Sedimentmanagement in the Port of Hamburg

SedNet Special Session: Managing the Elbe Estuary

9th October 2009
The Drainage Basin

Length 1.091 km
Area 148.268 km²
Average discharge 877 m³/sec
Population 25 Million
Dredging has a long history

Steam dredger in 1877
Land Disposal in the 1960’s
Demonstration in 1980
METHA Treatment Plant
Francop Disposal Site – Construction Principle

- Surface Sealing and Cover System
- Alternating Layers of Silt and Sand
- Base Sealing
- Intermediate Sealing
- Edge Support
- Old Flushing Field
- Clay

Dimensions:
- Height: 38 m
- Width: 500 m

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Beneficial Use at Rodewischhafen

Harbour Basin

- Sand
- Silt
- Vertical Drainage
- Mixed Sand and Silt
Beneficial Use / Dyke Construction

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Mercury concentration in fresh sediments

BUP-Programme

METHA in operation

Target
Dredging Amounts from 1996 to 2008

- **Total Amount of dredged material**
- **Head Water Effluent**

- Sand from upstream
- Relocated to Northern Sea
- Relocated within Hamburg
- Land Disposal/Treatment

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Relocation to the North Sea
Maintenance Dredging is necessary 3 to 4 times a year.
Under Keel Clearance
Hopper Dredger

Capacity  10,000 m³
Abandoned Sites

Location: approx. 400 km upstream of Hamburg
Contamination Sources in Elbe Sub-Catchments

Tidal Elbe
Organotin

Havel
Organotin, Zn

Schwarze Elster
HCH; Cd, Zn, Hg

Czech Republic
DDX, HCB, PCB, TBT, PAK, Haloether, Cd, Zn, Hg

Saale
Organotin, PCB, PAK, HCB, Pentachlorbenzol, Pb, Cd, Zn, Hg, Cu, Dioxine/Furane

Mulde
Organotin, HCH, HCB, Dioxine/Furane, Cd, As, Zn, Hg, Cu, Pb
System Analysis – „Sediment Management Tidal Elbe“
Tidal Elbe Management Concept

- Room to the River
- Ongoing Land Disposal
- Integrated Relocation Strategy
- River Restauration
Let’s get it going…

… and thank you for your attention!
Contacts

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