

## Corrective Measures Report For Storm Water Runoff Event at the Dairyland Power Cooperative Phase IV Alma Offsite Landfill

September 23, 2016

### Release Description

On August 10, 2016, an existing cell (Area "C" of Cell 2) of the Phase IV landfill was being prepared for final capping. The project was part of the normal leachate control practice by closing of an existing Coal Combustion Residuals (CCR) cell to limit the amount of exposed ash to precipitation and thus reduce leachate generation for the landfill. As a result, the CCR was graded and packed and thus ready for cap placement. A berm was constructed at the base of the exposed slope, adjacent to the dike road, as a preventive measure to provide additional runoff control if rain should occur.

During the early morning hours of August 11, 2016, 7.4 inches of rain fell in approximately 5.5 hours. As a result of this extreme rain event, CCR contact water breached the containment berm located at the base Area "C" of Cell 2. CCR contact water, along with some CCR fines, flowed over the dike road and into a perimeter drainage ditch. All other runoff water within the exposed landfill was contained, as designed. Run-on controls also functioned as designed.

### Root Cause Analysis

The root cause for the release was a combination of having exposed CCR in preparation for capping and an extreme rain event. The large amount of sheet runoff from the exposed CCR face, allowed runoff water to build up at the base of the exposed face and top the berm before that water could percolate into the leachate collection system.

### Corrective Measures

A local contractor was mobilized to begin repairs. Al's Excavating was contracted to utilize a backhoe in order to remove the accumulated CCR's/rain water mix in order to allow drainage into the leachate collection system for another expected rainfall that night. DPC personnel obtained two haul trucks of gravel in order to restore the breached berm. A significant trench was dug in an attempt to allow expected rains to drain properly until Area C is properly covered. Additional heavy rains the following night did not materialize and the berm has been functioning as intended.

Since this rain event, no further issues have occurred at Area C. Cover placement has been completed and CCR contact runoff is no longer a threat from Area C.

The rest of the landfill handled the extreme rain event but has caused quite a bit of maintenance activity. Maintenance of the perimeter drainage blanket, run-on drainage controls, and sedimentation basin has been completed for the most part. As of this writing, some lingering items are in various stages of completion and will be completed by Fall.

#### Agency Contact

Wisconsin DNR (WDNR) Solid Waste Engineer was contacted by Dairyland personnel of the runoff event. WDNR arrived at the Alma Offsite at approximately 14:00 on August 11, 2016. Discussions were held with landfill personnel and WDNR did not have any issues with our response actions or the integrity of the landfill. WDNR thought current operations were performing accordingly. WDNR did emphasize the necessity of cleaning the landfill perimeter run-on controls and understood it would likely take some time to complete the work.