



*Ocean Advocacy  
Since 1984*

APRIL 14, 2006

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New York District  
26 Federal Plaza  
New York, NY 10278-0900

Consistency Review Coordinator  
New York State Department of State  
Division of Coastal Resources  
Attn: NY State Coastal Zone Management Consistency Review  
41 State Street  
Albany, NY 12231-0001

**Re: Public Notice # South Brother Island Channel, East River 06: 2006 Maintenance Dredging of South Brother Island Channel, East River, New York Federal Navigation Channel and Permit Application for Placement of Dredged Material at the HARS.**

Dear Ms. Donohue:

Enclosed are comments on behalf of Clean Ocean Action (representing over 150 organizations), including the over 200,000 citizens who signed petitions against ocean dumping of contaminated dredged materials.

We urge you to deny the permit application for placement of 265,000 cubic yards (CY) of dredged material from the South Brother Island Channel (located in the East River, New York Federal Navigation Channel, Queens County, New York) at the Historic Area Remediation Site (HARS).

Our concerns regarding the permit and the remediation of the HARS are discussed in detail below.

The quality of the mud will not reduce impacts at the Historic Area Remediation Site (HARS) as outlined in the HARS Supplemental Environmental Impact Statement (SEIS) <sup>1</sup>.

This material is not Remediation Material for the following reasons:

- Levels of certain toxins in the mud (which is over 99% silt/clay) will not remediate contaminant levels at the HARS site.

Levels of specific chemicals of concern in the sediments are high and do not support the intended purpose and true meaning of remediation. For example, elevated PCB levels in NY Bight lobster stocks were one catalyst for the HARS designation. Remediation of the site was intended to stop the continued bioaccumulation of contaminants in the local biota. COA has reviewed the sediment chemistry for this project and has compared these measured levels to baseline HARS levels. The comparison indicates that high levels of contaminants in the project sediments **will not** reduce levels of contamination within HARS and will actually maintain elevated levels of contamination within this site.

Specifically, sediment surveys performed in the HARS by Battelle in 1994 showed that PCB concentrations averaged 278.0 ppb (with a 95% confidence interval around this average of 147.1 ppb). In the South Brother project, sediments had a mean of 243.44 ppb total PCBs. Levels within the project are no less than levels at HARS before remediation and cannot be concluded to reduce impacts of PCB-exposure at the HARS.

Furthermore, these levels of PCBs in project sediments exceed levels in the ocean background, outside of the HARS. Sediment surveys in the NY Bight by REMAP surveys indicated that most of the surface sediments that were in the NY Bight in 1993 and 1994 had concentrations near or less than 50 ppb. This is also consistent with results at the MDS reference site in 1994 that showed an average of 58 ppb in the sediments.

Similar cases for failure to reduce contaminant levels within HARS can be made for total polycyclic aromatic hydrocarbons in the project sediments. In particular, levels of PAHs in the sediments are four times the levels at HARS before remediation. The average level of PAHs at HARS is 4164.4 (with a 95% confidence interval around this average of 1928.8 ppb), while the mean total PAHs were measured to be 16,127 ppb in the composited project sediment sample. This level in sediments has been closely correlated in scientific literature with adverse effects to aquatic wildlife and benthic systems. Additionally, this level will only exacerbate PAH contamination at the HARS.

The Public Notice concludes that the “Placement of this material at the HARS will serve to reduce impacts at the HARS to acceptable levels and improve benthic conditions.” The allowance of sediments with levels of PCBs and PAHs that match or grossly exceed baseline contaminant concentrations at HARS will not reduce impacts or improve benthic conditions. Therefore, levels of PCBs and PAHs in South Brother sediments must preclude it from use as Remediation Material.

- Levels of multiple toxins in the mud will not likely support a healthy benthic assemblage.

Moreover, levels of multiple contaminants in these sediments are high. The cumulative effect of multiple contaminants can significantly impact the benthic community. Researchers with the National Ocean Atmospheric Administration (NOAA) have developed methods for assessing risk to benthic communities from multiple contaminant

exposure. One method (also used by the EPA in the HARS designation process) was to measure how many effects-levels are exceeded by toxins in the sediments. Multiple exceedances indicate the sediments will likely cause adverse effects.

Another approach used by NOAA researchers is to calculate an Effects Range-Medium (ER-M) quotient, which measures the magnitude by which ER-M values are exceeded. This method allows for an assessment of the cumulative risks of contamination (*e.g.*, chronic toxicity, reduced reproduction, reduced larval settlement onto the benthos) to the benthic community.

Using both of these approaches (number of exceedances and magnitude of exceedances) results for the South Brother sediments demonstrate that the sediments:

- are contaminated with a multitude of toxicologically important contaminants (including a variety of PCBs, PAHs and Pesticides) at levels that have been shown to cause significant impacts to aquatic organisms (16 Effects-Range Low guidelines were exceeded and 3 Effects-Range Median guidelines were exceeded);
- are defined as “chemically degraded” (using the methods used by EPA in the HARS SEIS);
- are likely to cause acute or chronic toxicity (note that chronic toxicity is not directly measured in the sediments by EPA Region 2/ACOE NYD);
- will not likely support a healthy benthic community as determined by calculations and assessments using the mean ER-M quotient; and
- are more contaminated than sediments outside the HARS (1993 and 1994 REMAP surveys showed that sites in the New York Bight Apex have ER-M quotients less than 0.10 which is significantly lower than the ER-M quotient for the South Brother project sediments.

In short, using this evaluation, the South Brother sediments also fail to meet the purpose of remediation material.

- Exposure to benthic organisms resulted in significant bioaccumulation.

The following are the toxins that bioaccumulated to statistically significant levels in worms and clams exposed to South Brother sediments (which is >99% silt/clay particle sizes) as compared to reference sediments:

**Clam-** 16 PAHs, Dieldrin, a-Chlordane, Trans nonachlor, Heptachlor epoxide, Endosulfan II, 4,4-DDD, 4,4-DDE, total PCBs, 1,4-Dichlorobenzene, Copper, Lead, Mercury, Nickel, Silver, 4 Dioxins

**Worm-** 13 PAHs, a-Chlordane, Trans nonachlor, 4,4-DDD, 2,4- DDD, 4,4-DDE, total PCBs, 1,4-Dichlorobenzene, Copper, Lead, 2 Dioxins

It appears contradictory that contaminant levels in the sediments can be at or above NOAA ER-Ls and/or ER-Ms for PCBs, Pesticides, and PAHs and concentrations in worm tissues are significantly higher than HARS baseline data, yet bioaccumulation

levels are still not high enough to disqualify the material for placement at HARS. Any criteria that would allow material that is more contaminated and bioaccumulative than the material that is being remediated is seriously flawed and as it will not result in remediation of HARS.

- An outdated evaluation framework is being used, including effects levels that do not incorporate new information regarding effects of toxins on benthic communities and associated food chains (*e.g.*, the continued use of outdated Matrix values and effects levels for PAHs can not select for sediments that will reduce levels of contamination at HARS and can not select against sediments that have the potential to cause adverse ecological effects to the NY Bight).

A proposed framework for evaluating bioaccumulation test results is under review and potential revision by additional peer and public review. The currently used evaluative framework for bioaccumulation test results was developed in 1996 for the purposes of ocean dumping prior to the opening of the HARS and includes four critical matrix levels based on a “no degradation” standard developed in 1980. “Acceptable” levels of bioaccumulation have not been updated since that time with the exception of the newly revised PCB matrix value, which reflects more current scientific understanding of effects of PCBs in the marine environment (but does not uphold a “no degradation” standard). However, the currently used evaluative system (and its effects-levels) is grossly under-protective of the NY Bight because it is severely outdated, does not account for cumulative levels of contamination at HARS and associated food chains, and can not select for sediments that will reduce biological exposure to contaminants of concern.

COA’s previous comments have consistently specified technical reasons why the currently used evaluation framework used for assessing bioaccumulation and chronic toxicity can not be used for determining Material for Remediation and why it can not protect against adverse effects.

In addition to Clean Ocean Action’s issues with the contamination levels in the South Brother sediments, we are also concerned about the physical removal and placement of this contaminated material. These concerns are addressed below:

- Although the federal agencies have concluded that the South Brother sediments are “Material for Remediation”, we urge the State of New York to require “No barge overflow” and closed, environmental bucket with slow hoist speed during dredging to minimize suspension of fine grained particles and associated toxins.

The determination of “Material of Remediation” typically allows dredging to occur in NJ and NY state waters without environmental requirements to minimize sediment suspension. COA urges that any water quality reviews carefully consider effects of suspended sediments and toxins, since the material to be dredged is primarily fine-grained and contains elevated levels of contaminants, including toxins of bioaccumulation concern such as PAHs, PCBs and DDTs. Dredging is projected to last two months, during which time substantial cumulative

sediment release may occur without adequate environmental protections during the dredging operations. In order to minimize the water quality impacts of dredging, no barge overflow and a closed environmental bucket with slow hoist speed must be required.

- If this contaminated dredge material is placed at HARS, care must be taken to avoid placement on top of areas that have already been capped with clean sand, glacial till or red clay.

A considerable volume of clean sand, glacial till and red clay have already been placed at HARS. This material provides a cleaner substrate for benthic organisms to colonize and represent material that may truly lead to remediation of the HARS. It is imperative that if this highly contaminated sediment from the South Brother is approved for placement at HARS, it must not be placed over cleaner cap material that is already on the site.

In conclusion, based on the above points, this proposal for ocean placement for remediation at HARS must be denied.

Sincerely,



Cindy Zipf  
Executive Director



Jennifer Samson, Ph.D.  
Principal Scientist