

MIDDELPLAAT

MORPHOLOGICAL DEVELOPMENT OF A TIDAL CHANNEL

DOW Chemical exploits two oil pipelines that cross the highly dynamic Western Scheldt estuary. Due to morphological changes the pipelines get exposed on a yearly basis. At present the solution is to deepen the pipelines every year. This measure cannot be repeated infinitely and alternative solutions are investigated. In this framework a morphological trend analysis of the pipeline route is conducted.

The pipelines trajectory goes from Ellewoutsdijk through the Everingen and South Everingen across the Middelpmaat through the Pas van Terneuzen to Terneuzen.

The main problem the pipelines are exposed to is the migration and change in orientation of the South Everingen over the years.

In the Western Scheldt Estuary two yearly and in recent years yearly bathymetry measurements are available for the period 1955 to 2012. These bathymetries are used to analyse morphological trends along the pipeline route.

Part of the observed trends can be attributed to dredging and dumping for navigation purposes in the vicinity of the South Everingen.

An extrapolation of these trends is used for an advice on the long term stability of the pipelines.

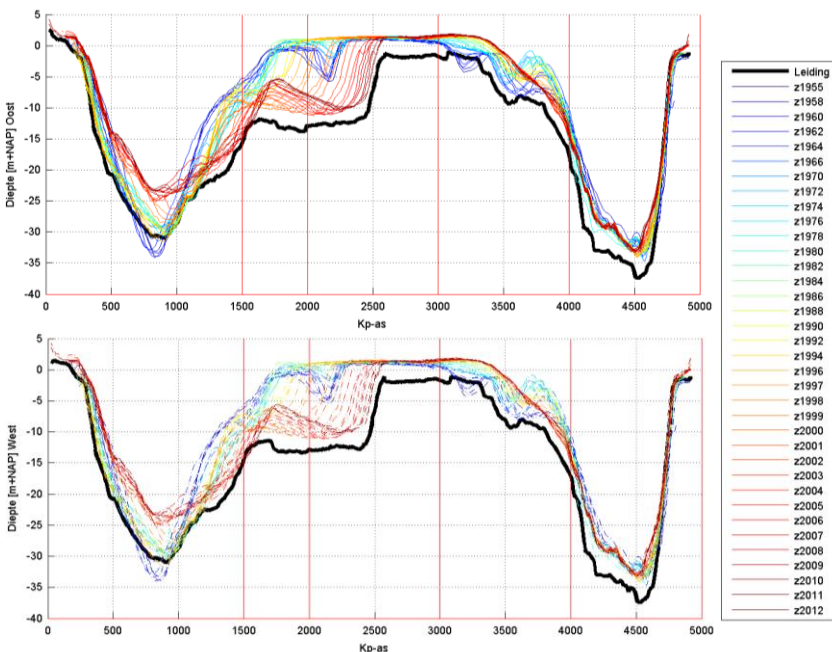
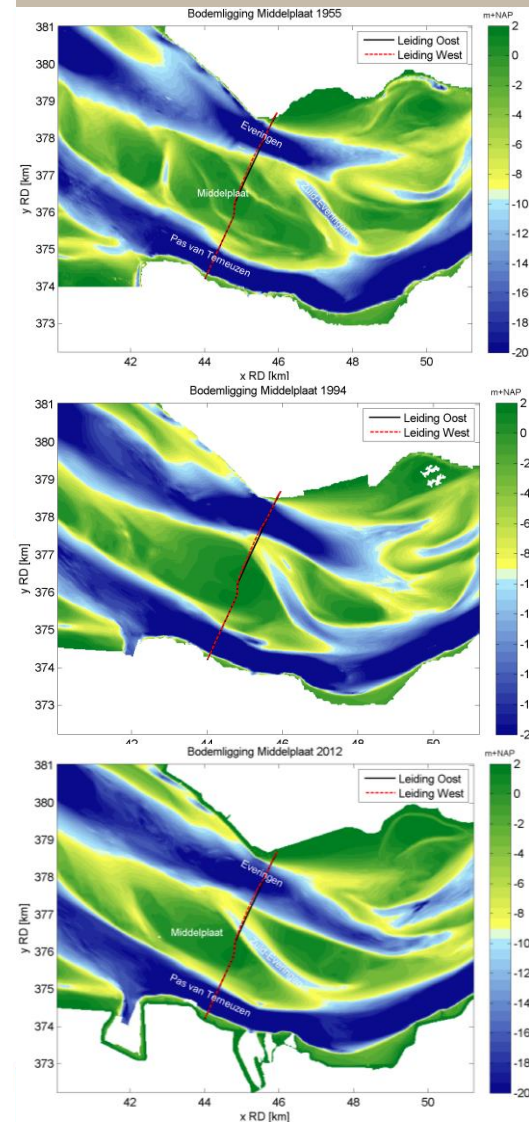
However the future morphological developments will be highly dependent on the dredge and dump policy.

CLIENT
DOW/Lievens CSO

LOCATION
Netherlands

DATE
2013

SERVICES
Morphological trend analysis



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