

US EPA ARCHIVE DOCUMENT

PPL's Comments on EPA's December 2009 Final Report of the Coal Combustion Residue site assessment of the Martins Creek facility:

PPL's primary concerns with this Final Report relate to EPA's contractor evaluation of Ash Basin No. 1 and their projection that the basin can still impound water and therefore requires vegetation management on the outside slope of the dam.

EPA's contractor calculated, using a 100-year precipitation event and non-representative infiltration parameters, that water would pond on the south end of Basin 1 to a depth of 5.9 ft. The contractor states that even by his analysis, "since the water surface elevation will remain more than 3 feet below the invert elevation of the V-notch weir in the outlet riser structure, no outflow from the outlet structure is expected." This analysis shows that for the infiltration characteristics assumed, the basin would hold water. It does not represent what actually exists in the basin.

Based on PPL's experience and the results of the HELP [Hydrologic Evaluation of Landfill Performance] model that simulated extreme storm events during an unusually wet year (Total annual precipitation of 77 inches and one week period of 6 inches of rain per day for a total of 42 inches in one week) using actual field measurements and parameters, PPL does not expect to ever have natural precipitation create standing water within any area of the former basin.

More specifically, the EPA's contractor's selection of the PMP (34 inches rain in 24-to 72 hours; timeframe was not specified in report) and a runoff coefficient of 0.8, is, in PPL's opinion, overly conservative and is not representative of an appropriate worst case condition for this particular basin. The contractor states that "the porosity of the ash deposits in the basin is rather high resulting in a low runoff coefficient" and then contradicts this statement by selecting a very high runoff coefficient of 0.8, making the predictions of ponding extremely conservative. The contractor makes the ponding evaluation further conservative by assuming that 80% of the rain falling over Ash Basin 1 will run off and pond in the low lying portion of the south end of the basin, which is about 8.7% of the total area of the basin. The accumulation of the assumed runoff in this small area of the basin does not reflect the flow restriction provided by the basin's median dike.

PPL's HELP modeling exercises were designed to assess the potential for the water table to rise into the unlined basin and mobilize groundwater constituents of concern. This modeling was based on actual observations concerning measured characteristics of materials that have been in the basin for some time made by two experts, on field observations (including the rapid drainage of temporarily ponded water), and on extremely conservative precipitation scenarios. The latter in fact was so conservative in the 2008 version that PaDEP asked for more reasonable, worst case, precipitation scenarios in the 2009 version. Even with PPL's overly conservative model, the water table will not rise into the materials within the basin.

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Therefore, based on the site conditions and modeling which clearly indicate that this basin will not impound water and that the subsurface materials within the basin will not become saturated, PPL believes that there is no need to maintain the vegetation on the outer or inner slopes of the basin dikes or within the basin itself.

PPL's Response to Other Conclusions and Recommendations in the Final Report –

1. Section 1.1.3 in the Conclusions section asserts that insufficient technical documentation was available to support a conclusion regarding hydraulic/hydrologic safety of Basin 4 and Basin 1. Yet, using available data, the report is able to conclude that these Basins are adequate in this regard and further asserts no recommendations are warranted concerning hydraulic/hydrologic safety or supporting technical documentation. PPL appreciates the extra effort put forth by EPA's contractor to make the hydraulic adequacy conclusion.

Given that Basins 1 and 4 have no contributing watersheds and no other inflows other than precipitation, PPL has asserted that as long as an adequate freeboard (greater than the design rainfall, in inches) is maintained, a detailed hydraulic analysis on maximum expected basin level was not needed. PPL asks that Section 1.1.3 be reworded. Instead of stating "Insufficient", can the entries on the top row of Table 1.1.3 state "N/A, no contributing watershed".

Also, could the first sentence of Section 1.1.3, as well as the similar sentence in Section 6.3 be reworded as follows: "Given that both Ash Basin No. 1 and Ash Basin No. 4 do not have a contributing watershed, no storm-related hydrologic/hydraulic analyses were necessary for permitting or operation of the basins, and thus were not available for review."

2. Under the closure plan for Ash Basin No. 1, the outlet structure will not be relied upon for storm water drainage from the basin and will be decommissioned by plugging. This report recommends that the outlet structure be plugged as part of the final closure, consistent with PPL's plans.

3. As discussed earlier in PPL's comments, PPL does not believe that former Basin No. 1 will impound water, and we have requested PA DEP Dam Safety to concur with that conclusion as part of the approval of the closure plan. PPL will conduct the annual more detailed inspections as recommended until the PA DEP approves the closure plan that does not include a detailed annual dam inspection requirement.

4. PPL will have its independent Dam Safety contractor evaluate whether PPL should monitor the shallow depression observed at the southeast corner of the outside toe of former Ash Basin No.1 as recommended, and if so, for how long to continue such monitoring. PPL will obtain PA DEP Dam Safety's concurrence with the approach to address this recommendation.

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5. Under the closure plan for Ash Basin No. 4, PPL is proposing to plug the outlet structure. This report recommends that the outlet structure be plugged as part of the final closure, consistent with PPL's proposed plans.

6. Regarding the recommendation to maintain the vegetation on the outer slopes of Ash Basin No. 4, which is undergoing closure, PPL has plans in place to mow the outer slopes of this impoundment three times per year. This will also be a requirement of the post-closure monitoring program. PPL will also continue to implement burrowing animal controls by filling in their holes and will continue to evaluate and implement more aggressive measures if appropriate and warranted [i.e., if the extent of re-burrowing presents a concern].

7. Regarding the recommendations relating to the IWTB (Industrial Waste Treatment Basin), this impoundment is not regulated by PA Dam Safety regulations. Subsequent to the September 2009 inspection, PPL confirmed with the DEP Division of Dam Safety that the basin is too small to be regulated by State Dam Safety Regulations. Even though the impoundment is not regulated, PPL will continue to maintain the vegetation on the outer slopes of the operating IWTB so that woody vegetation does not become established and to facilitate routine inspections.