



Friends of the Blackstone

John Marsland, President

The Blackstone River Watershed Council/Friends of the Blackstone (BRWC/FOB) prepared this memorandum to comment upon the design approach for leachate control for OU-2 of the Peterson Puritan Superfund Site (the Site).

The September 2015 Record of Decision (ROD) indicated that a presumptive remedy will be implemented at the Site. The ROD supports full containment under a cap but does not include leachate control unless shown to be warranted through monitoring. A contingent remedy has not been identified or described in the ROD. The ROD (Part 3, page 118) states that:

“Any known, persistent leachate seeps observed (e.g., Pond C at the J. M. Mills Landfill and at Pond I located at the north east corner of the Nunes Parcel) will be investigated as part of the remedial design and remedial measures, if required, (e.g., a barrier and/or leachate collection system) will be designed and constructed to meet landfill closure requirements.”

Also, on Page 120 the ROD states:

“Within the groundwater compliance boundary federal and State surface water quality standards need to be achieved throughout OU 2.”

The BRWC/FOB believes that it would be prudent to incorporate passive flow-through treatment of shallow leachate and groundwater at the downgradient borders of the full cap. At a minimum, engineered barriers or wetlands could be constructed near identified hotspots or areas where leachate has been observed to form in shallow ponded waters. If hotspots of contamination are identified during pre-design investigation activities, the BRWC/FOB would support focused groundwater extraction or leachate control.

It is our understanding that typical presumptive remedies include both a capped landfill and leachate control. BRWC/FOB and the Remedy Review Board identified that leachate discharge from the J.M. Mills Landfill is likely occurring directly to the Blackstone River. Because of the lack of land and river front at the border of the J.M. Mills Landfill, there is little distance for natural attenuation processes to occur before leachate discharges to the Blackstone River. Also, we have raised our concern that assessment of this river front area (west of the J.M. Mills Landfill) may have been focused on deeper portions of groundwater, and did not focus on the shallow leachate that is “flushed” from the base of the J.M. Mills Landfill by groundwater.

Part 2 of the ROD (Section H, Remedial Action Objectives, page 80) lists the objectives for groundwater, but the objectives include an “if necessary” on the topic of leachate control. In the Feasibility Study (FS) the alternatives for remediation of groundwater were:

- No action
- Monitoring
- Phytoremediation
- Chemical oxidation

The selected remedy includes monitoring and institutional controls only for groundwater. The ROD does not currently include a full description of a potential Contingent Remedy if groundwater impacts are identified by monitoring after full cap installation. It may be difficult, at best, to implement additional controls to address groundwater and/or leachate once the cap is installed.

The ROD indicates that USEPA will allow flexibility in the design so that riparian restoration is completed. We implore USEPA to evaluate installation of in-situ, passive controls at the borders of the J.M. Mills Landfill and Nunes Parcel caps to facilitate long-term filtration and attenuation of leachate. We believe that innovative design and green installations could improve Blackstone River water quality over the long term. Engineered wetlands and flow-through barriers may provide the additional controls needed to make the presumptive remedy successful. We believe that a full cap without leachate control does not fulfill the protectiveness requirement for the presumptive remedy.

As stated in the ROD, USEPA believes that construction of the caps along the riverbank and in the floodplain will “present a significant technical challenge” and that implementation “requires phased design/construction planning elements, large quantities of material handling, and known space and access limitations” (Part 2, page 102). Because the construction is viewed to be complex and a technical challenge, it would be beneficial for the design team to incorporate passive controls at the boundary of the capped landfill during the design phase for construction concurrently with the full cap. Going back later to amend the remedy or add additional controls could compromise the new cap, and interrupt the restoration of habitat that will be completed in conjunction with cap construction.

The following section includes BRWC/FOB comments that were previously submitted to the USEPA and the Remedy Review Board prior to preparation of the ROD. The comments are presented to reiterate and summarize general BRWC/FOB comments that were related to leachate control.

Previous Leachate Control Comments:

- The BRWC/FOB anticipates that the Site Environmental Monitoring Plan (EMP) will be developed and initiated as soon as possible after the ROD is issued so that monitoring data are collected while Pre-Design Investigation (PDI) and remedial design activities are being performed.

- BRWC/FOB expects the remedy to protect the river from the cumulative effects of continued migration of leachate and sediment from the Landfill and to restore OU-2 to a sound ecological system conducive to the support of wildlife habitat and to passive recreation for the area's residents. The Proposed Plan *does not include leachate control*, and relies upon monitoring to identify whether remedial actions (i.e., installation of the cap) will reduce leachate migration. The USEPA should identify how leachate control could be achieved in the event that the installation of the cap does not reduce leachate, and consider including a contingent remedy in the ROD.
- The Remedy Review Board called into question grouping the waste source areas within one groundwater compliance boundary (Figure 8 of the Proposed Plan). Because of the unique location of the waste source areas (J.M. Mills Landfill and Nunes Parcel), with an active river channel flowing between them, establishing a compliance boundary that includes a portion of the river does not protect the Blackstone River from contaminant loading. The Review Board indicated that "landfill leachate may flow unimpeded into the river." Even low contaminant concentrations over time can add up to significant loading to the river. We believe that compliance monitoring wells should be installed in close proximity to the downgradient border of the capped areas to monitor and document long-term leachate quality and trends.
- The BRWC/FOB expects that visual inspection of leachate will be included in future monitoring programs. The J.M. Mills landfill is not homogeneous, therefore monitoring along the downgradient edge in wetlands, ponds, and drainage channels to assess compliance will identify whether focused areas need containment, filtration, or treatment. We believe that passive, flow-through engineered wetlands or treatment trenches may be viable for *focused point source leachate control*, if identified during monitoring. The BRWC/FOB believes that monitoring should be performed at the toe of the landfill, at the downgradient edge of the waste material or capped area.