SINKING OPERATION OF THE MAASDELTATUNNEL

PREDICTIONS OF FLOW AND SALINITY

As part of the Blankenburg Connection, the Maasdeltatunnel was constructed in the Scheur. After a failed attempt to sink the second tunnel element in the spring of 2023, Svašek Hydraulics was asked to analyze and predict the flow and salinity in the Scheur to ensure the successful sinking of the tunnel element during a new attempt in the fall of 2023.

The Maasdeltatunnel consists of two tunnel elements, which are sunk into a trench in the bottom of the Scheur. While the first tunnel element was successfully sunk on the first attempt in the spring of 2023, this was not achieved with the larger second tunnel element. Consequently, an extensive measurement campaign was conducted by BAAK BBV, with the aim of gaining a better understanding of the flow and salinity at this location.

This was necessary because the flow in the Scheur is a complex interacting system of fresh river discharge from the Nieuwe Maas and salty seawater with tidal dynamics from the North Sea. Additionally, the wind has a significant influence on the flow and dynamics of the salt tongue at this location.

Svašek used the Operational Flow Model Rotterdam (OSR) to calculate the flow and salinity. Using the measurement campaign, the high-resolution 3D model was revalidated for this location in the Scheur. The results showed that model output closely matches the measurements, both for flow and salinity.

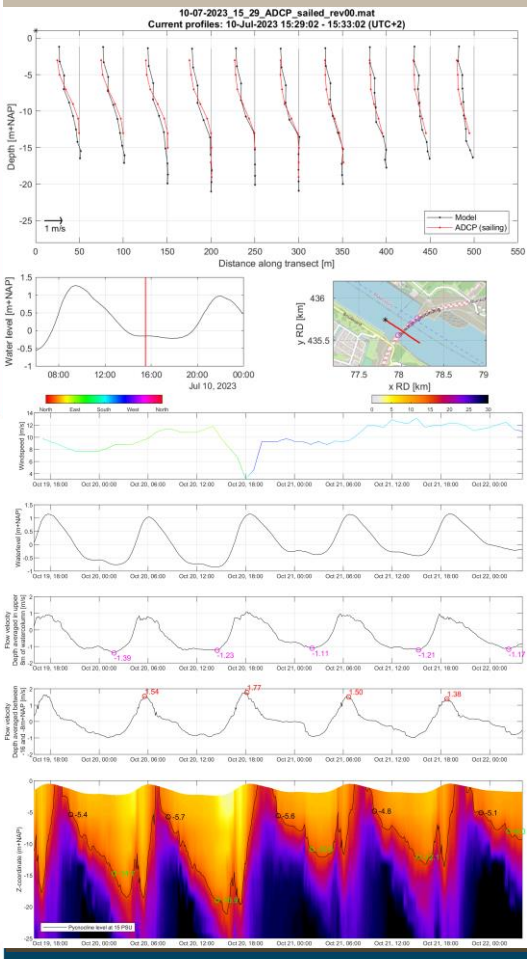
Using the model, an automatic forecast was set up, providing the sinking team of BAAK BBV with a new prediction twice a day. Based on these predictions, they could assess whether the flow and salinity conditions were favorable enough to safely sink the tunnel element. On November 6, 2023, the conditions were met, and the tunnel element was successfully sunk.

CLIENT
BAAK BBV

LOCATION
Scheur, Vlaardingen

DATE
2023

SERVICES
Automatic forecast including flow- and salinity predictions



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