

WDNR Interested
Parties Mtng
Nov. 5th, 2014

Organic Stability/Closure Phasing/Capping Requirements

- Introduction/Background (3)
- Brown County (5)
- Winnebago County (5)
- Dane/Marathon County (5)
- Case Study RD&D–FOTH Iowa (5)
- Organic Stability Rule Evaluation (5)
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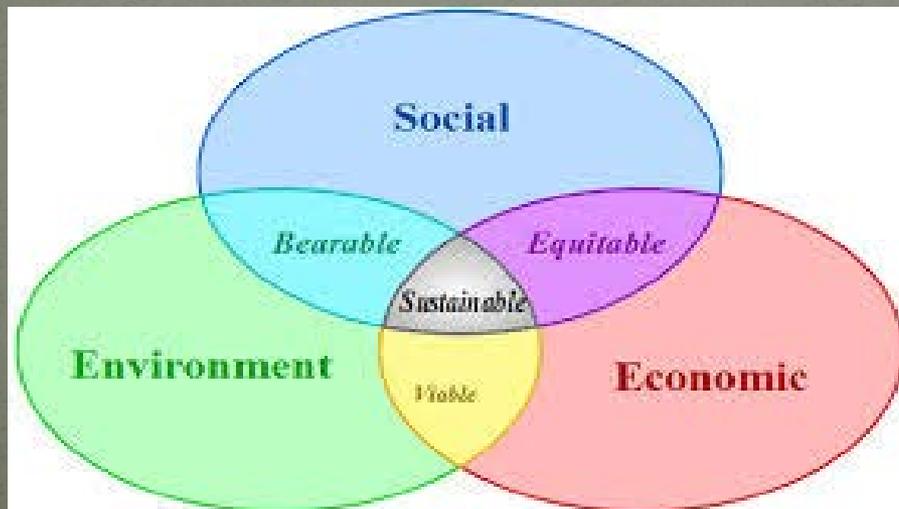
Landfill Capping Requirements

- NR 500 CODE REQUIREMENTS
 - a) Organic Stability Plans
 - b) Gas Well Installation Requirements
 - c) Landfill Closure Timeline



Landfill Capping Requirements

- SOCIAL ELEMENTS
 - a) Landfill Capacity is a Resource (Asset)
 - b) Smart Land Use Practices
 - c) Stewards of the LF capacity/footprint

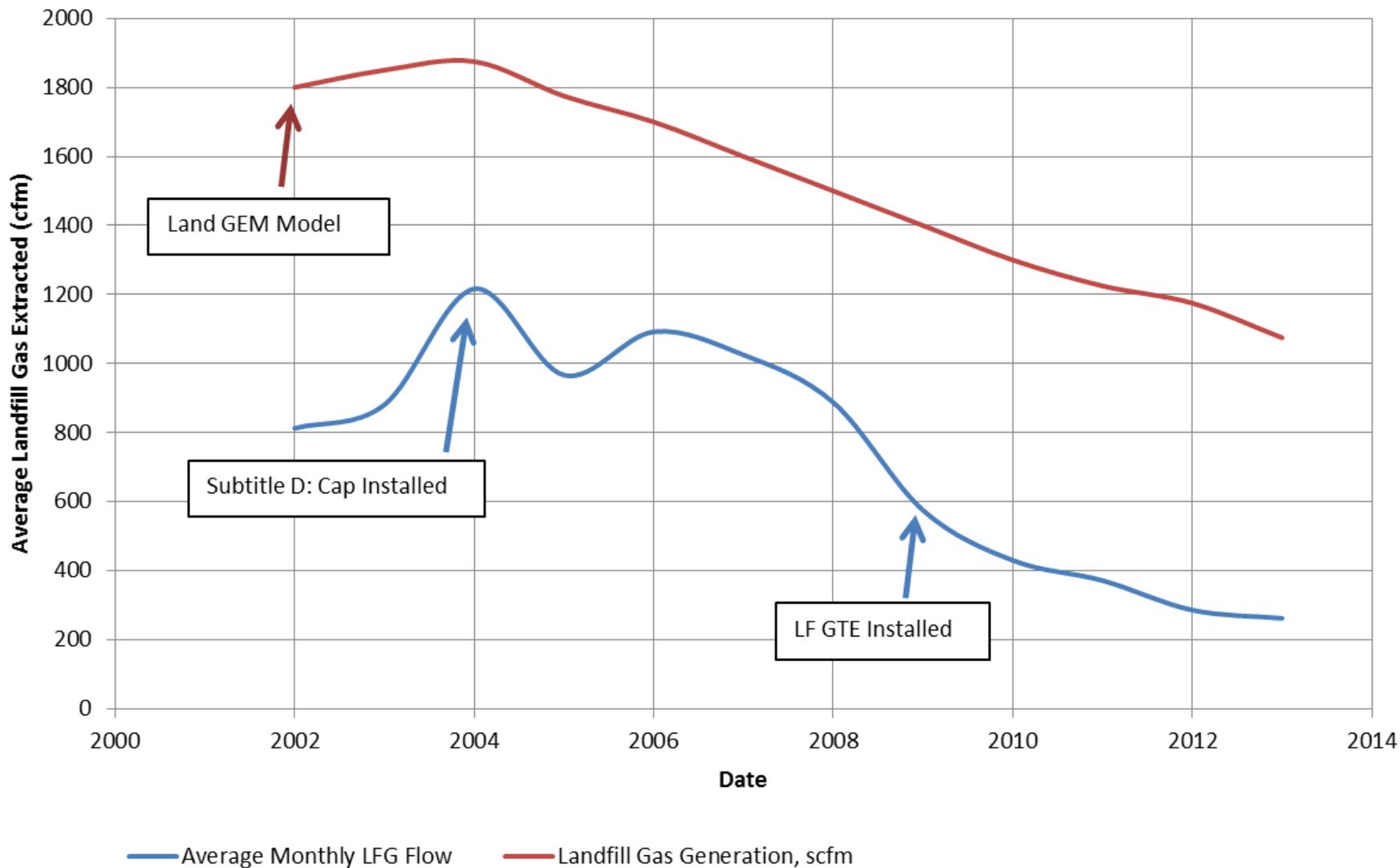


Brown County – East Landfill

- 61 acres
- Final Design Capacity 4.5 million cy waste
- Accepted waste 1976-2004
- Final cover installed 2004
- 83 gas extraction points
- Pumps in 90% of wells

Brown County East Landfill

2002 to Current Average Landfill Gas Flow



Winnebago County Landfill

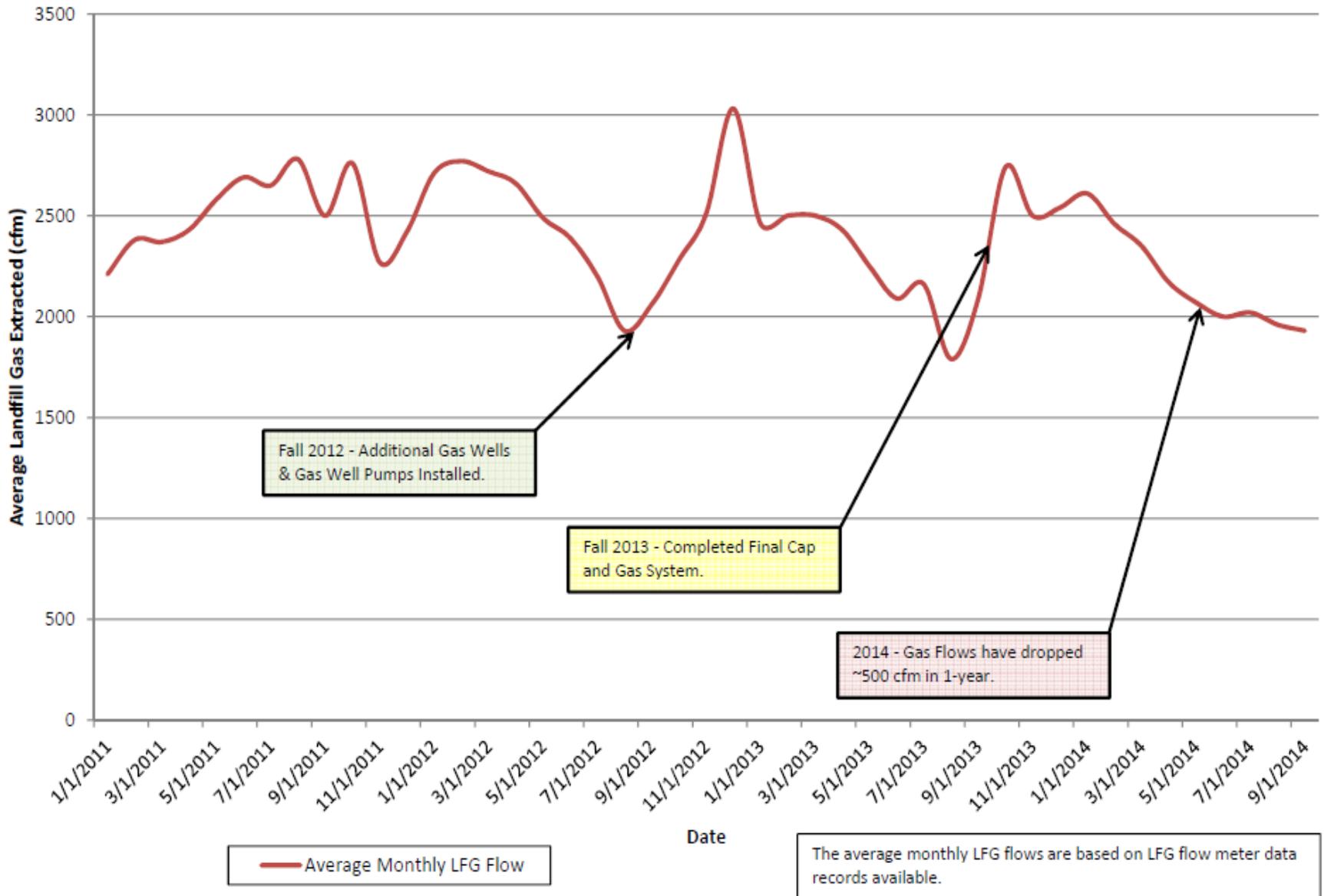
- 72 acres
- Final Design Capacity 7.8 million cy waste
- Accepted waste 1989-2012
- Final cover installed 2013
- 84 gas extraction points

Winnebago County Landfill

- 35 acre final cover installed in 2013
- Prior to closure 2400 cfm
- After closure, leachate pumps were reinstalled – 2500 cfm
- Sept 2014 – 1900 cfm
- May request plan mod to recirculate leachate to maintain 1800 cfm for 5 engines

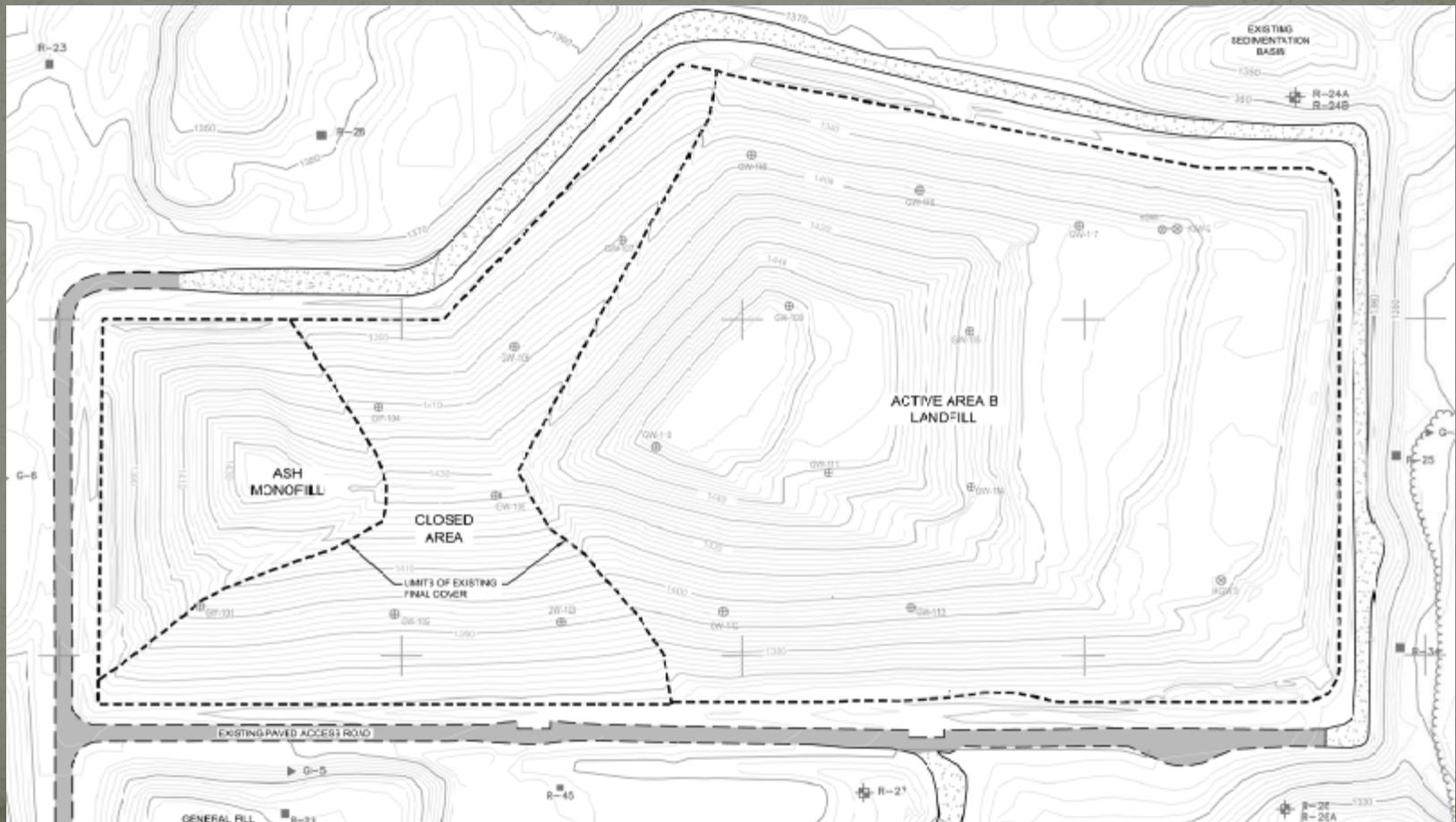
Winnebago County Sunnyview Landfill

2011 to Current Average Landfill Gas Flow



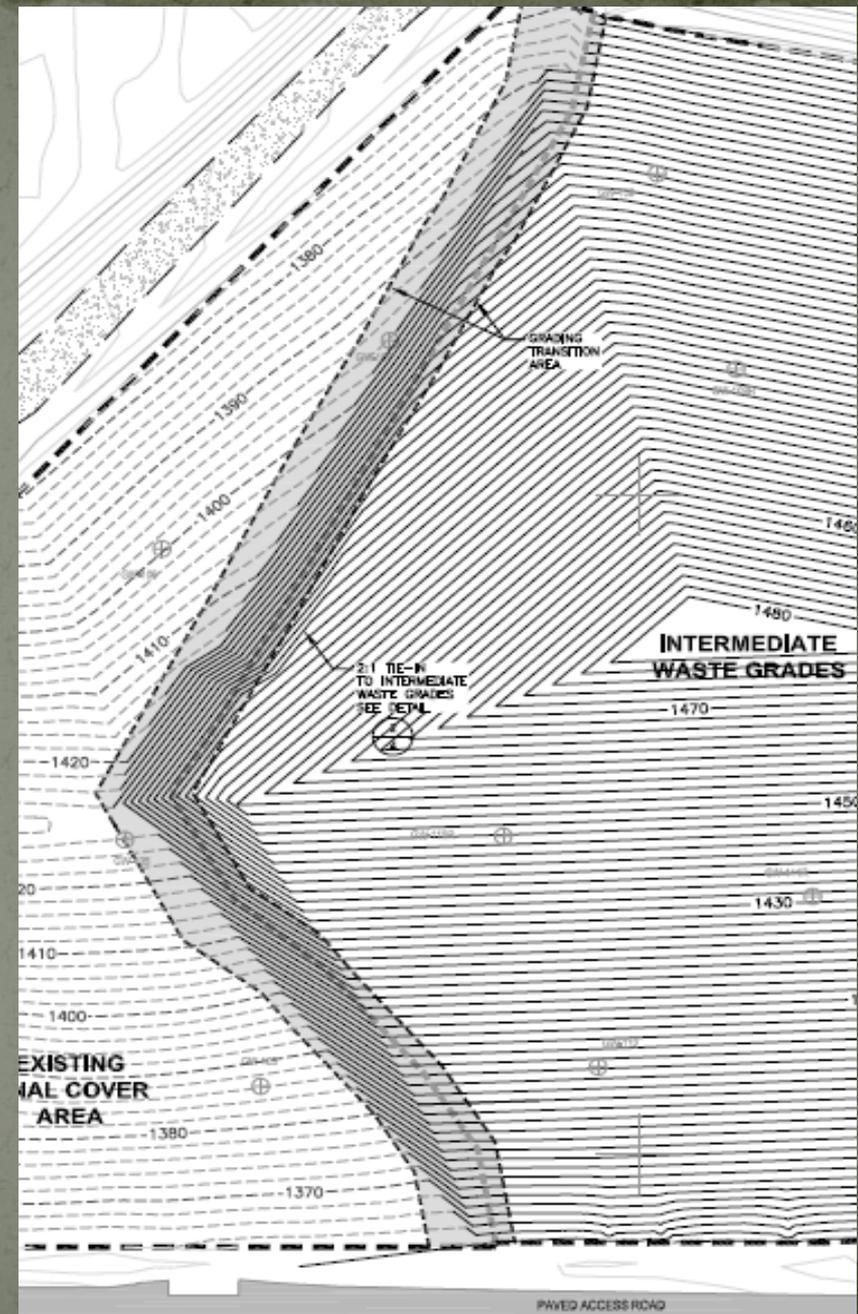
Marathon County

- Area B landfill 34 acres facility (3.4 million cu yds)



Area B

- 15-foot settlement differential between closed open area
- Plan mod to pull back final cover
- Made available 36,600 cy of airspace (~\$925,000 income potential)
- Difficulty will be in final closure tie-in



Case Study RD&D - IOWA

- Environmental Management System (EMS) Next Tier
 - Process equivalent to Green Tier w/ focus on solid waste
 - Framework for implementing environmentally sound design w/o typical state permitting
 - Framework allows design that meets intent of rules but may deviate from specific requirements
- IDNR contact – Alex Moon, Chief, Land Quality Bureau
- Foth contact – Jim Miles-Polka, Client Director

Case Study RD&D - IOWA

- Environmental Management System (EMS) Next Tier
 - Environmental Policy Statement
 - Environmental Impacts
 - Legal and Other Requirements
 - Objectives and Targets
 - Action Plan
 - Key Resources and Additional Needs
 - Communication/Training/Awareness
 - Monitoring and Measurement
 - Assessment
 - Reevaluation and Modification

Case Study RD&D - IOWA

- Current Status
 - Client and IDNR have accepted process
 - Preparing to submit a pilot project using this process for additional IDNR feedback
- Next Steps
 - Use the EMS process for LF renewal permit incl. ET cap at a Subtitle D lined facility
 - Use the EMS process and RD&D rules to obtain a perpetual RD&D approval for the ET cap
 - Will include performance monitoring

Case Study RD&D - IOWA

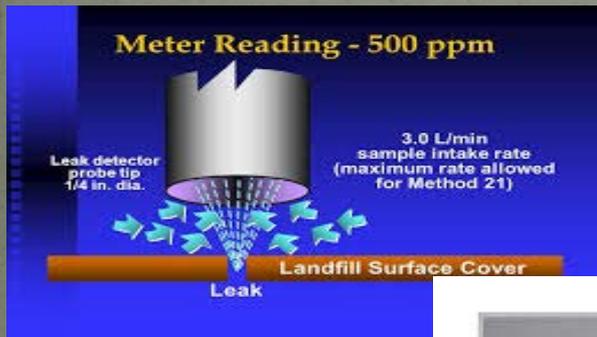
- Benefits
 - Allows for flexibility in design
 - Reduces time for permit application and review
 - Allows IDNR to focus on priority sites and enviro. issues
- Goals
 - Obtain LF renewal permit w/ ET cap by July 1, 2015
 - Full implementation of the EMS process will make this the last permit issued for the site

WI ORGANIC STABILITY RULE EVAL

- Christopher A. Bareither, PhD, PE
Assistant Professor
Civil & Environmental Engineering
Colorado State University
- John Welch – Summary

Alternate Caps Pros/Cons

- Organic Stability Quicker?
- SEM hits increase? New NSPS rules
- Cost of Leachate production/management – (high cost/no interest)(low cost/higher interest)
- Power Purchase Agreements w Utilities



● Discussion