

Tensar® NX650™ Geogrid Provides a Constructible Solution Over Soft, Pumping Soils

Nitrogen Production Facility

Donaldsonville, Louisiana

CHALLENGE

At a nitrogen production facility in Donaldsonville, Louisiana, the project team needed to construct a ring road to support the construction of a new building. As contractors tracked equipment across the area, the native soils began pumping water and became progressively wetter and softer. One way to manage this would have been to excavate the soft material as needed and replace it with flowable fill followed by 18 inches of structural fill—but the contractor asked for other options to consider.

SOLUTION

The project engineer consulted the geotechnical engineer, who partnered with Tensar to develop a geogrid solution designed to bridge the soft soils without the need for over-excavation and expensive fill material. Tensar assessed the site concerns, and provided two possible approaches.

The selected option involved incorporating a layer of Tensar NX650 Geogrid (an integrally formed geogrid engineered for mechanical stabilization applications) over the native soil, followed by 14 inches of sand fill, a second layer of NX650 Geogrid, and a six-inch limestone cap.

Although the native soils were pumping water, Tensar engineers determined that a geogrid/geotextile composite product (FilterGrid™) was not required for the selected section. Instead, the 14-inch sand layer could serve as a filter when placed in a single lift and compacted with a smooth drum roller in non-vibratory mode. The design gave the project team an alternative to the originally proposed over-excavation, flowable fill and 18-inch structural-fill approach.

RESULTS

- Provided a constructible ring-road design over soft, pumping soils.
- Eliminated the need for over-excavation and flowable fill in the selected design.
- Used the sand layer for filtration, avoiding the need for FilterGrid™.

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PROJECT TEAM

Product
Tensar® NX650™ Geogrid

Installation
May 2026



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