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Civil Engineering

Sewage treatment station by lagoon system of the Oued Souf Valley in Algeria

A benchmark structure for protection of the water table in an arid zone

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**The aerated lagoon: an
optimal solution for
treating sewage and for
depolluting the Souf
Valley's water table**

**A large-scale and
essential project for the
social and economic
development of the El
Oued Souf region**

**300,000 m² of Teranap
331 TP elastomeric
geomembrane, laid by
CHIALI Services**

**Teranap TP elastomeric
geomembrane: a
waterproofing solution
that it perfectly
corresponds to the
requirements of this
jobsite**



Located 620 km southeast of Algiers, the Souf Valley region is expected to confront a problem of pollution of its water tables. These are a crucial factor for this populated region that lives mainly from growing dates. The solution is a benchmark project to protect the environment, laying 300,000 m² of waterproofing, utilising Teranap 331 TP elastomer geomembrane, installed by CHIALI Services waterproofing works company, Algeria, subsidiary of CHIALI Tubes, the registered office of which is in Sidi Bel Abbes, in western Algeria.

The Souf Valley region is bordered by the sea of dunes of the Great Eastern Erg. Its more than 600,000 inhabitants live essentially from growing dates and from commerce. The main urban centre of that region, El Oued, familiarly called the city of the one thousand cupolas, is located at the crossing of the main roads linking Biskra, Tebessa, Tougourt, Ghardia and Tozeur (Tunisia).

The Souf Oued Valley covers 3 000 km² within a geographical configuration, the topography of which is flat and without water escape opening. So the region's economy is mainly based on raising dates, supported by a traditional irrigation system that draws on the resources of the water table.

To face up to the ever-growing needs for fresh water due to strong population growth, but also due to needs for water for irrigating food crops, the local people resorted to the resources of deep layers, all the way down to the water table. Well, in the absence of sewage and drainage systems and in the absence of a water escape opening, this water as it reached the water table, raised its level and polluted it.



The aerated lagoon: an optimal solution for treating sewage and for depolluting the Souf Valley's water table

To solve the problems, very large aerated lagoons were built in the valley to drain off and treat all the region's waste and run-off water.

Teranap TP elastomer geomembrane was used to waterproof those lagoons, taking into account the nature of the terrain and the particular conditions under which the works were to be executed.



A large-scale and essential project for the social and economic development of the El Oued Souf region

These lagoon structures drain off the waste water from the sewage networks of all the conurbations of the El Oued Valley.

A gigantic project, it is going to provide the population with the conditions indispensable for health and convenience, but it is also going to contribute to upgrading the cultivation of food crops which, in addition to the financial advantages, will make it possible to reduce rural exodus. So this project, linked to protection of the environment, will

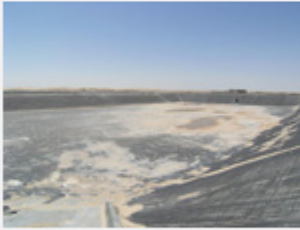
have immediate effects on the regional economy and on maintaining its population size.



300,000 m² of Teranap 331 TP elastomeric geomembrane, laid by CHIALI Services

Chiali Services is a subsidiary company of the CHIALI Group, leader in Algeria in manufacturing synthetic piping (PVC, polyethylene). Hence the CHIALI Group is an essential player in the field of hydraulic and environmental development and its influence now extends outside Algeria.

The CHIALI Services installation teams were trained at the SIPLAST training centre. Thanks to the theoretical and practical teaching, these same teams were successful in passing the certification of the « Geomembrane Application » Service, issued by the "Association pour la promotion de l'assurance qualité dans la filière du textile et de l'habillement" (ASQUAL) (Association for the promotion of quality assurance in the fields of textiles and clothing).



Teranap TP elastomeric geomembrane: a waterproofing solution that it perfectly corresponds to the requirements of this jobsite

In spite of the high temperatures in this region on the gateways into southern Algeria, the job was completed in a very short time (300,000 m² laid in less than twenty weeks) thanks to well-trained teams of welders.

Moreover, the Teranap TP geomembrane was particularly appropriate for this site subject to the hazards of sand storms, thanks to its weight that keeps it very stable during laying. Its insensitivity to the major temperature swings that can be encountered in this region were also a decisive criterion for choosing the geomembrane.

Jobsite identification sheet

Contracting Authority:
Office National de l'Assainissement/ONA/MRE
(National Sewage Treatment Department)

Earthworks:
Texeira Duarte / Portugal

Installation Company:
CHIALI Service / Algeria

Waterproofed surface area:
300,000 m²

Period of the works on the site : 2008-2009

Installed SIPLAST geomembrane:
Teranap 331 TP



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