



**Interreg**  
North Sea Region  
**IMMERSE**

European Regional Development Fund



EUROPEAN UNION

# Nya Arendal

## Results from the fieldtest

IMMERSE 1st Transnational Exchange Lab

12 June 2019

Gothenburg, Sweden

IMMERSE 1st Transnational Exchange Lab,  
12 June 2019



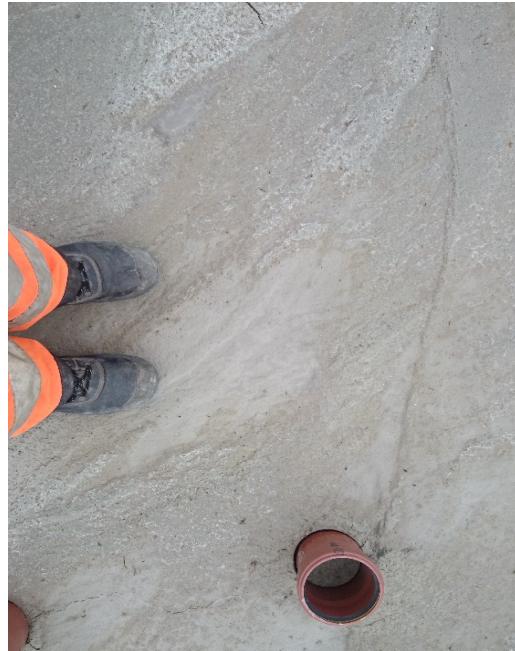
## Nya Arendal



- + Permission at the end of 2015 (M 4523-13)
- + Labrotorietests started in the beginning of 2016
- + Fieldtest March/April 2017

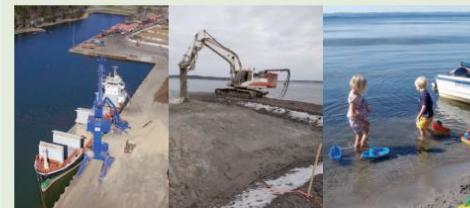


# Finding the best binders and recipe



 **STATENS GEOTEKNIKA INSTITUT**  
SWEDISH GEOTECHNICAL INSTITUTE

Vägledning för nyttiggörande  
av muddermassor i hamn-  
och anläggningskonstruktioner



Stabilisering och solidifiering  
av förorenade muddermassor

Information 20  
LINKÖPING 2011

Stabcon

skjuvhållfasthet efter 28 dygn  
(2-faldig säkerhet till krav i fält)

> 140 kPa

Permeabilitet efter 28 dygn

<  $10^{-9}$  m/s

Utlakning från skaktest

lägre TBT utlakning än från ett  
ostabiliseringssediment

Bindemedel

Stabiliseringssmedel av askor ska ha  
föroreningshalt som underskriber  
MKM



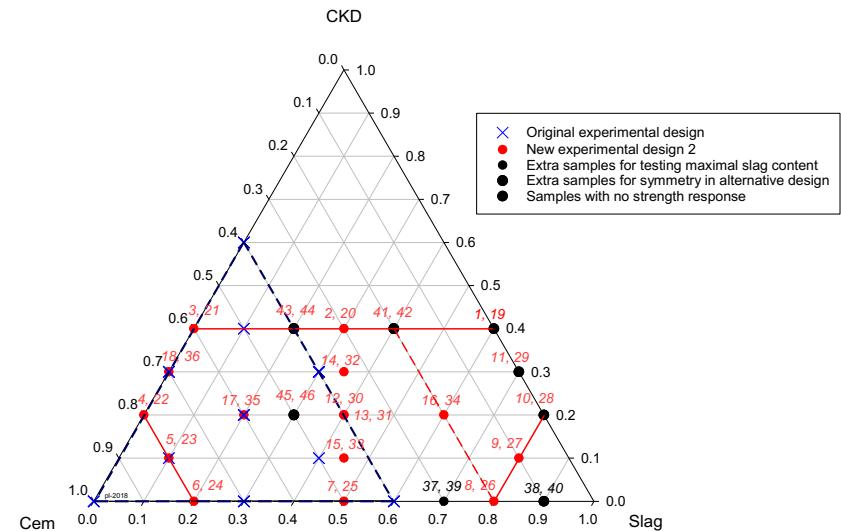
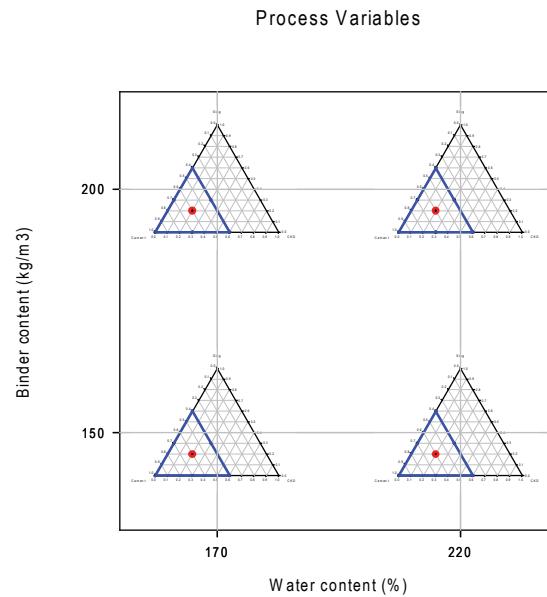
B = Basement (från  
Cementa AB)

E = Slagg (GGBS)  
(från Ecocem, Irland)

O = Flygaska  
(Oil Shale Fly Ash från  
Eesti Energia AS,  
Esland)

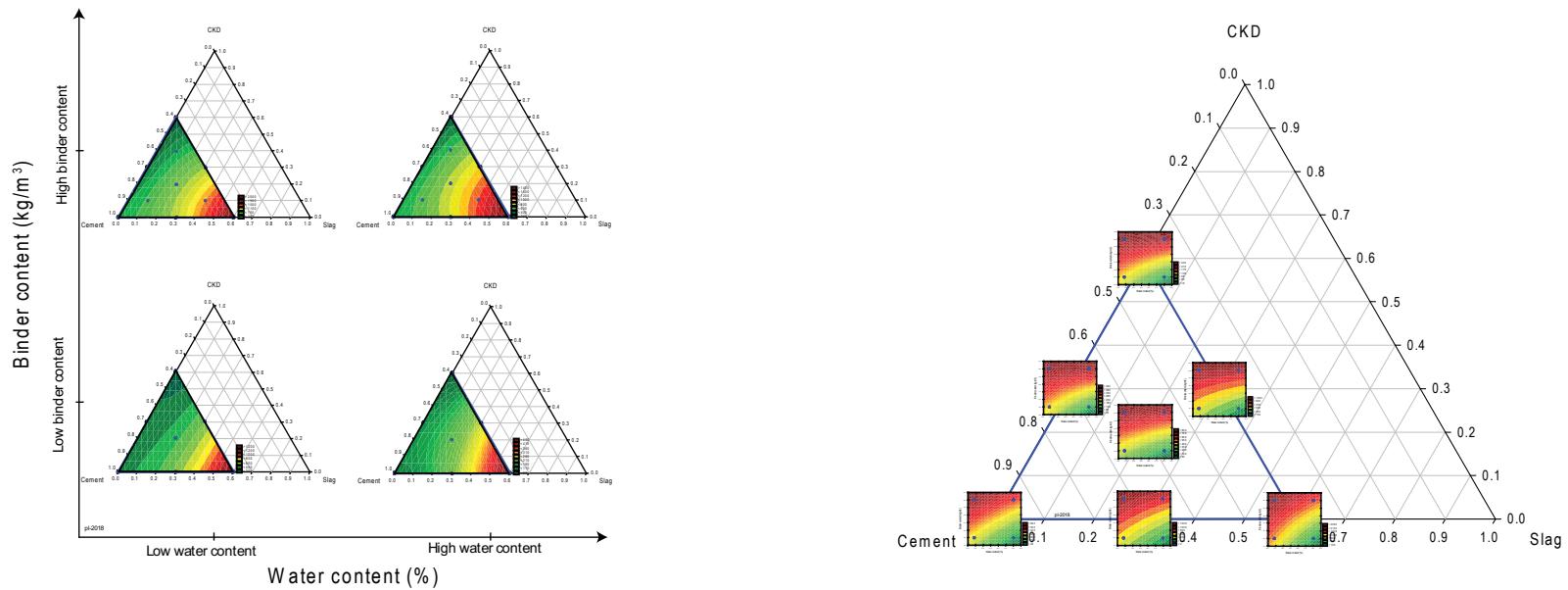


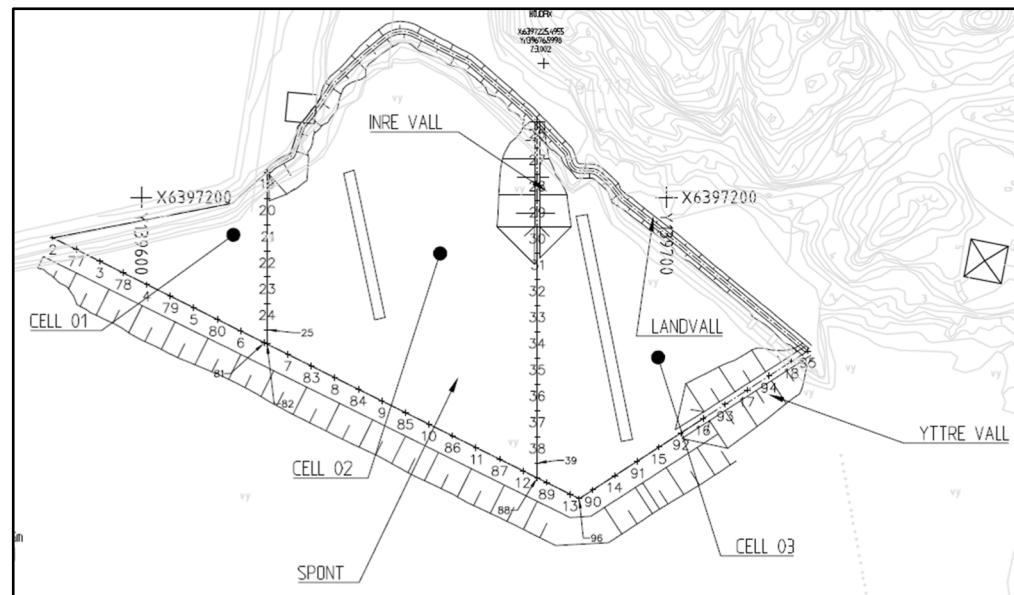
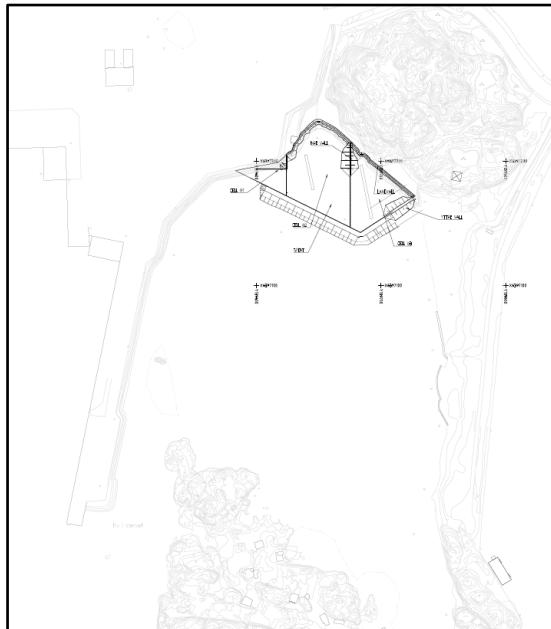
# Binder optimization methods – Factor design and Simplex

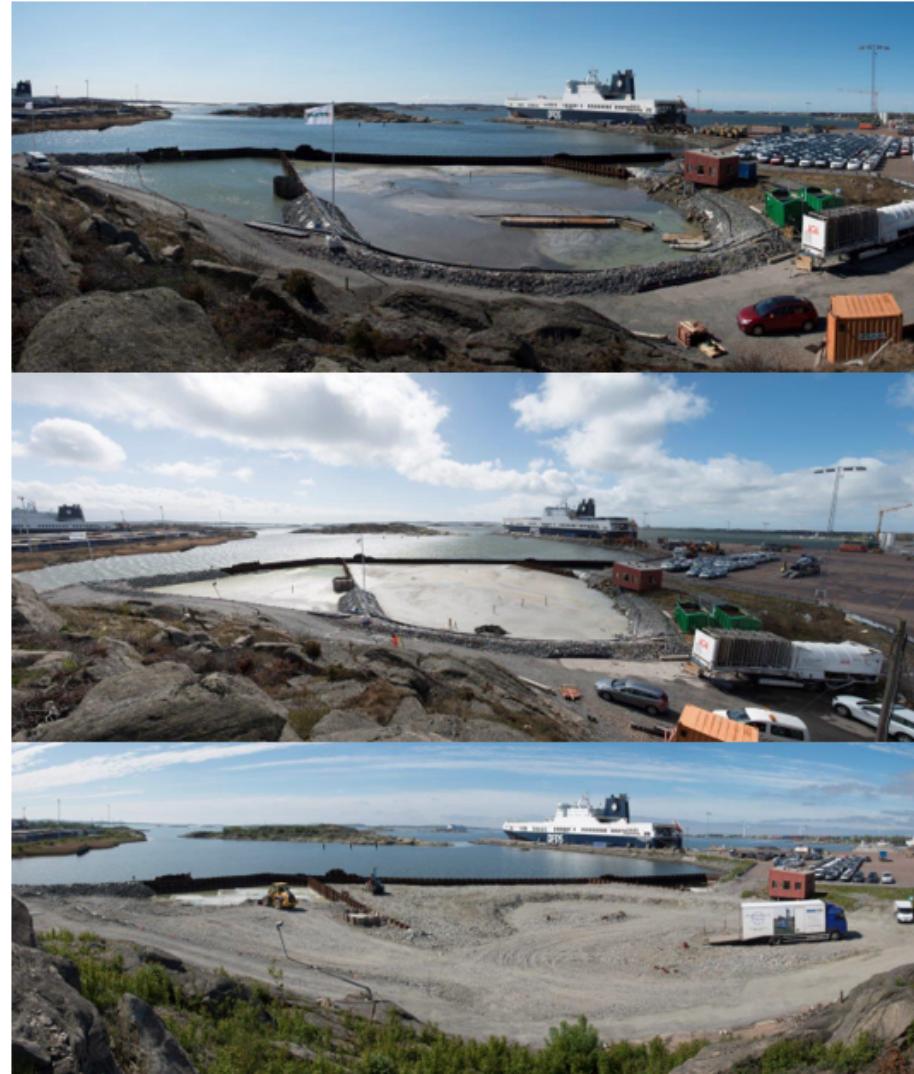




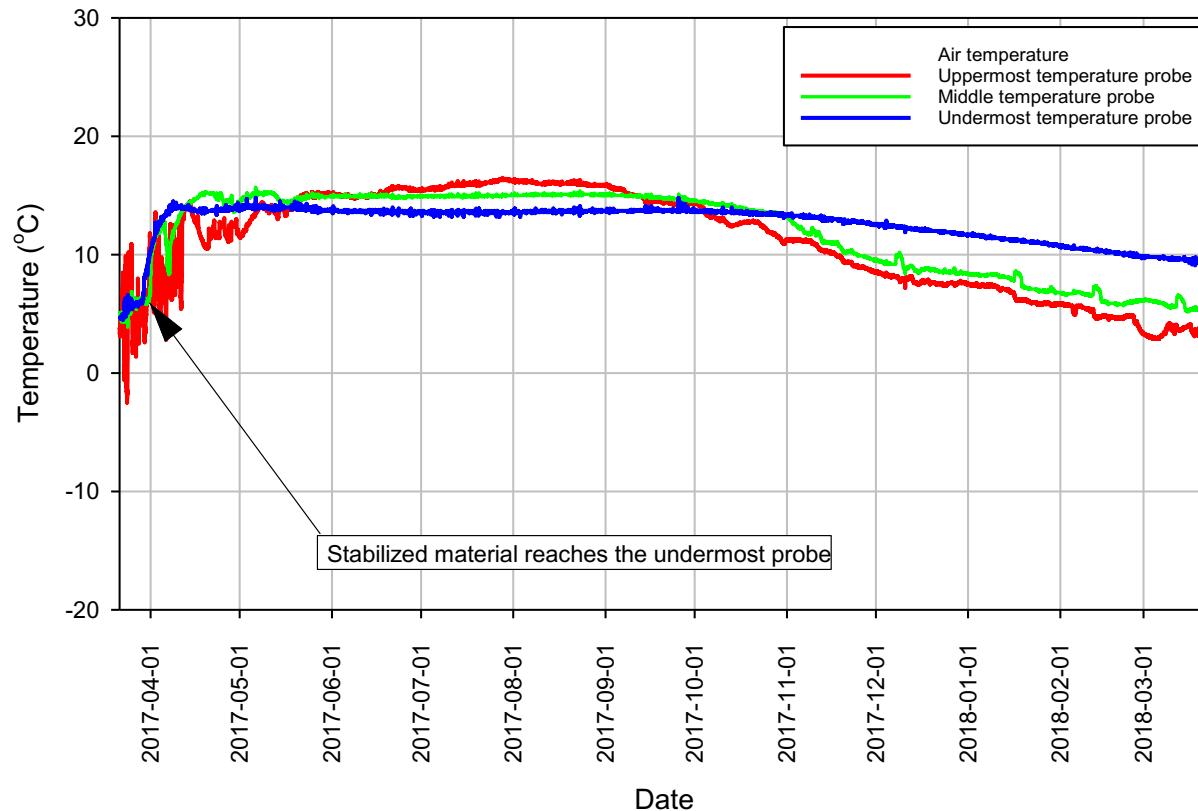
## Binder optimization methods

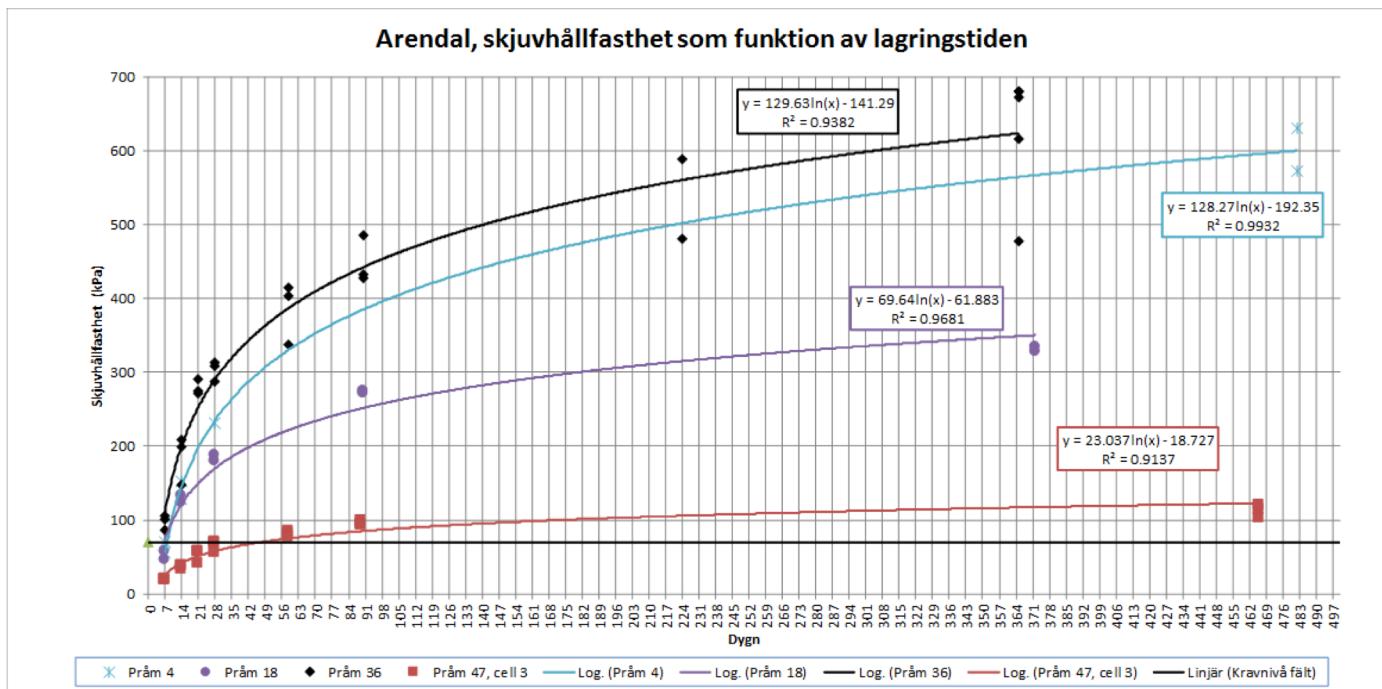






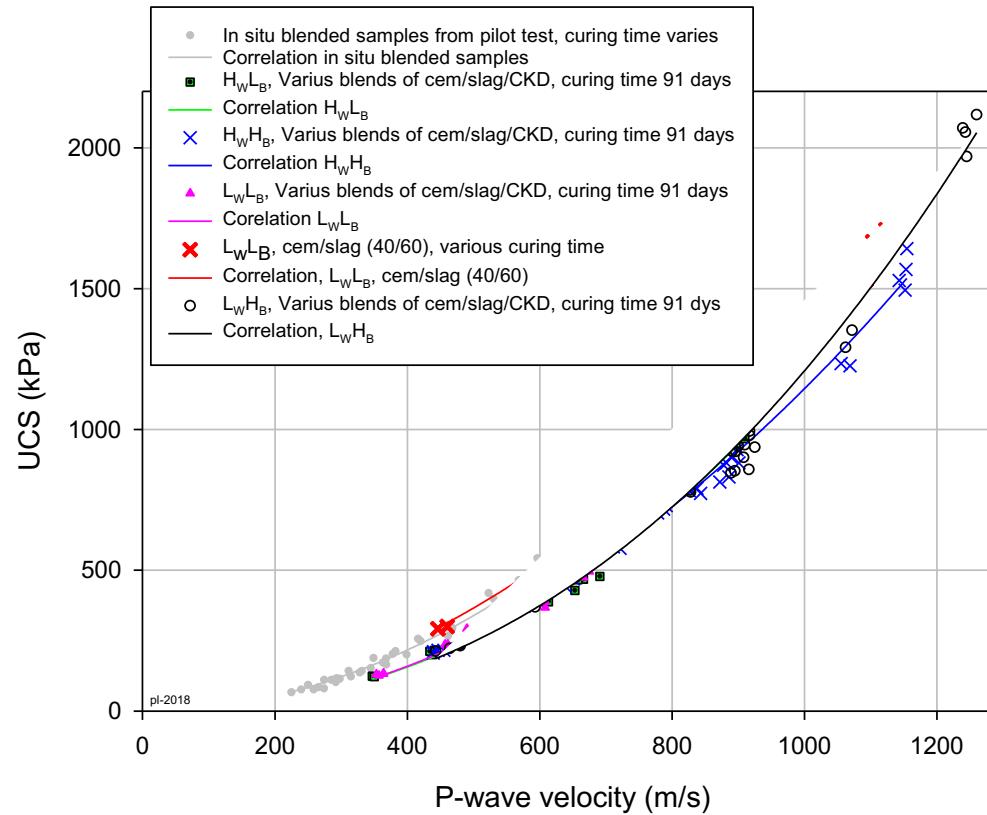
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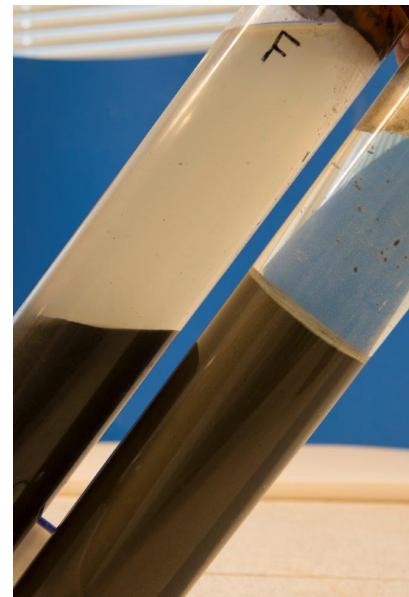


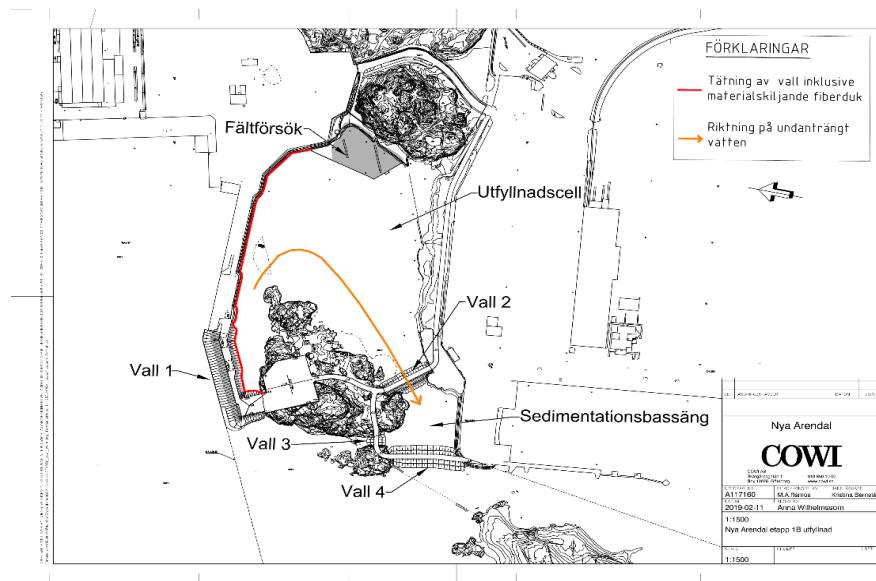
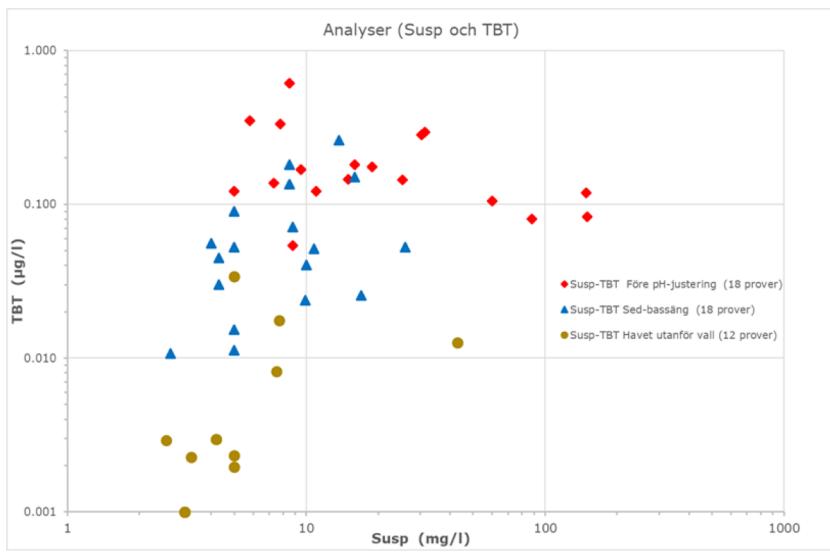




## Results from seismic testing







TBT in the dredged material	Fieldtest	
Average TBT (µg/kg TS)	Total TBT (g)	Total TBT (g) in the outgoing water
143	785	0,9