Integrated Management System for Prevention and Reduction of Pollution of Waterbodies at Contaminated Industrial Megasites

Checklist of existing information

Information	Bitterfeld	Port of Rotterdam	Tarnowskie Góry
Megasite area Impact area	25 km^2 50-100 km^2	400 km^2 450-600 km^2	5 km^2 10-20 km^2
Land use (maps)	General topographic map (former) chemical production facilities surrounded by residential areas of Bitterfeld, Wolfen, Jeznitz, Greppin and agriculture/ nature reserves; landscape and hydrology determined by flooded open pit lignite mines	General topographic map Sea Port/Industrial area surrounded by City of Rotterdam, green polders, and North Sea petrochemical production, dry bulk (containers) and wet bulk storage, etc.	General topographic map Mining area/chemical factory/railway distribution centre in close vicinity of residential and natural areas of Tarnowskie Góry Drinking water extraction wells in important aquifers
Documents from involved stakeholders and other institutions	Bitterfeld database, geological model UFZ, data of LMBV	Available regional databases, PoR Municipality of Rotterddam, Ministry of Waterways, site management plans from industrial site users	Data bases distributed over different authorities, Drinking water (wells) quality data
Historical timeframe (use/production)	Chemical production, lignite mining and chemical waste landfilling originating from 1900 and since 1940 focus on chlorinated hydrocarbons and pesticides	Industrial activity from 1920 until today through a gradual expansion from City of Rotterdam towards the sea, with artificial land made in the 1980-1990 (maasvlakte)	Map of old mining activities, chemical plant termination in early 1990; since mid 1995 remediation through excavation and controlled landfilling
Range of substances produced/used/present in soil and groundwater	Chlorinated and non-chlorinated organics, to some extent heavy metals in groundwater	Soil contamination data (Soqumas database of PoR), petrochemical organics	Soil contamination maps, heavy metals, boron
Potential sources (existing landfills, etc.)	Land-fill and high concentration groundwater damage represent four km^2 hotspot source areas, in	Regional maps (soqumas database of PoR , sources in Holocene top soil, and by unknown	Chemical plant, and waste, excavated and partly in controlled landfill, 1/3 of

	Quarternary and Tertiary aquifers. Lower groundwater concentration area's surround these hotspots	number of DNAPL area's in Pleistocene aquifer	contaminated land and landfill materials not included; boron and heavy metals present in two Triassic aquifers
Potential receptors (residential areas, protected areas, rivers, etc.)	Land use /topographic maps River Mulde and tributaries (Spittelwasser, Fuhneau) Flooded open pit mine Goitsche Quaternary / Tertiary aquifers Residential areas of Bitterfeld, Greppin etc.	Land use /topographic maps River Rhine/Meuse Sea Port waters Pleistocene aquifer Future residential use in current harbor region in vicinity of city of Rotterdam	Land use /topographic maps Residential area, ecological land-use two Triassic aquifers
Predominant stakeholders	LAF, MDSE, Municipalities of Bitterfeld, Wolfen, LAWA, Bitterfeld Chemie AG	PoR , Municipality of Roterdam, Ministry of Environment, Ministry of Water ways, 600 industrial site users	