

January 3, 2005

Consolidated Comments on the October 28, 2004 Draft Technical Memorandum re Background Investigation Work Plan for Eastern Vieques:

1. Any comparison of concentrations measured at specific solid waste management units (SWMUs) and areas of concern (AOCs) or other "sites" to background concentrations must be done independent of the human health risk assessment (HHRA). In the HHRA process, chemical concentrations are first screened against generic risk-based concentrations (RBCs). When there is an exceedance of the RBCs, the chemical is then carried into the quantitative risk assessment process. Comparison of concentrations at specific SWMUs/AOCs to background concentrations should be done after the HHRA, as part of for risk management decisions, not before. The language in the workplan October 28 Technical Memorandum and the resultant work plan must be revised to more clearly state this process. (Also, see comments number 8 and 14 below regarding the need to also evaluate whether or not unacceptable ecological impacts are posed).
2. The background sampling as proposed is to develop a data set for inorganic constituents in surface and subsurface soils. As discussed above, if an unacceptable human health risk is indicated at a SWMU or AOC due to measured inorganic constituents in the surface or subsurface soils, the entire background data set for those soils (surface or subsurface) should then be compared to the data set for soil samples collected at that SWMU/AOC. If no statistically significant difference is observed between the concentrations of naturally occurring inorganic constituents measured in the data set at the individual SWMUs/AOCs and the entire background data set, then no release of those inorganic constituents is indicated.
3. The Navy's rationale for not wishing to use a more sensitive method detection limit for thallium is that this will result in data that cannot be combined with existing SWMU/AOC data for thallium. In fact, due to some of the SWMU/AOC sample results for thallium exceeding the thallium risk-based concentration level, the Navy should now use a more sensitive analytical method to fully define the natural thallium background concentrations. If the thallium detection limits for the background samples also exceed the corresponding PRG concentration, any thallium background non-detect data may not be used to eliminate thallium as a constituent of concern at the SWMUs/AOCs. Whereas if the more sensitive detection levels are used in background and the data set confirms that the natural thallium background is above the PRG level, then at SWMUs/AOCs where non-detection of thallium were previously recorded using elevated detection levels, we can assume there are no thallium releases.
4. The October 28 Technical Memorandum should indicate the general areas where background samples are expected to be collected.
5. Please clarify when the "further statistical tests" will be run on the soil data set, and how the results of the statistical tests will be utilized. Please also expand the discussion of the usage of geochemical evaluations.

6. The October 28 Technical Memorandum suggests that for groundwater, instead of establishing a regional background data set, site specific (i.e., SWMU/AOC specific) upgradient wells will be compared to downgradient wells using statistics. On a site-specific basis, only one or a few wells are installed to evaluate background groundwater quality for any given SWMU/AOC; therefore, it seems that the dataset will be limited. Please clarify what methods will be used to statistically analyze up gradient versus on-site groundwater quality. In addition to the guidance you cite, please also consult the EPA guidance *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities* (EPA/530-SW-89-026) to determine if usage of the statistical procedures discussed in that guidance are applicable here.

7. Eliminating detected constituents as potential constituents of concern (PCOCs) based only on knowledge of site activities is not appropriate. It is not uncommon for the use or release of contaminants to have occurred, yet there is no documentation that the contaminant was ever utilized in conjunction with past site activities.

8. The Technical Memorandum and Background Work Plan must more clearly define what types of “quantitative risk assessment” will be conducted if contamination is found to be present at a SWMU/AOC site. Under both RCRA corrective action requirements and Superfund any final actions must evaluate whether or not there are unacceptable risks to both human health and/or the environment.

9. Some of the SWMUs/AOCs being addressed under the RCRA Order are located along or in close proximity to drainage areas and/or the shoreline. As part of any final decision regarding the SWMUs/AOCs being addressed under the RCRA Order, the Navy should assess whether surface runoff pathways from those SWMUs/AOCs are present and if they represent potentially complete pathways for releases from the SWMUs/AOCs to impact to the coastal lagoons and mangrove swamp areas. As part of the revised Background Investigation Work Plan, the Navy should include an evaluation of whether surface runoff pathways from the SWMUs/AOCs being addressed under the RCRA Order are present and whether those represent potentially complete pathways for releases from the SWMUs/AOCs to impact to the coastal lagoons and mangrove swamp areas. If potentially complete runoff pathways are present, the revised Background Sampling Plan should include a discussion of whether sampling of sediment and surface water should be conducted, and a separate sampling plan for surface water and sediments needs to be developed that will indicate how surface water and sediments background sites will be determined, the proposed sampling and analytical methods, and the relevant screening criteria to be used. Also, the June 2004 *Draft Phase I RFI Final Report* (and possibly the February 2001 *Description of Current Conditions Report*) may need to be revised to indicate where surface runoff pathways from the investigated SWMUs/AOCs represent potentially complete pathways for impacts to the coastal lagoons and mangrove swamps.

10. Several commentors have expressed concern with the proposed background soil sampling data set being used to eliminate from further evaluation certain Potential Areas of Concern (PAOCs) or Photo Identified (PIs) sites, as is indicated in the June 2004 *Draft Phase I RFI*

Report. While the October 28 Technical Memorandum states that sediment and surface water sampling may be necessary and will be collected on a site specific basis, there seems to be no commitment to do so at the present time. In fact the October 28 Technical Memorandum states that most of the environmental sites are not located in close proximity to surface water or sediments. Please clarify if that statement is only made with regard to the 12 SWMU and AOCs required investigated under the RCRA Order, though that is clearly not the case for SWMU 2, the Fuels Off-loading Site. In fact, many of the PAOC and PI sites identified since the RCRA Order took effect, as well as much of the live impact area (LIA), are adjacent to, or located in a wetland or water body. Although not part of the current Background Investigation proposal, as part of the future work, sediment sampling may be required for many of these sites.

11. In addition, although not part of the current Background Investigation proposal, if coastal lagoon and mangrove swamp sediment and surface water samples are proposed for investigation, EPA recommends that in order to determine if impacts to coastal lagoon and mangrove swamp are SWMU/AOC related, upstream locations along the identified surface runoff pathways should also be considered for sampling.

12. To be consistent with future CERCLA procedures, background soil and groundwater samples should undergo a full TCL and TAL analysis (as opposed to the Appenix IX list of 40 CFR § 264).

13. Although not part of the current Background Investigation proposal, if collected, sediment samples, should undergo grain size and TOC evaluations, and for surface water samples, the hardness should be measured.

14. Since the purpose of the National Wildlife Refuge System is for the conservation, management and restoration of fish and wildlife resources and their habitats, both the the EPA Region 9 Preliminary Remediation Goals (PRG) for human health and appropriate Ecological Screening levels should be cited for all data comparison for data from the Vieques National Wildlife Refuge. The following is a list of recommended soil screening criteria, along with the source of the list, and the web address for accessing them:

USEPA:

Ecological Soil Screening Level (Eco-SSL) Guidance and Documents
www.epa.gov/oerrpage/superfund/programs/risk/ecorisk/ecossl.htm

Oak Ridge National Laboratory:

Efroymsen, R., M. Will, and G. Suter II. 1997. Toxicological Benchmarks for Contaminants of Potential Concern for Effects on Soil and Litter Invertebrates and Heterotrophic Processes: 1997 Revision. Oak Ridge National Laboratory, Oak Ridge TN. ES/ER/TM-126/R2. http://www.esd.ornl.gov/programs/ecorisk/benchmark_reports.html

Efroymsen, R., M. Will, G. Suter II, and A. Wooten. 1997. Toxicological Benchmarks for Screening Contaminants of Potential Concern for Effects on Terrestrial Plants: 1997 Revision. Oak Ridge National Laboratory, Oak Ridge, TN. ES/ER/TM-85/R3. http://www.esd.ornl.gov/programs/ecorisk/benchmark_reports.html

Canada:

Canadian Environmental Quality Guidelines, Environment Canada
www.ec.gc.ca/ceqg-rcqe/

The Netherlands:

Crommentuijn, T., M. Polder, and E. van de Plassche. 1997. Maximum Permissible Concentrations and Negligible Concentrations for Metals, Taking Background Concentrations into Account. Nat. Inst. Public Health and the Environ., Bilthoven, The Netherlands. RIVM Report 601501 001. <http://www.rivm.nl/bibliotheek/rapporten/601501001.html>

15. In selecting the proposed background sample location, accessibility to a site should not be a selection criterion. Much of the dense scrub and vegetation may be mesquite or other such invasive exotic species, and the Fish & Wildlife Service (F&WS) may not be opposed to clearing those invasive exotic species for an access road and area for sample collection. However, prior to any such clearance, vegetation would need to be evaluated by a qualified individual prior to clearing. Given the current F&WS Refuge workload, the F&WS has indicated that the Navy consider contracting or hiring a site biologist for all future actions on Vieques.

16. If the selected background sampling areas that are currently accessible (i.e. easy to walk into), are suspect of recent anthropogenic disturbance and may not represent "natural" conditions. We recommend that a large suite of potential sample locations be identified, and then be visually screened to confirm there are no visual signs of anthropogenic impacts. The final sample locations can then be randomly selected from the suite of sites exhibiting no visual signs of anthropogenic impacts.

17. At the September 28, 2004 meeting it was generally accepted that the analysis of explosives, pesticides and/or most organic constituents in the background investigations was not appropriate since those parameters could not be considered to be natural occurring concentrations. However, measuring the concentrations of such parameters in the background samples could be useful in determining whether or not the soils at a background site are impacted waste or munitions related releases. If explosives, pesticides, and organic constituents are confirmed to not be present in a background sample, that would provide evidence that the background sample location has not impacted by releases, i.e., that it is representative of natural conditions.

18. It is important to be able to relocate the background sampling locations after they had been sampled. The work plan should include a discussion of how the coordinates of the background sample locations will be determined (either be surveyed or GPS coordinates) and recorded.

19. It is important to have procedures to adequately describe the background soil borings in terms of soil characteristics (i.e., color, grain type, soil horizon, presence of fill, evidence of contamination, odors). Also, it is important to have procedures to adequately describe the relationship between the soil sample locations and potential contaminant sources such as roads, buildings, drainage ditches, photo identified sites. The work plan should include a discussion of how both types of information will be gathered and recorded.

20. All background soil samples should be evaluated for Total Organic Carbon and pH. This data may be needed to assist in subsequent fate and transport assessments.

21. The work plan must include an acceptable QA/QC program to confirm the validity of the background analytical data.

22. The Statistical Analysis section of the Technical Memorandum indicates that background samples may inadvertently be collected from areas which have been impacted by past waste and/or munitions activities. If elevated concentrations in background samples are to be eliminated from the background data set if identified as outliers resulting from past waste and/or munitions activities, the Technical Memorandum and Background Work Plan should include a discussion of what actions would be triggered to assess if such outlier locations found in the background data set are the result of past waste or munitions-related releases.