Salina Landfill – Concept to Construction

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Overview

- Background and History of Site
- Master Planning
- 2014 Construction Project
Background and History of Site
Site Birdseye View
Background and History of Site

Original Permit Layout
Master Planning

Key Components

- Cell Grades
- Leachate Pond
- Leachate Collection and Removal System
- Access Roads
- Final Cover
- Stormwater Control Structures
Master Planning
New Site Layout
Master Planning

Liner Grades
Master Planning

Key Highlights

- Original Waste Volume Estimate ~21.5MM CY
- New Waste Volume ~ 30MM CY
- Net Gain of 8.5MM CY While Only Adding 8 Acres of Footprint
- Leachate Gravity System
  - No pumps or sumps in future cells; replacement and maintenance
  - Central wet well at the leachate pond
- No Leachate Tanks, Hauling to POTW
2014 Construction Project

Overview

• Construction Project Consisted of:
  • 10 Acre Cell 19
  • 1800 feet of Gravity Main, Wet Well, and Pumping System (Leachate Collection and Removal System)
  • 3 Acre Leachate Pond
2014 Construction Project Overview
2014 Construction Project Overview
2014 Construction Project

Cell 19 Construction

- 2 feet of compacted clay liner
- 60 mil HDPE
- 1 foot of sand drainage/protective layer
2014 Construction Project

Cell 19 Construction

- Other Key Components
  - Leachate Collection Trench
  - Emergency Sump
  - Liner Termination Berm
  - Leachate Collection Line - Liner Penetration
2014 Construction Project
Cell 19 Construction
2014 Construction Project

Cell 19 Construction
2014 Construction Project

Cell 19 Construction
2014 Construction Project
Leachate Collection and Removal System

- After the liner penetration the leachate collection line discharges into a concrete manhole that was lined with polypropylene outside of Cell 19 limits
- Travels to the south by gravity to a wet well
- Pumped into the leachate pond
- Installed future lined manholes along pipeline. 7 in total
2014 Construction Project
Leachate Collection and Removal System
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Leachate Collection and Removal System

• Wet well equipped with 2-ABS sanitary sewer pumps.
  – Stainless steel or epoxy coated parts
• Pumps alternate operation to decrease operational wear
• High leachate level alarm with light and sound
• Lights when the pumps are on and when a pump fails
2014 Construction Project
Leachate Collection and Removal System

- Digital display showing depth of leachate from bottom of wet well
- Flow totalizer with a manual reset switch
- Digital flow meter display in GPM
- Control panel controls pumps at the following switch levels
  - Pump on
  - Lag Pump Start on
  - High alarm
  - Pump off
2014 Construction Project

Leachate Collection and Removal System
2014 Construction Project
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Leachate Collection and
Removal System
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Leachate Collection and Removal System
2014 Construction Project

Leachate Pond

- Double lined with a 2-foot thick low permeability soil liner, geosynthetic components, and aggregate protective layers
2014 Construction Project

Leachate Pond
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Leachate Pond
Thank You For Your Time

Questions?