

Updates on Water and Coal Ash

CIBO

Energy and Environmental Meeting

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WATER

Federal Actions Dealing with Water

- ▶ Definition of “Waters of the United States”
- ▶ Effluent Limitation Guidelines for Steam Electric Generating Units
- ▶ Section 316(b) Implementation
- ▶ Storm Water Management

Waters of the United States

- ▶ Greatly Expands Waters Subject to Federal Clean Water Act
- ▶ Comments were submitted October 20, 2014
- ▶ Final Rule?

Potential Impacts of Definition Change

- ▶ EPA and the U.S. Army Corps of Engineers jointly issued a proposed rule in March 2014. ▣ The proposal greatly expands scope of regulation.
- ▶ All tributaries of already-jurisdictional waters, and riparian/floodplain waters, would become jurisdictional (previously case-by-case).
- ▶ Certain isolated wetlands and other waters with a “significant nexus” to jurisdictional waters could be regulated. ▣ Once waters are found jurisdictional, Clean Water Act permitting requirements are triggered.
- ▶ Point-source emissions for individual facilities require permits (NPDES) • Water quality standards and anti-degradation requirements for bodies of water
- ▶ Thermal pollution standards for cooling water
- ▶ If finalized as proposed, 20 million acres of presently non-jurisdictional wetlands would become jurisdictional, as would numerous streams and other watersheds.

Effluent Guideline Limitations for Steam for Steam Electric Generating Units

- ▶ In June, 2013, EPA proposed major revisions to the effluent limitation guidelines (ELG) for the electric power sector •
 - ▶ ELGs are national standards that limit the amount of pollution discharged into surface waters
 - ▶ ELGs for the electric power sector were last revised in 1982
- ▶ The proposal applies to all EGUs that produce steam, including: those powered by nuclear, coal, oil and natural gas

ELG Expansion

- ▶ EPA is proposing to expand greatly the scope of regulation.
 - ▶ The 1982 ELGs focused on conventional pollutants (e.g., total suspended solids, oil and grease, etc.) and only some of the wastewater streams (e.g., fly ash wastewater)
 - ▶ The proposal expands the scope in order to address toxic pollutants that have increased primarily due to increase use of air pollution controls

Proposed ELG Expansion

- ▶ The proposed ELGs would regulate 7 waste streams, including FGD wastewater, fly ash transport water, bottom ash transport water, nonchemical metal cleaning waste, and flue gas mercury control (FGMC) wastewater
- ▶ Pollutants regulated by the proposed ELGs include:
 - ▶ Heavy metals, such as lead, mercury, arsenic, and selenium; • Nutrients, such as nitrogen (nitrate/nitrite); and
 - ▶ Conventional pollutants, such as total suspended solids, oil and grease

Effluent Guideline Limitations for Steam for Steam Electric Generating Units (continued)

- ▶ Establishes design criteria related to impoundment and their operation and maintenance.
- ▶ Establishes requirements related to runoff and leachate from coal ash storage and disposal areas.
- ▶ This includes landfills that may or may not be owned by the Unit!
- ▶ Rule to be finalized by September 30, 2015 (under a Consent Decree)!

Section 316(b) water withdrawal regulations

- ▶ Final Rule published in Federal Register August 15, 2014
- ▶ EPA indicates that the rule covers roughly 1,065 existing facilities that are designed to withdraw at least 2 million gallons per day of cooling water. EPA estimates that 521 of these facilities are factories, and the other 544 are power plants.

316(b) Overview

- ▶ The facilities are required to choose one of seven options to reduce fish impingement.
- ▶ Facilities that withdraw at least 125 million gallons per day must conduct studies to help their permitting authority determine whether and what site-specific controls, if any, would be required to reduce entrainment of aquatic organisms.
- ▶ New units added to an existing facility are required to reduce both impingement and entrainment that achieves one of two alternatives under national entrainment standards.
- ▶ EPA has concluded Endangered Species Act consultation with the Fish and Wildlife Service and the National Marine Fisheries Service.

NPDES Phase II-Storm Water Management Municipal Separate Storm Sewer Systems, “MS4s”

- ▶ Areas covered by rule: “urbanized areas” as defined by 2010 census
- ▶ Stormwater runoff is generated when precipitation from rain and snowmelt events flows over land or impervious surfaces and does not percolate into the ground.
- ▶ As the runoff flows over the land or impervious surfaces (paved streets, parking lots, and building rooftops), it accumulates debris, chemicals, sediment or other pollutants that could adversely affect water quality if the runoff is discharged untreated.
- ▶ The primary method to control stormwater discharges is the use of best management practices (BMPs). In addition, most stormwater discharges are considered point sources and require coverage under an NPDES permit. For more information about the Stormwater program, visit the [Stormwater Basic Information page](#).

NPDES Phase II-Storm Water Management (continued)

- ▶ Stormwater Management is becoming a critical issues to municipalities both in terms of managing
 - ▶ their municipal water treatment facilities.
 - ▶ stormwater management in controlling runoff not part of integrated stormwater/wastewater sewers
- ▶ From a Municipality Perspective, the concepts of Storm Water Utilities/Authorities as vehicle to raise the money necessary to implement stormwater controls is a taking form.
- ▶ The Stormwater Management at the Municipal Level is to address both water quality problems and flooding problems.

NPDES Phase II-Storm Water Management (continued)

- ▶ What this means to you:
 - ▶ Stormwater fees based on amount of impervious surface area
 - ▶ Requirement to develop and maintain stormwater pollution prevention plans (includes good housekeeping, regular site inspections, etc.)
 - ▶ Requirement for stormwater permit for construction sites 1 acre and larger. Inspections during construction!
 - ▶ Post construction stormwater management requirements (detention basins, infiltration basins, etc.)

Coal Combustion Residuals Final Rule

Subtitle D

- ▶ EPA's final rule to regulate the disposal of coal combustion residuals (CCR) as solid waste is under Subtitle D of the Resource Conservation and Recovery Act (RCRA).
- ▶ (Note-The Subtitle C battle is not over. It is just put on hold for the present.)

Minimum National Criteria

- ▶ EPA establishes national minimum criteria for
 - ▶ existing and new CCR landfills;
 - ▶ existing and new CCR surface impoundments; and
 - ▶ all lateral expansions.

The Criteria

- ▶ The criteria consists of:
 - ▶ location restrictions;
 - ▶ design and operating criteria;
 - ▶ groundwater monitoring and corrective action;
 - ▶ closure requirements and post closure care; and
 - ▶ recordkeeping, notification, and *internet posting requirements*.

Requirements

- ▶ The rule requires
 - ▶ any existing unlined CCR surface impoundment that is contaminating groundwater above a regulated constituent's groundwater protection standard to stop receiving CCR and either retrofit or close, except in limited circumstances.
 - ▶ the closure of any CCR landfill or CCR surface impoundment that cannot meet the applicable performance criteria for location restrictions or structural integrity.
 - ▶ those CCR surface impoundments that do not receive CCR after the effective date of the rule, but still contain water and CCR will be subject to all applicable regulatory requirements, unless the owner or operator of the facility dewateres and installs a final cover system on these inactive units no later than three years from publication of the rule.

Subtitle C is still on the table in the future

- ▶ *EPA is deferring its final decision on the Bevill Regulatory Determination because of regulatory and technical uncertainties that cannot be resolved at this time.*

Closer Look at the Final Rule

Open Dump

▶ § 257.1 Scope and purpose.

- ▶ * * * Unless otherwise provided, the criteria in §§ 257.50 through 257.107 are adopted for determining which CCR landfills and CCR surface impoundments pose a reasonable probability of adverse effects on health or the environment under sections 1008(a)(3) and 4004(a) of the Act.
 - ▶ (1) Facilities failing to satisfy any of the criteria in §§ 257.1 through 257.4 or §§ 257.5 through 257.30 or §§ 257.50 through 257.107 are considered open dumps, which are prohibited under section 4005 of the Act.
 - ▶ (2) Practices failing to satisfy any of the criteria in §§ 257.1 through 257.4 or §§ 257.5 through 257.30 or §§ 257.50 through 257.107 constitute open dumping, which is prohibited under section 4005 of the Act.

Open Dump

- ▶ * * * * *

- ▶ (c) * * *

- ▶ (12) Except as otherwise specifically provided in subpart D of this part, the criteria in subpart A of this part do not apply to CCR landfills, CCR surface impoundments, and lateral expansions of CCR units, as those terms are defined in subpart D of this part. Such units are instead subject to subpart D of this part.

Applicability

- ▶ **§ 257.50 Scope and purpose.**

- (a) This subpart establishes minimum national criteria for purposes of determining which solid waste disposal facilities and solid waste management practices do not pose a reasonable probability of adverse effects on health or the environment under sections 1008(a)(3) and 4004(a) of the Resource Conservation and Recovery Act.

Applicability

(Section 257.50(b))

- ▶ This subpart applies to owners and operators of new and existing landfills and surface impoundments, including any lateral expansions of such units that dispose or otherwise engage in solid waste management of CCR generated from the combustion of coal at electric utilities and independent power producers.
- ▶ Unless otherwise provided in this subpart, these requirements also apply to disposal units located off-site of the electric utility or independent power producer.
- ▶ This subpart also applies to any practice that does not meet the definition of a beneficial use of CCR.

Applicability

- ▶ (c) This subpart also applies to inactive CCR surface impoundments at active electric utilities or independent power producers, regardless of the fuel currently used at the facility to produce electricity.
- ▶ (d) This subpart does not apply to CCR landfills that have ceased receiving CCR prior to **[INSERT DATE 6 MONTHS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.
- ▶ (e) This subpart does not apply to electric utilities or independent power producers that have ceased producing electricity prior to **[INSERT DATE 6 MONTHS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

Applicability

- ▶ (f) This subpart does not apply to wastes, including fly ash, bottom ash, boiler slag, and flue gas desulfurization materials generated at facilities that are not part of an electric utility or independent power producer, such as manufacturing facilities, universities, and hospitals.

This subpart also does not apply to fly ash, bottom ash, boiler slag, and flue gas desulfurization materials, generated primarily from the combustion of fuels (including other fossil fuels) other than coal, for the purpose of generating electricity unless the fuel burned consists of more than fifty percent (50%) coal on a total heat input or mass input basis, whichever results in the greater mass feed rate of coal.

Applicability

- ▶ *(g) This subpart does not apply to practices that meet the definition of a beneficial use of CCR.*
- ▶ *(h) This subpart does not apply to CCR placement at active or abandoned underground or surface coal mines.*
- ▶ *(i) This subpart does not apply to municipal solid waste landfills that receive CCR.*

Definitions

- ▶ **Beneficial use** of CCR means the CCR meet all of the following conditions:
 - ▶ (1) The CCR must provide a functional benefit;
 - ▶ (2) The CCR must substitute for the use of a virgin material, conserving natural resources that would otherwise need to be obtained through practices, such as extraction;
 - ▶ (3) The use of the CCR must meet relevant product specifications, regulatory standards or design standards when available, and when such standards are not available, the CCR is not used in excess quantities; and

Beneficial Use

(continued)

- ▶ (4) When unencapsulated use of CCR involving placement on the land of 12,400 tons or more in non-roadway applications, the user must demonstrate and keep records, and provide such documentation upon request, that environmental releases to groundwater, surface water, soil and air are comparable to or lower than those from analogous products made without CCR, or that environmental releases to groundwater, surface water, soil and air will be at or below relevant regulatory and health-based benchmarks for human and ecological receptors during use.

Definitions

- ▶ Coal combustion residuals (CCR) means fly ash, bottom ash, boiler slag, and flue gas desulfurization materials generated from burning coal for the purpose of generating electricity by electric utilities and independent power producers
- ▶ *CCR fugitive dust* means solid airborne particulate matter that contains or is derived from CCR, emitted from any source other than a stack or chimney

Summary/Overview

CCR Generated by Non-Utility Boilers

- ▶ The requirements of this rule do not apply to wastes, including fly ash, bottom ash, boiler slag, and FGD materials generated at facilities that are not part of the electric power sector or an independent power producer and that use coal as the fuel in non-utility boilers, such as manufacturing facilities, universities, and hospitals. Industries that primarily burn coal to generate power for their own purposes (i.e., non-utilities), also known as combined heat and power (CHP) plants, are primarily engaged in business activities, such as agriculture, mining, manufacturing, transportation, and education

Applicability: Bevill Amendment Issues

- ▶ EPA noted that insufficient information was available on non-utility boilers burning coal to determine whether a regulatory flexibility analysis would be required under the Regulatory Flexibility Act, and to conduct one if it is necessary. Without such data, we were unable to fully assess CCR wastes from non-utility operations and indicated that we would decide on an appropriate course of action for these wastes after completing this rulemaking (see 75 FR 35129).

Applicability

- ▶ Accordingly, this rule does not apply to owners and operators of landfills and surface impoundments in which CCR are disposed that were generated by non-utility boilers burning coal.

Applicability

- ▶ EPA has concluded that inactive CCR surface impoundments require regulatory oversight.
 - ▶ **The sole exception is for “inactive” CCR surface impoundments” that have completed dewatering and capping operations (in accordance with the capping requirements finalized in this rule) within three years of the effective date.**

Is This a Final Regulatory Determination for CCR?

- ▶ No.
- ▶ USEPA states that it is deferring its final decision on the Bevill Regulatory Determination citing “regulatory and technical uncertainties that cannot be resolved at this time,” thus reserving the right to revise this decision and regulate under Subtitle C in the future.
- ▶ The final Rule retains the Bevill exclusion for CCR that is beneficially used.
- ▶ Remember that EPA was attempting to change the Regulatory Determination regarding CCRs that was sent to Congress.

What Role Does the Citizen Lawsuit Play?

- ▶ USEPA states they cannot enforce the Rule's requirements.
- ▶ They will rely on citizens or states acting as citizens to enforce the requirements under RCRA's citizen suit authority.
- ▶ The states can also continue to enforce any state regulation under their independent state enforcement authority.
- ▶ Thus, the Rule will be enforced through state or citizen lawsuits under RCRA section 7002 for non-compliance.
- ▶ USEPA has developed a number of provisions designed to facilitate citizens to enforce the Rule. These include the requirement to publicly post monitoring data, along with critical documentation of facility operations, so the public will have access to the information to monitor activities at CCR disposal facilities

What Roles Do the States Play?

- ▶ The states can bring suit against facilities for noncompliance with the Rule. USEPA is also “providing the opportunity for states to secure approval of its CCR program” through the State Solid Waste Management Program (SWMP). “EPA strongly recommends that States take advantage of this process by revising their SWMPs to address the issuance of the revised federal requirements in this final rule, and to submit revisions of these plans to EPA for review. EPA would then review and approve the revised SWMPs provided they demonstrate the minimum federal requirements in this final rule will be met.

EPA's believes their approval helps States:

- ▶ In this way, EPA's approval of a revised SWMP signals EPA's opinion that the State SWMP meets the minimum federal criteria.”
- ▶ USEPA also states: “EPA expects the approval of a state solid waste management plan, while it cannot prevent a citizen group from filing a lawsuit, will carry substantial weight in any court proceeding charged with determining whether compliance with state requirements constitutes compliance with the federal criteria.”
- ▶ The Rule is considered to provide the minimum requirements for compliance; however, states have the ability to develop more stringent requirements than the Federal Rule. It is unclear whether risk-based regulatory programs common in many states will be considered to be compliant with this new Federal Rule.

Location Restrictions

- ▶ Existing CCR units must meet location restrictions designated in the Rule within 42 months of the effective date or cease sending CCR to the facility and begin closure.
- ▶ These location restrictions address placement of CCR:
 - ▶ above the uppermost aquifer,
 - ▶ In wetlands,
 - ▶ within fault areas, in seismic impact zones,
 - ▶ and in unstable areas. The five location restrictions
- ▶ These apply to all new CCR landfills, all new and existing CCR surface impoundments, and all lateral expansions of CCR units. However, existing CCR landfills are only subject to the location restriction for unstable areas.

Liner Requirements

- ▶ Documentation is required 18 months after Rule publication to verify whether existing impoundments meet the definition of “lined” or “unlined.” New CCR surface impoundments and landfills are required to have composite liners that meet specific requirements within the Rule
- ▶ Liners are required for all new CCR units. An alternate liner design may be used if it is shown to be equivalent to the required system that includes a geomembrane on top of two feet of clay. ***A double membrane system is not allowed.*** Landfills also require a leachate collection system.

Minimum Design and Operating Requirements for CCR Disposal Units

- ▶ (1) use of a composite liner system (or an equally effective alternative) in all CCR disposal units except for existing landfills (existing CCR surface impoundments may meet this requirement with two feet of compacted soil of a specified hydraulic conductivity);
- ▶ (2) minimum structural integrity requirements which vary depending on the size and features of the disposal unit; and
- ▶ (3) periodic assessments of structural stability, potential hazards, and safety factors. Certain CCR disposal units will be required to adopt emergency action plans and some may be closed if minimum safety standards are not achievable.

Operating Criteria/Documentation

- ▶ (1) Air criteria, which are performance-based standards that require taking steps to minimize amount (or quantity) of CCR becoming airborne at the facility;
- ▶ (2) CCR surface impoundment and landfill inspection requirements, including documentation recording the results of each inspection and instrumentation monitoring by a qualified person at intervals not exceeding seven days. Run-on and run-off controls for CCR landfills, and hydrologic and hydraulic capacity requirements for CCR surface impoundments are to be in place 18 months after publication.
- ▶ (3) Owners of CCR units must place the information pertaining to the operating criteria in the facility's operating record as it becomes available.

Operating Criteria (notes)

- ▶ New Air Quality Requirement: A *fugitive dust plan* must be prepared for all CCR units within six months of the publication date of the rule.
- ▶ Any existing unlined landfill or impoundment may continue to operate. However, if groundwater impacts are detected, the unit must stop receiving CCRs and must close or install a liner.
- ▶ Impoundments must prepare and post a hydrological plan to assure they can control water during 25-year, 24-hour storm events without over topping.
- ▶ Landfills must prepare and post a run-on run-off plan to control flows produced by a 25-year, 24-hour storm event.

Groundwater Monitoring & Corrective Action

- ▶ Within 30 months after publication of the final Rule, owners and operators of CCR units will: install a professional engineer-certified groundwater monitoring system, develop a sampling and analysis program including statistical analysis methods, define background and downgradient groundwater quality, initiate detection monitoring (eight independent sample events), and begin evaluating groundwater monitoring data.
- ▶ By the end of the 30-month period, the professional engineer-certified groundwater sampling plan and statistical analysis of results are required to be posted on the facility's public website.

Groundwater Monitoring & Corrective Action

- ▶ The groundwater monitoring system consists of two elements: Detection Monitoring and Assessment Monitoring.
- ▶ If detected monitoring parameters are measured at a "statistically significant level over the established background concentrations," the owner or operator of the CCR disposal unit must notify the relevant state regulatory authority, conduct assessment monitoring, and, if necessary, initiate corrective action responses.
- ▶ *Post closure will require a minimum of 30 years of ground water monitoring.*

Closure & Post-Closure Care

- ▶ Closure and post-closure requirements are effective 18 months after the Rule publication. Closure of a CCR unit is triggered in one of three ways:
- ▶ 1. When a CCR unit receives the known final waste shipment or when the owner or operator removes the known final volume of CCRs from the unit for the purposes of beneficial use, closure must begin within 30 days of such receipt or volume removal.
- ▶ 2. For “Idled Units” (where the unit has remaining storage capacity or where there has been a temporary suspension of removal activities), closure is required two years after the most recent receipt of CCRs or the last removal for beneficial use, whichever is later.
- ▶ 3. When a unit fails to meet certain technical criteria (for example, if any CCR unit fails to meet location criteria; if an unlined surface impoundment has a groundwater exceedance of Appendix IV constituents, or if a surface impoundment fails to meet the safety factor requirements), closure must be initiated within six months under any of these conditions.

Closure & Post-Closure Care

- ▶ The Rule provides timing requirements for closure of landfills and surface impoundments.
- ▶ Landfills must complete closure within six months of commencing closure and surface impoundments must complete closure within five years of commencing closure.
- ▶ There is some flexibility in the Rule for potential

Closure & Post-Closure Care

- ▶ The final rule establishes requirements for the closure of existing CCR disposal units
 - ▶ (a) in the event of the failure to meet technical criteria;
 - ▶ (b) after receipt of the known final waste shipment or removal of the final volume of CCRs from the unit for beneficial use; or
 - ▶ (c) two years after the most recent receipt of CCRs or two years after the most recent removal of CCRs for the purpose beneficial use.
- ▶ Closure must be achieved by removing the CCRs and decontaminating the unit or by leaving the coal ash in place and installing a final cover system. Groundwater monitoring programs and corrective actions (if necessary) are required to continue after closure.

Closure & Post-Closure Care

- ▶ Closure shall include adding a note to the property deed that CCR is present.
- ▶ Post closure will require a minimum of 30 years of ground water monitoring.

Inactive Landfills

- ▶ The requirements of the Rule do not apply to inactive CCR landfills, which are defined as CCR landfills that do not accept waste after the effective date of the regulations.

Inactive Impoundments

- ▶ An owner or operator of an inactive CCR surface impoundment that completes closure and meets all of the requirements in §257.100 [Inactive CCR Surface Impoundments - Closure and Post-Closure Care] within 36 months after date of publication, is exempt from all other requirements in the Federal Rule.
- ▶ CCR surface impoundments that do not receive CCR after the effective date of the Rule, but still contain water and CCR, will be subject to all applicable regulatory requirements, unless the owner or operator of the facility dewateres and installs a final cover system on these inactive units no later than three years from publication of the Rule.

Inactive Impoundments

- ▶ States may provide their own guidance and requirements for inactive closure.
- ▶ If the owner of an inactive surface impoundment elects to close under §257.100 of the Rule, notification must be provided within eight months from the date of publication in the Federal Register, and the means of closure must be defined.
- ▶ Inactive units can elect to close by leaving the CCR in place or by removing and decontaminating all areas affected by releases from the CCR surface impoundment (including the liner).
- ▶ If the owner or operator of the CCR surface impoundment fails to complete closure of the inactive CCR surface impoundment within the 36 month timeframe, the CCR unit must comply with all of the requirements applicable to existing CCR surface impoundments.

Recordkeeping, Notification and Internet Posting Requirements

- ▶ The final rule requires the owner or operator of a CCR disposal unit to maintain files of all required information (e.g., demonstrations, plans, reports, etc.) in an operating record located at the facility, and to maintain a publicly accessible internet site which hosts each unit's CCR compliance data and information.

Recordkeeping, Notification and Internet Posting Requirements

- ▶ Examples of information needing to be posted including but not limited to:
 - ▶ Impoundments must prepare and post a hydrological plan
 - ▶ Landfills must prepare and post a run-on run-off plan to control flows
 - ▶ Closure plans and post closure plans must be prepared and posted for all CCR units

Summary

- ▶ Applicability
- ▶ Areas of Concerns
 - ▶ Definition of Open Dump
 - ▶ Criteria
 - ▶ Impoundments
 - ▶ Ground water monitoring
 - ▶ Citizens suits
 - ▶ Posting Information on the Internet

Summary

- ▶ States
 - ▶ Do they apply for approval under Solid waste
 - ▶ Do they expand coverage to all ash facilities (including exempt?)

Summary of Some Concerns

- ▶ Posting Information on the Internet
- ▶ Citizens Suits
- ▶ Liner Requirements
- ▶ Closure of Existing CCR Impoundments