



PITT-08-8-024

August 19, 2008

Project No. 112G00352

Mr. Howard Hickey
NAVFAC MW
201 Decatur Avenue
Building 1A, Code EV
Great Lakes, Illinois 60088

Subject: CLEAN Contract N62467-04-D-0055
Contract Task Order No. 0020

RE: **Final**
Quality Assurance Project Plan Addendum No. 4 for PCB Capacitor 2721 Investigation
(Phase 5) SWMU 17

Dear Mr. Hickey:

Enclosed is the subject Report for SWMU 17. The Signature Page is currently being routed to the laboratory for required signatures. It will then be forwarded to you under separate cover.

Also enclosed is a copy of the Response to EPA Comments that were approved by Peter Ramanauskas via e-mail, received on August 11, 2008.

Please contact the undersigned at (412) 921-8989 (e-mail Steve.Ruffing@Tetrattech.com) or James Goerdts at (412) 921-8425 (e-mail James.Goerdts@Tetrattech.com) regarding any questions you may have to the information provided.

Sincerely,



Steven H. Ruffing, P.E.
Project Manager

SHR/mlg
Enclosures

cc: Mr. Tom Brent, NSWC Crane (letter and 4 copies of enclosures)
Ms. Bonnie Capito, NAVFAC Atlantic (PDF copy of letter via e-mail)
Mr. John Trepanowski, Tetra Tech (letter and enclosures)
Mr. Steve Ruffing, Tetra Tech (letter and enclosures)
Mr. Jim Goerdts, Tetra Tech (letter and enclosures)
Mr. Garth Glenn, Tetra Tech (letter only)
File copy - CTO 0020 (letter and enclosures)

RESPONSES TO U.S. EPA COMMENTS
RECEIVED VIA E-MAIL FROM TOM BRENT ON APRIL 14, 2008
ON
QUALITY ASSURANCE PROJECT PLAN ADDENDUM NO. 4 FOR PCB CAPACITOR
BURIAL/POLE YARD BUILDING 2721 INVESTIGATION (PHASE 5)
SWMU 17
NSWC CRANE
CRANE, INDIANA

U.S. EPA comments are shown in bold font. Responses to each comment are shown in regular font. Text changes to the report are shown in italic font enclosed in quotation marks within the response.

Comments from Peter Ramanauskas – U.S. EPA (April 10, 2008)

1) In the last full paragraph on page 1-2, reference is made to to original approved QAPP. I don't recall at this moment, but was sediment and surface water sampling addressed within that QAPP? If not, this Addendum should be supplemented with the relevant lab SOPs and other appropriate QA/QC info for analysis of sediment and surface waters.

The original approved QAPP, dated November 2006, addresses PCB analysis in both soil and sediment, but did not include surface water. Since SOPs are routinely updated by the contract laboratory, the most recent version of the relevant SOPs have been added in CD format as Appendix B to this QAPP Addendum No. 4.

2) Section 1.3 should discuss that a geophysical survey and test pits were performed to attempt to locate the buried capacitors and briefly discuss results. Sections 1.3 and 1.4 should provide a reference to the report that includes the geophysical investigation results.

The 2nd paragraph of Section 1.3 has been updated to include a brief discussion regarding the geophysical survey and subsequent interim measures activities at SWMU 17.

The new paragraph now reads as follows:

"It has been reported that capacitors were buried at SWMU 17 in the early to mid-1970s, but it is not known whether any capacitors were buried before the early 1970s or after the mid-1970s. The soil at SWMU 17 has been investigated extensively. A geophysical survey was completed as part of the RFI in March of 2002. The survey, conducted to a maximum depth of 10 feet, identified several anomalies as well as a waste burial area and many locations of subsurface metal, including buried utilities. Subsequently, an Interim Measure was conducted in September 2004. During the Interim Measures, PCB contaminated soil was removed for disposal and excavation for buried capacitors was completed to a depth of between 7 to 12 feet. A large number of electrical insulators and other debris were uncovered, but no capacitor pieces were found in any of the 10 holes that were excavated."

A specific reference to the ToITest Interim Measures Report (2004) is provided in the second to last sentence in the **2004 Interim Measure** summary located in Section 1.4.

3) Section 1.4 refers to the 2004 excavation performed around the presumed capacitor burial area and identifies that electrical insulators and a transformer were uncovered. Did the transformer contain PCB and what was done with it? An earlier email I sent conveyed the potential that the debris field could contain electrical transformer insulators/bushings which may contain PCB and continue to be a source. I understand that the Navy & TetraTech have had some discussion about this. What have your discussions or investigations yielded? The same section discussing the 2004 Interim Measure mentions

that surface soil between B-357 and the paved road was not excavated based on regulatory decision. Provide additional detail in the text on that decision.

Under the 2004 Interim Measure summary located in Section 1.4, it was incorrectly stated that a transformer was uncovered during excavation activities. The item referred to in the comment was actually a step-down transformer. The unit was found in a drainage ditch on August 21, 2003. The transformer was sealed and no PCB sample was collected. It was placed into a drum along with other sealed capacitors and sent for disposal in November 2004. A disposal certificate was received on December 3, 2004.

The 3rd sentence of the 2004 Interim measure summary has been changed as follows to indicate the transformer was found nearby in the drainage channel and not uncovered during excavation:

"The excavation around the capacitor burial area uncovered electrical insulators and miscellaneous debris. A small step-down transformer was also found during a search of an adjacent ditch. The transformer was sealed and therefore not sampled for PCBs. It was placed in a drum along with other sealed capacitors and sent off for proper disposal as part of Crane's routine PCB management program."

The following information is provided by a Tetra Tech Master Electrician regarding the potential for the on-site insulators/bushings containing PCBs and possibly contributing to the source of PCB contamination:

Some older high voltage insulators (1,000 Volts and above) did at one time contain PCBs. They came in two basic forms, liquid or solid. The solid type is usually encountered on ratings below 13.8 KV, whereas the liquid type was encountered on ratings at 23 KV and above. Bushings manufactured before 1978 contained some PCBs. Reviewing the picture that was attached, these seem to be a solid rod type with porcelain insulators. This type **would not** contain PCBs and would rely on the porcelain to provide the necessary insulation values. They appear to be in the 13.8 to 23 KV range for voltage. This type was utilized on small transformers, capacitor banks, reactors, and isolation switches.

The soil between Building 357 and the paved road were not excavated because the soil concentrations were below 25 mg/kg which is the risk level for protection of industrial worker.

4) Section 3.3.1 discusses surface water sampling. Samples should be analyzed for PCBs in both total and dissolved phases. This section also mentions use of GPS in lieu of surveying sampling points. Are survey-grade units proposed for use? What is the accuracy?

The 3rd sentence of the 1st paragraph in Section 3.3.1 has been changed to reflect that surface water samples will be analyzed for PCBs in both total and dissolved phases.

"The surface water samples will be spaced out evenly along this stretch of Boggs Creek to determine whether PCB contamination is present in total and dissolved phases."

Survey grade points are not proposed to be used for this investigation. GPS is the proposed measurement for marking sample locations. Currently, Tetra Tech has been using a handheld Trimble GeoXT or GeoXM unit which have proven to have very good accuracies. The GeoXT provides sub-meter accuracy when used within 50 miles of a base station and the GeoXM provides an accuracy of 1 to 3 meters when used within 50 miles of a base station. Three known base stations are located 19, 30, and 37 miles from NSWC Crane. All collected GPS data points undergo post processing of the data which further increases the accuracy.

The objective of this investigation is to determine whether sediment pools are contaminated with PCBs along the approximate 10 mile stretch of Boggs Creek from SWMU 17 to Lake Gallimore

and their proximity to the lake. Sample location accuracies obtained by GPS are adequate for this purpose.

5) Referring to Section 3.3.1.2, we recommend including sampling at deeper intervals where sufficient sediment is present (> 6 inches) to determine whether deeper sediments are impacted. SOP CTO0020-05 should be changed to reflect this.

Sediment samples at depths greater than 6 inches will be collected at sample locations having adequate depth. The 1st sentence of the 2nd paragraph in Section 3.3.1.2 has been replaced with the following sentence to reflect this change:

"Each sediment sample will be a composite sample comprised of four sample aliquots. Samples will be collected at a depth of 0 to 6 inches, and if sufficient sediment is available, a second sample will be collected at a depth of 6 to 12 inches. Up to 10 sediment sample locations are proposed for the deeper sediment sampling."

Table 3-2 has been updated to include the proposed deeper sediment samples at up to 10 sample locations.

SOP CTO0020-02 (Sample Identification Nomenclature) has been revised to include depths (in inches) at the end of the sediment sample ID.

Section 3.1 of SOP CTO0020-05 (Composite Sampling For Sediment) has been revised to allow for sediment samples to be collected at a depth greater than 6 inches at sample locations with sufficient sediment. The following sentence has been inserted after Section 3.1.3 to accommodate this:

"Carefully remove the top 6 inches of sediment from the designated sampling area trying not to disturb the underlying sediments. Collect a sample aliquot from a depth of 6 to 12 inches or refusal if less than 12 inches until four discrete sediment sample locations are collected."

6) Floodplain areas should be delineated to determine lateral and vertical extent of PCB contamination. I recall, during our creek walk, coming into an open/floodplain area (I believe this may have been along Ditch 3 where samples 17SB04, 17SB82, and 17SB19 exist). Have you done an initial walk or evaluation of areas along the 10 miles of Boggs Creek to identify depositional areas for sediment sampling? If so, can you present some additional information on the areas you plan to sample?

Evaluation of the flood plain areas is not within the scope of this investigation. An initial walk and evaluation of the areas along the 10 miles of Boggs Creek will be completed to select areas for sediment sampling. Although delineation of flood plain areas is not an objective of this investigation, the presence of flood plain areas will be noted and used in designation of locations for sediment sampling. During sample collection, Tetra Tech personnel will document (photograph, note) any floodplain areas where sediment deposition has or may have occurred based on site topography.

No change has been made to the QAPP in response to this comment.

Comments from Allan Debus – U.S. EPA (April 14, 2008)

1. Referring to section 1.1, p. 1-2, where specific project objectives are mentioned in two 'bullets,' is it known or stated somewhere in a previous QAPP what the decision criteria are for this project, and how do Laucks' proposed reporting limits for the COCs compare to these targeted decision criteria in respective matrices to be sampled. This matter is of such significance that the table should (re-)appear in this QAPP addendum.

The specific objectives bulleted in Section 1.1 have been changed to reflect the decision criteria for this project. A new Table 1-1 has also been added listing method detection limits and risk criteria for both aqueous and sediment. The two bullets now read as follows:

- *"Based on additional sampling of surface water and sediment in Boggs Creek, determine if any PCB contamination located downstream of the headwaters of Boggs Creek exceed the 1 ppm decision criteria agreed to by the U.S. EPA, U.S. Fish and Wildlife Service (FWS), and the Navy.*
- *Provide information necessary to complete the human health and ecological risk assessments for SWMU 17. Laboratory analytical data meeting the human health and ecological screening levels is necessary. Table 1-1 provides the method detection limits and risk criteria for PCB aroclors in both aqueous and sediment matrices."*

2. Section 3.3.1, p. 3-2 introduces the concept or implies that field filtering of surface waters will be conducted because it is stated that a goal of surface water sampling will be to "determine whether PCB contamination is present in the dissolved phase." If this is the case then section 3.0 of SOP CTO0020-08 should be modified to clarify that field filtering of surface water samples will be performed for this project. (Note that section 3.7 of this SOP even suggests that samples will be unfiltered, despite the fact that section 2.0 of the SOP implies that a pump will be used to field-filter surface water samples.) Since surface water samples will be subjected to a determination for turbidity, perhaps if the turbidity results exceed a certain threshold, only then might it be necessary to field-filter surface water samples.

Surface water samples with a turbidity reading greater than 10 NTUs will be filtered prior to shipping to a fixed-base laboratory for analysis. The 1st sentence of the 2nd paragraph in Section 3.3.1 has been replaced with the following two sentences:

"Surface water samples will be collected by direct filling of the sample container at sample locations having a turbidity reading of 10 Nephelometric Turbidity Units (NTUs) or less, and surface water samples will be filtered through a 0.45-micron filter at sample locations having a turbidity reading greater than 10 NTUs. All sediment samples will be collected using a disposable plastic trowel or sample location-specific stainless-steel trowel."

The last sentence in Section 3.3.1.1 referring to the collection of all surface water samples via direct fill has been deleted since the above response in Section 3.3.1 discusses how surface samples are to be collected.

SOP CTO0020-08 has been revised to clarify the need to filter those surface water samples in locations of the creek that have a turbidity reading greater than 10 NTUs. Prior to collection of the surface water sample, the water quality measurements will be obtained immediately downstream of the sample collection point. Based on the turbidity reading, samples will be either direct filled or filtered.

3. Referring to the last sentence in section 3.3.1.1, p. 3-4, perhaps it could also be stated whether 'all surface water samples' will be field-filtered.

See response to Comment 2.

4. If surface water samples will be field-filtered using the pump device mentioned in SOP CTO0020-08, then would this introduce a need for the rinsate blank associated with aqueous sampling?

Yes, although the tubing and filter, if used, would be dedicated (disposable) for each sample location, a single rinsate blank will be collected from a portion of unused tubing to ensure it is contaminant free. A rinsate blank has been added to Table 3-3 under the column for surface water samples, and footnote number 2 has been revised as follows:

"2) Rinsate blanks will be collected at a frequency of one per sampling device or instrument. These are estimates and may vary. If all sediment samples are collected via disposable trowels and baggies, then no associated rinsate blank will be collected. However, a rinsate blank will be collected if stainless-steel trowels are utilized for sediment sample collection. A rinsate blank will be collected for surface water samples if the peristaltic pump and tubing are used in the collection.

5. Referring to the tables section of section 3, since sediment and surface water media are of special interest to ecologists, it should be illustrated that Laucks' reporting limits for the appropriate 'PCB' parameter will be sufficiently sensitive to meet Region 5 ESL decision criteria.

See the response to Comment 1.

6. How will 'PCBs' be reported for this project? As total Aroclor, per SW-846 method 8082?

PCBs will be reported as both Total and Specific Aroclors by EPA Method SW 846-8081B/8082A as shown in Tables 3-1 through 3-4. The analytical method has also been added to the 2nd sentence of the 1st paragraph in Section 3.1 as follows:

"All surface water and sediment samples will be analyzed for PCBs by EPA Method SW-846-8081B/8082A as listed in Tables 3-1 and 3-2, respectively."

7. Measurements cited in section 3.8 of SOP CTO0020-08 should be performed on unfiltered samples.

Section 3.8 of SOP_CTO0020-08 has been moved to Section 3.3 with the intent that water quality measurements will be collected at all surface water sample locations. Those locations with turbidity readings greater than 10 NTUs will then undergo filtering prior to collection in the sample container.