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CURRENT CHALLENGES IN NON-HAZARDOUS WASTE DISPOSAL

The four most troublesome issues currently are:

- ① Clean Construction or Demolition Debris (CCDD)
- ② Subsurface Landfill Fires
- ③ Toxic Substance Control Act (TSCA) wastes
- ④ Problems for landfills over mined areas

CCDD issues

- The Illinois Environmental Protection Act (Act) allows clean masonry materials (concrete, block, brick, stone) and recycled asphalt paving as fill without a permit, with some restrictions.
- Concerns about people disposing of non-CCDD materials.
- So starting in 2005, I was part of a group that developed the CCDD regulations (35 IAC Subpart 1100). USFO added in 2012

CCDD issues continued

- Still is a lot of confusion of when a soil or CCDD is “clean”
- Unfortunately, it is not defined in the Act
- Permit Section developed a Maximum Allowable Contaminant table for materials going to USFO or CDDD fill site.
- Still many issues with when a soil is contaminated enough to be a waste.

Landfill fires

- Bacteria decompose the organic part of MSW and release methane, carbon dioxide, and heat in the landfill.
- If oxygen penetrates through the cap, a fire will occur.
- Since the fire is typically underground and smoldering, it's difficult to detect, fight, and determine when it's out.

Landfill Fires continued

- ① There have been several fires in Illinois landfills in the last decade.
- ① Most were small and did little damage.
- ① Best method of fire fighting is contain and smother using dirt to cut off the oxygen supply.
- ① There has been one serious landfill fire in Illinois in the last decade.

Landfill Fires continued

- Unique site in a former limestone quarry
- Over 300 feet deep with vertical sidewalls.
- In a Chicago suburb with neighbors on all four sides.
- Started accepting waste under the old 807 regulations, and therefore did not have a leachate collection system until 1993.

Landfill Fires continued

- ⦿ Temperatures up to 300 F
- ⦿ Incredibly bad odors
- ⦿ Over 60' of settlement in areas
- ⦿ Landfill gas migration to nearby structures, including a hotel and church
- ⦿ “Problem” wells with boiling leachate.
- ⦿ Several wellhead failures

Landfill Fires continued

- What happens when a wellhead fails with boiling temperatures?



TSCA wastes

- TSCA wastes are wastes that are too nasty to be considered MSW, but not dangerous enough to be considered hazardous waste.
- In Illinois the main TSCA concerns are PCB contaminated wastes and MGP wastes.
- MG was used for light and power before electricity. Left over sludge was generally dumped in back of plant.

TSCA Wastes continued

- Landfill built a TSCA cell (actually built to hazardous waste standards)
- Local citizens are not happy
- Is located over Mahomet aquifer, but has ~100' of clayey soils between aquifer and landfill.

Landfills in Mined Areas

- Large areas of the State have been either subsurface or surface mined.
- Section 22.36 of the Illinois Environmental Protection Act prohibits landfills over a mined area unless “engineering measures” have been taken to protect the structure.

Mined Areas continued

- ⦿ The main concern is differential settlement
- ⦿ There are also groundwater issues caused by the mining
- ⦿ Illinois EPA actually used the ISGS coal mine areas maps.

Mined Areas continued

- ⦿ However, many of the older mines are poorly map
- ⦿ I had a new landfill in Southern IL where the locals knew that the mine extended farther south then shown.
- ⦿ Operator decided to move the waste boundaries to the south to avoid it.

Questions?

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