

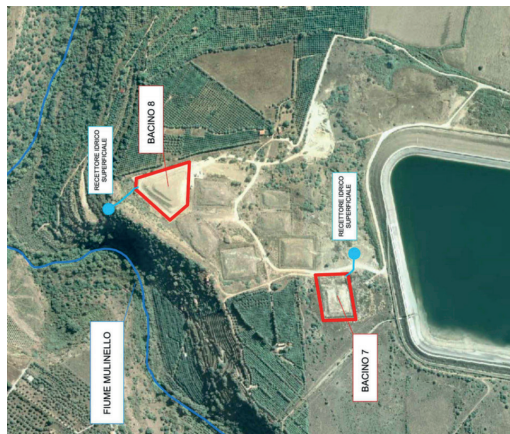
ENVIRONMENTAL EMERGENCY AND PERMANENT MEASURES IN AUGUSTA

The design was developed in accordance to the need of the Municipality of Augusta to operate the permanent safety measures (according to the Law Decree No. 152/06 and further amendments) for the municipal landfills located in “Ogliastro di Sopra” district. In particular, basins No. 7 and No. 8 have repeatedly caused leachate spilling in the last years, at the same time with heavy rainfalls. This is caused by the lack of the waterproof final capping of the waste and so the rain infiltrates into the waste mass. The lack of adequate storage tanks has also caused these problems because the leachate cannot be pumped and stored during these meteorological events.

The project of the Emergency, Operational and Permanent Safety measures concerns the following topics:

- to isolate the landfill basin by the rainfall;
- to offer the maximum hydraulic safety of the adjacent surface area, through the interception and removal of all the surface rainwater by the construction of drainage canals onto the landfill basins which are linked to the perimetral drainage system; the contour Of the bordering areas (owned by the Municipal Administration too) allows the natural removal of the collected water.

Therefore the purpose of the entire project is to guarantee the environmental protection of soil, surface water and groundwater from any contamination due to the waste mass, interrupting the leak of leachate from the landfill basins and preventing the infiltration of rainwater into the waste mass.



DESIGN DATA

Public client Comune di Augusta (SR)
Tasks assigned and carried out Final design for Emergency and Permanent Safety Measures
Cost € 1.126.317,05
Location Augusta (SR)
UTM Coord. (Zone 33S) 511,274 E - 4,122,395 N
Surface of the landfill basin
basin No. 7 8.000 m²
basin No. 8 10.000 m²
Disposal period
basin No. 7 2001 - 2003
basin No. 8 2006 - 2006
Design period 2012

TECHNICAL DATA

Hydrologic Assessment of the landfill basins' area to calculate the project hydraulic conditions
 Emergency Safety Measures needed to reduce the possibility of leachate load by pumping it away from the collection wells and directing it to authorized plants for disposal. This to safely operate the following remediation steps
 Re-modeling of the final disposal level so as to give adequate slope to the upper area of the basins
 Supplying of waterproofing layers for the upper covering, through a geomembrane high density polyethylene (HDPE) layer with a thickness of 2 mm (“double rough” type)
 Construction of drainage trenches on the summit of the basins in order to control meteoric flows
 Arrangement of vent systems for the biogas trapped under the HDPE layer
 Hydraulic check of the surface drainage sections to avoid the erosion of the designed works