



MUCONE RESERVOIR

Italy, 1987

PROJECT CHARACTERISTICS

Works: Refurbishment of an existing annular reservoir and relining the old bituminous concrete facing with a PVC geomembrane protected.

Purpose: irrigation

Dimensions:

- Height: 7.05 m
- perimeter: about 900 m
- storage: 300 000 m³
- slope angle: 2H /1V

Materials:

- PVC geomembranes
- PP PET geotextiles
- geocomposites for drainage
- concrete slabs as a protection over the bottom and shotcrete as a protection on the slope.



PROFESSIONAL SERVICES PERFORMED

Construction design of the waterproofing system, inspection during construction.

Mucone reservoir is a gravel embankment with bituminous facing on the river Mucone, Calabria. Relining was applied in 1987 to waterproof the cracked and leaking original facing. The bottom portion of the reservoir was waterproofed with, from bottom to top: 1) high transmissivity geocomposite for drainage, 2) polyester geotextile as drainage and separator between the geomembrane and the drain, 3) 2 mm PVC geomembrane as waterproofing element, 4) polypropylene geotextile as separator, drainage and protection, 5) 0.1 mm polyethylene geomembrane to prevent penetration of the concrete into the underlying geotextile, 6) reinforced concrete slabs as protection.

On all slopes, the reinforced concrete slabs 6) have been replaced by gunite, reinforced with polypropylene mesh, applied directly on the geotextile. The waterproofing PVC geomembrane has been thickened to 2.5 mm in consideration of its increased exposure.

Uplift pressure under the liner are checked by 8 electropneumatic piezometers.

