

Design and Engineering at the Coffin Butte Landfill

Corvallis, Oregon

Client

Valley Landfills, Inc.

Timeframe

1995 - Present

Contract Amount

\$1,000,000+

Personnel

Aaron Ogorzalek	Caleb Miller
Michael Yacyshyn	Jake Russell
Ryan Berquist	Neven Matasovic
	Noah Campbell



The Coffin Butte Landfill is located in Western Oregon where the climate consists of wet, rainy winter months followed by a relatively dry summer. The bulk of the area's 40 inches of rain occurs between the months of December and March. This climatic swing demands that flexible and varying solutions be applied when it comes to providing engineering for the Coffin Butte site.

GLA has provided ongoing engineering services for the site including the design and preparation of construction documents for both expansion and closure of several of the landfill cells, Master Plan preparation, stormwater master planning and pond design, site fill planning, budget modelling, operations support, and Construction Quality Assurance (CQA) on multiple development projects. GLA has also provided design support at Coffin Butte's nearby compost facility as well as geotechnical, geophysical, and geochemical investigation for the characterization and clean-closure recommendation of an unclassified former military landfill on site.

The GLA team was also involved in coming up with creative solutions to Coffin Butte's unique leachate management issues, including the detailed design of the temporary geomembrane cover and ballast system that is currently used for interim closure areas at the site. The design included temporary covering of over 20 acres of landfill to protect the intermediate soil covered slopes and minimize rainfall infiltration on this very wet site. The leachate generation had been very high at the site which required very costly treatment. The temporary geomembrane cover virtually eliminated the leachate generation from new rainfall on the filled portions of the landfill; thus, significantly reducing the owner's treatment costs over the life of the site. The temporary cover system also has an excellent performance record since it was constructed and has provided a valuable enhancement to the landfill gas management infrastructure.

Project Highlights

- Design for the temporary geomembrane cover and ballast system
- Design and preparation of bid documents for landfill expansions
- Final closure design for multiple cells
- Engineering services for south slope closure
- Preparation of multiple landfill Master Plans
- Site Development Plan update & five year fill planning
- Wetlands design consideration for high rainfall site
- Leachate pond design
- Field geotechnical Investigation including soils analysis
- Hydrology studies & stormwater drainage analyses
- Channel and downdrain design
- Stormwater pond design
- Aerial budget modelling
- Construction Quality Assurance (CA)