



KETTLEMAN HILLS FACILITY

35251 Old Skyline Rd.
P.O. Box 471
Kettleman City, CA 93239

December 7, 2006

CERTIFIED MAIL (7006 0100 0006 6738 6402)

Ruth Cayabyab
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, CA 95826

**RE: CLASS 3 PERMIT MODIFICATION REQUEST, 22 CCR 66270.42(c)
TEMP. AUTHORIZATION EXTENSION REQUEST, 22 CCR 66270.42(e)(4)(C)2.
LANDFILL B-19 CLOSURE PLAN**

Dear Ms. Cayabyab:

The Chemical Waste Management, Inc. – Kettleman Hills Facility (KHF) hereby requests approval from the Department of Toxic Substances Control (DTSC) for the following Class 3 permit modification, as well as an extension to the related Temporary Authorization that was granted on June 15, 2006. The item in this Class 3 permit modification is listed briefly in the following table and then explained why it is necessary.

Item	Source	Appendix I to 22 CCR chapter 20
Modification to the Landfill B-19 Closure Plan to incorporate the changes planned for the Class II/III waste operations	Application Ch. 15.0, Sections 15.3(a) and (b) Application Ch. 40.0, Table 40-1	J.3.

The changes to the specific pages of the Part B Application (aka Operation Plan) are marked on the copies of the current pages and included in Attachment 1. Clean copies of Operation Plan Chapter 15.0 and Table 40-1 with the text changes incorporated are included in Attachment 2. Enclosed is the following document:

From everyday collection to environmental protection, Think Green® Think Waste Management.



Modification No. 2, Landfill Unit B-19 Closure Plan for Class I Portion, Kettleman Hills Facility, Kettleman City, California, by Golder Associates, October 2005, revised November 2006.

The aforementioned document results in the following changes, to accommodate the plans, discussed later in this letter, for the Class II/III waste operations above the covered hazardous waste portion.

- The “daylight” final cover over the Class I waste at the southwestern corner of the landfill will be a larger area because the footprint for the Class II/III waste is to be smaller.
- The Class II/III cover slope is changed from 4:1 to effective 3:1.
- The potential impacts from the bioreactor operations are addressed.
- A monolithic evapotranspirative cover will be used for the Class II/III waste.

For your information, the stability buttress configuration is amended in the southern portion due to the revised waste fill configuration (e.g., more of the berm overlaps the area of “daylight” final cover); however, as discussed in the March 17, 2006 meeting with the DTSC, this change does not require any DTSC approval.

The changes to the Class II/III waste operations (all above the covered hazardous waste portion) have been in the planning stage for several years. The primary changes are an increase in daily tonnage limit, the Class II/III waste slope change, bioreactor operations, and a monolithic evaporative cover. With the exception of this DTSC approval and the San Joaquin Valley Unified Air Pollution Control District’s final approval for the gas collection and control system (the Authority to Construct is under review), all approvals for the Class II/III waste operations changes have been obtained. Here is a listing of the various documents and permits related to the changes to the Class II/III waste operations.

Draft Subsequent Environmental Impact Report: B-19 Landfill Bioreactor Project, Kettleman Hills Facility, Chemical Waste Management, Inc. (State Clearinghouse No. 2003091023), prepared for Kings County Planning Agency, CH2M Hill, November 2004.

Final Subsequent Environmental Impact Report: B-19 Landfill Bioreactor Project, Kettleman Hills Facility, Chemical Waste Management, Inc. (State Clearinghouse No. 2003091023), prepared for Kings County Planning Agency, CH2M Hill, May 2005.

From everyday collection to environmental protection, Think Green® Think Waste Management.



Conditional Use Permit No. 03-06, approved by the Kings County Planning Commission, June 6, 2005.

Joint Technical Document, MSW Landfill B-19, Kettleman Hills Facility, Kings County, California, Volumes 1 and 2, prepared by Shaw EMCON/OWT, Inc., April 2006.

Solid Waste Facility Permit, SWIS No. 16-AA-0021, revised and issued by the Kings County Department of Public Health, August 23, 2006.

Waste Discharge Requirements, Order No. R5-2006-0122, issued by the Regional Water Quality Control Board, October 26, 2006.

All of these above documents and permits have gone through a series of public notices and public comment periods. The processing of this Class 3 permit modification request is the last step. Since the Class 3 permit modification process requires a minimum of 105 days and the current temporary authorization request expires on December 12, 2006, the KHF requires an extension of the temporary authorization (for Class II/III cover slope change from 4:1 to effective 3:1) until the DTSC decision is made on this Class 3 permit modification request.

In accordance with 22 CCR §66270.10 and §§66270.13 through 66270.23, the Part A and Part B applications have been submitted to the DTSC as of July 1, 1997 and, along with records of all data used to complete the applications, are available at the KHF.

In accordance with 22 CCR §66270.42(c)(2), a notice of the modification will be sent to all persons on the facility mailing list and the appropriate units of State and local government within 7 days of this request. The notice will also be published in *The Hanford Sentinel*, a local major newspaper within 7 days of this request. A public meeting has been scheduled for January 4, 2007, at 6:00 pm, at the Kettleman City Community Center in Kettleman City, California.

“I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to [be] *sic* the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”



If you need more information on these two requests (i.e., the Class 3 permit modification and the temporary authorization extension), please call me at telephone number 559.386.6140.

Sincerely,

/original signed by Carol J. Carollo/

Carol J. Carollo, CHMM
Environmental Compliance Specialist

Attachments (2)
Enclosure (1)

cc: Statewide Compliance Division, DTSC, Clovis (w/o attachments or enclosure)
Jim Dowdall, RWQCB (w/enclosure)
Director, EPA (w/o attachments or enclosure)
Max Weintraub, EPA (w/ enclosure)
Lee Johnson, KCDPH (w/o attachments or enclosure)
Chuck White, WM (w/o attachments or enclosure)

ATTACHMENT 1
MARKUP COPIES
OF
APPLICATION CHAPTER 15.0 PAGES
AND
TABLE 40-1

other appropriate regulatory agencies as discussed in other sections of this renewal application. The following Closure Plans have been approved for Landfills B-16, B-18 and B-19 and are incorporated by reference:

1. Closure Plan for Landfill B-16, Kettleman Hills Facility, Kettleman City, California, Golder Associates, Inc., August 23, 1990.
2. Closure Plan for Landfill B-16, Revision 1, Kettleman Hills Facility, Kettleman City, California, Golder Associates, Inc., March 11, 1993.
3. Engineering and Design Report Landfill Unit B-18, Phases I and II and Final Closure, Kettleman Hills Facility, Kings County, California, Environmental Solutions, Inc., August 1990.
4. Landfill B-19, Phase IA Redesign and Closure Plan, Kettleman Hills Facility, Kettleman City, California, Golder Associates, Inc., April 15, 1991.
5. ~~Landfill Unit B-19 Modified Closure Plan, Kettleman Hills Facility, TRC, October 1997.~~
Modification No. 2, Landfill Unit B19 Closure Plan for Class I Permeon, Kettleman Hills Facility, Kettleman City, California, Golder Associates, October 2005, revised November 2006.

The configurations and procedures in these approved closure plans will be utilized for Landfills B-16, B-18 and B-19 with one exception; a modified cover layer configuration to match the cover configuration approved by DTSC (DTSC, June 28, 1996 and October 24, 1996) for the Combined Closure Plan. This proposed modification is discussed further in Section 15.3(b).

15.3(b) Final Cover

On June 28, 1996, a Notice of Final Decision was issued by DTSC approving a revised cover section for use in the Combined Closure Area and Landfill B-15. This revised section is proposed for approval in this renewal application for the closure of landfills B-16, B-18 and B-19 (and impoundments P-9, P-14, P-15 and P-16 as discussed in Section 15.4). This cover section is indicated in Figure 15-2. From top to bottom, the final cover will consist of:

- 2.5 feet of vegetative soil cover;
- Geotextile drainage layer (transmissivity ≥ 0.03 gal/min/ft);
- 40-mil-thick textured high density polyethylene (HDPE) geomembrane;
- 1 foot (minimum) of compacted foundation layer (Hydraulic Conductivity $\leq 1 \times 10^{-5}$ cm/sec);
- 1 foot (minimum) of intermediate soil cover.

For Landfill B-19, the final cover for the Class II/III waste (municipal solid waste) portion will follow the above mentioned plan.

A The synthetic components of the final cover will be constructed using guidelines and specifications contained in the Quality Assurance Manual for the Installation of Geosynthetic Lining Systems (CWM, June 15, 1990, or latest revision thereof). Drawings and specifications for cover

TABLE 40-1
DETAILS OF ACTIVE LANDFILL UNITS
KETTLEMAN HILLS FACILITY
(Continued)

LANDFILL UNIT	APPLICABLE DESIGN AND CONSTRUCTION DOCUMENTS			RESPONSE ACTION PLAN REFERENCES	DESCRIPTION OF KEY DESIGN COMPONENTS			
	Design	Construction ⁽¹⁾	Construction Quality Assurance		Lining System ⁽²⁾	LCRS ⁽²⁾	LDS ⁽²⁾	VZDCRS ⁽²⁾⁽³⁾
B-19	<ul style="list-style-type: none"> Construction Drawings, Landfill Unit B-19, Kettleman Hills Facility, Kings County, California, (13 Drawings) EMCON Associates, June 18, 1986a. Construction Specifications for Double-Lined Landfill Unit B-19, Kettleman Hills Facility, Kings County, California, EMCON Associates, June 18, 1986b. Engineering Report, Chemical Waste Management Inc., Kettleman Hills Facility, Landfill B-19, Phases II and III, King County, California, Revision 2, Donohue and Associates, January 1989a. Supplemental Geotechnical Investigation, Kettleman Hills Facility, Landfill Unit B-19, Phases II and III, Kings County, California, Donohue and Associates, January 31, 1989b. As-Built Sections, Landfill B-19, Phases II and III, Kettleman Hills Facility, Donohue and Associates, April 13, 1989. Landfill B-19, Phase IA Redesign and Closure Plan, KHF, Kettleman City, California, Golder Associates, Inc., April 15, 1991. Landfill B-19 Interim Closure Plan, Kettleman Hills Facility, Golder Associates Inc., June 18, 1993. Landfill Unit B-19 Modified Closure Plan, Kettleman Hills Facility, TRC, October 1997. Modification No. 2, Landfill Unit B-19 Closure Plan for Class I Portion, Kettleman Hills Facility, Kettleman City, California, Golder Associates, October 2005, revised November 2006. 	<p><u>Phase IA</u></p> <ul style="list-style-type: none"> To be reconstructed in accordance with Golder Associates Inc., April 15, 1991. <p><u>Phase IB</u></p> <ul style="list-style-type: none"> Geologic Conditions of the Subgrade, Landfill B-19, Phase IB, Kettleman Hills Facility, Kettleman City, California, Golder Associates Inc., September 16, 1987. Clay Liner Source Report, Landfill B-19, Phase IB, Kettleman Hills Facility, Kettleman City, California, Golder Associates Inc., September 25, 1987. Secondary Clay Liner Construction Report, Landfill B-19, Phase IB, Kettleman Hills Facility, Kettleman City, California, Golder Associates Inc., October 16, 1987. Secondary HDPE Liner and Leachate Collection System Report, Landfill B-19, Phase IB, Kettleman Hills Facility, Kettleman City, California, 2 Volumes, Golder Associates Inc., October 27, 1987. Primary Clay Liner Construction Report, Landfill B-19, Phase IB, Kettleman Hills Facility, Kettleman City, California, Golder Associates Inc., November 6, 1987. Primary HDPE Liner and Leachate Collection System Report, Landfill B-19, Phase IB, Kettleman Hills Facility, Kettleman City, California, Golder Associates Inc., November 13, 1987. <p><u>Phases II and III</u></p> <ul style="list-style-type: none"> Geologic Conditions of the Subgrade, Landfill B-19, Phases II and III with Summary of Geology and Engineering Properties of Landfill B-19, Kettleman Hills Facility, Kettleman City, California, Golder Associates Inc., February 1989. Chemical Analyses Results of Subgrade Soil, Landfill B-19, Phases II and III, Kettleman Hills Facility, Kettleman City, California Golder Associates Inc., March 1989a. Clay Liner Source Report, Landfill B-19, Phases II and III, Kettleman Hills Facility, Kettleman City, California Golder Associates Inc., March 1989b. Secondary Clay Liner Construction Report Landfill B-19, Phases II and III, Kettleman Hills Facility, Kettleman City, California Golder Associates Inc., April 1989. Secondary HDPE Liner and Leachate Collection System Report, Landfill B-19, Phases II and III, Kettleman Hills Facility, Kettleman City, California, Golder Associates Inc., April 1989. Primary Clay Liner Construction Report, Landfill B-19, Phases II and III, Kettleman Hills Facility, Kettleman City, California, Golder Associates Inc., April 1989. Primary HDPE Liner and Leachate Collection System Report, Landfill B-19, Phases II and III, Kettleman Hills Facility, Kettleman City, California, Golder Associates Inc., May 1989. Landfill B-19 Interim Closure, Chemical Waste Management, Inc., Kettleman City, California, Golder Construction Services, Inc., May 1994. 	<p><u>Phases IB, II and III</u></p> <ul style="list-style-type: none"> Quality Assurance Manual for the Installation of the Soil Components of Lining and Final Cover Systems, Chemical Waste Management Inc., June 1986. Specification Guidelines for the Procurement and Installation of Geosynthetic Lining Systems, Chemical Waste Management Inc., June 1986. Quality Assurance Manual for the Installation of Geosynthetic Lining Systems, Chemical Waste Management Inc., June 15, 1990. <p><u>Phase IA Reconstruction</u></p> <ul style="list-style-type: none"> Quality Assurance Manual for the Installation of the Soil components of Lining and Final Cover Systems, Chemical Waste Management Inc., June 1986. Quality Assurance Manual for the Installation of Geosynthetic Lining Systems, Chemical Waste Management Inc., June 15, 1990. 	<ul style="list-style-type: none"> Provided in Exhibit 36-1. 	<p><u>Sideslopes</u></p> <ul style="list-style-type: none"> Geonet.⁽⁴⁾ Geotextile.⁽⁴⁾ Double-sided Geocomposite.⁽⁵⁾ <p><u>Bottom Liner</u></p> <ul style="list-style-type: none"> 3-foot-thick (min.) clay layer ($k \leq 1 \times 10^{-7}$ cm/sec). 60-mil smooth HDPE geomembrane.⁽⁴⁾ 60-mil textured HDPE geomembrane.⁽⁵⁾ <p><u>Top Liner</u></p> <ul style="list-style-type: none"> 1.5-foot-thick clay layer ($k \leq 1 \times 10^{-7}$ cm/sec).⁽⁸⁾ 60-mil smooth HDPE geomembrane.⁽⁴⁾ 60-mil textured HDPE geomembrane.⁽⁵⁾ 	<p><u>Sideslopes</u></p> <ul style="list-style-type: none"> Geonet.⁽⁴⁾ Geotextile.⁽⁴⁾ Double-sided Geocomposite.⁽⁵⁾ <p><u>Base</u></p> <ul style="list-style-type: none"> Geonet.⁽⁴⁾ Geotextile.⁽⁴⁾ Double-sided Geocomposite.⁽⁵⁾ 1-foot gravel ($k \geq 1 \times 10^{-2}$ cm/sec). Geotextile. HDPE sideslope riser pipe.⁽⁶⁾ Stainless steel/carbon steel sideslope riser pipe.⁽⁷⁾ 	<p><u>Sideslopes</u></p> <ul style="list-style-type: none"> 80-mil smooth HDPE. Geotextile. 1-foot-thick gravel layer. Geotextile. HDPE sideslope riser pipe.⁽⁶⁾ Stainless steel/carbon steel sideslope riser pipe.⁽⁷⁾ 	

(1) Design changes and clarifications are included in construction documentation.

(2) Described from bottom to top.

(3) Materials are installed in a trench extending from the sump along the centerline of the base of each phase below the 3-foot (min.) clay layer.

(4) Phases IB, II and III.

(5) Phase IA reconstruction only.

(6) Phase IB only.

(7) Phases IA reconstruction, II and III.

(8) Base only.

LCRS = Leachate collection and removal system.

LDS = Leak detection system.

VZDCRS = Vadose zone leak detection, collection and recovery system.

N/A = Not applicable.

ATTACHMENT 2
CLEAN COPIES
OF
APPLICATION CHAPTER 15.0
AND
TABLE 40-1

15.0 CLOSURE AND POST-CLOSURE PLANS

22 CCR 66270.14(b)(13)

15.1 BACKGROUND AND SCOPE

This chapter addresses how and when closure of existing active and inactive units and final closure of the KHF will occur in accordance with 22 CCR 66264.111. Reference is made to Closure Plans previously approved by DTSC, where appropriate. Post-closure monitoring and maintenance is also addressed in conformance with 22 CCR 66264.118.

Support and ancillary facilities that are not hazardous waste management units, such as the vehicle wash station, laboratory and maintenance facilities, are not subject to closure and post-closure requirements of 22 CCR Division 4.5, Chapter 14. Therefore, they are not addressed in this document.

A copy of these Closure and Post-closure Plans and subsequent approved amendments will be maintained onsite until the post-closure period begins. CWM will amend the plans as necessary when changes in facility design or operating plans affect the proposed closure or post-closure activities. Amendments will be made in accordance with 22 CCR 66264.112 and 66264.118.

15.2 GENERAL CLOSURE PROCEDURES, REQUIREMENTS AND SCHEDULE

15.2(a) Closure Policies and Practices

In accordance with 22 CCR 66264.111, closure of the KHF will incorporate necessary measures to:

- Minimize the need for further maintenance.
- Control, minimize or eliminate, to the extent necessary to protect human health and the environment, post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated rainfall or runoff, or waste decomposition products to ground water, surface water or the atmosphere.
- Comply with closure requirements of 22 CCR Division 4.5, Chapter 14.

Except for surface impoundments, the hazardous waste received at each unit will be treated, removed or disposed of within 90 days following receipt of final waste at the respective unit⁽¹⁾. A DTSC extension to this 90-day period for surface impoundments, and for the 180-day closure limit pursuant to 22 CCR 66264.113(b), is discussed in Section 15.2(c). CWM will notify DTSC in

⁽¹⁾ Since landfills are disposal units, hazardous waste received at landfill units is disposed of at the time of placement.

writing at least 60 days prior to the date that closure of a surface impoundment or landfill unit, or final closure of the facility, is expected to begin.

Closure of facility operations will be conducted in a manner that will provide for sufficient reserve landfill capacity to allow onsite disposal of final volumes of hazardous waste received at each unit and contaminated materials generated by partial and final closure activities. Six months of landfill capacity will be reserved for this purpose. Waste generated by closure activities will be handled and disposed of in accordance with applicable regulation, including, but not limited to, pertinent requirements of 22 CCR, Division 4.5, Chapter 12 (Standards Applicable to Generators of Hazardous Waste) and Chapter 18 (Land Disposal Restrictions). Where Land Disposal Restrictions preclude onsite treatment and/or landfiling, hazardous wastes generated by closure will be shipped offsite for disposal in accordance with applicable regulations.

Where hazardous waste, waste residues or contaminated materials remain in place upon unit closure (e.g., at landfills and closed-in-place surface impoundments), specific closure measures such as construction of a final cover will be taken to control, minimize or eliminate migration of hazardous constituents, as further discussed in Sections 15.3 and 15.4. Areas of final cover will be graded and revegetated to control ponding, runoff and erosion, so that maintenance requirements are minimized. The KHF has successfully completed partial closure of several units which have exhibited the performance characteristics desirable for long-term closure. The site has worked with local experts to determine the types of vegetation which are best suited for the climatic conditions in the area of the Kettleman Hills. Drought-tolerant species of plants will be used to revegetate cover areas without irrigation. Plants with shallow root zones will be used so as not to impair the cover integrity.

A heavy equipment fleet (e.g., scrapers, dozers, graders, compactors and trucks) will be used to close the site. Steam and/or pressure washing, with the appropriate chemical additives, will be used for the decontamination of heavy equipment either at a future vehicle wash station, or a temporary decontamination unit. Rinse waters will be collected and treated or disposed of in accordance with applicable regulations.

Chapter 7.0 of this renewal application provides an Inspection Program Plan for the KHF to conform with the requirements of 22 CCR 66264.15. The inspection program will continue during the closure period. Detailed descriptions of site environmental monitoring operations (leachate collection/detection, vadose zone detection, and ground water monitoring) are included in the facility's approved environmental monitoring plans. The monitoring program will continue as described in those plans throughout the duration of the closure period.

15.2(b) Estimate of Maximum Unclosed Operations and Waste Inventory

Closure of some active or inactive waste management units may occur independent of (i.e., prior to) final closure of the facility. However, for the purposes of tracking progress with the closure schedule, estimating maximum potential facility waste inventory and identifying the maximum extent of operations that may be unclosed at any given time, the closure plans described herein are based on each of the existing active and inactive units remaining unclosed until final closure is initiated. This closure scenario results in the most expensive estimated closure costs as required by 22 CCR 66264.142(a)(1). The estimated maximum waste inventory that may occur and

other key parameters pertinent to closure are summarized in Tables 15-1, 15-2 and 15-3 for existing unclosed landfills, surface impoundments and other storage/treatment units, respectively.

TABLE 15-1
LANDFILL DATA
KETTLEMAN HILLS FACILITY

Unit	Unit Area (acre)	Total Airspace (cy)	Net Disposal Volume Remaining (cy) ⁽¹⁾
B-16	5	258,000	60,000
B-18	53	10,700,000	8,453,000
B-19	40	7,000,000	4,400,000
Total	98	17,958,000	12,913,000

(1) Approximate disposal volume remaining as of June 1997 including waste and intermediate soil cover.

TABLE 15-2
SURFACE IMPOUNDMENT DATA
KETTLEMAN HILLS FACILITY

Unit	Unit Area (acres)	Liquid Surface Area ⁽¹⁾ (acres)	Depth of Liquid ⁽¹⁾ (feet)	Capacity ⁽¹⁾ (gal)
P-9	1.5	1.3	14	4,400,000
P-14	0.9	0.8	12	2,100,000
P-15	1.5	1.1	9	(2)
P-16	1.6	1.4	11	3,900,000
Total	5.5	4.6	--	10,400,000

(1) Based on a freeboard of 2 feet.

(2) Pond P-15 is inactive. Potential waste inventory for Pond P-15 would be incorporated for closure financial assurance if and when this pond is reconstructed.

TABLE 15-3
WASTE INVENTORY FOR OTHER STORAGE/TREATMENT UNITS
KETTLEMAN HILLS FACILITY

Waste Type	Waste Inventory ⁽¹⁾					
	DDU (gal)	PCB Flushing/ Storage Unit (gal)	DSU (gal)	FSU (gal)	BSU 1 (cy)	BSU 2 (cy)
Tanks	60,600	10,000	--	20,000	--	--
Containers	33,000	16,500	495,000	--	2,300	2,300
Total	93,600	27,500	495,000	20,000	2,300	2,300

(1) Capacity of potential future facilities addressed in Chapters 2.0, 34.0 and 35.0 would be in addition to that shown. Potential waste inventory of future facilities would be incorporated for closure financial assurance if and when constructed.

15.2(c) Schedule

The KHF is estimated to have adequate remaining disposal capacity for at least 40 years. For the purpose of this closure plan, final closure is estimated to occur in the year 2037. This estimate does not include the potential extension of facility life due to future advances in waste treatment technology, regulatory changes or other factors.

The estimated schedule of final closure is shown in Figure 15-1. This schedule includes the closure of landfills, surface impoundments and other waste storage/treatment units. The time for closure shown on the schedule accommodates time needed to process the maximum potential waste inventory. While the schedule is based on individual unit closure occurring sequentially as part of final closure, individual units may be closed earlier (i.e., during the site operational life). At least one landfill unit will remain open until disposal of waste residue and contaminated material resulting from final closure of units is complete (except surface impoundments that are closed during final closure).

As shown in Figure 15-1, closure of surface impoundments will require about 29 months from receipt of the last volume of waste, including time for processing (evaporation) of liquids. Closure of the final landfill is expected to take about 14 months from receipt of the last volume of waste at the facility, including the time that the final landfill will remain open to accept hazardous waste, waste residue and contaminated material resulting from closure of other units. CWM requests that, in conjunction with this permit renewal, DTSC approve an extension to reflect these anticipated schedules pursuant to 22 CCR 66264.113(b)(1)(A).

The DDU and Surface Impoundment P-15 are currently inactive. The DDU may receive additional waste and be reactivated under the renewed permit. Impoundment P-15 is no longer in use but is not practical to close at this time due to its proximity to active impoundments P-14 and P-16. Impoundment P-15 would not be reactivated under the renewed permit unless reconstructed, as

further addressed in Section 36.3. CWM has submitted to DTSC requests for extensions for the closure of the DDU and Impoundment P-15 (CWM, 1997a and 1997b).

Landfill B-16 is currently inactive pending disposal of additional waste. The KHF has submitted to DTSC a request to allow delay of closure for this landfill (CWM, 1996) to utilize its remaining capacity and fill the unit to meet the subgrade elevations of the approved Closure Plan.

Landfill B-19 is in an interim closed configuration with Phase 1A to be reconstructed when appropriate. The DTSC has approved the landfill to remain in the interim closure configuration for a period lasting up to about the year 2004 (DTSC, 1994).

The CTU has been removed and a closure certification report has been submitted to DTSC (RUST, 1996). Because this unit shared a containment slab with the DDU, DTSC staff has indicated that they will consider the CTU interim closed until the DDU containment slab is also closed.

15.2(d) Closure Certification

Within 60 days of completion of partial closure (i.e., closure of a unit) or final closure, CWM will submit to DTSC, by registered mail, a certification that the closure has been completed in accordance with the specifications in the approved closure plan. The certification will be signed by an appropriate representative of CWM and an independent qualified professional engineer registered in California.

15.2(e) Survey Plat

At or prior to the time certification of closure is submitted, CWM will provide a survey plat to the DTSC and Kings County Planning Agency (or other appropriate local land authority). The plat, indicating the location and dimensions of the waste burial areas, will be prepared and certified by a professional land surveyor. It will contain notification that hazardous wastes have been disposed of at the site, and that the owner of the facility is obliged to restrict disturbance of the site as specified in 22 CCR 66264.117.

In addition, CWM will submit a record of survey to the DTSC and Kings County Zoning Authority that describes the type, location and quantity of hazardous wastes disposed of within each burial area of the facility. Information on waste disposal which took place at the facility prior to promulgation of 40 CFR Part 264 will be estimated based on available records. Changes in the type, location or quantity of hazardous wastes disposed of after the survey plat is filed will be reported by CWM to DTSC and the Kings County Zoning Authority.

15.3 LANDFILLS

15.3(a) General

The unclosed landfill units at the KHF are B-16, B-18 and B-19. Engineering construction plans and specifications for these landfill units have been approved by the DTSC (formerly DHS) and

other appropriate regulatory agencies as discussed in other sections of this renewal application. The following Closure Plans have been approved for Landfills B-16, B-18 and B-19 and are incorporated by reference:

1. Closure Plan for Landfill B-16, Kettleman Hills Facility, Kettleman City, California, Golder Associates, Inc., August 23, 1990.
2. Closure Plan for Landfill B-16, Revision 1, Kettleman Hills Facility, Kettleman City, California, Golder Associates, Inc., March 11, 1993.
3. Engineering and Design Report Landfill Unit B-18, Phases I and II and Final Closure, Kettleman Hills Facility, Kings County, California, Environmental Solutions, Inc., August 1990.
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The configurations and procedures in these approved closure plans will be utilized for Landfills B-16, B-18 and B-19 with one exception; a modified cover layer configuration to match the cover configuration approved by DTSC (DTSC, June 28, 1996 and October 24, 1996) for the Combined Closure Plan. This proposed modification is discussed further in Section 15.3(b).

15.3(b) Final Cover

On June 28, 1996, a Notice of Final Decision was issued by DTSC approving a revised cover section for use in the Combined Closure Area and Landfill B-15. This revised section is proposed for approval in this renewal application for the closure of landfills B-16, B-18 and B-19 (and impoundments P-9, P-14, P-15 and P-16 as discussed in Section 15.4). This cover section is indicated in Figure 15-2. From top to bottom, the final cover will consist of:

- 2.5 feet of vegetative soil cover;
- Geotextile drainage layer (transmissivity ≥ 0.03 gal/min/ft);
- 40-mil-thick textured high density polyethylene (HDPE) geomembrane;
- 1 foot (minimum) of compacted foundation layer (Hydraulic Conductivity $\leq 1 \times 10^{-5}$ cm/sec);
- 1 foot (minimum) of intermediate soil cover.

For Landfill B-19, the final cover for the Class II/III waste (municipal solid waste) portion will follow the aforementioned plan.

The synthetic components of the final cover will be constructed using guidelines and specifications contained in the Quality Assurance Manual for the Installation of Geosynthetic Lining Systems (CWM, June 15, 1990, or latest revision thereof). Drawings and specifications for cover construction will be provided to DTSC with notification of closure pursuant to 22 CCR 66264.112(d).

Soils for partial closure and final closure of waste management units will either be excavated onsite or imported. The KHF contains sufficient onsite soils to complete the closures, although these soils may require processing to meet permeability requirements.

15.3(c) Erosion Control and Cover Maintenance

After the soil cover has been placed to final grades and compacted, the surfaces will be graded and conditioned to create a uniform slope. Disturbed soil areas will be reseeded to establish vegetative growth (at least 65 percent cover) for erosion control.

The final cover has been designed to avoid ponding, control runoff, minimize erosion or abrasion, and therefore function with minimal maintenance. Cover designs include benches when necessary for erosion control. Calculations using the Universal Soil Loss Equation show that the slope and cover designs will restrict erosion of the soil cover to less than 2 tons per acre per year. Drainage of water from the closed units will be promoted by the slope of the final cover and perimeter run-on/runoff control ditches.

Post-closure inspections will be performed, and post-closure maintenance will occur, as discussed in Section 15.6.

15.4 SURFACE IMPOUNDMENTS

15.4(a) General

The unclosed surface impoundment units are P-9, P-14, P-15 and P-16. Detailed engineering plans and specifications for these surface impoundments have been submitted to the DTSC (formerly DHS), as discussed in other sections of this renewal application. Impoundment P-15 is currently inactive and waste has been removed. It will be closed in conjunction with P-14 and P-16 because of its proximity to these ponds.

In accordance with 22 CCR 66264.112(a)(1) and 66264.228(a) surface impoundments will be closed by one of two methods:

- Closure in Place
- Closure by Removal

Closure procedures for surface impoundments under each of these scenarios are summarized in Table 15-4.

The closure schedule presented in Section 15.2 and closure and post-closure cost estimates in Chapters 17.0 and 18.0 are based on closure in place, because that procedure is expected to be the more expensive and time consuming. The closure method to be used will be defined by CWM at the time of notification of closure pursuant to 22 CCR 66264.112(d). At that time, CWM will provide DTSC with final grading plans and construction specifications for ponds to be closed in place, and sampling and analysis procedures to confirm removal of hazardous constituents at ponds to be closed by removal.

The closure of impoundments P-14, P-15 and P-16 will complete the closure of the area where Spreading Area S-4 was located, as discussed in Chapter 31.0.

TABLE 15-4
SURFACE IMPOUNDMENT CLOSURE PROCEDURES
KETTLEMAN HILLS FACILITY

Closure Alternative	Closure Procedures
Closure in place	<ul style="list-style-type: none"> • The truck unloading aprons will be decontaminated. • Piping, pipe stands and other ancillary equipment will be removed and disposed of in onsite landfills. • Liquids will be evaporated to reduce volume. Waste residue will be stabilized in place or removed and disposed of in accordance with applicable regulations. Waste residue stabilized in place will be tested for free liquids using the Paint Filter Liquids Test (EPA Test Method 9095) or other approved method. • The impoundment will be filled with compacted soil backfill, placed such that there is sufficient bearing capacity to support the final cover and to provide drainage off of the cover area. • The final cover will be placed and the area revegetated.
Closure by removal	<ul style="list-style-type: none"> • Liquids will be evaporated to reduce volume. • Waste residue, liner systems, piping, pipe stands, truck unloading aprons and other ancillary equipment will be removed and disposed of in accordance with applicable regulations. • Subgrade soils will be tested and decontaminated or removed and disposed of in onsite landfills. • The pond area will be regraded to promote drainage and revegetated.

Based on the average yearly effective liquid waste evaporation rate and the full impoundment capacity being evaporated to a 1.5-foot depth, the time required for evaporation of surface impoundment liquids at closure is estimated to be 26 months. Approximately three additional months will be required for residue stabilization or removal, backfill and the placement of the final cover. Therefore, it will take an estimated 29 months to close the impoundments.

15.4(b) Final Cover, Erosion Control and Cover Maintenance

The cover cross-section proposed for landfills in Section 15.3 will also be utilized for surface impoundments that are closed in place. Cover configurations will conform with applicable specifications in 22 CCR 66264.228. The final cover will be constructed and compacted to avoid ponding and control runoff. The vegetative soil layer will be seeded to attain at least 65 percent grass cover. Site drainage controls will be maintained to control run-on/runoff in impoundments areas.

Post-closure inspections will be performed, and post-closure maintenance will occur, as discussed in Section 15.6.

15.5 OTHER WASTE STORAGE/TREATMENT UNITS

15.5(a) General

Closure plans and procedures for existing unclosed waste storage units and treatment units other than surface impoundments are addressed in this section. These existing units include:

- Drum Decant Unit
- Bulk Storage Units
- Final Stabilization Unit
- PCB Flushing/Storage Unit
- Drum Storage Unit

Closure plans for future units (i.e., Neutralization/Filtration Unit, Evaporative Tank Unit and future PCB Flushing/Storage Unit) are not included herein. They will not become part of the “working” Closure/Post-closure Plans until they have been constructed and begun accepting wastes. Closure cost estimates for future units are not included in the current total facility closure cost calculations that form the basis for the financial assurance demonstration for the KHF. These costs will be included in updated closure cost estimates and financial assurance document packages as the units become operational.

15.5(b) Closure Procedures

The waste storage and treatment units addressed in this section will be closed and decontaminated in accordance with requirements for closure of container and tank units pursuant to 22 CCR 66264.114, 66264.178 and 66264.197. Table 15-5 addresses measures to be taken at each unit to conform with these requirements.

TABLE 15-5

**CLOSURE PROCEDURES FOR OTHER
WASTE STORAGE AND TREATMENT UNITS
KETTLEMAN HILLS FACILITY**

CLOSURE TASK	UNIT				
	DDU	BSU	FSU	PCB Flushing/ Storage Unit	DSU
• Process remaining hazardous wastes and remove from the unit.	X	X	X	X	X
• Remove hazardous waste residues (e.g., solids, sludges) and contaminated containers for treatment and/or disposal. ⁽¹⁾	X	X	X	X	X
• Decontaminate storage/processing tanks; or remove and dispose. ⁽¹⁾	X		X	X	
• Decontaminate appurtenant piping and hardware (e.g., pumps, conveyors); or remove and dispose. ⁽¹⁾	X		X	X	X
• Assess potential for structures and ancillary equipment to be contaminated (e.g., buildings, electronics). Decontaminate as needed, or remove and dispose. ⁽¹⁾	X		X	X	X
• Decontaminate concrete containment slabs, curbing and sumps, including those at loading/unloading aprons.	X		X	X	X
• Remove and dispose of aggregate and geosynthetic liners. ⁽¹⁾		X			
• Regrade excavated containment areas to blend with surrounding contours and control drainage.		X			
• Sample and analyze soils adjacent to units to confirm compliance with 22 CCR 66264.114.	X	X	X	X	X

(1) Hazardous waste residues and contaminated materials destined for disposal will be handled in accordance with applicable regulations including, but not limited to, 22 CCR Division 4.5, Chapter 12.0 and Chapter 18.0.

Hazardous waste, hazardous waste residue and contaminated containers will be removed from each unit and disposed of in accordance with applicable regulations including, but not limited to, 22 CCR, Division 4.5, Chapter 12.0 (Standards Applicable to Generators of Hazardous Waste) and Chapter 18 (Land Disposal Restrictions). Waste storage/processing tanks, piping, pumps, conveyors and other appurtenant equipment contaminated by hazardous waste will be either decontaminated or removed and disposed of as hazardous waste. Remaining equipment and structures will be assessed for potential contamination, and decontaminated as necessary, or also removed and disposed of. Onsite landfiling with macro-encapsulation bins may be used for disposal of debris and other wastes if necessary for compliance with Land Disposal Restrictions.

Decontamination will occur using pressure and/or steam sprays, with cleaning reagents where appropriate. Containment floors and curbing will also be scrubbed to achieve adequate cleaning. The brooms will be disposed of as hazardous wastes in an onsite landfill. Cleaning solutions will be selected considering compatibility and effectiveness for cleaning wastes handled at each unit, and specific vendor recommendations. They typically will consist of:

- Mild caustic solution for acid waste handling areas;
- Water for alkaline waste handling areas;
- Nonalkali detergents for other storage/treatment and handling areas; and
- Solvent for the PCB Flushing/Storage Unit.

The effectiveness of the decontamination program will be determined either by obtaining and analyzing samples from decontaminated surfaces, or by analyzing the final decontamination rinsate for appropriate waste constituents. Additional rinses will be performed as necessary. Rinsate will be evaporated in onsite surface impoundments, except for PCB-contaminated rinsate, which will be removed from the site.

The aggregate and geosynthetic liners at the BSUs will be excavated and disposed of in an onsite landfill. Following excavation of the liner and soil sampling to confirm that no contaminated soil remains, the BSU areas will be regraded to blend with surrounding areas and to control drainage. Compaction and grading will occur to preclude ponding in the BSU areas, and the disturbed areas will be seeded.

Soil samples from areas adjacent to each unit will be taken and analyzed. Contaminated areas will be excavated to a depth where contamination no longer is detected at hazardous levels, as determined by additional soil sampling and analysis. The contaminated soil will be removed and disposed of in accordance with applicable regulations. Detailed procedures for sampling and analysis to confirm effective decontamination will be provided to DTSC at least 60 days prior to initiation of partial (unit) closure or final closure.

At the time of final facility closure, certifications by both CWM and an independent qualified professional engineer registered in California will be submitted to DTSC to document that waste processing units have been closed in accordance with approved closure procedures.

15.6 POST-CLOSURE PLAN

15.6(a) Introduction

This section describes the manner in which CWM will provide for post-closure inspections and maintenance of the KHF in accordance with the requirements of 22 CCR 66264.117. A copy of this Post-closure Plan will be available at the facility until final closure is complete. Thereafter, a copy will be maintained at the following address:

Post-closure Period Facility Contact: Chemical Waste Management, Inc.
1001 Fannin Street, Suite 4000
Houston, TX 77002
(713) 512-6200

If changes in the operation or design of the KHF occur prior to closure that affect the post-closure or the anticipated year of final closure, CWM will amend this Post-closure Plan as required by 22 CCR 66264.118(d).

15.6(b) Inspection and Maintenance Activities and Schedule

Surface impoundments closed in place, landfills, and other units closed with waste or waste constituents in place will be inspected and maintained in accordance with this Post-closure Plan following certification of the respective partial (unit) closure and final closure. Inspections and maintenance will continue for the period of time required by 22 CCR 66264.117. For the purpose of this plan and post-closure cost estimates, the post-closure period is assumed to be 30 years.

Inspections will be conducted as described in Table 15-6 by persons familiar with the Closure and Post-closure Plans. Inspections conducted pursuant to 22 CCR 66264.228(k), at a minimum, will be conducted by an independent qualified professional engineer registered in California. Copies of inspection records and associated remedial work forms will be maintained by the Post-closure Period Facility Contact specified in Section 15.6(a) for a period of at least three years following the paperwork date.

Maintenance may include, but would not be limited to, the following:

- Reseeding, with fertilization if necessary, of soil areas where vegetation is inadequate to prevent erosion.
- Repairing of erosion or other disruption to unit covers that threatens the integrity of the cover system.
- Cleaning and repair of drainage controls to mitigate erosion, silting or debris accumulation that hinder drainage system performance.
- Maintaining adequate grades in cover areas to promote controlled runoff and avoid ponding (e.g., placing additional soils if low spots occur due to settlement).

TABLE 15-6

**DESCRIPTION OF POSTCLOSURE INSPECTION ACTIVITIES
KETTLEMAN HILLS FACILITY**

ITEM(S)	INSPECTION/MONITORING ELEMENTS	FREQUENCY
Surface Impoundment Closed-In-Place, Landfills, and Other Units Closed with Waste or Waste Constituents In Place	<ul style="list-style-type: none"> • Final cover; <ul style="list-style-type: none"> • Check condition of vegetation (estimate percent vegetative cover; stress indications, if any; areas requiring reseeding, if any). • Check for signs of erosion, cracking, heaving, excessive disturbance by animals or other visible disturbance. • Water or leachate flow from disposal areas (including rainfall runoff), if present: <ul style="list-style-type: none"> • Check for surface flow presence or absence. • Estimated flow rate and appearance, if applicable. • Erosion and run-on/runoff control systems: <ul style="list-style-type: none"> • Check for evidence of damage or degradation; • Check condition of erosion controls; • Check for excessive debris or vegetation;⁽¹⁾ • Check for high or low spots that inhibit free drainage. • Slope areas: <ul style="list-style-type: none"> • Check for evidence of potential slope instability that could affect containment (e.g., bulging, cracking). • Monitor location and elevation (by survey) of the cover and other containment features, monitoring facilities and drainage features; and benchmarks required by 22 CCR 66264.116, 66264.228(c)(16), and 66264.309(a). 	Annually
	<ul style="list-style-type: none"> • LCRS systems: <ul style="list-style-type: none"> • Monitor/record volume of liquids removed. 	Monthly ⁽²⁾
Ground Water Monitoring System	<ul style="list-style-type: none"> • Monitor performance and integrity of wells in conjunction with sampling. • Sample and analyze ground water. 	Sampling and analysis performed pursuant to Site-Specific Ground Water Monitoring Plan (GeoSyntec Consultants, 2001 or latest revision thereof).
Security Fencing, Gates and Firebreak	<ul style="list-style-type: none"> • Check for potential damaged or degraded fencing. • Check for breaches in access control via erosion at fenceline. • Check to see that gates are securely locked. • Check integrity of gate hardware (e.g., hinges, kingposts). • Check condition of firebreak. 	Annually

(1) Debris or vegetation will be considered excessive if it is likely to result in or lead to inadequate performance of drainage or erosion controls.

(2) Intact LCRS systems would initially be monitored monthly. When liquid stays below the pump operating level, inspection frequency and scope will be in accordance with 22 CCR 66264.226(d)(2) and 66264.303(c)(2).

- Maintaining ground water monitoring wells necessary for compliance with the Site-Specific Ground Water Monitoring Plan.
- Repairing areas if movement causes slopes or other conditions that do not conform with applicable 22 CCR, Division 4.5, Chapter 14 requirements.
- Clearing vegetation at benchmarks required by 22 CCR 66264.116, 66264.228(c)(16) and 66264.309(a), and other activities necessary to maintain these benchmarks.
- Maintaining fencing and gates such that their effectiveness as a deterrent to access is not impaired.
- Clearing of the firebreak as required to maintain its effectiveness.

CWM will submit annual reports to DTSC and the RWQCB describing post-closure inspection results and maintenance activities conducted at the site during the previous year.

15.6(c) Notice in Deed to Property

Waste will be permanently disposed of at some KHF waste management units. CWM will record, in accordance with state law, the following notice appended to the legal description of the parcel or the plat(s) filed with the local land authority.

"Notice is hereby given that the property described on the Exhibit attached hereto has been used to dispose of hazardous waste and its use is restricted pursuant to 22 CCR 66264.117. A survey plat and record of the type, location and quantity of hazardous wastes disposed of has been filed with the local land authority and the California Department of Toxic Substances Control."

The plat will contain a note, prominently displayed, stating the property owner's obligation to restrict disturbance of the site.

15.6(d) Certification of Completion of Post-closure

No later than 60 days after the completion of the established post-closure maintenance, CWM will submit to the appropriate regulatory agencies, by registered mail, a certification that post-closure maintenance was performed in accordance with the approved post-closure plan. The certification will be signed by the owner or operator and an independent qualified professional engineer registered in California.

**TABLE 40-1
DETAILS OF ACTIVE LANDFILL UNITS
KETTLEMAN HILLS FACILITY**

LANDFILL UNIT	APPLICABLE DESIGN AND CONSTRUCTION DOCUMENTS			RESPONSE ACTION PLAN REFERENCES	DESCRIPTION OF KEY DESIGN COMPONENTS			
	Design	Construction ⁽¹⁾	Construction Quality Assurance		Lining System ⁽²⁾	LCRS ⁽²⁾	LDS ⁽²⁾	VZDCRS ⁽²⁾⁽³⁾
B-16	<ul style="list-style-type: none"> Engineering Plans, Specifications and Certification Reports for Existing Landfills, EMCON Associates, September 7, 1985. Engineering Report for Landfills, KHF, Kings County, California, EMCON Associates, September 7, 1985, revised November 3, 1992. Closure Plan for Landfill B-16, KHF, Kettleman City, California, Golder Associates, Inc., August 23, 1990, revised March 11, 1993. 	<ul style="list-style-type: none"> Construction Certification Report, PCB Burial Area B-16, Kettleman Hills Facility, California, EMCON Associates, April 27, 1987. 	<ul style="list-style-type: none"> No specific quality assurance document used for existing construction. Future construction to be completed in accordance with: <ul style="list-style-type: none"> Quality Assurance Manual for the Installation of the Soil Components of Lining and Final Cover Systems, Chemical Waste Management, Inc., June 1986. Quality Assurance Manual for the Installation of Geosynthetic Lining Systems, Chemical Waste Management, Inc., June 15, 1990. 	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> 3-foot clay layer ($k \leq 10^{-7}$ cm/sec). Sealed with emulsified asphalt. 	<ul style="list-style-type: none"> Gravel blanket drain in cell base with single riser. 	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> N/A
B-18	<ul style="list-style-type: none"> Construction specifications and Quality Assurance Plan, Landfill B-18, Phases I and II and Final Closure, KHF, King County, California, Environmental Solutions Inc., July 31, 1990a. Construction Drawings, Landfill Unit B-18, Phases I and II and Final Closure KHF, Kings County, California, Environmental Solutions Inc., July 1990b. Engineering and Design Report Landfill Unit B-18 Phases I and II and Final Closure, Environmental Solutions, Inc., August 1990. Revised Interim Waste Fill Plan, Landfill Unit B-18 Phase I, Kettleman Hills Facility, Kings County, California, Environmental Solutions, Inc., August 1993. Potential Chemical Similarities Between the B-19 and B-18 Clay, Kettleman Hills Facility, (Environmental Solutions, Inc., January 9, 1992). 	<p>Phase I</p> <ul style="list-style-type: none"> Subgrade Geologic Mapping and Chemical Analysis for Landfill B-18, Phase I, Kettleman Hills Facility, Kettleman City, California (Golder Associates Inc., November 27, 1991, revised March 30, 1992). Clay Source Landfill B-18, Phases IA and IB, Kettleman Hills Facility, Kettleman City, California (Environmental Construction Services, Inc., November 25, 1991, revised January 9, 1992). Secondary Clay Liner, Landfill B-18, Phases IA and IB, Kettleman Hills Facility, Kettleman City, California (Environmental Construction Services, Inc., January 6, 1992, revised March 30, 1992). Secondary HDPE Liner and Leachate Collection System, Landfill B-18, and Phases IA and IB, Kettleman Hills Facility, Kettleman City, California (Environmental Construction Services, Inc., January 13, 1992, revised March 30, 1992). Primary Clay Liner, Landfill B-18 Phases IA and IB, Kettleman Hills Facility, Kettleman City, California (Environmental Construction Services, Inc., January 13, 1992, revised March 30, 1992). Primary HDPE Liner and Leachate Collection System, Landfill B-18, Phases IA and IB, Kettleman Hills Facility, Kettleman City, California (Environmental Construction Services, Inc., January 20, 1992, revised March 30, 1992). Summary Construction Report, Landfill B-18, Phases IA and IB, Kettleman Hills Facility, Kettleman City, California (Environmental Construction Services, Inc., February 18, 1992, revised March 30, 1992). Design Changes and Design Clarifications, Landfill B-18, Phases IA and IB, Kettleman Hills Facility, Kettleman City, California (Environmental Construction Services, Inc., February 18, 1992). Test Fill and Infiltration Test Results, Landfill Unit B-18, Phases I and II and Final Closure (Environmental Solutions, Inc., January 23, 1992). <p>Phase II</p> <ul style="list-style-type: none"> Landfill B-18, Phases IIA and IIB Construction Reports, Volume 1 - Clay Liner Source Report, prepared by Golder Construction Services, Inc. and ACZ Engineering Inc., May 1993. Landfill B-18, Phases IIA and IIB Construction Reports, Volume 2 - Subgrade Geologic Mapping and Chemical Analysis Report, prepared by Golder Construction Services, Inc. and ACZ Engineering, Inc., May 1993. Landfill B-18, Phases IIA and IIB Construction Reports, Volume 3 - Excavation and Structural Fill Placement Construction Report, prepared by Golder Construction Services, Inc. and ACZ Engineering Inc., August 1993. Landfill B-18, Phases IIA and IIB Construction Reports, Volume 4 - Secondary Clay Liner Construction Report, prepared by Golder Construction Services, Inc. and ACZ Engineering Inc., September 1993. Landfill B-18, Phases IIA and IIB Construction Reports, Volume 5 - Secondary and Vadose HDPE Liner and Leachate Collection System Report, prepared by Golder Construction Services, Inc. and ACZ Engineering Inc., October 1993. Landfill B-18, Phases IIA and IIB Construction Reports, Volume 6 - Primary Clay Liner Construction Report, prepared by Golder Construction Services, Inc. and ACZ Engineering Inc., October 1993. Landfill B-18, Phases IIA and IIB Construction Reports, Volume 7 - Primary HDPE Liner and Leachate Collection System Construction Report, prepared by Golder Construction Services, Inc. and ACZ Engineering Inc., November 1993. Landfill B-18, Phases IIA and IIB Construction Reports, Volume 8 - Summary Construction Report, prepared by Golder Construction Services, Inc. and ACZ Engineering Inc., November 1993. 	<ul style="list-style-type: none"> Quality Assurance Manual for the Installation of the Soil Components of Lining and Final Cover Systems, Chemical Waste Management Inc., June 1986. Quality Assurance Manual for the Installation of Geosynthetic Lining Systems, Chemical Waste Management Inc., June 15, 1990. 	<ul style="list-style-type: none"> Response Action Plan, Landfill B-18, KHF, SEC Donohue, Inc., June 1992. 	<p>Bottom Liner</p> <ul style="list-style-type: none"> 3-foot-thick (min.) clay layer ($k \leq 10^{-7}$ cm/sec). 60-mil textured HDPE geomembrane. <p>Top Liner</p> <ul style="list-style-type: none"> 1.5-foot-thick clay layer ($k \leq 10^{-7}$ cm/sec).⁽⁶⁾ 60-mil textured HDPE geomembrane. 		<p>Sideslopes</p> <ul style="list-style-type: none"> Geotextile. Single-sided geocomposite drainage layer. <p>Base</p> <ul style="list-style-type: none"> Geotextile. Single-sided geocomposite drainage layer. 1-foot gravel layer ($k \geq 10^{-2}$ cm/sec). Geotextile. Stainless steel/carbon steel sideslope riser pipe. HDPE sideslope riser pipe. <p>Sideslopes</p> <ul style="list-style-type: none"> Geotextile. Single-sided geocomposite drainage layer. <p>Base</p> <ul style="list-style-type: none"> Geotextile. Single-sided geocomposite drainage layer. 1-foot gravel layer ($k \geq 10^{-2}$ cm/sec) Geotextile. Stainless steel/carbon steel sideslope riser pipe. Steel/HDPE pipe vertical riser. 	<ul style="list-style-type: none"> 80-mil smooth HDPE geomembrane. Geotextile. 1-foot-thick gravel layer. Geotextile. Stainless steel/carbon steel sideslope riser pipe.

TABLE 40-1
DETAILS OF ACTIVE LANDFILL UNITS
KETTLEMAN HILLS FACILITY
(Continued)

LANDFILL UNIT	APPLICABLE DESIGN AND CONSTRUCTION DOCUMENTS			RESPONSE ACTION PLAN REFERENCES	DESCRIPTION OF KEY DESIGN COMPONENTS			
	Design	Construction ⁽¹⁾	Construction Quality Assurance		Lining System ⁽²⁾	LCRS ⁽²⁾	LDS ⁽²⁾	VZDCRS ⁽²⁾⁽³⁾
B-19	<ul style="list-style-type: none"> Construction Drawings, Landfill Unit B-19, Kettleman Hills Facility, Kings County, California, (13 Drawings) EMCON Associates, June 18, 1986a. Construction Specifications for Double-Lined Landfill Unit B-19, Kettleman Hills Facility, Kings County, California, EMCON Associates, June 18, 1986b. Engineering Report, Chemical Waste Management Inc., Kettleman Hills Facility, Landfill B-19, Phases II and III, King County, California, Revision 2, Donohue and Associates, January 1989a. Supplemental Geotechnical Investigation, Kettleman Hills Facility, Landfill Unit B-19, Phases II and III, Kings County, California, Donohue and Associates, January 31, 1989b. As-Built Sections, Landfill B-19, Phases II and III, Kettleman Hills Facility, Donohue and Associates, April 13, 1989. Landfill B-19, Phase IA Redesign and Closure Plan, KHF, Kettleman City, California, Golder Associates, Inc., April 15, 1991. Landfill B-19 Interim Closure Plan, Kettleman Hills Facility, Golder Associates Inc., June 18, 1993. Modification No. 2, Landfill Unit B-19 Closure Plan for Class I Portion, Kettleman Hills Facility, Kettleman City, California, Golder Associates, October 2005, revised November 2006. 	<p><u>Phase IA</u></p> <ul style="list-style-type: none"> To be reconstructed in accordance with Golder Associates Inc., April 15, 1991. <p><u>Phase IB</u></p> <ul style="list-style-type: none"> Geologic Conditions of the Subgrade, Landfill B-19, Phase IB, Kettleman Hills Facility, Kettleman City, California, Golder Associates Inc., September 16, 1987. Clay Liner Source Report, Landfill B-19, Phase IB, Kettleman Hills Facility, Kettleman City, California, Golder Associates Inc., September 25, 1987. Secondary Clay Liner Construction Report, Landfill B-19, Phase IB, Kettleman Hills Facility, Kettleman City, California, Golder Associates Inc., October 16, 1987. Secondary HDPE Liner and Leachate Collection System Report, Landfill B-19, Phase IB, Kettleman Hills Facility, Kettleman City, California, 2 Volumes, Golder Associates Inc., October 27, 1987. Primary Clay Liner Construction Report, Landfill B-19, Phase IB, Kettleman Hills Facility, Kettleman City, California, Golder Associates Inc., November 6, 1987. Primary HDPE Liner and Leachate Collection System Report, Landfill B-19, Phase IB, Kettleman Hills Facility, Kettleman City, California, Golder Associates Inc., November 13, 1987. <p><u>Phases II and III</u></p> <ul style="list-style-type: none"> Geologic Conditions of the Subgrade, Landfill B-19, Phases II and III with Summary of Geology and Engineering Properties of Landfill B-19, Kettleman Hills Facility, Kettleman City, California, Golder Associates Inc., February 1989. Chemical Analyses Results of Subgrade Soil, Landfill B-19, Phases II and III, Kettleman Hills Facility, Kettleman City, California, Golder Associates Inc., March 1989a. Clay Liner Source Report, Landfill B-19, Phases II and III, Kettleman Hills Facility, Kettleman City, California, Golder Associates Inc., March 1989b. Secondary Clay Liner Construction Report Landfill B-19, Phases II and III, Kettleman Hills Facility, Kettleman City, California, Golder Associates Inc., April 1989. Secondary HDPE Liner and Leachate Collection System Report, Landfill B-19, Phases II and III, Kettleman Hills Facility, Kettleman City, California, Golder Associates Inc., April 1989. Primary Clay Liner Construction Report, Landfill B-19, Phases II and III, Kettleman Hills Facility, Kettleman City, California, Golder Associates Inc., May 1989. Landfill B-19 Interim Closure, Chemical Waste Management, Inc., Kettleman City, California, Golder Construction Services, Inc., May 1994. 	<p><u>Phases IB, II and III</u></p> <ul style="list-style-type: none"> Quality Assurance Manual for the Installation of the Soil Components of Lining and Final Cover Systems, Chemical Waste Management Inc., June 1986. Specification Guidelines for the Procurement and Installation of Geosynthetic Lining Systems, Chemical Waste Management Inc., June 1986. Quality Assurance Manual for the Installation of Geosynthetic Lining Systems, Chemical Waste Management Inc., June 15, 1990. <p><u>Phase IA Reconstruction</u></p> <ul style="list-style-type: none"> Quality Assurance Manual for the Installation of the Soil components of Lining and Final Cover Systems, Chemical Waste Management Inc., June 1986. Quality Assurance Manual for the Installation of Geosynthetic Lining Systems, Chemical Waste Management Inc., June 15, 1990. 	<ul style="list-style-type: none"> Provided in Exhibit 36-1. 	<p><u>Lining System⁽²⁾</u></p> <p><u>Bottom Liner</u></p> <ul style="list-style-type: none"> 3-foot-thick (min.) clay layer ($k \leq 10^{-7}$ cm/sec). 60-mil smooth HDPE geomembrane.⁽⁴⁾ 60-mil textured HDPE geomembrane.⁽⁵⁾ <p><u>Top Liner</u></p> <ul style="list-style-type: none"> 1.5-foot-thick clay layer ($k \leq 10^{-7}$ cm/sec).⁽⁸⁾ 60-mil smooth HDPE geomembrane.⁽⁴⁾ 60-mil textured HDPE geomembrane.⁽⁵⁾ 	<p><u>Sideslopes</u></p> <ul style="list-style-type: none"> Geonet.⁽⁴⁾ Geotextile.⁽⁴⁾ Double-sided Geocomposite.⁽⁵⁾ <p><u>Base</u></p> <ul style="list-style-type: none"> Geonet.⁽⁴⁾ Geotextile.⁽⁴⁾ Double-sided Geocomposite.⁽⁵⁾ 1-foot gravel ($k \geq 10^{-2}$ cm/sec). Geotextile. HDPE sideslope riser pipe.⁽⁶⁾ Stainless steel/carbon steel sideslope riser pipe.⁽⁷⁾ 	<p><u>Sideslopes</u></p> <ul style="list-style-type: none"> Geonet.⁽⁴⁾ Geotextile.⁽⁴⁾ Double-sided Geocomposite.⁽⁵⁾ <p><u>Base</u></p> <ul style="list-style-type: none"> Geonet.⁽⁴⁾ Geotextile.⁽⁴⁾ Double-sided Geocomposite.⁽⁵⁾ 1-foot gravel ($k \geq 10^{-2}$ cm/sec). Geotextile. HDPE sideslope riser pipe.⁽⁶⁾ Stainless steel/carbon steel sideslope riser pipe.⁽⁷⁾ 	<ul style="list-style-type: none"> 80-mil smooth HDPE. Geotextile. 1-foot-thick gravel layer. Geotextile. HDPE sideslope riser pipe.⁽⁶⁾ Stainless steel/carbon steel sideslope riser pipe.⁽⁷⁾

(1) Design changes and clarifications are included in construction documentation.

(2) Described from bottom to top.

(3) Materials are installed in a trench extending from the sump along the centerline of the base of each phase below the 3-foot (min.) clay layer.

(4) Phases IB, II and III.

(5) Phase IA reconstruction only.

(6) Phase IB only.

(7) Phases IA reconstruction, II and III.

(8) Base only.

LCRS = Leachate collection and removal system.

LDS = Leak detection system.

VZDCRS = Vadose zone leak detection, collection and recovery system.

N/A = Not applicable.



December 11, 2006

PUBLIC NOTICE

On December 7, 2006, the Chemical Waste Management, Inc. – Kettleman Hills Facility (KHF) requested a Class 3 permit modification to its California Department of Toxic Substances Control (DTSC) Hazardous Waste Facility Permit for a modification to the approved Landfill B-19 Closure Plan. The particular changes to the closure plan are a change in slope to accommodate the proposed plans for the Class II/III waste area, discussion of the potential impacts from the proposed bioreactor operations in the Class II/III waste area, and an earthen final cover for the Class II/III waste area. This notice is provided in accordance with 22 CCR §66270.42(c)(2).

The public may provide comments on this modification request between December 11, 2006 and February 9, 2007, inclusively. Comments may be sent to the DTSC. The contact information for the DTSC and KHF are:

Ms. Ruth Cayabyab
DEPARTMENT OF TOXIC SUBSTANCES CONTROL
8800 Cal Center Drive
Sacramento, CA 95826
916.255.3601

Ms. Carol Carollo
CHEMICAL WASTE MANAGEMENT, INC.
35251 Old Skyline Road
Kettleman City, CA 93239
559.386.6140

A public meeting on the modification request will be held on Thursday, January 4, 2007, at 6:00 pm. The meeting will be located at the Kettleman City Community Center, 75 Fifth Street, Kettleman City, California.

Copies of the permit modification request and supporting documents are available for review at the Kettleman City, Avenal, and Hanford branches of the Kings County Library.

The permittee's compliance history during the life of the permit being modified is available from the DTSC contact person (Ms. Ruth Cayabyab).

From everyday collection to environmental protection, Think Green® Think Waste Management.



11 de Diciembre del 2006

AVISO PUBLICO

El día 7 de Diciembre del 2006. Chemical Waste Management, Inc.- Kettleman Hills Facility (KHF) pidió un permiso de modificación Clase 3 al Departamento de Control de sustancias tóxicas (por sus siglas en Inglés DTSC Department of Toxic Substances Control) Permiso para Plantas de Desechos Peligros para que la modificación del Plan de Cierre del Vertedero B sea aprobado. Los cambios en particular para el Plan de Cierre son un cambio en la ladera para acomodar el plan propuesto para la zona de desecho Clase II/III, exposición de los posibles efectos del plan puesto en consideración de la operación del bioreactor en la zona de desecho Clase II/III y la excavación de la cubierta final de la zona de desecho Clase II/III. Este aviso se le proporciona conforme al CCR artículo 66270.42(c) (2).

Se estarán aceptando comentarios del público a partir del 11 de Diciembre del 2006 al 2 de Febrero del 2007 exclusivamente. Puede enviar sus comentarios al Departamento de Control de Sustancias Tóxicas (por sus siglas en Inglés DTSC Department of Toxic Substances Control) La información para contactarse con el DTSC y KHF aparece a continuación:

Ms. Ruth Cayabyab
DEPARTMENT OF TOXIC SUBSTANCES CONTROL
8800 Cal Centre Drive
Sacramento, CA 95826
Tel. (916) 255-3601

Ms. Carol Carollo
CHEMICAL WASTE MANAGEMENT, INC.
35251 Old Skyline Road
Kettleman City, CA 93239
(559) 386-6140

Se llevará a cabo una audiencia pública el Jueves 4 de Enero del 2007 a las 6:00 pm. En el Kettleman City Community Center con domicilio en 75 5th Street en Kettleman City, California.

Las copias de la petición de modificación del permiso y documentos de apoyo estarán disponible al público en las Bibliotecas Públicas del Condado de Kings en las sucursales de Avenal y Hanford .

El historial de cumplimiento del habiente del permiso durante la existencia del permiso en modificación se encuentra disponible en el DTSC y la persona contacto es la Srita. Ruth Cayabyab.



KETTLEMAN HILLS FACILITY
35251 Old Skyline Rd.
P.O. Box 471
Kettleman City, CA 95239

January 11, 2007

CERTIFIED MAIL (7006 0100 0006 6738 6488)

Ruth Cayabyab
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, CA 95826

**RE: Supporting Documents for Public Participation
12/07/06 Class 3 Permit Modification Request**

Dear Ms. Cayabyab:

Attached are copies of the following documents associated with the public participation for the Class 3 Permit Modification Request, submitted on December 7, 2006, by Chemical Waste Management, Inc. – Kettleman Hills Facility (KHF).

- Proof of Publication from *The Hanford Sentinel* for the public notice.
- Attendance Sheet from the January 4, 2007 public meeting.

If you would like any other information associated with this permit modification request, please let me know. And, if the Department of Toxic Substances Control receives any comments on the Class 3 Permit Modification Request, the KHF would appreciate a copy of those comments.

Sincerely,

/original signed by Carol J. Carollo/

Carol J. Carollo, CHMM
Environmental Compliance Specialist

Attachments

AFFIDAVIT OF PUBLICATION

ACCOUNT NUMBER 1001105
AD NUMBER 0000067907-01
PAGE TWO X 4.16"
AD AMOUNT \$66.51

Chemical Waste Management
P.O. Box 471, ,
Kettleman City, CA 93239

PUBLICATION SENT
STATE OF CALIFORNIA
COUNTY OF KINGS

I AM A CITIZEN OF THE UNITED STATES AND A RESIDENT OF THE COUNTY FORESAID; I AM OVER THE AGE OF EIGHTEEN YEARS, AND NOT A PART TO OR INTERESTED IN THE ABOVE-ENTITLED MATTER. I AM THE PRINCIPAL CLERK OF HANFORD SENTINEL, INC., A NEWSPAPER OF GENERAL CIRCULATION, PRINTED AND PUBLISHED DAILY IN THE CITY OF HANFORD, COUNTY OF KINGS, AND WHICH NEWSPAPER HAS BEEN ADJUDGED A NEWSPAPER OF GENERAL CIRCULATION BY THE SUPERIOR COURT OF THE COUNTY OF KINGS, STATE OF CALIFORNIA, UNDER THE DATE OF OCTOBER 23, 1951, CASE NUMBER 11623,

THAT I KNOW FROM MY OWN PERSONAL KNOWLEDGE THE NOTICE, OF WHICH THE ANNEXED IS A PRINTED COPY (SET IN TYPE NOT SMALLER THAN NONPAREIL), HAS BEEN PUBLISHED IN EACH REGULAR AND ENTIRE ISSUE OF SAID NEWSPAPER AND NOT IN ANY SUPPLEMENT THEREOF ON THE FOLLOWING DATES, TO WIT:

PUBLISHED ON: 12/11/2006
FILED ON: 12/11/2006

I CERTIFY (OR DECLARE) UNDER PENALTY OF PERJURY THAT THE FOREGOING IS TRUE AND CORRECT.

DATED AT KINGS COUNTY, CALIFORNIA,

THIS DAY 11 of December 2006

SIGNATURE Allyson B. De

AD#67907

PUBLIC NOTICE

On December 7, 2006, the Chemical Waste Management, Inc. - Kettleman Hills Facility (KHF) requested a Class 3 permit modification to its California Department of Toxic Substances Control (DTSC) Hazardous Waste Facility Permit for a modification to the approved Landfill B-19 Closure Plan. The particular changes to the closure plan are a change in slope to accommodate the proposed plans for the Class I/II waste area, discussion of the potential impacts from the proposed bioreactor operations in the Class I/II waste area, and an earthen final cover for the Class I/II waste area. This notice is provided in accordance with 22 CCR §66270.42(c)(2).

The public may provide comments on this modification request between December 11, 2006 and February 9, 2007, inclusively. Comments may be sent to the DTSC. The contact information for the DTSC and KHF are:

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The permittee's compliance history during the life of the permit being modified is available from the DTSC contact person (Ms. Ruth Cayabyab).

Publish: Dec. 11, 2006



Waste Management Chemical Waste Management, Inc. - Kettleman Hills Facility
 Class 3 Permit Modification Request Public Meeting (Audiencia Publica)
 Landfill B-19 Closure Plan Modification (La Modificacion del Plan de Cierre del Vertedero B)
 January 4, 2007 (4 de Enero del 2007)

Name/Nombre	Address/Domicilio
CAROL J. CAROLLO	Onsite Kettleman Hills Facility
BOB HENRY	CWMI-KHF
Paul Turck	CWMI - KHF
SAMUEL T. CROWLEY	CWMI - KHF
Terra Vurbrough	CWMI-KHF
Patricia Lyons	2008 E. Hwy One Fresno CA 93720
Ruth Cayabyab	8800 Cal Center Dr., Sacto.
Fred Paap	CWMI - KHF
Maricela Mars-Alatorre	P.O. B. 212 K.C., CA 93239
Miguel Angel Alatorre	P.O. B. 212 K.C., CA 93239
Erica Swinney/GreenAction	eve Hallidre plaza #760 SF, CA 94102
Ynez Lopez	P.O. BOX 297 Kettleman City CA 93239

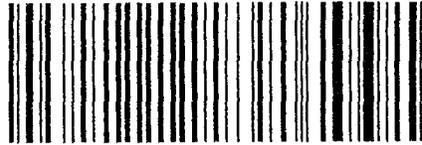


KETTLEMAN HILLS FACILITY

35251 Old Skelme Rd. P.O. Box 471 Kettleman City, CA 93239

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2007 JUN 16 11:25



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Ruth Cayabyab
DTSC
8800 Cal Center Drive
Sacramento, CA 95826

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