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LETTER AND COMMENTS FROM U S EPA REGION II ON LETTER WORK PLAN  
ADDENDUM VPB-133 NWIRP BETHPAGE NY

10/20/2011  
U S EPA REGION II



**U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION II**

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To: Carol Stein, RCRA-RPM

From: Rob Alvey, P.G.

Date: October 20, 2011

Re: Review of Letter Work Plan Addendum – VPB-133  
Naval Weapons Industrial Reserve Plant, Bethpage, NY

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I have completed a courtesy review of the Letter Work Plan Addendum (LWPA), dated October 2011, as prepared by Tetra Tech NUS for the vertical profile boring (VPB-133) and monitoring wells installation being planned by the Navy under the current NYSDEC program. Please note that the USGS is also conducting a review of the LWPA in accordance with the existing EPA-USGS Interagency Agreement (IA) task and I anticipate they will submit comments on October 24, 2011. In the interest of time, I have briefly reviewed their initial draft comments and requested few modifications that may be helpful to clarify their comments.

It is noted that this Letter Work Plan Addendum serves as a supplement to the 2010 Letter Work Plan that was previously approved by NYSDEC. EPA and USGS have been providing assistance on this overall effort as requested by the EPA Regional Administrator, Judith Enck. An assignment to observe current drilling progress was tasked by EPA under the IA, and an additional task to conduct a supplemental geophysical log of VPB-129 has been authorized and conducted. The results of the USGS geophysical logging effort are being finalized and communicated with the Navy and their contractor, and will be made available to NYSDEC and you as soon as practical.

My comments regarding the LWPA for VPB-133 are below. These are for consideration only and no formal response is required.

1. The current 'gamma logging' task does not appear to be sufficient to provide the details needed to get as much information from the boring as can be useful for an understanding of the hydrogeology and monitoring well design. Further, it would be particularly useful to "save" the actual electronic log of geophysical equipment readings so that it can be accessed and further analyzed in the future. I suggest that the suite of logging techniques recently conducted by USGS for VPB-129 be considered for future VPBs. In the future, this task should be funded by the Navy.

2. The design of the actual monitoring wells is not consistent with EPA Superfund protocols. I concur with installing more than one monitoring well screen zone based on the VPB, but the stated screen lengths for each well appear excessive. The proposed well designs for future wells should be more targeted to enable sampling of aquifer areas of concern more definitively. With the extensive costs involved in the deep drilling, it may be cost beneficial to consider a multiple port well, such as the Westbay well systems installed at the Old Roosevelt Field Superfund site, another extensive and deep groundwater contaminated area of Nassau County potentially affecting a number of public supply wells. The Westbay wells require specialized sampling equipment, but have proven practical and enable, in some instances 10, or more monitoring points in a single well. There may be alternate multiple well screen designs that can prove more cost effective.
3. The use of mud rotary as a drilling method might be re-evaluated, although my observation of the drilling company and their work was very positive. Possibly reverse mud rotary or 'rotosonic' methods may be a better alternate and should be considered when planning additional monitoring locations.
4. The inclusion of suma-canister air monitoring may not be necessary, particularly when the drilling is far off-site of the known sources. I suggest a review of previous results as that may help assess if it is necessary. For work-related exposures, the Site Safety Officer should have portable real time air monitoring tools available to ensure protection of human health in the work environment.
5. I question the planned extensive use of gravel pack above the well screens. This enables some additional water flow into the screen interval and reduces the certainty of the elevation of sample collection. Again, the purpose of this modification of typical EPA monitoring well construction protocols should be understood if it is to be continued.
6. The positioning of the dedicated well pumps above the screen interval should be justified, and I do not concur with limiting the depth of the pump placement to 500 feet below the top of the well casing. There are various hanging tools available to protect the equipment when placed at depth. Access for collection of water levels still needs to be considered, whether a tape is used or transducers. The sampling method is not defined, but in accordance with EPA Superfund protocols, we usually specify the pump is set in the middle of the screened interval, except for well screens that straddle the water table. The actual sampling methodology is not stated, but I have concerns that EPA Low-Flow Sampling procedures would not ensure sufficient purging of the casing volume if the pump is too far removed from the screen interval.
7. It appears that the drilling targets the "Raritan" as proposed final depth, but this formation is not consistent at its upper surface. It would be appropriate to clarify the need to actually drill into and sample the material when it is suspected the Raritan has been encountered. This is an important formation that drives some of the decision processes regarding the site and contamination. Since solvents do exhibit greater density than water, I suggest that monitoring of the top of this confining layer may be advisable.

8. Everything in the LWPA is in "depths" below ground surface, including reference to the existing public supply wells screen zones. It is important to consider elevations as Long Island, to many people's surprise, is not level and the variation in surface elevations may result in misplaced well screens when only targeted "depths" are referenced.
9. The sample monitoring well construction figure is not sufficient. It is a hand-drawn field sketch that does not identify the driller, dates, or locations on the sample figure. And, note that gravel pack isn't included on the form, nor is any dedicated pump. It is critical that the completed monitoring well construction diagrams must also have the associated lat/long/and elevations with a location sketch included so that people in the future know where to look and what they are looking at. The driller might access and use the NYSDEC well forms as an example. Many contractors, consultants, and drilling firms are familiar with and use these forms, whether or not the well is designed as a supply well or monitoring well,
10. Section 2.2 includes a description of the monitoring well construction completion including "curb box" and concrete apron. Based on my experience and a site visit, I recommend that a permanent identification marker tag be placed at each well. There are various inexpensive metal tags available, and they are much more reliable and permanent than spray painting the cover or apron. The tags prevent well mis-identification and provide a reference for communications with the well owner.
11. Section 2.7. The surveying, I assume is referenced in the original Work Plan. However, this section of the LWPA the does not include requirements for elevations, nor reference standards and precision required by the surveyor. This needs to be addressed as the locational data for new wells needs to be incorporated into the electronic base map used by Navy, their contractors, and others involved with the groundwater contamination issues regarding this region.
12. Section 2.8 does not include any reference to obtaining and providing the data associated with this task for submittal to NYSDEC in the required EDD format (currently Equis 5 based). As EPA also uses this system, it is very important to coordinate submittals on a timely basis. The information regarding the wells is critical to be able to communicate.

I appreciate the opportunity to provide continued assistance on behalf of EPA's Emergency & Remedial Response Division on this effort. Should you have any questions, please do not hesitate to contact me.

Cc: M. Poetzch, RCRA  
S. Scharf, NYSDEC  
S. Terracciano, USGS  
G. Pavlou, EPA