

# Pumping-stations Rijnland Polder

## WATER MOVEMENT AROUND A PUMPING-STATION

Water board Rijnland intends to renovate the two polder pumping stations of the Elsgeestepolder in 2014/2015. The pumps are situated close together and both discharge into the Haarlemmer Trekvaart. Before the new pumps are put into service, the license application must be completed. Svašek Hydraulics has helped with her specialist knowledge of hydraulics around a pumping station to ensure that replacement of two old pumps has not resulted in unnecessary delays.

The new pumping stations must comply with regulations to ensure safe shipping on the waterways. One of the regulations concerns the maximum allowable cross flow caused by the pumping station. This cross flow may potentially affect shipping, which could lead to dangerous situations. If a cross flow of 0.3 m/s is exceeded, research into the hazards for shipping is necessary and additional measures may need to be taken.

It is suspected that one of the pumping stations does not meet the requirement of a maximum cross flow of 0.3 m/s. A complicating factor is that the flow of the two pumping stations can affect each other. Svašek Hydraulics has modelled the flow

around the pumping stations for the Hoogheemraadschap. Also the need for soil protection at the discharge locations of the pumps is investigated.

The findings have been discussed with the Province of Zuid-Holland. The conclusion was that the calculated cross flow design (just) fulfilled the requirements laid down in the legislation. For the soil erosion a layer of gravel provides sufficient protection in the direct vicinity of the discharge location of the pumping station.

CLIENT

Waterboard Rijnland

LOCATION

Netherlands

DATE

2013

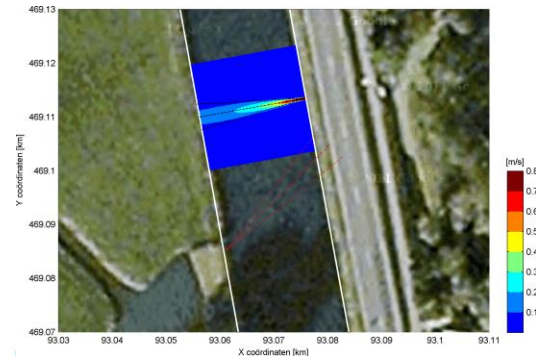
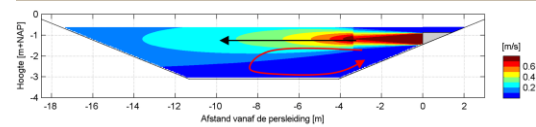
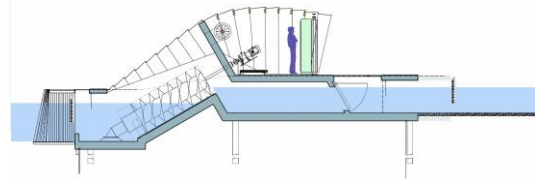
SERVICES

Modelling of cross flow pumping stations,

Assistance license application



Hoogheemraadschap van  
**Rijnland**



# SVASEK

## HYDRAULICS

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