# INFORMATION SHEET

ORDER NO. R5-2012-XXXX
COUNTY OF TULARE
WOODVILLE MUNICIPAL SOLID WASTE LANDFILL
CLASS III LANDFILL
CONSTRUCTION, OPERATION, CLOSURE, POSTCLOSURE MAINTENANCE, AND CORRECTIVE ACTION
TULARE COUNTY

The County of Tulare (hereafter Discharger) owns and operates a municipal solid waste landfill (facility) about four miles northwest of Woodville in Tulare County.

The California Regional Water Quality Control Board (Central Valley Water Board) adopted Waste Discharge Requirements (WDRs) Order No. R5-2005-0121 on 18 October 2005, which classified waste management units IA and IB (Units IA and IB) as a Class III landfill as defined in Title 27, California Code of Regulations, section 20005 et seq. (hereafter Title 27), that accepts or accepted municipal solid waste. The proposed Order revises the existing WDRs to provide for construction of an expansion unit (Unit II) with an engineered alternative composite liner system, closure of Units IA, IB, and II with an engineered alternative final cover, postclosure maintenance, and to implement a corrective action program.

The 305-acre facility contains two existing, contiguous waste management units (units). Unit IA is unlined and covers 57 acres and Unit IB is constructed with an engineered alternative composite liner covering eight acres. The Discharger proposes to construct the 66.4-acre Unit II south of and contiguous with, Units IA and IB. Unit II will be classified as a Class III landfill in accordance with Title 27.

The facility is located on the westward dipping, eastern limb of the asymmetrical trough of the San Joaquin Valley. Sediments ranging in age from Jurassic to Holocene fill the trough. The site overlies a basement complex of pre-Tertiary age metasediments, plutonics, and ultramafics. Sequentially overlying the basement complex are approximately 1,000 to 3,500 feet of consolidated and unconsolidated Tertiary marine deposits, continental deposits, and unconsolidated Quaternary alluvium. Of significance to the site are the Quaternary age floodplain deposits of Lewis Creek, which consist of moderately permeable, interbedded, and laterally discontinuous poorly-sorted gravels, fine-to-medium-grained sands, sandy-silts, silts, and clay.

The first encountered groundwater ranges from about 97 feet to 136 feet below the native ground surface (bgs) depending on location and is unconfined. Groundwater elevations range from about 171 feet above mean sea level (MSL) to 210 feet MSL depending on location. The depth to groundwater fluctuates seasonally as much as 30 feet. Groundwater elevation data indicate that a groundwater depression exists beneath the facility. The groundwater gradient on all sides of the facility is generally toward the center of the facility.

The existing groundwater monitoring network for the units consists of four background groundwater monitoring wells and 24 detection groundwater monitoring wells. The detection groundwater monitoring wells will additionally be used to monitor the effectiveness of the corrective action program. All background and detection groundwater monitoring wells are screened in the unconfined groundwater zone.

A vadose monitoring system has been installed at the facility and consists of soil-pore gas monitoring wells located around the perimeter of Units IA and IB, and two pan lysimeters installed beneath the Unit IB leachate collection and removal system (LCRS) sumps and troughs. Additionally, multilevel landfill gas (LFG) probes have been constructed along the perimeter of Unit IA, and a single level LFG probe was constructed along the western boundary of Unit IA.

Organic compounds that are not naturally occurring have been detected in the unconfined groundwater zone along the western, northern, and northeastern points of compliance. The most frequently detected volatile organic compounds (VOCs) at concentrations above the laboratory Practical Quantitation Limit are dichlorodifluoromethane (Freon 12), tetrachloroethylene (PCE), 1,1-dichloroethane (1,1-DCA), trichloroethylene (TCE), 1,1-dichloroethylene (1,1-DCE), cis-1,2-dichloroethene (1,2-DCE), vinyl chloride, and trichlorofluoromethane (Freon 11).

Statistical analysis of inorganic waste constituents determined that bicarbonate exceeds its respective background concentration in groundwater.

Cleanup and Abatement Order 98-706 requires the Discharger to complete an evaluation monitoring program and establish a corrective action program in accordance with a time schedule. An evaluation monitoring program was completed in January 2008. The VOC plume was determined to extend a distance of three to five hundred feet on each side of the northern, northeastern, and western boundaries of Units IA and IB. The vertical extent of the VOC plume was determined to be a depth of approximately 253 feet bgs in the vicinity of groundwater monitoring well M-5D. The bicarbonate plume coincides with the lateral extent of the VOC plume. The vertical extent of the bicarbonate plume is approximately 185 feet deep along the western and northern boundaries of Units IA and IB and coincides with the vertical extent of the VOC plume.

A revised final engineering feasibility study for a corrective action program was submitted on 2 May 2009. The engineering feasibility study for a corrective action program proposed enhanced bioremediation of the VOC plume in groundwater by the injection of Regenesis' 3-D MicroEmulsion Hydrogen Release Compound (HRC) into groundwater. The Discharger's proposed engineering feasibility study for a corrective action program was approved on 1 February 2012.

Title 27, section 20080(b) allows the Central Valley Water Board to consider the approval of an engineered alternative to the prescriptive standard liner design. In order to approve an engineered alternative in accordance with Title 27, sections 20080(c)(1) or (2), the Discharger was required to demonstrate that the prescriptive design is unreasonably and unnecessarily burdensome and will cost substantially more than an alternative which will meet the criteria contained in Title 27, section 20080(b) or would be impractical and would not promote attainment of applicable performance standards.

The Discharger adequately demonstrated that construction of a Subtitle D prescriptive standard liner would be unreasonably and unnecessarily burdensome when compared to the proposed engineered alternative design and would cost would cost substantially more than the alternative design.

The Discharger demonstrated that the proposed engineered alternative is consistent with the performance goals of Title 27, section 20310(c), and affords at least equivalent protection against water quality impairment.

The engineered alternative base liner system for Unit II consists of the following in ascending order: 1) a compacted one-foot thick engineered subgrade; 2) a reinforced geosynthetic clay liner (GCL); 3) a 60-mil high density polyethylene (HDPE) geomembrane; 4) a geocomposite drainage layer comprising a blanket LCRS; and 5) a two-feet thick operations layer. The components of the side slope liner for Unit II consist of the following in ascending order: 1) a prepared subgrade; 2) a reinforced GCL; 3) a 60-mil HDPE geomembrane, textured side down; and 4) a two-feet thick operations layer.

A separation liner system will be placed in the transition area between Unit IA and Unit II and consists of the following components in ascending order: 1) a two-feet thick prepared foundation layer of soils; 2) a geocomposite drainage layer; 3) a 60-mil linear low density polyethylene (LLDPE) geomembrane, textured on both sides; and 4) a two-feet thick operations soil layer.

The Discharger submitted a *Final Closure and Postclosure Maintenance Plan* (as part of a JTD) for closure and postclosure maintenance of unlined Unit IA, composite-lined Unit IB, and future composite-lined Unit II at the facility on 26 February 2010. The Discharger demonstrated that the proposed water balance/evaporation final cover (ET final cover) meets the performance goals of Title 27. Staff determined that the final closure and postclosure maintenance plan complied with the provisions of Title 27, section 21090 and was approved on 16 June 2010.

The proposed engineered alternative final cover for Units IA, IB, and Unit II (future) consists of an ET final cover consisting of four feet of on-site soils. A pan lysimeter will be placed beneath the ET final cover at a location where storm water percolation will be at a maximum and runoff at a minimum (top deck). The pan lysimeter will be used to monitor the performance of the ET final cover.

The Tulare County Public Works Department (Lead Agency) certified the final environmental impact report for the facility on 24 December 1996. A Notice of Determination was filed on 24 September 1996 in accordance with the California Environmental Quality Act (Public Resources Code section 21000 et seq.) and CEQA guidelines (Title 14, section 15000 et seq.). The Central Valley Water Board considered the environmental impact report and incorporated mitigation measures from the environmental impact report into these WDRs designed to prevent potentially significant impacts to design facilities and to water quality.

This order requires full containment of wastes and does not permit degradation of surface water or groundwater. Further, antidegradation analysis is therefore not needed. The discharge is consistent with the antidegradation provisions of State Water Resources Control Board Resolution 68-16.