

May 30, 2000

U. S. Environmental Protection Agency - Region II
290 Broadway - 22nd Floor
New York, NY 10007-1866

Attn: Ms. Nicoletta DiForte
Chief, RCRA Caribbean Section

Re: Contract N62470-95-D-6007
Navy CLEAN, District III
Contract Task Order (CTO) 033
U.S. Naval Station Roosevelt Roads, Puerto Rico
RCRA Corrective Action Program
RCRA/HSWA Permit No. PR2170027203
Response to EPA Comments on Draft CMS Work Plan
for SWMU 6/AOC B, Revised Final CMS Final Report
for SWMU 13 and SWMU 46/AOC C, and Draft CMS
Final Report for SWMU 31/32, Operable Units (OU) 1, 6 and 7

Dear Ms. DiForte:

Baker Environmental, Inc. is submitting, on behalf of the Navy, this letter in response to your comment letter, dated March 15, 2000, pertaining to the above listed U.S Navy submittals previously transmitted to the United States Environmental Protection Agency, Region II (USEPA) on January 7, January 26, and January 28, 2000. The U.S. Navy has reviewed both EPA's and Booz Allen & Hamilton (BAH) comments pertaining to the Draft Corrective Measures Study (CMS) Work Plan for SWMU 6/AOC B dated January 7, 2000, the Revised Final CMS Final Report for SWMU 13 and SWMU 46/AOC C dated January 26, 2000, and the Draft CMS Final Report for SWMU 31/32 dated January 28, 2000. The enclosure to this letter provides the Navy's responses to your comment letter. Please note that EPA's and BAH's comments are included in italics before each response for ease of review.

In addition to the above mentioned response to comments, the Draft CMS Final Report for SWMU 6/AOC B is attached separately for your review. This document has been developed in response to your comment letter dated March 15, 2000. Upon your review and approval of this CMS the Navy anticipates including SWMU 6/AOC B into the NSRR RCRA Part B permit renewal for No Further Action. This will be accomplished through the development of a No Further Response Action Plan document being incorporated into the permit.

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Please do not hesitate to call Mr. Christopher T. Penny at (757) 322-4815 or myself at (412) 269-2009 if you have any questions or desire further clarification of any of the points discussed in this letter or the enclosure or attached report.

Sincerely,

BAKER ENVIRONMENTAL, INC.

Mark E. Kimes, PE
Activity Coordinator

MEK/lp
Attachments

cc: Mr. Christopher T. Penny, LANTRDIV, Code 18231 (1 copy)
Mr. Tim Gordon, US EPA Region II (2 copies)
Mr. Carl Soderberg, US EPA Caribbean Office (1 copy)
Ms. Constance Crossley, Booz Allen & Hamilton (1 copy)
Ms. Madeline Rivera, NSRR (4 copies)
Ms. Luz Muriel-Diaz, PREQB (2 copies)
Mr. John Tomik, CH2M Hill Virginia Beach (1 copy)

**NAVY RESPONSE TO EPA AND BAH REVIEW COMMENTS
DATED MARCH 15, 2000**

Draft Corrective Measures Study (CMS) Work Plan for SWMU 6/AOC B, Revised Final Corrective Measures Study (CMS) Final Report for SWMU 13 and SWMU 46/AOC C, and Draft Corrective Measures Study (CMS) Final Report for SWMU 31/32, U.S. Naval Station Roosevelt Roads, Puerto Rico

EPA Comments on the Draft Corrective Measures Study (CMS) Workplan for SWMU 6/AOC B

The submitted workplan is completely generic, and seems to assume that some form of land usage restriction, by itself, will constitute the selected remedy. It does not identify other remedial alternatives for evaluation, or describe how unacceptable risks from multiple potential exposure pathways (surface soil, groundwater, and ponded rainwater) will be prevented under both current and future exposure scenarios.

Since a total cancer risk of 2.0×10^{-4} was indicated for on-site workers in the November 24, 1998 revised Risk Assessment, land-usage restrictions alone may not be fully protective for onsite worker exposure at this site, unless coupled with some other risk reduction proposal. The CMS Final report must demonstrate that the selected remedy, whether land-usage restrictions alone, and/or some other measure (such as engineering controls, such as fencing) will prevent unacceptable residential exposure, as well as unacceptable exposure for on-site workers. If land usage restrictions alone are not fully protective, under both current and future land usage scenarios, the CMS must evaluate other risk reduction alternatives.

Even though the submitted workplan is deficient on the proposed alternatives to be evaluated, EPA will approve the January 7th CMS workplan for SWMU #6/AOC B, subject to the CMS Final report adequately addressing EPA's above concerns. Failure to do that could result in EPA requiring that the CMS be re-opened and that the Final Report be resubmitted. Pursuant to Schedule proposed in Section 4.0 of the submitted workplan, the draft CMS Final report, which must include recommendations for a remedy/corrective measure that is protective of human health under both current and future exposures, should be submitted within 7 weeks of your receipt of this letter.

Navy Response

The Draft CMS Final Report for SWMU 6/AOC B addressing the EPA's above concerns is provided for your review as a separate attachment

EPA Comments on the Revised Final Corrective Measures Study (CMS) Final Report for SWMU 13 and SWMU 46/AOC C

This January 26, 2000 revised CMS Final Report for SWMU #13 (demolished pest control building) and SWMU #46/AOC C (both areas were used for non-serviceable transformer and other electrical equipment storage, and/or storage of PCB contaminated materials), as well as Baker Environmental's letter of January 13, 2000, were submitted to address comments given in my letter of December 10, 1999. EPA's comments were further discussed during the conference call held on January 6, 2000 between Mr. Tim Gordon of EPA, yourself, and contractors for EPA (Booz Allen) and the Navy (Baker Environmental and CH2M HILL).

EPA requested our contractor, Booz Allen, to review the revised CMS Final Report and Baker Environmental's letter of January 13, 2000. Although Booz Allen had several comments, which are discussed in the enclosed February 15, 2000 Technical Review, EPA does not consider them sufficiently significant to alter the overall acceptability of the revised Final CMS report. The most significant comments (#2, #3, and #4 of enclosed Technical Review) concern the preliminary remediation goal (PRG) for carcinogenic polynuclear aromatic hydrocarbons (PAHs) at SWMU 46/AOC and the resulting residual risk for PAHs and PCBs.

If the 10 mg/kg PRG for SWMU 46/AOC is the cumulative concentration of all carcinogenic PAHs, that PRG is acceptable, and the CMS Report is approved. Comments in the enclosed Technical Review may then be addressed as part of the corrective measures implementation (CMI) [design] plan, and/or the CMI final report. However, if the proposed 10 mg/kg PRG is not the cumulative concentration of all carcinogenic PAHs, EPA requests the Navy to submit, within 25 days of your receipt of this letter, written clarification and justification of the recommended PRG for PAHs at SWMU 46/AOC C, as well as clarification of the resultant residual risks for both PAHs and PCBs.

Within 90 days of your receipt of this letter, or within 90 days following submission of written clarification of the recommended PRG for PAHs at SWMU 46/AOC C, if so required, please submit a CMI [design] plan for SWMU #13 and SWMU #46/AOC C for the remedies recommended in the CMS Final report. Following EPA's review and approval of the CMI [design] plans, if the Navy wishes, it may proceed with implementation of those remedies/corrective measures. However, as has been indicated on previous occasions, the remedies/corrective measures for SWMU #13 and SWMU #46/AOC C will not be considered fully approved until completion of public notice and public comment of those final remedies/corrective measure, either as part of a modification of the 1994 RCRA Permit, or issuance of the Draft renewed RCRA permit for Roosevelt Roads.

Navy Response

The 10 mg/kg PRG for SWMU 46/AOC C is the cumulative concentration of all carcinogenic PAHs. Therefore, the CMS is approved according to your comments. A CMI [design] plan for SWMU 13 and SWMU 46/AOC C addressing the remedies recommended in the CMS will be developed and submitted to your office on July 10, 2000.

BAH Comments on the Revised Final Corrective Measures Study (CMS) Final Report for SWMU 13 and SWMU 46/AOC C

General Comments:

1. *The Revised Final Corrective Measures Study Report for SWMU 13 and SWMU 46/AOC C Areas (Final CMS Report) identifies appropriate technical approaches and acceptable cleanup levels to address releases to sediment from SWMU 13, and releases to the surface and subsurface soil from SWMU 46/AOC C. In addition, the Final CMS Report provides adequate documentation, including relevant exposure parameters, toxicity criteria, and calculations, to support the calculation of the proposed soil and sediment cleanup levels. Furthermore, the Final CMS Report applies an appropriate combination of site-specific cleanup levels and institutional controls to ensure that the selected remedy is protective of human health. However, despite the overall acceptability of the Final CMS Report, a few deficiencies were identified in the calculation of cleanup goals and residual risks. These discrepancies do not alter the conclusions of the Final CMS Report or the proposed remedies for the site, but should be corrected for accuracy.*

Navy Response

Comment noted. The discrepancies identified will be corrected for accuracy in the CMI design plan.

Specific Comments:

Section 3.4.2, Human Health Risk-Based Cleanup Levels, Tables 3-13 and 3-15

1. *Table 3-13 and 3-15, and the cleanup level calculation spreadsheets in Appendix B, incorrectly list beta-chlordane as a constituent of concern (COC) at SWMU 13. According to Section 3.2.1, page 3-2, and Table A-2 of the Final CMS Report, the appropriate COC is gamma-chlordane. Since the carcinogenic and noncarcinogenic preliminary remediation goals (PRGs) for this chemical were calculated based on toxicity criteria for gamma-chlordane, the incorrect chemical name does not affect the calculation of these PRGs; nonetheless, the error should be noted and corrected.*

Navy Response

Agreed. This correction will be addressed in the Corrective Measures Implementation (CMI) report. Gamma-chlordane will be identified as a Chemical of Concern (COC) rather than beta-chlordane.

2. *Previous iterations of the Final CMS Report calculated an individual PRG for each carcinogenic polyaromatic hydrocarbon (cPAH) identified as a COC at SWMU 46/AOC C. However, the Final CMS Report has been modified to provide a single PRG for "Total cPAHs." The text on Table 3-13 states, "total cPAHs [were] evaluated as benzo(a)pyrene at a target risk of 1×10^{-5} to account for benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, indeno(1,2,3-cd)pyrene and dibenzo(a,h)anthracene." It is unclear why this modification was made in the Final CMS Report. Additionally, it is unclear why a less conservative target risk value of 1×10^{-5} (as opposed to 1×10^{-6}) was used to calculate the PRG for total cPAHs. Finally, it is unclear how the proposed PRG value of 10 mg/kg for total cPAHs will be applied during confirmatory sampling and analysis. Specifically, it is unclear whether the proposed 10 mg/kg PRG for total cPAHs applies to the cumulative concentration of all cPAHs detected at SWMU 46/AOC C, or if it applies to the individual concentrations of each cPAH. If the 10 mg/kg PRG is for the cumulative concentration of cPAHs, this value (in combination with the proposed institutional controls for the site) would be protective of human receptors at SWMU 46/AOC C. The proposed methodology for applying this PRG at the site should be clarified.*

Navy Response

The 10 mg/Kg cleanup level applies to all potentially carcinogenic polynuclear aromatic hydrocarbons (cPAHs). Typically, cPAHs occur as a mixture of benzo(a)pyrene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, indeno(1,2,3-cd)pyrene and dibenz(ah)anthracene and the toxicity of these contaminants is relative to the toxicity of benzo(a)pyrene. As such, cleanup levels specified for cPAHs should account for all seven PAH compounds. Because cPAHs will be addressed cumulatively, rather than individual constituents, the target ICR value of 1×10^{-5} is selected, rather than the more conservative point of departure. Text will be provided in the CMI report to provide rationale for modifications to the CMS concerning cPAHs.

Section 3.5, Selection of Remediation Levels, Page 3-9

3. *The residual risk estimate presented in the Final CMS Report for military residents at SWMU 13 could not be verified. Page 3-9 states "a proposed cleanup goal for cPAHs of 10 mg/kg would result in a residual risk to military residents in excess of 1×10^{-4} ." However, using the exposure parameters provided in the Final CMS Report (including an exposure duration of four years for military residents), a proposed cleanup goal of 10 mg/kg for cumulative cPAHs would result in residual risks within USEPA's target risk range for this receptor. Since the residual risk calculations for the military residents were not provided in the Final CMS Report, it is not possible to verify the source of this 1×10^{-4} value. Therefore, although the apparent error is conservative in nature, and does not affect the results of the Final CMS Report or the proposed remedy for SWMU 13, the residual risk estimate should be verified and corrected as necessary.*

Navy Response

Residual risk estimates were estimated by comparing proposed clean up levels to conservative RBC values established at for a target risk of 1×10^{-6} . A more appropriate evaluation of potential residual risk would involve evaluating the site specific exposure scenarios and parameters provided in the Final CMS report. Although the conservative estimate of risk does not affect the Final CMS Report results, text in Section 3.5 will be modified and added to the CMI report to reflect site specific residual risks as opposed to more conservative comparisons to Risk-Based Concentrations (RBCs) established for life-time residential exposure.

4. *The residual risk estimate presented for military residents at SWMU 46/AOC C could not be verified. Page 3-9 states "selection of commercial/industrial worker risk-based remediation levels for SWMU 46/AOC C would produce residual risks of approximately 5×10^{-6} for military residents. The PCB cleanup goal of 25 mg/kg would result in additional risk of 2.5×10^{-5} ." However, using the exposure parameters provided in the Final CMS Report, it appears that the residual risk has been slightly underestimated for military child residents. Since the residual risk calculations for the military residents were not provided in the Final CMS Report, it is not possible to verify the source of these values. Therefore, although the apparent error does not affect the results of the Final CMS Report or the proposed remedy for SWMU 46/AOC C, the residual risk estimate should be verified and corrected as necessary.*

Navy Response

Agreed. The residual risk estimate will be verified and corrected to account for potential risks to military resident children. This corrected information will be provided in the CMI report.

Appendix B, Risk Assessment Calculations

5. *The Final CMS Report calculates both carcinogenic and noncarcinogenic PRGs for military adult and child residents at Naval Station Roosevelt Roads, and correctly selects carcinogenic PRGs as the more conservative (i.e., lower) PRGs for this receptor. A review of the calculations presented in Appendix B shows that incorrect averaging times (ATncs) were used to calculate the noncarcinogenic PRGs for both military adult and child residents, resulting in slightly elevated noncarcinogenic PRGs. However, this error in the calculation of noncarcinogenic PRGs does not impact the selection of carcinogenic PRGs as the more conservative PRGs for this receptor, and therefore does not affect the results of the Final CMS Report or the proposed remedies for SWMU 13 and SWMU 46/AOC C.*

Navy Response

Agreed. Appendix B calculations will be checked and averaging times for noncarcinogens corrected to reflect accurate averaging times for military residents. Changes in clean up goals (if any) will be presented in the CMI report.

6. *Although Table 3-11 of the Final CMS Report correctly indicates that an exposure duration (ED) of 25 years should be used to calculate PRGs for commercial/utility workers, a review of the calculations presented in Appendix B shows that a less conservative exposure duration of 20 years was actually used to calculate these PRGs. This error results in slightly elevated PRGs; however, the associated affects on the results of the Final CMS Report and the proposed remedies are not considered to be significant.*

Navy Response

Agreed. The averaging time of 25 years will be used in the calculation of PRGs for the commercial/utility worker scenario. Changes in clean up goals produced by these corrections will be provided in the CMI report.

EPA Comments on the Corrective Measures Study (CMS) Final Report for SWMU 31/32

EPA requests that the recommendations in the CMS be modified to specify that in addition, the final remedy for SWMU 31/32 will include a requirement that acceptable institutional controls be adapted to insure that:

- a) *both the proposed new [5400 square foot] asphalt cap area, as well as the existing areas of asphalt pavement within the area outlined as CMS SWMU 31/32 area on Figure 4-1 of the submitted CMS report will be maintained, and*
- b) *the area will not be utilized for residential housing.*

In addition, Table 2-3 of the CMS should be revised to clearly indicate the source of the listed Toxicity Equivalency Factors. Within 30 days of your receipt of this letter, please submit either a revised Final CMS report for SWMU #31/#32, or a letter and attachment, reflecting the above described institutional controls and a revised Table 2-3.

Navy Response

A Final CMS Final Report for SWMU 31/32 was submitted to your office on April 17, 2000 addressing EPA's above concerns.