



Workshop on Draft Landfill Methane Control Measure

California Air Resources Board
March 24, 2008 – Cal/EPA Headquarters

Agenda

- Introduction and Workshop Overview
- Applicability
- Gas Collection and Control Requirements
- Monitoring Requirements

Agenda

- Recordkeeping and Reporting Requirements
- Test Methods and Procedures
- Revisions and Clarifications to be Considered
- Next Steps
- Discussion

3

Introduction and Workshop Overview

- Initial draft regulatory language
- Looking for feedback from stakeholders
 - Lower surface emission standard
 - Landfill threshold cut-off
 - Increased monitoring frequencies

4

Applicability

5

Applicability

- All MSW landfills
- $\geq 400,000$ tons of WIP
 - Install a GCCS, unless exemption requirements are met
 - Comply with statewide standards
- $< 400,000$ tons of WIP
 - Comply with specified reporting requirements

6

Applicability

Limited Exemptions

- $\geq 400,000$ tons of WIP
 - No surface methane leak exceeding 200 ppmv over 6-month monitoring period
 - Landfill gas heat input capacity < 2.5 MMBtu/hr
 - Comply with annual reporting requirements

7

Applicability

Limited Exemptions

- $< 400,000$ tons of WIP
 - If landfill is active with future design capacity
 - Comply with annual reporting requirements

8

Applicability

Limited Exemptions

- <400,000 tons of WIP
 - If landfill is closed with no future design capacity
 - Comply with one-time reporting requirements

9

Gas Collection and Control Requirements

10

Gas Collection and Control Requirements

GCCS Design Plan

- Must submit 1 year after effective date of regulation
- Provide for control of collected methane to meet standards
- Conform to specifications for active collection system

11

Gas Collection and Control Requirements

GCCS Design Plan

- Address practices to further minimize emissions and maximize methane collection efficiencies
- Alternatives to the requirements based on site-specific conditions may be included (subject to approval)

12

Gas Collection and Control Requirements

GCCS Requirements

- To be operated continuously, except under certain conditions
- 200 ppmv component leak standard
- Gas control devices (other than lean burn engines) must achieve a methane DE of at least 99%
- Lean burn engines must meet an outlet methane ppm standard (TBD)

13

Gas Collection and Control Requirements

GCCS Requirements

- Emissions from any treatment system must be routed to the control device
- Annual source test for gas control devices
- Wellhead raising
- GCCS Inspection and Maintenance

14

Gas Collection and Control Requirements

GCCS Requirements

- Temporary Shutdown of Gas Collection System Components
- Construction Activities
- Permanent Shutdown and Removal of GCCS
- Permanent Landfill Closure
- Wellhead Requirements

15

Gas Collection and Control Requirements

Surface Methane Emission Standard

- ARB's proposed 200 ppmv standard based on a preliminary review of District surface monitoring data
- SCAQMD's 500 ppmv Instantaneous Surface Standard (57 reports, 27 landfills):
 - 500 ppmv instantaneous standard was exceeded a little more than half of the time

16

Gas Collection and Control Requirements

Surface Methane Emission Standard (cont.)

- SCAQMD's 50 ppmv Integrated Surface Sampling Standard (57 reports, 27 landfills):
 - 50 ppmv appeared to be rarely exceeded (only 2 times out of a sample of 27 landfills)
 - The highest recorded measurement was only 90 ppmv

17

Gas Collection and Control Requirements

Surface Methane Emission Standard

- BAAQMD – query of surface leak violations from 2002 – 2008:
 - 31 violations of the 500 ppmv surface leak standard
- Continuing to Analyze Data

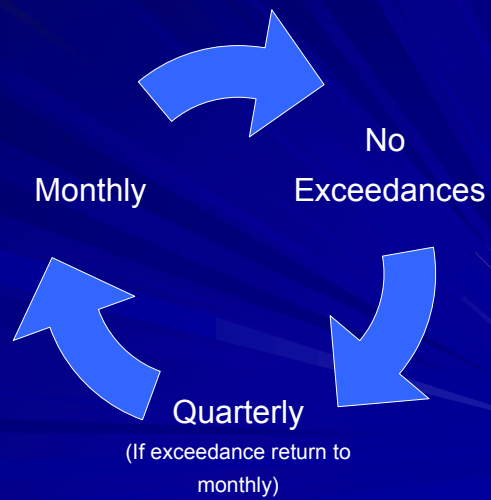
18

Monitoring Requirements

Monitoring Requirements

Surface Monitoring
Frequencies

Active Landfills



Monitoring Requirements

Surface Monitoring
Frequencies

Closed and
Inactive Landfills



(If any exceedance return to monthly)

21

Monitoring Requirements

Gas Control System Monitoring
Requirements

- Enclosed combustors
- Alternative control devices
- Monthly monitoring for component leaks

22

Recordkeeping and Reporting Requirements

23

Recordkeeping and Reporting Requirements

Recordkeeping

- GCCS operational data, exceedances, and shutdown times

Reporting

- Annual Report
- Closure Report
- Equipment Removal Report

24

Recordkeeping and Reporting Requirements

Reporting (Cont.)

- Simplified Reporting Requirements for Exempted Landfills
 - Estimated waste-in-place
 - Percentage of area with final cover and a geomembrane
 - Percentage of area with final cover but without a geomembrane

25

Test Methods and Procedures

26

Test Methods and Procedures

- Determination of Concentration
- Determination of Maximum Expected Gas Generation Rate
- Control System Efficiency Determination
- Determination of Rated Heat Capacity
- Instantaneous Surface Methane Monitoring

27

Revisions and Clarifications to be Considered

- Exemption Criteria – subsections (c)(2)(A) and (c)(2)(B)
- Specifications for Active Collection Systems
- Enforcement Agency
- Monitoring Exceedance Violation
- Recordkeeping and Reporting Requirements

28

Next Steps

29

Next Steps

- ARB is seeking comments and will continue to work with stakeholders
- Landfill Technical Review Workgroup meetings
- Late Sept. 2008 – Staff report (Initial Statement of Reasons), will be available for a 45-day formal public review and comment period

30

Next Steps

- November 2008 – Board hearing to consider the adoption of the landfill methane control measure
- Fall 2009 – Anticipated effective date of the control measure

31

ARB Contacts

Renaldo Crooks (Staff Lead)

rcrooks@arb.ca.gov
(916) 327-5618

Richard Boyd – Manager

rboyd@arb.ca.gov
(916) 322-8285

Landfill Methane Control Measure

Website:

<http://www.arb.ca.gov/cc/landfills/landfills.htm>



