IT4 – Part 2

NZ 3D Processing

17 February 2021

INSTITUTE FOR GEOPHYSICS

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Passion for Geoscience

Outline

- **Objective:**

  To further improve deep velocity, especially in the middle and west part.

- **Procedure:**

  Following the previous intermediate result, TTI FWI was run to 6Hz. An anomalous inverse Q absorption model was derived from FWI velocity (mainly below the BSR where gas accumulates) and was added to the FWI velocity only inversion. This approach gives a FWI velocity that results in flatter gathers in the gas zone.

- **Display:**

  Velocity, migrated depth full stack & gathers.

- **Observation and Recommendation:**

  In the low S/N area from middle to west of the survey, the velocity in the deeper area is more geological and results in a better imaging of the central dipping events. We'll continue to focus this area for better velocity.

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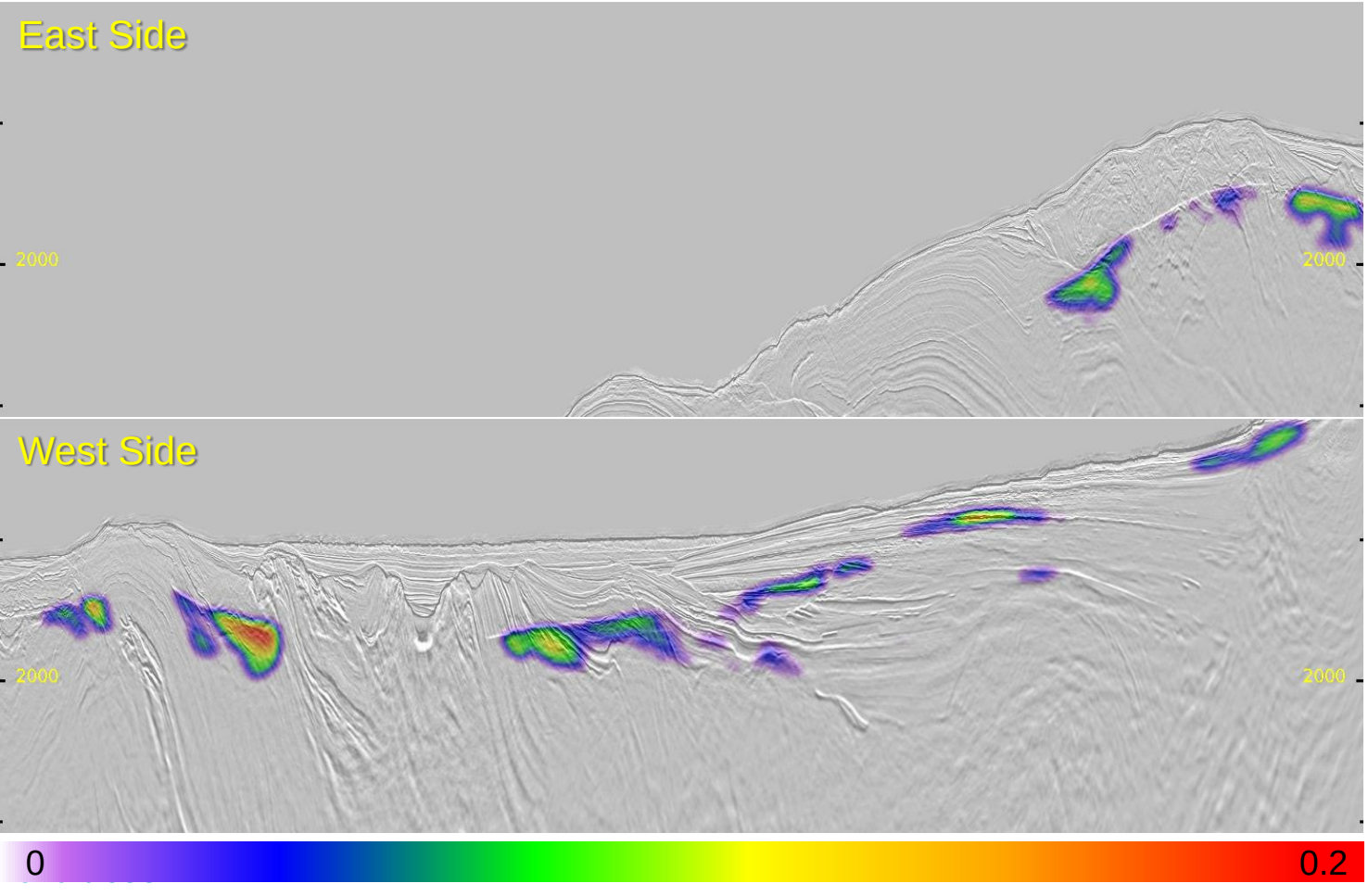
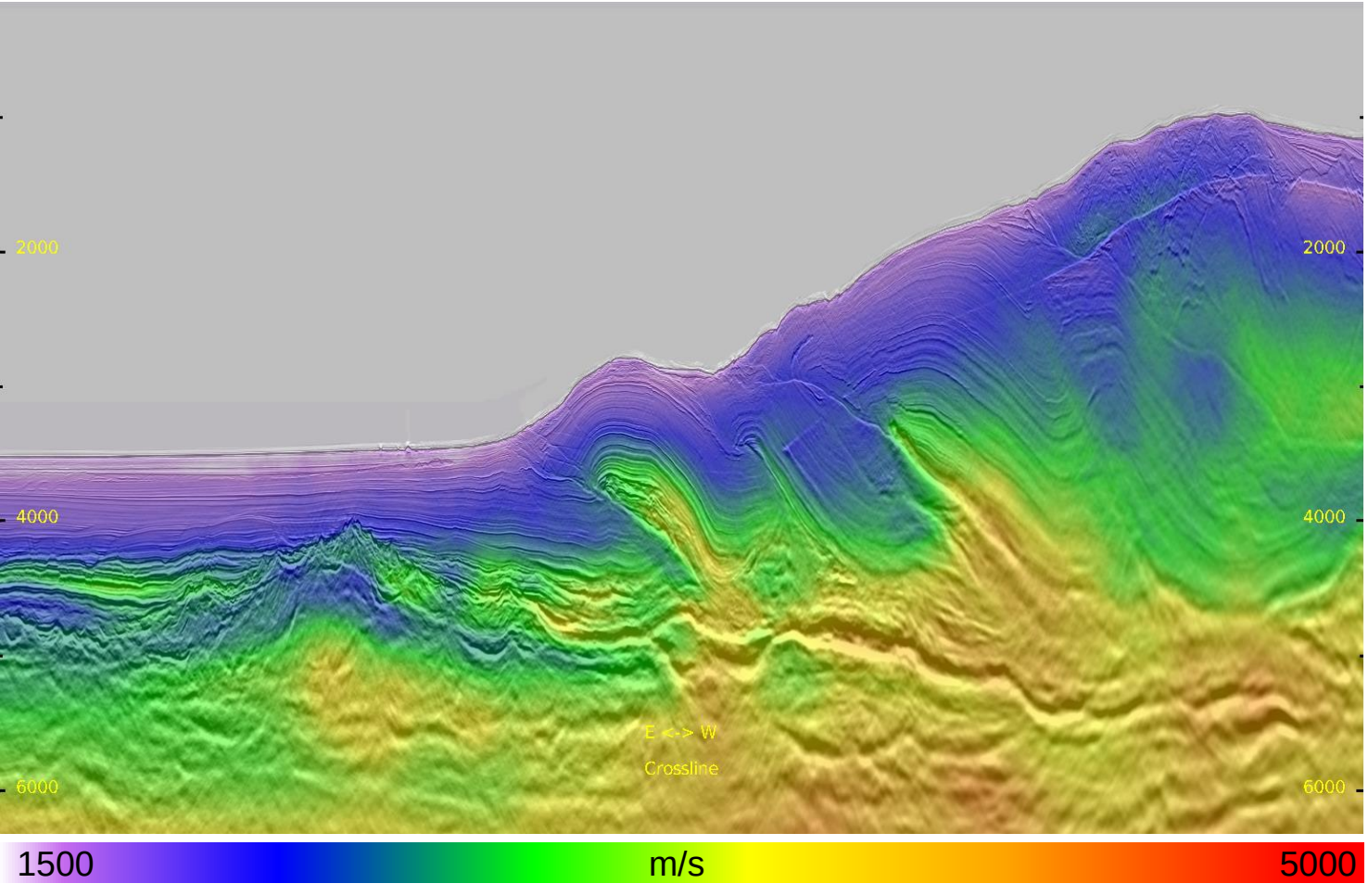
Velocity Model

Inline 436: Anomalous Inverse Q Model



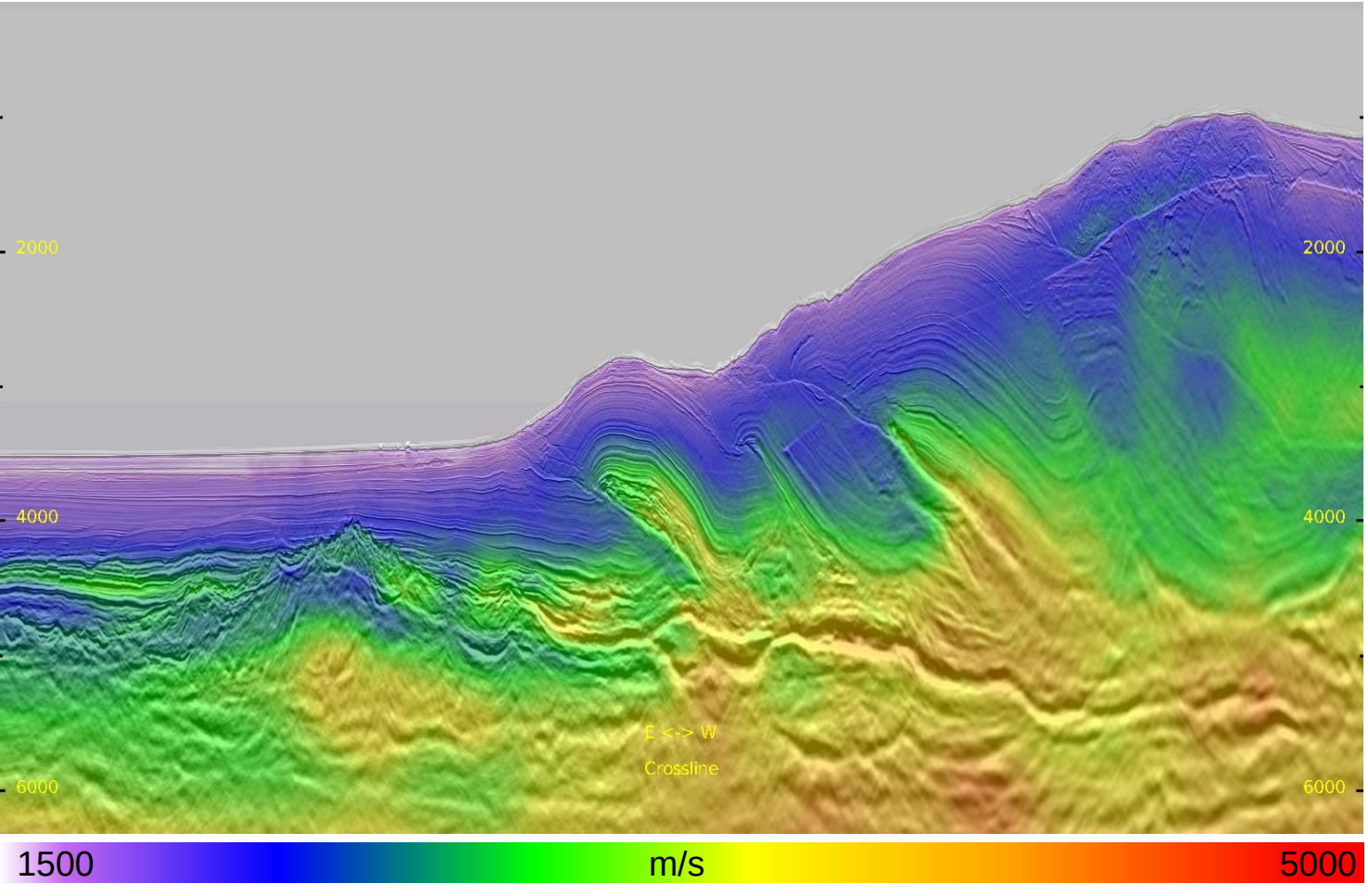
- An anomalous inverse Q Model was derive from the FWI velocity.

Inline 436 Eest: Previous Velocity



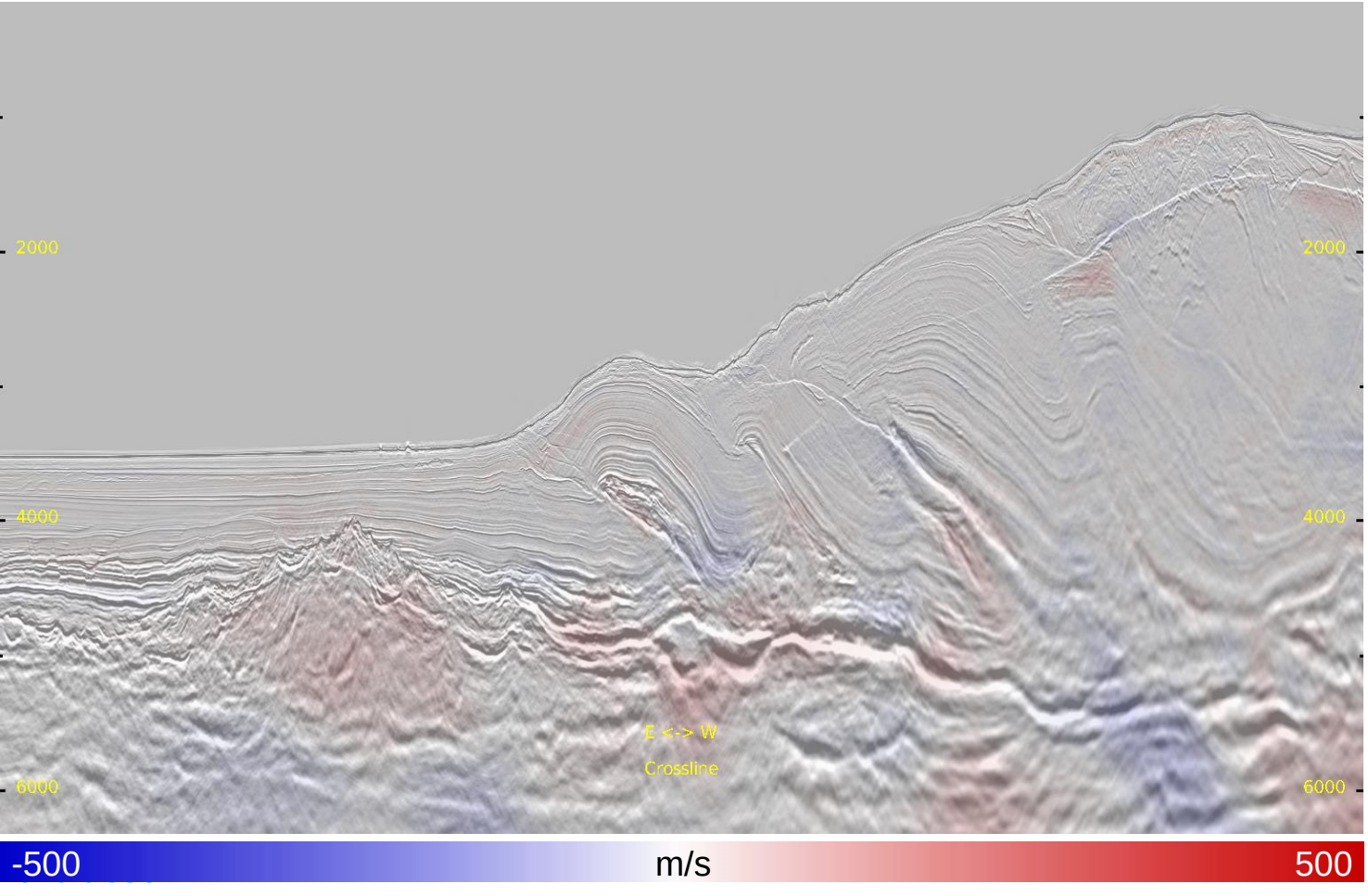
- Previous preliminary FWI velocity

Inline 436 Eest: Current Velocity



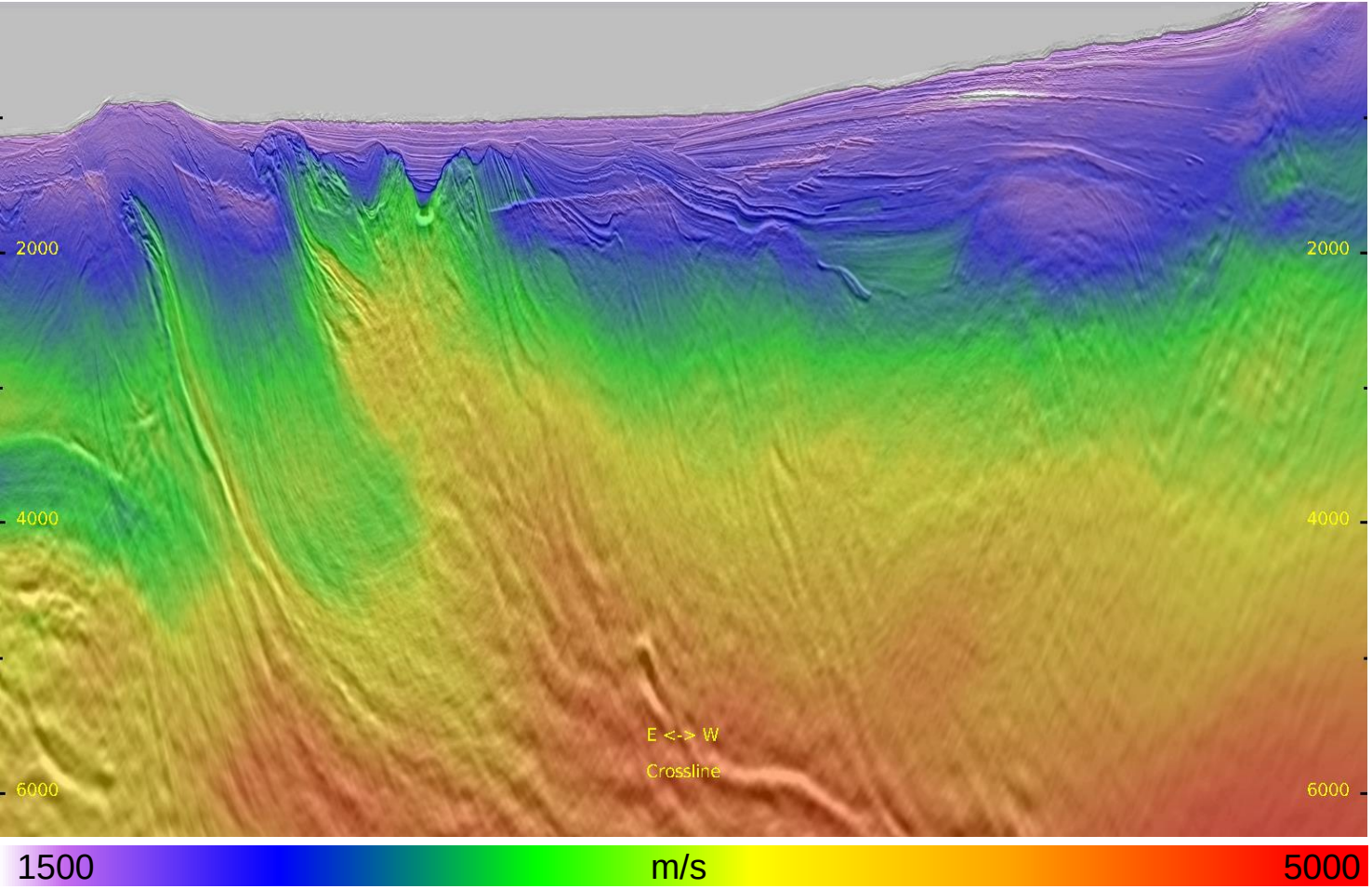
- Current TTI FWI velocity considering anomalous Q absorption.

Inline 436 Eest: Velcoity Perturbation



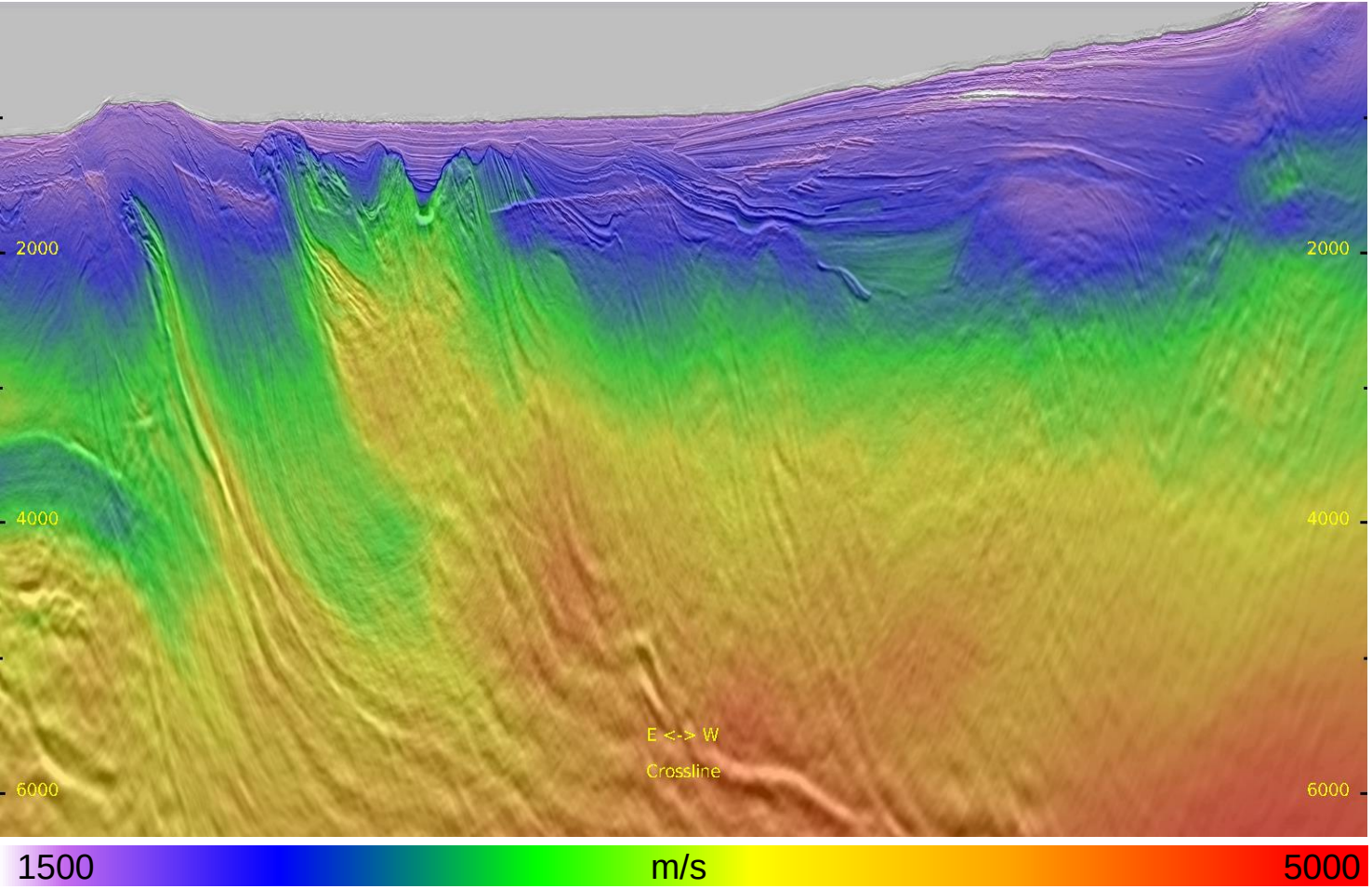
- Velocity perturbation shows a increase of velocity below the BSR.

Inline 436 West: Previous Velocity



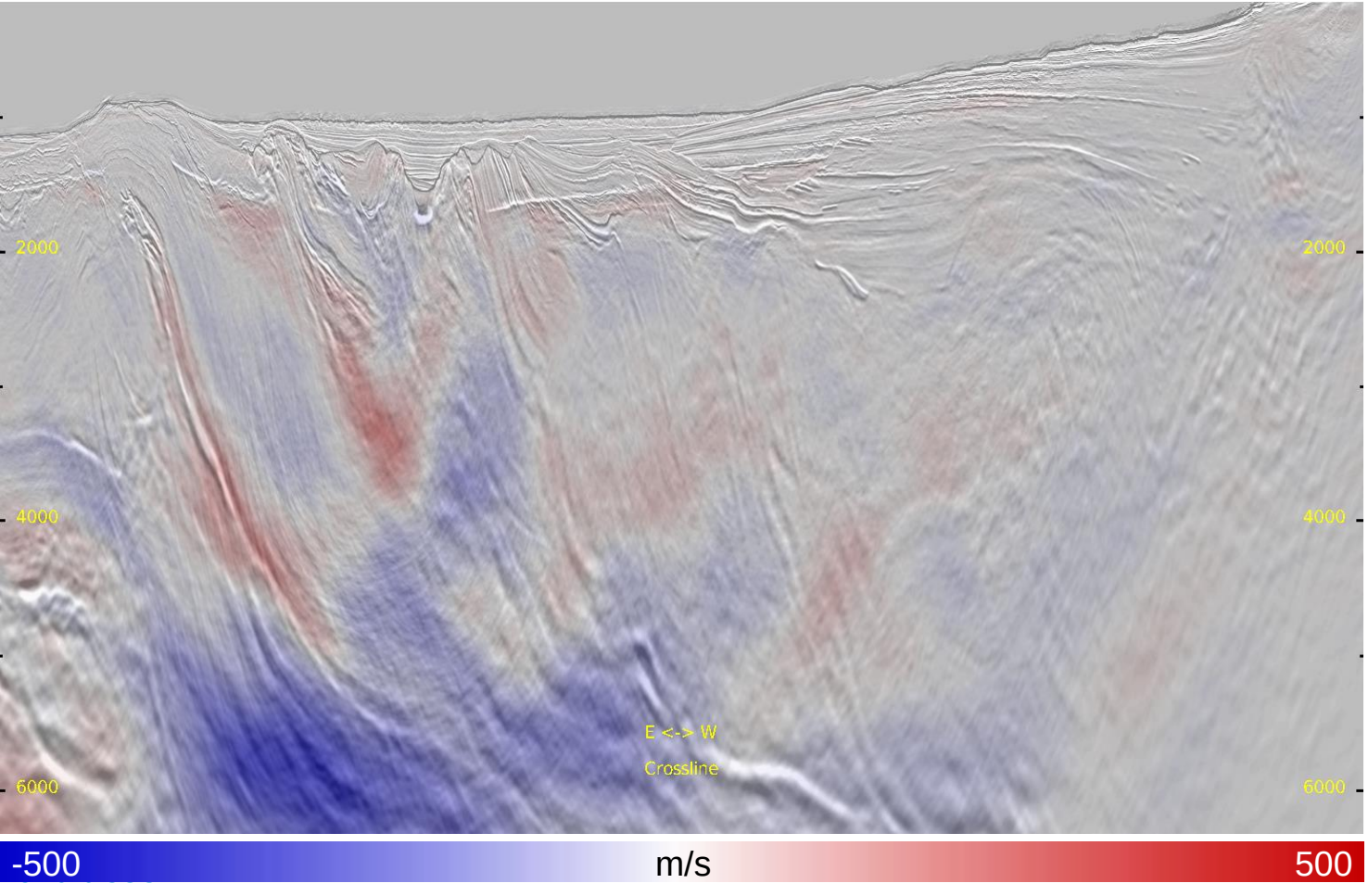
- Previous preliminary FWI velocity

Inline 436 West: Current Velocity



- Current TTI FWI velocity considering anomalous Q effect.

Inline 436 West: Velcoity Perturbation

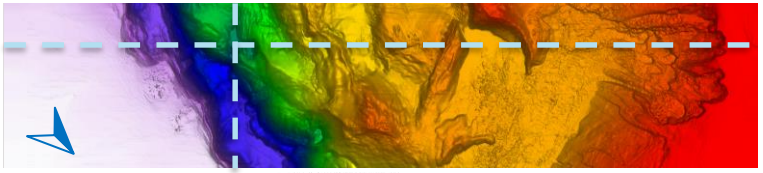


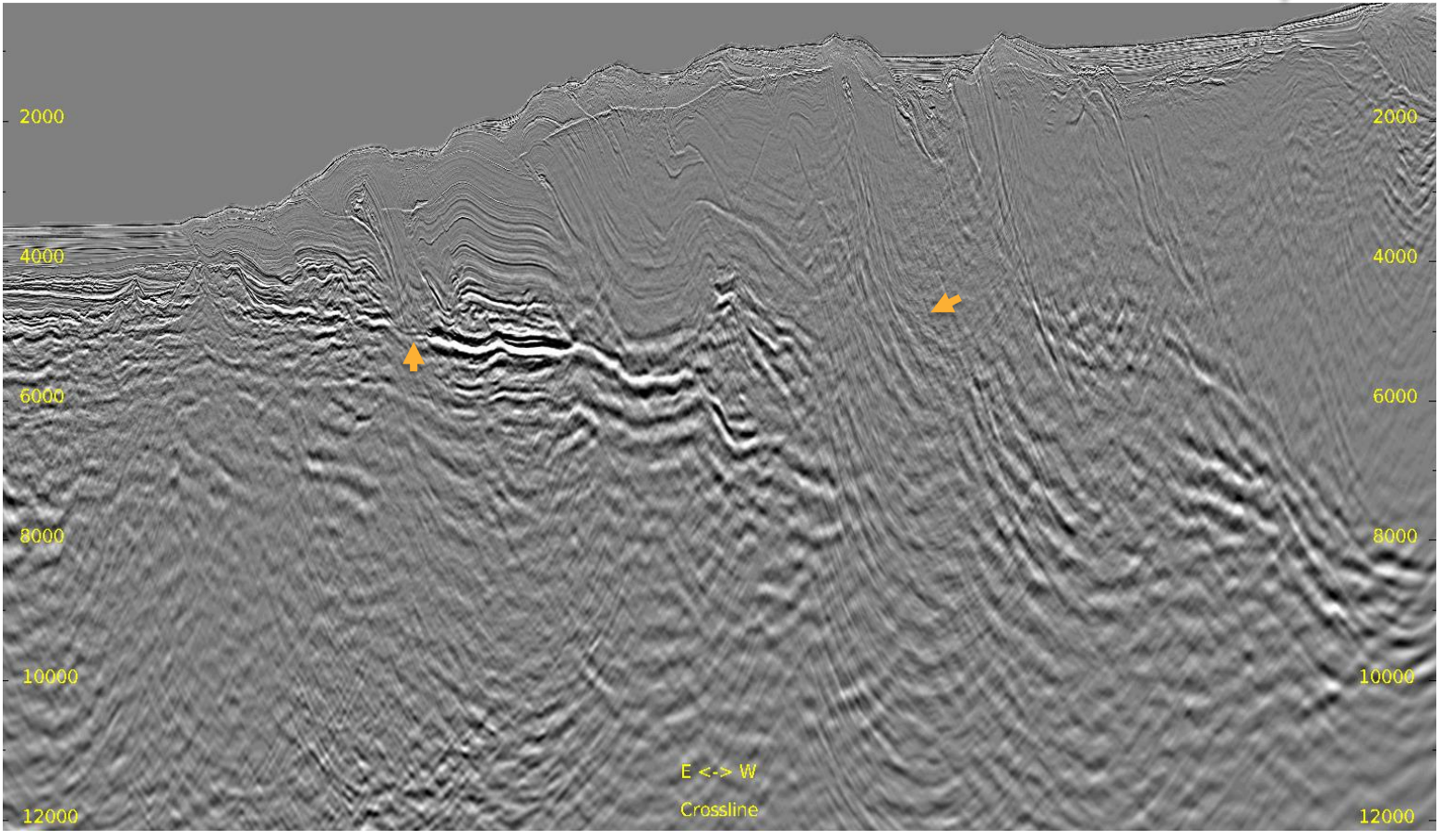
- Velocity perturbation shows a increase of velocity below the BSR and in the gas zone.

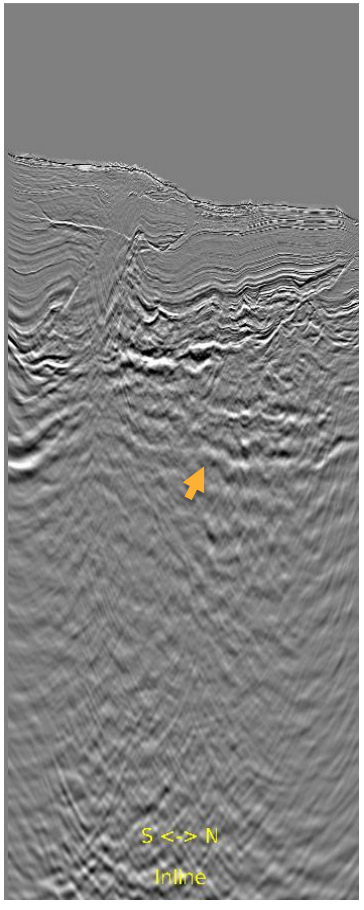
Kirchhoff Depth Migration

Full Stack: Previous Result

Inline 236 & Crossline 1774

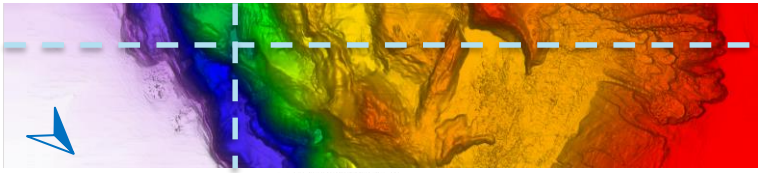


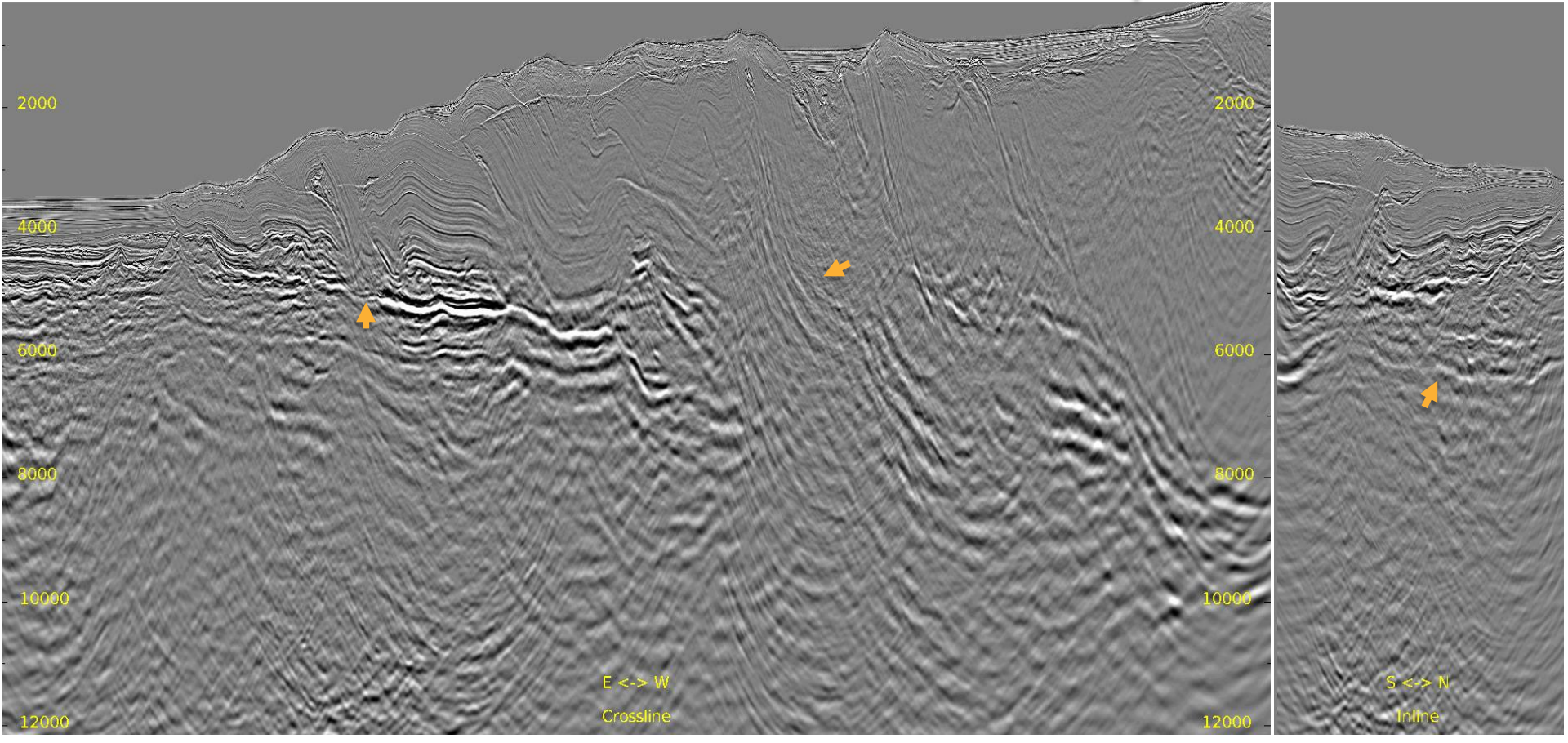




Full Stack: Current Result

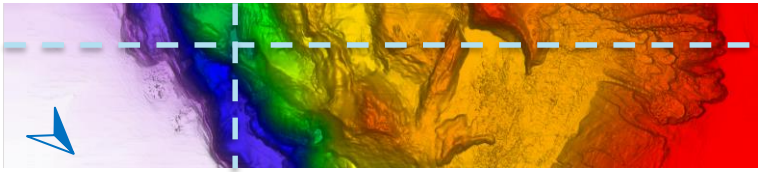
Inline 236 & Crossline 1774

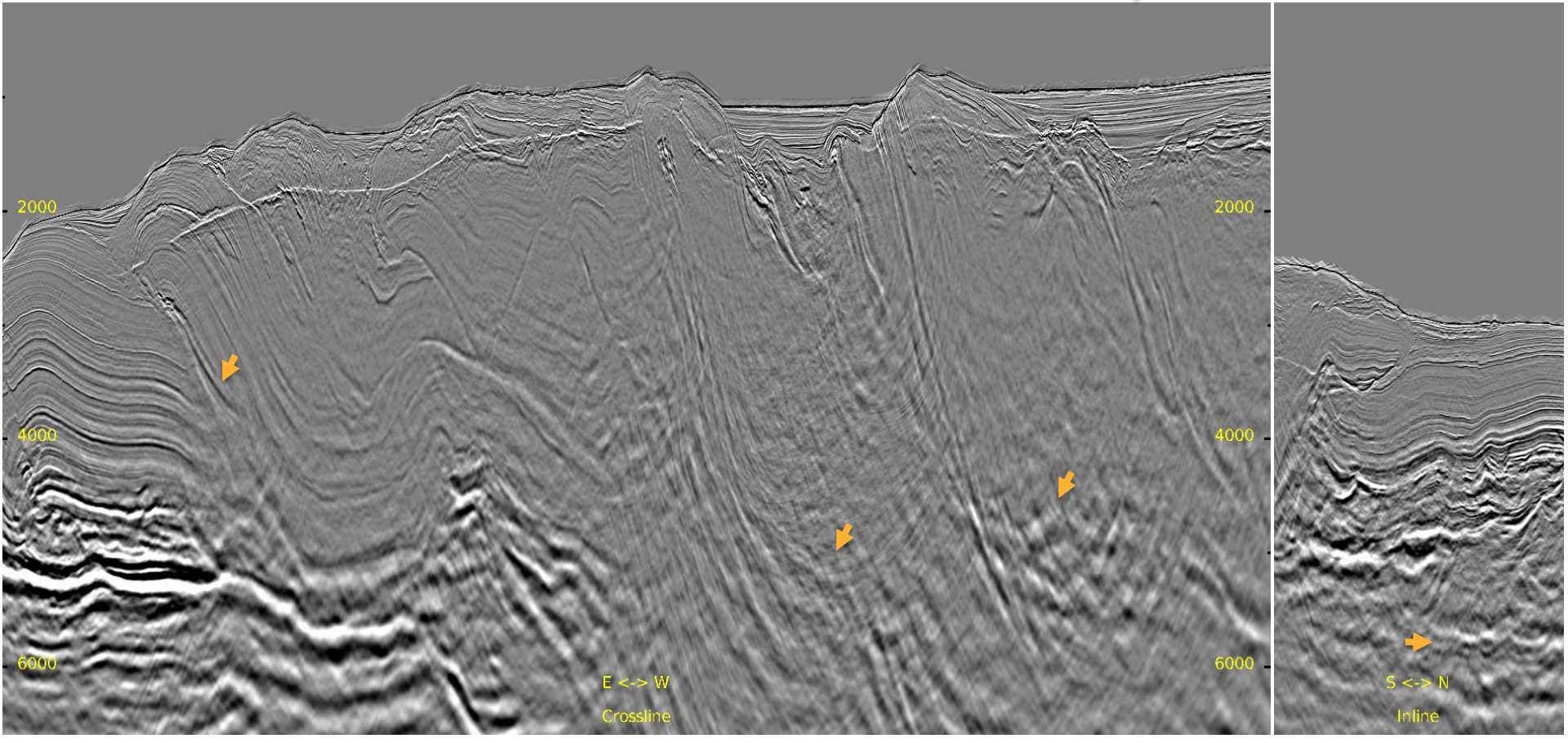




Zoomed Full Stack: Previous Result

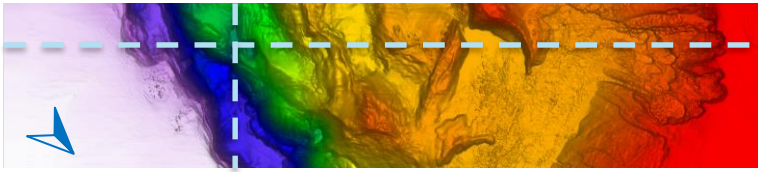
Inline 236 & Crossline 1774

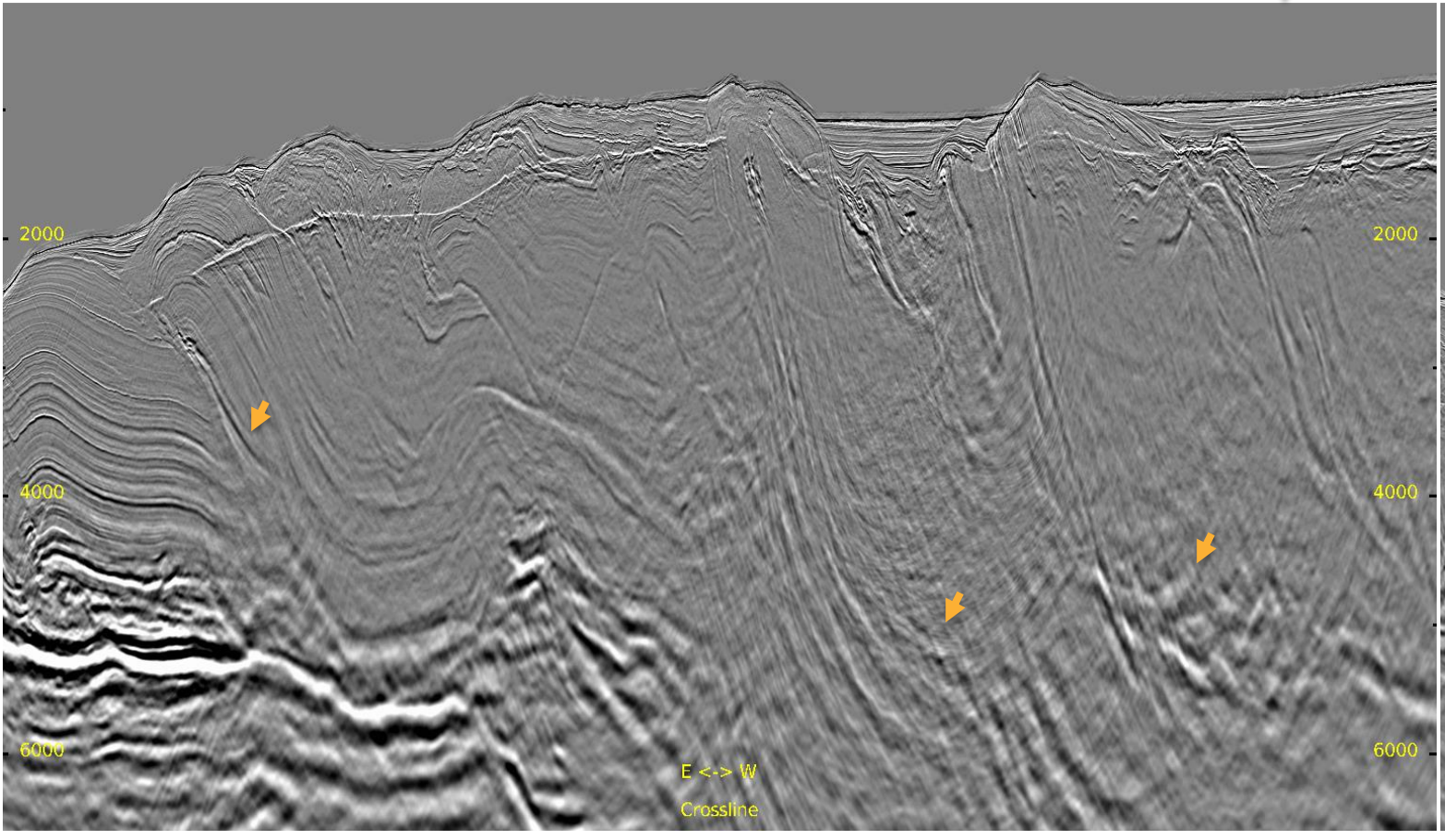


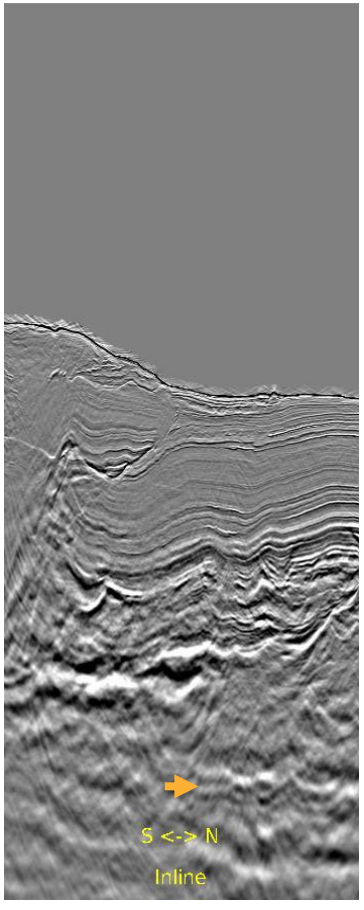


Zoomed Full Stack: Current Result

Inline 236 & Crossline 1774

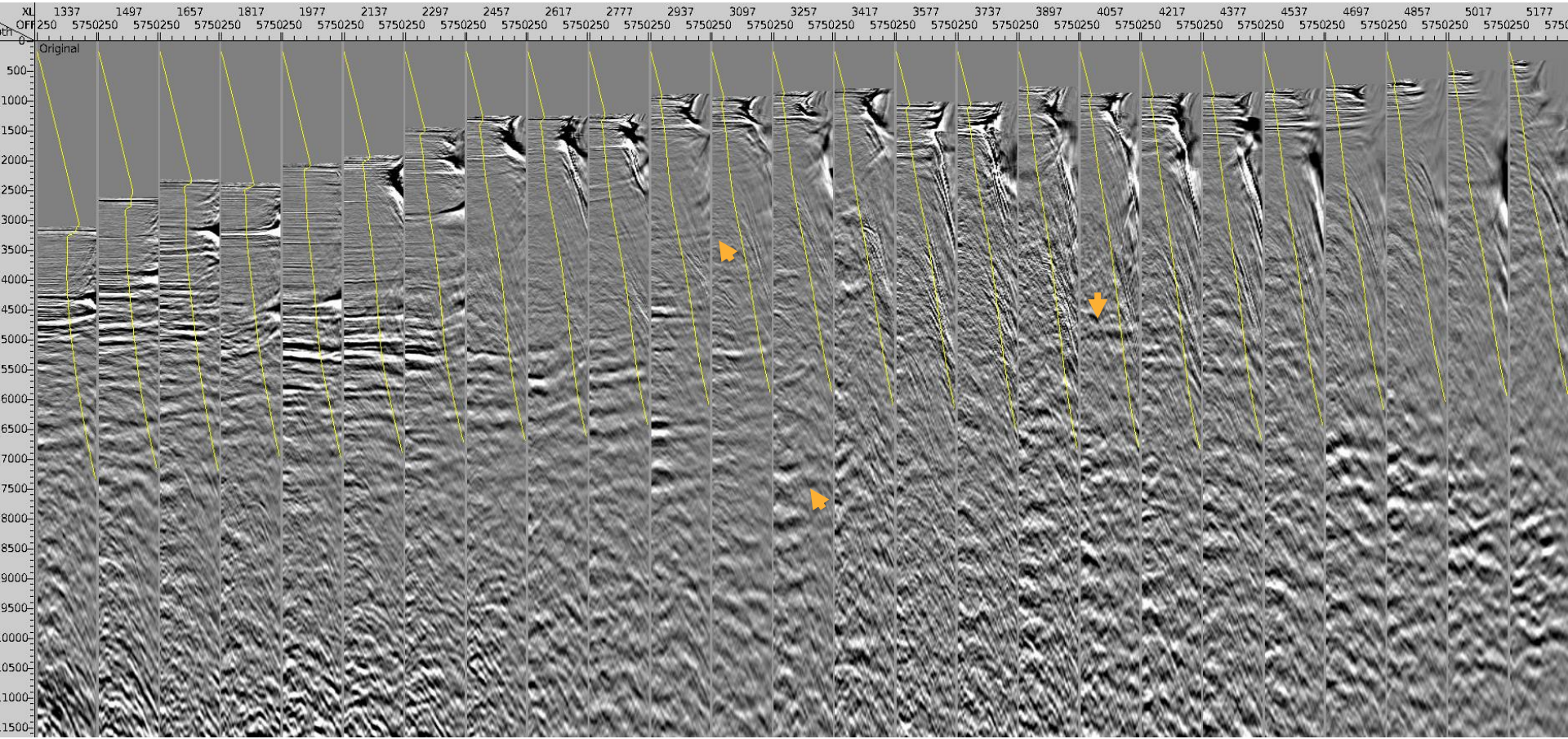






Inline 236 CDP Gathers: Previous Result

35º Mute



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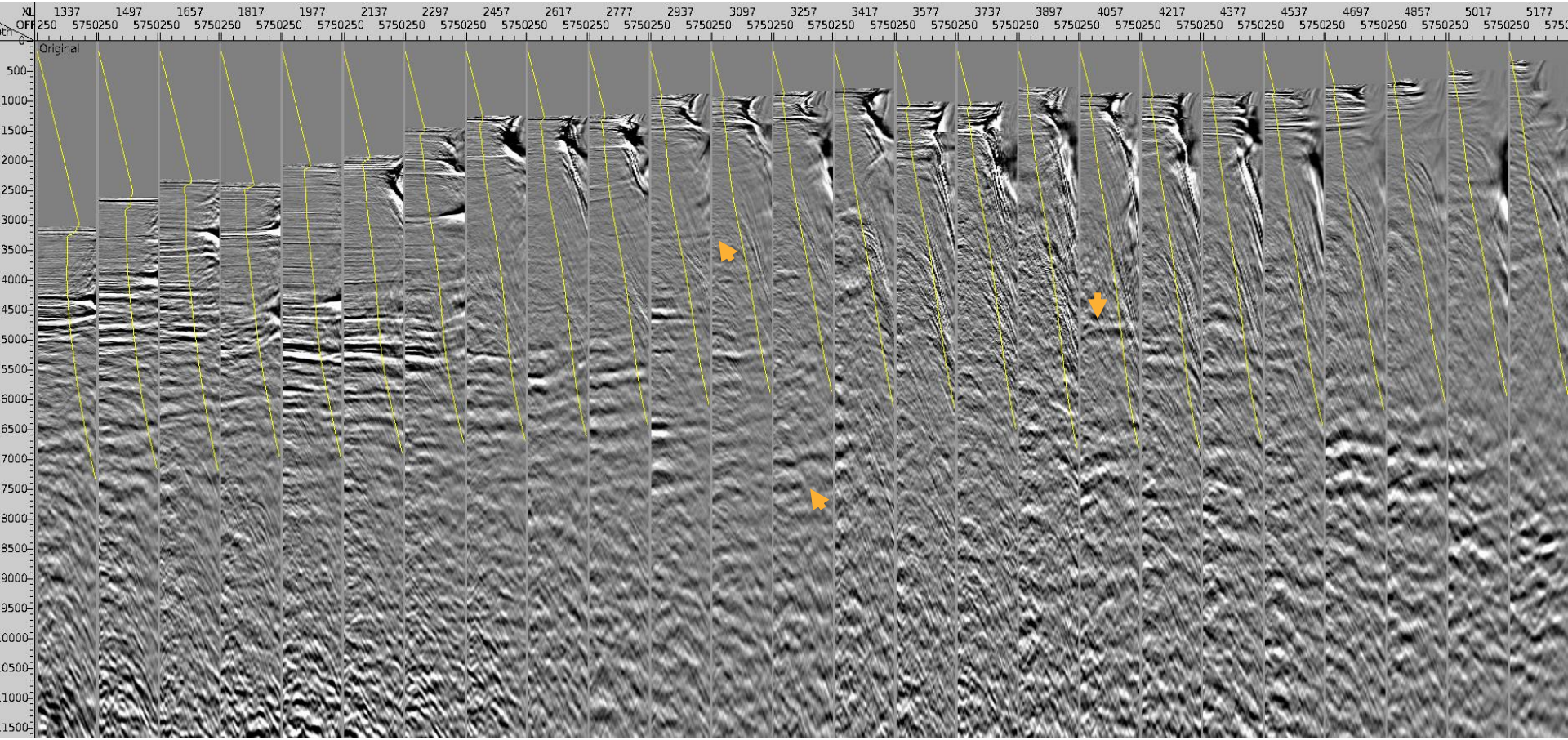
Inline 236 CDP Gathers: Current Result

35º Mute



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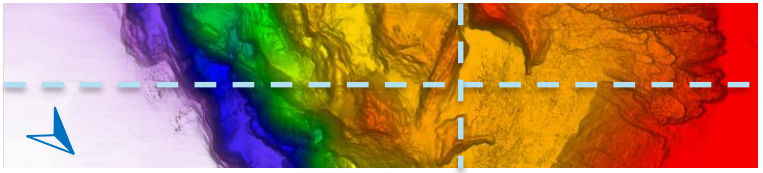
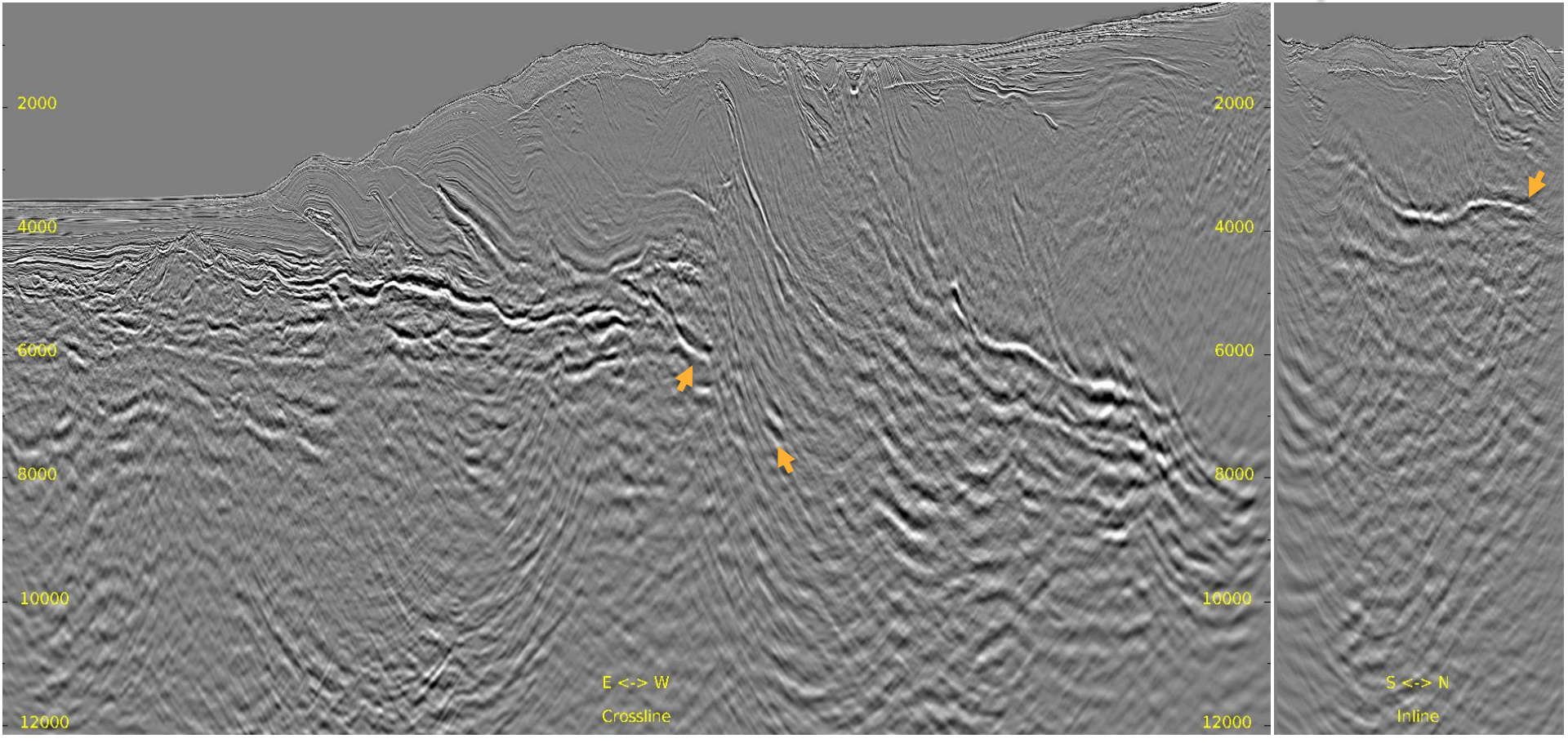
Full Stack: Previous Result

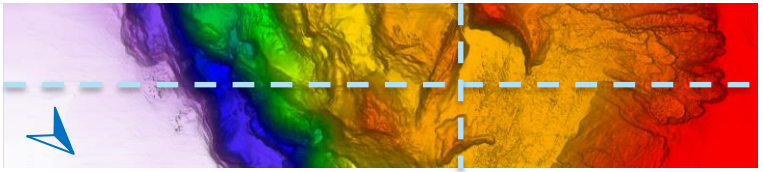
Inline 436 & Crossline 3423

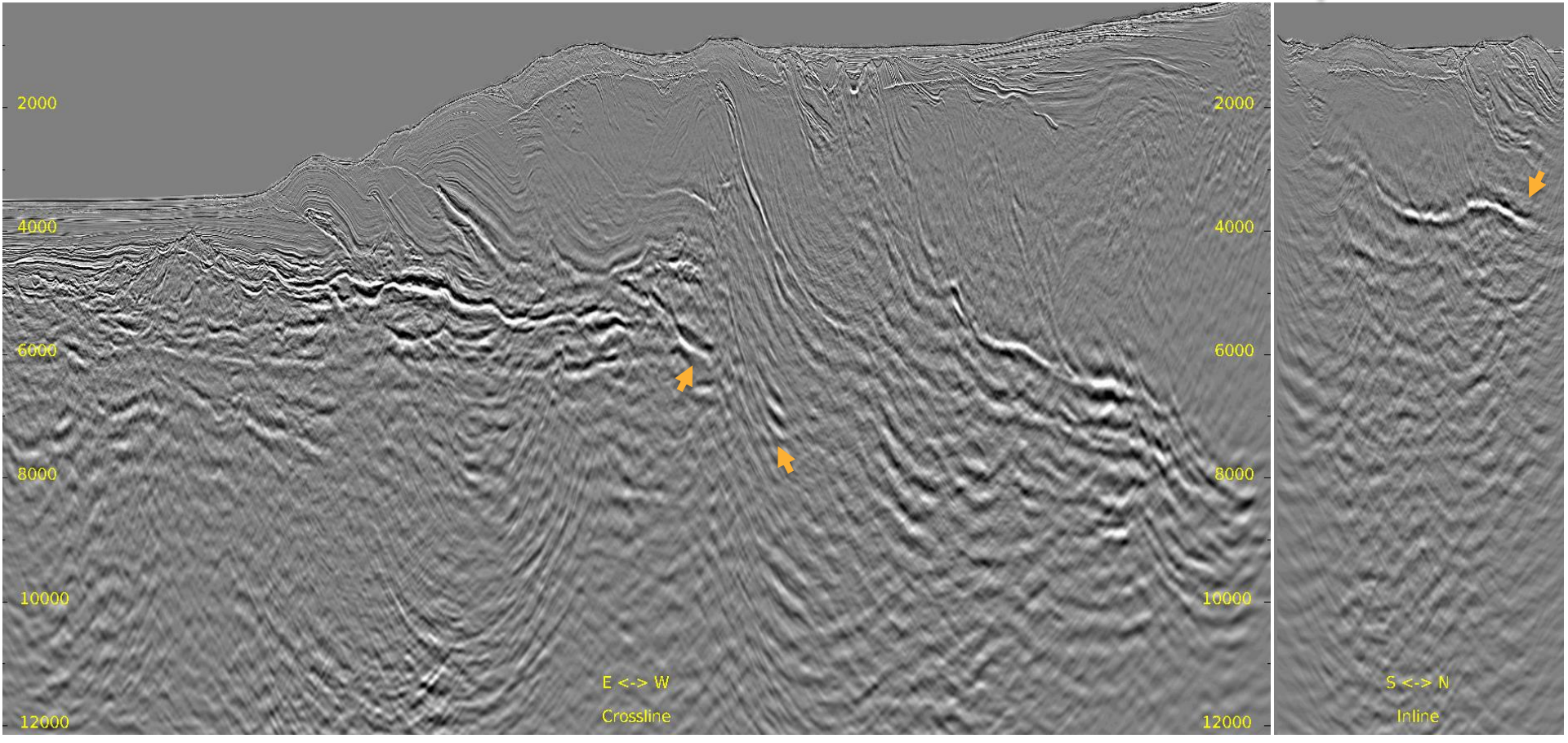




Full Stack: Current Result

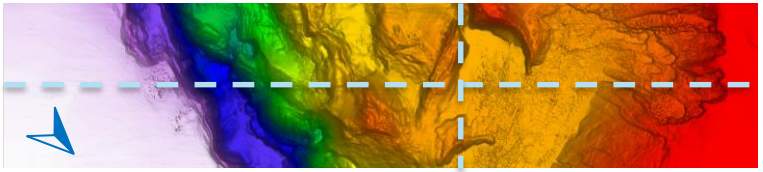
Inline 436 & Crossline 3423

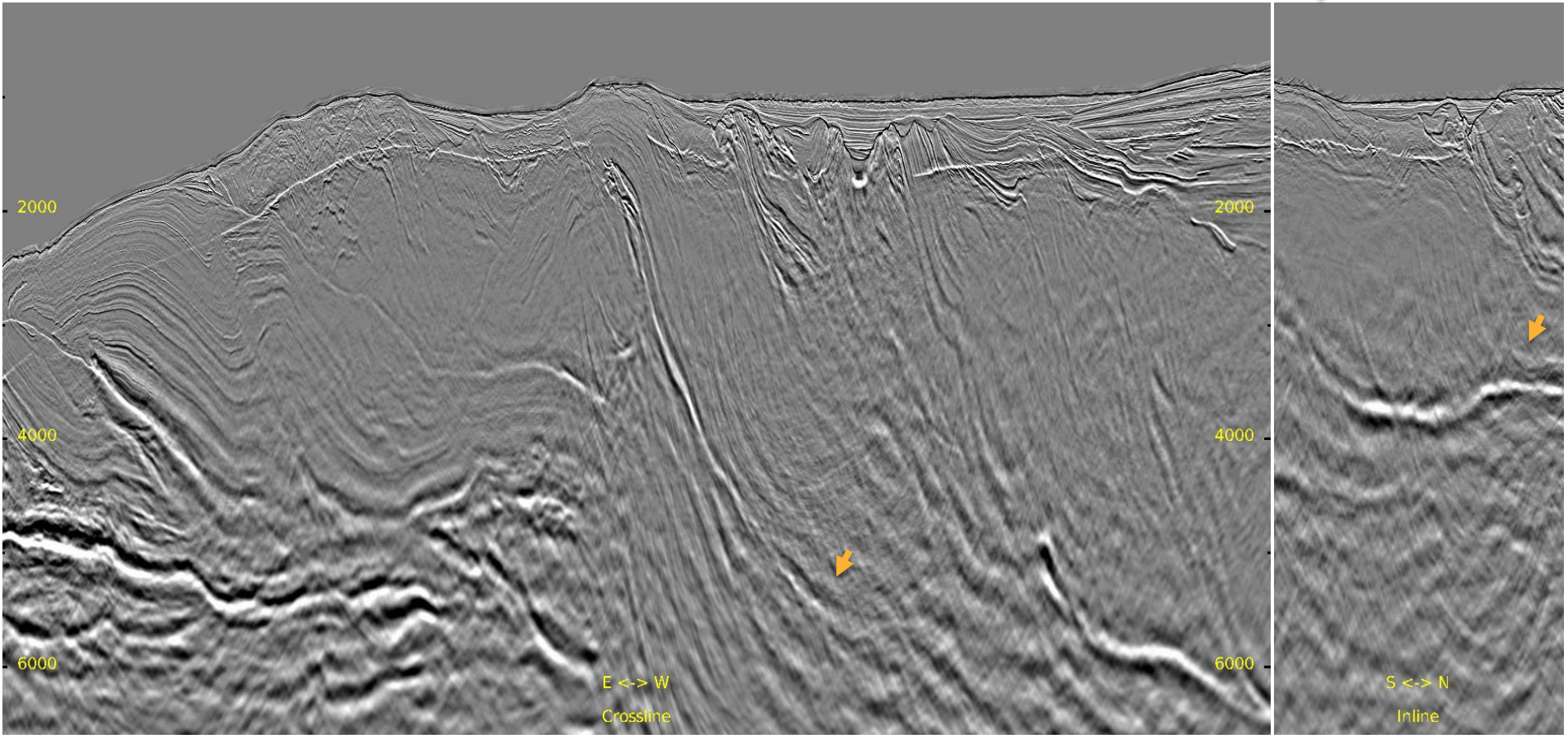




Zoomed Full Stack: Previous Result

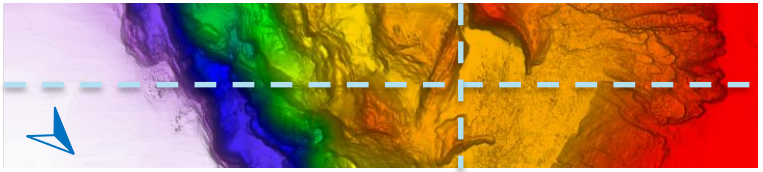
Inline 436 & Crossline 3423

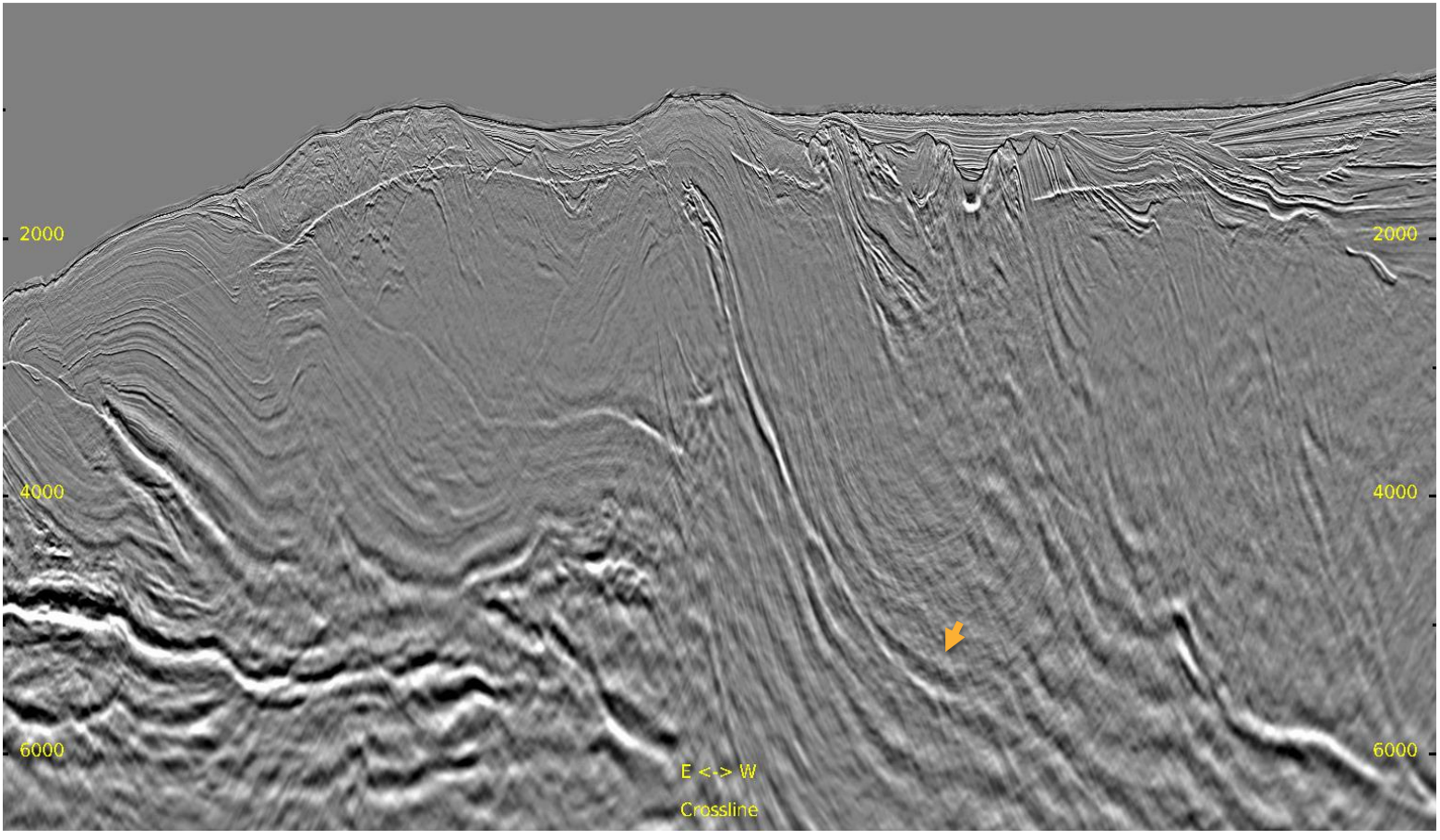


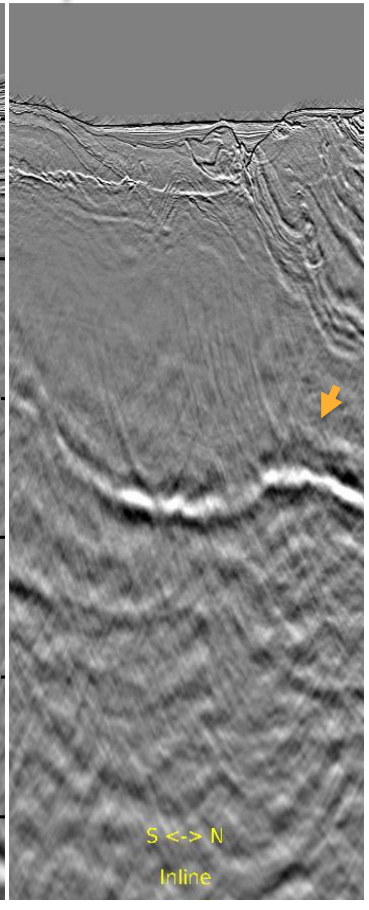


Zoomed Full Stack: Current Result

Inline 436 & Crossline 3423

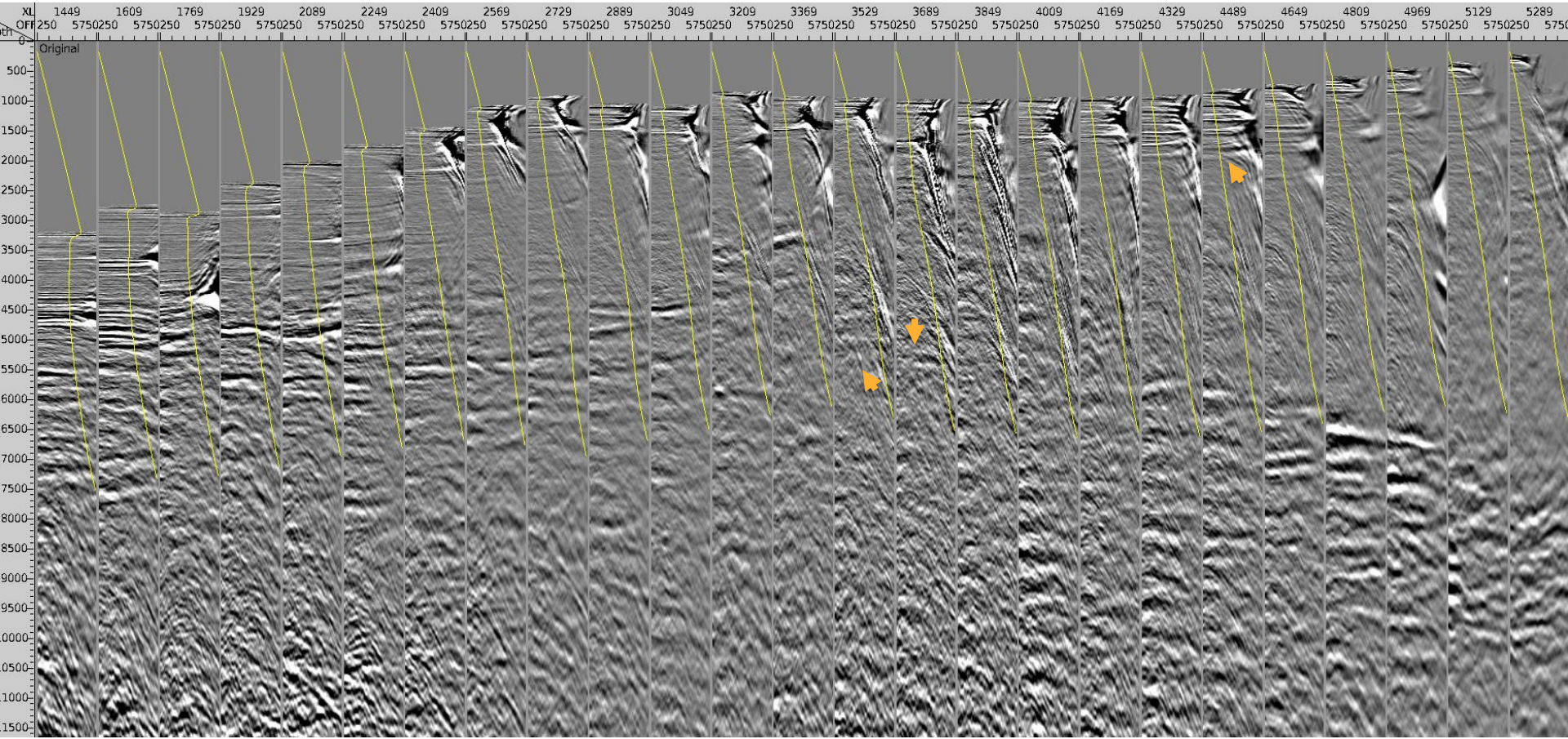






Inline 436 CDP Gathers: Previous Result

35º Mute



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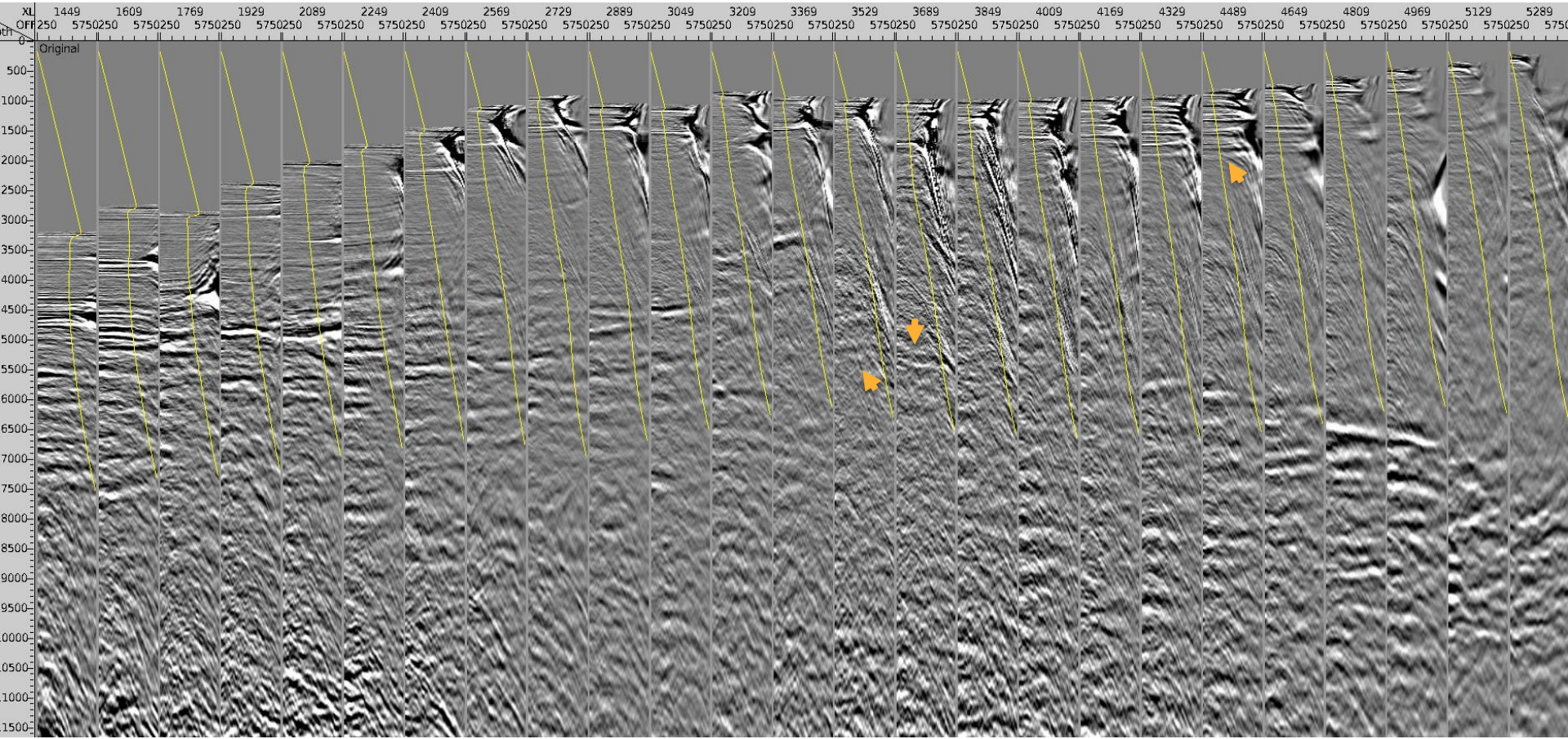
Inline 436 CDP Gathers: Current Result

35º Mute



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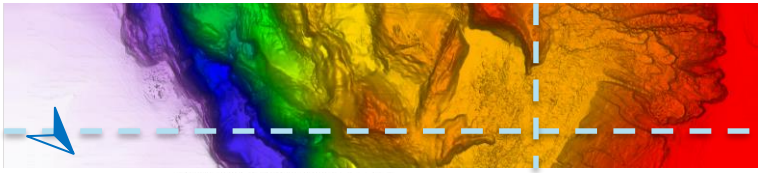
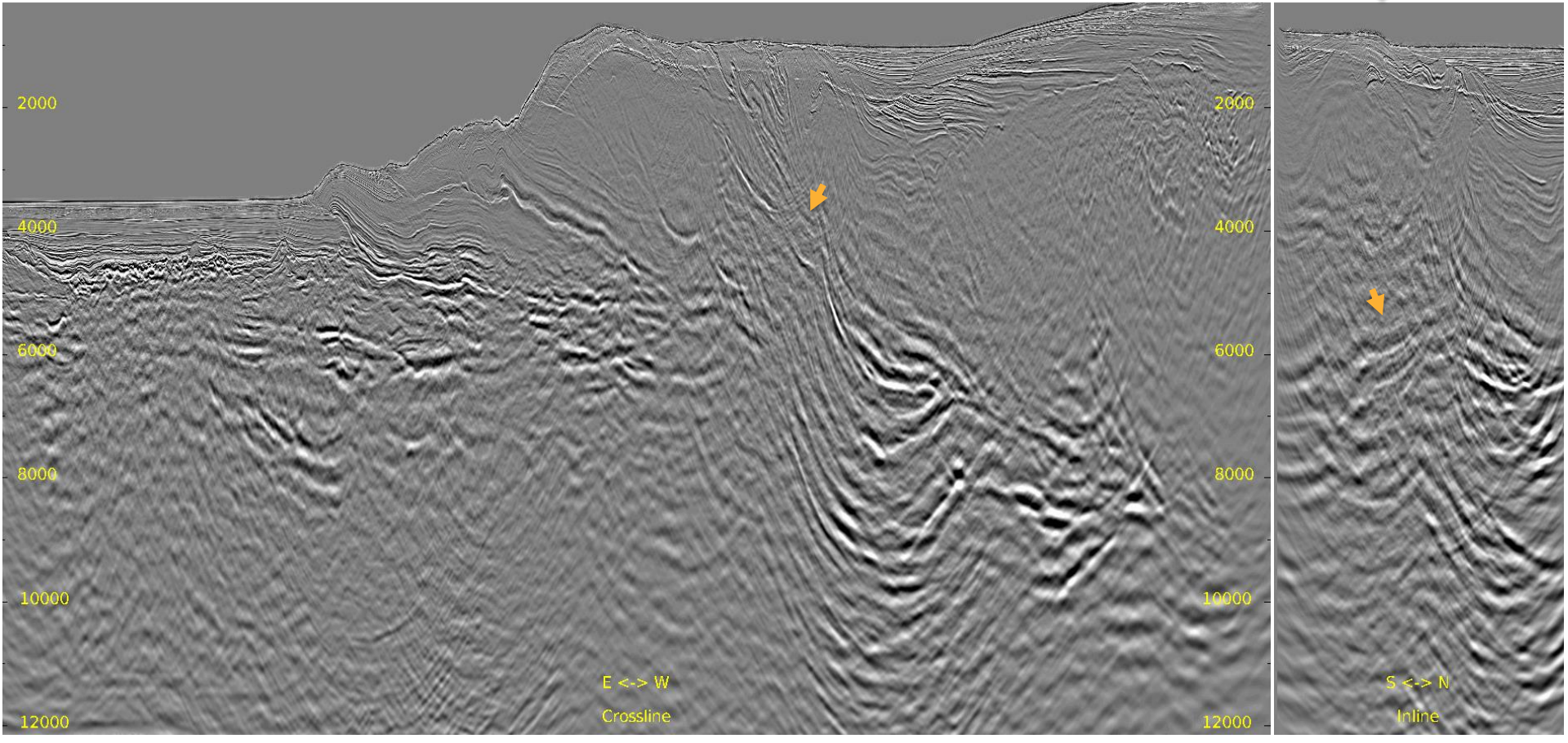
Full Stack: Previous Result

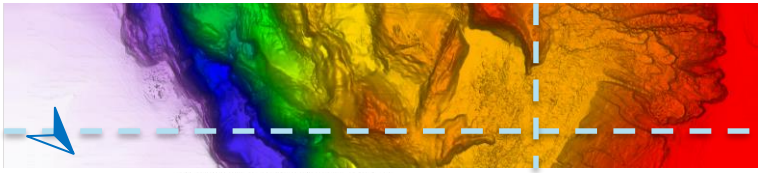
Inline 636 & Crossline 3944

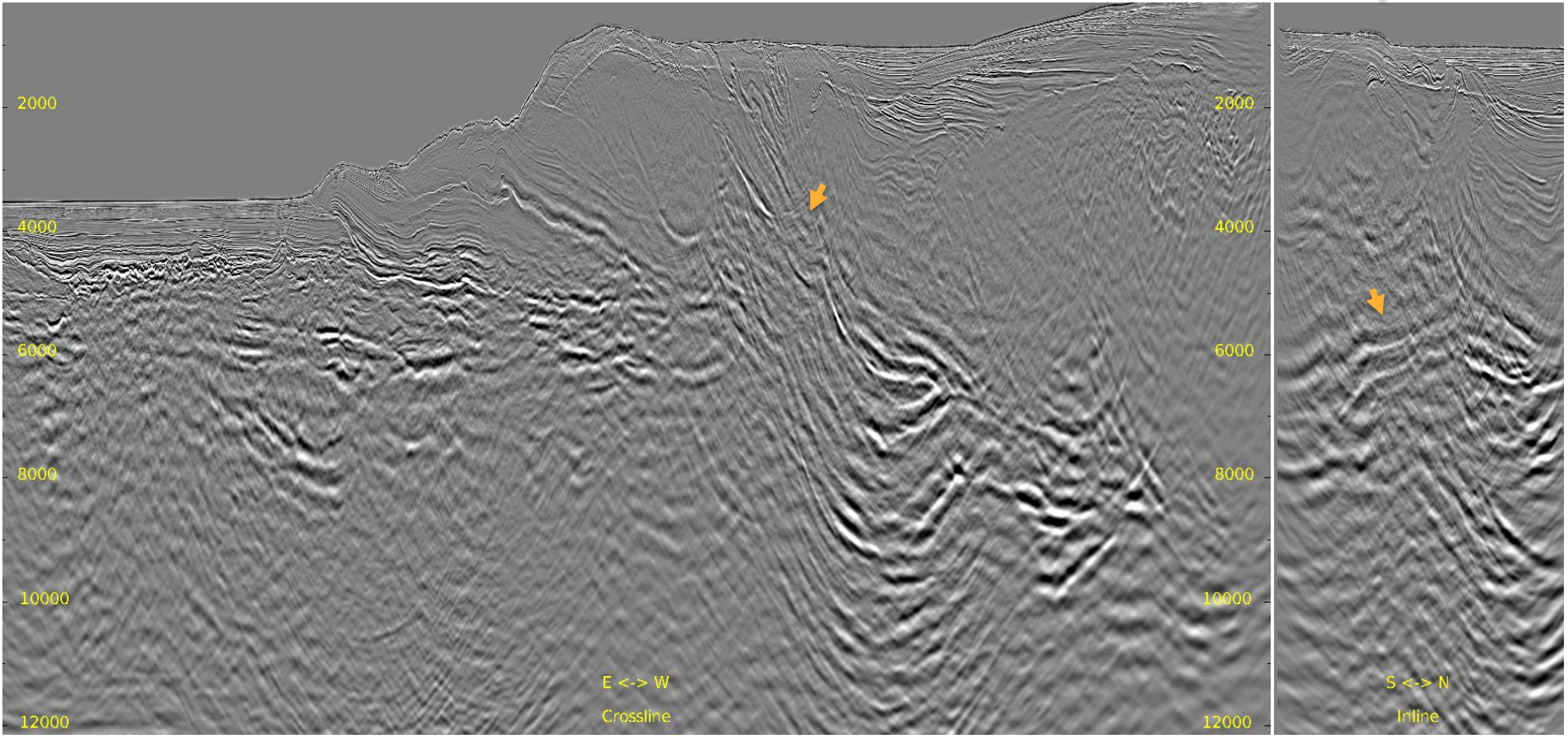




Full Stack: Current Result

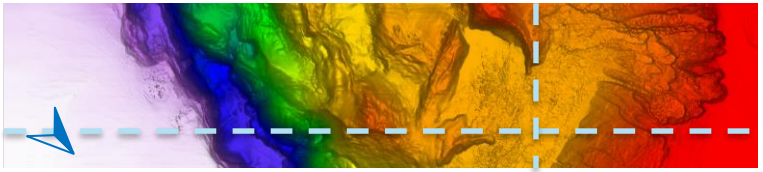
Inline 636 & Crossline 3944

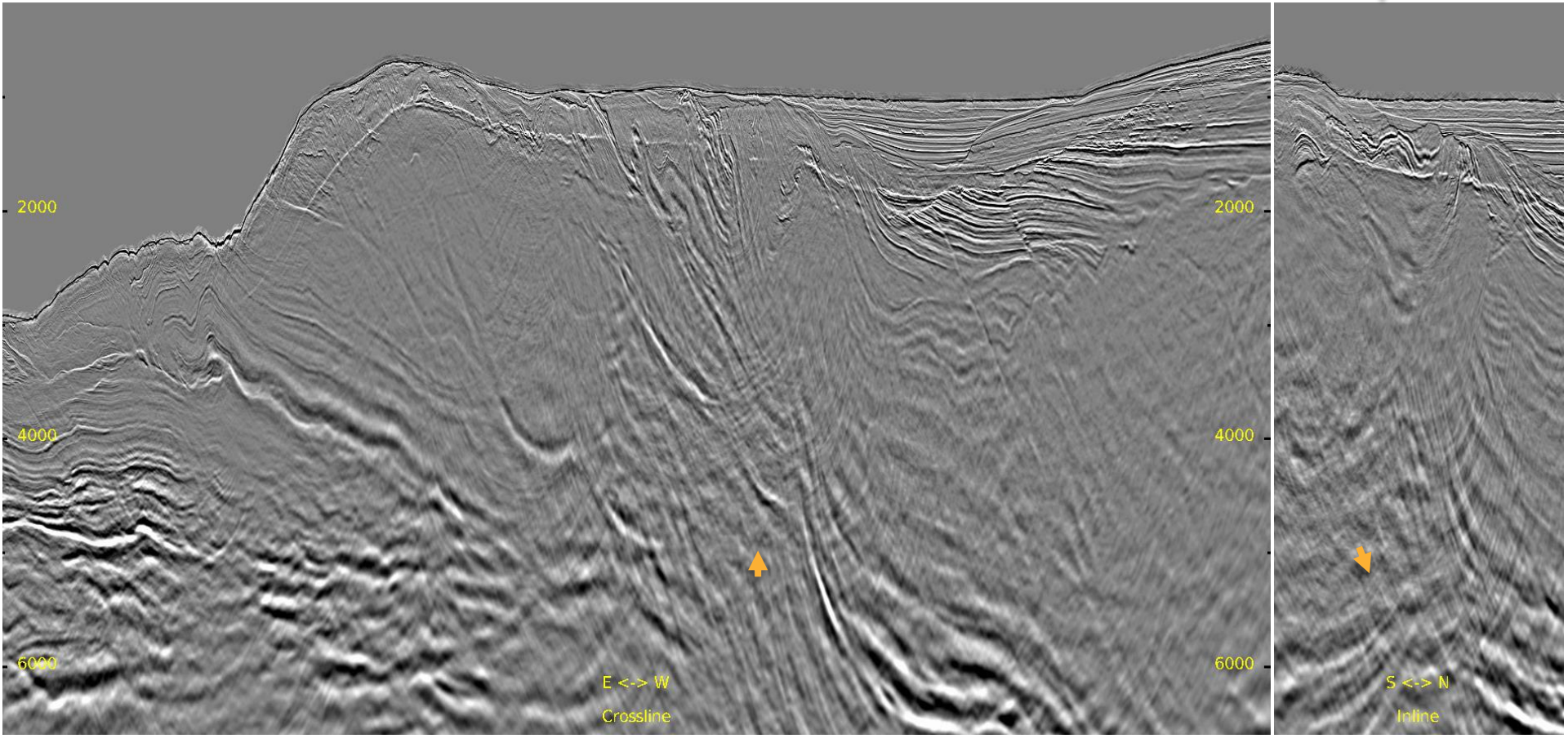




Zoomed Full Stack: Previous Result

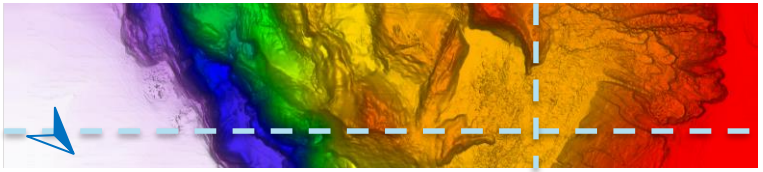
Inline 636 & Crossline 3944

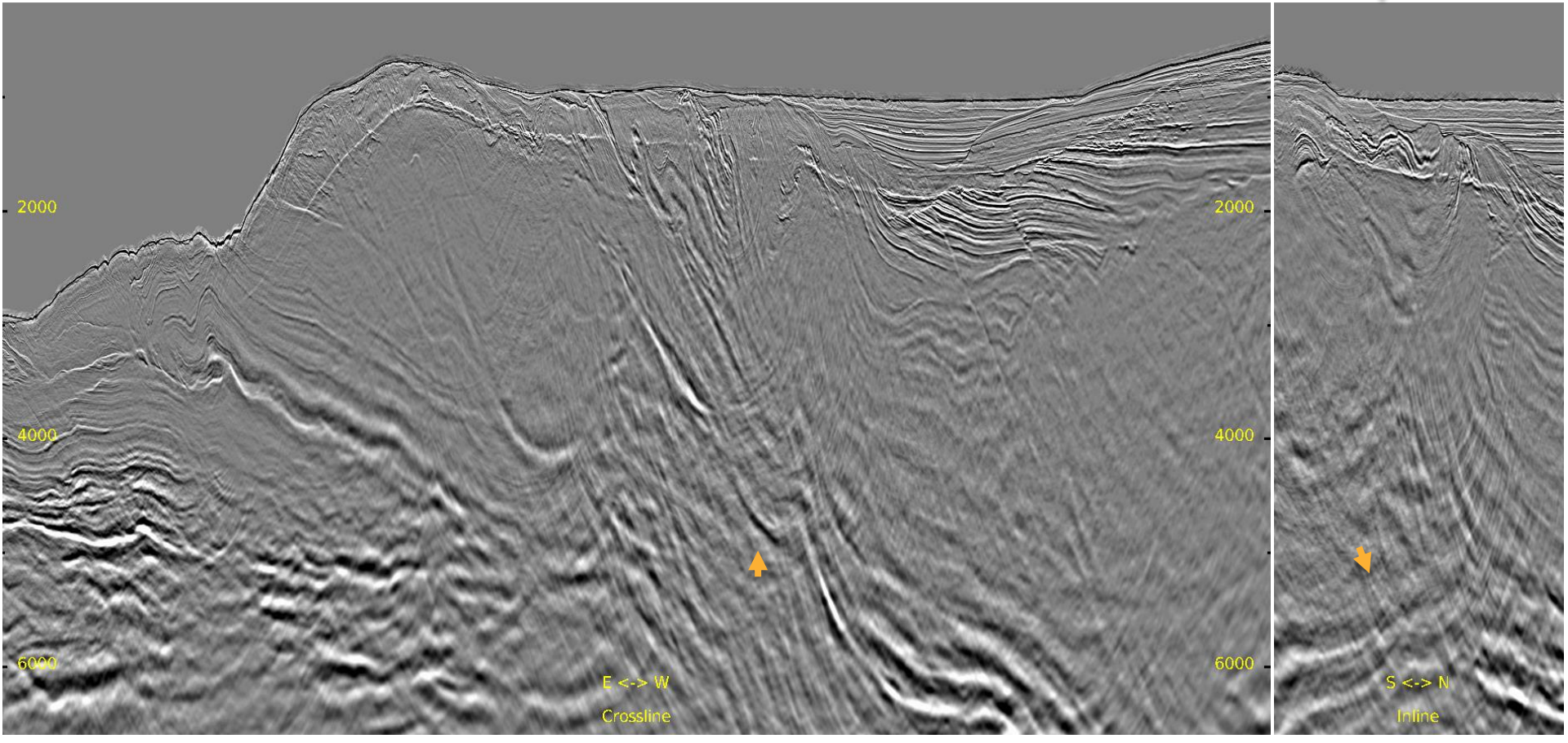




Zoomed Full Stack: Current Result

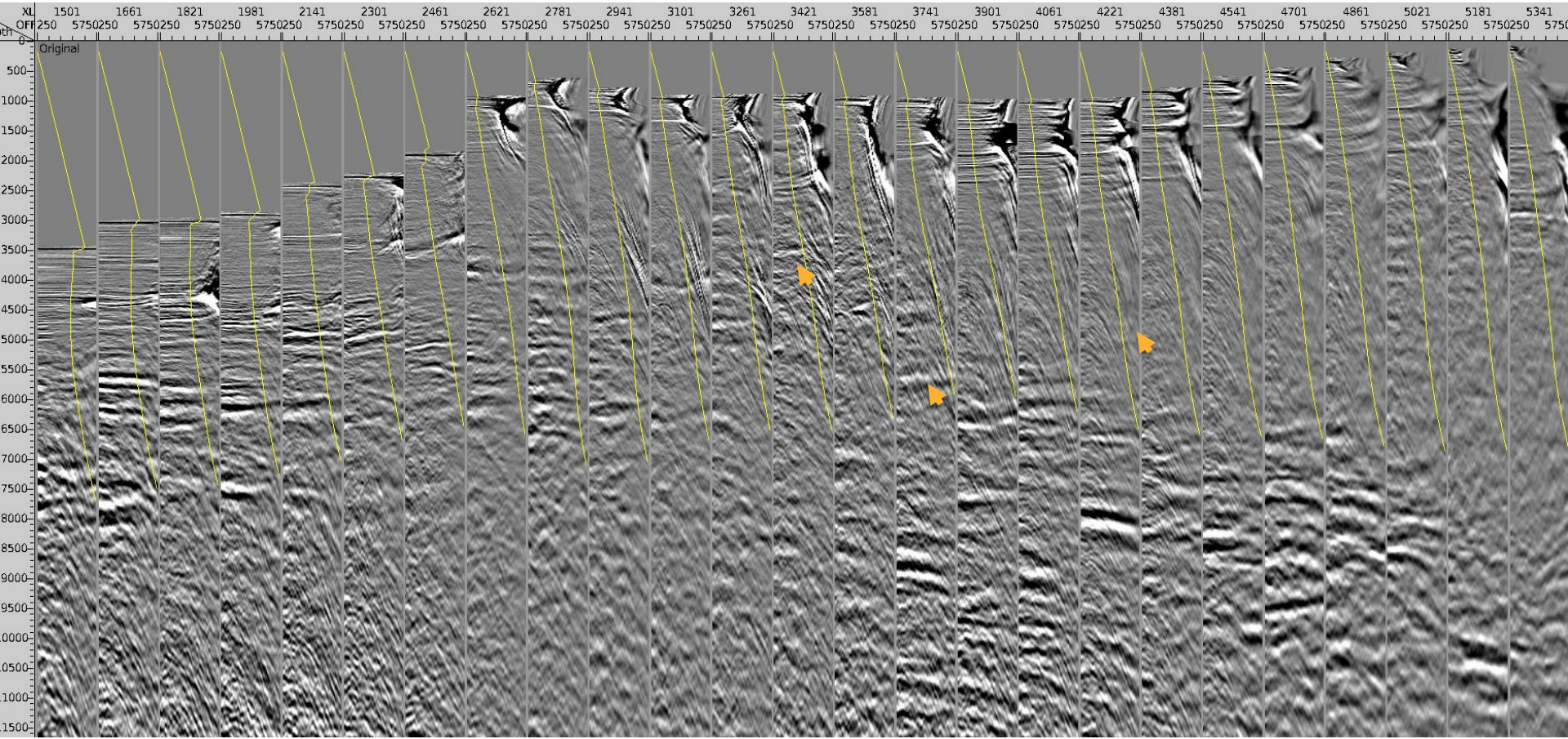
Inline 636 & Crossline 3944





Inline 636 CDP Gathers: Previous Result

35º Mute



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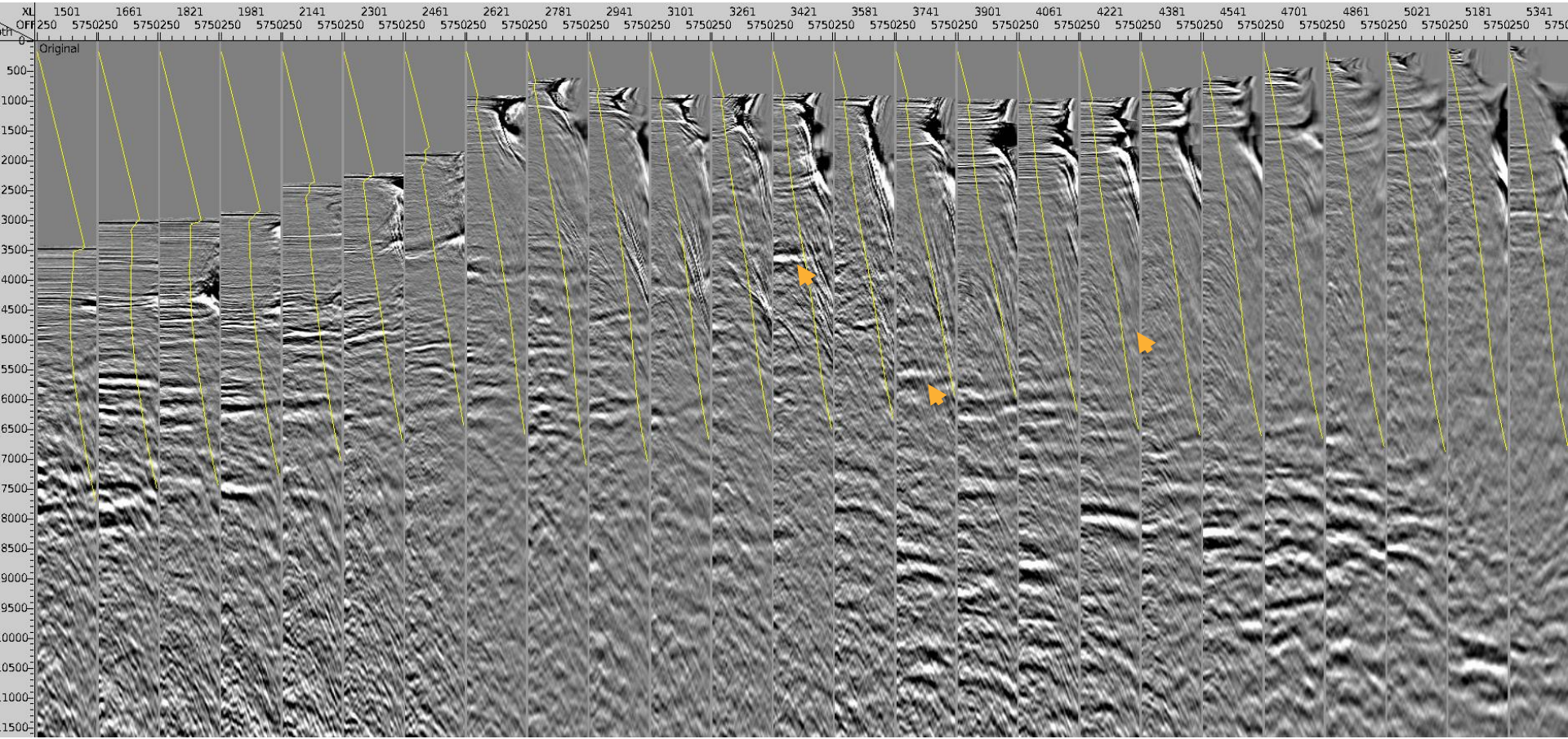
Inline 636 CDP Gathers: Current Result

35º Mute



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