



# Groundwater Services for the Power Industry

## Regulatory Changes

The coal combustion residuals (CCR) rule was signed by the EPA on December 19, 2014. The rule regulates CCRs as non-hazardous waste under Subtitle D of the Resource Conservation and Recovery Act (RCRA) and applies to new and existing landfills and surface impoundments. These rules are modeled after the Subtitle D RCRA rules established for Municipal Solid Waste (MSW) facilities (40 CFR Part 258) in 1992. Golder has been providing services to support Subtitle D compliance to the power and solid waste industries since its inception more than 25 years ago, this experience will benefit our clients in evaluating and implementing required changes to meet these regulations.

The EPA's proposed rule contains a CCR groundwater monitoring program that includes the following:

- Detection monitoring
- Assessment monitoring
- Corrective action program

## Our Approach

Golder's strategy for addressing regulatory changes and evaluating remedies consists of a phased approach. We work with you to focus the program development to achieve compliance with and meet the deadlines established in the CCR rule. We work with the facility staff to develop and implement scopes of work for thorough field investigations to complete site characterization, well installation, and groundwater sampling and analysis.

Golder has a long and successful track record in negotiating with regulatory agencies during assessment to gain approval of alternative remedies under the oversight of the RCRA Corrective Action programs, as well as equivalent state programs. At the design stage, we have successfully demonstrated equivalent performance of less-costly remedial components. We make use of presumptive remedies to help reduce risks quickly followed by engineering analysis to evaluate innovative technologies that could provide superior performance in terms of risk, cost, and sustainability. We have a strong command of conventional remedial methods, and have remained on the forefront in applying new and innovative technologies.

### The Challenges

Existing CCR landfills and surface impoundments have established groundwater monitoring networks and have implemented both detection and assessment monitoring programs, where necessary. CCR facilities are working diligently to identify statistically significant increases over background. CCR facilities must evaluate groundwater quality to determine whether indicator parameters are present at levels above the Federal or State groundwater standards, and/or site-specific background concentrations. CCR facilities are working through the complications of evaluating whether identified exceedances are the result of a release from the unit or from naturally occurring sources. During evaluation and assessment of corrective measures, where necessary, CCR facilities are challenged to meet the requirement of both Federal and State Rules (if applicable), as well as the expectation of local stakeholders. Public outreach to stakeholders and risk evaluation are key to groundwater data evaluation and development of assessment and remedial strategies.



### Other Resources

#### Monitoring and Evaluations

Golder offers a staff of experienced groundwater professionals ready to assist your coal-fired electric generation facility with:

- Physical and chemical hydrogeologic site characterizations (i.e., aquifer testing and soil sampling)
- Monitoring well installation
- Water quality monitoring and analyses
- Groundwater program management (sampling and reporting)
- Groundwater and aquifer modeling
- Contaminant and corrective measures assessments
- Alternate Source Demonstrations (ASDs)
- Remedial investigations/feasibility studies
- Remedial design
- Remedial action Implementation and operations and maintenance (O&M)
- Hydrogeologic and geochemical modeling

#### Remedies and corrective Action

Our staff has experience designing and implementing remedial approaches for thousands of sites worldwide using a range of methods, including but not limited to:

- Pump and treat
- In situ reactive zones
- Bioremediation
- Constructed wetlands treatment
- Characterizing the nature and extent of impacts
- Conceptual site model
- Establishing the mechanism, volume and extent of release
- Alternative source evaluation
- Geochemical fingerprinting

