



Kiefer Landfill

**It is Not a Dump; It is a
Resource**

Sacramento Environmental Commission
November 20, 2017

Kiefer Landfill – A Regional Resource

Kiefer Landfill Basics

History

Critical Future Dates

Operations

Regulation

Site Layout

Resources

Capacity

Green Energy Generation

Endangered Species Preservation

Alternative Fuel Usage

Bufferlands

Groundwater Recharge

Other Resources



Kiefer Landfill History

- ▶ Opened in 1967
- ▶ Currently 305 acres, 30,000,000 tons in place
- ▶ Primarily services Sacramento County
- ▶ Owned and Operated by Sacramento County
- ▶ 1st liner system installed in 1993
- ▶ Major expansion permitted in 1998
- ▶ Groundwater treatment system installed in 1995
- ▶ LFG collection system installed in 1997
- ▶ Power Plant (KLG 1) operational in 1999

Kiefer Landfill Critical Future Dates

- ▶ Module M4 construction 2018–2021
 - ▶ Constructed capacity through 2022
 - ▶ M1 final cover complete by 2026
 - ▶ Solid Waste Facility Permit estimated closure date of 2035
 - ▶ Facility has capacity through 2092 at current fill rates
-

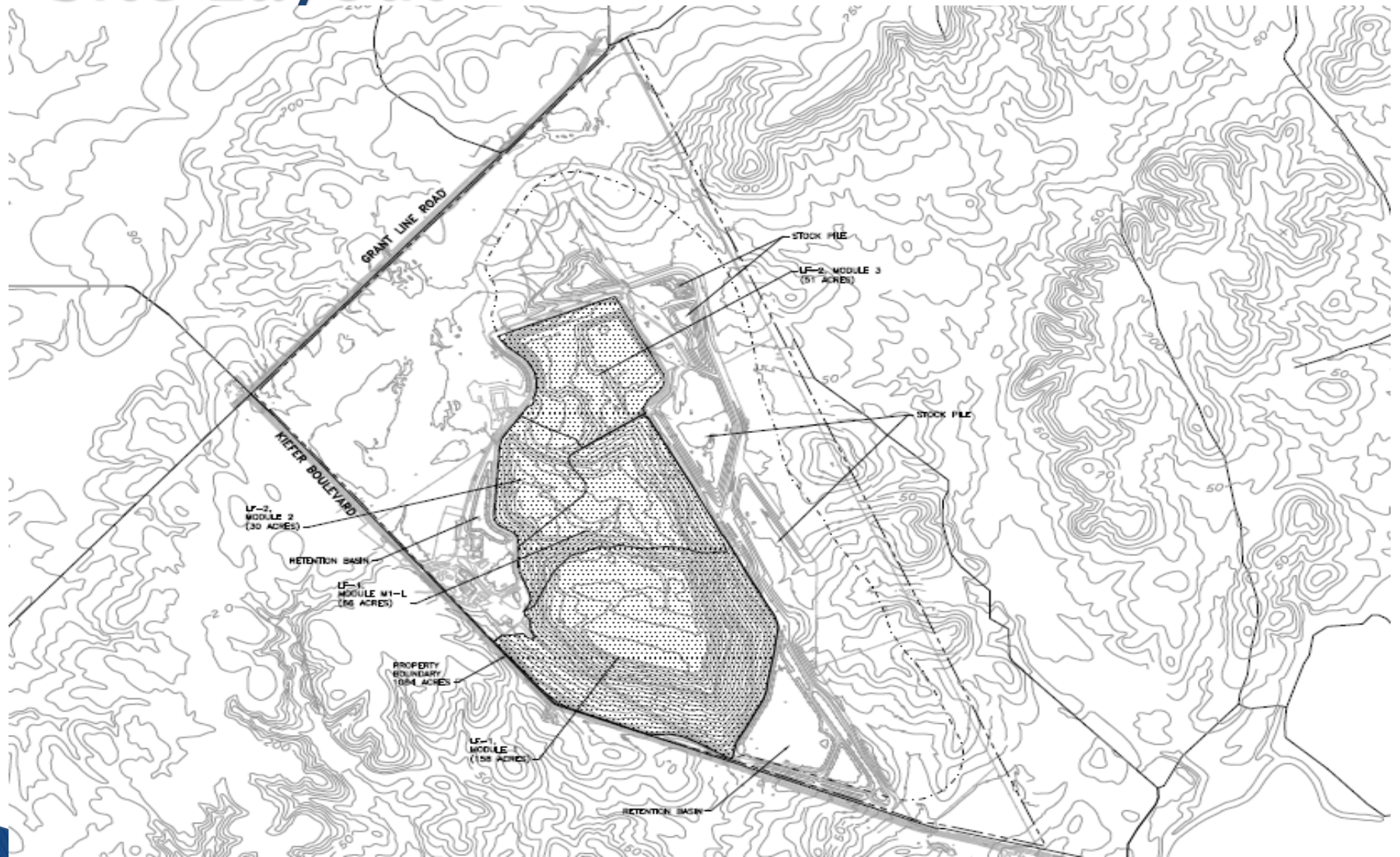
Operations

- ▶ 2,200 tons per day per thru the scalehouse
 - ▶ Open every day
 - ▶ Staff of 50 operators, laborers, and technicians
 - ▶ Small amount of recyclables are diverted
 - ▶ Build cells – 20 foot lifts, 5 to 7 days
 - ▶ Dozers, Compactors, Excavators, Trucks
 - ▶ Must cover the trash each day
 - ▶ Maximize airspace through compaction, minimal soil use, and efficient cell geometry.
-

Landfill Regulation

- ▶ Federal law requires minimum solid waste landfill standards
 - ▶ State Law adds to those standards
 - ▶ Groundwater regulations
 - ▶ Air emissions regulations
 - ▶ Hazardous material handling and storage
 - ▶ Sensitive habitat and endangered species rules
 - ▶ Monitoring, reporting, and inspections
-

Site Layout



Kiefer Landfill Aerial View



Landfill Capacity

- ▶ Can accept up to 10,815 tons per day
 - ▶ Average tonnage limit of 3,910 tons per day
 - ▶ Can service the entire Sacramento region
 - ▶ 75 years of remaining capacity
 - ▶ Local disposal reduces GHG impacts associated with transportation
 - ▶ Provides an essential regional disposal site in the case of natural disaster
-

Module M3



Energy Plant

- ▶ Built in 1999
 - ▶ 5 Cat 3616 engines drive generators that produce 15 megawatts of electricity
 - ▶ Power sold to SMUD
 - ▶ Approximately 10,000 homes powered
 - ▶ Operated by a contractor
 - ▶ Utilizes 70% of the LFG produced in the landfill
-

Kiefer Landfill Generation Plant



Vernal Pools

- ▶ The site is the home of the 244 acre Kiefer Landfill Vernal Pool Preserve
 - ▶ Managed by the Sacramento Valley Conservancy
 - ▶ Endangered species include orcutt grass, fairy shrimp, and tadpole shrimp
 - ▶ Seed from the Kiefer preserve is used for reintroduction of orcutt grass vernal pools around the area
-

Vernal Pool



Use of Alternative Fuel Technology

- ▶ DWMR utilizes green diesel for its heavy equipment
 - ▶ The entire DWMR collection fleet is natural gas powered
 - ▶ Long haul transfer truck also utilize natural gas fuel
 - ▶ Operates hybrid heavy equipment at Kiefer
-

CNG Collection Truck



Bufferlands

- ▶ The County owns a total of over 2,000 acres of land surrounding Kiefer
 - ▶ Acts a buffer to surrounding development
 - ▶ Managed in coordination with the South County Habitat Conservation Plan
 - ▶ Significant agricultural land is preserved
 - ▶ Additional vernal pools and riparian woodlands
 - ▶ Long term lease with Wildlands for vernal pool banking and agricultural use
 - ▶ Potential site for environmentally compatible solid waste management facilities
-

Bufferlands – Agricultural Use



Groundwater Recharge

- ▶ Onsite stormwater retention basins help recharge the local groundwater aquifer
- ▶ Groundwater treatment plant discharge water is planned to add to the recharge

Stormwater Retention



Other Green Efforts

- ▶ DWMR uses sheep and goats for vegetation control at Kiefer and other DWMR facilities
 - ▶ DWMR has worked with CalRecycle to develop engineering applications for the use of Tire Derived Aggregate (TDA)
 - ▶ Sacramento Tree Foundation mitigation
 - ▶ Laguna High School GETA internship program
-

Other Green Efforts



Questions?

Tim Israel

Senior Engineer

Sacramento County – Department of Waste
Management and Recycling

916-876-9431

Israelt@saccounty.net
