

On February 20, 2018, the Community Advisory Group Technical Committee submitted the following list of questions to Region 7 of the U.S. Environmental Protection Agency in advance of a teleconference held between CAG members and Region 7 staff on February 22, 2018. The EPA encourages the CAG to submit official comments on the Proposed Plan, including some of the information presented below, so that the EPA may develop a complete response in the Responsiveness Summary. However, to assist the CAG and other interested members of the public in understanding the information contained in the Proposed Plan, the EPA is providing the following references to certain supporting information contained in the Operable Unit-1 (OU-1) Administrative Record file. This document will be included in the Administrative Record file.

1. Please explain the graphs on Page 9.

EPA Response:

The notes located at the bottom of page 9 of the Proposed Plan (<https://semspub.epa.gov/src/document/07/30352175>) provide a short description of the various features depicted on the figures on page 9. The figures are taken from two videos that depict the 3D model of RIM in Area 1 and Area 2 of the West Lake Landfill (<https://semspub.epa.gov/src/document/07/30294287> and <https://semspub.epa.gov/src/document/07/30294288>).

2. Please show how the Proposed Remedy is protective of RIM from the existing SSE or a future SSE or landfill fire.

EPA Response:

Please refer to Section 6.2.2.3.4 (<https://semspub.epa.gov/src/document/07/30352116>) and Appendix E and Appendix N (<https://semspub.epa.gov/src/document/07/30352117>) of the January 26, 2018, Final Feasibility Study, or FFS, as well as the EPA's February 5, 2018, FFS approval letter (<https://semspub.epa.gov/src/document/07/30352115>).

3. What is the plan should the existing SSE or a future SSE or landfill fire threaten the RIM left behind?

EPA Response:

Please refer to the January 26, 2017, Incident Management Plan (<https://semspub.epa.gov/src/document/07/30337762>), the August 4, 2017 Temperature Monitoring Probe (TMP) Work Plan (<https://semspub.epa.gov/src/document/07/30351150>) and the December 16, 2017 draft Inert Gas Injection Work Plan for Hot Spot Remediation (<https://semspub.epa.gov/src/document/07/30351149>).

4. Is the 2005 level that is proposed to be the starting point of the 16-foot depth above or below the "muffin top", i.e. some are saying that the muffin top was placed after 2005. Please specify exact date and AMSL.

EPA Response:

The 2005 topographical surface referenced in the EPA's preferred alternative is discussed on page 8 of the October 31, 2014, draft Estimated Volumes for Partial Excavation Options Identified by the EPA (<https://semspub.epa.gov/src/document/07/40479602>) available in the Administrative Record. As discussed in this document, the 2005 topographical surface was the same topographic surface used

for the evaluations in the December 16, 2011, Supplemental Feasibility Study (<https://semspub.epa.gov/src/document/07/30284988>). This concept was later incorporated into the EPA's December 9, 2015, Statement of Work for the Remedial Investigation Addendum, or RIA, and FFS (<https://semspub.epa.gov/src/document/07/30285885>) also included in the Administrative Record. Additionally, please refer to Section 3.3.2.1 West Lake Landfill Radiological Area 1 and Figure 3-9 of the January 25, 2018, RIA (<https://semspub.epa.gov/src/document/07/30352110>) for information related to the timing of the placement of the above-grade portion of the North Quarry of Bridgeton Landfill which occurred approximately between 2002 and 2003.

5. Is EPA agreeable to different depths for different parts of the site? It seems that the 16-foot rule should not apply to the entire site, specifically; it would appear to safe to go much deeper into Area 2. Please discuss the selection of 16 feet and if you agree that it may be safe and practical to go deeper into Area 2 and any other parts of the site where this may be practical. Will the EPA provide the legal guidance for choosing 16ft as the depth of excavation in the EPA's preferred alternative?

EPA Response:

Per Section 12 of the Proposed Plan, the EPA is requesting public comments on this topic. The Proposed Plan also discusses the 16-foot excavation limit on pages 16 and 26. A more detailed description is included on pages 8 and 9 of the EPA Region 7's December 26, 2017, Summary of Actions to Address the February 20, 2012, National Remedy Review Board consultation (<https://semspub.epa.gov/src/document/07/30337920>). Section 3 of the January 26, 2018, FFS (<https://semspub.epa.gov/src/document/07/30352116>) and the EPA's February 5, 2018, approval letter for the FFS (<https://semspub.epa.gov/src/document/07/30352115>) provide a summary of the applicable or relevant and appropriate requirements (ARAR). No specific ARAR was used as a basis for selecting the 16-foot depth.

6. Will any off site testing and remediation be done as part of this Remedy? If not, what is EPA's official response to the discovery of off-site RIM by the study commissioned by AG Koster?

EPA Response:

The EPA's various off-site investigation reports have been included in the Administrative Record and are summarized on pages 5-7 of the Proposed Plan. None of the alternatives evaluated in the FFS and described in the Proposed Plan include requirements for additional off-site investigations. All the alternatives include further investigation and remediation of the buffer zone and crossroads property adjacent to Area 2, which is part of OU-1 of the Site as discussed in the RIA and FFS.

7. Mary Peterson used the term "static conditions" when referring to groundwater considerations within the Proposal. Please explain "static conditions" (she said this means that the current pumps continue to keep the groundwater levels where they currently are). If this Remedy relies on these pumps, what is the guarantee that they will be maintained and working for the next 1000 years?

EPA Response:

The operation of the Bridgeton Landfill leachate collection system is not specified in the January 26, 2018, FFS for any of the alternatives. A description of the Site hydrogeology, including a description of factors that may influence groundwater levels beneath OU-1, is discussed in Section 2.5.2 of the FFS (<https://semspub.epa.gov/src/document/07/30352116>). Additionally, Section 2.2 of the Proposed Plan discusses Operable Unit 3 (OU-3) and groundwater monitoring conducted at the Site.

8. What considerations are in the Proposal to protect remaining RIM from a seismic event?

EPA Response:

ARARs related to the considerations of earthquakes in the design of any OU-1 engineered cover are discussed in Sections 3.1.2.4 of the January 26, 2018, FFS (<https://semspub.epa.gov/src/document/07/30352116>). Section 3.1.3.3 of the of the January 26, 2018, FFS also includes discussion of ARARs that include earthquake considerations that may be relevant and appropriate for the design of an on-site disposal cell. Additional considerations for natural disasters, including floods and tornadoes, are discussed for each alternative in Section 6 of the January 26, 2018, FFS, specifically the subsections on the adequacy and reliability of the controls (example Section 6.2.2.3.3).

9. How will 1st responders protect the community during the remedial process?

EPA Response:

The roles and responsibilities of first responders with respect to remedial sites are established as part of the required health and safety plans developed during the remedial design/remedial action, or RD/RA, portion of the Superfund process. The EPA has also developed a guidance that discusses the coordination with local responders including fire departments, hospitals, police departments, etc. This guidance is available at <https://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=P100KM6R.TXT>.

Additionally, please see the previous EPA Response to #3 regarding the Incident Management Plan. This plan provides site-specific information to support responses from landfill operators, local responders, the Missouri Department of Natural Resources or MDNR, and the EPA to a variety of incidents should they occur at the Bridgeton and/or West Lake Landfill.

10. Section 5.1, page 11. The human receptor selected for the baseline risk assessment is a future on-site storage yard worker. Considering that unacceptable levels of radiation are projected for 9000+ years, why does the EPA not evaluate the potential of residential use in the far distant future (perhaps in 5000 years), or even a smaller exposure consideration of it becoming unsecured in the future and accessible to children or the general public? Since the film Atomic Homefront aired, we are hearing anecdotal stories of people who used to access the landfill and drink beer under the flare.

EPA Response:

Risk estimates have been developed and presented for the no action alternative and for each of the remedial alternatives in the January 31, 2018, Updated Baseline Risk Assessment, or BRA, (<https://semspub.epa.gov/src/document/07/30351681>) and Appendix H of the January 26, 2018, FFS (<https://semspub.epa.gov/src/document/07/30352117>), respectively. Section 6.3.1 of the BRA provides a discussion of the uncertainty related to land use assumptions at the Site. Information related to this question can also be found on pages 2 and 3 in the EPA's February 2, 2018, approval letter for the updated BRA (<https://semspub.epa.gov/src/document/07/30352119>).

11. Section 7.1, page 13. EPA indicates that all alternative remedies will require 5-year reviews, long-term monitoring, maintenance and proper site management. Will the EPA clarify the expected length of time 5-year reviews, long-term monitoring, and maintenance will be required for each alternative and how those expectations are reflected in the cost comparisons? Would full remediation result in much less (like 950 years less) post-remediation monitoring and maintenance?

EPA Response:

Section 6.1.7 of the January 26, 2018, FFS provides a general overview of the cost estimates developed for each alternative (<https://semspub.epa.gov/src/document/07/30352116>). Specifically, Section 6.1.7.3 on pages 259 and 260 provides an explanation of discount rates and the effect this has on long-term cost estimates. The details of the cost estimates can be found in Appendix K of the January 26, 2018, FFS (<https://semspub.epa.gov/src/document/07/30352117>) for each alternative. Page "i" of Appendix K contains the following statement, "Cost projections for the Full Excavation with Off-Site Disposal Alternative end at 30 years."

12. Will the EPA provide shape files for the proposed removal areas?

EPA Response:

The EPA is not currently in possession of these shape files. Once obtained, the files would be available for sharing.

13. It would seem that that removal of RIM above 1000 pCi/g at any depth is merited. The Proposal indicates that uranium mill tailings typically have a radioactivity of 1000pCi/g. Since the site is located in the populous St. Louis metro area and long-term use of the site is unknowable, reducing radioactivity to 1000 pCi/g at greater depths seems reasonable. Please comment if this is feasible and if the level of safety would be compromised.

EPA Response:

As presented in the January 26, 2018, FFS, all of the alternatives are feasible. Sections 5 and 6 of the FFS provide information about each of the alternatives. Section 7 provides a comparative analysis of the alternatives. In addition, page 13 of the Proposed Plan provides a summary of each alternative in Section 7. Section 8 of the Proposed Plan summarizes the EPA's evaluation of each alternative with respect to the nine criteria established in 40 CFR 300.430(e)(9) (iii). Specific details regarding the evaluation of the alternative that would remove RIM at concentrations above 1000 pCi/g are available in all of the above referenced documents. In addition, it should be noted that Section 12 of the Proposed Plan on page 27 requests comments from the public which include comments on all the remedial alternatives presented in the FFS.

14. Section 4, page 10. The report states that, "The remedy for OU-1 will be consistent with the remedy selected for OU-2 and any remedy that may be selected for OU-3." What does "consistent with" mean and does achieving consistency with OU-2 and OU-3 limit EPA's choice of remedial actions for OU-1?

EPA Response:

The EPA implements the Superfund Law in accordance with the National Contingency Plan, or NCP. As specified in 300.430 (a)(1)(ii)(A) and 300.430 (a)(1)(ii)(B): "(A) Sites should generally be remediated in operable units when early actions are necessary or appropriate to achieve significant risk reduction quickly, when phased analysis and response is necessary or appropriate given the size or complexity of the site, or to expedite the completion of total site cleanup. (B) Operable units, including interim action operable units, should not be inconsistent with nor preclude implementation of the expected final remedy."

The preferred alternative as described in the Proposed Plan for OU-1 is consistent with the remedy for OU-2 and would not limit any remedy selected for OU-3. It is the EPA's intention that any and all information gathered as the EPA moves forward with implementing the RD/RA process for OU-1 will inform the investigation and remedy selection process for OU-3.

15. It appears that the UMTRCA standard calls for the top 2.2 feet to be remediated to a lower level than the 52.9 threshold proposed. Specifically:

EPA Response:

The requirements in UMTRCA are performance based and do not prescribe specific excavation depths. Appendix L of the January 26, 2018, FFS (<https://semspub.epa.gov/src/document/07/30352117>) provides a technical evaluation which is the basis for the selection of the depth of excavation associated with the risk based partial excavation alternative. Compliance with the UMTRCA regulations (40 CFR 192) is discussed in Appendix L as it relates to limits on radon releases. A summary description of the Risk-Based Partial Excavation Alternative is provided in Section 5.9 of the FFS on pages 241 through 245.

16. Discuss removal of all RIM above 7.2 pCi/g to a depth of 2.2 feet. The criteria of 52.9 pCi/g is ten times greater than EPA's Uranium Mill Tailings Radiation Control Act (UMTRCA) health-based surface soil clean-up standard for radium, which is 5 pCi/g over background. As presented, Alternative 4 could leave RIM in the surface soil at levels almost 10 times the UMTRCA health-based criteria for surface soil.

EPA Response:

As discussed in the January 26, 2018, FFS and summarized in Section 7 of the Proposed Plan, all of the action alternatives evaluated for OU-1 require an engineered cover that complies with the standards established in UMTRCA Subpart A for control of residual radioactive materials (40 CFR 192.02) or require removal of all RIM which is defined based on the clean-up standards specified in UMTRCA subpart B (40 CFR 192.12). As a result, no RIM will be left at the surface after implementation of any of the action alternatives.

17. Why would EPA choose on-site disposal? What advantages does EPA see?

EPA Response:

Per Section 12 of the Proposed Plan, the EPA is requesting public comments on this topic. Alternatives that consider complete excavation of RIM with both off-site and on-site disposal are presented in the FFS and summarized in the Proposed Plan. The alternative evaluations provide information related to the considerations, impacts, and challenges for each type of disposal.

18. 5-year review – what is the criteria to determine effectiveness?

EPA Response:

There are a variety of factors that will be considered in determining the protectiveness of the remedy as a part of the 5-Year Review process for the Site. For more information please see Section 4 of the Comprehensive Five-Year Review Guidance document located at: <https://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=2000IRKW.TXT>.

19. Where in the RI/FS does the EPA provide data for RIM by depth for each boring? Most tables and maps we've reviewed provide a max reading.

EPA Response:

Appendix C (<https://semspub.epa.gov/src/document/07/30352111>) and L (<https://semspub.epa.gov/src/document/07/30352113>) of the January 25, 2018, RIA provide detailed information of the various investigations on an individual boring basis. Appendix L contains the borehole summary sheets which plot all the information available for each boring on the same figure. Appendix M of the RIA (<https://semspub.epa.gov/src/document/07/30352113>) also provides vertical and horizontal cross sections of the estimated RIM in Area 1 and Area 2.

20. Why did the testing for the isolation barrier stop where it did?

EPA Response:

See Section 1 and Section 5 of the Final Phase 1 Comprehensive Report dated April 5, 2016, for more information (<https://semspub.epa.gov/src/document/07/30285875>).

21. Are there any ARARs or other applicable guidance to systemic risk if the EPA chooses a remedy that leaves behind RIM behind?

EPA Response:

There are ARARs that have been identified that are either applicable or relevant and appropriate related to the presence of RIM at the Site. These ARARs are discussed in Section 3 of the January 26, 2018, FFS. The EPA has also provided corrected ARARs tables as an attachment to the February 5, 2018, FFS approval letter (<https://semspub.epa.gov/src/document/07/30352115>). All remedies must attain the threshold criteria of overall protectiveness of human health and the environment to be considered as viable alternatives at Superfund sites as set forth in the NCP at 40 CFR 300.430(e)(9)(iii). All of the alternatives presented in the FFS, except the "No Action" alternative, have been demonstrated in the FFS to comply with the threshold criteria.

22. If off-site disposal is chosen, will any RIM be trucked and stored outside the property line?

EPA Response:

The January 26, 2018, FFS proposes sorting of waste and filling of transportation containers be done on-site, these containers would then be transported off-site. Final details, however, are to be determined in RD phase.

23. Can 5-year reviews be done more frequently ... is there any reason why this cannot be required?

EPA Response:

If the remedial action implemented results in hazardous substances remaining at the Site above levels that allow for unlimited use and unrestricted exposure, the EPA shall review such action no less often than every 5 years after the initiation of the action. The EPA can make a determination to conduct 5-year reviews earlier or more frequently than the standard 5-year cycle. See the EPA 5-Year Review Fact Sheet (<https://semspub.epa.gov/work/HQ/174760.pdf>).

24. What is the odor control plan for muffin top and older landfills?

EPA Response:

Odor control technologies are discussed in Section 4.3.6 of the January 26, 2018, FFS. Specific plans and details related to controlling odors will be established during the RD/RA phase.

25. Section 2.4, page 6. The report states that, “Levels of radon measured on-site by the PRPs (<0.4 pCi/L to 0.7pCi/L) were similar to levels measured at the EPA’s off-site reference location in St. Charles, Missouri (median of 0.3 pCi/L) and below the UMTRCA standard (40 CFR 192.02) of 0.5 pCi/L above background at the site boundary.” The CAG wants to know if EPA considers 0.3 pCi/L to be the background concentration for air. If so, the UMTRCA standard would be 0.8 pCi/L for air, during implementation, correct?

EPA Response:

The EPA’s 2012 Citizen’s Guide to Radon (https://www.epa.gov/sites/production/files/2016-02/documents/2012_a_citizens_guide_to_radon.pdf) contains information about radon exposures and indoor radon testing. This guidance also states that 0.4 pCi/L of radon is an average value for outside air.

The radon results from the EPA’s off-site air monitoring are presented in Section 4.2.3 of the October 22, 2018, Final Data Summary Of Baseline Off-Site Air Monitoring Radiological Parameters (<https://semsub.epa.gov/src/document/07/30284975>). The median radon concentration based on all the radon measurements obtained from the EPA’s reference air monitoring station, or Station 5, was 0.3 pCi/L and is being used to compare radon results from the on-site air monitoring in the January 25, 2018, RIA and January 26, 2018, FFS but has not been established as a background value for radon for the West Lake Landfill Site for the purposes of compliance with any standards in UMTRCA.

The radon emission standards from UMTRCA specified in 40 CFR 192.02(b) are discussed in Section 3.1.1.1.1 of the January 26, 2018, FFS. Design specifications for any engineered cover that must comply with the performance standards in UMTRCA, including the radon emissions standards, will be determined in the RD phase.

26. Section 6, bottom of page 12 and top of page 13. The text discussing background based PRGs for the Buffer Zone and Lot 2A2 seems to indicate that EPA intends to clean up these areas to background concentrations. But, the report also states that, “Final cleanup levels will be determined in the amended Record of Decision (ROD).” Will the EPA clarify the level of cleanup intended for the Buffer Zone and Lot 2A2?

EPA Response:

As stated on pages 12 and 13 of the Proposed Plan, background based Preliminary Remediation Goals are presented for remediation of the Buffer Zone and Lot 2A2. As with all Superfund sites, the EPA establishes final Remediation Goals in the ROD and will do so in the ROD for OU-1 for this Site after consideration of public comments.

27. Will the EPA provide the latitude/longitude for all sampling data (groundwater, borings, GCPT, air, etc...)?

EPA Response:

Northing and Eastings and the associated coordinate system are provided in many of the tables in the January 25, 2018, RIA that present sampling data. This location information can be converted to latitude and longitude.

28. Does the EPA have a master map that shows which sampling areas overlap using lat/long? Is there a map that shows which lat/long may have been used more than once but by a different name due to a different contractor/type of testing (ie... Vendor A did the GCPT test and Vendor B conducted boring tests at the same lat/long locations, but they have different names.

EPA Response:

The last two figures provided in the January 25, 2016 RIA titled "Plate 1: Area 1 RIM Extent and Data" and "Plate 2: Area 2 RIM Extent and Data" are large format maps that provide a variety of information on one map.

29. From Table 1 in the Proposed Remedy, why is Risk Based Partial Excavation Alternative the most protective?

EPA Response:

All of the action alternatives are considered protective. The alternatives (including the Risk Based Partial Excavation Alternative) are discussed in Section 7 of the Proposed Plan, and Section 6 of the January 26, 2018, FFS. Short-term and long-term risk evaluations are presented for each alternative in Appendix H of the FFS. Also see the EPA response to question 15 for more information related to the Risk Based Partial Excavation Alternative.