

Lockwood Landfill

Washoe County, Nevada

Client / Contact

Waste Management, Inc.

Chris Anderson | 775.386.5001 | cander14@wm.com

Timeframe

1989 - Present

Contract Amount

\$ 2,600,000

Personnel

Robert Valceschini, PE

Steve Morrow, PE

Michelle Morrow



The GLA project team (as Applied Soil Water Technologies or ASW) has provided geotechnical and geoenvironmental engineering services at the Lockwood Regional Landfill (LRL) since 1989. The LRL was privately owned until purchased by Waste Management. Notable projects completed by GLA staff include:

Landfill Lateral Expansion Design. This project involved a 510-acre, 234,000,000 cubic yard lateral expansion and establishes a footprint that optimizes operational efficiency and meet's the owner's capacity requirements. Other aspects of the project include run-on and run-off design and controls, materials identification and selection, geohazards evaluation, and geohydrologic characterization of the vadose zone and groundwater characterization.

Alternative earthen final cover design. The design required delineating borrow sources with enough acceptable material for closure of the landfill. Work included saturated and unsaturated laboratory testing and UNSAT-H modeling (Dwyer Engineering). A permit application was prepared and multiple meetings with the solid waste management authority were attended as part of the work. The project received a permit in June 2013. The team also performed an alternative cover design in 2000.

Monitoring Well LL-9 and LL-10 Installation. The GLA project team assisted in selecting a drilling contractor, overseeing the drilling, and preparing a lithologic and construction log of the well. Groundwater at the site occurs in a fractured bed rock aquifer system with low transmissivity. The team first encountered water that was difficult to identify while drilling. Both wells were eventually identified first water through careful observation of drill cuttings and confirmation by performing a video of the boring.

Landfill Vertical Expansion. The team designed a vertical expansion which included runoff controls, slope stability, volumetrics, and line-of-site evaluation. The project added five benches, 225-feet, to the existing landfill.

Project Highlights

- Expansion Design
- Geotechnical investigations
- Final Closure / Post Closure Maintenance Plan (FCPCMP)
- Design of final closure of WM Unit 2
- Construction Quality Assurance (CQA)
- Bidding support
- Permitting
- Geotechnical investigation and engineering
- Slope stability
- Run-on and run-off design and controls
- Materials identification and selection
- Geohydrologic characterization of vadose zone
- Groundwater characterization
- Alternative cover design and permitting
- Lateral vertical expansion design
- Access road design and CQA
- Suction lysimeter evaluation and installation
- Biomediation cell design and CQA

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Permit Update. the team prepared an update to the permit with the Nevada Division of Environmental Protection - Bureau of Solid Waste. The permit had not been updated for over 15-years and the solid waste management authority for the landfill had been transferred from Washoe County to the State of Nevada. The update incorporated all modifications and amendments that had occurred during the 15-years since the original permit had been issued.

Access Road Design and CQA. The team performed the geotechnical investigation, provided geotechnical recommendations, and CQA for a 3.1 mile access road. The road traverses a steep hillside with cuts and fills up to 24-feet. The embankment was constructed of rock fill derived from required cuts and borrow areas. The team also assisted in developing borrow sources during construction to accommodate the contractors construction sequencing and equipment.

Suction Lysimeter Evaluation and Installation. The team evaluated the condition and functionality of suction lysimeters that had been installed for over 10 years and also managed the installation of a replacement lysimeter.

Bioremediation Cell Design. The team designed two lined cells used for bioremediation of hydrocarbon contaminated soil. The designs made accommodation for the deposit and removal of impacted soil without damaging the liner system. CQA was then provided during construction.