



BATTELLE

LANDFILL CONSTRUCTION AND OPERATIONS WORKSHOP

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No.	Module	Presenter
1	Importance of Proper Landfill Management	P. Ruesch
2	Landfill Construction Part I	M. Elizondo
3	Landfill Construction Part II	J. Davila
4	Landfill Operations Part I	M. Elizondo
5	Landfill Operations Part II	M. Elizondo
6	LFG Basics and GCCS	J. Davila
7	LFG Utilization Technologies	J. Davila
8	Open Dump Closure	P. Ruesch



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Module No. 1

Importance of Proper Landfill Management

Paul Ruesch
USEPA Region 5 – Chicago

Overview

- I. Design & Operation
- II. Errors & Mistakes
- II. Landfill Gas
- III. Bibliography & Resources

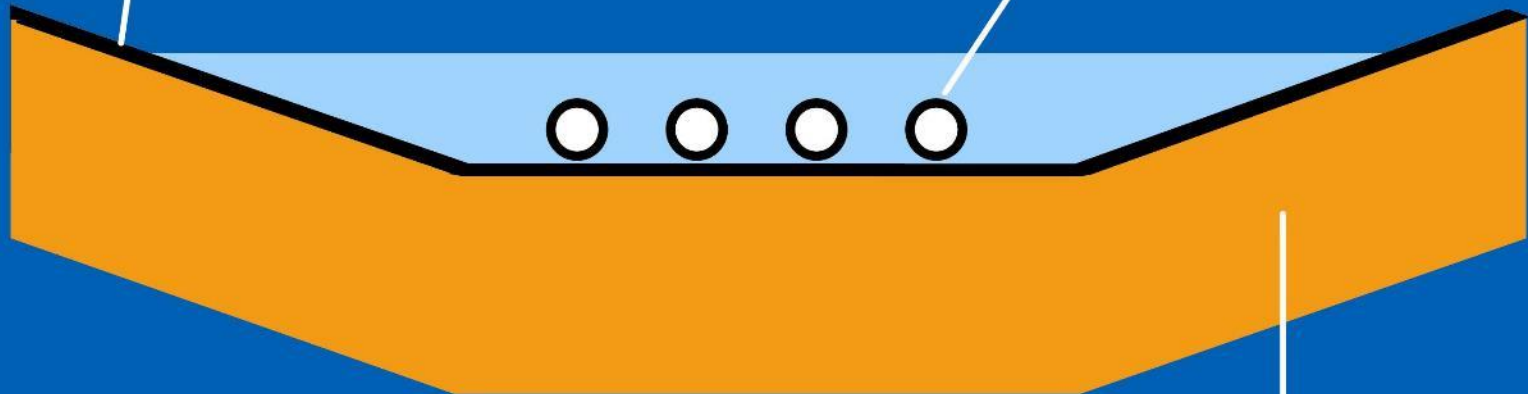
Concept



Basic Liner Design (Sanitary Landfills)

Flexible Membrane Liner
(60mil HDPE)

Leachate Collection System



2' Recompacted Clay
($K = 1 \times 10^{-7}$ cm/sec)

Reality



Fire at 'Construction & Demolition Debris' Landfill Site



Leachate



Rail cars

Cover



Stormwater



Leachate collection and aeration



Leachate recirculation and reuse

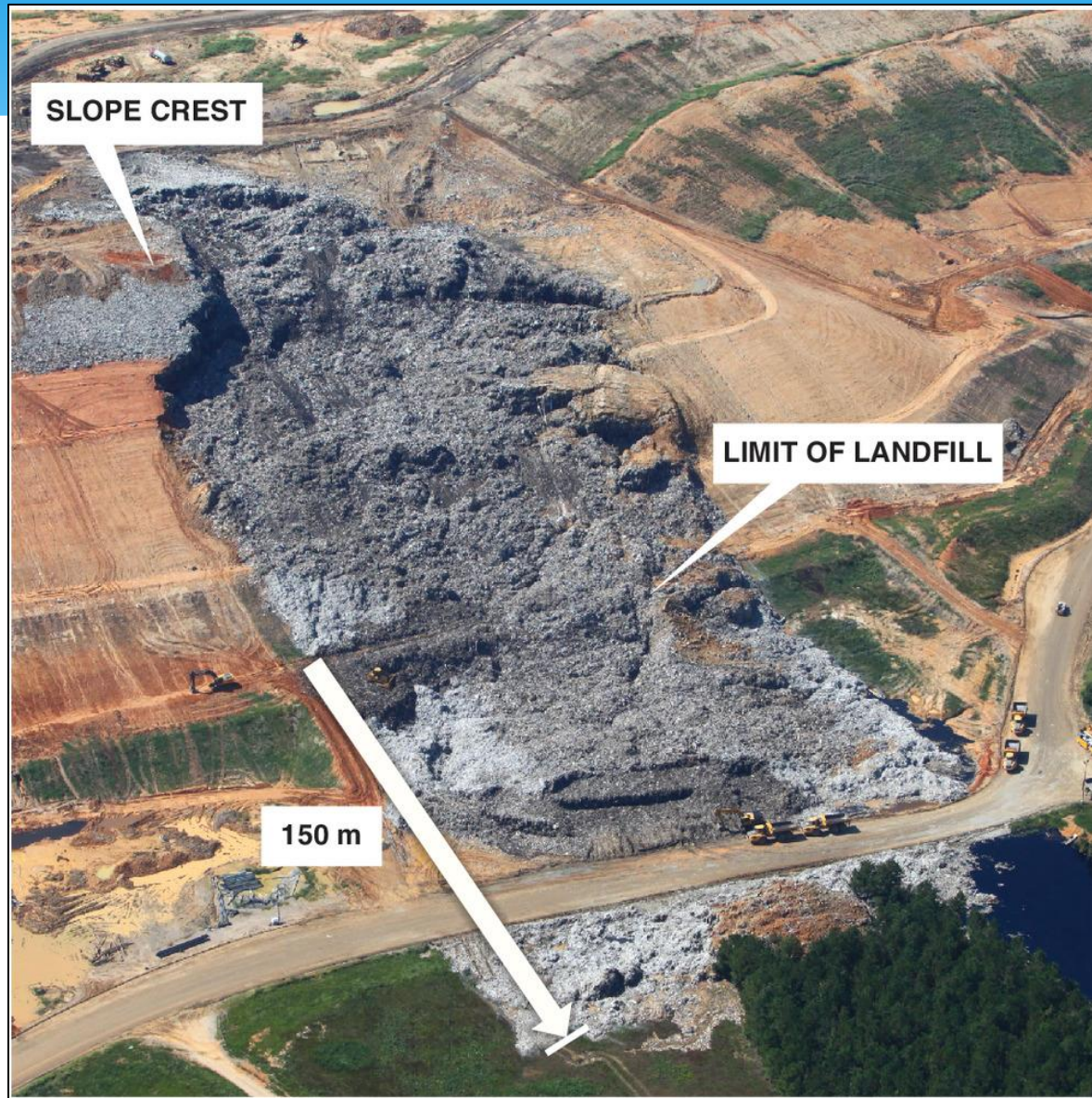


Leachate pressure, odor and ejection (+150 °F or 65.6 °C)





Slope Failure



Gypsum (drywall)



Hydrogen Sulfide =
Intense odor





Lime application to absorb gas



Odor control systems



Solar flares



Fire - 'C&D Recycler'





Leachate
control



LFG accumulation in stormwater system



Settlement due to lack of
compaction

Erosion



Erosion control



LFG collection wells

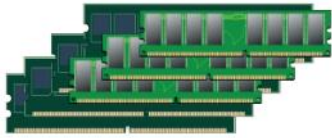


LFG control system





Special Wastes – Fluorescent Bulbs



Responsible Management Of Electronic Waste



Responsible Management Of Batteries



Responsible Management Of Flourecent Bulbs



<http://www.sica.int/busqueda>



ISWA

International Solid Waste Association



Field Procedures Handbook for the Operation of Landfill Biogas Systems

Prepared by:
International Solid Waste Association
Working Group for Sanitary Landfills

LANDFILL OPERATIONAL GUIDELINES

2nd Edition

PREPARED BY
ISWA WORKING GROUP ON LANDFILL



ISWA

International Solid Waste Association

Scrap Tires: Handbook on Recycling Applications and Management for the U.S. and Mexico





CONSTRUCTION OF NEW SANITARY LANDFILLS WITH COMPOSITE LINERS

Presented to:



ACUERDO DE COOPERACIÓN USAID - CCAD

**Comision Centroamericana de
Ambiente y Desarrollo**

Presented by:

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INSPECTION PROTOCOL FOR CONSTRUCTION AND OPERATION OF LANDFILLS OPERATION OF NEW SANITARY SOLID WASTE LANDFILLS

Presented to:



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Thank you

Module No. 1

Importance of Proper Landfill Management

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