

MEMORANDUM

TO: LISA Humphreys, USACE PBOW Coordinator, and others

FROM: Julie Weatherington-Rice, Ph.D., RAB TAPP Coordinator

RE: Site-Specific Sampling and Analysis Plan & Site-Specific Health and Safety Plan Phase 2 Remedial Investigation Waste Water Treatment Plants 1 and 3 and Ash Pits 1 and 3; and Work Plan Remedial Investigation Locomotive Building Area, Former Plum Brook Ordnance Works Sandusky, Ohio; – Shaw Environmental, Inc.

DATE: February 13, 2009

Per our current contractual arrangement with US ACE which require both a technical memorandum for each report and an educational explanation to the RAB, this memorandum constitutes the technical review of the Shaw Environmental, Inc. November 2008 Draft “Site-Specific Sampling and Analysis Plan & Site-Specific Health and Safety Plan Phase 2 Remedial Investigation Waste Water Treatment Plants 1 and 3 and Ash Pits 1 and 3”; and “Work Plan Remedial Investigation Locomotive Building Area, Former Plum Brook Ordnance Works Sandusky, Ohio”; which are companion documents to the “Site-Specific Sampling and Analysis Plan & Site-Specific Health and Safety Plan Waste Water Treatment Plants 1 and 3 and Ash Pits 1 and 3 Phase 1 Remedial Investigation Former Plum Brook Ordnance Works Sandusky, Ohio”; “Site-Specific Sampling and Analysis Plan & Site-Specific Health and Safety Plan Wastewater Treatment Plant No. 1 Sewer Lines”; and “Site-Specific Sampling and Analysis Plan & Site-Specific Health and Safety Plan Remedial Investigation Ash Pit 2” documents just reviewed. Please forward to those who need to read this technical review.

This review is completed in several sections. The first section reviews the overarching considerations that need to be revisited at this point in time as to the role of a stand-alone Site-Specific Sampling and Analysis Plan or a Work Plan as this role seems to have been blurred over the years. The second review designed to discuss the Site-Specific Sampling and Analysis Plan for the Phase 2 Remedial Investigation Waste Water Treatment Plants 1 and 3 and Ash Pits 1 and 3 consists of both a general review and a specific review which references specific section language in the text for change or enhancement. The review of the Site-Specific Health and Safety Plan for the site is more problematic. There have been historic legal challenges and assignment of responsibility to outside reviewing firms when they have made sustentative changes to health and safety plans where they had no on-site program review. Since Bennett & Williams does not act as an on-site reviewer of activities at the Plum Brook Ordnance Works and has no interaction with the work as performed, I have taken the more prudent position of reading previous Site-Specific Health and Safety Plans and relegated my comments to the identification of typographical errors. This Site-Specific Safety and Health Plan is a copy of previous

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documents. Therefore there can be no question of Bennett & Williams or my explicit or implicit approval of this plan. Any untoward events that may occur at the site that are caused and/or aggravated by any shortcomings in this Site-Specific Safety and Health Plan are NOT the responsibility of Bennett & Williams Environmental Consultants Inc. or me. We neither approve nor disapprove this plan. The third review is a specific review of the Work Plan for the Locomotive Building Area. There is no Site-Specific Safety and Health Plan attached to this document.

What Should a Site-Specific Sampling and Analysis Plan or a Work Plan Cover?

These documents no longer serve as “stand alone” instructions for work efforts planned at the PBOW site. Please see the text of this section in the “Educational” memo addressing the possible limitations of these documents for use by new staff and/or outside reviewers.

Site-Specific Sampling and Analysis Plan Phase 2 Remedial Investigation Waste Water Treatment Plants 1 and 3 and Ash Pits 1 and 3 Former Plum Brook Ordnance Works Sandusky, Ohio – Shaw Environmental, Inc.

General Comments

1. This document is much better written than the previously reviewed documents. The connection and linkages between the sections continues to be stronger, more references to topics that are discussed in more than one place. It is even easier to follow than the second and third documents. A number of site-specific deficiencies that I noted in the earlier documents have been corrected in this text. The second paragraph on page 1-1 in the section 1.0 Project Description is especially helpful

Specific Comments

1. 1.1 Plum Brook Ordnance Works Facility History on Page 1-2
Second line from bottom of page “In 1963, *accountability* for and custody of the entire PBOW property (6,030 acres) was transferred to NASA by the Department of the Army.” Have we absolutely determined that NASA has “accountability” of the PBOW site since 1963? If so, the lawyers will read this as NASA having the sole responsibility of clean-up of the site from their budget only. The legal usage of the term “accountability” under CERCLA and other Federal applications is different from the everyday usage of this term. If this is not the intended legal understanding of the assignment of the “responsible party” for the PBOW clean-up effort, consider revising this term to something more neutral and recalling this draft page (my previous comments to the previous reviewed plan). To this the next sentence has been added “The Judge Advocate General, Department of the Army, Washington, D.C., became the custodian of title for the property”. I’m not certain that this additional language resolves NASA of liability. I recommend that USACE get a legal opinion for this section.

2. Top paragraph page 3-5 references the construction requirements for limestone bedrock wells and overburden/shale wells as “Requirements are listed in EM 1110-1-4000 (USACE, 1998).” These requirements should be included in this document as well. They could be included in an appendix at the back of the document, but they should be included so that the reviewer does not have to go look up an additional document. See comments above RE: “What Should a Site-Specific Sampling and Analysis Plan or a Work Plan Cover”
3. Third bullet, page 3-10 Listing of what the samples were screened for. Virtually all Ohio coals and their resulting coal ash are also radioactive. USACE should be instructing their contractors to be checking all ash pits for radioactivity as well as the parameters listed. This information has been included in previous reviews. Please see the following Ohio Dept. of Natural Resources Division of Geological Survey publications for further information:

RI 103. Trace elements in Ohio coals, by Norman F. Knapp. 12 p., 2 figs., 8 tables, 1977. \$3.00.

IC 47. Analyses of Ohio coals, by George Botoman and David A. Stith. 148 p. of tables and 8 folded tables, 1978. \$8.00.

IC 50. Analyses of Ohio coals, 1977-1978, by George Botoman and David A. Stith. 51 p. of tables and 4 folded tables, 1981. \$8.00.

C 52. Analyses of Ohio coals, 1979-1980, by George Botoman and David A. Stith. 26 p. of tables and four folded tables, 1986. \$8.00.

IC 55. Analyses of Ohio coals, 1982-1984, by George Botoman and David A. Stith. 17 p. of tables and four folded tables, 1988. \$8.00.

These comments conclude my review and recommendations to the text, figures, and tables of the “Site-Specific Sampling and Analysis Plan & Site-Specific Health and Safety Plan Phase 2 Remedial Investigation Waste Water Treatment Plants 1 and 3 and Ash Pits 1 and 3, Former Plum Brook Ordnance Works Sandusky, Ohio” – Shaw Environmental, Inc.

Site-Specific Health and Safety Plan Site Phase 2 Remedial Investigation Waste Water Treatment Plants 1 and 3 and Ash Pits 1 and 3 Former Plum Brook Ordnance Works Sandusky, Ohio – Shaw Environmental, Inc.

Specific Comments

This text has been reviewed for typographical errors several times and so was not reviewed this time.

Work Plan, Remedial Investigation Locomotive Building Area, Former Plum Brook Ordnance Works Sandusky, Ohio – Shaw Environmental, Inc.

Specific Comments

1. 1.3 Sitewide Hydrogeology 1st paragraph, 2nd sentence, page 1-4. The second sentence refers to an overburden unit, “composed of glacial outwash materials”. The term “glacial outwash materials” references materials deposited by flowing glacial meltwater. That is an incorrect term for these materials. Its use here creates the illusion of a coarser material than is actually present. Unless actually discussing the glacial depositional components of the site, a more general term, such as “glacial drift” would be more familiar to Ohio readers. Please replace when using this text again in other documents.
2. 3.2.2 Soil Sampling Procedures, 1st paragraph, 1st line page 3-6. Change the word “to” to the word “too”, typo.
3. 3rd paragraph this section page 3-6. Include a copy of Figure 4-5 of the SWSAP, typical piezometer construction form in this document for completeness of information.
4. 3.4.3 Piezometer Installation bottom page 3-9 and top page 3-10. In discussing the installation and completion process for the piezometers, the following statements are made; “No filter pack material will be placed around the well screen. Because the sampling will occur reasonably quickly after the piezometers have been installed, semipermanent seals are not necessary. The top 1-2 feet of the borehole will be sealed with bentonite to prevent precipitation water or surface runoff from infiltrating the borehole”. I specifically asked Shaw representatives at the December 2008 RAB meeting how temporary piezometers were installed to prevent the bentonite from plugging the well screens and they provided additional information that resolves the missing information provided in this section in each of the plans I reviewed. Again, here is a reference to Figure 4-5 of the SWSAP that is supposed to show a “typical piezometer construction” but that figure is NOT here included in this document. If that figure had been included, perhaps the confusion caused from the missing steps in the text could have been resolved earlier. See comments in the previous three reviews for additional details.
5. 3.4.4.1 Monitoring Well Installation, pages 3-10 and 3-11. Two figures showing typical overburden/shale wells and limestone wells installation should be included in this work plan for clarification. This description should be expanded to at least list the basic steps of drilling, core logging, and monitoring well installation so that readers who are not part of the installation team do not have to reference another document to see how the well should be installed.
6. 3.5 Land Surveying, page 3-17 middle of paragraph. “and referenced to the 1929 National Geodetic Vertical Datum. If the 1929 datum is not readily available, the existing local vertical datum will be used.” This is a placeholder paragraph suitable for any project in the United States. Given the number of monitoring wells that have been installed and surveyed at PBOW over time, Shaw should know whether the 1929 datum is readily available at the PBOW site and should rewrite this paragraph with the information specific to the PBOW site identified.

These comments conclude my review and recommendations to the text, figures, and tables of the “Work Plan, Remedial Investigation Locomotive Building Area, Former Plum Brook Ordnance Works Sandusky, Ohio” – Shaw Environmental, Inc.

This concludes my technical comments on these Draft “Site-Specific Sampling and Analysis Plan & Site-Specific Health and Safety Plan Phase 2 Remedial Investigation Waste Water Treatment Plants 1 and 3 and Ash Pits 1 and 3; and Work Plan Remedial Investigation Locomotive Building Area, Former Plum Brook Ordnance Works Sandusky” documents. If you have any questions and/or need further clarification on any point discussed in this memorandum, please feel free to contact me.