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NAWC WARMINSTER
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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
841 Chestnut Building
Philadelphia, Pennsylvania 19107-4431

MAR 12 1993

Mr. Lonnie Monaco
Naval Facilities Engineering Command
Northern Division, Mailstop #82
Environmental Contracts Branch
10 Industrial Highway
Lester, Pennsylvania 19113

Re: Naval Air Warfare Center - Warminster, PA

Dear Mr. Monaco:

Please find below EPA comments on the Phase II Remedial Investigation Report for Operable Unit One of the subject site dated February 1993.

EXECUTIVE SUMMARY

p.ES-1: Introduction and Purpose

The third paragraph should read: "This report presents the results of RI work conducted at NAWC Warminster. Data from these investigations are utilized to conduct risk assessments, which are also included in the report. The risk assessments determine where unacceptable risks to human health and the environment have been identified. The report also identifies where additional investigations are needed to complete risk assessments and where Feasibility Studies should be performed to evaluate remedial alternatives for identified contamination."

p.ES-2: Scope and Objectives

Second paragraph, second sentence should read: "...due to releases on former and current NAWC property." The third sentence in this paragraph should be deleted.

Last paragraph, first sentence should read, "Additional investigations are planned by the Navy to fully identify the nature and extent of contamination in OU-1 and for the rest of NAWC."

p.ES-4: Second paragraph

Last sentence should read: "Groundwater within deeper bedrock layers can occur under unconfined or confined conditions."

p.ES-8: Under Contaminant Fate and Transport - Area A

First paragraph: Delete last sentence.

Second paragraph, last sentence should read: "The primary focus of this report is the investigation of onsite groundwater and the potential migration of this groundwater to offsite locations."

p.ES-11: First full paragraph

First sentence should read: "Shallow ground water under Area A has been found to present an unacceptable risk to human health because some HQs..."

p.ES-11: Last paragraph

Should read; "Based on information in the RI, adequate data exists to proceed with the evaluation of remedial alternatives for shallow ground water through the Feasibility Study process. Additional Remedial Investigation is needed for other media associated with Area A, including ground water in deep bedrock."

p.ES-15: Contaminant Fate and Transport - Area B

See comments on this section in the Executive Summary for Sites 1, 2 and 3.

p.ES-18: Last paragraph under Conclusions - Area B

Should read: "Shallow ground water under Area B has been determined to present an unacceptable risk to human health. Adequate data exists to proceed with the evaluation of remedial alternatives for shallow ground water through the Feasibility Study process. Additional Remedial Investigation is needed for other media associated with Area B, including deep ground water."

p.ES-18: Additional Investigations

First paragraph, fourth sentence: Delete.

p.ES-19: Offsite Groundwater Use

Second paragraph, second sentence should read: "...mainly from deeper bedrock zones of the Stockton Formation."

Third paragraph, insert second sentence which reads: "However, WMTA Well No. 26 is located 0.4 miles from NAWC."

p. ES-20: Second paragraph

First sentence should read: "Several residential wells were reported to contain TCE and/or PCE during the well survey."

p. ES-21: Contaminant Fate and Transport for Off-Site Groundwater

The name of this section should read: "Transport of Contaminated Groundwater Offsite"

This section should read:

"Contaminated groundwater within the water table (or overburden) aquifer may move laterally within this aquifer to surface water, to offsite locations or move vertically into bedrock. Contaminated groundwater in bedrock may move offsite along bedding planes or within fractures and may be under confined or unconfined conditions. Migration of groundwater in bedrock is influenced by onsite and offsite pumping."

p. ES-22: Third paragraph

First sentence should read: "Prior to treatment, MCLs were exceeded...."

p. ES-22: Conclusions for Off-Site Groundwater

Second paragraph should read: "While offsite deep ground water in the vicinity of the Wagner well presents a potential unacceptable risk, current information is inadequate to evaluate remedial alternatives. Additional Remedial Investigation should be performed and include:"

List bullet numbers 1, 4, 5, 6 and 7 noted under Conclusions for Area A in Executive Summary in addition to those identified here.

1.0 INTRODUCTION

p.1-1: Sec. 1.1

First paragraph, first sentence should read: "...conducted at NAWC, results of associated risk assessments and conclusions regarding additional investigations and future actions." Delete last two sentences.

p.1-2: Sec.1.2

This language in this section should be consistent with language in the Scope and Objective section in the Executive Summary.

3.0 PHYSICAL CHARACTERISTICS OF THE STUDY AREA

p.3-12: Sec.3.5

First paragraph, the last sentence should read: "Ground water in the Stockton Formation occurs locally under both confined and unconfined conditions."

p.3-13: Sec.3.5

See Attachment A, a memo from D. Kargbo to Darius Ostrauskas. This section (and the RI) should be consistent with the contents of this memo.

The second paragraph regarding "the hydrogeologic model for NAWC Warminster presented by Satterthwaite" should be deleted. This "model" is based on hydrogeologic tests conducted in one location at NAWC and is not representative of hydrogeologic conditions elsewhere on NAWC property.

The aquifers identified in this report should be consistent with the FS, which identifies overburden, shallow bedrock and deep bedrock aquifers. The terms "semi-artesian" and "deep-artesian" "zone" should be deleted here and elsewhere in the report. These terms are not defined and incorrectly suggest that confined conditions are known to occur throughout NAWC property at a particular depth. Instead, it may be accurate to say that confined conditions are known to occur locally within particular areas and at particular depths within bedrock.

The first sentence of the last paragraph on this page should read: "The overburden consists of..." Delete the second sentence in this paragraph. Elsewhere in this paragraph and throughout the report, the "surficial zone" should be called overburden to be consistent with the FS.

p.3-14: Figure 3-2

This figure should be deleted from the report. The values for K, S and L are derived from data for a limited area and are not necessarily representative of NAWC property or the vicinity. In addition, there is no technical basis for the depths provided for the different "ground water zones".

p.3-15: Sec. 3.5

The text on this page should be revised to reflect comments above. The discussion should be consistent with Sloto, 1992, and the results of hydrogeologic studies conducted during the Phase II RI.

Available data (see Sloto, 1992 and Phase II RI data) indicates leakage of ground water into the "deep artesian zone" is not necessarily "negligible" and flow of groundwater across bedding surfaces is not necessarily "negligible" relative to parallel flow. Please correct. In addition, the last sentence in the third paragraph on this page should be deleted.

Prior to including this section in the Final FS due to EPA on April 8, please provide the EPA an opportunity to review and comment on a final draft of this section by March 24. Please let us know prior to March 24 if this is not possible.

p.4-40: Sec.4.4.3.4

Should any additional drawdown curves from the pump test be constructed at this time, please include in this RI. Additional curves should be constructed as necessary as part of future investigations.

NOTE: See Attachment B for additional comments on Section 4.

p.4-101: Table 4-21

Per EPA Region III policy, the inhalation rate should be 14.4

L/min, which corresponds to 20 cubic yards/day for an adult.

p.4-115: Sec.4.7.4.2

A brief discussion should be included regarding the effects of lead on small children (IQ) and pregnant women (birth defects).

p.4-127: Sec.4.8.2

The language in this section should be consistent with language in Conclusions - Area A in the Executive Summary.

p.4-136: Sec.4.8.2.2 Remedial Action Objectives

Second paragraph (starts with "Since the deeper aquifers...") should be deleted.

p.4-137: Last paragraph

Delete.

5.0 SITES 5, 6 AND 7 - AREA B

p.5-93: Sec. 5.8.2 - Conclusions

Should be consistent with Executive Summary (e.g. see last paragraph in Sec.5.8.2.1).

p.5-96: Last paragraph

Delete.

6.0 ADDITIONAL GROUNDWATER INVESTIGATIONS

General: This section should be consistent with all comments above, including those on the Executive Summary and Section 3.

p.6-1: Second paragraph

First sentence: Delete.

p.6-5: First paragraph

Identify municipal well located within 0.25 miles and/or note WTMA Well No. 26 is located 0.4 miles from NAWC.

p.6-11: Sec.6.4.4

Second sentence should read: "One of the three residential wells allegedly containing contamination was reported to be filtered prior to use."

p.6-51: Sec.6.8.2

Again, assure consistency with Conclusions in Executive Summary.

p.6-53: Delete this paragraph.

APPENDIX K

Include Well (Boring) Logs for the following wells installed prior to Phase I:

Area A: DG-1, DG-2, DG-3, BG-3, C, D, E, SMC-1, SMC-2, SMP-2
Area B: DG-8, DG-9, DG-10

Include Well Logs for the Phase I wells BG-1 and DG-27.

Should you have any questions or comments regarding the above, please call me at 215-597-0549.

Sincerely,



Darius Ostrauskas
Remedial Project Manager

cc: Frank Kurdziel, NAWC
David Kennedy, PADER
Ben Mykijewycz