

February 14, 1995

Ms. Kimberlee Keckler
Remedial Project Manager
Federal Facilities Superfund Section
United States Environmental
Protection Agency
Region 1
J.F. Kennedy Federal Building
Boston, MA 02203-2211

RE: Background Soils Data Report, July 1994
Naval Submarine Base-New London
Groton, Connecticut
Atlantic Project No. 2072-01-02

Dear Ms. Keckler:

Enclosed please find the Navy's responses to your comments dated October 5, 1994 regarding the Background Soils Data Report dated July 1994. As stated in the responses, the Navy plans on preparing a comprehensive background soils report incorporating your comments. These responses reflect our discussion of the comments during a meeting held in your office on January 4, 1995.

Should you have any further comments or questions, please feel free to contact Mark Evans at (610) 595-0567 (ext. 162) or me.

Sincerely,

ATLANTIC ENVIRONMENTAL
SERVICES, INC.



Barry L. Giroux, P.E.
Project Manager

BG:sjg
Enclosures

cc: Mark Lewis, CTDEP
~~Mark Evans, NORTH DIV~~
Jean-Luc Glorieux, HNUS

General Comments

1. I am concerned that the values generated to represent background concentrations includes samples collected in impacted areas. If the calculation of the average concentration were limited to only those background samples collected in April 1993, the average background concentration would be lower. Since the Phase I RI samples exhibited the highest concentration of organic contaminants and higher concentrations of many metals than the April 1993 samples, I recommend that the Phase I RI samples be omitted when calculating the average background concentration.

The samples used to compute background levels are as specified in the work plan for collection of background soil samples. The Phase I samples do contain several chemicals which are ubiquitous in an urban environment in higher concentrations than the samples collected in April 1993. The April 1993 samples were collected in wooded areas that probably have not been impacted by urban activities. As per EPA's request, the Phase I samples will not be used to compute background levels for this site because they contain higher levels of contaminants than the April 1993 samples.

2. EPA usually does not use statistical alterations of background data for federal facilities. Instead, EPA uses the actual range of detected results to characterize background levels. However, given the relatively small sample size, I would be willing to consider the use of statistical methods if I was convinced that the statistics were performed appropriately. As indicated below, EPA has several questions about the statistical methodology used. A comparison between the actual range and the range generated by using statistics would be helpful.

To establish inorganic background levels, the Navy will use the highest level detected during the April 1993 sampling event for the range of any particular analyte. For organics, any constituent levels detected will be assumed to be present in concentrations above background. Separate background levels will be established for the 0-2 foot interval and the 0-4 foot interval. In addition the final background soils report will also present for comparative purposes background levels computed using statistical methodologies.

3. Concentrations of contaminants that were less than the detection limit (including antimony, cadmium, and silver) should be listed on the summary tables as such and as half of the detection limit for background concentrations.

Summary tables will include detection limits, and a value of one half the detection limit will be used as the background level for any constituent that was not detected. In addition, numbers developed using statistical methods will use one half the detection limit to represent the results of any non-detected values.

4. The report could greatly benefit by adding a discussion of the findings, a map of where the samples were taken, and a discussion of the statistical methods used and the rationale for using them (including, but not limited to, tests for normality and treatment of any outliers).

Additionally, I recommend that the data be illustrated with box plots so that both data sets can be compared and the distributions can be summarized. The report should also discuss whether the samples were collected in contaminated areas, the relationship between soil type and contaminant concentration, and the detected concentrations of several contaminants (DDT, DDE, methylene chloride, and acetone).

The report reviewed was a data report only and not intended to be a comprehensive background soils report. However, as requested by the EPA, the Navy will develop a comprehensive background soils report which, in addition to the information in the data report, will include the purpose and objectives of background soil sampling, a discussion of findings, a figure showing sample locations, a discussion of statistical methodologies used, box plots of data, a description of sample areas (e.g., contaminated versus woodland areas), a description of any relationship between soil type and contaminant concentrations, and a discussion regarding the significance of contaminants detected.