RAWFILL WP I1
Desk study
Archives and inventory report

June 2017

OVAM

Prior to the geophysical surveys, the amount of waste, the landfill area and the waste types must be estimated. These estimations are based on existing databases and archives from OVAM and the site-operator IOK.

ULg submitted a questionnaire to OVAM about some fundamental characteristics for their research. The available answers were summarized in this document.

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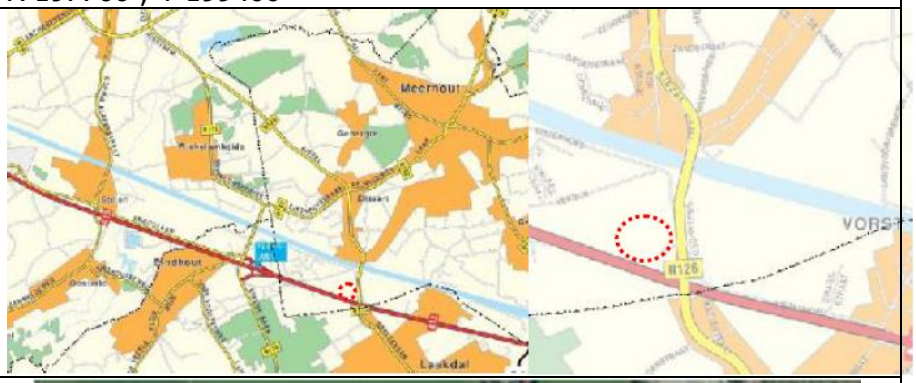
General information

Address	Kiezel 300, 2420 Meerhout
GPS (Lambert 1976)	X 197700 ; Y 199400
Location	
Site detail	

Accessibility	 View on the gas extraction installation (lower part)  Path between the lower and higher part of the landfill. The eastern part of the site is now a waste sorting facility. This is the only entrance to the landfill and is only open during working hours (ca. 8h-16h) and on demand.
OVAM file number	The reference number is 12290. This is an OBO (orientating soil investigation) number. Two investigations were done : in 2000 and 2004.

Geometry

Sections of the landfill	
Thickness of the landfill	The landfill of Meerhout is completely built on the original ground level, therefore the thickness of the waste is the same as the current prominence of 10 and 20 metres respectively.
Topography	The landfill area can be divided into two main areas : the northeastern level of about 10 metres which is the oldest part of the landfill (sixties) and not sealed with HPDE foil. The southern, highest part (20 metres) is the most recent extension dating from the eighties and is sealed properly.

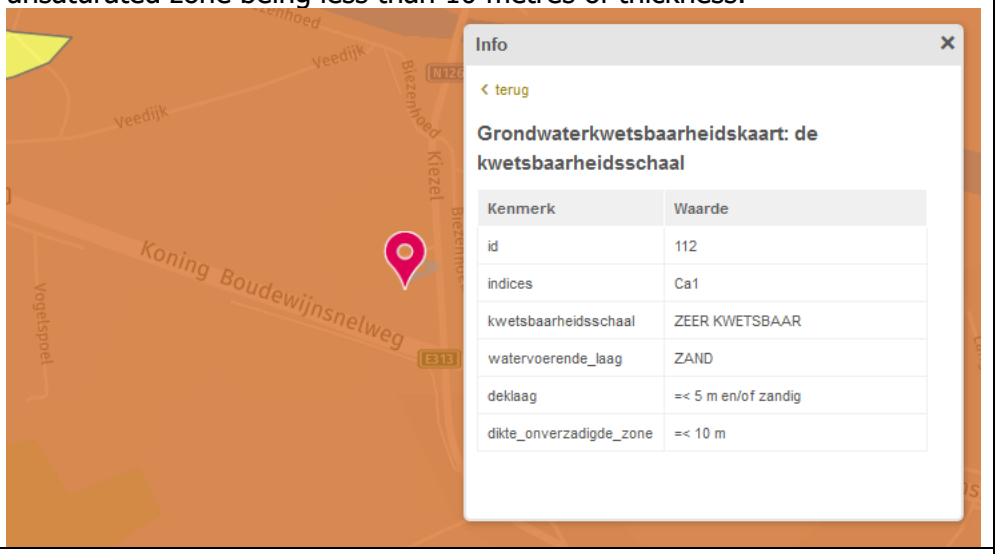
Historical information

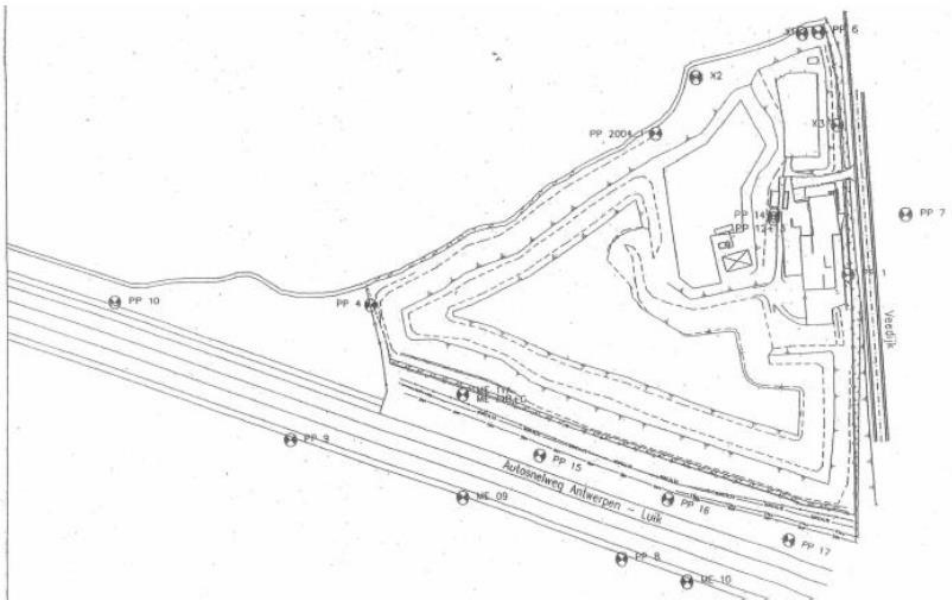
Type of waste by weight	Both municipal solid waste and industrial waste were deposited. Between 1981 and 1997, 942.589 m³ of MSW and 370.909 m³ of industrial waste were deposited.
Dumping method	Accumulation on top with layered mechanical compaction.
Frequency of dumping	At least annually. More information is not available.

Environmental monitoring

Leachate monitoring and analysis	A leachate collection and removal system is installed on site. Two leachate wells collect 814 tonnes of leachate each year. This leachate is treated in an external treatment center – TWZ Evergem.
Gas monitoring	Biogas production in the landfill is quickly diminishing, to the extent that the biogas motor stopped being operational from 2015 onwards. The gas flare still is operational on a monthly basis.
Tomography monitoring	No data available
Temperature monitoring	No data available
Leakages monitoring	Regular checkups were done by IOK in 2015 in the sealed layers and dikes of the landfill. No specific problems were mentioned.
Rainfall monitoring	To be able to get an indentification of the leachate level in the landfill, from July 2002 onwards each month the level was measured in the degasification wells and three other control wells. The measurements were done by IOK and no diverging values were reported.
Microbiology monitoring	Not performed on the landfill.

Characterisation results

Soil and geology	Local geology reveals four distinctive layers below the landfill. The first one, up to five metres thick, are quaternary sands, followed by tertiary sands. Below that is a fifty metres thick layer from the Diest Formation. Even deeper is a 20m thick layer of the Berchem Formation (sand with clay) and Boom Formation (clay)
Hydrogeology	Based on previous investigations, the groundwater level appears to be 1 metre below the original surface level. Based on the topography of the area and on-site visits, the groundwater is flowing in southwestern direction. <u>Vulnerability of the groundwater</u> The terrain is located in an area that is marked as being 'very vulnerable' on the groundwater vulnerability maps. To be precise, the area is indicated on the maps with 'Ca1', which means the sandy water bearing layer is covered only by another sandy layer of less than 5 metres and the unsaturated zone being less than 10 metres of thickness. 
Boreholes	Only those for the monitoring of the leachate, which were already mentioned (see above).
Pits	No information available
Trenches	No information available

Sampling and analysis	 Location of all monitoring wells on the site.
Capping layer	The landfill has a bruto surface area of about 6 hectares. The capping of the landfill was performed in 1998 and consists out of a foil, with a top layer (soil) of 1 metre. On top of this layer, trees and shrubs were planted.
Remote sensing data	No information available.