



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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July 14, 2000

Judith Leithner, Ph.D., Project Manager
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Dear Dr. Leithner:

This is in response to your request for comments on three documents provided in June concerning Phase II remedial investigation of the Niagara Falls Storage Site. Our comments are provided below for each document.

Quality Assurance Project Plan (QAPP) Addendum

Page 2, section 2.1.2, *Additional Radionuclides for Analysis*: Many of the radionuclides listed for gamma spectroscopy are part of the same decay series but with the series equilibrium disrupted by chemical or physical processes. As a result, the laboratory needs to be careful of which gamma peaks will be used to determine the concentration for each nuclide so that each of the thirteen nuclides' concentration is independently determined and can meet the MDA stated on Table 3-10B.

Page 2, section 2.1.2, *Additional Radionuclides for Analysis*, last sentence: Change "compounds" to "radionuclides."

Page 3, section 2.1.2, *Additional Radionuclides for Analysis*: If Sr-90 and Pu are excluded because historical data did not indicate the presence of fission products, what is the rationale for including Co-60 and Cs-137 in the list of radionuclides for analyses? It appears that this section is not in agreement with the SAIC memo "Responses to Maxim's Request for Information Regarding Phase 2 Sampling at NFSS" dated June 6, 2000. The SAIC memo recommended that Th-230 not be analyzed by gamma spectroscopy and stated that Cs-137 (a fission product) was present in a Phase 1 sample.

Appendix A: insert " α " and " β " in the appropriate places in the Tables.

Appendix A: Table 3-3: Is the holding time for radionuclides sufficient to get all the soil analyses (alpha and gamma spec) done? There is normally no limit on holding time for soil samples for radionuclide analyses. Is the sample size adequate for multiple analyses?

Draft Field Sampling Plan Addendum Phase II Edition

Page 4-5, section 2.3, *Gamma Walkover Surveys and Resulting Phase II Data Needs*: Another reason for poor correlation between the walkover survey results and the radioanalytical results could be the contribution of gammas from subsurface contamination.

Page 4-5, section 2.3, *Gamma Walkover Surveys and Resulting Phase II Data Needs*: Thousands of counts per second seem high for spots that were indicated during a site visit as slightly above background.

Page 5, section 2.3, *Gamma Walkover Surveys and Resulting Phase II Data Needs*: What was the background count-rate for soil surrounding the railroad ballast?

Page 6 (section 2.4.1.1), page 16 (section 3.0, item 2), and Figure 27: Provide a table listing each proposed MARSSIM unit and the rationale for each unit's classification.

Page 16, section 3.0 *Planned Phase II Activities*, item 1: As part of the Phase II activities, a surface sample will be collected where the NaI reading exceeded 20,000 cps. How or when will you address the presence or absence of subsurface contamination at these locations? What is the basis for using 20,000 cps as the cut off to take a surface soil sample? What was the ambient background count-rate?

Page 16, section 3.0 *Planned Phase II Activities*, item 3: The Phase II activity described is unclear. Table 4 identifies 15 subsurface soil samples from buildings 401 and the acidification area. How do these match with the 29 locations for surface and subsurface soils and groundwater samples stated in the text? What is meant by collecting samples to "bound constituents found in samples that exceed screening values?"

Tables 2, 3, 4 and 7: What are the purpose and interpretation of gross α and β measurements for soil samples? In addition to "Total U," will isotopic uranium be provided under "Radiological Isotopes?" What radionuclides will be evaluated under "Radiological Isotopes?" Will it be the thirteen radionuclides listed in the draft QAPP?

Table 6: Isotopic radium analysis should be done for groundwater samples.

Draft Site Safety and Health Plan (SSHP) Addendum for Phase II

General: The subsections on "Radiological Hazards" in section 3 refer to the Radiation Protection Plan in Appendix A of this addendum. Apparently the full Plan is not in Appendix A, and I do not have it for review.

Page 8-1, Section 8.0, *Dosimetry*: The lower detection limit of TLD badges should be better than 0.1 rad, especially if you are striving to keep doses to within 100 mrem/yr.

Page 9-1, Section 9.2 *Radiation Monitoring*: Record-keeping requirements were not found in the Radiation Protection Plan Addendum in Appendix A.

Page 9-2, section 9.2.1 *Internal Radioactive Material Monitoring*: This section discusses personnel air monitoring for workers. The text states that the limit will be 10 CFR 20 Appendix B, Table 2, non-occupational limits. Appendix A, the Radiation Protection Plan Addendum, states the limit is 10 CFR 20 Appendix B, Table 1, occupational limits. Also what limit is or will be used for exposure to members of the general public from airborne radionuclides?

Page 11-1, section 11.3, *Contamination Reduction Zone*: States Radiation Protection Plan is in Appendix B.

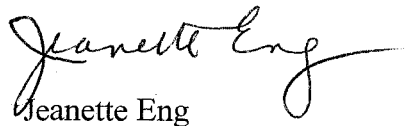
Table 3-1: The several references to "Radionuclides are addressed in the Radiation Protection Program, Appendix A" could not be evaluated because Appendix A is incomplete. See comment on Appendix A. Page 20 of the Table indicates the Radiation Protection Plan is in

both Appendix A and Appendix B. On page 8, is the contaminant of concern cobalt or cobalt-60?

Appendix A, *Radiation Protection Plan*: It appears that only an addendum to the Radiation Protection Plan was included in Appendix A of the SSHP, hence the references to non-addendum material could not be reviewed. Nevertheless, with respect to Appendix "B" to establish a radiological occupational weighted Derived Air Concentration (DAC) value, all the radionuclides of concern should be discussed as to why each is or was not included in the derivation of a weighted DAC value. At minimum, this should include actinium-227 and daughters (Ac-227+D), and protactinium-231 (Pa-231).

We appreciate the opportunity to comment. If you have any questions, please do not hesitate to contact me.

Sincerely,



Jeanette Eng

c: P.A. Giardina, Chief, RIAB