SNF
WATER SCIENCE

CASE STUDY

SW BROOKLYN MARINE TRANSFER STATION

Polymers for Dewatering Dredged Sediments

BACKGROUND

The Southwest Brooklyn Marine Transfer Station on the shore of Gravesend Bay in Brookly, New York is a new waste handling facility scheduled for completion in 2017 as part of their New York City Solid Waste Management Plan. The facility will process and compact garbage from the city in preparation for shipment to landfills located out of state. Dredging of the bay in front of the new facility was required to make way for the loading and unloading of barges at the site.

SITUATION

Approximately 5400 cubic yards of sand, silt and clay sediments were concentrated on the shoreline of Gravesend Bay in Brooklyn, New York around the Transfer Station. The area surveyed extended for approximately 370 feet along the shore and 320 feet into Gravesend Bay. The material was to be mechanically dredged with a 5.4 cubic yard clamshell bucket and placed into an 800 cubic yard scow, dewatered, and then taken to a disposal site. The settling time required to naturally decant clean water from the scow greatly increased the amount of time required to dredge the area.

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SOLUTION

Sediment samples were sent to SNF laboratories and a coagulant dosage program was developed to improve settling time in the scow.

The use of FLOQUAT® FL 4420, a 20% active polyDADMAC solution, was determined to create the best flocculation results

The process of adding the polymer to the slurry was best obtained when the dredge operator continually stacked slurry material while another operator applied the solution to the slurry by high pressure hose.

Clamshell bucket placing dredged material into scow

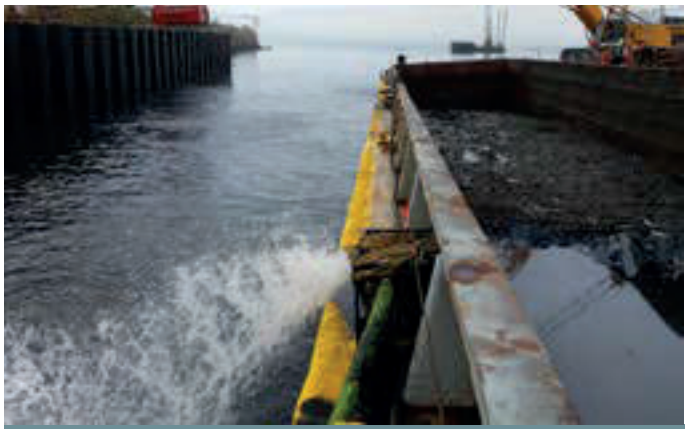
RESULTS

The coagulant solution mixed well into the released slurry and flocculation could be seen almost immediately. Material was settled at a rate two times faster when treated with an SNF polymer than when untreated and produce the cleanest water discharge back into Gravesend Bay. This allowed the dredging company to continue dredging longer during each work day and complete the dredging project on schedule.

EM 30 pump with high pressure static mixer and FLOQUAT® FL 4420

CONCLUSION

SNF's applications expertise provided an environmentally - friendly solution while reducing project time and costs. Effluent quality was also within compliance of the guidelines set forth by the New York City Department of Sanitation.



Clean water discharge decanted after treatment