

INFORMATION SHEET

ORDER NO. R5-2007-_____
COUNTY OF YOLO
PLANNING AND PUBLIC WORKS DEPARTMENT
YOLO COUNTY CENTRAL LANDFILL
CLASS III LANDFILLS & CLASS II SURFACE IMPOUNDMENTS
CONSTRUCTION, OPERATION, CLOSURE, POST-CLOSURE MAINTENANCE,
AND CORRECTIVE ACTION
YOLO COUNTY

The County of Yolo, Planning and Public Works Department, (hereafter Discharger) owns and operates the Yolo County Central Landfill, a Class III municipal solid waste (MSW) disposal facility with Class II surface impoundments. The landfill has been in operation since 1975, servicing the incorporated and unincorporated areas of Yolo County. The landfill accepts solid wastes classified as "inert" and "nonhazardous" under Sections 20220 and 20230, Title 27 of the California Code of Regulations (Title 27). Approximately 195,000 tons per year of MSW and other waste are disposed at the site.

Facilities

The waste disposal facilities include six Class III landfills (WMUs 1-6), two Class II surface impoundments (WMUs G and H), and a pilot-scale bioreactor demonstration project. WMUs 1-4 are unlined; WMU 5 is clay-only lined; and WMU 6 contains multiple modules that are compositely lined. Module D of WMU 6 contains a full-scale bioreactor project in cooperation with the Regional Water Board and USEPA under a waiver from liquids restrictions in the Federal regulations. Other landfill facilities include borrow areas for module construction, a ground water extraction and treatment system, storm water drainage ditches and a storm water retention pond, a supply water storage pond, two leachate pump stations, gas extraction facilities, pipelines, and an onsite power plant for co-generation of electricity. Diversion facilities include a metal recycling area, a concrete and asphalt diversion area, a household hazardous waste collection area, and a wood/yard-waste facility.

There are currently 63 ground water monitoring wells at the facility, including 43 shallow observation wells, 15 extraction wells (EWs 1 through 14, and EW16), and five deep wells (DWs-1, 2, 6 and 7, and PZ1). The shallow observation wells are OWs 1 through 28, SIMWs 1, 4, and 5, LPTZs A, B, C, and D, PZs 3 through 7, and DIMWs 1, 2, and 3. As described in the WDRs, the ground water on the western part of the site is impacted by low levels of VOCs from the older landfill units. The detection monitoring program for groundwater at the landfill satisfies the requirements contained in Title 27.

The existing onsite surface water drainage facilities include perimeter ditches at all WMUs and one storm water sedimentation basin. The facility has obtained coverage under the General Industrial Storm Water Permit for storm water discharges. The permit applies to direct storm water discharges and storm water discharges from the sedimentation basin. This Order also requires monitoring of landfill constituents in storm water at a background location and at the locations where runoff leaves the facility.

Leachate Handling

WMUs 1 through 4 are constructed on compacted sub-grade, which has been graded for leachate runoff. A perimeter trench captures leachate runoff from these units and conveys it to a trunk line to Pump Station No. 1. Since the trench is below grade, it may also be capturing ground water when groundwater is high. Since these units are unlined and do not have an LCRS, any leachate that does not runoff to the perimeter drains has the potential to percolate to groundwater and impact groundwater. WMU H is plumbed to Pump Stations No. 1 and 2, and WMU 6D. Leachate from the WMU 6D sumps is directly pumped to the surface impoundment WMU H. The impoundment will be used to store landfill leachate during the wet season and evaporate it during the dry season. The large pond is equipped with spray and drip facilities to enhance evaporation. Pump station No.1 collects leachate from WMUs 1 through 5. Pump Station No. 2 collects leachate from WMU 6A, 6B, and 6C.

Corrective Action

Groundwater on the western part of the site has been impacted by volatile organic compounds (VOCs) from one or more of the older landfill units (WMUs 1 through 5). After installation an air stripper unit in 1993, the Discharger began groundwater pump and treat using existing de-watering wells that were installed between the landfills and a slurry wall to maintain the required groundwater separation from waste. The treated groundwater was formerly discharged to surface water under an NPDES permit but is now discharged to land under separate WDRs due to high boron and selenium concentrations.

Through a recent Evaluation Monitoring Program, the Discharger confirmed a release from WMU 6, Module C in one of the suction lysimeters. In response, the Discharger installed additional landfill gas extraction wells in this module as a corrective action measure to address VOCs detected in the lysimeter.

Bioreactors and Liner System Requirements

As a follow-up to the pilot bioreactor project, the Discharger is operating a full-scale bioreactor demonstration project at WMU6, Module D. The project consists of both anaerobic and aerobic bioreactor cells. Instrumentation is placed in bioreactors to monitor moisture levels and other process parameters. The information is used to adjust liquid injection levels as necessary to stay below the moisture holding capacity of the waste mass.

The Discharger plans to operate existing bioreactor units and future modules to be constructed in WMUs 6 and 7 as bioreactors under the Research, Development, and Demonstration (RD&D) Permits allowed under 40CFR, Part 258.4. This Order provides the requirements for the Discharger to operate bioreactors under the RD&D rule.

These WDRs require that the Discharger not exceed the moisture holding capacity of the landfill, as defined in Title 27, and require that hydraulic head on the liners for the bioreactor units not exceed six inches. The bioreactors utilize a Subtitle D composite liner system, which is underlain by engineered fill to maintain separation from groundwater, and the engineered fill is underlain by a groundwater barrier layer to prevent groundwater from rising above the required separation level. Phase 2 of Module D (and future modules) are also

required to have a drainage layer above the groundwater barrier layer that drains to a pan lysimeter to monitor the entire unsaturated zone beneath the composite liner system. This liner system design was demonstrated by the Discharger to meet the performance standards of Title 27.

WLB: 11/5/2007