

## **STAFF REPORT**

### **WASTE DISCHARGE REQUIREMENTS FOR NANCY C. CLEAVINGER, TRUSTEE, ET AL. FLORIN PERKINS LANDFILL SACRAMENTO COUNTY**

#### **INTRODUCTION**

A group of family trusts, led by Nancy Cleavinger, Trustee, owns the Florin Perkins Landfill property. The landfill is currently regulated under Waste Discharge Requirements (WDR) Order No. 95-196, which is out of date and needs to be revised to reflect various significant changes at the site. Such changes include development of area fill cells along the north, south, and east sides of the unit; various enforcement actions by the Regional Board and Local Enforcement Agency; eviction of the landfill operator and cessation of landfill operations; completion of an Evaluation Monitoring Program; and submission of corrective action and final closure and postclosure maintenance plans for the landfill.

Groundwater at the site has been impacted with low concentrations of the volatile organic compound (VOC) Freon 11 and mildly elevated general minerals. A 2011 Evaluation Monitoring Program identified the southern fill area as the primary source of these impacts. The Discharger plans to close the landfill as a corrective action measure, beginning with the southern fill area. Cover soil will be obtained from an onsite transfer station. Gas controls would also be installed, including passive vents prior to cover installation and long term controls after cover installation. A 10-year implementation schedule is proposed for the project. Each of the three area fill cells will be closed as separate unclassified waste management units under Title 27.

These revised WDRs incorporate and prescribe requirements for the Discharger's plans for a landfill closure and corrective action. The monitoring program in the WDRs generally requires quarterly gas monitoring and semiannual surface and groundwater monitoring.

#### **BACKGROUND**

The Florin Perkins Landfill is an inactive, unclassified landfill on Florin Perkins Road near the Jackson Highway about seven miles southeast of downtown Sacramento. The landfill operated from 1993 to 2005 under waste discharge requirements (Order Nos. 89-202 and 95-196) that limited the discharge to inert wastes. In February 2005, the property owner (Cleavinger Et Al.) evicted the former landfill operator Florin Perkins Landfill, Inc. for noncompliance with Regional Board Orders and breaches of the operating agreement. Since then the landfill has been inactive.

The landfill was sited in a quarry pit that was mined to a maximum depth of about 52.5 feet below ground surface or -2.5 feet MSL. Previous WDRs authorized a 106-acre unit area within the quarry pit area for landfilling. Three area fill cells totaling about 39 acres were ultimately developed on the north, south, and east sides of the authorized disposal area. Up to 11 feet of concrete and other inert debris was also buried in the central part of the unit. This area was subsequently used for materials stockpiling and processing. Other onsite features include ancillary landfill facilities (e.g., ditches, monitoring wells, and access roads); a 10-acre transfer station/materials recovery facility (MRF); buffer land south of the unit (19

acres); a utility tower easement; and undeveloped areas of the quarry pit.

Uppermost groundwater at the site occurs in Riverbank alluvium at an average depth of about 63 feet bgs corresponding to -13 feet MSL. The shallow aquifer is unconfined. The groundwater flow direction is generally to the southeast at an average gradient of about 1.4 ft./1000 ft. No significant vertical gradients have been observed between upper and lower zones in the uppermost aquifer. Background water quality at the site has about 795  $\mu\text{mhos/cm}$  specific conductivity; 510 mg/L total dissolved solids (TDS) and 200 mg/L bicarbonate alkalinity. Groundwater impacts consisting of low concentrations of the volatile organic compound (VOC) trichlorofluoromethane (Freon 11) and mildly elevated general minerals have been historically detected at the site since 2002, primarily down gradient of the Southern Fill Area. For example, concentrations of Freon 11 detected in compliance well MW-F at the Southern Fill Area have historically ranged from about 1 to 22  $\mu\text{g/L}$  and averaged about 8  $\mu\text{g/L}$ . Lower average concentrations of Freon 11 have also been detected down gradient of the Northern Fill Area. No clear rising or falling trends have been historically evident in the Freon concentrations detected at either unit. The water quality limit for Freon 11 is the 150  $\mu\text{g/L}$  California Maximum Contaminant Level.

#### **EVALUATION MONITORING PROGRAM**

In 2011, the Discharger implemented an Evaluation Monitoring Program investigation in response to a January 2011 CWC Section 13267 Order issued by the Central Valley Water Board's Executive Officer. The EMP included a geophysical survey of the site; an investigation of landfill wastes; installation and sampling of landfill vapor probes and perimeter soil-pore gas monitoring wells; installation and sampling of additional groundwater monitoring wells to delineate the extent of impacts; and various other activities. The EMP concluded that landfill gas in the Southern Fill Area was the primary source of Freon 11 impacts at the site and that unmined gravel in the unsaturated zone in the southern portion of the site was the likely pathway for LFG migration to groundwater. The complete EMP investigation, including Phases I and II, was documented in the December 2011 report *Evaluation Monitoring Program Report for the Florin Perkins Landfill*, prepared by the DE Team. Additional details of the EMP investigation, including prior compliance history, are summarized in the Information Sheet attached to the proposed WDRs.

#### **ENGINEERING FEASIBILITY STUDY**

In response to the January 2011 CWC Section 13267 Order, the Discharger submitted an Engineering Feasibility Study/Corrective Action Plan (EFS/CAP) report (30 December 2011 *Engineering Feasibility Study and Phased Corrective Action Plan for the Florin Perkins Landfill*, prepared by the DE Team) that evaluated various corrective action alternatives for addressing VOC impacts at the site (e.g., groundwater pump and treat, active landfill gas extraction, landfill closure). Groundwater pump and treat was determined to be infeasible for a variety of reasons including a lack of hydraulic control, low VOC concentrations, and a risk of drawing impacted LFG into contact with the saturated zone. Active LFG extraction was also considered to be infeasible due to the relatively low methane concentrations in waste at the site. The EFS/CAP recommended phased landfill closure, passive landfill gas controls, and monitored natural attenuation as the most effective and feasible corrective action options for addressing impacts at the site.

### **CORRECTIVE ACTION PLAN**

The Discharger proposes installation of passive LFG controls at each unit prior to landfill closure as an interim corrective action measure to address landfill gas concerns. The LFG controls will consist of passive LFG vents and associated monitoring probes installed in two phases over a three year period in advance of landfill closure, beginning with the Southern Fill Area. The first phase of the interim LFG controls at each unit will be installed in areas where existing vapor probes indicate the highest concentrations of methane (see Finding 30). The second phase will be installed, as necessary, based on the results of monitoring the first phase for a one-year period. The second phase will consist of any additional vents and monitoring probes necessary for interim LFG control prior to closure of the landfill unit. LFG monitoring will be conducted in accordance with the Landfill Gas Monitoring and Control Plan (LGMCP) as approved by the LEA and incorporated into the MRP under this Order. Upon installation of final cover per the landfill closure schedule, the interim vents would be incorporated into a long term LFG control system constructed in accordance with the final closure plan.

Construction and operation of the passive LFG vents will be subject to local approvals and/or permits, including those from the Sacramento Air Quality Management District, which may require that the Discharger obtain a permit to construct and operate the vents, depending on the results of air emissions testing. The schedule in Provision I.8 of the proposed WDRs incorporates the Discharger's anticipated timeline for obtaining local permits and approvals.

### **LANDFILL CLOSURE**

Proposed closure activities include site preparation; stockpiling of cover soil, re-grading/buttrussing landfill slopes; relocation of wastes along utility tower footings; placement of final cover; construction of precipitation and drainage and LFG controls; establishment of vegetative cover; and installation of survey monuments. The Final Closure Plan proposes installation of a non-prescriptive final cover on each cell, as follows, from top to bottom:

- Vegetative cover – ½ foot of compacted soil seeded with native grass mix;
- Engineered soil layer – 1½ feet of compacted soil;
- Foundation layer -- 1 foot of compacted soil and/or inert waste.

Existing landfill cover and soil diverted from the onsite transfer station/MRF (approximately 35,000 cubic yards per year) will be used for cover soil. Closure activities will be conducted over a 10 year period beginning with the Southern Fill Area in 2013 and ending with the Northern Fill Area and Eastern Fill Area in 2022. Each cell would be closed as a separate unclassified landfill unit. The Southern Fill Area would be closed first because it was found to be the most likely source of Freon 11 detected in groundwater at the site.

### **COMMENTS ON TENTATIVE WDRs**

Comments on the tentative WDRs were received from Teichert Aggregates, which owns land immediately east of the Florin Perkins Landfill site, and from L and D Landfill Limited Partnership, which operates the L and D Landfill southeast of the Florin Perkins Landfill site. Both parties expressed the opinion that the time schedule for implementation of closure and

corrective action activities in the tentative WDRs was too long and that the closure and corrective action plans did not comply with Title 27 requirements. L and D also stated that the Discharger should be required to provide financial assurances for the site. Staff's response to these comments was that the landfill is unclassified and is not required to comply with Title 27, except as provided in the WDRs. (Staff's response is more fully captured in the summary section below. )

Teichert also indicated that it planned to decommission three monitoring wells on the eastern side of its property that are compliance wells under the tentative WDRs. Provision I.7.iii of the tentative WDRs requires that the Discharger submit a contingency plan to address this situation. Assuming that there are feasible onsite alternatives to the Teichert wells and that staff approves of the contingency plan, the monitoring program could be updated to reflect such change such as the installation of a replacement well. If no feasible onsite alternatives to one or more of the Teichert wells exist, staff informed Teichert that the Board would encourage the Discharger and offsite property owner to come to an agreement regarding offsite access.

## **SUMMARY**

Monitoring data for the site indicates that the groundwater impacts are relatively low and no volatile organic compounds (VOCs) have been detected down gradient of the Eastern Fill Area. One VOC, Freon 11, has been detected down gradient of the Northern Fill Area, but at relatively low concentrations (e.g. <5 µg/L) compared to drinking water standards (e.g., 150 µg/L California MCL). Somewhat higher VOC concentrations, limited to Freon 11, have been detected down gradient of the Southern Fill Area, but still relatively low compared to drinking water standards.

Landfill gas concentrations detected in the vapor probes at the landfill units are also generally low compared to a Class III landfill and landfill gas has been detected in the perimeter probes for only the Southern Fill Area. Because the Southern Fill Area has higher gas and groundwater impacts than the other two units, the WDRs require that interim controls and closure be implemented at it first.

The WDRs implement Title 27 based on the need for corrective action, as indicated by existing impacts and threat to water quality. Landfill closure and gas controls are required as the primary corrective action measures. Staff believes that the due dates in the WDRs for implementation of closure and corrective action at all three of the landfill units are reasonable based on the relatively low threat to water quality and mild groundwater impacts compared to a release from a Class III landfill.

## **RECOMMENDATION**

Staff therefore recommends that the Board adopt the tentative WDRs as proposed.