



pennsylvania

DEPARTMENT OF ENVIRONMENTAL PROTECTION



Bureau of Waste Management

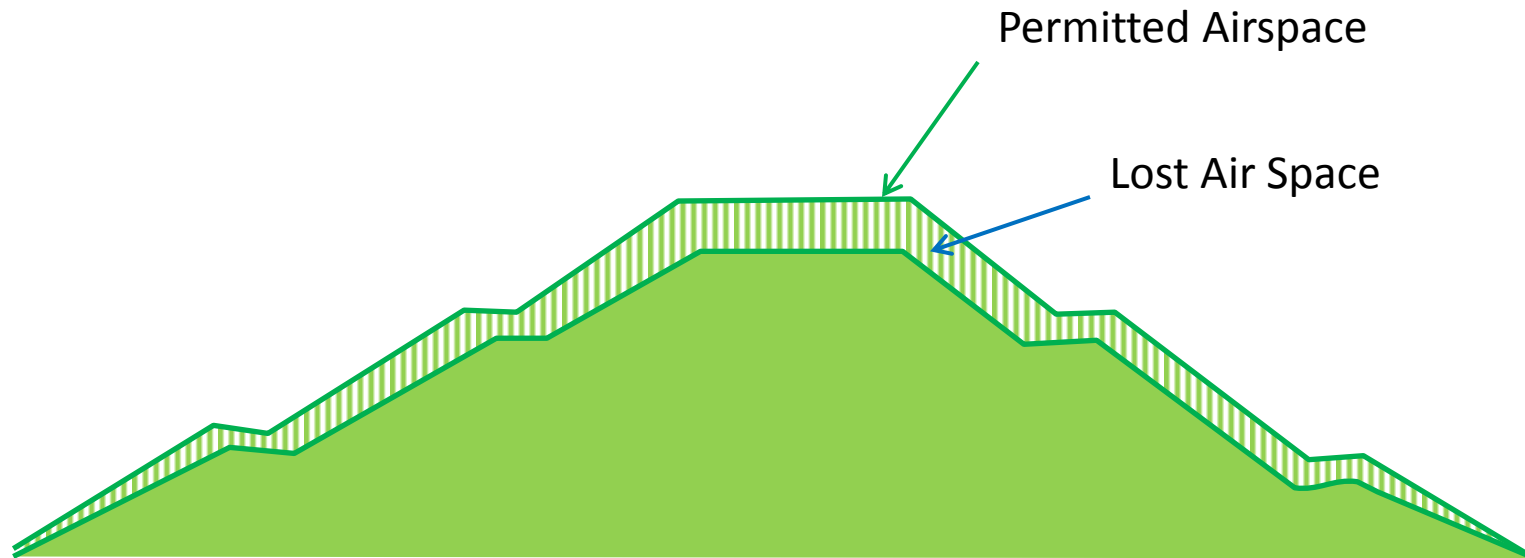
Settlement Accommodation Plan

Solid Waste Advisory Committee Meeting

June 30, 2016

Why a Settlement Accommodation Plan?

- Maximize the amount of permitted volume to save future green space.

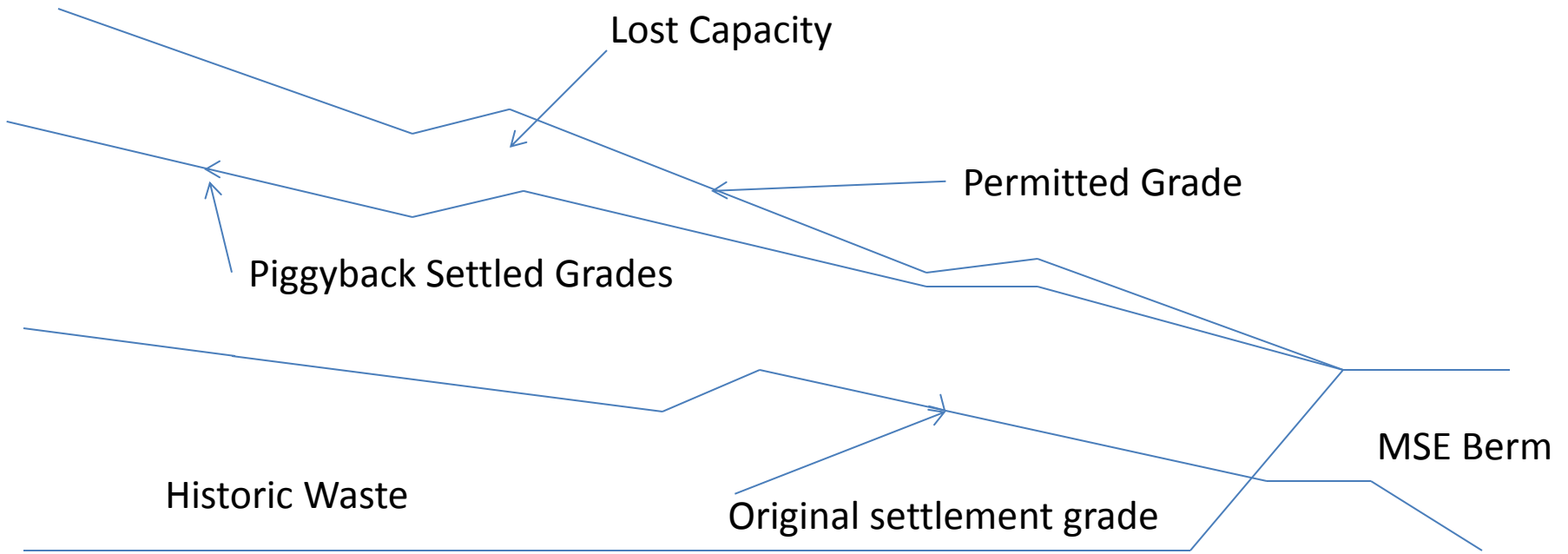


▶ Why a Settlement Accommodation Plan?

- Allow for settlement of lower exterior slopes to meet grades of higher elevation slopes.
- Minimize opening of cover on outside slopes and filling.
- Can accurately predict and monitor settlement.

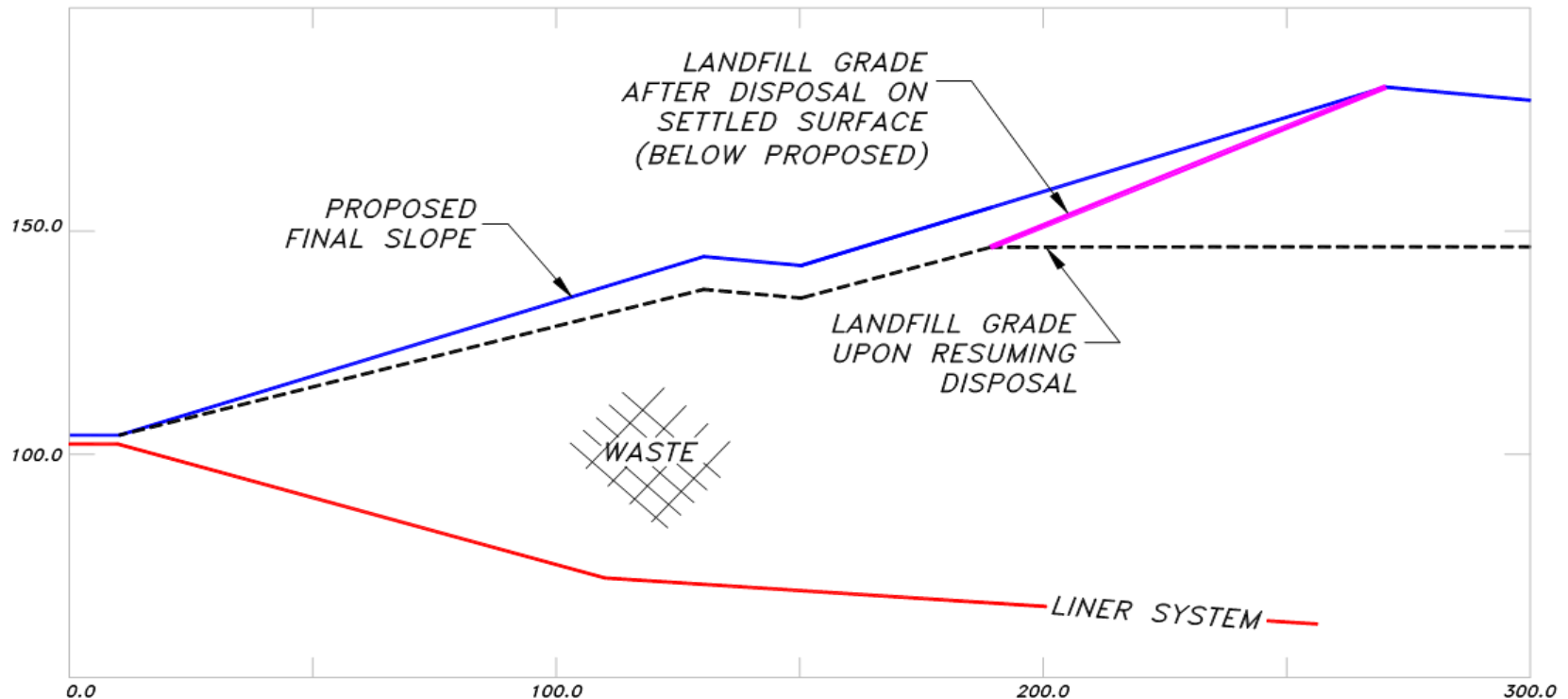


Why a Settlement Accommodation Plan?



Operational Difficulties Of Filling On Side Slopes

When the operator resumes filling on side slopes, it is difficult to get back to permitted grades. Will cause loss of future airspace; filling thin layers on side slopes is impractical.



Successful SAP = Compliance + Monitoring

- Landfill operation must be in compliance to have an SAP approved: Must Manage Odors, Leachate, Storm Water, LFG, Nuisances.
- If landfill operators are not implementing the SAP correctly and causing compliance issues, DEP will suspend the SAP for future fill.

Successful SAP = Compliance + Monitoring

- Every landfill operator must dedicate effort and budget into SAP development, with continual settlement monitoring and SAP revisions as necessary.
- The landfill operator must be careful to install grades in accordance with the SAP.

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SAP Limitations

- Operators may exceed 33% slopes on outer slopes that will eventually represent final grades, but shall not exceed 40% slopes.
- Operators may exceed permitted elevations by 10% of the total permitted waste height including historic waste, but not including additional height afforded by the SAP.
- Permitted elevations must be achieved within 5 years after final waste acceptance.
- Bond amount must include adjustments for open areas and capping schedule.

SAP Limitations

- Operators may install temporary caps on SAP areas to control odors and leachate, subject to minor permit mod approval. May be turned into a permanent cap if meets all regulatory design requirements.
- Operators may install permanent caps in SAP areas.
- If any grades do not settle to permitted grades in 5 years, the grading must be adjusted.

Components of SAP

- Prepared by a PA-licensed Professional Engineer
- Plan view of SAP area, Cross sections @100-foot intervals
- Bottom waste grade
- Existing grade
- Permitted grade
- Proposed SAP grades
- Settlement grades @ 1, 3 and 5 years
- Analysis of historic waste
- Settlement calculations for all waste types, considering age, thickness, density, moisture conditions
- Slope stability analysis
- Capping schedule
- Additional capacity gained by SAP

Annual Operation Report

- Annual operations reports are the mechanism to report progress of the SAP and performance to DEP
- If modifications are needed to the SAP and capping schedule, a minor permit modification shall be submitted with the Annual Operation Report
- Predicted verses actual settlement shall be shown each year, successively, on all SAP sections
- SAP settlement predictions must be validated and deviations quantified
- The annual bonding update shall include the SAP and capping schedule



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