Response to Comments
Illinois Environmental Protection Agency Comments on the Draft Revisions to the Existing Quality Assurance Project Plan (QAPP) and QAPP for Site 22 – Building 105 Old Dry Cleaning Facility
0971255048 -- Lake
Great Lakes Naval Station
Superfund/Technical Reports

1) **Section B2.A.13, page IX-B-3** – The second paragraph states the plastic sleeves inside the DPT samplers will be cleaned of visual soil and disposed of as trash. Given the concentrations of VOCs at this site, before disposing of those sleeves, they should be decontaminated thoroughly and at least one rinsate sample collected for analysis, prior to disposal.

Response: This section will be changed to indicate that the plastic sleeves will be decontaminated in accordance with Section B2.B Cleaning and Decontamination of Equipment/Sample Containers and SOP CTO154-8. One rinsate sample will sample will be collected and analyzed and based on the results of the analysis the sleeves will be disposed. The disposal activity will be documented and will occur at the same time as the disposal of the IDW drums. Table B-24 will be revised to indicate 1 rinsate blank with a footnote identifying the rinsate blank is for the plastic sleeves.

2) **Sections B2.A.15 through B2.A.18, page IX-B-3** – The monitoring well depths, screens, and subsequent sampling should be positioned and performed to be able to intercept and collect samples from the entire groundwater column, vertically, top to bottom (not necessarily in each well) in order to analyze for the dense, non-aqueous phase liquids that are of concern at this site. Most important is the lower limit of the column, as this is where the majority of the pure product would be located, once it has entered the water column. One option might be the use of well pairs (nested wells) to screen different parts of the water column at specific locations.

   In addition, detailed lithological descriptions of the soil column will be necessary to fully understand and to build an accurate Conceptual Site Model.

Response: Based on soil borings from the previous investigations at this site and at Site 7, the shallow soil lithology at the site consists of clay with some pockets of fill and sand. The first bullet of Section B2.A.13 (page IX-B-2) will have the following text added to the end of the bullet: "Boring 22SB01/22MW01, the most upgradient location will be drilled first to a depth of 50 feet to identify confining layers that would intercept possible dense, non-aqueous phase liquids. This soil boring will provide the detailed lithological description of the soil column/site. This will be used to build the Conceptual Site Model. If additional information for the lithology is required, boring 22SB02/22MW02S and 22SB04/22MW04S may be drilled to a deeper depth. The depth of Boring 22SB01/22MW01 or the use of the other locations will be based on field observations and field decisions to be made after consultation with the TtNUS TOM, Navy, and Illinois EPA to allow for flexibility in the investigation."

Section B2.A.16 (to be changed to B2.A.15) will be revised to add the following text: "The monitoring wells are planned to be installed at the site in accordance with Table B-25. The positioning of the well screens will be adjusted in the field based on the soil boring sample locations, PID readings, and the field hydrophobic dye testing results (Spectrum Oil Red O) that identify possible dense, non-aqueous phase liquids. Monitoring well 22MW06D is a deeper well that is located next to the shallow well 22MW06S (nested well pair) in the area of highest contamination based on the historical data. This monitoring well will be used to determine if the lower water column (approximate depth of 40 to 50 feet bgs but the screened interval will be adjusted in the field based on field observations) is contaminated. Downgradient of this nested

well pair will be monitoring well 22MW07D, a deeper well that is located next to the shallow well 22MW07S (another nested well pair), to determine if groundwater contamination has migrated in the direction of groundwater flow. Monitoring well 22MW07D is also approximately 40 to 50 feet bgs (screened interval will be adjusted in the field based on field observations). The location of monitoring well 22MW07D will be determined based on the field observations during the drilling program. This well could be nested next to 22MW05S or 22MW09S. The location and sampling of the soil and groundwater for this site will be flexible to allow for field decisions to be made after consultation with the TtNUS TOM, Navy, and Illinois EPA.

3) **Section B2.A18** – There is no section B2.A.17. Should this section be renamed or is that section missing?

Response: There is no section B2.A.14 also. The sections will be renumbered from section B2.A.13 to B2.A.16. This was an oversight during the preparation of the QAPP.

4) **Appendix I, Section 1.0** – The first bullet should state the lowest Tier I objective for all receptors will be used and not limit the screening levels to the residential receptor only.

Response: The section will be changed in accordance with the comment. The bullet will be changed to "IEPA Tier 1 Soil Remediation Objectives (IEPA, February 2003) for the soil ingestion exposure route and for the inhalation exposure route. The lowest Tier I objective of the receptors (residential, industrial/commercial, or construction worker) will be used for screening."

5) **Appendix I, Section 1.0** – In the third bullet, it is inappropriate to state that the Soil Component of the Groundwater Ingestion Exposure Route objectives are specific to the residential receptor. These objectives are receptor independent.

Response: The section will be changed in accordance with the comment. The bullet will be changed to "IEPA Tier 1 Soil Remediation Objectives for the Soil Component of the Groundwater Ingestion Exposure Route (IEPA, February 2003)."

6) **Appendix I, Section 2.1.3.1, page IX-1.3-6** – The first full paragraph on this page gives sources for chemical/physical information. Illinois EPA suggests that the same sources as used by the USEPA in the Soil Screening Guidance be employed. They include: Superfund Chemical Data Matrix (SCDM) and EPA's CHEMDAT8 and WATER8 models.

Response: The section will be changed in accordance with the comment. This paragraph will be changed to read "...Chemical properties will be obtained primarily from the Soil Screening Guidance: User's Guide (U.S. EPA, July 1996 and March 2001). Other possible sources of chemical/physical data include, the Superfund Chemical Data Matrix (SCDM), the U.S. EPA's CHEMDAT8 and WATER8 models, the Hazardous Substance Data Base (HSDB) (http://toxnet.nlm.nih.gov), and the Risk Assessment Information System (RAIS), Office of Environment (http://risk.lsd.ornl.gov). ..."

7) **Appendix I, Section 3.0** – This section should state that subchronic noncancer toxicity values will be determined for the construction worker receptor and that chronic toxicity values will be determined for the remaining receptors.

Response: The section will be changed in accordance with the comment. This section will be changed to read "The Toxicity Assessment for Site 22 will be similar to that of Site 7. However, the toxicity discussion will be adapted to account for the types of chemicals detected at Site 22 and for the additional exposure scenarios described above. For example, chronic noncancer toxicity values (RfDs) will be used most exposure scenarios but subchronic RfDs will be used for the construction workers scenarios. Toxicological profiles for each COPC will be presented in an appendix to the risk assessment. These brief profiles will present a summary of the currently available literature on the carcinogenic and noncarcinogenic health effects associated with human exposure to the COPCs."

8) **Appendix I, Figure 1** – The groundwater inhalation exposure route should be separated into indoor and outdoor exposures.
Response: The section will be changed in accordance with the comment.

9) **Appendix I, Tables 6, 7, 9, and 10** – Inhalation rates should be corrected to "m^3/day."
Response: The tables will be changed in accordance with the comment because exposure is for a whole day.

10) **Appendix I, Table 13** – Exposure durations (ED) for exposures of less than one year, such as those proposed here for the construction worker, should correspond more closely to the actual exposure frequency (EF). In this case, the EF is 150 days or 30 weeks. The appropriate ED for this exposure is 30 weeks x 7 days/week or 210 days. *Actually, the ED should remain 1 year and the averaging time (AT-N) should be reduced to 210 days.*
Response: The section and Tables 3 and 14 will be changed in accordance with the revised comment in italics.

11) **Appendix VII, Section 1.2** – The facsimile number for Brian Conrath is (217) 782-3258.
Response: The section will be changed in accordance with the comment.

12) **Appendix VII, Section 3.1.3** – The maximum detected concentrations listed in this section do not match those listed in Section A5.A.4. Please reconcile this discrepancy.
Response: The section will be changed to match Section A5.A.4.

Additional comment provided by e-mail - The Human Health Risk Assessment Work Plan (Appendix I.3) assumes a lognormal data distribution when the dataset tests neither normal nor lognormal. Current guidance tempers this procedure by also looking at n and the number of nondetects. Please revise the data summarization procedures for Site 22 and future sites to conform with the USEPA guidance *Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites*, OSWER, December 2002.
Response: The Appendix I.3 will be changed in accordance with the comment. Page IX-I.3-12 to Page IX-I.3-13 provides the procedure that will be used for dataset tests that do test as neither

normal nor lognormal and how n and the number of nondetects will be looked at. The Section 2.3 Exposure Point Concentrations (EPCs) will be copied from the Site 7 HHRA and placed into the Site 22 HHRA. The 2nd bullet of this section was modified based on the comment above (see underlined changes below).

If a data set contains 10 or more samples, the 95 percent UCL on the arithmetic mean, based on the distribution of the data set, will be selected as the EPC for the RME and CTE cases. Conventional statistical methods (e.g., the Shapiro-Wilk W-Test, the t- and H-statistic based UCL calculation) will initially be used to determine the distribution and UCL. The "best fit" distribution (normal or lognormal) will initially be assumed if the data set distribution is undefined. However, if the risk assessor or statistician determines that assumptions about the distributional type cannot reasonably be made or if the data contains large proportions of non-detects, methods provided in the U.S. EPA guidance "Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites" (U.S. EPA, December 2002) will be used to evaluate the data. This may involve the use of distribution-free or nonparametric methods, if applicable. EPCs calculated assuming a lognormal distribution will be reviewed and re-calculated (if necessary), as recommended in U.S. EPA guidance (U.S. EPA, 1997b) so that the H-statistic based UCL is not an over-prediction of the EPC. If the calculated 95 percent UCL exceeds the maximum detected concentration, the maximum concentration will be used as the EPC. If enough data are available and a qualified statistician judges that Jackknife or Bootstrap procedures would present a more realistic estimation of risk, these techniques, which are described in the U.S. EPA (1997b) reference, may be used. Bootstrap and Jackknife procedures are nonparametric statistical techniques which can be used to reduce the bias of point estimates and construct approximate confidence intervals for parameters such as the population mean. These procedures require no assumptions regarding the statistical distribution (e.g., normal or lognormal) of the data and can be applied to a variety of situations, no matter how complicated. The Bootstrap and Jackknife procedures, which are based on resampling techniques, are conceptually simple but require considerable computing power and time.