



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION I

J.F. KENNEDY FEDERAL BUILDING, BOSTON, MASSACHUSETTS 02203-2211

September 18, 1990

Mr. Russell Fish
U.S. Department of the Navy
Naval Facilities Engineering Command
Northern Division
U.S. Naval Base, Bldg. 77L
Philadelphia, PA 19112-5094

Dear Mr. Fish:

As discussed during our 23 February 1990 meeting in Boston, there are a number of outstanding issues pertaining to the Remedial Investigation/Feasibility Study (RI/FS) Work Plan for the Naval Education and Training Center (NETC) which are best addressed via written correspondence. This letter formally identifies questions and/or concerns resulting from EPA's review of the aforementioned work plan for conformance with applicable CERCLA and NCP guidance and requirements for RI/FSs. The comments are presented in a format that is consistent with the Work Plan.

It is EPA's intent to identify and resolve any outstanding issues or concerns pertaining to the RI/FS Work Plan prior to the commencement of Interagency Agreement (IAG) negotiations. As you are aware, the RI/FS Work Plan is a primary document which must be "approved" by all parties to the IAG. A discussion of these issues is offered at this time to help expedite EPA's "approval" of the RI/FS Work Plan during the IAG negotiations.

Should you have any questions or concerns in regard to the above, please do not hesitate to call. Thank you in advance for your cooperation in this matter.

Sincerely,

for Mary Anderson
Carol A. Cody
Remedial Project Manager

Attachment

cc: Mr. Jeffrey Crawford, RIDEM
Mr. Douglas Luckerman, U.S. EPA - Office of Regional Counsel
Ms. Anne Fenn, U.S. EPA - Regional Federal Facility Program
Manager (w/o attachment)
Mr. Michael Kulbersh, CDM-FPC



ATTACHMENT

INTRODUCTION - ARARS AND PRELIMINARY REMEDIAL ACTION ALTERNATIVES

The following are comments specific to Figure 1 - Preliminary Identification of ARARs for NETC.

Figure 1 (1 of 5):

- o CERCLA as amended by SARA and the NCP require that Action Specific, Location Specific and Chemical Specific ARARs be identified, but they not in themselves ARARs.
- o The citation for Standards for Permitted Hazardous Waste Facilities should be 40 CFR 264.10-.18, instead of 40 CFR 264.10-.80.
- o The citation for Preparedness/Prevention should be 40 CFR 264.30-.37 not 40 CFR 264.10-.08.
- o The citation for Closure/Post Closure is missing the reference to Section 264 of 40 CFR.
- o The citation for Interim Status Requirements should read 40 CFR 265.110-.120, not 40 CFR 205.193-.351.
- o Under the heading Toxic Substance Control Act (TSCA), the citation for Storage and Disposal Requirements for PCBs is presently identified as Subpart D. It would be more appropriate to cite the section as being 40 CFR 761.60-.79.

Figure 1 (2 of 5):

- o A citation of 16 U.S.C. 1271 should be given for the Wild and Scenic Rivers Act. Presently no citation is given.
- o A citation of 16 U.S.C. 470 should be given in addition to 36 CFR Part 60 & Executive Order 11593 for the National Historic Preservation Act of 1866.
- o A citation of 132 CFR Parts 229 & 229.4 and 43 CFR Parts 7 & 7.4 should be cited for the Archeological Preservation Act of 1974.
- o Add the year "1972" to the Coastal Zone Management Act.
- o Add the year "1973" to the Endangered Species Act, and add the citation 16 U.S.C. 1531.
- o The Fish & Wildlife Coordination Act 16 U.S.C. 661 is not cited in the report. This act may be an ARAR for this site.

Figure 1 (3 of 5):

- o For the Safe Drinking Water Act, change the citation from 40 CFR 141 to 40 CFR 141.11-141.16.
- o For the Clean Water Act, change the citation from 40 CFR 401.15 to 40 CFR Parts 413, 414 & 433.

Figure 1 (4 of 5):

- o Add the citation 29 U.S.C. 631 for the Occupation Safety and Health Act.
- o Change the citation for the Clean Air Act from 42 U.S.C. 1857 to 42 U.S.C. 7401.
- o Change the citation for the New Source Performance Standards from 40 CFR 50 to 40 CFR 60.
- o Change the citation for the NPDES Permit Requirements from 40 CFR 122 to 40 CFR 402.
- o The Regulations for Ocean Discharge - 40 CFR 403 and Ocean Dumping Criteria - 40 CFR Parts 220-233, Subchapter H may be ARARs that are applicable to this site.

VOLUME I - BACKGROUND INVESTIGATION REPORT

General Comments

- o Removal actions were conducted at Sites 3, 5, 6, 15, 17 and 18. What standards were applied in determining the appropriateness of and subsequent omission from remedial actions as part of the RI/FS?

Section 2.9.3 - Hydrology

- o Based on TRC's description, a ridge trending through Tanks 51 and 59 would be oriented northwest to southeast, not east to west. Please clarify.
- o Based on an estimated hydraulic conductivity of 3×10^{-5} cm/sec, a porosity of shale of 5% and a hydraulic gradient of 2×10^{-2} ft/ft, the groundwater velocity would be 12.5 ft/year not 25 ft/year. Please verify this calculation.

Section 3.2.1 - Site 01 - McAllister Point Landfill

- o It should be noted that the levels of cadmium, chromium and cyanide exceed the ambient water quality criteria for the protection of aquatic life and could pose a harm to the surrounding biota.

- o The concentrations cited for chromium on page 33, paragraph 1 should be 0.028 ppm not 0.028 ppb and 0.032 ppm not 0.032 ppb, respectively. Please clarify.
- o Page 37, Paragraph 2: It should be noted that chromium exceeded the MCL in at least one sample collected from the downgradient monitoring wells. TRC reports the highest concentration for chromium as being 0.22 ppm, and the MCL for chromium is 0.050 ppm. Please clarify.

Section 3.2.1 - Site 01 - McAllister Point Landfill

- o Site 1 - McAllister Point Landfill - Based on historical documentation and past disposal activities, sampling activity should be extended south.

Section 3.2.2 - Site 02 - Melville North Landfill

- o Location of two background sediment sample (N-1 and N-2) locations should be referenced/provided.

Section 3.2.4 - Site 12 - Tank Farm Four

- o Page 41, Table: The proposed MCL for lead should be 0.005 ppm (5 ppb), not 0.50 ppm as indicated. Please clarify.

Section 3.2.5 - Site 13 - Tank Farm Five

- o Page 45, Second Table: A promulgated MCL of 0.20 ppm exists for 1,1,1-trichloroethane. The concentrations cited in wells MW-53E & MW-53W exceed the MCL. In addition, a proposed MCL of 0.10 ppm exists for trans-1,2-dichloroethene. It should be noted that the concentration of 0.166 ppm in the sample collected from MW-53E exceeds this value.

Page 46, Paragraph 1: Based on the concentrations of volatile organic compounds detected in wells 1 through 5 and the solubility coefficients of many of these compounds, it appears that the hydrogeology of the site might also significantly impact the fate of the "plume" near MW-5, in addition to the specific contaminants' densities.

VOLUME II - FIELD SAMPLING PLAN

General Comments

- o The sampling approach relies heavily on screening of samples for contamination both visually and with an OVA. What OVA measurement will be used as an indicator of contamination, i.e., action level?

- o The archiving of samples for subsequent analysis of dioxin and furans is presented in the plan. However, there is no criteria presented to determine what will trigger the analysis of these samples. For example, will high herbicide, chlorophenol, and/or PCB concentrations mandate the analysis for dioxin?
- o EPA's Contract Laboratory Program (CLP) utilizes the Target Compound List (TCL) to reference organic compounds and the Target Analyte List (TAL) for inorganics. If TCL and TAL compounds are to be included in the analyses, reference to both should be made throughout the document.
- o Although the Tables in this section cite various CLP methods, they are not inclusive of all HSL metals. The Work Plan should reference all metals to be analyzed.
- o When will methods 8010, 8020 and 8015 be utilized, i.e., field analyses? Will the majority of volatile organic analyses be done by GC/MS as per CLP-SOW 2/88 or will most be performed pursuant to RCRA methods?
- o The standard operating procedures (SOPs) in Appendix A - Sampling Methods should be stand-alone documents. They should not reference other SOPs or other appendices, especially if the referenced SOPs or appendices are not contained in Appendix A. For example, Method II-1: Soil Sampling With A Spade and Scoop references Appendices A and E, in parts 4 and 6, respectively. Appendices A and E were not attached to these documents. Method III-9: Sampling Monitoring Wells With A Bucket Type Bailer, part 2 references Methods III-7 and III-8. These were not in Appendix A - Sampling Methods.

Section 3.4 - Soil Gas Survey

- o What are the "action levels" for the soil gas readings, particularly where extension of the grid may be required?
- o How close to the oil-water separator (Tank Farm 4) and the burning pit (Tank Farm 5) will the soil gas samples be taken? Figures 27 and 31 are not specific.
- o Present the rationale for not having employed at least one soil gas survey point in the far western corner of Site 9. It appears from Figure 21 that this area will not be sampled under the present grid.

Section 4.1 - Surface Soil Sampling

- o Subsection 4.1.1, page 17: The last sentence of the first paragraph should indicate soil sample locations are shown on Figure 8, not 13.

- o Figures providing surface soil sample locations for Tank Farms 4 and 5 should be provided.
- o Dioxin and furan should be sampled for downwind of the oil/water separator at Tank Farm 4 and the burn pit at Tank Farm 5. Improper incineration of PCB-containing oils could have contaminated surface soils downwind.
- o The text states that Phase Two surface soil samples at Tank Farms 4 and 5 will be analyzed for TCL constituents. However, Table 3 indicates that only TCL pesticides and PCBs will be analyzed for. Clarification is requested.
- o Subsection 4.1.5, page 21, first paragraph: The criteria for determining whether or not a composite sample will be collected should be provided.

Section 4.2 - Surface Water, Sediment and Biota Sampling

- o Justification should be provided for the collection of only one sediment sample per location at Melville North Landfill, the Old Fire Fighting Training Area and Tank Farm 5. The collection of two sediment samples per location is proposed at the other two sites.
- o What are the "action levels" which will trigger the collection of the five optional samples at McAllister Point Landfill?
- o The text indicates that surface water samples will be collected at three of the six locations in connection with Tank Farm Four. Figure 29 indicates surface water samples will be collected at all six locations. Furthermore, Table 3 indicates that sediment samples will be analyzed for TCL constituents less pesticides while surface water samples will be analyzed for TCL constituents less pesticides and PCBs. However, the text indicates that both mediums will be analyzed for TCL constituents less pesticides. Please clarify.
- o To conduct a more accurate risk assessment, why weren't off-shore sediment samples taken 25-50 feet into the bay, since it has been reported that this is the point from which most fishing activity takes place?
- o Justification should be provided as to why sediment samples at Tank Farm Five are not being analyzed for VOCs when earlier investigations detected the presence of VOCs in groundwater.
- o Subsection 4.2.5, page 27, first paragraph: The methods for pH and specific conductance measurements should be provided.

- o Subsection 4.2.5, page 27, second paragraph: A definition of sediment should be provided. This will dictate how sediment samples will be collected.

Section 4.3 - Test Pits

- o Will the test pit program be expanded if previously undetected lagoon contamination is found?
- o How many test pits are being excavated at Site 1 - McAllister Point Landfill? Figure 15 shows one location, but the text alludes to several. Please clarify.
- o Subsection 4.3.1, page 29, fifth paragraph: This section states, "All samples will be collected from the middle of the bucket so as to obtain a sample which has not contacted the backhoe bucket." Care must be taken to ensure hydraulic fluids from the backhoe do not contaminate samples.

Section 4.4 - Test Borings

- o The subsurface investigations for McAllister Point Landfill and Melville North Landfill refer to the collection of one soil sample from those borings found to be outside of the fill material. However, the first split-spoon sample submitted for chemical analysis might represent cap material. Justification for this sampling approach is requested.
- o Table 3 does not indicate that the samples of fill material taken at McAllister Point Landfill will be analyzed for dioxin, although the text does. Please clarify.
- o Page 32 indicates that all fill samples at McAllister Point Landfill will be analyzed for dioxin. However, the text reveals that approximately 50% of the fill samples will be archived for dioxin and furan analyses. Please clarify.
- o The test boring locations at the Old Fire Fighting Training Area are shown on Figure 23, not Figure 19 as indicated. Furthermore, it is unclear as to how many samples will be collected from each boring if the samples are deemed to be "clean." Please clarify.
- o The Test Boring Sampling Method discussion should clarify the sample screening procedure with respect to selecting those samples with highest observed contamination for analysis. Section 4.3.1 states that, "Split spoon samples will be collected at 2.0 foot intervals from each borehole." This section should indicate which part of the split spoon sample will be collected. What percent retention (of soil) is required in the spoon to warrant collecting a sample? Also,

this section should indicate corrective action if the spoon is withdrawn with less than the required percentage of soil retained.

- o What criteria will be employed to determine whether "additional information is needed in these areas" and optional borings drilled and sampled?
- o Figures 8, 9 & 10 are missing from the Work Plan.

Section 4.5 - Monitoring Wells

- o Section 4.4.5, page 43, second paragraph: The size of the well screen slots must not permit infiltration of backfill material into the well.
- o Section 4.4.5, page 46, first paragraph: This section states, "At a minimum, the surge block will be decontaminated with non-phosphate detergent and tap water." If TCL and TAL compounds are anticipated in the groundwater, a more rigorous decontamination of the surge block may be warranted.
- o Page 46, fourth paragraph: This section states, "The water level indicator will be decontaminated with deionized water prior to each use unless visual observations indicate additional decontamination is necessary." What visual observations does this section refer to? What additional decontamination will be instituted?
- o Page 48, second paragraph: This section indicates that teflon bailers will be dedicated. Will stainless steel cables be dedicated as well? If not, what will be the decontamination protocol?
- o Page 55, Table 3: "Sample Analyses" column lists TCL and TCL volatiles, semi-volatiles, inorganics, and PCBs. What is actually being analyzed when TCL is listed? Is lead to be analyzed by ICP as stated on Table 2, page 9 of the QAPjP, or is the CLP SOW to be followed?

Specific analytical methods should be listed under "Sample Analyses." What methods are referenced by "TCL" for organic analysis? Does "VOCs" refer to the volatile organic analysis from the 2/88 SOW, EPA Method SW-8010, EPA Method-8020, or EPA Method 502.1? EPA Method 502.1 is referenced in Table 2 on page 9 as the analytical method for the analysis of 1,2-dibromomethane. However, this analytical method is not listed in Table 3.

- o The analysis of phosphates, sulfides, ammonia N, TKNs, or TDS is not requested under "sample analyses" but these parameters are mentioned in the Work Plan. Please clarify.

- o In what material will each of the wells installed at the Old Fire Fighting Training Area and Tank Farm Five be installed?
- o First line on page 40 should reference Section 4.5.1 and 4.5.2.
- o The individual site discussions of well installation make no mention of the collection of soil samples. However, the Well Boring, Drilling and Sampling Methods section indicates that well boring soil samples will undergo the same analysis as soil boring samples taken at the site. Clarification is requested with respect to the collection of soil samples in conjunction with the well installation program is essential and should be spelled out in greater detail.
- o If, while coring bedrock, the circulation water is noted to be contaminated, will the water be containerized and sampled?
- o How long will drummed water be containerized before it is disposed of? Will drummed water (i.e., purge or development) be tested analytically?
- o Will any in-situ hydraulic conductivity tests (i.e., falling or rising head test) be conducted in bedrock wells?
- o Will it be necessary to develop existing monitoring wells? Has an assessment be conducted to determine if existing wells are in hydraulic connection with the aquifer?
- o To adequately characterize water table conditions where details of ground water systems are unknown, it is recommended that levels be measured at least 8-10 times/month, at least initially. Explain why water levels in each well are being measured only "a minimum of once a month."

VOLUME IIII - QUALITY ASSURANCE/QUALITY CONTROL (QAPjP)

General Comment

- o The NEESA Level C evaluation of analytical data and the required deliverables are not as complete as those required by the 2/88 Organic SOW, 7/88 Inorganic SOW, and Region I Functional Guidelines. In some instances, data validation processes are different from those applied pursuant to the EPA's Functional Guidelines.

Section 1.5 - Project Plan

- o Page 3, fourth paragraph: This section states, "The sample program makes extensive use of Target Compound List (TCL) analyses using EPA-CLP protocols." In order to clarify which

compounds are to be detected, the compounds from the TCL should be provided in a table with methods and method references, study objective detection limits, and method detection limits. In addition, this section should explain exactly what is meant by "EPA-CLP protocols."

Section 3.0 - Sampling Procedures

- o Page 7, third paragraph: This section states, "The sample bottle field kit will be prepared and shipped to the field by the laboratory QC Coordinator." Please provide a description of the "sample bottle field kit."
- o Page 7, fourth paragraph: This section refers to holding times which are based on "CLP Protocols." The specific analytical methods should be referenced.

This section does not specify that dioxin samples must be enclosed in a metal can with a clipped or sealable lid when shipped. Also, volatile samples must not be shipped in the same cooler as samples collected for total petroleum hydrocarbons.

- o Page 8, Table 1: The table states that two 40 mL sample containers will be filled for collecting soil, sediment and waste samples for volatile analyses SW-8010 and SW-8020. EPA Method SW-846, 3rd Edition specifies that three 40 mL sample containers be collected.

The table lists no preservation procedures for the inorganic soil samples. These samples should be cooled at 4 degrees centigrade as stated on page D-4 of the CLP 7/88 Statement of Work.

The table lists ICP-CLP SOW as an analytical method. The method should state specifically which CLP SOW is to be followed.

- o Page 9-10, Table 2: The table does not list a preservative for aqueous samples collected for EPA Method SW-846, 8010. EPA Method SW-846, 3rd Edition specifies that all volatile aqueous samples must be preserved with 4 drops of concentrated hydrochloric acid.

EPA Method SW-846, 3rd Edition also specifies that aqueous samples with suspected residual chlorine must be pre-preserved with 10% sodium thiosulfate.

The lists ICP-SOW as an analytical method. This method should state specifically which CLP SOW is to be followed.

The table lists Pb and Hg under compounds, with a method reference of ICP-CLP SOW. The 7/88 Statement of Work states that both lead and mercury are to be analyzed by AA instruments and not ICP.

The table lists A429 as an analytical method. There is no reference to where this method was obtained.

When referring to EPA Methods SW-846, the correct edition should be referenced.

- o Page 11, Table 3: The table lists the extraction holding time for soil/sediment/waste samples for TCL pesticide/PCB compounds as five days. The Statement of Work (SOW) for Organics Analysis 2/88 specified the extraction holding time as ten days from validated time of sample receipt.

The table states that according to the CLP SOW no holding times have been established for petroleum hydrocarbons. The CLP SOW does not provide an analysis method for petroleum hydrocarbons. The correct method should be referenced for holding time criteria.

The table lists the metals as TCL metals (Target Compound List metals). The correct way the list should be addressed is as the Target Analyte List (TAL), as stated on page C-1 of the 7/88 SOW. Throughout this document the TAL is referred to as the TCL; TAL should be utilized for metals.

The table lists the holding time for TCL Metals and Inorganic compounds as six months with the exception of mercury, which is 26 days. This table fails to mention that the holding time for cyanide is 12 days, as stated on page D-4 of the CLP 7/88 SOW.

The table does not mention the holding times of phosphates, TDS, sulfides, ammonia N, or TKNs. These parameters are not mentioned in the CLP SOW.

The holding time for 1,2-Dibromomethane using EPA Method 502.1 is not listed on the table.

- o Page 12, fifth paragraph: This section states, "Conductivity and pH will be measured with electronic probes, which will be decontaminated with organic-free distilled water in between each usage." Since organic and inorganic compounds are anticipated at the site, decontamination of these probes should be conducted according to the procedure provided in Section 3.5 - Field Decontamination Procedures.

Sample tags should identify analyses for each sample.

Section 3.4 - Field Quality Control (QC) Samples

- o Page 13, first paragraph: This section provides an example of two sampling events, with a two month time period in between the events. What amount of time is required between events to constitute separate sampling events?
- o Page 13, third paragraph: Trip blanks should be treated as samples and preserved as such.
- o Page 13, fourth paragraph: Field blanks should be preserved according to the method utilized to preserve field samples.
- o Page 15, first paragraph: This section states, "Field blanks will be collected for each matrix sampled, all field blanks will be analyzed for the corresponding TCL parameters pertaining to the sample matrix." Will samples be analyzed for TAL compounds as well? If so, field blanks must be analyzed for TAL parameters. Field blanks should be collected from every type of matrix "sampling device" which is utilized and then decontaminated.

Section 3.4.3 - Source Water Blanks

- o Source water blanks must be preserved according to the same method utilized to preserve field samples. In addition, the frequency of collection of the source water blanks is not clear. Will they be collected only once per sampling event, once per day, etc.?

Section 3.4.4 - Field Duplicates

- o A definition of a field duplicate and a split sample should be provided. Duplicate samples and split samples are not the same.

Section 3.4.5 - Referee Duplicates

- o A definition of "referee duplicate" should be provided.

Section 3.5 - Field Decontamination Procedures

- o Page 15, fifth paragraph: This section should reference a table which provides the following information: sampling equipment and decontamination solutions (which can be used and will not interfere with sampling equipment or the matrix to be sampled).
- o Page 16, sixty paragraph: How will it be demonstrated that the distilled water rinse is analyte free?

Section 4 - Sample Custody

- o Pages 18-19: Sample tags and field notebooks should also identify analyses for each sample.
- o Page 20, fourth paragraph: This section states, "Samples will be delivered . . . for analysis as soon as . . . the number of samples and sample containers comprise a shipment..." What number of samples will comprise a shipment? Samples for volatile organic analyses should be shipped the day of collection, so as not to exceed holding times. Holding times should be calculated from the date of sample collection, not receipt at the analytical laboratory.

Section 4.3 - Laboratory Sample Custody

- o Page 21, fourth paragraph: This section states, "Details of the Chain-of-Custody for Laboratory Activities will be provided in the laboratories QA Manual." The laboratory's QA manual should be attached to the QAPjP for review and reference.

Section 5.0 - Analytical Procedures

- o Page 23, first paragraph: The specific statements of work for organic and inorganic analyses must be referenced:

Statement of Work for Organics Analysis, Multimedia, Multi-concentration, 2/88

Statement of Work for Inorganics Analysis, Multimedia, Multi-concentration, 7/88

It states that in the event where a "pure" waste is encountered and a dilution is required, the detection limit will be raised. This is not necessary if the dilution takes place after the sample has been analyzed undiluted. If the sample was analyzed undiluted first, then the original detection limit can be applied because if an analyte existed at the lower detection limit it could be detected.

- o Page 26, Table 6: Only detection limits for the analysis of volatiles, semi-volatiles, and pesticide/PCB's are listed on this table. Detection limits for all methods referenced must be provided.
- o Page 31, Table 8: The surrogate spike recovery ranges that are listed for water and soil/sediment analyses are not from the 2/88 Organic Statement of Work.

The surrogate spike recovery range for dibutylchloroendate is advisory only.

Section 5.2 - Target Compound List - Metals

- o Page 30, second paragraph: This section states that the CLP SOW dated July 1987 (7/87 SOW) should be followed, or the latest version applicable at the time of analyses. As referenced above, the latest SOW is the 7/88 SOW and since there are differences between these two versions, the 7/88 SOW should be utilized.
- o Page 32, Table 9: The last line should read "Metals and CN," not "Metals: CN."
- o Page 33, Table 10: The Low Soil/Sediment Detection Limits listed on the table are one half as high as they should be for all analytes except mercury. For example, Aluminum should have a detection limit of 40 ug/g not 20 ug/g for soils. Also, it should be noted (with a footnote) that the soil/sediment CRDLs are based on sample wet weights, and that dry weight CRDLs will depend on the moisture content of each individual samples.

The table only lists the detection limit of one inorganic parameter, cyanide. Please specify the detection limits for hydrocarbons, phosphates, sulfides, ammonia H and TKNs.

The table lists boron as one of the compounds. However boron is not one of the elements listed on page C-1 of the 7/88 SOW.

Section 5.3 - Petroleum Hydrocarbons

- o Page 34, first paragraph: This section states that it will use EPA Method 418.1 to analyze for petroleum hydrocarbons. This same section lists a detection limit of 20 ug/g for soil samples. Method 418.1 is only applicable for waters. The soil method to be used must be referenced.

Discussion on TCLP analysis needs clarification. The first sentence eludes to analyzing for "full TCL" but only some of the TCL compounds are analyzed for in TCLP.

Section 5.6 - Dioxin Analysis (2,3,7,8-TCDD)

The correct Statement of Work for dioxin analysis should be referenced. There is an inconsistency in the Work Plan in regards to whether monitoring will be strictly for 2,3,7,8 TCDD or for both the furans and dioxins, i.e., Page V and VI Table I - note (1) indicates that samples will be archived for dioxin and furan analysis. However, only 2,3,7,8 TCDD is mentioned on Page 34 under analytical procedures.

EPA Region I analyzes for all polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans, not just 2,3,7,8 TCDD, because these other compounds can also pose a health risk. The method used is SW-846 8280.

The archiving of samples for subsequent analysis for dioxin and furans is presented throughout the Work Plan. However, there is no criteria presented to determine what will trigger the analysis of these samples, i.e., will high herbicide, chlorophenol, and/or PCB concentrations mandate the analysis for dioxin?

Section 8 - Data Reduction Validation and Reporting

- o Page 41: Not all organic TCL analytes are quantitated using mass spectra (e.g., pesticide/PCBs); however, no method for quantitation besides EICP primary ion (mass spectra) is discussed here. Discuss methods in addition to the quantitation for CLP methods. Also, it is not recommended that "corrections for blank readings" be made on sample results.
- o Page 41, third paragraph: It is stated that aqueous sample results will be reported as milligrams of analyte per liter and solid/non-aqueous liquid samples will be reported as milligrams per kilogram. The 2/88 Statement of Work specifies that aqueous and solid results be reported in micrograms per liter and micrograms per kilogram, respectively. Solids are to be reported in dry weight.

Section 8.2.1 - Target Compound List

- o Page 42, third paragraph: The response factor equation listed in this section for calculating aqueous samples by GC/MS does not specify which fraction it should be used for. If calculations are to be provided in this plan, the equation should be reproduced in its entirety and the analytical reference should be provided.
- o Page 43: Data validation also involves estimation "J" of data points, not only acceptance or rejection. This should be made clear in the beginning statement.

Section 8.2.2 - Metals and Cyanide

- o Page 43, third paragraph: It is stated that in the event of low spike recovery, the analysis will be repeated using method of known additions. It is not clear what type of spike is being referred to. If it is a matrix spike, then the method of known additions (also named the method of standard addition) is not to be used if the CLP 7/88 SOW is being followed. If it is a post-digestion spike performed on

graphite furnace analyses, then it should be stated that the method of known additions is also performed on samples whose spike recovery is less than 85% and greater than 115%.

Please explain "CLP criteria will be maintained for analyses of samples of similar matrix."

Section 8.3.2 - Analytical Data Validation

- o Page 44, second paragraph: The first sentence in this section states that analytical data will be evaluated by "EPA CLP protocols." The specific Statement of Work and/or guidelines for validation should be referenced.
- o Page 44, fifth paragraph: This section states that data validation will be consistent with EPA Region I's current procedures. Later in the paragraph, references to the Functional Guidelines for Evaluating Organic and Inorganic Analysis, April 1985 are made. If current procedures are to be used then the Functional Guidelines for Evaluation of Inorganic Analyses, February 1989 and the Functional Guidelines for Evaluation of Organic Analyses, November 1988 should be used.
- o Page 45, first paragraph: It states that results less than 5 times the concentration found in the highest blank shall be flagged (J). The current procedure is to report the result with a (U) flag, stating that the sample result is non-detected with a raised detection limit equal to the value found in the sample.
- o Page 45, second paragraph: For organic analysis, this section states that positive values in the sample are estimated (J) if the concentration is less than ten times the concentration found in the blank for common contaminant compounds or less than five times the concentration found in the blank for all other compounds. According to the Region I Laboratory Data Validation Functional Guidelines for Evaluating Organics Analyses, February 1, 1988, modified November 1, 1988, the sample result should be qualified (U).

Section 10.0 - Calibration Procedures and Frequency

- o Page 52, second paragraph: The specific SOW's should be referenced.
- o Page 52, third paragraph: This paragraph should also indicate that calibration of field instruments, including the pH meter, will conform to the appropriate EPA methods, if they exist. Where no methods exist, then the manufacturer's recommendations for the calibration should be followed. The calibration procedures should also include appropriate QA/QC

procedures. For pH, EPA Method 150.1 should be followed.

Section 11.1 - Preventive Maintenance Procedures

- o Page 54, second paragraph: This paragraph states, "Specific (routine maintenance) procedures will be outlined in the Laboratory Standard Operating Procedures." These SOPs should be attached to the QAPjP for review and reference.

Section 12.2 - Immediate Corrective Action

- o Page 56, third paragraph: This section states, "Operator oversight is best avoided by having field crew members audit each others' work before and after a sampling event." A schedule for performing field audits should be established and provided in the QAPjP and should be conducted by someone not involved with site activities.

APPENDIX A - NEESA LEVEL C GUIDANCE DOCUMENT

- o The Level C quality assurance requirements presented in the QA/QC Plan are acceptable but fall short of EPA CLP requirements in that:
 - Level C does not require some of the deliverables which CLP requires;
 - Level C does not require some of the QC tests which CLP requires; and
 - Level C's data validation criteria are not as thorough as CLP's.
- o In addition, the second paragraph on page 44 of the QA/QC Plan states that data validation will "follow EPA/CLP guidance," and adds that "NEESA guidance will also be followed." These two guidance documents are not comparable or interchangeable due to the basic differences outlined above. Please specify which criteria will be used.
- o Level C QA covers deliverables and validation steps for VOA, BNA, pesticide/PCB and metals data, but does not mention any of the analytical tests, i.e., wet chemistry (NO₂/NO₃, bicarbonate, chloride and sulfate), petroleum hydrocarbons, TCLP, EP Tox, and dioxin.
- o Page 61: Will the raw data submitted included quantitation reports to supplement the VOA, BNA and pesticide/PCB chromatograms? It is recommended that these be provided to ensure thorough data validation.

When referencing CLP forms, the correct SOW must be referenced, i.e., Form 2 from the 2/88 SOW.

All applicable forms must be submitted for validation according to Region I Laboratory Data Validation Functional Guidelines for Evaluating Organics Analyses, February 1, 1988, modified November 1, 1988. In addition, raw data for all blanks, spikes, standards and samples must be submitted. The raw data must include the reconstructed ion chromatogram, the instrument quantitation sheet, and spectra (raw and enhanced) for all positive results reported, a daily standard referenced spectrum, and the date and time of analysis must be clearly labelled on the instrument quantitation sheet.

- o Page 62: Although NEESA Level C does not require the submittal of pesticide/PCB standard data, these data should be requested from the laboratory to ensure thorough data validation.

It is stated that the recovery of a post digestion spike sample is to be reported for ICP metals (only done if the predigestion spike recovery exceed CLP limits). It does not state that this post digestion spike must also be performed for elements analyzed by flame AA or cyanide samples whose predigestion spike recoveries exceed CLP limits, as mentioned on page E-10 of the 7/88 SOW.

- o Page 63: Raw data must be submitted with all deliverables. This includes copies of all analytical runs and copies of digestion logs. In addition, results from a CRDL standard for AA and 2x CRDL for ICP analyses must be included in the deliverables.

Inorganic Form 10, referred to as the reporting form for holding times, is the correct form for the EPA CLP 7/87 Inorganic SOW. Form 10 in the most recent EPA CLP 7/88 Inorganic SOW reports instrument detection limits. There is no form in the 7/88 Inorganic SOW for reporting holding times.

Is the "batch" referred to in the discussion of "wet chemistry" the same as the CLP "batch", i.e., 20 samples of the same matrix?

A holding limit for petroleum hydrocarbons in soil samples should be established to ensure timely reporting of results, i.e., 40 days from sample collection.

- o Page 64: The second paragraph states that if the blank concentration exceeds the reporting limit, the reporting limit shall be raised and the data flagged as estimated (UJ). What is meant by reporting limit? According to the Inorganic Functional Guidelines (February 1989) the only data qualified

are samples less than 5 times the highest blank level. These samples are reported as non-detected with a raised detection limit of the value found in the sample.

What correction action techniques will be employed if calibration criteria are exceeded?

According to the 2/88 SOW for volatile organics, if surrogates exceed the CLP limits, the samples must be reanalyzed. If the surrogates exceed the limits in the second analysis, both analyses must be submitted and the data will be qualified when validated.

- o Page 65: According to the Region I Laboratory Data Validation Functional Guidelines for Evaluating Organics Analyses, February 1, 1988, modified November 1, 1988, if any recovery results are greater than the contract required recovery range (CRR), the positive results for the compound should be estimated (J) in the unspiked sample. If any recovery results are greater than or equal to ten percent, but less than the CRR, the positive results for the compound will be estimated (J) and the non-detects will be rejected (R) in the unspiked sample. If the relative percent difference is greater than the contract limits, positive results for the compound will be estimated (J) in the unspiked sample. Profession judgment must be used to determine if the percent relative standard deviation of the results of the unspiked compounds in the matrix spike and matrix spike duplicate warrant qualification of the results for the compound.

The discussion on holding times indicates that samples for semivolatile organics analysis must be extracted within seven days of collection. For aqueous samples, the CLP (2/88 SOW) extraction holding time is five days from the validated time of sample receipt. For soil, sediment and waste samples the extraction holding time is ten days from validated time of sample receipt.

- o Page 66: According to the 2/88 SOW for semivolatile analysis, a blank is extracted with every 20 samples and is analyzed on each analytical system that the associated samples are analyzed on.

Data validation guidelines are provided for the evaluation of metals data calibration, calibration blank and continuing calibration verification QC parameters only. No guidelines are established for any of the other QC parameters falling outside the limits.

APPENDIX B - FIELD INSTRUMENT CALIBRATION PROCEDURES

- o Page B-1 - Portable Gas Chromatograph Calibration Procedures" - This section should provide the make and/or model number of the portable GC to be utilized. Also, the second bullet states, "Withdraw an aliquot of headspace gas with a syringe for injection or directly inject factory calibration gas ...". It must be noted that headspace standards should not be utilized for quantifying gas samples.

VOLUME IV - DATA MANAGEMENT PLAN

1.0 - Introduction

- o Provide the name(s) of the laboratory alluded to in this discussion.

3.1 - Sample Identification and Chain-of-Custody

- o It is not clear if the sample is a laboratory or TRC employee. Please clarify.

3.2 - Reporting of Analytical Results

- o What are the "Laboratory D.V. Functional Guidelines ... April 1985"? Are these old SOWs? In addition, as mentioned previously, CLP and NEESA guidelines are not in full agreement.

4.0 - Document Control

- o Discussion on document control may need to be expanded to ensure traceability of data and the measures to be applied to accomplish this.

Where are the central files to be located? How will access be controlled?

5.0 - Data Management

- o A discussion of QC measures to be utilized in data transfer/entry procedures should be included to ensure adequate transcription.