Central Peninsula Landfill Leachate Issues

HISTORY OF PROJECT

- 2006 - CPL constructed new lined landfill cells in accordance with regulations
  - Lined landfill cells generate leachate, which is a wastewater consisting of liquid from the landfill
- 2013 – Evaporator was installed at CPL after regional treatment plants stopped accepting leachate
- 2020 – Solid Waste Department observes site issues showing a lack of leachate handling capacity as well as decreased evaporator performance
- 2021 – Consultant hired to evaluate annual leachate generation versus disposal capacity and propose solutions to most efficiently dispose of leachate

CURRENT STATE

- Cells 1 and 2 are ponding leachate on liner
- Existing leachate tank constructed in 2004 is undergoing repairs
- Existing leachate pond constructed in 2004 needs liner replaced
- Leachate evaporator system cannot keep up with leachate generation and has run-time issues due to scale build up
- Consultant reviewed system and solutions to develop a plan to manage leachate at CPL

PROPOSED IMPROVEMENTS

- Install a treatment system to improve leachate quality prior to disposal and reduce scaling and run time issues at evaporator
- Install a new, larger leachate pond for leachate storage and leachate tank for winter operations
- Upgrade existing evaporator system and leachate piping to optimize operations and evaporation
- Evaluate disposal options of trajectory evaporators, surface disposal or hauling to municipal wastewater treatment plants depending on treatment results
- Reestablish leachate recirculation after leachate volume is reduced to permit conditions

PHASE 1 – 2022 COMPLETION

- Work with treatment vendor to complete bench testing and pilot testing onsite to prove efficacy of system
  - Estimated cost: $100,000 – Complete winter 2021
- Work with evaporator manufacturer to complete upgrades to evaporation process and computer control and monitoring system
  - Estimated cost: $150,000 – Begin immediately, 3-4 months to complete depending on lead time
- Hire design consultant to design new leachate pond, new leachate tank, replace existing pond liner and redesign piping and controls for improved operations
  - Estimated cost: $250,000 – Design through winter for construction spring 2022
- Construct improvements/install full scale treatment system
  - Estimated cost: $3,500,000 – Complete fall 2022
- Phase 1 Total Cost: $4,000,000 to be completed by spring 2022

PHASE 2

- Trial trajectory evaporators and purchase additional if effective
  - Cost: $50,000-$200,000
- Pursue surface water discharge and permitting
- Work with municipalities operating wastewater treatment plants to determine if their treatment system will accept treated leachate for disposal
- Investigate operational changes to reduce leachate generation
- Process leachate in most cost effective way