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LETTER AND COMMENTS FROM U S EPA REGION III REGARDING DRAFT CALCULATION  
OF BACKGROUND CONCENTRATIONS TECHNICAL MEMORANDUM CHEATHAM ANNEX  
FISC WILLIAMSBURG VA  
08/05/2010  
U S EPA REGION III

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION III  
1650 Arch Street  
Philadelphia, Pennsylvania 19103-2029

Robert Thomson, P.E., R.E.M.  
Office of Federal Facility Remediation

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Date: August 5, 2010

Mr. Thomas Kowalski  
NAVFAC MIDLANT, Code EV3  
9742 Maryland Avenue  
Building N-26, Room 3208  
Norfolk, VA 23511-3095

Re: Naval Weapons Station–Yorktown NPL site, Yorktown, Va.  
Naval Supply Center – Cheatham Annex NPL site, Williamsburg, Va  
*Calculation of Background Concentrations Technical Memorandum*  
Review of the Navy's 6/30/10 response to EPA's 5/5/10 letter

Dear Mr. Kowalski:

The U.S. Environmental Protection Agency (EPA) has reviewed the U.S. Navy's (Navy's) June 30, 2010 response to EPA's May 5, 2010 letter pertaining to the Navy's February, 2010 draft *Calculation of Background Concentrations Technical Memorandum* (TM) for the Naval Weapons Station-Yorktown (NWSY) NPL site, and the Naval Supply Center – Cheatham Annex (CAX) NPL site. Based upon that review, we offer the following:

1. Based upon rigorous statistical evaluations, it was concluded that concentrations of the COCs in CAX and NWSY base areas are significantly different. The EPA did not, as the Navy's response contends, agree to ultimately combine the data sets without first evaluating the appropriateness of doing so. Statistically, the data sets are different. Thus, any rationale for combining the data sets has not been clearly presented by the Navy. For evaluating the appropriateness of combining said data sets outside the realm of statistics, it is recommended that a sensitivity analysis be performed to determine the degree of variation between data sets. For such a comparison, EPA recommends using the old Yorktown inorganic background data set, the new Yorktown inorganic background data set, and the new/existing Cheatham Annex inorganic background data set (even though it is small). Comparison of inorganic background concentrations between the three data sets should be illustrated for discussion with the EPA. We are looking for the range of variability between the data sets.
2. For site versus background comparisons, typically the higher duplicate site value is compared with background statistics or some other screening level. For the

computation of background statistics, the use of the higher duplicate value may yield inflated values of background statistics (e.g., 95/95UTLs). This is especially true when the difference between the duplicate values is large.

It is suggested again that the Navy use an appropriate duplicate value (e.g., average or lower) to compute background statistics. If the use of the lower duplicate value is not acceptable, the Navy may just use the commonly used average value.

This concludes EPA's review of the Navy's 6/30/10 response to EPA's 5/5/10 letter pertaining to the Navy's February, 2010 draft *Calculation of Background Concentrations TM* for the NWSY NPL site, and the CAX NPL site. Please note that the remaining Navy responses not directly addressed above are considered acceptable. Additionally, based upon the Navy's responses, recalculation of the background data is necessary given the responses by the Navy. It is noted that such recalculations may also be affected by the outcome of the two remaining issues outlined above.

If you have any questions, please feel free to call me at (215) 814-3357.

Sincerely,



Robert Thomson, P.E., R.E.M.  
Federal Facility Remediation (3HS11)

Cc: Wade Smith (VaDEQ, Richmond)  
Dawn Ioven (USEPA, 3HS41)