UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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JUL 0 2 1996

EXPRESS MAIL

Stephen Absolom
BRAC Environmental Coordinator
Directorate of Engineering and Housing
Seneca Army Depot Activity (SEDA)
Romulus, New York 14541-5001

Re: Draft SEAD-12, SEAD-48, SEAD-63 Project Scoping Plan
for Performing a CERCLA Remedial Investigation/Feasibility Study (RI/FS)
at Building 804 and the Associated Radioactive Waste Burial Sites (SEAD-12),
Pitchblende Storage Igloos (SEAD-48), and The Miscellaneous Components
Burial Site (SEAD-63).

Dear Mr. Absolom:

This is regarding the above referenced draft document prepared by Parsons Engineering Science (Parsons ES), for the Seneca Army Depot Activity, through the New York District and Huntsville Division of the US Army Corps of Engineers. During our June 27, 1996 meeting at SEDA, it was mentioned that funding had been received by SEDA to begin fieldwork at SEAD 12. The following are the majority of EPA's comments, but additional comments will be provided within a few weeks. The additional comments will be general and specific comments which apply to SEADs 12, 48 and 63.

General

The table-of-contents is incomplete, the page numbers should be completed to allow for easier review and referencing of the document.

ECOLOGICAL

Although the Ecological Description sections (4.2.12, 4.3.10 and 4.4.10) mention that regulated wetlands will be identified within the project vicinity, no mention is made that wetland delineations will be conducted at any of the sites. Also, if remedial actions involve disruption of wetland areas, a wetland functional assessment should also be conducted. This possibility should be discussed in the scoping plan.

Specific Comments

Page 3-1, p2: Current and future land uses should be added as an aspect evaluated in the development of the conceptual site models.

Page 3-5, p1: The locations of the five remaining prior borings around the UST should be located on the appropriate site figures to aid in the definition of the site geology.

Page 3-8 EM Survey: The text gives the approximate dimensions of Area 1 as 65 feet long by 40 feet wide, Figure 3-4 shows this area as being approximately 90 feet long by 85 feet wide. Similar differences were also noted when comparing the text and figure for the remaining three areas. These discrepancies should be resolved.

Page 3-20, p1: The measurements cited for the region of weak GPR signal are incorrect in the text based on a review of Figure 3-8.

Figure 3-11: The date for water level measurements does not match that presented in Table 3-2. This discrepancy should be corrected.

Page 3-24 Section 3.1.1.2.5, Soil: The results of the analyses have been compared to the 1992 TAGM No. 4046. A new version of recommended soil clean-up TAGM was published in January 1994, this version should be used for the comparison of the results.

Page 3-62 and elsewhere: Data are presented in incorrect units. For ease of comparison to release criteria, wipe sample results should be presented in disintegrations per minute (dpm) per 100 cm^2. Soil sample data should be in picoCuries per gram (pCi/g). A "count" is not the same thing as a concentration and should not be expressed as such. The second paragraph states that a Pb-214 result of 6.2 pCi/g is reflective of background radiation. This is not true, as background concentration for members of the uranium series should fall in the range of 0.5 - 2 pCi/g. This should be noted, even if the information is excerpted from previous studies done by other groups.

Page 3-110, Section 3.2, General Comment: More attention should be paid to the development of this section as, in theory, its the basis for the RI/FS. As outlined, not all potential receptors were considered and there are inconsistencies between the text and the figures that should be corrected. Specific examples follow.

Figure 3-20, Figure 3-21, Figure 3-22: Since radon gas may emanate from sources on the sites, "volatilization" as a primary release mechanism should be revised to "release/volatilization". Since exposure via radon gas, contaminated particulates, and volatilized chemicals may be possible "dust/radon" as a pathway should be revised to "air". Since the text discusses uptake by both flora and fauna, "uptake by flora" as a secondary release mechanism should be revised to include both.

Pages 3-115, p3; 3-118, p4; and 3-121, p3: For consistency with Figures 3-20, 3-21, and 3-22, respectively, site visitors and aquatic biota should be added to the list of receptor populations.

Page 3-116, p2: Since the unnamed creek "eventually flows beyond the AOC boundary and into Reeder Creek" and since Reeder Creek flows off SEDA, consideration should be given to the potential for exposure of individuals who may contact Reeder Creek downstream of SEDA. The potential for impacts to aquatic biota that inhabit the unnamed creek and Reeder Creek should be addressed. According to Section 4.2.10, surface water and sediment samples will be collected from Reeder Creek at off-site locations. Figure 3-20 should be revised accordingly.

Pages 3-116, p4; 3-119, p5; and 3-122, p5: It is not clear why the potential for "uptake in site flora" is limited to radionuclides. Some discussion should be provided or the potential for uptake of other contaminants should be considered.

Page 3-116 and elsewhere: Contrary to what appears in the text, radon does not accumulate in the respiratory system of fauna. Radon is generally not an outdoor inhalation hazard due to the enormous dilution of radon gas with air. Since radon is an inert gas, the vast majority of radon inhaled by fauna (or humans) will also be exhaled. Inhaled short-lived radon decay products deposit on bronchial tissue. However, as a result of the short half-times, they do not "accumulate" in the respiratory system. Rather, they decay there.

Page 3-119, p3: Since Silver Creek "flows . . . beyond the site boundary and eventually drains into Indian Creek", consideration should be given to the potential for exposure of individuals who may contact Silver Creek and Indian Creek downstream of SEDA. According to Section 4.3.9, surface water and sediment samples will be collected from Silver Creek and Indian Creek. Figure 3-21 should be revised accordingly.

Page 3-127 and 3-128: Chemical-specific ARARs for New York State should include New York State Department of Environmental Conservation's "Technical Guidance for Screening Contaminated Sediments", July 1994.

Page 3-134, Groundwater Data; bullet 1: Why use geophysical data to access groundwater flow directions? Existing wells can be used to aid in determining groundwater flow directions at the site.

Page 4-3; bullet 7: What are "Special measurements and sampling "? This should be better defined.

Page 4-3; bullet 9: Wells within the bedrock should also be considered since the UST is at a depth of approximately 18 feet, which indicates that the bottom of the tank is within the bedrock. Contaminants may have migrated in the bedrock and this should be investigated through the installation of bedrock monitoring wells.

Page 4-3, Section 4.2.1: See previous comment on the use of geophysical data for the determination of groundwater flow direction where there are existing monitoring wells.

1. **Page 4-5, Section 4.2.2:** The text states that "Based upon the soil gas survey results, 2 test pits, 2 soil borings and four monitoring wells will be spatially located...". However, the text does not discuss the basis for locating these areas. Will a threshold value from the soil gas survey be used to identify areas which require investigations? Have criteria been established to determine if more (or fewer) test pits or borings would be conducted? EPA should be consulted for concurrence.

Page 4-5, Section 4.2.2: This section states that soil gas sample locations are shown in Figure 4-1. The locations are not shown on the legend of Figure 4-1. Using soil radon data to delineate a volume of soil contaminated with radium may not be the best approach since the radon emanation rate of the soil is unknown. Further, it is not likely that the radon emanation rate in the areas of concern are constant. The use of downhole gamma count rates to delineate contaminated areas should be considered. Estimate of Radium Contaminated Soil On Five Sites In Ottawa, Illinois, September-October 1988, prepared for the USEPA Region 5 (ANL/ESH/TS-89/100, March 1989), describes how this type of measurement may be used to estimate subsurface soil radium concentrations.

Page 4-9 Section 4.2.6: If total surface activity measurements are in the range of background, it appears unnecessary to collect wipe tests for removable activity, as currently described. Where a wipe test result exceeds the relevant criterion, the document calls for taking five additional wipes from adjacent areas. This level of effort is not necessary. The wipe data are to be used to determine if a surface meets release criteria and if not, to evaluate decontamination and disposal options. Those goals could be accomplished without performing the quantity of wipe tests described in the document.

Page 4-12, p3: The locations of the stated borings/monitoring wells should be checked against Plate 4-1, e.g. MW12-9 appears to be downgradient and not upgradient of the stated location, MW12-12 is not located near the disposal pits. The Army should review the groundwater flow map presented on Figure 3-11, since the stated flow directions in this section do not match Figure 3-11. This discrepancy should be corrected.

Page 4-14, p1: The purpose of collecting a soil sample below the water table is unclear. It would be more appropriate to collect the sample from just above the water table, since any contamination below the water table would probably be considered a groundwater issue.

Page 4-15, Section 4.2.10, p2: The text here should reference Plate 4-1 and Figure 4-1.

Page 4-16, Section 4.2.11.1, p1: The text states that wells will be installed in the saturated overburden; however, if no saturated overburden is encountered, it does not state if wells will be installed in the first water bearing unit (bedrock).

Sections 4.2.12, 4.3.10 and 4.4.10, Ecological Descriptions: These sections are adequate as generic discussions, but for the purposes of the scoping plan, it would be more useful to tailor the sections to the individual sites, using existing information on habitats present and taking into account the complexity of each site.

Table 4-1: A review of the monitoring well location rationale should be conducted to ensure that stated locations match those presented on Plate 4-1.

Page 4-32, Section 4.3.6, p1: The location and former use of the background Igloo's should be given in the text.

Figure 4-5: A larger map should be provided to show the location of the surface water and sediment sampling points which are off this figure. The locations and configurations of the monitoring wells at this SEAD should be re-evaluated. The gap in the line of monitoring wells between MW48-4 and MW48-5 versus between MW48-5 through MW48-12 should be explained. The present locations of the monitoring wells would not adequately define the hydrogeology, or groundwater flow direction at this SEAD. Additional monitoring wells should be installed to adequately define the groundwater flow.

Page 4-35, Section 4.3.8.2, p3: Monitoring well MW48-14 is referred to twice in the text. As presently written it appears as if these wells are in two different locations.

Page 4-36, p2: See previous comment on the collection of soil samples below the water table.

Table 4-5: The rationale for the proposed monitoring well locations should be checked against Figures 3-16 and 3-18, relative to whether they are upgradient and downgradient of the trenches.

Figure 4-5: The flow direction of the surface water should be shown on this figure.

Section 6.1: The project schedules should be revised. The first activities shown on the figures were scheduled for January 22, 1996. At this time no plans have been approved for the sampling at these SEADs.

Section 7.0: Several of the references are incorrect, e.g. the TAGM reference should read New York State Department of Environmental Conservation ... and not "New York State Department of Environmental Protection...".

Appendix D: See previous comment on the use of a soil gas (radon) survey for determining the extent of radium-226 contamination. All pages in this appendix are labeled D-1.

Appendix D, Section 1.1.2: The depth to which the probe will be driven (five feet) is deeper than "standard" soil gas surveys, which typically drive the probe to approximately three feet below grade. A rationale for the stated depth should be given in the text.

Appendix D, Section 1.1.2, bullet 6: If the sample effluent is redirected into the sampling hole, the sampling may be biased by the introduction of the purge air. The effluent should be directed to the atmosphere.

Appendix D, Quality Assurance: The flow rate of the equipment should also be checked daily and noted for every sample collected.

Appendix F: The plan does not contain the contract laboratory's Quality Assurance Project Plan (QAPP), as stated in the generic work plan. This recurring cross-referencing error should be corrected.

TOXIC AND HAZARDOUS WASTE SECTION

The comments summarized in EPA's May 7, 1996 letter regarding the Generic Workplan apply to this SEAD as well, but will not be reiterated. The Generic Workplan should be revised to address all comments in the May 7, 1996 correspondence and resubmitted prior to commencing sampling activities at SEAD 4, SEADs 16 and 17, and SEADs 12, 48 and 63.

The following comments pertain to SEADs 12A and 12B only:

1. Section 3.1.1.1, Page 3-3

The second paragraph here states that the dry waste disposal pit was excavated by the AEC in 1957, yet the preceding paragraph indicates that the pit was presumably in use at this time. Please clarify this discrepancy.

2. Section 3.1.1.2.5, Page 3-24, Table 3-3A

a) The reporting limits listed here for sample TP12A-2-1, semi-volatile organic compounds, are approximately ten times higher than expected. Please clarify this discrepancy indicating if this is due to a required dilution, the dilution factor used, and an explanation as to why all compounds are reported as non-detect at 4500 ppb.

b) Upon comparison of the TAGM values with the attained reporting limits for certain semi-volatile organic compounds as well as metals, it is evident that the TAGM values have been exceeded. As per prior response to EPA comments on the Generic Workplan, alternate analytical methods are being evaluated in conjunction with the contracted laboratory for use on the upcoming RI sampling. These alternatives must be documented in the corresponding Scoping Plan **prior** to approval and initiation of field activities. If the lab proceeds using the methodologies currently proposed in the CDAP, data will be acquired which exceeds ARARs for certain parameters.

3. Section 3.1.1.2.5, Pages 3-35 and 3-36

a) The paragraphs summarizing the semi-volatile organic and metals results that exceeded TAGM values do not include those results where the reporting limit is greater than the TAGM. Please address this omission.

b) In both the soil and sediment samples analyzed during the ESI, chromium was detected above the corresponding regulatory criteria. At present, the Scoping Plan does not discuss the analysis of hexavalent Chromium (Cr(VI)) in addition to the planned analysis for Cr(III). Please provide the justification supporting the omission of sample analysis for Cr(VI) in the affected matrices.

4. Section 3.1.1.2.5, Page 3-53

The summary for the metals results in sediment samples should include a statement on the impact of obtaining rejected results for Lead in these samples.

5. Section 3.1.1.3, Page 3-55

Page 3-55 states that the radionuclide concentrations detected in the groundwater at Area 12B of the ESI samples can be attributed to lab contamination and/or analysis interferences, not site conditions. In order to support these statements, this Scoping Plan should include the conclusions drawn from validation of the QC sample results associated to these surface and subsurface soils. For example, the results obtained from the trip blank, field blank and laboratory blank may be indicative as to the source of the detected contaminants and support the statement that is presented. If these QC samples do not contain the contaminants detected in the groundwater samples, then these results should not be considered extraneous.

If it is demonstrated that the source of the contamination is the analytical laboratory, then the subsequent sampling and analytical program should take the appropriate precautionary measures to ensure that this situation is not repeated. This can become problematic if the contaminant concentrations detected exceed the associated ARARs.

6. Section 3.5, Pages 3-131 thru 3-133

The appropriate terminology used to define the data deliverables package to be produced is the NYSDEC Analytical Services Program Category B deliverables. The NYSDEC ASP is intended to support the Superfund Program and defines two types of deliverables packages: ASP Category A and ASP Category B. In this investigation, use of ASP Category B is warranted. Please replace the text here (as well as in the Generic WP) with the correct NYSDEC terminology.

7. Section 4.2, Page 4-1

This section should reference the corresponding, matrix specific sample collection procedures delineated in the generic Work Plan. Currently this Scoping Plan references it's Appendix D, which in turn, references the generic Work Plan. However, it is recommended that each subsection of this Scoping Plan, ie., subsurface soil, test pits, surface soil, surface water and sediment, and groundwater, reference the specific section in the generic Work Plan where the actual sampling procedures can be found.

8. Section 4.2.7, Page 4-10

Define the field and trip blank mentioned here as the QC samples relevant to the radon detectors. Since equipment decontamination is not performed for a radon detector, a field blank is not needed.

9. Section 4.2.9.2, Page 4-13

Correct the reference to the Field Sampling and Analysis Plan in the second paragraph here to Appendix **D**.

10. Section 4.2.13, Table 4-2

a) This table specifies Method 352.1 for the nitrate/nitrite analyses. This contradicts with the information presented in the generic Work Plan, Table C-2 which lists Method 353.2 for this parameter for **aqueous samples only**. Please correct this inconsistency to agree with the generic Work Plan. Remove reference to this analysis for soil matrices, or provide the method modification which the lab will utilize to accommodate soil samples. If the method is modified, the lab is to include information which demonstrates acceptable performance of their technique.

b) Method 524.2, Revision 4.0, August 1992 is the correct reference for the analysis of VOCs in groundwater. In addition, it should be noted that the compound list for Method 524.2 varies from that contained in the NYSDEC CLP SOW for VOCs. SEDA must decide which compound list is appropriate for this investigation.

In addition, the SOP for validating data acquired through Method 524.2 must be included in the Plan, preferably as an attachment to the Generic WP. In lieu of using Method 524.2 for groundwater VOC sample analysis, the EPA CLP SOW entitled "Superfund Analytical Method for Low Concentration Organics in Water" (most recent revision) and corresponding regional data validation SOP HW-13, Revision 1, 10/92 may be used. This SOP was included in the comment memo for SEAD 4 as Attachment 3. This option presents a more cost effective approach to low concentration VOC analysis since the data validation SOP is provided and would eliminate the need for it's development by the A-E contractor.

c) The number of surface soils listed here is inconsistent with that provided in Section 4.2.9.1 which states the total is 131. Do the numbers in the table include the 0-2 inch sample to be collected from each of the 34 soil borings?

d) Provide the method modifications on Method 150.1 for pH and Method 415.1 for TOC to be used by the lab to accommodate soil samples. Attachment 2 of the comment memo for SEAD 4 contains a Region II method for the analysis of TOC on soil/sediment matrices which may be used in lieu of modifying Method 415.1.

e) Explain the data quality objective for the 12 subsurface soil samples to be analyzed by the "TCLP." This information is not included in Section 3.5 or 3.6.1. In addition, additional information is required since the TCLP is only an **extraction** procedure. In order to obtain sample results, corresponding analysis methods for the TCLP extracts must be provided which include the specific compound list of interest to this project.

11. Appendix D, Soil Gas Sampling

Provide the calibration procedures to be utilized daily in Section 1.1.3 of this Appendix.

BIOLOGICAL TECHNICAL ASSISTANCE GROUP

Soil analysis results are compared to NYSDEC TAGM values which do not address ecological concerns. Soil COCs for ecological receptors should be screened against site reference values, not two times the screening values, as was referenced for soil and sediment metals. Guidelines which are established for surface activities and surface soil concentrations (radionuclides) should also take into account risk to ecological receptors. Further, for ecological purposes, gamma exposure rates should be taken as close to ground surface as possible (as opposed to the 3' referenced on page 4-9). Proposed surface soil samples for SEAD-12 (page 4-11) should undergo a full TCL organic and TAL inorganic analyses to determine what levels of contaminants may be present. Previous surface soil analyses indicated the presence of elevated levels of metals and PAHs. For SEAD-48 (page 4-35) the surface soil samples which will only be undergoing radioanalyses should be noted in Figure 4-5.

On page 3-53 the discussion concerning SVOCs in sediment states that there are no criteria for fluoranthene in sediment. This is incorrect. We recommend that freshwater sediments be screened against the lowest effect levels (LELs) and severe effect levels (SELs) taken from "Guidelines for the Protection and Management of Aquatic Sediment Quality in Ontario" (Persaud, et. al., 1993). This guidance provides screening criteria for fluoranthene. A review of the sediment samples (page 3-55) indicates that SD12A-1 has been impacted by a variety of metals yet, "the SD12A-1 sample location is situated upgradient of the SEAD-12A boundaries and is unlikely to have been affected by the constituents found within the area of SEAD-12A." The likelihood of this area being impacted by neighboring SEADs should be explored. Proposed sediment sampling should indicate that the depth of the samples will be from 0-6".

Sediment data for SEAD-63 are presented in Table 3-19. The sediment screening values are referenced as the 1969 NYDEC Sediment Criteria guidance. This should be revised to the

1994 document. Further, the values for the SVOCs (page 3-87) are not contained in the most recent document. TOC values must be factored into SVOC, pesticide and PAH data screened against the NYDEC Sediment Criteria.

All wetland areas associated with SEAD-48 (page 3-57) and SEAD-63 (page 4-54) should be delineated and identified in site figures. It should also be noted whether there are any wetlands associated with the unnamed creek which flows through the north part of SEAD-12. In order to comply with federal wetland ARARs, the three parameter method should be used to delineate wetlands. Also note that a wetlands assessment and restoration plan will be needed for any wetlands impacted or disturbed by contamination or remedial activities.

In Section 3.4, "Preliminary Identification of Applicable or Relevant And Appropriate Requirements (ARARs)," the Fish and Wildlife Coordination Act (16 USC 661) which requires the protection of fish and wildlife and their habitat, should be included under federal sources of location specific ARARs.

In the "Potential Exposure Pathways and Receptors - Current Uses" section for all three areas, potential receptor population should include aquatic receptors on or near the site. In the section entitled, "Ingestion and Dermal Exposure Due to Surface Water Runoff and Erosion," it should be indicated (for SEAD-12) that aquatic receptors may be currently exposed to contaminated surface water and sediment. This exposure pathway should be evaluated in the ecological risk assessment. Additionally, for all three SEADs, terrestrial and aquatic receptors may also be impacted by sediment, as well as surface water. Under "Uptake to Site Flora," for all three SEADs, it should be noted that site flora may uptake other soil contaminants in addition to radionuclides, such as inorganics.

A facsimile of this letter will be sent to you today. Additional general and specific comments which apply to SEADs 12, 48 and 63 will be provided within a few weeks. If you have any questions, please call me at (212) 637-4322.

Sincerely yours,

Carla M. Struble, P.E.
Federal Facilities Section

cc: K. Gupta, NYSDEC
R. Battaglia, USACOE-NY
K. Healy, USACOE-HD
M. Duchesneau, Parsons ES

New York State Department of Environmental Conservation
50 Wolf Road, Albany, New York 12233

June 20, 1996

Michael D. Zagata
Commissioner

Tom / Janet
CF Jo Anne

Mr. Stephen M. Absolom
Chief, Engineering and Environmental Division
Seneca Army Depot Activity (SEDA)
5786 State Route 96
Romulus, NY 14541-50001

Dear Mr. Absolom:

Re: Draft Scoping Plan for the Radioactive Waste Sites
SEAD-12, 48 and 63

The New York State Department of Environmental Conservation (NYSDEC) and the New York State Department of Health (NYSDOH) have reviewed the above document and provide the following comments:

General Comments:

1. In order for us to assure that we have adequately verified the site status prior to release, we request access to archival documentation covering present and past radiological uses of the site. We understand that much of this information is currently classified. We are not requesting access to detailed information regarding systems that may still be in use, but we do need to verify what isotopes were on site, when and where they were stored or used and any actions or incidents that have the potential to impact public health or the environment.

   To this end, we would like to utilize staff members in our Radiation Section with Department of Energy (DOE) Q-Clearance. One of these people is a former military member who had a Department of Defense (DOD) top secret clearance. We need to know from the Army whether these clearances are sufficient to allow us access to the needed files, or if they are insufficient, what else could be done to gain access.

2. As one result of the conference call of 2/8/96 with Parsons, the Corps of Engineers, Seneca Army Depot, and the NYS DOH, we understand that there is interest in arranging a meeting at SEDA between the State, Parsons, and the Corps of Engineers. This would help orient State personnel to the site and allow for a discussion of land use scenarios, pathways, and application of the RESRAD computer code. We are interested in discussing with the Army and Parsons the possibility of their updating from RESRAD version 5.19 to version 5.61.

3. We agree with the types and location of the proposed sampling, and believe that adequate consideration has been given to the likely exposure pathways and their relative importance. In some areas we have determined that the number of samples and analysis proposed are excessive for the purpose of site characterization. If the long-range plan is to use the data generated for the RI/FS as the primary data for the final release survey, then this may justify some of the apparent

excess of samples. Parsons should explain why the data needs require the number of proposed samples. In addition, why is chemical analysis proposed where historical information and site investigation results do not indicate chemical contamination. It appears that an adequate job can be accomplished using a more modest sampling and analytical program.

4. Parsons commits, in several locations in the draft, to following the US Nuclear Regulatory Commission's (NRC) NUREG-5849, "Manual for Conducting Radiological Surveys in Support of License Termination," during the RI/FS. The RI/FS is essentially a characterization survey, while NUREG-5849 is designed to prove that a site can be released for unrestricted use. If the intent is to utilize the data generated from the RI/FS as part of the final release survey, then use of NUREG-5849 is appropriate. It should save significant time and money during the release process. Data requirements need to be established based on clearly stated goals in order to ensure a consistent approach and make the best use of time and money available.

   If final release is the purpose, and NUREG-5849 is not just being used as a general guide for a characterization survey, then a review of the NUREG is in order. The Draft Project Scoping Plan differs from the recommendations in NUREG-5849 in several areas. For example:

   a. Draft Section 4.2.3 refers to the first four feet of wall as the "lower wall" for survey purposes. NUREG-5849, Section 4.2.2, describes the first two meters as meeting this purpose.

   b. Draft section 4.2.3 also specifies a survey speed of 1.5 feet per second for Beta/Gamma instruments. This appears to refer to a GM or Gas Flow Proportional counter for surface contamination. NUREG-5849, Sec. 6.4.2, specifies that it should not exceed 1 detector width per second.

   c. No minimum detector-to-surface distance is specified. NUREG-5849 and most other published decommissioning guidance specify minimum distances based upon instrument and radiation type.

   This need for review of NUREG-5849 also applies to sample collection and gamma dose rates. The Draft Project Scoping Document does not conform to NUREG-5849 in those areas, either.

5. We agree with the proposed general exposure pathways and the conclusion that consumption of deer flesh from animals on the property is likely to be the most significant current exposure pathway for local residents. We also agree with the selection of the residential scenarios as the most restrictive plausible future use scenario. We would like to discuss the scenario and pathways with the Army in more detail.

6. A survey of the ground around an affected building should not be limited to a 5-foot radius below each window. The entire perimeter of a building should be surveyed, out to at least one meter. Special attention should be paid to all wall penetrations (windows and doors) and roof downspouts.

7. It is highly desirable to have some flexibility regarding the number and location of samples when performing a characterization of a site for the presence of hazardous materials/waste. As a means of building in some flexibility to the project, we propose the following:

   a. A radiation survey should be performed for the full length of each two-foot split spoon sample collected during the boring operations. The results should be recorded using a detailed log of meter readings.

b. All split spoon samples should be archived until the extent of additional analysis needs is determined. If this is not possible, then samples should be taken from every segment where the survey meter readings are more than 50% above readings without a sample present. Those samples should be archived. Samples for archiving should also be collected from the segments immediately above and below the potentially contaminated segments.

c. After completion of the initial sample analysis for all three SEADs, the data generated should be used with the field survey records to choose up to a maximum of 30 additional samples from those archived. These would be analyzed to more precisely determine the volume of subsurface contamination.

8. A similar flexibility should be built into the test pit protocol. Currently only two subsurface samples can be collected per test pit. If the visual and field screening process determines that two discrete samples are not sufficient to characterize the contamination in a pit, additional samples should be collected and archived in order to cover the total depth of the affected region. A maximum of 30 of these samples would be analyzed to provide a better characterization of subsurface contamination.

The analysis of archived samples would not increase the number of samples above the current proposed total. In actuality, the total would be reduced due to the reduction in what we consider to be an excessive number of fixed sample locations in the current plan proposal.

SPECIFIC COMMENTS

1. **Table of Contents, page V:** There appears to be a typographical error in the page numbers given for sections 4.3 through 4.8.

2. **Section 1.3, page 1-5**: The second paragraph is related to SEAD-63 and therefore should be moved to section 1.5 Back ground, SEAD-63.

3. **Section 1.5, page 1-7:** The last sentence in the first paragraph on page 1-7 reads, "The 'operations' that were performed at the operations pad are unknown." Is this due to security reasons or lack of documentation? It would be very helpful to know what the operations were.

4. **Section 3.1.1.1, page 3-3:** Were any samples collected during the July 1986 attempt to remove the 5,000 gallon underground storage tank (UST) behind building 804? If so, what were the results?

The second paragraph on page 3-3 needs to be expanded to better explain the history of the dry waste disposal pit. It should explain what was done with the material removed from the dry waste pit in 1957, 1965, and 1986, whether waste was found in the pit during the 1957 excavation, and if so, what type of waste it was. If there are any records of analyses performed on the waste, the results should be presented. Given the lack of any waste in the pit, please explain why it was excavated in 1965 and again in 1986.

5. **Table 3-24 - Standard Assumptions for Calculation of Chemical Intake:** Both the inhalation pathway and the ingestion of water pathway rows in this table lack an inhalation rate and an ingestion rate, respectively, for a child in the noncarcinogenic risk scenarios. The ingestion of soil pathway row incorrectly cites an "inhalation rate" of 200 mg/day for a child. Please change this to an "ingestion rate". Furthermore, no soil ingestion rate for an adult is listed in this row

under the noncarcinogenic scenario. This gives the impression that the consultant does not intend to evaluate this exposure scenario. Please add the adult intake assumptions to this section.

6. **Section 3.1.1.2.5, page 3-36:** The paragraph entitled, "Radioactivity" needs to be revised. The third sentence refers to, "the New York State TAGM of 90 mrem/year." This implies that our dose guideline is 90 mrem/yr. The dose guideline in our TAGM-4003 is 10 mrem/yr, in addition to the dose from background radiation. If the 90 mrem/yr is a total background dose of 80 mrem/yr plus our 10 mrem/yr above background guideline, this should be made clear. Normally a representative background is established, and this value is subtracted from affected area values prior to reporting dose contributions above background.

7. **Section 3.1.1.2, pages 3-45 through 3-48:** On pages 3-45 through 3-48, the results of radioanalysis of groundwater samples are presented. The groundwater samples at SEAD-12B were subject to a full spectral analysis, gross alpha/beta analysis, and tritium analysis. Those from SEAD-12A were analyzed only for gross alpha/beta and K-40. If there is a reason why 12A did not receive full spectral and H-3 analyses, this should be explained in the plan. Otherwise, we would expect all SEAD-12 samples to receive full analysis.

8. **Sec. 3.1.1.3, page 3-55:** We agree that there is some indication of a possible radiological release to the groundwater at pit A. However, since only gross alpha activity is currently indicated, it is prudent to perform gamma and alpha spec analyses on these samples, or new samples should be collected and have these analyses performed. This data would help to determine the isotopes contributing to this gross activity. They may help to better define the appropriate steps to follow in the RI/FS.

9. **Section 3.2.1.2 - Potential Exposure Pathways and Receptors, Current Uses:** This section states there are three primary receptor populations that could be affected by potential releases of contaminants from SEAD-12, only two are listed. Please correct this misstatement.

10. **Section 3.2.3.4, page 3-123:** This section is apparently mislabeled as 3.2.4.

    This section indicates that data collected will be considered to be normally distributed and treated as such in statistical considerations of the data. As a rule, environmental data is not normally distributed. This has been recognized by many authorities and is being incorporated into the statistical treatment in the forthcoming Multiagency Manual or MARSIM Document. Draft NUREG-1505 "A Nonparametric Statistical Methodology for Design and Analysis of Final Status Decommissioning Surveys" by Gogolak, Huffert and Powers is being used in the creation of the MARSIM document and is available for use. Another good reference for this application is Gilbert, R.O. and Simpson, J.C.,Statistical Methods for Evaluating the Attainment of Cleanup Standards, Volume 3: Reference Based Standards for Soils and Soil Media, PNL-7409 (Revision 1), Richland, Washington, December 1992, published for the EPA . We would be happy to discuss statistical approaches to data treatment with the Army.

11. **Section 3.4, page 3-128:** The reference for our TAGM "Technical and Operational Guidance Series, (Memorandum 4003)" should read, "Technical Administrative Guidance Memorandum: 4003, Cleanup Guideline for Soils Contaminated with Radioactive Materials (TAGM 4003)."

It is important to note that exposures from radon (Rn) are not covered under TAGM-4003.

12. **Section 3.5, page 3-132:** In the last paragraph on this page, it is stated that soils obtained from the split-spoon sampler will be screened for the presence of volatile organics. In addition, they should also be routinely screened with a radiation survey instrument.

13. **Section 3.6.1, page 3-135:** Under "Buildings and Structures Data," add "determination of radionuclide concentrations in building ventilation systems." If ventilation surveys or historical evidence indicate the potential for airborne releases, the roof of the suspect building also needs to be surveyed.

14. **Section 3.6.2, pages 3-136 to 3-137:** This section describes the data needs for SEAD-48. Extensive radiological survey work has been performed at SEAD-48 over a number of years, including a site decontamination. The June 1993 NYS follow-up survey of the bunkers and surrounding area did show a small number of areas in need of further radiological decontamination that had not been previously identified. However, the rest of the area was considered to be acceptable for release. While there is a need to clean up these three areas and verify the decontamination of the rest of the site, it does not seem reasonable to require an extensive, final-release radiological survey of the entire site as is proposed for SEAD-48.

    However, further work does appear to be needed to verify the lack of any residual subsurface contamination. In addition, the previously identified area of ground surface contamination needs to be delineated, and a verification survey should be performed on the rest of the exterior area. Biased surveys should concentrate on the soils in front of the bunkers, in floor drain outfalls, and in surface drainage pathways. After removal of the contamination from the affected areas, a final release survey should then be performed in those areas.

    The Corps should consult with the New York State Department of Labor regarding surveys of the interiors of buildings that are being left intact on the site.

    In addition, it is our understanding that the only concern at SEAD-48 is the radiation from residual pitchblende ore, stored in 1940s. If there are other concerns which required chemical analysis then that should be stated, otherwise Parsons should explain why all samples are proposed for chemical analysis. To eliminate uncertainties with the historical data, a few samples should undergo chemical analysis, but to analyze all samples as proposed appears to be excessive.

15. **Section 4.2.2 pg 4-5:** The next to last sentence reads, "Based upon the soil gas survey results, 2 test pits, 2 soil borings and four monitoring wells will be spatially located to better define the extent of ^{226}Ra in the site's soils." This should be the minimum number of test pits, borings, and wells. At this time, there is no way to ensure that the specified number of locations will be adequate. While a soil gas survey for Rn is an interesting technique to delineate buried radium, there are factors that could provide false negative results. Given the fact that some of the pits excavated showed that the disposal pits extend below the water table, Rn from deposited radium may never make it out of the groundwater.

16. **Section 4.2.5, page 4-9 and Sec 4.2.9.1 page 4-11:** Archival information may provide enough information to determine that the rest of SEAD-12 (other than 12A and 12B) has little potential for impact, but without this information, the limited number of gamma dose rate measurements and surface soil samples (30) proposed for that portion of the site is inadequate.

17. **Section 4.2.8, page 4-11:** The second sentence on this page states that three samples/smears will be taken from the interior of the 5,000 UST north of Buildings 804 and 805. This sentence should start with, "A minimum of". Three samples may not be sufficient to characterize the interior of the UST, especially given the fact that it may have been partially filled with soil during the previous failed attempt to remove it. Breaching the top of the tank with a drill rig to collect the samples may be inadequate. If the samples collected from the bore hole cannot be determined to be representative of the contents, the tank top may need to be excavated and the previous hole exposed, to better establish the interior state of the tank.

18. **Section 4.2.9.1, pages 4-11 to 4-12:** Beginning at the bottom of page 4-11 it is written, "If possible one of the surface soil samples collected as part of this grid sampling will be collected at each downspout drain location around Buildings 804, 805, and 819." The sentence should be revised to read, "Biased surface soil samples will be collected in conjunction with this grid sampling at each downspout drain location around Buildings 804, 805, and 819." Downspouts are important biased sample locations that should not be passed up solely because they do not fall at one of the grid intersections.

19. **Section 4.2.9.1 page 4-11:** Eight surface soil samples are proposed from background locations to establish a surface soil background radionuclide concentration data base, but the Table 4-2 indicate that these samples will also be tested for VOCs, Semi-VOCs, pesticides/PCBs and metals. We do not see a need for VOCs, Semi-VOCs and pesticides/PCBs analysis from upgradient locations.

20. **Section 4.2.9.2, page 4-12:** Soils brought up during boring should be checked with a radiation survey meter, as is proposed in section 4.2.9.3 for test pits.

21. **Sections 4.2.9.3 and 4.4.7.3 - Test Pitting Programs:** These sections state that soil sample results from the test pits at SEAD-12 and SEAD-48 will be excluded from the risk assessment. It is inappropriate to exclude the results of the test pit soil samples from the risk assessment for these, or any, sites. Because it is reasonable to anticipate excavation and exposure to subsurface soils under a future residential use scenario, all data gathered regarding soil contamination is relevant to the risk assessment. It would be improper to exclude these test pit soil sample results from the risk assessment because the consultant expects to encounter high levels of contamination. The sample selection process it self is biased under the RI/FS process. We try to take samples, where the possibility of finding contamination is greater. If we apply the theory that biased samples should not be used for risk assessment, then all the samples from the suspected disposal areas should be excluded.

    The introduction of this document also state, "the purpose of the RI/FS is to determine the nature and extent of environmental impacts, and to evaluate and select appropriate remedial actions". By selectively excluding sampling results, the consultant may be hindering the attainment of the stated goals of this investigation.

    In addition, the New York State Department of Health (NYSDOH) encourages the use of a more conservative approach so that a maximally exposed individual is evaluated. Consistent with this, the NYSDOH recommends that maximum detected values of each contaminant in each media of concern be used to calculate risk.

22. **Section 4.2.13, page 4-21:**

    a. We do not see the purpose of performing radon emanation analysis on **all** samples collected from the SEAD-12. Parsons should reconsider the need for radon emanation analysis of samples such as swipes, surface soils, waters, and sediments. The likely purpose is to

differentiate between uranium-235 and radium-226, given their very similar gamma energies. However, soil samples can be accurately analyzed for radium using gamma spec, if time is allowed for daughter products to build in after the sample is prepared for gamma spectrum analysis. Parsons needs to rethink this proposed analysis, and if they believe it is still necessary, then a justification should be included in the proposal.

b. Since historical information is classified and the scope of SEAD-12 has been increased to include the remaining open area of the weapon storage area, a full target compound list (TCL) analysis for samples from areas where no information is available is understandable. But, the proposed sampling plan requires all samples to undergo full TCL analysis, including samples from SEAD 12-A and SEAD 12-B, for which site investigation results indicate some concern for few metals and radionuclides only. We therefore do not see a need for all samples to undergo full TCL analysis.

23. **Section 4.3, SEAD-48, pages 4-24 through 4-47:**

a. Previous comment on section 3.6.2 regarding SEAD-48 also apply to this section.

b. The use of NUREG/CR-5849 to classify igloos E0804 through E0811 as affected is questionable. This work qualifies as a characterization survey and not a final release survey. Regulatory bodies routinely responsible for decommissioning of nuclear facilities would not require NUREG/CR-5849 to be used for the RI/FS, since the guidance applies to final release surveys (Refer to the NRC's "Draft Branch Technical Position on Site Characterization for Decommissioning," Section 4.2., paragraph two, which states " In general, site characterization will not require the level of detail prescribed in the NUREG/CR-5849 for the final and confirmatory survey").

Furthermore, given the decontamination work, release surveys, and verification surveys already performed for this SEAD, it does not appear to be necessary to do another full characterization survey of the area.

Instead of following NUREG/CR-5849, it may be more appropriate to proceed as follows:

I. Remediate the areas determined to contain residual activity during the NYSDEC/DOH verification survey.

ii. Perform a final release survey of these remediated areas per NUREG/CR-5849.

iii. Perform a verification survey (up to 10% of surfaces), rather than a 100% coverage final release type survey, of the interior of the remaining bunkers and of the loading areas in front of them.

iv. Perform a verification survey of the grounds around the bunkers.

v. Unless they have already been investigated as part of a previous survey, roadway shoulders should be surveyed near the igloos and road intersections to look for ore that may have been deposited during transport.

vi. Sediment and surface water samples should be collected as indicators of possible past runoff problems. The pattern of sampling proposed is appropriate, but again it appears that excessive sampling is proposed. If Parsons has reason to suspect activity in these waterways that warrants the larger number of samples, that information should be included in the plan.

vii. The previous studies have not fully addressed the potential for subsurface and groundwater contamination. Therefore, borings and monitoring wells are needed. However, the number proposed is excessive for the history of contamination at the site and the potential impact from it. A small number of biased soil borings should be performed at igloos where past soil contamination has occurred. An up-gradient and a couple of down-gradient borings are also needed. Each of these borings should then be developed as a monitoring well.

c. Verification at the rail yard is worth including.

24. **Section 4.4 Field Investigation at SEAD-63:**

a. There is only a possible impact from Ra-226 on soils in this area, not a definite impact. The range of concentrations reported is within the range of background values for the State.

b. Given the elevated Gross Alpha activity in groundwater at MW63-3, we agree that isotopic analysis of groundwater is warranted. However, this should be done now in order to determine if it is necessary to install the comparatively large number of wells proposed for this SEAD. Parsons should justify the need for these proposed wells.

c. Given the lack of evidence for significant radiological contamination in this area to date, there is little justification for requiring 48 surface soil samples as noted in table 4-8. We believe that characterization purposes can be served by the analysis of a smaller number of samples, concentrated in the area of known disposal pits, the former operations pad, and former vehicle access points.

d. For the same reasons noted above, we believe that the proposed number of surface water/sediment sample analyses may be unnecessarily large. The local depression and adjacent roadway drainage ditches should be sampled, but fewer samples would suffice.

e. Test pits in uninvestigated geophysical anomalies are needed and should remain in the proposal.

f. Soil borings could be limited to SB63-1, SB63-2 and SB63-3, and the smaller number of additional monitoring wells recommended above.

25. **Section 4.4.2, page 4-49:** What is the distinction made here between a beta instrument and a beta-gamma instrument? The Draft Project Scoping Plan correctly identifies a pancake GM as a beta-gamma instrument but then specifies a survey rate of 1.5 feet per second for it. This is an extremely fast rate. The rate of one detector width per second, which the plan specifies for a beta instrument, is correct for a pancake GM.

26. **Section 4.4.11 Analytical Program:** The site investigation results indicate that concerns at SEAD-63 are few metals and radionuclides. Please explain why all samples are proposed for full TCL analysis.

Comments from the NYSDOH's Bureau of Environmental Radiation Protection:

1. **Page 3-45:** The Uranium-235 concentrations found in ground water (44pCi/l) would appear to be extremely high from well MW12B-1. Since no U-238/234 concentrations are shown, it could be assumed that highly enriched U-235 somehow entered the ground water. The report also implies on page 3-44,3.1.1.3, that this result may be due to laboratory error, yet no follow up analysis was conducted.

2. **Appendix A; Page 1 of 2, SEAD-12A, Test Pit 12A-3:** This diagram shows what may have been a thermal battery. Since many thermal batteries contain high concentrations of radionuclides, the type of unit should be identified and if radioactive material was incorporated in the battery, the radioisotope should be identified and addressed in the sampling plan.

3. **Page Table 3-6B:** The Tritium (HTO) results shown for these samples are questionable. Typical Minimum Detection Levels (MDL) for HTO in water are approximately 100-150 pCi/l. As reported, these samples range from 0.06 to 0.27 pCi/l, which is considerably lower than the background levels of 200 pCi/l found in N.Y.S.

4. **Page 4-3:** This states that alpha surveys will only be performed in buildings and on pavement. Since some of the radioisotopes potentially involved emit relatively low energy gammas, the presence of an alpha emitter may be determined by using appropriate instrumentation. While alpha survey meters cannot be effectively used on soils, grass or rough surfaces, detectors such as FIDLER (Field Instrument to Detect Low Energy Gammas) or other Sodium Iodide (NaI) crystal detectors with an appropriate single channel analyzer can be used to survey these areas. These types of instruments are used extensively by the military as well as federal and state agencies to search for special nuclear materials as well as isotopes of Uranium, Plutonium, Americium and other low energy gamma emitters.

   Although not directly confirmed, it is assumed that fissionable material was stored and/or maintained in the NWS (Nuclear Weapons Storage) area. To be sure that contamination, primarily alpha emitters, has not been covered or limited to one decay series, use of the FIDLER or other NaI detector to locate areas of contamination would be essential.

5. **Section 4:** In the description of the Task Plan for RI in Section 4, it is stated that the investigation will follow the procedures outlined in the USNRC's "Manual for Conducting Radiological Surveys in Support of License Termination" (NUREG/CR-5849). The first decision to be made is what type of survey is to be conducted. From the description in Section 4, it would appear that a final status survey is being proposed and that scoping and characterization surveys have been completed. It is our assumption, however, that this is primarily a characterization survey to precisely define the extent and magnitude of the contamination.

   Guideline values for soil contamination will need to be determined in conjuction with the appropriate state agencies based on future use scenarios and dose limits prior to initiation of the survey. Likewise, comparison of the agreed upon guidelines for fixed and removable contamination with the detection sensitivity or Minimal Detectable Activity (MDA) of the proposed survey instruments must be predetermined to insure that systematic measurement are performed at appropriate intervals, i.e. 1.0 meter or 2.0 meters.

According to Section 4.2.3 and 4.2.4, a 100% scan of affected areas in the buildings will be performed with direct measurements taken at 10 foot intervals. Unless the scanning technique can be demonstrated to have a detection sensitivity of <25% of the guideline values with the instruments proposed, a direct measurement would be required in each 1.0 meter grid interval.

Since alpha contamination may have been covered or imbedded in floors or walls and only the G.M. meters are proposed to detect Beta/Gamma associated emissions, the typical detection sensitivities (Table 5-5, NUREG/CR-5849) of 2,000 to 3,000 dpm/100 cm with a count rate instrument and 500 to 1,000 dpm/100 cm for a digital scaler (static count), would not be sufficient to meet the <25% guideline value figure. The NUREG document also states on page 4.13 that .... "floors and wall surfaces be scanned for all radiations which may be emitted....". Since some of the potential contaminants emit low energy gamma, NaI probes should be used for this survey.

Assuming that the <25% guideline value figure will not be met would also require that swipe samples be taken in each 1.0 meter grid location.

If you have any questions, please call me at (518) 457-3976.

Sincerely,

Kamal Gupta

Kamal Gupta
Bureau of Eastern Remedial Action
Division of Hazardous Waste Remediation

cc: C. Struble, USEPA-Region II
R. Battaglia, USACOE-NY
K. Healy, USACOE-HD
M. Duchesneau, Parsons E.G.

RADIOLOGICAL INVESTIGATIONS
MEETING AGENDA

August 22, 1996
Seneca Army Depot Activity, NY

8:30 - 8:45	Introduction / Board Bus
9:00 - 10:30	Site History / Site Tour
10:30- 10:45	Return to NCO Club
10:45 - 11:00	Purpose of Investigations
11:00 - 12:00	Applicable Regulations
12:00 - 12:45	Lunch
12:45 - 1:45	Discussion Affected Areas vs. Unaffected Areas Interior and Exterior Data Collection Background Levels
1:45 - 2:00	Conclusions

ATTENDEE LIST FOR RADIOLOGICAL INVESTIGATIONS MEETING

NAME	AGENCY
Stephen M. Absolom	Seneca Army Depot Activity
Thomas Enroth	Seneca Army Depot Activity
Mike Lewis	Seneca Army Depot Activity
Thomas Stincic	Seneca Army Depot Activity
Thomas Reynolds	Seneca Army Depot Activity
Keith Hoddinott	U.S. Army Center for Health Promotion and Preventive Medicine
Randall Battaglia	NYD Corps of Engineers
Dorothy Richards	HND Corps of Engineers
Luke McCormick	MRD Corps of Engineers
Carla Struble	U.S. Environmental Protection Agency
Bruce Nelson	Malcolm Pirnie
Adela Salame'Alfie	NYS Dept. of Health
Bob Alibozek	NYS Dept. of Health
Gary Baker	NYS Dept. of Health
Dan Geraghty	NYS Dept. of Health
Kamal Gupta	NYS Dept. of Env. Conservation
John Kadlecek	NYS Dept. of Env. Conservation
Tim Rice	NYS Dept. of Env. Conservation
Andrew Schwartz	Parsons Engineering Science, Inc.
Eliza Schantz	Parsons Engineering Science, Inc

SEAD 12 #63
RI/FS

Bldg. 803

U235, U238, Pu239, H3, Ra226, Co60, Co57

Bldg. 804

U235, U238, Pu239, H3, Ra226 (sealed & unsealed sources)
Solvents
Lead-based paints
Chromate-based paints

Bldg. 806

Lead / heavy metals
Acid
Solvents

Bldg.810

Lead/ heavy metals
Solvents
U238, H3, Ra226, Co60 (sealed & unsealed sources)
Lead-based paints
Chromate-based paints

Bldg. 812

Ra226, Pm145, H3 (sealed sources)
Solvents
POLs

Bldg. 813

Lead-based paints
Chromate-based paints
Solvents

Bldg. 814

Solvents
POLs
Lead-based paints
Chromate-based paints
Acids
Heavy metals

Bldg. 815 & 816

U235, U238, Pu239, H3, Co60, Pm145, Ra226 (sealed & unsealed sources)
Solvents
Heavy metals
Acid
Asbestos
Lead-based paints
Chromate-based paints

Bldg. 817

Lead-based paints
Chromate-based paints

Bldg. 819

Di-isocynates (foam project)
Heavy metals
Acid
Lead-based paints
Chromate-based paints
Solvents
Asbestos
Ra226, U235, U238, Co60, Pu239, H3 (sealed & unsealed sources)

Miscellaneous

Fence line--herbicide

The following is a listing of known solvents, activators, adhesives,primers,paints, greases, etc. that were used in Q-area buildings: 213, 215/216 & 219, 317

Acetone, technical, O-A-51F
Activator MIL-S-22473, Grade T and N
Adhesive, P/N 815809-00W
Adhesive MMM-A-121
Adhesive, Contact MIL-A-21366
Adhesive (Eastman 910) MIL-A-46050,Type 1, Class 2
Adhesive, MMM-A-130, Type 1
Adhesive, MMM-A-181, Type I, Grade A
Adhesive, MMM-A-250, Type II
Adhesive, MMM-A-1617, Type II
Adhesive, MMM-A-1617, Type III
Adhesive, P/N 879451-00W
Adhesive, P/N 871440-00W
Adhesive, Epoxy Resin, P/N 329756-00W
Adhesive, Epoxy Resin, P/N 334412-00
Adhesive, Silicone RTV 732, P/N 878266-00W
Adhesive, Silicone RTV 162, P/N 880389-00
Adhesive, Silicone,DC-281 w/catalyst P/N 876415-00
Alcohol, Denatured
Alcohol, Isopropyl, Technical
Antiseize Compound, DOD-L-25681
Antiseize Compound, MIL-T-22361
Calcium Sulphate, Technical Grade C138
Chromium Trioxide, Technical O-C-303
Coating Compound, MIL-C-81706, Class 1A, Form II or III, Method B
Coating Compound, Bituminous, Emulsion Type, P/N 875754-00W
Coating Compound, Epoxy Resin, P/N 837994-0W
Coating Compound, Fluorescent, MIL-P-21600
Coating Compound, Metal Pretreatment, DOD-P-15328
Coating Compound, Polyurethane, P/N 872243-00W
Coating Compound, Polyurethane, P/N 877551-00W
Coating Compound, Polyurethane, P/N 872242-00W
Coating Compound, Polyurethane, MIL-C-83286
Coating Kit, Epoxy-Polyamide, MIL-C-22750, Type I
Coating Kit, P/N 870215-00W
Compound, Silicone, RTV 3145
Corrosion Preventive, Solvent Cutback, MIL-C-81309, Grade I
Corrosion Preventive, Water-displacing,MIL-C-81309,Type II, Class2
Dye, Layout P/N 871173-00
Enamel Lusterless TT-E-00488
Enamel MIL-E-16663
Enamel, Gloss TT-E-489, Class A

Enamel, Semigloss, MIL-E-15090, Type II, Class 2
Enamel, Lusterless, TT-E-515
Enamel, Semigloss, TT-E-529, Class A
Enamel, TT-E-485, Type II
Filler, Dent, Metal MIL-F-52352
Filler, Plastic, TTT-F-340
Grease, Aircraft, MIL-G-23827
Grease, Fluorinated, P/N 329390-00W
Grease, Ground Glass, P/N 831476-00
Grease, Ground Glass, P/N 877806-00
Grease, Industrial, GP, DOD-G-24508
Grease, Molybdenum Disulfide, MIL-G-21164
Grease, Polyglycol, P/N 871603-00W
Grease, MIL-G-4343
Hydraulic Fluid, MIL-H-5606
Ink, Stencil, A-A-208, Type I, II, and III
Insulating Compound, Electrical, MIL-I-3660
Insulating Compound, Electrical, MIL-E-22118
Lacquer, A-A-565A
Lacquer, TT-L-32
Lacquer, TT-L-20
Lacquer, TT-L-58
Lubricant, Dry Film, MIL-L-23398, Type I
Lubricant, Solid Film, P/N 875942-00W
Lubricating Oil, MIL-L-15019
Lubricating Oil, GP, MIL-L-3150
Methanol, ACS, O-M-232, Grade A
Methyl Ethyl Ketone, Technical, TT-M-261
Methyl Isobutyl Ketone, ASTM-D1153
Molybdenum Disulfide, Technical, P/N 871432-00W
Naptha, Aliphatic, TT-N-95, type II
Oil, Duo-Seal, MIL-L-83767
Paint, Stencil, A-A-1558, Type I
Pigment, Aluminum, TT-P-320, Type II, Class A
Primer Coating, Epoxy-Polyamide, MIL-P-23377, Type I
Primer Coating, TT-P-1757
Primer Coating, TT-P-636
Primer Coating, MIL-P-15930
Putty (zinc chromate) MIL-P-8116
Remover, Paint TT-R-251, Type III, Class A
Sealant, Base Compound, RTV 630A w/catalyst RTV 630B
Sealing Compound, MIL-S-8802, Classes A-2, B-2, B-1/2
Sealing Compound, MIL-S-22473, Grades A,B,C,E,H,CV, CVV, CW,EV,HV
Sealing Compound, MIL-S-46163, Type II, Grade M
Sealing Compound, MIL-S-46163, Type I, Grade A

Silicone Fluid, Dimethyl Polysiloxane, VV-D-1071
Solvent, Dry Cleaning, A-A-711
Tetrahydrofuran, Technical Grade, 9450
Thinner, Aliphatic, MIL-T-81772
Thinner, Dope and Lacquer, A-A-857
Thinner, Paint, Mineral Spirits, TT-T-291, Type I
Thinner, Epoxy Coating, P/N 679934-00W
Thinner, Synthetic Enamel, TT-E-306, Type 2
Toluene, Technical, TT-T-548
Trichloroethane, Technical, O-T-620
Trichloroethylene, Technical, O-T-634, Type I
Tetrachloroethylene, O-T-236
Trichlorotrifluoroethane, MIL-C-81302, Type I and Type II
Varnish, Insulating, MIL-I-24092C, Grade TE, Class 155
Varnish, TT-V-119
Xylene, Technical, ASTM-D846

NSNs are available for the majority of the above listed items in TM 9-6850-251-A

Radiological Investigation Information Sheet
at Seneca Army Depot Activity
August 22, 1996

The intent of this information sheet is to identify recent developments regarding the status of the radiological sites at the Seneca Army Depot Activity (SEDA). There are three (3) radiological sites : SEAD-12, the radiological burial disposal pits, SEAD-48, the pitchblende ore storage igloos, and SEAD-63, the miscellaneous component burial site. These three sites, SEADs 12, 48, and 63, were combined as an operable unit (OU) in order to consolidate the investigative efforts by preparing one project scoping plan that will cover all radiological issues. Preparing site specific project scoping plans, with references made to the site-wide generic workplan, was determined as the most effective way of expediting the process of workplan review. The generic workplan contains information that applies site-wide. Project scoping plans are streamlined workplans that focus only on site specific issues. Initially, Parsons ES prepared pre-draft scoping plans for each site. Pre-draft scoping plans are intended for Army review only. The pre-draft scoping plan for SEAD-12 was submitted on August 11,1995. The pre-draft scoping plan for SEAD-48 was submitted on August 12, 1995 and the pre-draft scoping plan for SEAD-63 was submitted on September 9, 1995. Following receipt and incorporation of all Army comments, Parsons ES combined these pre-draft scoping plans into a single radiological OU draft document which was submitted to EPA and NYSDEC on December 19, 1995. This OU document is referred to as the SEAD 12, 48, and 63 Project Scoping Plan. Comments from EPA, dated July 2, 1996, were received on July 9, 1996. Comments from NYSDEC, dated June 20, 1996, were received on July 1, 1996.

Upon review of the EPA and NYSDEC comments, it is apparent that changes to the draft scoping plan will be required. The most significant comments pertaining to radiological issues were received from NYSDEC. The intent of this information sheet is to identify these issues and begin the process of obtaining consensus among the parties involved to resolve regulatory comments.

In addition, during our recent Bottom Up Review (BUR) meeting at SEDA on July 31 and August 1, 1996, the Army released additional information pertaining to SEAD-12, including the types of radioactive isotopes that were associated with specific buildings in the special weapons area. Previously, none of this information was available. However, with SEDA being closed, this new information has been provided and will need to be incorporated into the revised scoping plan for SEAD-12. This disclosure of the types of materials that were used in the various buildings within the high security area will result in reclassifying as Affected several of the buildings that had previously been classified as Unaffected.

Summarized below are the premises that were used by Parsons ES in writing the project scoping plan. Following these summaries, three alternatives are discussed which address the options that can be taken to respond to the comments on that plan.

The SEAD 12, 48, and 63 project scoping plan was written to propose remedial investigations that would meet two objectives:

1. Collect characterization data for areas where releases are currently impacting site media. This data would be used to characterize the nature and extent of these impacts, as well as provide sufficient data to perform a baseline risk assessment for those areas.
2. Collect "final release" survey data, following NUREG 5849 guidance, in areas that were classified as Affected Areas and Unaffected Areas. This data would be used to demonstrate that these areas could

be released for unrestricted use following the guidance and guidelines that the NRC uses to terminate NRC licenses.

The design of the site characterization / baseline risk assessment portions of the project scoping plan follow, and adhere to, normal CERCLA guidance for conducting remedial investigations. The design of the Affected/Unaffected rad area surveys follows the guidance in NUREG 5849 to identify the types of surveys that should be conducted. However, following advise from within the Army, SEDA proposed a sampling scheme such that the recommended quantity of data specified in NUREG 5849 would be reduced. In addition, Army Material Command (AMC) guidance on performing radiological surveys was issued after the SEAD 12, 48, and 63 project scoping plan was prepared. The AMC guidance was written to address radiological survey requirements at Army sites where sealed sources were maintained and/or stored. Though the AMC guidance was not used in preparing the SEAD 12, 48, and 63 project scoping plan, the level of effort detailed in the scoping plan prepared by Parsons ES is essentially the same as detailed in the AMC guidance. The two differ slightly in the details of how to perform the surveys.

It should be noted that the scope of work proposed in the SEAD-12, 48, and 63 project scoping plan is greater than that which would normally be proposed for an RI. The decision for the increased scope was based upon these sites having served as storage and maintenance areas for special weapons. The Army, using Sandia National Labs (SNL) for technical assistance, recommended that the survey methodology for the sites follow the guidance provided in NUREG 5849. However, since these sites were never regulated under an NRC license, and, they were not used for functions that are typically licensed by the NRC (i.e. nuclear power generation), the army chose to develop a work plan for these sites such that the level of scope of work needed at these areas would be less than that prescribed in NUREG 5849.

As we have now received comments from the EPA and NYSDEC on the SEAD 12, 48, and 63 project scoping plan, it appears that NYSDEC is asking the Army to restate what the intent of the plan is. NYSDEC commented that if the intent of the plan is to perform a characterization of the site, then what is proposed is sufficient, and in several aspects excessive. However, if the intent of the plan is to obtain data "as part of a final release survey" for these sites, then the proposed level of effort is warranted, but is not sufficient for a final release survey. NYSDEC states that the requirements of NUREG 5849 must be adhered to for the final release survey. EPA's comments make no mention of these issues and it appears that the types and quantities of surveys are generally sufficient.

NYSDEC agrees with the applicability of NUREG 5849 to identify and address the radiological screening/measurement activities that are required at these sites. They indicate, however, that in order for these sites to be released, a final release survey is expected to be conducted at each site.

There are three possible alternatives for addressing NYSDEC's comments on the proposed work. The first alternative is that the Army can decide to treat this investigation purely as an RI. The scope of work would be reduced to provide a full characterization of impacted or potentially impacted areas only (i.e. areas where releases have been documented as well as all areas currently designated as Affected Areas). This alternative would essentially require the same quantity and types of soil, water, surface water, and sediment analyses that are described in the current project scoping plan. Also, the radiological screening and special measurements of the Affected Areas (i.e. swipes in drainage piping and ventilation ducts) would be performed as described in the current plan. The plan would be changed to include fewer direct measurements, and no grid-based soil sampling would be performed. Also, all Unaffected Areas would not be investigated. The benefits to this alternative is that the cost of the project would be reduced by between 25 and 40%. The drawback is that, since these sites are "rad" sites, NYSDEC may require additional surveying to demonstrate that there is no residual radiation at these sites, and SEDA's intention is to clear these sites during the RI/FS investigation

The second alternative is that the project scoping plan be revised to conform with NUREG 5849 to the extent that NYSDEC had indicated in their comments. Based upon some of those comments, this alternative may require a three fold increase in the proposed scope for the building surveys, and a two fold increase in the number of soil samples submitted for laboratory analyses. The benefit to this alternative is that NYSDEC would accept the RI work as the final release survey. We would have sufficient information to a) release for unrestricted use all areas that are free of residual radiation, and b) identify all areas (if any) that need localized remediation. The draw back to this alternative is the substantial increase in survey, analysis, and interpretation costs.

The third alternative proposed is that NUREG 5849 be used only as guidance and that some flexibility be allowed regarding the implementation of all the requirements in that guidance. These sites were not regulated by an NRC license, and all activities relating to the storage and maintenance of special weapons has ceased. As such, these areas should be considered as being equivalent to NRC sites that have been decontaminated, i.e. all nuclear materials were decommissioned. Since these sites were used for storage and maintenance only, the currently proposed scope, which is a modification of NUREG 5849, would require little modification to demonstrate that these sites are free of residual radiation. The benefits to this alternative are the same as those of the second alternative: The information collected would be considered sufficient to a) release for unrestricted use all areas that are free of residual radiation, and b) identify most of the areas (if any) that need localized remediation. The drawbacks to this alternative are that the cost to complete the scope may increase moderately and the Army would likely be required to provide assurances that any residual radiation not found during the RI will be remediated.

Those issues that would require modifications to the current plan would be discussed with all of the parties involved to obtain a consensus on what the final work plan should be. These issues would include:

- what criteria can be used in classifying Affected and Unaffected Areas
- what does NYSDEC expect for a background database
- what density of soil samples is expected for Affected and Unaffected Areas
- what density of direct measurements is expected
- what selection criteria should be used in determining the quantity of archived samples that would be analyzed
- what guidelines should be written into the project scoping plan for soil, wipe, and scanning/measurement surveys

As a reminder, it should be noted that these investigations are "one-shot deals", and that the scope of work for these RIs must be defined within this constraint. Returning several times to perform characterization surveys, verification surveys, and final release surveys is not within SEDA's design plan and budget for investigating Solid Waste Management Units.

At the Albany, New York meeting between SEDA, EPA and the NYSDEC on June 26, 1997, the Army advocated the use of a phased approach to implement the Remedial Investigations for SEADs 12 and 63. A phased approach has been incorporated in the revised Work Plan by initially identifying survey classifications in accordance with MARSSIM. The revised Work Plan should discuss details on how decisions will be reached to change a survey classification or implement additional phases of investigation. It should also be clarified if the implementation of any portion of the scope of work described in the revised Work Plans is intended to be optional or dependent upon the results of earlier phases of the revised Work Plan scope.

Throughout the plan, the authors state that MARSSIM will be followed, along with NUREG/CR-5849 and other NUREG documents. However, as the following specific comments point out, there are several activities and procedures included in this plan which are inconsistent with MARSSIM methodology. MARSSIM is not intended to be adopted selectively. Either it is followed, or it should be not cited as the basis for this project.

SPECIFIC COMMENTS

Comment/Response # 3:
The response to this comment acknowledges that the NYSDEC will use the RESRAD code to determine guideline values for the radiological data at these SEADs. The response further states, however, that "the project scoping plan has been revised and all references to performing a radiological risk assessment as part of the baseline risk assessment have been removed". This implies that a baseline risk assessment will be conducted only for non-radiological chemicals of concern. The output from the NYSDEC's application of RESRAD will not result in a baseline risk assessment for radiological compounds. The USEPA's Risk Assessment Guidance for Superfund, Chapter 10, Radiation Risk Assessment Guidance, discusses summing the estimates of lifetime risk of cancer resulting from radiological and chemical risk assessments in order to determine the overall potential human health hazard associated with a site. The scoping document should be revised to indicate that a radiological baseline risk assessment will also be prepared.

Comment/Response #11:
As referenced in previous comment letters on the draft Remedial Investigation Reports for SEADs 16 & 17 and SEADs 25 & 26, the USEPA's Supplemental Guidance to RAGS: Calculating the Concentration Term (USEPA, 1992; Publication 9285.7-08I) should be used as a reference in calculating the 95 percent upper confidence limit. If Parsons is aware of more recent USEPA guidance on this subject, it should be submitted for review. In the absence of such guidance, the document cited above should be used.

Comment/Response #14:
Due to the future intended use of these areas as a wildlife conservation / recreation area, the future use will also require the preparation of an ecological risk assessment. The Army should review the applicability of the RESRAD-Ecorisk model in the preparation of such an assessment.

Page 3-24: A Ludlum M-19 is called a micro-R beta and gamma rate meter. It is a sodium iodide gamma scintillation detector (it does not respond to beta particles). A Ludlum 2221 is called an alpha scintillation meter. It is a rate meter/scaler (it is not a scintillation detector).

Page 3-56: The text states "Gamma radiation from radium-226 and two of its associated radionuclides were found at levels ranging from 56 pCi/L to 109 pCi/L." Gamma radiation is not expressed as a concentration. The text should be revised.

Page 3-78: See the previous comment on the use of radiation detection equipment.

Page 3-97, Section 3.1.2.3: The language in the introduction to this section contrasts with the discussion in the "Groundwater" subsection. The introduction indicates the groundwater has been affected, whereas the subsection indicates it may have been affected. The elevated gross alpha and gross beta concentrations in some samples may be a reflection of natural levels of radioactivity in the suspended solids, measured in NTUs. The text should consistently indicate this.

Page 3-135, ARARs: 40 CFR 192, the Uranium Mill Tailings Radiation Control Act (UMTRCA), should be deleted in lieu of USEPA's recent OSWER Directive No. 9200.4-18 (Establishment of Cleanup Levels for CERCLA Sites with Radioactive Contamination), which, in an attachment, indicates that UMTRCA does <u>not</u> apply to CERCLA sites.

Page 3-142: The text states that "The Null Hypothesis for the radiological survey units at SEADs-12 and -63 is that any residual radiation at a survey unit is below a release criterion." In MARSSIM, the Null Hypothesis used for testing a survey unit is exactly the opposite, i.e., that the residual radioactivity in a survey unit exceeds the release criterion. A survey unit may be released when the Null is rejected. It is recommended that the text be revised to be consistent with MARSSIM.

Page 4-2, p1: The text states that the "investigations are designed to demonstrate <u>that</u> the levels of exposure to radiation . . . is below the acceptable limits." The word "that" should be changed to "if." The actual conditions are not known, pending an evaluation of the RI data.

Page 4-2: The text states that the radiation survey methodologies of NUREG/CR-5849 and MARSSIM will be followed. The two documents describe methodologies which are similar,

but they do have real differences. The SEDA investigations can not be compliant with both. If both are referenced, it should be clear what is included/excluded from NUREG/CR-5849 and MARSSIM.

Page 4-6, p1: The last sentence states that monitoring wells MW12-10, -11, -12, and -13 will be located in areas where the borehole geophysics survey indicates that radium-226 is being transported downgradient of the disposal pit. The scientific literature shows that radium is extremely slow to migrate from soil to groundwater and this sentence, as written, makes the *a priori* assumption that migration has occurred. It is possible, or even likely, that radium migration to groundwater has not occurred. The text should be clarified.

Page 4-9: The text states that the site is divided into survey units and then classified as Class 1, 2, or 3 areas. This sequence is inconsistent with MARSSIM, which calls for classification of areas to precede survey unit designations. Survey unit size is class dependent. The approach should be changed accordingly.

Figures 4-4 and 4-5, p. 4-10: The strategy to upgrade area classification is inconsistent with MARSSIM. As written, the area 3 and 2 survey units will be upgraded to area 2 and 1 survey units, respectively, when residual radioactivity exceeding 50% of the site specific guideline value, but less than the site specific guideline value, is found. MARSSIM classifies survey units as follows:

Class 1 - Residual activity exceeds guideline value at one or more locations.

Class 2 - Residual activity exists, but does not exceed guideline value.

Class 3 - Greater than background residual activity does not exist anywhere in survey unit.

As currently presented in the document, there will be survey units with relatively equivalent levels of residual radioactivity given different classifications (some Class 1 and some Class 2) simply as a result of the preliminary classification prior to data collection. Furthermore, problems also exist with the strategy proposed to downgrade classification of survey units. The text states that Class 3 survey units in Buildings 806, 810, 812, 800, 802, and 825 will be downgraded to unaffected if Class 1 and Class 2 survey units in Buildings 803, 804, 805, 806, 810, or 812 are found not to have residual radioactivity above 50% of the guideline. To release Class 3 survey units, data must be collected from those survey units and meet the release criterion as specified in MARSSIM.

The classification protocols should be changed to be consistent with MARSSIM methodology.

Table 4-3, p. 4-16 and 4-17: Regarding guideline values for building surfaces; Section 8.5.3 of MARSSIM clearly indicates that removable activity data (from wipe or smear samples) are not to be used for comparison to guideline values due to the relatively high degree of error associated with that type of data. Rather, they are a diagnostic tool to determine if further investigation is necessary and should only be used for that purpose. They should not be used to evaluate if a survey unit meets release criteria.

Table 4-4, p. 4-19 and 4-20: Regarding the MDCs; the field investigations include surface scanning for alpha emitters with ZnS and/or gas proportional counters. Page 4-5 of MARSSIM (December 1996) and a recent article by Abelquist and Vitkus in the July/August 1997 issue of Radiation Protection Management which describes the errors which result when one assumes that the alpha detection efficiency determined with a smooth, massless alpha source is achieved in the field. This is because there is a large and variable reduction in alpha efficiency due to the self-attenuation of alpha particles emitted from irregular surfaces. Therefore the scanning data determined in the field often significantly underestimates the true alpha activity levels. Whenever possible, therefore, beta particle measurements should be used as a surrogate for alpha activity; this can be done for radionuclides which are members of the uranium, thorium, and actinium series.

Page 4-24: MARSSIM states that 100% of Class 1 survey units must be scanned. The text states that this will be done for lower walls, but upper wall scans will be done over only 10% of the surface. This approach is reasonable, but then the upper walls should be classified as Class 2 survey units rather than Class 1.

Page 4-24 and Page 4-25: See previous comment on MDCs. Alpha surveys for radionuclides of concern which include uranium, thorium, and radium would be better served by beta surveys due to the problems with alpha detection efficiency over an irregularly shaped source.

Page 4-27, Daily Flag Values: See the previous comments on MDCs. The detection efficiency for surface alpha measurements will differ significantly from location to location due to self-attenuation.

Section 4.2.3.3 Exposure Rate Surveys: Exposure rate measurements may be useful to characterize contamination, which is of course an objective of a remedial investigation. However, for indoor surveys, exposure rate measurements should not be compared to a guideline level for statistical testing designed to test the survey unit against a reference background area to evaluate if it has met the release criterion. It is possible that alpha and/or beta surface contamination could be present at levels exceeding the release criteria, yet the exposure rates at one meter above the surface will not differ from background. The determination of surface activity in survey units and reference areas, which are a part of this project, are sufficient for the buildings investigations.

Section 4.2.3.4: See previous comment regarding Tables 4-3, page 4-16 and 4-17.

Page 4-33, Surface Soil Sampling Program: A total of 318 surface soil samples will be collected from SEAD-12, of which 250 will be collected from Class 1 and Class 2 areas where, the text states, no residual radiation is expected except in the subsurface of Disposal Pit A. If no residual radiation is expected in most of the area, then, by MARSSIM definition, most of the area should be classified as Class 2. Furthermore, the sampling density of one sample per 10 by 10 meter grid is said to be planned as a means of documenting the surface scanning and exposure rate measurement surveys. If the instruments used to conduct those surveys are operating properly and the appropriate QC checks are performed, then the data which result from those surveys would not require "documentation" by another means. Soil samples should be collected to (1) help delineate contaminated areas, and (2) enable statistical testing of the survey unit.

Section 4.2.4.4 Soil Sampling Summary: See previous comment concerning the surface soil sampling program.

Page 4-46: The text states that "groundwater samples from the ESI contained two principal radionuclides, U-235 and Ra-226, gross alpha, and gross beta radiations at concentrations exceeding state or federal drinking water criteria." It goes on to state that the vertical and lateral extent of potential contaminant migration . . . has not been fully characterized and that up to 41 monitoring wells will be installed to determine the extent of groundwater contamination. At the Albany, New York meeting between SEDA, EPA and the DEC in June 26, 1997, the Army advocated the use of a phased approach to implement the Remedial Investigations for SEADs 12 and 63. The text should discuss how that will effect the installation of 41 monitoring wells. See general comment above.

Section 4.3.2, Radiological Investigations at SEAD-63: All of the comments above regarding radiation characterization activities at SEAD-12 are applicable to the SEAD-63 investigation. These include the comments about instruments, types of measurements and the use of specific types of data.

Section 4.4 Data Reduction, Assessment and Interpretation: MARSSIM is cited and the statistical tests included in MARSSIM are mentioned. As noted in earlier comments, MARSSIM testing should not be done on parameters which MARSSIM indicates are not quantitative (such as removable surface activity data and indoor exposure rate measurements).

HAZARDOUS WASTE SUPPORT SECTION

1. Modification of Existing methods to Achieve MCLs

The SEDA response indicates that this issue is addressed under separate cover in a letter to EPA dated 9/9/97 and that the requested information will be incorporated into the generic workplan. However, recent discussions with SEDA have indicated that subsequent revision of the Generic RI/FS Workplan is not currently possible due to contractual difficulties. This is contradictory to the original intent of the Generic RI/FS Workplan as stated in Section 1.1, page 1-1. "As required , this generic workplan will be updated and/or revised to incorporate specific field sampling procedures and/or analytical methodologies or test procedures used for environmental investigation/construction developments at the SEDA." Therefore, if revision of the generic workplan is not possible, each individual Scoping Plan must contain all relevant and appropriate information to the AOCs and be amended as such.

Review of SEDAs 9/9/97 submittal regarding the analytical method modifications as they apply to SEADs 12 and 63 warrant the following comments.

a. Regarding the validation SOPs to be used on data acquired with the modified NYSDEC ASP methods, the EPA Region II SOPs for Evaluating Organic Data stated in the Generic Workplan, Appendix C, Chemical Data Acquisition Plan, Section 9.2.4, page C-49 remain applicable and must be used.

b. SEDA has not fully addressed item 6 in EPA's letter of 11/15/96. That is, SEDA must provide the scenario which is to exist on order to implement the modified methods. For example, will first round sampling be performed by routine NYSDEC ASP semi-volatile and pesticide/PCB methods? If non-detect results are obtained for those compounds which have an ARAR lower than the achieved quantitation limit, will the modified method then be enacted on subsequent sampling rounds? Or, will the modified semi-volatile and PST/PCB methods be used initially? Please discuss.

c. The PCB reporting limits listed in Attachment C of the SEDA 9/9/97 letter do not agree with those listed in the Pesticide/PCB Analysis SOP, Section 11, pages 23 and 24, as provided by Inchcape Testing Services. This information is also inconsistent with the Ar 1260 reporting limit listed in the laboratory's MDL study using the modified NYSDEC ASP methods (Inchcape letter dated 3/25/97). Please clarify.

2. Data Validation

As per the approved Generic Workplan and item 1a above, the Region 2 SOPs for Evaluating Organic Data are to be used in lieu of the National Functional Guidelines which the Army is currently proposing in the Project Scoping Plan. For the data acquired using Method 524.2, the regional organic SOP should be used as a guideline for the topics to assess

and the subsequent qualification actions to perform. The specific QC criteria and acceptance limits are found within M. 524.2 and must be used by the validation personnel.

3. TCLP data

The response provided is acceptable.

4. Radiological data

The response provided is acceptable.

5. Laboratory Certification

See general comment above.

A facsimile of this letter will be sent to you today. If you have any questions, please call me at (212) 637-4322.

Sincerely yours,

Carla M. Struble, P.E.
Federal Facilities Section

cc: M. Chen, NYSDEC
D. Geraghty, NYSDOH
R. Scott, NYSDEC
R. Battaglia, USACE-NY
K. Healy, USACE-HD
M. Duchesneau, Parsons ES

bcc: R. Wing, SPB
A. Jackson, DESA-HWSB
B. Nelson, MPI
E. Simpson, DEPP-RIAB

New York State Department of Environmental Conservation
50 Wolf Road, Albany, New York 12233-7010

December 17, 1997

John P. Cahill
Commissioner

Mr. Stephen Absolom
Chief, Engineering and Environmental Division
Seneca Army Depot Activity (SEADA)
5786 State Route 96
Romulus, NY 14541-5001

Dear Mr. Absolom:

Re: Final Project Scoping Plan
SEAD-12 & SEAD-63
Seneca Army Depot, Site ID No. 850006

The New York State Department's of Environmental Conservation and Health have reviewed the Final Project Scoping Plan for performing an RI/FS dated September, 1997 for SEAD-12 & SEAD-63 and offer the following:

1. The plan states on Page 4-16 paragraph 2, "Final soil guideline values will be calculated by NYSDEC radiation branch. Once the guideline levels calculated by NYSDEC have been agreed to by the Army, these values will be used in the final presentation of the radiological data." The order of which agency proposes the guidelines and which agency reviews them needs to be reversed. The Army is most familiar with site parameters and is well qualified to estimate doses consistent with various use scenarios. A list of residual soil activities is presented in Table 4-3 based on NUREG 1500. It is not clear whether the Army is proposing to use them. Perhaps site specific modeling would give more representative estimates of total dose. Whatever guideline levels are used, the sum of fractions rule will have to apply.

   When we receive the proposed guideline levels, including whatever assumptions are made and the supporting documentation, we will conduct our own independent estimate of doses. To meet our Cleanup Guideline for Soils Contaminated with Radioactive Materials (DSHM Technical Administrative Guidance Memorandum 4003), the total dose needs to be less than 10 mrem/y from all pathways. If the most restrictive land use scenarios are not used, it should be justified.

2. It appears from the Army's March 1997 Response to Comments for the Draft Final Scoping Plan for Conducting an RI/FS at SEADs 12 and 63 that "Comment # 4 Additional Swipes" was misinterpreted. Department of Health's Bureau of Environmental Radiation Protection provide the following clarification:

   In preparing Comment #4, concerning guidelines for fixed contamination, the example of a building renovation scenario was suggested as an example to justify the use of removable limits rather than fixed.

   The intent however, was to point out that while surface contamination limits are routinely used to evaluate contamination remaining at the time of release; under certain circumstances, such as demolition and use of a drinking water scenario, the total activity remaining is added to the soil inventory (Rubble disposal on-site) to determine TEDE dose.

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samples are to be used as a diagnostic tool to determine if further investigation is necessary ... they should not be used to evaluate if a survey unit meets release criteria."

It has been our position that the use of FIDLER, gamma spectroscopy, or other suitable means be employed to detect presence of low energy gamma emitters "fixed" or otherwise covered by paint or other substances in Class I or "Affected" buildings. While we recognize that quantitative measurements may not be made in this manner, elevated areas, if present, could then be characterized using coring or other invasive methods to determine volumetric isotopic concentrations through laboratory analysis.

Use of removable and fixed contamination levels under New York State. Department of Labor, Part 38 and New York State Department of Health, Part 16 does not alleviate the responsibility of meeting acceptable dose or risk criteria established by New York State Department of Environmental Conservation of an overall dose objective of 10 mrem/y prior to unrestricted release. It is with this objective in mind and the reference stated earlier, that the suggestion was made to use the removable limits, rather than fixed, in evaluating survey units for decontamination if required.

If you have any questions on the above, please contact me via telephone at (518) 457-3976 or via e-mail at jaquinn@gw.dec.state.ny.us.

Sincerely,

James A. Quinn
Bureau of Eastern Remedial Action
Division of Environmental Remediation

c: C. Struble
D. Geraghty
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CF
SEDA Legal
SEDA COE
Kevin Healy
Mike Duchesneau / Andrew Schwartz
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New York State Department of Environmental Conservation
50 Wolf Road, Albany, New York 12233-7010

John P. Cahill
Commissioner

December 17, 1997

Mr. Stephen Absolom
Chief, Engineering and Environmental Division
Seneca Army Depot Activity (SEADA)
5786 State Route 96
Romulus, NY 14541-5001

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   When we receive the proposed guideline levels, including whatever assumptions are made and the supporting documentation, we will conduct our own independent estimate of doses. To meet our Cleanup Guideline for Soils Contaminated with Radioactive Materials (DSHM Technical Administrative Guidance Memorandum 4003), the total dose needs to be less than 10 mrem/y from all pathways. If the most restrictive land use scenarios are not used, it should be justified.

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Reverse of what we expected

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AUG 0 3 1998

EXPRESS MAIL

Stephen M. Absolom
FFA Program Manager
Directorate of Engineering and Housing
Seneca Army Depot Activity (SEDA)
Romulus, New York 14541-5001

Re: Revised Analytical Program
Generic Installation RI/FS Work Plan
Project Scoping Plan for SEAD 12 and SEAD 63

Dear Mr. Absolom:

This is regarding the update to the Revised Analytical Program and update to the Generic Installation RI/FS Work Plan dated June 19, 1998, prepared by Parsons Engineering Science (Parsons ES) for SEDA through the U.S. Army Corps of Engineers New York District and Huntsville Division.

Contrary to what is stipulated by Article 17.7 (f) Review and Comment on Draft Documents of our Federal Facility Agreement, the Army did not include written responses to all comments submitted by EPA regarding the Generic Installation RI/FS Work Plan. Our review was delayed, as a result. Issues from our May 1, 1997 and January 27, 1998 letters remain outstanding and will affect the completion of field activities at SEADs 12 and 63. SEDA's June 19, 1998 submittal is limited to a discussion and presentation of information on proposed extraction and analytical methods for the analysis of PCBs only.

Sampling Schedule for SEAD 12 and SEAD 63

On July 21, 1998, I discussed with Army staff at SEDA that EPA would be collecting split samples during remedial investigation sampling at SEAD 12 and SEAD 63. I was told a schedule would be forthcoming, but have received no information to date. As stipulated by Article 24.8 Sampling and Data /Document Availability of our Federal Facility Agreement, the Army shall endeavor to notify the EPA and NYSDEC not less than thirty (30) business days in advance of any sample collection.

OUTSTANDING ISSUES

May 1, 1997 Letter

Original Comment 1:
SEDA submitted revisions to the Final SEAD 4 Scoping Plan, including responses to EPA comments, on October 18, 1996. Appendix E of the SEAD 4 Scoping Plan contains these EPA comments and SEDA responses. The comment applicable to the Generic Workplan, discusses the issue of the modifications to the SVOC and Pest/PCB NYSDEC ASP methods. In your response, SEDA requested EPA to provide a description of those requirements needed to secure approval for the use of the modified methods. EPA provided the requested information in a November 15, 1996 letter to SEDA. At this time, EPA is awaiting response from SEDA on their modifications t the proposed analytical methodologies in order to demonstrate compliance with groundwater standards, i.e., MCL and NYSDEC GA. To date, SEDA's response has not been received. This comment has not been addressed.

As discussed above, the June 19, 1998 submittal only discusses PCB analyses.

Original Comment 3:
EPA provided comments to SEDA dated April 22, 1997 regarding SEADs 12 & 63 which included two comments pertaining to the Generic RI/FS Workplan, specifically the baseline risk assessment and future land use. We anticipate that SEDA will respond to these comments when addressing comments on SEADs 12 and 63.

The recent SEAD 12 and 63 revised scoping document did not include a risk assessment work plan as requested in the USEPA's April 22, 1997 letter. Does SEDA plan to address this under a separate cover along with the ecological risk assessment issues? As requested in our July 21, 1998 letter regarding SEADs 12 & 63, SEDA should propose a new deadline for submittal of revised pages to address these comments.

January 27, 1998 letter

Original Comment:
1. Modification of Existing methods to Achieve MCLs

The SEDA response indicates that the revised analytical information will be incorporated into the Generic RI/FS Workplan. However, recent discussions with SEDA have indicated that subsequent revision of the Generic RI/FS Workplan is not currently possible due to contractual difficulties. This is contradictory to the original

intent of the Generic RI/FS Workplan as stated in Section 1.1, page 1-1. "As required, this generic workplan will be updated and/or revised to incorporate specific field sampling procedures and/or analytical methodologies or test procedures used for environmental investigation/construction developments at the SEDA." Therefore, if revision of the Generic RI/FS Workplan is not possible, each individual Scoping Plan must contain all relevant and appropriate information to the AOC and be amended as such.

Review of SEDA's September 9, 1997 submittal regarding the analytical method modifications warrant the following comments.

a. Regarding the data validation SOPs to be used on the analytical results acquired with the modified NYSDEC ASP methods, the EPA Region II SOPs for Evaluating Organic Data stated in the Generic RI/FS Workplan, Appendix C, Chemical Data Acquisition Plan, Section 9.2.4, page C-49 remain applicable and must be used.

The directive in this subparagraph has not been acknowledged in the June 19, 1998 document.

Original Comment:
b. SEDA has not fully addressed item 6 in EPAs letter of November 15, 1996. That is, SEDA must provide the scenario which is to exist on order to implement the modified methods. For example, will first round sample analysis be performed by routine NYSDEC ASP semi-volatile and pesticide/PCB methods? If non-detect results are obtained for those compounds which have an ARAR lower than the achieved quantitation limit, will the modified method then be enacted on subsequent sampling rounds? Or, will the modified semi-volatile and PST/PCB methods be used initially? Please discuss.

This question has not been responded to directly. It is not clear if the modified method presented in the June 19, 1998 document will be the default analytical method for PCBs. This will affect the completion of field activities at SEADS 12 and 63.

Original Comment:
c. The PCB reporting limits listed in Attachment C of SEDA's September 9, 1997 revisions do not agree with those listed in the Pesticide/PCB Analysis SOP, Section 11, pages 23 and 24, as provided by Inchcape Testing Services. This information is also inconsistent with the Ar 1260 reporting limit listed in the laboratory's MDL study using the modified NYSDEC ASP methods (Inchcape letter dated March 25, 1997). Please clarify.

The PCB reporting limits listed in the Table titled "Comparison of Reporting Limits to Potential ARARs" now agree with those presented on page 24 of the PCB SOP in the June 19, 1998 submittal. However, they do not appear to agree with the Ar 1242 and 1260 reporting limits listed in the laboratory's MDL study using the modified NYSDEC ASP methods. The outstanding issues from this paragraph could affect completion of the field activities at SEADs 12 & 63.

Original Comment:
2. Data Validation
As per item 1a above, the Region 2 SOPs for Evaluating Organic Data and the corresponding SOP for Evaluation of Metals Data, as per the approved Generic RI/FS Workplan, are to be used in lieu of the National Functional Guidelines. For the data acquired using Method 524.2, the regional organic SOP may be used as a guideline for the topics to assess and the subsequent qualification actions to perform. The specific QC criteria and acceptance limits are found within M. 524.2 and must be used by the validation personnel.

The directive in this paragraph has not been acknowledged in the June 19, 1998 document.

A facsimile of this letter will be sent to you today. If you have any questions, please call me at (212) 264-4595.

Sincerely yours,

Carla M. Struble, P.E.
Federal Facilities Section

cc: J. Quinn, NYSDEC
D. Geraghty, NYSDOH
R. Scott, NYSDEC-Avon
K. Healy, USACOE-HD
T. Enroth, USACOE-NY
M. Duchesneau, Parsons ES

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2
290 BROADWAY
NEW YORK, NY 10007-1866

Fax to
M. Duchesneau
K. Healy
T. Enroth
cc Mary F

AUG 25 1998
EXPRESS MAIL

Stephen M. Absolom
BRAC Environmental Coordinator
Directorate of Engineering and Housing
Seneca Army Depot Activity (SEDA)
Romulus, New York 14541-5001

Re: Project Scoping Plan for Performing a CERCLA Remedial Investigation / Feasibility Study (RI/FS) at SEAD 12 and SEAD 63 (Scoping Plan),
SEAD 12 Sampling Schedule
Federal Facility Agreement

Dear Mr. Absolom:

EPA received the proposed sampling schedule for SEAD 12 on August 6, 1998, which was prepared by Parsons Engineering Science, Inc. (Parsons ES) for SEDA through the U.S. Army Corps of Engineers New York District and Huntsville Division. Attached please find a table summarizing the test pit, soil boring and groundwater samples EPA would like to split. As we discussed today, the August 6 submittal did not include dates for surface soil sampling. Please provide us with that schedule as soon as possible.

Please be reminded that concerns in EPA's July 21, 1998 letter have not been addressed, and therefore, the Scoping Plan is not considered to be final.

On August 14, 1998, we received Ecological Risk Assessment inserts for the Scoping Plan. Contrary to what is stipulated by Article 17.7 (f) Review and Comment on Draft Documents of our Federal Facility Agreement, no response to written comments was included with the inserts. EPA has provided Ecological Risk Assessment comments in several letters to SEDA regarding both the SEAD 12 and 63 Scoping Plan and the Generic Installation RI/FS Workplan for SEDA. EPA will not review the inserts, until the Army provides a summary of the EPA comments followed by the Army responses that the August 14, 1998 submittal addresses.

A facsimile of this letter will be sent to you today. If you have any questions, please call me at (212) 637-4322.

Sincerely yours,

Carla M. Struble, P.E.
Federal Facilities Section

Attachment

cc: J. Quinn, NYSDEC
D. Geraghty, NYSDOH
R. Scott, NYSDEC-Avon
T. Enroth, USACE-NY
K. Healy, USACE-HD
M. Duchesneau, Parsons ES

ATTACHMENT

Task	Location	Number of Samples	Analyses (a)
Test Pits	TP12-5	3	TCL/TAL, Radiochemicals, nitrate-nitrogen
	TP12-24	3	TCL/TAL, Radiochemicals, nitrate-nitrogen
	TP12-11	3	TCL/TAL, Radiochemicals, nitrate-nitrogen
Soil Borings	SB12-2	3	TCL/TAL, Radiochemicals, nitrate-nitrogen
	SB12-5	3	TCL/TAL, Radiochemicals, nitrate-nitrogen
	MW12-14	3	TCL/TAL, Radiochemicals, nitrate-nitrogen
	MW12-36	3	TCL/TAL, Radiochemicals, nitrate-nitrogen
Groundwater Sampling	MW12-10	1	TCL/TAL, Radiochemicals, nitrate-nitrogen, additional parameters
	MW12-15	1	TCL/TAL, Radiochemicals, nitrate-nitrogen, additional parameters
	MW12-41	1	TCL/TAL, Radiochemicals, nitrate-nitrogen, additional parameters
	MW12B-1	1	TCL/TAL, Radiochemicals, nitrate-nitrogen, additional parameters

New York State Department of Environmental Conservation
Division of Environmental Remediation
Bureau of Eastern Remedial Action, Room 242
50 Wolf Road, Albany, New York 12233-7010
Phone: (518) 457-4349 FAX: (518) 457-4198

Fax to
Kevin H
Mike D
Tom E.
Mary F.

September 21, 1998

Mr. Stephen Absolom
Chief, Engineering and Environmental Division
Seneca Army Depot Activity (SEADA)
5786 State Route 96
Romulus, NY 14541-5001

Dear Mr. Absolom:

Re: SEADs-12 and -63
Project Scoping Plan
Seneca Army Depot, Site ID No. 850006

The New York State Departments of Environmental Conservation (NYSDEC) and Health have reviewed the revised Project Scoping Plan for SEADs-12 and -63 and offer the following. The comments offered by the New York State Department of Health are enclosed with this letter.

1. In Appendix K of the RI/FS (September 1997), pages three and four, it was stated that split spoon samples should be scanned for alpha, beta and gamma radiation. Not mentioned was how the results of the scans would be recorded. In the conference call we proposed that meter readings be recorded at about 6 inch intervals down the lengths of the cores (three to four per split spoon sample). The meters will have to be held in each measuring position until they come to equilibrium or, for digital scalars, during the integration time - 30 seconds may be appropriate. Taking readings at locations of maximum count rate is also valuable. This profile data can be used to verify that no contamination is present or can be used to estimate the thickness of any contaminated layers. Along with visual breaks in the composition of the core, this data can be used to identify where a core should be segmented so that, to the extent possible, material with similar characteristics will comprise each sample. Another use of the data may be to estimate concentrations of radioactive materials where the radionuclides are known but not quantified. This was agreed to by Parsons Engineering and USACOE representatives during the conference call.

2. Section 4.2.3.6 (Special Measurement and Sampling), states, in regard to the 5000 Gallon UST, that a minimum of three samples and/or smears of the tanks interior will be obtained. Not specified were locations of samples, and what criteria was to be used to determine if more than three samples may need to be taken. Clarification made during the conference call stated that a

sample will be taken at each end of the tank and in the middle. Should field scans of any of these samples reveal residual radioactivity at levels of concern, additional samples will be taken and archived for further analysis.

Please ensure that the NYSDEC is informed of sampling efforts as they are scheduled, so that our staff may actively participate. If you have any comments or questions on this matter or on the enclosed letter, please contact me by telephone at (518)457-3976 or by e-mail at jaquinn@gw.dec.state.ny.us.

Sincerely,

James A. Quinn
Bureau of Eastern Remedial Action
Division of Environmental Remediation

c: C. Struble
D. Geraghty

3. Page 3-142 and Table 3-25 both describe the methods used to determine the number of samples for environmental media and building surfaces. What's described is the statistical method used in MARRSIM to demonstrate compliance that a sufficient number of samples are taken for the **FINAL STATUS or RELEASE SURVEY.** This does not apply to a Scoping or Characterization survey which this document is describing and is what is needed. Once the survey units are scanned, swiped, sampled, decontaminated if needed according to the Class I, II, or III protocols then the above mentioned method is used to demonstrate the survey unit is suitable for unrestricted release. In previous discussions and comments we have pointed out the lack of historical documents would necessitate complete characterization of Class I and possibly Class II buildings. Information obtained during the characterization however, could be used to demonstrate compliance with closeout criteria and/or reclassify similar survey units.

4. Table 3-6A provides the NY AWQS Class GA Water standards for ground water, while it would appear that the EPA standards are for drinking water. If the drinking water standards are used, which might be appropriate for a resident farmer, then the NYS Drinking Water Standards of the New York State Department of Health would apply, which are the same as the EPA's. Additionally, tritium would be listed as 20,000 pCi/l rather than 1,000 pCi/l. According to the DEC, the gross beta standard of 1,000 pCi/l excludes Sr-90 and the gross alpha levels exclude radium.

5. A closer look at the results of the water samples reported here brings up some questions about the validity of the results. MW12B-1 and MW12B-5 are reported as duplicates yet there is a large discrepancy in the reported Ra-226 values, ie... 97pCi/l vs 149pCi/l with a qualifier of "U" which indicates undetected. In fact all results show "U" qualifiers. Gross alpha data is not qualified but does exceed the drinking water standards but do not correspond favorably with the reported radium and uranium levels.

6. Page 4-10 discusses the reclassification of buildings based on surveys performed in other buildings. We have no objection to the reclassification of survey units within buildings based on surveys performed. However, we do not agree that separate buildings, even though classified at a lower level can be judged to be unaffected without some survey activity. The conditions under which the unit was originally classified have not changed. Using this type logic, only one Class I survey unit would need to be surveyed to justify reclassifying the entire base. This item was brought to your attention by the EPA in January 1998 comments and acknowledged but not directly answered, as to reclassifying Class III units based on Class I buildings.

7. Figure 3-22, Exposure Pathway Summary for SEAD-12 would indicate that only a current industrial worker is a receptor for exposure in buildings 804, 805, 806, 810, 812, 815, 816, 819 and related structures. It's difficult to understand how a future or present construction worker performing demolition or renovation would not be a potential receptor. The same could be said for a potential resident or industrial worker.

8. Section 4.2.8.4 describes the counting of swipe samples for gross alpha and beta and tritium, but does not mention the method employed. Previous descriptions included liquid scintillation counting for swipes which would be fine, except that radiochemical analysis of the swipe following liquid scintillation would be difficult if not impossible. If liquid scintillation is not used, how do you quantify tritium?

9. Table 4-6 indicates that 102 ground water and 67 surface water samples will be analyzed for radon. Is this really necessary other than to act as a screening tool for radium? We also indicated in the past that there was too much variability in radon in water and soil gas to be effective.

If you have any questions, you may contact me at 518-458-6309.

Sincerely,

Michael J. Rivara for

Daniel R. Geraghty
Public Health Specialist II
Bureau of Environmental Exposure
Investigation

cc: G. A. Carlson, Ph.D.
Mr. M. Rivara
Mr. D. Miles
Ms. A. Salame-Alfie, Ph.D/Mr. R. Alibozek
Mr. D. Napier - RFO
Mr. B. Dombrowski - SCHD
Mr. M. Chen - DEC
Ms. M. J. Peachey - DEC Reg 8
Mr. G. Ulirsch - ATSDR
Mr. A. Block - ATSDR

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DEPARTMENT OF THE ARMY
SENECA ARMY DEPOT ACTIVITY
5786 STATE RTE 96
ROMULUS, NEW YORK 14541-5001

August 12, 1999

REPLY TO
ATTENTION OF

Engineering and
Environmental Division

Ms. Carla Struble
USEPA Region II
Emergency & Remedial Response Division
290 Broadway, 18th Floor, E-3
New York, NY 10007-1866

SUBJECT: Response to Remaining Comments Pertaining to the Ecological Risk Assessment at the Special Weapons Storage Site, SEAD-12

Dear Ms. Struble:

This letter is in response to our telephone conference call of July 28, 1999. The call involved EPA, the Army and Parsons ES Engineering Science (Parsons ES). The basis for the conference call was to resolve remaining issues associated with resolution of EPA comments regarding the ecological site evaluation of a former Special Weapons Storage Area at the Seneca Army Depot Activity (SEDA).

With the exception of one EPA clarification letter, dated April 15, 1998, we believe that Parsons ES has submitted responses to all EPA comments. The intent of this letter is to clarify the various comments and responses to comments about the project Scoping Plan so that the remaining fieldwork for this project can be completed during the good weather.

A discussion of the most recent EPA comments and our response to these comments is provided below:

- Following an internal Army review, the Draft Project Scoping Plan for SEAD-12, SEAD-48 and SEAD-63 was submitted for regulatory review on December 19, 1995. This document referenced the Generic Workplan for procedures in performing various ecological survey tasks. At this time, SEAD-12 was only the Radioactive Waste Disposal pits.

- EPA ecological comments, dated July 2, 1996, on the Draft SEAD-12, SEAD-48, and SEAD-63 Scoping Plan identified a concern regarding the need to include a delineation of the wetlands at the site.

  Parsons ES's response was included in Appendix K, the Response to Comments appendix, of the revised Scoping Plan. The response agreed with the EPA's comment and stated that the US Fish and Wildlife Service had recently conducted a wetland delineation of the entire SEDA facility as part of the BRAC95 program. This wetland assessment, in addition to the National Wetland Inventory (NWI) maps, would be used to identify wetlands at the site. The response also states that a functional wetland assessment will be conducted as part of the FS, if remediation of an area involved wetland impacts.

  There were no comments to the proposed approach for the ecological risk assessment, which proposed to follow the same process that had been used for the six previous RI sites. This process relied on guidance provided by the State of New York Fish and Wildlife Service and the EPA. The process involved an survey of the ecological communities present at the site and a visual evaluation of any observable impacts. At two sites, this effort involved small mammal counting, fish counting, macroinvertebrate survey, vegetative species identification and a wetland delineation. Correlation of site ecological species to a nearby reference area was performed to determine if site conditions were different than non-impacted areas. Following the collection of soil, surface water and sediment data, a quantitative estimate of ecological risk was prepared that involved selection of likely ecological receptors, an

estimate of dose and a risk characterization. The later effort of risk characterization followed available EPA guidance.

- The Draft-final Project Scoping Plan was submitted in response to the July 2, 1996 USEPA comments in November, 1996. Two additional sets of comments on the Draft-final Project Scoping Plan were received from EPA in April, 1997. None of these two additional sets of EPA comments referenced concerns regarding the proposed responses to the previous ecological risk assessment comments. Inserts, constituting the Final Project Scoping Plan, were then submitted in response to the April, 1997 EPA comments on September 9, 1997.

- Additional EPA ecological comments, dated November 14, 1997, on the Final Scoping Plan were received, See comment/response #14. The November 14, 1997 comment stated that an ecological risk assessment should be prepared and that the Army should review the applicability of RESRAD-Ecorisk model. Since the previous comments did not identify the need to conduct an ecological risk assessment using RESRAD-Ecorisk, Parsons ES wanted to clarify if the ecological assessment, both for radiological and non-radiological contaminants, proposed as part of the previous draft submittal, was now no longer acceptable. The approach, described in the draft Scoping Plan, followed the same procedures that had been proposed and accepted previously at six (6) other sites since we had not received previous EPA comments on the approach. Parsons ES had proposed to evaluate radiological contaminants as Parsons ES would evaluate all other contaminants. Parsons ES felt that this would ensure a consistent approach for both radiological and non-radiological impacts. While we recognized that the RESRAD-Ecorisk model was available, we were also aware that this model was still new and not widely accepted. Further, since these comments focused on the evaluation of the data, not on the actual field collection of the data, Parsons ES wanted to determine if the ecological fieldwork and other related fieldwork could proceed prior to finalization of the scoping plan. It was felt that the final resolution of the evaluation of the data should not delay the fieldwork. As a result, Parsons ES requested clarification of this comment through the Army.

- EPA formally responded to the request for clarification on April 15, 1998. The April 15, 1998 EPA letter stated that the new Ecological Risk Assessment Guidance for Superfund (ERAGS), dated November 1997, should be used for the ecological risk assessment. Although this guidance is not specifically focused on ecological risk assessment for radiological materials, the EPA requested that the Army propose how the risk to ecological receptors from radiological contaminants will be evaluated. The EPA indicated that the Army should complete Steps 1 and 2 of the new ERAGS guidance, which should then be reviewed and approved by EPA. Steps 1 and 2 of the November, 1997 ERAGS guidance involve a screening level problem formulation/ecological effects evaluation and a screening-level preliminary exposure estimate with a risk calculation. A site visit is included as part of Step 1. Further, the comments indicated that if RESRAD-Ecorisk was to be used, the results would have to be compared to the results that would be obtained by following the EPA November, 1997 ERAGS guidance.

- On June 19, 1998, Parsons ES responded to the EPA comments on the final version of the Project Scoping Plan and agreed to use ERAGS to perform the ecological risk assessment. However, since the existing plan would have to be completely re-written in accordance with the requirements of the new November 1997 ERAGS guidance, Parsons ES proposed to submit the rewritten ecological risk assessment portion of the Project Scoping Plan at a later date so that the remainder of the scoping plan could be reviewed. This was done to avoid any further delays associated with conducting the other fieldwork tasks.

  Parsons ES did not formally respond to the April 15, 1998 letter, as Parsons ES believed that this April letter was a clarification of the initial November 14, 1997 EPA comment on ecological risk assessment. However, Parsons ES did reference the April 15, 1998 letter in our responses to the November 14, 1997 comments, which was submitted on June 19, 1998. The June 19, 1998 response is included in Appendix K of the Project Scoping Plan. The comments by USEPA are attached and references the April 15, 1998 letter, referred to as letter sent in "spring of 1998". Parsons ES believed that this response addressed both the April 15, 1998 comment and the November, 14, 1997 EPA comment.

- EPA provided additional comments, dated July 21, 1998, in response to the revised June 19,1998 Final Project Scoping Plan inserts. In these comments, EPA noted that SEDA plans to address ecological risk assessment comments under a separate cover and that a new deadline should be proposed as soon as possible. EPA received replacement pages for the ecological risk assessment from Parsons ES on August 14, 1998. Since Parsons ES had previously responded to EPA's November 19, 1997 and April 15, 1998 comments in our June 19, 1998 submittal, where Parsons ES agreed to perform the ecological risk assessment in accordance with the new ERAGS guidance, Parsons ES did not believe a reiteration of our response was necessary with the August 14, 1998 ecological risk assessment replacement pages. The replacement pages clearly identified the document as the ecological risk assessment inserts for the Final Project Scoping Plan for SEAD-12. Our response to the July 21, 1998 EPA comments was also included in Appendix K (Response to Comments USEPA - July 1998).

- On August 25, 1998, September 5, 1998, September 28, 1998, the EPA requested a response to their previous ecological risk assessment comments. Parsons ES responded on October 13, 1998 by resubmitting the August 14, 1998 workplan inserts, including Section 4.2.7, Ecological Risk Assessment. Responses to July 21, 1998 comments were also included in this submittal. The responses addressed the EPA's November 14, 1997 comments and the EPA's April 15, 1998 letter, where the ERAGS discussion had originated. Since all subsequent EPA comments were a request to respond to the previous ecological risk assessment comments, Parsons ES felt that once the revised ecological risk assessment was submitted, which was submitted on June 19, 1998, these other requests would not require a formal response.

We would like to achieve closure at the Special Weapons Storage Area site, SEAD-12, we believe that this letter clarifies our position and will be helpful in moving ahead with an agreeable plan. Please do not hesitate to call Mr. Stephen Absolom at (607) 869-1309 if you have any questions.

Sincerely,

Brian K. Frank
LTC, U.S. Army
Commanding Officer

Copies Furnished:

Commander, U.S. Army Corps of Engineers, Seneca Army Depot Activity, ATTN: CENAN-PP-E (Randy Battaglia/Thomas Enroth/Janet Fallo), SEDA Office for Project Management, Romulus, New York 14541-5001

Commander, U.S. Army Corps of Engineers, Huntsville Division, ATTN: CEHND-ED-CS (Kevin Healy), P.O. Box 1600, Huntsville, Alabama 35807

Commander, USACHPPM, 5158 Blackhawk Road, ATTN: Keith Hoddinott, Aberdeen Proving Ground, Maryland 21010-5422

Commander, U.S. Army Environmental Center, ATTN: SFIM-AEC-IRP (John Buck), Aberdeen Proving Ground, MD 21010-5410

Mr. Michael Duchesneau, Parsons Engineering Science, Inc., 30 Dan Road, Canton, MA 02021

New York State Department of Environmental Conservation, Bureau of Eastern Remedial Action Division of Hazardous Waste Remediation, 50 Wolf Road, Albany, NY 12233-7010

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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SEP 13 1999

EXPRESS MAIL

Stephen M. Absolom
BRAC Environmental Coordinator
Directorate of Engineering and Housing
Seneca Army Depot Activity (SEDA)
Romulus, New York 14541-5001

Re: Revised Draft Project Scoping Plan for SEAD 12 - Ecological Risk Comments

Dear Mr. Absolom:

In accordance with Article 18 (Extensions) of our Federal Facility Agreement, it is necessary for the EPA to extend the comment period for the revised pages and response to EPA comments regarding the above referenced documents which were received by EPA August 16, 1999. The materials were sent during our busiest time of year and EPA requests an additional thirty (30) days, in order for our Ecological Risk Assessor to complete the review . We will be sending our comments no later than October 15, 1999.

A facsimile of this letter will be sent to you today. If you have any questions, please call me at (212) 637-4322.

Sincerely yours,

Carla M. Struble, P.E.
Federal Facilities Section

cc: J. Quinn, NYSDEC
D. Geraghty, NYSDOH
R. Scott, NYSDEC-Avon
T. Enroth, USACE-NY
K. Healy, USACE-HD
M. Duchesneau, Parsons ES

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NOV 2 6 1999

EXPRESS MAIL

Stephen M. Absolom
BRAC Environmental Coordinator
Directorate of Engineering and Housing
Seneca Army Depot Activity (SEDA)
Romulus, New York 14541-5001

Re: Comments on the Seneca Army Depot Activity, Ecological Risk Assessment Insert for the Workplan for SEAD-12, Final prepared by Parsons dated August 13, 1998

Dear Mr. Absolom:

Please find below our comments regarding the above referenced document in accordance with Article 17.7 of the Federal Facility Agreement.

GENERAL COMMENTS

In the Screening Level Ecological Risk Assessment(SLERA), contaminants of concern (COCs) should not be selected based on a comparison to background concentrations. This is because there is a potential for even 'naturally' occurring levels of analytes to affect the cumulative risk that is present in the system by increasing the stress on receptors utilizing that habitat. For this reason, when screening contaminants for ecological consideration, comparison should be to ecologically relevant criteria, guidance, recommended benchmarks, or literature effects values. The Ontario guidelines (D. Persaud, et al. August 1993. "Guidelines for the Protection and Management of Aquatic Sediment Quality in Ontario." Ontario Ministry of Environment and Energy), or the NYSDEC Sediment Quality Criteria, are recommended for the screening of wetland sediment. Surface water should be screened against the USEPA's Ambient Water Quality Criteria (AWQC) (Federal Register/Vol. 57, No. 246/Tuesday, Dec. 22, 1992/Rules and Regulations, p. 60911; and as revised for specific metals by Federal Register/Vol. 60, No. 86/Thursday, May 4, 1995/Rules and Regulations, p. 22228), or the NYSDEC Ambient Water Quality Standards and Guidance Values (AWQS). Compilations of soil values are not as readily available, but literature values such as those found in the Eisler series are recommended (A...Hazards to Fish, Wildlife, and Invertebrates: A Synoptic Review,@ Ronald Eisler, Biological Report..., Contaminant Hazard Reviews..., U.S. Fish and Wildlife Service). There are also many 'on-line' computer databases that can be accessed to acquire information, but it is recommended that the original study referenced in these databases be obtained when possible rather than strictly relying on what is reported in the database. This is to ensure that the methods and results of the study have produced data that are applicable to the ecological risk assessment process.

SPECIFIC COMMENTS

1. Page 1, Section 4.2.7, 3rd ¶ - To clarify, a Superfund Ecological Risk Assessment is conducted in an eight step manner according to the 1997 ERAGS guidance. The first two steps are considered a screening level ecological risk assessment and the other six steps constitute a baseline ecological risk assessment.

2. Page 3, Ecological Characterization section, 4th ¶, 2nd sentence - Federally-designated wetlands are also an aquatic resource of concern and should be included in the topographic map as well as the report text.

3. Page 4, 4th complete ¶ - Identification of criteria for potential remediation of resources should not be included as part of the ecological risk assessment.

4. Page 8, Soil Exposure Pathway, 2nd ¶, 3rd sentence - BTAG recommends evaluating a soil depth of zero to 2 feet for potential terrestrial exposure to site soils.

5. Page 9, Preliminary Screening and Identification of Chemical Stressors section, 1st ¶ - A SLERA uses the maximum media concentrations to select contaminants of concern.

6. Page 10,

a. 1st bullet - Contaminants for the ecological risk assessment should not be screened against background concentrations to select contaminants of concern.

b. 2nd bullet - Maximum concentrations of surface water and sediment contaminants should be screened against relevant criteria and guidelines to select COCs. See the General Comments section above for more information.

7. Page 11, last ¶ - As stated above, a SLERA uses the maximum media concentrations to select contaminants of concern.

8. Page 13,

a. 1st ¶, last sentence - This sentence needs to indicate why the screening benchmarks for the terrestrial and aquatic receptors are an order of magnitude lower than the chronic doses listed in the previous sentence.

b. The terms in the equation and the explanations below need to agree.

9. Page 14, explanation of equation terms for "C" should read "Daily ingested concentration per gram body weight (pCi/g)"

10. Page 16, 1st ¶, 1st sentence - Since a reference section is not provided, please give the full name of the reference "Blaylock et al (1993)."

11. Page 21, Exposure Assessment section,

a. 1st ¶, last two sentences - If after the SLERA (Steps 1 and 2) indicates potential risk, further evaluation of the chemicals using the information provided is performed in Step 3 after a Scientific Management Decision Point is agreed upon.

b. For a SLERA, the maximum media concentrations are used to calculate exposure doses to the receptors of concern. All the references to RME concentrations must be removed from this section on calculating doses for the Phase I (SLERA).

c. For the SLERA, the minimum body weight and maximum ingestion rate from the literature must be used to calculate exposure doses for all receptors.

12. Page 26, 2nd complete ¶ - ERAGS states that the most conservative (highest) bioaccumulation factors from the literature should be used in the SLERA.

13. Page 30, 1st ¶ - A hazard quotient greater than or equal to one in the SLERA indicates the potential for ecological risk. All of the other information presented here is part of Step 3 of the ERAGS process and comes after a Scientific Management Decision Point is agreed upon.

A facsimile of this letter will be sent to you today. If you have any questions, please call me at (212) 637-4323.

Sincerely yours,

Julio F. Vazquez, RPM
Federal Facilities Section

cc: J. Quinn, NYSDEC
D. Geraghty, NYSDOH
R. Scott, NYSDEC-Avon
T. Enroth, USACE-NY
K. Healy, USACE-HD
M. Duchesneau, Parsons ES

DEPARTMENT OF THE ARMY
SENECA ARMY DEPOT ACTIVITY
5786 STATE RTE 96
ROMULUS, NEW YORK 14541-5001

REPLY TO
ATTENTION OF

May 12, 2000

Engineering and
Environmental Office

Mr. Julio Vazquez
U.S. Environmental Protection Agency
Emergency & Remedial Response Division
290 Broadway
18th Floor, E-3
New York, New York 10007-1866

Mr. Steven Paszko
NYS Department of Environmental Conservation
Division of Hazardous Waste Remediation
Bureau of Eastern Remedial Action
50 Wolf Road, Room 237
Albany, New York 12233-7010

Re: Draft Remedial Investigation (RI) for the Radioactive Waste Burial Sites (SEAD-12) and the Miscellaneous Components Burial Site (SEAD-63)

Dear Mr. Vazquez/Mr. Paszko:

In accordance with Article 18 (Extensions) of the Federal Facility Agreement (FFA) with Seneca Army Depot Activity (SEDA), SEDA requests an extension for the submission of the Draft RI for SEAD-12/63.

SEDA requests a twelve (12) day extension for the submission of the document. Seneca is requesting this extension in order to complete the duplication, assembly, and distribution of the document.

The Draft RI for SEAD-12/63 was due on May 14, 2000. Pending the acceptance of this extension request, the new submission date for the Draft RI will be May 26, 2000.

The updated IAG Attachment 5 schedule for SEAD-12/63

Draft RI/FS Work Plan	19 Dec 95
Draft RI Submission	26 May 00
Draft FS Submission	18 Oct 00
Draft PRAP	05 Feb 01
Draft ROD	19 Aug 01

Questions may be directed to Stephen Absolom, BRAC Environmental Coordinator, at (607) 869-1309.

Sincerely,

Brian K. Frank
LTC, U.S. Army
Commanding Officer

Enclosure

Copies Furnished:

Michael Duchesneau, Parsons Engineering Science, Inc.,
30 Dan Road
Canton, Massachusetts 02021

Commander, U.S. Corps of Engineers, Huntsville
Division, ATTN: CEHND-ED-CS (Kevin Healy)
P.O. Box 1600, Huntsville, Alabama 35807

Commander, U.S. Army Corps of Engineers, Seneca Army
Depot Activity, ATTN: CENAN-PP-M (Tom Enroth)
SEDA Resident Office, Romulus, New York 14541-5001

New York State Department of Environmental Conservation
Division of Environmental Remediation
Bureau of Eastern Remedial Action, Room 242
50 Wolf Road, Albany, New York 12233-7010
Phone: (518) 457-4349 • **FAX:** (518) 457-4198
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John P. Cahill
Commissioner

June 20, 2000

Fax to
Mike
Kevin
Tom
Mary

Mr Stephen Absolom
Chief, Engineering and Environmental Division
Seneca Army Depot Activity (SEDA)
5786 State Route 96
Romulus, NY 14541-5001

Dear Mr. Absolom,

RE: Derived Concentration Guideline Level (DCGL) Development for Radiological Surveys in Class 1 Buildings as SEAD-12. Seneca Army Depot, Site ID No. 850006.

Staff of the New York State Department of Health's Bureau of Environmental Radiation Protection and the New York State Department of Environmental Conservation have reviewed the document. As was discussed during the April 26, 2000 conference call between the NYSDOH, NYSDEC and the Army's consultants, many of the DCGL's calculated in this document are too high to be acceptable to the NYSDOH. The following are comments regarding some of the assumptions made in the modeling of the DCGL's in this document.

1) One reason the DCGL's are so high is that an air release fraction (i.e., resuspension fraction) of 1E-6 is based on NUREG/CR-5512 (See Table 3 of the report). The default values in RESRAD-BUILD are 0.1 for normal occupancy scenarios and 0.01 for building renovation scenarios (bue to less lung deposition of larger respirable particles). Table 6.4 on page 6.13 of NUREG/CR-5512 lists many resuspension factors for various scenarios. The resuspension factors for indoor buildings range from 1E-6 to 1.5E-2. (See attached notes)

2) The sample output places the contamination on the floor, averaged over the entire area of the floor, with the person at the center of the room. For determining DCGLw this document assumes that uniform contamination over the entire floor will model uniform contamination in the room. If the contamination is on one or several walls and the floor, the source term is greater; therefore the DCGL's would have to be lower. If you place contamination on two adjacent walls and floor, the calculated dose is about 1.7 times greater; therfore the DCGL's would decrease accordingly. If you include the other two walls and ceiling, the dose is even higher.

3) The defaults chosen in this document for the parameters are based on a building occupancy scenario. Default values for a renovation scenario are quite different and would probably result in very different DCGLs. (See attached notes)

4) Tritium is not included in the DCGLs and it is not detectable with a survey meter. How will tritium be accounted for?

5) Section 1.0 states "The NYSDEC TAGM of 10 mrem/yr was used for this purpose". TAGM 4003 is only appropriate in evaluating contaminated soils, and not building debris or other non-soil materials.

If you have any questions please contact me by telephone at (518) 457-3976 or by e-mail at sxpaszko@gw.dec.state.ny.us.

Sincerely,

Steve Paszko
Bureau of Eastern Remedial Action
Division of Environmental Remediation

c: J. Vazquez
D. Geraghty
M. Peachey
R. Scott
K. Healy

STATE OF NEW YORK
DEPARTMENT OF HEALTH

Flanigan Square, 547 River Street, Troy, New York 12180-2216

Antonia C. Novello, M.D., M.P.H., Dr.P.H.
Commissioner

Dennis P. Whalen
Executive Deputy Commissioner

July 31, 2000

Mr. Steve Paszko
Bureau of Eastern Remedial Action
Division of Environmental Remediation
NYS Department of Environmental Conservation
50 Wolf Road, Room 237
Albany, New York 12233

RE: Seneca Army Depot
Site #850006
Romulus, Seneca County

Dear Mr. Paszko:

Staff of the New York State Department of Health's Bureau of Environmental Radiation Protection have reviewed the May 2000 Draft Remedial Investigation Report for the Radiological Waste Burial Sites (SEAD-12) at the Seneca Army Depot in Romulus, Seneca County and have the following comments:

1. It would be helpful to summarize results for each study area and make recommendations and/or state that based on RESRAD or other analysis, no further study is required and therefore that the area can be released for unrestricted use, if the US Army so chooses.

2. Section 1.3.3 – Previous Investigations, Page 1-11: While it is stated correctly in other sections, it is stated here that the cleanup criteria of New York State (DEC) is 90 mRem/yr and the proposed federal limit under 10 CFR 834 is 182 mRem/yr. The NRC decommissioning and decontamination exposure limit for unrestricted residential use is 25 mRem/yr. While the general public exposure limit is 100 mRem/yr. As noted, the agreed upon limit for this site is the NYDEC TAGM 4003 of 10 mRem/yr.

3. Section 2.3.4.2 - Ground Survey Instrumentation, Page 2-18: Contrary to what is listed in the document, the Ludlum Model 19 micro-R meter does not detect, no less measure low energy Beta emissions. It also is not appropriate to interchange data obtained with the Ludlum Model 19 and the Bicron microRem meter. The Ludlum meter utilizes a 1"x1" NaI(Tl) crystal, which when calibrated with Cesium-137 over-responds to low energy gamma radiation. In addition, low energy gamma radiation associated with Plutonium-239 or Americium-241 would not be detected.

4. As a follow-up to the previous comment, the stated efficiency for the Bicron FIDLER at 1.8%, a scanning MDA of 151,843 dpm/100cm^2 and a static MDA of 16, 645 dpm/100cm^2 appears to be inadequate or perhaps the efficiency was miscalculated. Previous experience with this probe would indicate that efficiencies greater than 20% are reasonable.

5. Table 4-1 – Soil Derived Concentration Guideline Levels: Why are the DCGL's for the same isotope different for various locations, when the clean up level remains 10 mRem/yr? Why are backgrounds for the same isotope at the same location different (ie. Building 819/ bkg.soil)?

6. Tritium analysis for background soils range from approximately 0.1 to 60 pCi/g. A wide range indeed. Given that the soils are analyzed both as surface and subsurface soils, how are the background values assigned?

7. The DCGL's for tritium in soil range from 80 to over 200 pCi/g for soil, depending on the location, including the reduction by a value of 10 for the RESRAD model. However, a sample at building 815/816 exceeded 300 pCi/g or at least 2 to 3 times background without further study or acknowledgement in the text that the DCGL was exceeded. Since this building housed an area that loaded or unloaded tritium and the potential for environmental contamination existed, further study may be warranted unless explained. While tritium values in pCi/g are required for RESRAD, it would be helpful to know the concentration in ground water in pCi/l.

8. Numerous locations indicated higher levels of Pb-210 without comparative values associated with Radium-226 or Radon-222 progeny. If the premise is made that these values are attributable to glazes, pottery or other domestic products, then a table comparing Pb-210 to stable lead compounds from the same sample would go a long way to convince everyone that the Pb-210 is not the result of army activities and or the analysis did not misidentify the isotope or other progeny of uranium 238/234.

Additional comments from the New York State Department of Health will be forwarded to your office shortly. If you have any questions, please contact me by telephone at (518) 402-7890 or by e-mail at drg01@health.state.ny.us.

Sincerely,

Daniel R. Geraghty
Public Health Specialist II
Bureau of Environmental Exposure Investigation

cc: A. Carlson, Ph.D.
Mr. M. Rivara
Dr. A. Salame-Alfie
Mr. D. Miles
Mr. D. Napier – RFO
Mr. B. Dombrowski – SCHD
Mr. M. Chen – DEC
Ms. M. J. Peachey – DEC, Region 8
Mr. G. Ulirsch – ATSDR
Mr. A. Block – ATSDR

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2
290 BROADWAY
NEW YORK, NY 10007-1866

Fax to
Kevin
Mike D.
Tom E
C.F. Mary

AUG 22 2000

Stephen M. Absolom
BRAC Environmental Coordinator
Directorate of Engineering and Housing
Seneca Army Depot Activity (SEDA)
Romulus, New York 14541-5001

Re: *Draft Remedial Investigation Report (RI) at SEAD-12*
Seneca Army Depot, Romulus, New York

Dear Steve:

This is in reference to the above subject document dated May 2000. EPA reviewed the subject document and submits the following comments. The general comments address concerns that pertained to the entire document. The specific comments address concerns for individual sections.

GENERAL COMMENTS–Remedial Investigation

1. Although the report generally conveys the results of the RI in a systematic manner, it is difficult to find information concerning field observations that may indicate potential data gaps. For example, the text in Section 4.3.4.2 describes foreign items found in test pits TP12-3 (debris below the water table) and TP12-4 (stainless steel cylinder). Information such as this should be provided in a summary section or table.

2. The electromagnetic survey interpreted an anomaly (EM-43) north of Building 815 as a transformer. Three surface soil samples (SS12-66, SS12-67, and SS12-68), one monitoring well (MW12-40), two subsurface soil samples (from MW12-40 boring at 2-4 feet and 4-6 feet), and one sediment sample (SD12-32) were collected from this area. However, test pit investigations were not conducted in this area. If there is a transformer below the surface in the location of EM-43, it would be a possible source of PCB contamination. Further investigation or excavation of this area should be considered.

3. Section 4.3 presents the results of the RI for each potential release area in SEAD-12. Test pits were excavated at many of these potential release areas.

Surface soil and subsurface samples were also collected from the potential release areas. It is assumed that samples collected from within the test pits are considered to be subsurface samples. However, it is not clear from the text if this is the case. This issue should be clarified.

GENERAL COMMENTS - Human Health

1. One major concern relating to the Human Health portion of this Draft RI Document is that exposure parameters used for the human health exposure assessment could not be verified. Reference to an EPA document published in 1993 was provided with the tables found in Section 6.8. This document, "Superfund's Standard Default Exposure for the Central Tendency and Reasonable Maximum Exposure" was published in 1993 as a preliminary review document. It is the opinion of the reviewers that these exposure parameters were superceded by information provided in the 1997 Exposure Factors Handbook. The most up-to-date references for exposure factors should be used for this risk evaluation.

2. A check of the toxicity values used revealed that the HEAST version referenced in Table 6-7 has been updated. The HEAST Tables referenced were 1995. HEAST Tables were updated in 1997.

3. The radiological risk slope factors presented in Table 6-7B and referenced from HEAST do not all correspond to the updated version of HEAST available at www.epa.gov/radiation/heast. Please verify the slope factors presented in this table with the most up-to-date version of HEAST.

4. The soil to skin adherence factor (AF) used in the human health risk assessment was 1.0 for all chemicals in all scenarios. However, more recent guidance suggests an AF of 0.08 mg/cm^2 for adults and 0.3 mg/cm^2 for children. (USEPA, 1997a.) While an AF of 1 is more conservative, using this value has the potential to overestimate risks from the dermal pathway. This potential overestimation of risk should be discussed in the Uncertainty Section of the risk assessment.

5. There were no toxicological profiles provided for the COPCs or ROPCs selected. EPA guidance recommends inclusion of toxicological profiles in risk assessments. Toxicological profiles for COPCs and ROPCs should be included as an appendix to the document.

6. Several spelling and grammatical errors were found as well as many partial sentences. The references section is disorganized with references listed both as "EPA" and "USEPA," and not arranged in chronological order. The document needs an editorial review.

7. The document is large and cumbersome. Typically, for a document of this size, an Executive Summary is provided to present a concise description of the site, the purpose and conclusions of the RI. As the documents are intended for public review, an Executive Summary should be a worthwhile addition.

GENERAL COMMENTS--Ecological Risk Assessment

1. The sequence of steps performed in this ecological risk assessment (ERA) appears to be out of order. According to the RI, detected concentrations were compared to screening values and then food chain modeling was performed on contaminants whose concentrations exceeded the screening values. A comparison to background and an evaluation of frequency of detection was then performed for contaminants whose hazard quotients (HQs) were greater than one. Valuable time and resources could have been saved if the background and frequency of detection analyses were performed directly after the screening and before the food chain modeling. The Process Document (EPA, 1997) states that the beginning of step 3 should be a refinement of the COPCs. This refinement typically includes a comparison to background, elimination of essential nutrients, analysis of frequency of detection, and a discussion of bioavailability. Many contaminants could have been eliminated from the ERA at this stage reducing the amount of costly food chain modeling necessary. The sequence of steps presented in the Process Document (EPA, 1997) should be closely reviewed and followed in future ERAs.

2. Several COPCs are eliminated from further consideration due to a frequency of detection of less than 20 percent. The general rule of thumb regarding frequency of detection is that it can be used as a screening tool if the sample size is at least 20 samples and the frequency of detection is less than 5 percent. In general, the use of low frequency of detection as justification for eliminating COPCs from further consideration is discouraged unless the frequency of detection is less than 5 percent.

3. It would be useful if figures were included in the ERA showing the locations in each media of all of the COPC detections that exceed background and for which the HQ values exceed one. This will help to clarify the justification of excluding or including specific COPCs as COCs based on frequency of detection and/or magnitude of detection. For example, if a COPC is being eliminated based on a low frequency of detection even though HQs greater than one were calculated, it would be useful to know if all of the detections were in the same location or if they are scattered across the site. If they are all in the same location, an interim measure (IM) may be possible. Including figures for each media sampled should be considered for future versions of this report.

4. There is no conclusions and recommendations section of this RI. Although it is

stated in Section 7.7 that further investigation of limited removal actions in soil and sediment may be warranted, the overall recommendations of this RI are not clearly stated. An overall conclusions and recommendations section should be added to this RI.

SPECIFIC COMMENTS–Remedial Investigation

1. **Section 3.4.3, page 3-22, first bullet item.** The bullet provides the value for the geometric mean of hydraulic conductivity. The value stated in this bullet is 1.6 feet/day; however, the value provided in Table 3-3 and Section 3.4.2 is 2.61 feet/day. This discrepancy should be reconciled.

SPECIFIC COMMENTS–Human Health

1. **Page 6-32, Section 6.2.4.** The first paragraph on this page states that "the maximum value was used as the EPC, if it exceeded the 95% UCL." However, this practice is contrary to EPA guidance regarding selection of EPCs. Guidance recommends that the lower value of the maximum and the 95% UCL should be used as the EPC. Review of Table 6-3A indicates that, in fact, the lower of the two values was used as the EPC. The text on page 6-32 should be corrected.

1. **Table 6-5A, Exposure Factors Assumptions.** The inhalation rate for the current site worker receptor is not correct. According to the USEPA, 1997, Exposure Factors Handbook, the correct inhalation rate for the moderately active, adult male is 15.2 m^3/day, not 9.6 m^3/day as listed in Table 6-5A.

2. **Page 6-107, Section 6.3.5.9.** The first sentence on this page indicates that acetone is the only compound listed on the previous page whose t* value is less than the exposure time of one hour. According to values listed on Page 6-106, toluene also has a t* value of less than one. Please revise the text appropriately to reflect this value.

3. **Pages 6-153, 154, 155.** The text of the document indicates that nine exposure routes were evaluated for the Child Recreational Visitor for all areas of the SEAD-12. There are eight exposure routes evaluated and presented in Tables in 6-8. Please clarify the actual number of exposure routes evaluated.

5. **Page 6-156.** The text of the document indicates that three exposure routes were evaluated for the Off-Site Wader. Table 6-9D presents information on only two exposure routes, with only one pathway being complete. Please clarify the actual number of exposure routes evaluated.

6. **Risk Tables, Appendix L.** A number of tables presenting the risk calculations were not included with the document. The following receptors and routes were not provided in Tables.

   a. Table L-8, Future Resident -Risks Associated with Inhalation of Groundwater while Showering. Tables are not presented for any area of the SEAD-12.

   b. Table L-4F, Future Outdoor Park Worker, Future Recreational Visitor-Risks Associated with Dermal Contact to Surface Water. Tables are not presented for any area of SEAD-12.

7. **Risk Tables, Appendix L.** Dermal contact hazard indexes and cancer risks for several receptors have not been transcribed properly from the Risk Tables in Appendix L to the presentation of the risk values in section 6.8. Please correct this or provide an explanation.

SPECIFIC COMMENTS--Ecological Risk Assessment

1. **Section 7.2.2.2.1, Page 7-10**. This section discusses the identification of soil COPCs. The first paragraph of this section lists the sources of soil screening values used in this ERA. It is unclear why New York Technical and Administrative Guidance Memorandum # 4046 (TAGM) values were not included in this list. State screening values are used for the surface water screening and the sediment screening so it is unclear why state values are not being used for soil screening. All applicable state screening values should be used in the screening level ERA.

2. **Section 7.4, Page 7-20**. This section discusses the screening level exposure estimate. It is stated in the last paragraph of this section that for sediment metal COPCs, partitioning coefficients (Kd) were used to estimate pore water concentrations in sediment samples. Biota sediment accumulation factors (BSAFs) should be used for metals in sediments instead of using an equilibrium partition method due to the high degree of uncertainty involved with equilibrium partitioning. Sources and/or methods of calculation should be provided along with the BSAF values. The U.S. Army Corps of Engineers Waterways Experiment Station website (http://www.wes.army.mil/) is a potential source for BSAF values.

3. **Section 7.6.2, Page 7-36**. This section discusses the identification of COCs in sediment and surface water. The last paragraph on this page discusses why aluminum was not identified as a COC. It is stated that because mean HQs are less than 10 for the heron and because the bioaccumulation model is likely to

overestimate body burdens in the heron, aluminum is not considered a COC in sediment. HQs of less than 10 and uncertainty in the food chain model is not adequate justification for excluding contaminants from consideration as COCs. The threshold for further investigation based on HQ values is one, not ten, and the fact that both max HQs were over 30 indicates that there may be some hot spots of aluminum in sediments that could warrant an IM. Although uncertainty in modeling is unavoidable to a certain degree, the fact that the bioaccumulation model has the potential to overestimate risk should not be used as justification for eliminating aluminum from consideration as a COC. Aluminum should be identified as a COC in sediment at SEAD-12 and should be considered in any future investigations.

A facsimile of this letter will be sent to you today. If you have any questions, please call me at (212) 637-4323.

Sincerely yours,

Julio F. Vazquez, RPM
Federal Facilities Section

cc: S. Spaszko, NYSDEC
D. Geraghty, NYSDOH
R. Scott, NYSDEC-Avon
T. Enroth, USACE-NY
K. Healy, USACE-HD
M. Duchesneau, Parsons ES

USEPA	FACSIMILE	SUPERFUND
8/22/00	7 page(s)	
To:	STEVE ABSOLOM	
Organization:	SENECA ARMY DEPOT	
Fax number:	607 869 1362	
From:	JULIO VAZQUEZ	
Comments:	Steve, I am still awaiting resolution on the phenol and dinitrotoluene issues on the Prison FOST.	

New York State Department of Environmental Conservation

Division of Environmental Remediation

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August 1, 2000

Mr Stephen Absolom
Chief, Engineering and Environmental Division
Seneca Army Depot Activity (SEDA)
5786 State Route 96
Romulus, NY 14541-5001

Dear Mr. Absolom,

RE: DRAFT Remedial Investigation Report at the Radiological Waste Burial Sites (SEAD-12) Seneca Army Depot, Site ID No. 850006.

The New York State Department of Health (NYSDOH) and the New York State Department of Environmental Conservation (NYSDEC) have not completely reviewed the Draft Document; however, in an effort to expedite the review process, these initial comments/suggestions are offered:

SEAD-12 RI Report Comments (NYSDEC Federal Projects Section)

1) The opening paragraph of Section Four states that " [d]ata from the ESI and RI investigations have been merged into a single database and are disussed as a whole in this RI report" implying that the Tables in Chapter Two (i.e. Table 2-1, Table 2-5, Table 2-6, Table 2-7, and Table 2-10), the Appendices (G, H, I, and J) and the various Figures found throughout the RI document are all in agreement regarding number of samples, sampling locations and sample identifications. The resulting review of the RI indicates that this is not the case. For example, the Chapter Two Analytical Summary Tables and the "full presentation of the analytical data collected" in Appendix G do not correlate with the specific number of samples as cited in many of the media result summaries presented in Chapter Four. Comments citing other data gaps specific to each section have been made below; however, the entire three volume document should be reviewed and amended so that the RI presents the data completely (inclusive of all ESI and RI data) and in such a way as to reflect conditions at SEAD-12 clearly and accurately.

2) Section Four is comprised of subsections describing analytical data for nine potential release areas as listed in Section 4.3. From Figure 2-10, it appears that those areas within SEAD-12 each warranted a separate insert. The presentation of the data in Section Four should reflect this approach and include a figure for each of the nine potential release areas (inclusive of the Wastewater Treatment Plant) within their respective sections. Each section should also present all the data associated with, and specific to each potential

release area as cited in the beginning of Section 4.3. For each potential release area the results should be presented as stated in the Section Organization of Section Four, and Surface Water Results, Sediment Results and Groundwater Results should be included in each specific section, instead of the way they are presently presented by encompassing all of SEAD-12. Each of the result summary tables should include the identification of each sample that had an exceedance and a figure (inset areas as found in Figures 2-11 and 2-12) should be included showing all locations where these exceedences occurred (as in Figure 4-4). The reader should also be referred to a figure which identifies the location and identification of all sampling points associated with the potential release area being discussed.

3) **Reference section:** The *New York State Department of Environmental Conservation (NYSDEC). 1991b, Division of Water Technical and Operational Guidance Series (1.1.1). Ambient Water Quality Standards and Guidance Values,* ***June 1998*** is the most recent issue of this guidance document but is not listed in the Reference section. The criteria listed in the Appendix for Groundwater and Surface Water should be amended as well as the conclusions based on the criteria used from the outdated guidance manuals.

4) **Section 2.3 Radiological Investigations:** The texts refers to a separate document that addresses the building radiological surveys. The title of the document should be included as well as a list of the buildings to be addressed in the cited document.

5) **Section 2.5:** The text states that a total of 52 soil gas samples were taken. Table 4-22 lists a total of 54 soil gas samples.

6) **Section 2.6, Reference Data Sets:** Presentation of background data for Soil and Groundwater should follow that of Sediment and Surface Water data sets as presented in their respective Appendices.

> Appendix G: the 28 pages that comprise Table G-1 should be removed. The Table should contain only that data generated from the background sampling locations as listed in Table 2-5, specifically MW12-1, MW12-2, MW12-3, MW12-4, MW12-5, and MW12-6, SB12-7, SB12-8 and SB12-9, (discussion in Section 2.6 noted).
>
> Appendix J: The 8 pages that comprise Table J-1 should be removed. The table should contain only that data generated from the background sampling locations as listed in Table 2-10, specifically MW12-1, MW12-2, MW12-3, MW12-4, MW12-5, and MW12-6 (discussion in Section 2.6 noted).

The SEAD-12 RI (Section 2.6 specifically) should only cite the *Seneca Army Depot Activity Background Soil Data* as a reference for further information.

7) **Section 2.7, Page 2-28:** The paragraph that begins "[t]hese potential release....." indicated that the areas are shown on Figure 2-8 and Figure 2-9. The Figures should be amended to include the Wastewater Treatment Plant.

8) **Section 2.8.3, Groundwater:** How would low flow sampling provide more accurate data indicative of groundwater quality than conventional purging and sampling techniques. Primarily, are the monitoring wells at SEAD-12 constructed in such a way as to obtain optimal results specific

to the technique of low flow sampling (nested wells with short screened intervals as compared to the present single monitoring wells with five to twelve foot screened intervals)? Wells such as MW12-7 (screened interval of ~12 feet) ideally should have had samples taken at varying depths of the screened interval to obtain a true representation of groundwater quality. A groundwater sample taken at 2 feet from the bottom of the well (16.4 feet BGS) would not be characteristic of the zone of groundwater located near the top of the screened interval (5.4 feet BGS). Groundwater data obtained to date may not be reflective of actual groundwater quality at SEAD-12 and review of low flow sampling practices and possibly, further groundwater sampling, is recommended.

9) **Section 4.1.1, Chemical Data:** The last paragraph discusses criteria for inorganics being based on site background values in soil. Although some of the TAGM values for inorganics only list SB (Site Background), the paragraph should make it clear that TAGM values for some inorganics list both a numerical value and SB.

10) **Section 4.3, Potential Release Areas:** The text states that the nine potential release areas are included in Figure 4-1. The cited figure does not show the Waste Water Treatment Plant and should be amended to do so.

11) **Section 4.3.2, Building 815, Building 816 and EM-28:** Section 4.3.2.3 states that there were three surface samples (chemical parameters) associated with EM-28 but it is unclear which samples these were. Figure 2-11, Inset 2, should include EM-28 as well as surface soil sampling locations associated with it.

The text cites Table-4C as showing surface soil analytical data for all compounds detected in EM-28. The sampling locations listed in Table 4-C are MW12-29 and MW12-30 but Figure 2-10 identifies two surface soil sampling locations, SS12-234 and SS12-238, located within the EM-28 area. Are there actually four surface soil samples associated with EM-28? Where is the data presented for SS12-234 and SS12-238? Please clarify.

12) **Section 4.3.2.4:** Seven sampling locations resulted in ten samples collected from the monitoring well borings and test pits related to EM-28.

13) **Section 4.3.3.2:** Test Pits TP12A-1 and TP12A-2 (Table 2-6) should be discussed in this section also. A total of ten samples were collected as a result of the RI and ESI investigations. Also, it should be stated that the four soil borings that were drilled resulted in fifteen samples to delineate the extent of the disposal pits.

14) **Section 4.3.3.5, Subsurface Soil Results:** Table 2-5 and Table 2-6 indicate a total of 44 subsurface samples associated with test pits and soil borings (including monitoring well borings) completed in the release area. Monitoring well identification MW12-28 in incorrect and should be change to MW12-8. Is there a monitoring well designated as MW12-28 associated with SEAD-12?

15) **Section 4.3.3.5, Radionuclide Soil Results:** This section header should be changed to 4.3.3.6.

16) **Section 4.3.4.2, Test Pit Results:** The third paragraph states that soil samples were collected in the immediate vicinity of the stainless steal cylinder. These sample identifications should be included in this section and a summary should also be included

regarding the results of sampling done in the vicinity of the cylinder. To date the stainless steel cylinder and its contents are unknown, therefore a discussion should be included regarding future measures to be taken to characterize this cylinder and it's contents.

17) **Section 4.3.5.1, Gamma Radiation Scanning Results:** The reference to Disposal Pit C in the first paragraph should be changed to Former Dry Waste Disposal Pit.

18) **Section 4.3.5.3, Surface Soil Results:** The text states that fourteen surface soil samples were collected but Table G-10 lists only eleven.

19) **Section 4.3.5.4, Subsurface Soil Results:** The text states that the greatest frequency of exceedences occured in sample TP12-23C. Section 4.3.5.2 states that only two test pits (TP12-25 and TP12-26) were excavated. From Figure 2-9 a test pit TP12-23 is located north of Disposal Pit C. It is now apparent that the TP12-23 data is in the wrong place. Remove the reference to TP12-23C from this section and modify the result summaries of Disposal Pit C and Dry Waste Disposal Area.

20) **Section 4.3.5.4:** Table 2-5 and Table 2-6 identify forty subsurface samples.

21) **Page 4-33** To be consistent with the text and the data tables, the result summary headers should be changed from Disposal Areas A&B to Disposal Pit A/B Area.

22) **Page 4-38** To be consistent with the text and the data tables, the result summary headers should be changed from Disposal Area C to Disposal Pit C Area.

23) **Section 4.3.6.5, Radionuclide Soil Results (EM5):** The reference to the Dry Waste Disposal Pit area should be changed to EM5. Figure 2-13 only identifies two surface soil locations within the EM5 area. Please clarify.

24) **Section 4.3.7.3, Surface Soil Results (EM6):** The three surface soil samples collected were all a result of the monitoring wells in the vicinity of the EM6 area. From the review of Figure 2-8 and Figure 2-12 the area in question is approximately 125 feet x 100 feet. The three samples are not indicative of surface soil conditions comprising the total area associated with EM6. Further surface soil sampling is recommended.

25) **Section 4.3.7.5, Radionuclide Soil Results (EM6):** The reference to the Dry Waste Disposal Pit area should be changed to EM6. Figure 2-13 only identifies three surface soil locations within the EM6 area. Please clarify.

26) **Section 4.3.8, Class III Areas:** This section should be subdivided to discuss each EM anamoly separately. Result summaries should also be presented separately in each section specific to the anamoly investigated. The way the data is presented in the text makes it unduly difficult to identify which exceedences relate to which area investigated.

27) **Section 4.3.9, Wastewater Treatment Plant:** A figure should be included in the section that identifies surface soil, sediment and surface water sampling locations in relation to the

plant. Figure 4-2 identifies a "Waste Water Plant Outfall" but the text does not state whether any sampling was done in this area. The Wastewater Treatment Plant figure should include the location where the outfall enters the Unnamed Creek. There should also be a discussion regarding sampling in the vicinity where the outfall enters the Unnamed Creek. If no sampling was done, then it should be stated as a deficiency at the end of the section. There should also be a discussion as to rational for sampling performed to assess any downgradient impact to the Unnamed Creek or Reeder Creek from the Wastewater Treatment Plant?

28) **Section 4.4.1:** The first paragraph on page 4-72 should be located below the section 4.4.1 header, not above it.

29) **Section 4.4.1, Surface Water Chemical Results:** Surface Water, Sediment, and Groundwater samples specific to potential areas of release should be presented and summarized within their respective sections.

30) **Section 4.4.1.2, SEAD-12 Surface Water Results:** The last paragraph should include a discussion of the minor waterway located south of the Disposal Pit A, B, and C Areas (Fig. 4-8) and the impact to it as implied by the high Hg values found in SW12A-1, SW12A-2 and SW12-16. Or, if Section Four is modified, then this discussion should be included in the section pertaining to Class III areas.

31) **Section 4.5.1.3:** The eleven samples should be identified. Figure 2-17 does not identify the location of SWSD12-55, SWSD12-50, SWSD12-57 or SWSD12-58. The text should refer the reader to Figure 2-16.

32) **4.6.1.2, SEAD-12 Groundwater Results:** The reference to Figure 2-5 is incorrect. Soil gas sampling locations as related to Building 813 are located in Figure 2-7 and soil gas locations SG12-147 and SG12-151 are actually located on the eastern side of Building 814, not Building 813 as stated in the text. The area of these two soil gas locations would seem to be a good place for a monitoring well as the values obtained from the two soil gas samples at this location would be as indicative of contamination as the 1708 ppb TCE found at the soil gas location SG12-121, in the vicinity of MW10-37 which has the 1600 ppb TCE in the groundwater sample. A discussion should be included regarding a possible source and further investigation is recommended to delineate the impact to groundwater.

There is no discussion regarding the two exceedences of Bis(2-Ethylhexyl)phtalate or the 67 metals exceedences listed in this section. This section of the document should include a discussion similar to that regarding exceedences at Buildings 813. A Figure, similar to Figure 4-6 for example, should be included in the document identifying groundwater sample locations as well as the location of exceedences.

33) **Section 4.7, Summary of Extent of Impacts:** This section presents figures only for Surface Water samples (Figure 4-7 and Figure 4-8). The same type of figures should be included for Surface Soil, Subsurface Soil, Sediment, and Groundwater.

34) **Section 4.7.2.1, page 4-101:** The statement that no groundwater exceedences for heavy metals occurred is incorrect. Review of Table J-2 and section 4.6.1.2 indicate that there

were several exceedences of heavy metals in groundwater. The statement should be corrected.

35) **Section 4 Tables:** Table 4X should list the monitoring wells in numerical order. All tables should be reviewed and amended to list sampling locations in numerical order.

36) **Section 5.1.1:** The third bullet associates a stainless steel cylinder with Disposal Pits A and B. Is this the same stainless steel cylinder discussed in Section 4.3.4.2 of the RI document? Please clarify.

37) **Section 5.1.2:** This section should include a discussion of the minor waterway (Class III) located south of the Disposal Pit A, B, and C Areas (Fig. 4-8). Three Surface water samples (SW12A-1, SW12A-2 and SW12-16) exceeded criteria for Hg. Review of data tables and the Appendices reveal an impact to sediment and surface soil as well. Three surface soil samples (SS12-38, SS12-43, and SS12-52) and one sediment sample (SD12A-2) exceeded criteria for mercury in the vicinity of the un-named creek. There were other samples taken in the vicinity that did not exceed criteria but trace amounts of Hg were found. A discussion as to the source should be included in the document.

38) **Figure 2-3** indicates an area with sporadic high conductivities whose southern extent is just north of EM-30 and whose northern extent is just east of EM-11. As it appears that this area is not affected by cultural interference, was the area inspected further? The document should describe this area and further investigation may be warranted.

39) **Table 2-7:** This table should also include LOC_ID of monitoring wells used to obtain Surface Soil Samples.

40) **Figure 2-8:** This figure should have an inset for Disposal Pits A&B as it is difficult to identify the location of soil borings and monitoring wells in this area. MW12A-2 should be included in the Figure. What is the monitoring well MW12-815?

41) **Figure 4-7:** The figure should reference Figure 2-15 (Sediment and Surface Water Sampling Locations) should the reader have any questions regarding the identification of SW sample locations as shown in figure 4-7.

42) **Figure 4-8:** The figure should reference Figure 2-15 (Sediment and Surface Water Sampling Locations) should the reader have any questions regarding the identification of SW sample locations as shown in figure 4-8. Also the text "**<Empty Picture>**" should be removed.

43) **Figure 4-8:** LOC_ID SW12A-2 in the legend should also include Hg (0.08 µg/L)

44) **Appendix G, Table G-8:** Table G-8 is incomplete (parameter identifications are missing) and the text at the bottom right of each page should be corrected.

45) **Appendix G, H, I, and J:** As a summary of data was presented in Chapter Four, Tables G-2 thru G-18 should be combined into two tables presenting all surface soil samples and subsurface soil samples in numerical order. Appendicees H, I, and J should also be amended to present all data in numerical order.

46) **Appendix J:** The tables should reflect the fact that Class GA criteria for Thallium in groundwater is 0.5 µg/L. Table J-2 indicates several exceedences of samples taken on the second round of sampling (DEC-99). These include MW12B-2 (3.5 µg/L), MW12-9 (3.3 µg/L), MW12-10 (3.9 µg/L), MW12-14 (5.3 µg/L), MW12-15 (3.9 µg/L), MW12-16 (3.4 µg/L), MW12-17 (4.2 µg/L), MW12-20 (2.8 µg/L), MW12-24 (3.5 µg/L), MW12-26 (4.8 µg/L and 7 µg/L), MW12-38 (4.3 µg/L), and MW12-39 (5.3 µg/L). Section 4.6 of the SEAD-12 RI should discuss these exceedences.

47) **Surface Water Sample Results:** Review of the data tables in Appendix I do not indicate where the data is located that was used to generate the Class C criteria as listed. For clarity, a discussion should be included regarding the Class C criteria for surface water as well as the analytical data that was used for the determination of these values.

48) Some of the Soil Boring Logs found in Appendix B should be amended to include the VOC Screen-PID and RAD Screen readings (i.e. MW12-4 and MW12-5).

SEAD-12 RI Report Comments (NYSDEC Radiation Section)

1) Page 2-18 indicates that for the grounds survey, a low energy gamma scintillation detector (FIDLER or equivalent) was used as the primary detector. Considering the other potential radionuclides of concern such as listed in Table 2-2 (Co-60, Co-57, Ra-226), wouldn't it have been prudent to perform the gamma surveying with both a low energy and a broad energy instrument? While a FIDLER or equivalent may be appropriate for looking for specific low energy nuclides, a properly windowed meter would not respond to the gamma components of the aforementioned radionuclides.

2) Regarding the first comment, what was the energy window on the FIDLER probe (or equivalent) set at during the scanning of outside grounds? If the instrument was not windowed, then it would have been more appropriate to us a 2X2 NaI(Tl) probe due to better gamma detection efficiency.

3) Page 2-18, and in several proceeding sections inaccurately describes instruments as NaI(Ti). The appropriate designation for the instruments is NaI(Tl) for Thallium doped Sodium Iodide detectors.

4) Page 2-21, 2.3.4.5 indicates that exposure rate surveys were performed using either a Bicron Micro-Rem meter, or a Ludlum Model 19 Micro-R meter. While these instruments may seem comparable, it is well documented that Sodium Iodide based Micro-R meters

such as the Model 19 tend to over-respond at lower energies, causing falsely elevated readings in environmental surveys. The Bicron Micro-Rem meter is a plastic scintillator based survey meter with a flat energy response over a broad range (20keV and up) of energies including many of the nuclides mentioned in comment #1. Therefore, comparisons of survey results between Microrem, and Micro-R meters may be questionable.

5) The removal action that took place outside of building 819. Was that a radium compass or similar device? It is recollected from previous conversations with Parsons staff that this may have been the area.

6) References to DEC's applicable TAGM are mistakenly referenced as TAGM 4006 instead of TAGM 4003.

7) The soil DCGL's for SEAD-12 are broken down into areas of concern (apparently according to MARSSIM classification or operable units). This is unusual and unnecessary considering the driver behind DCGL's is potential future land use. In most cases, site specific DCGL's are used in all areas regardless of classification. The MARSSIM roadmap indicates that DCGL's should be established before classification of areas by contamination potential and/or site history.

8) Since this RI may be used as a final radiological status survey, it would be advantageous to summarize the radiological results in a conclusion section.

The revised report should also address the enclosed comments from the NYSDOH Bureau of Environmental Radiation Protection on the SEAD-12 Draft RI , which are attached to avoid misinterpretation. Be advised that final comments on the SEAD-12 RI by the NYSDOH and the NYSDEC will be forwarded by 1 September, 2000.

If you have any questions please contact me by telephone at (518) 457-3976 or by e-mail at sxpaszko@gw.dec.state.ny.us.

Sincerely

Steve Paszko
Bureau of Eastern Remedial Action
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