

May 12, 2003

Phillip Mazor
Remedial Project Manager
Waste Management, Inc.
700 56th Avenue
Zeeland, MI 49464

SUBJECT: REPORT OF MEETING HELD TO DISCUSS DECOMMISSIONING APPROACH
AND RELATED ISSUES FOR THE SCA SERVICES (HARTLEY & HARTLEY
LANDFILL) SITE, BAY COUNTY, MI

Dear Mr. Mazor:

On April 3, 2003, the U.S. Nuclear Regulatory Commission staff met with the representatives of the Waste Management, Inc., and its consultants to discuss the approach and related issues in the preparation of the decommissioning plan (DP) for the SCA Services (Hartley & Hartley Landfill) Site Decommissioning Management Plan (SDMP) site in Bay County, MI.

On March 19, 2003, a public meeting notice was published announcing the April 3, 2003, meeting at the NRC Headquarters. NRC's Public Meeting Feedback Form No. 659 was distributed at the meeting. A report of this meeting including a list of the participants is enclosed.

If you have any questions concerning this report, please contact me at (301) 415-6694.

Sincerely,

/RA/

M. (Sam) Nalluswami, Project Manager
Section B/Decommissioning Branch
Division of Waste Management
Office of Nuclear Material Safety
and Safeguards

Enclosure: Meeting Report

cc: T. Bertram, MDEQ
L. Smith, MDEQ
D. Gruben, MDNR

Docket No.: 40-9022
License No.: SUC-1565

MEETING REPORT

DATE: April 3, 2003

TIME: 8:30 a.m. - 12:00 noon.

PLACE: U. S. Nuclear Regulatory Commission (NRC)
11545 Rockville Pike
Rockville, MD 20852
Room T-7A1

PURPOSE: To discuss the decommissioning approach and related issues in the preparation of the decommissioning plan (DP) for the SCA Services (Hartley & Hartley Landfill) Site Decommissioning Management Plan (SDMP) site in Bay County, Michigan.

ATTENDEES: See Attachment A

BACKGROUND:

The SCA Services (SCA) SDMP site, located in Bay County, Michigan, is part of the former Hartley & Hartley Landfill. Part of the landfill site is contaminated with thorium that came from magnesium-thorium alloy production at a former licensee. The contaminated slag is covered with a clay cap and encapsulated with slurry walls. The current NRC license (SUC-1565) is for possession only. In accordance with condition 11A of the license, the DP is due to be submitted to the NRC no later than September 30, 2003.

DISCUSSION:

1. By a letter dated March 6, 2003, Waste Management, Inc. (WM) submitted an endorsement of its surety as financial assurance for decommissioning the site. Current amount is \$5 million and it may increase based on the proposed decommissioning tasks and related factors. The NRC Staff had no questions or comments on this issue at the meeting.
2. SCA provided a handout (Attachment B) and presented a brief history of the site and a description of the major site features, including both Northwest and East Landfills, surface ponds, flow of surface and ground water, local surroundings, and that of the adjacent MDNR site. The Northwest Landfill is about 11 acres which is contaminated with thorium slag. This landfill was capped in 1984 after the slurry wall was built. The East Landfill is about 35 acres and was capped in 1982.
3. SCA has determined that a significant fraction (~30%) of prior site characterization results are unusable for QA/QC reasons. In light of this shortcoming, SCA is evaluating if additional measurements and/or samples are required to make up for data gaps and address specific anomalies in the usable data set. For example, the current radiological data present results determined only by gamma spectroscopy and there are no results providing definitive radionuclide distributions of alpha emitters using alpha spectroscopy. SCA has some data that

Enclosure

may be useable for calculating the ratio of Th-230 and Th-232, but no information was provided establishing ratios for the two radionuclides. Additional samples were discussed.

Some of the historical data may not be accurate and WM needs to review this data to determine what data should be omitted. Tentatively, a telephone conference call was set-up for April 23, 2003, to discuss the data quality objectives (DQO) for the site (specifically, the usability of the historical data). NRC Staff would like to be at the site if and when additional sampling is proposed in those areas such that the staff could collect in-process samples.

4. Two areas were reported to have radioactive materials at/or near the surface which are outside the Landfills, one spot is located near the East Landfill and the other is near the Northwest Landfill. SCA will remediate these two areas and possibly put the material into the Northwest Landfill. It was indicated that most of the radioactive material present in the Northwest Landfill is more evenly distributed than that of the MDNR site, i.e., there are no apparent layers of deposited rad material. SCA will determine if there were ever any gamma log measurements made in prior investigations and use that data to qualitatively describe contamination profiles as a function of depth.

5. Leachate collection systems will be installed in each landfill and operated over the next 30 or so years in response to State imposed closure requirements for landfills. The design and operating specifications of the leachate collection system for the Northwest Landfill will have to consider the potential presence of sediments containing radioactive slag fines, disposition of such sediments, and operational health and safety issues commensurate with the presence of radioactivity in sediments and leachates. SCA is proposing to install the leachate collection system in the Northwest Landfill around 2006.

Note: Installation of the leachate collection system will require a license amendment because the current license is for possession only and the operation of a leachate collection system is an ancillary activity that could involve handling of radioactively contaminated water, slag fines and sediments. Likewise, the approval of a DP and similar actions would also require license amendments.

6. SCA believes that there are no radioactive materials in the East Landfill. Consequently, the remedy and closure for this landfill will be driven by State requirements for the closure of non-radioactive contaminants, if confirmed.

7. The site is underlain by a thick clay till layer which is expected to greatly minimize the movement of radioactive materials in the deeper aquifer. The aquifer beneath the thick clay till layer (hydraulic conductivity 10^{-7} cm/sec) is the water source for several drinking water wells in this area.

8. SCA is considering the installation of an additional clay cap over the existing cap over both landfills to retard the infiltration of surface water. Leachate collection systems will be used to cause an inward pressure and flow gradient to further minimize the release of leachates.

9. SCA has conducted a radiological survey to define background radiation and naturally occurring radioactivity levels in the vicinity of the site. A series of measurements were made and several samples were taken in the Tobico Marsh north of the site. The data revealed

typical levels of uranium and thorium in soils and water samples. Levels of cesium-137 were found to be typical of weapons fallout, but Sr-90 was detected at higher than expected levels at background locations. At a few locations on-site, Sr-90 was detected at levels above the mean background, particularly in wetland soil. Resampling at three locations in December 2002 in the West Marsh Area, where elevated levels of Sr-90 had been reported, did not confirm the prior results. There is no record of disposal of Sr-90 at the site. At this time, SCA does not plan to include Sr-90 and Cs-137 in further analyses in connection with the DP.

10. Discussions addressed options that SCA is considering in releasing the site, unrestricted vs restricted scenarios. Also, SCA is considering a hunter/fisherman scenario in assessing potential future impacts and developing the appropriate release criteria. Regarding the radiological distinctions between the Northwest Landfill and East Landfill, the discussion addressed the possibility of sectioning the site into areas that could be released under unrestricted and restricted conditions. Partial release for a large portion of the site may be available. Data needs to support the fact that there was no contamination buried in those areas. SCA intends to reopen discussions with the State on the types of durable institutional controls that might be workable for the site in light of approach that the State is considering for the adjacent MDNR site. At this time, SCA had no definitive information on this subject.

11. SCA has tentatively identified the distributions of Class 1, 2, and 3 survey areas or units across the site. However, the exact delineation of survey areas or units is still uncertain, pending the results of further radiological characterization. It was noted that the presence of non-radioactive contaminants might be used in further confirming that such boundaries have been appropriately defined between Class 2 and 3 areas surrounding Class 1 areas. The discussions addressed MARSSIM and NRC guidance in defining such areas. For example, Class 2 areas with contaminants at $\geq 75\%$ of the DCGL should be classified as Class 1 areas. Similarly, Class 3 areas with contaminants at $\geq 25\%$ of the DCGL should be classified as Class 2 areas.

12. SCA was encouraged to contact the NRC Staff in finalizing the DP and arrangements were made to address specific topics over the near term. As indicated earlier, April 23, 2003, was tentatively selected for a telephone conference call to discuss DQO (This date was subsequently changed to May 14, 2003). Likewise, May 12, 2003, has been chosen to discuss the scenario issues over the telephone.

13. NRC Staff requested the licensee to provide groundwater quality data for the existing site monitoring wells and any new monitoring wells for all analyzed constituents for one sampling event. This would include data on water levels, water temperature, pH, dissolved oxygen, redox, specific conductance, inorganic constituents, and organic constituents. The existing chemical data are summarized in the RI Report, which was finalized in March 2003. SCA will send copies of this report to the NRC. SCA noted that, as required by a Consent Order with the MDEQ, they monitor water levels at the site in May and November every year, and that they monitor groundwater quality for chemical parameters each May. SCA will send the results for these future monitoring events to the NRC.

14. NRC Staff suggested that the licensee evaluate the physical limitations of the uppermost water-bearing unit that contains the thorium slag materials. For example, the licensee may be able to eliminate the groundwater pathway in its dose assessment if the aforementioned water-

bearing units lack an adequate quantity of water to supply drinking water for the residential/garden scenario. The NRC Staff indicated that the water-bearing unit within the Northwest Landfill will be limited by the area confined within the slurry walls.

For dose assessment modeling purposes, the groundwater pathway would be turned **on** for a hypothetical family that has a residence that lies within the footprint of the containment areas (the areas of the landfills, inside the slurry walls/dikes) if adequate water were available from the shallow saturated zone to support a family; otherwise, the groundwater pathway would be turned off. The groundwater pathway would be turned **off** outside the containment areas (the wetland areas, outside the slurry walls/dikes); the recreational user scenario (hunter/fisherman) would apply in these wetland areas because the wetland areas are unsuitable for residential development.

15. NRC Staff suggested that the licensee evaluate the impact of potential leakage from the Northwest Landfill's slurry walls on the groundwater down gradient from the site. A one-dimensional numerical or analytic model may be adequate to simulate the fate and transport of the radioactivity toward potential receptors down gradient from the site toward Lake Huron.

16. Institutional control and financial assurance will be reviewed for restricted release option. SCA will review participation and meeting records for the former community group on-site activities. SCA will address the community relations activities required as part of the DP. NRC Staff noted this factor should be addressed in the DP.

ACTIONS:

Teleconference on April 23, 2003, at 9:00 a.m. for one hour to discuss DQO. (This has been postponed to 1 p.m. on May 14, 2003.)

Teleconference on May 12, 2003, at 1:00 p.m. for two hours to discuss scenarios.

ATTACHMENT:

- A. Meeting Attendees
- B. Meeting Handout

Attachment B

Meeting Handout (Revised) Dated April 11, 2003

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AN:

TEMPLATE: NMSS/RGN-001

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