

## INFORMATION SHEET

WASTE DISCHARGE REQUIREMENTS ORDER R5-2013-XXXX  
SAN JOAQUIN COUNTY DEPARTMENT OF PUBLIC WORKS  
CORRAL HOLLOW SANITARY LANDFILL  
SAN JOAQUIN COUNTY

### Background

The San Joaquin County Department of Public Works (hereinafter Discharger) owns and operates the closed Class III Corral Hollow Sanitary Landfill (Facility) approximately 5 miles south of the city of Tracy. The Facility is a municipal solid waste (MSW) landfill regulated under authority given in Water Code section 13000 et seq.; California Code of Regulations, title 27 ("Title 27"), section 20005 et seq.; and 40 Code of Federal Regulations section 258 in accordance with State Water Resources Control Board (State Water Board) Resolution 93-62.

The closed facility is on a 58-acre property at 31130 Corral Hollow Road. The Facility is comprised of Assessor's Parcel Numbers (APN) 253-030-005, 253-030-006, and 253-030-007.

The landfill was operated by the City of Tracy from 1946 until 1991. The Discharger operated the landfill after that time.

In the fourth quarter of 1991, volatile organic compounds (VOCs) (Trichlorofluoromethane and Tetrachloroethene) were first detected in groundwater samples collected from MW-5 (shallow aquifer), and were confirmed in February 1992.

On 26 September 1994, the Central Valley Water Board issued Order No. 94-259 classifying the unlined landfill waste management unit at the Facility as a Class III unit for the discharge of municipal solid waste. This Order continues to classify the landfill as Class III in accordance with Title 27.

In 1995, a corrective action plan (CAP) was implemented which included the closure and final cover construction for the landfill. The Discharger ceased accepting waste in 1995 and formal closure was completed in 1996.

The closed landfill area consisted of one unlined waste management unit covering approximately 43 acres. The 43-acre final cover was installed as prescribed in Title 27 and consists of a foundation layer of soil that varies from 2 to 6 feet thick. A low-permeability soil layer that is a minimum of 1-foot thick overlies the foundation layer. The low-permeability soil is an engineered mixture of selected soil and red clay. The uppermost layer is a nominal 1-foot thick vegetative layer of compacted soil that was hyroseeded after preparation.

On-site facilities at the Corral Hollow Sanitary Landfill currently include: a landfill closure cover, shallow and deep aquifer groundwater monitoring networks, an unsaturated (vadose) zone soil gas sampling network, an active landfill gas extraction system, and a landfill gas flare.

The landfill is on the alluvial fan at the mouth of Corral Hollow Creek at the base of the eastern side of the Coast Range. The nearest surface water is Corral Hollow Creek, which is adjacent to the southeastern boundary of the landfill.

Past drilling and geologic investigations at the site suggest that the landfill is underlain by recent alluvium, Quaternary stream terrace deposits, and relatively unconsolidated sedimentary rock of the Plio-Pleistocene age Turlock Formation. Lithologies within these three units are similar, and include assemblages of clays, silts, sands, and gravels. The Corcoran Clay member of the Corcoran Formation (also referred to as the Turlock Formation) has been identified in exploratory boreholes drilled around the northern third of the landfill. The Corcoran Formation is characterized as moderately to high plastic clays, and mixtures of clays with silts, sands, and gravels.

The first encountered groundwater ranges from about 12 feet to 65 feet below the native ground surface. This shallow perched aquifer is found beneath the northeast and east side of the landfill property. This aquifer is not found west of the landfill. Groundwater elevations range from about 228 feet MSL to 237 feet MSL. The direction of shallow perched groundwater flow varies due to groundwater mounding at groundwater monitoring well SB-1. However, there are indications of shallow groundwater flowing northeasterly from the Facility due to groundwater elevation monitoring in wells MW-9A through MW-11A located offsite. The estimated average groundwater gradient is approximately 0.04 feet per foot. The estimated average groundwater velocity is 11.16 feet per year.

A deep aquifer exists from about 300 feet to 350 feet below the native ground surface. Groundwater elevations range from about -39 feet MSL to -57 feet MSL. The direction of deep aquifer groundwater flow is generally toward the northeast. The estimated average groundwater gradient is approximately 0.005 feet per foot. The estimated average groundwater velocity is 1.39 feet per year.

In 2005 the Discharger discovered additional municipal waste outside of the original landfill area. In 2007, the Discharger determined that an additional 1.6 acres of municipal solid waste existed outside of the original landfill area. Approximately 0.3 acres of the 1.6 acres exists on California Department of Transportation (Caltrans) property.

On 14 January 2008, VOCs were detected in shallow monitoring well MW-8. The compounds and concentrations detected indicate that the source of ground water contamination emanates from an area near MW-5, most likely from LFG not captured by the existing LFG system, which includes the area without a final cover.

During February 2012, the Discharger advanced three step-out borings to fulfill the requirements of the Evaluation Monitoring Plan. Three borings were constructed as permanent groundwater monitoring wells MW-9A through MW-11A. Groundwater samples detected at low concentrations in all three step-out wells. In a letter dated 26 September 2012, Board staff issued a Notice of Violation (NOV) requesting that the Discharger provide a work plan to conduct additional off site investigation to define the VOC plume northeast of the site. In a letter dated 29 October 2012 the Discharger submitted a work plan to comply with

the NOV. The Discharger is currently complying with Board staff in evaluating and correcting the shallow groundwater contamination plume through implementation of a separate Order.

WDRs Order R5-2001-176, adopted by the Central Valley Water Board on 14 June 2001, prescribes requirements for closure and postclosure maintenance at the closed Class III Corral Hollow Sanitary Landfill. The Discharger through an amended Report of Waste Discharge (ROWD) proposes to extend the closure cover over the 1.6 acres of waste discovered outside of the previously closed landfill area. Order R5-2001-179 will be rescinded and replaced with this Order.

### **Planned Changes at the Facility**

On 6 October 2011, the Discharger submitted an amended ROWD as part of the Joint Technical Document (JTD) for the landfill. This document was revised on 26 October 2012. The ROWD/JTD and supporting documents contain information related to this revision of the WDRs including:

1. Addendum to the closure and postclosure maintenance plan to include extension of closure cover over approximately 1.6 acres of landfill waste discovered outside of previously covered landfill. The Discharger proposes an engineered alternative final cover for the closure cover extension consisting of, in ascending order, the following layers:
  - a. Two-foot soil foundation layer.
  - b. A 60 mil double-sided textured LLDPE geomembrane.
  - c. A 200 mil geocomposite drainage net (HDPE core with non-woven polyester or polypropylene geotextile on either side).
  - d. Two-foot vegetative erosion control soil layer.

The Discharger has demonstrated that the engineered alternative final cover meets the performance goals of Title 27 and that it is equivalent to the prescriptive standard.

2. Expansions of landfill gas collection well network into the closure cover extension project area. The landfill gas collection well network will be expanded from 44 gas extraction wells to 46 gas extraction wells by installing two new extraction wells in the adjacent Caltrans owned property;
3. Evaluation and delineation of the extent of groundwater contamination plume originating from landfill. The time schedule for completion of this action will be required under a separate Order; and
4. Implementation of corrective action to remediate discharge of waste constituents to receiving waters. The time schedule for completion of this action will be required under a separate Order.

The existing unsaturated zone monitoring consists of seven landfill gas monitoring probes GW-1 through GW-7, located along the perimeter of the landfill. The gas probes are monitored for fixed gases quarterly and gas samples are collected and analyzed for Volatile Organic Compounds (VOCs) semiannually. VOCs are regularly detected in landfill gas (LFG) samples collected and are partitioning into groundwater beneath the site. All shallow groundwater wells have been affected by LFG emanating from the WMU.

### Discharge Prohibitions, Specifications and Provisions

The Discharger submitted a Water Quality Protection Standard (WQPS) report on 29 December 1993 proposing statistical data analysis methods to calculate concentration limits for each monitored constituent in accordance with Title 27. The WQPS report proposed to use intrawell data analysis to calculate tolerance limits for the monitored constituents.

The Water Quality Protection Standards in this revised Order were updated excluding data identified as outliers using the EPA 1989 Outlier Test or data that indicates an upward trend due to a release of COCs to receiving water. The most recent concentration limits calculated using the outlier and upward trend exclusion criteria stated above for select parameters are as follows:

Sampling Well	SB-1	MW-4	MW-5	MW-8	MW-6	MW-7
Analysis Type	Intrawell	Intrawell	Intrawell	Intrawell	Intrawell	Intrawell
pH (Units)	5.98-7.62	6.68-7.83	6.49-7.9	6.82-7.9	<b>5.70-9.78</b>	<b>6.68-8.04</b>
EC <sup>1</sup> (umhos/cm)	1180	2920	<b>1700</b>	745	1144	1636
Turbidity (NTU)	202	170	102	57	57	45
TDS <sup>2</sup> (mg/L)	719	<b>2000</b>	909	442	780	<b>1100</b>
Chloride (mg/L) <sup>3</sup>	26	<b>380</b>	139	86	117	165
Nitrate as N (mg/L)	0.33	16	19	14	3	6
Sulfate (mg/L)	58	776	18	26	323	369
Carbonate Alkalinity as CaCO <sub>3</sub>	<b>0.81</b>	5.4	<b>480</b>	<b>2</b>	3.4	3.6
Bicarbonate Alkalinity as CaCO <sub>3</sub>	<b>600</b>	<b>400</b>	<b>660</b>	281	277	330
VOCs	Non Detect	Non Detect	Non Detect	Non Detect	Non Detect	Non Detect

Notes: The limits in bold are concentration limits that were set by the Discharger and not adjusted due to increasing trends e.g. evidence of a release. Concentration limits not in bold are concentration limits that RWQCB staff calculated after outliers were removed. Outliers should not be used to calculate concentration limits when concentration limits are used for detection monitoring.

- <sup>1</sup> Electrical Conductivity
- <sup>2</sup> Total Dissolved Solids
- <sup>3</sup> Milligrams per liter

The Monitoring and Reporting Program is designed to verify compliance with concentration limits, and other operational requirements of the WDRs.

The Discharger shall complete the tasks contained in the revised waste discharge requirements in accordance with the following time schedule:

<u>Task</u>	<u>Compliance Date</u>
<b>A. Installation of landfill cover extension</b> The Discharger shall complete installation of landfill cover extension, associated ground water monitoring wells , gas extraction wells, gas probes, and related equipment and appurtenances and perform final CQA as described in Addendum to the Final Closure Plan dated 26 October 2012.	1 September 2013
<b>B. Final CQA documentation</b> The Discharger shall submit a Final CQA Documentation Report containing all reports submitted concerning the placement of the cover extension containment system. This report shall include at an minimum all documentation required under Title 27 §20324(d)(1), and shall show that the landfill cover extension was constructed as required by this Order.	1 November 2013