

INFORMATION SHEET

ORDER R5-2014-XXX
WASTE DISCHARGE REQUIREMENTS
FOR CHEMICAL WASTE MANAGEMENT, INC.
CLASS I WASTE MANAGEMENT UNITS
KETTLEMAN HILLS FACILITY, KINGS COUNTY

Chemical Waste Management, Inc. (CWMI) owns and operates the 1,600-acre Kettleman Hills Facility (KHF), which is located one mile north of State Highway 41 and 3.5 miles southwest of Kettleman City in Kings County. The disposal of Class I hazardous waste at the KHF is currently regulated by Waste Discharge Requirements (WDRs) Order 98-058, which was issued by the California Regional Water Quality Control Board, Central Valley Region (Central Valley Water Board) on 27 February 1998, and a Department of Toxic Substances Control (DTSC) Hazardous Waste Facility Permit. The WDRs regulate the disposal and monitoring of Resource Conservation and Recovery Act hazardous waste, and California Class I hazardous and Class II designated wastes discharged to Class I waste management units (WMUs) at the KHF.

The geologic setting of the KHF is on the west flank of the North Kettleman Dome anticline. Site topography is characterized by rolling hills and incised ephemeral stream drainages, with elevations varying from 700 to 1,015 feet above mean sea level. Northwest to southeast trending ridges form a physical topographic barrier east of the KHF that would prevent any runoff from flowing towards the Kettleman City area.

Ephemeral streams to the east of the KHF drain southeast into the Kettleman Hills and Los Viejos Hills and terminate in the permeable alluvium. The ephemeral streams to the west-southwest of the KHF drain south-southwest towards the Kettleman Plain, where surface water runoff terminates in permeable alluvium soil. Surface runoff that collects on the KHF is contained by the facility's storm water retention ponds and does not leave the site. The nearest perennial surface water body is the California Aqueduct, which is east of the KHF towards Kettleman City area, and about 3.5 miles away from the KHF at its nearest point. The KHF is not located within a 100-year flood plain, and the WMUs are not located in areas subject to rapid geologic change.

Naturally occurring groundwater quality beneath the KHF is poor, with total dissolved solids ranging from 1,700 to greater than 15,000 milligrams per liter. The depth to groundwater ranges from 330 feet to greater than 520 feet below the ground surface. Well yields are low, ranging from 0.1 gallons per minute (gpm) to 5.5 gpm. Groundwater flows predominately to the southeast at less than 10 feet per year, with a hydraulic gradient of 0.001. Groundwater in the San Joaquin Formation below the KHF is hydrogeologically isolated from water supply aquifers in the San Joaquin Valley. Central Valley Water Board Resolution 89-155 amended *The Water Quality Control Plan for the Tulare Lake Basin, 2nd Edition (Revised 2004)* (Basin Plan) to de-designate the municipal or domestic supply (MUN) beneficial use from the groundwater contained in the San Joaquin, Etchegoin, and Jacalitos Formations within one-half mile of the KHF's Class I surface impoundments.

In the mid- to late 1980's, groundwater sampling identified releases from unlined WMUs at the KHF. A subsequent investigation showed that although pollutants had impacted groundwater in the underlying San Joaquin Formation, these impacts were highly localized; only groundwater beneath and/or slightly downgradient of the WMUs was affected, due to the fact that groundwater in the area has a very low flow velocity. In response to the releases, all of the unlined WMUs were either closed or were bought up to current operating standards through the installation of appropriate engineered containment systems. A pump-and-treat system was also installed to remediate the groundwater impacts and to ensure that the releases did not spread. Operation of the pump-and-treat system was suspended in

2007 after DTSC and Central Valley Water Board determined that the system had been effective. Since that time, quarterly groundwater sampling is still being conducted and monitored natural attenuation continues. The sampling confirms that the impacted groundwater remains within the KHF boundary.

Approximately 3.5 miles east of the KHF, groundwater wells in the Kettleman City area are used for irrigation, industrial supply, and domestic and municipal water supply. The wells produce groundwater from the alluvium and upper Tulare Formation from depths of 300 to 1,000 feet below ground surface, which is isolated from groundwater below the KHF. Concentrations of Total Dissolved Solids in two drinking water wells serving Kettleman City range from 573 to 907 milligrams per liter. Benzene concentrations in groundwater samples range from non-detect to 61 micrograms per liter ($\mu\text{g/L}$), and arsenic concentrations range from 2 to 20 $\mu\text{g/L}$. Treatment removes benzene from groundwater before it is distributed to homes. The California Department of Public Health (CDPH) has provided financial support to the local water district, which is studying options to bring the drinking water into compliance with drinking water standards, which may include improved treatment or obtaining surface water from the California Aqueduct.

Starting in 2006, several birth defects were observed in the Kettleman City area, and community members questioned whether there was a potential link between the birth defects and the Kettleman Hills hazardous waste disposal facility or were caused by other environmental exposures. Responding to these concerns, in January 2010 Governor Arnold Schwarzenegger directed the California Environmental Protection Agency (CalEPA) and the CDPH to investigate whether environmental contaminants in the air, water, and soil could have caused the birth defects. In December 2010, CalEPA and CDPH produced a report, *Investigation of Birth Defects and Community Exposures in Kettleman City CA*, which found that the levels of pollutants in the air, water, and soil of Kettleman City were comparable to those found in other San Joaquin Valley communities. The report also concluded that benzene and arsenic in the groundwater was naturally occurring (as is the case throughout the Central Valley). The investigation did not find a specific cause or environmental exposure that would explain the increase in the number of children born with birth defects.

The revised WDRs will:

- 1) Regulate the construction and continued operation of the Phase III Expansion and the final closure of Class I/II Landfill B-18. The Phase III Expansion will increase the landfill footprint from 53 to 67 acres, and will adding about 4,900,000 cubic yards of waste disposal capacity to extend the landfill's operating life by about 8 to 9 years. The Kings County Planning Commission approved Conditional Use Permit (CUP 05-10) for CWMI, which increased the operations area from 499 to 695.5 acres for the Landfill B-18 Phase III Expansion and authorized the construction of Class I Landfill B-20 (the revised WDRs do not address proposed Landfill B-20). The Landfill B-18 Phase III Expansion is a sideslope expansion with a liner system that exceeds the prescriptive and performance standards contained in the California Code of Regulations, title 23, chapter 15 (Chapter 15). The Board considers the existing groundwater monitoring well network to be adequate, and is not requiring the installation of additional groundwater monitoring wells at this time.

- 2) Regulate the discharge of liquid hazardous and designated waste to surface impoundments P-9, P-14, and P-16.
- 3) Address the closure and post-closure monitoring of the Class I WMUs at the KHF.
- 4) Reduce the groundwater monitoring frequency from quarterly to semi-annual. This reduction is based on the consistency of historic groundwater sampling results and the low groundwater flow velocities beneath the KHF. With groundwater flow velocities less than 10 feet per year, the reduction from quarterly to semi-annual sampling would only allow contaminants to migrate a maximum additional distance of about 2.5 feet before they would be detected during the next semi-annual sampling event. Depth-to-water measurements and flow velocities will still be documented quarterly. Resampling is required to verify any detection greater than a water quality protection standard. Semi-annual sampling may only be implemented when also allowed by the Hazardous Waste Facility Permit issued by DTSC.
- 5) Require CWMI to collect samples from the leachate collection and removal system (LCRS) each quarter for the first four quarters after waste is placed in the B-18 Phase III Expansion WMU. These samples will be analyzed for all constituents of concern. LCRS sampling will continue annually thereafter.
- 6) Update and revise the technical information contained in the Findings. Order R5-2013-XXX will be incorporated by reference into the DTSC Hazardous Waste Facility Permit.

To fulfill requirements imposed by the California Environmental Quality Act (Pub. Resources Code, § 21000 et seq.), Kings County prepared and certified a Final Subsequent Environmental Impact Report for the B-18/B-20 Hazardous Waste Disposal Project and filed a Notice of Determination on 22 December 2009. The Central Valley Water Board, acting as a responsible agency, was consulted during the development of these documents. Compliance with the WDRs will preclude and mitigate any adverse impacts to water quality. The WDRs implement the Basin Plan and the prescriptive standards and performance goals of Chapter 15 of Title 23 of the California Code of Regulations for the construction, operation, and closure of Class I WMUs. CWMI is required to submit a Report of Waste Discharge prior to proposing the construction of any additional WMUs.