

Baker

Baker Environmental, Inc.
A Unit of Michael Baker Corporation

Airport Office Park, Building 3
420 Rouser Road
Coraopolis, Pennsylvania 15108

(412) 269-6000
FAX (412) 269-6097

December 23, 2002

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

Attn: Mr. Adolph Everett, P.E.
Chief, RCRA Program Branch

Re: Contract N62470-95-D-6007
Navy CLEAN, District III
Contract Task Order (CTO) 099
U.S. Naval Station Roosevelt Roads, Puerto Rico
RCRA/HSWA Permit No. PR2170027203
Response to EPA Comments Dated November 19, 2002
Draft CMS Investigation Report for SWMU 9

Dear Mr. Everett:

Baker Environmental, Inc. (Baker), on behalf of the Navy, is providing you with responses to EPA comments dated November 19, 2002 on the Navy's September 5, 2002 responses to EPA's October 4, 2002 Comments on the Draft Corrective Measures Study (CMS) Investigation Report for SWMU 9. These responses are being submitted in accordance EPA's comment letter dated November 19, 2002.

If you have questions regarding this submittal, please contact Mr. Kevin Cloe, P.E. at (757) 322-4736. Additional distribution has been made as indicated below.

Sincerely,

BAKER ENVIRONMENTAL, INC.

Jan C. Edel Jr. for

Mark E. Kimes, P.E.
Activity Manager

MEK/lp
Attachments

cc: Mr. Kevin Cloe, LANTDIV - Code EV23KRC (1 copy)
Mr. Carl Soderberg, US EPA Caribbean Office (1 copy)
Ms. Kathy Rogovin, Booz, Allen & Hamilton (1 copy)
Mr. Mace Barron, Booz, Allen & Hamilton (1 copy)
Ms. Madeline Rivera, NSRR (1 copy)
Mr. Carmelo Vasquez, PREQB (1 copy)
Mr. John Tomik, P.G, CH2M Hill Virginia Beach (1 copy)

ChallengeUs.

**NAVY RESPONSE TO EPA COMMENTS DATED NOVEMBER 19, 2002
SEPTEMBER 5, 2002 NAVY RESPONSE TO EPA'S OCTOBER 5, 2001 COMMENTS
DRAFT CMS INVESTIGATION REPORT FOR SWMU 9
NAVAL STATION ROOSEVELT ROADS
CEIBA, PUERTO RICO**

EPA Comments on September 5, 2002 Navy Response to EPA's October 5, 2001 Comments on Draft CMS Investigation Report for SWMU #9

EPA finds the Navy's September 5, 2002 responses regarding SWMU #9 to be acceptable, except for one issue regarding equilibrium partitioning (EP) eco-toxicity screening values for PAHs in sediments. This issue is discussed in the enclosed Technical Review prepared by our contractor, Booz Allen.

Navy Response to EPA Comments on September 5, 2002 Navy Response to EPA's October 5, 2001 Comments on Draft CMS Investigation Report for SWMU 9:

See the response to Booz Allen comment listed in the following paragraphs.

Booz Allen Hamilton Comments on September 5, 2002 Response To EPA's October 5, 2001 Comments On The Draft Corrective Measures Study Investigation Report For SWMU 9

I GENERAL COMMENTS

All general comments have been adequately addressed.

II SPECIFIC COMMENTS

All specific comments have been adequately addressed, with the exception of Specific Comment 10.

5.7.1.3.2 Bioavailability of Ecological COPCs

10. *The facilities response is partially adequate. EPA agrees that polycyclic aromatic hydrocarbons (PAHs) were generally non-detected in sediment in areas A, B, and C. However, EPA remains concerned about the derived equilibrium partitioning (EP) ecotoxicity screening values for PAHs in sediment. EPA agrees that EP-derived benchmarks can be valid, but it is unclear whether NSRR has derived the values correctly. NSRR should consider the sediment quality criteria for PAHs recently published by Di Toro and McGrath (2000). The Di Toro values, which are based on the EP, have been peer-reviewed, and EPA understands that they will be adopted into national criteria. The Di Toro values are also less conservative than other screening benchmarks, but they do not appear to be consistent with those derived by NSRR. Sediment risks should be re-evaluated using the Di Toro and McGrath (2000) values, unless NSRR can provide adequate justification on the appropriateness of the facility-derived benchmarks.*

References

Di Toro DM and McGrath JA. 2000. *Technical basis for narcotic chemicals and polycyclic aromatic hydrocarbon criteria. II. Mixtures and sediments. Environ. Toxicol. Chem. 19:1971-1982.*

Navy Response to Booz Allen Hamilton's Specific Comment No. 10 on September 5, 2002 **Navy Response to EPA's October 5, 2001 Comments on Draft CMS Investigation Report for SWMU 9:**

The EqP-based benchmarks for PAHs presented in the draft CMS report (Baker 2001) were derived using the approach used by the USEPA for development of sediment quality criteria for nonionic organic chemicals (USEPA 1993a and 1993b). This methodology was presented in Section 5.1.4.1 of the Draft Final Corrective Measures Study Work Plan, SWMU 9, Naval Station Roosevelt Roads, Ceiba, Puerto Rico (Baker 2000). USEPA comments (dated December 5, 2000) did not include any general or specific comments that questioned the EqP-based approach presented in the draft final CMS work plan. As such, this approach was used to derive the equilibrium partitioning-based PAH sediment benchmarks presented in Table 5-45 and 5-60 of the draft CMS report. For this reason, as well as budgetary constraints, the ERA for SWMU 9 will not be revised to reflect use of the Di Toro and McGrath (2000) EqP-based values. However, a comparison of PAH sediment concentrations to Di Toro and McGrath (2000) EqP-based benchmarks is presented in the paragraph below. In addition, future ERAs at NSRR will incorporate the Di Toro and McGrath (2000) EqP-based PAH sediment benchmarks into the sediment evaluation.

Use of the Di Toro and McGrath (2000) PAH benchmarks in place of the PAH benchmarks presented in the draft CMS report would not change the conclusion that PAHs are not impacting the estuarine wetland (i.e., mangrove) benthic macroinvertebrate community. As demonstrated by the following table, maximum detected PAH sediment concentrations (in the case of non-detected PAHs, maximum reporting limits) are less than the Di Toro and McGrath (2000) EqP-based benchmarks [Note: The Di Toro and McGrath (2000) EqP-based benchmarks were derived assuming one percent organic carbon. However, the average total organic carbon content in Area A/B sediment was 6.4 percent, while the average TOC content in Area C sediment was 13.4 percent. As such, the Di Toro and McGrath (2000) EqP-based benchmarks presented in the table below are considered conservative and do not reflect actual site conditions.]

PAH	Area A/B	Area C	Di Toro and McGrath (2000) EqP-Based Benchmark (ug/kg)
	Maximum Concentration (ug/kg)	Maximum Concentration (ug/kg)	
1-Methylnaphthalene	1,800 U	180 U	7,551
2-Methylnaphthalene	3,600 U	1,300 U	7,565
Acenaphthene	3,600 U	1,300 U	8,312
Acenaphthylene	3,600 U	1,300 U	7,656
Anthracene	3,600 U	1,300 U	10,050

Benzo(a)anthracene	3,600 U	1,300 U	14,222
Benzo(a)pyrene	1,300 J	1,300 U	16,324
Benzo(b)fluoranthene	840 J	1,300 U	16,552
Benzo(g,h,i)perylene	1,300 J	1,300 U	18,515
Benzo(k)fluoranthene	820 J	1,300 U	16,603
Chrysene	560 J	1,300 U	14,268
Dibenz(a,h)anthracene	3,600 U	1,300 U	18,983
Fluoranthene	3,600 U	1,300 U	11,974
Fluorene	3,600 U	1,300 U	9,108
Indeno(1,2,3-cd)pyrene	1,100 J	1,300 U	18,874
Naphthalene	3,600 U	1,300 U	6,525
Phenanthrene	360 J	1,300 U	10,086
Pyrene	3,600 U	1,300 U	11,792

References:

Baker Environmental, Inc. (Baker). 2001. Draft Final Corrective Measures Study Investigation Report, SWMU 9, Naval Station Roosevelt Roads, Ceiba, Puerto Rico. July 2, 2001. Coraopolis, Pennsylvania.

Baker. 2000. Draft Final Corrective Measures Study Work Plan, SWMU 9, Naval Station Roosevelt Roads, Ceiba, Puerto Rico. November 15, 2000. Coraopolis, Pennsylvania.

Di Toro DM and McGrath JA. 2000. Technical Basis for Narcotic Chemicals and Polycyclic Aromatic Hydrocarbon Criteria. II. Mixtures and Sediments. Environ. Toxicol. Chem. 19:1971-1982.

USEPA. 1993a. Technical Basis for Deriving Sediment Quality Criteria for Nonionic Organic Contaminants for the Protection of Benthic Organisms by Using Equilibrium Partitioning. Office of Water, Washington, D.C. EPA-822-R-93-011.

USEPA. 1993b. Guidelines for Deriving Site-specific Sediment Quality Criteria for the Protection of Benthic Organisms. Office of Science and Technology, Washington, D.C. EPA-822-R-93-017.