In the top left image, mattress sections are filled with stone (stone size varies) and the geogrid is seamed shut. In the top right image, REACTIVE CORE MAT® is attached to the bottom of the mattress. The REACTIVE CORE MAT® is filled with ORGANOCLAY®, which is used to adsorb contaminants. The mattress system’s subaqueous installation is aided by divers to ensure proper positioning of the mattress sections.

CHALLENGE:
Treating contaminated sediments in a subaqueous environment presents a set of unique challenge. In these types of applications, a mechanism is needed to aid in placement of the underlying geotextile treatment layer with minimal displacement of sediment. For this application, the underlying geotextile was REACTIVE CORE MAT®, which is designed to sequester and treat contaminants within the soil.
Gabion mattress deployment at former manufactured gas plant site

SOLUTION:
The remediation strategy included the placement of a modular reactive capping system, including Triton® Marine Mattresses used in conjunction with 135,000 lbs. of ORGANOCLAY® bulk capping material and 35,000 square feet of REACTIVE CORE MAT®, in order to prevent non-aqueous phase liquid (NAPL) contamination from reaching the surface waters. The modified mattress system utilizes ORGANOCLAY® filled within the REACTIVE CORE MAT® to adsorb contaminants.

With the help of underwater divers, the Triton® Marine Mattresses and REACTIVE CORE MAT® sediment treatment layer was installed with ease and is performing as expected. The system allowed for minimal displacement of sediments and eliminated the need for a thick sand cap.

RESULT:
The 600 Triton® Marine Mattresses performed as expected, and the revetment and underlying 25,000 square feet of REACTIVE CORE MAT® sediment treatment layer remained intact, with no damage.