

INFORMATION SHEET

WASTE DISCHARGE REQUIREMENTS ORDER NO. R5-2012-XXXX
FOR COUNTY OF KERN
FOR OPERATION AND CONSTRUCTION
SHAFTER-WASCO SANITARY LANDFILL
KERN COUNTY

The County of Kern (hereafter Discharger) owns and operates a municipal solid waste landfill about seven miles west of the City of Shafter. The landfill is just north of Lerdo Highway and just west of Scofield Avenue.

The California Regional Water Quality Control Board (Central Valley Water Board) adopted Waste Discharge Requirements (WDRs) Order No. R5-2002-0179 on 18 October 2002, which classified the waste management unit (Unit) as a Class III landfill as defined in Title 27, California Code of Regulations, Section 20005 et seq. (hereafter Title 27). The proposed Order revises the existing WDRs to provide for construction of new waste management cells with an engineered alternative composite liner system, acceptance of treated wood waste, and to implement a corrective action plan.

The 250-acre waste management facility contains one existing Unit covering approximately 90 acres. The Unit consists of three modules: one 48-acre unlined module (Module One), one 22-acre module (Module Two) with an engineered alternative liner that utilizes a geosynthetic clay liner (GCL), and an 18-acre module (Module Three) with an engineered alternative liner that utilizes an encapsulated GCL.

The waste management facility is located in the southern portion of the San Joaquin Valley geomorphic province. The San Joaquin Valley is a structural trough in which several thousands of feet of sediments have been deposited. The sources of the sediments are the Sierra Nevada to the east and the Coast Ranges to the west. The predominant soils beneath the waste management facility are the Milham sandy-loam; which is a deep, well-drained soil developed on alluvial fans, plains, and low terraces. Milham sandy-loam is typically 35 to 60 per cent sand.

The first encountered groundwater, occurring in a perched water-bearing zone, is about 60 to 74 feet below the native ground surface. Groundwater elevations in the perched water-bearing zone range from approximately 227 to 236 feet mean sea level (MSL). Underlying the perched water-bearing zone is the regional unconfined aquifer. Depth to groundwater in the regional unconfined aquifer has been measured from 252 to 299 feet below native ground surface. Groundwater elevations have ranged from approximately 44 feet above MSL to three feet below MSL.

The existing groundwater detection monitoring system consists of 16 monitoring wells. In addition, pan lysimeters have been installed beneath the leachate collection and removal system (LCRS) sumps of the composite-lined modules to monitor the vadose zone beneath the landfill.

Organic compounds that are not naturally occurring have been detected in groundwater along the point of compliance since 1992. The six most frequently detected volatile organic compounds (VOCs) at concentrations greater than the laboratory Practical Quantitation Limit are: dichlorodifluoromethane (Freon 12); 1,1-dichloroethane; 1,2-dichloropropane (1,2-DCP); tetrachloroethene (PCE); trichloroethene (TCE); and trichlorofluoromethane (Freon 11). PCE has been consistently detected in monitoring well SW1-04 at concentrations exceeding the primary Maximum Contaminant Level of 5 micrograms per liter for drinking water, established by the State of California, Department of Health Services, at the point of compliance.

The Discharger completed an Evaluation Monitoring Program for the release of waste constituents to the groundwater. The nature of the release was demonstrated to be volatile organic compounds that originated from landfill gas and consists of Freon 12; 1,1-dichloroethane; 1,2-DCP; PCE; TCE; and Freon 11. The extent of the release is a plume approximately 1,800 feet wide, 4,000 feet long, and 80 feet deep. The plume extends from the Unit approximately 1,800 feet beyond the boundary of the waste management facility to the east.

The Discharger completed an Engineering Feasibility Study in accordance with Section 20425(c) of Title 27. The Engineering Feasibility Study concluded that the most technically and economically feasible corrective action alternative is monitored natural attenuation in conjunction with landfill gas extraction.

Section 20080(b) of Title 27 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 Sections 20080(c)(1) or (2) of Title 27, the Discharger must 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 Section 20080(b) of Title 27, or would be impractical and would not promote attainment of applicable performance standards.

The Discharger demonstrated that the proposed engineered alternative liner system is consistent with the performance goal addressed by the particular prescriptive standard, and provides protection against water quality impairment equivalent to the prescriptive standard in accordance with Section 20080(b)(2) of Title 27.

The proposed waste containment system consists of, from the bottom up: a prepared subgrade for both bottom and side slopes; 30-mil thick high-density polyethylene (HDPE) geomembrane over the subgrade; a geosynthetic clay liner; a 60-mil HDPE geomembrane; a 12-inch granular leachate drainage layer; and a 36-inch soil operations layer and working surface.

The Kern County Board of Supervisors certified the final environmental impact report for the facility on 29 September 2009. The Kern County Clerk filed a Notice of Determination on 12 October 2009 in accordance with the California Environmental Quality Act (Public Resources Code Section 21000 et seq.) and CEQA guidelines (14 CCR Section 15000 et seq.). Central Valley Water Board staff considered the environmental impact report and incorporated mitigation measures from the environmental impact report into the 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 Resource Control Board Resolution No. 68-16.

REH: 11/29/2011