Harbor Rock – a dredged materials beneficial use
Harbors and Navigation Committee and QPI Meeting
New Orleans,
April 18, 2018
HarborRock is a two stage Process:

Stage 1:
- Separation of the dredged material into its primary components (i.e. cobbles, sand and silt/clay);
- Marketing and sales of the Cobbles and sand
- Placement of the silt/clay material in a separate pile

Stage 2:
- Construction and operation of the Light Weight Aggregate (LWA) facility to convert the silts and clays into LWA using a rotary kiln.
- LWA facilities designed to process 100,000 to 500,000 dry tons of solids per year, per kiln line.
What is Lightweight Aggregate?

Volcanic stone: pumice, lava

Shale, slate or clay expanded in rotary kilns that operate at temperatures over 2,000° F.
Light Weight Aggregates Uses & Applications

ASTM certified LWA and a patent pending for the process
LWA provides more than twice the volume for the same weight as conventional aggregates.
1. No chemicals are added to the dredged sediments

2. All components of the dredged material are reused:
   • Cobbles, Sand, Silt/Clay

3. The **cobbles & sand** are washed, screened & sold

4. The **silt/clay** is fired & tested to ASTM standards

5. All wash/process water is sent to WWT for pH control

6. Air emissions are controlled by the Best Available Technologies
Advantages of HarborRock’s LWA

1. **Is Extruded & Highly Engineered:**
   - Uniform and consistent properties

2. **Meets ASTM standards**
   - C330 LWA for Structural Concrete
   - C331 LWA for Concrete Masonry Units
   - C90 for Concrete Masonry Units

3. **Is Inert & Highly Marketable:**
   - Complete destruction of organic contaminants
   - Metals immobilized magnitudes below RCRA TCLP limits
   - Not blended or mixed with other products
   - Eligible for LEED Certification
Beginning in 1996, HarborRock has made structural grade LWA in bench and pilot scale tests using dredged materials obtained from the following U.S. locations:

- Bellingham Bay
- Seattle
- San Francisco
- Milwaukee
- NY/NJ
- PA/NJ/DE
- Baltimore
- Norfolk
- Jacksonville
- Mobile
- Bartow
HarborRock - Simplified Process Flowsheet

- Hydraulic Dredge
- DM Slurry Storage
- Oversize
- Screening
- Dewatering Press
- Water Return
- Pellet Extrusion
- Recycled Energy
- Pellet Feed
- Thermal Processing Kiln
- Thermal Dryer
- Cooler
- Lightweight Aggregate
- Stack
- Air Emission Control
Potential Applications

Hamburg Port
Baltimore Harbor
Savannah Port
Cleveland Port

Conowingo Dam - Susquehanna River Sediments

LWA exiting rotary kiln
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