

# **Accomplishments since Salina Workshop on May 7, 2014**



**September 9, 2015; Topeka, KS**

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# Accomplishments

- **Reduction &/or Termination of Postclosure Care Activities, BWM Policy 2014 P-2 (6-27-14).**  
**Basis for RTP (vs. PCP); note acronyms.**
- **Leachate Sampling Check Lists (11-6-14).**  
**Sampling protocol for leachate samplers.**
- **Comparison of Subtitle D Lives and Sampling Information (11-12-14).**  
**Survey of Subtitle D Landfill Lives;  
Locations & Frequency of Sampling.**

# Accomplishments (Continued)

- **PCC Statistics for Leachate Trend Analysis: Kendall's Tau, SWANA/KDHE, Manhattan (11-19 & 20-14).**

**Procedure to evaluate non-parametric emission (leachate & LFG) trends.**

- **Preparation of Topeka's Workshop Documents (most recent effort):**

**ACRL Modifications, ACRL Plan, ACRL Report (sent prior to meeting) & Flowcharts/decision trees (to be presented in PM session).**

# Summary & Introduction to Prototype ACRL Plan & Report

The accomplishments demonstrate BWM's efforts to provide stakeholders with a simplified scientific methodology to determine if PCC activities can be reduced &/or terminated prior to the current 30 year statutory limit, e.g., **this workshop builds upon the Salina workshop** where the emphasis was to demonstrate how a PCC reduction &/or termination plan can be prepared (& how emission sampling plans can be prepared); hence, a **prototype plan & report.**

# Prototype “ACRL Plan”



**September 16, 2015; Topeka, KS**

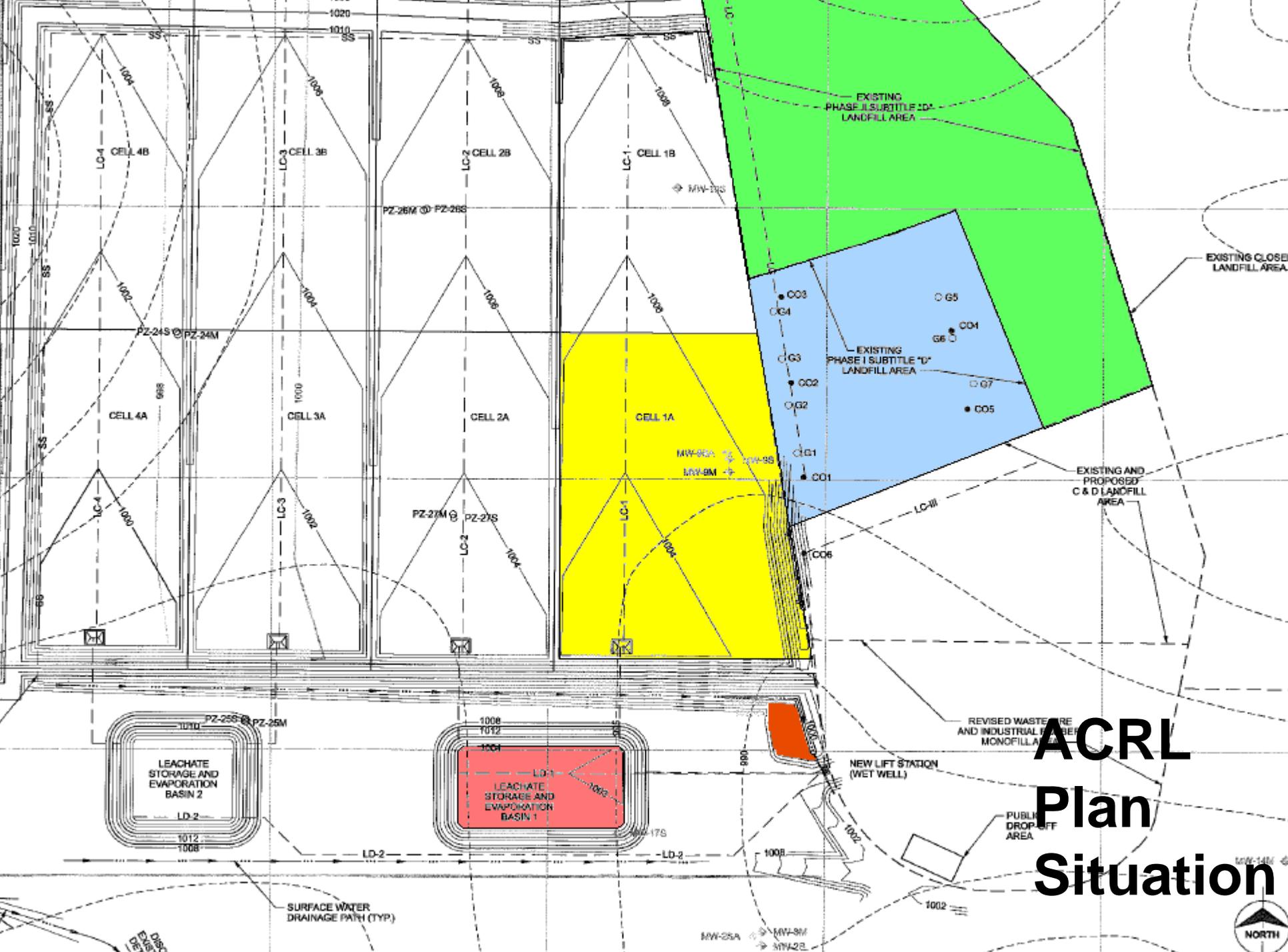
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# Prototype Plan

**Definitions of Prototype:** an original **model** on which something is patterned or a **standard** or a **typical example** .

**Prototype “ACRL Plan” = “A Postclosure Care Reduction &/or Termination Plan<sup>\*</sup> using the ACRL as a Prototype Landfill.”** It is not an **actual** plan submitted by the ACRL. A similar plan could be submitted by AC or other Subtitle D landfills for their facilities.

**\* Abbreviated as RTP as per flow charts.**



# ACRL Plan Situation



# Outline of Presentation

- Review the preparation of **ACRL Plan** which was done using BWM TGD SW-2014-G1 entitled: **Preparation of RTP.**
- The **ACRL Plan** format follows the TGD's Plan Content section format with additions unique to the ACRL operations & existing data base.

# Plan Contents Section Items:

- RTP criteria
- Key monitoring parameters
- Supplemental monitoring parameters
- Sampling points & frequencies
- Equipment needs
- Methods of analysis & QA/QC
- Statistical methods

**Each of these items will be summarized to illustrate the basis for the preparation of the ACRL Plan contents.**

# Bullet 1: RTP criteria

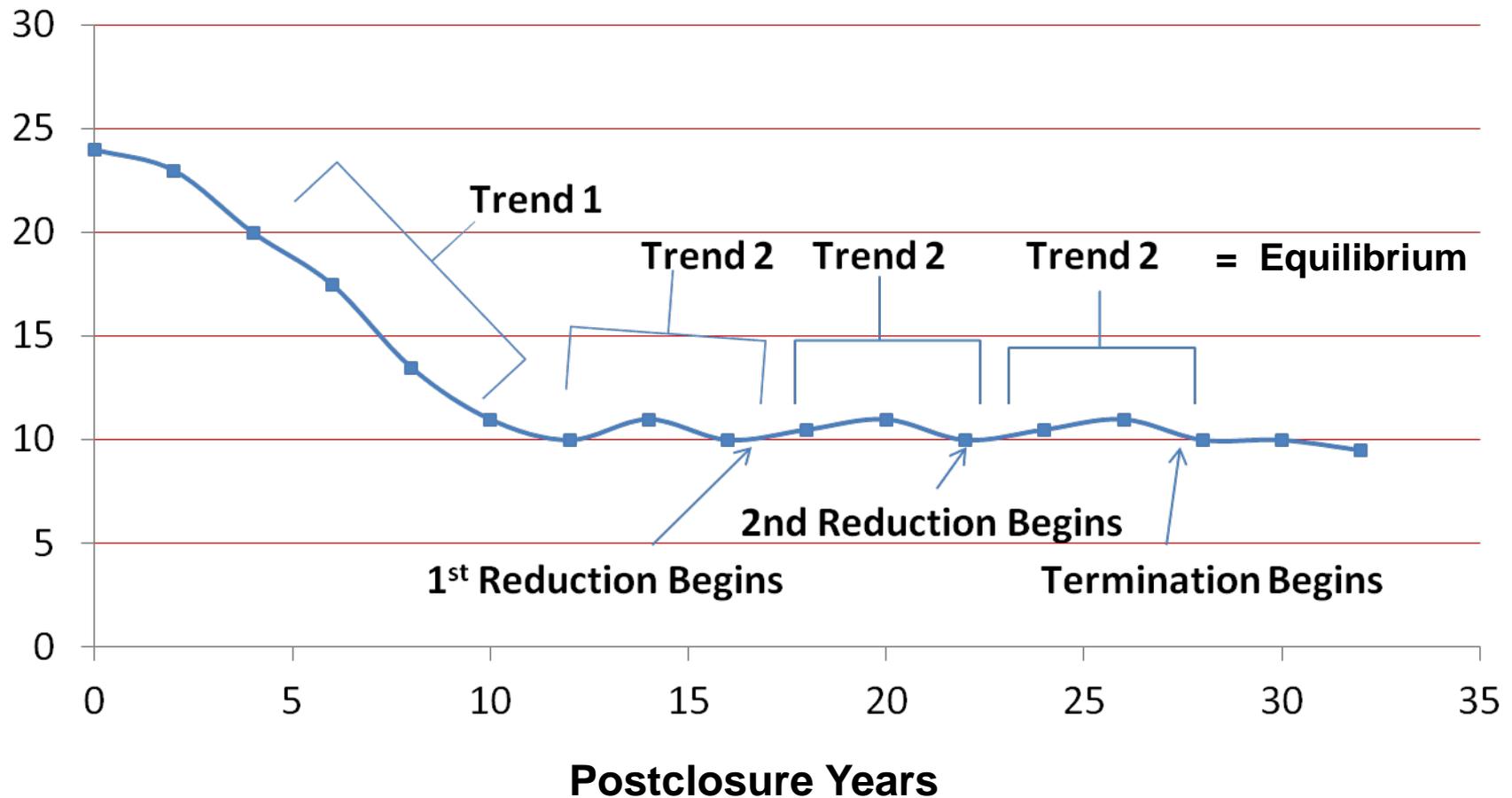
The Trend Analysis section identifies the statistically verifiable criteria:

- Minimum of at least 3 five year periods.
- Quarterly sampling required.
- One validated period results in **reduction** of an activity.
- Three validated periods result in **termination** of an activity with BWM approval.

**See following figure which demonstrates these criteria.**

# Example 5 Year Trends for One Key Parameter (BOD<sub>5</sub>):

Y-Values: BOD<sub>5</sub>



# References for **Bullets 2 to 6**

- **Leachate** sampling guidelines are given in SW-2013-G3 (7) & **Leachate** sampling check list in Reference 8.
- SW-2013-G2 (9) for **LFG** samples.
- Also, see Training Primer for Sampling of **MSWLF Emissions** as part of a PCC R&/orT Plan (Reference 10)

# Bullet 2: **Key monitoring parameters**

**Leachate** Monitoring – Concentration and volume measurements for designated phase(s) or total landfill. Preclosure annual analyses as per KAR.

**LFG** Monitoring – GCCS concentration & flow measurements corresponding (where possible) with leachate monitoring efforts.

**GW** Monitoring – As per KAR.

# Bullet 3: **Supplemental monitoring parameters**

Used to interpret & validate key monitoring parameters. Includes:

- landfill **inputs** (MSW quantity, quality & temperature).
- Landfill **outputs** (leachate, toe drain, cleanouts & LFG condensate quantities; quality & temperature).
- **Topographic changes & climatic data** (wind velocity, temperature and atmospheric pressure; on-site weather station is

# Bullet 4: **Sampling points & frequencies**

- **Leachate** samples will be taken for Phases I & II at the discharge into the wet well; Cells 1A & 1B at the discharge into SEB No. 1 & subsequent cells at the discharge points into the respective SEBs.
- **LFG** samples at well heads, **fugitive** samples at designated boundary locations, weight house & maintenance building.
- **GW** samples at designated locations.

**Bullet 5: Equipment needs and**

**Bullet 6: Methods of analysis &  
QA/QC**

**References 7 to 10 discuss equipment needs for leachate & LFG sampling as well as KDHE QA/QC requirements.**

# Bullet 7: **Statistical methods**

**See PCC Statistics for Leachate Trend Analysis: Kendall's Tau (11). The same methodology will be used for LFG emission statistical evaluations.**

# Reporting

Throughout the PCC period, the O/O will provide an **annual report** to BWM that summarizes & interprets the data that has been collected; & analyzes it in accordance with the approved PCP. Any deviation from the approved PCP must also be reported. In some cases, **modification** of the PCP may be required.

# Summary

- **A comprehensive scientific sampling & analysis plan is proposed using the ACRL as an example site. It can be used to validate RTP recommendations which can result in significant reduction in financial assurance savings.**
- **Additional related BWM information is given at the following website:**  
**<http://www.kdheks.gov/waste/index.html>**

# Questions





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