



Case Study

application	Subgrade Stabilization
location	San Diego, CA
product	Mirafi® RS580i & Miragrid® 2XT

job owner	The United States Navy
contractor	Nova Underground

TenCate™ develops and produces materials that function to increase performance, reduce costs and deliver measurable results by working with our customers to provide advanced solutions.

THE CHALLENGE

At the Naval Base in Point Loma California, located at the southern end of Rosecrans Blvd., eight fuel storage tanks are being constructed on soft soil foundations. The design for the large diameter storage tanks requires stone column footings. As a precautionary measure, cast in place containment dike walls surround the tank farm in the event of a fuel spill. Soft pumping subgrade was discovered by the contractor when excavating for the dike wall footings. TenCate Geosynthetics was asked to provide a solution for subgrade stabilization.

THE DESIGN

TenCate provided a roll of the new Mirafi® RS580i high strength woven geotextiles. This patent-pending double weave technology provides the highest biaxial tensile strength in the industry along with excellent characteristics of separation, filtration and lateral confinement. These four design properties are necessary in developing subgrade stabilization.

THE CONSTRUCTION

The roll of Mirafi® RS580i was placed directly on the pumping subgrade. A 12 inch thick section of 2" diameter crushed stone was placed on the geotextile. The stone was spread using bulldozers and was then compacted. A layer of Miragrid® 2XT biaxial geogrid was placed above the stone layer, an 8" thick section of crushed recycled concrete was placed on the geogrid. Water was then added to this crushed base material. Compaction of the material resulted in a tight foundation section ready for the dike wall concrete footing.



Preparation of Mirafi® RS580i material for placement.



Initial area where Mirafi® RS580i was tested.

THE PERFORMANCE

The use of Mirafi® RS580i eliminated the pumping subgrade condition.

Mirafi® RS580i provides:

- Superior tensile strength for subgrade support
- Separation of the pumping soils from the aggregate base
- Filtration and drainage of the water from the pumping soils
- Lateral confinement of the stone section

The result is a completed stable platform for the construction of the cast in place fuel containment dike walls.



Base material being end dumped and spread on Mirafi® RS580i.



Installation of Mirafi® RS580i on soft soil area.

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