

GSI W-11 Webinar Entitled:
“Lateral and Vertical Expansions Over Old and Existing Landfills”

Webinar Overview

With literally thousands of old landfills (aka, “dumps”) scattering the worldwide landscape their upgrading (via lateral and vertical expansions) to an engineered landfill is clearly possible to accomplish. This is obviously the case for existing landfills needing greater capacity as well. A key aspect for old landfills is to provide proper liner systems; these being geosynthetic materials related. For existing landfills with proper lining systems the situation is much more straightforward.

This webinar begins by describing the situation and then proceeding into lateral and vertical expansions. In lateral expansions, orientation, cross sections, foundation settlement, liner system behavior, geosynthetic selection and design details (including translational stability) are explained. In vertical expansions, general conditions, cross sections, estimating total settlement, estimating and designing against differential settlement and design details (including accelerated decomposition of the waste) are explained. Lastly, a section on post-closure landfill uses is included.

Learning Objectives

Participants will understand the adverse situations of old and/or abandoned landfills and how they can be upgraded and used in an environmentally safe and secure manner. The strategy is the same for adding waste fill capacity for modern engineered landfills. Critical in this regard are the distinctions between lateral design and vertical design. These two design situations will be addressed in detail. Each requires at least six separate issues in order to provide the proper outcome. Lastly, several innovative and clever post-closure uses for closed landfills will be presented and described accordingly.

Webinar Benefits

1. Understand the scale of adverse nature of abandoned landfills
2. Understand how these situations can be transformed to viable engineered landfills for additional use
3. Understand how existing engineered landfills can be extended for additional waste placement via lateral and/or vertical expansions
4. Learn design details necessary for such lateral and vertical expansions
5. Learn how to rapidly accelerate solid waste masses so as to mitigate the long-term effects of undesired settlement
6. Learn about innovative and clever post-closure uses for closed landfills

Intended Audiences

Public and private owners/operators of landfills, heap leach mining operations, combustion coal residuals and related solid waste facilities; consultants and designers in the public and private sector; regulators and agency personnel at the federal, state and local levels; geosynthetic manufacturers and their representatives; geotechnical and geosynthetic testing organization personnel; contractors and installers of liner and cover systems; academic and research groups; and others desiring technically related information on this important aspect of our constructed environment.

Specific Topics Covered

1. Needs and Objectives
2. General Concept
3. Lateral Expansions
4. Vertical Expansions
5. Accelerated Degradation
6. Post-Closure Site Usage
7. Conclusions

Webinar Instructor

Dr. Robert M. Koerner's (Professor Emeritus of Civil Engineering at Drexel University and Director Emeritus of the Geosynthetic Institute) interest in geosynthetics spans over thirty years of teaching, research, writing and advising. He holds his Ph.D. in Geotechnical Engineering from Duke University. He is a registered Professional Engineer in Pennsylvania, a Distinguished Member of ASCE, a Diplomate of the GeoInstitute and a member of the National Academy of Engineering. Bob has authored and co-authored about 650 papers on geosynthetics and geotechnical topics in journals and at national and international conferences. His most widely used publication is the sixth edition of the textbook entitled "*Designing with Geosynthetics*". He is the founding director of the Geosynthetic Institute which is a nonprofit research and development organization dedicated to the proper use of geosynthetics in its myriad applications. The institute also provides laboratory accreditation and inspection certification programs.