



Building on yesterday's Wallonia to create Wallonia's tomorrow

Mellery landfill

Mellery is a small semi-rural, semi-residential village situated in the Walloon Brabant, 30 kms south of Brussels.

The Mellery site has been used as a sand quarry before being converted to a landfill site in 1981. Intensive waste dumping was carried out between 1982 and 1988.

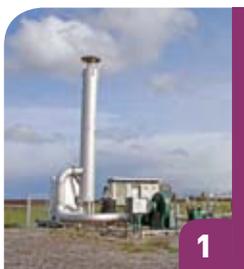
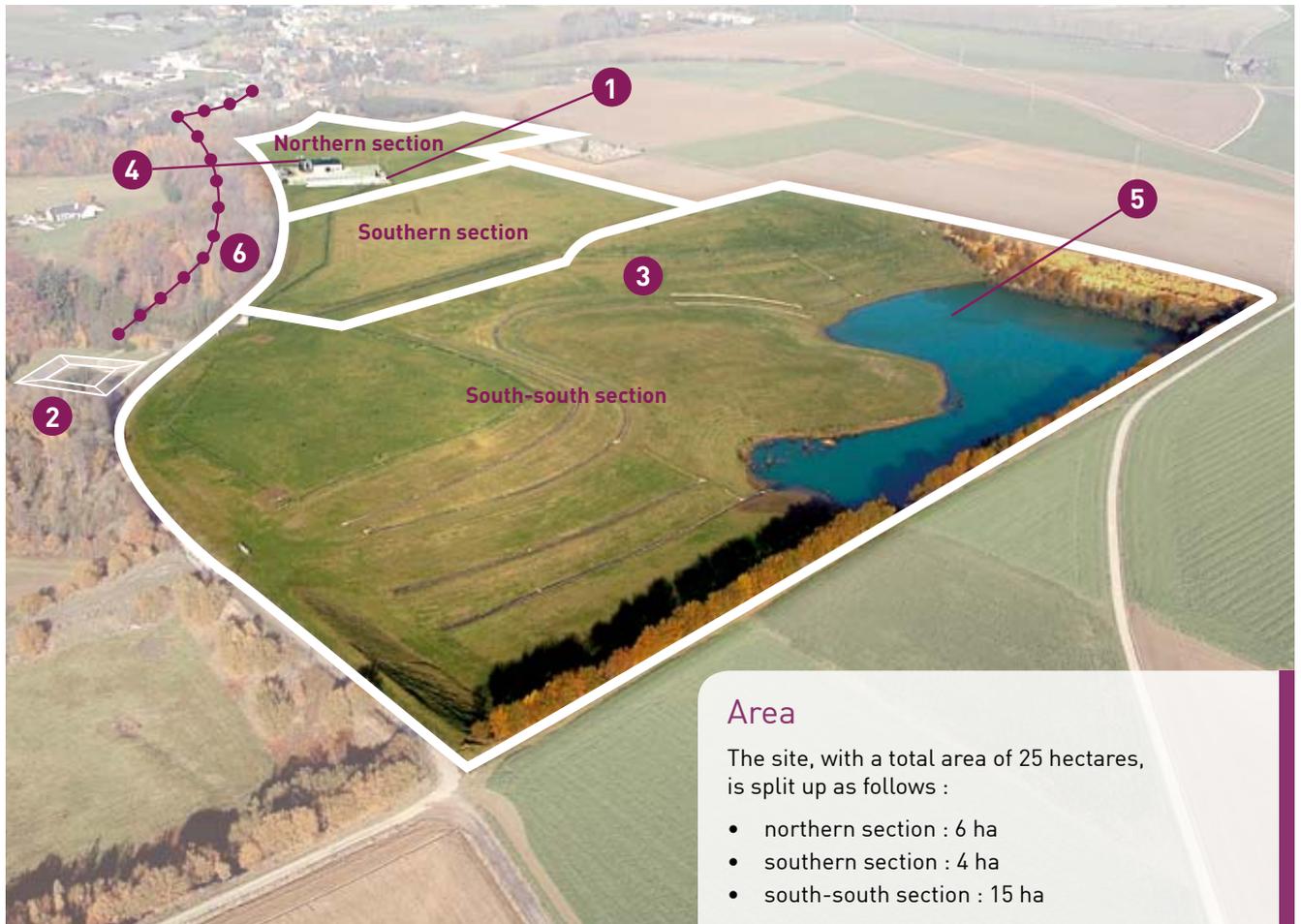
In 1989, following highly visible pollution problems, the site was closed.

Clearing up the site began in 1990 and the dossier was handed to SPAQuE in 1991.

SPAQuE are still responsible for the post-management of the site.



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Arrangement for the extraction and filtration of the biogas

The treatment is done by absorption using active carbon; in effect, the methane concentrations encountered today, no longer allow this to be burned off with a gas flare.

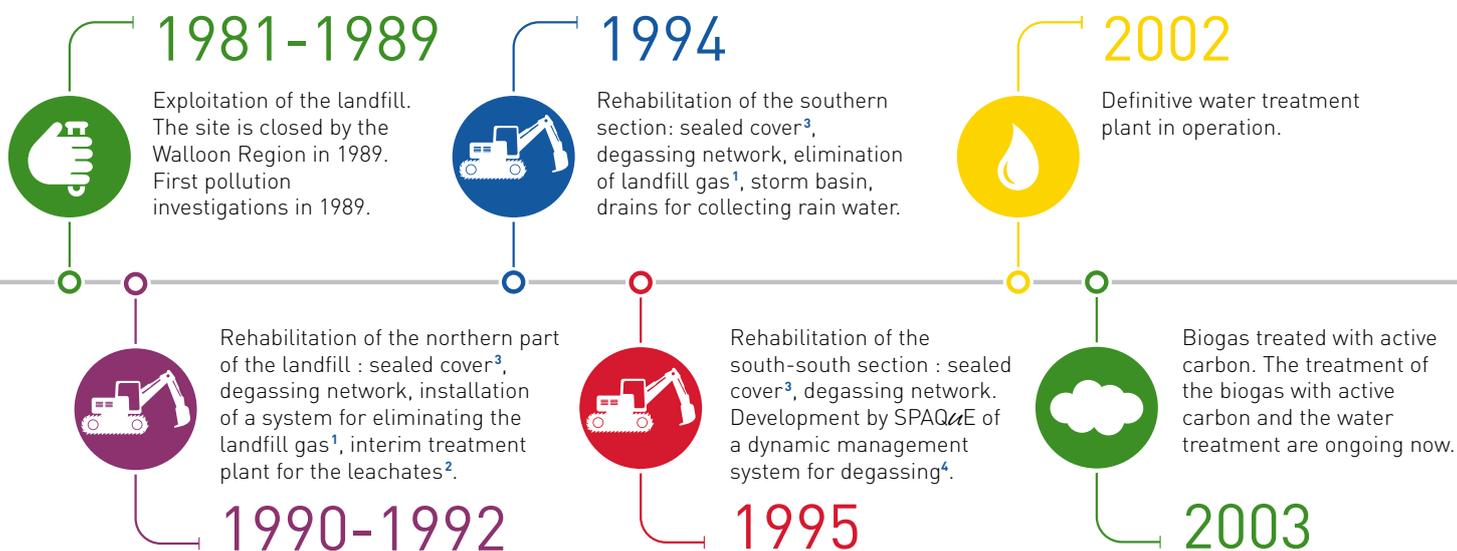


Storm basin

This allows the surface water to be collected and also serves as a transition area between the landfill and the Tobais, the stream below.



Several reference points...



Degassing network

The degassing network, formed with more than 100 wells bored through the rubbish and a network of pipes on the surface, collects the gas from the landfill and carry it towards the elimination system.

3



Water treatment plant

This is designed to treat the groundwater that becomes polluted whilst passing through the rubbish. The permanent water treatment plant came into operation in 2002.

4



Lagoon

Body of water situated in the south-south zone. Its situation upstream of the rubbish gives it the particularity of not being polluted. In effect this lagoon represents the underground water table that hasn't yet soaked through the rubbish.

5



Pumping curtain for the gas and the leachates

Curtain formed with about 40 wells designed to pump the gas and leachates from the landfill. It prevents their migration towards the neighbouring fields and the village. Risk of pollution or explosion, are thus avoided.

6





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Daily management

A maintenance team regularly visits the site. Their work consists of maintaining the degassing network of the landfill in good order and, peripheral to that, the biogas treatment unit and the water treatment plant.

The gas contained in the landfill is controlled, preventing any risk of explosion or fire. The leachates² are treated in such a way as to respect the norms imposed by the Walloon Region.

Mellery in figures

- Total area : 25 ha
- Northern section : 6 ha
- Southern section : 4 ha
- South-south section : 15 ha
- Quantity of waste buried : about 1.000.000 m³
- Output from the water treatment plant : 25 m³/h
- Flow from the unit treating the biogas extracted from the landfill : 50 m³/h
- Duration of the rehabilitation and its monitoring : about 30 years
- Estimated cost of rehabilitation and monitoring : about 27.000.000€

Glossary

- 1 **Landfill gas** : Gas coming from the decomposition of the organic waste and composed essentially of methane and carbon dioxide.
- 2 **Leachate** : water polluted by contact with the waste.
- 3 **Sealed cover** : cover laid over the waste and sealed at two levels :
 - it prevents the gas from leaking into the atmosphere ;
 - it stops rainwater from infiltrating the waste and polluting the water table.
- 4 **Dynamic management of the degassing** : system developed by SPAQuE and which allows the quantity of gas burned to be adapted, in real time, depending on the variations in atmospheric pressure.

Thanks to this system, at no moment can the landfill gas¹ escape through the landfill walls.

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