Long-Term Care of Closed Industrial and Construction & Demolition Landfills

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Our Mission: “To protect and improve the health and environment of all Kansans.”
Overview

- Post-Closure Care (PCC) Regulations & Policies for Industrial Landfills
- PCC Regulations and Policies for Construction and Demolition (C&D) Landfills
- New PCC Regulations for Industrial Landfills at Coal-Fired Power Plants
Post-Closure Care Regulations

• Responsible for care for at least 30 years

• KDHE may extend - protect human health and the environment
  – Release of chemical constituents into gw & risk to down gradient receptors
  – heavy metals, e.g., As, Ba, Cd, Cr, Pb, Hg, Cu
Activities of Industrial Landfill O/O During PCC

• Conduct inspections
  – Access control and security checks along perimeter

• Maintain the final cover system
  – Landfills w/ wastes that have potential to leach constituents into groundwater

• Maintain environmental monitoring system if required
Activities of Industrial Landfill O/O During PCC

• Conduct inspections
  – Access control and security checks along perimeter

• Maintain the final cover system
  – Needs to be erosion proof
  – No woody vegetation in cover
  – Erosive velocities avoided by design

• Terraces at regular intervals & let down structures
Construction Phase: Sediment Control Fences
Storm Water Drainage Culverts
Storm Water Let Down Structure Materials
Storm Water Let Down Structure
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Activities of Industrial Landfill O/O During PCC

• Maintain final cover system
  – Inspect it to ensure that no erosion rills and gullies have developed
  – That no settlement has occurred that compromises the “weatherproof” containment & does not allow “ponding” of precipitation
Activities of O/O for Industrial LFs

- Environmental monitoring
  - Landfills w/ wastes that have potential to leach constituents into groundwater
Activities of O/O for Industrial LF

• Groundwater monitoring
  – Liner is primary control system (clay or clay plus high density polyethylene)
  – If chemical constituents migrate thru liner system, GW monitoring data - warning system & decision-making guide
GW Elevation Measuring

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Protective Casing for GW Monitoring Wells

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Permit Renewal Requirements for O/O During PCC

• If landfill has an environmental monitoring system
  – Permit renewal fee
  – Annual PCC cost estimate
  – Demonstration of financial assurance & liability insurance
  – GW monitoring report/s
Duties of KDHE/BWM Regarding PCC

• Provide regulatory oversight
  – Periodic inspection of the final cover system
  – Inspection of monitoring system/s
  – Observe sampling procedures and obtain split samples of gw to verify water quality results & data quality
  – Review groundwater monitoring reports

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Duties of KDHE/BWM Regarding PCC (cont.)

• Provide regulatory oversight
  – Review PCC cost estimate to determine if unit costs and quantities are reasonable for all PCC activities for the current renewal year
  – Ensure that financial assurance amount and a proper method is in place
Financial Assurance Methods

• Corporate Financial Test
• Funded Trust Fund
• Surety Bond – Guaranteeing Payment/Performance with Standby Trust
• Letter of Credit

Point of Contact: Brian Busby at 785-296-0680 or bbusby@kdheks.gov
PCC of C&D Landfills

- O/O must conduct PCC for 30 yrs
  - Conduct & document annual inspections to ensure final cover effectiveness
  - Make repairs as needed
  - Prevent run-on & run-off – damaging cover
  - After 5 yrs a frequency change can be requested
C&D LF: Passive Venting of Gases
Final Cover at C&D Landfill

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Permit Renewal Requirements for O/O During PCC

• If landfill does not have an environmental monitoring system
  – Maintain and repair the final cover to prevent infiltration of precipitation
Permit Renewal Requirements for O/O During PCC

- If landfill does not have an environmental monitoring system
  - Permit renewal fee – NA = $0
  - PCC cost estimate
  - Demonstration of financial assurance & liability insurance
  - Environmental monitoring report
Restrictive Covenant Requirements for Industrial and C&D Landfills

• Need to clearly define the KDHE approved uses of the landfill surface where wastes have been covered
C&D Landfill: Final Cover & Alternate Temporary Uses

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New Landfill Regulations for Coal-Fired Power Plants

• EPA Published Coal Combustion Residuals (CCRs) Regulations
  – April 17, 2015
  – Regulations become effective Oct. 19, 2015
  – Applicable to SIs and ILFs that TSD
  – CCRs – Fly ash, bottom ash, boiler slag and flue gas desulfurization mat.
Fly Ash: Typical
Bottom ash: typical
New Landfill Regulations for Coal-Fired Power Plants

- EPA Published Coal Combustion Residuals (CCR) Regulations
  - PCC regulations are similar to current KDHE/BWM regulations and industrial landfill permits
  - PCC Requirements
    - Applicable to CCR LFs accepting CCR wastes after Oct. 19, 2015
    - PCC Period – 30 yrs
New Landfill Regulations for Coal-Fired Power Plants

• EPA Published Coal Combustion Residuals (CCR) Regulations
  – PCC Requirements
    • Deadline for preparing initial PCC plan – Oct. 19, 2016
    • PCC Maintenance
      – Maintain final cover system, leachate collection system & gw monitoring system

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PCC for Industrial and C&D Landfills

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