Gravatt, Dan

From: Gravatt, Dan
Sent: Tuesday, July 30, 2013 11:57 AM
To: Paul Rosasco; Warren, Victoria
Cc: Muenks, Shawn; Hammerschmidt, Ron; Tapia, Cecilia; Asher, Audrey
Subject: FW: SSE and Tornado Work Plans
Attachments: SSE Work Plan 7-23-13.pdf; Tornado Work Plan 7-24-13.pdf

Paul, Victoria,

EPA has reviewed the work plans you provided in your e-mail below for possible impacts due to an SSE or a tornado on OU-1. These workplans are acceptable to EPA. We look forward to seeing the results of these evaluations.

Sincerely,
Daniel R. Gravatt, PG
US EPA Region 7 SUPR/MOKS
11201 Renner Boulevard, Lenexa, KS 66219
Phone (913)-551-7324

Principles and integrity are expensive, but they are among the very few things worth having.

From: Paul Rosasco [mailto:paulrosasco@emsidenver.com]
Sent: Wednesday, July 24, 2013 11:08 AM
To: Gravatt, Dan; Asher, Audrey
Cc: 'Muenks, Shawn'; 'Merrigan, Jessie (LG)'; 'Neitzel, Charlotte'; 'Whitby, Kathleen'; steven.golian@em.doe.gov; 'Warren, Victoria'
Subject: SSE and Tornado Work Plans

Pursuant to Ms. Asher's July 3, 2013 letter, attached please find work plans for evaluation of possible impacts from a Subsurface Smoldering Event or a Tornado on the ROD-selected remedy. Please do not hesitate to contact us if you have questions.

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Work Plan

Evaluation of the Potential Impacts to the ROD-Selected Remedy from a Possible Subsurface Smoldering Event

Introduction

In a July 3, 2013 letter, the Environmental Protection Agency (EPA) requested the West Lake Landfill Operable Unit-1 (OU-1) Respondents expand the risk analysis section of the Supplemental Feasibility Study [SFS] (EMSI, 2011) to include risks associated with a subsurface smoldering event ("SSE") reaching OU-1 from the Bridgeton Landfill portion of OU-2, or a new SSE originating within OU-1. EPA indicated that it wants a qualitative assessment that takes into account how the remedy design would address the presence of an SSE, should one occur.

Approach

Per EPA's direction, evaluation of the potential impacts of an SSE on the Record of Decision (ROD)-selected remedy will be performed in a qualitative manner. Therefore, the evaluation will be based on review of published scientific and regulatory agency literature and an understanding of basic scientific principals and processes. This evaluation will include identification of additional ARARs, an assessment of potential impacts on the radionuclides present in OU-1, and the possible consequences to the integrity or performance of the ROD-selected remedy.

The evaluation will address the following items:

1. Discussion of a subsurface smoldering event that could result in an accumulation of increased heat within the landfill mass;

2. Description of the ROD-selected remedy;

3. Identification of possible SSE-related ARARs; and

4. Description of potential changes in the physical or chemical conditions within the landfill mass as a result of an SSE and the possible impacts of such changes on:

    a. The release, emission or migration of radionuclides in OU-1 Areas 1 and 2 after implementation of the ROD-selected remedy; and

    b. The integrity or performance of the ROD-selected remedy in such a circumstance.

Deliverables

1. Interim Deliverable – A memorandum will be prepared summarizing the results of the evaluation of potential impacts of an SSE on the ROD-selected remedy for OU-1 and any additional ARARs that could be implicated after construction of the ROD-selected remedy.

2. SFS revisions – an evaluation of the long-term effectiveness and permanence of the ROD-selected remedy, specifically, the evaluation of the adequacy and reliability of controls will be updated to include the potential impacts of an SSE at the Site and any ARARs raised by such an event.

Schedule

It is anticipated that collecting available information on SSEs, evaluating potential impacts of an SSE on the ROD-selected remedy, reviewing potential additional ARARs, and preparing a summary memorandum will take approximately six weeks after receipt of EPA approval of this work plan. (Please note this schedule may be revised depending upon the status of other activities simultaneously requested by EPA.)

EMSI will prepare a Supplemental SFS report that includes the results of the SSE evaluations after EPA comments on the interim SSE deliverable and as part of a comprehensive Supplemental SFS which addresses the results of the various other additional tasks EPA has requested.

References

Biffa, C&P Environmental, infinis, Ltd, Sita UK, Viridor Waste Management, and Waste Recycling Group, 2008, Management and Prevention of Subsurface Fires – Industry Code of Practice, Edition 1, June

CalRecycle, 2013, Landfill Fires Guidance Document,

Doll, Peter, 1997, Dessication of Mineral Liners Below Landfills with Heat Generation, Journal of Geotechnical and Geoenvironmental Engineering, Vo l. 123, No. 11, November, pp. 1001 – 1009.

Engineering Management Support, Inc. (EMSI), 2011, Supplemental Feasibility Study, Radiologically-Impacted Material Excavation Alternative Analysis, West Lake Landfill Operable Unit-1, December 16.

Federal Emergency Management Agency, 2002, Landfill Fires – Their Magnitude, Characteristics, and Mitigation, FA-225, May.

International Solid Waste Association, 2010, Landfill Operational Guidelines, 2nd Edition.

Martin, Jeffery, W., Stark, Timothy D., Thalhamer, Todd, Berasi, Gina, T., and Gortner, R. Edwin, 2011, Reaction and Combustion Indicators in MSW Landfills, Geo-Frontiers 2011, American Society of Civil Engineers.

Ohio Environmental Protection Agency, 2011, Subsurface Heating Events at Solid Waste and Construction and Demolition Debris Landfills: Best Management Practices, Guidance Document #1009, October 14.

Rein, Guillermo., 2009, Smouldering Combustion Phenomena in Science and Technology, International Review of Chemical Engineering, Vol 1, pp 3-18, January, http://www.era.lib.ed.ac.uk/handle/1842/1152

Ruesch, Paul, and Thalhamer, Todd, undated, Waste Fires Landfillology, United States Environmental Protection Agency, 13th Annual On-Site Coordinator (OSC) Readiness Training Program,

U.S. Environmental Protection Agency (EPA), 2008, Record of Decision – West Lake Landfill Site, Bridgeton Missouri, Operable Unit 1, May.

Work Plan

Evaluation of the Potential Impacts of a Tornado

on the ROD-Selected Remedy for West Lake Landfill OU-1

Introduction

In a July 3, 2013 letter, the Environmental Protection Agency (EPA) requested the West Lake Landfill Operable Unit-1 (OU-1) Respondents to provide a discussion of the effects of a tornado on the integrity of the remedial action to be taken at the site. EPA indicated that it was interested in a qualitative assessment.

Approach

Per EPA's direction, evaluation of the potential impacts of a tornado on the integrity or performance of the Record of Decision (ROD)-selected remedy will be performed in a qualitative manner. Therefore, the evaluation will be based on review of published scientific and government agency reports and application of basic scientific principals and processes.
The evaluation will address the following items:

1. Discussion of types of processes and damages associated with tornado impacts;

2. Description of the ROD-selected remedy;

3. Identification of possible tornado-related ARARs; and

4. Description of possible impacts of a tornado on the integrity of the ROD-selected remedy.

Evaluation of the potential impacts of a tornado on the integrity of the ROD-selected remedy will be based on the following types of information:

1. Technical or government agency reports of tornado impacts at other landfills (if available);

2. Information regarding actual tornado impacts at other Republic Services Landfills (e.g., the Roxanna Landfill, Roxanna, IL in 2013);

3. Information regarding vegetation destruction, soil erosion or other damages caused by tornados at non-landfill sites (e.g., Joplin, MO in 2011);

4. Information regarding the design of tornado-resistant structures such as tornado and storm shelters as an analogue for potential impacts to the ROD-selected remedy; and

5. ARARs that could be implicated at a tornado-impacted landfill.

Deliverables

1. Interim Deliverable – A memorandum will be prepared summarizing the results of the evaluation of potential impacts of a tornado on the ROD-selected remedy for OU-1 and any additional ARARs that could be implicated in a tornado impact after construction of the ROD-selected remedy.

2. SFS revisions – an evaluation of the long-term effectiveness and permanence of the ROD-selected remedy, specifically, the evaluation of the adequacy and reliability of controls will be updated to include the potential impacts of a tornado at the Site and any ARARs raised by such an impact.

Schedule

It is anticipated that collecting available information on actual tornado impacts, evaluating potential impacts of a tornado on the integrity of the ROD-selected remedy, reviewing potential additional ARARs, and preparing a summary memorandum will take approximately six weeks after receipt of EPA approval of this work plan. (Please note this schedule may be revised depending upon the status of other activities simultaneously requested by EPA.)

EMSI will prepare a Supplemental SFS report that includes the results of the tornado evaluation after EPA comments on the interim tornado deliverable and as part of a comprehensive Supplemental SFS which addresses the results of the various other additional tasks EPA has requested.

References

Engineering Management Support, Inc. (EMSI), 2011, Supplemental Feasibility Study, Radiologically-Impacted Material Excavation Alternative Analysis, West Lake Landfill Operable Unit-1, December 16.

Federal Emergency Management Agency (FEMA), 2008, Taking Shelter From the Storm – Building a Safe Room for Your Home or Small Business, FEMA P-320, August.

FEMA, 2007, Storm shelters: Selecting Design Criteria, FEMA DR 1699 RA 2, May.

FEMA, 2007, Storm shelters: Selecting Design Criteria, FEMA DR 1679 RA 2, February.

U.S. Department of Homeland Security, 1998, In-Residence and Small Business Safe Room Designs, October.

U.S. Environmental Protection Agency (EPA), 2008, Record of Decision – West Lake Landfill Site, Bridgeton Missouri, Operable Unit 1, May.