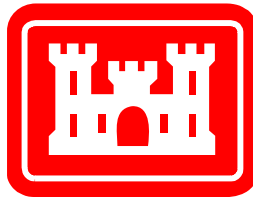


APPENDIX 6

PUBLIC COMMENT LETTERS AND RESPONSES to the APRIL DRAFT ENVIRONMENTAL ASSESSMENT

This Appendix contains the following documents:

- Letter to Ms. Jenine Gallo from Lawrence Levine, Natural Resources Defense Council, et. al., dated May 7, 2007
- Letters from Cooperating Agencies
 - Letter to Ms. Jenine Gallo from Grace Musumeci, United States Environmental protection Agency dates May 3, 2007
 - Letter to Ms. Jenine Gallo from Timothy Kubiak, United States Department of the Interior, Fish and Wildlife Service, dated May 11, 2007
 - Letter to Ms. Jenine Gallo from Suzanne Dietrick, New Jersey Department of Environmental Protection, dated May 25, 2007



**U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT**

June 2007

NY and NJ Harbor Deepening Project
**Appendix 6: Public Comment Letters and
Responses to the April Draft Environmental
Assessment**

GreenFaith • Natural Resources Defense Council
NY/NJ Baykeeper • Rutgers Environmental Law Clinic

May 7, 2007

Ms. Jenine Gallo
Chief, Environmental Investigation Section
Planning Division
USACE – New York District
26 Federal Plaza, Room 2136
New York, NY 10278-0090

Re: Comments on the April 4, 2007 Draft Environmental Assessment (“DEA”) of the Effects of the NY/NJ Harbor Deepening Project (“HDP”) on the Remedial Investigation/Feasibility Study (“RI/FS”) of the Newark Bay Study Area (“NBSA”)

Dear Ms Gallo,

Please accept the following comments regarding the above referenced matter on behalf of GreenFaith, Natural Resources Defense Council and NY/NJ Baykeeper.¹

Adverse Environmental Impacts

1. The DEA’s consideration of impacts to EPA’s RI sediment sampling effort suffers from the following methodological flaws, which undermine the validity of its conclusions:
 - a. The Corps’ application of the MIKE-3 sediment transport model to this case is unreliable because the field data used to calibrate and validate the model are not representative of the range of conditions encountered in the NBSA portion of the HDP. The biggest problem is that the DEA failed to use field data from dredging in high-energy flows – such as the main Newark Bay Channel – for model calibration or validation. The Arthur Kill TSS data used for calibration were all collected under low velocity, unsteady flow conditions, in an area (near Shooters Island) with complex flow patterns. In all cases the data were collected near the time of slack water² when currents are the most unsteady and variable. The Arthur Kill data also are based upon measurements taken when the dredge was operating at a very low production rate (*see* Appendix 3 at 12), which skews sampling results in the direction of lower TSS. For all of these reasons, this data

¹ As confirmed with Ellen Simon of the Corps by email dated May 2, 2007, since the Corps’ May 6, 2007 deadline for public comments fell on a Sunday, these comments postmarked on May 7, 2007 should be considered timely.

² This is apparent based on a review of the tide tables for the times and dates when the samples were taken.

set must be considered a less than representative sample for model calibration purposes.

Since a report on the TSS sampling event in the Port Authority berths, which was used for model validation, is not included in the DEA (unlike the report on the Arthur Kill sampling provided in Appendix 3), it is not possible to do a complete independent review of the adequacy of that data set for use in model validation. Even without such a complete review, however, it is apparent that the data used for validation were all collected from a low velocity area; it is also an area with complex flow patterns such as large eddies in the wake of the tip of the pier. This data set, therefore, is also not typical of conditions throughout the Bay. Further, the summary information and figures in the DEA concerning the extent to which the validation data “fits” with the modeled projections provide no quantitative discussion of the “goodness of fit,” including consideration of standard deviation, making it difficult to assess the extent of the model performance. The data provided simply do not support the DEA’s conclusion (at Appendix 1, p. 23) that the model performed “relatively well”.

In addition, for both calibration and validation, the DEA appears to improperly rely on comparisons of the modeled plume at given distances from the dredge, presumably along some defined plume centerline, with only a single value provided at a single moment in time (Appendix 1, Figs. 7 & 23). Given the significant spatial and temporal variability of an actual TSS plume, a more robust set of field data – reflecting an average plume profile across the lateral extent of the plume and over the vertical including consideration of standard deviation – is required in order to properly calibrate and validate the model.

- b. The DEA presents the 3% bucket loss rate as a “conservative” assumption for modeling purposes. However, this 3% figure is “conservative” only under relatively good conditions for dredging, and only so long as the dredge operator adheres completely to the BMPs identified in the DEA. (As noted in ¶ 9 below, there are adequate mechanisms for the Corps to ensure compliance that the DEA fails to consider.) If the dredge operator does not consistently comply with BMPs, or in the event of unfavorable field conditions (such as the presence of debris interfering with dredge operations, adverse weather conditions, or equipment malfunctions), loss rates would be well over 3%.³ The DEA does not address the extent to which the modeled results would change if the 3% loss rate turns out to be an under-estimate of actual performance in the field. (Further, as discussed below, the DEA fails to set forth any mechanisms for adapting the management of the dredging operations to sub-optimal conditions.)

³ See, e.g., National Research Council, A Risk-Management Strategy for PCB-Contaminated Sediments, at 220 (2001) (avail. at <http://www.nap.edu/books/0309073219/html/>). (The DEA cites this report as “NRC (2006)[sic]” at Appendix 1, p. 10.)

- c. The DEA relied on “extrapolations” from 14-day modeled simulations of dredging in selected locations in order to predict sediment dispersal over the life of the entire HDP. (Appendix 1, p. 14) Nowhere, however, does the DEA explain the method of extrapolation. For example, although flow conditions often vary significantly from one point to another in the harbor, it is unknown (from reading the DEA) whether any given area modeled in a 14-day simulation has flow conditions representative of all areas to which the results of that simulation were extrapolated. Any such variation would introduce a significant margin of error into the “extrapolated” modeling results.
- d. The modeled scenarios all involved a single dredge operating at any given time. Will dredging ever take place with two or more dredges operating simultaneously? Will it ever take place simultaneously with disposal operations in the Newark Bay CDF, which is immediately north of the HDP and is another source of resuspended contaminated sediment (see ¶ 3 below)? If so, the modeled scenarios are inadequate to predict the likely dispersal patterns because the effect of multiple plumes is not simply additive. Rather, larger masses of suspended sediment in a given area (*e.g.*, from multiple plumes) behave differently than smaller masses.
- e. The modeled scenarios assume a constant rate of dredge production, even though actual dredge operation (and hence sediment resuspension) is cyclical. The DEA does not consider any differences in the predicted sediment transport if the total mass of sediment were released in concentrated “pulses” rather than spread out evenly over time. As noted above, larger masses of suspended sediment in a given area at a given point in time behave differently than smaller masses.
- e. When converting the mass of sediment deposited outside the channels into depth measurements, the DEA uses the dry bulk density of the sediment as a conversion factor, but ignores the effect of “re-bulking” of a mass of deposited sediment – *i.e.*, the tendency to expand in volume (and hence depth) due to the presence of water in the interstitial spaces between particles. When re-bulking is properly accounted for, a 2-inch layer of deposited sediment (measured by dry density only), for example, can easily become a 3- 4-inch layer of deposited sediment. If the DEA properly accounted for re-bulking, the entire analysis of impacts on the contaminant profile of the upper six -inches of the flats would change. Many more grid cells would show a measurable change in surface contamination than are predicted in the DEA, since any newly deposited sediment in a given cell would be thicker and account for a greater percentage of the post-dredging top six-inch layer. Where the contaminant concentrations in the newly deposited sediment differ from the pre-existing surface contamination levels, the amount of change in contaminant levels in the post-dredging top six-inch layer would be magnified. This failure to account for re-bulking is a critical flaw in the DEA’s methodology, which renders unreliable the ultimate conclusions about the impacts of the HDP on the RI sediment sampling.

- f. The DEA never explains whether, or why, the currently available data on contaminant levels in Newark Bay sediment is “*sufficient* data to make a reasoned decision,” as required by the most recent court decision concerning the HDP. As explained further in ¶ 2 below, EPA (with the help of the Corps) has identified further sediment data needs in and adjacent to the HDP project area in order to adequately characterize contaminant distributions.
 - g. In the “elevated areas of concentration” scenario, the DEA uses an averaging method that skews downward the predicted contamination levels in re-deposited sediment. This is the result of the routine used in the DEA to estimate contaminant concentrations in the sediment deposited on the flats. In the AEC scenario, to estimate these values, the DEA divides the relevant HDP contract areas into 11 sections and calculates a single average contaminant level for each section based on the assumption that one-half of the side slopes within the each section is contaminated at a level equivalent to the 90th percentile of all data points collected south of the northern tip of the HDP, while the rest of the section is contaminated at the same level calculated for the baseline scenario. (Appendix 2, pp. 7-8) This average concentration, for a given section, is then applied to all of the sediment from that section which deposits on the flats. By averaging the contaminant levels in this way, the AEC analysis fails to account for the fact the sediment dredged from the side slopes – which is closer to the edge of the channels – is more likely to contribute to deposition on the flats than sediment dredged from the channel bottom. In other words, the sediment depositing on the flats from a given HDP section will consist disproportionately of sediment from the side slopes. Accordingly, under the DEA’s “AEC” scenario in which the side slopes are the most contaminated portion of the dredged sediment, the re-deposited sediment in the flats would actually have a higher concentration of contaminants than the “average” concentration calculated for the HDP section from which the sediment originated. Thus, through the DEA’s selected averaging method, the AEC analysis under-estimates the potential change in surface concentrations in the flats caused by the resuspension of highly contaminated sediment from the side slopes.
2. The DEA fails to consider at all the impacts of the HDP on the Feasibility Study portion of the RI/FS – that is, on EPA’s evaluation and selection of a remedy for the NBSA. Regardless of whether the HDP affects the results or interpretation of EPA’s sediment sampling outside of the channels, the fact that the HDP will disperse a mass of contaminated sediment outside the channels constrains EPA’s future remedial choices with respect to the channels and side slopes. Specifically, the Corps’ navigational dredging will render impossible any targeted remedial dredging of sediment once confined to the channels but subsequently diffused across the site. In other words, the HDP – if conducted as navigational, rather than remedial dredging – will adversely affect EPA’s ability to contain and clean-up the contamination in Newark Bay, resulting in a less thorough Superfund cleanup than may otherwise have been the case.

As a related matter, the DEA fails to consider the adverse impacts of exposing, and leaving behind as the new surface of the side slopes (and/or of other newly dredged areas), any previously buried hot spots of contamination – *i.e.*, “residual” contamination. The surface of the side slopes are subject to erosion and resuspension through forces such as ship wakes, currents, tides, sloughing, etc. Thus, residual contamination left behind in the new surface layer of sediment is prone to dispersal throughout the Newark Bay ecosystem. This will make it impossible for EPA to fully clean up the now-buried mass of contamination at a later date, since it will become dispersed across a broader area.

These issues are particularly significant given that the DEA concedes there is presently insufficient data to identify the location of any hot spots that may exist in the side slopes. *See* DEA at Appendix 2, p. 7 (stating that hot spots “if they exist, are local,” but that “the available slope data cannot be used to represent” such hot spots). Moreover, the Corps’ analysis of historical bathymetry maps identified several highly depositional areas that are suspected to contain historical deposition of contaminated sediment dating to the period of the greatest pollution in the Bay, some of which appear to be in or immediately adjacent to the channels and/or side slopes. *See* DEA at pp. 38-40 & Figure 4-2. Specifically, on Figure 4-2, the southernmost portion are area 7 immediately abuts the Elizabeth Channel; portions of area 9 immediately abut the S-NB-1 contract area;⁴ area 10 is directly in the South Elizabeth Channel and side slopes; area 12 immediately abuts to the S-NB-2 contract area; and areas 13-16 and 18 all appear to overlap with the side slopes of HDP contract areas in the Arthur Kill and Kill van Kull. (As discussed further in ¶ 5 below, it appears that the Corps has actually recommended that EPA focus on many of these areas for further sampling.) Because of the imprecision of the historical bathymetric maps on which Fig. 4-2 is based, it may well be that some of the areas that appear to abut the side slopes actually overlap with them. Further, even if these areas are immediately adjacent to, rather than within, the side slopes, the very close proximity may mean that these historical deposits are subject to being exposed as the post-dredging face of side slopes, or exposed soon thereafter due to slumping and/or erosion of the adjacent post-dredging side slopes. The DEA, however, ignores most of these areas and identifies only area 10 as being located in the HDP project area; the DEA then discounts the significance of area 10 because the sediments there “may” have been disturbed by prior dredging events. DEA at 39-40. But the area also “may not” have been disturbed as suggested, or not disturbed to such an extent that high levels of contamination are no longer concentrated there. This is particularly the case for the portions of area 10 that lie in areas into which the South Elizabeth channel will be widened, which have not previously been dredged. In sum, given that the DEA has identified numerous “high deposition” locations in the Bay that intersect with or immediately abut the HDP and are likely candidates for high levels of contamination, it is incumbent upon the Corps to determine (through sampling) whether or not such areas actually include high levels of contamination that would be re-suspended and/or exposed in-place by the planned

⁴ Notably, the composite sediment sample from the S-NB-1 contract with the highest measured level of 2,3,7,8-TCDD is located in this area. *See* Aqua Survey, Inc., Technical Report on the Sampling and Testing of Sediment from S-NB-1 Contract of the Harbor Deepening Project for Upland Beneficial Use in New Jersey and/or New York (Nov. 4, 2004) (Composite Core “E”).

navigational dredging; otherwise, the Corps has not satisfied its obligation, pursuant to the court's remedy decision, to gather "*sufficient* data to make a reasoned decision."

3. The DEA fails to account for the cumulative impacts of all "other past present and reasonable [sic] foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." DEA at 62 (citing 40 C.F.R. § 1508.7). The DEA excludes consideration of known permitted actions in the NBSA other than those undertaken by the Port Authority from the cumulative impact analysis. *Id.* at 65. Several of the excluded projects are of significant size and are likely to contain contaminants, including a 20,500 CY project around the Amerada Hess Corp. oil terminal, a 37,550 CY around the Motiva Enterprises, LLC oil terminal, and a 175,700 CY project by OENJ Cherokee Corp. DEA at 66-67, Table 5-2. These are not minor and, even if they were individually, they should be included in the alternatives analysis as reasonably foreseeable. Incredibly, the DEA also excludes any consideration of resuspension resulting from continued operation of the Newark Bay Confined Disposal Facility, which relates to the disposal, back into Newark Bay, of materials dredged from the HDP and other harbor projects that are too contaminated for either ocean disposal or upland placement. DEA, p. 67. As the Corps must be aware, the Port Authority is in the process of applying for approval to deposit additional non-HARS material in the pit. Please explain why that activity should not be accounted for in the cumulative impact analysis, and why the DEA should not also account for all permitted or foreseeable projects that might affect the NBSA, whether or not deemed "individually minor."

Alternatives

4. The DEA rejects the "Remedial Dredging" alternative for reasons that are clearly at odds with the March 2006 federal district court ruling. First, the DEA erroneously asserts (at 22, 28-33) that the sediment to be dredged does not qualify as "Hazardous, Toxic, or Radioactive Waste" ("HTRW"), and that the Corps' HTRW Guidance does not apply, notwithstanding the Court's explicit rejection of that reasoning.⁵ (*See* March 8, 2006

⁵ Additionally, since the sediment is classified as hazardous under the HTRW Guidance, and is part of a Superfund site, it is completely irrelevant for the purpose of determining an appropriate in-water dredging method that, for the separate purpose of on-land treatment and disposal, it is exempt from RCRA hazardous waste requirements (DEA at 31) and is not covered by New Jersey's Hazardous Waste Regulations (DEA at 32-33). As the commenters have stated several times to the Corps, regulatory and risk-based standards for handling of contaminated materials in a marine environment, where there is direct exposure of toxic contaminants to environmental receptors, are very different than the standards applicable for on-land disposal, in which contaminants are carefully contained and shielded from environmental exposure. Thus, for example, while contaminated silt from the HDP is deemed legally suitable, after "amendment" to immobilize the contaminants, for upland "beneficial use" as fill material, the same sediment is deemed legally unsuitable for in-water use as fill material at the HARS disposal site offshore, precisely because of the risks of direct exposure to marine organisms. In fact, EPA's Draft Screening Level Ecological Risk Assessment for the NBSA (Mar. 30, 2007), at p. 69, identifies a "screening value" of 3.6 ppt total dioxin/PCB TEQ; virtually all of the available sediment samples in Newark Bay exceed this level for 2,3,7,8-TCDD alone. (We believe the Corps has received a copy of this draft EPA report for inter-agency review.) Likewise, for virtually *all* areas of the HDP and for *all* six contaminants considered in the DEA, the DEA's average contaminant

Opinion and Order at 72-73 & n. 255). The DEA points out that under the HTRW Guidance any remedial dredging work must be 100% funded by the local partner for the civil works project – in this case, the Port Authority. Even if correct, however, this is not a valid reason to reject the alternative; if the HTRW Guidance applies (and it does) then the consequence of such a policy is that, for the Corps to proceed with the HDP within the NBSA, the Port Authority would need to agree to pay for any additional costs associated with any appropriate remedial action, over and above the costs of dredging in a non-HTRW site. The fact that the Corps could not proceed absent funding from a third-party is entirely unremarkable; that is already the case with the entire HDP, since the Corps' participation in the HDP is, by law, contingent on a substantial cost-sharing contribution from the Port Authority. Accordingly, a need for local sponsor funding is not a valid reason to reject this alternative. (As the DEA notes, a NEPA "alternatives analysis must include alternatives not within the jurisdiction of the lead agency." DEA at 22 (citing 40 C.F.R. 1502.14(c).)

The further statement in the DEA (at p. 30) that "remedial dredging is not applicable to navigational dredging" is nonsensical. The fact that the primary purpose of the dredging is for a navigational civil works project does not mean that remedial dredging techniques cannot, or should not, be applied when contaminated sediment is present. Indeed, as noted above, the HTRW Guidance specifically envisions that environmental remediation work would be integrated into navigational dredging projects when HTRW is present.

The DEA (at p. 30) offers as a further reason to reject the remedial dredging alternative that, to implement this alternative, "additional time and funding must be authorized." As discussed above, no federal funding authorization would be required; rather, the local partner, which is already contributing about half the cost of the entire HDP, would be responsible for providing additional funds as needed under this scenario. (The DEA also makes no attempt to quantify – or even explain in qualitative terms – how much of an additional cost would be involved, and thus provides no reasoned basis on which to reject the alternative because of cost.) With respect to the purported need for "additional time" to complete the HDP, the DEA does not explain any basis for concluding that remedial dredging methods – including in only "selected locations" (*id.*) – would cause the project to miss the 2012 target date for completion. In fact, past history indicates that the Corps is perfectly able to adjust its schedules in the event of delays so that the ultimate completion date remains unchanged; this is discussed further in ¶ 8 below.

The DEA further states (at p. 31) that the Corps "cannot unilaterally determine that remedial dredging is either required or approved until the congressionally-authorized agency [EPA] makes that determination and a designated response action [under CERCLA] has been identified." Following that logic, the Corps lacks authority to do *anything* with the contaminated sediment in the channels in NBSA until EPA makes its

remedial decision; on the Corps' reasoning, EPA must complete the entire CERCLA-mandated process of an RI/FS and ROD before any action can be taken regarding the contaminated sediment in the NBSA. But it would be perverse to say (as the DEA does) that the Corps cannot take environmentally protective action (*i.e.*, modifying the HDP to conform to remedial dredging standards) until EPA issues a ROD, even while it is free to take less protective action (conducting the HDP as planned) that constrains EPA's remedial options prior to the ROD. Rather, if the Corps need not await a ROD to determine that it should *not* perform the HDP in the manner of remedial dredging (which the Corps believes to be the case), then it also need not await the ROD to determine that it *should* perform the HDP in the manner of remedial dredging. Thus, if the HDP is going to proceed before EPA issues a ROD, it is incumbent upon *the Corps* to determine under NEPA (and after appropriate consultation with EPA) in what manner it should conduct the dredging to address any reasonable environmental concerns.

5. The DEA (at p. 26) rejects "Alternative A" as unnecessary, citing a Jan. 23, 2007 letter from EPA that states that no further RI/FS sampling "in and around the channel deepening efforts" is "envisioned at this time." However, a subsequent letter, dated Feb. 5, 2007, from EPA to Tierra Solutions (which conducts the sediment sampling pursuant to a consent order with EPA) appears to contradict that conclusion, and therefore requires a re-evaluation of the timing/sequencing alternatives in order to allow an opportunity for any necessary sampling before dredging takes place. The Feb. 5 letter states that:

- the Port Elizabeth Channel shows elevated contamination levels at depth and will require more sampling (see p. 18, ¶ 92 of the Feb. 5 letter);
- more samples will be needed from the Kill van Kull (see p. 18, ¶ 94 of the Feb. 5 letter); and
- further sampling at unspecified locations, to be determined, will be needed to provide adequate data for a "broad spatial characterization" of contamination in the Bay and to better characterize the "variability" of contamination within each geomorphic area (see p. 17, ¶ 90 & pp. 18-19, ¶ 100 of the Feb. 5 letter).⁶

The February 5th letter (at p. 17) also proposes a number of specific additional Phase 2 sampling locations based on indications that they are "areas of possibly unusually high contamination"; these appear to be the Corps' recommendations referenced on page 90 & Fig. 4-20 of the DEA, which are based on the Corps' bathymetric analysis that identified highly depositional areas. (*See also* the discussion of this bathymetric analysis in ¶ 2, above.) Based on Figure 4-20, six of these proposed sampling locations appear as though they may also be in or adjacent to channels or side slopes that are part of the HDP. These are proposed cores P2-12 (along or near the east edge of the S-NB-1 contract area); P2-13 (in the South Elizabeth Channel, which is part of the S-NB-2 contract); and P2-01, P2-14,

⁶ The memorandum in Appendix 5 summarizing the Feb. 13, 2007 inter-agency coordination also indicates that there will likely be a "Phase III" sediment sampling effort; the DEA does not (nor could it) assert that the Corps knows what sampling locations would be included in that effort.

P2-15, and P2-16 (in the Arthur Kill portion of the HDP). If these cores are, in fact, in or adjacent to HDP dredging areas, the Corps should wait for sampling results from these locations before dredging in these areas, to determine whether additional precautions are necessary to prevent the resuspension and/or exposure (as residual contamination) of localized hot spots. Such forthcoming data would help to address the problem identified in the DEA at Appendix 2, p. 7, that hot spots “if they exist, are local,” but that “the available slope data cannot be used to represent” such hot spots.

Since the Feb. 5 letter is a compilation of comments from multiple agencies, including the Corps, we expect the Corps has a copy of that letter. If not, we would be happy to provide a copy upon request.

6. The statements in EPA’s Feb. 5 letter that further sampling is anticipated in order to define the spatial variability of contamination within the NBSA also call into question the validity of the DEA’s assumptions about contaminant profiles in different areas of the Bay, and therefore require the Corps to re-consider the timing/sequencing alternatives to ensure that the Corps is able to make its dredging decisions based on sufficient data.
7. The DEA (at p. 25) states that under the proposed action, dredging in the side slopes of S-NB-1 would probably not take place sooner than June 2007, thereby allowing EPA a chance to do more sampling in those areas if they should deem it necessary. However, should EPA decide to do more sampling in the side slopes, our latest information from EPA is that they are unlikely to conduct Phase 2 sampling by that time. Thus, the option contract structure of the S-NB-1 dredging does not provide any real benefit.
8. Please explain the basis for the DEA’s assertion that both the “Timing/Sequencing Alternatives” and the “Remedial Dredging” alternative would cause unacceptable delays to the completion of the HDP; the DEA currently provides no basis for this claim. It is not obvious that any of these alternatives would necessarily take more time to implement than the selected alternative. Moreover, even if certain portions of the work were delayed under one or more of these alternatives, it is not at all clear that this would extend the ultimate completion date for the entire HDP. Based on the recent history of the HDP, delays in the anticipated start dates of dredging contracts have not pushed back the Corps’ expected completion date for the entire HDP. For example, although the S-NB-1 contract has been delayed from the Corps’ original anticipated start date, the planned start date of the S-NB-2 and S-E-1 contracts have been moved forward substantially such that the DEA anticipates that work within Newark Bay will be completed sooner than the Corps anticipated as of 2004, and the entire HDP will remain on schedule for completion.⁷ This history indicates a fluidity in the Corps’ scheduling, such that temporary up-front delays need not lead to delayed completion dates.

⁷ Compare the 2004 Limited Reevaluation Report at 26 & H42 with DEA at 19.

Mitigation

9. The DEA presents no additional protocols – beyond those offered in its prior NEPA analyses – for assuring the efficacy of the selected mitigation measures; nor does the DEA consider the adoption of alternatives to the Corps’ selected dredging protocols should those methods prove less effective than expected at minimizing resuspension. For both of these reasons, the DEA fails to satisfy the court’s remedy order. (See March 8, 2006 Opinion and Order at 76.) We refer the Corps to pages 17-20 our August 15, 2006 letter commenting on the Corps’ June 2005 Draft EA for a detailed description of the sorts of inspection, monitoring, and performance standard protocols that would provide the necessary level of assurance that the Corps’ selected mitigation measures will be effective at minimizing dredging-induced resuspension and that the Corps will alter its dredging methods if they prove to be ineffective. In particular, the following set of protocols would vastly improve the Corps’ current plans:

- Continuous, independent, on-board inspection of dredging operations for compliance with all BMPs concerning sediment resuspension, conducted by a Corps-certified inspector with authority to require corrective action as needed.⁸ The Corps’ contract specifications for the most recent HDP contracts include exhaustive requirements for such an independent inspector to ensure compliance with protocols concerning the ocean *disposal* of sediment after dredging. Please explain in the why the Corps has chosen, so far, not to require similar inspections of the actual dredging operations.
- Continuous, real-time monitoring of the magnitude and extent of any plume of resuspended sediments, using calibrated optical and/or high frequency acoustic sensors, either mounted on the bucket or dredged material barge or located down-current on a separate vessel and/or moored array. Real-time TSS data should be directed to the inspector and the dredge operator to facilitate modifications to dredging methods as needed to control resuspension.⁹
- A resuspension “performance standard” that sets a limit on the acceptable amount of resuspended sediment. This standard should be no higher than a level determined in the Final EA to result in no significant adverse impacts (based on adequate modeling methodologies).

⁸ We note that the American Association of Port Authorities recommends, in an Environmental Management Handbook co-authored by representatives of the Corps’ partner in the HDP, the Port Authority of NY & NJ, that there should be “continuous inspection of dredging activities, particularly during night work,” to ensure compliance with specified environmental precautions. See http://www.aapa-ports.org/govrelations/env_mgmt_hb.htm, at EMP No. O-16. Similarly, NJDEP’s dredging guidance manual NJDEP, provides (at p. 16) that “[d]redging contractors may be required to employ independent, on-board dredging inspectors certified by the USACE. These inspectors will observe the dredging and disposal operations to ensure compliance with all permit conditions.” *The Management and Regulation of Dredging Activities and Dredged Material in New Jersey’s Tidal Waters* (Oct. 1997) (“NJDEP Dredging Guidance”).

⁹ See, e.g., Bergeron, et al., “The Cable Arm Clamshell: Development and Track Record for Environmental Dredging” (avail. at www.cablearm.com/promo/TheCableArmClamshell.doc).

- Over-dredging and back-filling as necessary to avoid exposing residual contamination, in appropriate locations. The determination of where this is necessary should be based on chemical analyses of depth-stratified sediment samples from the side-slopes and other areas to be newly dredged as part of the HDP to determine where the post-HDP surface of the side slopes or channels would display elevated levels of contamination.¹⁰ (See ¶ 2 above.)

The Corps has still never provided a reasoned evaluation of these proposals; the Final EA should do so. If the Final EA rejects these protocols, please explain how the Corps plans to fulfill its “promise” in the Jan. 2006 EA to follow adaptive management protocols to ensure that its mitigation measures are implemented sufficiently to ensure there are no significant adverse impacts. See March 6, 2007 Opinion & Order at 76.

We further note, with regard to the need for continuous, real-time monitoring of TSS during dredging operations, that the Port Authority’s recent application to the New Jersey Department of Environmental Protection for the continued operation of the Newark Bay Confined Disposal Facility (“NBCDF”) calls for continuous, real-time monitoring of TSS during disposal operations. Notably, the sediment disposed at the NBCDF is the exact same “non-HARS suitable” sediment that is the subject of the DEA, and the disposal at the NBCDF also involves the use of a clamshell dredge (in that case to deposit, rather than dredge, the sediment). This example indicates that continuous real-time monitoring is clearly feasible, and that it is being used within Newark Bay as a standard protocol when handling the same exact sediment that is at issue in the DEA under conditions that present a likelihood of resuspension.

10. The only monitoring of mitigation performance that the DEA mentions is a “Total Suspended Solids (TSS) monitoring program.” (DEA at 83) However, the DEA’s only explanation of this monitoring program describes discrete monitoring events that have already been completed, specifically for purposes of the calibrating and validating the sediment transport model used in the DEA. There is absolutely no explanation of the nature of this “monitoring program” going forward, or of the use to which the monitoring results would be put in the service of adaptive management, such that the public or other interested agencies could evaluate and comment upon its adequacy. Rather, the DEA simply offers the conclusory statement that the monitoring program “is designed to assure that the[] [mitigation] measures mitigate the effects of the HDP on the RI/FS.” (*Id.*)¹¹ In

¹⁰ As a model for this requirement, we note – and have previously noted to the Corps – that the State of Washington, the Corps’ Seattle District, and EPA Region 9 have agreed to protocols for navigational dredging of contaminated sediments in Puget Sound, which calls for precisely this procedure to be followed. See, e.g., p. 11 of the commenters’ letter to NJDEP of 3/9/06 concerning the WQC for the S-NB-1 contract.

¹¹ We note that the Jan. 2006 EA (at 19-20) included some additional explanation of a “TSS and Turbidity Monitoring” program. It is not clear whether the DEA intends to refer to that program or to incorporate any of its concepts. Even if the present DEA does intend such incorporation, the Jan. 2006 EA fails to explain whether monitoring will be continuous and, if not, how often it will be conducted. It also does not explain whether monitoring results will be available soon enough after samples are taken in order to provide useful information for adaptive management of the particular dredging contract being monitored. We further note that the June 2005 Draft of the Jan. 2006 EA (at 14) stated that TSS monitoring would be conducted at least bi-weekly for the life of the

order to determine whether that is the case, the Corps must disclose the design of the monitoring program, not merely state in conclusory fashion that it is sufficient. The discussion in the DEA fails to satisfy the requirement of the court's remedy order that the Corps explain the measures it will implement to assure the efficacy of the selected mitigation measures. (*See also* ¶ 9 above, which describes a recommended TSS monitoring protocol.) Please explain the "TSS/Turbidity sampling program" and how the Corps will meet the federal district court's identified need for protocols to assure the effectiveness of mitigation measures.

11. The DEA omits at least one of the mitigation measures that the Corps had adopted in the Jan. 2006 EA. That earlier EA, in the one-page "Addendum to Appendix B," stated that "virtual inspections" via webcams would be part of the package of mitigation measures. This no longer appears as a mitigation measure in the current DEA. This represents a step backwards from a mitigation plan that was already deemed inadequate by the federal court. If the Final EA does not include this mitigation measure, please explain the rationale for excluding it.
12. The DEA lists the requirements of the NJDEP Water Quality Certificate ("WQC") for the S-NB-1 contract as part of the applicable mitigation measures. It states that separate WQCs for subsequent HDP contracts "are expected to contain the same or similar conditions." If future WQCs do not contain such provisions, and the Corps does not voluntarily apply them to future HDP contracts, the entire environmental impact analysis presented in Chapter 4 of the EA would become invalid, since the modeling analysis is premised on a resuspension rate that would result from implementation of the existing WQC conditions. In the absence of these conditions on future contracts, the Corps would be obligated to supplement its NEPA analysis to evaluate the impacts of carrying out the HDP with a different (and/or smaller) set of mitigation measures. Please explain how the DEA accounts for this uncertainty.
13. The DEA presents the BMPs and the WQC conditions as though they were two separate sets of mitigation measures. (DEA at 79-81) In fact, they are the same. The Final EA should correct this misleading presentation or should explain how the BMPs are distinct from and independent of the WQC.

Inter-Agency Coordination

14. The DEA does not propose any changes to the coordination process, notwithstanding that the court found the coordination plan to be inadequate in certain respects. (*See* March 8, 2006 Opinion and Order at 75). Please explain why the coordination plan continues to lack, for example, any standard for the resolution of disputes or any provision for work stoppage pending resolution of disputes. Also, the commenters have previously suggested that the Corps consider a coordination plan similar to an inter-agency

HDP, but that this detail was omitted from the Jan. 2006 Final EA. (In any event, the federal district court's March 8, 2006 Opinion & Order clearly indicates that the Corps must do more, not less, than it has previously proposed in order to monitor and ensure the effectiveness of mitigation measures.)

coordination plan that the Corps has applied to proposed navigational dredging projects in the Portland Harbor Superfund Site.¹² The DEA does not consider whether the Corps could or should enter into such an agreement here. Please explain why the Corps has chosen not to adopt a coordination plan similar to the one in Portland Harbor in this precisely analogous situation.

Additionally, we note that the DEA states that written minutes of coordination meetings will be distributed among participating agencies, but does not address public disclosure. Please explain whether such minutes will be routinely shared with the public and, if not, why not. Similarly, the DEA does not address whether the coordination meetings will be open to the public, either in full or in part, as is the case with the Passaic River Restoration Project's inter-agency project delivery team ("PDT"). Please explain whether they will be open and, if they will not be open, please explain why not. The DEA provides no explanation of why the NBSA coordination team should operate differently than the Passaic PDT with respect to public participation and access. *See* DEA at 87-88.

15. The DEA (at p. xix) states that "[a]ll monitoring results are shared and coordinated with NJDEP, NYSDEC and USEPA." Please explain whether the Corps routinely make such results available to the public? Any monitoring results should be publicly disseminated, just as the EA itself is.

Other

16. When referring to the parties to the litigation pending in the Southern District of New York, the document should identify all of the plaintiffs – *i.e.*, not only NRDC, but also GreenFaith and NY/NJ Baykeeper. (*See, e.g.*, p. xvi)
17. Please explain why the study cited as "USACE 2007" is not included as an appendix to the DEA. *See, e.g.*, DEA at 38-40, 90. Based on the title and date of the report, it appears to have been prepared specifically for the EA, as with the other appendices. It should be provided to the public for review and comment as part of the NEPA process.
18. Please explain why the DEA does not include an appendix reporting the results of the TSS monitoring event performed to gather data for the validation of the sediment transport model? The TSS field data used for calibration of the model is presented in a

¹² As we noted at p. 19, n.13 of the October 23, 2005 Memorandum of Law in Support of Plaintiffs' Request for Injunctive Relief (filed in the pending federal litigation concerning this matter), the Corps' Portland District and EPA Region 10 entered into a formal "Letter of Agreement" concerning coordination of Superfund and navigational dredging activities (among other things) within the site. The stated goals of the agreement include ensuring that all agency actions carried out within the site are consistent with CERCLA and assuring that CERCLA schedules, and not simply the Corps' schedules, are not delayed. The agreement also recognizes the Corps' potential CERCLA liability arising from dredging activities within the Superfund Site, and sets as a goal inter-agency cooperation to avoid such liability. It assigns EPA responsibility for "ensur[ing] that the impact of USACE's Federal channel maintenance dredging responsibilities on the RI/FS are evaluated." Finally, it also establishes a detailed and formal dispute resolution procedure. The commenters incorporated by reference that legal brief into their comments on the Corps' draft of the Jan. 2006 EA.

Ms. Jenine Gallo
May 7, 2007
page 14 of 14

full report; the data used for validation is equally important and should likewise be provided for public review and comment.

* * *

Thank you for your consideration of these comments.

Sincerely,

A handwritten signature in black ink, appearing to read "Lawrence Levine".

Lawrence Levine, NRDC
Counsel for NRDC and Greenfaith

/s

Carter H. Strickland, Jr., RELC
Counsel for NY/NJ Baykeeper

RESPONSE TO COMMENTS

GreenFaith, Natural Resources Defense Council, NY/NJ Baykeeper, and Rutgers Environmental Law Clinic - Letter dated May 7, 2007

Adverse Environmental Impacts

1. The DEA's consideration of impacts to EPA's RI sediment sampling effort suffers from the following methodological flaws, which undermine the validity of its conclusions:
 - a. The Corps' application of the MIKE-3 sediment transport model to this case is unreliable because the field data used to calibrate and validate the model are not representative of the range of conditions encountered in the NBSA portion of the HDP. The biggest problem is that the DEA failed to use field data from dredging in high-energy flows – such as the main Newark Bay Channel – for model calibration or validation.

USACE RESPONSE: We do not concur for the following reasons. Using a low-velocity complex flow condition does not invalidate the calibration because the model simulates its field counterparts. The strength of the flow field does not affect the ability of the model to replicate the plume. A stronger flow field only increases the advective forces – which are determined solely by the hydrodynamics, not sediment settling or dispersion. Because the model hydrodynamics have been extensively calibrated, it makes no difference if the resuspension model calibration is conducted in a relatively higher or lower energy area. The fact that the model is able to represent the spatial extents of the plume in a complex environment lends confidence that the model performs equally well in a simple, steady flow which is much easier to reproduce in a model. As a further assurance, we coordinated the application of this model with the EPA and their model team.

The Arthur Kill TSS data used for calibration were all collected under low velocity, unsteady flow conditions, in an area (near Shooters Island) with complex flow patterns. In all cases the data were collected near the time of slack water¹ when currents are the most unsteady and variable. The Arthur Kill data also are based upon measurements taken when the dredge was operating at a very low production rate (*see* Appendix 3 at 12), which skews sampling results in the direction of lower TSS. For all of these reasons, this data set must be considered a less than representative sample for model calibration purposes.

USACE RESPONSE: We do not concur for the following reason. The commenters are incorrect in stating that “..in all cases the data were collected near the time of slack water...”. The HDP TSS monitoring survey during dredging in the Arthur Kill at Shooters Island was conducted at all tidal stages (i.e. slack, ebb and flood). This survey was conducted during low production rates as we were monitoring the current dredging operations. However, low production rates do not affect the dispersion pattern of the plumes.

¹ This is apparent based on a review of the tide tables for the times and dates when the samples were taken

The commenters are also incorrect in stating that “...very low production rate..., which skews sampling results...”. One of the model input parameters is dredge production rate. Therefore, the model accounts for actual production rate when computing TSS concentration. Observe that the computed TSS concentrations are much less for the ebb calibration (max concentration 66 mg/K) than for the flood phase (275 mg/L). The difference between the two simulations is the adjustment of production rate. The fact that the model is able to reproduce the plume for both high and low production rates indicates that the model parameters are accurately defined and responsive to the system being modeled.

Since a report on the TSS sampling event in the Port Authority berths, which was used for model validation, is not included in the DEA (unlike the report on the Arthur Kill sampling provided in Appendix 3), it is not possible to do a complete independent review of the adequacy of that data set for use in model validation. Even without such a complete review, however, it is apparent that the data used for validation were all collected from a low velocity area; it is also an area with complex flow patterns such as large eddies in the wake of the tip of the pier. This data set, therefore, is also not typical of conditions throughout the Bay. Further, the summary information and figures in the DEA concerning the extent to which the validation data “fits” with the modeled projections provide no quantitative discussion of the “goodness of fit,” including consideration of standard deviation, making it difficult to assess the extent of the model performance. The data provided simply do not support the DEA’s conclusion (at Appendix 1, p. 23) that the model performed “relatively well”.

In addition, for both calibration and validation, the DEA appears to improperly rely on comparisons of the modeled plume at given distances from the dredge, presumably along some defined plume centerline, with only a single value provided at a single moment in time (Appendix 1, Figs. 7 & 23). Given the significant spatial and temporal variability of an actual TSS plume, a more robust set of field data – reflecting an average plume profile across the lateral extent of the plume and over the vertical including consideration of standard deviation – is required in order to properly calibrate and validate the model.

USACE RESPONSE: We do not concur for the following reasons. The Corps collection of monitoring data from the PANYNJ berth maintenance dredging occurred later during the development of the DEA and was used solely for the purposes of validation, not calibration. This data was consistent with the Arthur Kill TSS monitoring data that was used for calibration. For our purposes of using this data to validate the model, a final report was not required or timely given the need to complete the DEA and the consistency of this data with data previously collected by the Corps. The Corps anticipates that as time and funding allow, that this monitoring data will be compiled into a final report format.

Complex flow patterns do not detract from the calibration of the model but are indicative that the model is able to reproduce the complex flows as well as the simple flows. Because approximately 50% of the NBSA HDP sediments are within so-called low velocity areas, these are as much representative of the typical conditions as the flow in the open bay. Much of the HDP dredging takes place in similar locations (such as Arthur Kill, Elizabeth Channel, and South Elizabeth Channel), therefore it is equally important to demonstrate the model’s ability in these areas. The fact the model matches the spatial extents of the plume in two separate

locations, in so-called complex flows, and at different stages of the tide, demonstrate the model's capability to represent dredge events with reasonable accuracy and precision.

The calibration and validation events studied are taken from a set of measured transects collected over an approximately 2 hour period for each event (Appendix 1). As such they represent a "snapshot" of the plume within that two hour period. However, the plume is dynamic due to changes in flow over the two-hour measurement period as well as the dredge cycle (in other words, the timescales of the factors involved in dredging and modeling sediment transport are widely variable). Therefore, model data is summarized and presented as minimum, mean, and maximum within the two-hour window. The fact that the measured data fall within the temporal variability of the model suggests that the model is reasonably representing the extent and behavior of the measured plume. In the context of the modeling effort "reasonably well" was defined as a majority of the measured data points that fell within the maximum and minimum concentrations predicted by the model during the plume measurement period. This shall be clarified in the text of the Appendix 1.

The model was calibrated to the extent of the measured data in the downstream portion of the plume. For the case of calibration this was over 300m. For validation it was 100m (Appendix 1 in DEA). As presented in Appendix 3, the measured plume spreads very little laterally, and therefore a longitudinal transect is an acceptable method of presenting the data comparison. The model shows very little lateral spreading, consistent with the measured data (Figures 6 and 8 of Appendix 3). Because the data collected represents a snapshot there can be no calculation of standard deviation with respect to time. For that, a stationary station would be required such that the TSS concentration would be measured over a longer period. However, since dredges are constantly moving and starting and stopping operations, this would be difficult, if not practically impossible, to achieve. The model is calibrated qualitatively by showing that the measured values fall within the computed variation of the model as well as that the spatial extents of the measured plume are matched by the model-predicted concentration. Therefore, the commenter's suggestion of a more robust data set is not needed for the modeling effort in this EA.

- b. The DEA presents the 3% bucket loss rate as a "conservative" assumption for modeling purposes. However, this 3% figure is "conservative" only under relatively good conditions for dredging and only so long as the dredge operator adheres completely to the BMPs identified in the DEA. (As noted in ¶ 9 below, there are adequate mechanisms for the Corps to ensure compliance that the DEA fails to consider.)

USACE RESPONSE: We do not concur. Previously, the commenters argued for 3% in place of the value of 1% that was previously described in USACE court documents. Commenter's expert witness, Frank Bohlen, has stated, "a more realistic, conservative estimate is that resuspension rates from a closed environmental clamshell bucket, such as the Corps plans to use, would approach 3%" (October 21, 2005 declaration). The Corps used the 3% loss rate as this loss rate is supported by the dredging and scientific community as being realistic for environmental clamshell buckets.

Numerous published data indicates that the Corps selected 3% loss rate is at the conservative end of the range of loss values actually measured. The recent compilation of mechanical dredge loss rates (Anchor Environmental 2003) gives a mean loss rate of 2.1% for an analysis of over 30

mechanical dredging cases. The use of a closed or Cable Arm bucket and hoist speed restrictions alone would serve to keep loss rates in the lower end of the range. Other high rates reported in the literature, notably those mentioned for Nakai (1978), were measured years ago with what would be regarded today as less than state-of-the-art instrumentation on the dredge to control the bucket as well as bucket design. Bohlen's (1979) measured loss rates for mechanical buckets produced rates in the 1.5 to 3.0% range.

If the dredge operator does not consistently comply with BMPs, or in the event of unfavorable field conditions (such as the presence of debris interfering with dredge operations, adverse weather conditions, or equipment malfunctions), loss rates would be well over 3%.²

USACE RESPONSE: The 3% loss rate is conservative for an environmental bucket operated in the normally prescribed manner. However, as the NRC report cited by the commenters states that loss rates well above 3% are certainly possible, but likely to occur only when leakage rates are extraordinarily high due to anomalous rare occurrences such as encountering areas with high densities of debris. We further note that this condition itself is unlikely due to the relatively recent deepening dredging that occurred earlier this decade in most of the remaining HDP construction contract areas.

All of the BMPs (i.e. sensors for bucket closure, lift speed, etc.) already routinely in place during HDP dredging within the NBSA make rates above 3% very unlikely and are therefore likely unrealistic. Further, the multiple levels of inspection of the dredging process by the Corps, our contractors, and the involved regulators ensure that these BMPs are appropriately and adequately enforced. Also, please see response to comment 9.

The DEA does not address the extent to which the modeled results would change if the 3% loss rate turns out to be an under-estimate of actual performance in the field. (Further, as discussed below, the DEA fails to set forth any mechanisms for adapting the management of the dredging operations to sub-optimal conditions.)

USACE RESPONSE: We do not concur. The model deposition results are directly proportional to the loss rate. Therefore, if model results are a certain fraction greater than 3%, the deposition will be increased by the same amount. Underestimation of the loss rate is expected to have only a limited effect on surface sediment contaminant concentrations. For example, if the dredged material is twice as contaminated as surface sediments, a doubling of the amount of deposition, say from 10 to 20 mm, is predicted to change surface sediment concentrations by less than 10%. That said, due to the BMPs employed in the project and the abundant literature supporting a lower range of loss rates, the 3% loss rate used could be argued as being conservative.

- c. The DEA relied on "extrapolations" from 14-day modeled simulations of dredging in

² See, e.g., National Research Council, A Risk-Management Strategy for PCB-Contaminated Sediments, at 220 (2001) (avail. at <http://www.nap.edu/books/0309073219/html/>). (The DEA cites this report as "NRC (2006)[sic]" at Appendix 1, p. 10.)

selected locations in order to predict sediment dispersal over the life of the entire HDP. (Appendix 1, p. 14) Nowhere, however, does the DEA explain the method of extrapolation. For example, although flow conditions often vary significantly from one point to another in the harbor, it is unknown (from reading the DEA) whether any given area modeled in a 14-day simulation has flow conditions representative of all areas to which the results of that simulation were extrapolated. Any such variation would introduce a significant margin of error into the “extrapolated” modeling results.

USACE RESPONSE: We do not concur based upon the following explanation. There was no spatial extrapolation in the model as is posited by this comment. The cited extrapolation is a factoring of the particle tracking model results of suspended sediment to account for the total amount to be dredged for the HDP. Please note, the particle model works by tracking the release of sediment from a given point in the NBSA. A number of particles are released from each dredge location at each time step and their point of deposition is traced by the model. Each particle is then assigned a mass based on the volume of sediments dredged from that part of the harbor over the 5-year HDP. In this way, the model is able to efficiently track and estimate dredged material resuspension and deposition over a spring-neap tidal cycle on a spatially resolute basis throughout the model domain.

The model uses a typical 14-day spring-neap cycle to represent the regular cyclical variation in flows throughout the harbor. As such all of the variations in flow in each part of the harbor are represented in the model. A basic assumption of the method is that the sediments are primarily transported by tidal currents, the predominant driving force during the ambient weather conditions in which dredges operate.

- d. The modeled scenarios all involved a single dredge operating at any given time. Will dredging ever take place with two or more dredges operating simultaneously?

USACE RESPONSE: We do not concur. The statement that the modeled scenarios all involved a single dredge operating at any given time is incorrect. The model was implemented with a very conservative approach using several dredge sources operating simultaneously in each sub area to represent the dredging activities over the duration of the HDP within a spring-neap tidal cycle. The data collection program in Appendix 3 as well as the modeling in Appendix 1 show that suspended sediment concentrations decrease to near ambient within 200-300m of the dredge. It is highly unlikely that two dredges would operate within that distance (due to maneuvering of scows, movement of the dredges, and interference with shipping traffic). There would be no potential for interaction of plumes or formation of larger masses of sediment at high concentration. Therefore, assuming the effects are additive is reasonable. The model does not include concentration effects on settling velocity, but rather assumes settling velocity is independent of concentration.

Will it ever take place simultaneously with disposal operations in the Newark Bay CDF, which is immediately north of the HDP and is another source of resuspended contaminated sediment (see ¶ 3 below)?

USACE RESPONSE: We do not concur. Regardless of whether the Newark Bay Confined

Disposal Facility (NBCDF) will ever be used during the life of the HDP that disposal/placement action is entirely distinct and different from any dredging action, which is what the model analyses supporting this EA are designed to analyze. The State of New Jersey (NJDEP) and the PANYNJ (permitter) have established a management and monitoring program at the NBCDF that satisfies and CWA obligations. Total Suspended Solids (TSS) sampling and testing from past disposal events indicates that elevation of TSS attributable to the operation of the NBCDF has not occurred. These results eliminate the need to model those dispersions since the NBCDF and the permitted program are designed to eliminate such sediment escape or dispersions.

If so, the modeled scenarios are inadequate to predict the likely dispersal patterns because the effect of multiple plumes is not simply additive. Rather, larger masses of suspended sediment in a given area (*e.g.*, from multiple plumes) behave differently than smaller masses.

USACE RESPONSE: We do not concur for the following reasons. Please see response to previous (d) comment. Regardless of the number of dredges operating, the total volume or mass of sediment processed for the life of the project remains the same. It is a reasonable assumption in that the concentrations outside of the immediate vicinity of the dredge are not high enough to affect settling. The effects of high concentrations will tend to increase the rate of settling. Denser plumes containing higher masses of sediment would tend to settle faster in a smaller zone of settlement, than less dense plumes due to interactions between the particles in suspension (i.e. more sediment would deposit in the immediate vicinity of the dredge). The overall effect would likely be negligible, but would serve to reduce dispersion of sediment if there were any effect at all. Therefore, in terms of dispersion, it is conservative to assume that settling is independent of concentration (particles will travel farther).

- e. The modeled scenarios assume a constant rate of dredge production, even though actual dredge operation (and hence sediment resuspension) is cyclical.

USACE RESPONSE: We do not concur for the following reason. Please see Appendix 1, as the model also accounts for differences in vertical release during bucket cycling. The model uses a constant production rate in that it releases the same number of particles at each time step. The model simulates the mass of sediment originating from any given area of the Bay and not dredging rates per se. Those are used as model inputs.

The DEA does not consider any differences in the predicted sediment transport if the total mass of sediment were released in concentrated “pulses” rather than spread out evenly over time.

USACE RESPONSE: We do not concur for the following reasons. The temporal scale that the commenter is suggesting is inappropriate for the dispersion of sediment given the temporal and spatial scale of dredging. A typical bucket cycle using specified BMPs may be in the 60 to 90 second range, while the diurnal tidally driven flow through the bay ranges approximately 12 hours per tidal cycle. During this bucket cycle “pulse”, suspended sediment interacts with the surrounding water and is acted upon by various diffusive and advective forces keeping it in suspension for more than a few minutes. Pulses on this time scale would not affect the overall results of a simulated release with an appropriately selected time-step. It would have no measurable effect on delivery of resuspended sediment to some point in the model domain over

longer durations (e.g., tidal cycles).

As noted above, larger masses of suspended sediment in a given area at a given point in time behave differently than smaller masses.

USACE RESPONSE: We do not concur. As for the mass effect on deposition rate and as noted earlier, a higher suspended sediment mass would only tend to enhance settling, not dispersion. Thus, the Corps' approach is conservative in this regard.

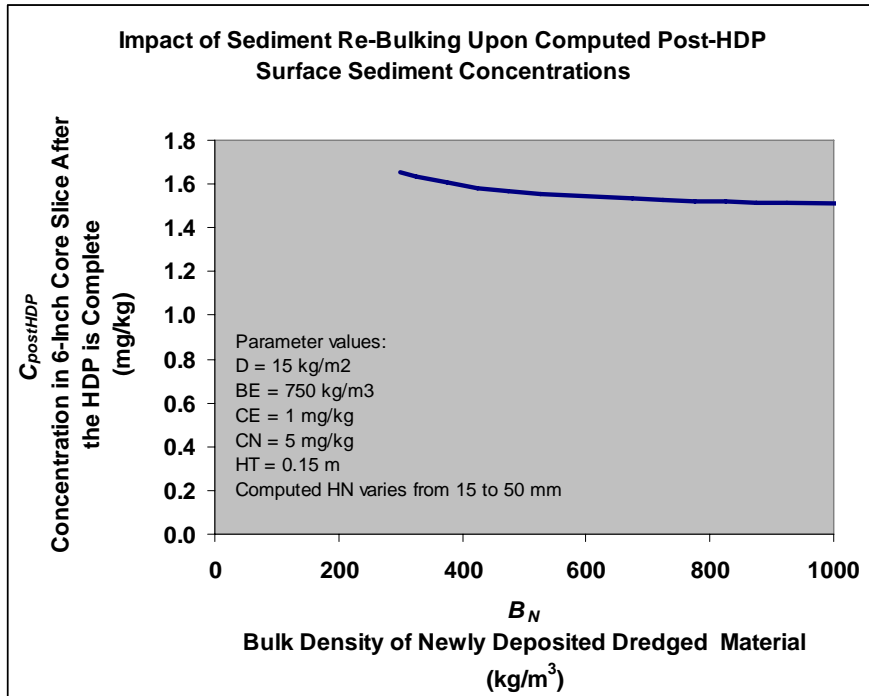
- f. When converting the mass of sediment deposited outside the channels into depth measurements, the DEA uses the dry bulk density of the sediment as a conversion factor, but ignores the effect of "re-bulking" of a mass of deposited sediment – *i.e.*, the tendency to expand in volume (and hence depth) due to the presence of water in the interstitial spaces between particles. When re-bulking is properly accounted for, a 2-inch layer of deposited sediment (measured by dry density only), for example, can easily become a 3-4-inch layer of deposited sediment

USACE RESPONSE: We do not concur. Clam shell dredging adds little water to the sediment and physical disruption is minor resulting in little if any bulking. The small amounts of sediment release at the dredge will follow well described particle settling patterns and will readily consolidate thus minimizing any bulking. The mass released by the dredge resuspension model is computed based on the in situ density of HDP sediments (approx. 1500 kg/m³). The model then tracks the mass of sediment to the deposition point. As the sediment settles to the bottom it will consolidate. To convert to deposited depth, a dry density must be applied to account for the voids (*i.e.* interstitial water). In this case, the dry density applied is based on the observed density of surficial sediments on the flats of Newark Bay (750 kg/m³). Surface sediment density represents the best data on the density of newly deposited bay sediments. It is reasonable to assume that newly deposited sediments from the HDP dredging will have a similar density to the exiting surface sediments of the bay.

If the DEA properly accounted for re-bulking, the entire analysis of impacts on the contaminant profile of the upper six -inches of the flats would change. Many more grid cells would show a measurable change in surface contamination than are predicted in the DEA, since any newly deposited sediment in a given cell would be thicker and account for a greater percentage of the post-dredging top six-inch layer. Where the contaminant concentrations in the newly deposited sediment differ from the pre-existing surface contamination levels, the amount of change in contaminant levels in the post-dredging top six-inch layer would be magnified. This failure to account for re-bulking is a critical flaw in the DEA's methodology, which renders unreliable the ultimate conclusions about the impacts of the HDP on the RI sediment sampling.

USACE RESPONSE: We do not concur for the following reasons. The methodology used in the EA took into account sediment consolidation. Please note, the figure below presents a relationship between the bulk density of the newly deposited material and the concentration in a post-HDP core, for conservative values of the parameters. This analysis shows that if the chemical concentration in the dredged material is five times the concentration in the existing surface sediments, and if the bulk densities differ by a factor of two, then the computed chemical concentration in the post-HDP core is changed by only about 5%. Thus, the assumption of equal

bulk densities is reasonable.



- g. The DEA never explains whether, or why, the currently available data on contaminant levels in Newark Bay sediment is “sufficient data to make a reasoned decision,” as required by the most recent court decision concerning the HDP. As explained further in ¶ 2 below, EPA (with the help of the Corps) has identified further sediment data needs in and adjacent to the HDP project area in order to adequately characterize contaminant distributions.

USACE RESPONSE: We do not concur. The data used in the chemical analysis in the EA consisted of the most expansive data set in that it is the recent, reasonable and acceptable (best available) data at the time. The DEA used all the data from USACE dredge samples and USEPA Phase I samples (DEA Appendix 2). Please recall, USACE delayed the analysis in this EA to await the EPA Phase I data set to be as inclusive and considerate of all reasonably anticipated data on the subject, as possible, and as per NEPA requirements. Also recall, in the January 2006 EA, the Corps also examined the following two data sources Contaminant Assessment and Reduction Program (CARP) and Inventory Report (Tierra Solutions, 2004). Also, The USACE examined data bases from the EPA’s Regional Environmental Monitoring and Assessment Program (REMAP), and National Oceanic and Atmospheric Administration’s (NOAA) Query Manager (that revealed 26 potentially relevant data sets within the NBSA) which assessed levels of 2,3,7,8-tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD) and its congeners. With regard to 2,3,7,8-tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD) and its congeners in the Newark Bay Study Area, USACE has determined the CARP, the Inventory Report, the EPA REMAP, and the NOAA Query Manager contain no new pertinent sediment data concerning dioxin that would alter the analysis of contaminant impacts conducted for the 1999 Final EIS, updated in the 2004 EA and subsequently analyzed in this EA.

However, we will clarify in the text to reflect why the data used in the sediment chemical evaluation in the EA are considered sufficient for the purposes of assessing the potential impacts on the RI/FS by the HDP in NBSA.

- There are data in every geomorphic area.
- There are data in every dredge area.
- There are data in every geographical region of the bay.
- There are data at depth in the channel to characterize the dredged material.
- There are data on the surface of the flats to characterize these areas.
- To the extent that there are areas with unusual concentrations, these would be limited in spatial extent (between existing data points) and therefore the impacts would be limited. The areas of elevated concern (AEC) analysis provided an evaluation of such a possibility.

- h. In the “elevated areas of concentration” scenario, the DEA uses an averaging method that skews downward the predicted contamination levels in re-deposited sediment. This is the result of the routine used in the DEA to estimate contaminant concentrations in the sediment deposited on the flats.

USACE RESPONSE: We do not concur. The AEC analyses presented in the DEA does not underestimate or skew down the potential change in surface concentrations in the flats caused by the resuspension of sediment from the side slopes for the following reasons. USACE used all available data and applied a realistic and scientifically justified and acceptable method of estimating contaminant concentrations in the dredged material. This method involved the use of Thiessen polygons to define chemical concentrations throughout the areas to be dredged. As discussed in the DEA and Appendix 2, Thiessen polygons are a set of adjacent polygons that cover the entire area, one polygon for each data point. All locations within a given polygon are closer to the data point within the polygon than to any other data point. Since the resuspended dredged material is mixed within the water column, it was realistic, and therefore, justified and entirely acceptable per current scientific methods to characterize the mixed material from each dredge area by combining data from throughout the dredge area.

In the AEC scenario, to estimate these values, the DEA divides the relevant HDP contract areas into 11 sections and calculates a single average contaminant level for each section based on the assumption that one-half of the side slopes within [the] each section is contaminated at a level equivalent to the 90th percentile of all data points collected south of the northern tip of the HDP, while the rest of the section is contaminated at the same level calculated for the baseline scenario. (Appendix 2, pp. 7-8) This average concentration, for a given section, is then applied to all of the sediment from that section which deposits on the flats.

USACE RESPONSE: We concur. This is an accurate description of USACE’s highly conservative method. The location of possible AEC’s within the side slopes are most likely located within the top six feet (which is approximately less than ten percent of the side slope) as this is the location of the post- industrial layer.

By averaging the contaminant levels in this way, the AEC analysis fails to account for the fact the sediment dredged from the side slopes – which is closer to the edge of the channels

– is more likely to contribute to deposition on the flats than sediment dredged from the channel bottom. In other words, the sediment depositing on the flats from a given HDP section will consist disproportionately of sediment from the side slopes.

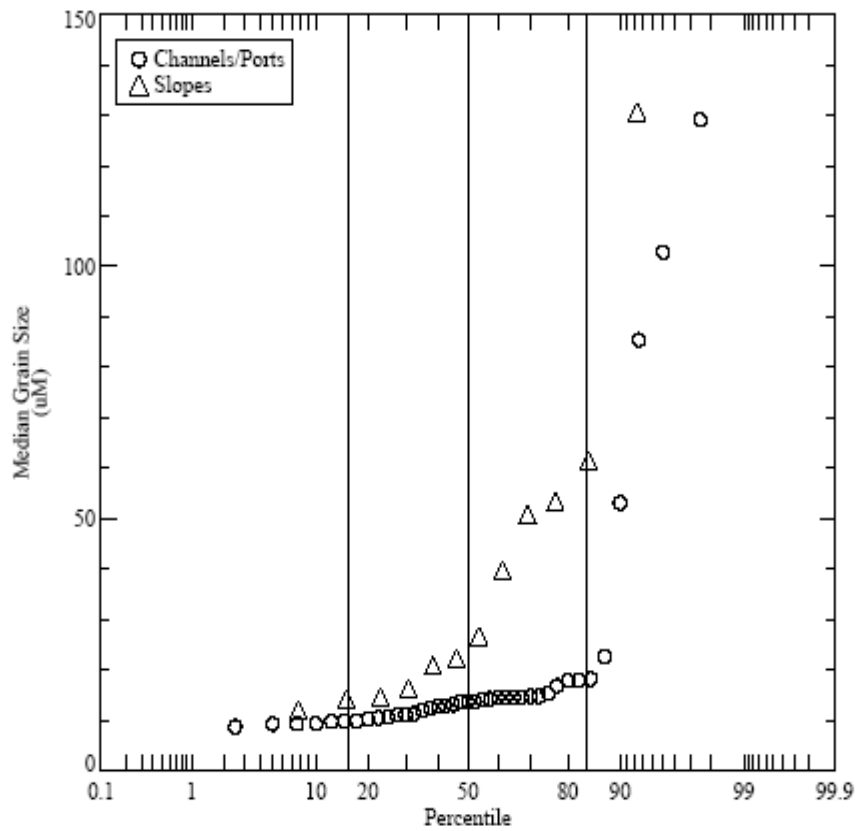
USACE RESPONSE: We do not concur for the following reasons. The comment that “the fact the sediment dredged from the side slopes – which is closer to the edge of the channels – is more likely to contribute to deposition on the flats than sediment dredged from the channel bottom” is not accurate. The evidence is to the contrary; in fact the material from slopes is less likely to be widely dispersed than material from the channel bottom. The NBSA Phase 1 data show (please see figure insert below) that side slope material exhibits larger grain size than channel material. Larger grained material settles more rapidly and therefore disperses less. For this reason, the resuspension and transport of dredged material from the side slopes are likely to be less than the resuspension and transport of channel bottom material, which is comprised of smaller grain sediments.

Accordingly, under the DEA’s “AEC” scenario in which the side slopes are the most contaminated portion of the dredged sediment, the re-deposited sediment in the flats would actually have a higher concentration of contaminants than the “average” concentration calculated for the HDP section from which the sediment originated.

USACE RESPONSE: We do not concur. The DEA does not state that the entire side slopes are the most contaminated portion of the dredged sediment. The location of possible AEC’s within the side slopes are most likely located within the top six feet as this is the location of the post-industrial layer. Also, please see the response above. While it is true that side slope material is resuspended closer to the flats, the larger grain size of side slope material will tend to reduce the extent of resuspension and dispersal of side slope material. Further, taking into account the dispersal and mixing that occurs in the water column, the USACE has concluded that the approach taken in the DEA is reasonable.

Thus, through the DEA’s selected averaging method, the AEC analysis under-estimates the potential change in surface concentrations in the flats caused by the resuspension of highly contaminated sediment from the side slopes.

USACE RESPONSE: We do not concur. The DEA’s method of the AEC analysis does not under estimate the potential change in surface concentrations in the flats caused by the resuspension of sediment from the side slopes. Please see responses above.



Cumulative probability distribution of median grain size by geomorphology in Newark Bay

Data Source: 2005 NBSA Phase I

Input file: epa_grain_size_input.csv

MS - D:\JOBS\ACEnes\Analysis\Tech_Memo_Comments\grainsize_boxplot.pro
 Fri May 11 10:19:57 2007

PRIVILEGED AND CONFIDENTIAL
 ATTORNEY WORK PRODUCT
 PREPARED AT REQUEST OF COUNSEL

2. The DEA fails to consider at all the impacts of the HDP on the Feasibility Study portion of the RI/FS – that is, on EPA’s evaluation and selection of a remedy for the NBSA. Regardless of whether the HDP affects the results or interpretation of EPA’s sediment sampling outside of the channels, the fact that the HDP will disperse a mass of contaminated sediment outside the channels constrains EPA’s future remedial choices with respect to the channels and side slopes. Specifically, the Corps’ navigational dredging will render impossible any targeted remedial dredging of sediment once confined to the channels but subsequently diffused across the site. In other words, the HDP – if conducted as navigational, rather than remedial dredging – will adversely affect EPA’s ability to contain and clean-up the contamination in Newark Bay, resulting in a less thorough Superfund cleanup than may otherwise have been the case.

USACE RESPONSE: We do not concur for multiple reasons. The statement that the HDP will disperse a mass of contaminated sediment outside the channels constrains EPA’s future remedial choices...” is incorrect. As modeling efforts have indicated no change/ impact to surface sediment contaminate concentrations resulting from the HDP, the “...sediment once confined to the channels but subsequently diffused across the site” would not impact EPA from selecting or implementing remedial dredging as an alternative remedy for the clean-up of contamination in Newark Bay.

The comment regarding “...navigational dredging will render impossible any targeted remedial dredging of sediment once confined to the channels but subsequently diffused across the site.” is also incorrect. Remedial dredging may still occur in those areas adjacent to channels or in any other area of the NBSA as deemed appropriate by the EPA Feasibility Study. The comment assumes remedial dredging may only be evaluated and/ or eventually selected for areas posing unacceptable risk, prior to EPA defining or establishing what constitutes or defines them or if any area of the NBSA does indeed require remediation.

EPA’s ability to contain and clean-up sediment contamination in Newark Bay will be defined in the Feasibility Study, which would presumably evaluate and establish uniform clean-up action levels for the entire NBSA, without prejudice to specific areas or AECs. Nearly all of the channels planned for deepening have been dredged previously to depths below the layer deposited during the industrial period. Thus, much of the silt in the channel has been deposited since the last dredging event; the HDP will remove these silts as well as underlying pre-industrial era sediments.

The BMPs employed while dredging the surficial soft silt material in the HDP within the NBSA include many of the most substantial and applicable remedial dredging methods that could be applied (see table insert below). Please note that this table is not all inclusive of remedial dredging BMPs such as containment, special processing, disposal and performance standards. In addition, continuing coordination with EPA and the states will insure that all protective measures required will be implemented.

BMPs	Remedial Dredging³	HDP
ENVIRONMENTAL WINDOWS- DREDGING RESTRICTION	X	X
USE OF ENVIRONMENTAL BUCKET DESIGNED TO REDUCE SEDIMENT AND MINIMIZE RESUSPENSION	X	X
SIGNAL LIGHT IN THE CONTROL STATION TO VERIFY ENVIRONMENTAL BUCKET CLOSURE AND SEAL	X	X
BUCKET PENETRATION/DEPTH SENSORS	X	X
REQUIRE BUCKET POSITIONING SOFTWARE	X	X
DREDGED MATERIAL PLACED DELIBERATELY IN BARGE TO PREVENT SPILLAGE	X	X
DREDGE TO BE OPERATED TO MAXIMIZE THE BITE OF THE ENVIRONMENTAL BUCKET		X
BUCKET HOIST SPEED LIMITATION	X	X
BUCKET DESCENT SPEED LIMITATION		
NO BARGE OVERFLOW RESTRICTION FOR NON- HARS MATERIAL	X	X
USE OF ENVIRONMENTAL BUCKET TO REFUSAL FOR NON- HARS MATERIAL		X
DECANTING OF WATER FROM BARGES PRIOR TO DISPOSAL AT DESIGNATED LOCATION		X
BARGES OR SCOWS USED TO TRANSPORT SEDIMENT SHALL BE SOLID HULL CONSTRUCTION OR SEALED EXCEPT FOR SUBAQUEOUS DISPOSAL	X	X
GUNWALES OF THE DREDGE SCOWS SHALL NOT BE HOSED DURING DREDGING	X	X
BUCKET SHALL BE LOWERED TO THE LEVEL OF BARGE UNWALES PRIOR TO RELEASE OF THE BUCKET LOAD	X	X

³ USACE 2006 Environmental Assessment

RINSE TANK	X	
TURBIDITY MORNITORING OF DREDGING	X	X
SILT FENCE IN SENSITIVE AREAS		X

As a related matter, the DEA fails to consider the adverse impacts of exposing, and leaving behind as the new surface of the side slopes (and/or of other newly dredged areas), any previously buried hot spots of contamination – *i.e.*, “residual” contamination. The surface of the side slopes are subject to erosion and resuspension through forces such as ship wakes, currents, tides, sloughing, etc.

USACE RESPONSE: We do not concur for the following reasons. The DEA does “...consider the [] [potential] adverse impacts of exposing, and leaving behind as the new surface of the side slopes (and/ or of newly dredged areas), and [] [potentially] previously buried hot spots of contamination...” in Appendix 2, Section 2.3 Effects of Uncovering Areas of Elevated Concentrations. The DEA evaluates the potential impact related to this action by modeling sediment exposure and subsequent dispersal of an elevated sediment concentration equal to the 90th percentile of all data collected south of the northern tip of the HDP.

Thus, residual contamination left behind in the new surface layer of sediment is prone to dispersal throughout the Newark Bay ecosystem. This will make it impossible for EPA to fully clean up the now-buried mass of contamination at a later date, since it will become dispersed across a broader area.

USACE RESPONSE: We do not concur. Results of this analysis predicted few insignificant changes in surface sediment concentrations resulting from the HDP; therefore the potential exposure and subsequent dispersal of AECs would not “...make it impossible for EPA to fully clean up the now-buried mass of contamination at a later date...” , and if it exists, as there would be little notable change to the existing conditions.

The USACE has incorporated a majority of remedial dredging elements as best management practices (BMPs) for HDP dredging within the NBSA (see table above). The current BMP's provide adequate protection as demonstrated by the regulatory approvals of the involved federal and state (New York and New Jersey) regulatory agencies and demonstrated by the EA modeling and chemical analyses. Thus, the few additional remedial dredging BMP methods that are not currently included within the HDP construction are either not applicable, not proven to be effective, or will not provide substantial additional protection (or may even possibly cause more harm) to warrant their use. As new information becomes available on additional or new BMP's (ex. Lower Passaic River TSS Pilot Study), full consideration and coordination by USACE with the regulatory agencies and stakeholder community will be pursued, as is required to insure CWA certification by each state.

Please note, nearly all of the channels planned for deepening have been dredged previously to depths below the layer deposited during the industrial period. Thus, much of the silt in the channel has been deposited since the last dredging event (2004); the HDP will remove these silts

as well as underlying pre-industrial era sediments. Neither of these sediment deposits are of interest to EPA for their RI/FS goals. Following the HDP, the residual sediments in the channel will be a mixture of these materials, material remaining from dredging the side slopes, and newly deposited silt that will quickly cover the bottom and side slopes. Corps bathymetric and side scan sonar surveys as well as 100% of the Beryllium-7 radiochemistry data from the EPA Phase 1 samples taken from the channel side slope geomorphic areas indicate that the channel side slopes are active depositional, NOT erosional, areas. To the extent that the residual layer along the side slopes includes material deposited during the industrial period (i.e. the sediment within the top 6 feet), the residual contaminant concentrations may be locally elevated. As such, the commenter's concern regarding exposure of the residual layer would be a preexisting condition to the HDP. In terms of environmental effects and as prior NEPA documents (i.e. 1999 FEIS and 2004 EA) have evaluated (and found to be sufficient by the Court), this elevation is likely to be temporary, however, as new sediment and deposition will lead to post-HDP contaminant levels that are similar to current conditions.

These issues are particularly significant given that the DEA concedes there is presently insufficient data to identify the location of any hot spots that may exist in the side slopes. *See* DEA at Appendix 2, p. 7 (stating that hot spots "if they exist, are local," but that "the available slope data cannot be used to represent" such hot spots).

USACE RESPONSE: We do not concur for the following reasons. The commenter misrepresents the information in Appendix 2 page 7. The correct citation from Appendix 2 is...

The first step in the AEC analysis involved determining whether there is evidence of higher contaminant concentrations on side slopes compared with the channel. Based upon the NBSA Phase I data, overall, there were no significant differences in depth-integrated concentrations. Thus, contaminant concentrations are not in general elevated on the slopes, indicating that AEC's if they exist, are local. Furthermore, the available slope data can not be used to represent AECs.

In the absence of data adjacent to the channels that could be used to represent AECs and acknowledging the limitation of the available data, the "elevated concentration" was set equal to the 90th percentile of all data collected south of the northern tip of the HDP. This analysis is designed to be conservative, as the data used to compute the 90th percentile included all NBSA Phase I data as well as all historical data collected within approximately half of Newark Bay at any depth, including previously dredged core locations

In other words, the method used in Appendix 2 was highly conservative in that the location of possible AEC's within the side slopes are most likely located within the top six feet (which is approximately less than ten percent of the side slope) as this is the location of the post- industrial layer. Please also see our response to comment 1f regarding sufficient data.

Moreover, the Corps' analysis of historical bathymetry maps identified several highly depositional areas that are suspected to contain historical deposition of contaminated sediment dating to the period of the greatest pollution in the Bay, some of which appear to be in or immediately adjacent to the channels and/or side slopes. *See* DEA at pp. 38-40 & Figure 4-2. Specifically, on Figure 4-2, the southernmost portion are area 7 immediately abuts the Elizabeth

Channel; portions of area 9 immediately abut the S-NB-1 contract area;⁴ area 10 is directly in the South Elizabeth Channel and side slopes; area 12 immediately abuts to the S-NB-2 contract area; and areas 13-16 and 18 all appear to overlap with the side slopes of HDP contract areas in the Arthur Kill and Kill van Kull. (As discussed further in ¶ 5 below, it appears that the Corps has actually recommended that EPA focus on many of these areas for further sampling.) Because of the imprecision of the historical bathymetric maps on which Fig. 4-2 is based, it may well be that some of the areas that appear to abut the side slopes actually overlap with them. Further, even if these areas are immediately adjacent to, rather than within, the side slopes, the very close proximity may mean that these historical deposits are subject to being exposed as the post-dredging face of side slopes, or exposed soon thereafter due to slumping and/or erosion of the adjacent post-dredging side slopes. The DEA, however, ignores most of these areas and identifies only area 10 as being located in the HDP project area; the DEA then discounts the significance of area 10 because the sediments there “may” have been disturbed by prior dredging events. DEA at 39-40. But the area also “may not” have been disturbed as suggested, or not disturbed to such an extent that high levels of contamination are no longer concentrated there. This is particularly the case for the portions of area 10 that lie in areas into which the South Elizabeth channel will be widened, which have not previously been dredged.

USACE RESPONSE: We do not concur. As early as summer 2005, the Corps recommended to EPA and Tierra (which they adopted into their program) to take samples as part of Phase 1 in several areas that appeared on historical charts of the bay to have accumulated relatively thick sedimentary deposits during the period of peak pollution in the bay. As shown in the Phase 1 sediment sampling, these areas identified by USACE experts did indeed have higher concentrations of many contaminants. In addition, the Corps performed a considerably more rigorous analysis of historical chart/bathymetry data in the bay to identify if and where any other such areas existed, and if these areas intersected directly with the remaining HDP construction. The Corps’ analysis of historical bathymetry maps identified, to the extent possible given the spatial and temporal accuracy of the source data, several highly depositional areas that may contain historical deposition of contaminated sediment.

Within the existing coordination framework between USACE and USEPA, the Corps recommended that EPA focus on many of these areas for further sampling in Phase II as well as the possible definition of the historical depositional areas as a separate geomorphic unit to the bay. These additional sampling locations are identified in Figure 4-20 of the DEA. Given the relatively large geographic scale of the bay when compared to the HDP channels and side slopes, the commenter’s have inaccurately extrapolated many of these historical depositional areas to overlap with the area affected by the remaining HDP construction. In other words, nearly all of these Corps proposed samples (which were identified by seeking the location in each historical area of deepest potential deposition) fall outside the HDP contract areas thus the HDP construction will not directly impact the RI/FS for two reasons. First, the ensuing RI sampling work plans are likely to rely very heavily on the historical depositional bathymetry analyses

⁴ Notably, the composite sediment sample from the S-NB-1 contract with the highest measured level of 2,3,7,8-TCDD is located in this area. See Aqua Survey, Inc., Technical Report on the Sampling and Testing of Sediment from S-NB-1 Contract of the Harbor Deepening Project for Upland Beneficial Use in New Jersey and/or New York (Nov. 4, 2004) (Composite Core “E”).

provided to EPA and Tierra by the Corps. Second, no matter where EPA chooses to sample in future RI endeavors, the Corps has committed to coordinate the remaining HDP construction contracts to avoid and minimize the potential conflicts with the EPA RI/FS study as an element of their adaptive management and mitigation requirement (to reduce or avoid adverse effects).

The sample locations within the HDP will not be impacted either. Due to the schedule of the HDP contracts and the side-slope deference option within S-NB-1, EPA and Tierra has ample time to collect samples at these locations as well as other locations that EPA and Tierra may select to sample. This mitigation measure is further ensured by the monthly coordination meetings held among the involved agencies on this topic. Future scheduling and sampling activities within the NBSA will similarly be coordinated to avoid conflicts between the two efforts. For example, if the Phase II sampling results indicate concerns related to areas within remaining USACE contracts, the USACE, in coordination with the EPA and other involved parties, will modify the dredging schedule, contract areas, or methods, as necessary, in order to avoid impacting the RI/FS, to repeat, as was done for the NB-1 contract. The currently documented, nearly continuous coordination that has been established between the Corps and EPA in the execution of their respective actions ensures the future avoidance of interference.

The comment footnote is also somewhat misleading. While composite E from the S-NB-1 contract upland testing did have the highest measured 2,3,7,8 TCDD concentration of the composites evaluated in that contract, those sediments were found to be acceptably dredged and managed using the established rigorous methods employed by the Corps and as required by the WQC issued by the State regulatory agencies.

In sum, given that the DEA has identified numerous “high deposition” locations in the Bay that intersect with or immediately about the HDP and are likely candidates for high levels of contamination, it is incumbent upon the Corps to determine (through sampling) whether or not such areas actually include high levels of contamination that would be re-suspended and/or exposed in-place by the planned navigational dredging; otherwise, the Corps has not satisfied its obligation, pursuant to the court’s remedy decision, to gather “*sufficient* data to make a reasoned decision.”

USACE RESPONSE: We do not concur. The USACE has gathered sufficient data to perform the required analysis, please see response to 1f. In addition, all required sediment sampling has been completed and coordinated with the states and/or EPA as is required under MPRSA and CWA. Finally, USACE will coordinate with EPA throughout the RI/FS to ensure that our project does not hinder their ability to perform the CERCLA investigations required.

3. The DEA fails to account for the cumulative impacts of all “other past present and reasonable [sic] foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.” DEA at 62 (citing 40 C.F.R. § 1508.7). The DEA excludes consideration of known permitted actions in the NBSA other than those undertaken by the Port Authority from the cumulative impact analysis. *Id.* at 65. Several of the excluded projects are of significant size and are likely to contain contaminants, including a 20,500 CY project around the Amerada Hess Corp. oil terminal, a 37,550 CY around the Motiva Enterprises, LLC oil terminal, and a 175,700 CY project by OENJ Cherokee Corp.

DEA at 66-67, Table 5-2. These are not minor and, even if they were individually, they should be included in the alternatives analysis as reasonably foreseeable. Incredibly, the DEA also excludes any consideration of resuspension resulting from continued operation of the Newark Bay Confined Disposal Facility, which relates to the disposal, back into Newark Bay, of materials dredged from the HDP and other harbor projects that are too contaminated for either ocean disposal or upland placement. DEA, p. 67. As the Corps must be aware, the Port Authority is in the process of applying for approval to deposit additional non-HARS material in the pit. Please explain why that activity should not be accounted for in the cumulative impact analysis, and why the DEA should not also account for all permitted or foreseeable projects that might affect the NBSA, whether or not deemed “individually minor.”

USACE RESPONSE: We do not concur with the overall comment for the following reasons. The DEA considers relevant (as in similar actions) potential cumulative adverse impacts of two of those three projects that are permitted and expected to occur within the HDP schedule, over the next five years. Although the following projects, including “... a 20,500 CY project around the Amerada Hess Corp. oil terminal, a 37,550 CY around the Motiva Enterprises, LLC oil terminal...”, are permitted, it is unlikely that dredging would be conducted concurrent with the HDP. At the time of the initiation of the cumulative assessment all permittees were contacted by the Corps to determine if the permitted work was likely or not based on funding and other applicant constraints. It was this recent coordination with the permittees that determined which projects would be considered reasonably foreseeable and included in the cumulative assessment.

The 175,700 CY project by OENJ Cherokee Corp was inadvertently not included in the cumulative assessment which utilized 900,000 CY (Table 5-5 of the DEA) rather than 1,075,700 CY. We do not believe that this omission changes the conclusions of the modeling and chemical analyses performed for the cumulative assessment. The majority of this permit work is planned to be performed over two thousand feet from the nearest remaining HDP construction. The DEA clearly demonstrates that projects included in the modeling of the cumulative assessment exhibit deposition plumes that are restricted spatially to the areas near the channels (DEA Figure 5-3 and Appendix 1 Figure 38). Therefore, the 5-fold smaller volume, to be resuspended along the shore and at a distance from the channel, is unlikely to interact with the deposition plume from the HDP. To evaluate this quantitatively, an alternative calculation was performed to evaluate the potential contribution from this additional volume of material projected to be dredged.

This chemical evaluation used the same method and parameter values as used in the HDP and cumulative assessments presented in the DEA. The total mass of resuspended material was estimated to equal 3% of 175,700 cy, or 5,300 cy. At a bulk density of $1,500 \text{ kg/m}^3$, this equates to 6,045,000 kg of material. The area of the flats in this portion of Newark Bay is approximately equal to $2,000,000 \text{ m}^2$. A preliminary estimate of the amount of material deposited is therefore 3.0 kg/m^2 . As in the DEA, the depth of deposition was calculated by dividing mass of deposited material by the dry bulk density of surface sediments (750 kg/m^3). This results in a depth of deposition equal to 4 mm. Finally, as demonstrated with the particle tracking model, it is likely that a large majority of the material will deposit relatively close to the dredge site, which is at a distance from the HDP channels. This means that deposition farther away from the project (i.e., in the vicinity of the HDP channels) is likely to be considerably less than 4 mm. This is unlikely to interact significantly with the dredging modeled in the cumulative assessment.

Please note, the Port Authority is applying only for authorization to maintain the availability of the NBCDF. All use of the NBCDF requires an individual Acceptable Use Determination from the New Jersey Department of Environmental Protection to ensure that the material is not suitable for placement at the HARS and cannot feasibly be managed at the currently available upland placement sites.

The NBCDF is currently undergoing permit review by the Corps to determine if the operation (construction and capping, only, per USACE regulatory authority) of the facility should be extended into the future. NJDEP is currently reviewing management of the CDF under their regulatory authority. While this placement site was actively used at the beginning of the decade, it has most recently only been used as a contingency placement site when upland placement is not possible for unexpected reasons such as encountering excessive debris in the surficial soft silt material. Aside from the reasoned determination that the CDF is unlikely to be used, additional justification for excluding this permit under our cumulative assessment is based upon the fact that this (unlikely) disposal activity is significantly different than the dredging and dispersal actions that we modeled (see previous response).

Please note, extensive monitoring of past placement at the site indicates the effectiveness of containing disposed material given the bathymetric confines of the NBCDF. Total Suspended Solids (TSS) sampling and testing from past disposal events indicates that elevation of TSS attributable to the operation of the Newark Bay Confined Disposal Facility (NBCDF) has not occurred. Currently, this site is neither identified as a first option for placement of non-HARS material and is not planned to receive material (except as an anomalous contingency which is admittedly hard to quantify for model input) during the HDP construction. Operation of the NBCDF has been monitored and will continue to be monitored to ensure it meets state and federal requirements. If a USACE permit extending its operation were to be issued by the Corps or a management permit issued by NJDEP the NBCDF may become a contingency placement option for non-HARS material.

Alternatives

4. The DEA rejects the “Remedial Dredging” alternative for reasons that are clearly at odds with the March 2006 federal district court ruling. First, the DEA erroneously asserts (at 22, 28-33) that the sediment to be dredged does not qualify as “Hazardous, Toxic, or Radioactive Waste” (“HTRW”), and that the Corps’ HTRW Guidance does not apply, notwithstanding the Court’s explicit rejection of that reasoning.⁵ (See March 8, 2006 Opinion and Order at 72-73 & n. 255).

⁵ Additionally, since the sediment is classified as hazardous under the HTRW Guidance, and is part of a Superfund site, it is completely irrelevant for the purpose of determining an appropriate in-water dredging method that, for the separate purpose of on-land treatment and disposal, it is exempt from RCRA hazardous waste requirements (DEA at 31) and is not covered by New Jersey’s Hazardous Waste Regulations (DEA at 32-33). As the commenters have stated several times to the Corps, regulatory and risk-based standards for handling of contaminated materials in a marine environment, where there is direct exposure of toxic contaminants to environmental receptors, are very different than the standards applicable for on-land disposal, in which contaminants are carefully contained and shielded from environmental exposure. Thus, for example, while contaminated silt from the HDP is deemed legally suitable, after “amendment” to immobilize the contaminants, for upland “beneficial use” as fill material, the same sediment is deemed legally unsuitable for in-water use as fill material at the HARS disposal site offshore, precisely because of the risks of direct exposure to marine organisms. In fact, EPA’s Draft Screening Level Ecological Risk Assessment

The DEA points out that under the HTRW Guidance any remedial dredging work must be 100% funded by the local partner for the civil works project – in this case, the Port Authority. Even if correct, however, this is not a valid reason to reject the alternative; if the HTRW Guidance applies (and it does) then the consequence of such a policy is that, for the Corps to proceed with the HDP within the NBSA, the Port Authority would need to agree to pay for any additional costs associated with any appropriate remedial action, over and above the costs of dredging in a non-HTRW site. The fact that the Corps could not proceed absent funding from a third-party is entirely unremarkable; that is already the case with the entire HDP, since the Corps' participation in the HDP is, by law, contingent on a substantial cost-sharing contribution from the Port Authority. Accordingly, a need for local sponsor funding is not a valid reason to reject this alternative. (As the DEA notes, a NEPA “alternatives analysis must include alternatives not within the jurisdiction of the lead agency.” DEA at 22 (citing 40 C.F.R. 1502.14(c).)

The further statement in the DEA (at p. 30) that “remedial dredging is not applicable to navigational dredging” is nonsensical. The fact that the primary purpose of the dredging is for a navigational civil works project does not mean that remedial dredging techniques cannot, or should not, be applied when contaminated sediment is present. Indeed, as noted above, the HTRW Guidance specifically envisions that environmental remediation work would be integrated into navigational dredging projects when HTRW is present.

The DEA (at p. 30) offers as a further reason to reject the remedial dredging alternative that, to implement this alternative, “additional time and funding must be authorized.” As discussed above, no federal funding authorization would be required; rather, the local partner, which is already contributing about half the cost of the entire HDP, would be responsible for providing additional funds as needed under this scenario. (The DEA also makes no attempt to quantify – or even explain in qualitative terms – how much of an additional cost would be involved, and thus provides no reasoned basis on which to reject the alternative because of cost.) With respect to the purported need for “additional time” to complete the HDP, the DEA does not explain any basis for concluding that remedial dredging methods – including in only “selected locations” (*id.*) – would cause the project to miss the 2012 target date for completion. In fact, past history indicates that the Corps is perfectly able to adjust its schedules in the event of delays so that the ultimate completion date remains unchanged; this is discussed further in ¶ 8 below.

The DEA further states (at p. 31) that the Corps “cannot unilaterally determine that remedial dredging is either required or approved until the congressionally-authorized agency [EPA] makes that determination and a designated response action [under CERCLA] has been identified.” Following that logic, the Corps lacks authority to do *anything* with the contaminated sediment in the channels in NBSA until EPA makes its remedial decision; on the Corps' reasoning, EPA must complete the entire CERCLA-mandated process of an RI/FS and

for the NBSA (Mar. 30, 2007), at p. 69, identifies a “screening value” of 3.6 ppt total dioxin/PCB TEQ; virtually all of the available sediment samples in Newark Bay exceed this level for 2,3,7,8-TCDD alone. (We believe the Corps has received a copy of this draft EPA report for inter-agency review.) Likewise, for virtually *all* areas of the HDP and for *all* six contaminants considered in the DEA, the DEA's average contaminant concentrations for both the “base case” and “AEC” scenario exceed the ecological risk screening values in the EPA report. *See* DEA at Appendix 2, Table 2.

ROD before any action can be taken regarding the contaminated sediment in the NBSA. But it would be perverse to say (as the DEA does) that the Corps cannot take environmentally protective action (*i.e.*, modifying the HDP to conform to remedial dredging standards) until EPA issues a ROD, even while it is free to take less protective action (conducting the HDP as planned) that constrains EPA's remedial options prior to the ROD. Rather, if the Corps need not await a ROD to determine that it should *not* perform the HDP in the manner of remedial dredging (which the Corps believes to be the case), then it also need not await the ROD to determine that it *should* perform the HDP in the manner of remedial dredging. Thus, if the HDP is going to proceed before EPA issues a ROD, it is incumbent upon *the Corps* to determine under NEPA (and after appropriate consultation with EPA) in what manner it should conduct the dredging to address any reasonable environmental concerns.

USACE RESPONSE: We do not concur with above argument due to fundamentally erroneous assumptions and incorrect statements relative to USACE regulations and the Alternative Analysis section of the DEA. The remedial dredging alternative was finally screened out, after careful analysis, because it simply is neither an applicable nor justified alternative for the subject Federal action, nor is it ripe for decision for any future Federal Action since EPA is currently conducting its CERCLA investigations. The goal of remedial dredging is to specifically remove HTRW-designated sediments and to restore the environment to some desired former condition. Navigational dredging has as its goal the effective, efficient and environmentally protective and sustainable deepening of Federal navigation channels. What commenters appear to be confusing is our ability to perform navigational dredging in a wholly environmentally sustainable and protective manner, as is required and has been demonstrated in the DEA and in our responses provided herein. Recall, the adopted BMP's, interagency coordination, adaptive management and mitigation to which USACE has committed provides all the protections required as pertains to the HDP effects to/on the RI/FS. Since the issue of whether or not the NBSA will even require remediation, and if so, what measure would be recommended should not be addressed in this NEPA document (USACE is not tasked with determining if the NBSA meets HTRW standards or with identifying and then executing a remedial or response action) prior to the conclusion of the EPA's RI/FS and subsequent ROD. Therefore, the commenters desire for the Corps to recommend the alternative to perform remedial dredging is premature (not ripe for decision) since EPA is currently collecting the necessary information to make such a determination. The Corps does concur, though, that we must determine under NEPA (and after appropriate consultation with EPA and the states) in what manner we should conduct the dredging to address any reasonable environmental concerns, as we have and will continue to do. Please note, the Corps HTRW regulation applies to all Corps projects. The DEA clearly and correctly states on page 46 that "To date, the sediments within the NBSA have not been designated for a response action (either a removal action or a remedial action) under CERCLA or as part of a NPL site by the USEPA or a state agency." The USACE cannot unilaterally determine that remedial dredging is either required or approved until the congressionally-authorized agency makes that determination and a designated response action has been identified, as based upon the EPA's CERCLA findings. Thus, the decision whether to (and whereto) implement remedial dredging is within the purview of USEPA's Superfund Remedial Response Process and will be contained in the ROD scheduled for 2012. Also noted on Page 48, "If for some reason material proposed for dredging does not meet the standards for remediation purposes at the HARS, is unable to receive an Acceptable Use Determination (AUD) for upland placement (another remediation purpose), then the USACE, in conjunction with the non-Federal sponsor, would perform the necessary

investigations and analyses to determine the best course of action. This would be fully coordinated with the USEPA, the appropriate state regulatory agencies, and the public.” If, in the unlikely case that the material in the channel were characterized as being HTRW in that it fails the appropriate tests and criteria established by the EPA and/or state environmental regulatory agency that defines HTRW material, the Corps may review the few remedial dredging techniques not already included within the HDP dredging as alternatives to incorporate, as needed and in coordination with the EPA and state regulatory agency(ies) and the project non-federal sponsor, to accomplish the purposes of the civil works navigation project. Given the extensive measures to protect the environment that are already in place in the HDP, and the different constraints related to the purposes and goals of the two efforts (creation of a navigation channel vs. remediation of an unacceptable risk), it is questionable if any additional BMPs would be feasible as part of the Corps HDP. It is only in the unlikely circumstance where the material exceeds an established criteria, where the HTRW regulation would then be implemented as the conditions described above and within the regulation would take effect.

The Project Cooperation Agreement (PCA) for the Harbor Deepening Project (HDP) governs how the Corps of Engineers and the Port Authority will address the issue of any HTRW material that might be discovered during construction. The specific section of the PCA that addresses this issue is Article 15. In addition, USACE is formally partnered (see MOU in Appendix 5 in DEA) with EPA, NJDEP and NJDOT on the Lower Passaic River Study (in both technical assistance and cost-sharing objectives). The commenters participate as stakeholders in this study process, which also encompasses the NBSA as an Operable Unit of the Diamond Alkali site, and therefore, would have the ability to provide input on their concerns regarding any agency decisions.

5. The DEA (at p. 26) rejects “Alternative A” as unnecessary, citing a Jan. 23, 2007 letter from EPA that states that no further RI/FS sampling “in and around the channel deepening efforts” is “envisioned at this time.” However, a subsequent letter, dated Feb. 5, 2007, from EPA to Tierra Solutions (which conducts the sediment sampling pursuant to a consent order with EPA) appears to contradict that conclusion, and therefore requires a re-evaluation of the timing/sequencing alternatives in order to allow an opportunity for any necessary sampling before dredging takes place. The Feb. 5 letter states that:

- the Port Elizabeth Channel shows elevated contamination levels at depth and will require more sampling (see p. 18, ¶ 92 of the Feb. 5 letter);
- more samples will be needed from the Kill van Kull (see p. 18, ¶ 94 of the Feb. 5 letter); and
- further sampling at unspecified locations, to be determined, will be needed to provide adequate data for a “broad spatial characterization” of contamination in the Bay and to better characterize the “variability” of contamination within each geomorphic area (see p. 17, ¶ 90 & pp. 18-19, ¶ 100 of the Feb. 5 letter).⁶

⁶ The memorandum in Appendix 5 summarizing the Feb. 13, 2007 inter-agency coordination also indicates that there will likely be a “Phase III” sediment sampling effort; the DEA does not (nor could it) assert that the Corps knows what sampling locations would be included in that effort.

The February 5th letter (at p. 17) also proposes a number of specific additional Phase 2 sampling locations based on indications that they are “areas of possibly unusually high contamination”; these appear to be the Corps’ recommendations referenced on page 90 & Fig. 4-20 of the DEA, which are based on the Corps’ bathymetric analysis that identified highly depositional areas. (See also the discussion of this bathymetric analysis in ¶ 2, above.) Based on Figure 4-20, six of these proposed sampling locations appear as though they may also be in or adjacent to channels or side slopes that are part of the HDP. These are proposed cores P2-12 (along or near the east edge of the S-NB-1 contract area); P2-13 (in the South Elizabeth Channel, which is part of the S-NB-2 contract); and P2-01, P2-14, P2-15, and P2-16 (in the Arthur Kill portion of the HDP). If these cores are, in fact, in or adjacent to HDP dredging areas, the Corps should wait for sampling results from these locations before dredging in these areas, to determine whether additional precautions are necessary to prevent the resuspension and/or exposure (as residual contamination) of localized hot spots. Such forthcoming data would help to address the problem identified in the DEA at Appendix 2, p. 7, that hot spots “if they exist, are local,” but that “the available slope data cannot be used to represent” such hot spots.

Since the Feb. 5 letter is a compilation of comments from multiple agencies, including the Corps, we expect the Corps has a copy of that letter. If not, we would be happy to provide a copy upon request.

USACE RESPONSE: We do not concur with the overall statement pertaining to delay of the HDP being required. For clarification purposes, we will revise the text to clarify the timing alternatives and the preferred alternative. The schedule of the HDP and the schedule of the Phase II sampling will be coordinated within the current inter-agency coordination plan.

The S-NB-1 contract contains a timing alternative similar to Alternative A which will allow USEPA to conduct their Phase II sampling. Timing alternatives will be considered, and implemented where required, for the remaining HDP contracts within the NBSA as a form of adaptive management and certainly mitigation to avoid potential impacts to the RI/FS.

Based on the S-NB-1 contract schedule, dredging will not begin until late July 2007. According to the current schedule, EPA Phase II sampling will be completed during that time. Through the USACE/USEPA coordination plan, any new data collected from Phase II sampling locations will be evaluated and any changes, if any, to dredging activities (i.e. enhanced BMPs) will be coordinated with the regulatory agencies. Note: that all schedules (USACE and USEPA) may change but the inter-agency coordination and contract sequencing will accommodate any changes. However, as provided in several previous responses, timing/sequencing options, where justified, will be implemented as mitigation measures by the Corps. Also, please see our response for comment 1 regarding sufficient data.

The commenter’s reference to the EPA response to Tierra dated February 5, 2007 is out of context (see commenter’s three bullets). For example, comment paragraph 92 on page 18 states

“Section 3.5, page 3-10. Additional sediment sampling and investigation of potential source(s) of contamination is warranted in the vicinity of the Port Newark and Port Elizabeth channels, where results from several cores indicate sources of PAHs, PCBs, or metals, and elevated concentrations at depth (relative to concentrations in surface sediments). Consider sampling Pierson’s Creek and the peripheral ditch of Newark Airport.” This comment suggests additional sampling in the vicinity of Port Newark and Port Elizabeth (i.e., Pierson’s Creek and the peripheral ditch), rather than in Port Newark and Port Elizabeth, as the commenter implies by paraphrasing the comment. Regarding the second bullet, all currently considered sampling points in the Kill Van Kull are located outside of the navigation channel in the shallower, areas nearer to the shoreline. Regarding the third bullet, this comment has not resulted in any further proposed (draft) sampling stations within the HDP boundaries, apart from the one station (not six) that the Corps itself proposed to EPA to be sampled for the RI/FS, based on our historical bathymetric analysis among other stations all outside the area affected by the remaining HDP construction. This station is located within the South Elizabeth Channel, which is part of the S-NB-2 contract area and not scheduled for construction for at least a year or more. As such, sampling of this location, should EPA decide to, would be done and the results available for consideration well before the HDP construction contract in this area would be underway.

6. The statements in EPA’s Feb. 5 letter that further sampling is anticipated in order to define the spatial variability of contamination within the NBSA also call into question the validity of the DEA’s assumptions about contaminant profiles in different areas of the Bay, and therefore require the Corps to re-consider the timing/sequencing alternatives to ensure that the Corps is able to make its dredging decisions based on sufficient data.

USACE RESPONSE: We do not concur for the following reason. The information in the USEPA’s Feb. 5 letter do not call into question the validity of the DEA’s assumptions about contaminant profiles in different areas of the Bay. Through the inter-agency coordination meetings EPA has neither requested nor even suggested USACE to modify the HDP schedule within the NBSA (see DEA Appendix 5 for documentation of all meetings). USACE has also identified several potential Phase II sampling locations based on a rigorous historical bathymetric analysis (Figure 4-20 in DEA), similar to the stations that the Corps had previously proposed to EPA prior to the Phase 1 sampling (based on the historical bathymetric evaluation done at that time). This proved to be a notable benefit to the RI/FS study. According to the current Phase II sampling schedule, sampling will be completed in June/July 2007. Dredging for the HDP S-NB-1 contract is currently scheduled for late July 2007. Note: that all schedules (USACE and USEPA) may change but the inter-agency coordination and contract sequencing will accommodate any changes. However, as provided in several previous responses, timing/sequencing options, where justified, will be implemented as mitigation measures by the Corps. Also, please see our response for comment 1 regarding sufficient data.

7. The DEA (at p. 25) states that under the proposed action, dredging in the side slopes of S-NB-1 would probably not take place sooner than June 2007, thereby allowing EPA a chance to do more sampling in those areas if they should deem it necessary. However, should EPA decide to do more sampling in the side slopes, our latest information from EPA is that they are unlikely to conduct Phase 2 sampling by that time. Thus, the option contract structure of the S-NB-1 dredging does not provide any real benefit.

USACE RESPONSE: We do not concur. The NBSA Coordination meetings have continuously provided updated schedule information, among many other items and issues ripe for discussion (see EA Appendix 5). In addition, the S-NB-1 contract schedule has been modified, as reported to EPA and the other potentially affected attending agency's at these monthly meetings. Dredging for S-NB-1 will most likely begin in late July 2007. Through our ongoing coordination with USEPA, dredging on the side slopes will be coordinated with USEPA in order to avoid impacting the RI/FS. This revised S-NB-1 schedule accommodates USEPA's revised Phase II sampling schedule. Thus, the option contract structure of S-NB-1 is beneficial to affording EPA the ability to collect any additional Phase 2 samples from the S-NB-1 side slopes, should they determine to do so (however, to date, none are identified as expected or planned in the S-NB-1 side slopes). In addition The USACE acknowledges that the S-NB-1 WQC requires that the USACE submit a request for an amendment to the S-NB-1 WQC for the side slopes option, submitted to NJDEP 90 days prior to award of option.

8. Please explain the basis for the DEA's assertion that both the "Timing/Sequencing Alternatives" and the "Remedial Dredging" alternative would cause unacceptable delays to the completion of the HDP; the DEA currently provides no basis for this claim. It is not obvious that any of these alternatives would necessarily take more time to implement than the selected alternative. Moreover, even if certain portions of the work were delayed under one or more of these alternatives, it is not at all clear that this would extend the ultimate completion date for the entire HDP. Based on the recent history of the HDP, delays in the anticipated start dates of dredging contracts have not pushed back the Corps' expected completion date for the entire HDP. For example, although the S-NB-1 contract has been delayed from the Corps' original anticipated start date, the planned start date of the S-NB-2 and S-E-1 contracts have been moved forward substantially such that the DEA anticipates that work within Newark Bay will be completed sooner than the Corps anticipated as of 2004, and the entire HDP will remain on schedule for completion.⁷ This history indicates fluidity in the Corps' scheduling, such that temporary up-front delays need not lead to delayed completion dates.

USACE RESPONSE: We do not concur; however, we will clarify the DEA text for the edification of the commenters. Although the history of the HDP schedule that is presented in the comment above seems fluid, the HDP schedule is complex with some contracts impacting and depending on the completion of other contracts. Due to recent events (including the litigation) the flexibility of the HDP schedule has decreased. In the DEA the evaluation of both the timing/sequencing alternatives and remedial dredging alternative was not based solely on schedule delays. However, through ongoing coordination with USEPA and sequencing of dredging options and contracts, the HDP will not impact the RI/FS.

While it's true that the Newark Bay contract finishes 9 months earlier in the DEA schedule it should also be noted that Arthur Kill contract finishes 13 months later.

Second, there are differences in the fundamental assumptions of the two schedules. The purpose of the DEA's schedule is to assess environmental impacts of the HDP on the RI/FS. Therefore an "optimistic" schedule that had numerous contracts being performed concurrently (a most

⁷ Compare the 2004 Limited Reevaluation Report at 26 & H42 with DEA at 19.

conservative approach) was chosen as it would tend to maximize impacts. The schedule in the 2004 report was to create a realistic look at the schedule implications of consolidation based on a number of assumptions as outlined in the 2004 report.

Third, the schedule must be understood in light of current events. Schedules will continually be revised to take into consideration the execution of ongoing contracts, navigation safety, and the availability of resources (i.e. funds, equipment, placement sites and available air emission offsets). The recent losses of the dredges Maricavor and Tauracavor out of NY/NJ Harbor make the schedule in the DEA even more "optimistic" than was envisioned when it was prepared.

Mitigation

9. The DEA presents no additional protocols – beyond those offered in its prior NEPA analyses – for assuring the efficacy of the selected mitigation measures; nor does the DEA consider the adoption of alternatives to the Corps’ selected dredging protocols should those methods prove less effective than expected at minimizing resuspension. For both of these reasons, the DEA fails to satisfy the court’s remedy order. (*See* March 8, 2006 Opinion and Order at 76.) We refer the Corps to pages 17-20 our August 15, 2006 letter commenting on the Corps’ June 2005 Draft EA for a detailed description of the sorts of inspection, monitoring, and performance standard protocols that would provide the necessary level of assurance that the Corps’ selected mitigation measures will be effective at minimizing dredging-induced resuspension and that the Corps will alter its dredging methods if they prove to be ineffective. In particular, the following set of protocols would vastly improve the Corps’ current plans:

- Continuous, independent, on-board inspection of dredging operations for compliance with all BMPs concerning sediment resuspension, conducted by a Corps-certified inspector with authority to require corrective action as needed.⁸ The Corps’ contract specifications for the most recent HDP contracts include exhaustive requirements for such an independent inspector to ensure compliance with protocols concerning the ocean *disposal* of sediment after dredging. Please explain in the why the Corps has chosen, so far, not to require similar inspections of the actual dredging operations.

USACE RESPONSE: We do not concur. Multiple layers of quality assurance and quality control of all aspects of the dredging and disposal process by the Corps, the Corps’ contractor and the involved regulatory community are in place to ensure the safe and environmentally acceptable execution of the required work is performed by the Corps’ contractors. The commenter incorrectly confuses these monitoring and inspection requirements with those related to monitoring of placement of material at the HARS and ocean sites (to which the Corps is the

⁸ We note that the American Association of Port Authorities recommends, in an Environmental Management Handbook co-authored by representatives of the Corps’ partner in the HDP, the Port Authority of NY & NJ, that there should be “continuous inspection of dredging activities, particularly during night work,” to ensure compliance with specified environmental precautions. *See* http://www.aapa-ports.org/govrelations/env_mgmt_hb.htm, at EMP No. O-16. Similarly, NJDEP’s dredging guidance manual NJDEP, provides (at p. 16) that “[d]redging contractors may be required to employ independent, on-board dredging inspectors certified by the USACE. These inspectors will observe the dredging and disposal operations to ensure compliance with all permit conditions.” *The Management and Regulation of Dredging Activities and Dredged Material in New Jersey’s Tidal Waters* (Oct. 1997) (“NJDEP Dredging Guidance”).

regulatory oversight agency). Procedurally the dredging inspection process is comprised of the following elements:

- Contractor/dredger Contractor Quality Control Plan (CQC) is provided to USACE-NYD as per the specifications for that contract, of which the states WQC is a vital component. This CQC plan is reviewed and approved by USACE.
 - USACE develops a Quality Assurance Plan (QA), as per the USACE regulations, that is independent of the above plan which is utilized as the enforcement tool for the contract. This plan contains, among many other elements, the details of continuous (daily) visual inspections of the dredging operations, that are documented for USACE internal review regarding enforcement and compliance documentation
 - USACE utilizes Notice of Non-Compliance (NCN) process that is documentation of a contractor's failure to follow specifications and/or the CQC plan. This process details the corrective action that may range from a warning to a financial penalty.
 - Webcam Visual Inspection, per the contract specifications (see example NB-1 P&S Section 12900, Chapter 4), are conducted 24 hours per day, every day, to monitor the entire bucket cycle from the buckets' descent into the water column to the buckets' ascent from the water column, breaking the surface to the loading to the scow, regardless of the density of the dredged material (HARS, Non-HARS).
 - Monthly Construction meetings, that include the states of New York and New Jersey WQC regulatory personnel, as well as the contractors, are conducted to discuss and coordinate issues, actions and resolve disputes, as well as monitor the timely and compliant progress of the contract.
- Continuous, real-time monitoring of the magnitude and extent of any plume of resuspended sediments, using calibrated optical and/or high frequency acoustic sensors, either mounted on the bucket or dredged material barge or located down-current on a separate vessel and/or moored array. Real-time TSS data should be directed to the inspector and the dredge operator to facilitate modifications to dredging methods as needed to control resuspension.⁹

USACE RESPONSE: We do not concur for the following reasons. There are two major obstacles to implementing the simplistically described continuous, real-time monitoring system. First, design and refinement of such a system requires a research program level of effort (i.e., substantial research funding which is not authorized as part of project's purpose and substantial time). One analogy, the Silent Inspector system recently adopted for hopper dredges, took over 15 years and several million dollars to develop to the implementation stage. A similar capability for mechanical dredges does not exist. Reference to footnote 9 does not establish the existence of adequate technology. The citation's senior author is president of the Cable Arm Clamshell manufacturer, and as such the reference is a form of marketing. In fact the reference states that "more informative measurements such as TSS, cannot be measured in real time and vary spatially in three dimensions in the water around a dredging area." Using a surrogate for TSS, i.e. turbidity, doesn't solve the technical challenges because the relationship between TSS and turbidity can vary from location to location.

⁹ See, e.g., Bergeron, et al., "The Cable Arm Clamshell: Development and Track Record for Environmental Dredging" (avail. at www.cablearm.com/promo/TheCableArmClamshell.doc).

The second obstacle is the lack of any regulatory framework under which a real time monitoring system would feed such that adaptive management decisions could be based. Recent TSS monitoring results show that dredging is a minor contributor to TSS in the Harbor and as such any real-time program would face the challenge of differentiating dredging induced TSS from other sources.

- A resuspension “performance standard” that sets a limit on the acceptable amount of resuspended sediment. This standard should be no higher than a level determined in the Final EA to result in no significant adverse impacts (based on adequate modeling methodologies).

USACE RESPONSE: We do not concur for the following reason. The Corps and the involved regulatory agencies through the Water Quality Certification and/or Marine Protection Research and Sanctuaries Act of 1972 (MPRSA) processes have evaluated and determined that the Commenter’s “performance standard” is either inappropriate and/or infeasible (see earlier responses related to research necessary to develop such “standards”). The EPA and the states (and other resource agencies) environmental regulatory departments have ultimate domain over this environmentally protective issue. In addition, the model used to support this EA can not set a “performance standard” as is suggested by the commenters. The model can predict sediment accumulation, which is the focus of this EA, but the precise value that is linked to a demonstrably detrimental effect can only be determined outside the model through extensive research such as described above and finally, as is indicated above.

To summarize, the results of the DEA “hard look” showed that the plume from HDP dredging will not likely significantly impact the RI/FS. In areas where the HDP could potentially affect the RI/FS, potentially adverse impacts are being mitigated through dredge timing sequences and adaptive management. Also, please see our response to comment 2 which describes BMPs being used for HDP in NBSA.

- Over-dredging and back-filling as necessary to avoid exposing residual contamination, in appropriate locations. The determination of where this is necessary should be based on chemical analyses of depth-stratified sediment samples from the side-slopes and other areas to be newly dredged as part of the HDP to determine where the post-HDP surface of the side slopes or channels would display elevated levels of contamination.¹⁰ (See ¶ 2 above.)

USACE RESPONSE: We do not concur for the following reason. As noted in prior responses, following the remaining HDP construction, only preindustrial sediment or bedrock will exist within the channel bottoms. However, channel side slopes, may have (both before and after HDP construction) silt deposited during the industrial era. Numerous and separate data sources by the Corps and EPA indicate that the vast majority, if not all, HDP side slopes are already or are

¹⁰ As a model for this requirement, we note – and have previously noted to the Corps – that the State of Washington, the Corps’ Seattle District, and EPA Region 9 have agreed to protocols for navigational dredging of contaminated sediments in Puget Sound, which calls for precisely this procedure to be followed. *See, e.g.*, p. 11 of the commenters’ letter to NJDEP of 3/9/06 concerning the WQC for the S-NB-1 contract.

likely to be active depositional areas and that any material exposed will be similar to that was exposed previously (through previous deepening construction) and quickly buried due to new sedimentary deposition which matches the current surficial sediment characteristics within the bay (i.e., negligible effect). In other words, “backfilling” occurs naturally (natural attenuation) via bay processes that encourage sedimentation.

The Corps has still never provided a reasoned evaluation of these proposals; the Final EA should do so. If the Final EA rejects these protocols, please explain how the Corps plans to fulfill its “promise” in the Jan. 2006 EA to follow adaptive management protocols to ensure that its mitigation measures are implemented sufficiently to ensure are no significant adverse impacts. *See* March 6, 2007 Opinion & Order at 76.

We further note, with regard to the need for continuous, real-time monitoring of TSS during dredging operations, that the Port Authority’s recent application to the New Jersey Department of Environmental Protection for the continued operation of the Newark Bay Confined Disposal Facility (“NBCDF”) calls for continuous, real-time monitoring of TSS during disposal operations. Notably, the sediment disposed at the NBCDF is the exact same “non-HARS suitable” sediment that is the subject of the DEA, and the disposal at the NBCDF also involves the use of a clamshell dredge (in that case to deposit, rather than dredge, the sediment). This example indicates that continuous real-time monitoring is clearly feasible, and that it is being used within Newark Bay as a standard protocol when handling the same exact sediment that is at issue in the DEA under conditions that present a likelihood of resuspension.

USACE RESPONSE: We do not concur for the following reasons. The analysis of this EA has determined that the HDP would cause no significant adverse impacts to the RI/FS. Regarding commenter’s conclusion that the Corps has never provided reasoned evaluation of these proposals please see all previous responses to comment 9.

Regarding commenters’ concerns pertaining to adaptive management and ensuring mitigation measures are implemented, please see sections 6 and 7 of the DEA.

Commenters make many faulty assumptions on which to base their claims. The referenced PANYNJ NBCDF continuous real time TSS monitoring program referenced above (#9) is in a draft form and has not been approved by the Corps or the NJDEP. The proposed monitoring at the NBCDF is not continuous, nor would it be in the proposed Operations and Maintenance (O&M) plan submitted the NJDEP Water Quality Certification renewal application or the Corps of Engineers permit extension request. Under the current Corps O&M plan, monitoring occurred when filling of each 10 foot lift was initiated. The proposed plan involves monitoring 1 bottom dump disposal event and 1 clamshell series of disposal events to verify that the NBCDF continues to function as it was designed to do. More importantly, as proposed, the NBCDF TSS monitoring program is not an accepted standard program for monitoring TSS in Newark Bay, as commenters propose, but is obviously still a work in progress.

Continuous real time monitoring at a known placement site location that represents a fixed source is in no way comparable to continuous real time monitoring at a dredging site that is constantly moving and can be anywhere in the estuary. Different hydrodynamic conditions (ex.

NBDCF vs. channels) and different release patterns (ex. release within CDF water column vs. no water column release at all during dredging action) create different challenges that obviously can not be treated similarly for TSS monitoring purposes.

The commenter also assumes with no apparent basis, that the nature of the material that would be found suitable by the NJDEP for placement in the NBCDF, should the permit(s) extension be granted, would be the “exact same” as the HDP surficial soft silt material. While there may be similarities, it is misleading and not supported by any existing data or plans of any of the involved agencies indicating that it is the “exact same”.

10. The only monitoring of mitigation performance that the DEA mentions is a “Total Suspended Solids (TSS) monitoring program.” (DEA at 83) However, the DEA’s only explanation of this monitoring program describes discrete monitoring events that have already been completed, specifically for purposes of the calibrating and validating the sediment transport model used in the DEA.

There is absolutely no explanation of the nature of this “monitoring program” going forward, or of the use to which the monitoring results would be put in the service of adaptive management, such that the public or other interested agencies could evaluate and comment upon its adequacy. Rather, the DEA simply offers the conclusory statement that the monitoring program “is designed to assure that the[] [mitigation] measures mitigate the effects of the HDP on the RI/FS.” (*Id.*)¹¹ In order to determine whether that is the case, the Corps must disclose the design of the monitoring program, not merely state in conclusory fashion that it is sufficient. The discussion in the DEA fails to satisfy the requirement of the court’s remedy order that the Corps explain the measures it will implement to assure the efficacy of the selected mitigation measures. (*See also* ¶ 9 above, which describes a recommended TSS monitoring protocol.) Please explain the “TSS/Turbidity sampling program” and how the Corps will meet the federal district court’s identified need for protocols to assure the effectiveness of mitigation measures.

USACE RESPONSE: We concur that the DEA does not describe the program as ongoing and we will revise text in the DEA to clarify the existing HDP TSS monitoring program. USACE has developed a Total Suspended Solids (TSS) monitoring program to evaluate the efficacy of mitigation measures and best management practices. This monitoring program is designed to assure that these measures mitigate the effects of the HDP on RI/FS. As part of the adaptive management program, results of the monitoring program conducted to date are summarized in

¹¹ We note that the Jan. 2006 EA (at 19-20) included some additional explanation of a “TSS and Turbidity Monitoring” program. It is not clear whether the DEA intends to refer to that program or to incorporate any of its concepts. Even if the present DEA does intend such incorporation, the Jan. 2006 EA fails to explain whether monitoring will be continuous and, if not, how often it will be conducted. It also does not explain whether monitoring results will be available soon enough after samples are taken in order to provide useful information for adaptive management of the particular dredging contract being monitored. We further note that the June 2005 Draft of the Jan. 2006 EA (at 14) stated that TSS monitoring would be conducted at least bi-weekly for the life of the HDP, but that this detail was omitted from the Jan. 2006 Final EA. (In any event, the federal district court’s March 8, 2006 Opinion & Order clearly indicates that the Corps must do more, not less, than it has previously proposed in order to monitor and ensure the effectiveness of mitigation measures.)

Appendix 3 of the DEA. Results of monitoring events will be provided to the Agencies for review. Upon their review of the data, USACE will coordinate any additional BMPs, as required and if necessary, for future contracts.

We do not concur that there needs to be public input on the monitoring program. Final reports of all technical evaluations performed to support USACE projects, will as always, be available upon request.

11. The DEA omits at least one of the mitigation measures that the Corps had adopted in the Jan. 2006 EA. That earlier EA, in the one-page “Addendum to Appendix B,” stated that “virtual inspections” via webcams would be part of the package of mitigation measures. This no longer appears as a mitigation measure in the current DEA. This represents a step backwards from a mitigation plan that was already deemed inadequate by the federal court. If the Final EA does not include this mitigation measure, please explain the rationale for excluding it.

USACE RESPONSE: We do not concur for the following reason. The commenters are inaccurate in their assessment of the 2006 EA provisions pertaining to mitigation commitments. The 2006 EA offered the webcam measure as an option and never adopted it as a viable mitigation measure. Since 2006 we have incorporated the webcam as part of the specifications for the HDP contracts within the NBSA. Webcam Visual Inspection, per the contract specifications (see example NB-1 P&S Section 12900, Chapter 4), are conducted 24 hours per day, every day, to monitor the entire bucket cycle from the buckets’ descent into the water column to the buckets’ ascent from the water column, breaking the surface to the loading to the scow, regardless of the density of the dredged material (HARS, Non-HARS).

12. The DEA lists the requirements of the NJDEP Water Quality Certificate (“WQC”) for the S-NB-1 contract as part of the applicable mitigation measures. It states that separate WQCs for subsequent HDP contracts “are expected to contain the same or similar conditions.” If future WQCs do not contain such provisions, and the Corps does not voluntarily apply them to future HDP contracts, the entire environmental impact analysis presented in Chapter 4 of the EA would become invalid, since the modeling analysis is premised on a resuspension rate that would result from implementation of the existing WQC conditions. In the absence of these conditions on future contracts, the Corps would be obligated to supplement its NEPA analysis to evaluate the impacts of carrying out the HDP with a different (and/or smaller) set of mitigation measures. Please explain how the DEA accounts for this uncertainty.

USACE RESPONSE: We do not concur for the following reason. As always, and as is required by statute, the Corps will comply with all WQC conditions. If there were determinations by either states to change the conditions in their permits, those decisions would be based upon sound, scientific determinations and demonstrations that such changes are warranted and beneficial to the environment and therefore would still offer all required protections to the environment as is required and regulated by the states under the Clean Water Act. The mitigation effect, which is to reduce, avoid or eliminate adverse effects to the environment, would still be met through the WQC process, as is required under both NEPA and the CWA. Therefore, all analyses presented in the EA are valid.

13. The DEA presents the BMPs and the WQC conditions as though they were two separate sets of mitigation measures. (DEA at 79-81) In fact, they are the same. The Final EA should correct this misleading presentation or should explain how the BMPs are distinct from and independent of the WQC.

USACE RESPONSE: We do not concur with the premise, but concur that the text in the EA needs clarification. USACE employs BMP's in their specifications that are not contained as conditions in the WQC's that are protective of the environment, and therefore are mitigation measures. Examples are provisions for Endangered Species Act and Clean Air Act mitigation specifications that are not contained within the state WQCs as BMPs.

Inter-Agency Coordination

14. The DEA does not propose any changes to the coordination process, notwithstanding that the court found the coordination plan to be inadequate in certain respects. (*See* March 8, 2006 Opinion and Order at 75). Please explain why the coordination plan continues to lack, for example, any standard for the resolution of disputes or any provision for work stoppage pending resolution of disputes. Also, the commenters have previously suggested that the Corps consider a coordination plan similar to an inter-agency coordination plan that the Corps has applied to proposed navigational dredging projects in the Portland Harbor Superfund Site.¹² The DEA does not consider whether the Corps could or should enter into such an agreement here. Please explain why the Corps has chosen not to adopt a coordination plan similar to the one in Portland Harbor in this precisely analogous situation.

Additionally, we note that the DEA states that written minutes of coordination meetings will be distributed among participating agencies, but does not address public disclosure. Please explain whether such minutes will be routinely shared with the public and, if not, why not. Similarly, the DEA does not address whether the coordination meetings will be open to the public, either in full or in part, as is the case with the Passaic River Restoration Project's inter-agency project delivery team ("PDT"). Please explain whether they will be open and, if they will not be open, please explain why not. The DEA provides no explanation of why the NBSA coordination team should operate differently than the Passaic PDT with respect to public participation and access. *See* DEA at 87-88.

USACE RESPONSE: We do not concur for the following reasons. The commenters

¹² As we noted at p. 19, n.13 of the October 23, 2005 Memorandum of Law in Support of Plaintiffs' Request for Injunctive Relief (filed in the pending federal litigation concerning this matter), the Corps' Portland District and EPA Region 10 entered into a formal "Letter of Agreement" concerning coordination of Superfund and navigational dredging activities (among other things) within the site. The stated goals of the agreement include ensuring that all agency actions carried out within the site are consistent with CERCLA and assuring that CERCLA schedules, and not simply the Corps' schedules, are not delayed. The agreement also recognizes the Corps' potential CERCLA liability arising from dredging activities within the Superfund Site, and sets as a goal inter-agency cooperation to avoid such liability. It assigns EPA responsibility for "ensur[ing] that the impact of USACE's Federal channel maintenance dredging responsibilities on the RI/FS are evaluated." Finally, it also establishes a detailed and formal dispute resolution procedure. The commenters incorporated by reference that legal brief into their comments on the Corps' draft of the Jan. 2006 EA.

misrepresent the facts. The coordination plan is described in Appendix 5. Please note Page 2, Item number 4 of that plan in which it clearly describes the dispute resolution aspect of the revised plan. The Corps has reviewed the agreement between USACE Portland District and EPA Region 10 to see if this type of agreement would be appropriate. There are many similarities between the coordination agreements (i.e. objectives, regularly scheduled meetings and dispute resolution).

Category	USACE-NYD and EPA Region 2 (Appendix 5 DEA)	USACE-Portland and EPA Region 10
Goals	<p>Ensure USACE dredging and EPA’s RI/FS are not delayed or impacted by the other agencies projects.</p> <p>Coordinate sampling and modeling efforts prior to, during and after dredging when occurring during the RI/FS in NBSA</p> <p>Evaluate results during dredging and RI/FS activities that may inform the Corps on how to improve dredging activities and better understand how to manage future dredging operations more efficiently and effectively to achieve USACE Environmental Operating Principles on environmental protection and sustainability</p>	<p>Ensuring the actions taken at the site by any of the agencies are consistent with CERCLA</p> <p>Ensuring open and regular communication among the agencies regarding actions taken by the agencies</p> <p>Ensuring that schedules established through CERCLA process as well as program schedule that must be adhered to by USAACAE are not delayed.</p> <p>All parties work toward assisting USACE in fulfillment of its current maintenance dredging and permitting responsibilities</p> <p>Ensuring coordination regarding Section 312 WRDA and CERCLA</p> <p>Ensuring that parties resolved issues and address means by which USACE may meet its objective of obtaining protection from liabilities that may arise from maintenance, regulatory and environmental dredging</p>
Meetings	<p>Monthly</p> <p>Supplementary meetings as necessary</p>	<p>Monthly</p>

<p>Dispute resolution</p>	<p>The team will first attempt to resolves dispute at the team level. The team will normally defer issue to the agency that has the legal or regulatory authority pertaining to the issue. The team shall be given 7 days to resolve the dispute</p> <p>If the issue can not be resolved, the issue will be raised to the agency supervisors of the team members. The supervisors will be given seven days to resolve the dispute</p> <p>If the issue is still not resolved, the issue will be raised to NY & NJ Harbor senior partners. They have 30 days to convene a meeting and resolve the dispute</p>	<ol style="list-style-type: none"> 1) Team will attempt to resolve disagreement informally among staff and Project managers. 2) Unresolved dispute will be elevated to first – line managers. (10 days) 3) Unresolved dispute elevated through the appropriate management level to next level of management. 4) To avoid significant delays to disruption to work ...generally agencies will strive to resolved disputes within 20 working days.
----------------------------------	--	--

The Lower Passaic River Restoration Study and the HDP are at different project phases or stages. The HDP is in the construction phase while the LPRS is in the study phase which involves and requires greater public participation. The primary public participation phase of the HDP occurred during the several years study phases (1996-2004) of this project. Currently, the interagency coordination participation being requested is included under the LPRS MOU terms of agreement between the participating study agencies for the LPR (since February 2004 including the NBSA Operable Unit of the Diamond Alkali site) and the commenters are documented as attending and participating in those critical study phase meetings. While the construction phase of the HDP has no role or obligation (nor regulatory requirement) for public participation other than that for which is provided under NEPA or under the CWA and/or MPRSA regulatory processes, the Corps is always receptive to public participation and responsive to concerns. Therefore, the Corps provides public access via the USACE website, which also provides contact information and continuous updates on the progress and issues associated with projects under construction. These processes have been deemed to afford adequate public participation and/or recourse for federal and regionally significant projects under construction.

15. The DEA (at p. xix) states that “[a]ll monitoring results are shared and coordinated with NJDEP, NYSDEC and USEPA.” Please explain whether the Corps routinely make such results available to the public? Any monitoring results should be publicly disseminated, just as the EA itself is.

USACE RESPONSE: As required by law and has been complied by this Federal agency, all final technical reports and final documents are available to the public upon request.

Other

16. When referring to the parties to the litigation pending in the Southern District of New York, the document should identify all of the plaintiffs – *i.e.*, not only NRDC, but also GreenFaith and NY/NJ Baykeeper. (*See, e.g.*, p. xvi)

USACE RESPONSE: Concur. We will revise the DEA text as necessary.

17. Please explain why the study cited as “USACE 2007” is not included as an appendix to the DEA. *See, e.g.*, DEA at 38-40, 90. Based on the title and date of the report, it appears to have been prepared specifically for the EA, as with the other appendices. It should be provided to the public for review and comment as part of the NEPA process.

USACE RESPONSE: We do not concur for the following reason. The USACE 2007 report was not prepared specifically for the EA. It is a stand alone report and was referenced in the EA. There are several studies referenced in the DEA and not provided in the appendices. However, final technical reports are available for public use and edification.

18. Please explain why the DEA does not include an appendix reporting the results of the TSS monitoring event performed to gather data for the validation of the sediment transport model? The TSS field data used for calibration of the model is presented in a full report; the data used for validation is equally important and should likewise be provided for public review and comment.

USACE RESPONSE: The Corps collection of monitoring data from the PANYNJ berth maintenance dredging occurred later than the Shooter’s Island study, *i.e.* during the development of the DEA and was used solely for the purposes of validation, not calibration. This data was consistent with the Arthur Kill TSS monitoring data that was used for calibration. For our purposes of using this data to validate the model, a final report was not required or timely given the need to complete the DEA and the consistency of this data with data previously collected by the Corps. The Corps anticipates that as time and funding allow that this monitoring data will be compiled into a final report format.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 2
290 BROADWAY
NEW YORK, NY 10007-1866

MAY 03 2007

Ms. Jenine Gallo
Chief, Environmental Investigation Section
Planning Division
USACE-New York District
26 Federal Plaza, Room 2136
New York, New York 10278-0090

Dear Ms. Gallo:

The Environmental Protection Agency (EPA) has reviewed the New York District U.S. Army Corps of Engineers (Corps) Draft Environmental Assessment (DEA) of the Effects of the NY/NJ Harbor Deepening Project on the Remedial Investigation/Feasibility Study of the Newark Bay Study Area (NBSA), dated April 6, 2007. The DEA provides an in depth analysis of the potential impacts of the New York and New Jersey Harbor Deepening Project on the EPA's Remedial Investigation and Feasibility Study being conducted in the Newark Bay Study Area. It was prepared by the Corps in response to Court actions subsequent to a lawsuit initiated by the Natural Resources Defense Council. The NBSA includes Newark Bay and portions of the Hackensack River, Arthur Kill and Kill Van Kull.

EPA's comments on the DEA are as follows:

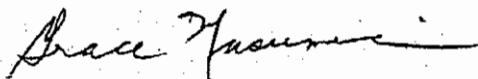
1. In Section 1.1, in the first sentence of the last paragraph, delete the word "downstream."
2. In Section 1.2, in the third sentence of the second paragraph, revise the parentheses to "(as the extent of the Phase I of the RI/FS is delineated by EPA)."
3. In Table 1-1, the Tierra Solutions' document date needs to be changed to "Sep 2005" and the title needs to be changed to "RI Work Plan."
4. In Section 1.3.2, delete "Diamond Alkali Superfund Site, specifically focusing upon the" from the first sentence and revise the end of the sentence to "...the listed Diamond Alkali Superfund Site..."
5. In Section 1.3.2, revise the end of the second sentence as follows: "... (Tierra), on behalf of the Potentially Responsible Party (PRP), Occidental Chemical Corporation, with USEPA performing overall study oversight."

6. In Section 1.3.2, revise the last sentence by inserting "draft" before "work plan," and after "June 2004," insert "which was finalized in September 2005," and insert "October" before "2005" at the end of the sentence.
7. In Section 2.2.5, Tierra Solutions, Inc. collected sediment cores from October – December 2005. Revise the fourth sentence in the first paragraph accordingly.
8. In Section 3, revise the third sentence in the fifth paragraph as follows: "...that the USEPA RI/FS field work was estimated to be completed by the winter of 2008 and the Record of Decision for the RI/FS was estimated to be issued by the winter of 2012" and insert this sentence immediately following: "Should more sampling phases than were anticipated at the time of the letter become necessary, these estimated timeframes could be extended."
9. In Section 3, revise the last sentence in the fifth paragraph by replacing "at this time" with "by the winter of 2012."
10. In Section 3.2.3, Alternative A, revise the beginning of the first sentence of the second paragraph as follows: "Tierra's draft Phase II work plan and USEPA's letter dated..."
11. In Section 3.2.3, Alternative B, insert a period at the end of the last sentence of the first paragraph.
12. In Section 3.2.4, revise the last sentence of the fifth paragraph as follows: "...2012 would mean that the HDP is under construction at the same time that USEPA is implementing any potential remedial action."
13. In Table 3-5, delete "Pre-empts USEPA ROD" from the Disadvantages column.
14. In Section 3.2.4.1, delete the first sentence of the second paragraph and include the following instead: "To date, no ROD has been issued by USEPA for the NBSA."
15. In Section 3.2.4.1, delete the Superfund process list in the third sentence of the second paragraph and include the following instead: "...Remedial Investigation, Feasibility Study (Alternatives Analysis), Proposed Plan, Public Comments, Record of Decision (Remedy Selection), Remedial Design, Remedial Action, and Operation and Maintenance..."
16. In Section 3.2.4.1, replace "scheduled for" with "estimated to be issued in" in the last sentence of the second paragraph.
17. In Section 4.2, revise the middle of the third sentence in the first paragraph as follows: "...to be collected within the original Phase I NBSA boundaries..."

18. In Section 4.2, replace "site" with "location" in the fourth sentence of the first paragraph.
19. On page 39, replace "Passaic River Superfund Site" with "Diamond Alkali Superfund Site" in the third line from the top of the page.
20. In Section 4.3.2.1, delete "USEPA" before "Remedial Investigation Workplan" and change the timeframe at the end of the sentence to "October – December, 2005" in the second sentence of the eighth paragraph.
21. In the #11 footnote, replace "USEPA" with "Tierra" in the first sentence.
22. In Section 4.3.2.6, delete "II" before "historical data" in the third sentence of the third paragraph.
23. In Section 4.3.2.7, change "sampled" to "samples" in the last sentence of the first paragraph.
24. In Section 7.1, add "s" after "Port Authority" in the bullet describing the Regional Air Team.
25. In Section 7.1, replace "NJDEP" with "NJDOT" in the second to last paragraph.
26. In Section 7.2, delete "the U.S. Coast Guard (USCG)," from the last sentence of the second paragraph.
27. In Section 7.2, delete the last sentence in the third paragraph and replace with the following: "The coordination team is supported on an as needed basis by additional agency scientists and engineers as well as consulting experts to address the project specific details of both the RI/FS and HDP."
28. In Section 7.2.1, delete the extra period in the first sentence of the first paragraph.
29. In Section 7.2.1, delete the entire third paragraph.
30. In Section 8, page 95, delete the "_" between "Deposition" and "of" in the title "Cumulative Deposition of Resuspended Sediments within each Geomorphic Area"
31. In Section 8, fix the conversions in the paragraph entitled "Navigation Channels" under the "Cumulative Deposition of Resuspended Sediments within each Geomorphic Area" (if 127mm equals 5.3 inches then 127.5mm can not equal 5 inches)

Thank you for the opportunity to comment on the DEA. If you have any questions, please call Lingard Knutson of my staff at (212) 637-3747.

Sincerely yours,



Grace Musumeci, Chief
Environmental Review Section

bcc: A. Steinberg, RA
K. Callahan, DRA
G. Pavlou, ERRD
R. Basso, ERRD
E. Butler, ERRD
A. Wagner, ORC-NJSFB
J. Filippelli, DEPP-SPMMP
L. Knutson, DEPP-ERS
D. Pabst, DEPP-CEPB

RESPONSE TO COMMENTS

U.S. Environmental Protection Agency -Letter dated May 3, 2007

Comments

1. Section 1.1, In the first sentence of the last paragraph, delete the word “downstream”

USACE RESPONSE: We will revise the text as necessary.

2. Section 1.2, in the third sentence of the second paragraph, revise the parentheses to “(as the extent of the Phase I of the RI/FS is delineated by EPA)”

USACE RESPONSE: We will revise the text as necessary

3. Table 1-1, the Tierra Solutions’ document date needs to be changed to “Sep 2005” and the title needs to be changed to “RI work plan.”

USACE RESPONSE: We will revise the text as necessary

4. Section 1.3.2, delete “Diamond Alkali Superfund Site, specifically focusing upon the” from the first sentence and revise the end of the sentence to “... the listed Diamond Alkali Superfund Site...”

USACE RESPONSE: We will revise the text as necessary

5. Section 1.3.2. Revise the end of the second sentence as follows “... (Tierra), on behalf of the Potentially Responsible Party (PRP), Occidental Chemical Corporation, with USEPA performing overall study oversight.”

USACE RESPONSE: We will revise the text as necessary

6. In Section 1.3.2, revise the last sentence by inserting “draft” before “work plan” and after “June 2004” insert “which was finalized in September 2005,” and insert “October” before “2005” at the end of the sentence.

USACE RESPONSE: We will revise the text as necessary

7. In Section 2.2.5, Tierra Solutions, Inc. collected sediment cores from October-December 2005. Revise the fourth sentence in the first paragraph accordingly.

USACE RESPONSE: We will revise the text as necessary

8. Section 3 Revise the third sentence in the fifth paragraph as follows: "...that the USEPA RI/FS field work was estimated to be completed by the winter of 2008 and the Record of Decision for the RI/FS was estimated to be issued by the winter of 2012" and insert this sentence immediately following: "Should more sampling phases that were anticipated at the time of the letter become necessary, these estimated timeframes could be extended."

USACE RESPONSE: We will revise the text as necessary

9. Section 3 Revise the last sentence in the fifth paragraph by replacing "at this time" with "by the winter of 2012"

USACE RESPONSE: We will revise the text as necessary

10. Section 3.2.3 Alternative A, revise the beginning of the first sentence of the second paragraph as follows: "Tierra's draft Phase II work plan and USEPA's letter dated..."

USACE RESPONSE: We will revise the text as necessary

11. Section 3.2.3 Alternative B; insert a period at the end of the last sentence of the first paragraph.

USACE RESPONSE: We will revise the text as necessary

12. Section 3.2.4. Revise the last sentence of the fifth paragraph as follows: "...2012 would mean that the HDP is under construction at the same time that USEPA is implementing any potential remedial action."

USACE RESPONSE: We will revise the text as necessary

13. Table 3-5 Delete "Pre-empts USEPA ROD" from the Disadvantages column.

USACE RESPONSE: We will revise the text as necessary

14. Section 3.2.4.1 Delete the first sentence of the second paragraph and include the following instead: "To date, no ROD has been issued by USEPA for the NBSA."

USACE RESPONSE: We will revise the text as necessary

15. Section 3.2.4.1 Delete the Superfund process list in the sentence of the second paragraph and include the following instead "...Remedial Investigation, Feasibility Study (alternatives Analysis), Proposed Plan, Public Comments, Record of Decision (Remedy Selection), Remedial Design, Remedial Action and Operations and Maintenance..."

USACE RESPONSE: We will revise the text as necessary

16. Section 3.2.4.1 Replace “scheduled for” with “estimated to be issued in” in the last sentence of the second paragraph.

USACE RESPONSE: We will revise the text as necessary

17. Section 4.2 Revise the middle of the third sentence in the first paragraph as follows: “...to be collected within the original Phase I NBSA boundaries...”

USACE RESPONSE: We will revise the text as necessary

18. Section 4.2 Replace “site” with “location” in the fourth sentence of the first paragraph.

USACE RESPONSE: We will revise the text as necessary

19. On page 39 Replace “Passaic River Superfund Site” with “Diamond Alkali Superfund Site” in the third line from the top of the page.

USACE RESPONSE: We will revise the text as necessary

20. In Section 4.3.2.1 Delete “USEPA” before “Remedial Investigation Workplan” and change the timeframe at the end of the sentence to “October-December, 2005” in the second sentence of the eighth paragraph.

USACE RESPONSE: We will revise the text as necessary

21. In the #11 footnote, replace “USEPA” with “Tierra” in the first sentence.

USACE RESPONSE: We will revise the text as necessary

22. In Section 4.3.2.6 delete “II” before “historical data” in the third sentence of the third paragraph.

USACE RESPONSE: We will revise the text as necessary

23. In Section 4.3.2.7 Change “sampled” to “samples” in the last sentence of the first paragraph.

USACE RESPONSE: We will revise the text as necessary

24. In Section 7.1 Add “s” after “Port Authority” in the bullet describing the Regional Air Team

USACE RESPONSE: We will revise the text as necessary

25. In Section 7.1 replace “NJDEP” with “NJDOT” in the second to last paragraph.

USACE RESPONSE: We will revise the text as necessary

26. In Section 7.2 delete “U.S. Coast Guard (USCG)” from the last sentence of the second paragraph.

USACE RESPONSE: We will revise the text as necessary

27. In Section 7.2 delete the last sentence in the third paragraph and replace with the following: “The coordination team is supported on an as needed basis by additional agency scientist and engineers as well as consulting experts to address the project specific details of both the RI/FS and HDP.”

USACE RESPONSE: We will revise the text as necessary

28. In Section 7.2.1 delete the extra period in the first sentence of the first paragraph.

USACE RESPONSE: We will revise the text as necessary

29. In Section 7.2.1 delete the entire third paragraph.

USACE RESPONSE: We will revise the text as necessary

30. In Section 8 page 95 delete the “_” between “Deposition” and “of” in the title “Cumulative Deposition of Resuspended Sediments within each Geomorphic Area”.

USACE RESPONSE: We will revise the text as necessary

31. In Section 8, fix the conversions in the paragraph entitled “Navigation Channels” under the “Cumulative Deposition of Resuspended Sediments within each Geomorphic Area” (if 127mm equals 5.3 inches then 127.5 mm can not equal 5 inches).

USACE RESPONSE: We will revise the text as necessary



In Reply Refer to:

United States Department of the Interior

FISH AND WILDLIFE SERVICE

New Jersey Field Office

Ecological Services

927 North Main Street, Building D

Pleasantville, New Jersey 08232

Tel: 609/646 9310

Fax: 609/646 0352

<http://www.fws.gov/northeast/njfieldoffice>



Ms. Jenine Gallo
Chief, Environmental Investigation Section
Planning Division
USACE-New York District
26 Federal Plaza, Room 2136
New York, NY 10278-0090

MAY 11 2007

Dear Ms. Gallo,

The New Jersey Field Office of the U.S. Fish and Wildlife Service (Service) has reviewed the Draft Environmental Assessment on the Effects of the New York/New Jersey Harbor Deepening Project on the Remedial Investigation/Feasibility Study of the Newark Bay Study Area. We appreciate the opportunity to provide input into further planning for the Harbor Deepening Project (HDP), as well as to promote continued coordination opportunities between the Service and the U.S. Army Corps of Engineers (USACE).

General Comments:

1. The Federal Natural Resource Trustees (Trustees) submitted a comment letter, dated December 5, 2005 (Brosnan 2005), on the Amendment to the Draft Environmental Assessment on the Newark Bay Area of the New York and New Jersey Harbor Deepening Project (USACE 2005). A copy is enclosed for your convenience. In that letter, the Trustees indicated the importance of identifying sediments that are causing any project to have higher disposal costs, and noted that a Toxicity Identification Evaluation (TIE) would aid Trustees' efforts to identify which hazardous substances are responsible for navigational losses. Additionally, the letter requested that the Trustees be informed regarding where historically dredged and future dredged materials have been or will be placed. Those comments have not yet been addressed. While the March 2006 Order and Opinion (O&O) identifying deficiencies in the June 2005 Draft Environmental Assessment (EA) does not specifically mention the issues raised by the Trustees, the Service, as a co-Trustee with NOAA, would appreciate USACE's acknowledgement of and response to previous comments.

2. Presently, the EA only states that the materials are designated for “upland disposal” or for Historic Area Remediation Site (HARS) placement. It is further stated that no dredged material removed from the deepening projects in the NBSA has been deemed hazardous waste under the regulatory authority of New York or New Jersey. However, the HDP may include dredging in more highly contaminated areas than in the past (e.g., along the side slopes); contaminant levels in sediments dredged under the HDP may thus exceed state standards for hazardous waste, necessitating specialized treatment and/or placement. The potential impact this may have on natural resources needs to be evaluated in the EA so that dredging and disposal of sediments will minimize injuries to natural resources.
3. The particle tracking model used the mean of the interpolated concentrations of each model cell within it to determine the potential change in contaminant concentrations post-dredging for each dredge area. However, mean values are only a statistical representation of the range of measured concentrations; the actual concentrations in dredged sediment may be higher (or lower) than the calculated mean. This means that the actual change in surface sediment concentrations pre- and post-dredging may be considerably larger (or smaller) than indicated by the model. Using a range of values in the model would help identify the extent to which the impact of the dredging may be greater (or less) than degree estimated in the EA. Similarly, there is no evaluation regarding the potential error associated with using the mean, or any of the inputs, in this model, which may have significant impacts on the conclusions regarding the potential effects of the HDP on the Remedial Investigation/Feasibility Study (RI/FS). This deficiency in the analysis needs to be addressed.
4. The particle tracking model presented in the EA is claimed to have reproduced the measured near-field total suspended solids (TSS) concentrations “reasonably well”. The term “reasonably well” needs to be defined or quantified. Additionally, the model was not validated at distances greater than 100 meters away from the dredge, nor were impacts from dredging on movement of sediments following initial re-settling evaluated. Dredge activities will loosen up sediments and conceivably subject them to further subsequent dispersion through tidal action, storm events, and shipping activities following the initial disturbance and settlement post-dredging. These factors need to be addressed in the EA.
5. Sampling during the HDP does not appear to be addressed in the EA. It is important to future dredging projects, as well as any future sampling that may be necessary for remedial or Natural Resource Damage Assessment and Restoration (NRDAR) activities, that the models developed and presented in the EA be repeatedly validated and calibrated. The HDP should incorporate such sampling and re-calibration efforts.
6. While the analysis presented in the EA indicates that few locations being sampled for the RI/FS will be significantly (i.e., to a greater degree than the sampling error, as indicated by the relative percent differences [RPD] in duplicate samples) affected by the HDP, there are a few cases where changes in concentrations (most often increases in surficial sediment concentrations) will occur. Recommendations should be made

regarding what can be done in these instances to decrease the likelihood of any significant changes occurring (e.g., moving RI/FS sampling locations).

7. Suspended sediment concentrations measured during the survey “NJFD” appeared to be relatively high around the northwest corner of the confluence of Shooter’s Island Reach and Newark Bay (see, for example, Appendix 3, Figure 32). The plume does not seem to be adequately characterized in this area, since a boundary delineating the increased concentrations of total suspended solids (TSS) is not evident in the displayed transects. Because this area lies at the confluence of the channel and Newark Bay, significant perturbations in water flow may occur here, which could have important effects on the movement of suspended solids. The plume needs to be better characterized, or effects of a potentially larger plume area and greater downstream dispersion on the RI/FS should be evaluated in the EA.
8. While the EA states that modeling indicates the effect of the HDP on the RI/FS will be minimal, the cumulative modeling approach described in the document cannot be adequately evaluated because procedures for deriving the input values are not clear. A more easily followed discussion of the methods for deriving input values is needed. Additionally, there appear to be some discrepancies in the calculations that need to be resolved to ensure that the analyses were performed correctly and the conclusions drawn from them are appropriate. This is discussed in more detail in the Specific Comments section below.
9. The Service would like to emphasize that even if the HDP is anticipated to have minimal effects on the RI/FS, it does not necessarily mean that it will have similarly minimal effects on the NRDAR process. Archival of samples taken prior, during, and after dredging would help ensure that effects on the NRDAR process are minimal.

Specific Comments:

1. P. 2, 2nd paragraph: The text states that the EA includes “the area of Newark Bay from its confluence with the Arthur Kill north to the Elizabeth Channel”. This is technically incorrect. It is the HDP that includes the area described; the EA is intended to evaluate the effect of the HDP on all of the NBSA, as was indicated in the first paragraph of this page.
2. P. 20, last paragraph: The text states that if dredged sediment does not meet standards for beneficial use or HARS placement, it will be placed in the Newark Bay Confined Disposal Facility (CDF). The Service believes that failure to close the CDF in a timely manner as originally permitted creates uncertainty with respect to water quality monitoring and establishing background for the RI/FS investigations. The potential effects on the RI/FS of depositing dredge spoils in the CDF during the HDP was not, but should be, evaluated in the EA. Additionally, Newark Bay is not without ecological value; it is an important area for waterfowl overwintering in the New York Harbor Estuary and supports other natural values as well. Deposition of contaminated sediments in the CDF increases the potential for harmful effects on natural resources.

The Service recommends the USACE work with us and other agencies evaluating dredged material disposal and consider options that will eliminate use and result in closure of the Newark Bay CDF as soon as is practicable.

3. P. 25, 2nd paragraph: The EA indicates that the center channels will be deepened first, to allow the greatest opportunity for regulatory review and sampling of the more highly contaminated side slopes. The text does not indicate, however, how this deepening would be done so that side slopes remain stable. The EA should indicate how these slopes would be stabilized. If side slopes are not adequately stabilized, dredging of the center channels first may increase suspension of the more highly contaminated sediments buried in the side slopes, as these sediments slip down into the deeper channel. Additionally, it is not clear whether deepening the center channels first is preferable from an ecological standpoint. Clarification of this point is needed, as is additional consideration of the potential for ecological effects if side slope sediments do slip and/or resuspend following dredging.
4. P. 33, 3rd paragraph, 2nd sentence: The Service does not agree, at this point, with the statements that the HDP “would not impact the RI”, or that “potential resuspension and redeposition of fine sediments...is not expected to have any measurable impact...on the sampling analysis and results in the RI/FS”. Several issues that may have significant effects on the results and were discussed previously (e.g., use of means rather than ranges; no consideration of variability in model input parameters; questions about secondary resuspension of contaminated sediments, etc.) remain to be resolved before this statement is acceptable.
5. Statements made on P. 37 (3rd paragraph) of the main text, in Appendix 2, P. 23, (2nd paragraph), and on P. 41 (1st paragraph) of the main text are in conflict. On P. 37, the EA text says that two proposed sampling locations for the RI/FS are “new”, while Appendix 2 and P. 41 of the main text says that only 1 location is “new”. Please correct this conflict as appropriate. Further, the EA says that none of the proposed sites are in the HDP boundary, while Appendix 2 indicates that five of the 18 cores are “outside the study area”. Please clarify what the term “study area” refers to, and whether it is the same as the HDP boundary. If it is, revise the text to be consistent.
6. P. 39, 3rd paragraph, 1st sentence: We suggest this sentence be changed to read: “Figure 4-2 identifies general areas with greater than 5 feet historic sediment deposition.” The term “substantial” as originally used is subjective.
7. P. 43, 2nd paragraph: The text indicates that approximately 1/3 of the material to be dredged is black silt, which will be removed using an environmental clamshell. The text should indicate how this proportion was determined from previously collected data.
8. P. 49, 2nd paragraph: References to left-and right-hand panels in figure 4-4 are reversed (i.e., the left-hand panel has results for individual model cells and the right-hand panel has interpolated results). Please correct as appropriate.

9. P. 59, 2nd paragraph: The modeling indicates that the cumulative effects of dredging will increase concentrations of mercury and DDTs to an extent greater than the precision of the data at only one sampling location (USACEP2-14). This sampling location was proposed to EPA for the RI/FS by USACE. The text should indicate why this sampling location was proposed and whether it can legitimately be moved to an area less likely to be significantly affected by dredging activities.
10. P. 64, 3rd paragraph: Reference to Figure 4-1 seems incorrect; area S-AK-3 is not identified on this figure, nor are any deepening projects. Please correct as appropriate.
11. P. 65, 1st paragraph: The EA states that "... most permits are for small amounts of dredged material and are located outside of the modeled HDP dredge plume domain. Thus, no sediment [sic] from these permits other than those issued to PANYNJ are included in the cumulative assessment." However, the last project listed in Table 5-2 is for a non-Port Authority project that is expected to "likely" include dredging approximately 175,000 cubic yards (CY) of material. This is not a "small amount", and it is likely that dredging this close to the vicinity of the HDP would add to the TSS loading into the system (even if the dredging is located outside the plume from the HDP, the dislodged sediment could enter the HDP plume). This volume should be included in the cumulative assessment. Additionally, it is not clear why other projects listed in Table 5-2 are believed to be "unlikely" to include dredging components; regardless, the possibility exists that they will. The potential effect of these dredging projects on the RI/FS, should they occur, needs to be evaluated in the EA.
12. P. 69, last paragraph: This paragraph and Table 5-3 present data regarding the volumes of dredged material in Newark Bay dating back to 1953. However, the cumulative modeling assessment uses an annual average dredge volume based only on data from 1987 to the present. While it may be true that using only more recent data, rather than all data back to 1953, is more representative of dredging activities likely to be conducted in the future, setting the cut-off point for "recent data" at 1987 is subjective and requires better justification. More preferable would be to analyze a range of dredging scenarios (amounts). Additionally, as indicated in the general comments above, dredging records dating to 1953 would provide valuable information regarding the volumes, dredge locations, and historic disposal sites of dredged material.
13. P. 70, 1st paragraph: Table 5-3 does not contain the information described in the text. A table appears to be missing. Please correct as appropriate.
14. P.70, last paragraph: Figure referenced should be 4-3, not 4-1.
15. Pp. 70-72 and Tables 5-4 and 5-5: It is not clear how dredging volumes presented in the text and tables relate to each other and it is impossible to follow the calculations to verify that they are correct. For example, section 5.4.2 states that an average of 24,520 CY of material was removed from "Port Newark Channel" annually. Table 5.4 should include information indicating which of the contracts (and the associated amounts) are used to calculate that figure, but because the terminology is different

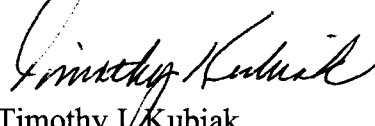
(the contract and title numbers in Table 5.4 do not use the term “Port Newark Channel”) it is not evident which volumes are used in the calculation. It appears as though the annual volume of 24,200 CY is derived from the sum of the values for Port Newark Reach A (100,000 CY + 145,203 CY = 245,203 CY over 10 years, as per Table 5-4). If the foregoing sum is subtracted from the total volume of 1,059,654 CY, the resulting value is 814,451 CY (81,451 CY per year), which does not equal the 94,545 CY per year that the text says could not be allocated to specific areas. Similarly, the volumes presented in Table 5-5, which presents the total dredge volumes input into the model, cannot be tracked to previous discussions. For example, the first paragraph on page 70 states that 65,000 CY of USACE O&M dredging was allocated to “various areas” in the HDP and Port Newark Channels, but it cannot be determined from Table 5-5 which areas are being referred to. In another example, the text on P. 70 (last paragraph) says that 94,545 CY per year from Port Authority (PA) maintenance dredging operations was distributed equally among the areas of S-NB-2A, S-NB-1C, S-E-1A, and S-E-1B; over a period of 5 years this would total 118,181 CY per area (94,545 CY * 5 years / 4 areas). However, Table 5-5 shows cumulative 5 year volumes for PA dredging of 97,745, 134,399, 114,035, and 61,091 CY for these areas, respectively; these values obviously are not consistent with the previous statement, particularly when three of the four table values are less than the amount stated in the text (i.e., the difference isn’t the result of other material from other activities being added in). This entire discussion of how volumes were derived for each dredge area, along with the associated tables, needs to be revised so that all the volumes can be clearly tracked from the initial discussion through to the final cumulative total. The cumulative modeling approach cannot be adequately evaluated unless the methods for deriving the input volumes are transparent.

16. P. 71, Table 5-4 Define “(**2)” at the bottom of the table.
17. P. 74, last paragraph: The references to figures are incorrect. There is no figure 5-8C, and Figure 5-8 does not display the information referred to in the text. Further, figures 5-8 through 5-13 do not show results for TCDD as described in the text; these results are shown in Figure 5-10 (a-c). Please correct as appropriate.
18. P. 78, 2nd paragraph: The text states that only two of the listed mitigation techniques are applicable to the HDP, but does not indicate why this is so. In particular, technique “d”, “reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action”, seems applicable. This action could include collecting and analyzing samples for contaminants prior to, during, and subsequent to the HDP, which would help evaluate the effects of dredging operations on the RI/FS, in addition to complementing anticipated NRDAR information needs. Better justification for discounting this technique is necessary. Additionally, the text indicates that mitigation technique ‘a’ is addressed in 6.2; it should also make clear that sections 6.3, 6.4, and 6.5 refer to mitigation technique ‘b’.
19. P. 79, 1st paragraph: Define the phrase, “to the extent possible”.

20. P. 80, 1st solid bullet (also Table 6-1, #7): Applying a “no barge overflow” condition only to fine-grained sediments implies that coarse-grained sediments would be allowed to overflow. The main organochlorine substances of concern throughout the harbor are most available in sandy, low-carbon content sediments. These sandy, low-carbon content sediments are a source of contamination in coarse-grained sediments and their suspension and resettlement could potentially disturb surrounding fine-grained surface sediments as well. This does not appear to be the best approach for minimizing bioaccumulation from contaminated sediments during dredging activities. Discussions of the potential for increased contaminant bioavailability from coarse-grained, low carbon sediments and disturbance to fine-grained sediments need to be included and, where possible, factored into the model.
21. Appendix 1, p. 15, 2nd paragraph: Add in referenced appendix number.
22. Appendix 2, p. 17, 2nd paragraph. The referenced tables do not include the information indicated in this paragraph: Table 5 does not include the Uncertainty Threshold (UT) values - Table 6 does; and Table 6 does not include the actual Relative Percent Difference (RPD) values, but instead only includes the mean, median, maximum, and UT (95th percent RPD) values. Please correct as appropriate.

The Service appreciates the opportunity to review the EA and to work with USACE to protect and restore the greater New York and New Jersey Harbor. If you have any questions regarding our comments, please contact me or Melissa Foster of my staff at 609-646-9310, extensions 26 and 21, respectively.

Sincerely,



Timothy J. Kubiak
Acting Supervisor

Literature Cited

- Brosnan, T. 2005. Letter, dated December 5, 2005, from Tom Brosnan, Chief, Atlantic Branch of the Office of Response and Restoration, National Oceanographic and Atmospheric Association, to the U.S. Army Corps of Engineers, New York District, New York, New York, regarding the Federal Natural Resource Trustee comments regarding the Amendment to the Draft Environmental Assessment.
- USACE (2005). Amendment to the Draft Environmental Assessment on the Newark Bay Area of the New York and New Jersey Harbor Deepening Project: A Qualitative and Quantitative Analysis of the Potential Effect of USACE Dredging on the Newark Bay Study Area Remedial Investigation/Feasibility Study. Preliminary Draft, September 28, 2005.

RESPONSE TO COMMENTS

U. S. Department of the Interior- Fish and Wildlife Service- Letter Dated May 11, 2007

General Comments:

1. The Federal Natural Resource Trustees (Trustees) submitted a comment letter, dated December 5, 2005 (Brosnan 2005), on the Amendment to the Draft Environmental Assessment on the Newark Bay Area of the New York and New Jersey Harbor Deepening Project (USACE 2005). A copy is enclosed for your convenience. In that letter, the Trustees indicated the importance of identifying sediments that are causing any project to have higher disposal costs, and noted that a Toxicity Identification Evaluation (TIE) would aid Trustees' efforts to identify which hazardous substances are responsible for navigational losses. Additionally, the letter requested that the materials have been or will be placed. Those comments have not yet been addressed. While the March 2006 Order and Opinion (O&O) identifying deficiencies in the June 2005 Draft Environmental Assessment (EA) does not specifically mention the issues raised by the Trustees, the Service, as a co-Trustee with NOAA, would appreciate USACE's acknowledgement of and response to previous comments.

USACE RESPONSE: We do not concur for the following reason. These requests are not within the scope of this EA. This Environmental Assessment (EA) evaluated the potential impacts of the New York and New Jersey Harbor Deepening Project (HDP) on the U.S. Environmental Protection Agency's (USEPA) Remedial Investigation and Feasibility Study (RI/FS) being conducted in the Newark Bay Study Area (NBSA). USACE addressed the Federal Natural Resources Trustee comments submitted in a comment letter dated December 5, 2005. These comments were coordinated and submitted as part of the January 2006 FEA and accepted. In addition, conducting various technical assessments and evaluations pursuant to title II of CERCLA for NRDAR are not part of the focus for this EA. Also, since research into TIEs is not directly related to the authorized HDP action (i.e., not required under the regulatory authorities pursuant to managing dredged material – see following paragraph), the use of HDP funding for this purpose would be inappropriate. Moreover, sediment TIE analysis would largely be research as this type of evaluation has been shown in the past to be exceedingly difficult given the numerous number of contaminants and the unclear causality of adverse biological effects related to the contaminants (e.g., unclear additive, antagonistic, synergistic or other effects of various contaminants).

USACE has also tested or will test as needed and appropriate all material proposed to be dredged as part of the HDP in the NBSA as required by CWA, MPRSA and other federal and/or state regulatory requirements for managing dredged material. Based on testing conducted on sediments that will be dredged during the HDP, all

are planned and expected to be suitable for some type of beneficial use, including: remediation of the Historic Area Remediation Site (HARS), creation of artificial reefs, or cover/closure material for landfills or contaminated terrestrial sites in the region. If dredged material does not meet the standards for beneficial use, an alternate disposal option will be investigated by the USACE, in conjunction with the non-Federal sponsor, and in coordination with the USEPA and state regulatory agencies, and the public. Disposal at the Newark Bay CDF is not expected at this time except as an anomalous contingency during the HDP construction. Therefore, a Toxicity Identification Evaluation (TIE) is not necessary.

2. Presently, the EA only states that the materials are designated for “upland disposal” or for Historic Area Remediation Site (HARS) placement. It is further stated that no dredged material removed from the deepening projects in the NBSA has been deemed hazardous waste under the regulatory authority of New York or New Jersey. However, the HDP may include dredging in more highly contaminated areas than in the past (e.g., along the side slopes); contaminant levels in sediments dredged under the HDP may thus exceed state standards for hazardous waste, necessitating specialized treatment and/or placement.

USACE RESPONSE: We do not concur for the following reasons. Please see response to number 1 as well as the 1999 FEIS. No dredged material from prior Corps deepening in the NBSA over the past several years has exceeded any established threshold that would characterize it as HTRW. Since this deepening covers the vast majority of the same areas as the remaining HDP construction (including the side slope areas) and based upon geotechnical information collected by the Corps, this is anticipated to continue to be the case for the remaining HDP construction within the NBSA. However, if there is any designation of sediments or establishment of new HTRW criteria by EPA or state environmental regulatory agency then USACE will revisit this issue according to the current regulatory requirements of the CWA and MPRSA as required by Corps HTRW regulation.

The potential impact this may have on natural resources needs to be evaluated in the EA so that dredging and disposal of sediments will minimize injuries to natural resources.

USACE RESPONSE: We do not concur. This EA evaluated the potential impacts of the New York and New Jersey Harbor Deepening Project (HDP) on the U.S. Environmental Protection Agency’s (USEPA) Remedial Investigation and Feasibility Study (RI/FS) being conducted in the Newark Bay Study Area (NBSA). The potential impact that this may have on natural resources were already conducted in the 1999 FEIS and the 2004 Consolidated EA. As it states in the DEA (page 6), the Court’s March 8 decision acknowledged that the “*the Corps’ extensive prior environmental reviews sufficiently analyzed the environmental impacts of dredging in the Bay, on, inter alia, water quality, noise, odor and aesthetics, geological stability, exposure of biological receptors to contaminants, and human health and*

safety, and considered methods for minimizing those effects” (page 49). Further, a recent New York Academy of Sciences report¹ indicates that the ongoing navigational dredging of sediments within the Port are the single largest (by mass) anthropogenic remover of contaminants (e.g. 2,3,7,8 TCDD) presently residing and exposed to the natural living resources of the estuary.

3. The particle tracking model used the mean of the interpolated concentrations of each model cell within it to determine the potential change in contaminant concentrations post-dredging for each dredge area. However, mean values are only a statistical representation of the range of measured concentrations; the actual concentrations in dredged sediment may be higher (or lower) than the calculated mean. This means that the actual change in surface sediment concentrations pre- and post- dredging may be considerably larger (or smaller) than indicated by the model.

USACE RESPONSE: We do not concur. Using the predicted result within a sub area is a legitimate and proper method for assessing the redistribution of the sediment concentrations. There is no deficiency in the analysis. First, spatial differences are accounted for explicitly: the model is segmented into sub areas for the purpose of representing large scale spatial variation. Second, small scale variation in contaminant concentrations in dredged material is not relevant to this analysis, because once the material is resuspended by the dredging process, the material will mix with suspended sediments from a variety of other sources (i.e. tidal resuspension, tributaries and the Kills). Relatively higher concentrations and lower concentrations will amalgamate and result in more homogenous concentrations in the water column. Therefore, the model does not underestimate/overestimate the actual change in surface sediment concentrations for pre-and post-dredging.

Using a range of values in the model would help identify the extent to which the impact of the dredging may be greater (or less) than degree estimated in the EA.

USACE RESPONSE: We do not concur for the following reason. The model in the EA uses concentrations that are based on data from sediment samples in representative locations in Newark Bay. The range of values measured in surface sediments of the bay is used explicitly in the analysis. Given the available site specific measured data we don't believe it is proper to arbitrarily use created data.

Similarly, there is no evaluation regarding the potential error associated with using the mean, or any of the inputs, in this model, which may have significant impacts on the conclusions regarding the potential effects of the HDP on the Remedial Investigation/Feasibility Study (RI/FS). This deficiency in the analysis needs to be addressed.

¹ Munoz, G.R. and M.A. Panero. 2006. Pollution Prevention and Management Strategies for Dioxins in the New York/New Jersey Harbor. New York Academy of Sciences, New York, New York.

USACE RESPONSE: We do not concur that there is a deficiency in the analysis for the following reason. The variation of model parameters was accounted for in the EA. Appendix 1; Section 4.2 presents a sensitivity analysis to the model parameters (i.e. dispersion, Shield’s parameter, and settling velocity) within acceptable ranges. For this analysis, model parameters were varied during calibration to examine effects on TSS concentrations. Also sensitivity tests for deposition patterns were also conducted based on the calibration parameters.

4. The particle tracking model presented in the EA is claimed to have reproduced the measured near-field total suspended solids (TSS) concentration “reasonably well”. The term “reasonably well” needs to be defined or quantified.

USACE RESPONSE: Text will be modified in Appendix 1 of the EA with the following definition of the term “reasonably well”. In the context of the modeling effort “reasonably well” was defined as a majority of the measured data points that fell within the maximum and minimum concentrations predicted by the model during the plume measurement period.

Model data is summarized and presented as minimum, mean, and maximum within the two-hour window. The fact that the measured data fall within the temporal variability of the model led to the determination that the model is reasonably representing the extent and behavior of the measured plume.

Additionally, the model was not validated at distances greater than 100 meters away from the dredge, nor were impacts from dredging on movement of sediments following initial re-settling evaluated. Dredge activities will loosen up sediments and conceivably subject them to further subsequent dispersions through tidal action, storm events, and shipping activities following the initial disturbance and settlement post-dredging. These factors need to be addressed in the EA.

USACE RESPONSE: We do not concur for the following reason. The model was calibrated to the extent of the measured data in the downstream portion of the plume. For the case of calibration this was over 300m. For validation it was 100m (Appendix 1 in DEA). As presented in Appendix 3, the measured plume spreads very little laterally, and therefore a longitudinal transect is an acceptable method of presenting the data comparison.

Denser plumes containing higher masses of sediment would tend to settle faster in a smaller zone of settlement, than less dense plumes due to interactions between the particles in suspension (i.e. more sediment would deposit in the immediate vicinity of the dredge). The overall effect would likely be negligible, but would serve to reduce dispersion of sediment if there were any effect at all. Therefore, in terms of dispersion, it is conservative to assume that settling is independent of concentration (particles will travel farther).

Storm events and ship resuspension will act to redistribute sediments following model-predicted deposition, resulting in further dispersal and mixing of the sediments, thereby resulting in lower impact on the RI/FS. To that end, the approach taken in the modeling study is conservative in assessing impacts on the RI.

5. Sampling during the HDP does not appear to be addressed in the EA. It is important to future dredging projects, as well as any future sampling that may be necessary for remedial or National Resource Damage Assessment and Restoration (NRDAR) activities, that the models developed and presented in the EA be repeatedly validated and calibrated. The HDP should incorporate such sampling and re-calibration efforts.

USACE RESPONSE: We do not concur that the model presented in the EA needs to be repeatedly validated and calibrated. A calibrated and validated model can adequately represent the local conditions and be applicable for examining conditions in that locality. “Repeatedly” calibrating and validating is antithetical to the concept of calibration. Unless there are data that contradict the data the model calibration is based upon, there is no reason for “re-calibration.” Further, the comment implies that the EA focused only on presently known or finite locations within the NBSA for RI sampling. It does not. The model used in the EA evaluates the potential effect of the continued HDP construction on all areas of the NBSA. As such, all future sampling anywhere in the NBSA and outside the boundaries of the HDP is anticipated to be negligibly affected (if at all) by the continued HDP construction. Therefore, further modeling is not warranted.

6. While the analysis presented in the EA indicates that few locations being sampled for the RI/FS will be significantly (i.e., to a greater degree than the sampling error, as indicated by the relative percent differences [RPD] in duplicate samples) affected by the HDP, there are few cases where changes in concentration (most often increases in surficial sediment concentration) will occur. Recommendations should be made regarding what can be done in these instances to decrease the likelihood of any significant changes occurring (e.g., moving RI/FS sampling locations).

USACE RESPONSE: We do not concur. The results presented in the EA indicate that even in those areas where the projected increase in concentration exceeds the data uncertainty, the amount of the increase is minor and not significant. Therefore, the USACE has determined that there is no need to move any Phase 2 locations due to the results of this analysis. USACE has made all of this information available to the EPA as part of the ongoing inter-agency coordination program, to which USFWS and other NRDA trustees are participants. Furthermore, USACE has made suggestions for modifications to the RI/FS Phase 2 sampling program based upon an evaluation of long-term bathymetric changes (e.g. abandoned channels, etc.). EPA has been provided this information and can modify their sampling locations as they see fit, based on the needs of the NBSA RI/FS program.

7. Suspended sediment concentration measured during the survey “NJFD” appeared to be relatively high around the northwest corner of the confluence of Shooter’s Island Reach and Newark Bay (see example, Appendix 3, Figure 32). The plume does not seem to be adequately characterized in this area, since a boundary delineating the increased concentration of total suspended solids (TSS) is not evident in the displayed transects. Because this area lies at the confluence of the channel and Newark Bay, significant perturbations in water flow may occur here, which could have important effects on the movement of suspended solids. The plume needs to be better characterized, or effects of a potentials large plume area and greater downstream dispersion on the RI/FS should be evaluated in the EA.

USACE RESPONSE: We do not concur for the following reason. As described on page 17 in Appendix 3 “Along the northern extent of these transects, TSS concentrations exceeding ambient concentrations were found from mid-water to the channel bottom. This plume resulted from the passage of a deep draft vessel traveling from west to east through the study area.” Thus, the suspended sediment concentrations associated with the dredge plume measured during the “NJFD” survey were fully characterized and the “relatively high” suspended sediment concentration was due to ship traffic. However, passing ships caused TSS “spikes” within the TSS monitoring transects. These data led to the development of the TSS ship traffic study (Appendix 4) in the DEA.

8. While the EA states that modeling indicates the effect of the HDP on the RI/FS will be minimal, the cumulative modeling approach described in the document cannot be adequately evaluated because procedures for deriving the input values are not clear. A more easily followed discussion of the methods for deriving input values is needed. Additionally, there appear to be some discrepancies in the calculations that need to be resolved to ensure that the analyses were performed correctly and the conclusions drawn from them are appropriate. This is discussed in more detail in the Specific Comments section below.

USACE RESPONSE: We do not concur that there are some discrepancies in the calculations. This model (including, but not limited to methods, calculations, application, assumptions) was reviewed by two levels of expert Quality Assurance teams (USACE ERDC model team and USACE-New England District team), in addition to the QA performed by the model consultants and deemed to be free of such discrepancies or errors. Please see a more detailed response regarding the cumulative assessment in the Specific Comments section below.

9. The Service would like to emphasize that even if the HDP is anticipated to have minimal effects on the RI/FS, it does not necessarily mean that it will have similarly minimal effects on the NRDAR process. Archival of samples taken prior, during, and after dredging would help ensure that effects on the NRDAR process are minimal.

USACE RESPONSE: We do not concur for the following reason. Commenter has not identified any specific or valid concern that is supported by any scientific rationale; therefore, USACE maintains that the conclusions of the EA are valid as pertains to the narrow focus of the EA, as was mandated by the District Court. In addition, we don't believe that archiving cores for use in NRDA is an appropriate task for USACE to undertake without some evidence of harm to support such an additional expense to the HDP or without us being participatory to the NRDA process as a trustee. USACE's collection of cores would be of no value to NRDA since as described in the EA, USACE collects composite cores for the purposes of evaluating management and disposal options. These data from the highly modified cores, while useful for chemical assessments, may not be useful in resource damage assessment due to the fact that they include material from the entire length of the core. Moreover, the protocol for assessing sediments proposed for disposal allows that multiple cores can be composited for each laboratory sample. Furthermore, archiving, followed by eventual re-analysis, is likely to result in exceeding allowable holding times for chemical and biological assessments.

Specific Comments

1. P.2, 2nd paragraph: The text states that the EA includes "the area of Newark Bay from its confluence with the Arthur Kill north to the Elizabeth Channel". This is technically incorrect. It is the HDP that includes the area described; the EA is intended to evaluate the effect of the HDP on all of the NBSA, as was indicated in the first paragraph of this page.

USACE RESPONSE: We will revise the text in the DEA.

2. P. 20, last paragraph: The text states that if dredged sediment does not meet standard for beneficial use or HARS placement, it will be placed in the Newark Bay Confined Disposal Facility (CDF). The Service believes that failure to close the CDF in a timely manner as originally permitted creates uncertainty with respect to water quality monitoring and establishing background for the RI/FS investigations. The potential effects on the RI/FS of depositing dredge spoils in the CDF during the HDP was not, but should be, evaluated in the EA. Additionally, Newark Bay is not without ecological value; it is an important area for waterfowl overwintering in the New York Harbor Estuary and support other natural values as well. Deposition of contaminated sediments in the CDF increases the potential for harmful effects on natural resources. The Service recommends the USACE work with us and other agencies evaluating dredged material disposal and consider options that will eliminate use and result in closure of the Newark Bay CDF as soon as is practicable.

USACE RESPONSE: We do not concur. While the operation of the NBCDF is not the subject of this EA, USACE recognizes USFWS' long time opposition to its existence and will therefore offer the following information.

The Newark Bay Confined Disposal Facility (NBCDF) disposal site is currently undergoing permit review to determine if the operation of the facility should be extended into the future.

The comment regarding the continued use of the NBCDF creating uncertainty appears to be counterintuitive. The NBCDF has been in existence for approximately seven years prior to the issuance of NBSA AOC as well as the years since the RI/FS has been underway, thereby suggesting that expediting the timely closure of the NBCDF and removing this existing (baseline) feature from the NBSA during the RI/FS would seem to have a greater basis for generating uncertainty in the RI/FS investigations.

Please note that extensive monitoring of past placement at the site indicates the effectiveness of containing disposed material given the bathymetric confines of the NBCDF. Total Suspended Solids (TSS) sampling and testing from past disposal events indicates that elevation of TSS attributable to the operation of the Newark Bay Confined Disposal Facility (NBCDF) has not occurred. Currently, this site is neither identified as a first option for placement of non-HARS material and is not planned to receive material (except as an anomalous contingency which is admittedly hard to quantify for model input)) during the HDP construction and has and will be monitored to ensure it meets state and Federal requirements, if a USACE permit extending its operation were to be issued by the Corps or a management permit issued by NJDEP.

Regarding it's presumed affects to the RI/FS, in addition to above information regarding monitoring, while this placement site was actively used at the beginning of the decade, it has most recently only been used as a contingency placement site.

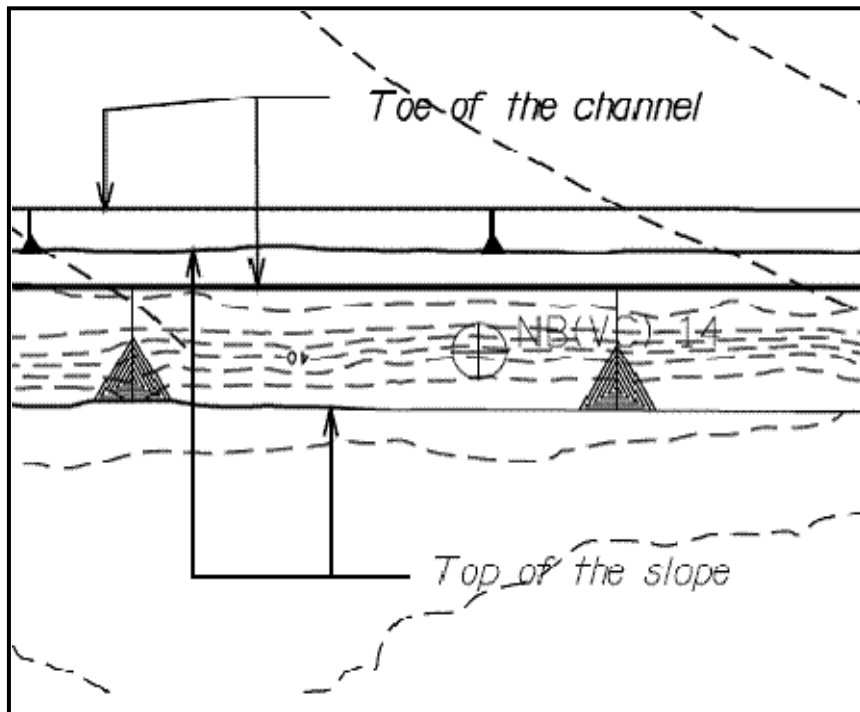
Finally, the location in which the NBCDF was sited contained surficial sediment contamination prior to its construction. As such, we are unaware of any data indicating the NBCDF increases the potential for harmful effects on natural resources.

USACE will continue to coordinate with USFWS and other Federal, state and local regulatory and resource agencies and stakeholders on all matter pertaining to our regulatory permitting of the NBCDF.

3. P. 25, 2nd paragraph: The EA indicates that the center channels will be deepened first, to allow the greatest opportunity for regulatory review and sampling of the more highly contaminated side slopes. The text does not indicate, however, how this deepening would be done so that side slopes remain stable. The EA should indicate how these slopes would be stabilized. If side slopes are not adequately stabilized, dredging of the center channels first may increase suspension of more highly contaminated sediments buried in the side slopes, as these sediments slip down into the deeper channel. Additionally, it is not clear whether deepening the center channels first is preferable from an ecological standpoint. Clarification of

this point is needed, as is additional consideration of the potential for ecological effects if side slope sediments do slip and/or resuspended following dredging.

USACE RESPONSE: We will revise text to indicate how deepening the center of the navigation channel will be conducted so that side slopes remain stable. The toe of the center of the channel will be dredged approximately 35 feet as a setback from the existing channel toe of the slope (see figure below). This will act as a buffer zone and ensure that the side slopes are stabilized. Also, the side slopes in this contract have been dredged largely thru sediments that were deposited centuries, if not millennia ago. This has resulted in sediments that are highly consolidated and physically very stable. Any sediments that were more recent deposits were removed with the last channel deepening in this area, which occurred earlier this decade. Subsequent bathymetric and side scan sonar data collected by the Corps as well as radiochemistry data from the RI/FS indicate that the newly cut side slopes in this contract area are in fact depositional and therefore unlikely that they will be subject to erosion.



4. P. 33, 3rd paragraph, 2nd sentence: The Service does not agree, at this point, with the statement that HDP “would not impact the RI”, or that “potential resuspension and redeposition of fine sediments...is not expected to have any measurable impact...on the sampling analysis and results in the RI/FS”. Several issues that may have significant effects on the results and were discussed previously (e.g., use of means rather than ranges; no consideration of variability in model input parameters; questions about secondary resuspension of

contaminated sediment, etc.) remain to be resolved before this statement is acceptable.

USACE RESPONSE: We do not concur. The issues, and erroneous assumptions raised by USFWS were addressed in our response to comments above. Since resolved, these issues do not materially affect the conclusions of the EA:

- a. the use of mean contaminant concentrations for dredged material in sub areas is appropriate due to fact that dredged material can mix in the water column prior to deposition and will mix through bioturbation which is very evident in the NBSA sediments.;
- b. model parameter uncertainty was characterized in the sensitivity analysis presented in Appendix 3; and
- c. secondary resuspension due to storm effects and ship induced resuspension will result in further dilution and thinning of redeposited dredge material, thus producing even less effect than the minor effects seen in this study.

In a conference call between the two agencies (USFWS, USACE) held on May 22, 2007, after late submittal of the comments, the Corps asked USFWS if “ they have major or significant concerns pertaining to the model used to support the analyses in the EA?” FWS responded that “We see no problem that should present a blockage for NYD from moving forward”.

5. Statements made on P. 37 (3rd paragraph) of the main text, in Appendix 2, P. 23 (2nd paragraph), and on P. 41 (1st paragraph) of the main text are in conflict. On P. 37, the EA text says that two proposed sampling locations for the RI/FS are “new”, while Appendix 2 and P. 41 of the main text says that only 1 location is “new”. Please correct this conflict as appropriate. Further, the EA says that none of the proposed sites are in the HDP boundary, while Appendix 2 indicates that five of the 18 cores are “outside the study area”. Please clarify what the term “study area” refers to, and whether it is the same as the HDP boundary. If it is, revised the text to be consistent.

USACE RESPONSE: We will revise text as appropriate. The context of the discussion on page 37 of the DEA main text is a description of the overall Phase II sampling program (a total of 18 stations; 12 within the NBSA). The context of the discussion on page 41 of the DEA main text is a description of the samples that are being collected for source identification (a total of seven stations; one within NBSA (082) and six stations outside the NBSA in adjacent tidal straights and tributaries). Thus, the number of proposed sampling locations discussed on page 41 is a subset of the number discussed on page 37. However, on both page 37 and page 41, only one sample proposed by USEPA for Phase II within the NBSA is referred to as new (location 082) and thus these statements are not in conflict. Regardless, the text has been revised to clarify the proposed sampling locations in both sections. The

description of two new stations in Appendix 2, page 23 includes the proposed Phase II locations 082 and 081. Location 081 is in the Kill van Kull and was included in the evaluation, despite being outside the NBSA, because this location was within the model domain, while the other proposed location within an adjacent tidal straight (087; Arthur Kill), as well the four locations proposed to be collected from tributaries, were not. Appendix 2 has been revised to clarify the locations of the proposed locations, indicating that only one of the two new locations is actually within the NBSA.

6. P. 39, 3rd paragraph, 1st sentence: We suggest this sentence be changed to read: "Figure 4-2 identifies general areas with greater than 5 feet historic sediment deposition". The term "substantial" as originally used is subjective.

USACE RESPONSE: We concur and will revise text.

7. P. 43, 2nd paragraph: The text indicates that approximately 1/3 of the material to be dredged is black silt, which will be removed using an environmental clamshell. The text should indicate how this portion was determined from previously collected data.

USACE RESPONSE: We concur and will revise text. Black silt quantities are determined from a variety of information sources such as geotechnical samples, sub-bottom profiles, surveys of the existing condition and surveys taken after the previous round of deepening as well as side-scan sonar all provide information as to the footprint and thickness of the silt and other layers. These thicknesses are used to create an "isopach map". Simply put, an isopach map is a contour map of silt thicknesses. This in turn can be used to calculate the volume of black silt.

8. P. 49, 2nd paragraph: References to left- and right-hand panels in figure 4-4 are reversed (i.e., the left-hand panel has results for individual model cells and the right-hand panel has interpolated results). Please correct as appropriate.

USACE RESPONSE: We concur and will revise text as necessary.

9. P. 59, 2nd paragraph: The modeling indicates that the cumulative effects of dredging will increase concentration of mercury and DDTs to an extent greater than the precision of the data at only one sampling location (USACEP2-14). This sampling location was proposed to EPA for the RI/FS by USACE. The text should indicate why this sampling location was proposed and whether it can legitimately be moved to an area less likely to be significantly affected by dredging activities.

USACE RESPONSE: We do not concur. As noted in the DEA Appendix 2 (pg 23), the current DDT concentration at this location was estimated to be very low based on the nearest historical data value, and the increase was minor. In any sampling plan, the locations are selected to represent a larger area. The Corps-

proposed locations were identified to coincide with where the historical bathymetric analysis indicated the thickest industrial era sedimentary deposits. The sample location can be moved within the area the sample is proposed to represent and still be valid. Location of the sample and its ability to represent an area is ultimately a decision for EPA and the PRP. Through monthly coordination meeting participation, the EPA has not indicated that they need to move sample locations based on the Corps current or future work.

10. P. 64, 3rd paragraph: Reference to Figure 4-1 seems incorrect; area S-AK-3 is not identified on this figure, nor any deepening projects. Please correct as appropriate.

USACE RESPONSE: We concur and will revise text as necessary

11. P. 65, 1st paragraph: The EA states that "...most permits are for small amounts of dredged material and are located outside of the modeled HDP dredge plume domain. Thus, no sediment [sic] from these permits other than those issued to PANYNJ are included in the cumulative assessment." However, the last project listed in Table 5-2 is for a non-Port Authority project that is expected to "likely" include dredging approximately 175,000 cubic yards (CY) of material. This is not a "small amount", and it is likely that dredging this close to the vicinity of the HDP would add to the TSS loading into the system (even if the dredging is located outside the plume from the HDP, the dislodged sediment could enter the HDP plume). This volume should be included in the cumulative assessment.

USACE RESPONSE: We do not concur with the conclusions drawn in this comment for the following reasons; but we do concur that the subject permit action was omitted.

The 175,700 CY project by OENJ Cherokee Corp was inadvertently not included in the cumulative assessment which utilized 900,000 CY (Table 5-5 of the DEA) rather than 1,075,700 CY. We do not believe that this omission changes the conclusions of the modeling and chemical analyses performed for the cumulative assessment. The majority of this permit work is planned to be performed over two thousand feet from the nearest remaining HDP construction. The DEA clearly demonstrates that projects included in the modeling of the cumulative assessment exhibit deposition plumes that are restricted spatially to the areas near the channels (DEA Figure 5-3 and Appendix 1 Figure 38). Therefore, the 5-fold smaller volume, to be resuspended along the shore and at a distance from the channel, is unlikely to interact with the deposition plume from the HDP. To evaluate this quantitatively, an alternative calculation was performed to evaluate the potential contribution from this additional volume of material projected to be dredged.

This chemical evaluation used the same method and parameter values as used in the HDP and cumulative assessments presented in the DEA. The total mass of resuspended material was estimated to equal 3% of 175,700 cy, or 5,300 cy. At a

bulk density of 1,500 kg/m³, this equates to 6,045,000 kg of material. The area of the flats in this portion of Newark Bay is approximately equal to 2,000,000 m². A preliminary estimate of the amount of material deposited is therefore 3.0 kg/m².

As in the DEA, the depth of deposition was calculated by dividing mass of deposited material by the dry bulk density of surface sediments (750 kg/m³). This results in a depth of deposition equal to 4 mm. Finally, as demonstrated with the particle tracking model, it is likely that a large majority of the material will deposit relatively close to the dredge site, either within the navigation channel itself or at a relatively short distance from the HDP channels. This means that deposition farther away from the project (i.e., in the vicinity of the HDP channels) is likely to be considerably less than 4 mm. This is unlikely to interact significantly with the dredging modeled in the cumulative assessment.

Additionally, it is not clear why other projects listed in Table 5-2 are believed to be unlikely to include dredging components; regardless, the possibility exists that they will. The potential effect of these dredging project on the RI/FS, should they occur, needs to be evaluated in the EA.

USACE RESPONSE: We do not concur. At the time of the initiation of the cumulative assessment all permittees were contacted by the Corps to determine if the permitted work was likely or not based on funding and other applicant constraints. It was this recent coordination with the permittees that determined which projects would be considered reasonably foreseeable and included in the cumulative assessment. The DEA considers relevant (as in similar actions) potential cumulative adverse impacts of two of those three projects that are permitted and expected to occur within the HDP schedule, over the next five years.

12. P. 69, last paragraph: This paragraph and Table 5-3 present data regarding the volumes of dredged material in Newark Bay dating back to 1953. However, the cumulative modeling assessment use an annual average dredge volume based only on data from 1987 to present. While it may be true that using only more recent data, rather than all data back to 1953, it is more representative of dredging activities likely to be conducted in the future, setting the cut-off point for “recent data” at 1987 is subjective and requires better justification. More preferable would be to analyze a range of dredging scenarios (amounts). Additionally, as indicated in the general comments above, dredging records dating to 1953 would provide valuable information regarding the volumes, dredge locations, and historic disposal sites of dredged material.

USACE RESPONSE: We do not concur. The analysis presented in the DEA appropriately uses the most current data and clearly differentiates possible future maintenance dredging during the construction of the HDP from materials removed during the deepening. Table 5-3 represents data dating back to 1987 not 1953 as indicated in the comment. There was a separate reference in the EA which refers to

a different study which dates back to 1953. The historic data used in the EA were limited to 1987 because the confidence level for this information was high. The source of the data was a MFR that documents the contract close out and represents what was dredged. In addition 1987 was chosen because the KVK and Newark Bay Channel Navigation Improvement project was authorized in WRDA 1986. This date represents the beginning of the Harbor Deepening Projects.

13. P. 70, 1st paragraph: Table 5-3 does not contain the information described in the text. A table appears to be missing. Please correct as appropriate.

USACE RESPONSE: We will revise the text as necessary.

14. P. 70, last paragraph: Figure referenced should be 4-3, not 4-1.

USACE RESPONSE: We will revise the text as necessary.

15. Pp. 70-72 and Tables 5-4 and 5-5: It is not clear how dredging volumes presented in the text and tables relate to each other and it is impossible to follow the calculations to verify that they are correct. For example, section 5.4.2 states that an average of 24,520 CY of material was removed from “Port Newark Channel” annually. Table 5.4 should include information indicating which of the contracts (and the associated amounts) are used to calculate that figure, but because the terminology is different (the contract and title numbers in Table 5.4 do not use the term “Port Newark Channel”) it is not evident which volume are used in the calculation. It appears as though the annual volume of 24,200 CY is derived from the sum of the values for Port Newark Reach A (100,000 CY + 145,203 CY = 245,203 CY over 10 years, as per Table 5-4). If the foregoing sum is subtracted from the total volume of 1,059,654 CY, the resulting value is 814,451 CY (81,451 CY per year), which does not equal the 94,545 CY per year that the text says could not be allocated to specific areas. Similarly, the volumes presented in Table 5-5, which presents the total dredge volumes input into the model, cannot be tracked to previous discussions. For example, the first paragraph on page 70 states that 65,000 CY of USACE O&M dredging was allocated to “various areas” in the HDP and Port Newark Channels, but it cannot be determined from Table 5-5 which areas are being referred to. In another example, the text on P. 70 (last paragraph) says that 94,545 CY per year from Port Authority (PA) maintenance dredging operations was distributed equally among the areas of S-NB-2A, S-NB-1C, S-E-1A, and S-e-1B; over a period of 5 years this would total 118,181 CY per area (94,545 CY * 5 years/4 areas). However, Table 5-5 shows cumulative 5 year volumes for PA dredging of 97,745, 134,399, 114,035, and 61,091 CY for these areas, respectively; these values obviously are not consistent with previous statement, particularly when three of the four table values are less than the amount stated in the text (i.e., the difference isn’t the result of other material from other activities being added in). This entire

discussion of how volumes were derived for each dredge area, along with the associated tables, needs to be revised so that all volumes can be clearly tracked from the initial discussion through to the final cumulative total. The cumulative modeling approach cannot be adequately evaluated unless the methods for deriving the input volumes are transparent.

USACE RESPONSE: We will revise the text as necessary to clarify the calculations of the dredge volumes. Tables 5.3 and 5.4 are historic summaries of actual dredging that has occurred within the NBSA. This actual dredging data was used to predict an annual estimate of future dredging over the life of the HDP. Please note that the area of work was also described in the tables. Table 5-5 lists the dredge volumes used in the cumulative analysis. The heading “Other USACE” dredging is maintenance dredging for federal channels. This table takes the annual estimate calculated from table 5.3 and 5.4 to establish an annualized estimate of future federal maintenance dredging of 65,000 CY (from the 20 year data described in #13 above) and multiplies this annualized average by 5 years for the life of the HDP for a total of 325,000 CY of future predicted federal maintenance dredging. The Arthur Kill 40’ dredge volume, 117,000 CY, was used in the assessment as it was not part of the HDP assessment. Thus the future predicted “other USACE” dredging is 442,000 CY. Other PANY dredging was estimated annually to be an average of 122,179 CY from table 5.4. Multiply this annual average by 5 years and the result is 610,000 CY for other PA NY&NJ maintenance dredging. The volumes of predicted maintenance dredging were then distributed in the HDP model sub areas in a weighted fashion to represent past dredging areas described in tables 5.3 and 5.4.

16. P. 71, Table 5-4 Define “(**2)” at the bottom of the table.

USACE RESPONSE: We will revise the text as necessary.

17. P. 74, last paragraph: The references to figures are incorrect. There is no figure 5-8C, and Figure 5-8 does not display the information referred to in the text. Further, figures 5-8 and 5-13 do not show results for TCDD as described in the text; these results are shown in Figure 5-10 (a-c). Please correct as appropriate.

USACE RESPONSE: We will revise the text as necessary.

18. P.78, 2nd paragraph: The text states that only two of the listed mitigation techniques are applicable to the HDP, but does not indicate why this is so. In particular, technique “d”, reducing or eliminating the impact over times by preservation and maintenance operations during the life of the action”, seems applicable. This action could include collecting and analyzing samples for contaminants prior to, during, and subsequent to the HDP, which would help evaluate the effects of dredging operations on the RI/FS, in addition to

complementing anticipated NRDAR information needs. Better justification for discounting this technique is necessary. Additionally, the text indicates that mitigation technique 'a' is addressed in 6.2; it should also make clear that section 6.3, 6.4, and 6.5 refer to mitigation technique 'b'.

USACE RESPONSE: We do not concur. Coordination with the EPA and sequencing of the HDP contracts are two mitigation measures to reduce the potential HDP impact on the RI/FS. Timing alternatives (which are (a) Avoidance) will be considered, and implemented where required, for the remaining HDP contracts within the NBSA as a form of adaptive management and certainly mitigation to avoid potential impacts to the RI/FS. BMP's (which are (b) Minimizing) are being employed. TSS monitoring is also being employed as a mitigation measure to ensure BMP's are operating as designed. It could be soundly argued that your request to collect and analyze samples would be more akin to (e) which is "Compensating for the impact by replacing or providing substitute resources or environments..." and not (d) which is reducing the impact over time by preservation and maintenance operations (such as is the timing alternative and the use of BMPs), which is already being done under our mitigation coverage under (a) and (b).

In addition, as noted in the responses above, the monthly coordination with EPA which occurs in compliance with the NBSA Coordination Plan (to which the NRDA trustees are participants) has ensured the capability to collect samples for analysis in areas near or prior to the remaining HDP construction. Please note, the usefulness of collecting and archiving samples for future possible analysis is highly questionable due to the limited holding times for most, if not all analytes.

Since mitigation as defined and required under NEPA has been met by USACE in recognizing and agreeing to the adoption of mitigation measures a-d and in that the EA analysis has demonstrated that there would be no significant adverse remaining impact to the RI/FS, compensatory mitigation is not required.

19. P. 79, 1st paragraph: Define the phrase, "to the extent possible".

USACE RESPONSE: We will revise the text as necessary.

20. P. 80, 1st solid bullet (also Table 6-1, #7): Applying a "no barge overflow" condition only to fine-grained sediments implies that coarse-grained sediments would be allowed to overflow. The main organochlorine substances of concern throughout the harbor are most available in sandy, low carbon content sediments. These sandy, low-carbon content sediments are a source of contamination in coarse-grained sediments and their suspension and resettlement could potentially disturb surrounding fine-grained surface sediments as well. This does not appear to be the best approach for minimizing bioaccumulation from contaminated sediments during dredging activities. Discussions of the potential for increased

contaminant bioavailability from coarse-grained, low carbon sediments and disturbance to fine-grained sediments needs to be included and, where possible, factored in to the model.

USACE RESPONSE: We do not concur for the following reason. “No Barge Overflow” for fine grained sediments is a Water Quality Certification requirement. However, sandy sediments will settle more rapidly in the barge, resulting in less overflow of sediment than for fine-grained material. Furthermore, much, if not all, of the sandy material is pre-industrial, and thus likely to have very low (i.e., naturally occurring background) contaminant concentrations. As such these materials are anticipated to be suitable for remediating the HARS by open water placement/capping operations. By allowing barge overflow at the dredging location (an area already impacted by the dredging activity itself), more material can effectively be placed into the hopper scow, thereby reducing the number of transits to the HARS (reduced air pollution) as well as less water column impacts at the HARS due to the scows having less supernatant. The focus of the EA is the potential HDP impacts on the RI/FS. As the court has found the impacts to the environment by the HDP to be sufficient, this analysis does not include an evaluation of bioaccumulation, which is itself a major factor in the determination of whether the sediments are suitable for placement at the HARS.

21. Appendix 1, p. 15, 2nd paragraph: Add in referenced appendix number

USACE RESPONSE: We will revise the text as necessary

22. Appendix 2, p. 17, 2nd paragraph: The referenced tables do not include the information indicated in this paragraph: Table 5 does not include the Uncertainty Threshold (UT) values – Table 6 does; and Table 6 does not include the actual Relative Percent Difference (RPD) values, but instead only includes the mean, median, maximum, and UT (95th percent RPD) values. Please correct as appropriate.

USACE RESPONSE: We will revise the text as necessary.

**State of New Jersey****DEPARTMENT OF ENVIRONMENTAL PROTECTION**

P.O. Box 028
Trenton, NJ 08625
(609) 292-1250
FAX (609) 777-1914

JON S. CORZINE
Governor

LISA P. JACKSON
Commissioner

Ms. Janine Gallo
Chief, Environmental Investigation Section
Planning Division
USACE - New York District
26 Federal Plaza, Room 2136
New York, NY 10278-0090

May 25, 2007

Dear Ms. Gallo:

The New Jersey Department of Environmental Protection (NJDEP) appreciates the opportunity to review and provide comment on the document entitled "Draft Environmental Assessment, Effects of the NY/NJ Harbor Deepening Project on the Remedial Investigation/Feasibility Study of the Newark Bay Study Area" dated April 6, 2007.

Comments

1. The schedule incorporated in the EA for the S-NB-1 contract is not accurate. Specifically, Table 3-1 states that the projected start date is April 2007, and that the amendment to the Federal Consistency/Water Quality Certification (FC/WQC) dated September 8, 2006 to authorize dredging of the side slopes would be authorized by the NJDEP by June 2007. Given that the FC/WQC requires that the amendment be submitted 90 days prior to the award of this option, and the entire contract has yet to be awarded by the District, the NJDEP requests that the NY District provide an updated schedule for this dredging contract and the date of anticipated submission of the amendment to the authorization to address the dredging of the side slopes.
2. Please clarify the sequencing of dredging within the Base Work and Option areas for the S-NB-1 dredging contract. Will the NY District direct the contractor to dredge the Base work to project depth (-53 feet below MLW) removing non-HARS and HARS suitable material prior to the award of other option areas? Or will the NY District direct the contractor to remove only the non-HARS suitable material from the Base Work, and then award the Option areas.
3. The EA states that there will be no impact upon the RI/FS for the Newark Bay Study Area from the dredging contracts associated with the Harbor Deepening Project. A letter, dated January 23, 2007 from Mr. George Pavlou, Director, Emergency and Remedial Response Division, USEPA to the NY District (Appendix 5), supports this conclusion in that it states that future sampling activities associated the RI Phase II sampling effort are not envisioned to occur in and around the channel deepening efforts. However, the NJDEP feels that USEPA's conclusions are premature given the fact that the USEPA has only recently provided a response to comments document (dated April 24, 2007) to the agencies that submitted comments on the Phase I sampling results and the proposed Phase II workplan. In addition, the response to comment document specifically states that a data assessment of the Phase I sampling results has not been addressed, and that a revised Phase II workplan is to be prepared. It is assumed that the revised Phase II workplan would be reviewed by all agencies prior to Phase II sampling effort currently scheduled by the USEPA for June/July 2007.

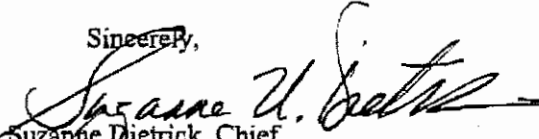
It is recognized that the Phase I sampling effort contained sampling points in the main navigation channel, and that the proposed Phase II workplan does not include any sampling points in this area. Therefore, the NY District should not delay the award of the SNB-1 for dredging of the main navigation channel as authorized in the FC/WQC issued on September 8, 2006. However, the NJDEP recommends that the Phase I data be fully evaluated by the USEPA, and that the Phase II workplan with sampling points identified being fully approved by the agencies prior to the dredging of the side slopes associated with the S-NB-1 dredging contract (Option Area 12). Based on the current schedule for sampling under Phase II, and the schedule for exercising the award of Option Area 12 (maximum of 450 calendar days after issuance of Notice to Proceed), it is not anticipated that this effort will delay the ability to collect samples for the Phase II RI prior to the award of this option. Should it be determined during the development of the schedule for Phase II workplan that sequencing of acceptance areas identified in the S-NB-1 contract is necessary to allow time for sampling under RI, the NJDEP recommends that for the side slope areas only that a sequencing approach be implemented by the NY District.

The NY District's use of the Phase I RI/FS data in the modeling effort included in the EA was appropriate to evaluate the re-suspension issue as it relates to the RI/FS sampling effort. The NJDEP supports the conclusions of the modeling presented in the EA.

4. Page 39 - References the "Passaic River Superfund Site." It is the Diamond Alkali Superfund Site or the Passaic River Study Area of the Diamond Alkali Superfund Site.

If you have any questions, please feel free to contact me at (609) 292-8838.

Sincerely,



Suzanne Dietrick, Chief

Office of Dredging and Sediment Technology
Site Remediation and Waste Management

- C: Janine MacGregor, SRWM
Anne Hayton, SRWM

Ms. Elizabeth Butler
Remedial Project Manager
USEPA - Region II
Emergency and Remedial Response Division
290 Broadway, 19th Floor
New York, NY 10007-1866

RESPONSE TO COMMENTS

New Jersey Department of Environmental Protection – Letter dated May 25,2007

Comments

1. The schedule incorporated in the EA for S-NB-1 contract is not accurate. Specifically, Table 3-1 states that the projected start date is April 2007, and that the amendment to the Federal Consistency/Water Quality Certification (FC/WQC) dated September 8, 2006 to authorize dredging of the side slopes would be authorized by the NJDEP by June 2007. Given that the FC/WQC requires that the amendment be submitted 90 days prior to the award of this option, and the entire contract has yet to be awarded by the District, the NJDEP requests that the NY District provide an updated schedule for this dredging contract and the date of anticipated submission of the amendment to the authorization to the address the side slopes.

USACE RESPONSE: We concur. Table 3-1 will be revised accordingly for the EA. The USACE acknowledges that the S-NB-1 FC/WQC requires that the USACE submit a request for an amendment to the S-NB-1 FC/WQC for the side slopes option is submitted to NJDEP 90 days prior to award of option. The award of S-NB-1 did not occur in April. At this time it is anticipated to occur after the subject EA is finalized. Award of this contract is anticipated to occur on or about June 15, 2007. Thus the earliest that the side slopes could be dredged is late September 2007.

2. Please clarify the sequencing of dredging within the Base Work and Option areas for the S-NB-1 dredging contract. Will the NY District direct the contractor to dredge the Base work to project depth (-53 feet below MLW) removing non-HARS and HARS suitable material prior to the award of other option areas? Or will the NY District direct the contractor to remove only the non-HARS suitable material from the Base Work, and then award the Option areas.

USACE RESPONSE: We concur and new text will be added to the DEA to clarify the schedule. The Corps anticipates exercising the option areas as funding becomes available. The Contractor would then execute the work in the order they find most efficient within the restrictions of the Specifications, which for your convenience are quoted below:

5.5 Order and Sequence of Work

5.5.1 Interference with Navigation

- 5.5.1.1 The Contractor shall minimize interference with the use of channel sand passages. The Contracting Officer will direct the shifting or moving of dredges, drill barges and other plant or the interruption of**

dredging operations to accommodate the movement of vessels and floating equipment if necessary.

5.5.1.2 Historic information on vessel traffic is maintained by the Vessel Traffic Service (USCG-VTS). Vessel operations are subject to USCG's Regulated Navigational Area.

5.5.1.3 The Contractor shall meet at least weekly with representatives the Army Corps of Engineers, USCG-VTS, pilots and terminal operators discuss the schedule of upcoming transits of vessels for the following weeks, and to negotiate windows when these transits shall occur.

5.5.2 Sequence of Work

Upon the Contractor's receipt of the Notice to Proceed (NTP) work shall commence within five(5) calendar days. When removal of non-HARS material is complete in an acceptance area the Contractor shall proceed to another acceptance area to remove non-HARS material. Non-HARS dredging is prohibited anywhere other than one acceptance area at a time, unless directed by the Contracting Officer's Representative (COR). Removal HARS and rock material covered by non-HARS material is prohibited in an acceptance area until the non-HARS dredging in that acceptance area is complete and accepted. Pre-treatment of rock, including but not limited to blasting, hammering, sawing or other means of mechanically fracturing the rock is prohibited in an acceptance area until the non-HARS dredging is complete and accepted.

5.5.2.1 The contract area is divided into eight (8) Acceptance Areas "A1", "A2", "B1", "B2", "B3", "C" and "D" and the Outer Side Slope Area.

5.6 Separation Plan

5.6.1 After all non-HARS material in these Material Reaches has been dredged with the environmental bucket, dredging operations will cease. Two surveys will then be performed by the Contractor:

5.6.1.1 A bathymetric survey will be conducted of the area, using a frequency suitable for providing reflection from the surface of Holocene black silt. The post-environmental bucket dredging bathymetric survey will be compared with the pre-dredge survey to determine if any areas appear to have residual black silt thicker than 6 inches.

5.6.1.2 A side-scan sonar survey will also be conducted, by a 3rd-party-contractor, to map the extent of any remaining black silt. The side-

scan sonar data will be analyzed by a technical expert familiar with such analyses (e.g. someone from the firm hired to conduct the side-scan sonar survey or other technical expert).

5.6.1.3 Reaches that appear to have remaining black silt, based on either the bathymetric survey data or the side-scan sonar data, will be cored with a gravity-coring device to determine if any areas of black silt remain with thicknesses greater than 6 inches. If areas of black silt thicker than 6 inches remain anywhere in these Material Reaches, those areas within the reach must be re-dredged with an environmental bucket. An on-site USACE Construction Field Office Inspector (QA Inspector) will verify that portions of any Material Reach characterized by black silt exceeding 6-inch thickness have been re-dredged with the environmental bucket. Copies of these surveys, and analysis reports, will be provided to the NY District Operations Division, Dredged Material Management Section, prior to any re-dredging. When re-dredging of all black silt areas has been completed, the on-site QA Inspector shall fax a notice to the HARS manager, Operations Division, indicating that all non-HARS material has been satisfactorily removed from these Material Reaches.

5.6.2 It is the responsibility of the dredging contractor to ensure that the conditions specified in paragraph 5.6.1.3 above are met prior to dredging HARS-suitable material. If NY District determines that non-HARS (upland) material, according to the conditions specified in paragraph 5.6.1.3 above, is transported offshore and placed or leaked anywhere offshore, the U.S. Environmental Protection Agency will be notified for potential enforcement action.

3. The EA states that there will be no impact upon the RI/FS for the Newark Bay Study Area from the dredging contracts associated with the Harbor Deepening Project. A letter dated January 23, 2007 from Mr. George Pavlou, Director, Emergency and Remedial Response Division, USEPA to the NY District (Appendix 5), supports this conclusion in that it states that future sampling activities associated the RI Phase II sampling effort are not envisioned to occur in and around the channel deepening efforts. However, the NJDEP feels that USEPA's conclusions are premature given the fact that the USEPA has only recently submitted comments on the Phase I sampling results and the proposed Phase II workplan. In addition, the response to comment document specifically states that a data assessment of the Phase I sampling result has not been addressed and that a revised Phase II workplan is to be prepared. It is assumed that the revised Phase II workplan would be reviewed by all agencies prior to Phase II sampling effort currently scheduled by the USEPA for June/July 2007.

It is recognized that the Phase I sampling effort contained sampling points in the main navigation channel and that the proposed Phase II workplan does not include

any sampling points in this area. Therefore, the NY District should not delay the award of the S-NB-1 for dredging of the main navigation channel as authorized in the FC/WQC issued on September 8, 2006. However, the NJDEP recommends that the Phase I data be fully evaluated by the USEPA, and that the Phase II workplan with sampling points identified being fully approved by the agencies prior to the dredging of side slopes associated with S-NB-1 dredging contract (Option Area 12). Based on the current schedule for sampling under Phase II, and the schedule for exercising the award of Option Area 12 (maximum of 450 calendar days after issuance of Notice To Proceed), it is not anticipated that this effort will delay the ability to collect samples for the Phase II RI prior to the award of this option. Should it be determined during the development of the schedule for the Phase II workplan that sequencing of acceptance areas identified in the S-NB-1 contract is necessary to allow time for sampling under the RI, the NJDEP recommends that for the side slope areas only that a sequencing approach be implemented by the NY District.

The NY District's use of the Phase I RI/FS data in the modeling effort included in the EA was appropriate to evaluate the re-suspension issue as it relates to the RI/FS sampling effort. The NJDEP supports the conclusions of the modeling presented in the EA.

USACE RESPONSE: USACE acknowledges that the Phase II workplan may be revised by the EPA after it completes its review of the Phase I data. As suggested in your letter, the schedule of the HDP and the schedule of the Phase II sampling will be coordinated within the current inter-agency coordination plan. The S-NB-1 contract contains a timing alternative which will allow USEPA to conduct their Phase II sampling. Timing alternatives will be considered, and implemented where required, for the remaining HDP contracts within the NBSA as a form of adaptive management and certainly mitigation to avoid potential impacts to the RI/FS.

Based on the S-NB-1 contract schedule, dredging will not begin until summer or possibly fall of 2007. According to the current schedule, EPA Phase II sampling will be completed at that time. Thus, the option contract structure of S-NB-1 is beneficial to affording EPA the ability to collect any additional Phase 2 samples from the S-NB-1 side slopes. Through the USACE/USEPA coordination plan, any new data collected from Phase II sampling locations will be evaluated and any changes, if any, to dredging activities (i.e. enhanced BMPs) will be coordinated with the regulatory agencies.

4. Page 39- References the "Passaic River Superfund Site." It is the Diamond Alkali Superfund Site or the Passaic River Study Area of the Diamond Alkali Superfund Site.

USACE RESPONSE: The DEA text was modified.