

INFORMATION SHEET

ORDER NO. R5-2006-_____
CHEMICAL WASTE MANAGEMENT, INC.
CLASS II/III B-19 BIOREACTOR AND CONTROL UNIT
CLASS II/III LANDFILL B-17
KETTLEMAN HILLS FACILITY
KINGS COUNTY

Chemical Waste Management, Inc. (CWMI) owns and operates the 1,600-acre Kettleman Hills Facility, of which 499 acres has a Conditional Use Permit as well as various other permits, including a Hazardous Waste Facility Permit, Waste Discharge Requirements (WDRs), and a Solid Waste Facility Permit, for accepting Class I liquid and solid hazardous wastes, Class II/III designated liquid and solid wastes, and municipal solid waste. The facility has been used as a land disposal site for liquid and solid hazardous wastes since at least 1975, and for designated/municipal solid wastes since 1998. It is located approximately 1 mile north of State Highway 41 and 3.5 miles southwest of Kettleman City.

WDRs Order No. 98-058 currently implements Title 22, Title 23, and Title 27 of the California Code of Regulations, regulating the disposal of hazardous waste and the disposal of designated/municipal solid waste at the facility. The new WDRs would supersede implementation of the Title 22 and Title 23 hazardous waste regulations, and will implement only the Title 27 non-hazardous waste regulations for permitting the addition of supplemental liquids to a portion of Class II/III Landfill B-19 (the 18.23-acre Bioreactor Unit) as an RD&D project in accordance with amended State Water Resources Control Board Resolution No. 93-62, the operation of a portion of Class II/III Landfill B-19 as a Control Unit (11.73-acres), the construction and operation of new Class II/III designated and municipal solid waste Landfill B-17 (62.1-acres), and the closure of these units.

CWMI is a wholly owned subsidiary of Waste Management, Inc. of Texas, a company that has considerable experience in operating bioreactor units. Waste Management, Inc. is currently operating ten bioreactor projects in both the United States and Canada. The benefits from operating a landfill as a bioreactor, rather than the current “dry tomb” practice, are:

- 1) Liquids, such as leachate and wastewater, are added to the bioreactor waste to speed up the waste decomposition process. This is considered to be a beneficial use of these liquids, which would have to be otherwise disposed of in surface impoundments.
- 2) More rapid waste decomposition resulting in more rapid waste settlement and more rapid gas generation. The waste settlement increases the landfill air space by 15-40%, providing an increase in the waste disposal capacity of the unit. More rapid gas generation from a bioreactor unit reduces the potential environmental impacts vs. the long-term impacts from gas emissions from a “dry tomb” landfill. Gas can potentially be recovered and used as an energy source to generate electricity or to power a fleet of trucks or buses designed to run on methane.
- 3) The more rapid waste settlement provides an increase in disposal capacity with a bioreactor, resulting in the need for less landfills.
- 4) A stabilized waste mass with lower gas emissions at closure results in lower post-closure maintenance costs and less environmental risks/impacts.

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Landfill B-19 is well suited for conversion to a bioreactor, having a double composite bottom liner system that exceeds the Title 27 prescriptive standards for Class III containment. The Kettleman Hills Facility is situated in an environmentally conducive area for operating a bioreactor unit and constructing new Class II/III landfills since there are no surface water bodies near the facility (nearest surface water is the California Aqueduct, 3.5 miles to the east), groundwater is relatively deep and of poor quality and is isolated from useable groundwater in both the Kettleman Plain and the San Joaquin Valley, and the facility is physically separated from any populated areas by several rolling hills and intervening gullies. The groundwater under the facility is not a municipal or domestic supply (MUN) and has very limited beneficial uses. On-site groundwater detection monitoring wells have very low yields (< 5 gpm) and are typically pumped dry in less than 30 minutes. The nearest off-site water supply wells with relatively good quality groundwater lie about 1.5 miles west of the facility, in the Kettleman Plain.

The climate around the facility is semi-arid, with annual average precipitation at 6.61 inches per year. The facility is not located within a 100-year flood plain and the landfills are not located in areas subject to rapid geologic change.

A portion of Landfill B-19 will be operated as a conventional “dry tomb” Control Unit, where no liquid waste will be added. The Landfill B-19 Bioreactor Unit will be operated immediately adjacent to the Landfill B-19 Control Unit, where the operation and performance of the two units can be compared in the same environmental setting.

The new unit, Landfill B-17, will be constructed in three phases and will be operated as a conventional “dry tomb” unit. The landfill will have a double composite base liner system that meets or exceeds the required Title 27 prescriptive standards for Class III containment. The unit will have an 18.4 million cubic yard capacity (including final cover and liner materials).

Both the Landfill B-19 Bioreactor and Control Unit have, and Landfill B-17 has or will have, groundwater detection monitoring systems to detect for the earliest possible evidence of a release from the units. The monitoring will be conducted semi-annually, utilizing monitoring parameters that will provide reliable evidence of the detection of a release.

CWMI is proposing to close the landfills with evapotranspirative (ET) cover material as an engineered alternative to the Title 27 prescriptive standard. Field tests conducted at the facility by CWMI have shown that the low permeability Title 27 prescriptive clay cover systems perform very poorly in semi-arid climates such as exist at the Kettleman Hills Facility. The ET cover system would consist of a 4-foot thick layer of fine sandy material with some clay and a low plasticity index, with a vegetative cover. An ET cover is designed to absorb moisture during precipitation events and to evaporate and transpire moisture between precipitation events and after the rainy season before it permeates the entire cover thickness. Preliminary results indicate that the proposed ET cover will prevent stormwater from percolating through the bottom of the cover system.

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Regional Water Board staff reviewed and commented on the draft Subsequent Environmental Impact Reports (SEIRs) for both the Landfill B-19 Bioreactor and new Class II/III Landfill B-17, and comments were incorporated into the final SEIRs. Kings County, acting as the lead agency, adopted the final SEIRs and filed Notices of Determination on 6 June 2005 and 30 May 2006, respectively. The SEIRs were adopted and noticed in accordance with the California Environmental Quality Act (CEQA) (Public Resources Code, Section 21000 et seq.) and CEQA guidelines (14 CCR, Section 15000 et seq.).

JKD
27 July 2006