

June 18, 2014

Mr. Paul Rosasco, P.E.  
Engineering Management Support, Inc.  
7220 West Jefferson Avenue, Suite 406  
Lakewood, CO 80235

RE: Work Plan for Removal Action – Preconstruction Work, West Lake Landfill Superfund Site

Dear Mr. Rosasco:

This comment letter is in response to the submittal prepared by Engineering Management Support, Inc. entitled “Work Plan for Removal Action – Preconstruction Work” (Preconstruction Work Plan) dated May 16, 2013. The Preconstruction Work Plan was submitted pursuant to Paragraph 31a of the Administrative Settlement Agreement and Order on Consent (ASAOC) for Removal Action – Preconstruction Work, EPA Docket No. CERCLA-07-2014-0002.

This comment letter was developed by the Missouri Department of Natural Resources’ Federal Facilities Section and Solid Waste Management Program (SWMP) in coordination with the Missouri Department of Health and Senior Services (MDHSS). MDHSS comments are provided as an enclosure to this letter.

General Comments:

1. Applicable or Relevant and Appropriate Requirements (ARARs) – Under this CERCLA Removal Action, any staging, management and relocation of excavated wastes on the West Lake Landfill Superfund site must comply with all ARARs including Missouri Solid Waste Management regulations and siting requirements.
2. Characterization of RIM – The Preconstruction Work Plan states, “One of the goals of the design of the isolation barrier is to locate the barrier outside the extent of the contiguous mass of RIM present within Area 1.” Will additional “step-out” sampling be performed prior to final design of the isolation barrier? Please provide a schedule for such investigation as well as a schedule for the Phase 2 investigation which is described in Section 4.2.3 of the Core Sampling (Phase 1B, 1C, and 2) Work Plan – Revision 1.
3. Stormwater Discharges – The Department has noted that the Preconstruction Work Plan includes vegetation clearing and grading that may require erosion controls and compliance

testing of stormwater discharges. The Department also notes that the Missouri State Operating Permit No. MO-0112771 is currently under review for proposed modification(s). The monitoring requirements of this permit may need to be updated to reflect the contaminants for Operable Unit 1.

Section Specific Comments:

4. Section 2. DESCRIPTION OF WORK TO BE PERFORMED, second paragraph on page 3. The second sentence of this paragraph states, "Due to the shorter haul distances, an overall design preference is to place all, or as much of the excavated waste as possible within the southeastern portion of Area 1 outside of the extent of actual occurrences of Radiologically-Impacted Materials (RIM) within Area 1." A map showing the Area 1 boundary and RIM extent would be helpful. The Department is not aware of any sizeable areas within Area 1 that do not contain RIM.
5. Section 2. DESCRIPTION OF WORK TO BE PERFORMED, third paragraph on page 3. The first sentence states, "Portions of Area 1 were overlain by MSW placed during final waste placement of the North Quarry Landfill, which can be demonstrated by comparing current topographic features to historical topographic mapping generated from aerial photogrammetric methods from an April 6, 1975 flight." The Department requests a copy of these topographic maps be included in the Preconstruction Work Plan.
6. Section 2. DESCRIPTION OF WORK TO BE PERFORMED, first paragraph on page 4. The last sentence states, "If RIM is encountered, this waste will be disposed in an approved manner, and not disposed in the relocation areas." What will be considered an "approved manner" for disposal of RIM? Please elaborate on what disposal methods and locations are planned.
7. Section 2.3 Bird Hazard Monitoring and Mitigation Plan for Ongoing Landfill Work, bullet list, page 6. The last bullet states, "Monitoring and mitigation measures for new detention basin construction and operation." It is unclear what new detention basin is this referring to? Please identify this feature on the site map.
8. Section 2.4 Air Monitoring, Sampling and QA/QC Plan, second last paragraph, page 7. The last sentence states, "In addition, four of the stations will also be monitored for the presence of volatile organic compounds (VOCs) in air." There appears to be a discrepancy as the first sentence of the sixth paragraph on page 11 of Appendix B: Air Monitoring, Sampling, and QA/QC Plan states, "Five of the monitoring stations will house continuous passive samplers to monitor for VOCs." Please clarify the exact number of stations equipped to monitor for VOCs.
9. Section 2.5 Litter Control Barriers, first paragraph on page 7. The fifth sentence states, "The support masts are secured to the ground using steel stakes." Please include a discussion on decontamination procedures for the steel stakes if they come in contact with RIM and a discussion on disposal of soil cuttings if any are generated during fence construction.

10. Section 2.5 Litter Control Barriers, first paragraph on page 7. Please include a discussion on decontamination procedures for the “dozer – moveable units” if they come in contact with RIM.
11. Section 2.5 Litter Control Barriers, second paragraph on page 8. This paragraph discusses a third technique of litter control involving manual removal of litter from the litter control fencing and any that has blown off site. Please include a discussion on radiological scanning and proper disposal for potentially radiologically contaminated litter.
12. Appendix B: Air Monitoring, Sampling and QA/QC Plan; Section 1.3 CONSTITUENTS OF CONCERN. The third sentence states, “A Baseline Risk Assessment (BRA) was published in 2000 and identified the radionuclides of concern at the West Lake Landfill.” Please list these radionuclides of concern.
13. Appendix B: Air Monitoring, Sampling and QA/QC Plan; Section 1.3 CONSTITUENTS OF CONCERN. This section references the Baseline Risk Assessment (BRA) as the source for radionuclides of concern. In addition to these constituents of concern (COCs), Table A.2-1 of the BRA lists arsenic, lead, uranium (as a heavy metal) and Aroclor 1254 as potential COCs. Please include a discussion of these non-radiological COCs for consideration to include in the air monitoring program. In addition, the Department notes that asbestos may be present in construction debris within the landfill material. Please include a discussion on how asbestos will be monitored during construction of the isolation barrier.
14. Appendix B: Air Monitoring, Sampling and QA/QC Plan; Section 1.3 CONSTITUENTS OF CONCERN. The COCs listed in this section were previously identified during the OU-1 Remedial Investigation. If construction of the isolation barrier extends into areas of the Bridgeton Sanitary Landfill, these COCs may not be all inclusive of contaminants encountered. The Department references EPA letter to Mr. Brian Power transmitting comments on the Core Sampling (Phase II) Work Plan. Comment #14 states as follows:

“Section 4.9 – Soil Sampling (second paragraph): Please clarify how the used PVC sleeve will be handled; will it be decontaminated or disposed of as waste? In addition, the EPA requests that Republic collect grab air samples from the head space of at least three boreholes and provide the sample results to the EPA and MDNR. The purpose is to use the open bore holes to sample source gas in order to identify the appropriate non-radiological air sampling for the trenching operations. The source gas should be analyzed for aldehydes, ammonia, reduced sulfur compounds, SO<sup>2</sup>, VOCs, carboxylic acids, CO<sup>2</sup>, methane and O<sup>2</sup>. Please identify which boring locations will be used to collect source gas samples in the revised Phase II Work Plan for review and approval.”

The Department requests that a discussion be included on source gas sampling and how this data will be used to select potential additional COCs to be included in the air monitoring program. Also, please include a schedule for the source gas sampling (Phase 2).

15. Appendix B: Air Monitoring, Sampling and QA/QC Plan; Section 1.4 AIR MONITORING APPROACH AND SAMPLING METHODS. The last sentence of the first paragraph states, "Buried or overhead electrical power service will be provided to all environmental monitoring station locations." It is not clear from Figure 4-3 if any of the air monitoring stations will be located within areas of RIM. Please include a discussion within this appendix or reference to other part(s) of the Preconstruction Work Plan that describes how such utilities will either avoid or be installed through potential RIM areas. This should include scanning of trenches or pole excavations, decontamination of equipment, handling/disposal of excavated RIM, etc.
16. Appendix D: Radiation Safety Plan for Site Preparation and Subsurface Investigation Activities, Section 2. SCOPE. The footnote to the term "TENORM-impacted soils" states that "Soils matching that description have been designated as 'RIM' (Radiologically Impacted Soil)." To avoid confusion, the Department recommends using the acronym RIM instead of TENORM throughout the Radiation Safety Plan to be consistent with the Preconstruction Work Plan and other technical documents for West Lake Landfill Operable Unit 1.

SWMP Comments:

Missouri is a U.S. EPA approved state for implementation of Subtitle D of the Resource Conservation and Recovery Act (RCRA). Under 42 U.S.C. 6901-6991k and 40 CFR Parts 257 and 258 requirements, Missouri has the authority to permit the design and operation of municipal solid waste disposal areas. All aspects of the design, operation, closure and post closure of these facilities fall under the authority of the SWMP.

GENERAL COMMENTS:

17. Oxygen intrusion into the area impacted by the excavation must be minimized to avoid landfill surface or subsurface fire. The submitted work plan does not address normal operating conditions at a solid waste disposal area when excavation involves movement of municipal solid wastes in various stages of decomposition. Of specific concern is the adequacy of control measures to limit the period wastes are exposed to oxygen from the open cut and any potential impacts vacuum from landfill infrastructure may have on the exposed wastes.
18. The work plan states that solid wastes will be relocated within the existing permitted solid waste disposal areas. Missouri statutes at 260.210.1.(2) RSMo prohibit relocation of solid wastes without approval from the SWMP. No approval of such relocation of solid wastes onto other areas of the West Lake Landfill Complex can be granted by SWMP unless all Applicable or Relevant and Appropriate Requirements (ARARs) and concerns/comments provided in this letter are fully addressed (see Comment #1).
19. Odors from the current subsurface smoldering event are already intruding into the community beyond the permitted boundaries of the landfill property. As proposed, the work

plan results in excavation and placement of nearly 95,000 yards of municipal solid waste in varying stages of decomposition and appears to place the waste at and above the ground's surface. Placement of these excavated materials back onto this property would further exacerbate this continuing public nuisance.

20. The SWMP did not see included a release or approval from the City of St. Louis to allow for the placement of waste materials on property covered by the negative easement and covenants entered into between Bridgeton Landfill, LLC and the City of St. Louis/Lambert International Airport on April 6, 2005.
21. Modifications to solid waste disposal area permits within the West Lake Landfill Complex have not been submitted by the permittee of record. Missouri statutes at 260.205.5 RSMo and the implementing regulations require that such modifications to solid waste disposal area permits be submitted for review and approval by the SWMP.
22. The submitted work plan is unsigned and is not marked draft. The work plan must be signed and stamped by a Professional Engineer registered in the state of Missouri as required by 10 CSR 80-2.020(4.)A.2. Further, the work plan must be signed by the permittee of record requesting the submitted modifications be reviewed for approval by the SWMP.
23. As the work plan extends across the boundaries of several Missouri permitted solid waste disposal areas, at a minimum, the plan title must reference those disposal areas and their permit numbers (i.e., Bridgeton Sanitary Landfill, Missouri Permit Number 0118912 and other solid waste disposal areas, Missouri Permit Numbers 0118906, 0118909, and 021890). A consolidated work plan addressing all of the listed Missouri permitted solid waste disposal areas or an individual work plan for each of the disposal areas listed needs to be developed and submitted as a permit modification(s) for review and approval by the SWMP.

Specific Comments:

24. Section 2.1: Relocation of the wastes within the West Lake Landfill Complex properties must comply with all ARARs and address concerns/comments provided in this letter (see Comment #1). The following comments address concerns related to "Identification of Waste Staging and Management". Wastes must be disposed of in an active, permitted solid waste disposal area.
  - a. The following concerns must be addressed within the work plan related to the wastes removed from the trench area and leachate generated by the waste mass in the construction area.
    - Testing to confirm material remaining in the Bridgeton Landfill's North Quarry is not West Lake Landfill radiologically impacted material;
    - Prevention of surface and subsurface fires as a result of waste excavation through implementation of controls and processes to minimize oxygen intrusion into either the excavated wastes or the remaining intact wastes.

- Methods for minimization of odors and attraction of vectors through reduced working face size and length of time wastes are allowed to be exposed to the ambient air prior to containerization and shipping of wastes off-site to a permitted destination, as applicable; and
  - Adequate management of stormwater and leachate during construction.
- b. The SWMP does not consider a trench 20 feet deep, with a 45 foot base, and 3:1 side slopes to be “shallow”. The volume of material to be moved would require a significant effort, appropriate odor management to minimize vector attraction and timely transport off-site for ultimate disposal at an active, permitted solid waste disposal area(s).
- c. Presently, the work plan does not include an isolation barrier alignment diagram which prevents full consideration of existing Bridgeton Landfill conditions. Bridgeton Landfill’s North Quarry has highly engineered slopes rising up to 80 feet above the quarry walls. The design plan of the isolation barrier must ensure slope stability for worker safety during construction, minimization of odor and maintenance of slopes in the long-term given the volume of the remaining waste mass.
- d. Clarification of the following statement is needed “In order to maximize the structural stability of the barrier wall relative to potential settlement of the adjacent MSW in the unlikely event that a subsurface smoldering event (SSE) were to occur in the North Quarry Landfill adjacent to the barrier, the alignment of the barrier must be set back from the quarry edge.” Without an isolation barrier alignment diagram, it is unclear whether this setback from the quarry edge will be north (in Operable Unit 1, Area 1) or south of the quarry edge (in the waste mass of Operable Unit 2, Bridgeton Landfill’s North Quarry).
- e. Section 2.1, paragraph 2 uses the terminology “an appropriate subsurface unit”. Please clarify by providing a description or definition of an appropriate subsurface unit.
- f. The work plan does not include or reference the previously approved North Quarry Capping Plan or explain how compliance will be achieved with applicable statutory, regulatory and permit requirements for cover.

25. Section 2.2:

- a. The work plan and associated schedule must minimize the exposure of bare surface soils in permitted solid waste disposal areas to reduce soil erosion and exposure of any solid wastes to ambient air which then has the potential to result in increased odors and stormwater violations.

- b. The work plan and associated schedule do not reflect time to allow for submission and review/approval of modifications to Missouri solid waste management disposal area permits. Specifically, the plan does not provide any modifications to the Bridgeton Sanitary Landfill - North Quarry's existing landfill infrastructure, which will be impacted by the isolation barrier construction, such as the continuity of the gas extraction wells, the leachate system or pressurized air system.
- c. See Specific Comments regarding litter control barriers in Section 2.5.

26. Section 2.3:

We understand the 2013 Bridgeton Landfill, LLC, Bird Hazard Monitoring and Mitigation Plan is provided as a baseline or example. We stress the importance of the City of St. Louis being given an opportunity to assess the need for additional/expanded mitigative measures and determine the adequacy of any wildlife mitigation plans prior to commencement of construction activities that involve excavating and relocating the proposed volume of putrescible wastes.

27. Section 2.5:

Winds are highly variable and frequently gust to 30 mph or above around the West Lake Landfill Complex. It is unclear why the temporary litter fence is limited to the area along St. Charles Rock Road. With an operating solid waste transfer station within the immediate vicinity and with the potential for contamination of litter blowing within the work area, the temporary litter fence needs to be expanded to all sides of the property to ensure waste materials are not blown beyond the property boundary.

28. Section 6.1: Reporting and Deliverables

Copies or electronic media containing a complete set of all reports and deliverables relating to areas or portions of areas permitted by the SWMP need to be provided to the SWMP at the same time as reports and deliverables are provided to EPA.

29. Section 6.2: Monthly Progress Reports

Copies or electronic media containing a complete set of all monthly progress reports relating to areas or portions of areas permitted by the SWMP will need to be provided to the SWMP at the same time as such reports are provided to EPA.

30. Figure 5: Project Organization Chart

The Chart needs to include a contact within the department's SWMP and should be, Chris Nagel, Director.

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Please submit responses to all comments under this transmittal to Shawn Muenks and address any questions to him by phone at (573)751-3107; by written correspondence at the Missouri Department of Natural Resources, P.O. Box 176, Jefferson City, MO 65102; or email to shawn.muenks@dnr.mo.gov.

Sincerely,

HAZARDOUS WASTE PROGRAM



Shawn Muenks, P.E.  
Federal Facilities Section

In cooperation with,

SOLID WASTE MANAGEMENT PROGRAM



Charlene S. Fitch, P.E.  
Chief, Engineering Section

SM:dc

Enclosure

c: Mr. Dan Gravatt, U.S. Environmental Protection Agency, Region VII  
Mr. Joseph Binbeutel, Attorney General's Office  
Mr. Chris Nagel, Director, Solid Waste Management Program  
Mr. Jonathan Garoutte, Department of Health and Senior Services





- a. Section 2.3, Questions to be Addressed, states that baseline chemicals of concern (COC) are to be defined during the initial monitoring. Appendix B, Air Monitoring, Sampling, and QA/QC Plan, Section 1.3, Constituents of Concern, identifies volatile organic chemicals (VOCs), radionuclides, and COCs from West Lake Landfill as the list of contaminants. The baseline risk assessment (BRA), as updated in the supplemental feasibility study, includes metals, semi-volatile organic compounds (SVOCs), pesticides, and polychlorinated biphenyls (PCBs) as potential COCs (PCOCs). Are there plans to sample for COCs as identified in the BRA during monitoring? Please discuss in this section adding language within the plan as needed. Revise the plan to list and address the all COCs.
  - b. Section 3, Quality Assurance Objectives, notes gamma will be compared to “relevant criteria.” Please define that “criteria” in the document.
  - c. According to Appendix B, Radiello Code 130, cartridges will be used for sampling of VOCs. Given the unit will be collecting for 28 days, discuss the potential for loss of VOCs for this duration. Also, identify how peak emissions during construction will be determined. For peak emission identification, please discuss the potential need for collecting air samples using shorter deployment times, summa canisters, or other methodology.
  - d. For Appendix E of Appendix B, Radiello 130 Reporting Limits, health-based screening levels should be provided to determine if the detection limits are protective of the receptor in question. EPA regional screening levels for construction worker and residential, when applied to fence-line sample data, may be used for screening. A limited number of acute screening levels for ambient air have been developed for Bridgeton Landfill, and may be provided upon request.
  - e. Regarding Table 1, Preliminary List of Samplers for Perimeter and On-Site Air Monitoring and Sampling, the time frame of 28 days does not provide a means for protection for the public or worker receptor assuming short-term exposure limits may be exceeded. Address this data gap in the plan where applicable.
6. Appendix C, Bridgeton Health and Safety Work Plan
- a. Section 2.3, Potential Hazards, does not identify the potential that uncharacterized chemical contamination exists on the surface and subsurface soils in the boundaries of the closed demolition landfill. Also not identified are the COCs other than radionuclides in the West Lake Landfill. Revise the list to identify these potential sources of contamination, and for West Lake Landfill, the list of COCs presented in the BRA.
  - b. Section 2.4, Assessment and Mitigation of Potential Hazards, lacks discussion of VOC monitoring. Appendix D is limited to assessment of radionuclides and radon. Given VOCs are PCOCs at West Lake (as identified in the BRA), and have yet to be characterized at the closed demolition landfill, either Section 2.4 or additional appendices should be provided to address VOCs. Given SVOCs and other contaminants may be identified during future investigations for the barrier area, additional appendices may be more appropriate.
7. Appendix D, Radiation Safety Plan for Site Preparation and Subsurface Investigation Activities at West Lake Landfill’s Operable Unit 1 Preconstruction Activities.
- a. The title implies that this plan will be used for this and future work plans. This plan deals with exposures to RIM that are mainly surface soil and particulates resulting from brush management. Due to the variation in exposures and potential dosimetry that can occur during trench excavation,

DHSS recommends that this plan allow for future modification. Modification will be based upon potential differences of exposure associated with not only surface soils and particulates, but also to include stock piling and trench excavation of subsurface soils.

- b. Regarding Section 1.2, General Considerations, discuss the need to obtain 40 hours off site training for workers as identified in 29 CFR 1910.120(e)(3)(i), due to uncharacterized contaminants including, but not limited to, VOCs, SVOCs, asbestos, as well as the COCs as identified in the BRA. As for requirements in the radiation health and safety plan, workers who enter zones of elevated gamma readings should also have acquired 40 hours off site training, if they may receive doses above criteria set forth in the plan.
- c. Section 1.6, Site Training, should be revised to discuss the initial site specific training responsibilities, as identified in Section 4, Project Team Organization, for Auxier and Associates (A&A), when entering RIM areas.
- d. Regarding Section 3.2, Auxier and Associates, identify in the bullet-pointed responsibilities whether A&A will perform scans of personnel exiting the work zone.
- e. Regarding Section 4.4.3, Occupational Air Monitoring, Personal Air Sampling, personal air samplers should be required for dust-generating operations, per 29 CFR 1919.120(h)(4) as potential high-risk employees. Activities include brush cutting and grinding, trenching, and grading when within RIM.
- f. On-site workers should receive hazardous waste operations and emergency response (HAZWOPER) training in accordance with 29 CFR 1910.120. These workers should also have received the radiological safety training required in 10 CFR Part 19 which requires that "*...all individuals who, in the course of their employment, are likely to receive a dose of more than 100 millirem in a year, must receive adequate training to protect themselves against radiation.*" This level of training should be conducted because we don't have data that shows exposure will be less than 100 millirem. The radiological safety training should meet typical General Employee Radiological Training (GERT) requirements and include:
  - The nature of radioactive materials on the Site;
  - Potential routes of exposure;
  - Types of controls practiced to minimize exposures, including discussion of any engineering controls, administrative use of time, distance and shielding, and personal protective equipment;
  - Types of monitoring used to track potential exposures (periodic area surveys, air monitoring, and use of dosimeters);
  - Proper use of instrumentation;
  - Incident reporting;
  - Availability and use of confidential personal dosimetry records;
  - Effects of radiation on humans; and

- Allowable limits (who sets them and what they are).

8. Attachment A, ALARA Review.

- a. For Section A.3, Numeric Criteria, clarify whether the prescribed dose rates in the sustained dose rate and general area dose rates are committed dose, total effective dose, or a specified external dose equivalent (i.e. external deep-dose equivalent). Additionally, this attachment would benefit from declaration of dose equivalent types when dose rates are stated.
- b. For Section A.3, numeric criteria for dose will be assessed "above background." Discuss in this plan how background will be derived, whether by numeric calculation or by monitoring.
- c. For Table A-2, Maximum Derived Concentrations Permitted by 10 CFR 20, please make available more information on how the "AreaDust" factor referenced in footnote c is derived.

If you have questions or comments, please contact Andrew McKinney at (573) 751-6102.

Sincerely,

Jonathan Garoutte, Chief  
Bureau of Environmental Epidemiology