Rocky Flats Citizens Advisory Board Recommendation 2003-8

Recommendation on the Present Landfill Interim Measure / Interim Remedial Action

Approved November 6, 2003

Letter to:
Mr. Frazer Lockhart
U.S. Dept. of Energy
Rocky Flats Field Office
10808 Hwy. 93, Unit A
Golden, CO 80403

Mr. Mark Aguilar
U.S. EPA
999 18th St. Ste. 500
Denver, CO 80202

Mr. Steve Gunderson
CDPHE
4300 Cherry Creek Dr. South
Denver, CO 80246

Dear Mr. Lockhart, Mr. Aguilar, and Mr. Gunderson:

The Rocky Flats Citizens Advisory Board appreciates the opportunity to review the Present Landfill Interim Measure / Interim Remedial Action (IM/IRA), and offers the following comments and recommendations. Many of our comments are aimed at gaining a better understanding of the proposal and its implications for the future. Along those lines, we would ask that the Executive Summary include a brief explanation of what prompted the change from the evapotranspiration cover proposed last year to the current proposal to install a RCRA Subtitle C cover. The Board would also like justification for the discrepancy between the data identifying the ratio of groundwater inflow and precipitation infiltration in the current document from previous site documents. Previously, it was stated that lateral groundwater inflow contributed as much as 40% to the seep flow, whereas the hydrologic modeling done this year estimates the groundwater contribution to be less than 10%. RFCAB recommends collecting field data to verify the modeling conclusions.

Long Term Stewardship

A. Monitoring

Cover Performance

- The site should consider using hydrologic cover performance monitoring to verify whether the cover is functioning as intended in the post-closure period (i.e. the minimum hydraulic conductivity is being attained).

- The site should justify any decision not to conduct direct monitoring of cover performance.

- If the site intends to rely on leachate flow to determine the integrity of the cap, the IM/ IRA should identify seep flow rates to trigger evaluations and additional monitoring of the effluent.

Seep

- RFCAB finds the sampling proposed for the seep unacceptable. At the October 23rd ER / D&D meeting, the site indicated that the RFCA parties will consult after four years to see whether further seep sampling is warranted. The burden of proof should be on DOE to justify discontinuance of sampling, not the other way around. A thorough data analysis should dictate the sampling period, not an arbitrary time frame.

- For the first year, the seep should be monitored monthly rather than quarterly. The purpose of more frequent monitoring is to establish seasonal and long-term trends using sufficient data points.

- The seep should be monitored at both influent to and effluent from the treatment unit to determine the effectiveness of the treatment unit.

- The treatment tank effluent should be a RFCA surface water point of compliance, as it is a discrete conveyance of pollutants to waters of the State.

- A suite of analytes, as identified by the Integrated Monitoring Plan, should be monitored until there are sufficient data points to ascertain whether the leachate contains slower migrating pollutants. An evaluation of the data during the review could modify the sampling methodology.

- Parameters should be identified for data analysis to determine when evaluations and/or corrective actions should be taken.

- Additional sampling required such as the Whole Effluent Toxicity (WET) Test, Biochemical Oxygen Demand (BOD), and Chemical Oxygen Demand (COD) shall be performed per the guidelines of effluent discharge into waters of the state.

- The source point of discharge shall be an enforceable compliance point with identified standards and penalties.

- The source point of discharge should be at the effluent discharge of the treatment tank.

- Local governments and the communities should be informed when an evaluation is implemented.

Groundwater

- The post-closure monitoring period should be a minimum of 30 years. The State of Colorado regulations pertaining to Municipal Solid Waste Landfill Units (6 CCR 1007-2, Subsection 3.6.3) state that: "Post-closure care must be conducted for a minimum of thirty years (30) years." RFCAB understands that this period may be reduced or increased, based on site-specific circumstances relative to protecting human health and the environment, and further, that these requirements do not directly apply to Present Landfill. However, we believe the monitoring regime for a RCRA Subtitle C landfill should be at least as stringent as that required for a solid waste landfill.

- The site should justify any proposed reduction of the 30-year post-closure monitoring period. Historical data alone would not be sufficient to demonstrate a lack of migration potential because it may not be representative of modified groundwater movement after the placement of the cap.

- A suite of analytes, as identified in the Integrated Monitoring Plan, should be analyzed annually as a minimum until the first CERCLA review is performed to gather sufficient data points to evaluate the monitoring criteria. The rationale for our recommendation is based on the concern that pollutants may migrate slowly from the landfill and impact groundwater quality.

- The proposal calls for continued use of the existing network of Integrated Monitoring Plan groundwater wells. The Board is concerned that these may not be optimally located. Therefore, we recommend that the groundwater well locations be reevaluated to ensure that the placement of downgradient wells is optimal in terms of identifying any potential migration from the landfill.

- Groundwater wells should be compliance points with identified standards that are enforceable.

- Parameters should be identified to determine when an evaluation or corrective action should be taken.

- The site proposes not to calculate alternate concentration limits (ACLs) for groundwater, as provided for in RFCA Attachment 10. RFCAB understands that ACLs are risk-based contaminant levels calculated to be protective of surface water. RFCAB recommends that ACLs be calculated for the Present Landfill area. This would provide greater assurance that groundwater in the area would continue to be of sufficient quality to prevent adverse effects on surface water.

- Local governments and the communities should be informed when an evaluation is implemented.

B. Inspections

- The Board has concerns with the frequency of physical inspections. In the near term, until vegetation is established in the drainage ditches, the Board urges that inspections occur on a regular basis. Also, the regular inspection schedule should be augmented whenever there is a precipitation event that results in overland flow of water. These inspections should include inspections of the cap, associated drainages, and pond to determine the extent of erosion damage, subsidence, or pond integrity.

- The subsidence criterion of two feet quoted by the site at a recent RFCAB meeting is unacceptable. Depending on the design specifications, a lesser degree of settling could compromise the integrity of the cover.

- The document should include the requirement of settlement monuments on the cap to measure subsidence criteria.

- The document should identify weed management criteria to protect the cap. If herbicides are used, they should be evaluated to determine their effect on water quality.

- The inspections should have measurable data quality objectives to ensure that regulatory criteria are being met.

C. Security / Site Control

- Signs should be placed around the landfill area to identify the area and inform humans of the landfill siting.

- To ensure protection of the cap, pond, and monitoring stations, CAB is

adamant a fence should be maintained around the landfill area. The fence will prevent access to the general public and provide controls of the monitoring stations.

- DOE must ensure that refuge activities are prohibited at or near the landfill.

D. Maintenance

- How will the cover be maintained? How often will its degradable components need replacement?

- Deep-rooted trees should be removed manually, rather than with herbicide, in order to protect water quality in the drainage.

- Include the general Contingency Plan for the cap and what parameters will be measured to determine when actions need to be taken. The plan at a minimum should include:

    - Maximum size of area with erosion that will require repair of the cap

    - Settlement/subsidence – based on monuments, at what point will the cap have to be repaired?

    - The length, width and/or depth of cracks that will require repair of the cap

    - The criteria to determine if burrowing animals have impacted the cap

    - The criteria for the rip/rap layer and the corrective measures to prevent ponding, vegetation growth, and settlement.

    - Breach of monitoring stations

    - Breach of trespassing

E. Enforceability

- The State Environmental Covenants law should apply to the entire site, including the Present Landfill. This law would provide an additional layer of institutional controls, and DOE's own stewardship guidance recommends layering of controls.

- Does the National Pollutant Discharge Elimination System (NPDES) exemption apply in

this case?

- The site has indicated that it may eventually seek delisting of the leachate. What is the time frame for delisting? How many data points would be required to support a delisting petition? Is the East Landfill Pond considered a land disposal site, and if so, are there any plans to delist it?

- Would regulatory enforcement be lost if leachate ceases and is no longer being released to the waters of the state?

- Identify points of compliance or point source areas.

Surface Water

A. National Pollutant Discharge Elimination System (NPDES) Criteria

- The permit-like instrument should have the full force of law under the Clean Water Act rather than CERCLA. RFCAB is concerned that under CERCLA, non-attainment of water quality standards would carry no enforceable repercussions.

- Monthly for at least one year and at regular intervals thereafter, there should be an evaluation of influent to and effluent from the seep treatment unit, with respect to analytes as identified in the Integrated Monitoring Plan, including but not necessarily limited to inorganics, organics, metals, whole effluent toxicity, gross alpha / beta, physical parameters, asbestos, BOD and COD. The purpose of this sampling would be to support a data analysis with the objective of determining which pollutants have a reasonable potential of being present in the seep.

- In the future, further evaluations during the CERCLA review or other post-closure decision document evaluation, DOE, the regulators, and stakeholders should determine which parameters to retain after the cap is in place.

B. Pond Management

- RFCAB understands that the site is proposing to modify the outlet structure of the East Landfill Pond to allow it to flow into No Name Gulch. RFCAB believes the site should evaluate potential effects on this previously unaffected drainage. The CAB is adamant the current scheme whereby this water is routed to the A-Series ponds should continue.

- Will the East Landfill Pond sediments be remediated if found to be above human health or ecological soil cleanup criteria, or levels associated with RCRA listed or characteristic

hazardous waste?

C. F039 (Leachate) Delisting

- Please identify the minimum criteria for delisting leachate.
- RFCAB believes stakeholder involvement is necessary at each step of this process.

Cover Design

A. QA/QC

The site must ensure that the cover is constructed according to procedures that meet rigorous QC requirements, with QA oversight of the contractor provided by an independent expert.

B. Cobble Layer

- The Board is concerned that the riprap appears to be only one-layer-thick, and believes that a single layer of cobbles is not sufficient to prevent intrusions into the cover.
- More information is needed on the mix of different sized cobbles to be used, in order to evaluate effectiveness and degree of maintenance required for this layer.
- Weed management also needs to be addressed. The use of herbicides may harm water quality.

C. Freeze-Thaw Cycles

- The cover design must ensure manmade materials in the critical barrier layer remain below the frost line.
- In calculating necessary soil cover depth, the site should make conservative assumptions resulting in at least a 95% confidence level that the liner materials will be protected even under extreme conditions.

D. Warranty / Bonding

What is the warranty on the cover materials and installation?

Applicable or Relevant and Appropriate Requirements (ARARs)

RFCAB is concerned that some potential ARARs were not considered. Examples include the Colorado Solid Waste Disposal Regulations pertaining to explosive gas control and the

NRC regulations on disposal of radioactive waste.

We hope that you are able to address these issues in the final Present Landfill IM/IRA and look forward to your response.

Sincerely,

Victor Holm
Chair

cc: Bob Davis, Kaiser-Hill

The Rocky Flats Citizens Advisory Board is a community advisory group that reviews and provides recommendations on cleanup plans for Rocky Flats, a former nuclear weapons plant outside of Denver, Colorado.

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