

February 28, 2007

RESPONSE TO COMMENTS
ILLINOIS ENVIRONMENTAL PROTECTION AGENCY COMMENTS
NOVEMBER 9, 2006
DRAFT QUALITY ASSURANCE PROJECT PLAN FOR SITE 1
NAVAL STATION GREAT LAKES

- 1) Table of Contents -Page 3 (of 4), which should be the first page of the list of Tables, appears to be missing.

Response: Page 3 of 4 of the Table of Contents will be included in the final version of the document.

- 2) Section A5.A.1 -At the top of page A-13, it states that the remediation of the old FFTU site has been completed. The Agency has found no documentation in our files to support such a statement.

Response: The sentence will be changed based on the comment. The end of the sentence will be changed to "...environmental remediation of the old FFTU site was conducted for the removal of the underground and above ground storage tanks." and the reference to Guernsey will be removed.

- 3) Section A5.A.1 -In the last line of the third paragraph on page A-15, there is reference to the Illinois EPA Soil Remediation Program. That should be the Illinois EPA Site Remediation Program. Please revise accordingly

Response: The sentence will be changed according to the comment.

- 4) Section A6.A.2 -It should state here that for any compound that the laboratory reporting limit does not achieve the risk-based target level, the analytical result will be reported down to the method detection level, regardless of the reporting level.

Response: The section will be changed according to the comment. The following sentence has been added at the end of the paragraph "If the laboratory reporting limit of a chemical compound does not achieve the risk-based target level, the non-detect analytical result will be reported at the method detection limit rather than at the reporting limit. Positive results reported at concentrations between the reporting limit and the MDL will be qualified with a "J"."

In addition the laboratory statement of work that was used to subcontract Severn Trent Laboratory had the following language "...results less than the reporting limit but greater than the Method Detection Limit (MDL) must be reported by the laboratory, the laboratory must "J" flag these results."

- 5) Section A6.B -It states here that the schedule includes approximately 60 days for regulatory review of the Draft QAPP and RI/RA Report. The schedule in Figure A-17 lists 30 calendar days for regulatory review of the Draft QAPP and 45 calendar days for review of the RI/RA Report. The Agency normally is provided 30 working days to complete their review of all major documents. Please revise the text in this section and the Figure to allow this amount of time.

Response: The section and the figure will be changed according to the comment.

- 6) Section A7 -The Data Quality Objectives (DQOs) process and the resultant outputs should be discussed and provided in this section. It is understood that Appendix III contains the planning meeting summary and reports the decisions made at that time, but it also leaves open the majority of the Action Items and tasks left to be performed. That information is a good reference, but it does not provide the complete explanation of the DQOs that is called for in a QAPP. Please expand this section to more appropriately explain the process.

Response: This section and Appendix III will be modified to provide the information as

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requested in the comment. The information obtained for the action items in Appendix III will be included. The following sentences will be added to Section A7, 3rd paragraph "The DQOs, in accordance with the QAPP guidance and DQO process, are presented throughout the QAPP. For example, the problem description (DQO Step 1) is provided in Section A.5.B. Inputs to the decision (DQO Step 3) are presented in Section B for the various matrices that are to be sampled. The study boundaries (DQO Step 4) were identified during the meeting, are summarized in Appendix III, and are shown on the figures in Section B."

- 7) Section A9.A -There should be a reference in this section to the location of example forms for each of the subsections herein. Each subsection references the appropriate SOP, but the SOPs reference an appendix that has not been provided. The example forms are actually located in Attachment A to the Supplemental Field Sampling Plan. Please revise to include the appropriate reference.

Response: *The first paragraph will be changed according to the comment. The following sentence will be added before the last sentence of the paragraph "Example log sheets and standard forms are provided in Appendix V, Attachment A of the Supplemental FSP."*

- 8) Table A-3 -The source of the Ecological Surface Water Criteria should be provided.

Response: *The sources of the ecological surface water criteria are provided in Table 1 in Appendix II. The following footnote will be added to Table A-3: "The sources of the ecological surface water criteria are provided in Table 1 in Appendix II."*

- 9) Table A-6 -In the Human Health Risk-Based Target Level Soil column, the concentrations listed for the inorganic compounds should be identified as being in mg/L, rather than in mg/kg as the column header currently reads. The most conservative value for the inorganics is the Soil Component of the Groundwater Ingestion Exposure Route, which uses concentrations obtained from TCLP or SPLP analyses. Please provide this clarification in the table.

Response: *The soil analysis will not include TCLP or SPLP analysis. The purpose of this table is to compare the laboratory MDL and RLs with the most restrictive criteria. The laboratory will provide soil analysis results in units of mg/kg for the inorganic compounds. The table will be changed to use the most conservative value for inorganic compounds with units of mg/kg (ingestion, TACO pH Specific Soil Remediation Objectives for Inorganics, EPA Region III Soil to Groundwater, Region IX Soil to Groundwater, etc.).*

- 10) Figures A-8 through A-13 -In the subject diagrams, a statistical test is addressed in the large diamond on the left. Illinois EPA understands that the Wilcoxon Rank Sum test rejection level should be stated as "95% confidence level" or " $\alpha=0.05$ ".

The large diamonds on the right side of the subject figures address screening to determine chemicals of concern using health-based objectives. The expression "AND" in the text indicates that both criteria must be true for the target analyte to be retained. For screening, either should be sufficient. Also, the likelihood of the HI equaling 0.1 is very low. The text should read "HI > 0.1". Finally, hazard indices (HI) are receptor- and analyte-specific. Please specify which receptor is to be used for the subject comparisons.

Response: *Statistical tests such as the Wilcoxon Rank Sum test are not applicable to Site 1 because facility background data sets are not available. Therefore, statistical*

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background comparisons cannot be performed. Background evaluations will be performed by number to number comparisons (e.g., comparing maximum site concentrations to Illinois EPA soil background concentrations). The text in the large diamond on the left side of the figures will be revised to say "Site Population > Upgradient or Background ?"

The figures will be changed according to the comment to read "HI>0.1" and the expression AND will be changed to OR.

- 11) Figure A-13 -The diamond on the right side of the subject diagram includes TACO as a screening tool. This is inappropriate because TACO was not designed to protect ecological receptors. One-tenth of the HI is too low and the receptor should be specified.

Response: The text in the diamond will be revised to say "Maximum concentration in any site sample > sediment screening value?". Figure A-12 was also changed to indicate the ecological receptor is aquatic organisms.

- 12) Figure A-14 -The subject figure presents a diagram that includes use of cancer risk and HI. Because these values are receptor-specific, the receptor to be utilized needs to be specified. Additionally, the pathway(s) included in these calculations should be specified. Cancer risks for individual chemicals should not exceed 1E-6.

Response: The receptor used for screening will be the residential receptor and will be added to the flow diagram. Cancer risks will be changed to 1E-6 in Figure A-14.

- 13) Figure A-15 -The last decision triangle in the flow chart uses a risk value of 1E-4 to determine if the decision is no further action or to recommend a feasibility study. Illinois EPA believes the value used there should be 1E-6. If the calculated risk value falls between 1E-4 and 1E-6, then a risk management decision must be made based upon site-specific information. It cannot just be assumed that any value below 1E-4 is acceptable. The point of departure should be 1E-6. Also, please specify the receptor pathway(s) for the risk and HI calculations.

Response: The figure will be revised to indicate that 1E-6 will be the point of departure for the cumulative effects of ingestion, dermal contact, and inhalation. The receptor pathways will be identified in the single * footnote at the bottom of the page.

- 14) Figure A-16 - Please provide the full reference for the Navy Ecorisk Tiered approach document referenced in this diagram.

Response: The figure will be changed to include a footnote to reference the Navy Ecorisk Tiered Approach. This reference will also be included in the list of references.

- 15) Section B2.A.1 -At the top of page B-4, it states that the 4-foot clear plastic sleeves inside of the direct-push samplers will be cleaned of visual soil and disposed of as trash. How will they be cleaned of the visual soil? Those sleeves should be considered Investigation-Derived Waste (IDW) and disposed accordingly unless they will be fully decontaminated prior to disposal. Please ensure this is the case.

Response: The text will be changed to indicate that the plastic sleeves will be disposed of as Investigation-Derived Waste (IDW) or will be decontaminated prior to disposal as trash.

- 16) Section B2.A.5 -There are four criteria/parameters listed for determining that well development is complete. They include pH, temperature, specific conductance, and turbidity and each has a

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defined limit that must be satisfied to determine that they have stabilized. Illinois EPA believes that dissolved oxygen (DO) and oxidation/reduction potential (ORP) should also be monitored. The limits for those should be $\pm 10\%$ and ± 20 mV, respectively.

Response: The TtNUS and USEPA Environmental Response Team SOPs for monitoring well development after the well is installed use the four criteria/parameters to determine when sufficient development has been performed. The USEPA Environmental Response Team SOP also indicates that DO is a useful parameter. It should be noted that DO and ORP are not included in the well stabilization parameters because of the difficulty in obtaining stable readings, even when aquifer representativeness is considered to be adequate because of probe or instrument instability for DO or ORP.

No change will be made to the QAPP, Field Sampling Plan, and Monitoring Well Installation SOP (SOP 154-7) as it relates to well development.

DO and ORP will be added to the list of parameters monitored at the limits specified in the comments during the monitoring well low flow purging that is conducted before the wells are sampled. The QAPP, Field Sampling Plan, and Monitoring Well Purging and Stabilization SOP (SOP 154-2) will be changed according to the comment.

The forms in Attachment A list the required criteria/parameters that are monitored during development and low flow purging.

- 17) Section B2.A.6 - It states here that filtered groundwater samples will be collected for metals analysis if a turbidity of less than 10 NTUs cannot be achieved during stabilization. Suggest, in that instance, that both a filtered and an unfiltered sample be collected for metals analysis. It is the Agency's policy to not filter groundwater samples for metals analysis, although having values for both cases can be useful.

Response: The section will be changed according to the comment. The sentence will now read: "Filtered and unfiltered samples will be collected for metals analysis if a turbidity of less than 10 NTUs cannot be achieved during stabilization."

- 18) Section B2.A.9 -The first sentence states that a minimum of three of the permanent monitoring wells will have slug tests performed on them. Illinois EPA previously requested that, due to the complexities of the subsurface at this site, slug tests be run on all of the permanent monitoring wells to be installed. The Agency still believes this should be the case.

Response: In order to achieve the data quality objectives, it is believed that a minimum of three slug tests are required. This number may increase based on findings during the Phase II well installation. Based on the Phase I investigation that delineated the boundary of the landfill and with the location of the permanent monitoring wells being at the edge of the landfill, these wells will be installed outside of the landfill materials in the native regional clay. During the monitoring well installation, the lithology of the well locations will be compared to the soil borings advanced to delineate the landfill boundary and at least one slug test will be conducted from wells installed in differing lithologic profiles. This will include total well depths differing by ten feet or more and/or the presence of differing soil materials (including thin lenses of higher permeability material) in the saturated zone. The slug testing will determine the hydraulic characteristics (hydraulic conductivity) of the formation only. Static water levels collected before groundwater sampling and before the slug tests are performed will be

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used to determine the groundwater flow direction.

19) Section B2.A.12 -See previous comment regarding disposal of DPT Plastic Sleeves from Section B2.A. 1.

Response: This section will be changed according to the response to comment 15.

20) Section B3.B.1 -The last sentence on page B-21 states that an example COC form is included in Appendix V, SOP CTO 154-10. That SOP references Appendix A for examples of various forms. Illinois EPA could not locate Appendix A. The referenced forms were located in Attachment A to the Supplemental Field Sampling Plan, however. The provided references to the location of the various forms need to be verified for accuracy.

Response: The SOPs in Appendix V will be changed to reference Attachment A according to the comment.

21) Section B4 - It states here that the laboratory SOPs are listed in Appendix IV. It should also state that the SOPs were provided on a CD included as part of that appendix.

Response: This section will be changed according to the comment. The following will be added to the second paragraph, first sentence "...Appendix IV and the laboratory SOPs are provided on a compact disc as part of Appendix IV."

22) Section B9 and Table B-1 -Soil samples for full analytical evaluation are quite limited for this investigation and only chemical and physical data of known quality from previous investigations will be used in making decisions concerning risk or the nature and extent of contamination. This was agreed upon during the original scoping meeting. However, if after completion of the field work, there is insufficient data to properly evaluate the identified receptors, more of the previously-collected data may be required for use, regardless of the confidence in that data, to be conservative. Otherwise, the number of samples collected for full analytical evaluation may need to be increased.

Response: The Navy recognizes the Illinois EPA comment and is prepared to collect additional information if necessary.

23) Section B10.E -The last sentence of this section references this same section, B10.E. Please review and revise as necessary.

Response: This reference will be changed to B10.C

24) Table B-6 -As mentioned previously, slug tests were requested for all of the permanent monitoring wells to be installed. There should be an "X" in every box in that column.

Response: The table will be changed according to the response to comment 18.

25) Tables B-11 and B-12 -Illinois EPA prefers Encore samplers and method 5035 be used for soil and sediment sampling for volatile organic compounds. Please revise both tables appropriately.

Response: Based on the visual inspection of the sediment at this site and experience at Naval Station Great Lakes Site 17, it is believed that Encore samplers should not be used for collection of sediment samples. The saturated sand and gravel consistency is expected to make collection with Encores problematic. Table B-11 will be modified to indicate collection of soil samples for VOCs via Encore samplers and collection of sediment samples for VOCs in 4 oz. jars.

26) Section D2 -The section title is *Verification and Validation Methods*, but the following text only

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discusses data validation. There should be a discussion of the data verification process as well. All generated data should go through a 100% data verification step to ensure the completeness, correctness, consistency, and compliance of the data package prior to the 3d party data validation step.

Response: The section will be changed according to the comment. The following paragraph will be added to the end of Section D.2 - "Verification is the process by which Navy by way of the TiNUS TOM evaluates the project for completeness, consistency, and adherence to contractual obligations. Field data will be verified in real time by the FOL to be complete, consistent, and adheres to the requirements of this QAPP. The TOM will maintain contact with the FOL to make sure the field work is completed in accordance with the QAPP. Deviations from the QAPP will be reported to the TOM and will be documented on the Field Task Modification Request Form that is included in Attachment A of Appendix V. This form will be signed by the FOL and the TOM and will be included in the RI report. In addition, the TOM will review the chain of custody forms as they are submitted to the laboratory with the samples and verify that the samples are being collected and analyzed in accordance with the QAPP.

Verification in the data validation process will also evaluate the project for completeness, consistency, and adherence to contractual obligations. The laboratory data packages will be verified to be complete by the data validators. The verification will make sure that the elements of the data package necessary to support validation are present. If data packages are incomplete, the data validator will contact the laboratory to obtain the missing data and inform the TOM. If missing field or laboratory data cannot be recovered by the FOL for field data or the data validator for laboratory data, this deficiency will be identified to the TOM. The TOM will assess the impact to the project and, based on this assessment, will alert the Navy as necessary. This assessment will include a consideration of the impact of missing data on the ability to meet project objectives in spite of the missing data. Further details concerning verification of data package suitability to support validation are provided in the paragraphs below."

- 27) Reference Section -The reference for TACO, Illinois EPA, 2006, should be updated to the latest revision. This revision is available on the Illinois Pollution Control Board Web site at <http://w.ipcb.state.il.us/documents/dsweb/Get!Documents-54263/>.

Response: The reference will be changed according to the comment.

- 28) Appendix I, page 1-4 -In the first paragraph of the Screening Levels for Soil section, surface soils are removed from the risk assessment. It is reported here that clean soils were placed over the old landfill. Illinois EPA will expect some form of assurance that the cover soils are free of contaminants using results from contemporary sampling, records of sample results determined during installation of the barrier, or documentation of the source area for that soil, provided it was obtained from a location reasonably expected to be free of contaminants. Additionally, assurances need to be provided that subsurface soils are not currently uncovered and now on the surface.

Elimination of surface soils from the risk assessment creates added concerns. All of the potential receptors identified in the conceptual site model typically experience substantial contact with surface soil. In most cases, contaminants found in the uppermost level of the soil contribute the most risk and hazard to the evaluated receptors. Removing consideration of this significant pathway weakens the significance of the risk assessment. It would not be prudent to ignore risks

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from the major source of risk. The Agency would prefer to see the construction worker receptor developed completely and the other receptors removed than to continue as planned and develop incomplete and meaningless assessments of the other potential receptors.

Response: *During the June 2006 DQO meeting, the surface soil for the golf course was considered part of the cover to the landfill and it was agreed at that time that surface soil was not a media of concern. It was agreed that the surface soil media would not be evaluated for the anticipated receptors. The HHRA Work Plan does evaluate the surface water and sediment media for the anticipated receptors.*

Additionally, the 2002 Guernsey Environmental Assessment Report was prepared to facilitate the repair and redesign of the back nine portion of the golf course (which covered the former landfill). The report indicated (see page 6 of the report): "To accommodate the apparent needs for clean soil availability for the proposed project, a soil mixture of clay, mixed clay and black dirt from residential and construction projects is stockpiled on the golf course for future use. The soil-hauling contractor, Herky's Trucking Inc., Excavating Sewer and Water of Libertyville, Illinois, has certified that the soil is not contaminated and that it does not contain construction debris."

These construction activities were conducted in 2003 and required placing the stockpiled clean soil on the site to raise the topography, thereby additionally covering the landfill waste. As part of the presumptive remedy, the integrity of this clean soil cover will be periodically inspected to ensure that waste is not exposed at the surface.

29) Appendix I -On page I-5 in the first full paragraph there is discussion of comparing concentrations of anthropogenic organic compounds (e.g. PAHs) to the proposed amendments to TACO. Using the values provided in that background study for PAHs in not acceptable for use at this site. That study was conducted and intended for use on surface soils only. As there is already a golf course built over the landfill, there are no surface soils at issue there. Any detected PAH concentrations should be compared to the most conservative of the identified screening values.

Response: *Concentrations of anthropogenic organic compounds will not be compared to the values in the proposed amendments to TACO. The sentence near the end of the first full paragraphs of page I-5 of the HHRA Work Plan will be revised to indicate this according to the comment (part of the sentence discussing the anthropogenic PAHs will be deleted)..*

30) Appendix I -On page I-5 in the fourth paragraph, a plan to document but not act on exceedances of migration to groundwater SSLs is discussed. The rationale for this activity should be discussed. In the next paragraph, first bullet at the bottom of the page, the classification of groundwater (Class I or II) should be specified.

Response: *Quantitative risk assessments are typically based on direct contact with soil, sediment, or water, or inhalation of vapors 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. This explanation will be provided on Page I-5.*

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The groundwater will be specified as Class I groundwater.

- 31) Appendix I - The third sentence of the last paragraph on page I-12 contains the terms "Supply-side" and "activity" which need to be defined.

Response: The unclear phrase will be removed and the sentence will be revised as follows, "Skokie Ditch flows in a southerly direction from the site and exits Navy property after passing the Green Bay Sewage Treatment Plant in Forrestal Village".

- 32) Appendix I - In Section 2.1.3, Potential Receptors/Exposure Routes, a paragraph describing the Adolescent Trespasser should be added.

Response: The risks for this receptor are expected to be similar to the adolescent recreational user. The adolescent receptor will be redefined and evaluated as the adolescent recreational user/trespasser in the second bullet in this section.

- 33) Appendix I - In the fourth bullet on page I-19, the ProUCL statistical software program is discussed. Fallback statistical procedures should be identified when limits of the ProUCL program are exceeded, such as when datasets contain more than 15% censored values. In the fifth bullet, groundwater conditions when using TACO or standard risk assessment procedures for the RME exposure are typically characterized by the highest groundwater concentration. The concern being that wells are placed in discrete locations and that an actual well location could correspond to the highest groundwater concentration.

Response: Current practice in determining UCLs is as follows: The version of ProUCL used by TtNUS is set up to flag cases that may require additional evaluation, e.g., large number of non-detects, high detection limits, or cases where the value recommended by ProUCL exceeds the maximum concentration. The individual cases are then examined by a statistician who makes a decision on the appropriate value to use as the exposure concentration. Typically, recommendations made in Section 3 (Data Evaluation) of the ProUCL guidance or methods specified in Gilbert are used by the statistician. In keeping with past practice at Naval Station Great Lakes, it is expected that Illinois EPA will be consulted for the non-typical cases.

In regard to groundwater, risks will be characterized using maximum groundwater concentrations. Risks for the most highly contaminated individual well(s) will also be presented.

- 34) Appendix I - On page I-27, the third paragraph concludes with the statement that soil properties have a great influence on the outcome of the vapor intrusion modeling. To control the influences of these unknowns site-specific soil property data should be determined.

Response: Site-specific soil properties, such as total organic carbon and soil type, will be used in the vapor intrusion modeling. This will be indicated by inserting the following text after "properties of the soil" in the last sentence of the last multi-line paragraph on page I-27: "... (such as site-specific total organic carbon and soil type [clay, silt, sand, gravel])"

- 35) Appendix I - On page I-31, the equation in the middle of the page would be clearer if the concentration of chemical in trench air term was labeled " C_{trenchi} " and the intake term was labeled " $\text{Intake}_{\text{trenchi}}$ ".

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Response: The suggested clarification will be made to the text on page I-31.

- 36) Appendix I - On page I-34, the first paragraph expresses regret over the lack of methods to evaluate intermittent exposures to lead. Guidance on this subject can be obtained from the document *Assessing Intermittent or Variable Exposures to Lead Sites*, USEPA 2003, Office of Solid Waste and Emergency Response, Washington, DC (EPA-540-R-03-008, OSWER #9285.7-76).

Section 3.1 on the subject page addresses sources for chronic toxicity values. Sources for subchronic toxicity values should be identified for the construction worker receptor.

Response: The document *Assessing Intermittent or Variable Exposures to Lead Sites* will be used if it is necessary to evaluate intermittent exposure to lead in the risk assessment. A discussion of this and reference to the document will be added to Page I-34 to Appendix I.

Sources of subchronic toxicity values (such as HEAST and the Risk Assessment Information System) will be added to the text in Appendix I.

- 37) Appendix I - On the last page, please explain the relevance to the risk assessment of the differences between complete and potential exposure pathways.

Response: As defined on Page I-11, a complete exposure pathway requires a source, a route of contaminant transport, and an exposure or contact point for a human receptor. If one of these is lacking, the exposure pathway is considered incomplete and is not quantitatively evaluated in the risk assessment under current land use. However, the situation at the site might change in the future (e.g., residential dwellings could be built), and the exposure pathway for future residents could then be complete. This potential future exposure pathway will also be quantitatively evaluated in the risk assessment under future land use. Therefore, both current and potential future exposure pathways will be quantitatively evaluated in the risk assessment. An explanation similar to the above will be added to the footnote of Figure 1.

- 38) Appendix II - In the equation at the top of page II-11, it appears that the fish lipid to sediment organic content normalization factor is mistakenly coupled with the benthic organism biota-sediment accumulation factor. Please revise as necessary.

Response: The equation will be changed to couple the fish lipid with the sediment-to-fish accumulation factor instead of the benthic organism biota-sediment accumulation factor.

- 39) Appendix II - On page II-12, the second sentence in the fifth paragraph should be revised to be more concise.

Response: The referenced sentence will be changed to the following: "It is assumed that the raccoon's diet is comprised of 50 percent fish and 50 percent invertebrates, and the belted kingfisher's diet is comprised fully (100 percent) of fish. This difference is reflected in the above CDI equations."

- 40) Appendix II - On page II-14, the first and second bullets indicate comparison with EEQ values. EEQ values are calculated and are receptor-specific. Please specify which receptor EEQ will be used for these comparisons.

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Response: The referenced bullets will be changed, as follows:

- ***Chemicals with EEQs greater than 1.0 (using screening values) will be retained as COPCs for further evaluation because they have a potential to cause risk to benthic invertebrates, fish, and other aquatic organisms.***

- ***Chemicals with EEQs greater than 1.0 based on the food chain model using NOAELs will be retained as COPCs because they have the potential to cause risk to piscivorous mammals (raccoons) and birds (kingfishers).***

41) Appendix II, Tables I and II - Several entries are followed by parenthetical superscript numbers suggesting footnote explanations. The footnotes need to be added.

Response: The footnotes were inadvertently not printed. They will be added to the tables.

42) Appendix III - Following the first bullet after "Notes:" it states that the Navy, Illinois EPA, and the USEPA Region V have a Land Use Control Memorandum of Agreement for nine sites. As far as the Agency is aware, Region V never signed off on that document. Please verify that they are or are not a signatory to the agreement and revise as necessary.

Response: The note was changed according to the comment. USEPA Region V has not signed off on the document.

43) Appendix V, Section 2.4.1.2 - Oxidation-reduction potential (ORP) has been omitted from the bulleted items on page V-11. Please include it there along with its stabilization parameter of ± 20 mV.

Response: ORP will be added to the bulleted items with the indicated limit.

44) Appendix V, Section 2.5 - See previous comment regarding slug tests at all permanent monitoring wells.

Response: This section will be changed according to the response to comment 18.

45) Appendix V, Section 2.9 - The list of field measurements and instruments to be used should include the Ludlum detectors for radiological contamination.

Response: The radiological screening instrumentation will be added to this section. Additional text will also be added to Section B2.A.1 (Subsurface Soil Sampling) describing radiological background sample collection and screening.

46) Appendix VII - Tables 5-1 and 6-1 list the chemical hazards anticipated to be contacted on-site. Included in those lists are a few volatile compounds and several heavy metals. Since there is still significant uncertainty as to the exact contents of this landfill, the lists should at least include all the contaminants previously detected on-site as well as any potential contaminants known to have been disposed there. Among those contaminants that should be added to the tables are polynuclear aromatic hydrocarbons (PAHs), solvents and PCBs, for starters. Please review the frequency of detection tables and revise these tables accordingly.

Response: The historical chemical data was used as a guide to determine the chemical hazards anticipated in the QAPP and during the investigation. Using the historical data and the Marlowe Acute Exposure Model for Site Workers, the contaminants and action levels in Table 5-1 and 6-1 will provide reasonable protection to the personnel performing the investigation.

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Additional chemical data was also included in Table 6-1 that could have possibly been used in starting the fires in the trenches, such as PCE, TCE, and BTEX (gasoline) and other chemicals that may have been disposed at the landfill such as PAHs and PCBs.

- 47) Appendix VII, Section 6.1 - See previous comment regarding identification of potential chemical hazards. Those contaminants may not all be identified as primary contaminants, but given the current uncertainty regarding nature and extent, it would be preferable to list some contaminants that may not be detected, rather than not list some that may.

Response: See the response to comment 46.