Refuse Disposal Application for Tolson Rubble Landfill
Permit No. 2003-WRF-0580

Phase I
Public Informational Meeting
September 10th, 2019
Crofton, Maryland
Presentation Agenda

• Permit Application to Maryland Department of the Environment (MDE)
  – Rubble disposal in Anne Arundel County
  – Purpose and Technical Basis

• Landfill Control Systems and Environmental Responsibility
  – Groundwater Protection
  – Surface Water Protection
  – Gas Control

• Design Approach and Calculations Required

• Summary
Purpose of the Landfill Application

- There is a growing need for disposal of construction and demolition debris (CDD or rubble) in and surrounding Anne Arundel County.
- Tolson is committed to continuing cost-effective and environmentally responsible rubble disposal services for residents and businesses.
- To achieve this, Tolson intends to expand the existing landfill within the mining operation site.
Site Layout

PROPERTY BOUNDARY

SITE BOUNDARY

Legend:
- Approximate Site Boundary
- Half-Mile Site Boundary Buffer
- C2 Commercial - Office
- C3 Commercial - General
- C4 Commercial - Highway
- MXD-C Mixed Use Commercial
- MXD-R Mixed Use Residential
- OS Open Space
- R1 Residential
- R10 Residential
- R15 Residential
- R2 Residential
- R5 Residential
- RA Rural Agricultural
- RLD Residential Low Density
- W1 Industrial Park
- W3 Industrial - Heavy
Site Layout

Site Boundary

Existing Screening Berm

Little Patuxent River

Capitol Raceway Road

Closed Cunningham Landfill

Currently Permitted Waste Boundary

Limit of Expansion
Why Expand the Existing Site?

- Preferable to developing a “greenfield” site in another location
- Site is already in use for sand and gravel operations and waste disposal
  - Waste disposal operation began in 2016
  - Location and routes are known to residents and haulers
  - Modern engineered landfill is considered a beneficial re-use of the open mining area
- Infrastructure is already in place
  - Access roads and security controls
  - Disposal operation (scales, litter fences, screening berm, etc.)
- Extended environmental monitoring network in place
  - Monitoring at the TRL has been underway since early 1990s and expanded for current landfill and again for proposed expansion
- Screening
  - A screening berm already exists along the eastern boundary
  - Site setback is one mile from Route 3
What will TRL look like?

Total area = 72.38 acres → 118.5 acres
Vertical height increase from 230 ft msl → 244 ft msl
Base grades lowered from 122 ft msl → 100 ft msl
Total disposal capacity = 6.8 MCY → 16 MCY

Max. waste elevation = 240 ft-msl
Basis of Design = Environmental Protection

- Leachate is controlled by the landfill liner and leachate collection system
- Gas is controlled by the liner and gas management system
- Cover system serves to minimize leachate generation and gas emissions
Overview of Landfill Operations and Control Systems
Landfill Liner System

- **Construction Demolition Waste**
- **Geocomposite Drainage Layer**
- **Geomembrane Barrier**
- **Protective Sand Layer**
- **Prepared Subbase**
- **Natural Soil**
- **Groundwater**
- **Leachate Drainage Pipe**

Dimensions:
- 1 ft
- 2 ft
- Minimum 3 ft
Liner System Construction (1)

ROLLING SUBBASE
Liner System Construction (2)

GEOMEMBRANE DEPLOYMENT

PREPARED SUBBASE

GEOMEMBRANE
Liner System Construction (3)

GEOCOMPOSITE DRAINAGE LAYER

DEPLOYMENT

ZIP-TIED

SEAMING

GEOTEXTILE DEPLOYMENT

GEOTEXTILE AND GEOCOMPOSITE IN PLACE

GEOCOMPOSITE DRAINAGE LAYER AND GEOTEXTILE DEPLOYMENT
Liner System Construction (4)
Liner System Construction (5)

PIPING TO SUMP
Leachate Management System
Minimizing Leachate and Nuisances

Periodic Cover
Minimizing Leachate and Nuisances

Periodic Cover

Clean runoff (stormwater)

Soil Layer

Construction and Demolition Waste

0.5 ft
Minimizing Leachate and Nuisances

Intermediate Cover

Clean runoff (stormwater)

Soil Layer

Construction and Demolition Waste

1 ft
Landfill Final Cover System

Clean runoff (stormwater)

- Geocomposite Drainage Layer
- Protective Soil Layer
- Geomembrane Barrier
- Geotextile
- Topsoil
- Soil Layer
- Construction and Demolition Waste

6 in
18 in
2 ft
Landfill Gas Control and Construction

Benefits

• Helps prevent odors
• Protects air quality
Design Calculations Required

• **Liner System**
  ✓ Is the liner strong enough?
  ✓ Will the ground sink?
  ✓ Will the landfill be stable?

• **Leachate Management**
  ✓ Are the pipes and tanks big enough?
  ✓ Are the collection pipes strong enough?

• **Stormwater Management**
  ✓ Are the ponds big enough to hold all the water?
  ✓ Will the landfill cover be eroded or damaged?

• **Gas Management**
  ✓ Do we have enough gas collection wells?
  ✓ Are the pipes and flare big enough?
Environmental Monitoring

- **Groundwater monitoring well network**
  - Background and downgradient

- **Gas migration monitoring well network**
  - Entire perimeter

- **Routine monitoring performed**
  - Statistical analysis of data
  - Reports submitted to MDE
Closing Summary

- Landfill expansion will provide long-term economical rubble disposal for the Anne Arundel County community
- Environmental quality at the site will be protected
- Permit Application available to view:
  Crofton Community Library Branch of the Anne Arundel County Library System
  1681 Riedel Road
  Crofton, Maryland 21114