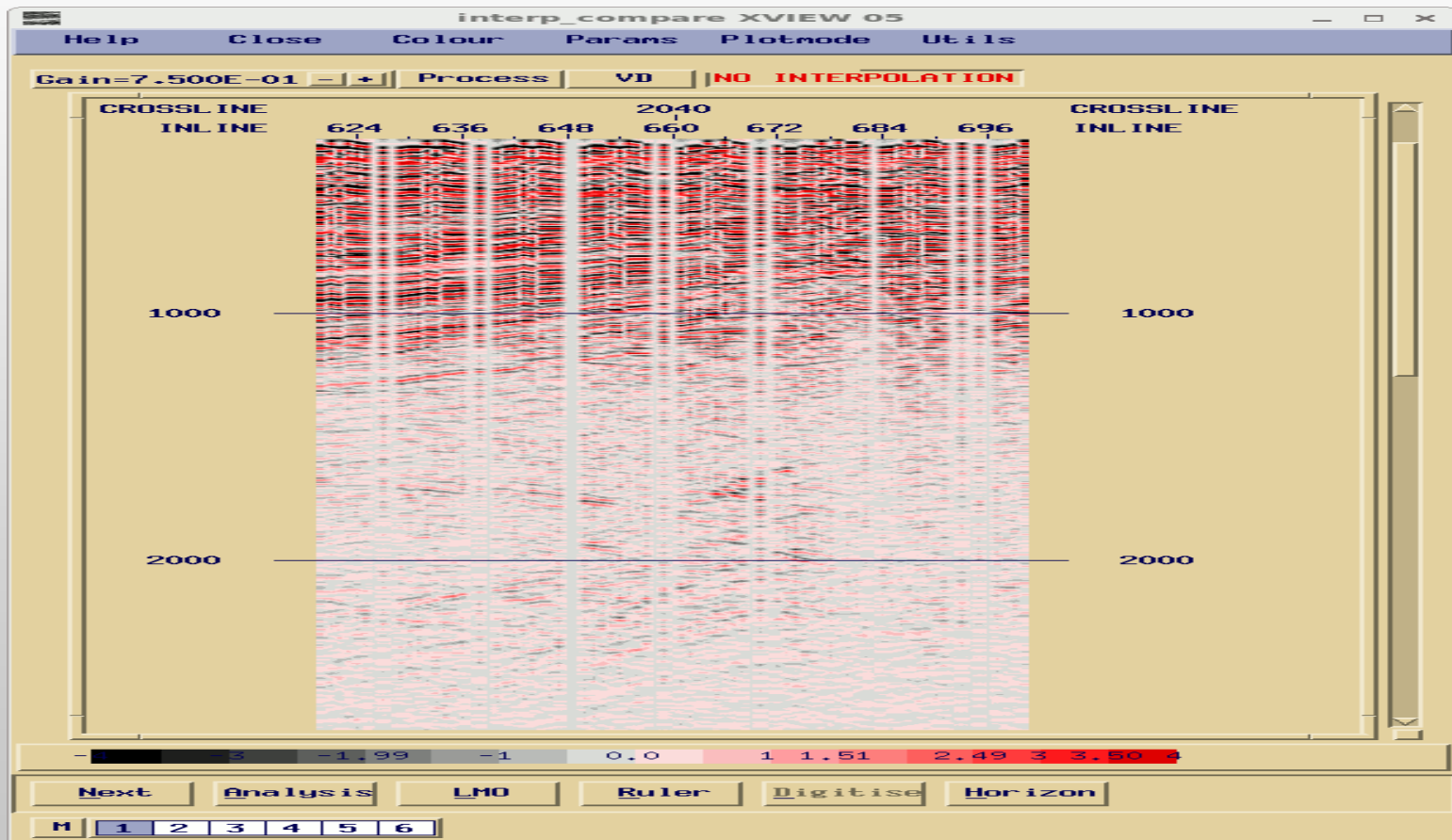
Processing specials: Multiple Suppression

Original

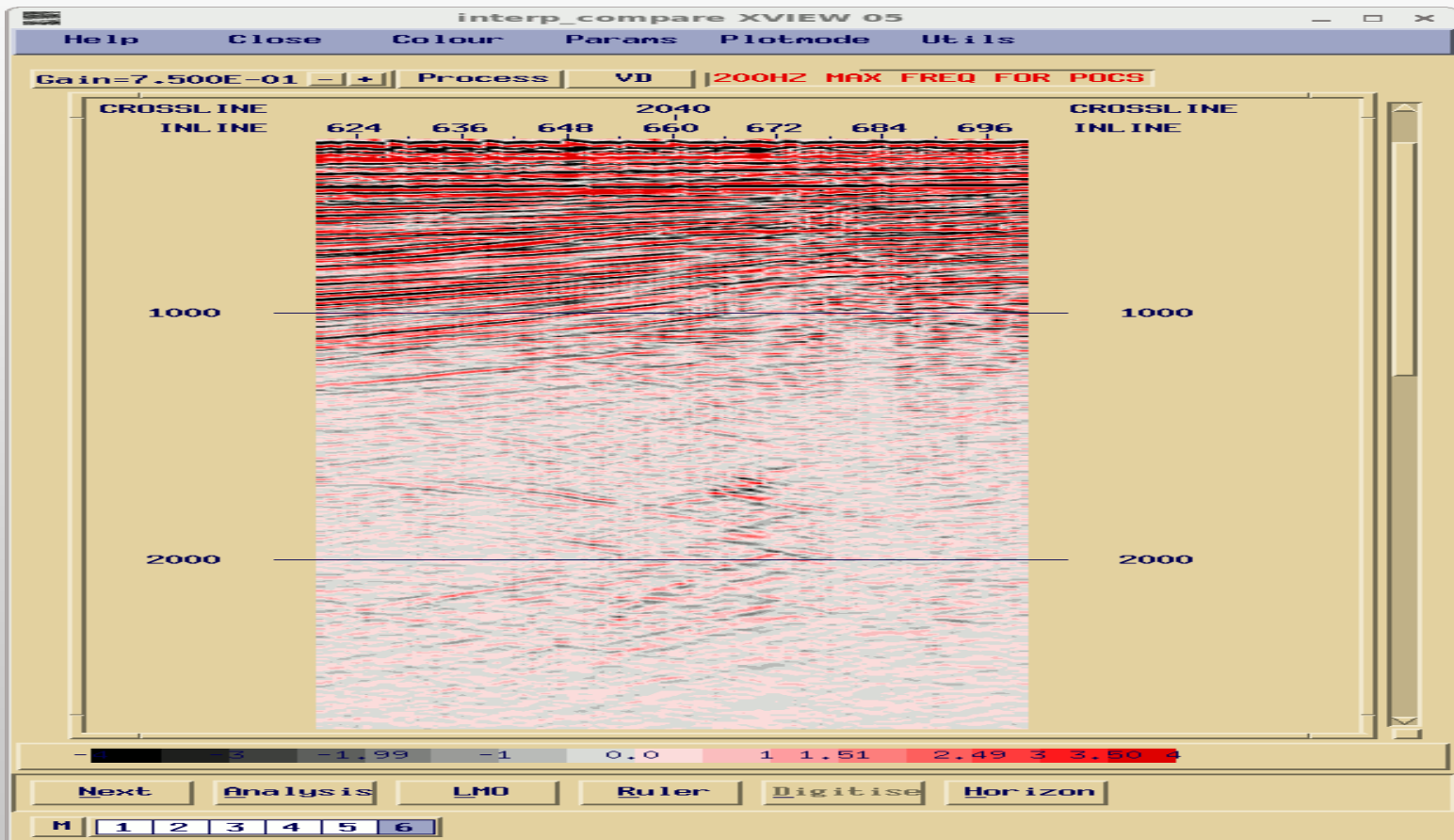
Claritas 3D SRME



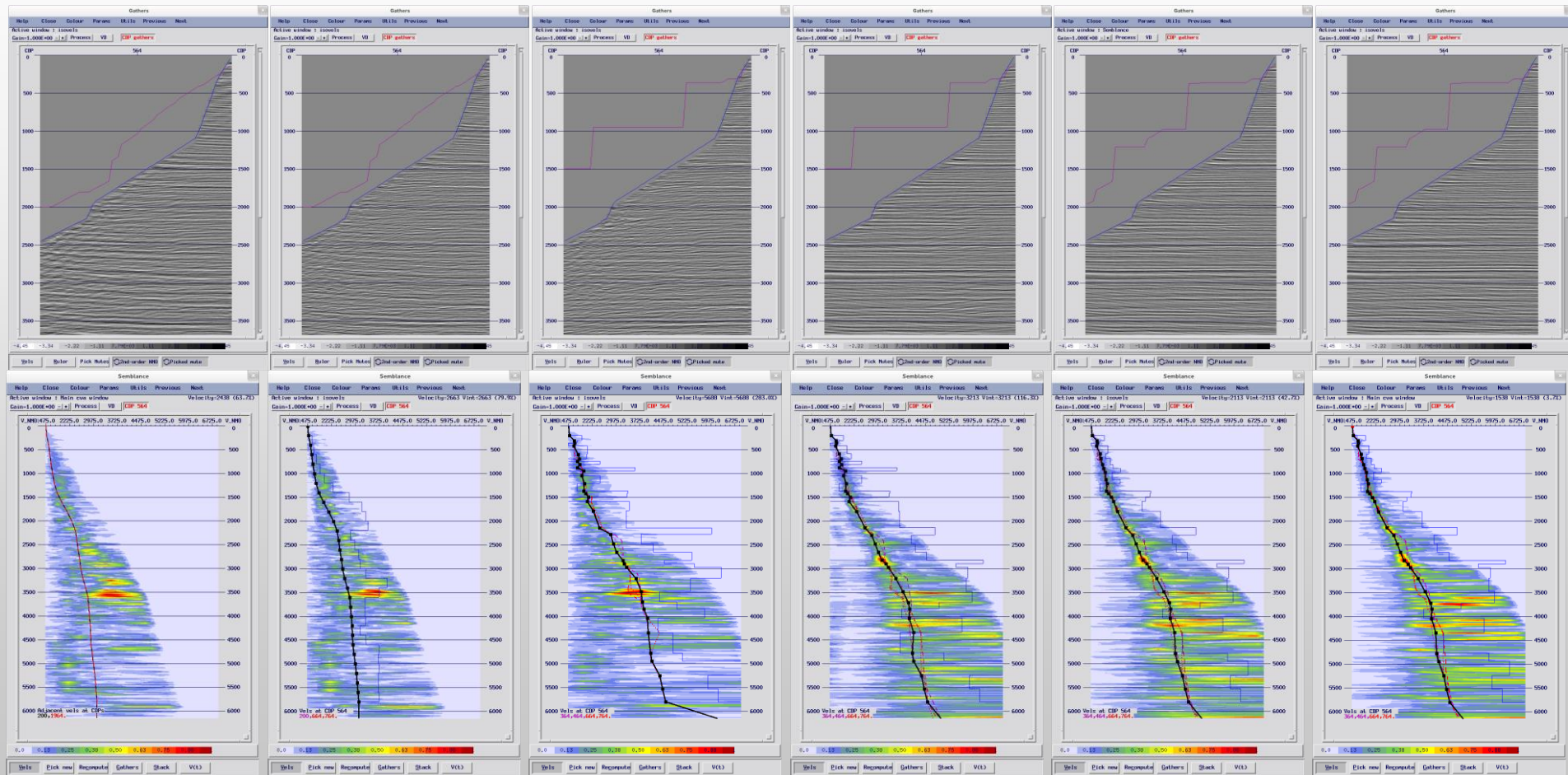
Processing specials: Stitch 5D data interpolation before



Processing specials: Stitch 5D data interpolation after



Processing specials: Claritas iterative velocity model building



Value for clients

- AmsterdamPG (re-)processes your data to give more value for your business
- Your data quality improves → new discoveries, less risk and greater PoS
- Reprocessing very feasible on poststack data, economic alternative to costly pre-stack data or new (3D) surveys



Value for clients

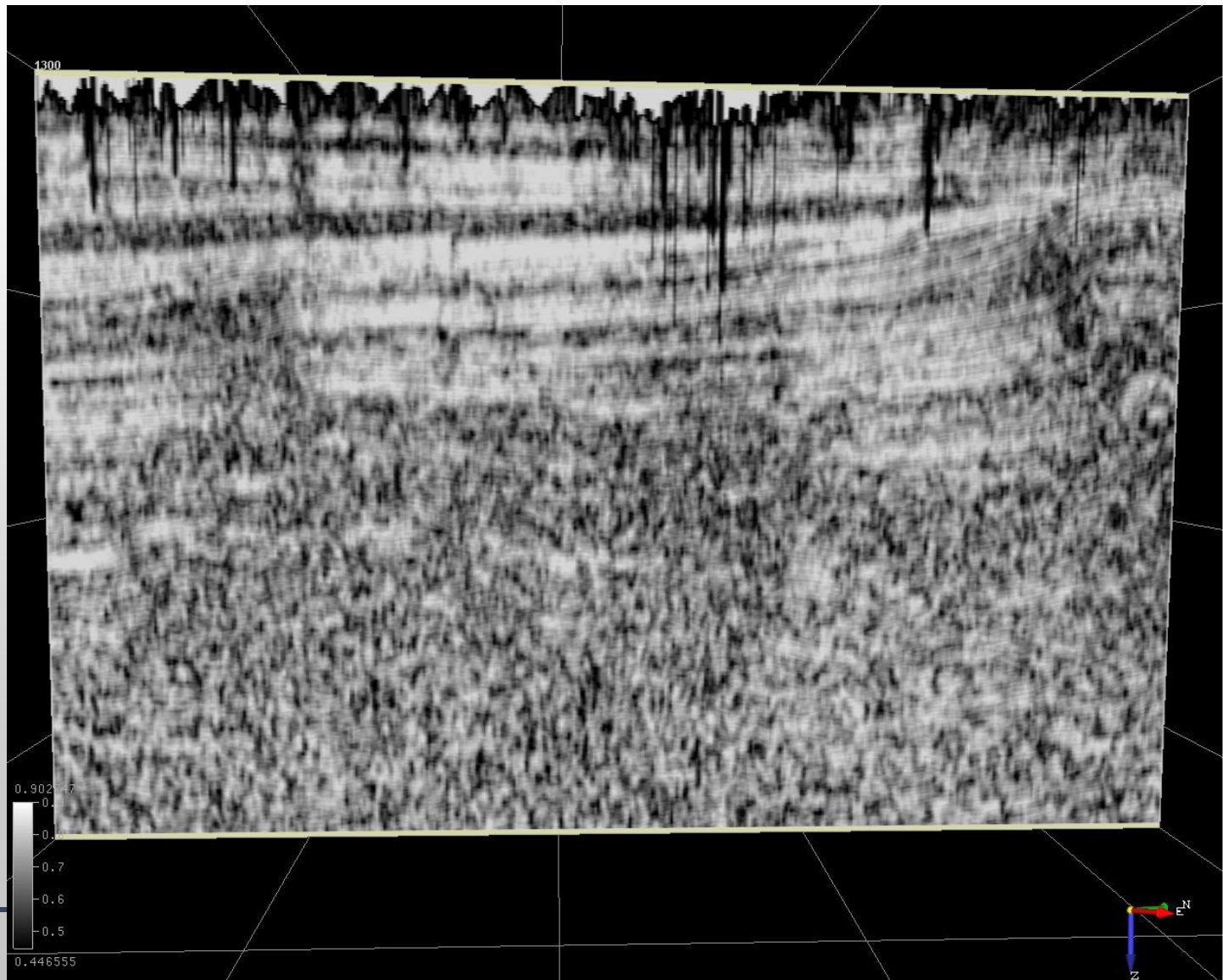
- Better signal-to-noise: lower risk in reservoir thickness and volume
- Better fault imaging: lower risk in hydrocarbon traps and drilling hazard
- Better input data for seismic-to-well tie, seismic inversion, AVO, attributes



Seismic inversion and attributes

Similarity
attribute

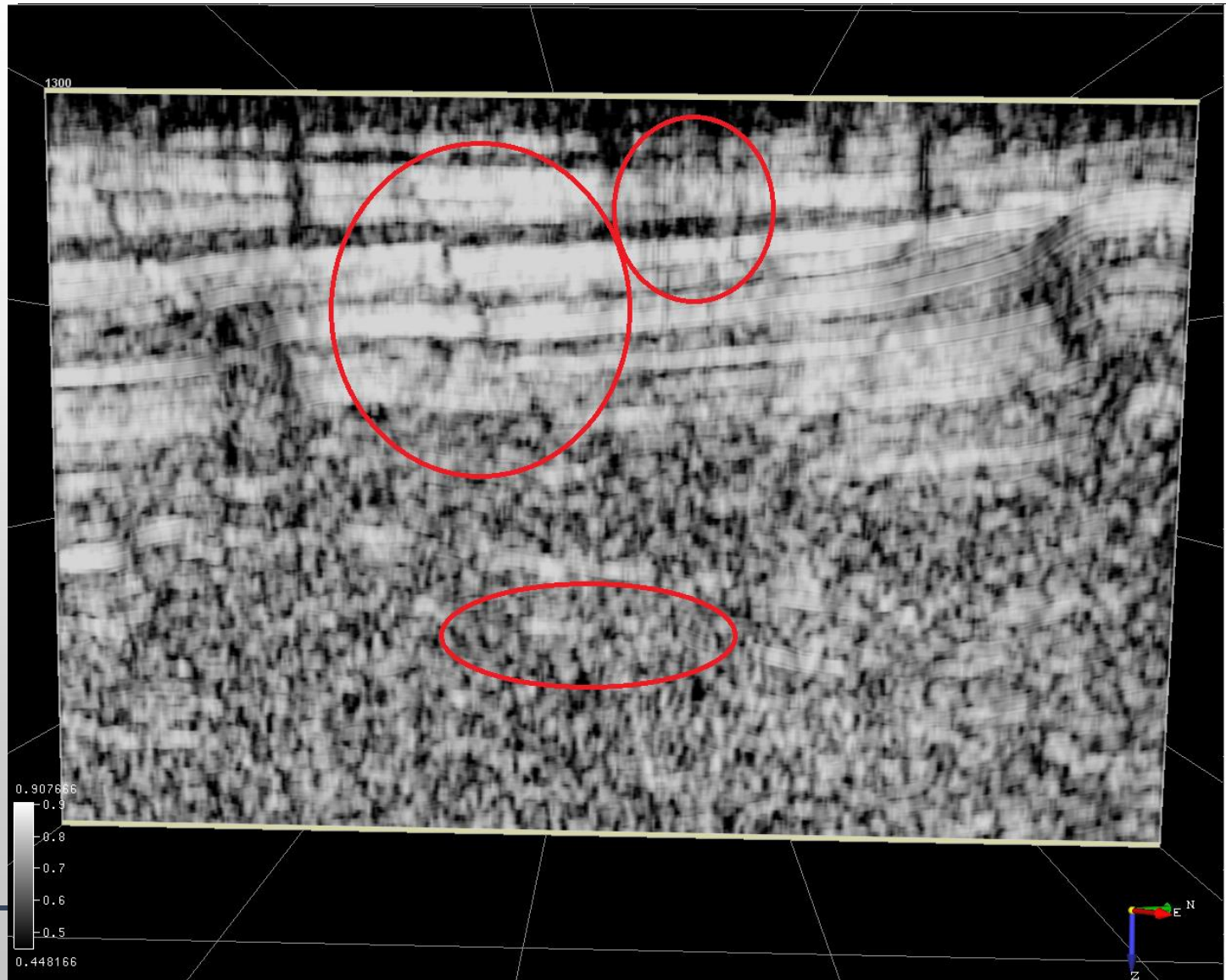
Before
reprocessing



Seismic inversion and attributes

Similarity
attribute

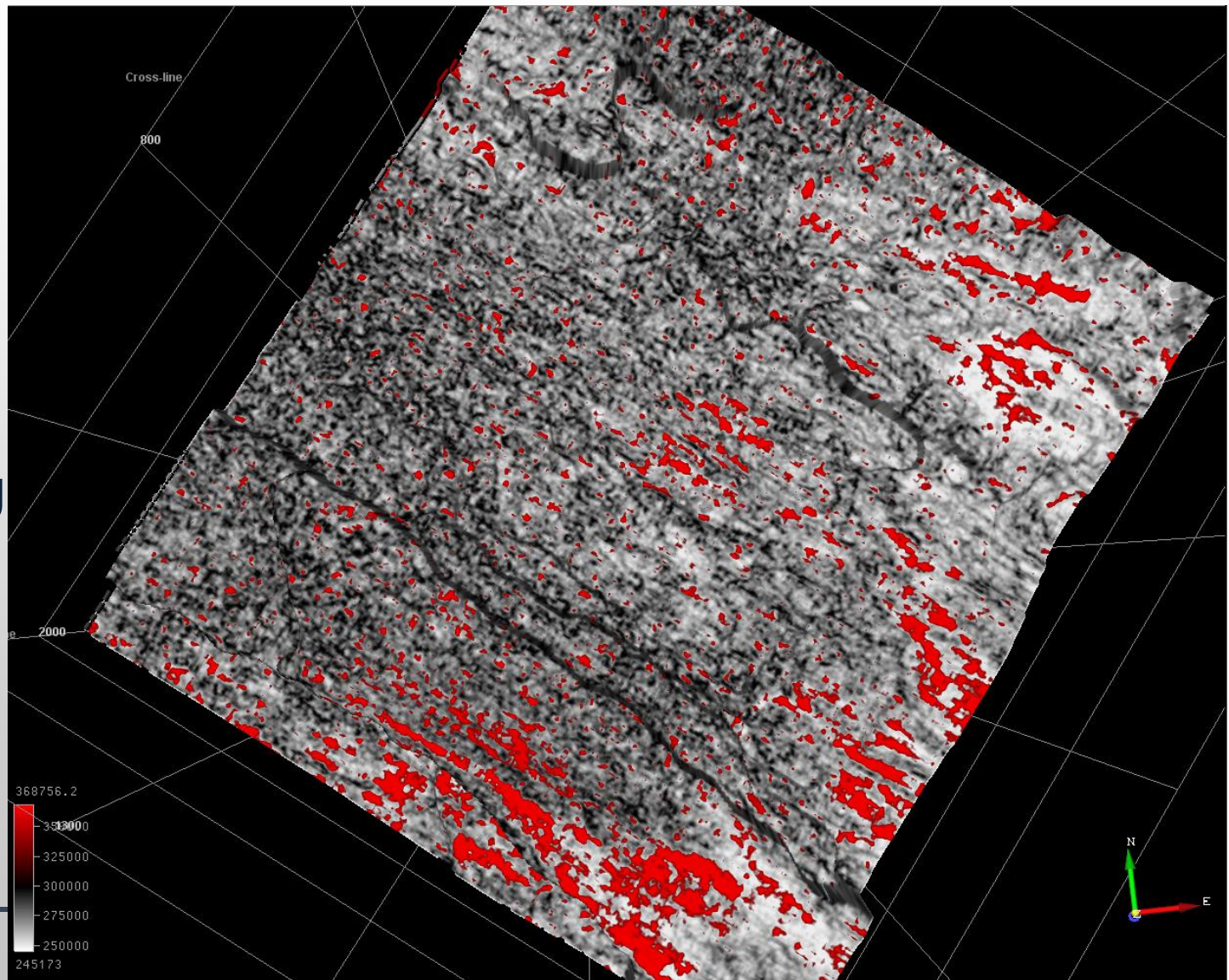
After
reprocessing



Seismic inversion and attributes

Similarity +
energy
attribute

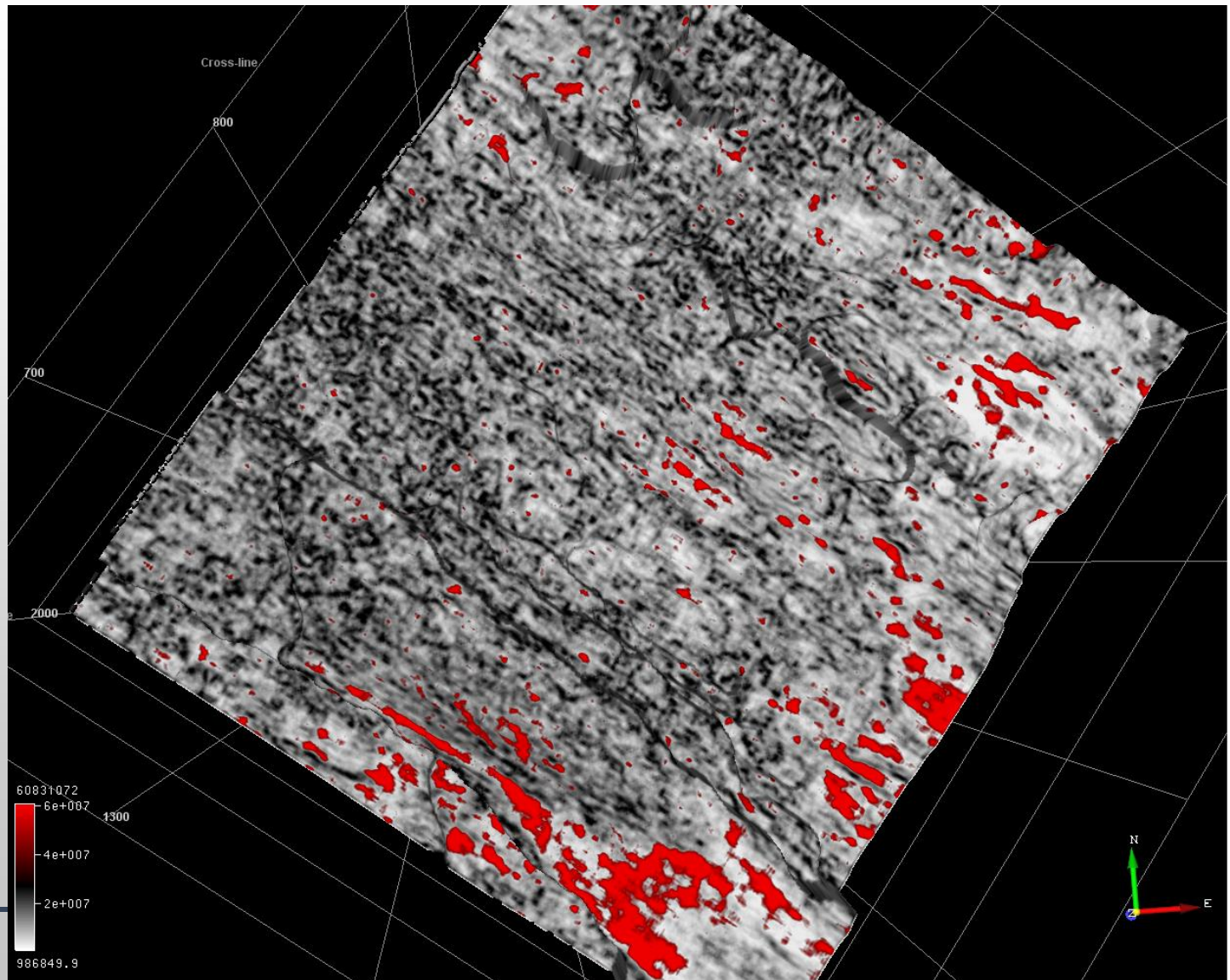
Before
reprocessing



Seismic inversion and attributes

Similarity +
energy
attribute

After
reprocessing



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- Thank you for your attention

Down to earth

Amsterdam
Petroleum
Geoscience

