

Valmont Station CCR Landfill and Surface Impoundments SSI and Assessment Monitoring Notification

Public Service Company of Colorado (PSCo), an Xcel Energy Company, is the owner of Valmont Station which historically was a coal-fired, steam turbine electric generating station. The station was retired from operations on September 30, 2017. During the active coal operations, two incised CCR impoundments (3A and 3B) were used for temporary storage of bottom ash prior to disposal at the onsite CCR landfill. Both CCR impoundments ceased receiving CCR in 2017, and are scheduled to be clean closed in 2018 by removal of CCRs pursuant to 257.102(c). The CCR landfill will be used for disposal of CCR during the final clean closure of the impoundments, and is scheduled to be closed in 2019. Written Closure Plans have been prepared for both the CCR impoundments and landfill (HDR, 2016).

Protecting the environment is a core value for Xcel Energy

PSCo conducts all of our business in an environmentally responsible manner and that includes regularly monitoring our operations and taking steps to protect our air, water and other natural resources. Pursuant to 40 CFR Part 257.93(h)(2) of the Disposal of Coal Combustion Residuals from Electrical Utilities Rule (Federal CCR Rule), finalized on April 17, 2015, PSCo has made a determination of Statistically Significant Increases (SSIs) over background levels for the constituents listed in Appendix III as required by 257.94(a). The attached Memo, Determination of Statistically Significant Increases over Background per 257.93(h)(2), identifies those constituents for which SSIs have been identified. These test results do not indicate there is any impact on local drinking water. The monitoring wells evaluate groundwater immediately adjacent to the CCR units, and measure groundwater conditions within the Valmont Station property boundary. The 2017 Annual Groundwater Monitoring Report for Valmont Station documents monitoring activities through 2017 and will be available on the CCR website no later than March 2 at xcelenergy.com (under Environment, under Responsible Operations, Coal Ash Management.)

As a next step, and pursuant to 257.94(e)(1), PSCo is establishing an assessment monitoring program for the CCR units at Valmont Station. The assessment monitoring program will sample and analyze for Appendix IV constituents groundwater from wells in the certified CCR Groundwater Monitoring System at Valmont Station. This next step of the investigation is intended under the rule to help determine further information about groundwater conditions and to determine whether any corrective actions might be warranted. However, at Valmont we were already undertaking steps to shut down coal operations, to clean close the ash ponds and install a CCR compliant final cover at the landfill. Completion of impoundment clean closure includes removal of CCR constituents and is measured by groundwater monitoring results that show CCR constituent concentrations do not exceed the groundwater protection standards.

Memo

Date: Monday, January 15, 2018

To: Kristen Carney, Public Service Company of Colorado
Jennifer McCarter, Public Service Company of Colorado

From: Matt Rohr, HDR, Inc.

Subject: Valmont Station CCR Units
Determination of Statistically Significant Increases over Background per 257.93(h)(2)

The U.S. Environmental Protection Agency's (EPA's) final Coal Combustion Residuals (CCR) Rule establishes a comprehensive set of requirements for the management and disposal of CCR (or coal ash) in landfills and surface impoundments by electric utilities. Valmont Station, located in Boulder, Colorado has three existing CCR units subject to the CCR Rule: the ash landfill and two incised bottom ash impoundments. The CCR units operation and monitoring are described further in the Valmont Station Groundwater Monitoring System Certification (HDR 2016).

The objective of this memorandum is to document the identification of statistically significant increases (SSIs) over background water quality at the CCR units at Valmont. Groundwater monitoring has been conducted to collect eight rounds of background sampling plus the first detection monitoring event (completed before October 17, 2017) as specified under CCR Rule Part 257.94. The water quality collected from the monitoring wells located upgradient of the CCR units has been compiled and statistically analyzed to develop background threshold values (BTVs) for each constituent of interest (COI) for each CCR facility. The Background Water Quality Statistical Certification (HDR 2018) documents the background sample events and describes the data evaluation performed to select the appropriate statistical method in the background data. The first detection monitoring event was conducted in September 2017. The downgradient monitoring well data were compared against the BTVs and SSIs were identified.

Hydrogeologic characterization of the site is provided in the Valmont Station Groundwater Monitoring System Certification (HDR 2016). Groundwater monitoring occurs at six wells around the CCR landfill: MW-7 (background well) and at wells MW-1, MW-3, MW-4, MW-6, and MW-8 for comparison against background water quality. At the impoundments, groundwater monitoring occurs at five wells: MW-1P (background well) and at wells MW-9, MW-10, MW-11, and MW-12 for comparison against background water quality.

As stipulated in the CCR Rule, eight background groundwater sampling events were completed on a quarterly basis between fourth quarter 2015 and third quarter 2017. Background groundwater samples were analyzed for all of the parameters in Appendices III and IV of CCR Rule Part 257. Background sampling is described in detail in the Background Water Quality

Statistical Certification (HDR 2018). The first detection monitoring event was conducted on September 12-14, 2017. Detection monitoring groundwater samples were analyzed for all of the parameters in Appendix III of CCR Rule Part 257, as discussed below. The detection monitoring event will be described in detail in the first Annual Groundwater Monitoring and Corrective Action Report due January 31, 2018. The annual report will include all laboratory data for the reporting period.

SSI Determination

Landfill

Groundwater sampling for detection monitoring was analyzed for the CCR Rule Appendix III COIs. The concentrations of Appendix III COIs from each downgradient monitoring well at the landfill were compared against the BTVs and the COIs with SSIs are listed below.

MW-1	calcium and chloride
MW-3	boron, calcium, sulfate, total dissolved solids (TDS)
MW-4	calcium, chloride, fluoride, pH, sulfate, TDS
MW-6	calcium, chloride, TDS
MW-8	calcium and TDS During the detection monitoring event (September 2017) MW-8 had insufficient volume of water available to analyze all Appendix III constituents; MW-8 was not analyzed for boron, chloride, fluoride, pH, and sulfate. Using the 8 th background sample event concentrations as a proxy, chloride and sulfate would be added to the list of SSIs for MW-8. Further discussion of the September 2017 detection monitoring event will be included in the first Annual Groundwater Monitoring and Corrective Action Report.

Impoundments

The concentrations of Appendix III COIs from each downgradient monitoring well at the impoundments were compared against the BTVs and the COIs with SSIs are listed below.

MW-9	boron, fluoride, sulfate, TDS
MW-10	boron, fluoride, sulfate, TDS
MW-11	boron, fluoride, pH sulfate, TDS
MW-12	boron, calcium, pH, TDS

The identification of SSIs begins the process of further investigation at Valmont. Within 90 days of triggering an assessment monitoring program Public Service Company of Colorado will either sample and analyze for Appendix IV constituents under an assessment monitoring program or document that the SSI resulted from an alternative source, an error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality.

References

HDR, 2016. Groundwater Monitoring System Certification - Compliance with the Coal Combustion Residuals Rule Valmont Station. May 4, 2016.

HDR, 2018. Valmont Station Background Water Quality Statistical Certification for Compliance with the Coal Combustion Residuals Rule. January 15, 2018.