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LETTER OF TRANSMITTAL FOR FINAL PERFLUORINATED COMPOUNDS IN GROUNDWATER PROJECT REPORT AND U S NAVY RESPONSES TO REGULATOR COMMENTS ON DRAFT REPORT NAS SOUTH WEYMOUTH MA
09/27/2010
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C-NAVY-09-10-3868W

September 27, 2010

Project Number G02073

Mr. Brian Helland, RPM
BRAC PMO, Northeast
4911 South Broad Street
Philadelphia, Pennsylvania 19112

Reference: CLEAN Contract No. N62470-08-D-1001
Contract Task Order (CTO) No. WE11

Subject: Responses to Comments and Final Perfluorinated Compounds in Groundwater Project Report
Naval Air Station South Weymouth, Weymouth, Massachusetts

Dear Mr. Helland:

Tetra Tech NUS, Inc. (TtNUS) has prepared responses to comments received from the U.S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MassDEP) on the draft Perfluorinated Compounds in Groundwater Project Report for Naval Air Station South Weymouth, Weymouth, Massachusetts. The report has been revised in accordance with the RTCs. The final Perfluorinated Compounds in Groundwater Project Report is enclosed along with the RTCs.

Through copy of this letter, the RTCs and final Project Report are being provided to the recipients listed below. If you have any questions regarding the documents, please contact me at (978) 474-8403.

Very truly yours,

Phoebe A. Call

Phoebe A. Call
Project Manager

PAC/lh

Enclosures

c: D. Barney, Navy (w/encl. – 1 paper, 1 CD)
P. Marchessault, EPA (w/encl. – 1 paper, 1 CD)
D. Chaffin, MassDEP (w/encl. – 1 paper, 1 CD)
P. Golonka, Gannett Fleming (w/encl. – 1 paper, 1 CD)
Y. Walker, Naval Environmental Health Center (w/encl. – 1 CD)
P. Sortin, Abington (w/encl. – 1 CD)
D. McCormack, Weymouth (w/encl. – 1 CD)
M. Parsons, Rockland (w/encl. – 1 CD)
Tufts Library, Weymouth (w/encl. – 1 CD)
Public Library, Abington (w/encl. – 1 CD)
Public Library, Rockland (w/encl. – 1 CD)
Public Library, Hingham (w/encl. – 1 CD)
Chief Executive Officer, South Shore Tri-town Development Corp. (w/encl. – 1 paper, 1 CD)
R. Daniels, LNR (w/encl. – 1 CD)
G. Wagner, TtNUS (w/encl. – 1 paper, 1 CD)
J Traut, TtNUS (w/encl. – 1 paper)
J. Trepanowski, TtNUS (w/o encl.)
G. Glenn, TtNUS (w/o encl.)
File G02073-3.2 (w/o encl.); G02073-8.0 (w/encl. - 1 each)

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NAVY RESPONSES TO U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA) COMMENTS (DATED AUGUST 17, 2010) DRAFT PERFLUORINATED COMPOUNDS IN GROUNDWATER PROJECT REPORT NAVAL AIR STATION (NAS) SOUTH WEYMOUTH, MASSACHUSETTS

Navy responses to the EPA comments on the Draft Perfluorinated Compounds in Groundwater Project Report, Naval Air Station South Weymouth, Weymouth, Massachusetts (July 2010) are presented below. The EPA comments are presented first (in italics) followed by Navy's responses.

EPA Letter Comments

Letter Comment 1: *It does not appear that MW05-301 is an adequate background well at Hangar 1. As noted in my email on April 12,2010 on our review of the SAP for this project, we had expressed concern about using this monitoring well as a background well due to its proximity to Hangar 1. The background concentration of PFOA/PFOS in groundwater should be determined by sampling further upgradient than MW05-301; perhaps from some of the non-contaminated locations that were used for basewide background.*

Response: The work presented in the Project Report was performed in accordance with the UFP SAP for the project and the objectives of this project were met with the current data. In reference to Worksheet #14 of the SAP, this specific sample location was simply defined to be located "upgradient" of the suspected release location within the hangar and was not promoted as being representative of background conditions. As noted in the minutes of the September 9, 2010 Base Cleanup Team (BCT) meeting to discuss the Project Report, any additional sampling will be discussed at a later date and would be scoped in a new UFP SAP.

Letter Comment 2: *Additional groundwater samples should be taken to the east of the Fire Fighter Training Area, to the west of Hangar 1, and to the south of PZ11D to adequately bound the extent of contamination. A cost-effective way of providing additional spatial coverage may be the use of a direct-push rig.*

Response: Please see the Response to Letter Comment 1 above. Specifically, any additional sampling will be discussed at a later date and would be scoped in a new UFP SAP.

Letter Comment 3: *The occurrence of PFOS/PFOA in groundwater at high concentrations near the probably sources indicates there is a continuing source in soil or that it is being formed and leached from precursor components in the AFFF; therefore, it is necessary to collect and analyze soil samples for PFOS/PFOA to determine the extent of contamination and to evaluate whether there is a relationship between concentration in soil and concentration in groundwater. This may most effectively be accomplished by taking soil samples in the immediate vicinity of the monitoring wells that were sampled for PFOS/PFOA. A subset of these soil sampling locations should be sampled for both surface and subsurface soils to evaluate whether the source material has migrated vertically over time. The results should be evaluated to determine whether there is a relationship between concentrations in soil and underlying groundwater and to evaluate the potential mass of PFOS/PFOA remaining in the source areas. The co-located soil/groundwater data will also serve to evaluate whether PFOS/PFOA is being formed from precursor AFFF components, as would be suggested by finding higher concentrations in groundwater than in soil.*

Response: Please see the Response to Letter Comment 1 above. Navy believes that there is insufficient information to draw the conclusions stated in the comment concerning concentrations in soil.

Letter Comment 4: *In addition, PFOS/PFOA should be analyzed in sediment samples from the TACAN downstream from Hangar 1, in the west branch of French Stream immediately downstream from the confluence with the TACAN ditch, in the east branch of French Stream downstream from the FFTA, and in Old Swamp River upstream from the RDA to determine the extent of contamination in sediment. The sample in Old Swamp should be collected because the area upstream from RDA is fed by groundwater*

between it and the FFTA. One sample should also be taken from the most downstream section of French Stream on Navy property. Background sediment samples should be taken from one or more locations from the Westgate Landfill in the west branch of French Stream and upstream from the FFTA, if possible, perhaps from the upgradient wetland. The high concentrations in the FFTA groundwater suggest that PFOS/PFOA is being released to gaining sections of the east branch of French Stream via groundwater.

Response: Please see the Response to Letter Comment 1 above.

Letter Comment 5: *If PFOA/PFOA is detected in sediment, surface water samples should be collected and analyzed to determine extent of contamination and whether the sediment contamination is being released to surface water primarily via the sediment, or via emerging contaminated groundwater. This may most efficiently be conducted by collecting both sediment and surface water samples at the same time in areas of emerging groundwater (as detected by temperature or conductivity differential).*

Response: Please see the Response to Letter Comment 1 above.

Letter Comment 6: *If PFOS/PFOA is detected in the sediment of French Stream or Old Swamp River, it may be necessary to collect fish from these areas and appropriate reference areas to determine the extent of contamination.*

Response: Please see the Response to Letter Comment 1 above.

Letter Comment 7: *On page 4, section 2.3 of the report, the reader is directed to the Appendices for low-flow log sheets. It is recommended that the field parameters be tabulated and included in the print document. This would allow a quick assessment of potential relationships between water quality parameters and the analytical results for the PFCs. In particular, it is known that the PFCs sorb to solid surfaces, so that sample turbidity may influence the analytical results. As it turns out in the present case, the suite of wells for this investigation generally exhibited reasonably low turbidity. The highest recorded was 9.2 NTU at MW01-093, where PFOA and PFOS were both below the HA screening values*

Response: The groundwater sample field parameters have been tabulated and added to the report as Table 3. The analytical results are now in Table 4.

NAVY RESPONSES TO MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION (MASSDEP) COMMENTS (DATED AUGUST 5, 2010)
DRAFT PERFLUORINATED COMPOUNDS IN GROUNDWATER PROJECT REPORT
NAVAL AIR STATION (NAS) SOUTH WEYMOUTH, MASSACHUSETTS

Navy responses to the DEP comments on the Draft Perfluorinated Compounds in Groundwater Project Report, Naval Air Station South Weymouth, Weymouth, Massachusetts (July 2010) are presented below. The DEP comments are presented first (in italics) followed by Navy's responses.

Letter Comment 1: Section 3.2: *While the lack of enforceable standards for the perfluorinated compounds (PFCs) detected in the groundwater samples collected during this investigation complicates the assessment of risk with respect to the more familiar contaminants encountered at the base, the Navy should nevertheless manage the uncertain risks posed by these compounds using an approach that is protective of human health and the environment.*

Response: Agreed. Please see the specific responses below.

In the near-term, action is necessary to prevent human and ecological exposures to the detected compounds. In particular, action is needed to ensure that any construction activities in the vicinity of Hangar 1 will be conducted using an approach that will prevent worker exposure to soil or groundwater contaminated by these compounds. This can be accomplished by confirming that the limits of contamination do not extend into planned construction areas before construction begins or by coordinating with construction personal to delineate and safely manage contaminated soil and groundwater during construction (e.g., procedures used during Phase I access road construction).

Response: As discussed at the September 9, 2010 Base Cleanup Team (BCT) meeting, it appears that the construction will extend into areas that are within potential areas of contamination. As appropriate, the parties involved will coordinate as necessary to address the exposure issues noted in the comment.

For the intermediate term, action is required to develop a plan to manage the impacted soil and groundwater in a manner that is protective of human health and the environment until the risks posed by PFCs can be quantified and addressed using established practices. In particular, while the question of whether of not a cleanup is necessary is uncertain at present, there can be no doubt that the full extent of contamination in soil and groundwater should be determined to develop a protective management approach (e.g., notice or land use restriction). The following actions are recommended to delineate the extent of contamination in soil and groundwater:

a) Hangar 1: An investigation should be conducted to locate PFCs source areas and determine the magnitude and extent of contamination in soil, and the extent of PFCs in groundwater exceeding the provisional criteria should be delineated (existing groundwater data may be sufficient); and

Response: The work presented in the Project Report was performed in accordance with the UFP SAP for the project. As noted in the minutes of the September 9, 2010 BCT meeting to discuss the Project Report, any additional sampling will be discussed at a later date and would be scoped in a new UFP SAP.

b) FFTA: Surface water sampling should be conducted to determine if PFCs extend from the FFTA to the east branch of French Stream, and if so, to determine the downstream extent, and the extent of PFCs in groundwater exceeding the provisional criteria should be delineated (existing groundwater data may be sufficient).

Response: Please see the response to the comment above.

For the long-term, it is expected that appropriate standards, criteria, and risk assessment values (e.g., CSF and/or RfD) will eventually be established for the detected PFCs and related PFCs. When this occurs, risks should be quantified and if necessary a permanent remedy should be implemented.

Response: Comment noted. As noted in the minutes of the September 9, 2010 BCT meeting to discuss the Project Report, further discussions and evaluations are needed.

Letter Comment 2: *Appendix A-1: The map provided in this appendix associates monitoring well identifiers MW05-302 and MW05-304 with different locations than shown in Figures 2, 3, and 4 of the report. Please confirm that the labels shown in Figures 2, 3, and 4 are correct.*

Response: The locations of monitoring wells MW05-302 and MW05-304 will be corrected on Figures 2, 3, and 4.

Letter Comment 3: *Records should be reviewed to determine if aqueous film forming foam was stored or used at Building 82 and to assess the potential for past migration of PFCs from Building 82 to surrounding environmental media.*

Response: Based on review of Building 82 documents (Phase I EBS Report and documents reviewed and referenced in the Building 82 RI), there is no record of AFFF being stored or used at Building 82. In addition, there is no record or drawings of any equipment that could properly disperse AFFF at Building 82. Since there is no evidence to support use or storage of PFCs at Building 82, PFCs are not a concern at this site.