

**RESPONSE TO COMMENTS
ILLINOIS ENVIRONMENTAL PROTECTION AGENCY COMMENTS
DATED JANUARY 4, 2010
DRAFT COMMUNITY INVOLVEMENT PLAN
NAVAL STATION GREAT LAKES**

1) **Executive Summary** - The next to last sentence lists the compounds for which this investigation will be analyzing. As will be mentioned below, Section 1.2 also includes polynuclear aromatic hydrocarbons (PAHs). Please determine whether PAHs should be on the list and revise the plan accordingly.

Response: Reference to PAHs was removed from the text. PAHs should not be on the list as those constituents are already included in the SVOCs list being analyzed.

2) Acronyms and Abbreviations - The definition for JULIE should be Joint Utility Locating Information for Excavators. This will need to be updated throughout the document.

Response: Corrected.

3) Worksheet #9 - Following the fourth bullet on page 19, it should state that 27 soil sample *locations* were required for statistical analysis of the site.

Response: The words "boring locations" replaced the word "sample".

4) Worksheet #10 - In subsection 10.1 the third paragraph lists the possible contaminants for Site 9 and 21. That list should include SVOCs.

Response: SVOCs was added to the list.

5) Worksheet #10 - In subsection-10.1 the last sentence on page 20 states, "The Site 9 and Site 21 SI results will be incorporated into the Site 5 RI Report that presents the results from the investigative activities presented in this SAP." Wouldn't it be more accurate to say the Site 9 and Site 21 SI results *may* be incorporated in to the RI Report?

Response: The last sentence referenced above was replaced with this one: "For this reason, Site 9 and Site 21 SI data may be incorporated into the Site 5 RI Report to provide a more accurate assessment of site conditions."

6) Worksheet #10 - In subsection 10.3, the first sentence under Hydrogeology is confusing. Please review and revise as necessary.

Response: First sentence was replaced with: "Site 5 has no topography change and is best described as flat."

7) Worksheet #10 - In subsection 10.3, in the paragraph directly below Figure 10-7 on page 23, the site numbers have been incorrectly placed. The sixth line should read "... has the potential to impact both Site 5 and Site 9. Site 5 has the potential."

Response: Changed.

8) Worksheet #11 - In subsection 11.3 in the first line, the word "the" should be removed. Also, the location of the site should be described here or at least a reference to a figure showing its location should be provided.

Response: The word "the" was removed. The following sentence was added to direct the reader to related figures: "Refer to Figure 10-2 for a general site map and Figure 10-3 for a broader depiction of area surrounding Site 5."

9) Worksheet #11 - In subsection 11.4 there is a list of chemicals that were detected in previous investigations. However, that list does not include PAHs. Since PAHs are included in the list of chemicals for analysis in Section 11.2, shouldn't they be included here or at least mentioned along with their reason for inclusion on the list?

Response: PAHs were removed from the list for the reason stated in the response to Comment 1.

10) Worksheet #11 - In subsection 11.4 on page 28, the last bullet item, the threshold values for risk for residential receptors (1×10^{-6} , 1.0) should be provided.

Response: Following text was added as recommended: "...residential receptors (ILCR < 1×10^{-6} and HI < 1.0)."

11) Worksheet #11 - In subsection 11.5 in the second paragraph, it mentions that 27 samples were decided to be the optimum number based upon distance between samples, etc ... This should state that 27 sample locations were chosen rather than 27 samples as there are actually 81 soil samples being collected.

Response: Paragraph was revised to state that sample locations were required versus samples. Text now clearly states that "27 sample locations" were decided.

12) Worksheet #14 - In subsection 14.4 it states that 81 soil samples from 27 borings will be collected. In several locations earlier in this document, it states that 27 samples will be collected. The actual number -of soil samples will be 81, as stated here. Therefore, the other references to 27 samples should be corrected.

Response: It was clarified in the document that there are 27 sample/boring locations and a total of 81 analytical samples being collected from those locations.

13) **Worksheet #14** - In subsection 14.8 there should be a discussion of the sampling, analysis, and disposal of the Investigation-Derived Waste, which would be a special waste, at a minimum.

Response: More detailed discussion was added. Analytical methods for IDW analysis were listed, storage and labeling procedures were listed with the applicable SOP, and general disposal procedures were presented. The following paragraph was added to the end of the section

"Two composite IDW samples [solid (soil) and liquid (groundwater/decontamination water) sample] will be collected by TtNUS to characterize the waste for proper disposal. The IDW samples will be submitted to TriMatrix Laboratories for toxicity characteristic leaching procedure (TCLP) VOCs, SVOCs, pesticides, herbicides, and metals and Naval

Station Great Lakes required analyses (BTU, flash point, pH, reactive with acid, base, and water, reactive with cyanide and sulfide, phenolics, polychlorinated biphenols, water content (karl fisher), and paint filter test). The samples will be submitted to the laboratory with a 7-day turnaround time. Analytical data for the two samples will then be provided to NS Great Lakes for characterization of the waste and determination of proper disposal methods. NS Great Lakes is responsible for contracting an approved IDW vendor to properly dispose of the IDW drums. Manifests for the IDW disposal will be maintained by NS Great Lakes. Copies of the manifest will be included in the RI report.”

14) **Worksheet #14** - In subsection 14.11 the last bulleted item lists information collected for each photograph. The list should also include a description of what the photo is intending to show.

Response: The words “and what the photo is intending to show” was added to the list of items required for each photograph.

15) **Worksheet #15** - There are quite a number of analytes in this table that are both highlighted and bolded indicating the Project Action Limit is less than the laboratory quantitation limit (QL) and the method detection limit (MDL). This includes compounds that have historical exceedances at this site. This is reason for concern. It is noted that there is a paragraph at the bottom of the last page discussing this issue, but the Agency is still not completely comfortable with this. Every effort should be made to achieve a QL that is below the PAL, where possible.

Response: The laboratory QLs and MDLs were updated with the laboratory (TriMatrix) as they have recently (February 2010) updated a majority of these values. This reduced the number of analytes where the project action limit was less than the QL or MDL. Worksheet #15 was also revised to meet the Navy updated Worksheet #15 requirements that includes the identification of the Limit of Quantitation, Limit of Detection and the MDLs instead of the QLs and MDLs for the laboratory.

16) **Worksheet #15** - A rigorous review of columns 3 and 4, Project Action Limit and Project Action Limit Reference, respectively, was undertaken. The following discrepancies need to be revised or explained.

Response: The project action limits were selected based on the project action limit reference table (Appendix E). Appendix E was revised to reflect the most current EPA, TACO, and non TACO screening values. Therefore, some values used in the responses may differ from what was suggested in the comment.

Soil

- Aluminum: The project action limit (PAL) reported for this mineral is one order of magnitude less than the level given in the stated reference. This is consistent with the stated strategy of using 1/10th of the published screening level as action limit for non-carcinogenic chemicals. However, aluminum is the only analyte reduced by a factor of ten. The tables should be consistent and should agree with the text.

Response: The PAL for aluminum should not have been reduced by 1/10th in Worksheet #15 as this reduction for non-carcinogens will only be done during the human health risk assessment. Therefore, the PAL for aluminum was corrected to 55,000 mg/kg.

- Chromium: The footnote, number 4, states that the PAL for chromium is based on total chromium. The values presented are for the soluble, Cr VI valence of the mineral. The PAL should be for the more toxic form of this mineral.

Response: The HHRA will use the screening value for the more toxic form (Chromium VI).

- Lead: The PAL of 14,000 µg/kg for lead could not be confirmed. *400,000 µg/kg* should be used.

Response: The PAL for lead was changed to 107 mg/kg, the Illinois TACO pH specific criteria.

- 2,4-Dinitrotoluene: The ORNL Regional Screening Level (RSL) for the risk-based protection of groundwater of 0.2 µg/kg is lower and should be used.

Response: The ORNL RSL for risk to groundwater was revised to 0.29 µg/kg (this was used) in December 2009.

- 2,6-Dinitrotoluene: The TACO migration to groundwater remediation objective (RO) is 0.7 µg/kg and should be the PAL.

Response: 0.7 µg/kg was used.

- 2-Nitroaniline: The ORNL RSL for risk to groundwater of 33 µg/kg should be the PAL.

Response: The ORNL RSL for risk to groundwater was revised to 150 µg/kg in December 2009. The non TACO value of 140 µg/kg was used (listed in Worksheet #15 and detailed in Appendix E).

- 3-Nitroaniline: The PAL and PAL reference for this chemical should be "NA".

Response: The Illinois EPA Non-TACO value of 10 µg/kg was used (listed in Worksheet #15 and detailed in Appendix E).

- 4,6-Dinitro-2-methylphenol: The PAL for this substance should be corrected to 3.1 µg/kg.

Response: The Illinois EPA Non-TACO value of 3.1 µg/kg was used.

- 4-Chloroaniline: The PAL should be corrected to 0.12 µg/kg.

Response: The ORNL RSL for risk to groundwater was revised to 0.14 µg/kg (this was used) in December 2009 (listed in Worksheet #15 and detailed in Appendix E).

- Acenaphthalene: The PAL and its reference could not be confirmed. The entry should be changed to 85,000 µg/kg using the IEPA non-TACO reference.

Response: The Illinois EPA Non-TACO value of 85,000 µg/kg was used.

- Benzo(g,h,i)perylene: The PAL and its reference could not be confirmed. The entry should be changed to 2,300,000 µg/kg from the IEPA non-TACO reference.

Response: The Illinois EPA Non-TACO value of 2,300,000 µg/kg was used.

- Dibenzofuran: TACO ROs are available. The Construction Worker ingestion RO of 820,000 µg/kg should be used.

Response: The Illinois EPA Non-TACO value of 820,000 µg/kg was used (listed in Worksheet #15 and detailed in Appendix E).

- Di-n-octylphthalate: TACO ROs are available for this chemical. The residential ingestion value of 1,600,000 µg/kg should be used.

Response: The value of 1,600,000 µg/kg was used (listed in Worksheet #15 and detailed in Appendix E).

- Hexachlorocyclopentadiene: The PAL should be revised to 180 µg/kg, the lowest RSL from the reference.

Response: The ORNL RSL for risk to groundwater was revised to 160 µg/kg (this was used) in December 2009.

- Nitrobenzene: The PAL should be revised to 0.071 µg/kg, the lowest RSL listed in the reference.

Response: The ORNL RSK for risk to groundwater was revised to 0.079 µg/kg (this was used) in December 2009.

- Phenanthrene: The PAL could not be confirmed. The entry should be changed to 200,000 µg/kg from the IEPA non-TACO reference.

Response: Corrected.

- Chloromethane: The PAL could not be confirmed and should be revised to 49 µg/kg.

Response: Corrected.

- Dibromochloromethane: The PAL could not be confirmed and should be revised to 0.04 µg/kg.

Response: Corrected.

- Methylcyclohexane: The PAL could not be confirmed and should be revised to 46,000 µg/kg.

Response: The non TACO value of 46,000 µg/kg was used.

Groundwater

- Mercury: The PAL should be revised to 0.57 µg/L, the lower RSL from this reference.

Response: Corrected.

- 4-Chloroaniline: The PAL should be corrected to 0.34 $\mu\text{g/L}$.

Response: Corrected.

- 4-Nitroaniline: The PAL should be corrected to 3.4 $\mu\text{g/L}$.

Response: Corrected.

- 4-Nitrophenol: No values could be located for this chemical. The PAL and reference entries should be changed to "NA".

Response: The reference has been changed to "NC."

- Chrysene: The spelling for this analyte should be corrected. The PAL could not be confirmed. The PAL and its reference should be revised to 2.9 $\mu\text{g/L}$ and ORNL-R, respectively.

Response: The spelling was corrected. The TACO value of 1.5 $\mu\text{g/L}$ was used (listed in Worksheet #15 and detailed in Appendix E).

- Nitrobenzene: The PAL should be corrected to 0.12 $\mu\text{g/L}$.

Response: Corrected.

- Bromodichloromethane: The PAL should be revised to 0.12 $\mu\text{g/L}$ and the reference to "ORNL-R".

Response: Corrected.

- Chloromethane: The PAL should be corrected to 190 $\mu\text{g/L}$.

Response: Corrected.

- Dibromochloromethane: The PAL should be corrected to 0.15 $\mu\text{g/L}$.

Response: Corrected.

17) **Worksheet #15** - There is no data included here for investigation-derived waste analysis as has been done in the past. Please provide that information as well.

Response: IDW analysis (parameters with PALs) was added to Worksheet #15.

18) **Worksheet #16** - The dates on this table will need to be updated/revised to match the current schedule.

Response: Dates were revised to reflect anticipated project schedule.

19) **Worksheet #17** - In the first full paragraph on page 61, the list of chemicals for soil analysis are provided. The list does not include PAHs when in Section 11.2 PAHs are included. Please determine which is correct and revise as necessary. The same is true for groundwater analysis. The remainder of the SAP (text and tables) will need to be revised to match as well.

Response: PAHs are part of the SVOC analytical list for this project and specific references to the PAHs have been removed from this SAP. No change will be made to this section.

20) **Worksheet #18** - In the Depth column, subsurface soil should be listed as 0.5 to 4 feet.

Response: Corrected.

21) **Worksheet #19** - In the Containers column, shouldn't there be 3 40-milliliter vials collected for aqueous samples for volatiles?

Response: The laboratory (TriMatrix) only requested 2 40-mL vials for VOC analysis. Three vials is not required as the laboratory only uses one of the vials for analysis. The second vial (and third if desired) is only used as backup to allow for errors (e.g., dilution issues, broken vials, and QC problems). No change will be made to this section.

22) **Worksheet #19** - In the Containers column, the soil volatile containers should be Encore samplers or their equivalent, not 40-milliliter vials. The preservation requirements for those samples will need to be revised as well.

Response: Encore sampler or equivalent was added. The equivalent will be used to collect 5 grams of soil for the 3 vials (1 vial containing methanol, and 2 containing water or sodium bisulfate).

23) **Worksheet #19** - If, as noted previously, PAHs are to be included in the analysis scheme, they will need to be added here keeping in mind that in order to reach the PAL a different analysis method than is used for SVOCs may need to be employed.

Response: PAHs were removed (see the response to comment 1).

24) **Worksheet #27** - There is no discussion provided for sample custody while in the field. The sample custody requirements should be provided from the point of collection until disposal.

Response: The following paragraph was added to Worksheet #27:

Field Custody

Sections 5.3.1.3 and 5.3.1.4 of TtNUS SOP SA-6.3, provided in Appendix D, document general field sample custody procedures but a project specific summary is provided in the remainder of this paragraph. Upon collection of field environmental samples by TtNUS, the samples will be added to a chain-of-custody (COC) form that lists the date, time, identification, preservative, and requested analysis for each sample. Samples collected for laboratory analysis will be listed on the COC form maintained by the TtNUS FOL. Physical control of the samples will be maintained by FOL until the samples are submitted for analysis to TriMatrix Laboratories via either Federal Express (FedEx) or a

TriMatrix courier. The COC will be signed, dated, and have time provided, that the TtNUS FOL relinquished control the samples to either FedEx or TriMatrix. The COC form(s) will then be placed in a water-proof zip-loc bag and inserted in a sample cooler containing the samples listed on the COC from. Signed and dated custody seals will be placed on the lids of each cooler submitted to provide evidence that they are not tampered with prior to TriMatrix receiving them.

25) Worksheet #30 - In the Matrix column, it should read soil and groundwater, rather than semi-volatiles.

Response: Typo was corrected.

26) Worksheet #37 - The third paragraph on page 124 states that one-half the detection limit will be used for statistical comparisons involving analytical results that are below the sample-specific reporting limits. This is not always appropriate. Any value substitution for non-detected values should be appropriate to the statistical method used.

Response: The paragraph will be revised to “Statistical comparisons and mathematical manipulations will be utilized in the evaluation of the results. Non-detected values will be substituted in these statistical comparisons and mathematical manipulations as appropriate to the statistical method used. For example, for upper confidence level (UCL) calculations, the method detection limit value will be used according to EPA guidance. Duplicate results (original and duplicate) will not be averaged for the purpose of representing the range of concentrations. Duplicate samples will be used for quality control purposes, not for the statistical comparisons and mathematical manipulations in the evaluation of the results.”

27) Appendix A, Table of Contents - The title for Figure 2-2 should read from Site 5, rather than from Sites 9 and 21.

Response: Typo was corrected

28) Appendix B, Section 1.2 - There is discussion here of the "screening criteria". If these criteria are the same as the "project action limits" presented in Worksheet #15, this connection should be stated. If the screening criteria are different, they should be referenced or presented.

Response: Screening Criteria are defined and listed in Section 1.2.1 by media. Worksheet #15 was developed by the Intergovernmental Data Quality Task Force Workbook for Uniform Federal Policy for Quality Assurance Project Plans and it is used for the procurement of the laboratory that will conduct this work. The purpose of Worksheet #15 is for the laboratory to document the laboratory’s achievable MDLs and QLs for each analytical method used for the project. These laboratory’s achievable MDLs and QLs are compared to the PALs which are the most conservative TACO or EPA criteria and the Project Quantitation Limit Goals. No change will be made to this section.

29) Appendix B, Section 1.2.1 - It states here that the screening criteria will "correspond to a hazard quotient of 0.1 for non-carcinogens". The PALs from Worksheet #15 do not conform to this statement.

Response: See the response to comment 28 regarding Worksheet 15. The evaluation of the Human Health Risk Assessment will conform to this statement. No change will be made to this section.

30) Appendix B, Section 1.2.1 - The Screening Levels for Subsurface Soil section begins on page B-4 and contains four bullets. The first bullet carries over to the following page and contains two URLs. The second URL identifies the proposed and as yet unfinalized revisions to the IEPA TACO regulation. It was mutually agreed by the IEPA and Naval Station Great Lakes for a previously-investigated site that proposed regulations would not be reflected in work plans. If this agreement holds for Site 5, the second URL should be removed.

Response: The URL for the proposed Illinois EPA TACO regulation in Section 1.2.1 was removed.

31) Appendix B, Section 1.2.1 - The first bullet near the top of page B-5 indicates that the Regional Screening Levels internet-based table of values was used to develop screening levels for subsurface soil. Because the referenced table is frequently revised and updated, this entry and subsequent references to the Regional Screening Levels should be revised to include the URL and the date.

Response: The URL and current date were added.

32) Appendix B, Section 1.2.1 - The first paragraph on page B-6 states that migration to groundwater SSLs will not be used to select chemicals of concern. Please revise or explain this statement in light of the Worksheet #15 PALs which are predominantly based on potential threats to groundwater through soil infiltration.

Response: Worksheet #15 was developed by the Intergovernmental Data Quality Task Force Workbook for Uniform Federal Policy for Quality Assurance Project Plans and it is used for the procurement of the laboratory that will conduct this work. The purpose of Worksheet #15 is for the laboratory to document the laboratory's achievable MDLs and QLs for each analytical method used for the project. These laboratory's achievable MDLs and QLs are compared to the PALs which are the most conservative TACO or EPA criteria and the Project Quantitation Limit Goals. The Human Health Risk Assessment will evaluate the potential for chemicals detected in soil to impact groundwater by comparing the maximum chemical concentrations in soil to SSLs for migration to groundwater. The comparisons will be presented in separate tables (from the COPC tables) and will not be used to select COPCs for quantitative risk assessment for soil. Migration to Groundwater SSLs are not used for COPC selection because quantitative risk assessments are typically based on direct contact with soil or inhalation of vapors for volatile organic compounds (VOCs) and particulates. There is no methodology available for quantitative risk evaluation of indirect exposure based on migration to groundwater. Therefore, it is not appropriate to select COPCs for quantitative risk evaluation for direct exposure on the basis of the indirect soil-to-groundwater pathway. The soil-to-groundwater SSLs provide an indication of potential impacts of contamination in soil on groundwater quality but are not indicators of quantitative risk. Chemicals flagged as greater than the SSLs for migration to groundwater will be qualitatively discussed in the Uncertainty Section of the risk assessment. No change will be made to this section.

33) Appendix B, Section 1.2.1 - In the Screening Concentrations for Groundwater section, reference is made to groundwater screening concentrations for vapor intrusion. These levels should be presented for review and comment.

Response: The URL where the USEPA Groundwater Generic Screening Levels for Evaluating the Vapor Intrusion to Indoor Air, Table 2c was added to Section 1.2.1.

34) Appendix B, Section 2.1.3 - The second bullet on page B-13 discusses the On-site Worker receptor. The description describes occasional visits to the site. The storage dome and truck parking suggest more frequent and regular on-site worker activities. An additional, daily on-site worker scenario should be considered.

Response: It was assumed that the On-Site Occupational Workers only occasionally work in the former Transformer Storage Boneyard, doing such activities as hauling gravel and stone from the site, parking a work vehicle, etc. that would equate to no more than approximately 2/hours per day. However, based on Comments #41 and 42, the EF for the RME and CTE On-Site Occupational Workers was changed to 250 and 120 days respectively, which is more conservative and protective of an on-site worker at the site most of the day.

35) Appendix B, Section 2.3 - The final paragraph in the Exposure Point Concentrations (EPCs) section describes the use of one-half the detection limit. See our caution regarding this practice in the comment regarding Worksheet Number 37.

Response: This has been corrected to the detection limit.

36) Appendix B, Section 2.4.3 - The intake equation for inhalation of dusts and volatiles should include the receptor body weight in the denominator.

Response: The equation was corrected.

37) Appendix B, Section 2.4.6 - The equation for inhalation of volatiles from vapor intrusion should include body weight in the denominator.

Response: The equation was corrected.

38) Appendix B, Section 5.4 - An un-labeled figure follows page B-34. This figure should be numbered and identified. On Worksheet #10, it is labeled as Figure 10-7. Additionally, an "On-Base Military Resident" receptor should be added in both locations.

Response: The figure has been corrected.

39) Appendix B, Tables 1-4 - The subject tables are erroneously labeled as "Site 9 – Camp Moffett Disposal Area".

Response: The table titles were corrected.

40) Appendix B, Table 2 - The Occupational Workers receptor description should include a current land use scenario. All pathways should be considered for these receptors.

Response: The table was corrected.

41) Appendix B, Table 3 - The RME Occupational Worker exposure frequency of 24 days per year should be revised based on the daily activities currently conducted at this site.

Response: The table was corrected to reflect 250 days.

42) Appendix B, Table 4 - The CTE Occupational Worker exposure frequency of 12 days per year should be revised based on the daily activities currently conducted at this site.

Response: The table was corrected to reflect 120 days.

43) General Comment - The body of the report contains citations to literature sources, but there is no reference section. Please add a reference section.

Response: If references were used in a Worksheet, the citations were provided as the last section of that Worksheet. A "Reference" page was not included for the entire document since they were provided in each Worksheet.