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LETTER AND COMMENTS FROM U S EPA REGION I ON RESPONSE TO COMMENTS REGARDING REMEDIAL INVESTIGATION ADDENDUM FOR BUILDING 82 NAS SOUTH WEYMOUTH MA
11/08/2010
U S EPA REGION I

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, REGION I
5 Post Office Square, Suite 100
Boston, MA 02109-3912

November 8, 2010

Brian J. Helland, P.E.
BRAC Program Management Office NE
4911 South Broad Street
Philadelphia, PA 19112-1303

Re: Response to Comments - Remedial Investigation Addendum for Building 82

Dear Mr. Helland:

Thank you for the opportunity to review the responses to EPA comments on the Remedial Investigation Addendum for Building 82 dated October 13, 2010. EPA is concerned that its previous requests for a detailed groundwater flow map at the scale of the greater Building 15 area remains an outstanding item. While it may be advantageous to defer many of the issues until the remedial design phase, a basic understanding of the groundwater flow system, (including sources, sinks, potential preferential pathways and typical hydraulic conductivities) gradients, and groundwater velocities are fundamental to the FS. In addition to adding basic groundwater flow information, a limited amount of hydraulic conductivity data is needed near Building 15 in order to better estimate the time frames for remedial alternatives.

LC1 EPA asked the Navy to better characterize the local groundwater flow directions. The responses promise a synoptic round of water levels, and a contoured interpretation of the potential surface and address part of the comment (*see also* SC8 & SC9). Of the numerous items listed, several are more critical to inform the FS. These include:

- Inventory permanent monitoring points near Building 15;
- Collect synoptic water levels near Building 15;
- Prepare high resolution groundwater flow maps at scale compatible with groundwater profiling (chemistry) data;
- Construct new hydrogeologic cross sections parallel and perpendicular to the primary flow directions determined for the greater Building 15 area (to supplement or update existing cross sections in the RI); and
- Collect site-specific hydraulic conductivity data.

A more detailed understanding of the drainage system as related to the groundwater flow near Building 15 is needed. Please update the subsurface utility plans in conjunction with any new field effort to collect water levels and/or slug tests near Building 15.

SC2 Based on Appendix A-1, Video Log for Storm Sewer System, there appear to be additional areas of possible groundwater/storm water exchange. It will be necessary to survey invert elevations for all catch basins, manholes, etc., in the study area to improve the storm drain data set (*see also* SC18).

SC3 The response incorrectly indicates that the "sanitary sewer is shown on Figure 1-2." This figure does not extend far enough east to depict the OSW, and Figure 1-2 does not delineate the sanitary sewer, although the floor drain system that formerly existed at Building 82 is shown. Since the former OWS represents a potential residual source, and the sanitary sewer and associated bedding represents a potential transport pathway, the entire sanitary sewer network should be depicted on Figure 1-3 (*see also* SC18).

SC4 EPA notes that MW07-003 appears to be cross-gradient to former UST-12. It will therefore be necessary to install a monitoring point directly down-gradient of the former UST-12 once groundwater flow directions are more firmly established near Building 15.

SC5 From the 1953 utility plan (provided as Appendix A-2), USTs 9A and 9B were moved to their final location. From the figure, the tanks apparently were moved from a former location near the southeastern corner of Building 81. Please clarify the history and former locations of gasoline or other fuel dispensing in the Building 15 area. While 9AB-MW-01, -02, -03, -04, and -05 presumably also provide down-gradient monitoring with respect to the *"new" (former) UST location*, the flow directions to the south and south-southwest from Building 15 are not certain, and there is some potential for an unmonitored flow path in this direction. Please clarify the history and former locations of gasoline or other fuel dispensing near Building 15. Is there potential for a residual source in the subsurface here? Please compile the existing monitoring well locations and construction details for all wells to the south and south-southwest of Building 15 (*i.e.,* near Buildings 11, 8, 117, and 10). It may be necessary, in subsequent phases of work, to install a monitoring point directly down-gradient of the former (unnamed) UST area(s) near the southeast corner of Building 15 once groundwater flow directions are better established near Building 15.

SC6 Please discuss how the groundwater connections between Buildings 81 and 15 were assessed. The current monitoring network relative to Building 81 and the adjacent areas around Building 15 is not sufficiently robust to dismiss an interconnection between Building 81 and the down-gradient areas via bedrock. Therefore, please plan to install limited additional bedrock control near Building 15 in subsequent phases of work.

SC7 Please note that the wells were redeveloped after the surface seal/road box repair.

SC8 EPA appreciates the Navy's plans to inventory and conduct a synoptic water-level round for the existing monitoring wells near Building 15. Since this work is essential to finalizing the *Remedial Investigation Addendum for Building 82,* we would appreciate a schedule for these tasks. Although no new head control points

will be added at this stage, EPA expects this initial comprehensive water level round to point to areas where control is weak.

SC8&9 The responses state that the Navy will perform a synoptic round of water-level measurements, and will provide an interpreted potential surface (contour map). They will support (or possibly refute) the general interpretation of the plume (*e.g.,* Is the inferred flow direction consistent with the orientation of the axis of the mapped plume?). Are the available data consistent with any interpretations that invoke interaction with utility trenches and/or surface drainages (*e.g.,* at the distal end of the plume)?

SC10 The proposed synoptic water levels round can help establish hydraulic gradients near Building 15. In relation to hydraulic conductivity, it is problematic for the FS that there are no data relative to this basic parameter for this "new" appended portion of the site. Please collect slug test data on a subset of the existing wells to inform the *Remedial Investigation Addendum* and the FS for Building 82. As indicated in EPA's response to LC1, these data are needed for both the RI and the analysis of remedial alternatives and associated time frames in the FS. It may be possible to estimate the hydraulic conductivity by carefully evaluating the time-drawdown data provided in Appendix B-1, Groundwater Stabilization Measurements and Appendix B-2, Well Development logs. If time-drawdown data are available from the groundwater sampling records, it may be possible (depending on the nature of the aquifer and the quality of the data) to estimate hydraulic conductivity using the method described in "*Determining Hydraulic Conductivity Using Pumping Data from Low Flow Sampling*," G.A. Robbins, A.T. Aragon-Jose, and A. Romero, Groundwater – 2008. Also, the data provided in Appendix B-1, Groundwater Stabilization Measurements, is too general to facilitate this analysis. Are the field data sheets available? Lastly, with respect to the flatter gradients observed near Building 15, the role of subsurface utilities needs additional scrutiny. The density of subsurface drains in this area appears to be relatively large, and the potential for exchange with groundwater appears to be substantial. The flatter gradients may be a function of overall enhanced conductivity of the composite natural and engineered systems. A greater level of understanding of the engineered drainage system as well as its interconnectivity to the natural aquifers is needed (*see also* SC18).

SC18 EPA agrees that necessary follow-on actions as outlined in LC1 may be conducted in subsequent phases. LC1 and SC8 both discuss the importance of the engineered drainage system. While Figure 1-3 accurately depicts the storm sewer system, more work is needed. Based on the Video Log for Storm Sewer System, there appear to be additional areas of groundwater/storm water exchange. Please prepare a more detailed map indicating all possible/likely areas of exchange. It will also be necessary to survey invert elevations for all catch basins, manholes, *etc.*, in the study area to improve the storm drain data set and reflect current conditions. Please update the subsurface utility map to include the locations and depths of all subsurface utilities in the site area so that their potential role in groundwater flow may be assessed. As stated previously, please prepare a detailed combined groundwater and subsurface utility elevation map to identify areas where the utilities or backfill intersect/penetrate the water table. The outfall and associated drainage features near

Building 120 should be included. These efforts will help establish a credible coordinated long-term monitoring strategy for the greater area including Buildings 81, 82, 15, and adjacent areas.

I look forward working with you and the Massachusetts Department of Environmental Protection to select a final remedy for Building 82. Please do not hesitate to contact me at (617) 918-1385 should you have any questions.

Sincerely,

Kymberlee Keckler, Remedial Project Manager
Federal Facilities Superfund Section

cc: Dave Barney, USN, South Weymouth, MA
Dave Chaffin, MADEP, Boston, MA
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