# TSCA PERMIT RENEWAL APPLICATION

## CHEMICAL WASTE MANAGEMENT, INC.

## KETTLEMAN HILLS FACILITY

**Revision 0: May 15, 2017**

**Revision 1: July 15, 2017**

**Revision 2: April 20, 2018**

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3 Amendment to the Biological Opinion for Toxic Substances Control Act Permit
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Appendix C: San Joaquin Valley Air Pollution Control District Permit to Operate Facility ID: C-283

# 1. INTRODUCTION

Chemical Waste Management Inc. (CWM) - Kettleman Hills Facility (KHF) is requesting that United States Environmental Protection Agency - Region IX (US EPA-IX) renew its approval to store, manage and dispose of polychlorinated biphenyl (PCB) wastes at its hazardous waste management facility in accordance with 40 CFR, §§761.60, 761.65 and 761.75. KHF was issued prior approvals in 1988, 1990, and 1992 to operate a PCB storage and disposal facility by the US EPA-IX under the Toxic Substance Control Act (TSCA). The 1992 approval remains current today for TSCA-regulated units, Landfill B-18 Phases I and II and the PCB Building. KHF is also permitted under the Resource Conservation and Recovery Act (RCRA) to treat, store and dispose hazardous wastes by the California Department of Toxic Substances Control (DTSC). The DTSC is authorized by the U.S. Environmental Protection Agency (US EPA) to implement the RCRA hazardous waste program.

KHF recently completed permitting and construction of a vertical expansion (Phase III) of hazardous waste Landfill B-18. The current TSCA permit does not authorize disposal of PCB waste in Landfill B-18 Phase III and PCB wastes are currently only disposed in Landfill B-18 Phases I and II. KHF is requesting approval to utilize Landfill B-18 Phase III for disposal of non-liquid PCB waste. The remainder of this application follows the required elements of a permit application as stated in 40 CFR §761. 75. Citations to specific sections of the rule are provided in individual sections.

# 2. FACILITY DESCRIPTION

## 2.1. Location [40 CFR§761.75(c)(1)(i)]

KHF is located in western Kings County, California on an approximately 1,600-acre parcel, in which 555 acres are permitted for the management of federal and state hazardous waste. The facility entrance is located approximately two and one-half miles west of Interstate 5 on State Route 41. The location of Landfill Unit B-18, within the Kettleman Hills Facility, can be found on the site map provided as Attachment 2, the Landfill B-18's coordinates are 35.9624°N, 120.0102°W.

KHF is situated in a rural area; the two population centers nearest to KHF are Kettleman City and the City of Avenal located 4.0 and 6.5 air miles, respectively, away from the site. Because of the remote location, rugged topography, low annual precipitation, and absence of surface water and commercially usable groundwater resources, the Kettleman Hills area is

predominantly uninhabited. The currently permitted waste management areas at KHF extend generally in a northwest to southeast direction across Section 34, T22S, R18E, and across Section 3, T23S, R18E, Mount Diablo Base and Meridian. Lands adjacent to KHF are predominately used for oil and gas production and cattle grazing.

2.2. Detailed Description [40 CFR§761.75(c)(1)(ii)]

A general facility description is provided in Chapter 3.0 of the Part B Permit Renewal Application, included as Appendix A. A detailed description of the Landfill Unit B-18 Phases I, II and III design plans and specifications can be found in the following four approved documents:

Construction Drawings, Landfill Unit B-18, Phases I and II and Final Closure, Kettleman Hills Facility, Kings County, California (Environmental Solutions, Inc., 7/31/90)

Construction Specifications and Quality Assurance Plan, Landfill Unit B-18, Phases I and II and Final Closure, Kettleman Hills Facility, Kings County, California (Environmental Solutions, Inc., 7/31/90)

Engineering and Design Report, Landfill Unit B-18, Phases I and II and Final Closure, Kettleman Hills Facility, Kings County, California, Volumes I and II (Environmental Solutions, Inc., 8/90)

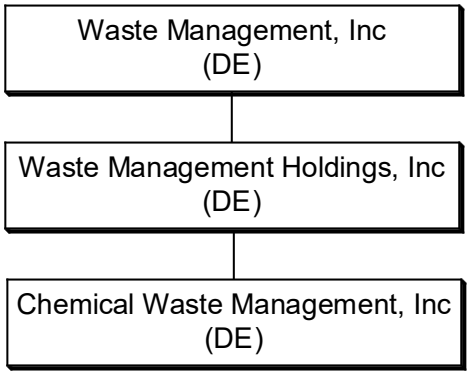
Engineering and Design Report, B-18 Class 1 Landfill, Phase III Expansion and Final Closure, Kettleman Hills Facility, Kettleman City, California, August 2011 Revision 2.

The Construction Certification Report documents listed in Appendix A of the attached TSCA Operations Plan provide as-built survey data including northerly and easterly coordinates and elevations for all components of Landfill Unit B-18 Phases I, II and III.

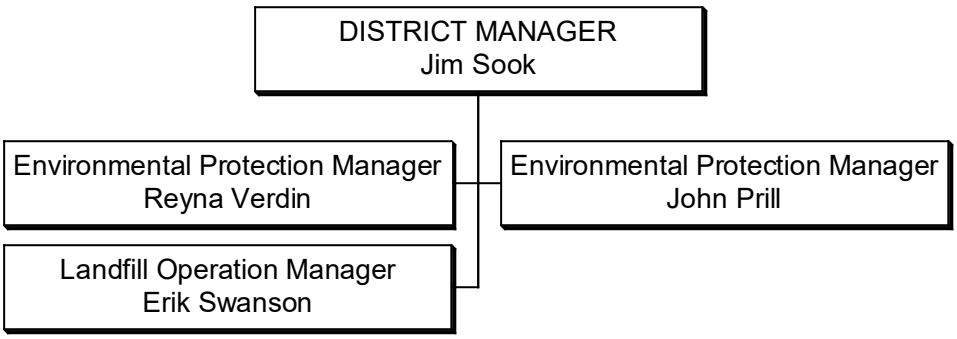
The Engineering and Design Report for Landfill Unit B-18 Phase III, listed in Appendix A of the attached TSCA Operations Plan, incorporates the engineering and design information for Phases I and II; therefore, this 2008 (Revised August 2011) engineering and design report supersedes the 1990 report and will serve as a stand-alone document for Landfill Unit B-18 Phases I, II and III. The Construction Quality Assurance Reports for Landfill B-18 Phases I, II and III are provided in the Part B Permit Renewal Application included as Appendix A of this submittal.

2.3. Corporate Structure and Personnel Qualifications [40 C.F.R. § 761.65(d)(3)]

Chemical Waste Management, Inc – Kettleman Hills Facility Corporate Structure:




Chemical Waste Management, Inc. – Kettleman Hills Facility Management Structure:




KHF has been operating under USEPA-IX approval to dispose of TSCA PCB waste since 1981 (30+ years). The current management has been at KHF for an aggregate total of 35 years, and "are qualified to engage in the business of commercial storage of PCB waste."

District Manager – Jim Sook

- 28 years in the hazardous waste industry, including TSCA waste management
- 25 years with Waste Management
- 20 years at KHF
- Certified Hazardous Material Manager
- Bachelors of Science in Biology

Environmental Protection Manager – Reyna Verdin

- 10 years in the hazardous waste industry, including TSCA waste management
- 10 years with Waste Management
- 10 years at KHF
- Bachelors of Science in Microbiology, Immunology, and Molecular Genetics

Environmental Protection Manager – John Prill

- 6 years in the hazardous waste industry
- 6 years with Waste Management
- 6 years at KHF
- Bachelor's degree in Environmental Sciences

Landfill Operations Manager – Erik Swanson

- 8 years in the hazardous waste industry
- 4 years with Waste Management
- 2 years at KHF
- Bachelors of Science in Environmental Management Technology & Criminal Justice.

Table 6 includes the information required by 40 C.F.R. §761.65(d)(3)(iv). Pursuant to requests by U.S. EPA, the table includes information dating back to January 1, 2018 through January 1, 2018.

## 3. FACILITY HISTORY

### 3.1. History of Ownership

The McKay Trucking Company began disposal operations at KHF in March 1975. In 1979, Chemical Waste Management, Inc., a wholly-owned subsidiary of Waste Management, Inc., purchased the KHF and is the current owner and operator. As per 40 CFR 761.65(d)(3)(v), there are no companies currently owned or operated in the past by the principals or key employees that are or were directly or indirectly involved with waste handling activities.

### 3.2. Operational History

The Kettleman Hills Facility has been used for waste disposal activities since the late 1960s. Land disposal of municipal sewage took place in the late 1960s to the 1970s by the first owner/operator of the facility, McKay Trucking. In June 1975, Kings County issued a Conditional Use Permit (CUP) to McKay Trucking for land disposal of oilfield wastes. In March 1977, Kings County expanded the CUP to include evaporation ponds and land disposal of

industrial wastes. McKay Trucking changed its name to Environmental Disposal Services, Inc. (EDS). EDS received a CUP to handle Class I hazardous wastes in February 1979. In April 1979, (CWM) purchased the site from EDS and began to operate a Class I treatment and disposal facility. In 1988, the facility was permitted by the both the DTSC and US EPA-IX to accept, store, treat, and dispose of waste Polychlorinated Biphenyls (PCBs). Between 1979 and 1998, the facility operated exclusively as a Class I landfill that treated, stored, and disposed of hazardous waste. In 1998, the facility converted a portion of its Class I Landfill B-19 to a Class II/III industrial non-hazardous/MSW landfill. Prior to the conversion, approximately 3 million cubic yards of hazardous waste had been placed in the unit from 1987 to 1992. A total of 20 landfill units (all but 3 are closed), 20 surface impoundments. (all but 4 are closed), 6 spreading areas (all are closed), and 1 mud pond (inactive) have been constructed at the facility over the past 38 years. The KHF currently has three operational landfills; Landfill B-18 is permitted as a 15.6 million-cubic yard Class I/II Landfill (RCRA, Non-RCRA and TSCA). Currently TSCA PCB waste is restricted to Phases I and II only. Phase III is pending US EPA- IX approval as a TSCA permitted unit. Landfill B-19 is permitted as a 3.0 million-cubic yard Class I/II landfill and a 4.4 million cubic yard Class II/III landfill. The liner system in both Landfill B-18 Class I/II and Landfill B-19 Class I/II consists of two synthetic liners combined with two (2) clay liners. A separate leachate collection and recovery system (LCRS) operates within each of the four (4) phases of Landfill B-18 and three (3) Phases of Landfill B-19. Incompatible wastes are separated by clean soil (daily cover). Landfill B-17 is permitted as a 17.8 million-yard Class II/III landfill and is designed with a double composite liner system consisting of a 60-ml thick double-sided textured HDPE and a geosynthetic clay liner. The landfill is designed with a leachate collection and recovery system.

The Kettleman Hills Facility maintains an on-site lab capable of conducting tests required for incoming waste analysis in accordance with the facility Waste Analysis Plan, provided in Chapter 12.0 of the Part B Permit Renewal application, included as Appendix A. The Kettleman Hills Facility currently utilizes NELAC and/or California ELAP certified laboratories for samples requiring organic or inorganic analyses. Post-treatment certification testing is conducted under stringent quality assurance procedures.

3.3. Regulatory History

Early in 1975, McKay Trucking entered a ten-year lease with R.L. Hewitson, owner of the property, to use the land as a disposal site. To operate the site, McKay Trucking received Waste Discharge Requirements (WDRs) (Order #75-080) from the Regional Water Quality Control Board (RWQCB) dated April 25, 1975, and CUP #785 from the Kings County Board of Zoning Adjustment. Order #75-080 found that the disposal site met the criteria for classification as a Class II-I disposal site and was therefore satisfactory for the disposal of Group I oil field waste. The permitted area of the disposal site in 1975 was 60 acres.

In September 1978, the Department of Health Services (DHS) issued a Hazardous Waste Permit to McKay Trucking. This permit allowed McKay Trucking to receive a broader range of hazardous waste for disposal. In October 1978, McKay Trucking changed its name to Environmental Disposal Services, Incorporated (EDS).

In February 1979, EDS received CUP #1192 which expanded the permitted facility to 211 acres and designated the disposal site as a Class I site, which enabled it to accept all hazardous wastes besides radioactive material. The RWQCB issued a new WDR (Order #79-52), which reclassified the site as a Class I site and allowed EDS to accept up to 400,000 gallons per day of Group 1 and Group 2 waste. Disposal operations at the site consisted of land spreading, ponding, drum burial, and limited recycling activities. CWM purchased the facility in April 1979 and has been the only operator since that time.

As required by the Federal Resource Conservation and Recovery Act (RCRA), the facility submitted a Part A application for a hazardous waste permit dated November 14, 1980 and was subsequently granted interim status by US EPA-IX. The US EPA-IX also issued a Toxic Substances Control Act (TSCA) permit in June 1980 which approved the disposal of non-liquid PCB waste at the facility.

The DHS issued a hazardous waste permit effective November 30, 1982 which substantially revised the permit issued by DHS to McKay Trucking in September 1978. The 1982 permit

allowed the facility to operate the site as a Class I disposal facility. Subsequent permit modifications were granted by DHS to allow the operation of individual waste management units, including the Drum Decant Unit, Cyanide Treatment Unit, Interim Stabilization Unit, and the Interim Drum Storage Unit.

CWM was issued a DHS final hazardous waste facility permit and a US EPA-IX final RCRA permit effective April 4 and September 14, 1988, respectively. Pursuant to a challenge of certain permit conditions undertaken by the facility, US EPA-IX issued a final modified RCRA permit effective April 25, 1989. In addition, CWM received from US EPA-IX an approval dated February 22, 1988 to dispose of non-liquid PCB waste in Landfills B-16 and B-19. This approval modified and superseded an approval dated February 16, 1983 which allowed disposal in Landfill B-16 only.

On March 30, 1990, CWM was issued a second modified permit by US EPA-IX as well as a modified permit by DHS. The US EPA-IX permit became effective 45-days after issuance and the DHS permit became effective 30-days after signature.

In March of 1991, CWM was issued a second modified permit by DHS effective upon signature, and US EPA-IX approved the final hazardous waste facility permit (third modification) on June 3, 1991. In addition, CWM received from US EPA-IX an approval dated May 19, 1992 to dispose of non-liquid PCB waste in Landfill B-18 Phase I. The US EPA-IX approval was modified in 1993 to approve disposal of non-liquid PCB waste Landfill B-18 Phase II.

CWM was issued a RCRA hazardous waste facility permit effective June 16, 2003 by the DTSC. A subsequent permit modification was granted by the DTSC to allow for the expansion of Landfill B-18 and was effective May 21, 2014.

The RWQCB issued WDRs Order #86-121 to CWM in May 1987. The Monitoring and Reporting Program portion of the WDRs were revised on December 17, 1987.

On March 25, 1988, the RWQCB, by Resolution #88-051, concluded that groundwater contained in the San Joaquin, Etchegoin, and Jacalitos Formations within one-half mile of existing and proposed surface impoundments at the facility was not a potential source of drinking water, but the RWQCB could not make a finding on the Tulare Formation due to insufficient information.

In August 1989, the RWQCB issued WDRs Order #89-136 to regulate closure of the following waste management units: unlined Landfills B-1, B-4, B-5, B-6, B-7, B-8, B-9, B-9 Extension, B-9 Expansion, B-10, B-11, B-12, B-13, B-13 Expansion, B-15, lined Landfill B-16, unlined Surface Impoundments P-5, P-6, P-7, P-8, P-10, P-11, P-12, P-12A, P-13, unlined Spreading Area S-3, and seven units (P-1, P-2, P-3, P-4, P-4.5, S-1, and S-2) which have been incorporated into some of the above disposal units that contain hazardous wastes and a post-closure monitoring program for Landfill B-14.

The RWQCB issued WDRs Order #98-058 to CWM in February 1998. These requirements are incorporated into the groundwater monitoring conditions of the DTSC hazardous waste facility permit.

The RWQCB issued WDRs Order R5-2014-0003 on January 16, 2014 to include the approval of Landfill B-18 Phase III Expansion. These requirements are incorporated into the groundwater monitoring conditions detailed in Chapters 8, 9, 24, 25, 26, 27, 28 and 29 of the Part B Permit Renewal Application, included as Appendix A.

In August 2012, the US Fish and Wildlife issued a biological opinion for the approval and addition of the Landfill B-18 expansion, included as Attachment 3 of this submittal.

Since 1975, The Kings County Planning Agency has issued fourteen conditional use permits, forty administrative approvals, four modifications, and six site plan reviews for hazardous waste and other operations at KHF. The San Joaquin Valley Air Pollution Control District (SJVAPCD) has issued numerous air pollution permits for the construction and operation of

KHF's waste management and other units, the current Title V permits are included as Appendix C.

## 4. PCB WASTE MANAGEMENT

### 4.1. Waste Management Units and Processes

With this permit application, KHF is requesting U.S. EPA Region IX approval to process TSCA regulated (40 CFR Part 761) PCB articles and wastes at the following waste management units:

| WMU | Process | Approval Request |
|---|---|---|
| Landfill B-18 Phases I & II | Landfill Disposal | Renewal of existing TSCA permit. |
| Landfill B-18 Phase III | Landfill Disposal | New Approval |
| PCB Flushing/Storage Unit | Building Interior:<br>• Drain/flushing, repacking, bulking, and temporary storage.<br><br>Building Exterior Containment Area:<br>• Drain/flushing and temporary storage, in accordance with 40 CFR 761.65(c)(1). | Renewal of existing TSCA permit. |

### 4.2. PCB Storage, Draining, Flushing and Secondary Containment

Most wastes received at KHF in containers (e.g., drums, labpacks) are sent directly to the Drum Storage Unit (DSU) for sampling, analysis and/or inspection. The primary exception is TSCA-regulated polychlorinated biphenyls (PCBs), where PCB wastes that are received at the DSU, are not temporally or permanently stored, but are transferred directly to the PCB Flushing/Storage Unit for storage and/or processing.

The KHF has the capacity to store up to 300 55-gallon drums, and 8,415 gallons (maximum capacity)/ 7,500 gallons (working capacity) in the holding tank inside the building (interior containment area) equaling a maximum capacity of 24,000 gallons. The KHF has the capacity to store up to 273 55-gallon drums, and one 5,000-gallon container placed on the existing concrete floor outside the building (exterior containment area) equaling a maximum capacity of 20,000 gallons.

PCB wastes are directed to the PCB Flushing/Storage Unit or to a TSCA permitted landfill. Wastes destined for the PCB Flushing/Storage Unit are assumed to contain TSCA regulated levels of PCBs and under the facility's Waste Analysis Plan are not subject to the usual sampling and analysis procedures for incoming loads. Liquid wastes, primarily from articles and containers, can be decanted into the PCB liquids storage tank for storage prior to off-site treatment/destruction. PCB solids and the drained PCB articles (flushed, if appropriate) are disposed in a TSCA approved onsite landfill. The liquids used to flush PCB articles may also be decanted into the PCB tank for storage prior to off-site treatment/destruction.

The PCB Flushing/Storage Unit is used for the drainage and temporary storage of TSCA regulated (40 CFR Part 761) PCB articles and wastes. PCBs are not regulated under RCRA with the exception of 40 CFR 268.48; however, they are regulated under toxic and extremely hazardous criteria of 22 CCR regulations under which this plan is submitted. In general, wastes with PCB concentrations of 50 ppm or greater are regulated under TSCA. PCB wastes received at KHF that are not subject to the regulation under TSCA are generally either processed through the facility's Final Stabilization Unit and/or landfilled in accordance with 22 CCR regulations.

As per 40 CFR 761.65(c)(4) KHF ensures that no item of movable equipment that is used for handling PCBs (i.e. forklift attachments) and PCB Items (i.e. pumps, hoses, hand tools) in the storage units, and that comes in direct contact with PCBs shall be removed from the storage unit area unless it has been decontaminated as specified in 40 CFR 761.79.

PCB articles, which are handled outdoors, conform with the requirements of 40 CFR 761.65(c). 40 CFR 761.65 (c)(7) allows for stationary storage containers for liquid PCBs to be larger than the containers that meet the DOT packaging requirements. In the unlikely event that this should occur, KHF ensures compliance with 40 CFR 761.65(c).

Most TSCA regulated PCB wastes handled at the PCB Flushing/Storage Unit are drums, PCB articles (e.g., capacitors, transformers, and contaminated equipment), PCB article containers, or bulk solids. Transformers and drums containing PCB liquids are drained and flushed with a suitable solvent in accordance with 40 CFR Part 761 regulations, and are shipped offsite for incineration. The drained oils and the flushing agents are stored temporarily in a tank or DOT approved container for eventual offsite treatment/disposal. Capacitors received at the unit, except those that are small by regulatory definition 40 CFR

Part 761, are shipped offsite for disposal. PCB solids, drained/flushed PCB-contaminated drums and articles, and small capacitors are placed in an onsite landfill in accordance with 40 CFR Part 761 and 22 CCR, Division 4.5 regulations. Other processes at the PCB Flushing/Storage Unit can include bulking and repacking of waste.

### 4.3. PCB Disposal

PCBs and PCB items shall be placed in a landfill in a manner that will prevent damage to containers or articles. Other wastes placed in the landfill that are not chemically compatible with PCBs and PCB items shall be segregated from the PCBs throughout the waste handling and disposal process. Bulk PCB-contaminated solids received at the site are taken directly to a landfill for disposal.

On occasion, a shipment of a solid PCB waste material may arrive containing a minimal amount of free liquids. 40 CFR 761.60(a)(3) allows a chemical waste landfill to dispose liquids from incidental sources (e.g., rain, load separation) when they are associated with PCB Articles or non-liquid PCB wastes, provided the liquids do not exceed 500 ppm PCBs and are not an ignitable waste. In this case, the liquids may be absorbed in situ. If a load is received with minimal amount of free liquids from incidental sources meeting the requirements of 40 CFR 761.60(a)(3), KHF's first option is to solidify these loads by bin-top solidification, utilizing clean soil. KHF will determine if bin-top solidification is an effective option by visual inspection of the load and by reviewing waste profile analytical provided by the generator to ensure compliance with 40 CFR 761.60(a)(3)(ii). If profile analytical is not available, KHF may analyze the incidental liquids or reject the waste back to the generator. Once there are no visible free liquids in the waste, in accordance with the Waste Analysis Plan, the waste will be disposed in the hazardous waste landfill. When bin-top solidification will not be an effective remediation for a wet load, the load will be rejected back to the generator.

## 5. CHEMICAL WASTE LANDFILL REQUIREMENT COMPLIANCE

Presently Landfill B-18 Phases I and II are approved by US EPA IX for disposal of non-liquid PCB wastes under TSCA. The newly constructed Landfill B-18 Phase III has not been approved for disposal of TSCA regulated wastes. Authorization to utilize Landfill B-18 Phase III for disposal of

PCB waste under TSCA regulations is being sought as part of this permit renewal application. An engineering report was prepared to comply with 40 CFR §761.75(c)(1)(iii); Engineering and Design Report, B-18, Class 1 Landfill Phase III Expansion and Final Closure, Kettleman Hills Facility, Kettleman City, California, August 2011 Revision 2, and is provided as part of the Part B Permit Renewal Application, included as Appendix A.

5.1. Liner System Description [40 CFR §761.75(b)(1) and (2)]

All technical requirements as identified in 40 CFR §761.75 (b) are described in the following discussion. The operation plan as required in 40 CFR §761.75 (b) is provided as Attachment 1.

*Soils* - TSCA soil thickness and permeability requirements are exceeded by the bottom liner design of Landfill B-18 which includes from bottom to top:

a. Vadose zone leak detection trench
b. Secondary clay liner (three and one-half feet of compacted clay, $1x10^{-7}$ cm/sec or less permeability, greater than 30 percent passing No. 200 sieve, Liquid Limit greater than 30 and Plasticity Index greater than 15)
c. Secondary geomembrane (textured high-density polyethylene (HDPE) liner of 60 mil thickness)
d. Secondary leachate collection and removal system
e. Primary clay liner (one and one-half feet of compacted clay, $1x10^{-7}$ cm/sec or less permeability, greater than 30 percent passing No. 200 sieve, Liquid Limit greater than 30 and Plasticity Index greater than 15)
f. Primary geomembrane (textured HDPE liner of 60 mil thickness)
g. Primary leachate collection and removal system
h. Two feet of operations layer

*Synthetic Membrane Liners* – High density polyethylene (HDPE) textured liners are part of the design of Landfill B-18 as described above and as described in the Construction Certification Report. The chemical compatibility of the HDPE liners (used in Phases I, II and III construction) relative to typical leachate has been tested in conformance with the procedure specified in EPA Method 9090. The compatibility data obtained from the Phases

I and II liner materials as well as industry-wide testing of liner materials with leachate indicate that the material utilized for Phase III construction will function without adverse effect due to the exposure to leachate.

5.2. Hydrologic Conditions [40 CFR §761.75(b)(3)]

The hydrologic conditions at the Kettleman Hills Facility are described in Chapter 25.0 of the Part B Permit Renewal Application, included as Appendix A. A more detailed description can be found in the following document, incorporated by reference into the Part B Permit Renewal Application: Hydrogeologic Characterization, Kettleman Hills Facility, Kings County, California (EMCON Associates, Inc., November, 1985, revised December 1986).

a. The bottom elevation of the landfill is a minimum of 300 feet above historical water tables.
b. No flood plains, shore lands or groundwater recharge areas are located within the facility boundary.
c. There is no hydrologic connection between the site and standing or flowing surface water. There is no permanent surface water at the disposal site area. There is one construction water storage pond on CWM property, at the north end of the active facility. Run-off from non-active areas of the facility is retained on-site by engineered surface water management reservoirs. For more information, the reviewer is referred to the Surface Water Control Plan for the Kettleman Hills Facility (Centra Consulting, Inc., October 23, 2009). The current and proposed engineering and design reports for Landfill B-18 also describe run-on control, run-off control, and general storm water management for the landfill.
d. Monitoring wells and leachate systems are described in following sections

5.3. Flood Protection [40 CFR §761.75(b)(4)]

The Kettleman Hills Facility is not located in a 100-year flood zone. Run-off from a 24-hour, 25-year storm will be diverted away from the landfill, as discussed in Storm water Pollution Prevention Plan (Golder Associates, June 2015), as well as the current Engineering and Design Reports for Landfill B-18.

5.3.1. Surface Water Hydrology

There is no hydrologic connection between the site and standing or flowing surface water. There is no permanent surface water at the disposal site area.

5.3.2.Run On/Run Off Control

Run-off from non-active areas of the facility is retained on-site by engineered surface water management reservoirs.

During the design for Phase III it was determined that the 24-hour Probable Maximum Precipitation (PMP) event had increased from 7.4 inches to 10.3 inches. A revised design was incorporated into the November 2008 (Revised August 2011) Engineering Design Report and associated Construction Quality Control Plan.

The changes in the run-off control bench and slope design results are as follows:

- 28-foot wide bench, instead of the approximately 23-foot wide bench (at the waste grade);
- Approximately 3.5:1 slopes, instead of the approximately 3.6:1 slopes between individual benches;
- Bench sloped longitudinally at 2 percent, instead of 3 percent for surface water drainage of the cover; and
- The plans for the asphalt-lined V-ditch channel and gravel in the original design are no longer required with the above modifications of the bench channel to accommodate the increased flow from the Probable Maximum Precipitation.

A more detailed discussion is included in the Storm water Pollution Prevention Plan (Waste Management, Inc, June 2015) included as part of the Part B Permit Renewal Application provided as Appendix A. The engineering and design reports for Landfill B-18 also describe run-on control, run-off control, and general storm water management for the landfill

5.4. Topography [40 CFR §761.75(b)(5)]

A topographic map of the KHF is included as Attachment 2. Site topography is presented in Chapter 4.0 of the Part B Permit Renewal Application included as Appendix A.

## 5.5. Groundwater Monitoring Systems [40 CFR §761.75(b)(6)]

The monitoring systems described in 40 CFR §761.75(b)(6) include three components: water sampling, groundwater monitoring wells; and water analysis. As specified in 40 CFR §761.75(b), these requirements apply to chemical waste landfills used for disposal of PCBs and PCB items. Landfill B-18 at the KHF is an active waste management unit (WMU) used for disposal of PCBs and PCB items. Landfills B-14, B-16, and Phases 2 and 3 of B-19 are closed WMUs (closed TSCA WMUs) that were used for the disposal of PCB and PCB items. The monitoring systems for Landfill B-18 and the closed TSCA WMUs are described in the following documents:

1) Waste Discharge Requirements Order R5 2014-0003 and Monitoring and Reporting Program R5 2014-0003 adopted by the RWQCB on January 16, 2014, included as Appendix B.

2) *TSCA Groundwater Monitoring Addendum to Site-Specific Monitoring Plan,* Kettleman Hills Facility, Kings County, California. Amec Foster Wheeler, Inc. April 16, 2018., (Addendum).

These two documents are collectively referred to as the "monitoring plan". Each component of the monitoring systems described in 40 CFR §761.75(b)(6) for Landfill B-18 monitoring are addressed in the following subsections.

### 5.5.1. Water Sampling

40 CFR §761.75(b)(6)(i) requires groundwater and surface water sampling. No surface water samples are collected because, no permanent surface watercourses are present on or near the KHF. As required by 40 CFR §761.75 (b)(6) and the regulations established by the RWQCB, baseline groundwater samples from Landfill B-18 wells were collected and analyzed prior to waste acceptance into the unit. The PCB baseline data and PCB data collected since that time are maintained in the KHF groundwater database. Baseline groundwater quality samples for Phase I and II of B-18 were collected from monitoring wells K10, K11, K18, K22, K32R, K33, K39, K51, K53, and K57 in 1991. Review of groundwater data from samples collected prior to placement of waste into Phase I and II of B-18 (1991) indicate: PCBs and chlorinated organics were not detected (Tables 4.1 and 4.4); the field measurements for pH varied

between about 7 and 7.75 standard units (Table 4.2); and the field measurements for specific conductance were typically between 10,000 and 17,500 micromhos per centimeter (µmhos/cm) (Table 4.3). In two wells, the specific conductance was as low as 4,000 µmhos/cm (Table 4.3).

Baseline groundwater quality samples for Phase III of B-18 were collected from monitoring wells E02, K38, K58, K60, K67, K68, and K71R during 2016 and 2017. Review of groundwater quality data for samples collected for Phase III of the B-18 WMU indicate: PCBs were not detected (Tables 5.1); the field measurements for pH varied between about 7 and 7.4 standard units (Table 5.2); and the field measurements for specific conductance were typically between 6,000 and 21,000 micromhos per centimeter (Table 5.3). Other than well E02, chlorinated organics were not detected (Table 5.4). Chlorinated organics, including 1,1-dichloroethene and trichloroethene, associated with a release from a non-TSCA WMU are routinely detected in well E02.

Aroclor analytical results, dating back to October 2, 1984, are maintained in the sampling database. These PCB analytical data include results of samples collected from groundwater monitoring wells and leachate risers.

Changes to the KHF groundwater monitoring program that affect monitoring PCBs in the TSCA groundwater monitoring wells must be approved by U.S. EPA.

5.5.2. Groundwater Monitoring Wells

40 CFR §761.75(b)(6)(ii) requires (A) groundwater monitoring wells and (B) specifies minimum construction standards for the monitoring well. The groundwater monitoring wells for the TSCA waste cells are listed in Table 1 of the Addendum, included as Attachment 4 of the Application. Groundwater monitoring well construction information is included in Table 2 of the Addendum.

The earth materials underlying the KHF are heterogeneous, vary from impermeable to permeable, and uniformly slope (dip) in one direction. Groundwater occurs beneath the KHF in steeply dipping saturated sandstone beds, or water-bearing zones (WBZs), which are isolated hydraulically from one another by siltstone and claystone intervals designated as low-permeability zones. These zones dip about 30 degrees

uniformly to the southwest. Significant variations in groundwater elevations between adjacent WBZs attest to the hydraulic isolation of individual WBZs. Groundwater depths range from approximately 300 to 520 feet below ground surface.

Permeability of the WBZs and low permeability zones cropping out beneath the KHF typically varies from less than $10^{-10}$ cm/sec to $10^{-4}$ cm/sec in the discrete dipping stratigraphic zones. The more permeable zones or WBZs are the most likely pathways for potential leak migration.

A map of the monitoring well network at the facility is included as Figure 2 of the Addendum. WBZs that underlie a WMU are monitored using one or two groundwater quality monitoring. Using this monitoring approach, Landfill B-18 groundwater monitoring network currently consists of 11 groundwater monitoring wells completed in the Mya A, Mya C/D, Pecten A, Pecten B, Trachycardium A, and Trachycardium B WBZs. The closed TSCA WMU groundwater monitoring network consists of 13 groundwater monitoring wells completed in the Neverita A, Neverita B, Tuffaceous A, Tuffaceous B, and Mya A WBZs.

This monitoring approach satisfies the regulatory requirements for operating a hazardous waste management unit.

The State Siting Criteria Equivalency Assessment for Chemical Waste Management, Inc.'s Kettleman Hills Facility (Meredith/Boli & Associates, October, 1985), referenced in Chapter 25.0 of the Part B Permit Renewal Application, shows that the absorptive retention capacity of the vadose zone at KHF is much greater than the volume of liquids which might possibly leach through a solids-only landfill. Thus, while KHF has installed a sufficient number of wells to comply with prescriptive requirements of TSCA and RCRA, the primary means of leak detection shall be through operational leachate management and monitoring of the secondary and vadose zone leak detection systems.

Monitoring Well Design – As-built documentation for the Landfill B-18 groundwater monitoring wells is retained within the facility operating record. Groundwater monitoring well construction information is also summarized on Table 2 of the Addendum (Amec Foster Wheeler, April 17, 2018). Well sampling equipment and procedures are described in the most recently approved version of the site-specific

monitoring plan included as part of the Part B Operating Permit. Wells are purged as part of the sampling procedures, in accordance with the approved monitoring plans.

5.5.3. Groundwater Sample Analysis

40 CFR §761.75(b)(6)(iii) requires groundwater samples be tested for PCBs, pH, specific conductance, and chlorinated organics and that analytical data be maintained. The Addendum (Amec Foster Wheeler, April 17, 2018) describes TSCA groundwater monitoring. Groundwater samples from the wells monitoring the closed TSCA waste cells, B-14, B-16, and Phases 2 and 3 of B-19, are sampled at least annually for pH (field), electrical conductance (field), and chlorinated organics and every 5 years, during the site constituent of concern (COC) groundwater monitoring event, for PCBs.

Groundwater samples from the wells monitoring the active TSCA waste cell B-18, are sampled at least annually for PCBs, pH (field), electrical conductance (field), and chlorinated organics.

Groundwater samples from the site monitoring wells are also tested for constituents and on the schedule specified in the most recently approved version of the SSMP. A complete list of groundwater parameters for Landfill B-18 wells and the closed TSCA WMU wells is presented in the SSMP included as part of Part B Permit Renewal Application provided as Appendix A.

Analyses are carried out using the analytical methods specified in the SSMP, as well as any agreements between KHF, RWQCB and DTSC, and the analytical labs as methods are updated.

In accordance with 40 CFR §761.180(d), analytical data for water analysis obtained in compliance with 40 CFR §761.75(b)(6)(iii) will be maintained until at least 20 years after the chemical waste landfill is no longer used for the disposal of PCBs.

5.6. Leachate Collection and Removal System [40 CFR §761.75(b)(7)]

In addition to the design plans and drawings included in the reports listed in Appendix A of the facility TSCA Operation Plan (Attachment 1), the reviewer should refer to the Construction Certification Report documents for Landfill B-18, Phases I, II and III, for construction details of the compound leachate collection system.

5.6.1. Leachate Collection System Design

Primary System – A primary leachate collection system is installed above the primary geomembrane liner. This system consists of a geotextile/geonet/geotextile layer in combination with a granular drainage layer which has permeability of $10^{-2}$ cm/sec or greater. The system is designed to convey all liquid which percolates through the waste to a sump for removal. Primary access to the sump for liquid removal is via a dedicated pump and an 8" O.D. sideslope riser access tubing, including a liquid level detection device. A 24" O.D. vertical riser provides secondary access to the sump.

Secondary System – A secondary leachate collection system is installed between the primary and secondary composite liners. This system consists of a geotextile/geonet/geotextile layer in combination with a granular drainage layer which has permeability of $10^{-2}$ cm/sec or greater. This system is designed to convey all liquid which penetrates the primary liner to a sump for removal. Primary access to the sump for liquid removal is via a dedicated pump and an 8" O.D. sideslope riser access tubing, including a liquid level detection device. An additional 8" O.D. sideslope riser access tubing provides secondary access to the sump.

Vadose System / Unsaturated Zone - This system is constructed beneath the secondary clay liner to serve as an indicator of secondary liner leakage. The vadose trench is lined with geomembrane, geotextile and a granular drainage layer which has a permeability of $10^{-2}$ cm/sec or greater and is equipped with a dedicated pump and an 8" O.D. sideslope riser access tubing, with a liquid level detection device.

5.6.2. Monitoring of Leachate Collection System

The leachate collection system will be inspected at least weekly for liquid accumulation. The system is operated and maintained as required by the regulations, as well as by Inspection Program Plan in Chapter 31.0 of the RCRA Renewal Permit Application, and the WDR Order No. R5-2014-0003. The current engineering and design reports for Landfill Unit B-18 also describe the operation and maintenance of

the leachate collection/leak detection systems. The facility TSCA Operation Plan (Attachment 1) describes the leak detection monitoring of the leachate collection system, including the establishment of Action Leakage Rates (for the secondary leachate collection system) and Trigger Levels (for the vadose system). In addition to the standard pre-disposal analyses required by the WAP for each waste load, the representative sample of a leachate load will be analyzed for PCBs. If the concentration of PCBs in the sample is equal to or greater than 50 mg/l (ppm), that load of leachate will be managed in compliance with 40 CFR §§761.60 (a) and 761.70. If the concentration of PCBs is less than 50 mg/l (ppm), that load of leachate will be managed in accordance with applicable RCRA regulations. Liquids (if sufficient quantities can be collected for analysis) in the leachate collection system will be annually analyzed, using US EPA Methods or approved equivalent methods, for the inorganic and organic constituents specified in the WDRs Order No. R5-2014-0003. Annual leachate analysis is conducted under WDR R5-2014-0003.

## 5.7. Quarterly Wipe Sampling Plan

### 5.7.1. Sampling Schedule

Wipe samples will be collected quarterly from the PCB Flushing/Storage Unit during the second week of the first month of each quarter (January, April, July, October). A total of six (6) samples will be collected each quarter.

Onsite personnel will be responsible for conducting the sampling; once per year, CWMI will hire a third party to collect the wipe samples for that quarter.

If wipe sampling cannot occur within the second week of the first month within a given quarter, US EPA IX will be notified prior to the scheduling period with the rescheduled date.

### 5.7.2. Sample Areas

The PCB Flushing/Storage unit includes areas where PCBs are processed and/or stored, i.e. building interior and exterior loading/containment area and non-PCB processing areas (clean area inside building, walkways adjacent to building). Each quarter two (2) floor wipe samples will be collected from each of the PCB processing

areas (i.e. building interior and exterior loading/containment area), one (1) floor wipe sample will be collected from the designated non-PCB processing area, and one (1) sample will be collected from one of the doorknobs/door handles within the unit. A sampling grid (See Attachment 9) will be used for selection of the sampling locations; each grid is approximately one (1) square meter and will be assigned a unique identification number. Doorknobs and door handles used within the building will also be assigned a unique identification number. The Excel® random number function will be used to determine the sampling grid/locations for each of the sampling areas (RAND() * (b-a)+a), the random number will be rounded to the nearest whole number to select the grid square. If a grid overlaps two area types, the grid will be included in both areas for random selection of the grid to be sampled. If the randomly selected grid is obstructed, (i.e. large transformer, tool storage container) a sample will be collected from an adjacent area as close to the selected grid as possible.

The estimated number of sample whole and partial grids in the PCB Flushing/Storage Unit are approximately:

- PCB Processing Area: 457 grids / partial grids
    - Interior: 198 grids / partial grids
    - Exterior: 269 grids / partial grids
- Non-PCB Processing Area: 94 grids / partial grids
- Doorknobs/Door Handles: 4

5.7.3. Sampling Procedures

Samples will be collected from within the selected whole or partial square meter grid; if visual staining or contamination is evident then sampling will be biased to those areas. Samples will be collected by wiping a standard 100 $cm^2$ template; for doorknobs/door handles, the sample will be collected by wiping both sides of the doorknob/door handle. Standard EPA wipe sampling protocol will be followed for all sample collection and analysis.

5.7.4. PCB Contamination Thresholds

The standard threshold concentration of 10 µg/l00 $cm^2$ will be used to define PCB contamination for non-porous surfaces and 1 ppm for porous surfaces, for purposes of this sampling plan, coated concrete floors will be considered non-porous surfaces provided the coating is intact.

If a sample shows PCB concentrations above the threshold, the extent of PCB contamination will be fully delineated and a cleanup process in accordance with 40 CFR 761.79 or 40 CFR 761 Subpart G, will be initiated promptly.

If any sample exceeds 10 µg/100$cm^2$, EPA will be promptly notified and a report providing results of the sampling event will be sent to US EPA IX within 30 days of receiving the sampling results.

5.7.5. Records & Reports

A brief written report providing the quarterly wipe sampling results will be submitted along with the Annual Report prepared in accordance with 40 CFR 761.180(b)(3). The report will contain the following data for the previous four quarters of wipe sampling:

- Location of sampling;
- Dates samples were collected;
- Name of person & company collecting samples;
- Analytical Reports;
- Actions taken to decontaminate areas found to be greater than 10 µg/100 $cm^2$.

If any sample exceeds 10 µg/100 $cm^2$, EPA will be promptly notified and a report providing results of the sampling event will be sent to US EPA IX within 30 days of receiving the sampling results.

Wipe sampling reports will be submitted to the Manager of the RCRA Facilities Management Office.

Manager, Permits Office (LND-4-2)
Land Division
U.S. Environmental Protection Agency – Region 9
75 Hawthorne Street
San Francisco, CA 94105

Records of the laboratory results for each quarter, a copy of the annual report submitted to US EPA, and any records of cleanup (in accordance with chosen cleanup procedure) will be maintained at the CWMI facility, and will be readily available for EPA inspection.

5.8. Chemical Waste Landfill Operations [40 CFR §761.75(b)(8)]

A detailed comprehensive description of facility operations is available in the Part B Permit Renewal Application provided as Appendix A. Selected portions that apply primarily to PCB waste operations are discussed herein.

a. PCBs and PCB items shall be placed in the landfill in a manner that will prevent damage to containers or articles. Other wastes placed in the landfill that are not chemically compatible with PCBs and PCB items shall be segregated from the PCBs throughout the waste handling and disposal process. Specific waste management procedures are discussed below.

   1) Waste Receiving and Analysis – Trucks conveying all types of wastes access the facility through the main entrance complex. In each instance, manifests are checked against pre-acceptance waste data in accordance with the WAP (Chapter 12.0 of Part B Permit Renewal Application) prior to waste acceptance.

   2) PCB Waste Management – PCB-contaminated wastes are directed to the PCB Flushing/Storage Unit or to a TSCA-permitted landfill. Wastes destined for the PCB Flushing/Storage Unit are assumed to be contaminated with TSCA-regulated levels of PCBs and are not subject to the usual sampling and analysis procedures for incoming loads. Liquid wastes, primarily from articles and containers, can be decanted into the PCB liquids storage tank for storage prior to off-site treatment/destruction. PCB solids and the drained PCB articles (flushed, if appropriate) are buried on-site in a TSCA approved landfill. The liquids used to flush PCB articles may also be decanted to the PCB tank for storage prior to off-site treatment/destruction.

A TSCA Operations Plan has been developed and is included as Attachment 1. This plan includes detailed explanations of the procedures to be used for:

- Recordkeeping Procedures
- Surface Water Handling Procedures
- Landfill construction (excavation) and Operation (Backfilling)
- Waste Segregation/Burial Coordinates
- Access/Vehicle and Equipment Movement
- Leachate Collection Systems
- Sampling and Monitoring Procedures
- Contingency Plan
- Security Measures

5.9. Supporting Facilities [40 CFR §761.75(b)(9)]

The KHF has in-place security provisions that are intended to prevent the unknowing entry, and minimize the possibility for the unauthorized entry of persons or livestock into active waste management areas. In general, the KHF is not open to the general public, and entry is limited to authorized personnel and waste haulers, contractors and escorted visitors. Furthermore, the remote location and isolation of the facility from human habitations minimize the potential for public encroachment. Access is controlled by automated traffic gates, or by a manned attendant, during operational hours. During non-operational hours, the site's access is controlled by locked gates, barbed wire fencing, and chain link fencing, above-ground chain link fencing and locked gates, or by a manned attendant at the entrance to the facility. All visitors are required to check in at the Administration Building prior to being allowed on site.

The KHF operations area, approximately 555 acres, is surrounded by an approximately 6-foot high chain link fence. A second fence, comprised of a barbed wire on steel posts, surrounds the perimeter of the 1,600-acre KHF owned parcel. The barbed wire fencing extends along both sides of the site access road to the gate at State Route 41. Gates which access the active waste management areas are kept locked, unless needed. Facility managers and supervisors generally carry keys to these gates when on-site. Roads are adequately maintained to and within the site that support the operation and maintenance of the site without causing safety or nuisance problems or hazardous conditions by proactive maintenance activities; grading,

dust control and signage. The site is operated and maintained in a manner that prevents safety problems or hazardous conditions resulting from spilled liquids and windblown materials.

6. SAMPLING AND MONITORING [40 CFR §761.75(c)(1)(iv)]

   See the previous Monitoring System discussion within Sections 5.5, 5.6, and 5.7 of this application.

7. EXPECTED WASTE VOLUME OF PCBs [40 CFR§761.65(d)(3)(vi) and §761. 75(c)(1)(v)]

   Approximately 19,794,313 kg of PCB solid waste were landfilled at the Kettleman Hills Facility in 2015. Upon reviewing the 2012-2015 PCB Annual Reports, the annual disposal amounts ranged between 6,449 and 19,794,313 kg. The quantities are subject to change dependent upon government regulation, competition, and available market. Total capacity of Landfill B-18 is approximately 10.7 million cubic yards for Phases I and II. With Phase III, the total capacity of Landfill Unit B-18 will be approximately 15.6 million cubic yards.

8. DESCRIPTION OF OTHER WASTES [40 CFR §761.75(c)(1)(vi)]

   Landfill B-18 is used for all types of RCRA, California-regulated, and non-hazardous wastes. The list entitled "List of Hazardous Wastes Accepted at the Kettleman Hills Facility" [Appendix A to the Part B Permit Renewal Application] contains a complete list, by federal and state hazardous waste codes, of all hazardous wastes accepted. Wastes which will not be disposed at Landfill B-18 include the following:

   - Explosives;
   - Infectious Waste;
   - Radioactive Waste (except as allowed by the Hazardous Waste Facility Permit, and described in the General Description section of the Operation Plan);
   - Wastes Containing Free Liquids, except as provided in 40 CFR §264.314 (c) and applicable land disposal restrictions;
   - Reactive Waste, except as provided in 40 CFR §264.316(e) and applicable land disposal restrictions; and
   - Ignitable Waste as defined in 40 CFR part 261, unless treated.

9. FACILITY OPERATIONS PLAN [40 CFR §761.75(c)(1)(vii)]

Landfill operations for Landfill B-18 are described in the attached TSCA Operation Plan (Attachment 1). Additional operation information is available in the Part B Permit Renewal Application included as Appendix A of this submittal.

10. COMMERCIAL STORAGE FACILITIES [40 CFR §761.65]

TSCA regulated PCB wastes may be stored at the KHF while awaiting transfer to an off-site storage and/or disposal facility, awaiting further processing and/or awaiting disposal in Landfill B-18. Any container or article containing PCBs put into storage at KHF will be marked as required in 40 CFR §761.40 (a). In general, all PCB containers or PCB containing articles will be stored so that the labels can be easily read by any person inspecting or servicing the marked PCB items. All doors at the KHF PCB Building are marked as per 40 CFR 761.45(a)

Chemical Waste Management, Inc. – Kettleman Hills Facility certifies:

*"Pursuant to 40 C.F.R. §§ 761.65(d)(2)(iii) and under the possibility of civil and criminal penalties of law for the making or submission of false or fraudulent statements or representations (18 U.S.C. §§ 1001 and 15 U.S.C. §§ 2615), I hereby certify that the Chemical Waste Kettleman Hills facility located near Kettleman City, CA is in compliance with the storage facility standards for PCBs specified at 40 C.F.R. §§ 761.65(b) and 761.65(c)(7)."*

Signed: Jim Sook Date: 4/18/2018

Jim Sook, District Manager

10.1. Containerized Storage

Table 1 summarizes the container storage information for the PCB Flushing/Storage Unit for which KHF is requesting approval for TSCA-regulated storage. What follows is a description of the information listed on that table..

10.1.1. PCB Flushing/Storage Unit

The PCB Flushing/Storage Unit consists of an enclosed building with a roof and walls to prevent the entrance of precipitation or run-on. In addition, there is a continuous 1.5-foot concrete curb inside and adjacent to the walls of the building to contain spills that may occur within the building. The reinforced concrete floor is sealed with vinyl epoxy resin and is sloped to drain accumulated liquids away from stored articles and containers to a non-discharging sump. A vehicle access door is located at the southeast corner of the building. Bulk liquid PCB wastes are normally loaded and offloaded with the transport vehicle positioned such that the active connections and transfer hose are located inside the building or within the outside containment pad. The outside containment area consists of a reinforced concrete floor, a continuous 1.5-foot concrete curb, and a non-discharging sump. The floor, curb, and sump are all coated with vinyl epoxy resin. Vehicle access to the building is through the outside containment area. A diagram of the PCB Flushing/Storage Unit is included in Attachment 5 of this submittal.

In accordance with 40 CFR Part 761 regulations, the floor and curbing of the PCB Flushing/ Storage Unit have the capacity to contain at least two times the volume of the largest tank or 25 percent of the total internal volume of PCB articles or containers stored therein, whichever is greater. Because the building is roofed and curbed, provisions for precipitation containment are not required. The outside containment area requires provisions for precipitation.

The PCB building (interior) can store 150 drums on 38 pallets on the existing concrete floor and provide 2 times the secondary containment capacity of the largest vessel (i.e. tank capacity of 8,415 gallons (maximum capacity)/7,500 gallons (working capacity)). Additional drums may be stored within the building by double stacking drums and/or installation of a rack system to elevate the drums and pallets above the secondary containment wall. Since stacked drums or drums on the racks will not displace any of the secondary containment capacity to contain the spill from the tank, the quantity of drums does not factor into the evaluation. From a practical limit, a maximum of 300 drums will be stored within the PCB building. Attachment 6 includes

the PCB Building Secondary Containment (Interior) Volume Calculations, dated 05/17/2012.

The KHF has the capacity to store up to 273 55-gallon drums, and one 5,000-gallon container placed on the existing concrete floor of the outside containment area (exterior containment area) equaling a maximum capacity of 20,000 gallons. Attachment 7 includes the PCB Building Secondary Containment (Exterior) Volume Calculations, dated 02/12/2013.

KHF ensures compliance with the requirements of 40 CFR 761.65(c)(1)(iv) for the storage area adjacent to the PCB Flushing/Storage Building. The KHF Spill Prevention Control and Countermeasure Plan (SPCC) was last updated October 2016, and includes the PCB Building Outside Containment Area, it is included as Attachment 12. Storage on the outside containment area is limited to the temporary storage of those PCB Items listed in § 761.65(c)(1). The PCB Item or PCB container must indicate the date the item was removed from service and can only be stored for up to thirty days from the date of their removal of service.

The PCB Flushing/Storage unit includes a draining area for PCB articles, both inside and outside the building, where PCB liquids are drained from transformers and other PCB articles while within containment trays and/or on plastic material. PCB articles handled outdoors conform to requirements of 40 CFR 761.65(c). Trays are managed as clean and are lined with plastic material. Generally, sorbent material is placed in the containment tray or on the plastic to contain drips or spills that may occur during the processing of PCB wastes in the draining area. After draining is completed, the sorbent and lining materials are removed from the tray (if a tray is used) and properly disposed. If trays or other equipment are contaminated, the trays will either be disposed of appropriately or a thorough decontamination occurs in accordance with 40 CFR 761.79. When not in use, clean trays are stored inside the PCB Building.

## 10.2. Storage in Tanks

### 10.2.1. PCB Flushing/Storage Unit

The PCB tank has a design capacity of 10,082 gallons. Based on secondary capacity restraints, the tank is limited to a maximum secondary capacity of 8,415 gallons. To

stay below the maximum secondary capacity, a working capacity of 7,500 gallons has been established. The tank is made of carbon steel and is 12 feet in diameter and 12 feet in height. The bottom of the tank is 1/4" and the sides and top of the tank is 3/16". The tank is positioned on top of a 4-inch round-aggregate bolster, which allows for early detection of potential leaks. The tank is vented through the roof where the vent tube is fitted with a carbon canister filter which prevents buildup of pressure greater than hydrostatic pressure. A diagram illustrating piping, instrumentation and process flow of the system, and design drawings for the tank are included in Attachment 8. Design specifications for the tank are also included in Chapter 15.0 of the Part B Permit Renewal Application.

Tank integrity is periodically tested in accordance with the Inspection Program Plan in Chapter 31.0 of the Part Permit Renewal Application. The PCB tank wall thickness readings have been taken annually since 1986. The results are compared to the API 650 Welded Steel Tanks for Oil Storage 1/16-inch thickness for operational integrity.

11. LOCAL, STATE, OR FEDERAL APPROVALS [40CFR §761.75(c)(1) (viii)]

The agency approvals for waste acceptance into Landfill B-18 Phases I, II and III are listed in Table 2 Federal, State, and Local Permits and Approvals and are included as Attachment 10.

12. SCHEDULES/PLANS FOR COMPLIANCE [40 CFR §761.75(c)(1)(ix)]

This requirement is not applicable.

13. OTHER INFORMATION [40 CFR §761.75(c)(2)]

As requested by US EPA-IX letter titled Notice of Deficiency ("NOD") for Toxic Substances Control Act ("TSCA") Permit Renewal and Modification Application dated April 1, 1997, as revised, on May 10, 2010, KHF provided the responses to comments dated September 22, 2011 and have been incorporated into this document and/or the appropriate Sections or Plans.

13.1. Summary Table for Regulatory Submittals

The KHF submits various reports to several regulatory agencies as part of the facility's ongoing operations. A summary table for regulatory submittals related to TSCA operations or units, is included as Table 3 of this submittal.

13.2. Requested Waivers [40 CFR §761.75(c)(4)]

In accordance with 40 CFR §761.75(c)(4), CWM is requesting waivers to 40 CFR §761.75(b) listed below be renewed and/or approved with this application.

13.2.1. Groundwater Monitor Wells – 40 CFR §761.75(b)(6)(ii)(B)

The technical specifications require groundwater monitor wells be pumped to remove the volume of liquid initially contained in the well before obtaining a sample for analysis. This is not the purge method specified in the currently approved site-specific monitoring plan implemented as part of WDR-R5-2014-0003 and the Part B Permit Application. The purge process specified in those plans consists of removing the volume of water present in the pump discharge pipe, then removing the volume of water in the well casing above the pump, and continuing to pump while checking water quality indicator parameters (WQIPs). The volume of water in the well casing above the pump is the initial purge volume (IPV). After pumping the IPV, purging continues while checking that four consecutive WQIPs collected at 1-minute intervals have achieved the stabilization criteria. Purging continues until the stabilization criteria are met or 3 IPVs are removed from the well, at which point samples are collected. The purge process, including a list of WQIPs and process for sampling low yielding wells, are included in the most recent approved version of the site-specific monitoring plan.

At the request of Department of Toxics Substance Control (DTSC), an investigation of the groundwater purging method, including the WQIP stabilization at the KHF, was completed during 2005 through 2007. Data collected and the outcome of the investigation are discussed in three documents: Evaluation of Pre-Sample Purge Methods (Geomatrix 2007), Review of Evaluation of Pre-Sample Purge Methods

(DTSC 2008), and Addendum to Evaluation of Pre-Sample Purge Methods (AMEC 2008). The investigation concluded that the purge method utilized at the KHF provides a sample that is representative of in-situ groundwater conditions near the well.

Instead of a single well volume purge specified in 40 CFR 761.75(b)(6)(ii)(B), CWM requests a waiver for the TSCA waste cell monitoring wells to use the existing KHF site-specific purge process described above, which has been shown to be sufficient under site conditions to provide representative environmental samples.

13.2.2. Water Analysis – 40 CFR §761.75(b)(6)(iii)

The technical specifications require analysis using analytical procedures specified in 40 CFR part 136 as amended in 41 FR 52779 on December 1, 1976. These are not the parameters or test methods specified in WDR-R5-2014-0003 or in the currently approved site-specific monitoring plan included in the Part B Permit Application. CWM requests renewal of the waiver to allow for the substitution of SW-846 Methods, 6010, 8260, 8270, 8082, 8081, and other methods as required, and the parameters listed in the currently approved WDR (WDR-R5-2014-0003) and the currently approved site-specific monitoring plan included in the Part B Permit Application.

13.2.3. Leachate Collection - 40 CFR §761.75(b)(7)

The technical specifications indicate that the leachate collected should be tested for the parameters, using the methods specified, in 40 CFR §761.75(b)(6)(iii). CWM outlines the testing approach for leachate in the TSCA Operation Plan, testing of the leachate is conducted in accordance with the parameters and test methods specified in WDR-R5-2014-0003 and the facility Waste Analysis Plan included in the Part B Permit Application. In addition, CWM outlines the approach for handling accumulated precipitation in the Surface Water Handling Procedures section of the TSCA Operations Plan. CWM requests renewal of the waiver to allow sampling analysis, and management of run-on, accumulated precipitation, and

leachate in accordance with the TSCA Operation Plan, WDR-R5-2014-0003, and the facility Waste Analysis Plan included in the Part B Permit Application.

13.2.4. Supporting Facilities - 40 CFR §761.75(b)(9)

The technical specifications indicate that a six-foot woven mesh fence be placed around the site to prevent unauthorized entry. As outlined in Section 5.9 of this application, the KHF operations area is surrounded by an approximately 6-foot high chain link fence. A second fence, comprised of a barbed wire on steel posts, surrounds the perimeter of the 1,600-acre KHF owned parcel. Additional fencing around Landfill B-18 and the PCB Flushing/Storage Unit is not required since those waste management units lie within the fenced KHF operations area, see Attachment 2 for the existing facility layout outlining the operations area fencing. CWM requests renewal of this waiver to allow for the current operational area fencing to satisfy the requirements of 40 CFR §761.75(b)(9).

13.2.5. Ignitable Wastes - 40 CFR §761.75(b)(8)(iii)

The technical specifications indicate that ignitable wastes not be disposed in areas authorized for PCB disposal. Landfill B-18 does not accept wastes which exhibit the characteristics of ignitability listed in 40 CFR §261.21 and 22 CCR §66261.21 (liquid, solid, compressed gas, or oxidizers). The only exception to this is for disposal of small containers of hazardous waste in overpacked drums (lab packs) under the provisions of 40 CFR §264.316 and 22 CCR §66264.316. CWM believes that the intent of 40 CFR §761.75(b)(8)(iii) is to prevent the disposal of significant quantities of ignitable liquid material which may create a potentially hazardous situation. The overpacking requirements of the 40 CFR §264.316 and 22 CCR §66264.316 effectively eliminate the possibility that any ignitable waste placed in the landfill would actually ignite or otherwise react adversely with PCB articles or any other TSCA or RCRA waste place in the landfill. CWM believes that the lab-packing of ignitable wastes provides adequate protection to prevent

unreasonable risk of injury to health or the environment and requests renewal of this conditional waiver from the provisions of 40 CFR §761.75(b)(8)(iii).

## 14. CLOSURE PLAN AND FINANCIAL ASSURANCE [40 CFR §761.65(e) – (h))]

### 14.1. Closure and Post-Closure Plans

Closure and post-closure plans for the KHF are included in Closure and Post-Closure Plans, Kettleman Hills Facility (Golder 2018) submitted as Attachment 11. The plans address how and when closure of existing active and inactive units and final closure of KHF will occur. Post-Closure monitoring and maintenance is also addressed.

A copy of the Closure and Post-Closure Plans and subsequent approved amendments will be maintained onsite until the Post-Closure period for the entire facility begins. CWM will amend the plans as necessary when changes in facility design or operation plans affect the proposed closure or post-closure activities.

As per 40 CFR 761.65(e)(6)(iv), KHF shall complete closure activities in accordance with the approved closure plan and within 180 days after receiving the final quantity of PCB waste for storage at the facility. Should a "reasonable extension" be needed, KHF will submit a request to US EPA-IX once the units are undergoing closure.

### 14.2. Closure and Post-Closure Cost Estimates

CWM updates closure and post-closure cost estimates for the facility on an annual basis in accordance with 40 CFR 761.65(f). Detailed descriptions of the closure and post-closure cost estimates are included in Chapter 39 and 40, respectively, of the Part B Permit Renewal Application provided as Appendix A. The most current closure and post-closure cost estimates and financial assurance documentation are maintained at the facility. The method of demonstrating financial assurance for closure may change from time to time in accordance with 40 CFR 761.65(g). Financial assurance documentation will be submitted to US EPA IX for any closure/post-closure cost estimate adjustments, including adjustments resulting from annual inflation or modifications to the closure plans.

14.3. Liability Insurance

CWMI maintains liability insurance for Sudden and Non-Sudden Accidental Liability Coverage under 22CCR 66264.147 et seq; an example of that liability certificate is presented in Chapter 41 of the Part B Permit Renewal Application provided as Appendix A.

REFERENCES


Amec Foster Wheeler, Inc. Site-Specific Water Quality and Soil-Gas Monitoring Plan 2017, Kettleman Hills Facility, Kings County, California. March 2018. **Provided as references KHF DTSC 2017 089 and KHF US EPA IX 2017 089.**

Amec Foster Wheeler, Inc. Addendum to Evaluation of Pre-Sample Purge Methods, Kettleman Hills Facility, Kings Kettleman City, California. Letter to CWMI. June 27, 2008.

Department of Toxics Substance Control (DTSC). Review of Evaluation of Pre-Sample Purge Methods. Letter to CWMI. February 20, 2018.

EMCON Associates, Inc. Hydrogeologic Characterization, Kettleman Hills Facility. November 8, 1985 (revised December 1986). **Provided as references KHF DTSC 2017 054 and KHF US EPA IX 2017 054.**

Environmental Solutions, Inc. Engineering and Design Report Landfill Unit B-18, Phases I and II and Final Closure, Kettleman Hills Facility, Kings County, California. August 1990. **Provided as references KHF DTSC 2017 021/022 and KHF US EPA IX 2017 021/022.**

Geomatrix. Evaluation of Pre-Sample Purge Methods. March 2007.

Golder Associates, Inc. Closure and Post-Closure Plan. March 2018. **Provided as Attachment 11.**

Golder Associates, Inc. Engineering and Design Report B-18 Class I Landfill Phase III Expansion and Final Closure, Kettleman Hills Facility, Kettleman City, California. November 2008. **Provided as references KHF DTSC 2017 026A/B and KHF US EPA IX 2017 026A/B.**

Meredith/Boli & Associates, Inc. State Siting Criteria Equivalency Assessment for Chemical Waste Management, Inc.'s Kettleman Hills Facility. October 28, 1985. **Provided as references KHF DTSC 2017 055 and KHF US EPA IX 2017 055.**

Regional Water Quality Control Board. Waste Discharge Requirements for Chemical Waste Management, Inc., Kettleman Hills Facility. WDR Order No. R5-2014-003. January 16, 2014. **Provided as references KHF DTSC 2017 057 and KHF US EPA IX 2017 057.**

Waste Management. Inc. Storm water Pollution Prevention Plan, Revision June 2015, Amendment 1, March 2016. **Provided as references KHF DTSC 2017 076 and KHF US EPA IX 2017 076.**

Waste Management. Inc. Spill Prevention Control and Countermeasure Plan (SPCC), Revision October 2016. **Provided as Attachment 12.**

# TABLE 1
# CONTAINER STORAGE INFORMATION SUMMARY

| INFORMATION | PCB Flushing/Storage Unit |
|---|---|
| Containment System Design, Approximate Dimensions, and Materials of Construction | 60' x 35' inside containment area with epoxy-coated reinforced concrete slab and perimeter curb.<br>35' x 60' outside containment area with epoxy-coated reinforced concrete slab and perimeter curb. |
| Provisions for Avoiding Container Contact with Standing Liquids | Sloped concrete slabs drain away from containers to non-discharging sumps. |
| Containment System: Capacity (cubic feet) | 2,864 inside containment area<br>3,040 outside containment slab |
| 10% of Volume of Containers Stored or Transferred (cubic feet) | 321 (1) inside containment building<br>268 (2) outside containment slab |
| Volume of 24-Hour, 25-Year Rainfall (cubic feet) | 0 (3) inside containment building<br>350 outside containment slab |
| Provisions for Managing Run-On | Slab elevated compared to adjacent grade to prevent run-on. |
| Provisions for Removal of Accumulated Liquids | Containment areas are inspected for the presence of liquids in accordance with the Inspection Program Plan in Chapter 31.0 of the Part B Permit Renewal Application. When present, liquids are removed with a portable pump or vacuum truck or other appropriate means for treatment/ disposal in accordance with applicable regulations. Liquids are analyzed according to site Waste Analysis Plan in Chapter 12.0 of the Part B Permit Renewal Application, if necessary, to determine appropriate handling. |

(1) Not applicable for PCB Flushing/Storage Unit. The containment area is sized to contain at least twice the maximum waste tank volume that will be held in the tank (7,500 gallons) to meet 40 CFR 761.65 regulations

(2) Not applicable for PCB Flushing/Storage Unit. The containment area is sized to contain at least twice the maximum waste container volume that will be within the secondary containment (5,000 gallons) to meet 40 CFR 761.65 regulations

(3) Roof prevents accumulation of precipitation.

# Table 2
# Federal, State, and Local Permits and Approvals

The agency approvals for waste acceptance into Landfill B-18 Phases I, II and III are included in Attachment 9 of this submittal. The following matrix is a listing of permits pertinent to Landfill B-18.

| Permit | Agency | Date Issued (Date Expires) | Description | B-18 III Permit Mod Requested? |
|---|---|---|---|---|
| TSCA Permit | US EPA-IX | 02/22/88 (01/01/98)* | TSCA Approval to Operate Landfills B-14, B-16 & B-19 | NA |
| | | 11/30/90 (01/01/98)* | Modified to include Ancillary Storage | NA |
| TSCA Permit | US EPA-IX | 05/19/92 (05/19/97)* | TSCA Approval to Operate Landfill B-18 | Yes 06/26/09 |
| Hazardous Waste Facility Permit 02-SAC-03 | DTSC | 06/16/03 05/21/14** (06/30/13)* | Active & Closed Units Hazardous Waste Modified to include Landfill B-18 Phase III | NA |
| Waste Discharge Requirements Order No. R5-2014-0003 | RWQCB | 01/16/14 (None) | Active & Closed Units Hazardous Waste | NA |
| Conditional Use Permit 05-10 | KCCDA | 12/22/09 (None) | Modified to include Landfills B-18 Phase III and B-20 | NA |
| Authority to Construct | SJVAPCD | 11/05/90 (11/05/92) | Air District Permit for Landfill B-18 | NA |
| Permit to Operate | | 01/09/92 | | NA |
| Title V | | 06/19/15 (08/31/22) | | NA |
| Nonhazardous, Nonputrescible, Industrial Solid Waste (NNISW) | KCDPH | 03/12/15 (03/12/20) | Allows for co-disposal of Nonhazardous, Nonputrescible, Industrial Solid Waste in Landfill B-18 | NA |

* A Renewal Application was submitted in a timely manner.

** Permit Modification issued.

# Table 3
# Summary Table for Regulatory Submittals

Regularly Submitted Reports, related to TSCA/PCBs.

| Report Name | Purpose | Frequency | Due Date | To Agencies | CC Agencies |
|---|---|---|---|---|---|
| TSCA Monitoring Report | As per TSCA Approval to Operate, 02/22/88, and TSCA Approval, 05/19/92 | Monthly | "monthly" | **US EPA-IX** | RWQCB, DTSC, KCCDA |
| WDR Report | As per WDR R5-2014-0003 | Monthly | "by the 15th day of the month following" | RWQCB | DTSC, US **EPA-IX**, KCCDA |
| Groundwater and Unsaturated Zone Monitoring Report for Class I Waste Management Units | As per WDR R5-2014-0003 | Semiannual[1] | "30 September<br>31 March" | RWQCB, DTSC | **US EPA-IX**, KCDPH |
| Annual Monitoring Summary Report | As per WDR R5-2014-0003 | Annual | "1 March" | RWQCB | DTSC, US **EPA-IX** |
| Annual Leachate Collection Recovery System Report | As per WDR R5-2014-0003 | Annual | May 1 | RWQCB | DTSC, US **EPA-IX** |
| Constituents of Concern | As per WDR R5-2014-0003 | Every 5 years | "30 September<br>31 March" | RWQCB, DTSC | **US EPA-IX**, KCDPH |
| Ambient Air Monitoring Program (AAMP) Data Report | As per Part B Permit Modification Effective May 21, 2014 Section III.4 | Quarterly | "within 90 days after the end of the reporting quarter" | DTSC | RWQCB, US **EPA-IX**, KCDPH, CARB |
| AAMP Health Risk Assessment Annual Update | As per Part B Permit Modification Effective May 21, 2014 Section III.4 | Annual | End of reporting period + 180 days | DTSC | RWQCB, US **EPA-IX**, KCDPH, CARB |
| PCB Report | As per 40CFR 761.180(b)(3) | Annual | "by July 15" | **US EPA-IX**, **US EPA** | |
| Title V Compliance Certificate Form and Certification | As per Title V Permit | Annual | January 30 | SJVAPCD, US **EPA-IX** | |
| Annual/Biennial Facility Report | As per 22CCR 66264.75 (Annual), as per 40CFR 264.75 (Biennial) | Annual/Biennial | March 1 | DTSC | RWQCB, US **EPA-IX** |
| Toxic Release Inventory | As per EPCRA section 313 | Annual | July 1 | **US EPA** | |
| Facility Inspection Certification & Post-Closure Inspection Report | As per 22CCR 66264.310(a)(7) and 66264.228(k), and WDR R5-2014-0003 | Annual | September 30 | DTSC, RWQCB | KCDPH, US **EPA-IX** |
| Financial Assurance for Closure & Post Closure Costs | As per 22 CCR 66264.142 et seq, 22 CCR 66264.144 et seq, WDR R5-2014-0003, and 40 CFR 761.65(g) | Annual[2] | March 1 | DTSC | RWQCB, **US-EPA-IX,** KCDPH |

CARB = CA Air Resources Board
DTSC = CA Department of Toxic Substances Control
KCCDA = Kings County Community Development Agency
KCDPH = Kings County Department of Public Health
RWQCB = CA Regional Water Quality Control Board – Central Valley Region
SJVAPCD = San Joaquin Valley Air Pollution Control Board

[1] Sampling results will be incorporated into the single monitoring report that is due on the last day of the third month following the sampling period to the RWQCB, DTSC and US EPA IX. KHF has written approval from RWQCB (WDR R5-2014-0003) for semiannual groundwater monitor reporting. Pending permit modifications to the RCRA Part B Permit issued by DTSC will allow KHF to report to DTSC annually (March 31).
[2] Financial assurance documentation will be submitted to US EPA IX for any closure/post-closure cost estimate adjustments, including adjustments resulting from annual inflation or modifications to the closure plans,

# TABLE 4.1

## PCB-AROCLOR ANALYTICAL RESULTS

Kettleman Hills Facility
Kings County, California

| Well ID | Sample Date | PCB-Aroclor µg/L |
|---|---|---|
| K10 | 05/30/91 | ND |
| | 10/15/91 | ND |
| | 04/13/92 | ND |
| | 10/08/92 | ND |
| K11 | 05/30/91 | ND |
| | 10/16/91 | ND |
| | 04/13/92 | ND |
| | 10/14/92 | ND |
| K18 | 05/12/92 | ND |
| | 10/27/92 | ND |
| K22 | 06/17/92 | ND |
| | 10/23/92 | ND |
| K32R | 06/13/91 | ND |
| | 10/22/91 | ND |
| | 04/21/92 | ND |
| | 10/22/92 | ND |
| K33 | 06/13/91 | ND |
| | 10/24/91 | ND |
| | 04/22/92 | ND |
| | 10/20/92 | ND |
| K39 | 04/10/91 | ND |
| | 10/09/91 | ND |
| | 04/08/92 | ND |
| | 10/09/92 | ND |
| K51 | 08/06/91 | ND |
| | 10/23/91 | ND |
| | 04/21/92 | ND |
| | 10/22/92 | ND |
| K53 | 07/22/91 | ND |
| | 10/23/91 | ND |
| | 04/22/92 | ND |
| | 10/20/92 | ND |
| K57 | 07/22/91 | ND |
| | 10/16/91 | ND |
| | 04/09/92 | ND |
| | 10/14/92 | ND |

**Abbreviations:**
ND = not detected
µg/L = microgram per liter

## TABLE 4.2

## pH FIELD WATER QUALITY PARAMETERS

Kettleman Hills Facility
Kings County, California

| Well ID | Sample Date | pH s.u. |
|---|---|---|
| K10 | 01/22/91 | 7.59 |
| | | 7.61 |
| | | 7.61 |
| | | 7.76 |
| | 04/19/91 | 7.57 |
| | | 7.58 |
| | | 7.57 |
| | | 7.47 |
| | 05/30/91 | 7.59 |
| | | 7.60 |
| | | 7.62 |
| | | 7.56 |
| | 07/17/91 | 7.61 |
| | | 7.65 |
| | | 7.65 |
| | | 7.68 |
| | 10/15/91 | 7.12 |
| | | 7.08 |
| | | 7.12 |
| | | 7.11 |
| | 01/14/92 | 7.45 |
| | | 7.49 |
| | | 7.49 |
| | | 7.49 |
| | 04/13/92 | 7.48 |
| | | 7.47 |
| | | 7.47 |
| | | 7.51 |
| | 07/23/92 | 7.39 |
| | | 7.48 |
| | | 7.51 |
| | | 7.51 |
| | 10/08/92 | 7.66 |
| | | 7.69 |
| | | 7.64 |
| | | 7.57 |
| | 12/04/92 | 7.58 |
| | | 7.62 |
| | | 7.64 |
| | | 7.52 |

## TABLE 4.2

## pH FIELD WATER QUALITY PARAMETERS

| Well ID | Sample Date | pH s.u. |
|---|---|---|
| K11 | 03/30/91 | 8.01 |
| | | 7.92 |
| | | 7.89 |
| | | 7.86 |
| | 04/19/91 | 7.80 |
| | | 7.71 |
| | | 7.77 |
| | | 7.79 |
| | 04/30/91 | 7.76 |
| | | 7.73 |
| | | 7.72 |
| | | 7.74 |
| | 05/30/91 | 7.72 |
| | | 7.75 |
| | | 7.75 |
| | | 7.76 |
| | 07/17/91 | 7.91 |
| | | 7.92 |
| | | 7.82 |
| | | 7.88 |
| | 10/16/91 | 7.76 |
| | | 7.81 |
| | | 7.82 |
| | | 7.83 |
| | 01/14/92 | 7.79 |
| | | 7.79 |
| | | 7.77 |
| | | 7.81 |
| | 04/13/92 | 7.81 |
| | | 7.77 |
| | | 7.78 |
| | | 7.72 |
| | 07/23/92 | 7.78 |
| | | 7.77 |
| | | 7.75 |
| | | 7.81 |
| | 10/14/92 | 7.80 |
| | | 7.87 |
| | | 7.89 |
| | | 7.89 |
| K18 | 03/30/91 | 7.71 |
| | | 7.67 |
| | | 7.67 |
| | | 6.80 |

## TABLE 4.2

## pH FIELD WATER QUALITY PARAMETERS

| Well ID | Sample Date | pH s.u. |
|---|---|---|
| K18, continued | 04/30/91 | 7.55 |
| | | 7.49 |
| | | 7.51 |
| | | 7.51 |
| | 05/09/91 | 7.62 |
| | | 7.61 |
| | | 7.58 |
| | | 7.61 |
| | 09/13/91 | 7.63 |
| | | 7.68 |
| | | 7.69 |
| | | 7.69 |
| | 09/24/91 | 7.77 |
| | | 7.70 |
| | | 7.64 |
| | | 7.79 |
| | 01/31/92 | 7.79 |
| | | 7.82 |
| | | 7.82 |
| | | 7.83 |
| | 03/02/92 | 7.66 |
| | | 7.70 |
| | | 7.71 |
| | | 7.70 |
| | 05/12/92 | 7.69 |
| | | 7.75 |
| | | 7.74 |
| | | 7.75 |
| | 08/20/92 | 7.71 |
| | | 7.62 |
| | | 7.67 |
| | | 7.69 |
| | 10/27/92 | 7.71 |
| | | 7.72 |
| | | 7.66 |
| | | 7.69 |
| K22 | 03/30/91 | 8.01 |
| | | 7.96 |
| | | 7.97 |
| | | 7.96 |
| | 04/30/91 | 7.80 |
| | | 7.99 |
| | | 7.69 |
| | | 7.79 |

## TABLE 4.2

## pH FIELD WATER QUALITY PARAMETERS

| Well ID | Sample Date | pH s.u. |
|---|---|---|
| K22, continued | 06/18/91 | 7.89 |
| | | 8.00 |
| | | 8.04 |
| | | 8.03 |
| | 09/04/91 | 8.03 |
| | | 8.04 |
| | | 7.94 |
| | | 8.04 |
| | 11/06/91 | 7.87 |
| | | 7.87 |
| | | 7.86 |
| | | 7.89 |
| | 01/13/92 | 7.75 |
| | | 7.77 |
| | | 7.74 |
| | | 7.69 |
| | 06/17/92 | 8.38 |
| | | 8.35 |
| | | 8.35 |
| | | 8.37 |
| | 09/03/92 | 8.09 |
| | | 8.17 |
| | | 8.16 |
| | | 8.15 |
| | 10/23/92 | 8.04 |
| | | 8.13 |
| | | 8.14 |
| | | 8.17 |
| K32R | 03/31/91 | 8.23 |
| | | 8.22 |
| | | 8.23 |
| | | 8.15 |
| | 04/25/91 | 7.64 |
| | | 7.72 |
| | | 7.74 |
| | | 7.75 |
| | 04/30/91 | 7.65 |
| | | 7.70 |
| | | 7.70 |
| | | 7.69 |
| | 06/13/91 | 7.62 |
| | | 7.68 |
| | | 7.65 |
| | | 7.62 |
| | | 7.50 |

## TABLE 4.2

## pH FIELD WATER QUALITY PARAMETERS

| Well ID | Sample Date | pH s.u. |
|---|---|---|
| K32R, continued | 06/13/91 | 7.65 |
| | | 7.50 |
| | | 7.68 |
| | 07/23/91 | 7.63 |
| | | 7.60 |
| | | 7.61 |
| | | 7.62 |
| | 10/22/91 | 7.60 |
| | | 7.59 |
| | | 7.49 |
| | | 7.59 |
| | 01/13/92 | 7.58 |
| | | 7.59 |
| | | 7.59 |
| | | 7.61 |
| | 04/21/92 | 7.48 |
| | | 7.59 |
| | | 7.61 |
| | | 7.62 |
| | 08/04/92 | 7.45 |
| | | 7.53 |
| | | 7.50 |
| | | 7.52 |
| | 10/22/92 | 7.58 |
| | | 7.46 |
| | | 7.53 |
| | | 7.57 |
| K33 | 01/23/91 | 7.34 |
| | | 7.38 |
| | | 7.39 |
| | | 7.39 |
| | 04/25/91 | 7.37 |
| | | 7.41 |
| | | 7.43 |
| | | 7.45 |
| | 06/13/91 | 7.55 |
| | | 7.60 |
| | | 7.60 |
| | | 7.60 |
| | | 7.58 |
| | | 7.52 |
| | | 7.46 |
| | | 7.47 |

## TABLE 4.2

## pH FIELD WATER QUALITY PARAMETERS

| Well ID | Sample Date | pH s.u. |
|---|---|---|
| K33, continued | 07/23/91 | 7.45 |
| | | 7.53 |
| | | 7.53 |
| | | 7.52 |
| | 10/24/91 | 7.46 |
| | | 7.45 |
| | | 7.46 |
| | | 7.46 |
| | 01/21/92 | 7.55 |
| | | 7.58 |
| | | 7.58 |
| | | 7.56 |
| | 04/22/92 | 7.43 |
| | | 7.50 |
| | | 7.52 |
| | | 7.51 |
| | 08/05/92 | 7.34 |
| | | 7.42 |
| | | 7.43 |
| | | 7.47 |
| | 10/20/92 | 7.50 |
| | | 7.51 |
| | | 7.47 |
| | | 7.37 |
| K39 | 01/08/91 | 7.83 |
| | | 7.63 |
| | | 7.59 |
| | | 7.61 |
| | 03/25/91 | 7.56 |
| | | 7.56 |
| | | 7.58 |
| | | 7.55 |
| | 04/10/91 | 7.43 |
| | | 7.41 |
| | | 7.43 |
| | | 7.44 |
| | 06/24/91 | 7.51 |
| | | 7.40 |
| | | 7.44 |
| | | 7.48 |
| | 07/10/91 | 7.44 |
| | | 7.46 |
| | | 7.47 |
| | | 7.42 |

## TABLE 4.2

## pH FIELD WATER QUALITY PARAMETERS

| Well ID | Sample Date | pH s.u. |
|---|---|---|
| K39, continued | 10/09/91 | 7.44 |
| | | 7.43 |
| | | 7.43 |
| | | 7.44 |
| | 01/10/92 | 7.43 |
| | | 7.43 |
| | | 7.34 |
| | | 7.45 |
| | 04/08/92 | 7.46 |
| | | 7.40 |
| | | 7.43 |
| | | 7.46 |
| | 07/16/92 | 7.35 |
| | | 7.36 |
| | | 7.27 |
| | | 7.33 |
| | 10/09/92 | 7.57 |
| | | 7.60 |
| | | 7.59 |
| | | 7.58 |
| K51 | 06/27/91 | 7.85 |
| | | 7.93 |
| | | 7.97 |
| | | 7.70 |
| | 08/06/91 | 7.66 |
| | | 7.71 |
| | | 7.73 |
| | | 7.73 |
| | 09/05/91 | 7.59 |
| | | 7.56 |
| | | 7.58 |
| | | 7.58 |
| | 10/23/91 | 7.46 |
| | | 7.45 |
| | | 7.42 |
| | | 7.45 |
| | 01/13/92 | 7.56 |
| | | 7.56 |
| | | 7.56 |
| | | 7.57 |
| | 04/21/92 | 7.64 |
| | | 7.57 |
| | | 7.64 |
| | | 7.65 |

## TABLE 4.2

## pH FIELD WATER QUALITY PARAMETERS

| Well ID | Sample Date | pH s.u. |
|---|---|---|
| K51, continued | 08/04/92 | 7.46 |
| | | 7.54 |
| | | 7.56 |
| | | 7.58 |
| | 10/22/92 | 7.61 |
| | | 7.46 |
| | | 7.59 |
| | | 7.63 |
| K53 | 06/21/91 | 7.86 |
| | | 7.92 |
| | | 7.95 |
| | | 7.76 |
| | 07/22/91 | 7.74 |
| | | 7.77 |
| | | 7.78 |
| | | 7.78 |
| | 08/21/91 | 7.71 |
| | | 7.74 |
| | | 7.66 |
| | | 7.75 |
| | 10/23/91 | 7.52 |
| | | 7.55 |
| | | 7.52 |
| | | 7.52 |
| | 01/07/92 | 7.56 |
| | | 7.55 |
| | | 7.59 |
| | | 7.56 |
| | 04/22/92 | 7.40 |
| | | 7.49 |
| | | 7.49 |
| | | 7.49 |
| | 08/05/92 | 7.29 |
| | | 7.41 |
| | | 7.42 |
| | | 7.42 |
| | 10/20/92 | 7.54 |
| | | 7.49 |
| | | 7.40 |
| | | 7.53 |
| K57 | 06/21/91 | 7.72 |
| | | 7.73 |
| | | 7.73 |
| | | 7.62 |

## TABLE 4.2

## pH FIELD WATER QUALITY PARAMETERS

| Well ID | Sample Date | pH s.u. |
|---|---|---|
| K57, continued | 07/22/91 | 7.62 |
| | | 7.65 |
| | | 7.65 |
| | | 7.66 |
| | 08/21/91 | 7.70 |
| | | 7.59 |
| | | 7.65 |
| | | 7.68 |
| | 09/24/91 | 7.72 |
| | | 7.69 |
| | | 7.63 |
| | | 7.66 |
| | 10/16/91 | 7.56 |
| | | 7.60 |
| | | 7.60 |
| | | 7.62 |
| | 01/07/92 | 7.68 |
| | | 7.66 |
| | | 7.65 |
| | | 7.68 |
| | 04/09/92 | 7.67 |
| | | 7.58 |
| | | 7.63 |
| | | 7.65 |
| | 07/27/92 | 7.52 |
| | | 7.59 |
| | | 7.62 |
| | | 7.64 |
| | 10/14/92 | 7.58 |
| | | 7.70 |
| | | 7.67 |
| | | 7.69 |

**Abbreviation:**
s.u. = standard units

## TABLE 4.3

## EC FIELD WATER QUALITY PARAMETERS

Kettleman Hills Facility
Kings County, California

| Well ID | Sample Date | EC µmhos/cm |
|---|---|---|
| K10 | 01/22/91 | 17,000 |
| | | 17,100 |
| | | 17,300 |
| | | 17,400 |
| | 04/19/91 | 16,500 |
| | | 16,600 |
| | | 16,700 |
| | | 16,600 |
| | 05/30/91 | 16,700 |
| | | 16,600 |
| | | 16,700 |
| | | 16,500 |
| | 07/17/91 | 15,720 |
| | | 16,160 |
| | | 16,420 |
| | | 15,980 |
| | 10/15/91 | 17,800 |
| | | 17,500 |
| | | 17,500 |
| | | 18,000 |
| | 01/14/92 | 17,950 |
| | | 17,720 |
| | | 17,860 |
| | | 17,850 |
| | 04/13/92 | 17,750 |
| | | 17,720 |
| | | 17,850 |
| | | 17,690 |
| | 07/23/92 | 17,440 |
| | | 17,570 |
| | | 17,550 |
| | | 17,580 |
| | 10/08/92 | 17,820 |
| | | 17,920 |
| | | 17,890 |
| | | 17,860 |
| | 12/04/92 | 17,870 |
| | | 17,960 |
| | | 17,730 |
| | | 17,610 |

## TABLE 4.3

## EC FIELD WATER QUALITY PARAMETERS

| Well ID | Sample Date | EC µmhos/cm |
|---|---|---|
| K11 | 03/30/91 | 5,700 |
| | | 5,700 |
| | | 5,700 |
| | | 5,700 |
| | 04/19/91 | 5,600 |
| | | 5,600 |
| | | 5,600 |
| | | 5,600 |
| | 04/30/91 | 4,980 |
| | | 4,940 |
| | | 4,930 |
| | | 4,940 |
| | 05/30/91 | 5,300 |
| | | 5,400 |
| | | 5,400 |
| | | 5,400 |
| | 07/17/91 | 5,200 |
| | | 5,200 |
| | | 5,200 |
| | | 5,200 |
| | 10/16/91 | 5,600 |
| | | 5,600 |
| | | 5,600 |
| | | 5,600 |
| | 01/14/92 | 6,070 |
| | | 5,860 |
| | | 6,080 |
| | | 6,080 |
| | 04/13/92 | 5,730 |
| | | 5,760 |
| | | 5,800 |
| | | 5,640 |
| | 07/23/92 | 5,500 |
| | | 5,510 |
| | | 5,450 |
| | | 5,470 |
| | 10/14/92 | 5,700 |
| | | 5,690 |
| | | 5,800 |
| | | 5,770 |
| K18 | 03/30/91 | 6,700 |
| | | 6,800 |
| | | 6,800 |
| | | 6,800 |

## TABLE 4.3

## EC FIELD WATER QUALITY PARAMETERS

| Well ID | Sample Date | EC µmhos/cm |
|---|---|---|
| K18, continued | 04/30/91 | 6,330 |
| | | 6,270 |
| | | 6,270 |
| | | 6,280 |
| | 05/09/91 | 6,700 |
| | | 6,700 |
| | | 6,700 |
| | | 6,700 |
| | 09/13/91 | 6,960 |
| | | 7,010 |
| | | 6,930 |
| | | 6,940 |
| | 09/24/91 | 7,060 |
| | | 7,080 |
| | | 7,090 |
| | | 7,130 |
| | 01/31/92 | 6,800 |
| | | 6,800 |
| | | 6,800 |
| | | 6,800 |
| | 03/02/92 | 7,020 |
| | | 7,090 |
| | | 6,930 |
| | | 6,970 |
| | 05/12/92 | 6,800 |
| | | 6,950 |
| | | 6,820 |
| | | 6,900 |
| | 08/20/92 | 6,890 |
| | | 6,800 |
| | | 6,790 |
| | | 6,810 |
| | 10/27/92 | 6,840 |
| | | 6,830 |
| | | 6,800 |
| | | 6,830 |
| K22 | 03/30/91 | 4,100 |
| | | 4,100 |
| | | 4,200 |
| | | 4,200 |
| | 04/30/91 | 4,080 |
| | | 4,090 |
| | | 4,020 |
| | | 4,090 |

## TABLE 4.3

## EC FIELD WATER QUALITY PARAMETERS

| Well ID | Sample Date | EC µmhos/cm |
|---|---|---|
| K22, continued | 06/18/91 | 3,900 |
| | | 3,900 |
| | | 3,900 |
| | | 3,900 |
| | 09/04/91 | 4,080 |
| | | 4,070 |
| | | 4,030 |
| | | 4,120 |
| | 11/06/91 | 4,100 |
| | | 4,100 |
| | | 4,100 |
| | | 4,100 |
| | 01/13/92 | 4,400 |
| | | 4,410 |
| | | 4,390 |
| | | 4,380 |
| | 06/17/92 | 4,000 |
| | | 4,000 |
| | | 4,000 |
| | | 4,000 |
| | 09/03/92 | 3,970 |
| | | 3,990 |
| | | 3,980 |
| | | 3,990 |
| | 10/23/92 | 4,070 |
| | | 4,100 |
| | | 4,090 |
| | | 4,090 |
| K32R | 03/31/91 | 8,600 |
| | | 8,700 |
| | | 8,700 |
| | | 8,600 |
| | 04/25/91 | 12,000 |
| | | 12,200 |
| | | 12,200 |
| | | 12,200 |
| | 04/30/91 | 10,900 |
| | | 11,030 |
| | | 11,030 |
| | | 11,020 |
| | 06/13/91 | 13,000 |
| | | 13,000 |
| | | 13,100 |
| | | 13,000 |
| | | 13,200 |

## TABLE 4.3

## EC FIELD WATER QUALITY PARAMETERS

| Well ID | Sample Date | EC µmhos/cm |
|---|---|---|
| K32R, continued | 06/13/91 | 13,100 |
| | | 13,200 |
| | | 13,000 |
| | 07/23/91 | 13,900 |
| | | 14,000 |
| | | 14,000 |
| | | 14,000 |
| | 10/22/91 | 8,900 |
| | | 8,900 |
| | | 8,900 |
| | | 8,900 |
| | 01/13/92 | 15,340 |
| | | 15,330 |
| | | 15,380 |
| | | 15,100 |
| | 04/21/92 | 14,640 |
| | | 14,640 |
| | | 14,540 |
| | | 14,570 |
| | 08/04/92 | 14,600 |
| | | 14,580 |
| | | 14,600 |
| | | 14,610 |
| | 10/22/92 | 14,760 |
| | | 14,680 |
| | | 14,730 |
| | | 14,750 |
| K33 | 01/23/91 | 13,700 |
| | | 13,900 |
| | | 13,800 |
| | | 13,900 |
| | 04/25/91 | 15,600 |
| | | 15,600 |
| | | 15,500 |
| | | 15,500 |
| | 06/13/91 | 15,400 |
| | | 15,100 |
| | | 15,100 |
| | | 15,100 |
| | | 15,400 |
| | | 15,400 |
| | | 15,300 |
| | | 14,900 |

## TABLE 4.3

## EC FIELD WATER QUALITY PARAMETERS

| Well ID | Sample Date | EC µmhos/cm |
|---|---|---|
| K33, continued | 07/23/91 | 15,470 |
| | | 15,350 |
| | | 15,880 |
| | | 15,850 |
| | 10/24/91 | 16,400 |
| | | 16,400 |
| | | 16,500 |
| | | 16,400 |
| | 01/21/92 | 16,200 |
| | | 16,280 |
| | | 16,200 |
| | | 16,150 |
| | 04/22/92 | 17,400 |
| | | 17,420 |
| | | 17,470 |
| | | 17,560 |
| | 08/05/92 | 16,700 |
| | | 16,620 |
| | | 16,670 |
| | | 16,600 |
| | 10/20/92 | 16,580 |
| | | 16,430 |
| | | 16,590 |
| | | 16,520 |
| K39 | 01/08/91 | 11,000 |
| | | 11,000 |
| | | 11,000 |
| | | 11,000 |
| | 03/25/91 | 9,900 |
| | | 9,900 |
| | | 10,000 |
| | | 10,000 |
| | 04/10/91 | 10,400 |
| | | 10,400 |
| | | 10,400 |
| | | 10,400 |
| | 06/24/91 | 10,200 |
| | | 9,700 |
| | | 10,200 |
| | | 10,200 |
| | 07/10/91 | 10,300 |
| | | 10,100 |
| | | 10,100 |
| | | 10,300 |

## TABLE 4.3

## EC FIELD WATER QUALITY PARAMETERS

| Well ID | Sample Date | EC µmhos/cm |
|---|---|---|
| K39, continued | 10/09/91 | 10,700 |
| | | 10,600 |
| | | 10,600 |
| | | 10,700 |
| | 01/10/92 | 10,410 |
| | | 10,380 |
| | | 10,450 |
| | | 10,490 |
| | 04/08/92 | 11,190 |
| | | 11,230 |
| | | 11,270 |
| | | 11,220 |
| | 07/16/92 | 10,880 |
| | | 10,830 |
| | | 10,600 |
| | | 10,710 |
| | 10/09/92 | 10,940 |
| | | 11,030 |
| | | 10,920 |
| | | 11,030 |
| K51 | 06/27/91 | 13,900 |
| | | 14,000 |
| | | 13,900 |
| | | 13,700 |
| | 08/06/91 | 14,000 |
| | | 14,000 |
| | | 14,000 |
| | | 13,900 |
| | 09/05/91 | 14,900 |
| | | 14,500 |
| | | 14,700 |
| | | 14,800 |
| | 10/23/91 | 13,800 |
| | | 13,900 |
| | | 14,000 |
| | | 13,800 |
| | 01/13/92 | 15,810 |
| | | 15,670 |
| | | 15,710 |
| | | 15,690 |
| | 04/21/92 | 14,820 |
| | | 14,970 |
| | | 14,850 |
| | | 14,800 |

## TABLE 4.3

## EC FIELD WATER QUALITY PARAMETERS

| Well ID | Sample Date | EC µmhos/cm |
|---|---|---|
| K51, continued | 08/04/92 | 15,140 |
| | | 15,060 |
| | | 15,280 |
| | | 15,320 |
| | 10/22/92 | 14,800 |
| | | 14,880 |
| | | 14,910 |
| | | 14,980 |
| K53 | 06/21/91 | 7,900 |
| | | 7,900 |
| | | 7,900 |
| | | 7,900 |
| | 07/22/91 | 11,600 |
| | | 11,700 |
| | | 11,700 |
| | | 11,700 |
| | 08/21/91 | 15,100 |
| | | 15,200 |
| | | 14,900 |
| | | 15,200 |
| | 10/23/91 | 13,700 |
| | | 13,800 |
| | | 13,900 |
| | | 13,800 |
| | 01/07/92 | 15,230 |
| | | 15,250 |
| | | 15,160 |
| | | 15,280 |
| | 04/22/92 | 16,460 |
| | | 16,540 |
| | | 16,320 |
| | | 16,360 |
| | 08/05/92 | 15,090 |
| | | 15,250 |
| | | 15,270 |
| | | 15,200 |
| | 10/20/92 | 15,290 |
| | | 15,260 |
| | | 15,220 |
| | | 15,320 |
| K57 | 06/21/91 | 8,200 |
| | | 8,200 |
| | | 8,200 |
| | | 8,200 |

## TABLE 4.3

## EC FIELD WATER QUALITY PARAMETERS

| Well ID | Sample Date | EC µmhos/cm |
|---|---|---|
| K57, continued | 07/22/91 | 8,400 |
| | | 8,250 |
| | | 8,300 |
| | | 8,300 |
| | 08/21/91 | 8,700 |
| | | 8,700 |
| | | 8,600 |
| | | 8,600 |
| | 09/24/91 | 8,640 |
| | | 8,610 |
| | | 8,730 |
| | | 8,580 |
| | 10/16/91 | 8,600 |
| | | 8,700 |
| | | 8,700 |
| | | 8,700 |
| | 01/07/92 | 8,710 |
| | | 8,620 |
| | | 8,750 |
| | | 8,710 |
| | 04/09/92 | 8,670 |
| | | 8,630 |
| | | 8,580 |
| | | 8,630 |
| | 07/27/92 | 8,540 |
| | | 8,470 |
| | | 8,420 |
| | | 8,600 |
| | 10/14/92 | 8,700 |
| | | 8,660 |
| | | 8,680 |
| | | 8,670 |

**Abbreviations:**
EC = electrical conductivity
µmhos/cm = micromhos per centimeter

## TABLE 4.4

## CHLORINATED ORGANICS ANALYTICAL RESULTS

Kettleman Hills Facility
Kings County, California

| Well ID | Sample Date | Chlorinated Organics | |
|---|---|---|---|
| | | VOCs µg/L | SVOCs µg/L |
| K10 | 01/22/91 | ND | -- |
| | 05/30/91 | ND | ND |
| | 07/17/91 | ND | -- |
| | 10/15/91 | ND | ND |
| | 01/14/92 | ND | -- |
| | 04/13/92 | ND | ND |
| | 07/23/92 | ND | -- |
| | 10/08/92 | ND | ND |
| | 12/04/92 | ND | -- |
| K11 | 03/30/91 | ND | -- |
| | 04/30/91 | ND | -- |
| | 05/30/91 | ND | ND |
| | 07/17/91 | ND | -- |
| | 10/16/91 | ND | ND |
| | 01/14/92 | ND | -- |
| | 04/13/92 | ND | ND |
| | 07/23/92 | ND | -- |
| | 10/14/92 | ND | ND |
| K18 | 03/30/91 | ND | -- |
| | 04/30/91 | ND | -- |
| | 05/09/91 | ND | ND |
| | 09/13/91 | ND | -- |
| | 09/24/91 | ND | -- |
| | 01/31/92 | ND | ND |
| | 03/02/92 | ND | -- |
| | 05/12/92 | ND | ND |
| | 08/20/92 | ND | -- |
| | 10/27/92 | ND | ND |
| K22 | 03/30/91 | ND | -- |
| | 04/30/91 | ND | -- |
| | 06/18/91 | ND | ND |
| | 09/04/91 | ND | -- |
| | 11/06/91 | ND | ND |
| | 01/13/92 | ND | -- |
| | 06/17/92 | ND | ND |
| | 09/03/92 | ND | -- |
| | 10/23/92 | ND | ND |

## TABLE 4.4

## CHLORINATED ORGANICS ANALYTICAL RESULTS

| Well ID | Sample Date | Chlorinated Organics | |
|---|---|---|---|
| | | VOCs µg/L | SVOCs µg/L |
| K32R | 03/31/91 | ND | -- |
| | 04/30/91 | ND | -- |
| | 06/13/91 | ND | ND |
| | 07/23/91 | ND | -- |
| | 10/22/91 | ND | ND |
| | 01/13/92 | ND | -- |
| | 04/21/92 | ND | ND |
| | 08/04/92 | ND | -- |
| | 10/22/92 | ND | ND |
| K33 | 01/23/91 | ND | -- |
| | 06/13/91 | ND | ND |
| | 07/23/91 | ND | -- |
| | 10/24/91 | ND | ND |
| | 01/21/92 | ND | -- |
| | 04/22/92 | ND | ND |
| | 08/05/92 | ND | -- |
| | 10/20/92 | ND | ND |
| K39 | 01/08/91 | ND | -- |
| | 03/25/91 | ND | -- |
| | 04/10/91 | ND | ND |
| | 07/10/91 | ND | -- |
| | 10/09/91 | ND | ND |
| | 01/10/92 | ND | -- |
| | 04/08/92 | ND | ND |
| | 07/16/92 | ND | -- |
| | 10/09/92 | ND | ND |
| K51 | 06/27/91 | ND | -- |
| | 08/06/91 | ND | ND |
| | 09/05/91 | ND | -- |
| | 10/23/91 | ND | ND |
| | 01/13/92 | ND | -- |
| | 04/21/92 | ND | ND |
| | 08/04/92 | ND | -- |
| | 10/22/92 | ND | ND |
| K53 | 06/21/91 | ND | -- |
| | 07/22/91 | ND | ND |
| | 08/21/91 | ND | -- |
| | 10/23/91 | ND | ND |
| | 01/07/92 | ND | -- |
| | 04/22/92 | ND | ND |
| | 08/05/92 | ND | -- |
| | 10/20/92 | ND | ND |

# TABLE 4.4

## CHLORINATED ORGANICS ANALYTICAL RESULTS

| Well ID | Sample Date | Chlorinated Organics | |
|---|---|---|---|
| | | VOCs µg/L | SVOCs µg/L |
| K57 | 06/21/91 | ND | -- |
| | 07/22/91 | ND | ND |
| | 08/21/91 | ND | -- |
| | 10/16/91 | ND | ND |
| | 01/07/92 | ND | -- |
| | 04/09/92 | ND | ND |
| | 07/27/92 | ND | -- |
| | 10/14/92 | ND | ND |

**Abbreviations:**
-- = data not available
ND = not detected
SVOCs = semivolatile organic compounds
µg/L = micrograms per liter
VOCs = volatile organic compounds

# TABLE 5.1

## PCB-AROCLOR ANALYTICAL RESULTS

Kettleman Hills Facility
Kings County, California

| Well ID | Sample Date | PCB-Aroclor µg/L |
|---|---|---|
| E02 | 12/05/16 | ND |
| K38 | 06/24/16 | ND |
| | 11/15/16 | ND |
| | 06/15/17 | ND |
| K58 | 10/19/16 | ND |
| K60 | 12/05/16 | ND |
| K67 | 10/21/16 | ND |
| K68 | 10/21/16 | ND |
| K71R | 11/02/16 | ND |

**Abbreviations:**
ND = not detected
µg/L = microgram per liter

## TABLE 5.2

## pH FIELD WATER QUALITY PARAMETERS

Kettleman Hills Facility
Kings County, California

| Well ID | Sample Date | pH s.u. |
|---|---|---|
| E02 | 03/27/16 | 7.17 |
| | | 7.17 |
| | | 7.17 |
| | | 7.17 |
| | 06/26/16 | 7.26 |
| | | 7.26 |
| | | 7.26 |
| | | 7.26 |
| | 07/09/16 | 7.33 |
| | | 7.33 |
| | | 7.33 |
| | | 7.33 |
| | 09/07/16 | 6.99 |
| | | 7.00 |
| | | 7.01 |
| | | 7.04 |
| | 12/05/16 | 7.32 |
| | | 7.32 |
| | | 7.32 |
| | | 7.33 |
| | 03/28/17 | 7.16 |
| | | 7.16 |
| | | 7.16 |
| | | 7.16 |
| | 06/17/17 | 7.28 |
| | | 7.28 |
| | | 7.28 |
| | | 7.28 |
| | 09/25/17 | 7.10 |
| | | 7.05 |
| | | 7.01 |
| | | 7.06 |
| | 12/08/17 | 7.10 |
| | | 7.11 |
| | | 7.10 |
| | | 7.09 |
| | | 7.10 |
| | | 7.11 |
| | | 7.10 |
| | | 7.09 |

## TABLE 5.2

## pH FIELD WATER QUALITY PARAMETERS

| Well ID | Sample Date | pH s.u. |
|---|---|---|
| K38 | 03/19/16 | 7.28 |
| | | 7.28 |
| | | 7.28 |
| | | 7.28 |
| | 06/24/16 | 7.28 |
| | | 7.28 |
| | | 7.28 |
| | | 7.29 |
| | 08/25/16 | 7.24 |
| | | 7.24 |
| | | 7.24 |
| | | 7.24 |
| | 11/15/16 | 7.32 |
| | | 7.32 |
| | | 7.32 |
| | | 7.32 |
| | 02/22/17 | 7.09 |
| | | 7.09 |
| | | 7.10 |
| | | 7.10 |
| | 06/15/17 | 7.30 |
| | | 7.30 |
| | | 7.30 |
| | | 7.29 |
| | 08/02/17 | 7.21 |
| | | 7.21 |
| | | 7.21 |
| | | 7.20 |
| | 12/05/17 | 7.09 |
| | | 7.09 |
| | | 7.09 |
| | | 7.09 |
| K58 | 03/08/16 | 7.31 |
| | | 7.31 |
| | | 7.31 |
| | | 7.31 |
| | 06/25/16 | 7.34 |
| | | 7.34 |
| | | 7.34 |
| | | 7.34 |
| | 08/30/16 | 7.18 |
| | | 7.18 |
| | | 7.18 |
| | | 7.18 |

## TABLE 5.2

## pH FIELD WATER QUALITY PARAMETERS

| Well ID | Sample Date | pH s.u. |
|---|---|---|
| K58, continued | 10/19/16 | 7.17 |
| | | 7.18 |
| | | 7.18 |
| | | 7.18 |
| | 12/06/16 | 7.41 |
| | | 7.41 |
| | | 7.41 |
| | | 7.41 |
| | 03/17/17 | 7.34 |
| | | 7.34 |
| | | 7.34 |
| | | 7.34 |
| | 06/08/17 | 7.31 |
| | | 7.31 |
| | | 7.31 |
| | | 7.32 |
| | 07/28/17 | 7.47 |
| | | 7.46 |
| | | 7.45 |
| | | 7.48 |
| | 11/22/17 | 7.08 |
| | | 7.05 |
| | | 7.02 |
| | | 7.00 |
| K60 | 03/17/16 | 7.27 |
| | | 7.27 |
| | | 7.27 |
| | | 7.27 |
| | 06/17/16 | 7.26 |
| | | 7.26 |
| | | 7.26 |
| | | 7.26 |
| | 08/23/16 | 7.17 |
| | | 7.17 |
| | | 7.17 |
| | | 7.17 |
| | 12/05/16 | 7.37 |
| | | 7.37 |
| | | 7.37 |
| | | 7.37 |
| | 02/22/17 | 7.06 |
| | | 7.06 |
| | | 7.07 |
| | | 7.08 |

## TABLE 5.2

## pH FIELD WATER QUALITY PARAMETERS

| Well ID | Sample Date | pH s.u. |
|---|---|---|
| K60, continued | 03/08/17 | 7.18 |
| | | 7.18 |
| | | 7.18 |
| | | 7.18 |
| | 03/20/17 | 7.25 |
| | | 7.25 |
| | | 7.25 |
| | | 7.25 |
| | 06/17/17 | 7.35 |
| | | 7.34 |
| | | 7.34 |
| | | 7.34 |
| | 08/02/17 | 7.28 |
| | | 7.28 |
| | | 7.28 |
| | | 7.27 |
| | 12/08/17 | 7.13 |
| | | 7.14 |
| | | 7.15 |
| | | 7.16 |
| | | 7.13 |
| | | 7.14 |
| | | 7.15 |
| | | 7.16 |
| K67 | 02/26/16 | 7.18 |
| | | 7.18 |
| | | 7.18 |
| | | 7.18 |
| | 06/14/16 | 7.07 |
| | | 7.03 |
| | | 7.07 |
| | | 7.07 |
| | 08/30/16 | 7.12 |
| | | 7.13 |
| | | 7.13 |
| | | 7.12 |
| | 10/21/16 | 7.23 |
| | | 7.24 |
| | | 7.23 |
| | | 7.24 |
| | 03/03/17 | 7.12 |
| | | 7.12 |
| | | 7.12 |
| | | 7.11 |

## TABLE 5.2

## pH FIELD WATER QUALITY PARAMETERS

| Well ID | Sample Date | pH s.u. |
|---|---|---|
| K67, continued | 06/06/17 | 7.21 |
| | | 7.21 |
| | | 7.21 |
| | | 7.21 |
| | 07/26/17 | 7.23 |
| | | 7.23 |
| | | 7.23 |
| | | 7.23 |
| | 11/19/17 | 7.12 |
| | | 7.14 |
| | | 7.12 |
| | | 7.13 |
| K68 | 03/07/16 | 7.20 |
| | | 7.20 |
| | | 7.20 |
| | | 7.20 |
| | 06/25/16 | 7.24 |
| | | 7.24 |
| | | 7.26 |
| | | 7.24 |
| | 08/31/16 | 7.06 |
| | | 7.07 |
| | | 7.07 |
| | | 7.07 |
| | 10/21/16 | 6.83 |
| | | 6.83 |
| | | 6.83 |
| | | 6.83 |
| | 03/22/17 | 7.23 |
| | | 7.23 |
| | | 7.23 |
| | | 7.23 |
| | 06/07/17 | 7.23 |
| | | 7.24 |
| | | 7.24 |
| | | 7.25 |
| | 08/01/17 | 7.10 |
| | | 7.10 |
| | | 7.10 |
| | | 7.10 |
| | 11/22/17 | 7.06 |
| | | 7.06 |
| | | 7.07 |
| | | 7.08 |

## TABLE 5.2

## pH FIELD WATER QUALITY PARAMETERS

| Well ID | Sample Date | pH s.u. |
|---|---|---|
| K71R | 02/25/16 | 7.34 |
| | | 7.32 |
| | | 7.31 |
| | | 7.31 |
| | 06/12/16 | 7.21 |
| | | 7.21 |
| | | 7.27 |
| | | 7.21 |
| | 08/13/16 | 7.31 |
| | | 7.31 |
| | | 7.32 |
| | | 7.33 |
| | 08/26/16 | 7.16 |
| | | 7.16 |
| | | 7.16 |
| | | 7.16 |
| | 11/02/16 | 7.33 |
| | | 7.33 |
| | | 7.33 |
| | | 7.33 |
| | 12/07/16 | 7.41 |
| | | 7.43 |
| | | 7.43 |
| | | 7.42 |
| | 02/03/17 | 7.35 |
| | | 7.34 |
| | | 7.35 |
| | | 7.34 |
| | 02/05/17 | 7.25 |
| | | 7.25 |
| | | 7.25 |
| | | 7.25 |
| | 03/26/17 | 7.32 |
| | | 7.32 |
| | | 7.32 |
| | | 7.32 |
| | 06/05/17 | 7.16 |
| | | 7.16 |
| | | 7.16 |
| | | 7.16 |
| | 07/26/17 | 7.24 |
| | | 7.25 |
| | | 7.25 |
| | | 7.25 |

## TABLE 5.2

## pH FIELD WATER QUALITY PARAMETERS

| Well ID | Sample Date | pH s.u. |
|---|---|---|
| K71R, continued | 11/11/17 | 7.36 |
| | | 7.36 |
| | | 7.37 |
| | | 7.36 |

**Abbreviation:**
s.u. = standard units

## TABLE 5.3

## EC FIELD WATER QUALITY PARAMETERS

Kettleman Hills Facility
Kings County, California

| Well ID | Sample Date | EC µmhos/cm |
|---|---|---|
| E02 | 03/27/16 | 15,238 |
| | | 15,229 |
| | | 15,232 |
| | | 15,231 |
| | 06/26/16 | 15,176 |
| | | 15,183 |
| | | 15,195 |
| | | 15,174 |
| | 07/09/16 | 15,159 |
| | | 14,926 |
| | | 15,173 |
| | | 15,163 |
| | 09/07/16 | 15,519 |
| | | 15,521 |
| | | 15,555 |
| | | 15,531 |
| | 12/05/16 | 15,445 |
| | | 15,451 |
| | | 15,454 |
| | | 15,452 |
| | 03/28/17 | 15,016 |
| | | 15,019 |
| | | 15,029 |
| | | 15,027 |
| | 06/17/17 | 15,056 |
| | | 15,065 |
| | | 15,066 |
| | | 15,054 |
| | 09/25/17 | 15,037 |
| | | 15,048 |
| | | 15,050 |
| | | 15,041 |
| | 12/08/17 | 14,970 |
| | | 14,953 |
| | | 14,962 |
| | | 14,961 |
| | | 14,970 |
| | | 14,953 |
| | | 14,962 |
| | | 14,961 |

## TABLE 5.3

## EC FIELD WATER QUALITY PARAMETERS

| Well ID | Sample Date | EC µmhos/cm |
|---|---|---|
| K38 | 03/19/16 | 16,671 |
| | | 16,642 |
| | | 16,662 |
| | | 16,647 |
| | 06/24/16 | 17,073 |
| | | 17,057 |
| | | 17,039 |
| | | 17,027 |
| | 08/25/16 | 16,803 |
| | | 16,844 |
| | | 16,988 |
| | | 16,951 |
| | 11/15/16 | 17,053 |
| | | 17,046 |
| | | 17,039 |
| | | 17,037 |
| | 02/22/17 | 17,331 |
| | | 17,329 |
| | | 17,328 |
| | | 17,325 |
| | 06/15/17 | 17,898 |
| | | 17,887 |
| | | 17,893 |
| | | 17,895 |
| | 08/02/17 | 18,708 |
| | | 18,666 |
| | | 18,725 |
| | | 18,734 |
| | 12/05/17 | 19,669 |
| | | 19,600 |
| | | 19,557 |
| | | 19,521 |
| K58 | 03/08/16 | 5,768 |
| | | 5,767 |
| | | 5,768 |
| | | 5,769 |
| | 06/25/16 | 5,891 |
| | | 5,896 |
| | | 5,886 |
| | | 5,900 |
| | 08/30/16 | 6,017 |
| | | 6,019 |
| | | 6,031 |
| | | 6,033 |

## TABLE 5.3

## EC FIELD WATER QUALITY PARAMETERS

| Well ID | Sample Date | EC µmhos/cm |
|---|---|---|
| K58, continued | 10/19/16 | 5,761 |
| | | 5,764 |
| | | 5,768 |
| | | 5,770 |
| | 12/06/16 | 5,945 |
| | | 5,947 |
| | | 5,956 |
| | | 5,955 |
| | 03/17/17 | 5,880 |
| | | 5,880 |
| | | 5,881 |
| | | 5,879 |
| | 06/08/17 | 5,853 |
| | | 5,854 |
| | | 5,861 |
| | | 5,863 |
| | 07/28/17 | 5,842 |
| | | 5,848 |
| | | 5,837 |
| | | 5,840 |
| | 11/22/17 | 5,872 |
| | | 5,870 |
| | | 5,861 |
| | | 5,861 |
| K60 | 03/17/16 | 16,168 |
| | | 16,193 |
| | | 16,191 |
| | | 16,207 |
| | 06/17/16 | 16,998 |
| | | 16,994 |
| | | 17,003 |
| | | 17,006 |
| | 08/23/16 | 16,858 |
| | | 16,885 |
| | | 16,875 |
| | | 16,884 |
| | 12/05/16 | 17,058 |
| | | 17,078 |
| | | 17,078 |
| | | 17,100 |
| | 02/22/17 | 16,600 |
| | | 16,598 |
| | | 16,597 |
| | | 16,599 |

## TABLE 5.3

## EC FIELD WATER QUALITY PARAMETERS

| Well ID | Sample Date | EC µmhos/cm |
|---|---|---|
| K60, continued | 03/08/17 | 16,310 |
| | | 16,324 |
| | | 16,326 |
| | | 16,329 |
| | 03/20/17 | 16,554 |
| | | 16,564 |
| | | 16,558 |
| | | 16,560 |
| | 06/17/17 | 16,765 |
| | | 16,762 |
| | | 16,757 |
| | | 16,759 |
| | 08/02/17 | 16,850 |
| | | 16,845 |
| | | 16,844 |
| | | 16,843 |
| | 12/08/17 | 16,643 |
| | | 16,643 |
| | | 16,641 |
| | | 16,664 |
| | | 16,643 |
| | | 16,643 |
| | | 16,641 |
| | | 16,664 |
| K67 | 02/26/16 | 8,347 |
| | | 8,348 |
| | | 8,347 |
| | | 8,355 |
| | 06/14/16 | 8,598 |
| | | 8,591 |
| | | 8,590 |
| | | 8,589 |
| | 08/30/16 | 8,575 |
| | | 8,565 |
| | | 8,565 |
| | | 8,564 |
| | 10/21/16 | 8,624 |
| | | 8,622 |
| | | 8,629 |
| | | 8,627 |
| | 03/03/17 | 8,130 |
| | | 8,131 |
| | | 8,132 |
| | | 8,140 |

## TABLE 5.3

## EC FIELD WATER QUALITY PARAMETERS

| Well ID | Sample Date | EC µmhos/cm |
|---|---|---|
| K67, continued | 06/06/17 | 8,241 |
| | | 8,240 |
| | | 8,242 |
| | | 8,240 |
| | 07/26/17 | 8,161 |
| | | 8,165 |
| | | 8,165 |
| | | 8,161 |
| | 11/19/17 | 8,531 |
| | | 8,579 |
| | | 8,585 |
| | | 8,519 |
| K68 | 03/07/16 | 18,231 |
| | | 18,221 |
| | | 18,244 |
| | | 18,281 |
| | 06/25/16 | 18,663 |
| | | 18,655 |
| | | 18,659 |
| | | 18,667 |
| | 08/31/16 | 18,985 |
| | | 19,010 |
| | | 18,966 |
| | | 18,972 |
| | 10/21/16 | 19,555 |
| | | 19,556 |
| | | 19,544 |
| | | 19,554 |
| | 03/22/17 | 18,500 |
| | | 18,512 |
| | | 18,522 |
| | | 18,535 |
| | 06/07/17 | 18,585 |
| | | 18,599 |
| | | 18,603 |
| | | 18,602 |
| | 08/01/17 | 18,494 |
| | | 18,508 |
| | | 18,507 |
| | | 18,509 |
| | 11/22/17 | 18,432 |
| | | 18,436 |
| | | 18,443 |
| | | 18,451 |

## TABLE 5.3

## EC FIELD WATER QUALITY PARAMETERS

| Well ID | Sample Date | EC µmhos/cm |
|---|---|---|
| K71R | 02/25/16 | 20,398 |
| | | 20,416 |
| | | 20,415 |
| | | 20,459 |
| | 06/12/16 | 20,722 |
| | | 20,713 |
| | | 20,727 |
| | | 20,741 |
| | 08/13/16 | 20,380 |
| | | 20,380 |
| | | 20,380 |
| | | 20,380 |
| | 08/26/16 | 20,624 |
| | | 20,612 |
| | | 20,637 |
| | | 20,668 |
| | 11/02/16 | 21,171 |
| | | 21,189 |
| | | 21,183 |
| | | 21,171 |
| | 12/07/16 | 20,798 |
| | | 20,777 |
| | | 20,771 |
| | | 20,806 |
| | 02/03/17 | 20,803 |
| | | 20,802 |
| | | 20,800 |
| | | 20,798 |
| | 02/05/17 | 20,922 |
| | | 20,948 |
| | | 20,964 |
| | | 20,895 |
| | 03/26/17 | 20,395 |
| | | 20,395 |
| | | 20,400 |
| | | 20,389 |
| | 06/05/17 | 20,416 |
| | | 20,371 |
| | | 20,219 |
| | | 20,191 |
| | 07/26/17 | 20,636 |
| | | 20,630 |
| | | 20,637 |
| | | 20,642 |

## TABLE 5.3

## EC FIELD WATER QUALITY PARAMETERS

| Well ID | Sample Date | EC µmhos/cm |
|---|---|---|
| K71R, continued | 11/11/17 | 20,354 |
| | | 20,358 |
| | | 20,352 |
| | | 20,342 |

**Abbreviations:**
EC = electrical conductivity
µmhos/cm = micromhos per centimeter

## TABLE 5.4

## CHLORINATED ORGANICS ANALYTICAL RESULTS

Kettleman Hills Facility
Kings County, California

| Well ID | Sample Date | Chlorinated Organics | | | | |
|---|---|---|---|---|---|---|
| | | VOCs | | | | SVOCs |
| | | 1,1-dichloroethene µg/L | Carbon disulfide µg/L | Chloroform µg/L | Trichloroethene µg/L | µg/L |
| E02 | 03/27/16 | 45 | -- | ND | 550 | -- |
| | 06/26/16 | 47 | -- | ND | 560 | -- |
| | 07/09/16 | 33 | -- | ND | 460 | -- |
| | 09/07/16 | 22 | -- | ND | 360 | -- |
| | 12/05/16 | 27 | ND | ND | 370 | ND |
| | 03/28/17 | 47 | -- | 1.6 | 770 | -- |
| | 06/17/17 | 47 | -- | ND | 730 | -- |
| | 09/25/17 | 49 | -- | ND | 690 | -- |
| | 12/08/17 | 33 | -- | ND | 500 | -- |
| K38 | 03/19/16 | ND | -- | ND | ND | -- |
| | 06/24/16 | ND | ND | ND | ND | ND |
| | 08/25/16 | ND | -- | ND | ND | -- |
| | 11/15/16 | ND | ND | ND | ND | ND |
| | 02/22/17 | ND | -- | ND | ND | -- |
| | 06/15/17 | ND | ND | ND | ND | ND |
| | 08/02/17 | ND | -- | ND | ND | -- |
| | 12/05/17 | ND | -- | ND | ND | -- |
| K58 | 03/08/16 | ND | -- | ND | ND | -- |
| | 06/25/16 | ND | -- | ND | ND | -- |
| | 08/30/16 | ND | -- | ND | ND | -- |
| | 10/19/16 | ND | ND | ND | ND | ND |
| | 03/17/17 | ND | -- | ND | ND | -- |
| | 06/08/17 | ND | -- | ND | ND | -- |
| | 07/28/17 | ND | -- | ND | ND | -- |
| | 11/22/17 | ND | -- | ND | ND | -- |

## TABLE 5.4

## CHLORINATED ORGANICS ANALYTICAL RESULTS

| Well ID | Sample Date | Chlorinated Organics | | | | |
|---|---|---|---|---|---|---|
| | | VOCs | | | | SVOCs µg/L |
| | | 1,1-dichloroethene µg/L | Carbon disulfide µg/L | Chloroform µg/L | Trichloroethene µg/L | |
| K60 | 03/17/16 | ND | -- | ND | ND | -- |
| | 06/17/16 | ND | -- | ND | ND | -- |
| | 08/23/16 | ND | -- | ND | ND | -- |
| | 12/05/16 | ND | ND | ND | ND | ND |
| | 02/22/17 | ND | -- | ND | ND | -- |
| | 06/17/17 | ND | -- | ND | ND | -- |
| | 08/02/17 | ND | -- | ND | ND | -- |
| | 12/08/17 | ND | -- | ND | ND | -- |
| K67 | 02/26/16 | ND | -- | ND | ND | -- |
| | 06/14/16 | ND | -- | ND | ND | -- |
| | 08/30/16 | ND | -- | ND | ND | -- |
| | 10/21/16 | ND | ND | ND | ND | ND |
| | 03/03/17 | ND | ND | ND | ND | -- |
| | 06/06/17 | ND | -- | ND | ND | -- |
| | 07/26/17 | ND | -- | ND | ND | -- |
| | 11/19/17 | ND | -- | ND | ND | -- |
| K68 | 03/07/16 | ND | -- | ND | ND | -- |
| | 06/25/16 | ND | -- | ND | ND | -- |
| | 08/31/16 | ND | -- | ND | ND | -- |
| | 10/21/16 | ND | ND | ND | ND | ND |
| | 03/22/17 | ND | -- | ND | ND | -- |
| | 06/07/17 | ND | -- | ND | ND | -- |
| | 08/01/17 | ND | -- | ND | ND | -- |
| | 11/22/17 | ND | -- | ND | ND | -- |

## TABLE 5.4

## CHLORINATED ORGANICS ANALYTICAL RESULTS

| Well ID | Sample Date | Chlorinated Organics | | | | |
|---|---|---|---|---|---|---|
| | | VOCs | | | | SVOCs µg/L |
| | | 1,1-dichloroethene µg/L | Carbon disulfide µg/L | Chloroform µg/L | Trichloroethene µg/L | |
| K71R | 02/25/16 | ND | -- | ND | ND | -- |
| | 06/12/16 | ND | -- | ND | ND | -- |
| | 08/13/16 | ND | -- | ND | ND | -- |
| | 11/02/16 | ND | 11 | ND | ND | ND |
| | 02/03/17 | ND | ND | ND | ND | -- |
| | 02/05/17 | ND | ND | ND | ND | -- |
| | 03/26/17 | ND | -- | ND | ND | -- |
| | 06/05/17 | ND | -- | ND | ND | -- |
| | 07/26/17 | ND | -- | ND | ND | -- |
| | 11/11/17 | ND | -- | ND | ND | -- |

**Abbreviations:**
-- = data not available
ND = not detected
SVOCs = semivolatile organic compounds
µg/L = micrograms per liter
VOCs = volatile organic compounds

# Table 6
# Information Required by 40 C.F.R. § 761.65(d)(3)(iv)[1]

.

| DATE | AGENCY | DESCRIPTION SUMMARY |
|---|---|---|
| September 2015 | SJVAPCD | Self-reported, MSW landfill, Class II Soil exceedance |
| October 2012 | DTSC | Receiving Area, failure to report truck spills |
| September 2012 | US EPA-IX | Self-reported, Haz landfill, leachate testing error |
| November 2011 | SJVAPCD | MSW landfill, flare exceedance (hexane versus methane) |
| September 2011 | SJVAPCD | Self-reported, MSW landfill, data recorder operation |
| February 2011 | US EPA-IX | Laboratory analytical methods, RCRA |
| December 2010 | SJVAPCD | MSW landfill, flare exceedance (conversion error) |
| October 2010 | DTSC | PCB Building, failure to report corrective action spill |
| September 2010 | US EPA-IX | PCB Building, corrective action spill, TSCA |
| September 2009 | SJVAPCD | Self-reported, MSW landfill, failure to submit report timely |
| April 2009 | SJVAPCD | Self-reported, MSW landfill, flare exceedance |

DTSC = CA Department of Toxic Substances Control
KCDPH = Kings County Department of Public Health
RWQCB = CA Regional Water Quality Control Board – Central Valley Region
SJVAPCD = San Joaquin Valley Air Pollution Control Board
US EPA-IX = United States Environmental Protection Agency – Region IX

[1] Pursuant to U.S. EPA-IX request, summary table includes information dating back to January 1, 2018.

# ATTACHMENT 1

# TSCA OPERATIONS PLAN, KETTLEMAN HILLS FACILITY,

# CHEMICAL WASTE MANAGEMENT, INC

# TSCA OPERATION PLAN

LANDFILL B-18 PHASES I, II AND III
PCB BUILDING AND OUTSIDE CONTAINMENT AREA

CHEMICAL WASTE MANAGEMENT, INC.
KETTLEMAN HILLS FACILITY
35251 OLD SKYLINE ROAD
KETTLEMAN CITY, CA 93239

Revision 0: May 15, 2017
Revision 1: July 15, 2017
Revision 2: April 20, 2018

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## General Description

The Kettleman Hills Facility (KHF), owned and operated by Chemical Waste Management, Inc. (CWM), is a permitted treatment, storage, and disposal facility for hazardous waste. The Hazardous Waste Facility Permit is issued by the California Department of Toxic Substances Control (DTSC). The DTSC is authorized by the U.S. Environmental Protection Agency (EPA) to implement the RCRA hazardous waste program. The facility is located in Kings County, California on approximately 1,600 acres of land. The entrance to the facility is approximately two and one-half miles southwest of Interstate 5 on State Route 41. The nearest community is Kettleman City, about 3.5 miles northeast of the facility.

KHF accepts virtually every type and category of hazardous waste as defined in Title 40 of the Code of Federal Regulations (CFR), Part 261 and Title 22 of the California Code of Regulations, division 4.5, chapter 11, as well as certain wastes [e.g., polychlorinated biphenyls (PCBs)] defined by the Toxic Substances Control Act (TSCA). The facility is prohibited from the acceptance of radioactive waste that is not exempt from regulation and licensing or is not expressly authorized for disposal under the Radiation Control Law, chapter 8 (commencing with section 114960) of part 9 of division 104 of the California Health and Safety Code, or any successor statute that may replace the Radiation Control Law, or is prohibited from disposal under article 1 (commencing with section 114705) of chapter 5 of part 9 of division 104 of the California Health and Safety Code or any successor statute that may replace article 1, or is prohibited from disposal by any government agency; infectious materials; compressed gases (excluding aerosol cans); explosives; and a variety of other reactive and extremely toxic RCRA-regulated hazardous wastes. Appendix A of the DTSC Part B Permit Renewal Application lists the federal and state hazardous waste codes accepted at the facility. Much of the wastes received at the facility are subject to applicable land disposal restrictions in 40 CFR Part 268 as well as state land disposal restriction. The wastes, which may be in the form of liquids, semi-solids, or solids, are transported to the facility in container and bulk shipments by contracted hazardous waste haulers.

KHF also has a permit, issued by the California Integrated Waste Management Board, to receive municipal/solid wastes into the converted Landfill B-19 and Landfill B-17. KHF maintains a registration permit, issued by the Kings County Department of Public Health, Environmental Health Division, for the co-disposal of nonhazardous, non-putrescible, industrial solid waste with the hazardous wastes in Landfill B-18.

**Recordkeeping Procedures**

CWM maintains all required records and reports for waste tracking, analysis, and compilation; environmental monitoring; and inspections. A brief discussion of this documentation system is provided in the following sections. All facility records and reports are available on-site for agency inspection and review. A description of the KHF recordkeeping procedures is included in the DTSC Part B Permit Renewal Application, within Chapters 11 (Chemical and Physical Analyses), 12 (Waste Analysis Plan), 31 (Inspection Program Plan), and 24 (Summary of Environmental Monitoring Data).

The KHF procedures for manifests for incoming and/or outgoing shipments of PCB wastes meet the requirements of TSCA at 40 CFR 761.180(b)(4), 761.207, 761.208, 761.209, 761.210, 761.213, and 761.214.

Manifest Discrepancies under 40 CFR 761.215 include significant discrepancies in quantity such as variations greater than 10 percent in weight of PCB waste in containers, and any variation in piece count. Significant discrepancies in type of PCB waste are obvious differences which may be discovered by inspection or waste analysis, such as the substitution of solids for liquids or the substitution of high concentration PCBs (above 500 ppm) with lower concentration materials.

Should un-manifested shipments of PCB waste arrive at KHF, the KHF procedures for the reception, resolution, and reporting of un-manifested shipments of PCB waste meet the requirements of 40 CFR 761.216.

The KHF procedures for Exception Reports for shipments of PCB waste meet the requirements of 40 CFR 761.217.

The KHF procedures regarding Certificates of Disposal for shipments of PCB waste meet the requirements of 40 CFR 761.218.

KHF has developed a PCB-specific computer program to track all PCB material by the removed from service date, from receipt through final on-site disposal and, if necessary, to off-site shipment. The tracking system assists KHF in maintaining an accurate inventory of PCB materials. KHF utilizes waste tracking forms specific for PCB wastes, in addition to those forms used for other hazardous wastes. These forms document transfer activities to the tank and to other DOT approved containers. The documentation includes the quantity and date the batch of PCBs was added to the tank/container and the disposition of any batch removed from the tank/container. The computerized system contains information about incoming material types (e.g., transformers, capacitors PCB liquids, contaminated soils, etc.), types of containers, PCB concentrations in the wastes, removal from service date for the PCB items, processing activities, and off-site transfer.

The computerized system supports the development and maintenance of the records and reports required in 40 CFR §761.180. Written annual document logs

are prepared and maintained for the chemical waste landfills. The annual document logs shall be maintained at least 20 years after the chemical waste landfills are no longer used for the disposal of TSCA waste. An annual report is prepared and submitted by July 15th of each year for the preceding calendar year in accordance with 40 CFR §761.180 (b). Annual records on the disposition of all PCB wastes at the facility are maintained in accordance with 40 CFR §761.180 (b). Annual records include all signed manifests generated or received at the facility during each calendar year and all Certificates of Disposal generated or received by the facility during the calendar year. The annual record keeping requirements of 40 CFR 761.180(b), which includes the 40 CFR 761.65(c)(5) records of inspections and cleanups, are documented in the Inspection Program Plan Daily Inspection Program books, and are maintained at the facility. As required by 40 CFR §761.180 (d), any water analysis, obtained in compliance with §761.75(b)(6)(iii), and operations records, including burial coordinates of wastes obtained in compliance with §761.75(b)(8(ii), will be collected and maintained until at least 20 years after the chemical waste landfills are no longer used for the disposal of TSCA waste. In addition, the special records required in 40 CFR §761.180 (f) are also maintained at the facility.

Landfill disposal records include the northerly and easterly coordinates from the California Coordinate System and a mean sea level elevation for each waste load buried at the facility. This information is recorded and maintained, along with all other required records, at the administrative offices located near the facility entrance.

**Surface Water Handling Procedures**

All precipitation run-on to Landfill Unit B-18 is intercepted prior to contact with waste and directed by surface drainage channels to discharge. Precipitation that accumulates in the active phase of the unit and contacted waste will be collected via a vacuum truck or portable pump to minimize percolation through the waste. The accumulated precipitation will be stored in above ground tanks, containers, or vacuum trucks. When stored in satellite accumulation areas, the storage period for above ground tanks and containers will not exceed ninety calendar days in accordance with 40 CFR §262.34 and 22 CCR §66262.34. Above ground tanks or containers may also be stored in permitted containment systems as described in 40 CFR 264.175(b), i.e. Bulk Stabilization Unit II & the Drum Storage Unit, the storage period will not exceed one year for these units. A sample from the first collection of accumulated precipitation that contacted waste after each storm event will be analyzed for PCBs. If PCBs are detected (above the practical quantitation limit) in a sample taken from the accumulated precipitation, CWM must notify U.S. EPA IX immediately (within 24 hours of reviewing the analytical report). If the PCB concentration is below 50 ppm, the accumulated precipitation that contacted waste will be managed in accordance with applicable RCRA regulations. If the sample tests above 50 ppm, the accumulated precipitation will be managed as TSCA waste and will be transferred to the PCB Flushing/Storage Unit for storage and subsequent disposal within one year of the out of service date.

**Landfill Construction (Excavation) and Operation (Backfilling)**

Documents for the approved design plans and specifications of Landfill B-18 Phases I and II, 1990, are listed in Appendix A of this plan. Excavation and construction of Landfill B-18 Phases I and II are recorded in the Construction Certification Reports, also listed in Appendix A of this plan.

The engineering and design report for Landfill B-18 Phase III, listed in Appendix A of this plan, incorporates the engineering and design information for Phases I and II; therefore, this 2008 (Revised August 2011) engineering and design report supersedes the 1990 report and serves as a stand-alone document for Landfill B-18 Phases I, II and III. Documentation for the excavation and construction of Phase III were provided to the US EPA-IX, DTSC, and the California Regional Water Quality Control Board (RWQCB) via submittal of the Construction Certification Reports.

Landfill B-18 is operated as the final depository of bulk and containerized solid or stabilized wastes including RCRA, TSCA, and non-regulated solid waste. Phase I was approved for waste acceptance by US EPA-IX, DTSC, and RWQCB in 1992. Phase II was approved for waste acceptance in 1993. Phase III was constructed and approved for use in 2015 (excluding TSCA disposal). The current approval letters are included in Appendix B. Wastes may originate off-site or may be generated on-site from site operation. Landfill operations require the hauler to enter the active landfill area and, at the direction of a CWM employee, deposit the waste load in the appropriate location. End-dump truck wastes are discharged by tilting the truck bed vertically to release the truck contents; containers are unloaded from flatbed trailers using forklifts or loaders equipped with drum handling attachments. Each waste lift is approximately 7 feet thick as it extends over the bottom operations layer or over previously placed waste lifts.

On occasion, a shipment of a solid PCB waste material may arrive containing a minimal amount of free liquids. 40 CFR 761.60(a)(3) allows a chemical waste landfill to dispose liquids from incidental sources (e.g., rain, load separation) when they are associated with PCB Articles or non-liquid PCB wastes, provided the liquids do not exceed 500 ppm PCBs and are not an ignitable waste. In this case, the liquids may be absorbed in situ. If a load is received with minimal amount of free liquids from incidental sources meeting the requirements of 40 CFR 761.60(a)(3), KHF's first option is to solidify these loads by bin-top solidification, utilizing clean soil. KHF will determine if bin-top solidification is an effective option by visual inspection of the load and by reviewing waste profile analytical provided by the generator to ensure compliance with 40 CFR 761.60(a)(3)(ii). If profile analytical is not available, KHF may analyze the incidental liquids or reject the waste back to the generator. Once there are no

visible free liquids in the waste, in accordance with the Waste Analysis Plan, the waste will be disposed in the hazardous waste landfill. When bin-top solidification will not be an effective remediation for a wet load, the load will be rejected back to the generator.

The PCB Building and the Outside Containment Area, described in Chapters 14 and 15 of the Part B Permit Renewal Application, provides support activities for the disposal of TSCA-regulated PCB wastes. The PCB Building Interior is used for storage, transformer flushing, bulking\, and repacking of waste. The PCB Building Exterior Containment Area is used for transformer flushing and temporary storage in accordance with 40 CFR 761.65(c)(1).

**Waste Segregation/Burial Coordinates**

Burial activities will be directed by a CWM employee. Containers of compatible solid wastes will be placed in the disposal area and covered with interim soil layers or equivalent cover materials as needed. Bulk solid wastes will be placed in layers, compacted, and covered daily with stockpiled soil or equivalent material to control wind dispersal of particulate matter. Landfill disposal records include the northerly and easterly coordinates based on the California Coordinate System and a mean sea level elevation for each waste load buried at the facility. This information is incorporated into the operating records maintained at the administrative offices of the facility. Procedures used to prevent the potential mixing of incompatible waste types are detailed in Chapters 12 (Waste Analysis Plan) and 34 (Ignitable, Reactive, and Incompatible Wastes) of the Part B Permit Renewal Application.

**Access/Vehicle and Equipment Movement**

General traffic patterns to and within the facility are discussed in Chapter 10 of the Part B Permit Renewal Application. Access to Landfill B-18 will be through temporary all-weather roads which will be maintained as necessary within each phase to provide access to the areas where disposal activities take place. The location of these areas will necessarily vary over time. The on-site disposal staff will coordinate vehicle and equipment movement to minimize traffic congestion.

**Leachate Collection Systems**

The design of leachate collection systems at Landfill B-18 is described in the Leachate Collection section of the Engineering and Design Report, Landfill B-18, Class 1 Landfill, Phase III Expansion and Final Closure, Kettleman Hills Facility, Kettleman City, California (Golder Associates Inc., November 2008, Revised August 2011). The engineering and design report for Landfill B-18 Phase III, listed in Appendix A of the attached Operation Plan, incorporates the engineering and design information for Phases I and II; therefore, this 2008 (Revised August 2011) engineering and design report supersedes the 1990 report and will serve as a stand-alone document for Landfill B-18 Phases I, II, and III. The design is also described in the TSCA Permit Renewal Application; the report includes a description of the leachate monitoring and collection, analysis, treatment, and disposal procedures

applicable to Landfill B-18. The word "liquid" rather than leachate is used throughout to indicate that liquid pumped from the leachate monitoring and collection system is not necessarily leachate. The initial presence of liquids in the leachate system is generally attributable to "construction water." The source of this water is moisture squeezed out of the clay liner by the weight of the waste placed upon it. Only excessive liquid inflow into the system and the presence of contaminants (in the secondary or vadose systems) would be suggestive of liner leakage. Liquid from the leachate systems will be accumulated in a designated tank pending waste treatment/disposal decisions. The accumulated leachate may also be stored in above ground tanks, containers, or vacuum trucks. When stored in satellite accumulation areas, the storage period for above ground tanks and containers will not exceed ninety calendar days in accordance with 40 CFR §262.34 and 22 CCR §66262.34. Above ground tanks or containers may also be stored in permitted containment systems as described in 40 CFR 264.175(b), i.e. the Bulk Stabilization Unit II & the Drum Storage Unit, the storage period will not exceed one year for these units. The appropriate treatment and/or disposal method will be based on analytical results and will include one or more of the following:

- Discharge to a RCRA surface impoundment or tank for evaporation
- Stabilization and landfilling
- On-site treatment by carbon absorption or other methods
- Off-site treatment and disposal

a) Primary System – Liquid levels will be monitored and recorded at least weekly[1]. Liquid accumulating in the primary leachate collection sump will be pumped out as required. Liquid will be collected in a dedicated accumulation tank and handled as hazardous waste. Chemical analysis will be performed to the extent required to establish appropriate treatment or disposal methods.

b) Secondary System – Liquid levels will be monitored and recorded at least weekly[2]. Liquids accumulating in the secondary system will be pumped out as required. Liquid will be collected in a dedicated accumulation tank and handled as hazardous waste. Chemical analysis will be performed to the extent required to establish appropriate treatment or disposal methods.

c) Vadose System – Liquid levels will be monitored and recorded at least weekly[3]. Liquids accumulating in the vadose system will be pumped out as required. Liquid will be collected in a dedicated accumulation tank and handled as hazardous waste. Chemical

[1] Leachate levels are currently monitored and recorded daily; however, the facility is planning to change its permits to a weekly inspection frequency. The RCRA regulations require weekly inspections during the active life of a hazardous waste landfill and a lesser frequency after closure [22 CCR 66264.303 and 40 CFR 264.303]. The TSCA regulations require monthly monitoring of the leachate collection system for a chemical waste landfill [40 CFR 761.75(b)(7)]. In a semi-arid climate like the facility area, weekly inspections of the leachate collection system are more than adequate.

[2] See Footnote 1

[3] See Footnote 1

analysis will be performed to the extent required to establish appropriate treatment or disposal methods. .

**Sampling and Monitoring Procedures**

a) Groundwater Monitoring –
The active TSCA B-18 waste management unit (WMU) groundwater monitoring network consists of 11 groundwater quality monitoring wells. For a complete description of the groundwater monitoring procedures currently in effect at KHF, the reviewer should refer to Chapters 8, 9, 24, 25, 26, 27, 28 and 29 of the Part B Permit Renewal Application (in review), as well as the Waste Discharge Requirements (WDR) Order No. R5-2014-0003, issued by the RWQCB, and the current or most recently approved site-specific monitoring plan for the Kettleman Hills Facility, Kings County, California. To meet the requirements specified in 40 CFR §761.75(b)(6), the TSCA B-18 WMU is also monitored as specified in the *TSCA Groundwater Monitoring Addendum to Site-Specific Monitoring Plan*, Kettleman Hills Facility, Kings County, California. Amec Foster Wheeler, Inc. April 17, 2018, (Addendum).

The 11 monitoring wells in place to monitor groundwater beneath Landfill B-18 are E02, K-18, K33R, K38,K-51, K-57, K-58, K-60, K-67, K-68, and K-71R. To meet the specific requirements of 40 CFR §761.75(b)(6)(iii), these wells are sampled and analyzed at least annually for PCBs, pH (field), electrical conductance (field), and chlorinated organics.

If PCBs are detected (above the practical quantitation limit) in a groundwater monitoring well sample, CWM must notify U.S. EPA IX immediately (within 24 hours of reviewing the analytical report).

Sampling results will be incorporated into the single monitoring report that is due on the last day of the third month following the sampling period to the RWQCB, DTSC and US EPA IX.

b) Leak Detection – An investigation of primary liner leakage will be conducted whenever the flow rate into the secondary leachate collection system exceeds the Action Leakage Rate for each landfill phase established in the 1992 and 1994 Response Action Plans, listed below and included as part of the Part B Permit Renewal Application (provided as Appendix A to the TSCA Permit Renewal Application). An investigation of secondary liner leakage will be conducted whenever the flow rate into the vadose leachate collection system exceeds the Trigger Level for each landfill phase established in the 1992 Vadose Zone Response Plan listed below and included as part of the Part B Permit Renewal Application (provided as Appendix A to the TSCA Permit Renewal Application). The Action Leakage Rate and Trigger Level for each sump in Landfill B-18 are provided in the below-listed Response Action Plans and Vadose Zone Response Plan. It is noted that Phase III of Landfill B-18 has no sumps since it consists solely of slope liner that drains into one of the four

sumps for B-18 Phases I and II. As described in Section 5.6 of the engineering and design report for Landfill B-18 Phase III (Revised August 2011), the below-listed Response Action Plans and Vadose Zone Response Plan were not affected by the construction of Phase III and, therefore, remain valid. Leakage shall be confirmed by chemical analysis of secondary or vadose system liquids.

- Vadose Zone Response Plan, Landfill B-18, Kettleman Hills Facility, SEC Donohue, Inc., June 1992

- Response Action Plan, Landfill B-18, Kettleman Hills Facility, SEC Donohue, Inc., June 1992

- Kettleman Hills Landfill B-18, Phase IIA & IIB Response Action Plan Update, RUST Environment & Infrastructure, January 1994

c) Leachate Analysis - Annual leachate analysis under WDR R5-2014-0003 includes:
   - PCBs
   - pH
   - Specific Conductance
   - Chlorinated Organics

   If PCBs are detected (above the practical quantitation limit) in a sample taken from a leachate collection system, CWM must notify U.S. EPA IX immediately (within 24 hours of reviewing the analytical report).

d) Quarterly Wipe Sampling – Once per quarter, six (6) wipe samples will be collected from randomly selected grid locations in the PCB processing areas (interior and exterior), non-PCB processing area, and doorknobs/door handles in the PCB Flushing/Storage Unit. If sample results exceed PCB thresholds, the extent of PCB contamination will be delineated and cleanup process initiated. Details of the quarterly wipe sampling plan are included in Section 5.7 of the TSCA Application.

   If any samples exceed 10 µg/100 $cm^2$, CWM must notify U.S. EPA IX promptly and written report submitted to US EPA IX within 30 days of receiving the results.

   Sampling results will be incorporated into the Annual Report prepared in accordance with 40 CFR 761.180(b)(3) due by July 15 to US EPA IX.

**Contingency Plan**

The comprehensive Contingency Plan for KHF is included as Chapter 35 of the Part B Permit Renewal Application. A working copy of the Contingency Plan is maintained at the facility. The Plan is amended and distributed to appropriate agencies and local officials when changes are made, (e.g., when new waste management units become operational). Most of the information contained in the

Contingency Plan is generic to the facility, although unit-specific response procedures are included in Exhibit 35A of the Contingency Plan.

CWM has made contact with the local and regional entities and authorities which may be involved in an emergency situation. Each of these authorities has been provided a copy of the Contingency Plan and relevant facility background information. Discussions regarding their specific involvements and coordination have been held and personnel have been advised of the materials handled at the facility, hazards involved, and treatment processes used. Each agency is advised to have technical references pertaining to hazardous materials.

In general, CWM is prepared for incidents at the facility which could cause potential emergencies (e.g., fires, explosions, spills or other material releases). In the event of an emergency, containment and control activities are directed by the Emergency Coordinator who mobilizes personnel to assemble the required response equipment; determines the best method of approach, containment, and control; and coordinates activities of supervisory personnel. The Emergency Coordinator may designate other personnel to assist in his/her duties. Emergency services, including fire and police agencies and emergency response units, are available from local communities.

**Security Measures**

The KHF has security provisions in place that are intended to prevent or minimize the possibility for unknowing or unauthorized entry of persons or livestock onto active waste management areas. In general, KHF is not open to the public and entry is limited to facility personnel, waste haulers, contractors and escorted visitors. Furthermore, the remote location and isolation of the facility from human habitations minimizes the potential for public encroachments.

Access is controlled by automated traffic gates or by a manned attendant. during operational hours. During non-operational hours, the site's access is controlled by locked gates, barbed wire fencing, and chain link fencing, or by a manned attendant at the entrance to the facility. All visitors are required to check in at the Administration Building prior to being allowed on site.

The currently active waste management area is approximately 555 acres and is surrounded by a six–foot (aboveground) chain-link fence. A second barbed wire fence surrounds the perimeter of CWM's property (approximately 1,600 acres). Additionally, the barbed wire fencing extends along both sides of CWM's right-of-way to the front gate at State Route 41.

Warning signs are posted at all chain-link gates accessing the active facility. They read in English and Spanish, respectively:

DANGER
HAZARDOUS WASTE AREA
UNAUTHORIZED PERSONNEL KEEP OUT

PELIGRO
ZONA DE RESIDUOS PELIGROSOS
NO ENTRE

The signs are legible from the required 25-foot distance. The same or similar kinds of signs are currently spaced at roughly 200-foot intervals along the chain-link perimeter fence of the active waste management area.

# APPENDIX A

**LANDFILL B-18**
**DESIGN AND CONSTRUCTION**
**DOCUMENTS**

## LANDFILL B-18, PHASES I AND II
## DESIGN DOCUMENTS

Construction Drawings, Landfill Unit B-18, Phases I and II and Final Closure, Kettleman Hills Facility, Kings County, California (Environmental Solutions, Inc., 7/31/90)

Construction Specifications and Quality Assurance Plan, Landfill Unit B-18, Phases I and II and Final Closure, Kettleman Hills Facility, Kings County, California, (Environmental Solutions, Inc., 7/31/90)

Engineering and Design Report, Landfill Unit B-18, Phases I and II and Final Closure, Kettleman Hills Facility, Kings County, California, Volumes I and II (Environmental Solutions, Inc., 8/90)

## LANDFILL B-18, PHASE III
## DESIGN DOCUMENT

Engineering and Design Report, Landfill B-18, Class 1 Landfill, Phase III Expansion and Final Closure, Kettleman Hills Facility, Kettleman City, California (Golder Associates Inc., November 2008, Revised August 2011)

**LANDFILL B-18 PHASE I**
**CONSTRUCTION CERTIFICATION REPORT**
**LIST OF DOCUMENTS**

| | |
|---|---|
| Volume 1 | Subgrade Geologic Mapping and Chemical Analysis for Landfill B-18, Phase I, Kettleman Hills Facility, Kettleman City, California (Golder Associates Inc., November 27, 1991) |
| Volume 2 | Clay Source Report, Landfill B-18, Phases IA and IB, Kettleman Hills Facility, Kettleman City, California (Environmental Construction Services, Inc., November 25, 1991) |
| Volume 3 | Secondary Clay Liner, Landfill B-18, Phases IA and IB, Kettleman Hills Facility, Kettleman City, California (Environmental Construction Services, Inc., January 6, 1992) |
| Volume 4 | Secondary HDPE Liner and Leachate Collection System, Landfill B-18, Phases IA and IB, Kettleman Hills Facility, Kettleman City, California Volumes A and B (Environmental Construction Services, Inc., January 13, 1992) |
| Volume 5 | Primary Clay Liner, Landfill B-18, Phases IA and IB, Kettleman Hills Facility, Kettleman City, California (Environmental Construction Services, Inc., January 13, 1992) |
| Volume 6 | 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) |
| Volume 7 | Summary Construction Report, Landfill B-18, Phases IA and IB, Kettleman Hills Facility, Kettleman City, California (Environmental Construction Services, Inc., February 18, 1992) |
| Volume 8 | Operational Features Report, Landfill B-18, Phases IA and IB, Kettleman Hills Facility, Kettleman City, California (Environmental Construction Services, Inc., June 26, 1992) |
| Volume 9 | 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) |

**LANDFILL B-18 PHASE II**
**CONSTRUCTION CERTIFICATION REPORT**
**LIST OF DOCUMENTS**

- Landfill B-18, Phases IIA and IIB, Construction Reports, Volume 1 - Clay Liner Source Report, 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, 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, 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, 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, Golder Construction Services, Inc. and ACZ Engineering, Inc., October 1993.

- Landfill B-18, Phases IIA and IIB, Construction Reports, Volume 5A - Secondary and Vadose HDPE Liner and Leachate Collection System Report (Appendices A-D), Golder Construction Services, Inc. and ACZ Engineering, Inc., October 1993.

- Landfill B-18, Phases IIA and IIB, Construction Reports, Volume 5B - Secondary and Vadose HDPE Liner and Leachate Collection System Report (Appendix E), Golder Construction Services, Inc. and ACZ Engineering, Inc., October 1993.

- Landfill B-18, Phases IIA and IIB, Construction Reports, Volume 5C - Secondary and Vadose HDPE Liner and Leachate Collection System Report (Appendices F-O), 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, 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 Report, Golder Construction Services, Inc. and ACZ Engineering, Inc., November 1993.

- Landfill B-18, Phases IIA and IIB, Construction Reports, Volume 7A - Primary HDPE Liner and Leachate Collection System Report (Appendices), Golder Construction Services, Inc. and ACZ Engineering, Inc., November 1993.

- Landfill B-18, Phases IIA and IIB, Construction Reports, Volume 8 - Summary Construction Report, Golder Construction Services, Inc. and ACZ Engineering, Inc. November 1993.

**LANDFILL B-18 PHASE III**
**CONSTRUCTION CERTIFICATION REPORT**
**LIST OF DOCUMENTS**

- Construction Quality Assurance (CQA) Report for Landfill B-18 Phase III Expansion. Volume 1: Phase IIIA Subgrade and Secondary Clay Liner. Chemical Waste Management, Inc., Kettleman Hills Facility, Kings County, California. Golder Associates, January 2015.

- Construction Quality Assurance (CQA) Report for Landfill B-18 Phase III Expansion. Volume 2: Phase IIIA Geosynthetics and Operations Layer. Chemical Waste Management, Inc., Kettleman Hills Facility, Kings County, California. Golder Associates, February 2015.

- Construction Quality Assurance (CQA) Report for Landfill B-18 Phase III Expansion. Volume 3: Phase IIIB Subraged and Secondary Clay Liner. Chemical Waste Management, Inc., Kettleman Hills Facility, Kings County, California. Golder Associates, November 2015.

- Construction Quality Assurance (CQA) Report for Landfill B-18 Phase III Expansion. Volume 4: Phase IIIB Geosynthetics, Phase IIIB Operations Layer, and Phase III Operation Features. Chemical Waste Management, Inc., Kettleman Hills Facility, Kings County, California. Golder Associates, December 2015 (revised April 2016).

# ATTACHMENT 2

# EXISITING FACILITIES LAYOUT – KETTLEMAN HILLS FACILITY

PROPERTY BOUNDARY

OLD TRUCK WASH

MP-1

P-14

P-15

P-16

P-17

DAM-4

NORTH RETENTION BASIN

P-12

B-7

LIMITS OF EXISTING OPERATIONS AREA

S-3

P-12A

P-5

S-2

B-5

B-6

P-13

COMBINED CLOSURE AREA

DAM-3

B-9

P-4

P-1

P-2

B-9 EXPANSION

B-1

OPERATIONS SUPPORT FACILITY

B-10

P-3

B-9 EXTENSION

B-8

S-1

P-6/7/8

B-11

DDU/CTU

DAM-1

B-12

B-13

B-14

PCB-FLUSHING STORAGE UNIT

DRUM STORAGE UNIT

DRUM STORAGE UNIT FIRE SUPPRESSION WATER TANK

LIMITS OF EXISTING OPERATIONS AREA

PHASE 1A

B-19 CLASS II/III AREA

PHASE 1B

LANDFILL B-19

PHASE 2

PHASE 3

B-19 CLASS I/II AREA

EAST RETENTION BASIN

OPERATIONS SUPPORT FACILITY

WEST RETENTION BASIN

PHASE B

B-17 CLASS II/III LANDFILL

PHASE B

PHASE A

BULK STORAGE UNIT 2

P-9

B-15

B-16

P-10

BSU-2

P-11

BULK STORAGE UNIT 1

BSU-1

OPERATIONS SUPPORT FACILITY

ADMINISTRATION FACILITY

ENTRANCE STORMWATER RETENTION BASINS

CONTAINMENT AREA FOR SAMPLING PLATFORMS AND UNTARPING RACKS

RECEIVING AREA BASIN

B-18 EAST STORMWATER RETENTION BASIN

FINAL STABILIZATION UNIT

LIMITS OF FUTURE OPERATIONS AREA

PHASE IA

PHASE IIA

B-18 CLASS I/II LANDFILL

PHASE IIB

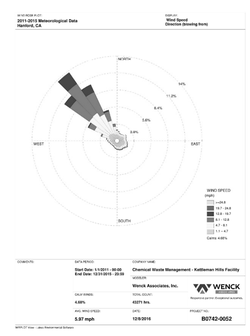
PHASE IB

PHASE III

B-18 SOUTH STORMWATER RETENTION BASIN

EXTENT OF 100-YEAR FLOODPLAIN MAPPED BY FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA)

LIMITS OF EXISTING OPERATIONS AREA




LEGEND

- INACTIVE
- ACTIVE
- CLOSED
- STORMWATER RETENTION BASIN
- 100-YEAR FLOOD PLAIN
- LIMITS OF EXISTING OPERATIONS AREA
- LIMITS OF FUTURE OPERATIONS AREA
- P SURFACE IMPOUNDMENT
- B LANDFILL (BURIAL AREA)
- G GATE
- ACTIVE OIL WELL (SEE NOTES)

N

0 400 800

SCALE IN FEET

1 inch = 400 feet

Notes:
- No drinking water wells are located on or within ¼ mile of the facility property boundary.
- Oil well locations obtained from California Division of Oil, Gas, and Geothermal Resources well finder website.
- No intake or discharge structure are located within the facility property boundary.
- Lands surrounding the Kettleman Hills Facility are Zoned Agriculture (AG-40)
- The limits of the existing operations area shown hereon corresponds to the existing perimeter fence for the site's operations area, which encompasses 541 acres. The site's current CUP boundary encompasses 555 acres, with the 14-acre difference including the scales, untarping racks and sampling platforms, laboratory, and administration facility.

SOURCE: Flood Insurance Rate Map, Map Number 06031C058C, Effective Date June 16, 2009.

USGS, Kettleman Plain, CA. January 30th, 2013.

THIS FIGURE IS IDENTICAL TO FIGURE 4-2-2 EXCEPT THAT IT IS AT A SCALE OF 1 INCH EQUALS 400 FEET.

**FIGURE 4-2-1**
**Existing Facilities Layout**
**Kettleman Hills Facility**

Golder Associates

Rev 3: 03/16/2018

# ATTACHMENT 3

# AMENDMENT TO THE BIOLOGICAL OPINION FOR

# TOXIC SUBSTANCES CONTROL ACT PERMIT

# United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825-1846

In Reply Refer To:
81420-2012-F-0044-2

SEP 05 2012

Mr. Chip Pialinelli
Project Manager, RCRA Facilities Management Office
U.S. Environmental Protection Agency, Region 9
75 Hawthorne Street
San Francisco, California 94105

Subject: Amendment to the Biological Opinion for Toxic Substances Control Act Permit Application for Chemical Waste Management's Kettleman Hills Facility (modification and expansion of PCB disposal Cell B-18), Kings County, California

Dear Mr. Pialinelli:

This letter is in response to your August 30, 2012, request for a modification to our August 15, 2012, biological opinion for Chemical Waste Management's application for a Toxic Substances Control Act Permit for the modification and expansion of PCB disposal cell B-18 at Chemical Waste Management's Kettleman Hills Facility in Kings County, California. Under the heading of Proposed Conservation Measures for Listed Species, paragraph number 3 states as follows:

3. No less than 30 calendar days but no more than 60 calendar days prior to construction, a protocol-level preconstruction survey conducted by an agency-approved biologist shall be done of all areas within the project footprint as well as within a 200 ft. buffer around the project footprint. The survey must adhere to the measures set forth in the Service's January 2011 (as updated) *Standard Measures for Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance Construction and Operation Requirements* (Standard Measures). A letter report and map of discovered and potential San Joaquin kit fox dens will be submitted to, and approved by, the Service and California Department of Fish and Game (CDFG) following the survey and prior to initiation of construction.

This paragraph is hereby modified to read as follows:

3. No more than 30 calendar days prior to construction, a protocol-level preconstruction survey shall be conducted by an agency-approved biologist of all areas within the project footprint as well as within a 200 ft. buffer around the project footprint. The survey must adhere to the measures set forth in the Service's January 2011 *Standard Measures for Protection of the San*

*Joaquin Kit Fox Prior to or During Ground Disturbance Construction and Operation Requirements* (Standard Measures). A letter report and map of discovered and potential San Joaquin kit fox dens will be submitted by the U.S. EPA to the Service and CDFG for approval following the survey and prior to initiation of construction.

Additionally, the Subject line of the biological opinion states that it is a draft biological opinion. This was written in error, and the subject line is hereby modified to read:

Subject: Biological Opinion for Toxic Substances Control Act Permit Application for Chemical Waste Management's Kettleman Hills Facility (modification and expansion of PCB disposal Cell B-18, Kings County, California

Please contact Kevin Aceituno, Fish and Wildlife Biologist or me at the letterhead address or at (916) 414-6600 if you have any questions regarding this letter on Chemical Waste Management's TSCA renewal/modification Approval application.

Sincerely,

Thomas Leeman
San Joaquin Valley Division Chief

# United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825-1846

In Reply Refer To:
81420-2012-F-0044

AUG 15 2012

Mr. Caleb Shaffer
Manager, RCRA Facilities Management Office
U.S. Environmental Protection Agency, Region 9
75 Hawthorne Street
San Francisco, California 94105

Subject: Draft Biological Opinion for Toxic Substances Control Act Permit Application for Chemical Waste Management's Kettleman Hills Facility (modification and expansion of PCB disposal Cell B-18), Kings County, California

Dear Mr. Shaffer:

This is the U.S. Fish and Wildlife Service's (Service) response to the U.S. Environmental Protection Agency's (EPA) request for initiation of formal consultation on Chemical Waste Management's (CWM) application for the renewal and modification of a permit under the Toxic Substances Control Act (TSCA), which includes the expansion and modification of the Kettleman Hills Facility's (KHF) Cell B-18 landfill to manage, store, and dispose of polychlorinated biphenyl (PCB) waste.

Your letter dated September 20, 2011, was received in this office on September 21, 2011. At issue are potential effects of the project to the federally-endangered San Joaquin kit fox (*Vulpes macrotis mutica*), blunt-nosed leopard lizard (*Gambelia sila*), San Joaquin woolly-threads (*Monolopia congdonii*) and California jewelflower (*Caulanthus californicus*). This document represents the Service's biological opinion on the effects of the proposed project on these listed species. This document has been prepared in accordance with section 7 (a)(2) of the Endangered Species Act of 1973, as amended (16 U.S.C. § 1531 *et seq.*) (Act).

The findings and recommendations of this biological opinion (BO) are based on: (1) EPA's September 20, 2011, letter requesting formal consultation; (2) CWM's biological assessment (BA), entitled *CWM Kettleman Hills Facility B-18 Landfill Expansion Project, Section 7 Biological Assessment*, prepared by Berryman Ecological; (3) the November 2010 report *Final Dioxin-Like Polychlorinated Biphenyl (PCB) Congeners Study Report* prepared by Wenck Associates, Inc.; (4) telephone exchanges and electronic (email) correspondences between the Service and EPA; and (5) other information available to the Service.

The Service has reviewed the proposed project description and concurs with EPA's determination that the project may affect, but is not likely to adversely affect blunt-nosed leopard lizard, San Joaquin woolly-threads and California jewelflower, and may affect, and is likely to adversely affect the San Joaquin kit fox.

**Consultation History**

Three past BOs have been issued by the Service addressing various hazardous waste units at the KHF: (1) Service Biological Opinion File No. 1-1-89-F-11, *Formal Endangered Species Consultation Concerning Proposed Construction on the Chemical Waste Management, Inc., Kettleman Hills Hazardous Waste Facility, Kings County, February 3, 1989*; (2) Service Biological Opinion File No. 1-1-90-F-18, *Formal Endangered Species Consultation on the Chemical Waste Management, Inc., Kettleman Hills Hazardous Waste Facilities Operations, Kings County, May 2, 1991*; and (3) Service Biological Opinion File No. 1-1-90-F-18(R), *Reinitiation of Formal Section 7 Consultation on the Operation of Chemical Waste Management's Hazardous Waste Facility in Kettleman Hills, Kings County, for a Water Pipeline and Firebreaks, November 22, 1991.*

*August 21, 2007.* A conference call was held between EPA, CWM, Service and CDFG representatives to discuss ongoing species protection issues under the previous BOs. The current project was discussed to provide EPA with information required for determining its role in permitting this project.

*January 15, 2008.* EPA sent a letter to the Service (with a copy to CDFG) requesting a meeting to informally discuss EPA's intention to begin consultation for anticipated species effects and potential offsetting conservation measures associated with the expansion of KHF's Cell B-18. EPA also requested a list of species that may occur in Kings County, California.

*April 10, 2008.* A meeting between CWM, Service, EPA, and CDFG representatives was held to begin informal discussions regarding the consultation process and the required next steps. CWM representatives presented background information on the proposed project.

*June 26, 2008.* A conference call was held between CWM, EPA, Service and CDFG representatives to further informally discuss the consultation process and next steps for CWM.

*September 21, 2011.* The Service received a letter from EPA requesting initiation of formal consultation. In addition to this letter, an initiation package was also sent which included the *CWM Kettleman Hills Facility B-18 Landfill Expansion Project Section 7 Biological Assessment* prepared by Berryman Ecological, and the *Final Dioxin-Like Polychlorinated Biphenyl (PCB) Congener Study Report* prepared by Wenck Associates, Inc.

*November 4, 2011.* The Service emailed EPA to verify receipt of the letter requesting initiation of formal consultation and the attached initiation package. The email also addressed three areas of concern identified during the Service's review of the BA: (1) potential PCB-contaminated runoff resulting from the stockpiling of PCB-containing soil; (2) the BA's conclusion that the

proposed project would not affect San Joaquin woolly-threads or California jewelflower; and (3) the lack of blunt-nosed leopard lizard credits at the Kreyenhagen Hills Conservation Bank.

*November 7, 2011.* EPA contacted the Service via telephone to discuss the Service's concerns with the BA. During this call EPA agreed to provide documentation of a plan to direct and contain surface water runoff that may be contaminated with PCBs. EPA concurred with the Service's concern regarding the proposed project's effect on San Joaquin woolly-threads and California jewelflower, EPA also concurred with the Service's recommendation that conservation credits be purchased at a bank that has both San Joaquin kit fox and blunt-nosed leopard lizard credits available. During this call EPA and the Service discussed the best approach to move forward, both agreed that no amendment to the BA would be necessary and these concerns would be acknowledged in the BO.

*November 22, 2011.* The Service sent a letter to EPA acknowledging receipt EPA's September 20, 2011, letter requesting initiation of formal consultation and the attached initiation package. The letter also addressed the Service's initial concerns with the BA, and acknowledged that these issues were resolved during phone conversations between the Service and EPA. In a separate correspondence, EPA contacted the Service via email with questions regarding sensitive/listed plant surveys.

*December 5, 2011.* The Service sent an email to EPA providing documents describing rare and listed plant survey requirements.

*January 18, 2012.* A conference call was held with the Service, EPA and CWM to discuss two issues remaining: (1) the need to purchase blunt-nosed leopard lizard conservation credits; and (2) the potential for San Joaquin woolly-threads and California jewelflower to occur within the proposed project's action area. CWM indicated that no blunt-nosed leopard lizard credits should be purchased since past surveys did not observe any individuals within the project area, and the habitat within the project area was not suitable. The Service indicated that the recommendation to purchase conservation credits was in response to the conclusion presented in the initial BA, which states that the project may affect blunt-nosed leopard lizard. Upon review of the available information, all parties agreed, and the Service concurred, that given the lack of evidence of blunt-nosed leopard lizards within the project boundary and the lack of habitat, a determination of likely to affect, but not likely to adversely affect was appropriate for blunt-nosed leopard lizard. CWM agreed to provide an addendum to the BA to the Service and EPA indicating the new conclusion.

During this call the Service also maintained the need for a pre-construction plant survey of the project area for San Joaquin woolly-threads and California jewelflower due to the amount of time since the last protocol-level survey (1991) and since suitable habitat that exists within the project area. CWM indicated that no new surveys should be required. The Service agreed to further review the surveys cited in the BA and get back to EPA about the best way to move forward.

*January 26, 2012.* CWM submitted a revised BA to EPA: *CWM Kettleman Hills Facility B-18 Landfill Expansion Project Section 7 Biological Assessment, January 2012* prepared by Berryman Ecological.

*February 1, 2012.* A conference call was held between EPA and the Service to discuss the January 2012 addendum to CWM's BA. All parties agreed that the new BA had sufficiently addressed the blunt-nosed leopard lizard issues identified during the January 18, 2012 conference call between EPA, CWM and the Service. EPA agreed with the Service's January 18, 2012 assessment regarding outdated plant surveys and concluded that the last complete protocol-level plant survey was conducted in 1991. The Service and EPA agreed that updated protocol-level plant surveys for San Joaquin woolly-threads and California jewelflower would be conducted.

*February 3, 2012.* EPA contacted the Service via email to convey a determination that the proposed project may affect, and is likely to adversely affect San Joaquin woolly-threads and California jewelflower. In response to this new determination, the Service requested a 60 extension for completing the BO and EPA agreed to the extension.

*March 13, 2012.* EPA sent a letter to the Service which included CWM's revised BA: *CWM Kettleman Hills Facility B-18 Landfill Expansion Project Section 7 Biological Assessment, March 2012* prepared by Berryman Ecological.

*May 21, 2012.* EPA sent a rare plant survey report of the project area to the Service: *Rare Plant Survey Results for the Proposed Chemical Waste Management, Inc. B-18 Landfill Expansion, Kings County, California, April 2012* prepared by McCormick Biological, Inc.

*August 8, 2012.* EPA contacted the Service via telephone to convey a determination that the project may affect, but is not likely to adversely affect San Joaquin woolly-threads and California jewelflower.

## BIOLOGICAL OPINION

### Description of Proposed Action

CWM has submitted to EPA an application pursuant to the TSCA to renew/modify an existing Approval allowing the expansion of landfill Cell B-18 at CWM's KHF. The purpose of the expansion is to increase the KHF's capacity to store and dispose of PCB-containing waste. The activities included in the Approval application consist of the following elements:

- addition of 81 contiguous acres (to be enclosed by exclusionary fencing) to KHF's existing 474-acre permitted operational area, resulting in 555 operational acres;
- vertical and lateral expansion of the existing and expanded B-18 landfill unit;
- operation and closure of the existing and expanded B-18 landfill unit;

- transport of PCB-containing material within the 555 operational acres; and
- operation of ancillary buildings within the 555 operational acres.

*Expansion-Related Construction Activities*

Expansion of the B-18 landfill unit will include fencing of 81 acres prior to construction. Construction activities will take place periodically over the life of the proposed project within the expanded fenced area. Vertical and lateral expansion of landfill unit B-18 would occur concurrently with ongoing waste disposal operations at other areas of the unit. It is expected that expansion and operation of Landfill Unit B-18 will begin in 2012.

Traffic related to the proposed project is anticipated to increase during the various phases of construction. It is estimated there may be up to 100 vehicle round-trips per day including transport of construction workers and delivery of materials. Traffic related to ongoing operations at the B-18 unit will not change as a result of the expansion (hazardous waste operations are currently permitted for 24 hours per day, 7 day a week).

*Operational Activities*

Operations within the fenced area will include the disposal of PCB-containing waste into the B-18 landfill unit, plus other related activities. Additional activities will include maintenance to landfill B-18 systems, such as leachate collection and monitoring, management of surface drainage, and control of nuisances (e.g., dust and litter). All of these activities will occur within the 81 acre fenced area.

Operation and closure of landfill unit B-18 will include the use of on-site earthen materials (soils and clays), as well as off-site sources of geosynthetic materials. The excavation and stockpiling of earthen materials, as well as the staging of equipment and materials, will occur within the perimeter of the 81 acre project footprint.

Waste truck traffic is not anticipated to increase as a result of the proposed project. Water will continue to be used and will be delivered via truck or pipeline. Water use associated with operations is anticipated to remain the same; however, periodic increases of overall water use are anticipated during temporary construction activities to control dust and aid in compaction.

Proposed Avoidance and Minimization Measures

The BA included the following measures to minimize or avoid impacts to listed species that are known and/or have the potential to occur within the vicinity of the proposed project area:

*Construction Guidelines*

1. Lighting at the project site shall be downcast and shielded to minimize reflection, and shall be directed inward toward the landfill. Night lighting used at the landfill shall be low-intensity, low-glare designs.

2. All employees and/or contractors working on-site shall dispose of food related trash in closed containers or remove trash from the project area.

3. Fuels, petroleum products, chemical lubricants, and any other hazardous materials shall be monitored and proper precautions shall be used. All equipment shall be maintained to prevent leaks and/or other accidental releases of hazardous materials into the environment. Proper containment and cleanup of any hazardous material spills shall be done immediately.

*Proposed Conservation Measures for Listed Species*

A Service-approved biologist shall have oversight over implementation of all measures described in this BO and he/she shall have the authority to stop project activities, through communication with CWM and/or KHF supervisors, if any of the requirements associated with these measures are not being fulfilled. Any suspension in project activities due to take of listed species shall be communicated to the Service and CDFG within one calendar day.

- San Joaquin kit fox:

    1. Vehicles within the 81-acre project area shall observe a 15 mph speed limit. To the extent practicable, nighttime construction and traffic shall be minimized as this is the time when San Joaquin kit fox are most active.

    2. The project proponent shall appoint a representative who will serve as the onsite contact person for any CWM employee or contractor who might inadvertently kill or injure a San Joaquin kit fox, or who finds a dead, injured or entrapped animal. The representative will be identified during the Listed Species Education Program and made known to all personnel on the project site. The representative's name and contact information will also be provided to the Service and CDFG prior to implementation of the project.

    3. No less than 30 calendar days but no more than 60 calendar days prior to construction, a protocol-level preconstruction survey conducted by an agency-approved biologist shall be done of all areas within the project footprint as well as within a 200 ft. buffer around the project footprint. The survey must adhere to the measures set forth in the Service's January 2011 (as updated) *Standard Measures for Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance Construction and Operation Requirements* (Standard Measures). A letter report and map of discovered and potential San Joaquin kit fox dens will be submitted to, and approved by, the Service and CFDG following the survey and prior to initiation of construction.

    4. Disturbance to all San Joaquin kit fox dens shall be avoided to the maximum extent possible. If dens or potential dens are identified within the project footprint and/or buffer zone during pre-construction surveys, the project proponent will

conduct monitoring and/or excavation of those dens affected by the project as follows:

a. All monitoring activities will be overseen by an agency-approved biologist.

b. The agency-approved biologist will monitor potential dens for three consecutive nights and submit the results to the Service and CDFG via letter report.

c. Active dens will not be excavated during the natal season (approximately January 1 – June 14).

d. Additionally, the agency-approved biologist will oversee excavation of dens with no San Joaquin kit fox use following approval by the Service and CDFG.

e. If natal/pupping dens are discovered within 200 ft. of the project footprint, CWM or KHF personnel must notify the Service and CDFG immediately.

5. CWM and KHF employees and/or contractors must adhere to the standard construction and operational measures set forth in the Service's revised January 2011 (as updated) *Standard Measures for Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance Construction and Operation Requirements* (Standard Measures. Attached as Attachment A.

6. An agency-approved biologist shall conduct a Listed Species Education Program (LSEP) for all construction and project supervisors prior to project implementation, with the purpose of providing personnel information regarding the potential of San Joaquin kit fox to occur on-site and the effects of the project on the species. Additionally, the LSEP shall cover information regarding general behavior, legal protections, and penalties for state and/or federal violations. The program shall be given to all new supervisory personnel prior to beginning work, and all attendees must sign an attendance sheet and confirm that they understand the protection measures and construction restrictions set forth in the program. Training materials and attendance lists shall be submitted to the Service and CDFG.

7. All exclusionary fencing surrounding the 81-acre project area shall be inspected on a monthly basis to ensure proper integrity. Inspections shall continue as long as construction and/or operational activities take place within the project area. If gaps and/or holes are discovered in the exclusionary fence, construction and/or operational activities shall cease and the project footprint shall be re-surveyed for San Joaquin kit fox.

8. Any project personnel who kills or injures a San Joaquin kit fox, or who finds a

dead or injured San Joaquin kit fox shall immediately report the incident to the appointed representative discussed in the above San Joaquin Kit Fox Conservation Measure No. 2. The appointed representative shall contact the Service and CDFG within one calendar day of the death or injury of a San Joaquin kit fox caused by project-related activities. Notification must include the date, time and location of the incident and any additional pertinent information.

9. Construction pipes, culverts, or similar structures with a diameter of 4 inches or greater that are stored less than two feet above the ground, and are located outside of the fenced-in project area for one or more nights shall be thoroughly inspected for San Joaquin kit fox prior to being moved and/or used. If a San Joaquin kit fox is discovered inside such structures, the structure shall not be moved until the Service and CDFG have been notified, and the animal has moved.

10. EPA shall verify the applicant's purchase of San Joaquin kit fox conservation credits at a conservation bank with an appropriate service area, and at a ratio of 3:1 (3 acres of conservation habitat purchased for every 1 acre of habitat lost as a result of the proposed project). The purchase of such credits must be completed prior to the initiation of any construction activities.

Action Area

The action area is defined in 50 CFR § 402.02, as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action." The action area for this project is the project footprint which includes the expanded footprint of KHF's Cell B-18 and stockpile area used to stage equipment and store excavated earthen material. All areas to be permanently lost (81 acres) as a result of this project are located within the project footprint. In addition to the proposed project footprint, the action area includes the land proposed as compensation for the habitat affected.

**Analytical Framework for the Jeopardy/No Jeopardy Determination**

In accordance with policy and regulation, the following analysis relies on four components to support the jeopardy/no jeopardy determination for the San Joaquin kit fox: (1) the *Status of the Species*, which evaluates the species' range-wide condition, the factors responsible for that condition, and their survival and recovery needs; (2) the *Environmental Baseline*, which evaluates the condition of all species in the action area, the factors responsible for that condition, and the role of the action area in the species' survival and recovery; (3) the *Effects of the Action*, which determines the direct and indirect impacts of the proposed Federal action and the effects of any interrelated or interdependent activities on the species; and (4) the *Cumulative Effects*, which evaluates the effects of future, non-Federal activities in the action area on the species.

In accordance with policy and regulation, the jeopardy/no jeopardy determination is made by evaluating the effects of the proposed Federal action in the context of the species' current status, taking into account any cumulative effects, to determine if implementation of the proposed

action is likely to result in an appreciable reduction in the likelihood of both the survival and recovery of the San Joaquin kit fox in the wild.

The following analysis places an emphasis on consideration of the range-wide survival and recovery needs of the species and the role of the action area in meeting those needs in the context of evaluating the significance of the effects of the proposed Federal action, combined with cumulative effects, for purposes of making the jeopardy/no jeopardy determination. In short, a non-jeopardy determination is warranted if the proposed action in consistent with maintaining the role of habitat and the species' population in the action area for the survival and recovery of these two species.

**Status of the Species**

San Joaquin Kit Fox

Refer to the *San Joaquin Kit Fox 5-Year Review: Summary and Evaluation* (Service 2010b) for the current Status of the Species.

**Environmental Baseline**

The KHF is located in the Kettleman Hills region of California's Central Valley, an area dominated by a low, discontinuous, northwest trending ridge. A flat apron of Pleistocene non-marine sediments and recent alluvial fan deposits, referred to as Kettleman Plain and Pleasant Valley, have formed around Kettleman Hills. The predominant vegetation community in the area is non-native annual grassland, with areas of shrubland also present. The region is arid, experiencing rapid runoff, and seasonal streams are often dry before summer.

Terrain in the action area is arid, with a diversity of microhabitats including steep badlands, fine particle alkaline deposits, sand and rock outcroppings, and ephemeral drainages and washes (CH2M Hill 2008). The KHF was historically used for grazing, and the 81 acres of habitat to be lost during the project are largely undisturbed.

San Joaquin Kit Fox

Two biological surveys of portions of the KHF (including the proposed project area) were conducted in 2002 and 2003 by Bumgardner Biological Consulting on behalf of CWM (Bumgardner 2002; 2004b). No occupied San Joaquin kit fox dens were identified in the project area, but potential dens were found on both the project area and areas with later-scheduled construction (Landfill Cell B-20). In addition to potential dens, San Joaquin kit fox tracks and scat were also observed during the surveys. Given the presence of suitable San Joaquin kit fox habitat, historical records of San Joaquin kit foxes in the region, the San Joaquin kit fox's range and mobility, and observation of potential dens, scat and tracks within and/or near the proposed project area, the Service concludes that San Joaquin kit foxes are reasonably likely to occur in the proposed project footprint.

**Effects of Proposed Action**

*Habitat Loss*

A total of 81 acres of annual non-native grasslands and scattered saltbrush scrub will be lost through the construction of an exclusionary fence surrounding all activities associated with the expansion of KHF Cell B-18. This affected area is composed of habitat that is, or may be, suitable for San Joaquin kit fox to utilize for foraging, shelter, breeding, and various other requirements. To offset the loss of San Joaquin kit fox habitat caused by the proposed project, the project proponents have proposed the purchase of compensation acreage that is of commensurate or higher quality to the habitat lost. The project proponents will purchase 3 acres of conservation habitat for every acre of habitat lost as a result of the proposed project. The purchase of conservation habitat is to ensure that the species affected by the proposed action can continue to meet all the required life cycle functions. Purchasing conservation acreage will also help to maintain the geographic distribution of the species, and will contribute to the recovery of the species by increasing the amount of habitat protected against future development and/or additional alteration.

*Construction and Operation Related Effects*

Construction and operational activities using heavy machinery (e.g., digging, grading, stockpiling) have the potential to crush and/or entomb San Joaquin kit foxes while in their dens. Additionally, destruction of dens can displace individuals leaving them vulnerable to predation or inhospitable environmental conditions. The project proponent has proposed to implement the above measures, which include conducting a preconstruction survey for San Joaquin kit fox and following specific conservation measures if active and/or potential dens are found.

Injury and mortality to San Joaquin kit fox may occur through vehicle strikes during construction and operation activities. Although vehicle-base mortality of San Joaquin kit fox occurs most frequently on major roadways with high traffic volume (Bjurlin et al. 2005), the potential of injury remains. The project proponents will observe a 15-mph speed limit while within the project footprint.

*PCB Released into the Environment*

PCBs may be released into the environment as vapor emissions, PCB-contaminated soil particles, or PCB-contaminated runoff, and could affect San Joaquin kit fox through a host of impacts including carcinogenicity, immunosuppression, impaired fetal development, and compromised function of the nervous and endocrine systems (Rice et al. 2003). In response to the potential release of PCBs, EPA requested that CWM conduct an ecological risk assessment using surface-soil, air and vegetation samples collected and analyzed for dioxin-like PCB congeners. The completed ecological risk assessment concluded that the PCB concentrations present in soil, air and vegetation do not pose an unacceptable risk to ecological receptors (Wenck 2010). The Service concurred with the conclusions presented in the 2010 ecological risk assessment, but also expressed concerns regarding the mobilization of PCBs during excavation and stockpiling activities within the project footprint. In discussions with the Service, EPA

provided a CWM work plan outlining dust suppression techniques that will be employed by the project proponents to reduce the dispersal of PCB-contaminated dust. EPA also provided the Service with documentation detailing the project proponent's plan to direct, contain and treat runoff that may be potentially contaminated with PCBs.

**Cumulative Effects**

Cumulative effects include the effects of future State, Tribal, local or private actions that are reasonably certain to occur in the action area considered in this BO. Future Federal actions that are unrelated to the proposed action are not considered in this section as they will require separate consultation with the Service pursuant to section 7 of the Act.

The Service is not aware of any non-Federal actions currently planned at the KHF action area that would directly remove or further disturb San Joaquin kit fox.

**Conclusion**

Construction guidelines and conservation measures set forth for implementation before, during and after this project will all serve to minimize project effects on San Joaquin kit fox. Project-related effects will also be minimal in regards to the wider subpopulations of San Joaquin kit fox present within the project area, within the wider Kettleman Hills region, and within Kings County at large. Following review of the current status of San Joaquin kit fox, the environmental baseline for the action area for the species, the effects of EPA's approval of CWM's TSCA Permit Application for modification and expansion of KHF landfill Cell B-18, and the cumulative effects, it is the Service's biological opinion that the project, as proposed, is not likely to jeopardize the continued existence of the San Joaquin kit fox.

## INCIDENTAL TAKE STATEMENT

Section 9(a)(1) of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened fish and wildlife species without special exemption. Take is defined as harass, harm, hunt, shoot, wound, kill, trap, capture or collect, or an attempt to engage in any such conduct. Harass is defined by the Service as an intentional or negligent act or omission which creates the likelihood of injury to a listed species by annoying it to such an extent as to significantly disrupt normal behavior patterns which includes, but are not limited to, breeding, feeding, or sheltering. Harm is defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by impairing behavioral patterns including breeding, feeding or sheltering. Incidental take is defined as take that is incidental to, and not the purpose or, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section (7)(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with this Incidental Take Statement.

The measures described below are non-discretionary, and must be undertaken by EPA so that they become binding conditions of any approval issued to CWM, as appropriate, for the

exemption in section 7(o)(2) to apply. EPA has a continuing duty to regulate the activity covered by this incidental take statement. If EPA (1) fails to assume and implement the terms and conditions or (2) fails to require CWM to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the approval document, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take EPA must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement. [50 CFR §402.14(i)(3)]

**Amount of Extent of Take**

San Joaquin kit fox

The Service anticipates that incidental take of San Joaquin kit fox cannot be quantified for the following reasons: when not foraging, mating, or otherwise being active on the surface, the San Joaquin kit fox inhabits dens, making detection difficult; San Joaquin kit fox occupy a large range and are primarily active at night; and San Joaquin are inherently shy animals that tend to avoid human presence. In instances when the Service cannot quantify individuals taken, the Service may estimate take in terms of the number of acres of habitat permanently lost or degraded as a result of the proposed action. The Service anticipates take incidental to this project as all San Joaquin kit foxes inhabiting, utilizing, or moving through 81 acres of suitable habitat that will be permanently lost. Upon implementation of the *Proposed Avoidance and Minimization Measures*, *Reasonable and Prudent Measures* and the *Terms and Conditions* considered herein, incidental take of San Joaquin kit fox within this acreage in the forms of harm and harassment due to landfill modification, and all associated construction and operational activities, leading to habitat loss and degradation, and in the forms of injury and mortality due to accidental entrapment, entombment or crushing in dens, or vehicle strikes, will become exempt from the prohibitions described in section 9 of the Act.

**Reasonable and Prudent Measures**

The following reasonable and prudent measures are necessary and appropriate to minimize the effects of the proposed action on the San Joaquin kit fox.

1. All of the conservation measures proposed in the *Project Description* of the BA must be fully implemented.

2. All of the *Avoidance and Minimization Measures* described in this BO, and as supplemented and modified below, must be fully implemented.

**Terms and Conditions**

In order to be exempt from the prohibitions of section 9 of the Act, EPA, as well CWM acting under EPA oversight and any contractors acting on CWM's behalf, must comply with the following terms and conditions, which implement the reasonable and prudent measures described above. These Terms and Conditions are nondiscretionary.

The following Term and Condition implements Reasonable and Prudent Measure one:

1. EPA shall require CWM to implement all conservation measures described in the BA. Terms and Conditions that apply to contractors and/or contractor activities shall be conditioned in contracts for work.

The following Terms and Conditions implement Reasonable and Prudent Measure two:

1. EPA shall require CWM to implement all measures described in this BO. Terms and Conditions that apply to contractors and/or contractor activities shall be conditioned in contracts for work.

2. EPA shall require CWM to monitor and document, on a monthly basis, the amount of habitat lost or degraded during project-related construction and/or operation to ensure that the amount of habitat affected does not exceed the amount of take anticipated by this BO (81 acres).

3. EPA shall require CWM to notify the Service and EPA when the take limit anticipated by the BO is reached, and shall reinitiate consultation if the limit is expected to be exceeded.

4. The EPA shall ensure that the appropriate conservation credits are purchased in accordance with this BO prior to the initiation of any construction activities.

**Reporting Requirements**

1. EPA shall provide the Service with proper documentation detailing the purchase of conservation credits as described in the BO. Documentation shall be provided to the Service prior to any on-site construction activities.

2. Any employee who, during construction or routine operations, inadvertently kills or injures a San Joaquin kit fox, or any other federally-listed species, shall immediately report the incident to the designated Listed Species Education Program representative. The representative must report the incident to EPA, and contact the Service within one calendar.

**Disposition of Individuals Taken**

In the event of injured and/or dead San Joaquin kit foxes, EPA shall ensure that CWM notifies the Service within one calendar day and that the animal(s) shall only be handled by an agency-approved, permitted biologist. Any injured San Joaquin kit foxes shall be cared for by a licensed veterinarian or other qualified individual. In the case of a dead San Joaquin kit fox, the individual shall be preserved as appropriate, and held in a secure location until further instructions are received from the Service regarding the disposition of the specimen, or until the Service, or Service designee, is able to take custody of the specimen. EPA shall also ensure that

CWM reports to the Service within one calendar day any information about take or suspected take of a federally-listed species not exempted in this BO. Notification must include date, time, and location of the incident, or of the finding of a dead individual. The Service contacts for such events are Daniel Russell, Deputy Assistant Field Supervisor, Endangered Species Program, Sacramento Fish and Wildlife Office, at (916)414-6600, and Daniel Crum, Resident Agent-in-Charge, Law Enforcement Division, at (916)414-6600.

## CONSERVATION RECOMMENDATIONS

Conservation recommendations are suggestions of the Service regarding discretionary measures to minimize or avoid further adverse effects of a proposed action on listed, proposed, or candidate species, or on designated critical habitat, or regarding the development of new information. They may also serve as suggestions on how action agencies can assist species conservation in furtherance of their responsibilities under section 7(a)(1) of the Act, or recommended studies improving an understanding of a species' biology or ecology. Wherever possible, conservation recommendations should be tied to tasks identified in recovery plans. The Service is providing you with the following conservation recommendations:

1. EPA should assist the Service in implementing recovery actions for San Joaquin kit fox identified in the *Recovery Plan for Upland Species of the San Joaquin Valley* (Service 1998).

2. New sightings of San Joaquin kit fox, or any other sensitive animal species, should be reported to the CNDDB. A copy of the reporting form and topographic map clearly marked with the location of the observed individual(s) should also be provided to the Service.

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefiting listed species and/or their habitat, the Service requests notification of the implementation of any conservation recommendations mentioned above.

## REINITIATION – CLOSING STATEMENT

This concludes the Service's review of CWM's TSCA renewal/modification Approval application as outlined in your September 20, 2011 letter. As provided in 50 CFR § 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been maintained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded, (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or an extent not considered in this BO, (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this BO, or (4) a new species is listed or critical habitat designated that may be affected by the action.

Please contact Kevin Aceituno, Fish and Wildlife Biologist, or Thomas Leeman, San Joaquin Valley Division Chief, at the letterhead address or at (916) 414-6600 if you have any questions regarding this letter on Chemical Waste Management's TSCA renewal/modification Approval application.

Sincerely,

for Susan K. Moore
Field Supervisor

cc:
John Beach, EPA Region 9, San Francisco, California
Chip Poalinelli, EPA Region 9, San Francisco, California

**Literature Cited**

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**ATTACHMENT 4**

**TSCA GROUNDWATER MONITORING ADDENDUM TO SITE-SPECIFIC MONITORING PLAN, KETTLEMAN HILLS FACILITY, KINGS COUNTY, CALIFORNIA. AMEC FOSTER WHEELER, INC. APRIL 17, 2018, (ADDENDUM).**

April 17, 2018

Project 07530

Ms. Reyna Verdin
Environmental Protection Manager
Chemical Waste Management, Inc.
35251 Old Skyline Road
Kettleman City, California 93239

**Subject:** **TSCA Groundwater Monitoring Addendum to Site-Specific Monitoring Plan**
Kettleman Hills Facility, Kings County, California

Dear Ms. Verdin:

The Chemical Waste Management, Inc. (CWM), Kettleman Hills Facility (KHF) is a waste management facility located in Kings County, California (Figure 1), that consists of operating and closed Class I (hazardous waste) treatment, storage, and disposal waste management units (WMUs) and Class II/III (designated and municipal wastes) WMUs. Class I WMUs B-14, B-16, B-18, and Phases 2 and 3 of B-19 have also been permitted to receive Toxic Substances Control Act (TSCA) waste. WMUs B-14, B-16, and Phases 2 and 3 of B-19 (closed TSCA WMUs) are closed and no longer receive waste. B-18 is active and continues to receive TSCA waste. TSCA waste storage and disposal is regulated by the U.S. Environmental Protection Agency and 40 Code of Federal Regulations (CFR) 761 Subpart D.

The current TSCA monitoring system includes 23 groundwater quality monitoring wells that monitor the closed and active TSCA WMUs (Figure 2). Of these, 13 wells monitor the closed TSCA WMUs, 11 wells monitor the active WMU, and 1 well (K32R) monitors both (Table 1).

Groundwater at the KHF is monitored in accordance with two approved site-specific monitoring plans (SSMPs) that were prepared to comply with the monitoring and reporting requirements of California Code of Regulations Title 22 and Title 23, administered by the California Department of Toxic Substances Control (DTSC) and the Central Valley Regional Water Quality Control Board (RWQCB), respectively. The SSMPs are periodically updated through a DTSC permit modification process and/or a RWQCB Waste Discharge Requirement (WDR) update. For the DTSC permit, the currently approved SSMP is the *Site-Specific Groundwater Monitoring Plan* (Geosyntec, 2001). For the RWQCB WDRs, the currently approved SSMP is the *Revised Site-Specific Groundwater Monitoring Plan Class I Waste Management Units* (AMEC, 2014). The currently approved DTSC plan specifies quarterly groundwater monitoring and reporting while the currently approved RWQCB plan specifies semiannual groundwater monitoring and reporting. KHF is working with the DTSC and RWQCB on updating and consolidating the SSMPs. Among other changes, the sampling and reporting frequency will be aligned between the two plans to either semiannual (twice per year) or annual (once per year). Monitoring is completed as required by the most recently approved version of the SSMP.

Some 40 CFR 761 Subpart D requirements may not be included in the approved SSMP. The purpose of this addendum to the SSMP is to specify the additional information and monitoring

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needed to comply with 40 CFR 761 Subpart D requirements. Specifically, this addendum addresses the requirements included in 40 CFR 761.75(b)(6)(ii)(B) and 40 CFR 761.75(b)(6)(iii).

40 CFR 761.75(b)(6)(ii)(B) specifies:

> "(B) All monitor wells shall be cased and the annular space between the monitor zone (zone of saturation) and the surface shall be completely backfilled with Portland cement or an equivalent material and plugged with Portland cement to effectively prevent percolation of surface water into the well bore. The well opening at the surface shall have a removable cap to provide access and to prevent entrance of rainfall or stormwater runoff. The well shall be pumped to remove the volume of liquid initially contained in the well before obtaining a sample for analysis. The discharge shall be treated to meet applicable State or Federal discharge standards or recycled to the chemical waste landfill."

The first portion of paragraph 40 CFR 761.75(b)(6)(ii)(B) includes well construction and seal requirements. Pertinent well construction information, including the seal interval and type of seal material used for the groundwater wells monitoring the TSCA waste cells, is summarized in Table 2. The seal material consisted of Portland type cement with or without bentonite. Each of the KHF groundwater monitoring wells has a removable cap to provide access to the well and prevent rainfall and storm water from entering the well.

The second portion of paragraph 40 CFR 761.75(b)(6)(ii)(B) indicates the wells shall be pumped to remove the volume of water initially in the well before obtaining a sample for analysis. The pre-sample purge method is presented in the most recently approved SSMP. This purge method may not remove the volume of water in the well casing before samples are collected. A waiver under 40 CFR 761.75(c)(4) is included in the TSCA permit application. The rationale for the purge process at the KHF is discussed in the SSMP and in *Evaluation of Pre-Sample Purge Methods* (Geomatrix, 2007), *Review of Evaluation of Pre-Sample Purge Methods* (DTSC, 2008), and *Addendum to Evaluation of Pre-Sample Purge Methods* (AMEC, 2008). The waiver to the prescriptive purge standard in 40 CFR 761.75(b)(6)(ii)(B) will not pose an increased risk of injury to health or the environment.

40 CFR 761.75(b)(6)(iii) specifies:

> "(iii) Water analysis. As a minimum, all samples shall be analyzed for the following parameters, and all data and records of the sampling and analysis shall be maintained as required in §761.180(d)(1). Sampling methods and analytical procedures for these parameters shall comply with those specified in 40 CFR part 136 as amended in 41 FR 52779 on December 1, 1976.
>
> (A) PCBs.
>
> (B) pH.
>
> (C) Specific conductance.
>
> (D) Chlorinated organics."

Groundwater samples from the groundwater wells monitoring the closed TSCA waste cells, B-14, B-16, and B-19 Phases 2 and 3 will be monitored on the same frequency and for the same constituents specified for the Class I WMUs in the most recent approved SSMP. At a

minimum, groundwater wells monitoring the closed TSCA waste cells will be tested annually for pH (field), specific conductance (field), and chlorinated organics and every 5 years for polychlorinated biphenyls (PCBs; to coincide with the KHF 5-year constituent of concern groundwater monitoring events).

Groundwater samples from the groundwater wells monitoring the active TSCA waste cell B-18 will be monitored on the same frequency and for the same constituents specified for the Class I WMUs in the most recent approved SSMP. At a minimum, groundwater wells monitoring the active TSCA waste cell B-18 will be sampled annually and tested for PCBs, pH (field), specific conductance (field), and chlorinated organics.

If you have any questions regarding the information presented in this letter, please contact either of the undersigned.

Sincerely yours,
Amec Foster Wheeler Environment & Infrastructure, Inc.

Bradley A. Loewen, PG
Senior Associate Geologist

Philip P. Ross, PG
Principal Hydrogeologist

Attachments:
Table 1 – Monitoring Well Summary, TSCA Waste Management Units
Table 2 – Groundwater Well Construction Information, TSCA Waste Management Units
Figure 1 – Site Location Map
Figure 2 – Monitoring Network, TSCA Waste Management Units

**REFERENCES**

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# TABLE 1

## MONITORING WELL SUMMARY
## TSCA WASTE MANAGEMENT UNITS

Kettleman Hills Facility
Kings County, California

| Well ID | Water-Bearing Zone | Monitored TSCA WMU |
|---|---|---|
| E02 | Mya C/D | B-18 |
| K05 | Tuffaceous B | closed B-19 Phases 2 and 3 |
| K17 | Neverita A | closed B-19 Phases 2 and 3 |
| K18 | Trachycardium A | B-18 |
| K30R | Mya A | closed B-19 Phases 2 and 3 |
| K32R | Mya A | B-18 and closed B-19 Phases 2 and 3 |
| K38 | Mya A | B-18 |
| K46 | Mya A | closed B-14 and closed B-19 Phases 2 and 3 |
| K48 | Neverita B | closed B-19 Phases 2 and 3 |
| K49 | Neverita B | closed B-16 and closed B-19 Phases 2 and 3 |
| K50 | Tuffaceous B | closed B-14 and closed B-19 Phases 2 and 3 |
| K51 | Mya C/D | B-18 |
| K57 | Trachycardium B | B-18 |
| K58 | Trachycardium B | B-18 |
| K60 | Pecten A | B-18 |
| K62 | Tuffaceous B | closed B-19 Phases 2 and 3 |
| K64 | Tuffaceous A | closed B-19 Phases 2 and 3 |
| K66 | Neverita A | closed B-19 Phases 2 and 3 |
| K67 | Trachycardium A | B-18 |
| K68 | Pecten B | B-18 |
| K69 | Neverita A | closed B-19 Phases 2 and 3 |
| K70 | Neverita B | closed B-19 Phases 2 and 3 |
| K71R | Pecten B | B-18 |

**Abbreviations:**
WMU = Waste Management Unit
TSCA = Toxic Substances Control Act

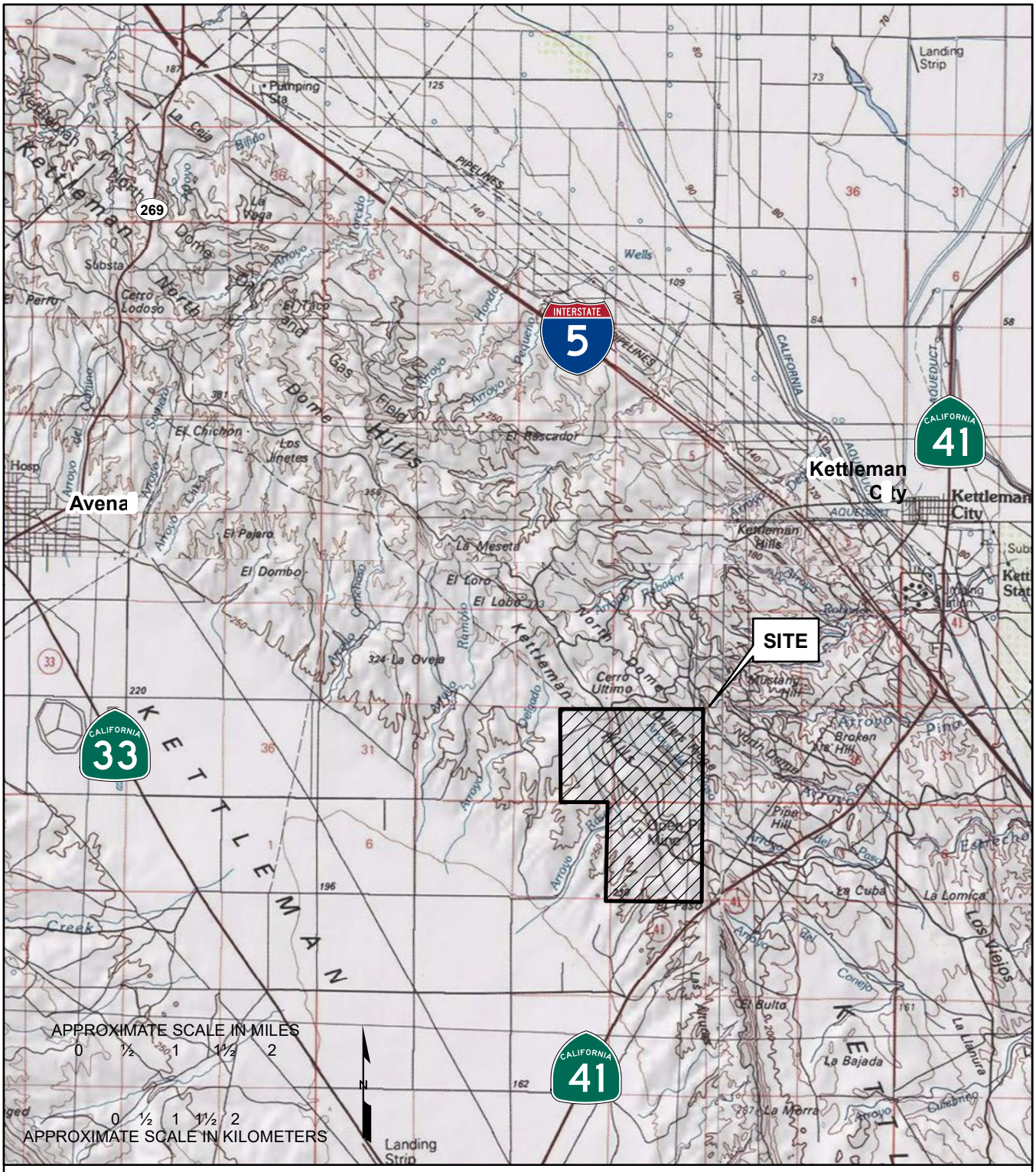
**TABLE 2**

**GROUNDWATER WELL CONSTRUCTION INFORMATION**
**TSCA WASTE MANAGEMENT UNITS**
Kettleman Hills Facility
Kings County, California

| Well ID | Ground Elevation (feet msl) | Top of Sounding Pipe[1] (feet msl) | Date Drilled[2] | Total Well Depth[1,3] (feet) | Conductor Casing[1] (inches) | Casing Size[1,4] (inches) | Screen Depth[2,3] (feet) | Sandpack Depth[2,3] (feet) | Seal Interval[2,3] (feet) | Seal Material[2] |
|---|---|---|---|---|---|---|---|---|---|---|
| E02 | 870.46 | 871.78 | 11/22/87 | 508 | N/A | 6 (SS) | 461-501 | 450-511 | 0-450 | Type V Cement w/3-5% Bentonite |
| K05 | 900.10 | 901.66 | 06/14/84 | 520 | N/A | 4 | 476-515 | 459-520 | 0-459 | Cement |
| K17 | 833.37 | 835.02 | 09/10/84 | 435 | N/A | 4 | 385-435 | 375-440 | 0-375 | Type V Cement |
| K18 | 896.23 | 897.70 | 07/20/85 | 615 | N/A | 4 | 500-610 | 490-620 | 0-490 | Type V Cement |
| K30R | 897.11 | 903.16 | 05/02/08 | 471 | N/A | 5 | 438-467 | 426-478 | 0-426 | Type II/V Cement w/ 5% Bentonite |
| K32R | 815.20 | 818.49 | 03/14/91 | 421 | 16 and 10 Steel | 5 | 381-421 | 376-422 | 0-376 | Type V Cement w/3% Bentonite |
| K38 | 856.51 | 857.35 | 08/02/85 | 451 | N/A | 4.5 | 416-446 | 400-447 | 0-400 | Type V Cement |
| K46 | 871.25 | 872.69 | 10/10/85 | 461 | N/A | 4.5 | 421-461 | 406-461 | 0-406 | Type V Cement |
| K48 | 820.02 | 821.57 | 10/11/85 | 411 | N/A | 4.5 | 386-416 | 376-419 | 0-376 | Type V Cement |
| K49 | 810.21 | 811.19 | 11/06/85 | 410 | N/A | 4.5 | 365-405 | 357-410 | 0-357 | Type V Cement |
| K50 | 887.13 | 887.81 | 01/28/86 | 468 | N/A | 2 inside 4.5 | 426-476 | 415-491 | 0-415 | Type V Cement |
| K51 | 835.65 | 836.90 | 06/22/91 | 464 | 16 and 10 Steel | 5 | 409-464 | 403-464 | 0-403 | Type V Cement w/5% Bentonite |
| K57 | 914.20 | 916.80 | 05/06/91 | 550 | 16 and 10 Steel | 5 | 530-549 | 525-550 | 0-525 | Type V Cement w/6% Bentonite |
| K58 | 905.72 | 907.40 | 12/10/99 | 531 | N/A | 5 | 490-530 | 485-535 | 0-485 | Type V Cement w/3-5% Bentonite |
| K60 | 864.47 | 866.27 | 10/20/99 | 474 | N/A | 5 | 453-473 | 443-475 | 0-443 | Type V Cement w/ Bentonite |
| K62 | 855.77 | 857.33 | 10/05/99 | 431 | N/A | 5 | 406-431 | 400-436 | 0-400 | Type V Cement w/ 5% Bentonite |
| K64 | 825.69 | 826.92 | 09/24/99 | 395 | N/A | 5 | 355-395 | 348-407 | 0-348 | Type V Cement w/ 3-5% Bentonite |
| K66 | 798.97 | 810.15 | 09/14/99 | 360 | N/A | 5 | 312-350 | 309-366 | 0-309 | Type V Cement w/ 5% Bentonite |
| K67 | 930.88 | 932.84 | 12/02/99 | 585 | N/A | 5 | 545-585 | 530-589 | 0-530 | Type V Cement w/ 3-5% Bentonite |
| K68 | 855.02 | 856.47 | 11/23/99 | 485 | N/A | 5 | 445-485 | 438-508 | 0-438 | Type V Cement w/ 3-5% Bentonite |
| K69 | 876.00 | 877.87 | 12/15/97 | 437 | N/A | 5 | 396-436 | 391-440 | 0-391 | Type V Cement w/ 5% Bentonite |
| K70 | 870.77 | 872.74 | 01/15/98 | 437 | N/A | 5 | 400-425 | 395-430 | 0-395 | Type V Cement w/ 5-7% Bentonite |
| K71R | 938.90 | 940.03 | 06/26/09 | 565 | N/A | 5 | 527-566 | 514-572 | 0-514 | Type V Cement w/ 5% Bentonite |

**Notes:**
1. Data from KHF Well ID Chart (November 6, 2013).
2. Taken from individual well completion records. Cement is Portland type cement.
3. Depths and elevations are rounded to nearest foot.
4. Polyvinyl chloride casing used for all wells except for E02, which used stainless steel casing.

**Abbreviations:**
msl = above mean sea level
N/A = not applicable
SS = stainless steel



California

Basemap modified from National Geographic Society TOPO!
(U.S. Geological Survey topographical map mosaic dataset).

SITE LOCATION MAP
Kettleman Hills Facility
Kings County, California

amec foster wheeler

| | | |
|---|---|---|
| Date: 01/10/2018 | Project No.: 007530 | Figure 1 |
| Submitted By: WTA | Drawn By: SCM | |

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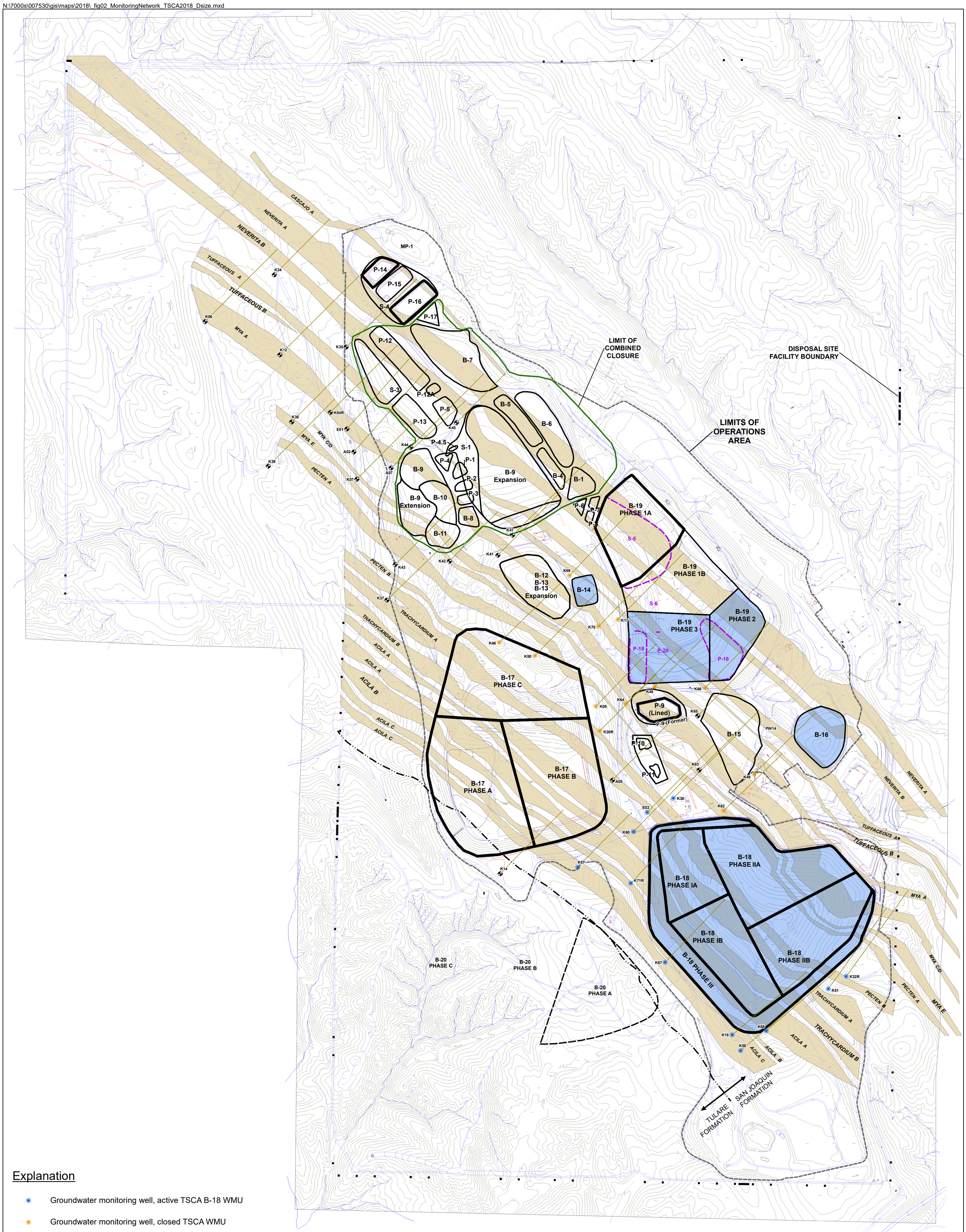



## Explanation

- Groundwater monitoring well, active TSCA B-18 WMU
- Groundwater monitoring well, closed TSCA WMU
- Other groundwater monitoring well
- Leader from well to target sandstone
- Geologic contact between the San Joaquin Formation and the Tulare Formation

**Site boundaries**

**Type**

- Disposal site facility boundary
- Limits of operations area

**Waste Management Units**

- Active WMUs
- Closed WMUs
- Future WMU B-20. Not yet permitted for waste disposal.
- Clean Closed WMUs
- TSCA WMU

**Site geology**

- Outcrop of water bearing zone within San Joaquin Formation

NOTES:
1) TSCA = Toxic Substances Control Act.
2) WMU = Waste Management Unit.
3) 10 ft topographic contours.

APPROXIMATE SCALE IN FEET
0 500 1,000 1,500 2,000
0 100 200 300 400
APPROXIMATE SCALE IN METERS

N

# MONITORING NETWORK
# TSCA WASTE MANAGEMENT UNITS
# Kettleman Hills Facility
# Kings County, California

amec foster wheeler

| | | |
|---|---|---|
| Date: 04/17/2018 | Project No.: 007530 | Figure 2 |
| Submitted By: BAL | Drawn By: SCM | |

# ATTACHMENT 5

# PCB BUILDING DIAGRAMS

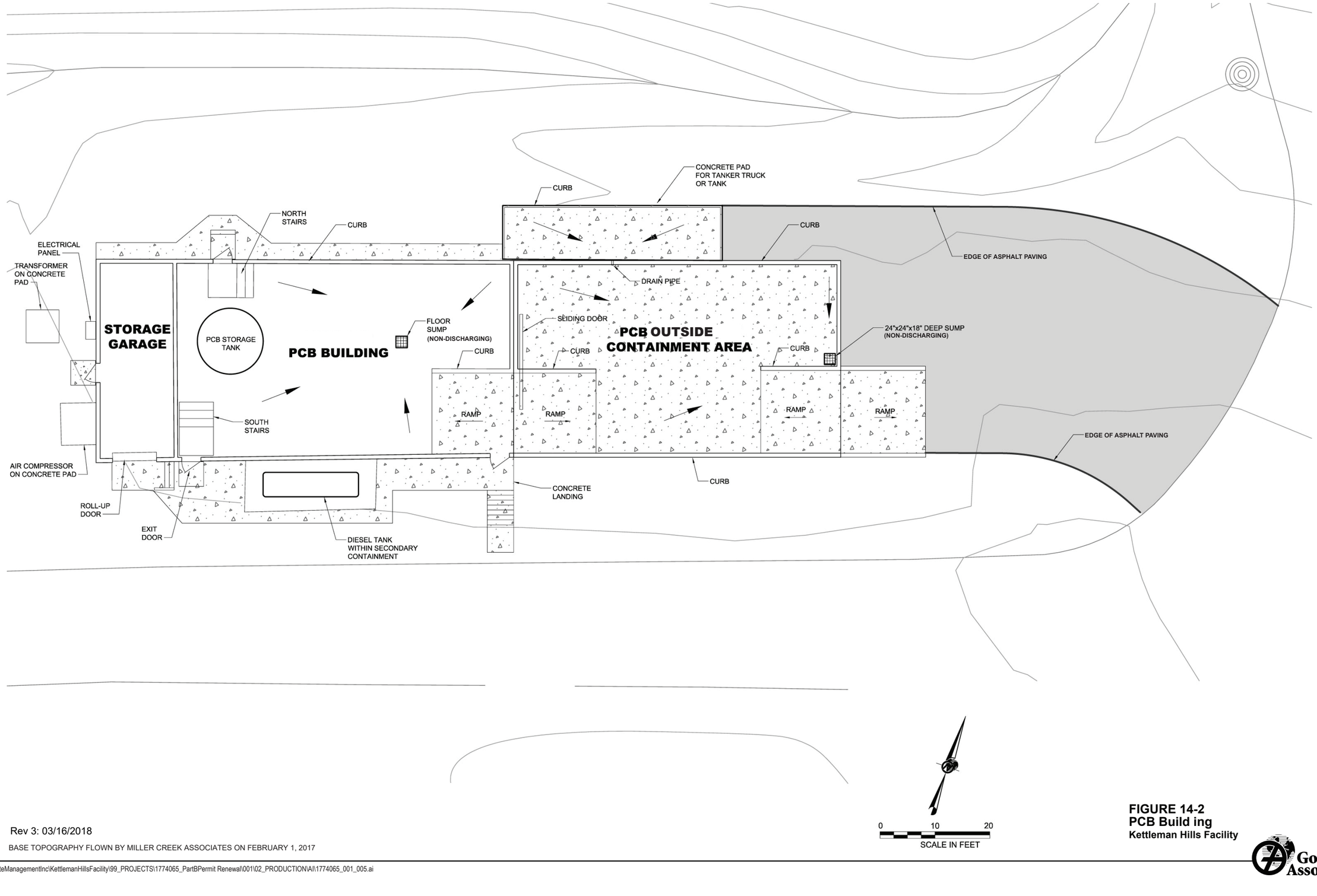


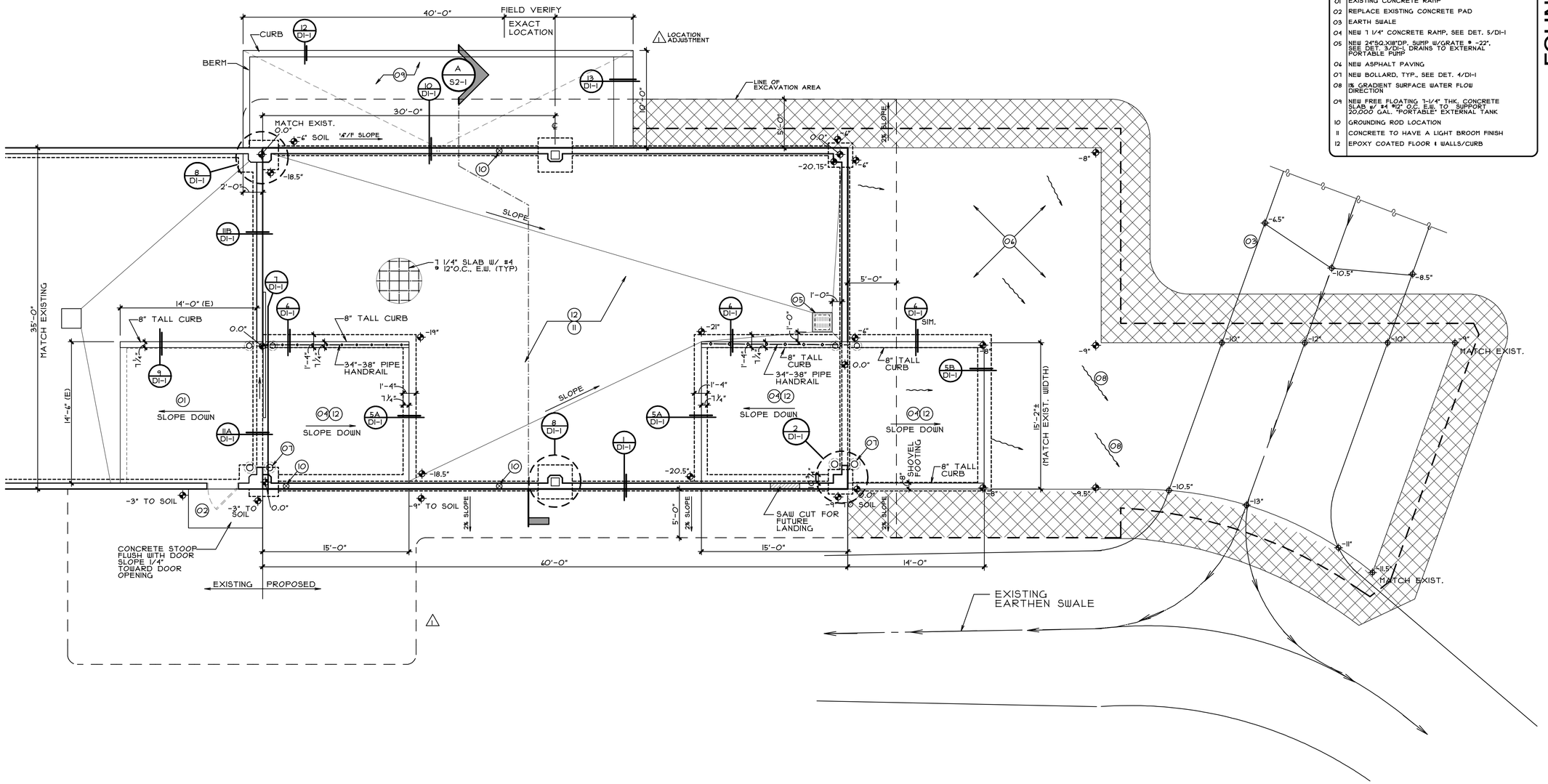

**FIGURE 14-2**
**PCB Build ing**
**Kettleman Hills Facility**

Rev 3: 03/16/2018

BASE TOPOGRAPHY FLOWN BY MILLER CREEK ASSOCIATES ON FEBRUARY 1, 2017

G:\ChemicalWasteManagementInc\KettlemanHillsFacility\99_PROJECTS\1774065_PartBPermit Renewal\001\02_PRODUCTION\AI\1774065_001_005.ai

Golder Associates




## FOUNDATION KEYNOTES

| | |
|---|---|
| 01 | EXISTING CONCRETE RAMP |
| 02 | REPLACE EXISTING CONCRETE PAD |
| 03 | EARTH SWALE |
| 04 | NEW 7 1/4" CONCRETE RAMP, SEE DET. 5/DI-1 |
| 05 | NEW 24"SQ.X18"DP. SUMP W/GRATE @ -22". SEE DET. 3/DI-1 DRAINS TO EXTERNAL PORTABLE PUMP |
| 06 | NEW ASPHALT PAVING |
| 07 | NEW BOLLARD, TYP., SEE DET. 4/DI-1 |
| 08 | 2% GRADIENT SURFACE WATER FLOW DIRECTION |
| 09 | NEW FREE FLOATING 7-1/4" THK. CONCRETE SLAB @ #4 @12" O.C. E.W. TO SUPPORT 20,000 GAL. "PORTABLE" EXTERNAL TANK |
| 10 | GROUNDING ROD LOCATION |
| 11 | CONCRETE TO HAVE A LIGHT BROOM FINISH |
| 12 | EPOXY COATED FLOOR & WALLS/CURB |

NOTE:
GRADE SLOPES ARE APPROX., SOME FIELD ADJUSTMENT WILL BE REQD.

# FOUNDATION PLAN

SCALE: 3/16" = 1'-0"

# FOUND. PLAN

PAUL H. STOMMEL A.I.A. C 19298
MICHAEL D. JUNDT R.S.E. S3396

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# PCB BUILDING OUTSIDE PAD FOUNDATION

architecture
engineering
planning

ASSOCIATED DESIGN & ENGINEERING ■ INC.
86 E. ESCALON ■ SUITE 107 ■ FRESNO, CALIFORNIA 93710 ■ PH. (559) 431-2389 ■ FAX (559) 431-2074

REGISTERED PROFESSIONAL ENGINEER
MICHAEL D. JUNDT
NO. S3396
EXP. 9-30-11
STRUCTURAL
STATE OF CALIFORNIA

| REVISIONS | | |
|---|---|---|
| 1 | 01/06/11 | |
| 2 | | |
| 3 | | |
| 4 | | |
| 5 | | |
| 6 | | |

| | |
|---|---|
| SHEET | S1-1 |
| JOB NO. | E10055 |
| DATE | 1/10/2011 |

# ATTACHMENT 6

# PCB BUILDING INTERIOR SECONDARY CONTAINMENT CALCULATIONS

Kettleman Hills Facility - PCB Building Secondary Containment Volume
Prepared by: Scott Sumner, P.E. Updated: 05/17/12

PCB Building Storage Capacity

Objective: Determine the maximum capacity of the storage tank to allow for 300 55 gallon drums on pallets that can be stored inside the building. The drums are assumed to be double stacked so 150 drums would be on the floor.

Criteria: 40 CFR 761.65(b)(1)(ii) requires that the floor and curbing must provide a containment volume equal to at least two times the internal volume of the largest PCB Article or Container, or 25 percent of the total volume of all PCB Articles or Containers, whichever is greater.

PCB Articles and Containers: The existing building has a 10,082 gallon tank. The number of drums and other articles will not have a capacity of over 30,000 gallons so the controlling criteria will be two times the largest PCB Article or Container. This assumption will be confirmed once the number of drums is determined.

Calculation: Determine the volume of the secondary containment for the building. The secondary containment must be reduced by any other articles, containers or structures etc. within the secondary containment that would displace a portion of the secondary containment. It should be noted that the largest tank does not displace any volume that would need to be included in the spill volume.

Based on dimension provided by Cranston Land Surveying (6/26/97) the secondary containment volume is computed as follows:

**Concrete Containment:**

Main containment:

| | | |
|---|---|---|
| 34.0 ft x 57.6 ft x 1.50 ft = | 2,937.6 | cubic feet |

Floor Drain (slope capacity)

| | | |
|---|---|---|
| 1/3 x 34.0 ft x 57.6 ft x 0.37 ft = | 241.5 | cubic feet |

| | | |
|---|---|---|
| **Total Secondary Containment:** | **3,179.1** | **cubic feet** |

**Fixed Structures:**

less South Stairway

| | | |
|---|---|---|
| (0.5 x 4.4 x 3.0) + (0.5 x 4.4 x 4.0) + (0.5 x 4.4 x 5.0) | 26.4 | cubic feet |

less North Stairway

| | | |
|---|---|---|
| (0.5 x 3.2 x 5.5) + (0.5 x 3.2 x 4.5) + (0.5 x 3.2 x 3.5) | 21.6 | cubic feet |

less Ramp

| | | |
|---|---|---|
| (1.5 x 13.0/2 x 14.5) | 141.4 | cubic feet |

| | | |
|---|---|---|
| **Total Displaced Volume by Fixed Structures:** | **189.4** | **cubic feet** |

| | |
|---|---|
| Equipment and Supplies | |
| Storage Lockers | |
| 5 lockers (flamables, tools, PPE, etc) x 48" x 36" | 74.4 cubic feet |
| (on pallets 5 inches off the floor) | |
| Absorbent Material | |
| 1 absorbent pallet 48 x 48 | 19.8 cubic feet |
| (on a pallet 5 inches off the floor) | |
| Service Tray | |
| 60" x 60" on 3" casters | 31.3 cubic feet |
| **Total Displaced Volume by Equipment and Supplies:** | **125.49 cubic feet** |
| Secondary Containment Less Structures and Equipment | 2,864.3 cubic feet |
| x 7.48 gallons/cubic foot | 21,424.7 gallons |

**Volume Required for 300 55 gallon drums on Pallets:**

The 55 gallon drums rest on wooden pallets that raise the drum approximately 5 inches above the concrete floor. Therefore the drum will displace approximately 15 inches (1.24 feet) on average (compensating for slope of floor).

Average height of containment: 3,179.1 cubic feet /34.0 feet /57.6 feet = 1.62 feet

1.62 feet deep
\- 0.42 pallet thickness (5 inches)
1.21 average displacement depth

Pallet displacement: A standard pallet weighs 40 to 70 pounds and is estimated to have a volume of 1 cubic foot.

Drum Displacement: A standard drum is slightly less than 24 inches. Therefore the displacement of a drum is:

$= \text{pi} \times R^2 \times h$
$= \text{pi} \times 1 \times 1.21$
3.8 cubic feet

A pallet will hold four drums (likely worst case, i.e. maximum displacement).

Therefore a typical pallet of drums will displace:
= pallet displacement + 4 x drum displacement
= 1+4*3.8
16.2 cubic feet per pallet
120.9 gallons per pallet
For 300 drums double stacked, 150 would be on the floor so 38 pallets would be on the floor.
Volume of 38 Pallets = 4594 gallons

Kettleman Hills Facility - PCB Building Secondary Containment Volume
Prepared by: Scott Sumner, P.E. Updated: 05/17/12

---

Volume for Largest Tank:

| | |
|---|---|
| The total secondary containment is | 21,425 |
| Volume of drums and pallets: | 4594 |
| Volume for containment of largest tank: | 16,830 |

Since containment must be twice the larget tank the storage tank must have less than 8,415 gallons.

Since the exsiting tank is 10,082 gallons and the maximum capacity allowed is 8,415 gallons the volume of storage has to be limited. To provide a factor of safety, the tank volume will be restricted to 7,500 gallons using a high level alarm system. This allows for 915 gallons (or 12% of the proposed storage). The site proposes to install a high level alarm system to limit the storage capacity to 7,500 gallons.

When 300 55-gallon drums are stored within the building, there will be 16,500 gallons in drums and 7,500 gallons in the tank. Total potential volume is therefore 24,000 gallons. The containment criteria based on total volume is 25% of the volume. Therefore the secondary containment volume must exceed 6,000 gallons. Calculations above demonstrate the secondary containment volume exceeds 20,164 gallons and therefore exceeds the criteria.

Conclusion

The PCB building can store 300 drums pallets double stacked and placed on the existing concrete floor and provide 2 times the secondary containment capacity of the largest vessel if the storage tank is limited to 7,500 gallons. A high level alarm system will be installaed to limit the capacity to 7,500 gallons which allows for 915 gallons (12%) factor of safety.

**ADDENDUM TO**
**SECONDARY CONTAINMENT VOLUME CALCULATIONS**
**PCB BUILDING INTERIOR**

Secondary containment volume calculations for the interior containment area at the PCB Flushing/ Storage Unit are presented in the preceding pages.

Figure 6-1 on the next page shows a scaled drawing of the PCB Flushing/Storage Unit that demonstrates the number of drums (i.e., 300 drums) assumed in the containment calculations can fit in the interior containment area.

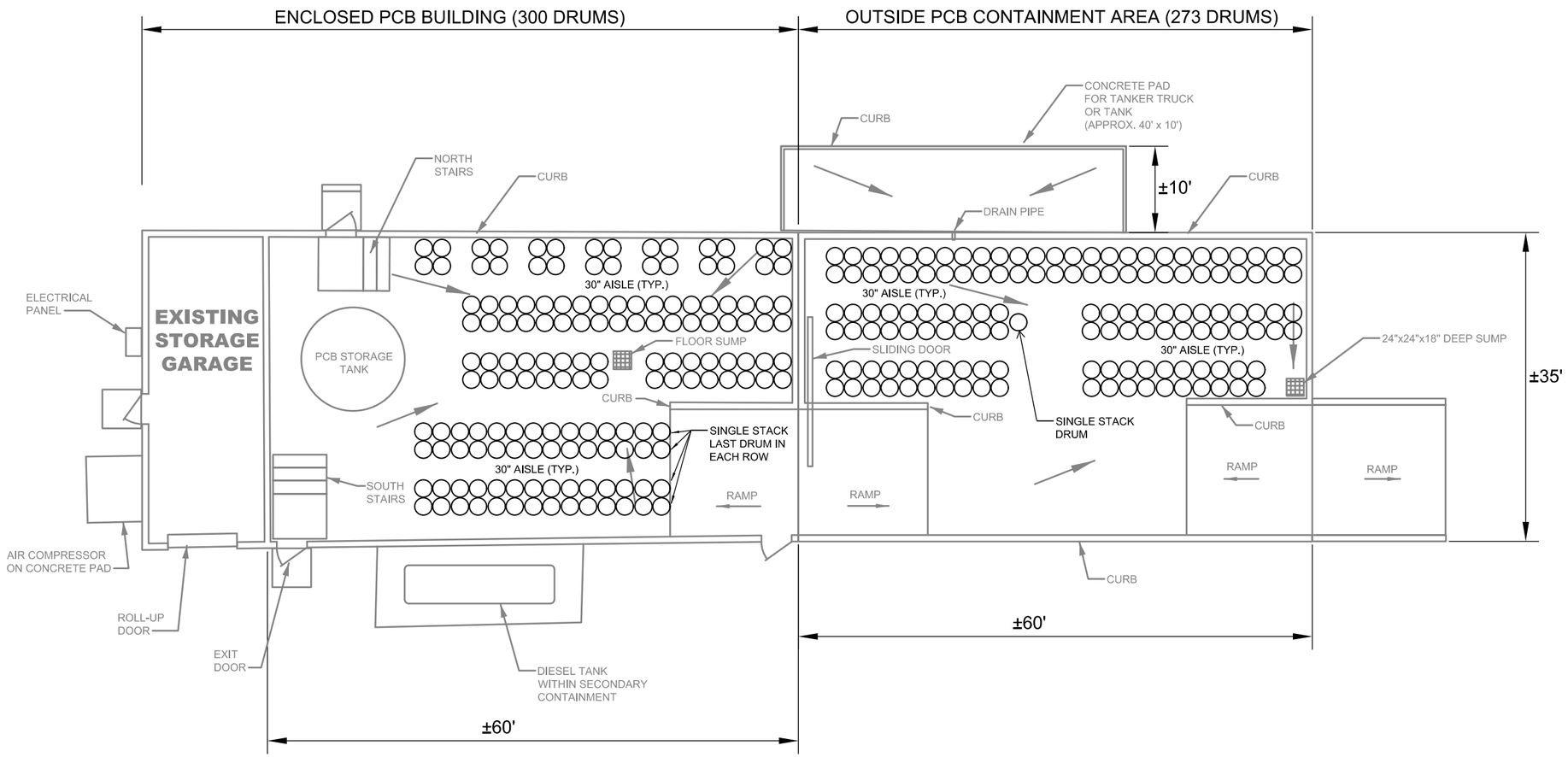
The existing dimensions of the containment system components for the interior building were measured by Golder Associates Inc. during an inspection of the PCB Flushing/Storage Unit on February 8, 2018. These measurements confirmed the validity of the dimensions used in the containment calculations on the preceding pages for the interior of the PCB Flushing/Storage Unit. Golder Associates Inc. also verified that there were not any accumulations or debris in the containment system components (e.g., floor, sumps, etc.) that could reduce the capacity of the interior containment system.

REGISTERED PROFESSIONAL ENGINEER
RYAN HILLMAN
No. C71988
CIVIL
STATE OF CALIFORNIA

3-14-2018

Ryan Hillman, PE
Golder Associates Inc.

Date




**LEGEND**

◯ 55 - GALLON DRUM FOOTPRINT (2-FOOT DIAMETER)

**NOTE**

1. DRUMS DOUBLE-STACKED UNLESS OTHERWISE NOTED.

15 0 15

SCALE FEET

CLIENT
CHEMICAL WASTE MANAGEMENT, INC.

CONSULTANT
Golder Associates

| | |
|---|---|
| YYYY-MM-DD | 2018-03-08 |
| PREPARED | KJK |
| DESIGN | KJK |
| REVIEW | RH |
| APPROVED | RH |

PROJECT
KETTLEMAN HILLS FACILITY
PCB FLUSHING / STORAGE UNIT

TITLE
DRUM LAYOUT

PROJECT No. 1774065 | Rev. | FIGURE 6-1

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

Plotted: --- | File Name: 1527679GCCS-01.dgn

# ATTACHMENT 7

# PCB BUILDING EXTERIOR SECONDARY CONTAINMENT CALCULATIONS

PCB Unit Outside Containment Area Storage Capacity

Objective: Determine the maximum capacity of the storage on the outside containment pad. Assumptions will be made on the types of containers stored on the pad.

Criteria: 40 CFR 761.65(b)(1)(ii) requires that the floor and curbing must provide a containment volume equal to at least two times the internal volume of the largest PCB Article or Container, or 25 percent of the total volume of all PCB Articles or Containers, whichever is greater.

PCB Articles and Containers: There are no fixed containers on the outside containment pad. In general large articles that would be difficult to manage inside the building may be placed on the containment pad during draining and flushing. For purposes of this calculation the number of drums and other articles will not have a capacity of over 20,000 gallons and no one article would exceed 5,000 gallon so the controlling criteria will be two times the largest PCB Article or Container. This assumption will be confirmed once the number of drums is determined.

Calculation: Determine the volume of the secondary containment for the building. The secondary containment must be reduced by any other articles, containers or structures etc. within the secondary containment that would displace a portion of the secondary containment. It should be noted that the largest tank does not displace any volume that would need to be included in the spill volume.

Based on dimension provided in the design plans ( the secondary containment volume is computed as follows:

**Concrete Containment:**

Main containment:

| | | |
|---|---|---|
| 34.0 ft x 59 ft x 1.50 ft = | 3,009.0 | cubic feet |

Floor Drain (slope capacity)

| | | |
|---|---|---|
| 1/3 x 34.0 ft x 59 ft x 0.29 ft = | 189.3 | cubic feet |
| (3.5 inches of drop) | | |
| **Total Secondary Containment:** | **3,198.3** | **cubic feet** |

**Fixed Structures:**

less West and East Ramps

| | | |
|---|---|---|
| 2 ramps (1.5 x 14.0/2 x 15) | 157.5 | cubic feet |
| **Total Displaced Volume by Fixed Structures:** | **157.5** | **cubic feet** |

| | | | |
|---|---|---|---|
| Secondary Containment Less Structures | | 3,040.8 | cubic feet |
| | x 7.48 gallons/cubic foot | 22,745.3 | gallons |

| | | | |
|---|---|---|---|
| Allowance for Precipitation: | | 20,164.0 | gallons |
| Provide for containment of the 24 hour 25 year storm event of 2.0 inches | | | |
| Volume of catchment: 60 ft. x 35 ft = | 2,100 | square feet | |
| Rainfall | 0.167 | feet | |
| Total Volume: | 350 | cubic feet or | |
| | 2,618 | gallons | |
| Resulting available secondary containment: | | 20,127.3 | gallons |

**Volume Required for Miscellaneous Containers:**

Assume that half of the containment pad is filled with drums, transformers or other containers totaling 15,000 gallons (equivalent to 273 55 gallon drums). Conservatively assume that no secondary containment capacity is available from that half.

Remaining Secondary Capacity: 20,127 gallons / 2

10,064 gallons

Assume a large container (5,000 gallons) is stored in the second half of pad.

The required secondary containment is:

5,000 gallons x 2 = 10,000 gallons < controlling criteria

or

25% of 20,000 gallons = 5,000 gallons

Conclusion

The PCB outside containment area can store the equivalent of 273 55 gallons drums and one 5,000 gallon container placed on the existing concrete floor and provide more than 2 times the secondary containment capacity of the largest vessel of 5,000 gallons and more than 25% of the total volume of all containers (assumed to be 20,000 gallons total).

**ADDENDUM TO**
**SECONDARY CONTAINMENT VOLUME CALCULATIONS**
**PCB BUILDING EXTERIOR AREA**

Secondary containment volume calculations for the exterior containment slab area at the PCB Flushing/ Storage Unit are presented in the preceding pages.

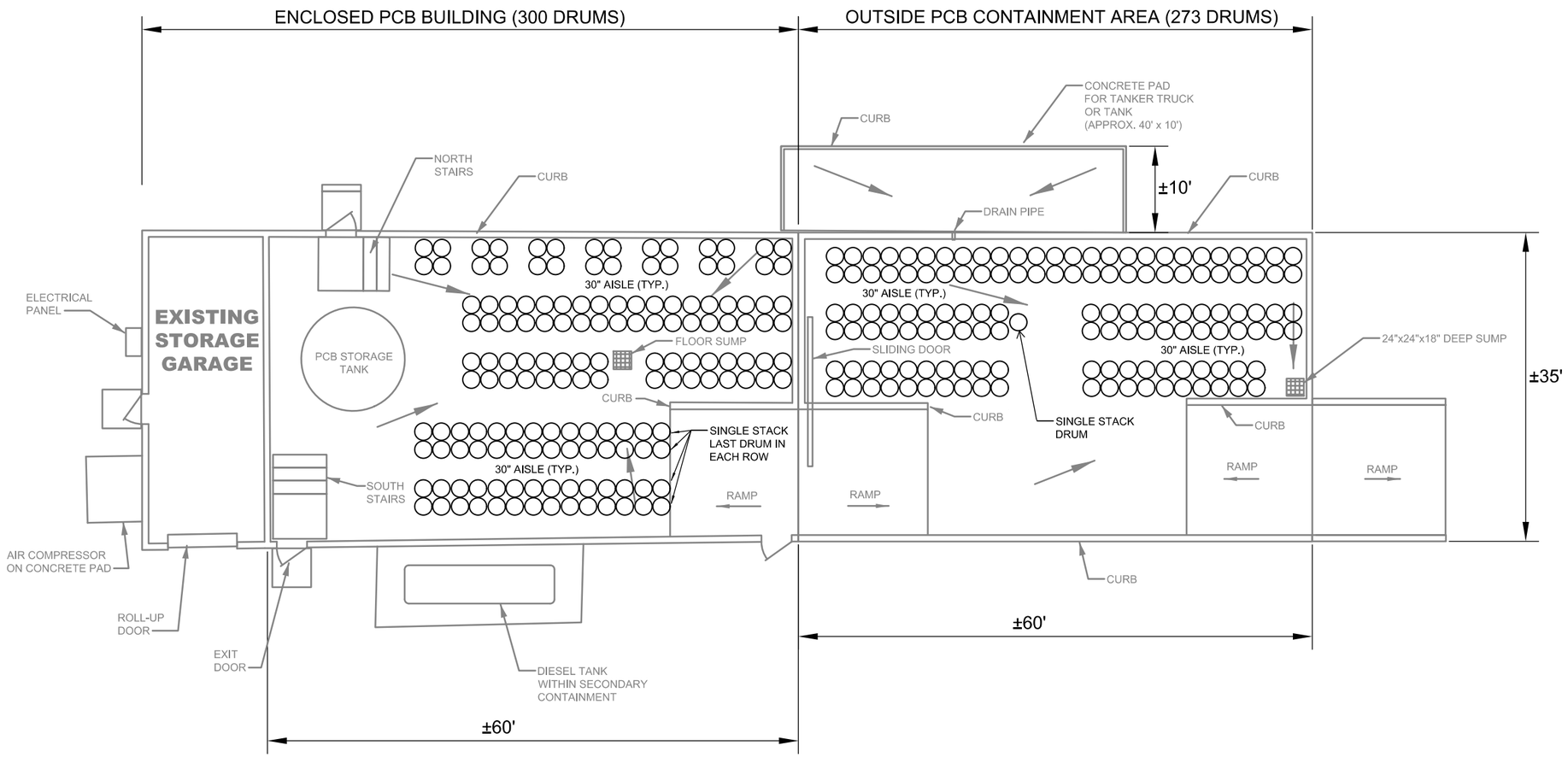
Figure 7-1 on the next page shows a scaled drawing of the PCB Flushing/Storage Unit that demonstrates the number of drums (i.e., 273 drums) assumed in the containment calculations can fit within the northern portion of the exterior containment area while maintaining a drive isle into the building along the southern portion of the exterior containment slab.

The existing dimensions of the containment system components for the exterior containment slab were measured by Golder Associates Inc. during an inspection of the PCB Flushing/Storage Unit on February 8, 2018. These measurements confirmed the validity of the dimensions used in the containment calculations on the preceding pages for the exterior containment slab at the PCB Flushing/Storage Unit. Golder Associates Inc. also verified that there were not any accumulations or debris in the containment system components (e.g., slab, sumps, etc.) that could reduce the capacity of the exterior containment system.

3-14-2018

Ryan Hillman, PE
Golder Associates Inc.

Date




**LEGEND**

◯ 55 - GALLON DRUM FOOTPRINT (2-FOOT DIAMETER)

**NOTE**

1. DRUMS DOUBLE-STACKED UNLESS OTHERWISE NOTED.

15 0 15

SCALE FEET

CLIENT
CHEMICAL WASTE MANAGEMENT, INC.

CONSULTANT
Golder Associates

| | |
|---|---|
| YYYY-MM-DD | 2018-03-08 |
| PREPARED | KJK |
| DESIGN | KJK |
| REVIEW | RH |
| APPROVED | RH |

PROJECT
KETTLEMAN HILLS FACILITY
PCB FLUSHING / STORAGE UNIT

TITLE
DRUM LAYOUT

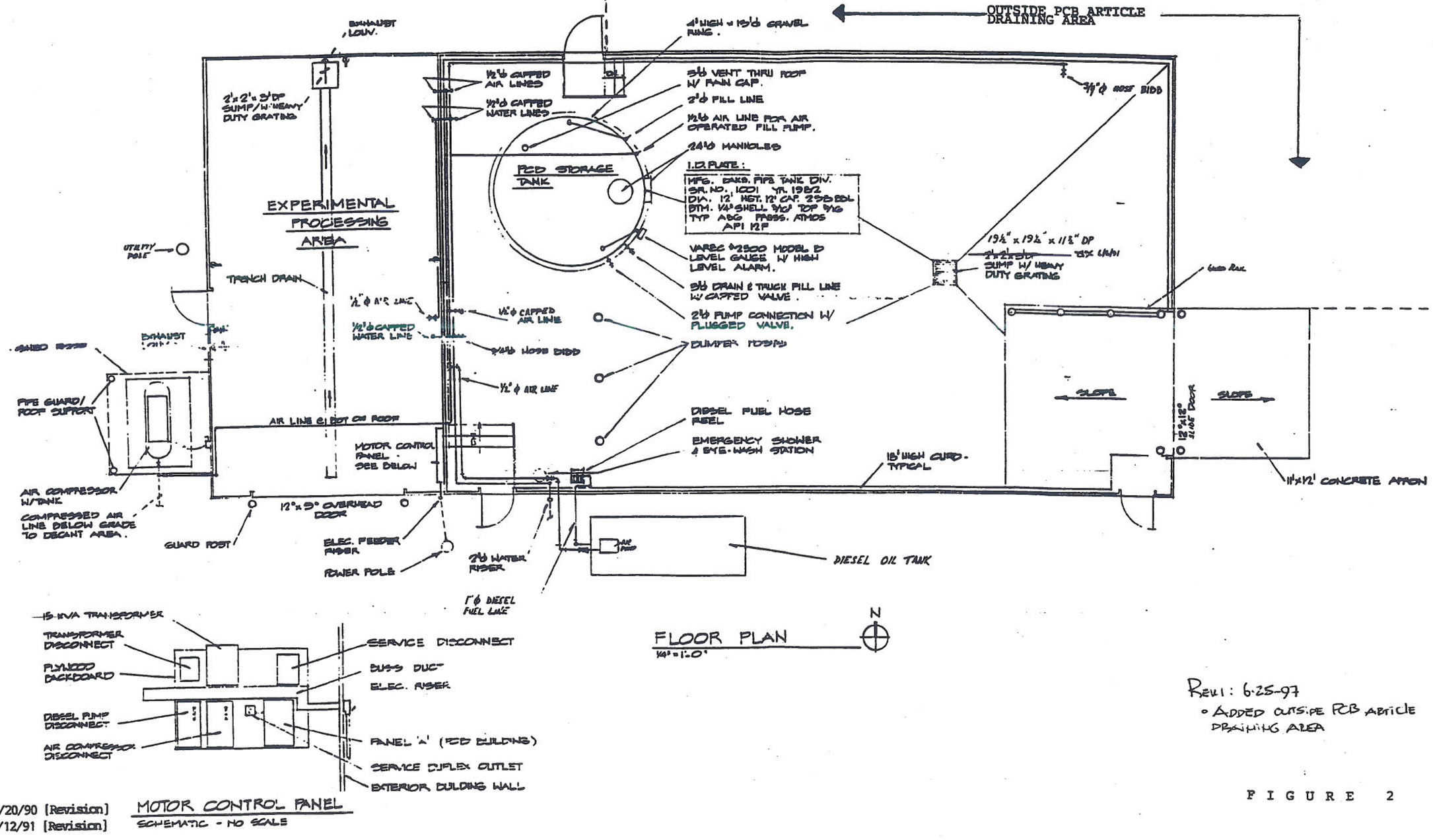
PROJECT No. 1774065 | Rev. | FIGURE 7-1

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

Plotted: --- | File Name: 1527679GCCS-01.dgn

# ATTACHMENT 8

# PCB TANK DIAGRAMS




Date: 07/20/90 [Revision]
06/12/91 [Revision]

Revi: 6-25-97
- Added outside PCB article draining area

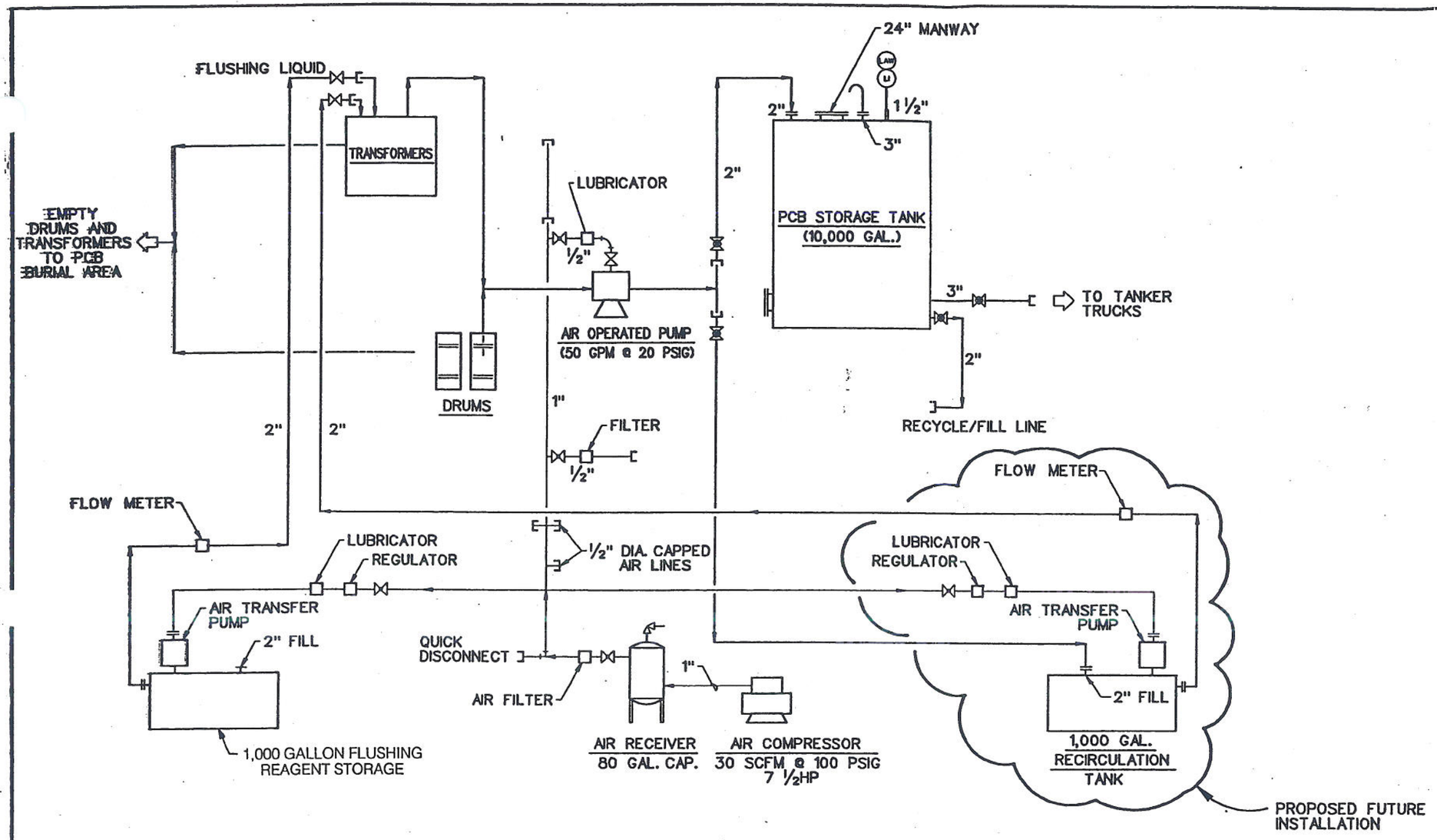
FIGURE 2

P.C.D. BUILDING As-BUILTS
CHEM-WASTE MANAGEMENT
KETTLEMAN HILLS, CALIF.: N/A

REVISION | DATE | DRWN BY | CHK
1 | 6/25/97 | CJK

PROJECT NUMBER: 8828

WILLIAM M. BROOKS INC.
CIVIL ENGINEERS · STRUCTURAL ENGINEERS
1300 E. SHAW, SUITE 125
FRESNO, CALIFORNIA 93710
TELEPHONE (209) 222-8801




LEGEND:

- GATE VALVE
- GLOBE VALVE
- CHECK VALVE
- BALL VALVE
- QUICK DISCONNECT

| REV. | DATE | DESCRIPTION | DR BY | APP BY |
|---|---|---|---|---|

FIGURE 3

| | |
|---|---|
| SCALE: NOT TO SCALE | PROJECT NO.: 67129 |
| DES BY | PROJECT: CWM KETTLMAN HILLS PROCESSING FACILITIES |
| DR BY: LLS | SHEET TITLE: PCB BUILDING PROCESS & INSTRUMENTATION SCHEMATIC |
| CHK BY: GS | |
| APP BY | |

Chemical Waste Management, Inc.
35251 Old Skyline Road
Kettleman City, CA 93239

SHEET 1 OF 1
DRAWING NO. | REV.

/usr3/project/kettlman/GWTT.dgn

CH2M, INC.

TANK DATA SHEET

PCB FLUSH STORAG

SITE Kettleman Hills Facility, CA

TANK NUMBER/NAME PCB-1

## PROCESS CONDITIONS

Vessel Fluid Polychlorinated Biphenyls and Flushings

Specific Gravity 1.0-2.0 Freeboard At Working Vol., ft. 1

Normal Operating Press., PSIG Atmospheric Temp.,°F Ambient

## CONSTRUCTION DETAILS

| | Material | Thickness | Type |
|---|---|---|---|
| Bottom | Carbon Steel | 1/4" | Flat |
| Shell | Carbon Steel | 3/16" | Straight sided |
| Head (Ends) | Carbon Steel | 3/16" | Flat |

Working Vol. USG 238 BBL Insulation None

Elev. Above Grade, ft. 13 Method of Construct. Welded

Tank I.D. ft. 12½ Tank Height or Length ft. 12

Design Code Used API 12 F Date in Service 4/83

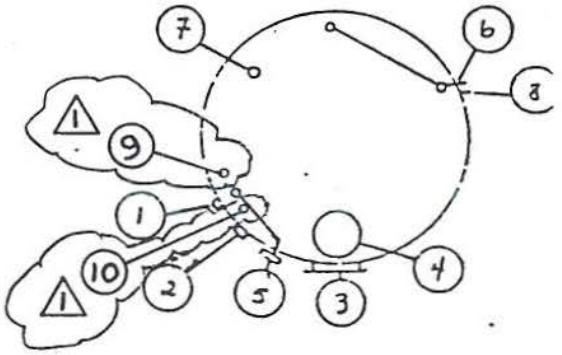
Anchorage None

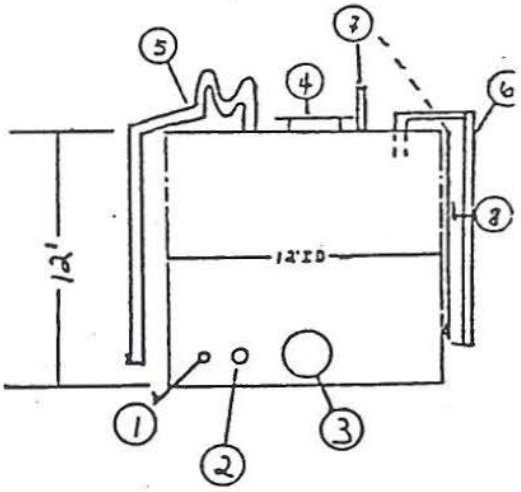
### Connections

| Item No. | Size In. | Gasket | Service |
|---|---|---|---|
| 1 | 2 | cam-lock | Pump connection |
| 2 | 3 | cam-lock | Trucks loading/unloading |
| 3 | 24' | Rubber | Side Manway |
| 4 | 24' | Rubber | Top Manway |
| 5 | 14' | - | Level indicator |
| 6 | 2' | Teflon | Fill w/internal tube |
| 7 | 3 | - | Vent tube |
| 8 | ½ | - | Air line |
| 9 | 1½ | - | THD. SPARE PLUGGED |
| 10 | 1½ | - | THD. SPARE PLUGGED |
| 11 | | | |
| 12 | | | |
| 13 | | | |
| 14 | | | |
| 15 | | | |
| 16 | | | |
| 17 | | | |
| 18 | | | |
| 19 | | | |
| 20 | | | |

REMARKS

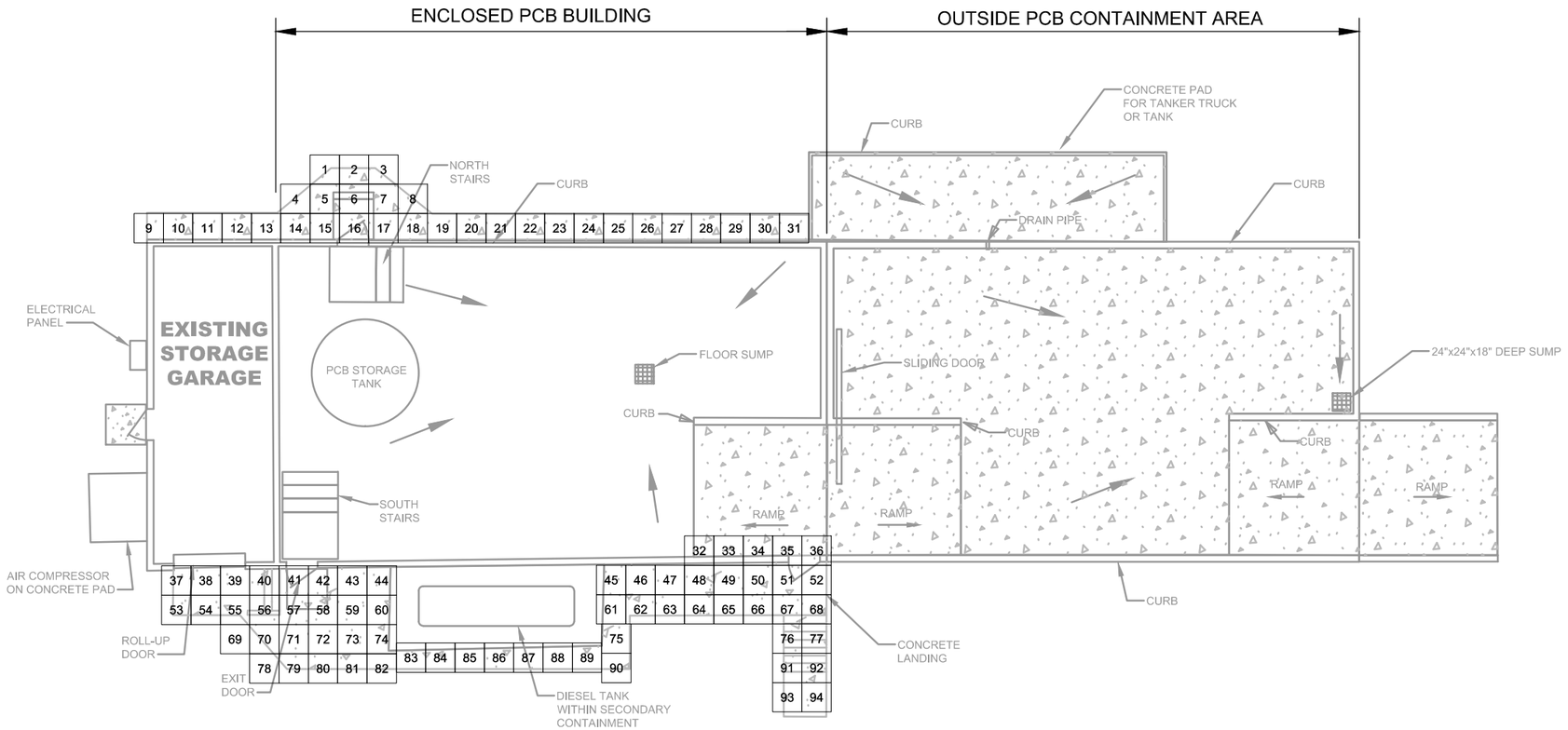
### Tank Sketch



# ATTACHMENT 9

# PCB BUILDING SAMPLING GRID



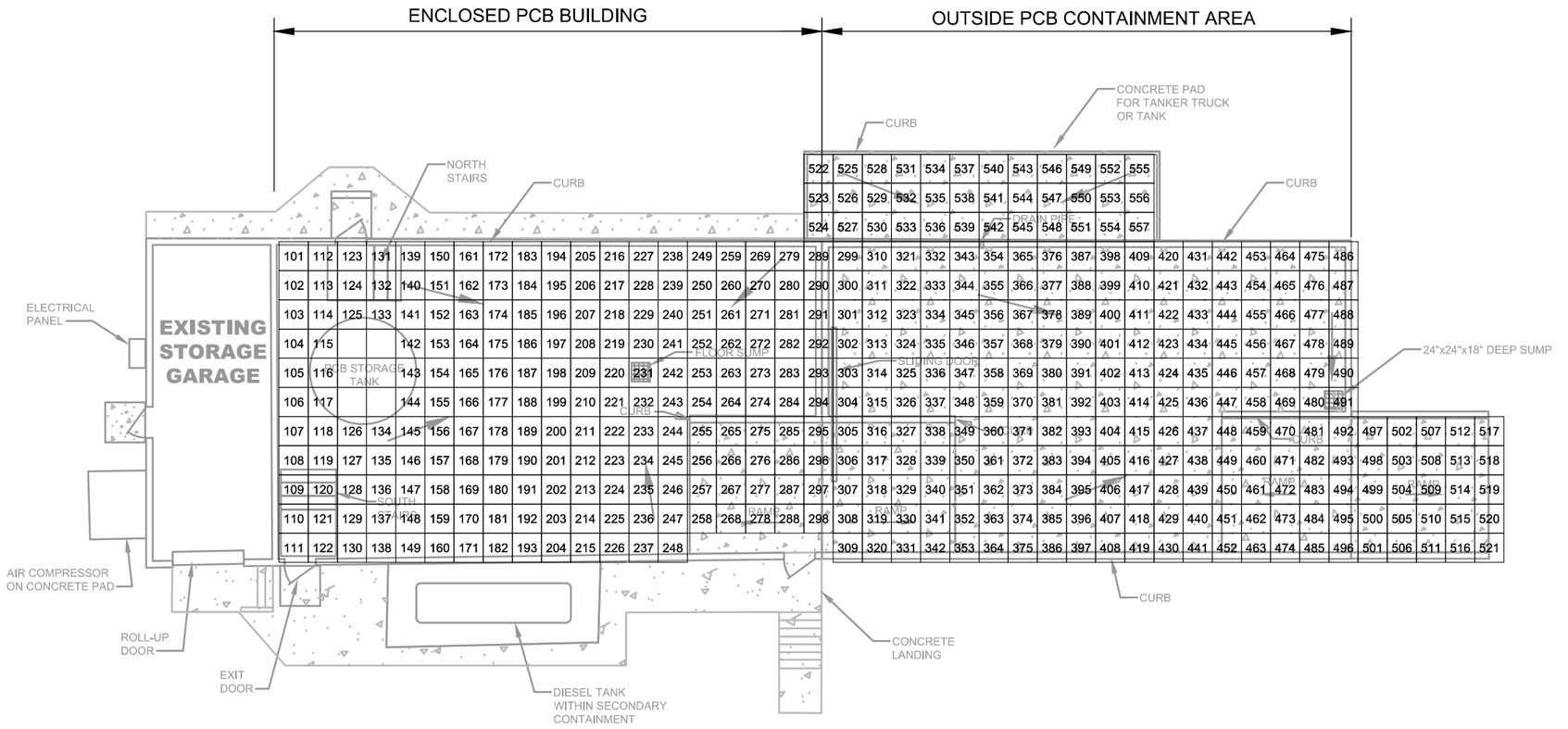

## LEGEND

78 — 1-METER BY 1-METER GRID AND GRID NUMBER

15 0 15
SCALE FEET

| | |
|---|---|
| CLIENT | CHEMICAL WASTE MANAGEMENT, INC. |
| CONSULTANT | GOLDER |
| YYYY-MM-DD | 2018-04-17 |
| PREPARED | KJK |
| DESIGN | KJK |
| REVIEW | RH |
| APPROVED | RH |
| PROJECT | KETTLEMAN HILLS FACILITY<br>PCB FLUSHING / STORAGE UNIT |
| TITLE | 1-METER BY 1-METER GRID LAYOUT<br>NON-PCB PROCESSING AREA |
| PROJECT No. | 1774065 |
| Rev. | |
| FIGURE | 9-1 |

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI B
1 in
0
Path: — | File Name: 1774065PCB-03.dgn




## LEGEND

401 — 1-METER BY 1-METER GRID AND GRID NUMBER

15 0 15
SCALE FEET

| | |
|---|---|
| CLIENT | CHEMICAL WASTE MANAGEMENT, INC. |
| CONSULTANT | GOLDER |
| YYYY-MM-DD | 2018-04-17 |
| PREPARED | KJK |
| DESIGN | KJK |
| REVIEW | RH |
| APPROVED | RH |
| PROJECT | KETTLEMAN HILLS FACILITY<br>PCB FLUSHING / STORAGE UNIT |
| TITLE | 1-METER BY 1-METER GRID LAYOUT<br>PCB PROCESSING AREA |
| PROJECT No. | 1774065 |
| Rev. | |
| FIGURE | 9-2 |

Path: — | File Name: 1774065PCB-03.dgn
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI B

# ATTACHMENT 10

# FEDERAL, STATE, AND LOCAL PERMITS AND APPROVALS

STATE OF CALIFORNIA PETE WILSON, Governor

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD—
CENTRAL VALLEY REGION
SAN JOAQUIN WATERSHED BRANCH OFFICE:
3614 EAST ASHLAN AVENUE
FRESNO, CA 93726
PHONE: (209) 445-5116
FAX: (209) 445-5910

28 February 1992

Mr. Rich Zweig
Chemical Waste Management, Inc.
P.O. Box 471
Kettleman City, CA 93239

**FINAL INSPECTION - LANDFILL B-18 PHASES IA AND IB - CHEMICAL WASTE MANAGEMENT, INC.'S KETTLEMAN HILLS FACILITY - KINGS COUNTY**

During the week of 16 February 1992, Carol Carollo of Chemical Waste Management, Inc. (CWMI) notified the Regional Board that construction of the Landfill B-18 Phases IA and IB was complete. Revised Monitoring and Reporting Program (RMRP) No. 86-121 requires CWMI to submit construction certification reports demonstrating that the waste management unit (WMU) was constructed in accordance with the design plans and specifications; and, with the prescriptive standards and performance goals of Chapter 15. The RMRP also requires a final inspection of the completed waste management unit and a response within 30 days.

We have reviewed the construction and materials documents referenced in the 29 January 1992 memorandum entitled "KETTLEMAN HILLS FACILITY CAT 000 646 117 LANDFILL B-18 CONSTRUCTION REPORT - CLAY TEST RESULTS RWQCB REQUIREMENT PER 23 CCR § 2541." An inspection of the completed facility was conducted on 24 February 1992.

The submitted information and inspection observations indicate the construction was completed in conformance with your requirements. Therefore, CWMI may initiate the disposal of waste to Landfill Unit B-18, Phases IA and IB.

If you have any questions, please call Jim Dowdall of this office at (209) 445-5108.

Shelton R. Gray
Senior Engineering Geologist

JKD:
cc: Mr. Les Kaufman, US EPA, San Francisco
Mr. Jim Pappas, DTSC, Sacramento
Mr. Gerry White, DTSC, Fresno
Mr. Dennis Otani, KCHS, Hanford
Mr. Richard Gurske, CWMI, Fremont
Mr. Leo Stahlecker, CWMI, Kettleman City
Ms. Carol Carollo, CWMI, Kettleman City
Ms. Catherine Bumgardner, CWMI, Kettleman City

STATE OF CALIFORNIA — ENVIRONMENTAL PROTECTION AGENCY
PETE WILSON, *Governor*

DEPARTMENT OF TOXIC SUBSTANCES CONTROL
REGION 1
10151 CROYDON WAY, SUITE 3
ACRAMENTO, CA 95827-2106
6) 855-7700

March 10, 1992

Mr. Mark Langowski
General Manager
Chemical Waste Management, Inc.
Kettleman Hills Facility
P.O. Box 471
Kettleman City, California 93239

APPROVAL OF THE CERTIFICATION REPORTS AND AS-BUILT DRAWINGS FOR THE LANDFILL B-18, PHASE I, DTSC PERMIT CONDITION IV.C.9., CHEMICAL WASTE MANAGEMENT,INC., KETTLEMAN HILLS FACILITY, EPA ID NO. CAT 000646117

Dear Mr. Langowski:

The Department of Toxic Substances Control (DTSC) hereby approves Phase I of Landfill B-18 for receipt of hazardous waste in accordance with State Permit Condition IV.C.9.. This approval is the result of a thorough review of the various construction certification reports, construction quality assurance reports, photo documentation submitted in response to DTSC Permit Condition IV.C.9..

If you have any questions concerning the above approval, please call Mr. William P. Veile of my staff at (916) 855-7708.

Sincerely,

Val F. Siebal
Regional Administrator

Certified # P 354 817 687

cc: Ms. Carol Carollo
Chemical Waste Management, Inc.
Kettleman Hills Facility
P.O. Box 471
Kettleman City, California 93239

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cc: Mr. Bob Henry
Chemical Waste Management, Inc.
Kettleman Hills Facility
P.O. Box 471
Kettleman City, California 93239

Mr. John Kendall
Chemical Waste Management, Inc.
Kettleman Hills Facility
P.O. Box 471
Kettleman City, California 93239

Mr. William Pfister
Regional Water Quality Control Board
Central Valley Region
3614 East Ashlan Avenue
Fresno, California 93726

Mr. Shelton Gray
Regional Water Quality Control Board
Central Valley Region
3614 East Ashlan Avenue
Fresno, California 93726

Mr. James Dowdall
Regional Water Quality Control Board
Central Valley Region
3614 East Ashlan Avenue
Fresno, California 93726

Mr. Jeffrey Zelikson
U. S. Environmental Protection Agency
Region IX, [H-3-2]
San Francisco, California 94105

Mr. Lester Kaufman
U. S. Environmental Protection Agency
Region IX, [H-3-2]
San Francisco, California 94105

Mr. Fredrick Moore
U. S. Environmental Protection Agency
Region IX, [H-3-2]
San Francisco, California 94105

Mr. William Zumwalt
Kings County Environmental Health
330 Campus Drive
Hanford, California 93230

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, Ca. 94105

H-3-2

March 12, 1992

<<telefaxed>>

Mr. Mark Langowski
General Manager
Chemical Waste Management, Inc.
Kettleman Hills Facility
P.O. Box 471
Kettleman City, California 93239

Re: APPROVAL OF B-18 PHASE I AS-BUILT DRAWINGS AND CERTIFICATION REPORT, AND APPROVAL OF B-18 ACCEPTANCE OF WASTE
EPA I.D. CAT 000 646 117

Dear Mr. Langowski:

The Environmental Protection Agency (EPA) approves the various submitted as-built documents and the construction certifications of landfill B-18 Phase I in accordance with permit condition IV.C.9.c.

EPA also approves of landfill B-18 Phase I operation in accordance with permit condition IV.C.9.d., and the unit may now begin to accept waste.

Sincerely,

Jeffrey Zelikson, Director
Hazardous Waste Management
Division

cc: next page

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cc: ✓Ms. Carol Carollo
Chemical Waste Management, Inc.
P.O. Box 471
Kettleman City, CA 93239

Mr. William Pfister
Regional Water Quality Control Board
Central Valley Region
3614 East Ashlan Avenue
Fresno, CA 93726

Mr. Val Siebal
Cal-EPA
Department of Toxic Substances Control
10151 Croydon Way Suite 3
Sacramento, CA 95827-2106

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, Ca. 94105-3901

RECEIVED
MAY 22 1992
C. W. M.

MAY 19 1992

CERTIFIED MAIL
P 887 519 788

Leo Stahlecker
Environmental Manager
Chemical Waste Management, Inc.
P.O. Box 471
Kettleman City, CA 93239

Re: Chemical Waste Management, Inc., Kettleman Hills Facility
TSCA Approval to Operate Landfill Unit B-18

Dear Mr. Stahlecker:

This letter will inform you of my approval of the plans submitted by Chemical Waste Management, Inc. on April 20, 1992, to dispose of non-liquid PCB wastes in Landfill Unit B-18 located at the Kettleman Hills Facility in Kings County, California.

This Approval to Operate, which authorizes specific PCB landfill activities, is issued to Chemical Waste Management, Inc. in accordance with Section 6(e) of the Toxic Substances Control Act as amended and the implementing regulations promulgated at 40 Code of Federal Regulations Part 761 and is subject to the specific conditions attached.

In the event you have any questions regarding the specific conditions in the Approval to Operate, you may direct them to Greg Czajkowski, Chief of the Toxics Section, at (415) 744-1116.

Sincerely,

David P. Howekamp
Director
Air and Toxics Division

Enclosure

FILE

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APPROVAL TO OPERATE A CHEMICAL WASTE LANDFILL
FOR
PCB DISPOSAL

In compliance with provisions of Section 6(e) of the Toxic Substances Control Act (15 USC 2601), Chemical Waste Management, Inc., the Kettleman Hills Facility owner and operator [hereinafter known as the Permittee], is hereby granted approval to operate a chemical waste landfill facility to dispose of non-liquid polychlorinated biphenyl wastes (PCBs) in the area designated as Landfill Unit B-18 at the Kettleman Hills Facility, in accordance with the TSCA approval application submitted April 20, 1992, in accordance with applicable parts of the comprehensive RCRA Part B permit application for landfills at the Kettleman Hills Facility submitted on August 3, 1983, and its subsequent modifications as listed in Attachment B, and in accordance with the rules and regulations promulgated on PCBs (40 C.F.R. Part 761), including the specific conditions attached to this approval document. The owner and operator shall be fully responsible for complying with the terms and conditions of this Approval to Operate.

The Kettleman Hills Facility is located in Kings County, near Kettleman City, California. The U. S. Environmental Protection Agency, Region 9, initially authorized the landfilling of non-liquid PCBs in Landfill Unit B-14 at the Kettleman Facility on June 29, 1981, and as amended November 30, 1990; the landfilling of non-liquid PCBs in Landfill Unit B-16 on February 16, 1983, and as modified on February 22, 1988, and as amended on November 30, 1990; and the landfilling of non-liquid PCBs in Landfill Unit B-19 on February 22, 1988, and as amended on November 30, 1990. This Approval to Operate is applicable only to Landfill B-18. The previously authorized Landfill B-14 area remains subject to the conditions of the approval dated June 29, 1981, and Landfills B-16 and B-19 remain subject to the conditions of the approval dated February 22, 1988.

Failure to comply with any condition or term set forth in this Approval to Operate shall constitute a violation of Section 15 (1) (C) of the Toxic Substance Control Act and 40 C.F.R. Part 761, and will be considered grounds for enforcement action pursuant to Sections 15, 16, and 17 of the Toxic Substances Control Act. In particular, failure to comply with Conditions **K** and **N** of this Approval to Operate will be grounds for immediate termination of the Approval to Operate.

This Approval to Operate grants no relief from the responsibility for compliance with other applicable provisions of 40 C.F.R. Part 761, or any other applicable Federal, State, or local laws and implementing regulations. This includes but is not limited to the Resource Conservation and Recovery Act and the Occupational Safety and Health Act. Certain treatment, storage, or disposal units subject to this Approval to Operate may also be

subject to the final permit issued under 3005 of the Resource Conservation and Recovery Act. In the event any condition of this Approval to Operate is in conflict with any condition in the final RCRA permit, the more stringent provision, as determined by the Regional Administrator, Region 9, shall apply.

This Approval to Operate shall become effective on the date written below and expires five years after the effective date.

DATED: 5/19/92

DAVID P. HOWEKAMP
Director
Air and Toxics Division

## ATTACHMENT

A. Only the following PCB wastes are authorized for disposal in Landfill B-18:

1. Non-liquid PCBs in the form of contaminated soil, rags, or other debris [40 C.F.R. § 761.60(a)(4), § 761.75(c)(3)(ii)].

   Liquid PCB wastes from any source, in which the concentration of PCBs is greater than or equal to fifty (50) mg/l [ppm], shall not be processed into non-liquid forms for the purpose of disposal in Landfill B-18. The Paint Filter Liquid Test [SW-846, Method 9095] shall be used to determine whether liquids are present in representative samples of PCB materials.

2. Dredged materials and municipal sewage treatment sludge that contains PCBs [40 C.F.R. § 761.60(a)(5), § 761.75(c)(3)(ii)].

   If the materials described in 1 and 2 above contain liquids with a PCB concentration of less than fifty mg/l [ppm], they shall be chemically stabilized or containerized such that no liquids are present prior to disposal in Landfill B-18. If the materials referred to above contain liquids with a PCB concentration of fifty mg/l [ppm] or greater, the PCB liquids shall be decanted prior to the remaining dredged materials or sewage treatment sludge being chemically stabilized or containerized. The decanted PCB liquids shall then be disposed in an incinerator that complies with 40 C.F.R. § 761.70. [see Condition A.1 regarding prohibition on liquid PCB wastes and requirement to test representative samples for liquid content].

3. PCB transformers which have been drained of all free-flowing liquids, filled with a PCB-soluble solvent, allowed to stand for at least eighteen hours, and then drained thoroughly [40 C.F.R. § 761.60(b)(1), § 761.75(c)(3)(ii)].

   Liquids removed from the transformers with a PCB concentration of less than fifty mg/l [ppm] shall be chemically stabilized or containerized such that no liquids are present prior to disposal in Landfill B-18. Liquids removed from the transformers with a PCB concentration of fifty mg/l [ppm] or greater shall be disposed in an incinerator that complies with 40 C.F.R. § 761.70. Solvents used to clean PCB transformers

shall be managed in accordance with the land disposal restrictions set forth at 40 C.F.R. Part 268. [see Condition A.1 regarding prohibition on liquid PCB wastes].

4. PCB contaminated electrical equipment, except capacitors, which have been drained of all free-flowing liquids [40 C.F.R. § 761.60(b)(4), § 761.75(c)(3)(ii)].

   Liquids removed from the electrical equipment with a PCB concentration of less than fifty mg/1 [ppm] shall be chemically stabilized or containerized such that no liquids are present prior to disposal in Landfill B-18. Liquids removed from the electrical equipment with a PCB concentration of fifty mg/1 [ppm] or greater shall be disposed in an incinerator that complies with 40 C.F.R. § 761.70. Solvents used to clean PCB electrical equipment shall be managed in accordance with the land disposal restrictions set forth at 40 C.F.R. Part 268. [see Condition A.1 regarding prohibition on liquid PCB wastes].

5. PCB contaminated capacitors containing between fifty and five hundred mg/l [ppm] PCBs [40 C.F.R. § 761.60(b)(2), § 761.75(c)(3)(ii)].

   Capacitors which contain more than one liter of liquid shall be drained prior to such capacitors being disposed in Landfill B-18. Capacitors which contain one liter of liquid or less shall be placed in overpacked drums (lab packs) prior to disposal in Landfill B-18, as described in 40 C.F.R. § 264.316. Liquids removed from the capacitors with a PCB concentration of less than fifty mg/1 [ppm] shall be chemically stabilized or containerized such that no liquids are present prior to disposal in Landfill B-18. Liquids removed from the capacitors with a PCB concentrations of fifty mg/1 [ppm] or greater shall be disposed in an incinerator that complies with 40 C.F.R. § 761.70. Solvents used to clean PCB capacitors shall be managed in accordance with the land disposal restrictions set forth at 40 C.F.R. § 268. [see Condition A.1 regarding prohibition on liquid PCB wastes].

6. Capacitors which have been determined not to contain PCBs, as indicated by label or nameplate information, manufacturer's literature, or chemical analysis [40 C.F.R. § 761.60(b)(2)(i), § 761.75(c)(3)(ii)].

Capacitors which contain more than one liter of liquid shall be drained prior to such capacitors being disposed in Landfill B-18. Capacitors which contain one liter of liquid or less shall be placed in overpacked drums (lab packs) prior to disposal in Landfill B-18, as described in 40 C.F.R. § 264.316. Liquids removed from the capacitors with a PCB concentration of less than fifty mg/1 [ppm] shall be chemically stabilized or containerized such that no liquids are present prior to disposal in Landfill B-18. Liquids removed from the capacitors with a PCB concentration of fifty mg/1 [ppm] or greater shall be disposed in an incinerator that complies with 40 C.F.R. § 761.70. Solvents used to clean PCB capacitors shall be managed in accordance with the land disposal restrictions set forth at 40 C.F.R. Part 268. [see Condition A.1 regarding prohibition on liquid PCB wastes].

7. PCB small capacitors not owned by any person who manufactures or at any time manufactured PCB Capacitors or PCB equipment and acquired PCB equipment or capacitors in the course of such manufacturing [40 C.F.R. § 761.60(b)(2), § 761.75(c)(3)(ii)].

   Capacitors which contain more than one liter of liquid shall be drained prior to such capacitors being disposed in Landfill B-18. Capacitors which contain one liter of liquid or less shall be placed in overpacked drums (lab packs) prior to disposal in Landfill B-18, as described in 40 C.F.R. § 264.316. Liquids removed from the capacitors with a PCB concentration of less than fifty mg/1 [ppm] shall be chemically stabilized or containerized such that no liquids are present prior to disposal in Landfill B-18. Liquids removed from the capacitors with a PCB concentration of fifty mg/1 [ppm] or greater shall be disposed in an incinerator that complies with 40 C.F.R. § 761.70. Solvents used to clean PCB capacitors shall be managed in accordance with the land disposal restrictions set forth at 40 C.F.R. Part 268. [see Condition A.1 regarding prohibition on liquid PCB wastes].

8. PCB large high or low voltage capacitors owned by any person which contains five hundred mg/1 [ppm] or greater PCBs [40 C.F.R. § 761.60(b)(2)(iii), § 761.60(b)(2)(v), § 761.75(c)(3)(iii)].

   These capacitors are authorized for disposal only if the Assistant Administrator for Pesticides and Toxic Substances publishes a notice in the Federal Register

declaring that Landfill B-18 is available for such disposal and explaining the reasons for the extension or reopening in accordance with 40 C.F.R. § 761.60(b)(2)(v). However, the Regional Administrator, Region 9, will not allow disposal of any liquids, or any capacitor containing more than one liter of liquid, in Landfill B-18.

9. PCB small capacitors owned by any person who manufactures or at any time manufactured PCB capacitors or PCB equipment and acquired the PCB capacitors in the course of such manufacturing [40 C.F.R. § 761.60 (b)(2)(iv), § 761.60(b)(2)(v), § 761.75(c)(3)(ii)].

These capacitors are authorized for disposal only if the Assistant Administrator for Pesticides and Toxic Substances publishes a notice in the Federal Register declaring that Landfill B-18 is available for such disposal and explaining the reasons for the extension or reopening in accordance with 40 C.F.R. § 761.60(b)(2)(v). However, the Assistant Administrator will not allow disposal of any liquids, or any capacitor containing more than one liter of liquid, in Landfill B-18.

10. PCB hydraulic machines which have been drained of all liquids [40 C.F.R. § 761.60(b)(3), § 761.75(c)(3)(ii)].

If the PCB liquid contains one thousand mg/l [ppm] PCB or grater, the hydraulic machine shall be flushed prior to disposal with a PCB-soluble solvent containing less than fifty mg/l [ppm] PCBs. Liquids removed from the hydraulic machines with a PCB concentration of less than fifty mg/l [ppm] shall be chemically stabilized or containerized such that no liquids are present prior to disposal in Landfill B-18. Liquids removed from the hydraulic machines with a PCB concentration of fifty mg/l [ppm] or greater shall be disposed in an incinerator that complies with 40 C.F.R. § 761.70. Solvents used to clean PCB hydraulic machines shall be managed in accordance with the land disposal restrictions pursuant to 40 C.F.R. Part 268. [see Condition A.1 regarding prohibition on liquid PCB wastes].

11. PCB articles with PCB concentrations of five hundred mg/l [ppm] or greater which have been thoroughly drained of all liquids [40 C.F.R. § 761.60(a)(1), § 761.75 (c)(3)(ii)].

PCB liquids drained from such articles shall be disposed in an incinerator that complies with 40 C.F.R. § 761.70.

12. PCB articles with PCB concentrations between fifty and five hundred mg/l [ppm] which have been thoroughly drained of all liquids [40 C.F.R. § 761.60(b)(5)(ii), § 761.75(c)(3)(ii)].

PCB liquids drained from such articles shall be disposed in an incinerator that complies with 40 C.F.R. § 761.70.

13. PCB containers which have not been decontaminated in accordance with 40 C.F.R. § 761.79 and which have been used to contain PCB liquids with a concentration of five hundred mg/l [ppm] or greater [40 C.F.R. § 761.60(c)(1), § 761.75(c)((3)(ii)].

Prior to disposal in Landfill B-18, liquids from such containers must be drained and disposed in an incinerator that complies with 40 C.F.R. § 761.70.

14. PCB containers used to contain only PCBs of less than five hundred mg/l [ppm] concentration [40 C.F.R. § 761.60(c)(2), § 761.75(c)(3)(ii)].

Liquids removed from the containers with a PCB concentration of less than fifty mg/l [ppm] shall be chemically stabilized or containerized such that no liquids are present prior to disposal in Landfill B-18. Liquids removed from the containers with a PCB concentration of fifty mg/l [ppm] or greater shall be disposed in an incinerator that complies with 40 C.F.R. § 761.70. Solvents used to clean PCB containers shall be managed in accordance with the land disposal restrictions set forth at 40 C.F.R. Part 268. [see Condition A.1 regarding prohibition on liquid PCB wastes].

B. Landfill B-18 shall be designed, constructed and maintained as specified in plans submitted with the application for TSCA approval dated April 20, 1992, and the applicable parts of the RCRA Part B permit application for the Kettleman Hills Facility dated August 3, 1983, and the subsequent modifications to the RCRA permit application as listed in Attachment B.

C. The Permittee shall comply with the landfill disposal requirements specified in 40 C.F.R. § 761.75, and § 761.180(b), except for those requirements in 40 C.F.R. § 761.75 which have been granted limited waivers pursuant to

40 C.F.R. § 761.75(c)(4). The Permittee shall comply with the requirements specified in 40 C.F.R. § 761.65 if PCB wastes are stored prior to disposal.

1. Pursuant to 40 C.F.R. § 761.75(c)(4), EPA hereby grants a limited waiver to the Permittee to allow the substitution of SW-846 Methods 8240, 8270, 8080, 9060, 9050, and other methods as required, for the 40 C.F.R. Part 136 methods specified in 40 C.F.R. § 761.75(b)(6)(iii).

2. Pursuant to 40 C.F.R. § 761.75(c)(4), EPA hereby grants a limited waiver to the Permittee to allow sampling, analysis, and management of run-on, accumulated precipitation, and leachate as required by Attachment C in lieu of compliance with 40 C.F.R. § 761.75(b)(7).

   The requirements of 40 C.F.R. § 761.75(b)(7) shall be satisfied by the Permittee if all applicable requirements of Attachment C are satisfied.

3. Pursuant to 40 C.F.R. § 761.75(c)(4), EPA hereby grants a limited waiver to the Permittee to allow construction of one fence around all TSCA and RCRA units to satisfy the requirements of 40 C.F.R. § 761.75(b)(9)(i). The fence requirement specified in 40 C.F.R. § 761.75(b)(9)(i) shall be satisfied by the Permittee if all requirements of Attachment D are satisfied.

4. Pursuant to 40 C.F.R. § 761.75(c)(4), EPA hereby grants a limited waiver to the Permittee to allow disposal of ignitable wastes, as defined in 40 C.F.R. Part 261, in Landfill B-18 subject to the restrictions specified in Attachment E. The ignitable waste restriction in 40 C.F.R. § 761.75(b)(8)(iii) shall be satisfied if all requirements specified in Attachment E are satisfied.

D. Operational guidelines and procedures shall be adhered to at all times and shall be, for Landfill B-18, as specified in the Operation Plan submitted to EPA on April 20, 1992, and hereby incorporated as a conditional part of this Approval to Operate, along with any amendments required to be submitted pursuant to this Approval to Operate or any future amendments approved or specified in writing by EPA. Upon approval by EPA, such amendments shall become conditional parts of this Approval to Operate.

E. PCBs and PCB Items must be placed in the areas authorized for PCB disposal in a manner that will prevent damage to containers and articles.

F. Non-liquid wastes which are chemically compatible with PCB wastes may be disposed of in Landfill B-18. Non-compatible wastes may be disposed of in the areas authorized for PCB disposal but must be adequately separated from PCB wastes. For the purpose of this condition only (Condition F), "adequately" means at least fifty feet, as measured in any horizontal direction from the point where the PCB wastes are placed, and at least one foot as measured in any vertical direction from the point where PCB wastes are placed. Ignitable wastes shall not be disposed of in the areas authorized for PCB disposal, except as allowed by Condition C.4 and Attachment E.

G. All collected leachate, accumulated precipitation, and run-on from Landfill B-18 shall be managed pursuant to Conditions C.1 and C.2, and Attachment C. Leachate, regardless of PCB concentration, shall be stored in tanks, containers, or vacuum trucks as specified in Attachment C, before discharge to surface impoundments, before transport to an incineration facility, and prior to being chemically stabilized or containerized.

H. All run-on and accumulated precipitation in the areas authorized for PCB disposal shall be considered leachate and handled as such.

I. EPA shall be notified in writing of all amendments to the Operation Plan for Landfill B-18. Such amendments are subject to EPA review and approval pursuant to 40 C.F.R. § 761.75(b)(8)(ii).

J. The Permittee shall submit in writing to EPA, on a monthly basis, a report of any PCB wastes received during the previous month which had resulted from spills, leaks, or other uncontrolled discharges of PCBs. The report shall include the name of the generator of the PCB wastes, name of the transporter, the quantity received, and a description of the PCB wastes. In addition, the monthly report shall include a description of any event which is not normal to operation of the PCB landfill facility (e.g. accidents, spills, leaks, uncontrolled discharges, entry on-site of animals or unauthorized persons, erosions, earthquake damage, excessive rain episodes, fires, explosions, etc.).

K. The Permittee shall immediately report in writing to EPA any instance of detection of PCBs in samples from lysimeters, ground water monitoring wells, leachate collection systems, or run-on and accumulated precipitation in Landfill B-18. This condition shall not be interpreted to mean that the Permittee is required to install lysimeters around Landfill B-18 as part of a routine monitoring program.

L. Notification of State and local governments shall be in accordance with 40 C.F.R. § 761.60(f)(1) and (2). Such notification shall be specifically addressed to appropriate State and local officials or specifically addressed to titles of their positions. Notification of State and local governments as required in 40 C.F.R. § 761.60(f)(1)(i) shall be considered to be satisfied by the Permittee if copies of this Approval to Operate and the application for the Approval to Operate are submitted to the State and local governments within thirty days after the effective date of this Approval to Operate.

M. EPA officials and representatives of EPA, upon presentation of credentials, shall be permitted access to the PCB landfill facility for the purpose of inspection, sampling, or monitoring.

N. If at any time EPA determines that the PCB landfill facility is creating a situation of imminent hazard, EPA will notify the facility as to actions necessary to prevent imminent hazard. Such actions must be taken by the date provided in such notice.

O. This Approval to Operate shall be subject to periodic review as deemed appropriate by EPA and may be modified, suspended, or revoked in whole or in part for cause, including, but not limited to the following:

1. Violation of any terms or conditions of this Approval to Operate;

2. Obtaining this Approval to Operate by misrepresentation or failure to disclose fully all relevant facts; or,

3. A material change in any condition that requires cessation of the authorized activities.

P. All reports, notifications, mail, or other submittals required to be submitted to EPA under this Approval to Operate shall be sent to the following address, unless and until otherwise informed by the following addressee:

Director
Air & Toxics Division
U.S. Environmental Protection Agency
Region 9
75 Hawthorne Street
San Francisco, California 94105
Attn: A-4-2

Q. This Approval to Operate designates Chemical Waste Management, Inc. as the owner and operator of this PCB landfill facility and applies only to Chemical Waste Management, Inc. as the designated owner and operator. Before any change of owner or operator of this PCB landfill facility occurs, the transfer of property procedures in regards to this Approval to Operate shall be followed as specified in 40 C.F.R. § 761.75(c)(7).

ATTACHMENT A

The Permittee has designed and constructed Landfill Unit B-18 as described in Construction Drawings, Landfill Unit B-18, Phases I and II and Final Closure, Kettleman Hills Facility, Kings County, California [Document C.31 in Attachment B], Construction Specifications and Quality Assurance Plan, Landfill Unit B-18, Phases I and II and Final Closure, Kettleman Hills Facility, Kings County, California [Document C.32 in Attachment B], and Engineering and Design Report, Landfill Unit B-18 Phases I and II and Final Closure [Document C. 33 in Attachment B]. On March 12, 1992, the Permittee received EPA approval of the construction certification report [Documents C.39.a through C.39.h in Attachment B] for Landfill Unit B-18 Phase I.

The Permittee shall implement the construction quality assurance procedures and methods during the completion of Landfill B-18 Phase II as described in the aforementioned documents [Documents C.31 through C.33 in Attachment B] and in Quality Assurance Manual for the Installation of the Soil Components of Lining and Final Cover Systems [Document C.13.d in Attachment B] and Quality Assurance Manual for the Installation of Geosynthetic Lining Systems [Document C.13.f in Attachment B].

The Permittee shall not treat, store, or dispose of PCBs in any phase of Landfill B-18, except Phase I, unless and until the Permittee has received written approval from the Regional Administrator, Region 9, for the construction certification report for Phase II of Landfill B-18. The Permittee shall submit a construction certification report to the Regional Administrator, Region 9, no later than sixty calendar days after Phase II of Landfill B-18 has been constructed. The Permittee shall ensure that the Landfill Unit B-18 Phase II construction certification report summarizes all procedures and methods described in the two quality assurance documents referenced above, and includes all information necessary for the Regional Administrator to determine whether Phase II of Landfill B-18 has been constructed according to the designs and specifications approved by the Regional Administrator, Region 9.

Closure of Landfill Unit B-18 Phases I and II shall be constructed as described in the aforementioned construction documents, unless the closure plan is modified by future modifications to the RCRA Part B permit.

ATTACHMENT B

COMPREHENSIVE PART B APPLICATION

A. GENERAL INFORMATION REQUIREMENTS
[40 C.F.R. 270.14 (b)]

1. RCRA Part B Permit Application, Volumes I and II, CWM (9/29/83; revised 12/15/86)

2. Appendices to RCRA Part B Permit Application

| | | |
|---|---|---|
| a. | Appendix I | Property Legal Description |
| b. | Appendix II | Site Master Plan |
| c. | Appendix III | List of Hazardous Wastes Accepted (9/29/83, revised 12/15/86, 2/2/89, 2/23/90, 6/15/90, 4/30/91, 11/01/91) |
| d. | Appendix IV | Waste Analysis Plan (8/16/83, revised 2/6/89, 6/9/90, 6/17/91, 11/01/91, 3/31/92) |
| e. | Appendix V | Inspection Program Plan (9/29/83, revised 3/23/89, 6/25/90, 11/01/91) |
| f. | Appendix VI | Dust Suppression Plan (5/9/86) |
| g. | Appendix VII | Contingency Plan (9/29/83, revised 5/1/88, 5/25/88, 1/27/89, 8/4/89, 1/19/90, 6/22/90, 9/27/90, 2/22/91, 11/11/91, 3/31/92) |
| h. | Appendix VIII | Traffic Study (8/86) |
| i. | Appendix IX | Training Plan (9/83, revised 8/19/86, 11/04/91) |
| j. | Appendix X | Closure and Post-Closure Plans (9/29/83) |
| k. | Appendix XI | Financial Assurance Documents |
| l. | Appendix XII | Potential Release Report (9/6/85) |

3. Proposed Evaporative Tank System: Application to Modify the Kettleman Hills Facility Part B Permit (CAT000646117), M/B&A (8/12/88)

B. UNIT OPERATION PLANS (Stand-Alone)
[40 C.F.R. 270.15 and 270.16]

1. Drum Decant Unit Operation Plan for Chemical Waste Management, Inc. Kettleman Hills Facility, Kings County, California, CWM (12/9/82; revised 5/1/88)

2. Cyanide Treatment Unit Operation Plan for Chemical Waste Management, Inc. Kettleman Hills Facility, CWM (12/9/82; revised 5/1/88)

3. Drum Storage Unit Operation Plan for Chemical Waste Management, Inc. Kettleman Hills Facility, CWM (11/10/86, revised 5/19/89, 7/20/90, 10/24/91)

4. Deleted by permit modification #2.

5. Final Stabilization Unit Operation Plan for Chemical Waste Management, Inc. Kettleman Hills Facility, Kings County, California, CWM (11/10/86, revised 8/4/89, 10/13/89, 8/10/90)

6. PCB Flushing/Storage Unit Operation Plan for Chemical Waste Management, Inc.'s Kettleman Hills Facility, CWM (12/15/86, revised 5/1/88, 7/20/90, 6/12/91)

7. Operation Plan, Temporary Container Storage Unit, CWM (5/25/84)

8. Operation Plan, Interim Stabilization Unit, CWM (6/14/85)

9. Stabilized Bulk Waste Storage Area Operation Plan and Revisions for Chemical Waste Management, Inc. Kettleman Hills Facility, Kings County, California, CWM (6/25/90, revised 12/06/90)

10. Bulk Storage Unit Operation Plan for Chemical Waste Management, Inc. Kettleman Hills Facility, Kings County, California, CWM (11/01/91)

C. ENGINEERING REPORTS

1. Engineering Plans, Specifications and Certification Reports for Existing Landfills, Kettleman Hills Facility, Kings County, California, EMCON (9/7/85)

2. Liner Composition Study for Burial Area B-16, Kettleman Hills Facility, for Chemical Waste Management, Inc., D&M (4/4/86)

3. Engineering Plans, Specifications and Certification Reports for Existing Surface Impoundments Units, Kettleman Hills Facility, Kings County, California, EMCON (9/7/85)

4. Construction Certification Report - Pond P-16, Kettleman Hills Facility, Kings County, California, EMCON (5/23/86)

5. Construction Certification Report - Pond P-9, Kettleman Hills Facility, Kings County, California, EMCON (5/27/86)

6. Construction Certification Report - Pond P-14, Kettleman Hills Facility, Kings County, California, EMCON (6/18/86)

7. Construction Certification Report - PCB Burial Area B-16, EMCON (4/27/87)

8. Construction Certification Reports for Landfill B-19, Phase IA, Golder (3/87)

9. Construction Certification Reports for Landfill B-19, Phase IB, Golder (11/87)

10. Engineering Report for Landfills, Kettleman Hills Facility, Kings County, California, EMCON (9/7/85; revised 12/15/86)

11. Engineering Report for Surface Impoundments, Kettleman Hills Facility, Kings County, California, EMCON (9/7/85; revised 12/15/86)

12. Engineering Report for Final Cover Design, Kettleman Hills Facility, Kings County, California, EMCON (9/7/85; revised 12/15/86)

13. Six Appendices to the Engineering Reports

    a. Construction Specifications for Double-Lined Surface Impoundments, EMCON (9/7/85; revised 12/15/86)

    b. Construction Specifications for Double-Lined Landfill Units, EMCON (9/7/85; revised 12/15/86)

    c. Evaluation of Gundle HDPE Liner Material in Contact with Leachates from the KHF, Battelle (2/11/85)

d. Quality Assurance Manual for the Installation of the Soil Components for Lining and Final Cover Systems, CWM (6/86)

e. Specification Guidelines for the Procurement and Installation of Geosynthetic Lining Systems, CWM (6/86)

f. Quality Assurance Manual for the Installation of Geosynthetic Lining Systems, CWM (6/86, revised 6/15/90)

14. Construction Certification Report, PCB Disposal Facility B-14, Kettleman Hills Facility, California, EMCON (10/14/85)

15. Construction Specifications for Excavation and Site Preparation, Double-Lined Landfill Unit B-19, Kettleman Hills Facility, Kings County, California, CWM (undated)

16. Construction Drawings, Landfill Unit B-19, Kettleman Hills Facility, Kings County, California, (13 Drawings) EMCON (6/18/86)

17. Construction Specifications for Double-Lined Landfill Unit B-19, Kettleman Hills Facility, Kings County, California, EMCON (6/18/86)

18. Bid Documents for Kettleman Drum Storage Unit, Kettleman Hills Facility, Kettleman City, California, ESI (3/4/87)

19. Drum Storage Unit, Bid Addendum #1, (undated)

20. Construction Drawings, Landfill Unit B-18, Kettleman Hills Facility, Kings County, California, EMCON (9/1/87)

21. Bid Documents for Final Stabilization Unit, Kettleman Hills Facility, Kettleman City, California, ESI (2/1/88)

22. Bid Addendum Number 3 for Final Stabilization Unit, Kettleman Hills Facility, Kettleman City, California, ESI (5/5/88)

23. Construction Drawings, Landfill Unit B-19 Phases II and III, Kettleman Hills Facility, Kings County, California, Donohue (7/88)

24. Construction Documents, Landfill Unit B-19 Phases II and III, Kettleman Hills Facility, Chemical Waste Management, Inc. Kettleman City, California, Donohue (9/88)

25. Quality Assurance Program, Drum Storage Unit, CWM (11/18/88)

26. Quality Assurance Program, Final Stabilization Unit, CWM (12/5/88, revised 7/31/90)

27. Construction Certification Reports for Landfill B-19, Phases II and III, Golder (5/89)

28. Certification Report, Drum Storage Unit, Kettleman Hills Facility, Kings County, California, ESI (9/12/89)

29. Clay Test Fill Plan for Landfill Cover Construction Project Specifications, Kettleman Hills Facility, Kettleman City, California, (Plan), Revision 2, Golder Associates (8/89)

30. Second Generation Stabilization Engineering Report for Chemical Waste Management, Inc. Kettleman Hills Facility, Kettleman City, California, Rust International Corporation (7/31/90)

31. Construction Drawings, Landfill Unit B-18, Phases I and II and Final Closure, Kettleman Hills Facility, Kings County, California, Environmental Solutions, Inc. (7/31/90)

32. Construction Specifications and Quality Assurance Plan, Landfill Unit B-18, Phases I and II and Final Closure, Kettleman Hills Facility, Kings County, California, Environmental Solutions, Inc. (7/31/90)

33. Engineering and Design Report, Landfill Unit B-18, Phases I and II and Final Closure, Kettleman Hills Facility, Kings County, California, Volumes I and II, Environmental Solutions, Inc. (8/90)

34. Bid Documents for Evaporative Tank Farm, Kettleman Hills Facility, Kettleman City, California, Revision 1, Engineering Services, Inc. (9/26/89, revised 5/18/90)

35. Quality Assurance Plan, Chemical Waste Management, Inc. Kettleman Hills Facility: Evaporative Tank System, CWM (7/27/90)

36. Stabilized Bulk Waste Storage Area Design Plans and Specifications and Revisions, Kettleman Hills Facility, Golder (6/27/90, revised 1/7/91)

37. Landfill Unit B-19 Phase IA Repair Plan

    a. Landfill B-19 Phase IA Redesign and Closure, Kettleman Hills Facility, Kettleman City, California, Volumes I, II, III, and IV, Golder (4/15/91) [PM #5]

    b. Cause and Mechanism of the March 1988 Failure in Landfill B-19, Phase IA, Kettleman Hills Facility, Kettleman City, California, Golder (4/15/91) [PM #5]

38. Bulk Storage Unit Phase 2, Design Plans and Specifications, Kettleman Hills Facility, Golder (11/91)

39. Construction Certification Report for Landfill Unit B-18 Phase I:

    a. 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)

    b. Clay Source Report, Landfill B-18, Phases IA and IB, Kettleman Hills Facility, Kettleman City, California, (Environmental Construction Services, Inc., November 25, 1991, revised January 9, 1992)

    c. 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)

    d. Secondary HDPE Liner and Leachate Collection System, Landfill B-18, Phases IA and IB, Kettleman Hills Facility, Kettleman City, California, Volumes A and B (Environmental Construction Services, Inc., January 13, 1992, revised March 30, 1992)

    e. Primary Clay Liner, Landfill B-18, Phase IA and IB, Kettleman Hills Facility, Kettleman City, California, (Environmental Construction Services, Inc., January 13, 1992, revised March 30, 1992)

f. 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)

g. 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)

h. 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)

D. UNIT-SPECIFIC CLOSURE PLANS

1. Closure Plans and Provisions for Area S-3 and Surface Impoundments P-5, P-12A, and P-13, Kettleman Hills Facility, Kings County, California, EMCON (12/31/85)

2. Closure Plans and Provisions for Burial Area B-15, Kettleman Hills Facility, Kings County, California, EMCON (1/3/86; revised 2/12/87)

3. Closure Plans and Provisions for Surface Impoundments P-6, P-7, and P-8, Kettleman Hills Facility, Kings County, California, EMCON (3/1/86)

4. Closure Plans and Provisions for Surface Impoundments P-10 and P-11, Kettleman Hills Facility, Kings County, California, EMCON (1/16/87)

5. Closure Plans and Provisions for Burial Areas B-1, B-4, B-5, B-6 and B-7, Kettleman Hills Facility, Kings County, California, EMCON (2/12/87)

6. Closure and Subgrade Investigation Report, Former Waste Burial Units B-2 and B-3, Kettleman Hills Facility, Kings County, California, EMCON (2/87, revised 6/10/88)

7. Landfill B-12 and B-13 Closure Plan, Kettleman Hills Facility, Golder (6/30/88)

8. Landfill B-9 Expansion and B-9 Extension Closure Plan, Kettleman Hills Facility, Golder (6/30/88, revised 9/15/88)

9. Landfill B-14 Post-Closure Care Inspection, Kettleman Hills Facility, Golder (12/13/88)

10. Combined Closure Plan for Landfills B-1/4/5/6/7, B-8/9/9 Expansion/9 Extension/10/11, Surface Impoundments P-5/12/12A/13 and Area S-3, Kettleman Hills Facility, Revision 1, Golder (8/89)

11. Closure Plan for Landfill B-15, Chemical Waste Management, Inc. Kettleman Hills Facility, Golder (12/4/89)

12. Modification No. 1 to the Closure Plans and Provisions for Surface Impoundments P-10 and P-11, Kettleman Hills Facility, Kings County, California, CWM (5/4/90)

13. Landfill Unit B-19 Closure Plan

    a. Final Conceptual Cover Design for Landfill B-19, Kettleman Hills Facility, Kettleman City, California, Golder (10/24/90) [PM #5]

    b. Landfill B-19 Phase IA Redesign and Closure, Kettleman Hills Facility, Kettleman City, California, Volumes I, II, III, and IV, Golder (4/15/91) [PM #5]

E. GROUNDWATER MONITORING DATA
[40 C.F.R. 270.14(c)(1)]

1. Interim Status Period Ground Water Monitoring Results, Kettleman Hills, California, EMCON (11/86)

2. Inorganic Chemical Characterization of Ground Water, Kettleman Hills, California, EMCON (11/86)

3. Waste Characterization, Kettleman Hills Facility, Kettleman Hills, California, EMCON (11/86)

4. Ground Water Monitoring Data Obtained During Interim Status, M/B&A (11/8/85)

5. Quarterly Interim Status Groundwater Monitoring Results

6. Semi-Annual and Annual Groundwater Monitoring Reports

7. Quarterly Ground Water Monitoring Results

F. HYDROGEOLOGIC INVESTIGATION/MAP
[40 C.F.R. 270.14(c)(2) and (3)]

1. Hydrogeologic Characterization, Kettleman Hills Facility, Kings County, California, EMCON (11/8/85; updates and errata 12/86)

2. Twelve Appendices to the Hydrogeologic Characterization

   a. Exploratory Boring Logs

   b. Colored Photographs of Cores

   c. Geophysical Logs

   d. Geologic Mapping and Cross Section Production Procedures

   e. Well Drilling and Construction

   f. Ground Water Level Data

   g. Field Permeability Testing

   h. Laboratory Petrophysical Analyses of Cores

   i. Chemical and Isotopic Ground Water Evaluation

   j. Groundwater Well Sampling Equipment and Procedures

   k. Water-Bearing Zone Tests and Aquitard Efficiency Tests

   l. Quantitative Flow Modeling

3. State Siting Criteria Equivalency Assessment for Chemical Waste Management, Inc.'s Kettleman Hills Facility, M/B&A (10/28/85)

4. Faulting/Seismicity Report, Kettleman Hills Facility, for Chemical Waste Management, Inc., D&M (11/10/86)

5. Waste Migration at the Kettleman Hills Facility, Kettleman Hills, California, for Chemical Waste Management, Inc., D&M (11/10/86)

6. Ground Water Flow Direction at the Kettleman Hills Waste Management Facility, Kings County, California, EMCON (12/86)

7. Gradient Study Plan for the Neverita A Water-Bearing Zone, Kettleman Hills Facility, Kings County, California, EMCON (4/1/88)

8. Quarterly Groundwater Gradient and Velocity Reports

G. CONTAMINANT PLUME ASSESSMENT
[40 C.F.R. 270.14(c)(4)]

1. Ground Water Quality Assessment Program (K-4), EMCON (8/15/84)

2. Supplemental Monitoring Program, Kettleman Hills Facility, Kings County, California, EMCON (2/21/85)

3. Ground Water Quality Assessment Plan, Kettleman Hills Facility, Kings County, California, EMCON (2/14/86)

4. Assessment Plan for Well K-48, Kettleman Hills Facility, Kings County, California, EMCON (9/86)

5. Description of Plume and Identification of Constituents (K-4), EMCON (11/8/85)

6. 1986 Ground Water Quality Assessment Report for the Well K-4 Area, Kettleman Hills Facility, Kings County, California, EMCON (10/15/86)

7. 1986 Ground Water Quality Assessment Report for the Well K-40 Area, Kettleman Hills Facility, Kings County, California, EMCON (12/86)

8. Corrective Action Plan for K-4 Area, Kettleman Hills Facility, Kings County California, EMCON (5/87)

9. Corrective Action Plan for K-40 Area, Kettleman Hills Facility, Kings County, California, EMCON (5/87)

10. 1987 Annual Ground-Water Quality Assessment Report for the Well K-4 Area, Kettleman Hills Facility, Kings County, California, EMCON (3/1/88)

11. 1987 Annual Ground-Water Quality Assessment Report for the Well K-40 Area, Kettleman Hills Facility, Kings County, California, EMCON (3/1/88)

12. Final Assessment Report for Wells K46, K48, and K50, Kettleman Hills Facility, CWM (3/7/88)

13. Well K05 Assessment Results for Chemical Waste Management's Kettleman Hills Facility, CWM (4/4/88)

14. Analytical Results Submittal for the K04 and K40 Assessment Areas, Chemical Waste Management, Inc., Kettleman Hills Facility, CWM (5/6/88)

15. Modifications to Corrective Action Plans for the K-4 and K-40 Areas, Kettleman Hills Facility, Kings County, California, EMCON (6/3/88)

16. Assessment Plan Submittal for Well K44- Kettleman Hills Facility, CWM (8/19/88)

17. Analytical Results Submittal for the K04 and K40 Assessment Areas at Chemical Waste Management's, Inc., Kettleman Hills Facility, CWM (8/25/88)

18. Re: Third Quarter Analytical Results Submittal for the K04/K40 Assessment Areas at Chemical Waste Management's, Inc., Kettleman Hills Facility (CAT000646117), CWM (12/21/88)

H. SUBSURFACE MONITORING PROGRAM
[40 C.F.R. 270.14(c)(5), (6), (7), and (8)]

1. Interim Status

   a. 40 C.F.R. 265 Subpart F Groundwater Monitoring Plan for CWM's Kettleman Hills Facility, M/B&A (10/28/85)

   b. As-Built Documentation for the Interim Ground Water Monitoring System, EMCON (3/86) [Contains "Specifications and Bid Documents for Monitoring Well Construction and Development", WMI (10/85)]

2. Permit Status

   a. Report of Waste Discharge for Chemical Waste Management, Inc.'s Kettleman Hills Facility, Kings County, California, M/B&A (11/25/85, revised 4/7/86)

   b. Subsurface Monitoring Plan for the Kettleman Hills Facility, Kettleman Hills, California, M/B&A (12/86)

   c. Proposed Statistical Monitoring Strategy for the Kettleman Hills Facility (compendium of issue-related reports), Robert D. Gibbons, University of Illinois (1986)

d. Ground Water Monitoring Parameters, Kettleman Hills Facility, Kettleman Hills, California, EMCON (11/86)

e. Feasibility Options for Remedial Action, David Keith Todd Consulting Engineers, Inc. (11/85)

f. Kettleman Hills Vadose Zone Demonstration, Kaman Tempo (1/87)

g. Manual for Ground Water Sampling, WMI (copyright 1985, revised 9/86)

h. Well Decommissioning Plan for Kettleman Hills Facility, Kings County, California, EMCON (6/1/88)

i. Well Plan for Revised Monitoring and Reporting Program No. 86-121, Kettleman Hills Facility, Kings County, California, EMCON (6/1/88)

j. Well Construction Specifications for Kettleman Hills Facility, Kings County, California, EMCON (6/13/88)

k. Vadose-Zone Monitoring Plan for Kettleman Hills Facility, Kings County, California, EMCON (7/88)

l. Supplemental Groundwater Monitoring Plan for Landfill B-18, Kettleman Hills Facility, Chemical Waste Management, Inc., CWM (7/31/90)

m. Site-Specific Groundwater Monitoring Plan for Chemical Waste Management, Inc. Kettleman Hills Facility, Kings County, California, CWM (10/90, revised 7/91)

I. MISCELLANEOUS TECHNICAL DOCUMENTS

1. Chemical Waste Management, Inc., Kettleman Hills Facility, Kings County, California (EPA ID. No. CAT000646117) Response to 9 May 1984 Notice of Deficiency, CWM (6/25/84)

2. Chemical Waste Management, Inc., Kettleman Hills Facility, Kings County, California (EPA ID No. CAT000646117) Response to 9 may 1984 Notice of Deficiency, CWM (7/25/84)

3. Exposure Information Report for the Chemical Waste Management, Inc. Kettleman Hills Facility, Kings County, California, EPA ID No. CAT000646117, M/B&A (8/8/85)

4. RCRA Hazardous Waste Compatibility Manual for the Kettleman Hills Facility, M/B&A (9/84)

5. Environmental Impact Report Kettleman Hills Facility, CH2M Hill (10/85)

6. Soil/Waste Compatibility Testing, Kettleman Hills Facility, Kettleman City, California, EMCON (3/30/88)

7. Re: Kettleman Hills Facility Neutralization/Filtration Unit, EPA Permit Section III.I, DHS Permit Section III.I, CWM (4/25/88)

8. 30-Day Response to EPA/DHS Part B Permit Compliance Items, CWM (5/1/88)

9. Structural Geology and Faults in the Kettleman Hills/Coalinga Area, EMCON (5/13/88)

10. Erratum for Kettleman Hills Facility May 1988 Part B Permit Submittals, CWM (5/24/88)

11. Earthquake Emergency Response Plan, CWM (5/25/88)

12. Test Protocol and Methodology for Compatibility Testing, CWM (5/31/88, revised 8/31/89)

13. Proposed Plan for Holocene Fault Study at the Kettleman Hills Facility, Kings County, California, EMCON (5/31/88)

14. Kettleman Hills Facility Seismic Stability of Structures, CWM (6/1/88)

15. Kettleman Hills Facility: Evaluation of Closure Options for Landfills That Accepted Containerized Liquid Wastes, M/B&A (7/6/88)

16. Re: Kettleman Hills Facility, Drum Decant Unit Secondary Containment, EPA Permit Section III.E.2, DHS Permit Section III.E.7., CWM (7/6/88)

17. Second Addendum to May 1988 Permit Submittals, CWM (8/4/88)

18. Re: Kettleman Hills Facility CAT000646117, Drum Decant Unit Secondary Containment, EPA Permit Section III.E.2 and III.E.1.c, DHS Permit Sections III.E.7. and III.E.6., CWM (8/5/88)

19. Stratigraphic and Topographic Dynamic Amplification Effects at the Kettleman Hills Facility Site, Golder (8/12/88)

20. Mitigation Plan for Chemical Waste Management Inc., Kettleman Hills Hazardous Waste Disposal Facility, Kings County, BioSystems (11/23/88)

21. Chain-Link Fence Design Report and Annual Report, CWM (12/15/88)

22. Holocene Surface Faulting Study, Nunez Fault and Kettleman Hills Facility, Roger Foott Associates, Inc. (4/2/90)

23. Rodent Management and Closure Cap Disturbance Mitigation Plan, CWM (4/29/91)

24. Mitigation and Monitoring Plan for the Chemical Waste Management, Inc., Kettleman Hills Facility in Kings County, California, BioSystems Analysis, Inc. (01/11/90, revised 5/1/90, 9/6/90, 3/15/91, 4/1/91, 4/26/91)

25. "Formal Endangered Species Consultation on the Chemical Waste Management, Inc., Kettleman Hills Hazardous Waste Facilities Operation, Kings County, California," U.S. Fish and Wildlife Service (05/02/91)

26. Stormwater Management Plan for Chemical Waste Management, Inc., Kettleman Hills Facility, Kettleman City, California, Volumes I and II, Sirrine Environmental Consultants, Inc. (8/91)

J. AIR MONITORING PROGRAM

1. Hazardous Waste Treatment, Storage, and Disposal Facility Area Sources, VOC Air Emissions at Chemical Waste Management, Inc., Kettleman Hills Facility, Kettleman City, California, Radian Corporation for EPA (11/21/84)

2. Kettleman Hills Facility, Atmospheric Dispersion Modeling Report, NUS (12/86)

3. Air Monitoring - Quarterly Data Reports

4. Kettleman Hills Facility, Air Monitoring - Technical Work Plan, NUS (2/86)

5. Kettleman Hills Facility Air Monitoring Workplan, Meteorological Characterization and Identification of Compounds, ERT (7/88)

6. Kettleman Hills Facility Air Monitoring Workplan, Meteorological Characterization and Identification of Compounds, ENSR Consulting and Engineering (7/89)

7. Kettleman Hills Facility Workplan, Topographical and Meteorological Characterization and Airborne Contaminant Identification, AeroVironment, Inc. (10/91)

K. SUBSURFACE SAMPLING PROGRAM

1. Soil Sampling and Analysis Plan (included in Closure and Post-Closure Plans), EMCON (12/86)

2. Waste Contamination Migration Study Pond for P-14, Kettleman Hills Facility, Chemical Waste Management, D&M (11/21/85)

3. Waste Contamination Migration Study, Pond P-9, Kettleman Hills Facility, for Chemical Waste Management, Inc., D&M (11/21/85)

4. Waste Contamination Migration Study for Spreading Zone S-5, Kettleman Hills Facility, for Chemical Waste Management, Inc., D&M (12/20/85)

5. Waste Contamination Migration Study for S-3 Spreading Zone, Kettleman Hills Facility, for Chemical Waste Management, Inc., D&M (12/20/85)

6. Waste Contamination Migration Study for Surface Impoundment P-16, for Chemical Waste Management, Inc., D&M (3/18/86)

L. PCB WASTE HANDLING OPERATIONS

1. Polychlorinated Biphenyls Disposal Facility Report, Kettleman Hills Facility, Kings County, California,EMCON (8/20/82; revised 8/5/83)

2. PCB Storage/Transfer Unit SPCC Plan, Kettleman Hills Facility, Kings County, California, EMCON (8/83)

3. Operation Plan, RCRA/TSCA Co-Disposal, Landfill B-19, Phase 1A, Kettleman Hills Facility, CWM (undated)

M. CORRECTIVE ACTION FOR CONTINUING RELEASES

1. Kettleman Hills Facility Phase I - RCRA Facility Investigation (RFI) Workplan, Surface Impoundments P-17 and MP-1, Truckwash Areas, And Drum Staging Area, ERT (7/88)

2. Kettleman Hills Facility RCRA Facility Investigation (RFI) Workplan, Landfills B-1, B-4, B-5, B-6, and B-7, ERT (7/88)

3. Report on Clean Up of Soils Lab Waste Materials Storage Area, Kettleman Hills Facility, Kettleman City, California, Golder (8/2/88)

4. Truck Waiting Area, Kettleman Hills Facility, Golder (8/2/88)

5. Truck Wash Closure Plan, Kettleman Hills Facility, Kings County, California, ENSR (9/88)

N. RESPONSE ACTION PLANS

1. Re: Kettleman Hills Facility, LCRS Certification, EPA Permit Condition: None, DHS Permit Condition: IV.A.7.a., CWM (5/25/88)

2. Response Action Plan, Impoundment P-9, EMCON (7/3/88)

3. Response Action Plan, Impoundment P-14, EMCON (7/3/88)

4. Response Action Plan, Impoundment P-16, EMCON (7/3/88)

5. Response Action Plan, Landfill B-19, Chemical Waste Management, Inc., Kettleman Hills Facility, EMCON (7/3/88)

6. Re: Impoundment Vadose Zone Response for Kettleman Hills, EMCON (12/8/88)

7. Vadose Zone Response Plan, Landfill B-19, Chemical Waste Management, Inc., Kettleman Hills Facility, EMCON (12/9/88)

Abbreviations Used:

1. CWM - Chemical Waste Management, Inc.
2. EMCON - EMCON Associates
3. M/B&A - Meredith/Boli & Associates,Inc.
4. D&M - Dames and Moore, Consulting Engineers
5. CH2M Hill - CH2M Hill, Consulting Engineers
6. Golder - Golder Associates Inc., Consulting Engineers
7. BioSystems - BioSystems Analysis, Inc.
8. ENSR - ENSR, Inc.
9. ERT - ERT, Inc.
10. ESI - Engineering Services, Inc.
11. Hydro-Search - Hydro-Search, Inc.
12. WMI - Waste Management, Inc.

ATTACHMENT C

The leachate collection system for Landfill Unit B-18, comprised of a primary system, a secondary system, and a vadose system, as described in the Initial Report and the documents referenced therein (hereinafter "System") shall be inspected daily for liquid accumulation. The System shall be operated and maintained as required in the Kettleman Hills Facility RCRA Part B permit modification conditions IV.A.8 and IV.A.9 and Attachment IV-B thereto [RCRA Part B permit modification number 3 dated May, 1991], and as described in the Initial Report submitted April 20, 1992, and the documents referenced therein.

All liquids pumped out of any part of the System shall be considered by the Permittee to be hazardous wastes as defined by 40 C.F.R. Part 261 which contain PCBs, and shall be managed in accordance with the requirements of this Approval to Operate and the Kettleman Hills Facility RCRA Part B permit.

The Permittee shall store all leachate and run-on removed from Landfill B-18 in above-ground tanks, containers, or vacuum trucks for a period not to exceed ninety calendar days. All tanks or containers (excluding vacuum trucks) used for this purpose shall be placed in a containment system as described in 40 C.F.R. § 264.175(b).

To determine how the contents of each aforementioned tank, container, or vacuum truck shall be managed, the Permittee shall obtain a sample(s) from each tank, container, or vacuum truck which is representative of all liquids stored therein. The Permittee shall analyze each sample for PCBs. If the concentration of PCBs for any one sample in a specified tank, container, or vacuum truck is equal to or greater than fifty mg/l [50 ppm], the Permittee shall manage the contents of that tank or container in compliance with 40 C.F.R. § 761.60(a) and 40 C.F.R. § 761.70 regarding the incineration of liquids with PCB concentrations greater than or equal to fifty mg/l [ppm]. If the concentration is less than fifty mg/l [ppm], the Permittee may discharge the contents of the tank, container, or vacuum truck to a surface impoundment or may stabilize the contents and dispose of the stabilized waste in Landfill B-18, in accordance with the final permit issued under authority of the Resource Conservation and Recovery Act.

The Permittee shall store all accumulated precipitation removed from Landfill B-18 in above-ground tanks, containers, or vacuum trucks for a period not to exceed ninety calendar days. All tanks or containers (excluding vacuum trucks) used for this purpose shall be placed in a containment system as described in 40 C.F.R. § 264.175(b). The accumulated precipitation shall be

managed as described in the B-18 Operating Plan; that is, all precipitation will be intercepted prior to contact with waste and directed by surface drainage channels. Precipitation that accumulates in the active phase of Landfill Unit B-18 shall be collected in order to minimize percolation through the waste. A sample from the first vacuum truck of accumulated precipitation after each storm event shall be analyzed for PCBs. If the PCB concentration is found to be below fifty mg/l [ppm], the accumulated precipitation shall be managed in accordance with applicable RCRA regulations and the RCRA Part B permit for the Kettleman Hills Facility. If the PCB concentration is found to be greater than fifty mg/l [ppm], the accumulated precipitation shall be managed as TSCA waste in accordance with this Approval to Operate.

ATTACHMENT D

No later than February 22, 1993, a chain link fence with an above-ground height of at least six feet shall be installed around all TSCA and RCRA waste management units at the Kettleman Hills Facility, in accordance with the RCRA Part B permit condition II.D.1. The Permittee shall post signs as described by 40 C.F.R. § 264.14(c) at each entrance to the Kettleman Facility and at roughly two hundred foot intervals along the fence. The fence shall be located around the perimeter of the waste management area, including all active and inactive solid waste management units.

The Permittee shall maintain the fence during the active life of the Kettleman Hills Facility, and during the closure and post-closure periods.

ATTACHMENT E

1. Special Requirements for Ignitable or Reactive Waste

The Permittee shall not place bulk ignitable wastes as defined in 40 C.F.R. Part 261 or reactive wastes in any landfill at the Kettleman Hills Facility. Containerized ignitable wastes which do not contain free liquids may be placed in Landfill B-18, subject to the waste prohibitions in condition IV.C.3.b of the final permit issued under authority of the Resource Conservation and Recovery Act. The disposal of ignitable wastes shall be prohibited unless and until the wastes are treated to meet all applicable land disposal restrictions established in 40 C.F.R. Part 268.

2. Disposal of Small Containers of Hazardous Waste in Overpacked Drums (Lab Packs).

The Permittee shall not place overpacked drums in Landfill B-18 unless and until the requirements of 40 C.F.R. § 264.316 are satisfied.

STATE OF CALIFORNIA - Environmental Protection Agency
PETE WILSON, Governor

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION
3614 East Ashlan Avenue
Fresno, CA 93726
PHONE: (209) 445-5116
FAX: (209) 445-5910

RECEIVED
DEC 9 1993
C. W. M.

8 December 1993

Mr. Rich Zweig
Chemical Waste Management, Inc.
P.O. Box 471
Kettleman City, CA 93239

**CHEMICAL WASTE MANAGEMENT, INC. (CWMI) - LANDFILL UNIT B-18 PHASE II FINAL INSPECTION AND CONSTRUCTION CERTIFICATION REPORT**

Recently, CWMI completed the construction of the Phase II portion of Landfill B-18. In accordance with Revised Monitoring and Reporting Program No. 86-121, a final inspection of the unit was performed by Regional Board Associate Engineering Geologist Jim Dowdall on 4 November 1993.

CWMI submitted the following eight (8) volume construction certification report for Landfill Unit B-18 Phase II for review:

- Volume 1 - *Clay Liner Source Report;*
- Volume 2 - *Subgrade Geologic Mapping Report;*
- Volume 3 - *Excavation and Structural Fill Placement Construction Report;*
- Volume 4 - *Secondary Clay Liner Construction Report;*
- Volume 5 - *Secondary and Vadose HDPE Liner and Leachate Collection System Construction Report;*
- Volume 6 - *Primary Clay Liner Construction Report;*
- Volume 7 - *Primary HDPE Liner and Leachate Collection System Construction Report;*
- Volume 8 - *Summary Construction Observation Report.*

The report was certified by two California Registered Civil Engineers as being constructed in substantial compliance with the design drawings, project specifications and CWMI's Quality Assurance Manuals previously approved by the regulatory agencies.

FILE

Following a through review, it was determined that Phase II has been constructed in accordance with the prescriptive standards and performance goals of Title 23, California Code of Regulations, Chapter 15 and Waste Discharge Requirements Order No. 86-121. CWMI may initiate disposal of waste in Landfill Unit B-18 Phase II upon approval of the remaining regulatory agencies.

If you have any questions, please call Jim Dowdall of this office at (209) 445-5108.

William F. Pfister
Supervising Engineering Geologist
CEG #931

Shelton R. Gray
Senior Engineering Geologist

JKD:jkd

cc: Ms. Lily E. Herskovits, U.S. Environmental Protection Agency, San Francisco
Mr. William P. Veile, Department of Toxic Substances Control, Sacramento
Mr. Gerry White, Department of Toxic Substances Control, Fresno
Mr. Dennis Otani, Kings County Environmental Health Department, Hanford
Mr. Richard Gurske, Chemical Waste Management, Inc., Fremont
Mr. Leo Stahlecker, Chemical Waste Management, Inc. Kettleman City
Mr. John Kendall, Chemical Waste Management, Inc., Kettleman City
Ms. Catherine Pool, Chemical Waste Management, Inc., Kettleman City

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12/28/93

STATE OF CALIFORNIA — ENVIRONMENTAL PROTECTION AGENCY

PETE WILSON, Governor

DEPARTMENT OF TOXIC SUBSTANCES CONTROL

REGION 1
10151 CROYDON WAY, SUITE 3
SACRAMENTO, CA 95827-2106
(916) 255-3545

December 23, 1993

Mr. Richard D. Zweig
General Manager
Chemical Waste
Management, Incorporated
Kettleman Hills Facility
Post Office Box 471
Kettleman City, California 93239

APPROVAL OF THE CERTIFICATION REPORTS AND AS BUILT DRAWINGS FOR THE LANDFILL B-18, PHASE II, DTSC PERMIT CONDITION IV.C.9.C. CHEMICAL WASTE MANAGEMENT, INCORPORATED, KETTLEMAN HILLS FACILITY, EPA I.D. No. CAT000646117.

Dear Mr. Zweig:

The Department of Toxic Substances Control (DTSC) hereby approves Phase II of Landfill B-18 for receipt of hazardous waste in accordance with State Permit Condition IV.C.9.c. This approval is the result of a thorough review of the various construction certification reports, construction quality assurance reports, and photo documentation submitted in response to DTSC Permit condition IV.C.9.c.

If you have any questions concerning the above approval, please call Mr. William P. Veile of my staff at (916) 255-3605.

Sincerely,

James M. Pappas

James M. Pappas, P.E.
Acting Chief
Facility Permitting Branch

Certified #P117863770

cc: Mr. Leo Stahlecker
Chemical Waste Management,
Incorporated
Kettleman Hills Facility
Post Office Box 471
Kettleman City, California 93239

BV:sa
BV73.123

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cc: Mr. John Kendall
Chemical Waste Management,
Incorporated
Kettleman Hills Facility
Post Office Box 471
Kettleman City, California 93239

Mr. Robert Henry
Chemical Waste Management,
Incorporated
Kettleman Hills Facility
Post Office Box 471
Kettleman City, California 93239

Mr. William Pfister
Regional Water Quality
Control Board
Central Valley Region
3614 E. Ashlan Avenue
Fresno, California 93726

Mr. Shelton Gray
Regional Water Quality
Control Board
Central Valley Region
3614 E. Ashlan Avenue
Fresno, California 93726

Mr. James Dowdall
Regional Water Quality
Control Board
Central Valley Region
3614 E. Ashlan Avenue
Fresno, California 93726

Ms. Lili Herskovits
U. S. EPA, Region IX [H-3-2]
75 Hawthorne Street
San Francisco, California 94105

Mr. William Zumwalt
Kings County
Environmental Health
330 Campus Drive
Hanford, California 93230

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, Ca. 94105-3901

RECEIVED
JAN 3 RECD 1994
C. W. M.

CERTIFIED MAIL
P 765 056 252

DEC 30 1993

Mr. Leo Stahlecker
Environmental Manager
Chemical Waste Management, Inc.
P.O. Box 471
Kettleman City, CA 93239

**Re: Chemical Waste Management, Inc., Kettleman Hills Facility TSCA Approval to Operate Landfill Unit B-18, Phase II**

Dear Mr. Stahlecker:

This letter is to inform you that EPA, Region IX has reviewed the construction certification report for Phase II of Landfill B-18 at the Kettleman Hills Facility. The construction certification report summary of procedures and methods contained in the quality assurance documents include all the information needed to determine compliance with the design and specifications already approved by the Regional Administrator for Phase I.

Based on 1) the conformance of Phase II to the approved design and specifications, 2) having already received certification by the California Regional Water Quality Control Board and 3) having already received approval from the California Department of Toxic Substances Control, Region IX grants approval for disposal of non-liquid PCB waste in Unit B-18, Phase II. Disposal shall be in accordance with Section 6(e) of the Toxic Substances Control Act, as amended, and the implementing regulations promulgated by Title 40 of the Code of Federal Regulations, Part 761. This approval is subject to conditions set forth in your PCB site approval dated May 19, 1992 and expires with it.

Any questions regarding this permit may be directed to Vince Mancus of the Toxics Management Section, at (415) 744-1125.

Sincerely,

David P. Howekamp
Director
Air and Toxics Division

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Water Boards

EDMUND G. BROWN JR.
GOVERNOR

MATTHEW RODRIQUEZ
SECRETARY FOR
ENVIRONMENTAL PROTECTION

**Central Valley Regional Water Quality Control Board**

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

20 March 2015

**CONSTRUCTION CERTIFICATION REPORT REVIEW - LANDFILL B-18, PHASE IIIA LINER SYSTEM, KETTLEMAN HILLS FACILITY, CHEMICAL WASTE MANAGEMENT, KINGS COUNTY**

Chemical Waste Management, Inc. (CWMI) documented the construction quality assurance (CQA) activities during the construction of Phase IIIA of Landfill B-18 at CWMI's Kettleman Hills Facility (KHF) in two separate reports (collectively referred to as the CQA Reports). Phase IIIA is the first of two phases to complete the Phase III expansion of Landfill B-18. The CQA Reports were prepared by Golder Associates, Inc. (Golder) on behalf of CWMI. *Construction Quality Assurance (CQA) Report for Landfill B-18 Phase III Expansions, Volume 1: Phase IIIA Subgrade and Secondary Clay Liner, Kettleman Hills Facility, Kings County, California* (Volume 1 Report), dated January 2015, documents the CQA activities regarding the earthwork, clay processing, and installation of the clay liner. *Construction Quality Assurance (CQA) Report for Landfill B-18 Phase III Expansions, Volume 2: Phase IIIA Geosynthetics and Operations Layer, Kettleman Hills Facility, Kings County, California* (Volume 2), dated February 2015, documents the CQA activities regarding the geosynthetic components of the primary and secondary liner systems, the operations layer, and the remaining construction items not documented in the Volume 1 Report. Central Valley Regional Water Quality Control Board (Central Valley Water Board) and the Department of Toxic Substances Control (DTSC) staff reviewed the CQA Reports and subsequent comments were addressed by Golder in correspondence dated 24 February 2015 and 11 March 2015. Please see the enclosed memorandum for additional details.

The CQA Reports document the construction activities of Landfill B-18 Phase IIIA and are signed by a California Registered Civil Engineer. These reports certify that the construction of Landfill B-18 Phase IIIA meets or exceeds the approved design criteria. The final construction inspection was conducted by Central Valley Water Board staff on 13 February 2015, in accordance with Title 23, Section 2540(e). Central Valley Water Board staff concur, based on the certifications and representations of Golder, that construction of Landfill B-18 Phase IIIA was completed in accordance with the approved design report and meets or exceed the construction standards and specifications of Title 23, California Code of Regulations, Section 2510 et seq. and Waste Discharge Requirements Order R5-2014-0003. If you have any questions, please contact Kristen Gomes at (559) 445-5108 or by email at kristen.gomes@waterboards.ca.gov.

Clay L. Rodgers
for Pamela C. Creedon
Executive Officer

Enclosure: Memorandum

cc: Troy Hommerding, Kings County Department of Public Health, DEHS, Hanford
Muzhda, Ferouz, Department of Toxic Substances Control, Sacramento
Ryan Hillman, Golder Associates, Irvine

Department of Toxic Substances Control

*Matthew Rodriquez*
Secretary for
Environmental Protection

Barbara A. Lee, Director
8800 Cal Center Drive
Sacramento, California 95826-3200

*Edmund G. Brown Jr.*
Governor

March 19, 2015

Mr. Paul Turek
Environmental Manager
Chemical Waste Management, Incorporated
Kettleman Hills Facility
Post Office Box 471
Kettleman City, California 93239

REVIEW OF CONSTRUCTION QUALITY ASSURANCE FOR LANDFILL B-18 PHASE IIIA EXPANSION, CHEMICAL WASTE MANAGEMENT, INC., KETTLEMAN HILLS FACILITY, 35251 OLD SKYLINE ROAD, KETTLEMAN CITY, KINGS COUNTY, CALIFORNIA 93239, ENVIRONMENTAL PROTECTION AGENCY IDENTIFICATION NUMBER CAT000646117

Dear Mr. Turek:

On December 12, 2008 Chemical Waste Management (CWM) submitted a Class 3 permit modification request to modify the design of Landfill B-18 to increase the facility's disposal capacity. The Department of Toxic Substances Control (DTSC) reviewed the associated application and granted a Class 3 permit modification of the Hazardous Waste Facility Permit effective June 23, 2014.

DTSC visited the CWM Kettleman Hills Facility to observe Landfill B-18 construction activities on the following dates: November 24, 2014, December 16, 2014, January 6, 2015, January 13, 2015, January 26, 2015, and February 12, 2015. In accordance with the California Code of Regulations (CCR), Section 66270.30, DTSC has inspected the construction activities and finds it in compliance with the conditions of the permit.

In accordance with CCR, Section 66264.19, CWM must meet the Construction Quality Assurance (CQA) Program requirements to ensure the constructed unit meets or exceeds all design criteria and specifications of the permit.

DTSC received the Landfill B-18 Volume 1 CQA Report (Phase IIIA Subgrade and Clay) on February 1, 2015 and the Volume 2 CQA Report (Phase IIIA Geosynthetics and Ops Layer) on February 17, 2015. Mr. Peter Gathungu of the DTSC Engineering and Special Projects Office reviewed the reports and DTSC provided comments to CWM. After numerous reviews and revisions, Mr. Gathungu has issued final comments on the

Volume 1 and Volume 2 CQA reports. As is noted on page 6, comment #15 of Mr. Gathungu's memorandum (enclosed) please revise the text and slope stability plots with the appropriate material properties to remove the discrepancy between the tabulated values and the values in the plot in the CQA Report and the values in the referenced 2011 Golder Report.

In accordance with CCR, Section 66264.19(d), DTSC has received the certification signed by the CQA officer, Mr. Ryan Hillman of Golder Associates, Inc.

DTSC has no objection to CWM placing waste in the newly constructed Landfill B-18 Phase IIIA unit, contingent upon CWM revising the text and slope stability plots with the appropriate material properties and submitting the revision to DTSC by March 27, 2015.

If you have any questions regarding this letter, please contact me at (916) 255-6413 or muzhda.ferouz@dtsc.ca.gov.

Sincerely,

Muzhda Ferouz

Muzhda Ferouz
Hazardous Substances Engineer
Department of Toxic Substances Control
8800 Cal Center Drive

Enclosure

CC:

Mr. Dan Carlson
Regional Water Quality Control Board
Central Valley Region
1685 "E" Street
Fresno, California 93706-2025

Ms. Kristen Gomes
Regional Water Quality Control Board
Central Valley Region
1685 "E" Street
Fresno, California 93706-2025

Mr. John Moody
Waste Management Division (WST-4)
US Environmental Protection Agency, Region 9
75 Hawthorne Street
San Francisco, California 94105-3901

Mr. Lynn Baker
California Air Resources Board
1001 I Street
Sacramento, California 95812

Mr. Arnaud Marjollet
San Joaquin Valley Unified Air Pollution Control District
1990 East Gettysburg Avenue
Fresno, California 93726

Mr. Dave Warner
Director of Permit Services
San Joaquin Valley APCD
1990 E. Gettysburg Ave.
Fresno, CA 93726

BCC: Mr. Rizgar Ghazi, DTSC
Mr. Peter Bailey, DTSC
Dr. Brian Endlich, DTSC
Mr. Peter Gathungu, DTSC
Mr. Nathan Schumacher, DTSC
Mr. Keith Kihara, DTSC
Mr. Richard Driscoll, DTSC
Mr. Wayne Lorentzen, DTSC
Mr. Juan Koponen, DTSC
Mr. Edward Nieto, DTSC

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MATTHEW RODRIQUEZ
SECRETARY FOR
ENVIRONMENTAL PROTECTION

**Central Valley Regional Water Quality Control Board**

17 June 2016

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

**CONSTRUCTION CERTIFICATION REPORT REVIEW - LANDFILL B-18, PHASE IIIB LINER SYSTEM, KETTLEMAN HILLS FACILITY, CHEMICAL WASTE MANAGEMENT, KINGS COUNTY**

Chemical Waste Management, Inc. (CWMI) documented the construction quality assurance (CQA) activities during the construction of Phase IIIB of Landfill B-18 at CWMI's Kettleman Hills Facility (KHF) in two separate reports (collectively referred to as the CQA Reports). Phase IIIB is the second of two phases to complete the Phase III expansion of Landfill B-18.

The CQA Reports were prepared by Golder Associates, Inc. (Golder) on behalf of CWMI. *Construction Quality Assurance (CQA) Report for Landfill B-18 Phase III Expansion, Volume 3: Phase IIIB Subgrade and Secondary Clay Liner, Kettleman Hills Facility, Kings County, California* (Part 3 Report), dated November 2015, documents the CQA activities regarding the earthwork and the installation of the clay liner for Phase IIIB. *Construction Quality Assurance (CQA) Report for Landfill B-18 Phase III Expansions, Volume 4: Phase IIIB Geosynthetics, Phase IIIB Operations Layer, and Phase III Operational Features, Kettleman Hills Facility, Kings County, California* (Part 4 Report), dated December 2015 (Revised April 2016), documents the CQA activities regarding the geosynthetic components of the primary and secondary liner systems and the operations layer for Phase IIIB, as well as the remaining Phase III construction items not documented in previous CQA reports.

The CQA Reports document the construction activities of Landfill B-18, Phase IIIB and are signed by a California Registered Civil Engineer. These reports certify that the construction of Landfill B-18 Phase IIIB meets or exceeds the approved design criteria. Central Valley Regional Water Quality Control Board (Central Valley Water Board) staff reviewed the CQA Reports, performed periodic inspections during construction, and a final inspection after construction was completed. Please see the enclosed staff review memorandum for additional details.

Central Valley Water Board staff concur, based on the certifications and representations of Golder, that construction of Landfill B-18 Phase IIIB was completed in accordance with the approved design report and meets or exceed the construction standards and specifications of Title 23, California Code of Regulations, Section 2510 et seq. and the WDRs . The Landfill B-18, Phase IIIB CQA Reports are hereby approved. The CQA Reports were also approved by the Department of Toxic Substances Control on 15 June 2016. Therefore, discharge to Landfill B-18, Phase IIIB area may commence.

If you have any questions, please contact Kristen Gomes at (559) 445-5108 or by email at kristen.gomes@waterboards.ca.gov.

Clay L. Rodgers

for Pamela C. Creedon
Executive Officer

Enclosure: Memorandum

cc: Muzhda Ferouz, Department of Toxic Substances Control, Sacramento
Ryan Hillman, Golder Associates, Irvine

Department of Toxic Substances Control

Barbara A. Lee, Director
8800 Cal Center Drive
Sacramento, California 95826-3200

*Matthew Rodriquez*
Secretary for
Environmental Protection

*Edmund G. Brown Jr.*
Governor

June 15, 2016

Mr. Robert G. Henry
Senior District Manager
Chemical Waste Management, Incorporated
Kettleman Hills Facility
Post Office Box 471
Kettleman City, California 93239

Certified Mail #70142870000077241457

REVIEW OF CONSTRUCTION QUALITY ASSURANCE REPORT, VOLUME 4 FOR LANDFILL B-18 PHASE IIIB EXPANSION, CHEMICAL WASTE MANAGEMENT, INC., KETTLEMAN HILLS FACILITY, 35251 OLD SKYLINE ROAD, KETTLEMAN CITY, KINGS COUNTY, CALIFORNIA 93239 (EPA ID NUMBER CAT000646117)

Dear Mr. Henry:

On December 12, 2008 Chemical Waste Management (CWM) submitted a Class 3 permit modification request to modify the design of Landfill B-18 to increase the facility's disposal capacity. The Department of Toxic Substances Control (DTSC) reviewed the associated application and granted a Class 3 permit modification of the Hazardous Waste Facility Permit effective June 23, 2014. Landfill B-18 was initially constructed in two phases between 1991 and 1993: Phase I on the west portion and Phase II on the east portion. The 2014 modification authorized the Phase III expansion that was constructed in two phases (IIIA and IIIB). Phase IIIA covers the entire northern and northern one-third portion of the western portion of Phase III and was completed in February 2015. The Phase IIIB construction established a slide-slope liner system along the southerly two-thirds of the western portion and south sides of Landfill B-18.

In accordance with the California Code of Regulations (CCR), Section 66270.30(i), DTSC has inspected the Landfill B-18 construction activities and finds them in compliance with the conditions of the permit. DTSC visited the CWM Kettleman Hills Facility to observe the construction activities on the following dates: November 24, 2014, December 16, 2014, January 6, 2015, January 13, 2015, January 26, 2015, February 12, 2015, April 7, 2015, September 21, 2015, November 17, 2015 and May 4, 2016.

In accordance with CCR, Section 66264.19, CWM must meet the Construction Quality Assurance (CQA) requirements to ensure the Phase IIIB expansion meets or exceeds all design criteria and specifications of the permit. DTSC received revisions dated

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April 22, 2016 to the December 2015 Construction Quality Assurance Report for Landfill B-18 Phase III Expansion - Volume 4: Phase IIIB Geosynthetics, Phase IIIB Operations Layer, and Phase III Operational Features on April 26, 2016. In accordance with CCR, Section 66264.19(d), the CQA report contains the certification signed by the CQA officer, Mr. Ryan Hillman of Golder Associates, Inc. as well as-built drawings.

Based on the oversight activities and review of the subject documents and construction certification statements provided, DTSC has determined that Chemical Waste Management has complied with the construction specifications, CQA requirements, and has appropriately certified construction. DTSC therefore accepts the construction quality assurance report(s) for Landfill B-18 Phase IIIB Expansion and use of the Phase IIIB portion can begin.

If you have any questions regarding this letter, please contact me at (916) 255-3578 or edward.nieto@dtsc.ca.gov.

Sincerely,

Edward Nieto
Supervising Hazardous Substances Engineer I
Permitting Division

cc: Mr. Paul Turek
Environmental Manager
Chemical Waste Management, Incorporated
Kettleman Hills Facility
Post Office Box 4 71
Kettleman City, California 93239

Mr. Dan Carlson
Regional Water Quality Control Board
Central Valley Region
1685 "E" Street
Fresno, California 93706-2025

Ms. Kristen Gomes
Regional Water Quality Control Board
Central Valley Region
1685 "E" Street
Fresno, California 93706-2025

EN, rjb
ED03W.0616

cc: Mr. John Moody
Waste Management Division (WST-4)
US Environmental Protection Agency, Region 9
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San Francisco, California 94105-3901

Mr. Lynn Baker
California Air Resources Board
1001 I Street
Sacramento, California 95812

Mr. Arnaud Marjollet
San Joaquin Valley Unified Air Pollution Control District
1990 East Gettysburg Avenue
Fresno, California 93726

Mr. Dave Warner
Director of Permit Services
San Joaquin Valley Air Pollution Control District
1990 E. Gettysburg Avenue
Fresno, California 93726

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

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JUN 19 2015

RECEIVED 06/22/15

Paul Turek
Chemical Waste Management, Inc.
32251 Old Skyline Road
Kettleman City, CA 93239

**Re: Notice of Final Action - Minor Title V Permit Modification**
**District Facility # C-283**
**Project # C-1142001**

Dear Mr. Turek:

The Air Pollution Control Officer has modified the Title V permit for Chemical Waste Management, Inc. for it's landfill facilty located at 35251 Old Skyline Road, Kettleman City. This modification allows landfill expansion from 53 acres to 67 acres by extending the landfill to the west by approximately 220 feet from the existing waste footprint and elevation will increase from 965 feet to 1,018 feet above mean sea level.

Enclosed is the modified Title V permit. The application and proposal were sent to US EPA Region IX on March 10, 2015. No comments were received following the District's preliminary decision on this project.

Thank you for your cooperation in this matter. If you have any questions, please contact Mr. Jim Swaney, Permit Services Manager, at (559) 230-5900.

Sincerely,

Arnaud Marjollet
Director of Permit Services

AM:KS

Enclosures

cc: Gerardo C. Rios, EPA (w/enclosure) via email

**Seyed Sadredin**
Executive Director/Air Pollution Control Officer

**Northern Region**
4800 Enterprise Way
Modesto, CA 95356-8718
Tel: (209) 557-6400 FAX: (209) 557-6475

**Central Region (Main Office)**
1990 E. Gettysburg Avenue
Fresno, CA 93726-0244
Tel: (559) 230-6000 FAX: (559) 230-6061

**Southern Region**
34946 Flyover Court
Bakersfield, CA 93308-9725
Tel: 661-392-5500 FAX: 661-392-5585

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**ATTACHMENT 11**

**CLOSURE AND POST-CLOSURE PLANS, KETTLEMAN HILLS FACILITY, KINGS COUNTY, CALIFORNIA. MARCH 2018**

**(BOUND SEPARATELY)**

**ATTACHMENT 12**

**SPILL PREVENTION CONTROL AND COUNTERMEASURE PLAN (SPCC)**

**(BOUND SEPARATELY)**

# SPILL PREVENTION CONTROL AND COUNTERMEASURE PLAN (SPCC)

*Prepared for:*

**Chemical Waste Management, Inc.**
**Kettleman Hills Facility**
Kings County, California

*Designated Person Accountable for Spill Prevention:*
Environmental Manager, Kettleman Hills Facility
(559) 386-6142

Original Date of Plan: August 1995

Date of Last Plan Amendment / P.E. Certification: October 2016

Date of Last Plan Review: October 2016

*Initially Prepared by:*

Golder Associates, Inc.

*Revised by:*

Waste Management

October 2016

WASTE MANAGEMENT

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# MANAGEMENT APPROVAL

Chemical Waste Management, Inc. is committed to the prevention of discharges of oil to navigable waters and the environment and maintains standards for spill prevention control and countermeasures through regular review, updating and implementation of the SPCC Plan for the Kettleman Hills Facility Chemical Waste Management, Inc. will provide the manpower, equipment and materials required to expeditiously control and remove any quantity of oil discharged that may be harmful. This SPCC Plan will be implemented as described herein.

Authorized Facility Representative: _____

(Signature)

John Prill

(Print or Type Name)

ENVIRONMENTAL MANAGER

(Title)

OCTOBER, 2016

(Date)

# PROFESSIONAL ENGINEER'S CERTIFICATION

By means of this certification, I hereby attest that:

1. I am familiar with the requirements of 40 CFR Part 112 -Oil Pollution Prevention;
2. I, or my agent, has visited and examined the subject facility;
3. This SPCC Plan has been prepared in accordance with good engineering practice, Including, consideration of applicable industry standards, and with the requirements of 40 CFR Part 112;
4. The procedures for the required inspections and testing have been established, and,
5. This SPCC Plan is adequate for the subject facility.

(Signature) (Date) 10/13/16

Scott G. Sumner, Waste Management, Manager of Engineering - LA

(Printed Name, Company, Title)

REGISTERED PROFESSIONAL ENGINEER
SCOTT G. SUMNER
No. C049769
EXP. 9-30-18
CIVIL
STATE OF CALIFORNIA

C049769

(Professional Engineer Registration Number)

## SPCC PLAN REVIEWS AND REVISIONS

In accordance with 40 CFR 112.5(b), a review and evaluation of this SPCC Plan is conducted at least once every 5 years. As a result of this review and evaluation, Chemical Waste Management, Inc. will amend the SPCC Plan within 6 months of the review to include more effective prevention and control technology if: (1) such technology will significantly reduce the likelihood of a spill event from the facility; and (2) such technology has been field-proven at the time of review. Amendments to the SPCC Plan shall be certified by a Professional Engineer within 6 months after a change in the facility design, construction, operation, or maintenance occurs which materially affects the facility's potential for the discharge of oil into or upon the navigable waters of the United States or adjoining shorelines.

| REVISION DATE | SIGNATURE |
|---|---|
| August 1995 | Prepared and Certified by Golder Associates |
| September 1995 | Prepared and Certified by Golder Associates |
| November 1995 | Prepared and Certified by Golder Associates |
| August 1997 | Prepared and Certified by Rust E&I |
| November 1998 | Prepared and Certified by TRC |
| August 2000 | Prepared and Certified by TRC |
| September 2001 | Prepared by KHF, Certified by TRC |
| September 2004 | Prepared by KHF, Certified by Golder |
| December 2007 | Prepared by KHF, Certified by Golder |
| June 2011 | Prepared by KHF, Certified by WM |
| November 2011 | Prepared by Golder, Certified by WM |
| October 2016 | Prepared and Certified by WM |

# FOREWORD

A Spill Prevention Control and Countermeasure (SPCC) Plan must be prepared by any facility that could reasonably be expected to discharge oil into or upon navigable waters or adjacent shorelines as mandated by the U.S. Environmental Protection Agency (EPA) in 40 CFR 112.7. This SPCC plan has been developed for the Chemical Waste Management, Inc. (CWMI) hazardous waste management facility located in Kettleman Hills, Kings County, California. The facility location is presented in Figure 1.

The principal objectives of the SPCC Plan are to:

- Ensure all appropriate measures are established to prevent spills.
- Ensure all appropriate actions are established to properly respond to a spill.
- Meet the requirements for a SPCC Plan as required by 40 CFR 112.
- Meet the requirements for a SPCC Plan as required by 40 CFR 761.

This plan has been written with the approval of the facility management with authority to commit the resources necessary to comply with the respective regulations.

This plan has been written to include oil storage tanks, piping and containers which could reasonably be expected to discharge oil or oil products into navigable waters (as defined by EPA in 40 CFR 112.2). Prior to this SPCC Plan, CWMI operated the storage and handling of oil products and waste oil per the SPCC Plan Negative Declaration originally prepared in March 1986, and the SPCC Plan originally prepared in August 1995 (as last amended in October 2016). This SPCC Plan supersedes the previous plans.

Because of the special nature of the PCB wastes and requirements for their handling under the Toxic Substances Control Act (40 CFR 761.65(c)(7)(ii)), a SPCC Plan was submitted to EPA in August 1983, specifically for this unit including the 10,000 gallons storage tank and containers. The PCB SPCC Plan was incorporated into this SPCC Plan originally in August 1995. This SPCC Plan supersedes the previous plans for the PCB facility.

The remainder of this SPCC Plan follows the format of the SPCC Plan Guidance issued by the US EPA November 28, 2005 (EPA 550-B-05-001) and final rules published November 13, 2009 (74 Fed. Reg. at 58783) and December 5, 2008 (78 Fed. Reg. at 74235). A cross reference matrix

for non-production facilities is included as Attachment E and matches regulatory requirements to the appropriate page number of this Plan.
In accordance with 40 CFR 112.3(e) a complete copy of the SPCC plan is maintained at the Administration building with the facility Environmental Protection Manager or his/her designee and is available for review during normal working hours.

In accordance with 40 CFR 112.5(a) KHF will periodically review and evaluate this SPCC plan for any changes in the facility design, construction, operation or maintenance that affect the facilities potential for an oil discharge, including, but not limited to:

- Decommissioning or commissioning containers
- Replacement
- Installation of piping systems
- Construction or demolition that alters secondary containment structures
- Changes of product or service; or
- Revision of standard operation or maintenance procedures at a facility

Additionally, the SPCC Plan will be reviewed and evaluated at least once every 5 years. As a result of the review and evaluation, the SPCC Plan shall be amended within 6 months of the review to include more effective prevention and control technology if: (1) such technology will significantly reduce the likelihood of a discharge to navigable waters or adjoining shorelines from the facility; and, (2) if such technology has been field-proven at the time of the review. Completion of the review and evaluation must be documented. Changes of this type must be certified by a P.E. The statement provided in the Management Approval section, which certifies the intention to implement this SPCC Plan, shall be signed by the responsible manager.

Non-technical changes not requiring the exercise of good engineering practice do not require PE certification. Such non-technical changes include but are not limited to such items as: changes to the contact list; more stringent requirements for stormwater discharges to comply with NPDES rules; phone numbers; product changes if the new product is compatible with conditions in the existing tank and secondary containment; and, any other changes which do not materially affect the facility's potential to discharge oil.

# 1.0 FACILITY OWNER AND OPERATOR

A. Facility Owner, Address and Telephone:
Chemical Waste Management, Inc.
35251 Old Skyline Road
P.O. Box 471
Kettleman City, California 93239-0471
(559) 386-9711

B. Facility Operator, Address and Telephone:
Chemical Waste Management, Inc.
35251 Old Skyline Road
P.O. Box 471
Kettleman City, California 93239-0471
(559) 386-9711

C. EPA Facility Identification Number:
CAT000646117

D. Primary Response Contact:
Kettleman Hills Facility Environmental Protection Manager, John Prill
Phone: (559) 386-6142
Cell: (559) 381-5925

E. Secondary Response Contact
Kettleman Hills Facility District Manager, Jim Sook
Phone: (559) 559-386-6116Cell: 559-318-0203

## 2.0 EMERGENCY NOTIFICATIONS

If a confirmed oil release is determined, the SPCC Emergency Contact or designee shall make the following notifications immediately if the release of oil to or that threatens navigable waters of the United States as defined in 40 CFR 112.1(b)(1).

- National Response Center[A] 800-424-8802
- California State Emergency Management Agency 800-852-7550
- State Water Resources Control Board Emergency Response (Spills) 800-952-5400
- US EPA Region IX Spill Phone 415-744-2000
- Kings County Department of Public Health (CUPA Agency) 559-584-1411

A. If oil or oil waste is discharged into a waterway in quantities sufficient to cause a sheen on the water

# 3.0 FACILITY DESCRIPTION

A. Facility Operations

The Kettleman Hills Facility (KHF) is an existing waste treatment, storage and disposal facility owned and operated by Chemical Waste Management, Inc. (CWMI). The site is permitted to handle and dispose of Class I, Class II and Class III waste, as allowed by various permits authorizing operations at the site. While the hours during which the site accepts waste shipments are currently self-limited, the site is permitted to operate 24 hours per day, 7 days per week. Onsite operations are supported by a full-time work force of approximately 35 people. A 24-hour, 7-day per week surveillance is maintained at the facility using facility personnel and/or guards.

The location and layout of the site are shown in Figures 1 and 2. Additional facility details are provided in Figures 3 through 6. More detailed figures for facilities that manage waste containing oil are provided in various facility permit documents. Oil at the KHF that is subject to SPCC Plan requirements is transported to the site via trucks. There is no pipeline or rail transport of oil to or from the site.

B. Facility Storage

Oil storage at the KHF is summarized in Table 1 for aboveground storage and Table 2 for underground storage[1]. The underground storage tanks (USTs) are identified on Figure 6. The KHF is a classified as a Tier I qualified facility as it meets the qualification criteria in 40 CFR 112.3(g)(2) with a total containment capacity exceeding 10,000 gallons, and no individual oil container capacity exceeding 5,000 gallons. Aboveground and underground oil storage occurs at the KHF Equipment Shop, and aboveground oil storage occurs at the KHF Maintenance Building. In addition, the KHF has a number of waste management units which may process or store waste oil, mixed oil and other waste containing oil as defined in 40 CFR 112.2 on a regular basis. These waste management units include the PCB Storage/Transfer Unit, Drum Storage Unit, Final Stabilization Unit and the Bulk Storage Unit (Phases 1 and 2).. Each of these facilities is shown on the Facility Site Map on Figure 2.

Throughout the facility there are utility company transformers (pad and pole-mounted) not controlled by the facility. The locations of transformers with greater than 55 gallons of oil are identified on Figure 2. The utility company has a periodic inspection schedule for the pad-mounted transformers. Any problems with a utility company transformer would be immediately reported to the utility company, upon discovery.

[1] All underground oil storage at the facility is excluded from the SPCC rule by 40 CFR 112.1(d)(4), but is mentioned in the SPCC Plan for information.

The emergency generator located next to the Administration Building includes a 70 gallon fuel tank. Its location is marked on Figure 2. The emergency generator is within secondary containment.

B.1 Maintenance Shop

The Maintenance Shop is located on the eastern side of the KHF site, approximately 1/4 mile north of the Administration Building as shown on Figures 2 and 5. The Maintenance Shop has two 1,000-gallon aboveground product tanks, which previously contained hydraulic and motor oils for use in the maintenance of facility equipment. The tanks are located under a covered roof at the north end of the building and have not been used since approximately 2003. In addition, an average of two, 55-gallon drums containing similar products are also stored in this area. Used oil is stored in a 55-gallon drum and removed as required.

The two above ground oil storage tanks at the Maintenance Shop rest inside a secondary containment wall capable of holding the contents of the largest tank in the event of a spill, leak, or overflow. Drums containing oil products are stored on top of spill pallets.

B.2 Equipment Shop

The Equipment Shop is located approximately 1,000 feet northwest of the Guard House and west of the Administration Building as shown on Figures 2 and 6. The Equipment Shop maintains one, 1,000-gallon aboveground waste-oil tank and three, 1,000-gallon aboveground product tanks containing oils used in the maintenance of facility vehicles, located under a roof at the north end of the building. In addition, three, 275-gallon aboveground storage tanks (ASTs) and several 55-gallon drums containing similar products are also stored inside the equipment shop.

The 1,000-gallon waste oil tank rests inside a 700-gallon capacity secondary containment structure that therefore is not capable of holding the entire contents of the tank in the event of a spill, leak, or overflow. However a high level alarm control devise has been installed to limit the potential for overfilling. The three 1,000-gallon aboveground product tanks rest inside a 3,141-gallon capacity secondary containment wall capable of holding the contents of the largest tank in the event of a spill, leak, or overfill. As these tanks are located under cover, rainfall could not cause the secondary containment structures to overflow. The three, 275-gallon ASTs and 55-gallon drums inside the shop have no local secondary containment. If a spill was to occur that was large enough so as not to be contained with absorbents and would flow away from the

immediate area, it would flow along a dirt road until it potentially reached the East Retention Basin, where the spill would be contained (See Figure 2).

For onsite servicing and fueling of heavy construction equipment, the Equipment Shop utilizes a service truck (See Figure 6). The service truck has a storage capacity of 100 gallons of motor oil, 2,000 gallons of gasoline and 100 gallons of hydraulic fluid. Although the service truck is mobile, when not in use, it is parked north of the Equipment Shop. If there is a leak from the truck that cannot be contained by spill pillows or absorbent it will flow to the north east away from Equipment Shop and down the road to the north east, eventually potentially entering the Eastern Retention Basin where the spill would be contained.

B.3 PCB Storage/Transfer Unit

PCB storage/transfer operations are conducted within a prefabricated steel building located in the central portion of the KHF site as shown in Figures 2 and 3. The reinforced concrete slab has an approximate 18-inch-high perimeter containment dike. The PCB storage/transfer unit is operated in conformance with the requirements of 40 CFR 761, 22 CCR Division 4.5, and permits issued by federal, state and local authorities. Various PCB containers and articles are stored inside the PCB building. A sliding door and truck ramp are provided at the southwest corner of the building for vehicle access into the containment area. Transfer of liquids between the PCB liquids storage tank and transport vehicles occurs within the containment area so that the hose connection to the truck and other potential spill elements (e.g., pumps and hoses) are within secondary containment.

A 1,000-gallon tank containing diesel fuel is located under cover from a steel roof structure located directly south and abutting the PCB Building as shown in Figure 3. The tank is located within an 18-inch high concrete secondary containment berm that provides over 5,000 gallons of containment (containment details provided in Tables 1 and 2). The diesel fuel is used for flushing containers that previously contained PCBs.

PCB containers and large transformers may be stored temporarily for up to 30 days outside of the PCB Building, in conformance with 40 CFR 761.65(c)(1). Storage is provided by a epoxy-coated concrete pad located adjacent to the east of the PCB Building and designated for temporary PCB storage and PCB article/large transformer draining. Vehicular access to the approximately 18-inch deep containment pad is provided by concrete ramps from the surrounding paved area. The draining of PCB liquids from transformers and other PCB articles

occurs here while the PCB articles are within containment trays. In general, the trays measure 8 feet by 8 feet in dimension and are 10 inches deep (400-gallon capacity). For draining articles at this outside area, the pump stays inside the containment building with the PCB liquids storage tank and a flexible double-walled hose is extended outside to the secondary containment tray to drain the article(s). In the event of a leak from the hose during transfer, the spill will remain contained within the epoxy-coated concrete containment area. Site personnel present during article draining and transfer activities will dike off the area using soil or other sorbent material and the spilled material will be disposed of accordingly.

B.4. Drum Decant Unit

The drum decant unit has been clean closed under the Resource Conservation and Recovery Act (RCRA) and no longer has any storage facilities.

B.5 Drum Storage Unit

The Drum Storage Unit (DSU) is an open-sided, roofed structure supported by steel columns and is curbed to a height of 6-inches on all sides to prevent run-on or uncontrolled waste release. It is located in the central portion of the facility as shown on Figures 2 and 3. The DSU has the capacity to store approximately 1,200 drums, most of which are 55 gallons in volume and can contain waste oil, RCRA hazardous waste, or non-RCRA hazardous waste, are staged at this unit prior to treatment/disposal. The DSU has nine discrete storage, sampling and analysis bays constructed of poured concrete, each of which is dedicated to a compatible waste grouping. The bays are 325 feet long and 139 feet wide and each bay has a containment volume of 5,064 gallons.

B.6 Final Stabilization Unit

The Final Stabilization Unit (FSU) is located in the southern portion of the facility, just north of the active B-18 unit as shown in Figures 2 and 4.

In the FSU system, bulk solid, semi-solid, sludge and selected aqueous wastes are off-loaded directly from delivery trucks into one of the four waste processing tanks. Information on these tanks is presented in Table 1. Wastes treated in the FSU may contain free-phase oil wastes that could fall under regulations at 40 CFR 112. Table 1 includes the waste mixing tanks for this reason.

Containerized wastes that are to be solidified or stabilized are brought to the unit by truck. They are later emptied into the waste processing tanks by removing the lids or piercing the drums on a spike and dispersing the contents into the tank. Once the wastes have been discharged to the waste processing tanks, wastes are treated by mixing with solidification or stabilization reagents until the treatment is complete.

The four waste processing tanks are open on top and are located within a reinforced concrete secondary containment vault below the ground-level floor of the FSU building. A batch treatment process is used. Up to 5,000 gallons of waste may be processed in a batch, compared to the approximately 17,000-gallon volume of each tank. This allows adequate freeboard to make overtopping unlikely. The concrete floor surrounding the tops of the tanks is sloped inward toward the tanks. These provisions prevent the potential for a spill from these tanks to flow away from the area. In the event of a spill the material will be diked using soil or another sorbent material and will be disposed of accordingly. Most likely by placing the material back in the stabilization tanks.

B.7 Bulk Storage Unit (BSU), Phases 1 and 2

The Bulk Storage Units (BSU) are located in the southern portion of the facility as shown in Figures 2 and 4.

Phase 1 was constructed in 1992 and includes a clay liner overlain by a 60-mil high-density polyethylene (HDPE) geomembrane. The liner is overlain by a permeable layer of gravel that drains to a collection sump. Liquids, typically rain water, are removed at the sump and disposed of in an approved manner.

Phase 2 was also constructed in 1992 and includes a double HDPE geomembrane liner system with a leak detection system between the geomembranes. Liquids collected on the surface or from the leak detection system are removed at the sump.

Phase 1 is used to temporarily hold bulk containers of treated waste that were stabilized in the FSU. After laboratory analyses have determined that the stabilized waste meets the appropriate treatment standard(s), the stabilized waste is transported to the appropriate onsite landfill.

Additionally, in Phase 1, the 35-foot span from the entrance and along the width of the area may be used to temporarily hold the drums to be processed the next day at the FSU, as well as any

liquid waste transfer trailers that are waiting to be processed. This 35-foot span has an impervious surface of asphalt and a separate containment berm. On average 60 to 70 drums are stored in this area.

In addition to the temporary storage of stabilized bulk waste, Phase 2 is used to store bulk containers of untreated waste.

B.8 Portable and Mobile Equipment

KHF has numerous vehicles, portable compressors, generators, pumps, light-plants, etc, and a stationary emergency generator (Administration Building, see Figure 2). These internal combustion engines contain various amounts of fuel and oil, and can be found anywhere on site at any given time. If a spill was to occur at one of these devices, the spill would be localized, and would be contained and cleaned up following established KHF spill response and cleanup procedures. The oil capacities of these small engines are typically less than 55 gallons, so are exempt from specific inclusion in the SPCC plan.

B.9. Leachate Tanks

KHF has five 5,000-gallon leachate tanks at Landfills' B17 (2 tanks) and B19 (3 tanks). There is one 4,000 gallon leachate tank at B19. Within Landfill B18 there are four 5,500 leachate tanks and there are three 500 gallon leachate tanks, one at each of the three ponds. Various tanks are within secondary containment structures that provide containment for the entire volume of the tank and an additional 2 feet of freeboard. The majority of the tanks are doubled walled and have the additional protection of concrete containment structures. In some circumstances the risers from which the leachate is pumped are contained within the secondary containment thereby limiting any chance for a spill outside of containment. There are however some circumstances where the piping from the risers to the tanks is outside of secondary containment thus if there was a leak from the hose if may occur outside of containment.

C. Drainage Pathway and Distance to Navigable Waters

C.1 Drainage Pathway and Distance

The relatively arid climate of the San Joaquin Valley and, more specifically, the Kettleman Hills region of the coastal Range, produce only ephemeral, storm-related intermittent streams.

Average annual precipitation is 6.12 inches (National Oceanic and Atmospheric Administration [NOAA] Climatological Data Summary, Volume 82, No. 13) with a mean evaporation of 102.94 inches (California Department of Water Resources Bulletin No. 73-1). There are no natural bodies of surface water (i.e. ponds, lakes) either on or adjacent to the KHF. Infrequent precipitation from local storm events is quickly absorbed by the moisture-deficient soils.

The regulations (40 CFR 112.8 (c)(2)) state that an operator should "construct all bulk storage container installations so that you provide a secondary means of containment for the entire contents of the largest single container plus sufficient freeboard to contain precipitation." For the purposes of this SPCC Plan, a 24-hour, 25-year storm event was considered for the allowance for precipitation (67 FR 47117). According to the National Oceanic and Atmospheric Administration (NOAA) Atlas 2 Published in 1973, a 25-year storm event for this area would deliver approximately 2 inches of rain in a 24-hour period.

Only ephemeral drainages are present in the Kettleman Hills area. Several ephemeral terminal streams can be mapped across the KHF site boundaries, draining either southwest toward the Kettleman Plain or southeast toward the San Joaquin Valley (see Appendix A, Site Drainage Map). These streams are defined as "ephemeral terminal" because they flow only for short periods following rainfall events and do not feed into any bodies of surface water. Instead, when they reach the valleys adjacent to the site, the Kettleman Plain to the west and the San Joaquin Valley to the east, they become more poorly defined as the water either is evaporated, is retained in the upper limits of the moisture-deficient soils, or provides a limited amount of groundwater recharge to the valley aquifers.

The nearest body of water to the facility is the California Aqueduct, approximately 3.5 miles east of the site, which is not in contact with the local ephemeral drainages of the area (personal communication with Mr. Alan Jones, Public Information Officer, Department of Water Resources, (916) 322-4838, on January 8, 1986).

C.2 Run-on and Run-off Controls

Precipitation events at the facility are infrequent and are typically absorbed by the dry soil in normal rainfall years. Run-off that does occur within the active area is routed through ditches and channels to storm water basins. The design of these stormwater basins prevents potentially contaminated run-off from leaving the facility during a 24-hour Probable Maximum Precipitation (PMP) storm-event. The 24-hour PMP is estimated to be 10.3 inches of precipitation.

Surface water flow paths around each of the DSU and PCB Flushing/Storage Units, FSU/BSU, Storage Units, Maintenance Building and Equipment Shop Area are shown in Figures 3 through 6.

KHF has a Storm Water Pollution Prevention Plan (SWPPP), which identifies sources of pollution that affect the quality of industrial storm water discharges, and describes and implements Best Management Practices (BMPs) to reduce or prevent these pollutants in industrial storm water discharges. In accordance with the KHF's Notice of Intent to the Industrial Activities Storm Water General Permit, storm water may be discharged (e.g. during a prolonged series of large storm events) provided that a sample of the discharge is obtained and analyzed.

Storm water basins are observed regularly during rainy seasons. All dams are checked annually in preparation of the rainy season for evidence of erosion, damage or deterioration. Annually, the drainage ditches and conveyance systems are cleared and graded. To date, no run-off is known to have left the active area of the KHF during its operation by CWMI.

## 4.0 SPILL HISTORY [40 CFR 112.4(a)]

As of the date of this SPCC Plan, there have been no known spills of oil to navigable waters or adjacent shorelines from the KHF.

## 5.0 POTENTIAL SPILL PREDICTIONS, VOLUMES, RATES AND CONTROL [40 CFR 112.7(b)]

Guidance in 40 CFR 112.7(b) provides that *"[w]here experience indicates a reasonable potential for equipment failure (such as loading or unloading equipment, tank overflow, rupture or leakage), the plan should include a prediction of the direction, rate of flow and total quantity of oil which could be discharged from the facility as a result of each major type of failure."*

Table 3, as well as the following text, provides information on potential equipment failures and prediction of discharge in the event of a failure in accordance with this guidance. As indicated in Section 4.0, there have been no discharges to date from the KHF during operations by CWMI to navigable waters or adjacent shorelines.

CWMI provides spill cleanup kits for cleaning of minor spills and leaks at appropriate locations throughout the site.

Because the facility is a permitted hazardous waste TSDF the facility has the equipment on-site to clean up a large spill outside of containment. Therefore, no contract is maintained with an outside contractor as discussed in 40 CFR 112(a)(2)(iv).

A. Maintenance Shop [40 CFR 112.7(a)(3)(iv)]

Potential spills could occur by overfilling of the tanks or leakage of the piping network. The potential for these types of spills is low since filling of the tanks is closely monitored and the tanks are visually inspected for structural integrity.

Predicted spills would be either minor leaks that would be cleaned up by onsite personnel or complete rupturing of the tanks and/or drums. Although the two 1,000-gallon tanks at the maintenance shop are empty, and have been since approximately 2003, if they were used the complete rupturing of a tank would have the potential to release a maximum of 1,000 gallons at

an estimated rate of 200 gallons per minute (gpm). The tanks rest inside a 1,575-gallon capacity secondary containment wall capable of holding the contents of a tank in the event of a spill, leak or overflow. In the event of a major spill, the product would be contained by the concrete containment berm. The potential for spills beyond the concrete containment berm are very remote.

Fifty-five-gallon drums containing liquids are generally placed on spill control pallets. Potential spills from the 55-gallon drums would be contained in the spill control pallet; moreover, since the maximum spill would be 55-gallons, any spill is not likely to reach the East Retention Basin, which is approximately 250 feet away to the west.

B. Equipment Shop [40 CFR 112.7(a)(3)(iv)]

Potential spills could occur by overfilling of the tanks or leakage of the piping network. The potential for these types of spills is low since filling of the tanks is closely monitored and the tanks are visually inspected for structural integrity.

Predicted spills would be either minor leaks that would be cleaned up by onsite personnel or complete rupturing of the tank and/or drums. The complete rupturing of a tank would have the potential to release a maximum of 1,000 gallons at an estimated rate of 200 gpm. The 1,000 gallon waste oil tank rests inside a 700-gallon secondary containment wall that does not have the capacity to contain the entire volume of the tank. However, in the event of a major spill, the product would be contained by the concrete containment berm. The potential for spills beyond the concrete containment berm are very remote. The three 1,000-gallon product tanks rest inside a 3,141-gallon secondary containment wall that is capable of holding the contents of a tank in the event of a spill, leak or overflow. In the event that secondary containment structure failed, the product would be contained by the concrete containment berm.

Spills from the 275-gallon tanks located inside the Equipment Shop would most likely be contained within the Equipment Shop or limited to the immediate vicinity, and is not likely to reach the East Retention Basin. The fuel storage USTs are filled by tanker trucks, with transfer operations occurring as needed. Re-filling of fuel tanks is performed by a licensed fuel supplier, who must comply with all regulations for transporting and dispensing fuels. The fuel supplier is therefore responsible for supplying a tanker truck equipped with the required pipework and safety features to carry out re-filling operations.

Drums used inside the Equipment Shop are required to be moved frequently. Therefore, these drums are placed on dollies. Since the maximum spill would be 55-gallons, any spill is not likely to reach the East Retention Basin because it is more than 250 feet away. Any spill would be cleaned up using sorbent materials or soil.

The fuel dispenser islands at the equipment shop contain 3 dispensers each with 30 gallon double walled containment tanks. An emergency shut off switch is located in the outside northwest corner of the Equipment Shop, as shown in Figure 6.

C. PCB Storage/Transfer Unit [40 CFR 112.7(a)(3)(iv)]

In the event of a release of PCB liquids from the 10,000-gallon PCB Tank (PCB-1), or other release inside the PCB Building, the contents will be contained by the 18-inch continuous concrete curb around the perimeter of the building.

A spill during transfer of PCB liquids outside the building would be ultimately contained by an 18-inch continuous concrete curb around the perimeter of the epoxy-coated concrete loading area, within which all outdoor storage and transfer activities take place. Non-leaking PCB articles may be stored within the containment area outside the PCB building if required. A leak from these articles is unlikely, but if one were to occur the spill would be contained and migration limited with the use of sorbent materials and managed per the requirements of 40 CFR Part 761. Additionally, it is unlikely that a spill would be of sufficient volume to exceed the capacity of the secondary containment concrete pad, however in the event that a spill and a rupture of the structure occurred simultaneously during a storm water runoff event, it would flow toward Dam 1 where it would be contained.

Potential spills could occur by overfilling of the diesel tank (diesel is used for flushing PCB articles) or leakage of related piping network. Predicted spills would be either minor leaks, which would be cleaned up by onsite personnel, or complete rupturing of the tank. The complete rupturing of the tank would have the potential to release 1,000 gallons. The 1,000-gallon diesel tank rests inside a secondary containment wall capable of holding the contents of the tank in the event of a spill, leak or overflow (5,000 gallon capacity). In the event of a major spill, the diesel fuel would be contained by the concrete containment berm. The potential for spills beyond the concrete containment berm are very remote.

D. Drum Decant Unit

This unit has been clean closed in accordance with RCRA.

E. Drum Storage Unit [40 CFR 112.7(a)(3)(iv)]

Potential spills could occur in the DSU as a result of a leak or rupture of a 55-gallon container during storage or handling. Each bay is sloped to drain to a central collection trench, which directs any fluids to a nondischarging, dedicated collection sump. The drum loading/unloading area consists of a covered, sloped concrete apron and four individual sumps. These provisions would contain a foreseeable potential spill at the DSU. Any spills within the containment area will be cleaned up using sorbent material and disposed of appropriately.

F. Final Stabilization Unit [40 CFR 112.7(a)(3)(iv)]

The FSU and its associated loading/unloading areas were designed and constructed to ensure that spills, leaks, and precipitation would be held and collected until they could be removed. The building floor is constructed of cast-in-place reinforced concrete and is sloped to drain any spilled wastes into the tanks. Trucks unloading into a processing tank are positioned so that any spilled or leaking material flows into the tank.

The four tanks are set within a concrete vault that would contain leakage from the tank if it were to occur. For each tank, the vault is sloped to drain any accumulated liquids to a collection sump for leak detection monitoring.

G. Bulk Storage Unit (BSU), Phases 1 and 2 [40 CFR 112.7(a)(3)(iv)]

Potential spills could occur in the BSUs due to a leak or rupture from a stored container.

Each BSU phase is approximately 170 feet by 240 feet and is surrounded by a containment berm. BSU 1 is lined with a HDPE membrane, overlaid with a geocomposite drainage layer and either 16 inches of gravel or 4 inches of asphalt over 10 inches of gravel. The capacity of BSU 1 is approximately 30,420 cubic feet and the capacity of BSU 2 is approximately 66,370 cubic feet. The HDPE base is sloped to promote drainage, and a concrete drain box with a collection system is located in the low corner. In Phase 2, there is a secondary liner system consisting of a secondary HDPE liner, geocomposite drainage layer, and a sump collection area. These provisions would contain any liquid spilled or emitted from stored containers. Any spills within the containment area will be cleaned up using sorbent material and disposed of appropriately.

## 6.0 PREVENTION MEASURES PROVIDED [40 CFR 112.7(C) TO (I), 40 CFR 112.8(B) TO (D), CFR 112.9 AND CFR 112.10]

A. Discharge Prevention [40 CFR 112.7(c)]

Guidance in 40 CFR 112.7(c) indicates that the facility shall *"Provide appropriate containment and/or diversionary structures or equipment to prevent a discharge as described in §112.1(b), except as provided in paragraph (k) of this section for qualified oil-filled operational equipment, and except as provided in §112.9(d)(3) for flowlines and intra-facility gathering lines at an oil production facility. The entire containment system, including walls and floor, must be capable of containing oil and must be constructed so that any discharge from a primary containment system, such as a tank, will not escape the containment system before cleanup occurs. In determining the method, design, and capacity for secondary containment, you need only to address the typical failure mode, and the most likely quantity of oil that would be discharged. Secondary containment may be either active or passive in design. At a minimum, you must use one of the following prevention systems or its equivalent:*

*(1) For onshore facilities:*

*(i) Dikes, berms, or retaining walls sufficiently impervious to contain oil;*

*(ii) Curbing or drip pans;*

*(iii) Sumps and collection systems;*

*(iv) Culverting, gutters, or other drainage systems;*

*(v) Weirs, booms, or other barriers;*

*(vi) Spill diversion ponds;*

*(vii) Retention ponds; or*

*(viii) Sorbent materials."*

At the KHF, each of the areas where oil is stored or transferred either has localized secondary containment such as impervious dikes, or drains toward a retention basin. The secondary containment provisions are discussed in Section 5 and Table 3 of this SPCC Plan.

B. Explanation of Impracticability of Secondary Containment [40 CFR 112.7(d)

Guidance in 40 CFR 112.8(c)(6) indicates that *" Provided your Plan is certified by a licensed Professional Engineer under §112.3(d), or, in the case of a qualified facility that meets the criteria in §112.3(g), the relevant sections of your Plan are certified by a licensed Professional Engineer under §112.6(d), if you determine that the installation of any of the structures or pieces of equipment listed in paragraphs (c) and (h)(1) of this section, and §§112.8(c)(2), 112.8(c)(11),*

*112.9(c)(2), 112.10(c), 112.12(c)(2), and 112.12(c)(11) to prevent a discharge as described in §112.1(b) from any onshore or offshore facility is not practicable, you must clearly explain in your Plan why such measures are not practicable; for bulk storage containers, conduct both periodic integrity testing of the containers and periodic integrity and leak testing of the valves and piping; and, unless you have submitted a response plan under §112.20, provide in your Plan the following:*
*(1) An oil spill contingency plan following the provisions of part 109 of this chapter.*
*(2) A written commitment of manpower, equipment, and materials required to expeditiously control and remove any quantity of oil discharged that may be harmful."*

Since these measures described above for 40 CFR 112.7(c) provide secondary containment for each of the oil storage locations, the 40 CFR 112.7(d) allowance for alternative protection measures does not apply to this site. The secondary containment provisions for each oil storage tank, container, or drum storage area are detailed in Section 5.0 of this Plan and the likely spill volumes, containment capacities and likely migration pathways are described in Table 3. A written commitment of manpower, equipment, and materials required to expeditiously control and remove any quantity of oil discharged that may be harmful is included at the front of this Plan document.

C. Inspections and Record Keeping [40 CFR 112.7(e)]

Guidance in 40 CFR 112.7(e) indicates that the facility shall *" Conduct inspections and tests required by this part in accordance with written procedures that you or the certifying engineer develop for the facility. You must keep these written procedures and a record of the inspections and tests, signed by the appropriate supervisor or inspector, with the SPCC Plan for a period of three years. Records of inspections and tests kept under usual and customary business practices will suffice for purposes of this paragraph."*

Checklist forms that include inspection requirements of 40 CFR 112 are included in Appendix B. Completed inspection checklists signed by the appropriate inspector or supervisor are maintained onsite and available for review as part of the SPCC Plan. Completed checklists will be retained onsite for at least 3 years.

D. Personnel Training and Spill Prevention Procedures [40 CFR 112.7(f)]

(i) Personnel Instructions [40 CFR 112.7(f)(1)]

Guidance in 40 CFR 112.7(f)(1) indicates that the facility shall *"At a minimum, train your oil-handling personnel in the operation and maintenance of equipment to prevent discharges; discharge procedure protocols; applicable pollution control laws, rules, and regulations; general facility operations; and, the contents of the facility SPCC Plan."*

CWMI has developed a multi-level personnel training program in accordance with the requirements of 40 CFR 264.16. New operations employees receive general orientation to facility operations, environmental awareness, and Health/Safety initial training within the first few weeks of employment. Job specific training unique to each position is completed within the first 6 months of employment. Employees may also complete specialized training where advanced knowledge or skill is required.

Different job positions require various levels and amounts of training in each category, i.e. initial, job specific and specialized. Within the KHF, training programs are tailored to the position. Personnel involved with the transfer, storage and use of the oil products have been trained in the prevention of spills, the use of spill cleanup equipment commonly used at the site, and on oil pollution control laws and regulations. Personnel involved in the maintenance of equipment are trained in appropriate maintenance procedures and schedules.

No employee at the KHF is permitted to work unsupervised until his supervisor has certified that he has successfully completed all elements of the general facility-wide orientation training program and both classroom and on-the-job instruction related specifically to the work area.

Refresher training is conducted on an annual basis which includes a review of the spill response procedures.

(ii) Designated Accountable Person [40 CFR 112.7(f)(2)]
Guidance in 40 CFR 112.7 (f)(2) indicates that the facility shall "*Designate a person at each applicable facility who is accountable for discharge prevention and who reports to facility management. "*

The designated person accountable for spill prevention at the KHF is the Environmental Manager.

(iii) Spill Prevention Briefings [40 CFR 112.7(f)(3)]
Guidance in 40 CFR 112.7(f)(3) indicates that the facility shall *" Schedule and conduct discharge prevention briefings for your oil-handling personnel at least once a year to assure adequate understanding of the SPCC Plan for that facility. Such briefings must highlight and describe known discharges as described in §112.1(b) or failures, malfunctioning components, and any recently developed precautionary measures."*

Training for operations personnel includes instruction on the SPCC Plan prevention of oil spills. Refresher courses are provided annually. If recent spills have occurred, they are reviewed along with any new precautionary measures. Additional spill prevention briefings on topics such as observations, reporting, responding and clean up occur as necessary.

E. Site Security [40 CFR 112.7(g)]
Guidance in 40 CFR 112.7(g) indicates that the facility shall "*Describe in your Plan how you secure and control access to the oil handling, processing and storage areas; secure master flow and drain valves; prevent unauthorized access to starter controls on oil pumps; secure out-of-service and loading/unloading connections of oil pipelines; and address the appropriateness of security lighting to both prevent acts of vandalism and assist in the discovery of oil discharges"*

There are no valves on the tanks at KHF that will permit direct outward flow of the tank's content to the surface.

Standard operating practice at the KHF includes securing pump starter controls in the off position when pumps are not operating or on standby. Since the site maintains 24-hour per day security, only authorized personnel have access to the controls.

The KHF is completely fenced around the perimeter and is posted as a hazardous waste site. Access to the active facility is monitored and controlled at a guardhouse tended 24 hours a day, 365 days a year. The KHF has security provisions that are intended to prevent or minimize the possibility of unknowing or unauthorized entry of persons or livestock into not only the active waste management area, but also the inactive area. In general, the facility is not open to the public and entry is limited to authorized personnel, waste haulers and escorted visitors. Furthermore, the remote location and isolation of the facility from human habitation minimizes the potential for public encroachment.

There are no pipelines at the KHF that are used for loading/unloading of oil products.

The areas of the KHF site where oil storage, use and transfer occur are generally well lighted which would allow for the observation of spills during the night hours. The lighting is sufficient to discourage unauthorized personnel from vandalizing the tanks or lines. Furthermore, the remote location and isolation of the facility from human habitation minimizes the potential for public encroachment.

F. Facility Tank Car and Truck Loading/Unloading Operations [40 CFR 112.7(h)]

(i) Adequate Secondary Containment for Vehicles [40 CFR 112.7(h)(1)]

Guidance in 40 CFR 112.7(h)(1) indicates that *"Where loading/unloading rack drainage does not flow into a catchment basin or treatment facility designed to handle discharges, use a quick drainage system for tank car or tank truck loading/unloading racks. You must design any containment system to hold at least the maximum capacity of any single compartment of a tank car or tank truck loaded or unloaded at the facility."*

As shown in Table 3, the oil transfers at KHF have either localized secondary containment or have a retention basin downgradient. In each case, the capacity of the catchment area exceeds the maximum capacity of any single tank truck compartment loaded or unloaded at the respective location. Therefore, a quick drainage system, as indicated in 40 CFR 112.7(h)(1), does not apply to the KHF site.

(ii) Vehicle Warning or Barrier System [40 CFR 112.7(h)(2)]

Guidance in 40 CFR 112.7(h)(2) indicates that the facility shall *"Provide an interlocked warning light or physical barrier system, warning signs, wheel chocks or vehicle brake interlock system in the area adjacent to a loading/unloading rack, to prevent vehicles from departing before complete disconnection of flexible or fixed oil transfer lines."*

Warning signs reminding tank truck drivers to disconnect prior to departure are provided at the fuel tank filling areas. Other tanks that require periodic filling are filled by authorized personnel who provide continuous monitoring of the filling operation.

(iii) Examination of Drainage Outlets [40 CFR 112.7(h)(3)]
Guidance in 40 CFR 112.7(h)(3) indicates that "*Prior to filling and departure of any tank car or tank truck, closely inspect for discharges the lowermost drain and all outlets of such vehicles, and if necessary, ensure that they are tightened, adjusted, or replaced to prevent liquid discharge while in transit*"

This provision applies to the filling of tank trucks for periodic offsite transport of waste oil and waste PCBs. The standard practice for evacuation of waste oil tank includes examination of the tank trucks by a supervisor prior to leaving the waste oil tank area, to assure that the tank truck is not leaking. Each outlet of the tank truck container is closely examined.

G. Repair, Alteration, Reconstruction and Changes in Service of Field-Constructed Containers [40 CFR 112.7(i)]
Repair, Alteration, Reconstruction and Changes in Service of Field-Constructed Containers
Guidance in 40 CFR 112.7(i) indicates that "*If a field-constructed aboveground container undergoes a repair, alteration, reconstruction, or a change in service that might affect the risk of a discharge or failure due to brittle fracture or other catastrophe, or has discharged oil or failed due to brittle fracture failure or other catastrophe, evaluate the container for risk of discharge or failure due to brittle fracture or other catastrophe, and as necessary, take appropriate action.*"

All containers and above ground tanks used to contain oil shall be designed following the fail safe engineering principles detailed in 40 CFR 112.8(c)(8), inspected using the checklist forms included in Appendix B and tested according to the procedures contained within his plan when appropriate.

H. Drainage Control [40 CFR 112.8(b)]
(i) Drainage from Diked Storage Areas [40 CFR 112.8(b)(1)]
Guidance in 40 CFR 112.8(b)(1) indicates that the facility shall *"Restrain drainage from diked storage areas by valves to prevent a discharge into the drainage system or facility effluent treatment system, except where facility systems are designed to control such discharge. You may empty diked areas by pumps or ejectors; however, you must manually activate these pumps or ejectors and must inspect the condition of the accumulation before starting, to ensure no oil will be discharged."*

The containment systems shown for each oil storage and use area in Table 3 conform to this guidance. Each of the containment systems are designed for closed drainage with no valves or other mechanism that would allow gravity flow or other automatic drainage away from containment to occur. When necessary, liquids are removed from containment with portable, manually activated pumps, into vacuum trucks. Those liquid wastes are disposed of in an appropriate manner.

The retention basins are managed to minimize the potential for overtopping in accordance with a *Surface Water Control Program for Kettleman Hills Facility* (Centra Consulting, Inc., October 23, 2009), or the latest version. There have been no known instances of release from or overtopping of retention basins since the KHF has operated.

(ii) Valves Used on Diked Storage Areas [40 CFR 112.8(b)(2)]
Guidance in 40 CFR 112.8(b)(2) states that the facility shall *"Use valves of manual, open-and-closed design, for the drainage of diked areas. You may not use flapper-type drain valves to drain diked areas. If your facility drainage drains directly into a watercourse and not into an on-site wastewater treatment plant, you must inspect and may drain uncontaminated retained stormwater, as provided in paragraphs (c)(3)(ii), (iii), and (iv) of this section."*

As noted above, each of the containment systems in Table 3 is designed for closed drainage with no valves. When necessary, liquids are removed from containment with portable, manually activated pumps into vacuum trucks. These liquid wastes are disposed in an appropriate manner. Prior to release of stormwater, should that ever become necessary, liquids are inspected in accordance with 40 CFR 112.8*((c)(3)(ii), (iii), and (iv)*, as further described in Section 6.B (iii) of this SPCC Plan.

(iii) Plant Drainage Systems from Undiked Areas [40 CFR 112.8(b)(3)]
Guidance in 40 CFR 112.8(b)(3) indicates that the facility shall*"Design facility drainage systems from undiked areas with a potential for a discharge (such as where piping is located outside containment walls or where tank truck discharges may occur outside the loading area) to flow into ponds, lagoons, or catchment basins designed to retain oil or return it to the facility. You must not locate catchment basins in areas subject to periodic flooding"*

Table 3 shows that oil storage and transfer areas that are not within localized secondary containment (e.g., dikes or equivalent) drain to retention basins. These basins are designed to retain potential spills at the KHF and managed to prevent the release of stormwater from the KHF.

(iv) Final Discharge of Drainage [40 CFR 112.8(b)(4)]
40 CFR 112.8(b)(4) provides for alternative protective measures where plant drainage is not designed in accordance with 40 CFR 112.8(b)(3). As discussed above, plant drainage is designed in accordance with guidance of 40 CFR 112.8(b)(3). Therefore, alternative provisions of 40 CFR 112.8 (b)(4) do not apply to this site.

(v) Facility Drainage Systems and Equipment [40 CFR 112.8(b)(5)]
Guidance in 40 CFR 112.8 (b)(5) indicates that the facility shall ensure *"Where drainage waters are treated in more than one treatment unit and such treatment is continuous, and pump transfer is needed, provide two "lift" pumps and permanently install at least one of the pumps. Whatever techniques you use, you must engineer facility drainage systems to prevent a discharge as described in §112.1(b) in case there is an equipment failure or human error at the facility."*

None of the containment systems rely on the use of a wastewater treatment system. Furthermore, containment provisions for the oil storage, filling and use areas, as discussed in previous sections, would prevent discharge of oil to navigable waters under natural hydraulic flow (i.e., gravity-flow conditions). Pump transfer is not necessary for containment of the contents of the largest oil tank plus precipitation in each respective area or containment system.

I. Bulk Storage Tanks/Secondary Containment [40 CFR 112.8(c)]
(i) Tank Compatibility with Contents [40 CFR 112.8(c)(1)]
Guidance in 40 CFR 112.8(c)(1) indicates that the facility shall *"Not use a container for the storage of oil unless its material and construction are compatible with the material stored and conditions of storage such as pressure and temperature."*

Oil storage tanks and containers at the KHF site comply with this requirement. Construction details for each of the tanks are identified in Tables 1 and 2. Each of the hazardous waste tanks has been specifically reviewed for compatibility as a component of a 1997 and 2014 permit

renewal (*Chemical Waste Management, Inc. Kettleman Hills Facility, Kings County, California, Hazardous Waste Facility Permit Renewal Application*, Chemical Waste Management, Inc., July 1997, Section 35.0). These tanks comply with various standards (e.g., API, NFPA, OSHA, UBC, and UL) as well as applicable waste handling regulations of 22 CCR Division 4.5. Waste oil and oil product tanks also are constructed of compatible materials in accordance with applicable standards, typically steel or fiberglass tanks. The four FSU waste processing tanks are open-topped and located within a reinforced concrete secondary containment structure. All wastes placed within these tanks are compatible. 55-gallon drums containing oil wastes are typically steel and polypropylene.

(ii) Diked Area Construction and Containment Volume [40 CFR 112.8(c)(2)]
Guidance in 40 CFR 112.8(c)(2) indicates that the facility shall *"Construct all bulk storage tank installations (except mobile refuelers and other non-transportation-related tank trucks) so that you provide a secondary means of containment for the entire capacity of the largest single container and sufficient freeboard to contain precipitation. You must ensure that diked areas are sufficiently impervious to contain discharged oil. Dikes, containment curbs, and pits are commonly employed for this purpose. You may also use an alternative system consisting of a drainage trench enclosure that must be arranged so that any discharge will terminate and be safely confined in a facility catchment basin or holding pond."*

Table 3 demonstrates that secondary containment provisions for aboveground bulk storage tank installations conform to these requirements. The PCB Building, DSU and FSU are roofed, which prevents significant accumulation of rainfall. Other secondary containment is adequate to accommodate typical rainfall events.

(iii) Diked Area Inspection and Drainage of Rainwater [40 CFR 112.8(c)(3)]
Guidance in 40 CFR 112.8(c)(3) indicates that the facility shall *"Not allow drainage of uncontaminated rainwater from the diked area into a storm drain or discharge of an effluent into an open watercourse, lake, or pond, bypassing the facility treatment system unless you:*

*(i) Normally keep the bypass valve sealed closed.*

*(ii) Inspect the retained rainwater to ensure that its presence will not cause a discharge as described in §112.1(b).*

*(iii) Open the bypass valve and reseal it following drainage under responsible supervision; and*

*(iv) Keep adequate records of such events, for example, any records required under permits issued in accordance with §§122.41(j)(2) and 122.41(m)(3)."*

Rainwater does not frequently collect in diked areas or impoundments due to the dry climate. However, on occasion, there may be need to remove rainwater. The diked areas, such as secondary containment for tanks, or the outside storage area at the PCB Building, use portable pumps to remove rainwater. Prior to pumping, impounded water is inspected and sampled to ensure that appropriate disposal is performed. The water is generally disposed in an on-site disposal (evaporation) pond. In the event retention basins are filled and about to discharge water, the water will be inspected prior to discharge to assure that oil is not present in a quantity that would result in a harmful discharge. Discharge of storm water would occur under the requirements of the KHF Storm Water General Permit. To date, no storm water has been discharged by the KHF during operations by CWMI.

(iv) Corrosion Protection of Buried Metallic Storage Tanks [40 CFR 112.8(c)(4)]
Guidance in 40 CFR 112.8(c)(4) indicates that the facility shall *"Protect any completely buried metallic storage tank installed on or after January 10, 1974 from corrosion by coatings or cathodic protection compatible with local soil conditions. You must regularly leak test such completely buried metallic storage tanks."*

As shown in Table 2, the fuel USTs at the KHF are steel, coated with fiberglass-reinforced plastic. Each of the fuel USTs are double-walled and equipped with a leak detection system which will activate an alarm to indicate the presence of liquids between the inner and outer walls.

(v) Corrosion Protection of Partially Buried Metallic Tanks [40 CFR 112.8(c)(5)]
Guidance in 40 CFR 112.8(c)(5) indicates that the facility shall *"Not use partially buried or bunkered metallic tanks for the storage of oil, unless you protect the buried section of the tank from corrosion. You must protect partially buried and bunkered tanks from corrosion by coatings or cathodic protection compatible with local soil conditions."*

The FSU tanks are carbon steel and located in a concrete vault, i.e., not buried in contact with the soil or water. Additionally, the tanks have a leak detection system. Therefore, 40 CFR 112.8(c)(5) does not apply.

(vi) Aboveground Tank Periodic Integrity Testing [40 CFR 112.8(c)(6)]
Guidance in 40 CFR 112.8(c)(6) indicates that the facility shall "*Test or inspect each aboveground container for integrity on a regular schedule and whenever you make material repairs. You must determine, in accordance with industry standards, the appropriate qualifications for personnel performing tests and inspections, the frequency and type of testing and inspections, which take into account container size, configuration, and design (such as containers that are: shop-built, field-erected, skid-mounted, elevated, equipped with a liner, double-walled, or partially buried). Examples of these integrity tests include, but are not limited to: visual inspection, hydrostatic testing, radiographic testing, ultrasonic testing, acoustic emissions testing, or other systems of non-destructive testing. You must keep comparison records and you must also inspect the container's supports and foundations. In addition, you must frequently inspect the outside of the container for signs of deterioration, discharges, or accumulation of oil inside diked areas. Records of inspections and tests kept under usual and customary business practices satisfy the recordkeeping requirements of this paragraph.*"

Table 1 summarizes inspections and other measures implemented for assurance of tank integrity to comply with guidance of 40 CFR 112.8(c)(6). Facility personnel on a minimum of a daily basis visually observe tanks. Inspections are conducted on a regular basis to examine the exterior of the tanks and the containment area. As indicated in Tables 1 and 2, periodic thickness testing is performed on tanks regulated under Resource Conservation and Recovery Act and Toxic Substances Control Act. Records are maintained for 3 years.

Containers exceeding 55 gallons: Monthly written inspections will be conducted consisting of a complete walk through of all tank areas to check for valve, appurtenances, and tank damage or leakage, including liquids in the secondary containment structures. Tanks are also inspected for corrosion and secondary containment systems are checked for any signs of deterioration. The monthly inspection and kept for a period of at least three years. These procedures along with the tanks secondary containment, accessibility for inspection and non-contact with the tanks foundation provide a high level of environmental protection, therefore periodic integrity testing will not performed.

All 55-gallon drums containing product and used oil are rotated out by vendors on a regular basis, ensuring the integrity of these types of containers. Therefore, no periodic integrity testing will be conducted on 55-gallon drums. Monthly written inspections will be documented and filed on-site in order to detect any leakage into the secondary containment. Should leakage be detected, temporary repairs will be made and the vendor notified to replace the defective drum.

(vii) Control of Leakage Through Internal Heating Coils [40 CFR 112.8(c)(7)]
None of the oil storage tanks at the KHF have heating coils. Therefore, guidance in 40 CFR 112.8(c)(7) does not apply.

(viii) Tank Installation Fail-Safe Engineering [40 CFR 112.8(c)(8)]
Guidance in 40 CFR 112.8(c)(8) indicates that the facility shall "*Engineer or update each container installation in accordance with good engineering practice to avoid discharges. You must provide at least one of the following devices:*

*(i) High liquid level alarms with an audible or visual signal at a constantly attended operation or surveillance station. In smaller facilities an audible air vent may suffice.*

*(ii) High liquid level pump cutoff devices set to stop flow at a predetermined container content level.*

*(iii) Direct audible or code signal communication between the container gauger and the pumping station.*

*(iv) A fast response system for determining the liquid level of each bulk storage container such as digital computers, telepulse, or direct vision gauges. If you use this alternative, a person must be present to monitor gauges and the overall filling of bulk storage containers.*

*(v) You must regularly test liquid level sensing devices to ensure proper operation."*

Table 1 summarizes fail-safe engineering measures in place at each oil storage tank.

Liquid level sensing devices are regularly checked to assure proper operation. In general, the volume required to fill the tank is computed based on measurement of the level of the tank. KHF orders the appropriate volume and only allows the required volume to be delivered to the site, thus minimizing the potential for overflow.

(ix) Observation of Disposal Facilities for Effluent Discharge [40 CFR 112.8(c)(9)]
Guidance in 40 CFR 112.8(c)(9) indicates that the facility shall "*Observe effluent treatment facilities frequently enough to detect possible system upsets that could cause a discharge as described in §112.1(b)."*

To date, the KHF has not discharged effluent to the navigable waters.

(x) Visible Oil Leak Corrections from Tank Seams and Gaskets [40 CFR 112.8(c)(10)]
Guidance in 40 CFR 112.8(c)(10) indicates that the facility shall *"Promptly correct visible discharges which result in a loss of oil from the container, including but not limited to seams, gaskets, piping, pumps, valves, rivets, and bolts. You must promptly remove any accumulations of oil in diked areas."*

Daily inspections are conducted that, in part, focus on detecting accumulations of oil due to leakage, if any. In compliance with 40 CFR 112.8(c)(10), any detected oil accumulations are reported to appropriate supervisory personnel. Maintenance or repair required to stop the source of the oil leak is promptly initiated. Inspection procedures are further discussed in Section 6.H of this SPCC Plan.

(xi) Appropriate Position of Mobile or Portable Oil Storage Tanks [40 CFR 112.8(c)(11)]
Guidance in 40 CFR 112.8(c)(11) indicates that the facility shall *"Position or locate mobile or portable oil storage containers to prevent a discharge as described in §112.1(b). Except for mobile refuelers and other non-transportation-related tank trucks, you must furnish a secondary means of containment, such as a dike or catchment basin, sufficient to contain the capacity of the largest single compartment or container with sufficient freeboard to contain precipitation"*

The fueling/service truck, used by the Equipment Shop, services heavy equipment at the KHF. A spill kit is located on the fueling/service truck and contains absorbent material and rags to provide an immediate response to small spills that may be easily contained or a temporary response to larger spills until a complete cleanup can be initiated. If a spill were to occur that was large enough to flow away from the truck, it would in the worst case flow to one of the retention basins designed and managed to prevent a release from the KHF site. When not in use, the truck is stored at the Equipment Shop. If a release occurs while parked at the Equipment Shop it would worst case flow to the East Retention Basin.
Drums containing oil products or oil waste are generally stored within secondary containment areas with sufficient capacity to contain the contents of any container stored. If drums are not stored within local secondary containment, spills would be prevented from reaching navigable waters by means of KHF spill response and cleanup procedures, which involves the use of spill sorbent materials.

J. Facility Transfer Operations [40 CFR 112.8(d)]

(i) Buried Piping Installation Protection and Examination [40 CFR 112.8(d)(1)]
Guidance in 40 CFR 112.8(d)(1) indicates that the facility shall *"Provide buried piping that is installed or replaced on or after August 16, 2002, with a protective wrapping and coating. You must also cathodically protect such buried piping installations or otherwise satisfy the corrosion protection standards for piping in part 280 of this chapter or a State program approved under part 281 of this chapter. If a section of buried line is exposed for any reason, you must carefully inspect it for deterioration. If you find corrosion damage, you must undertake additional examination and corrective action as indicated by the magnitude of the damage."*

Underground oil piping occurs in conjunction with the USTs shown in Table 2. These piping installations are wrapped and cathodically protected. If buried piping installations are exposed, they will be carefully examined for damage. If damage is found, additional examination and corrective action will be taken, as appropriate.
(ii). Not-in-Service and Standby Service Terminal Connections [40 CFR 112.8(d)(2)]
40 CFR 112.8(d)(2) indicates that the facility shall *"Cap or blank-flange the terminal connection at the transfer point and mark it as to origin when piping is not in service or is in standby service for an extended time.*

The KHF does not have any Service Terminal Connections; therefore, this regulation does not apply to the site.

(iii) Pipeline Supports Design [40 CFR 112.8(d)(3)]
40 CFR 112.8(d)(3) indicates that the facility shall *"Properly design pipe supports to minimize abrasion and corrosion and allow for expansion and contraction."*

There are no pipeline supports required at the KHF; therefore, this regulation is not applicable to the site.

(iv) Aboveground Valve and Pipeline Examination [40 CFR 112.8(d)(4)]
40 CFR 112.8(d)(4) indicates that the facility shall *"Regularly inspect all aboveground valves, piping, and appurtenances. During the inspection you must assess the general condition of items, such as flange joints, expansion joints, valve glands and bodies, catch pans, pipeline supports, locking of valves, and metal surfaces. You must also conduct integrity and leak testing of buried piping at the time of installation, modification, construction, relocation, or replacement."*

Daily inspections are conducted that, in part, focus on observing the general condition of liquid control systems and on observing for potential leaks or spills. Inspection procedures are further discussed in Section 6.H of this SPCC Plan.

(v) Aboveground Piping Protection from Vehicular Traffic [40 CFR 112.8(d)(5)]
Guidance in 40 CFR 112.8(d)(5) indicates that *"Warn all vehicles entering the facility to be sure that no vehicle will endanger aboveground piping or other oil transfer operations."*

The KHF is designed to safely accommodate the types of vehicles that are granted access to the site. There is no known piping on the KHF to which this section is applicable.

K. Oil Production Facilities (Onshore) [40 CFR 112.9]
The KHF has no oil production facilities; therefore, 40 CFR 112.9 is not applicable.

L. Oil Drilling and Workover Facilities (Onshore and Offshore) [40 CFR 112.10]
The KHF has no oil drilling and workover facilities; therefore, 40 CFR 112.10 are not applicable.

M. Discharge Response
The prevention measures described in this section, e.g., inspections and personnel training, will minimize the likelihood and severity of an oil discharge. Immediate action must be taken to control, contain, and recover discharged oil or oil wastes. The general response steps are:

- Eliminate potential spark sources;
- If possible and safe to do so, identify & shut down the discharge source to stop the flow;
- Contain the discharge with sorbents, berms, trenches, sandbags, or other material;
- Contact Security/Emergency Coordinator, if needed;
- Contact regulatory authorities and the response organizations, if applicable;
- Collect and dispose of / recycle recovered products according to applicable regulations; and
- Complete a Spill/Release Report for submittal to the Environmental Manager.
- As a permitted TSDF, KHF does not have the need for an agreement with an outside contractor for cleanup.

KHF maintains a Contingency Plan in accordance with 22 CCR Division 4.5, Chapter 14, Article 4 Section 66264.50. Table 9-1 in that plan includes a list of spill control equipment that is maintained onsite at a minimum. Stocks of oil-absorbent materials are typically stored in drums and/or bags at the DSU and PCB Building, Maintenance Shop, FSU and Macro Buildings and the truck receiving area. A sample copy of the equipment list is included in Appendix C. In addition to equipment on the list, various earthmoving equipment is available onsite that could be used in the event that a large oil spill were ever to occur.

An oil discharge would be controlled, contained, and recovered with the spill response equipment described above. The recovered oil material would then be managed, e.g., disposed, according to the applicable regulations.

N. Emergency Contacts

The KHF maintains a Contingency Plan for implementation in the event of a release or other emergency at the KHF. State and Federal laws require that the emergency notifications shall be made in the event of a significant or reportable spill, as defined in the following sections These emergency notifications would be made in accordance with that plan, a copy of which is maintained onsite. A copy of these phone numbers is not included in this SPCC plan because some phone numbers are subject to change from time-to-time, and a sole source of emergency notification phone numbers (i.e., the Contingency Plan) facilitates emergency response.

(i) State

State law requires significant spills to be reported to the Emergency Management Agency (EMA), the CUPA, and other applicable local agencies. Contacts for these agencies are provided at the front of this SPCC Plan. Failure to make the appropriate notifications in the event of a spill may result in fines and penalties.

A useful guideline for assessing whether or not a spill is "significant" is if there is a threat to the public, a threat to worker health and safety, or if there is a threat to the environment.

Verbal reporting is required to the CUPA and the EMA as soon as:

- You have knowledge of the release or threatened release;
- Notification can be made without impeding immediate control of a release or threatened release; and,
- Notification can be made without impeding emergency medical measures.

- The EMA number is (800) 852-7550.
- Notification should include:
- The exact location of spill;
- The name of person reporting spill;
- The hazardous material(s) involved in spill;
- The quantity of spilled material; and,
- The potential hazards of the spilled material(s).

Verbal notification is not needed, if there is a reasonable belief that the release or threatened release poses no significant present or potential hazard to human health and safety, property, or the environment. If a small spill can be immediately contained and cleaned up without affecting human health, property or the environment, then no notification is needed.

(ii) Federal

Federal laws require that, in the event of a reportable spill, the National Response Center (NRC), the EMA, and the appropriate state and local agencies be contacted. Contacts for these agencies are provided at the front of this SPCC Plan. Failure to make the appropriate notifications in the event of a spill may result in fines and penalties. If the spill reaches a watercourse in harmful quantities as defined by 40 CFR 110.3, the NRC must be notified (40 CFR 110.10). The regulatory definition of harmful quantities is a discharge that:

- Violates applicable water quality standards, or
- Causes a film or sheen upon or discoloration of the surface of the water or adjoining shorelines; or
- Causes a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines."

The second condition may be a difficult determination to make. If there is reason to believe that the spill has reached a watercourse, the Site Manager or designee should complete the spill notification form and contact the Environmental Manager immediately to help determine whether notification is indeed required. Under 40 CFR Section 112.4, a discharge must be reported to the EPA Regional Administrator if the following quantities are discharged:

- The facility discharges more than 1,000 gallons of oil in a single event; or
- The facility experiences two discharges (over 42 gallons) within any 12-month period.

When determining the applicability of this requirement, the gallon amounts refer to the amount of oil that actually reaches navigable waters or adjoining shorelines, not the total amount spilled.

If NRC notification is required, the Environmental Manager or designee shall notify this agency by telephone as soon as possible. A list of contacts is provided in Section 2.0 of this document, however the most current list is included in the Site Contingency Plan. A notification report shall be submitted to the U.S. EPA Regional Administrator and the EMA within 60 days and contain the following information:

- Name of the facility;
- Name(s) of the owner or operator of the facility;
- Location of the facility;
- Cause of the spill(s);
- Corrective actions and/or countermeasures taken including adequate description of equipment repairs and/or replacements;
- Information the regional administrator may reasonably require pertinent to the plan or spill event;
- Date and year of initial facility operation;
- Maximum storage or handling;
- Description of the facility, including maps, flow diagrams, and topographical maps;
- Failure analysis of the system and sub-system in which the failure occurred;
- A complete copy of the SPCC Plan with any amendments; and,
- Additional measures taken (preventative) or contemplated to minimize the possibility of recurrence.

O. Substantial Harm Criteria

Guidance in 40 CFR 112.20(e) indicates that *"[i]f the owner or operator of a facility determines... that the facility could not... be expected to cause substantial harm to the environment... the owner or operator shall complete and maintain at the facility the certification form contained in Appendix C."*

The form has been completed by the KHF, which indicates the facility could not be expected to cause substantial harm. The completed form is included in Appendix D.

# TABLES

# TABLE 1

## ABOVEGROUND OIL STORAGE SUMMARY



| AREA | TANK ID | CAPACITY (gallons) | CONTENTS | MATERIAL OF CONSTRUCTION | AGE (Date Built) | TANK/CONTAINER INTEGRITY ASSURANCE METHODS [40 CFR 112.8(c)(6)] | | | | | FAIL SAFE ENGINEERING SYSTEMS [40 CFR 112.7(c)(8)] | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Periodic Visual Inspection | Periodic Ultrasound Testing | Periodic Changeout | Leak Detection Monitoring Between Inner/Outer Shells | Periodic Tightness Testing | High Liquid Level Alarm with Audible or Visual Signal | High Liquid Level Pump Cutoff Devices | Direct Audible or Code Signal Communications Between Tank Gauger and Pumping Station | Fast Response System for Determining Liquid Level (e.g., Direct Vision Gauges) |
| Maintenance Shop | -- | 1,000 | Motor Oil | Steel | 1987 | X | -- | -- | -- | -- | -- | -- | -- | -- |
| | -- | 1,000 | Hydraulic Oil | Steel | 1987 | X | -- | -- | -- | -- | -- | -- | -- | -- |
| | Drums | 55 each (typical) | Various Oil Products | Steel or Polyethylene | -- | X | -- | X | -- | -- | -- | -- | -- | -- |
| | Drum | 55 | Used Oil | Steel | -- | X | -- | X | -- | -- | -- | -- | -- | -- |
| Equipment Shop | -- | 1,000 | Waste Oil | Steel | 1985 | X | -- | -- | -- | -- | X | X | -- | -- |
| | -- | 1,000 | Motor Oil | Steel | 1987 | X | -- | -- | -- | -- | -- | -- | -- | -- |
| | -- | 1,000 | Motor Oil | Steel | 1987 | X | -- | -- | -- | -- | -- | -- | -- | -- |
| | -- | 1,000 | Transmission Oil | Steel | 1993 | X | -- | -- | -- | -- | -- | -- | -- | -- |
| | -- | 275 | Automotive Lubricants | Steel | 1996 | X | -- | -- | -- | -- | -- | -- | -- | -- |
| | -- | 275 | Automotive Lubricants | Steel | 1996 | X | -- | -- | -- | -- | -- | -- | -- | -- |
| | -- | 275 | Automotive Lubricants | Steel | 1996 | X | -- | -- | -- | -- | -- | -- | -- | -- |
| | -- | 150 | Antifreeze | Polyethylene | 2006 | X | -- | -- | -- | -- | -- | -- | -- | -- |
| | -- | 150 | Waste Antifreeze | Polyethylene | 2006 | X | -- | -- | -- | -- | -- | -- | -- | -- |
| | Drums (indoor storage) | 55 each (typical) | Various Oil Products | Steel or Polyethylene | -- | X | -- | X | -- | -- | -- | -- | -- | -- |

# TABLE 1

## ABOVEGROUND OIL STORAGE SUMMARY
**(Continued)**



| AREA | TANK ID | CAPACITY (gallons) | CONTENTS | MATERIAL OF CONSTRUCTION | AGE (Date Built) | TANK/CONTAINER INTEGRITY ASSURANCE METHODS [40 CFR 112.8(c)(6)] | | | | | FAIL SAFE ENGINEERING SYSTEMS [40 CFR 112.7(c)(8)] | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Periodic Visual Inspection | Periodic Ultrasound Testing | Periodic Changeout | Leak Detection Monitoring Between Inner/Outer Shells | Periodic Tightness Testing | High Liquid Level Alarm with Audible or Visual Signal | High Liquid Level Pump Cutoff Devices | Direct Audible or Code Signal Communications Between Tank Gauger and Pumping Station | Fast Response System for Determining Liquid Level (e.g., Direct Vision Gauges) |
| Equipment Shop | Drums (outdoor storage) | 55 each (typical) | Various Oil Products | Steel or Polyethylene | -- | X | -- | X | -- | -- | -- | -- | -- | -- |
| PCB Transfer/ Storage Area | PCB-1 | 10,000 | PCB Liquids and Flushing Reagent | Steel | 1983 | X | X | -- | -- | -- | X | -- | -- | -- |
| | Diesel-1 | 1,000 | Diesel for PCB Flushing | Steel | 1986 | X | -- | -- | -- | -- | -- | -- | -- | -- |
| | Various PCB Containers (inside PCB building) | Various | PCB Liquids | Steel | -- | X | -- | X | -- | -- | -- | -- | -- | -- |
| | Various PCB Containers (outside PCB building) | Various | PCB Liquids | Steel | -- | X | -- | X | -- | -- | -- | -- | -- | -- |
| Drum Storage Unit | Drums | 55 each (typical) | Various Liquid Wastes, Including Oil Wastes | Steel or Polyethylene | -- | X | -- | X | -- | -- | -- | -- | -- | -- |
| Service Truck | Mobile Motor Oil | 100 | Motor Oil | Steel | -- | X | -- | -- | -- | -- | -- | -- | -- | -- |

# TABLE 1

## ABOVEGROUND OIL STORAGE SUMMARY
**(Continued)**



| AREA | TANK ID | CAPACITY (gallons) | CONTENTS | MATERIAL OF CONSTRUCTION | AGE (Date Built) | TANK/CONTAINER INTEGRITY ASSURANCE METHODS [40 CFR 112.8(c)(6)] | | | | | FAIL SAFE ENGINEERING SYSTEMS [40 CFR 112.7(c)(8)] | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Periodic Visual Inspection | Periodic Ultrasound Testing | Periodic Changeout | Leak Detection Monitoring Between Inner/Outer Shells | Periodic Tightness Testing | High Liquid Level Alarm with Audible or Visual Signal | High Liquid Level Pump Cutoff Devices | Direct Audible or Code Signal Communications Between Tank Gauger and Pumping Station | Fast Response System for Determining Liquid Level (e.g., Direct Vision Gauges) |
| Service Truck | Mobile Gasoline | 2,000 | Gasoline | Steel | -- | X | -- | -- | -- | -- | -- | -- | -- | -- |
| | Mobile Hydraulic Fluid | 100 | Hydraulic Fluid | Steel | -- | X | -- | -- | -- | -- | -- | -- | -- | -- |
| Bulk Storage Unit 1 | Drums, Roll-off Bins and Other Containers | Various | Various Wastes Including Oily Wastes | Various | -- | X | -- | X | -- | -- | -- | -- | -- | -- |
| Bulk Storage Unit 2 | Drums, Roll-off Bins and Other Containers | Various | Various Wastes, Including Oily Wastes | Various | -- | X | -- | X | -- | -- | -- | -- | -- | -- |
| Admin Building | Emergency Generator(1) | 70 | Diesel Fuel | Steel | 1985 | X | -- | -- | -- | -- | -- | -- | -- | -- |

(1) Emergency Generator is located within concrete secondary containment.

# TABLE 2

## UNDERGROUND STORAGE TANK INFORMATION

| AREA | TANK ID (KCDPH Permit #) | CAPACITY (Gallons) | CONTENTS | MATERIAL OF CONSTRUCTION | AGE (Date Built) | FAIL SAFE ENGINEERING SYSTEMS [40 CFR 112.8(c)(6)] | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | High Liquid Level Alarm with Audible or Visual Signal | High Liquid Level Pump Cutoff Devices | Direct Audible or Code Signal Communications Between Tank Gauger and Pumping Station | Fast Response System for Determining Liquid Level (e.g., Direct Vision Gauges) |
| Equipment Shop | 020001 | 12,000 | Diesel | Double Wall Steel with Fiberglass Reinforced Plastic Coating(1) | 1985 | X | -- | -- | -- |
| | 020002 | 12,000 | Diesel | Double Wall Steel with Fiberglass Reinforced Plastic Coating(1) | 1985 | X | -- | -- | -- |
| | 020003 | 10,000 | Unleaded Gasoline | Double Wall Steel with Fiberglass Reinforced Plastic Coating(1) | 1985 | X(3) | -- | -- | -- |
| Final Stabilization Unit | Waste Processing Tanks T-1 through T-4 (4 tanks) | 20,000 | Various wastes mixed with reagents | Carbon Steel | 1990 | -- | -- | (2) | -- |

(1) All underground storage tanks are equipped with a secondary leak detection system which will activate an alarm (strobe light/horn) if liquid is present.

(2) Up to 5,000 gallons of liquid waste are batch-mixed in this open-top tank, compared to the 20,000 gallon tank capacity. (The tank capacity is reduced to about 17,000 gallons with the protective insert liner.) The freeboard in the tank is visible as liquid waste is added.

(3) Gasoline UST also equipped with a flapper-valve as a pump cut-off device.

# TABLE 3

## POTENTIAL SPILL VOLUMES RATES AND CONTROL



| AREA | SOURCE | TYPE OF FAILURE | MAXIMUM VOLUME (gallons) | RATE OF FLOW (gallons/ minute)(1) | DIRECTION OF FLOW | CONTAINMENT |
|---|---|---|---|---|---|---|
| Maintenance Shop | 1,000-gallon motor oil or hydraulic oil tank (2 tanks) | Rupture or leak | 1,000 | 200 | No flow | Diked concrete pad (capacity greater than 1,000 gallons) |
| | | Overfilling or other filling accident(2) | 25(3) | 5(4) | | |
| | Drummed oil products | Rupture or leak | 55 | 55 | No flow | Secondary containment pallets (capacity greater than 55-gallons) |
| Equipment Shop | 1,000-gallon waste oil tank | Rupture or leak | 1,000 | 200 | No flow | Diked concrete pad (capacity greater than 1,000 gallons) |
| | | Overfilling or other filling accident(2) | 25(3) | 5(4) | | |
| | 1,000-gallon motor oil or transmission oil tanks (3 tanks) | Rupture or leak | 1,000 | 200 | No flow | Diked concrete pad (capacity greater than 1,000 gallons) |
| | | Overfilling or other filling accident(2) | 25(3) | 5(4) | | |
| | 275 gallon tanks for automotive lubricants (3 tanks) | Rupture or leak | 275 | <5 | North(5) | East Retention Basin (approximately 43.3 acre-feet capacity)(5)(6) |
| | | Overfilling or other filling accident(2) | 55 | 11 | | |
| | 150 gallon tanks for antifreeze (product and waste) | Rupture or leak | 150 | <3 | | |
| | | Overfilling or other filling accident(2) | 0(11) | 15 | | |
| | Drummed oil products (indoor storage) | Rupture or leak | 55 | 55 | | |
| | Drummed oil products (outdoor storage) | Rupture or leak | 55 | 55 | No flow | Secondary containment pallets (capacity greater than 55-gallons) |
| Service Truck | 100-gallon motor oil tank | Rupture or leak | 100 | 100 | North(5) | East Retention Basin (approximately 43.3 acre-feet capacity)(5)(6) |
| | | Overfilling or other filling accident(2) | 25(3) | 5(4) | | |
| | 2,000-gallon gasoline tank | Rupture or leak | 2,000 | 200 | | |
| | | Overfilling or other filling accident(2) | 25 | 5(4) | | |
| | 100-gallon hydraulic oil tank | Rupture or leak | 100 | 100 | | |
| | | Overfilling or other filling accident(2) | 25 | 5(4) | | |
| Drum Storage Unit | Drummed Wastes containing oil (in storage bays) | Rupture or Leak | 55 | 55 | No flow | Reinforced concrete containment (approximate 5,064 gallon capacity per storage bay)(7) |
| | Drummed Wastes containing oil (loading/ unloading area) | Rupture or Leak | 55 | 55 | No flow | Reinforced concrete containment (approximate 2,360 gallon capacity)(7) |

# TABLE 3

## POTENTIAL SPILL VOLUMES RATES AND CONTROL
## (Continued)



| AREA | SOURCE | TYPE OF FAILURE | MAXIMUM VOLUME (gallons) | RATE OF FLOW (gallons/ minute)(1) | DIRECTION OF FLOW | CONTAINMENT |
|---|---|---|---|---|---|---|
| PCB Transfer/ Storage Unit | PCB-1 PCB Waste Tank | Rupture or leak | 10,000 | 170 | No flow | Epoxy-coated reinforced concrete containment (21,300 gallon capacity)(8) |
| | | Overfilling or other filling accident(2) | 1,250(3) | 250(4) | | |
| | PCB Containers (inside building) | Rupture or leak | 55 | 55 | | |
| | | PCB liquid transfer spill | 55(3) | 55(4) | | |
| | Diesel-1 Diesel Tank | Rupture or leak | 1,000 | 200 | No flow | Diked concrete pad (capacity greater than 1,000 gallons) |
| | | Overfilling or other filling accident (within secondary containment) | 75(3) | 15(4) | | |
| | PCB Containers (outside of building area) | Overfilling or other filling accident (truck-transfer area) | 125(3) | 25(4) | West(9) | Epoxy-lined concrete containment area (capacity of greater than 20,000 gallons);<br><br>Spills escaping containment would enter Dam 1 (approximately 14.54 acre-feet capacity)(6)(9)<br><br>The transfer tray is a portable, collapsible, plastic containment tray (approximately 400 gallon capacity)(10). |
| | | Rupture or leak | 1,000 | 17 | West(9) | |
| | | PCB liquid transfer spill | 250(3) | 50(4) | No flow | |
| Bulk Storage Unit 1 | Containerized waste containing oil | Rupture or Leak | 5,000 | 80 | No flow | HDPE-lined containment area (approximately 30,420 cu. ft capacity)(7) |
| Bulk Storage Unit 2 | Containerized waste containing oil | Rupture or Leak | 5,000 | 80 | No flow | HDPE-lined containment area (approximately 66,370 cu. ft capacity)(7) |
| Admin Bldg | Emergency Generator | Rupture or Leak | 70 | 1 | No flow | Concrete containment |

(1) Except where otherwise noted:
- Estimated rate of flow for tanks is based on entire tank volume being drained by an accidental rupture capable of draining the tank in 1 hour.
- Estimated rate of flow for containers is based on an accidental rupture capable of draining a container in 1 minute.

These generic factors are considered adequate for this SPCC Plan because containment is provided by localized secondary containment and/or overall site containment via retention basins without reliance on time-sensitive actions such as normal spill response.

(2) Includes the tank/container area and the associated truck-transfer or container-transfer area.

(3) Flow volume estimated as the maximum routine transfer rate multiplied by 5 minutes. Because unattended pumping of oil is prohibited at the KHF, 5 minutes is considered a conservative time frame for discovering an overfill condition or other transfer accident, and shutting down the transfer pump.

(4) Flow rate estimated as the maximum routine transfer rate. Because containment is provided by localized secondary containment and/or overall site containment via retention basins, without reliance on time-

# TABLE 3

## POTENTIAL SPILL VOLUMES RATES AND CONTROL (Continued)



sensitive actions such as normal spill response, higher pumping rates (and flow volumes) may occur without violating this SPCC Plan.

(5) Flow would occur toward the East Retention Basin. The likelihood of a spill large enough to actually reach the East retention basin is low. However, such a spill could occur, for example, if a substantial spill occurs during a stormwater run-off event or if a large spill occurs when the ground is saturated from a recent precipitation event.

(6) Reference for capacity: *Stormwater Management Plan for the Kettleman Hills Facility*, Golder Associates, Inc., July 1, 1996, Section 3.2.

(7) Reference for capacity: *Chemical Waste Management, Inc. Kettleman Hills Facility, Kings County, California, Hazardous Waste Facility Permit Renewal Application*, Chemical Waste Management, Inc., July 1997, Table 34-1.

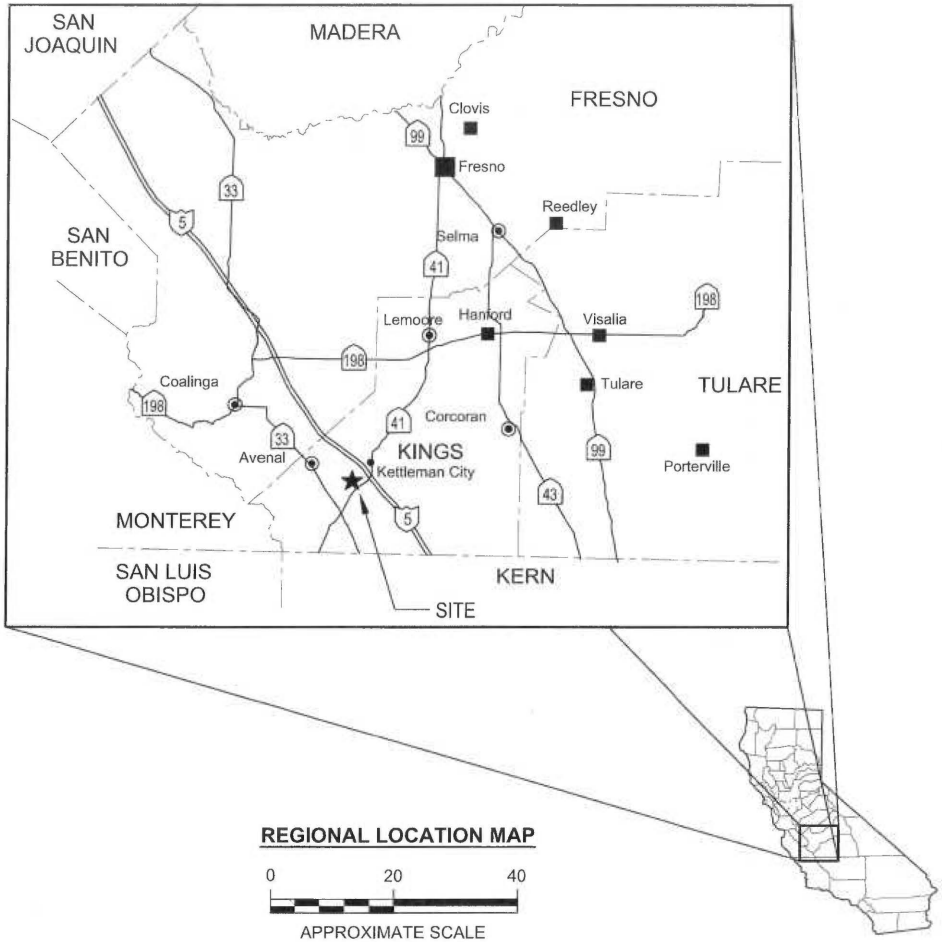
(8) Reference for capacity: *Chemical Waste Management, Inc. Kettleman Hills Facility, Kings County, California, Hazardous Waste Facility Permit Renewal Application*, Chemical Waste Management, Inc., July 1997, Table 35-1.

(9) Flow would occur toward Dam 1. The likelihood of a spill large enough to actually reach Dam 1 is low. A spill that exceeded the containment capacity would be unlikely, likely only if a spill occurred in conjunction with a breach of the containment structure.

(10) Volume based on tray dimensions of 8' x 8' x 10" as reported in *Chemical Waste Management, Inc. Kettleman Hills Facility, Kings County, California, Hazardous Waste Facility Permit Renewal Application*, Chemical Waste Management, Inc., July 1997, Section 34.4(b).

(11) The antifreeze tanks (waste and product) are designed so that overfilling spills are captured by secondary containment.

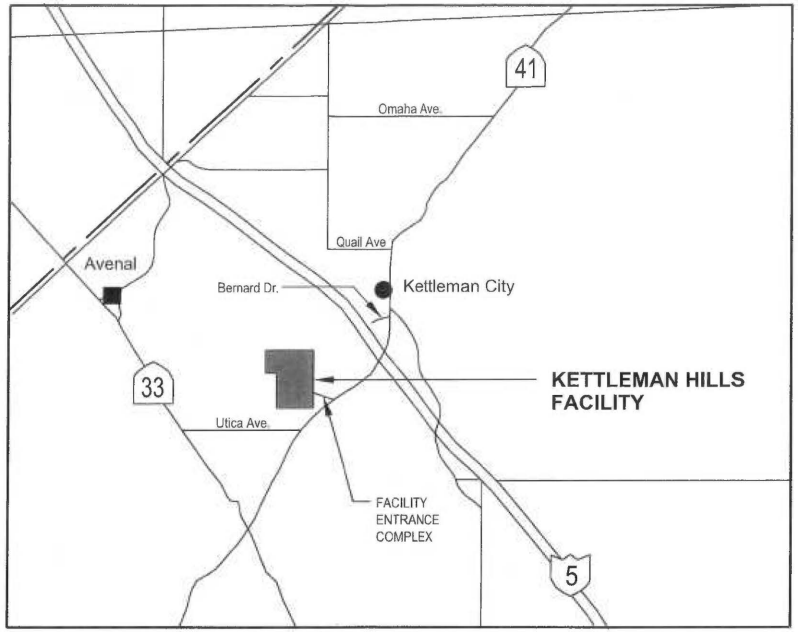
# Figures




**REGIONAL LOCATION MAP**

0 20 40

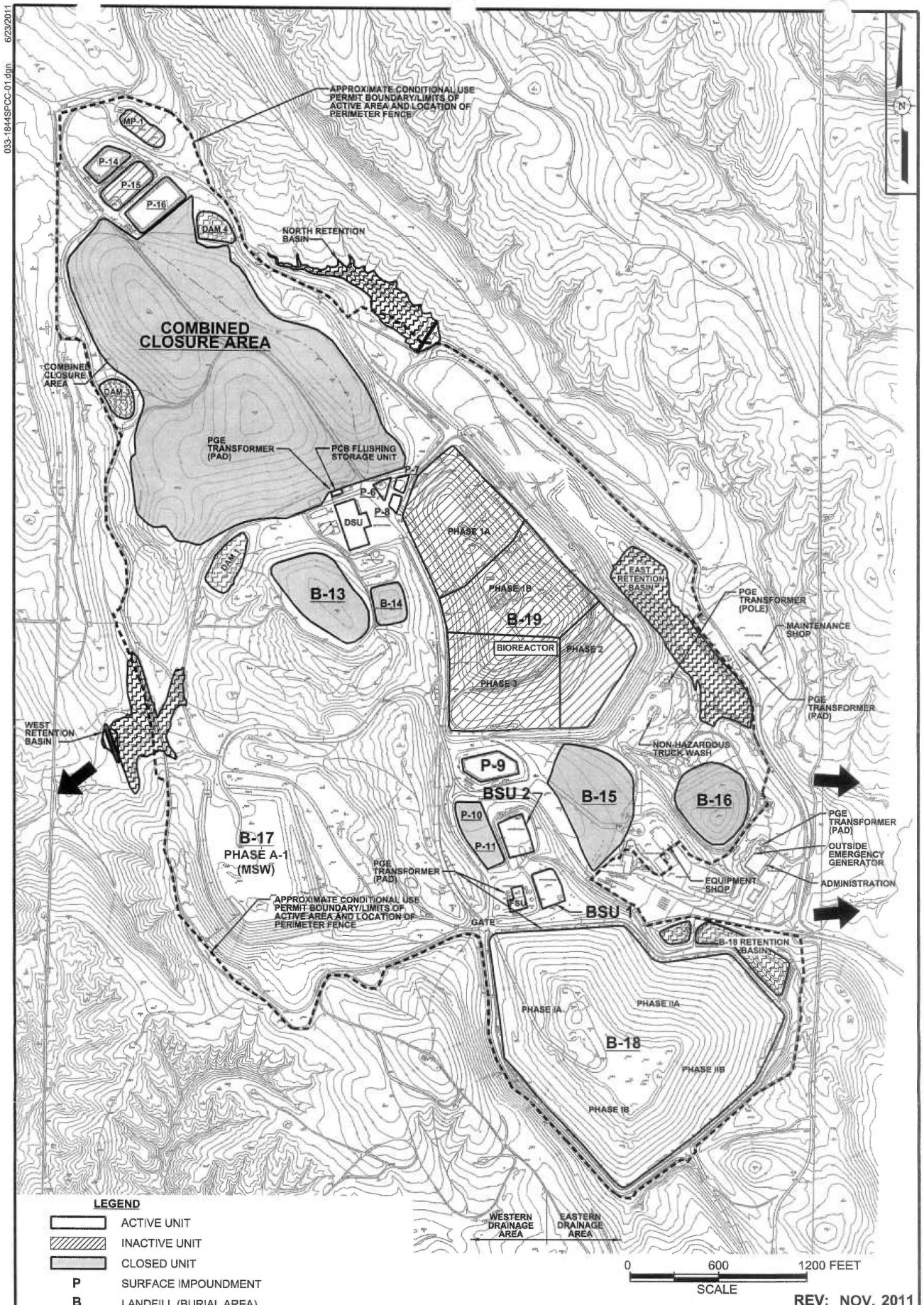
APPROXIMATE SCALE
1 Inch = 20 Miles




**PROJECT LOCATION**
NOT TO SCALE

| | | |
|---|---|---|
| Golder Associates | Project No.: 073-91935 | Date: Nov. 2011 |
| | Drawn by: KJK | Checked by: DH |

**FIGURE 1**
**VICINITY/PROJECT LOCATION MAP**
CHEMICAL WASTE MANAGEMENT, INC.
KETTLEMAN HILLS FACILITY



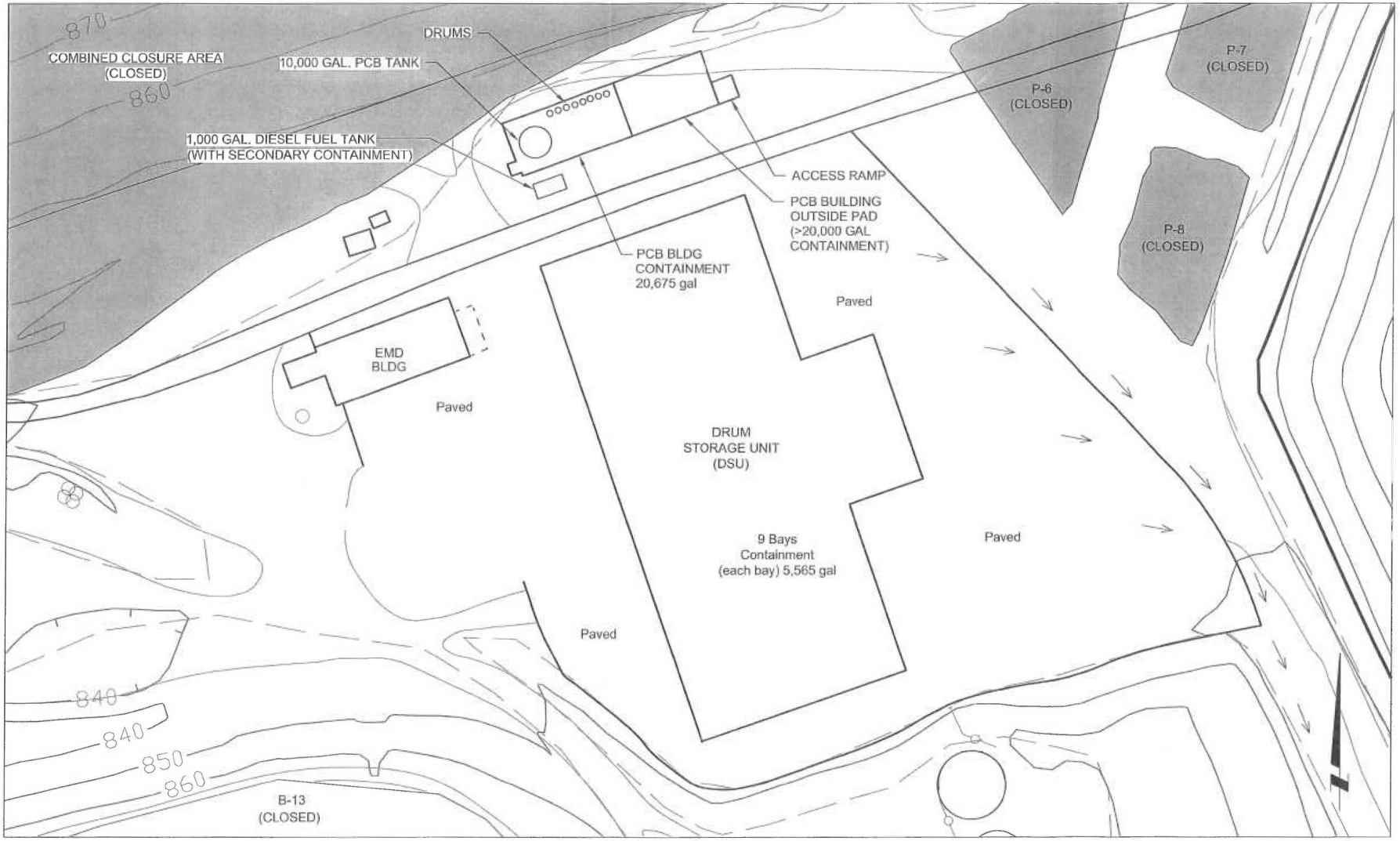

REV: NOV. 2011

PHOTOGRAMMETRY BY: WALKER ASSOCIATES, DATED MARCH 14, 2011.

FIGURE 2

**CWMI KETTLEMAN HILLS FACILITY - SITE MAP**

CHEMICAL WASTE MANAGEMENT, INC.
KETTLEMAN HILLS FACILITY




0 60 120

SCALE IN FEET

FIGURE **3**

**DSU AND PCB FLUSHING/STORAGE UNITS**

CWMI/KHF SURFACE WATER/CA

**REV: NOV. 2011**

N:\Projects_2011\113-97400 (Kettleman LF SPCC)\FIGs\11397400-F3-DSU_PCB.DWG 11/29/2011, 09:10

**Golder Associates**

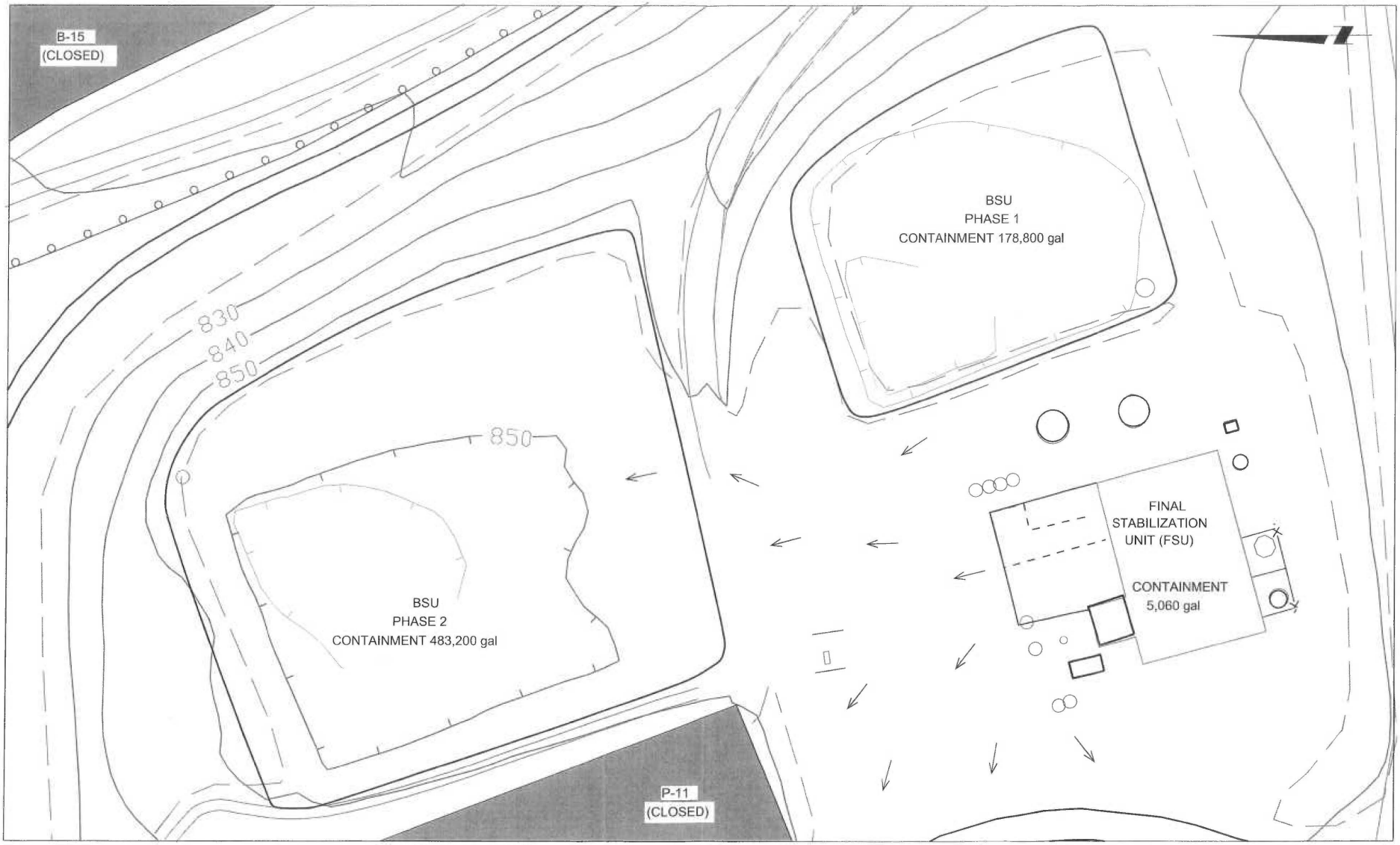



FIGURE **4**

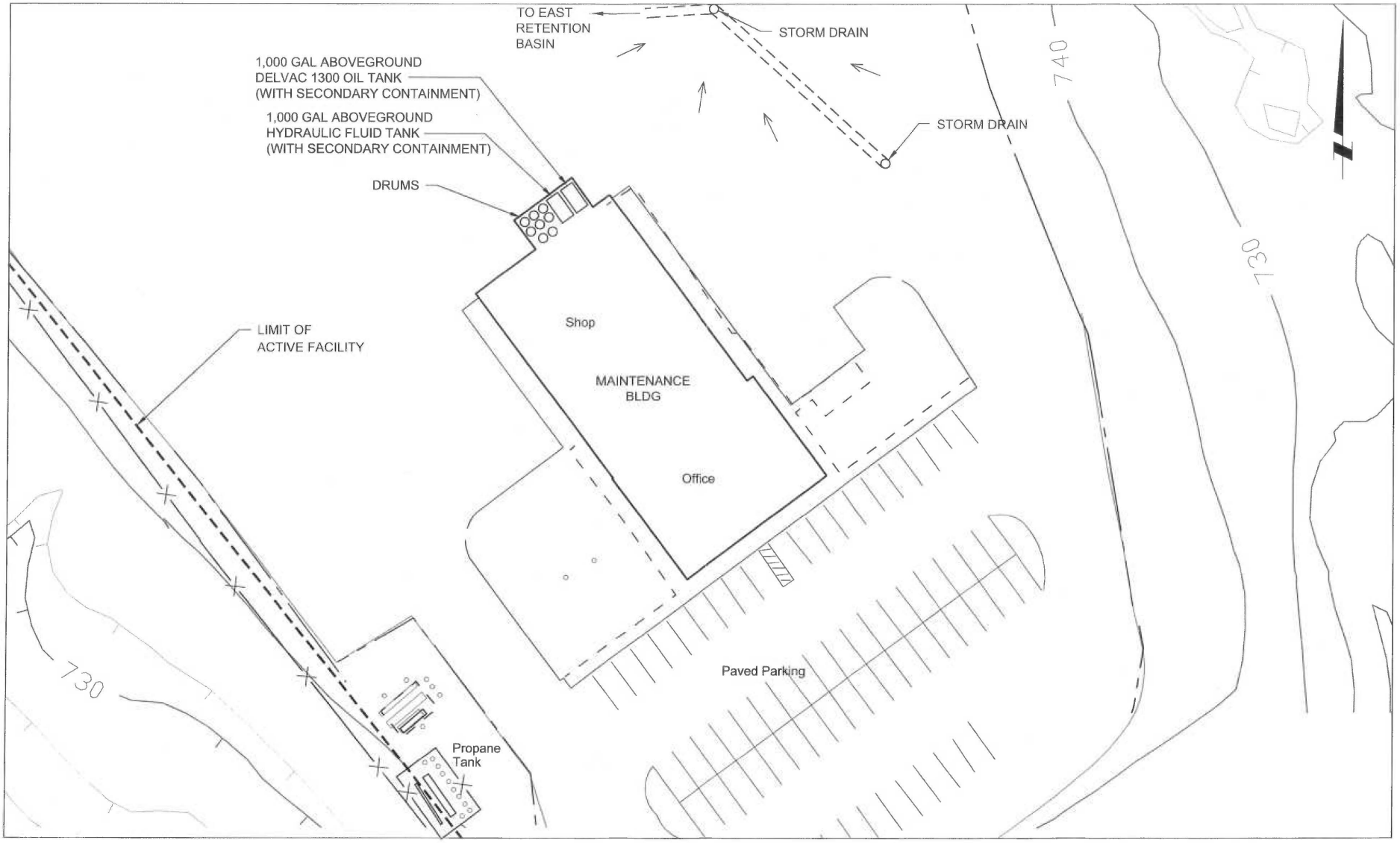
**FSU/BSU 1/BSU 2 STORAGE UNITS**

CWMI/KHF SURFACE WATER/CA

**REV: SEPT. 2004**

N:\Projects_2011\113-97400 (Kettleman LF SPCC)\FIGs\11397400-F4-FSU_BSU1_2.DWG 10/17/2011, 15:06

**Golder Associates**




REV: SEPT. 2004

FIGURE **5**

**MAINTENANCE BUILDING**

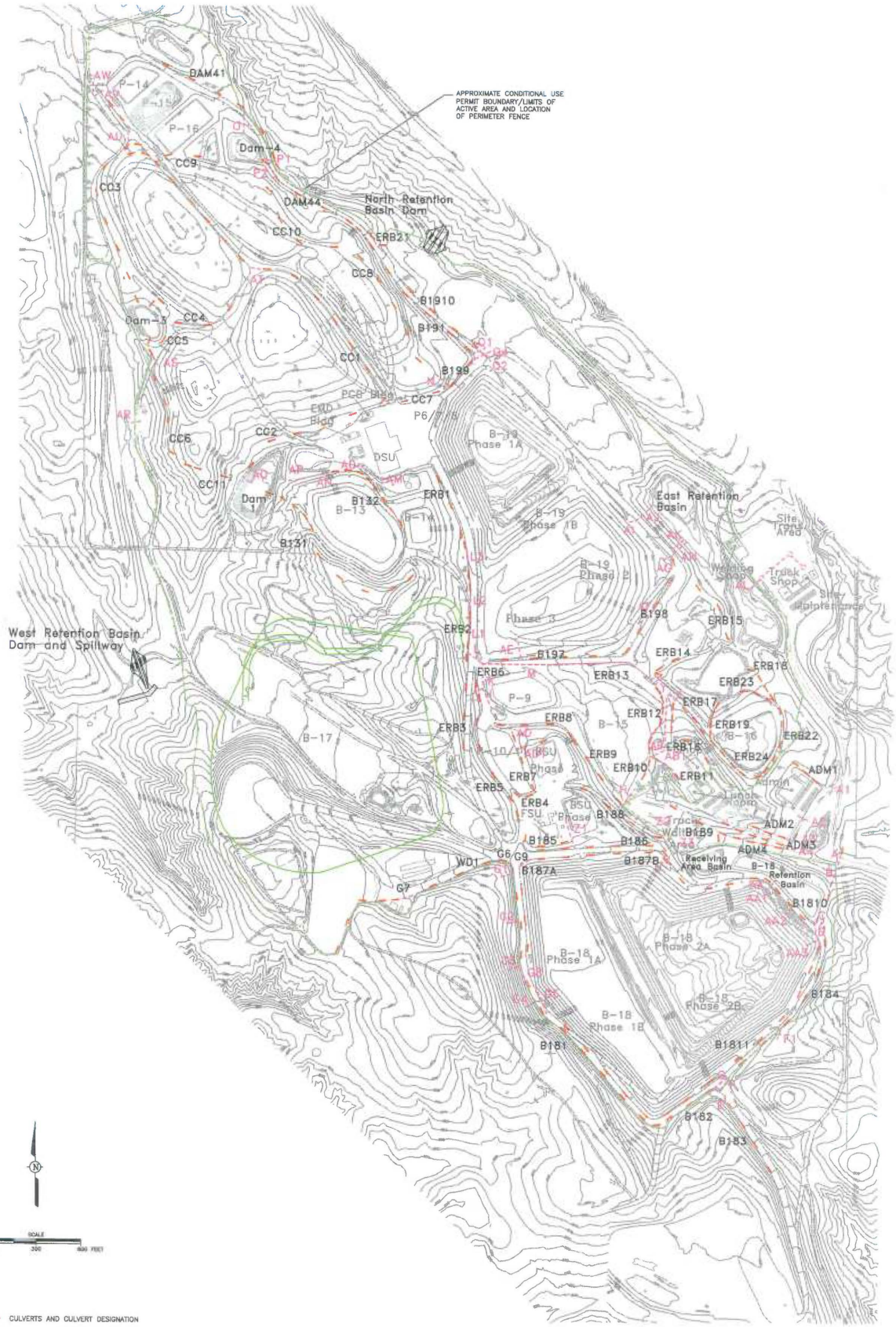
CWMI/KHF SURFACE WATER/CA

N:\Projects_2011\113-97400 (Kettleman LF SPCC)\FIGs\11397400-F5-MAINT.DWG 10/17/2011, 15:09

**Golder Associates**

# APPENDIX A

# SITE DRAINAGE




LEGEND

R ---------- CULVERTS AND CULVERT DESIGNATION

— — — — PERMIT BOUNDARY

ERB20 → DIRECTION OF FLOW

NOTES:

1. COMBINED COVERS CONTOURS FROM RUST ENVIRONMENTAL GRADING PLAN, APRIL 1995.
2. TOPOGRAPHY FLOWN BY AERIAL PHOTO MAPPING SERVICES, SUPPLIED BY CRANSTON LAND SURVEYING SEPTEMBER 12, 1994.

SOURCE: GOLDER ASSOCIATES

CENTRA CONSULTING INC.

| NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| 5 | 2/16/09 | REVISION 5 | KSO |
| | | | |
| | | | |

# DRAWING 1
# LOCATION OF DITCHES AND CULVERTS

KETTLEMAN HILLS FACILITY
CHEMICAL WASTE MANAGEMENT, INC.
KETTLEMAN HILLS
CALIFORNIA

DATE: 11-23-05 | SCALE: AS SHOWN | JOB NO.: 6188 | SHEET: DWG1

# APPENDIX B

# SAMPLE INSPECTION CHECKLIST

# CHEMICAL WASTE MANAGEMENT, INC.
# KETTLEMAN HILLS FACILITY

## DAILY INSPECTION PROGRAM

SAMPLE

Date of Inspection:

11/1/11

**NOTIFY ENVIRONMENTAL MANAGER OF RAINFALL**
**1 INCH OR GREATER ☐ (Check)**

Rain Gauge Reading: _____ inches @ _____

Storm Event? No ☐ Yes ☐

QA/QC of Magnehelic Gauge:
Adjustment Required? No ☐ Yes ☐, Amount of Adjustment: (+) _____"
(-) _____"

1st Review By: _____ 2nd Review By: _____

Last Date of Revision: 10/11

**Chemical Waste Management, Inc.**

# Kettleman Hills Facility
# Daily Inspection Program

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Equipment Shop ..... 3
PCB Storage/Transfer Unit ..... 4
PCB Storage/Transfer Unit (continued) ..... 5
Drum Storage Unit ..... 6
Bulk Storage Unit - Phase 1 ..... 7
Bulk Storage Unit - Phase 2 ..... 8
Final Stabilization Unit ..... 9
Surface Water Management System ..... 10


SAMPLE

Date and Time of Inspection: 11/1/11 _____ Time

EQUIPMENT/PROCESS/UNIT NAME:

## Equipment Shop

INSPECTION CHECK LIST

| Equipment/Structure Item | Inspection Element | | Acceptable Yes | Acceptable No | Comments |
|---|---|---|---|---|---|
| Loading/Unloading Area | Check for spills | (D) | | | |
| Waste Oil Tank | Inspect tank exterior for cracks, leaks, corrosion, and obvious deterioration | (D) | | | |
| | Record Liquid Level: _____ in. (maximum 36 in.) | (D) | | | |
| | Check for evidence of spills | (D) | | | |
| | ***Check piping and valves for leaks and damage*** | (D) | | | |
| Containment Area - Waste Oil Tank | Check for cracks, gaps, or deterioration | (D) | | | |
| | Check for evidence of seepage outside of containment area | (D) | | | |
| | Check containment area for liquids | (D) | | | |
| | ***Check piping and valves for leaks and damage*** | (D) | | | |
| Product Tanks | Inspect tank exterior for cracks, leaks, corrosion and obvious deterioration | (D) | | | |
| | ***Check piping and valves for leaks and damage*** | (D) | | | |
| Underground Storage Tanks, Leak Detection System | Check for operability of alarm control panel and for potential alarm conditions<br>NOTE: If an alarm condition exists, notify Environmental Specialist or EMD manager as well as issue an "URGENT 1" RWO to EMD. | (D) | | | |
| Fuel Island | Check Fuel Island area for leaks, spills | (D) | | | |
| Facility Gates: 13, 14, and 15 | Check for proper lock function | (D) | | | |
| | Check that gates are closed | (D) | | | |

SAMPLE

 Inspector's Signature: _____

Date and Time of Inspection: 11/1/11 _____ Time

EQUIPMENT/PROCESS/UNIT NAME:

**PCB Storage/Transfer Unit**

INSPECTION CHECK LIST

| Equipment/Structure Item | Inspection Element | | Acceptable Yes | Acceptable No | Comments |
|---|---|---|---|---|---|
| Tank Truck Loading/ Unloading Area | Check 12' aisle space to ensure a clear path for truck backing into the building | (D) | | | |
| | Check for evidence of spills | (D) | | | |
| Containment Area | Check for cracks and gaps in containment walls, floor, and sump | (D) | | | |
| | Check for evidence of seepage outside of containment curbing | (D) | | | |
| | Check for debris, clean-up residue, and improperly stored equipment. | (D) | | | |
| | Check containment sump for presence of liquids | (D) | | | |
| Stored Containers | Check for spills | (D) | | | |
| | Check for leaks | (D) | | | |
| | Check for: damage, swollen, corroded container(s) | (D) | | | |
| | Check to ensure that containers are kept closed | (D) | | | |
| | Check for proper labeling | (D) | | | |
| | Check for adequate aisle space | (D) | | | |
| | Check to ensure all containers are properly stored and stacked on pallets | (D) | | | |
| | Check pallets to ensure that each has been marked as a PCB pallet | (D) | | | |
| 10,000-Gallon Storage Tank | Inspect tank exterior for cracks, leaks, discoloration, and obvious deformation | (D) | | | |
| | ***Check piping and valves for leaks and damage*** | (D) | | | |
| | Check valves for locks | (D) | | | |

SAMPLE

 Inspector's Signature: _____

EQUIPMENT/PROCESS/UNIT NAME:

## PCB Storage/Transfer Unit (continued)

INSPECTION CHECK LIST

| Equipment/Structure Item | Inspection Element | | Acceptable Yes | Acceptable No | Comments |
|---|---|---|---|---|---|
| Liquid Level | Check liquid level indicator for operability (**if tank liquid level reads 6" or less. "DO NOT TURN KNOB". Log reading on dial in book. STAMP, "NOT IN SERVICE", for operability).** | (D) | | | |
| | Record liquid level: _____ ft. _____ in. | (D) | | | |
| Storage Building | Check roof and walls for gaps, holes, and signs of rain water penetration | (D) | | | |
| Product Tank (diesel) | Inspect tank exterior for cracks, leaks, corrosion and obvious deterioration | (D) | | | |
| | ***Check piping and valves for leaks and damage*** | (D) | | | |
| Product Tank (diesel) Containment Area | Check for spills | (D) | | | |
| | Check for cracks, gaps, or deterioration | (D) | | | |
| | Check for evidence of seepage outside containment area | (D) | | | |
| | Check containment area for liquids | (D) | | | |

SAMPLE

 Inspector's Signature: _____

Date and Time of Inspection: 11/1/11 _____ Time

EQUIPMENT/PROCESS/UNIT NAME:

**Drum Storage Unit**

INSPECTION CHECK LIST

| Equipment/Structure Item | Inspection Element | | Acceptable Yes | Acceptable No | Comments |
|---|---|---|---|---|---|
| Container Loading/ Unloading Area | Check for spills | (D) | | | |
| | Check four sumps for liquids [ 4 ] | (D) | | | |
| Stored Containers | Check for spills | (D) | | | |
| | Check for adequate aisle space and proper stacking of containers | (D) | | | RWO18226R1-1 |
| | **Check for swelling, corroded, damaged, open, or leaking containers** | (D) | | | |
| | Check to ensure containers are properly labeled | (D) | | | |
| | Check to ensure containers are properly located | (D) | | | |
| Container Storage Area | Check nine concrete sumps for liquids [ 4 ] | (D) | | | |
| | Check nine HDPE sumps for liquids [ 4 ] | (D) | | | |
| | **Check collection trench areas for spills** | (D) | | | |
| | Check for debris and clean-up residue | (D) | | | |

SAMPLE



Inspector's Signature: _____

EQUIPMENT/PROCESS/UNIT NAME:

**Bulk Storage Unit - Phase 1**

INSPECTION CHECK LIST

| Equipment/Structure Item | Inspection Element | | Acceptable Yes | Acceptable No | Comments |
|---|---|---|---|---|---|
| Stored Containers | Check for spills | (D) | | | |
| **Includes Macro** | Check for adequate aisle space | (D) | | | |
| **Welding area** | Check for bulging or damaged containers | (D) | | | |
| | Check for leaking containers | (D) | | | |
| | Check to ensure containers are kept closed/covered | (D) | | | |
| | Check to ensure containers are properly located<br><br>- Stabilized Waste<br>- Drums overnight in asphalt ar<br>- Tankers < 24 hours in asphalt are | (D) | | | |
| | Check to ensure containers ar properly labeled | (D) | | | |
| Container Storage Area | Check for evidence of spil | (D) | | | |
| Portable Eyewash and Shower Combination Unit | Check water pressu (80 - 100 psi) and level if below 80 psi | (D) | | | |
| Container Storage Area | Check primary sump for presence of liquids [4] | (D) | | | |
| | Check for evidence of seepage outside of containment area (D after rain storm*) | | | | |

SAMPLE

* Note: Rain storm defined as one-inch of rainfall received within 24 hours or less.

Date and Time of Inspection: 11/1/11 _____ Time

EQUIPMENT/PROCESS/UNIT NAME:

**Bulk Storage Unit - Phase 2**

INSPECTION CHECK LIST

| Equipment/Structure Item | Inspection Element | | Acceptable Yes | Acceptable No | Comments |
|---|---|---|---|---|---|
| Stored Containers | Check for spills | (D) | | | |
| | Check for adequate aisle space | (D) | | | |
| | Check for bulging or damaged containers | (D) | | | |
| | Check for leaking containers | (D) | | | |
| | Check to ensure containers are kept closed/covered | (D) | | | |
| | Check to ensure containers are properly located<br><br>- Stabilized waste<br>- Unstabilized waste | (D) | | | |
| | Check to ensure containers are properly labeled | (D) | | | |
| Container Storage Area | Check for evidence of spills | (D) | | | |
| | Check for evidence of storage outside of containment area (D after rain storm*) | | | | |
| | Check primary sump for presence of liquids [4] | (D) | | | |
| | Check secondary sump for presence of liquids, record liquid level _____ in [24] | (D) | | | |
| Portable Eyewash Shower Combination | Check water pressure (80 - 100 psi) and level if below 80 psi | (D) | | | |

* Note: Rain storm defined as one-inch of rainfall received within 24 hours or less.

SAMPLE



Inspector's Signature: _____

Date and Time of Inspection: 11/1/11 _____ Time

EQUIPMENT/PROCESS/UNIT NAME:

**Final Stabilization Unit**

INSPECTION CHECK LIST

| Equipment/Structure Item | Inspection Element | | Acceptable Yes | Acceptable No | Comments |
|---|---|---|---|---|---|
| Truck Loading and Unloading Area | Check for spills | (D) | | | |
| | Check for operability of truck wash-out equipment (if FSU is operating) | (D) | | | |
| | Check for cracks and damage | (D) | | | |
| Treatment Tanks | Check for evidence of spills | (D) | | | |
| | Check for adequate freeboard | (D) | | | |
| Tanks - Secondary Containment System | Check for accumulated liquids | (D) | | | |
| | Check for operability of liquid alarm | (D) | | | |
| Baghouse | Check concrete pad and surrounding gravel for evidence of baghouse waste. | (D) | | | |
| | Check for visible particulate emissions from exhaust stack | (D) | | | * |
| Reagent Tank (e.g. calcium polysulfide) | Check containment sumps for liquids [ 4 ] | (D) | | | |
| | ***Check piping and valves for leaks and damage*** | (D) | | | |
| Reagent Silos | Check for visible particulate emission from filter units atop silos | (D) | | | * |
| Portable Eyewash and Shower Combination Units | Check pressure (80 – 100 psi) and water level if below 80 psi | (D) | | | |

SAMPLE

*** If particulate emissions are noticeable, notify Environmental Manager for further evaluation.**

 Inspector's Signature: _____

EQUIPMENT/PROCESS/UNIT NAME:

## Surface Water Management System

INSPECTION CHECK LIST

| Equipment/Structure Item | Inspection Element | | Acceptable Yes | Acceptable No | Comments |
|---|---|---|---|---|---|
| Surface Water Containment Structures<br><br>- Dam #1<br>- Dam #3<br>- Dam #4<br>- East Retention Basin<br>- B18 Retention Basin | Check for adequate freeboard 2 feet or greater (D after a rain storm*) | | | | |
| | Check for evidence of breaches, erosion, and burrowing mammals (D after a rain storm * or seismic ** event) | | | | |
| | Check for seepage of water (D after a rain storm * or seismic ** event) | | | | |

* Note: Rain storm defined as one-inch of rainfall received within 24 hours or less.
** Note: Seismic event is defined as an earthquake of Magnitude (M) 5.0 or greater within 25 miles of the facility or a M6.0 or greater earthquake within 50 miles of the facility, as reported by UC Berkeley.

SAMPLE

# APPENDIX C

## SAMPLE CONTINGENCY PLAN TABLE 9-1

# TABLE 9-1

## EMERGENCY EQUIPMENT[1]
## KETTLEMAN HILLS FACILITY



| EQUIPMENT | CAPABILITY | QUANTITY | LOCATION |
|---|---|---|---|
| Emergency Alarm Stations | Notify adjacent personnel and guard shack of emergency condition. | 6 | See Figure 9-3 |
| Fire Extinguishers | Extinguish or contain fires, and/or control fumes. | 100 | EMD Building[2], locations shown in Figures 9-3 through 9-8 |
| Portable Fire Suppression Unit (Fire Boss) | Extinguish or contain fires, and/or control fumes. | | EMD Building, see Figure 9-3 |
| Emergency Showers and/or Eyewashes | Rinse contaminants off of personnel | | See Figures 9-3 through 9-8 |
| First Aid Kits | Provide first aid supplies. | 10 | EMD Building[2], locations shown in Figure 9-3 and various additional locations |
| SCBA Units | Respiratory protection for situations in which supplied air is appropriate | 6 | EMD Building[2] or FSU |
| Spare SCBA Air Tanks | Provide additional air supply to respiratory protection systems. | 6 | EMD Building[2] or FSU |
| Two-Way Radio | Provide communication capabilities at remote locations. | 1 | EMD Building[2] |
| Flashlights | Provide portable light. | 4 | EMD Building[2] |
| Warning Triangle Kit | Provide reflective warning indicator | 1 | EMD Building[2] |
| Barricade Tape | Provide visual barricade, typically for exclusion zones. | 4 rolls | EMD Building[2] |
| Tool Kit | Provide basic hand tools. | 1 | EMD Building[2] |
| Duct Tape | Miscellaneous adhesive, sealant and repair capabilities. | 2 rolls | EMD Building[2] |

SAMPLE

(1) This is the minimum type and quantity of emergency equipment maintained on site. Additional types and quantities may also be available. Key emergency equipment locations are depicted on Figures 9-3 through 9-8.

(2) This equipment is located in an Emergency Response Vehicle (e.g., van or trailer) which is stored at the EMD Building.

# TABLE 9-1

## EMERGENCY EQUIPMENT[1]
## KETTLEMAN HILLS FACILITY
**(Continued)**



| EQUIPMENT | CAPABILITY | QUANTITY | LOCATION |
|---|---|---|---|
| Viton Gloves | Hand or lower forearm protection against aromatic and chlorinated hydrocarbon, petroleum compound and oxidizer chemicals. | 4 pair | EMD Building[2] |
| Neoprene Gloves | Hand or lower forearm protection against alcohol, caustic, acid and salt chemicals. | 4 pair | EMD Building[2] |
| Saranex Tyvek Coverall (various sizes) | Body protection against liquids. | 4 pair | EMD Building[2] |
| Polyethylene Tyvek Coverall (various sizes) | Body protection against liquids. | 4 pair | EMD Building[2] |
| Face Shields and Attachments | Face protection against liquid splashes and other materials. | 4 | EMD Building[2] |
| Hard Hats | Head protection against falling objects and liquids. | 4 | EMD Building[2] |
| Goggles | Eye protection against non-gas materials. | 4 | EMD Building[2] |
| Safety Glasses, Clear | Eye protection against non-gas materials. | 4 | EMD Building[2] |
| Chemical Protective Steel-Toed Boots (various sizes) | Foot protection against chemicals and pinching, crushing and falling objects. | 4 pair | EMD Building[2] |
| T-Bar Twin Cartridge Adapters | Adapts respirator face piece to two cartridges. | 6 | EMD Building[2] |
| Organic Vapor/Acid Gas Respirator Cartridges | Respiratory protection for many organic vapors and acid gases. | 8 pair | EMD Building[2] |

SAMPLE

(1) This is the minimum type and quantity of emergency equipment maintained on site. Additional types and quantities may also be available. Key emergency equipment locations are depicted on Figures 9-3 through 9-8.

(2) This equipment is located in an Emergency Response Vehicle (e.g., van or trailer) which is stored at the EMD Building.

# TABLE 9-1

## EMERGENCY EQUIPMENT[1]
## KETTLEMAN HILLS FACILITY
**(Continued)**



| EQUIPMENT | CAPABILITY | QUANTITY | LOCATION |
|---|---|---|---|
| Colorimetric Detection Tubes | Measure general concentration of certain specified compounds in air or other gas environment. | Various | EMD Building[2] |
| Rope with Safety Hook, 50-foot | Provides miscellaneous rescue capabilities. | 2 | EMD Building[2] |
| Sorbent Material | Sorb spilled liquids. | 500 lbs | EMD Building[2] |
| Recovery Drums | Provide primary containment for remediation of spilled or leaking materials. | | EMD Building[2] |
| Shovel (non-metallic) | Shovel contaminated and other materials. | 2 | EMD Building[2] |
| Rake | Rake contaminated and other materials. | 1 | EMD Building[2] |
| Broom | Sweep contaminated and other materials. | 1 | EMD Building[2] |

96-181 (6/30/97/dh)

(1) This is the minimum type and quantity of emergency equipment maintained on site. Additional types and quantities may also be available. Key emergency equipment locations are depicted on Figures 9-3 through 9-8.

(2) This equipment is located in an Emergency Response Vehicle (e.g., van or trailer) which is stored at the EMD Building.

SAMPLE

# APPENDIX D

## CERTIFICATION OF THE APPLICABILITY OF THE SUBSTANTIAL HARM CRITERIA CHECKLIST

ATTACHMENT C-II—CERTIFICATION OF THE APPLICABILITY OF THE SUBSTANTIAL HARM CRITERIA

40 CFR 112.20 (e)

Facility Name: Chemical Waste Management, Inc. Kettleman Hills Facility

Facility Address: 35251 Old Skyline Rd, Kettleman City, California 93239

1. Does the facility transfer oil over water to or from vessels and does the facility have a total oil storage capacity greater than or equal to 42,000 gallons? Yes ____ No X

2. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and does the facility lack secondary containment that is sufficiently large to contain the capacity of the largest aboveground oil storage tank plus sufficient freeboard to allow for precipitation within any aboveground oil storage tank area? Yes ____ No X

3. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and is the facility located at a distance (as calculated using the appropriate formula in Attachment C–III to this appendix or a comparable formula 1) such that a discharge from the facility could cause injury to fish and wildlife and sensitive environments? For further description of fish and wildlife and sensitive environments, see Appendices I, II, and III to DOC/NOAA's "Guidance for Facility and Vessel Response Plans: Fish and Wildlife and Sensitive Environments" (see appendix E to this part, section 13, for availability) and the applicable Area Contingency Plan. Yes ____ No X

4. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and is the facility located at a distance (as calculated using the appropriate formula in Attachment C-III to this appendix or a comparable formula 1) such that a discharge from the facility would shut down a public drinking water intake 2 ? Yes ____ No X

5. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and has the facility experienced a reportable oil discharge in an amount greater than or equal to 10,000 gallons within the last 5 years? Yes ____ No X

**Certification**

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those individuals responsible for obtaining this information, I believe that the submitted information is true, accurate, and complete.

Signature John Prill Name (please type or print) John Prill

Title Environmental Protection Manager Date 10/15/16

# APPENDIX E

# CROSS REFERENCE MATRIX FOR NON-PRODUCTION FACILITIES

# CROSS REFERENCE MATRIX FOR NON-PRODUCTION FACILITIES

| Regulation | Description | Page # |
|---|---|---|
| §112.3(b)(1) or (c) | SPCC Plan prepared prior to facility becoming operational (effective 11/10/2010) | viii |
| §112.3(d) | Professional Engineer (PE) certification with five elements | vii |
| §112.5(a) | Amendment of SPCC Plan | viii |
| §112.5(b) | Review of Plan at least every 5 years with documentation (*i.e.* a log) | viii |
| **§112.6** | **Qualified Facilities: meets qualification criteria** | 5 |
| §112.6(a) or (b) | Tier I or Tier II Self Certification with 8 elements | N/A |
| §112.6(a)(2) | Technical amendments self-certified | N/A. |
| §112.6(a)(3)(i) | Template has failure analysis | Tables 2/3 |
| §112.6(a)(3)(ii) | Template has adequate secondary containment | Tables 2/3 |
| §112.6(a)(3)(iii) | Template has overfill protection | N/A |
| §112.6(b)(2) / (i) | Technical amendment Self-Certified or PE certification for deviations from Plan requirements | vii |
| §112.6(c)(3)(i) | Environmental Equivalence certified by PE | N/A |
| §112.6(c)(3)(ii) | Impracticability determination certified by PE | N/A |
| §112.6(c)(4) | PE certification with three elements | vii |
| **§112.7** | **General requirements for SPCC Plans for all facilities & all oil types** | SEE BELOW |
| §112.7 | Management approval of Plan | vi |
| §112.7 | Discussion of facilities, procedures, methods or equipment not yet fully operational with details of installation and operational start-up | Sect. 3.0 |
| §112.7(a)(1) | General requirements; discussion of facility's conformance with rule requirements | Sect 5.0 |
| §112.7(a)(2) | Deviations from Plan requirements | N/A |
| §112.7(a)(3) | Facility description and diagram, type of oil and capacity of each container, transfer stations and piping, buried containers on diagram | Figures Tables |
| §112.7(a)(3)(ii) | Discharge prevention measures | Sect. 6.0 |
| §112.7(a)(3)(iii) | Discharge drainage controls | 5-12 |
| §112.7(a)(3)(iv) | Countermeasures for discharge discovery, response and cleanup | Sect 5.0 |
| §112.7(a)(3)(v) | Methods of disposal of recovered materials in accordance with legal requirements | 31 |
| §112.7(a)(3)(vi) | Contact list and phone numbers for facility response coordinator, National Response Center, cleanup contractors, all Federal, State, and local agencies who must be contacted in case of a discharge | 4. 32 |
| §112.7(a)(4) | Spill reporting information | 32 |
| §112.7(a)(5) | Discharge procedures | 31 |
| §112.7(b) | Failure prediction (sources, quantities, rates, and directions) | Table 3 |
| §112.7(c) | Secondary containment for all areas from which a discharge of oil could occur (i.e. mobile refuelers, loading/unloading areas, transformers, oil filled operational equipment, etc.) other than bulk containers | Table 3 |
| §112.7(d) | Explanation of impracticability of secondary containment | 17 |
| §112.7(d)(1) | Oil spill contingency plan per part 109 | Sect 5/6 |
| §112.7(d)(2) | Commitment of manpower, equipment & materials to remove a discharge | vi |
| §112.7(e) | Written procedures for inspections and tests | App. B. |
| §112.7(e) | Records of inspections and tests signed and kept 3 years | 18 |
| §112.7(f)(1) | Employee training | 18 |
| §112.7(f)(2) | Designated individual accountable for discharge prevention | 19 |

# CROSS REFERENCE MATRIX FOR NON-PRODUCTION FACILITIES

| Regulation | Description | Page # |
|---|---|---|
| §112.7(f)(3) | Discharge prevention briefings scheduled and conducted annually | 18 |
| §112.7(g) | Security: How oil handling, processing and storage areas are secured and access is controlled | 20 |
| §112.7(g) | Security: How master flow and drain valves of containers are secured | 20 |
| §112.7(g) | Security: How unauthorized access to starter controls on oil pumps is prevented | 20 |
| §112.7(g) | Security: How out-of-service and loading/unloading connections of oil pipelines are secured | 20 |
| §112.7(g)(5) | Security: Appropriateness of security lighting to both prevent acts of vandalism and assist in the discovery of oil discharges is addressed | 20 |
| §112.7(h) | Loading/unloading rack (excluding offshore facilities) | 21 |
| §112.7(h)(1) | Containment for contents of largest compartment | 22 |
| §112.7(h)(2) | Warning light/sign, barrier system, wheel chocks, or break interlock system to prevent departure with connected lines | 22 |
| §112.7(h)(3) | Inspect drains and outlets of vehicles | 22 |
| §112.7(i) | Brittle fracture or catastrophic failure evaluation requirements | 22 |
| §112.7(j) | Conformance with State requirements | 32 |
| **§112.3(k)(1)** | **Qualified Oil-Filled Operational Equipment: meets criteria** | SEE BELOW |
| §112.7(k)(2)(i) | Inspection procedures or monitoring program | App. B. |
| §112.7(k)(2)(ii)(A) | Oil spill contingency plan per part 109 | N/A. |
| §112.7(k)(2)(ii)(B) | Written commitment of resources | vi |
| **§112.8, §112.12** | **Requirements for Onshore Facilities (excluding production)** | SEE BELOW |
| §112.8(a), §112.12(a) | Meet general and specific requirements | 17 |
| §112.8(b)(1), §112.12(b)(1) | Facility drainage: Restrain drainage from diked areas; inspect accumulation | 22 |
| §112.8(b)(2), §112.12(b)(2) | Facility drainage: Manual valves to drain diked areas, inspect before discharging into watercourse | 22 |
| §112.8(b)(3), §112.12(b)(3) | Facility drainage: Undiked drainage with a potential for a discharge designed to flow to ponds, lagoons, or catchment basins | 23 |
| §112.8(b)(4), §112.12(b)(4) | Facility drainage: Final discharge of ditch drainage controlled | 24 |
| §112.8(b)(5), §112.12(b)(5) | Facility drainage: Where pump transfer is needed, two lift pumps installed with one installed permanently | 24 |
| §112.8(c), §112.12(c) | Bulk storage containers: | 24 |
| §112.8(c)(1), §112.12(c)(1) | Containers compatible with material and conditions of storage | 24 |
| §112.8(c)(2), §112.12(c)(2) | Secondary containment for capacity of largest container & sufficient freeboard for precipitation | 25 |
| §112.8(c)(3), §112.12(c)(3) | Not allow drainage of rainwater from diked areas unless inspected, records kept of drainage events | 25 |
| §112.8(c)(4), §112.12(c)(4) | Completely buried metallic containers corrosion protected, leak testing conducted | 26 |
| §112.8(c)(5), §112.12(c)(5) | Partially buried containers corrosion protected | 26 |

# CROSS REFERENCE MATRIX FOR NON-PRODUCTION FACILITIES

| Regulation | Description | Page # |
|---|---|---|
| §112.8(c)(6), §112.12(c)(6) | Integrity testing, visual plus non-destructive shell testing, comparison records kept | 27 |
| §112.8(c)(7), §112.12(c)(7) | Internal heating coils monitored | 27 |
| §112.8(c)(7), §112.12(c)(7) | Internal heating coils monitored | 27 |
| §112.8(c)(8), §112.12(c)(8) | Containers engineered to prevent discharges | 27 |
| §112.8(c)(8)(v), §112.12(c)(8)(v) | Liquid level sensing devices tested to ensure proper operation | 27 |
| §112.8(c)(9), §112.12(c)(9) | Observe effluent treatment facilities to detect system upsets | 28 |
| §112.8(c)(10), §112.12(c)(10) | Correct visible leaks and remove accumulations of oil | 28 |
| §112.8(c)(11), §112.12(c)(11) | Secondary containment for mobile/portable containers with capacity of largest container & sufficient freeboard for precipitation | 29 |
| §112.8(d), §112.12(d) | Facility transfer operations, pumping and facility process: | 29 |
| §112.8(d)(1), §112.12(d)(1) | Buried piping installed or replaced after 8/16/02 corrosion protected | 29 |
| §112.8(d)(2), §112.12(d)(2) | Terminal connections capped/blank flanged when not in service or in standby service for an extended time | 30 |
| §112.8(d)(3), §112.12(d)(3) | Pipe supports properly designed | 30 |
| §112.8(d)(4), §112.12(d)(4) | Inspect aboveground piping, integrity and leak test buried piping | 30 |
| §112.8(d)(5), §112.12(d)(5) | Warn vehicles of aboveground piping | 30 |
| **§112.20(e)** | **Completed and signed certification of substantial harm form (Appendix C)** | App. D. |

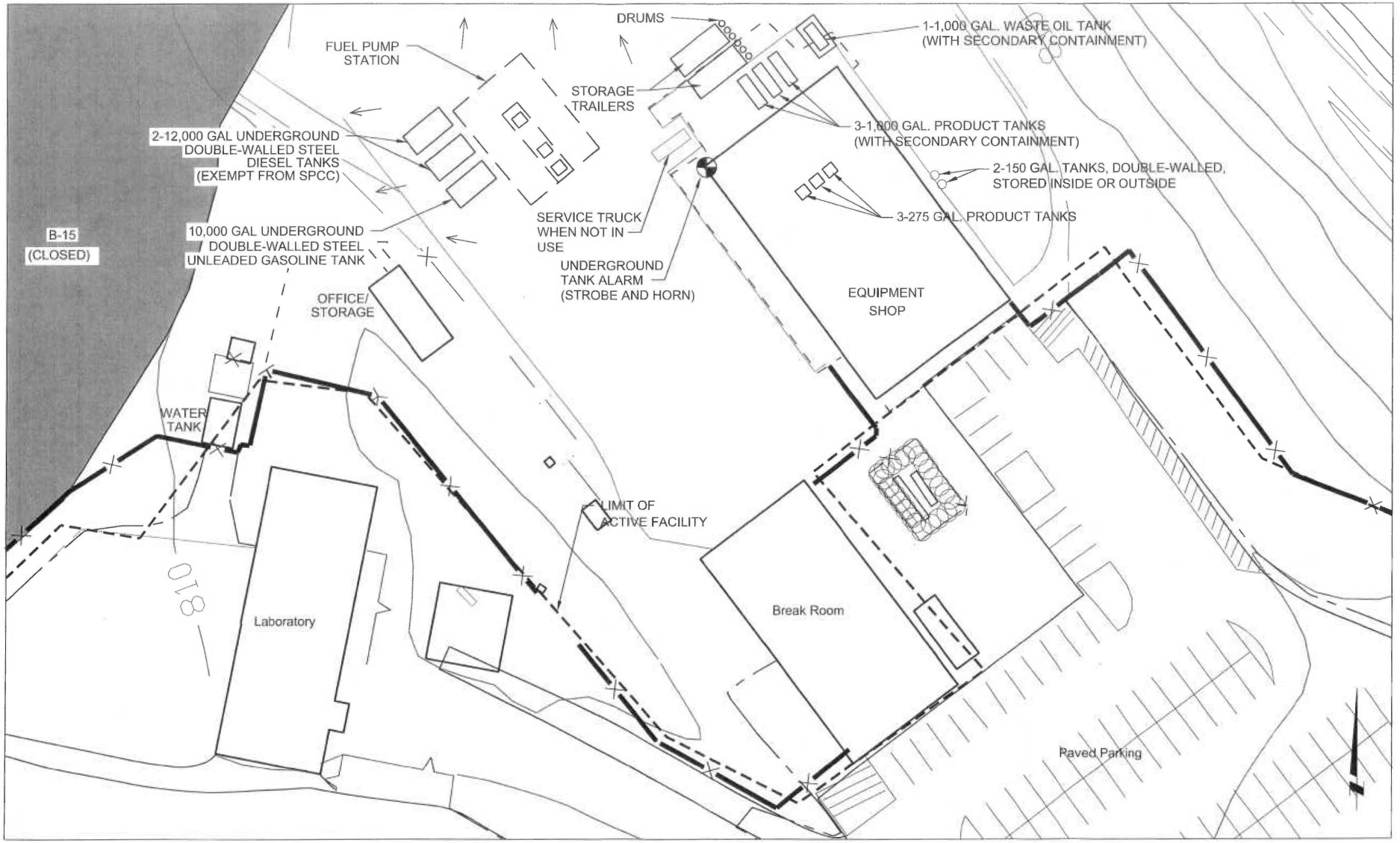



FIGURE **6**

**EQUIPMENT SHOP AREA**

CWMI/KHF SURFACE WATER/CA

**REV: NOV. 2011**

N:\Projects_2011\113-97400 (Kettleman LF SPCC)\FIGs\11397400-F6-EQUIP_SHOP.DWG 11/08/2011, 15:24

**Golder Associates**

# APPENDIX A

# PART B PERMIT APPLICATION (BOUND SEPARATELY)

# APPENDIX B

# WDR R5-2014-0003

CALIFORNIA
Water Boards

EDMUND G. BROWN JR.
GOVERNOR

MATTHEW RODRIQUEZ
SECRETARY FOR
ENVIRONMENTAL PROTECTION

**Central Valley Regional Water Quality Control Board**

6 February 2014

RECEIVED
2/07/14

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

**CERTIFIED MAIL**
**7012 2920 0000 1430 2780**

**TRANSMITTAL OF ADOPTED WASTE DISCHARGE REQUIREMENTS ORDER R5-2014-0003, CHEMICAL WASTE MANAGEMENT, INC., KETTLEMAN HILLS FACILITY, KINGS COUNTY**

On 16 January 2014, the Central Valley Water Quality Control Board (Central Valley Water Board) adopted Waste Discharge Requirements Order R5-2014-0003 (Order) to regulate expansion and operations of the existing Class I waste management units at the Kettleman Hills Facility. A copy of the adopted Order is enclosed. The Order may also be viewed from the Central Valley Water Board's Internet website at:

http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/

If you have any questions, please contact Kristen Pineda at (559) 445-5108 or by email at kpineda@waterboards.ca.gov.

FOR DANIEL L. CARLSON
Senior Engineering Geologist
PG No. 5379, CEG No. 1695, CHG No. 488

Enclosures: Order No. R5-2014-0003

cc (less enclosures): Lee Johnson, Kings County Department of Public Health, DEHS, Hanford
Wayne Lorenzen, Department of Toxic Substances Control, Sacramento
USEPA, Region 9, San Francisco

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER R5-2014-0003

WASTE DISCHARGE REQUIREMENTS
FOR
CHEMICAL WASTE MANAGEMENT, INC.
CLASS I/II WASTE MANAGEMENT UNITS
KETTLEMAN HILLS FACILITY
KINGS COUNTY

The California Regional Water Quality Control Board, Central Valley Region (Central Valley Water Board or Board) finds that:

1. The McKay Trucking Company began disposal operations at the Kettleman Hills Facility (KHF) in March 1975. In 1979, Chemical Waste Management, Inc. (hereafter Discharger), a wholly-owned subsidiary of Waste Management, Inc., purchased the KHF and is the current owner and operator. Class I waste management units (WMUs) at the KHF are currently regulated by Waste Discharge Requirements (WDRs) Order 98-058, which implements regulatory requirements contained in the California Code of Regulations, title 23, chapter 15 (Chapter 15).
2. Sources of waste received at the KHF are mostly from within the State of California.
3. In November 2008, the Discharger submitted an Engineering and Design Report as a Report of Waste Discharge for the Phase III Expansion and Final Closure of Class I Hazardous Waste Landfill B-18. Other technical reports regarding site characteristics, facility design, monitoring, operations, and closure have also been submitted.
4. Class II/III Landfill B-17, and the non-hazardous portion of Class II/III Landfill B-19 that includes the bioreactor, are regulated by WDRs Order R5-2006-0122 and Special Order R5-2011-0065.
5. Health and Safety Code (HSC) section 25204.6(b) requires consolidation of overlapping jurisdiction of the Department of Toxic Substances Control (DTSC), the Central Valley Water Board, and the State Water Board at hazardous waste facilities that are subject to regulation of HSC section 25180, et seq. and Division 7 of the California Water Code. In order to meet this requirement, WDRs adopted by the Central Valley Water Board at Class I facilities are incorporated by reference into the DTSC Hazardous Waste Facility Permit.
6. DTSC implements oversight responsibilities associated with the Class I WMUs and operations permitted in this Order. Enforcement actions considered by DTSC for violations of this Order are coordinated with Central Valley Water Board staff.
7. In January 2010, Governor Arnold Schwarzenegger directed the California Environmental Protection Agency (CalEPA) and the California Department of Public Health (CDPH) to investigate possible environmental contaminants in the air, water and

soil that could cause an apparent increase in the number of infants born with birth defects after 2006 in Kettleman City. Kettleman City community members had raised concerns about birth defects and questioned whether there was a potential link to the Kettleman Hills hazardous waste disposal facility or other environmental exposures. A report, *Investigation of Birth Defects and Community Exposures in Kettleman City, CA*, dated December 2010 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. CalEPA and CDPH found no link between health risks, including birth defects, to Kettleman City residents and the Kettleman Hills Facility. CalEPA and CDPH also did not find a specific cause or environmental exposure that would explain the increase in the number of children born with birth defects. CDPH nevertheless committed to continued monitoring of birth defects in Kettleman City and investigation of water treatment options to ensure a sustainable solution to bring drinking water into compliance with all drinking water standards, including arsenic, among other commitments.

## LOCATION AND DESCRIPTION

8. The KHF is approximately one mile north of State Route 41 and about 2.5 miles west of the intersection of Interstate 5 and State Route 41, as shown on Attachment A, which is attached to and made part of this Order. Kettleman City is approximately 3.5 miles northeast of the KHF.

9. The previously authorized waste management area includes 499 acres of the 1,600-acre property and extends generally in a northwest to southeast direction across Section 34, Township(T)22South(S), Range(R)18East(E), and across Section 3, T23S, R18E, Mount Diablo Base & Meridian (Assessor Parcel Nos. 038-330-001, 038-330-019, 038-330-020, 038-320-015, 038-320-020, 038-320-021, and 038-310-005).

10. A Conditional Use Permit issued by Kings County, which includes the expansion of Class I Landfill B-18 and the planned future construction of Class I Landfill B-20, increases the authorized waste management area from 499 to 695.5 acres, as shown on Attachment B that is attached to and made part of this Order.

11. Land in the vicinity of the KHF is used for oil and gas production and a limited amount of cattle grazing.

12. 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 prevents runoff toward the Kettleman City area. Ephemeral streams on 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.

13. 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 at its nearest point. The KHF is not in a 100-year flood plain based on the Federal Emergency Management Agency's Flood Insurance Rate Map, Community Panel Number 060086 0275B.

14. The Discharger filed a Notice of Intent on 16 February 1996 to obtain coverage under the State Water Board General Permit for Discharges of Storm Water Associated with Industrial Activities, Order No. 97-03-DWQ (the "General Industrial Stormwater Permit"). The Discharger has obtained coverage under the General Industrial Stormwater Permit.

15. The mean annual precipitation measured between 1948 and 2001 at the Kettleman City Climatological Station was 6.56 inches. The mean annual evaporation measured at the same station between 1949 and 1978 was 102.1 inches. The climatological station is located approximately 3.5 miles northeast of the KHF. The probable maximum precipitation in a 24-hour period is 10.3 inches (source: National Oceanic and Atmospheric Association Hydrometeorological Report 58 and 59 (1999)).

## GEOLOGY AND HYDROGEOLOGY

16. The KHF is located on the southwest flank of the Kettleman Hills North Dome anticline (North Dome). The Tulare, San Joaquin, and Etchegoin Formations strike approximately 50 degrees west of north, and dip 25 to 35 degrees to the southwest away from the San Joaquin Valley. The San Joaquin Formation crops out at, and directly underlies, operating and closed Class I WMUs at the KHF. The formation consists of laterally continuous interbeds of marine sandstone, siltstone, claystone, and minor amounts of limestone.

17. The facility is on the southwest flank of the anticline (North Dome).The San Joaquin Formation on the northeast side of the North Dome dips 25 to 30 degrees to the northeast, plunging beneath the San Joaquin Valley. Erosion of the central portion of the North Dome has removed the San Joaquin Formation between the KHF and the San Joaquin Valley, including the Kettleman City area. The erosion has formed a gap that separates the beds in the San Joaquin Formation on the west side of the anticline (near KHF) from those on the east side of the anticline (toward Kettleman City). The erosional gap prevents communication between the flanks of the anticline (North Dome). Therefore, the erosional gap eliminates eastward hydraulic communication through the beds of the San Joaquin Formation.

18. Fourteen water bearing sandstones (sands) within the San Joaquin Formation have been identified at the KHF. Groundwater detection monitoring wells for WMUs are constructed with well screens positioned within permeable saturated sand intervals within the formation.

19. No known Holocene faults exist within 200 feet of the KHF. In accordance with current geotechnical and seismic engineering practices, the Discharger determined a mean

peak horizontal ground acceleration of 0.62g. Acceleration was based on an assumed maximum credible earthquake (MCE) of $M_w$ 7.0, on a ramp thrust fault rupturing at a depth of 8 to10 kilometers beneath the KHF.

20. Operating and closed WMUs are designed to withstand the MCE without significant damage to their respective containment and closure cover systems.

21. The WMUs are not known to be in areas subject to rapid geologic change.

22. Over 25 years of groundwater monitoring data have been collected from the San Joaquin Formation at the KHF. Total dissolved solids (TDS) range from 1,700 to greater than 15,000 milligrams per liter (mg/L). The depth to groundwater ranges from approximately 330 feet to greater than 520 feet below ground surface (bgs). Well yields range from 0.1 gallons-per-minute (gpm) to 5.5 gpm.

23. Groundwater flow is predominantly to the southeast at less than 10 feet-per-year (ft/yr) with an average hydraulic gradient of 0.001.

24. Approximately two miles west of the KHF, wells in the Kettleman Plain are used for stock watering, irrigation, and domestic water supply. These wells produce groundwater (TDS ranging from 1,090 to 2,480 mg/L) from the alluvium from depths of 200 to 1,000 feet bgs. The San Joaquin Formation dips 25 to 35 degrees to the southwest of the KHF, plunging several thousand feet below the Kettleman Plain. Several hundred feet of claystone and siltstone interbeds isolate the deeper groundwater contained in the San Joaquin Formation from the groundwater contained in the alluvium and the Tulare Formation units.

25. There are no groundwater supply wells within one mile of the KHF property boundary. The closest recorded well is a domestic well completed in the alluvium on the Kettleman Plain, and located approximately 1.9 miles west of the KHF property boundary line. The well has been dry since 1985.

26. Approximately three miles east of the KHF, groundwater wells in the Kettleman City area are used for irrigation, industrial supply, and domestic and municipal water supply. Wells produce groundwater from the alluvium and upper Tulare Formation from depths of 300 to 1,000 feet bgs. As presented in Finding 17, groundwater in the San Joaquin Formation below the KHF is isolated from the water supply aquifers in the San Joaquin Valley.

27. The TDS concentrations in two drinking water wells serving Kettleman City range from 573 to 907 mg/L. Benzene concentrations in groundwater samples range from non-detect to 61 micrograms per liter (µg/L), and arsenic concentrations range from 2 to 20 µg/L. Treatment removes elevated concentrations of benzene in the wells before the chemical reaches homes. A third well serves the Kettleman City elementary school and, based on well construction and screen interval, produces water from a different groundwater zone, and requires only chlorination treatment. Regulatory agencies will continue efforts to reduce arsenic levels in the drinking water, either through an alternative water source or through improved treatment. The local water district is

analyzing options to bring drinking water into compliance with drinking water standards. As presented in Finding 17, groundwater in the San Joaquin Formation below the KHF is isolated from the water supply aquifers in the San Joaquin Valley.

28. Central Valley Water Board Resolution 89-155, adopted by the Central Valley Water Board on 11 August 1989, 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.

## WASTES AND THEIR CLASSIFICATION

29. Class I liquid hazardous waste and Class II liquid nonhazardous waste are discharged to Class I surface impoundments P-9, P-14, and P-16 for solar evaporation in accordance with permits issued by the San Joaquin Valley Air Pollution Control District and DTSC. Class I hazardous and Class II nonhazardous solid waste, and other hazardous waste requiring stabilization/solidification are discharged to Landfill B-18.

## WASTE MANAGEMENT UNIT DESIGN AND OPERATION

30. The natural geologic materials immediately underlying the KHF do not meet the permeability standard for new and existing Class I WMUs that is prescribed in California Code of Regulations, title 23 (Title 23), section 2531(b)(1). However, Title 23, section 2510, subsections (b) and (c) allow for the consideration of engineered alternatives to the prescriptive standard, if compliance with the prescriptive standard is not feasible. The Discharger has constructed Class I WMUs that function as an approved engineered alternative that exceeds the performance goal addressed by the prescriptive siting requirement.

31. Landfill B-18 has a base liner system consisting of (from bottom to top):

- a 3.5-foot thick clay liner compacted to a hydraulic conductivity of $1 \times 10^{-7}$ centimeters per second (cm/sec) or less
- a 60-mil (1 mil = one thousandth of an inch) textured High Density Polyethylene (HDPE) geomembrane
- a 16 ounce (oz.) nonwoven geotextile
- a single-sided geocomposite filter/drainage layer consisting of a 16 oz./square yard nonwoven geotextile thermally-bonded to one side of a Polynet 3000 geonet
- a secondary leachate collection and removal system (LCRS) consisting of a 12-inch thick granular drainage layer
- a 16 oz. nonwoven geotextile filter
- a 1.5-foot thick clay liner compacted to a hydraulic conductivity of $1 \times 10^{-7}$ cm/sec or less

- a 60-mil textured HDPE geomembrane
- an eight-ounce/square yard nonwoven geotextile
- a primary LCRS consisting of a 12-inch thick granular drainage layer
- an eight-ounce/square yard nonwoven geotextile filter
- a two-foot thick soil operations layer.

The side slope liner consists of (from bottom to top):

- a 3.5-foot thick clay liner compacted to a hydraulic conductivity of $1 \times 10^{-7}$ cm/sec
- a 60-mil textured HDPE geomembrane
- a geocomposite drainage layer
- a 60-mil textured HDPE geomembrane
- a geocomposite drainage layer
- a 40-mil smooth HDPE protective geomembrane, that is removed and replaced with the operations layer as the waste elevation increases
- a two-foot thick soil operations layer.

32. This Order permits the vertical and lateral expansion (Phase III Expansion) on the north, west, and south sides of Landfill B-18. Attachment C shows the Phase III Expansion Area of approximately 13.8 acres. The expansion will increase the landfill's top elevation from 965 feet to 1,018 feet and increase the waste disposal capacity from the currently permitted volume of 10,700,000 cubic yards to 15,600,000 cubic yards, as shown on Attachment D. Both Attachment C and D are attached to and made part of this Order.

33. The Phase III Expansion is a vertical expansion of the side slope, with the liner detail as shown on Attachment D. The liner system will consist of (from bottom to top):

- a 3-foot thick clay liner compacted to achieve a hydraulic conductivity of $1 \times 10^{-7}$ cm/sec or less
- a 60-mil HDPE geomembrane (textured on both sides)
- a double-sided geocomposite drainage layer
- a 60-mil HDPE geomembrane (textured on both sides)
- a double-sided geocomposite drainage layer
- a two-foot thick soil operations layer.

A temporary 40-mil smooth HDPE protective geomembrane is placed on top of the side slope liner and is removed immediately prior to placement of the operations layer as the waste elevation increases. It is not part of the permanent liner system.

34. The liner system for the Landfill B-18 Phase III Expansion exceeds the prescriptive standard for Class I hazardous waste containment specified in Chapter 15 of Title 23 of the California Code of Regulations (Chapter 15), which is a single composite system consisting of the following: 1) a three-foot thick clay liner that is one foot thicker than the required two-foot minimum thickness; 2) clay liner field test results for hydraulic conductivity resulted in $4.2 \times 10^{-8}$ cm/sec, less than the required $1.0 \times 10^{-7}$ cm/sec; 3) the 60-mil geomembrane is thicker than the required minimum of 40-mils; and 4) a double-sided geocomposite blanket-type drainage layer on top of the geomembrane. A second geomembrane and drainage layer provide for additional containment exceeding Chapter 15 requirements.

35. Attachment B, a part of this Order, shows a plan view of WMUs at the KHF, with the legend indicating which units are regulated by this Order. The WMUs include both operating and closed WMUs. Closed WMUs include: Combined Closure Area (Temporary Container Storage Area, Interim Stabilization Unit, Old Truck Wash, Landfills: B-1, B-4, B-5, B-6, B-7, B-8, B-9, B-9 Extension, B-9 Expansion, B-10, B-11, Surface Impoundments: P-1, P-2, P-3, P-4, P4.5, P-5, P-12,12A, P-13, P-17, Spreading Areas 1, 2, 3, 4, 5 & 6), Landfill B-2, Landfill B-3, Landfill B-13 (Landfill B-12 and the Landfill B-13 Expansion), Landfill B-14, Landfill B-15, Landfill B-16, Landfill B-19 (Class I/II portion), and Surface Impoundments: P-6, P-7, P-8, P-10, P-11 all of which were closed in accordance with approved closure plans.

36. The surface impoundment WMU P-15 is lined and used to contain clean water for construction and/or dust control needs for the facility's access roads.

37. Leachate from the Phase III Expansion will be collected in the existing Landfill B-18 LCRS sumps as shown on Attachments C and D. Any leachate collected will be managed as hazardous waste. Landfill B-18 has four primary LCRS sumps as shown in Attachment C. Below each primary LCRS sump is a secondary LCRS sump.

## UNSATURATED ZONE MONITORING

38. The Discharger has demonstrated that the collection of soil-pore liquid samples with lysimeters or similar suction-based technology, as a component of an unsaturated zone monitoring program, is not feasible under ambient conditions at the KHF.

39. The Discharger's current Site-Specific Unsaturated Zone Monitoring Plan (SSUZMP) dated October 2002 was prepared by Geomatrix Consultants, Inc. and was approved by Central Valley Water Board staff in January 2003.

40. Unsaturated zone monitoring targets permeable sandstones beneath lined surface impoundments P-9, P-14, and P-16. Three soil-moisture monitoring wells, NP09 in the Mya C/D Sand and NP14 and NP16 in the Cascajo A Sand, are located downdip in the target sandstones in the unsaturated zone several hundred feet above groundwater (see Attachment E). The wells are monitored as specified in the Monitoring and Reporting Program (MRP). Attachment E is attached to and made part of this Order.

41. Unsaturated zone monitoring also targets permeable sandstones beneath closed Landfills B-9 Extension, B-11, B-13, and B-15 that contain drums with liquid waste. Soil-gas monitoring wells GP-9A, GP-9B, GP-11A, and GP-11B are screened in the Mya C/D Sand, and soil-gas monitoring wells GP-13A, GP-13B, GP-15A, and GP-15B are screened in the Mya A Sand (see Attachment E). In addition, GP-8AR was installed as a landfill gas monitoring well for Class II/III Landfill B-19, and monitors for soil-gas in the Tuffaceous A Sand. The wells are monitored as specified in the MRP.

42. Four vadose zone monitoring trenches are located below the Landfill B-18 containment system as shown on Attachment C. The trenches are 12 feet wide and 12 inches deep, and were constructed below the axial low points of the landfill containment system. The trenches are lined with 80-mil HDPE geomembrane, geotextile, and contain high transmissivity granular material. The trenches terminate in the vadose zone collection sumps below each secondary LCRS sump. The vadose zone collection sumps act as unsaturated zone monitoring points. The sumps are monitored as specified in the MRP.

## GROUNDWATER MONITORING

43. The Discharger's current site-specific groundwater monitoring plan dated May 2001 was prepared by GeoSyntec Consultants and approved by Central Valley Water Board staff in May 2001.

44. Groundwater impacts from the previous operation of permitted unlined surface impoundments P-9, P-12/12A, and P-18 remain several thousand feet within the KHF property boundary. Surface Impoundment P-9 has been retrofitted with a double liner system that exceeds Chapter 15 requirements. Former Surface Impoundments P-12/12A and P-18 were closed in June 1997 and June 1989, respectively. The areal extent of the impacts is about three acres and has not increased in size during the past 25 years. Waterbearing sandstone zone(s) containing the impacts dip below the KHF away from the Kettleman City area. Due to erosion, water bearing sandstone zones(s) below the KHF are geologically and hydrologically isolated from the groundwater aquifers in the Kettleman City area , as described in Findings 17 and 18.

45. MRP R5-2014-0003, a part of this Order, specifies semi-annual groundwater monitoring for all the groundwater monitoring wells listed in Table 4.

## CLOSURE AND POST-CLOSURE

46. The final cover system for Landfill B-18, including the Phase III Expansion, will consist of (from the surface down):

- a minimum 2.5-foot thick vegetated soil layer
- a 12 ounce-per-square-yard nonwoven geotextile
- a 40-mil HDPE geomembrane that is textured on both sides

- a one-foot thick foundation layer having a maximum hydraulic conductivity of $1 \times 10^{-5}$ cm/sec
- an intermediate soil cover (minimum of one-foot thick) over the last lift of waste.

47. The cover system described in Finding No. 46 is similar to the approved closure systems that were constructed over the Combined Closure Area, Landfill B-13, Landfill B-16, and the closed Class I portion of Landfill B-19 (see Attachment B). Other Class I WMUs were closed in accordance with approved closure plans.

48. The KHF closure and post-closure plans, submitted in accordance with Health and Safety Code section 25246, were reviewed as required by Water Code section 13227. The Board finds that the information in the plans indicates that water quality will be adequately protected during the closure and post-closure monitoring period.

## POST- EARTHQUAKE INSPECTION AND RESPONSE PLAN

49. The Discharger will implement the Post-Earthquake Inspection and Response Plan as specified in Discharge Specification 16 in this Order. An inspection will be conducted following an earthquake of Magnitude ($M_w$) 5.0 or greater within 25 miles of the facility or $M_w$ 6.0 or greater earthquake within 50 miles of the facility.

## CEQA AND OTHER REGULATORY CONSIDERATIONS

50. To fulfill requirements imposed by the California Environmental Quality Act (CEQA)(Pub. Resources Code, § 21000 et seq.), the Kings County Planning Department (subsequently renamed the Kings County Community Development Agency) prepared and certified an Environmental Impact Report (EIR) in October 1985 for the construction and operation of three Class I WMUs at the KHF. Since the previously permitted hazardous disposal operations at the KHF B-18 Landfill were evaluated in the 1985 EIR, Kings County determined that preparation of a Subsequent EIR (SEIR) was required for its consideration of the B-18/B-20 Hazardous Waste Disposal Project. In conjunction with its approval of Conditional Use Permit (CUP) No. 05-10 for the B-18/B-20 Hazardous Waste Disposal Project, Kings County certified a Final Subsequent Environmental Impact Report (Final SEIR) on 22 December 2009 and filed a Notice of Determination for the Project on 22 December 2009. The Final SEIR consists of the Draft SEIR, the Revised Project Description and Analysis (May 2008), and the Recirculated Portions of the Draft EIR (May 2009); copies of the comments received on all three documents; a list of the persons, organizations, and public agencies who commented; responses to the Kings County Development Agency, as the Lead Agency, to the significant environmental points raised in the review and consultation process; and other information added by the Kings County Community Development Agency, as the Lead Agency. The Central Valley Water Board, acting as a responsible agency, was consulted during the development of these documents, and provided comments on 17 June 2008 and 18 June 2009.

51. CUP No. 05-10 increased the permitted existing operations area at the facility from 499 acres to 695.5 acres. This allowed for the Class I Landfill B-18 Phase III Expansion and for the future construction of Class I Landfill B-20 as addressed in the Final SEIR. This Order does not address the proposed Class I Landfill B-20. The Discharger is required to submit a Report of Waste Discharge prior to proposing construction of other WMUs.

52. This Order implements:

    a. *The Water Quality Control Plan for the Tulare Lake Basin, 2nd Edition* (Revised 2004); and

    b. The prescriptive standards and performance goals contained in Chapter 15 for the construction, operation, and closure of Class I WMUs.

53. Based on site conditions, the threat and complexity of the discharge, the facility is determined to be classified 2-A as defined below:

    a. Category 2 threat to water quality, defined as: " Those discharges of waste that could impair the designated beneficial uses of the receiving water, cause short-term violations of water quality objectives, cause secondary drinking water standards to be violated, or cause a nuisance."

    b. Category A complexity, defined as: "Any discharge of toxic wastes; any small volume discharge containing toxic waste; any facility having numerous discharge points and groundwater monitoring; or any Class 1 waste management unit."

54. Water Code section 13267(b)(1) states that:

> In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region... shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.

Technical reports required by this Order and the attached MRP are necessary to ensure compliance with these WDRs. The Discharger owns and operates the facility that discharges the waste subject to this Order.

## PROCEDURAL REQUIREMENTS

55. The Central Valley Water Board notified the Discharger and interested agencies and persons of its intent to prescribe WDRs for the KHF, and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.

56. The Central Valley Water Board, in a public meeting, heard and considered all comments pertaining to the WDRs.

**IT IS HEREBY ORDERED** that WDRs Order 98-058 is rescinded, except for the purposes of enforcement of violations occurring prior to the Effective Date of this Order, and that pursuant to Water Code sections 13263 and 13267, Chemical Waste Management, Inc., its agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the Water Code and the regulations adopted thereunder, shall comply with the following:

## A. PROHIBITIONS

The following discharges are prohibited:

1. The discharge of solid or liquid waste or leachate to surface waters, surface water drainage courses, groundwater, and natural geologic materials adjacent to the WMUs.
2. The discharge of hazardous waste to non-hazardous WMUs, except for hazardous waste that has been granted a variance from hazardous waste management requirements pursuant to Water Code section 13173. Hazardous waste is defined in Chapter 15.
3. The discharge of waste to closed WMUs.
4. The discharge of free liquids, waste containing free liquids, or containerized free liquids to Landfill B-18, with the exception of liquids from lab packs.
5. The discharge of wastes that have the potential to reduce or impair the integrity of containment structures or which, if commingled with other wastes in the WMU, could produce violent reaction, heat or pressure, fire or explosion, toxic by-products, or reaction products which in turn:
   - require a higher level of containment than provided by the WMU
   - are "restricted hazardous wastes"
6. The discharge of compressed gases (not including aerosol containers).
7. The discharge of Class 1, Division 1.1 or 1.2 explosives (49 C.F.R. § 173.50.) or forbidden explosives. (49 C.F.R. § 173.54.)
8. The discharge of biological agents or infectious wastes.
9. The discharge of municipal solid waste or refuse in Landfill B-18.

## B. DISCHARGE SPECIFICATIONS

1. Wastes shall be discharged only into WMUs specifically designed and constructed for their containment, as described in this Order. WMU design plans and specifications for liner construction and closure shall be approved by the Executive Officer prior to construction. WMU liner construction and closure

certification reports shall be approved by the Executive Officer prior to discharge to the WMU or prior to certification of closure.

2. The Discharger shall contact the DTSC regarding regulatory requirements concerning the receipt, transfer, containment, treatment, storage, or disposal of radioactive substances, materials, or wastes at the KHF.

3. For any wastes that are discharged in prohibition of this Order, the Discharger shall respond to such discharges in accordance with an approved contingency or remedial plan.

4. The treatment, storage, or disposal of wastes shall not cause pollution or a nuisance as defined in Water Code section 13050.

5. The Discharger shall immediately notify the Executive Officer of any flooding, unpermitted discharge of waste off-site, equipment failure, slope failure, or other change in site conditions that could impair the integrity of waste or leachate containment facilities or precipitation and drainage control structures.

6. Discharges to a WMU shall cease in the event of any containment system failure of that WMU.

7. The KHF shall be fenced and maintained to prevent unauthorized access.

8. The Discharger shall maintain in good working order any WMU, control system, visual observation and/or recording mechanism, or monitoring device installed to achieve compliance with this Order.

9. The discharge shall not cause degradation of any water supply.

10. The KHF shall be graded so that storm water runoff from access roads adjacent to WMUs is diverted away from the landfills.

11. Diversion and drainage facilities for Landfill B-18 shall be designed and constructed to accommodate the anticipated volume of precipitation and peak flows resulting from the 24-hour probable maximum precipitation event (10.3 inches).

12. The Discharger shall maintain a *Storm Water Pollution Prevention Plan* in accordance with the General Industrial Stormwater Permit mentioned in Finding No. 14, or shall retain all storm water on-site.

13. Surface impoundments shall be operated to prevent overtopping as a result of wave action from wind, seismic shaking, and successive heavy precipitation events. In accordance with Title 23, section 2548, in no case shall any surface impoundment be operated with less than two feet of freeboard.

14. The Discharger shall maintain a permanent marker in each surface impoundment as a reference point used to measure the freeboard.

15. The Discharger shall implement the inspection activities specified in the January

2007 *Post Earthquake Inspection and Response Plan* prepared by Golder Associates, following an earthquake of Magnitude (Mw) 5.0 or greater within 25 miles of the facility, or Mw 6.0 or greater earthquake within 50 miles of the facility.

16. All compatible wastes not prohibited by state or federal regulations, or this Order, may be placed in appropriate WMUs as specified in Chapter 15, provided that each waste is verified to be:

    - compatible with containment systems
    - compatible with wastes residing within the WMU

17. Conditions may be added to the KHF design, operating plan, or post closure plans as necessary to protect water quality, human health, and the environment.

## C. LANDFILL B-18 PHASE III CONSTRUCTION SPECIFICATIONS

1. In November 2008, the Discharger submitted an *Engineering and Design Report, B-18 Class I Landfill Phase III Expansion and Final Closure, Kettleman Hills Facility, Kettleman City, California* (Final Design Report). The Final Design Report was revised in February 2010 and was approved by Central Valley Water Board staff on14 July 2010. The Final Design Report was revised again in August 2011 to add details concerning the Landfill B-18 Phase IIIA and IIIB construction sequence, temporary slope stability conditions, storm water control, and report submittals. The Discharger shall implement the engineering design plans, construction drawings, technical specifications, and the construction quality assurance (CQA) plan contained in the Final Design Report. The Phase III liner system shall include all the components as listed in Finding No. 33 of this Order.

2. Visual observations and detailed geologic mapping of the excavated area of the Landfill B-18 Phase III subgrade shall be performed by or under the direct supervision of a Professional Geologist licensed in the State of California. A geologic report and map of the excavated subgrade shall be submitted with each construction certification report for the unit.

3. The Discharger shall submit Final Liner Construction Certification Reports for the Landfill B-18 Phase IIIA and IIIB containment systems that were constructed. The following information shall be included as appendices in the certification reports:

    i. a map of the excavated subgrade and a geologic report describing the geology and general condition of the subgrade prior to the Landfill Phase III containment system construction as indicated in Landfill B-18 Phase III Construction Specification C.2.;

    ii. as-built plans and final construction drawings; and

    iii. the CQA testing results. The CQA testing shall include a written summary

of the CQA testing program, all test results, analyses, and copies of the inspector's original field notes.

4. The certification reports shall contain sufficient information and test results to certify that construction was completed in accordance with the Final Design Report as specified in Landfill B-18 Phase III Construction Specification C.1. The certification reports shall be signed by a California registered civil engineer or certified engineering geologist licensed in the State of California and shall be submitted for review and approval by the Executive Officer prior to discharging waste to the Landfill B-18 Phase IIIA and IIIB Expansion areas.

5. Changes to the Landfill B-18 Phase III containment system design or components may be allowed if it is demonstrated that the changes will provide equal or greater protection of water quality and such changes are approved by the Executive Officer.

6. The Discharger shall provide notification, either written or oral, to Central Valley Water Board staff at least **10 days** prior to construction of the Landfill B-18 Phase III subgrade, geologic mapping of the excavated subgrade, installation of geosynthetics and the clay liner, and the extension of the LCRS riser pipes.

## D. LEACHATE COLLECTION AND REMOVAL SYSTEM SPECIFICATIONS

1. LCRSs shall be designed, constructed, and maintained to prevent the buildup of hydraulic head on the liner. If a hydraulic head occurs on any portion of the liner, the Discharger shall immediately notify the Central Valley Water Board staff and provide a written notification within **seven days**. The written notification shall include a timetable for implementing corrective action measures necessary to eliminate the hydraulic head.

2. Leachate collected from the Class I surface impoundment LCRSs is to be managed as hazardous waste. The leachate can either be discharged to the impoundment from which it came or in a manner consistent with Chapter 15.

3. Leachate collected from the Landfill B-18 LCRSs is to be managed as hazardous waste. The leachate can be discharged either to the Class I surface impoundments or in a manner consistent with Chapter 15.

4. Leachate collection and removal systems shall be monitored in accordance with MRP R5-2014-0003.

## E. UNSATURATED ZONE MONITORING SPECIFICATIONS

1. The Discharger shall perform unsaturated zone monitoring for the operating surface impoundments, Landfill B-18, and closed WMUs in accordance with MRP R5-2014-0003.

## F. GROUNDWATER MONITORING SPECIFICATIONS

1. Groundwater shall be monitored in accordance with MRP R5-2014-0003.
2. The Discharger shall provide notification at least **10 days** prior to drilling and installing any new groundwater monitoring wells.
3. For each monitoring report, the Discharger shall state whether the facility is in compliance with the Water Quality Protection Standard using the procedures specified in the MRP R5-2014-0003.
4. The concentration of constituents of concern in groundwater passing the Point of Compliance shall not exceed the concentration limits established pursuant to the MRP R5-2014-0003.
5. The Discharger shall submit a revised *Site-Specific Groundwater Monitoring Plan* (SSGWMP) in accordance with the time specified in Provision H.13 of this Order. The SSGWMP will be incorporated by reference into MRP R5-2014-0003.

## G. CLOSURE AND POST- CLOSURE SPECIFICATIONS

1. Cover design for closure of all future and existing Class I/II WMUs shall consist of the following (from the top down):
   - a minimum 2.5-foot thick vegetated soil layer
   - a 12 ounce-per-square-yard nonwoven geotextile
   - a 40-mil HDPE geomembrane that is textured on both sides
   - a one-foot thick foundation layer having a maximum hydraulic conductivity of $1 \times 10^{-5}$ cm/sec
   - an intermediate soil cover (minimum of one-foot thick) over the last lift of waste.
2. The Discharger shall implement the engineering design plans, construction drawings, technical specifications, and the CQA plan contained in the Final Design Report for the closure of Landfill B-18. The closure cover system shall include the components listed in Finding 46 of this Order.
3. Before closure of WMUs, the Discharger may be required to submit an updated closure plan that incorporates new engineering technology, construction methods and materials, and that ensures consistency with the current State policy and regulations.
4. A Final Closure Construction Certification Report shall be submitted for the cover system constructed. As-built plans and final closure cover drawings and the CQA testing results shall be included in the closure certification report. The CQA testing shall include a written summary of the CQA program, all test results, analyses, and copies of the inspector's original field notes. The closure

certification report shall contain sufficient information and test results to certify that construction was completed in accordance with the approved Final Design Report. The certification report shall be signed by a California registered civil engineer or certified engineering geologist licensed in California and shall be submitted for review and approval by the Executive Officer.

5. Changes to the cover system design may be allowed if it is demonstrated that the changes will provide an equal or greater ability to isolate moisture from the waste and such changes are approved by the Executive Officer.

6. The Discharger shall provide notification, either written or oral, to Central Valley Water Board staff at least **10 days** prior to the construction of the closure cover system.

7. The Discharger shall monitor closed Class I WMUs in accordance with the Post-Closure Maintenance Plan and the Monitoring and Reporting Program, that shall include the following elements:

   - final cover monitoring and maintenance
   - settlement monitoring
   - maintenance of permanent monuments
   - LCRS monitoring
   - maintenance of surface water drainage systems
   - groundwater and unsaturated zone monitoring

8. The Discharger shall install and maintain at least two surveyed permanent monuments from which the location and elevation of wastes, containment structures, and monitoring facilities can be determined throughout the post-closure maintenance period in accordance with Section 2580(d) of Title 23.

9. The Discharger shall perform visual inspections of the final cover of any closed WMUs regulated by this Order at least **annually** to check for evidence of settlement, erosion, ponded water, odor, exposed waste, cracks, slope failure, leachate seeps, or damage to the vegetated cover in accordance with the Monitoring and Reporting Program. Areas of the final cover showing evidence of any of the problems including those described above shall be repaired in a timely manner, and the cause shall be investigated to prevent recurrences of the problem(s).

10. The post-closure maintenance and monitoring period shall continue for as long as wastes contained within closed WMUs pose a threat to water quality.

## H. PROVISIONS

1. The Discharger may be required to submit technical reports as directed by the Executive Officer.

2. The Discharger shall comply with MRP R5-2014-0003 which is incorporated into and made part of this Order.

3. The Discharger shall comply with the applicable portions of the September 1993 Standard Provisions and Reporting Requirements (SPRR) for WDRs for discharges regulated by Chapter 15. The SPRR is incorporated into and made part of this Order.

4. If there is any conflicting or contradictory language between the Order, the MRP, or the SPRR, language in the Order shall govern over either the MRP or the SPRR, and language in the MRP shall govern over the SPRR.

5. This Order does not authorize violation of any federal, state, or local laws or regulations.

6. The Discharger shall **by 1 March of each year**, submit a copy of a Certificate of Insurance for Closure and Post-Closure Maintenance in accordance with requirements for financial assurances mechanisms contained in Title 22 and Title 23 of the California Code of Regulations. The Discharger shall submit an adjusted certificate using the latest available annual inflation factor adjustment. Any additional cost increases due to changes in closure design, closure construction, or post-closure maintenance and monitoring shall be included in the adjusted certificate.

7. The Discharger shall **by 1 March of each year**, submit a copy of a Certificate of Insurance for initiating and completing corrective action for all known or reasonably foreseeable releases from each waste management unit in accordance with requirements for financial assurance mechanisms contained in Title 22 and Title 23 of the California Code of Regulations. The Discharger shall submit an adjusted certificate using the latest available annual inflation factor adjustment. Any additional cost increases due to changes in completing corrective action(s) shall be included in the adjusted certificate.

8. The Discharger shall submit final construction and closure certification reports in accordance with Landfill B-18 Phase III Construction Specification C.3 and Closure and Post-Closure Specification G.4. The certification reports shall be submitted **within 60 days** following completion of construction or closure of the WMU.

9. The Discharger shall take all reasonable steps to minimize any adverse impact to the waters of the State resulting from noncompliance with this Order. Such steps shall include accelerated or additional monitoring as necessary to determine the nature, extent, and impact of the noncompliance.

10. To assume ownership or operation under this Order, the succeeding owner or operator must apply in writing to the Central Valley Water Board requesting transfer of this Order **within 14 days** of assuming ownership or operation of this facility. The request must contain the requesting entity's full legal name, the

State of incorporation if a corporation, the name and address and telephone number of the persons responsible for contact with the Central Valley Water Board, and a statement. The statement shall comply with the signatory requirements contained in the SPRR and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements and a violation of the Water Code. Transfer of this Order shall be approved by the Central Valley Water Board.

11. The Discharger shall, at a minimum, comply with all notice and reporting requirements of the State Department of Water Resources with regard to the drilling, installation, or decommissioning of any monitoring well, gradient well, piezometer, or gas probe used for compliance with this Order, as required by Water Code sections 13750 through 13755.

12. Monitoring locations may be modified if the Discharger demonstrates to the Board that the new locations provide equal or greater protection of water quality.

13. **Within 90 days** of adoption of this Order, the Discharger shall submit a revised SSGWMP and a revised SSUZMP.

14. The Discharger shall maintain WMUs and their associated LCRS and storm water drainage systems, storm water retention basins, unsaturated zone and groundwater monitoring systems, interim covers, and final covers during the operation, closure, and post-closure maintenance periods as specified in this Order and in the Monitoring and Reporting Program. Central Valley Water Board staff shall be immediately notified of any flooding, equipment failure, slope failure, fire, explosion, earthquake damage, accident, leachate seepage, or gas release that could cause the failure of any portion of the WMU and its related facilities, potentially threatening water quality.

15. The Discharger shall accept hazardous waste in accordance with the Waste Analysis Plan contained in the current Hazardous Waste Facility Permit issued by the DTSC.

16. The Discharger shall have the continuing responsibility to assure protection of waters of the state from discharged wastes and from gases and leachate generated by discharged waste during the active, closure, and post-closure maintenance period of the WMUs.

17. **Annually**, the Discharger shall submit a topographic map and aerial photograph of the facility. The map and photograph shall be at a scale where the WMUs are readily discernible and changes in topography from waste filling operations can be tracked.

18. The Discharger shall comply with all applicable provisions of Chapter 15 that are not specifically referred to in this Order.

19. The Discharger shall maintain a copy of the Order at the facility and provide copies to the appropriate facility employees, who shall comply with the prohibitions, specifications, and provisions contained in the Order. This Order shall be made available to regulatory agency personnel upon request.

20. This Order will be reviewed periodically and revisions made when necessary.

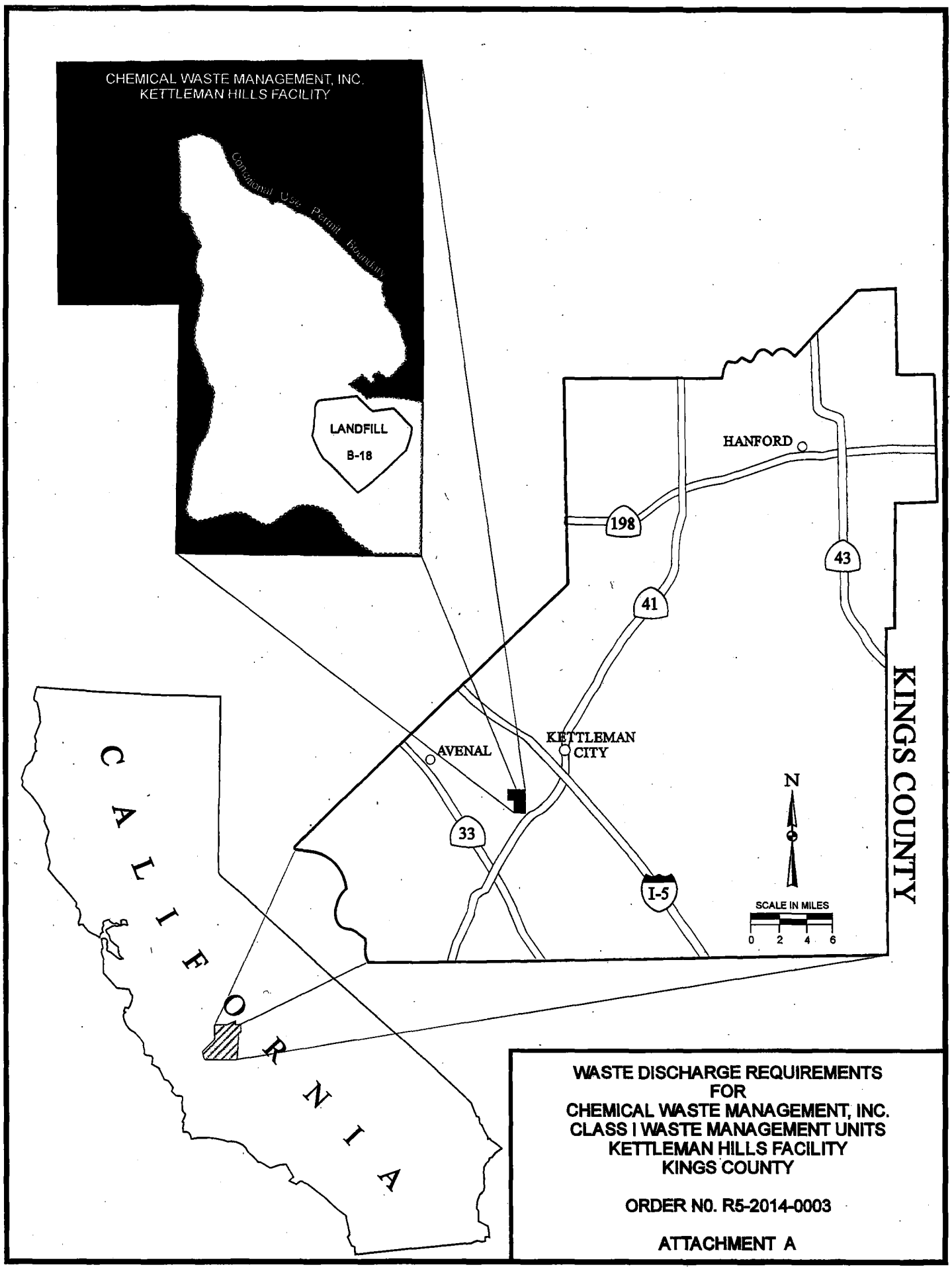
If, in the opinion of the Executive Officer, the Discharger fails to comply with the provisions of this Order, the Executive Officer may refer this matter to the Attorney General for judicial enforcement, may issue a complaint for administrative civil liability, or may take other enforcement actions. Failure to comply with this Order may result in the assessment of Administrative Civil Liability of up to $10,000 per violation, per day, depending on the violation, pursuant to the Water Code, including sections 13268, 13350 and 13385. The Central Valley Water Board reserves its right to take any enforcement actions authorized by law. Any person aggrieved by this action of the Central Valley Water Board may petition the State Water Board to review the action in accordance with Water Code section 13320 and California Code of Regulations, title 23, sections 2050 and following. The State Water Board must receive the petition by 5:00 p.m., 30 days after the date of this Order, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the Internet at:

http://www.waterboards.ca.gov/public_notices/petitions/water_quality

or will be provided upon request.

I, PAMELA C. CREEDON, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 16 January 2014.

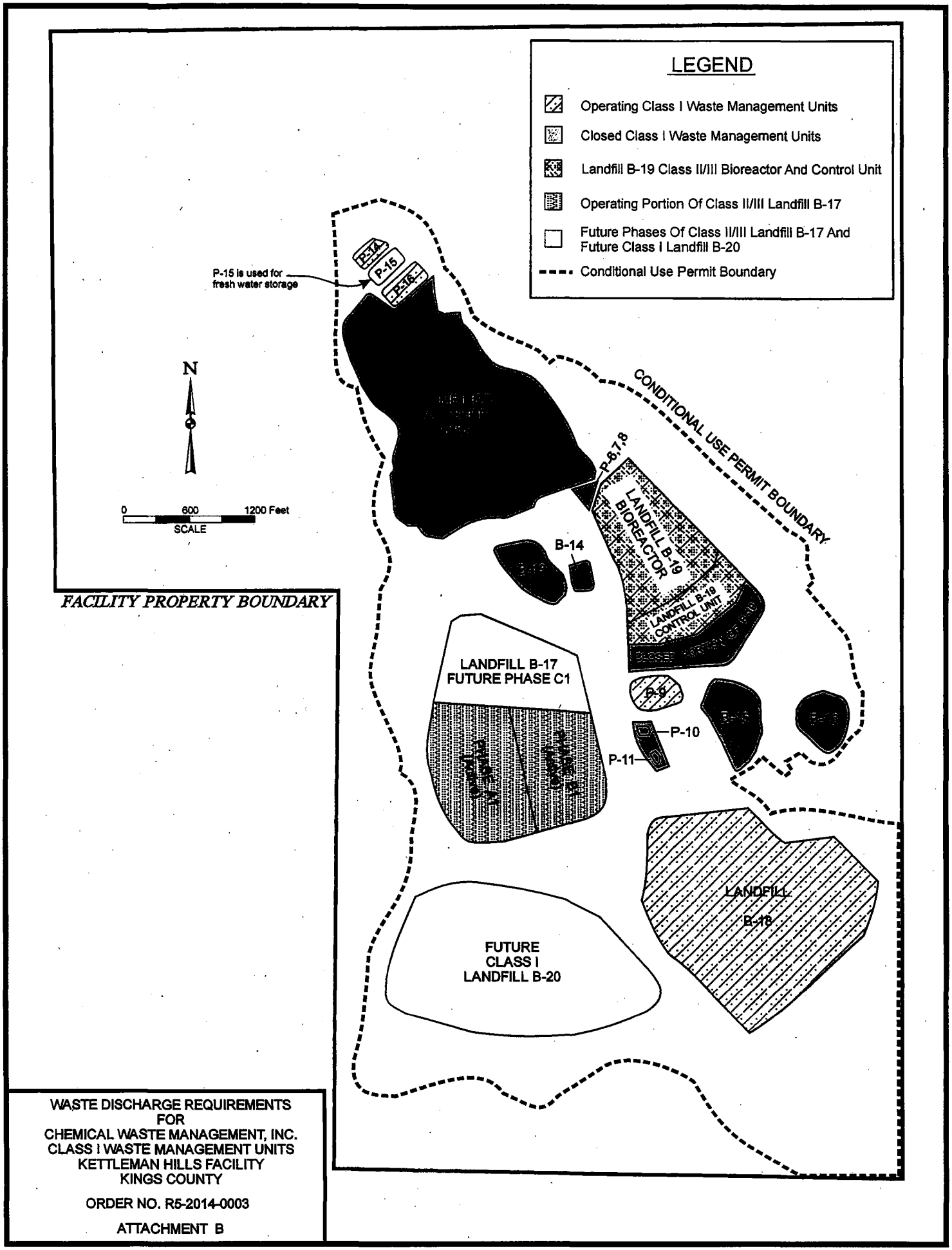
for PAMELA C. CREEDON, Executive Officer




**WASTE DISCHARGE REQUIREMENTS**
**FOR**
**CHEMICAL WASTE MANAGEMENT, INC.**
**CLASS I WASTE MANAGEMENT UNITS**
**KETTLEMAN HILLS FACILITY**
**KINGS COUNTY**

**ORDER NO. R5-2014-0003**

**ATTACHMENT A**

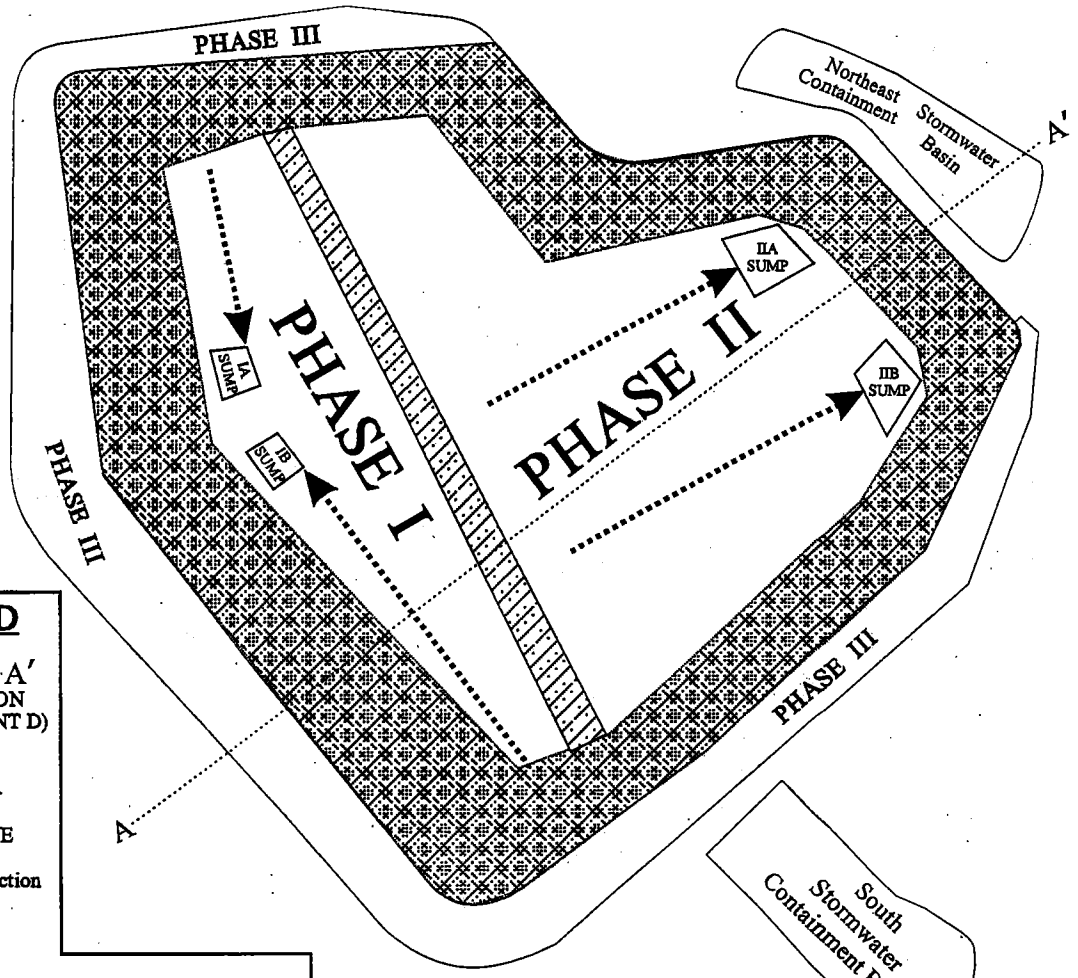



WASTE DISCHARGE REQUIREMENTS
FOR
CHEMICAL WASTE MANAGEMENT, INC.
CLASS I WASTE MANAGEMENT UNITS
KETTLEMAN HILLS FACILITY
KINGS COUNTY

ORDER NO. R5-2014-0003

ATTACHMENT B

# LANDFILL B-18




## LEGEND

A·····A'
CROSS-SECTION
(see ATTACHMENT D)

VADOSE ZONE TRENCHES
(arrows show direction of drainage)

PHASE III SIDESLOPE EXPANSION AREA
(13.8 acres)

LANDFILL SIDESLOPES
(PHASE I & II)

LANDFILL BASE
(PHASE I & II)

SUBGRADE BERM DIVIDING PHASE I AND II

N

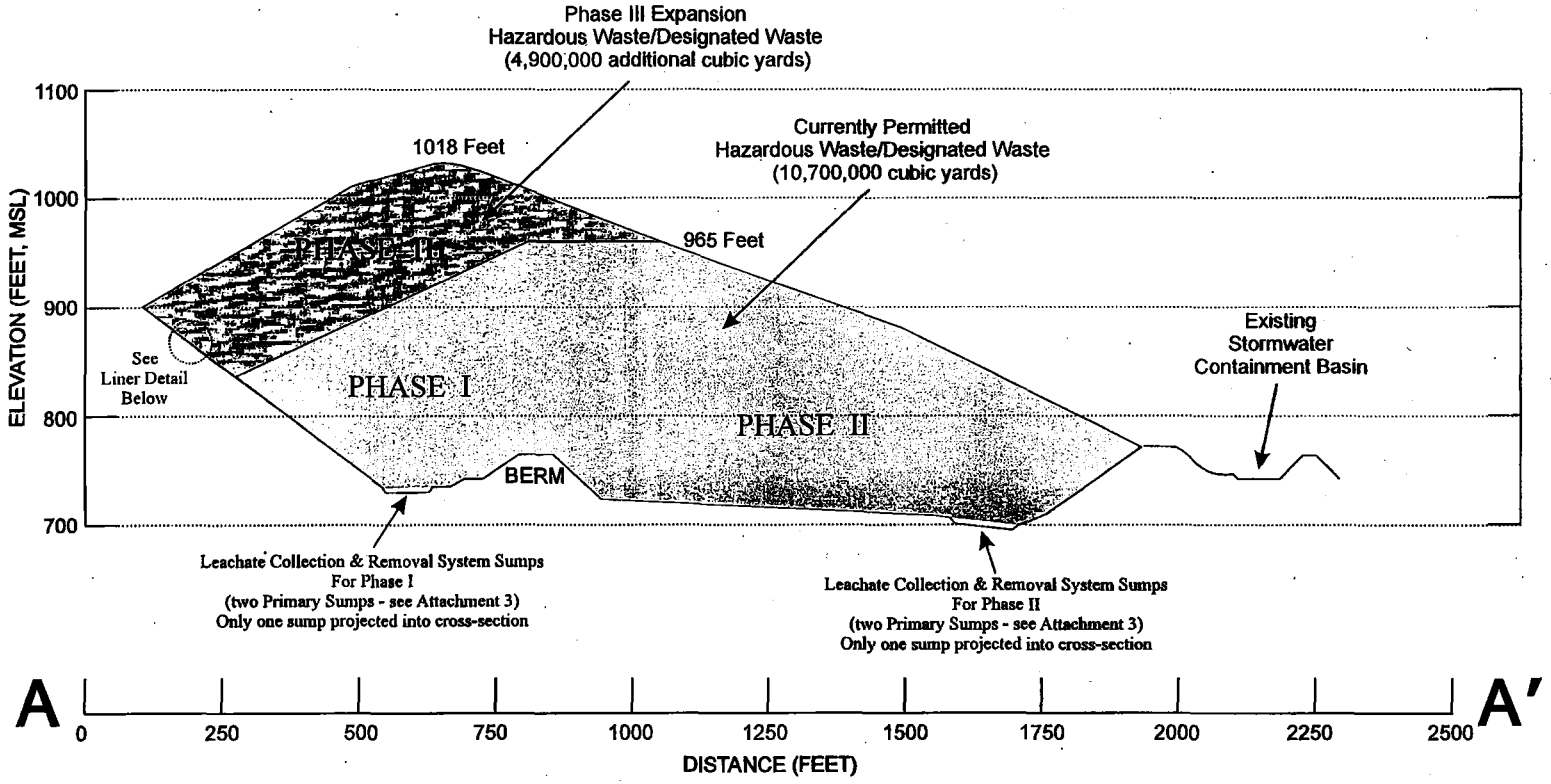
0 200 400
SCALE IN FEET

**WASTE DISCHARGE REQUIREMENTS FOR**
**CHEMICAL WASTE MANAGEMENT, INC.**
**CLASS I WASTE MANAGEMENT UNITS**
**KETTLEMAN HILLS FACILITY**
**KINGS COUNTY**

**ORDER NO. R5-2014-0003**

**ATTACHMENT C**

# LANDFILL B-18 CROSS-SECTION



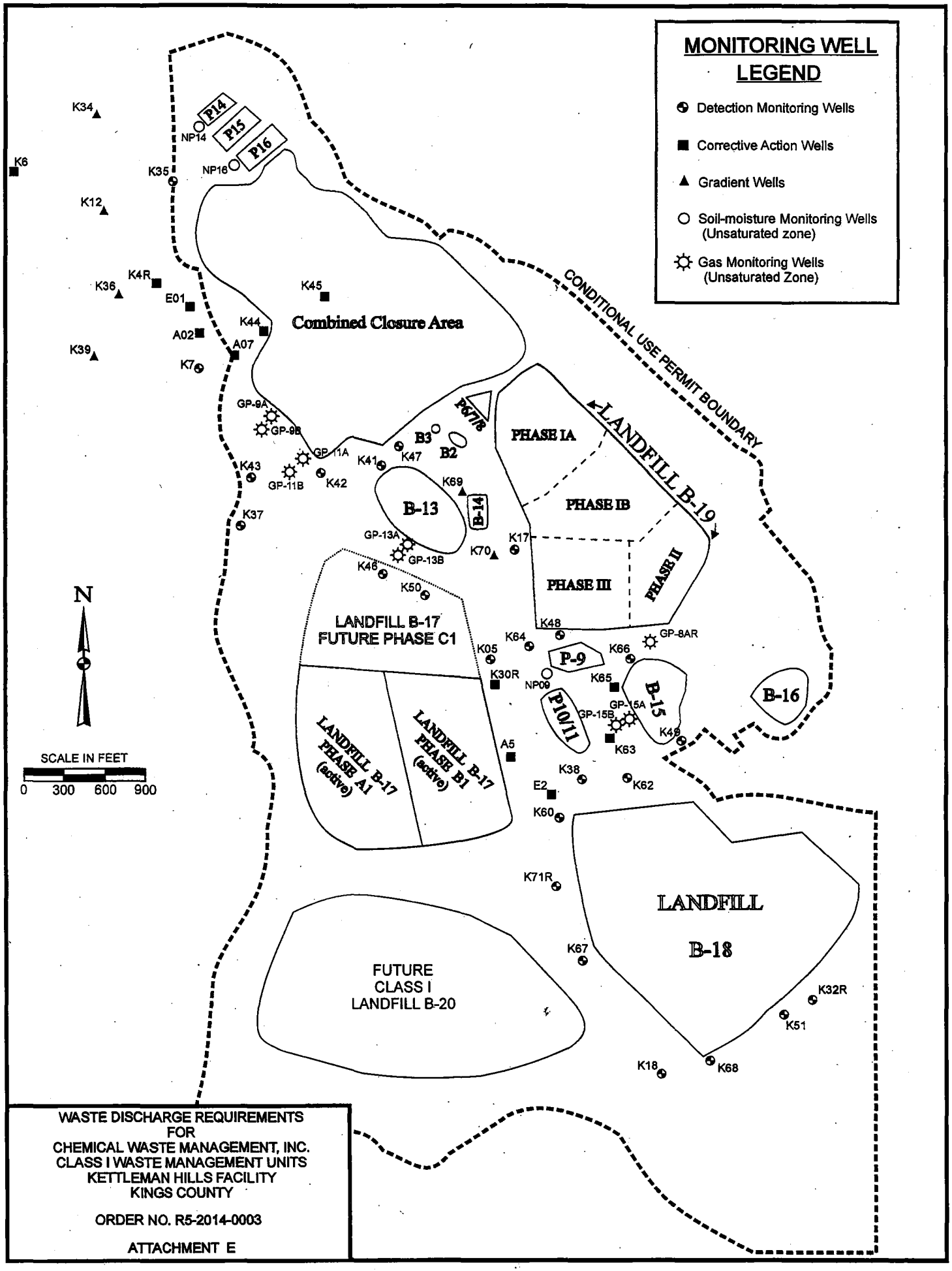

PHASE III EXPANSION
SIDESLOPE LINER DETAIL
(from bottom to top):

- a 3-foot thick clay liner compacted to achieve a hydraulic conductivity of 1 x $10^{-7}$ cm/sec or less
- a 60-mil HDPE geomembrane (textured on both sides)
- a double-sided geocomposite drainage layer
- a 60-mil HDPE geomembrane (textured on both sides)
- a double-sided geocomposite drainage layer
- a 40-mil smooth HDPE protective geomembrane, that is removed and replaced with the operations layer as the waste elevation increases.
- a two-foot thick soil operations layer.

WASTE DISCHARGE REQUIREMENTS
FOR
CHEMICAL WASTE MANAGEMENT, INC.
CLASS I WASTE MANAGEMENT UNITS
KETTLEMAN HILLS FACILITY
KINGS COUNTY

ORDER NO. R5-2014-0003

ATTACHMENT D




WASTE DISCHARGE REQUIREMENTS
FOR
CHEMICAL WASTE MANAGEMENT, INC.
CLASS I WASTE MANAGEMENT UNITS
KETTLEMAN HILLS FACILITY
KINGS COUNTY

ORDER NO. R5-2014-0003

ATTACHMENT E

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM R5-2014-0003
FOR
CHEMICAL WASTE MANAGEMENT, INC.
CLASS I/II WASTE MANAGEMENT UNITS
KETTLEMAN HILLS FACILITY
KINGS COUNTY

Compliance with this Monitoring and Reporting Program (MRP), with Chapter 15, and with the Standard Provisions and Reporting Requirements dated September 1993 for Class I Waste Management Units (WMUs) is ordered by Waste Discharge Requirements (WDRs) Order No. R5-2014-0003.

Failure to comply with this MRP, or with the Standard Provisions and Reporting Requirements, constitutes noncompliance with the WDRs and the Water Code, which can result in the imposition of civil monetary liability.

## A. REQUIRED REPORTS

| Report | Due |
|---|---|
| 1. Annual Monitoring Summary Report (Section B.) | **Annually** |
| 2. Constituents of Concern (Section C.1) | **Every 5 years[1]** |
| 3. Groundwater Monitoring (Section D.1) | **Semi-Annually** |
| 4. Incoming Waste Monitoring (Section D.2) | **Monthly** |
| 5. Leachate Collection and Removal System Monitoring (Section D.3) | |
| a. LCRS Fluid Levels (Section D.3) | **Monthly** |
| b. Constituents of Concern (Section D.3) | **Quarterly[2]/Annually** |
| c. Integrity Testing (Section D.3.a) | **Annually** |
| 6. Unsaturated Zone Monitoring (Section D.4) | **Semi-Annually** |
| 7. Class I Surface Impoundment Monitoring (Section D.5) | **Monthly** |
| 8. Facility Monitoring (Section D.6) | |
| a. Facility Inspection Certification (Section D.6.a.) | **Annually** |
| b. Post-Closure Inspection Report (Section D.6.b.) | **Annually** |
| c. Storm Event Inspection (Section D.6.c.) | **When required** |
| d. Seismic Event Inspection (Section D.6.d.) | **When required** |

[1]Sampling shall alternate between the 1st Semi-annual and 2nd Semi-annual sampling events.
[2]Quarterly the first four quarters after waste placement in the B-18 Phase III Expansion WMU begins.

## B. REPORTING

The Discharger shall report monitoring data and information as required in this MRP, in the approved *Site-Specific Groundwater Monitoring Plan* (SSGWMP), and in the Standard Provisions and Reporting Requirements. Reports that do not comply with the required format will be **REJECTED** and the Discharger shall be deemed to be in noncompliance with the WDRs. In reporting the monitoring data required by this MRP, the Discharger shall arrange the data in tabular form so that the date, constituents, concentrations, and units are readily discernible. Data shall be submitted in a digital database format, such as Microsoft Access or Excel that is acceptable to Central Valley Water Board staff. The data shall be summarized in such a manner as to illustrate clearly compliance with the WDRs or the lack thereof. A short discussion of the monitoring results, including notations of any water quality violations, shall precede the tabular summaries.

Each monitoring report shall include a compliance evaluation summary as specified in Item 2, 'Reports to be Filed with the Board,' of the 'Reporting Requirements,' of the Standard Provisions and Reporting Requirements.

The Discharger shall submit an **Annual Monitoring Summary Report** covering the previous monitoring year. The annual report shall contain the information specified in Item 4, 'Reports to be Filed with the Board,' of the 'Reporting Requirements,' of the Standard Provisions and Reporting Requirements, and a discussion of compliance with the WDRs and the water quality protection standards (WQPS).

The results of any WDR/MRP monitoring conducted more frequently at the locations specified herein or by the WDRs shall be reported. Field measurements and laboratory tests shall be reported in each monitoring report. Monthly, quarterly, semi-annual, and annual monitoring reports, unless as otherwise indicated, shall be submitted to the Board in accordance with the following schedule for the calendar period in which samples were taken or observations made.

| Sampling Frequency | Reporting Frequency | Reporting Periods End | Report Date Due |
|---|---|---|---|
| Monthly | Monthly | Last Day of Month | 30th day of following month |
| Quarterly | Quarterly | Last Day of each Calendar Quarter | 45th day of the the next quarter |
| Semi-annual | 1st Semi-annual<br>2nd Semi-annual | 30 June<br>31 December | 30 September<br>31 March |

| | | | |
|---|---|---|---|
| Annual | Annual | 31 December[1]<br>30 September[2] | 1 March[1]<br>15 November[2] |
| 5-Year | 5-Year | 30 June[3]<br>31 December[4] | 30 September[3]<br>31 March[4] |

[1]Annual Monitoring Summary Report
[2]Annual Facility Inspection & Report
[3]For 1st Semi-Annual Event
[4]For 2nd Semi-Annual Event

## C. WATER QUALITY PROTECTION STANDARD AND COMPLIANCE PERIOD

For each WMU, the WQPS consists of a list of: 1) constituents of concern (COC), 2) monitoring parameters, 3) concentration limits for each COC and each monitoring parameter, and 4) all monitoring points.

The WQPS shall apply during the active life of the WMU, closure period, post-closure maintenance period, and any compliance period under Title 23 CCR Section 2550.6.

### 1. Constituents of Concern

COCs are the waste constituents, reaction products, and hazardous constituents that are reasonably expected to be in or derived from waste contained in the WMUs. Analysis for the COCs is due **every 5 years** and includes all the constituents listed in Table 1.

### 2. Monitoring Parameters

Monitoring parameters are the waste constituents, reaction products, hazardous constituents, and physical parameters that provide a reliable indication of a release from a WMU. The monitoring parameters for all Class I WMUs are those listed in Table 2. The supplemental hydrochemical parameters and field parameters are those listed in Table 3. Supplemental hydrochemical parameters are only analyzed to track changes in groundwater chemistry over time and are not used for comparison with concentration limits or to determine compliance with the WQPS.

### 3. Concentration Limits

The concentration limits for COCs and monitoring parameters shall be established as follows:

a. For any anthropogenic COC or monitoring parameters, the concentration limit shall be the Practical Quantitation Limit (PQL) as described in the most recent edition of Manual SW-846 published by United States Environmental Protection Agency (US EPA). Concentrations that lie between the PQL and the Method Detection Limit (MDL) shall be reported as traces. Exceedences shall be determined using the non-statistical procedure specified in the most recent approved version of the SSGWMP.

b. The concentration limits for the naturally occurring COCs listed in Table 1 were revised in the September 2002 Revised Groundwater Concentration Limits report. The concentration limits shall be updated, as appropriate, following each COC monitoring event in accordance with the statistical procedure described in the most recent approved version of the SSGWMP.

**4. Monitoring Points**

All wells established for groundwater detection monitoring shall constitute the monitoring points for the WQPS. All approved monitoring wells shall be sampled and analyzed for the monitoring parameters and COCs as indicated and listed herein. All approved piezometers and gradient wells shall be sounded as appropriate. The currently approved groundwater monitoring well network includes the detection monitoring wells, corrective action wells, and gradient wells listed in Table 4. Their locations are shown in Attachment E of the WDRs.

**5. Revisions to Site-Specific Groundwater Monitoring Plan**

The Discharger shall submit revisions, changes, and/or additions to the SSGWMP, when necessary, to reflect the current groundwater monitoring system and groundwater sampling procedures.

## D. MONITORING

**1. Groundwater**

The Discharger shall submit a revised SSGWMP as required by Provision H.13 in the WDRs. The Discharger shall collect, preserve, and transport groundwater samples semi-annually from wells in the approved groundwater monitoring system. Groundwater sampling, analysis, and statistical and non-statistical data evaluations shall be performed in accordance with the procedures described in the revised SSGWMP.

Groundwater monitoring data shall be submitted in the semi-annual Groundwater Monitoring Reports due as specified above in the schedule contained in **B. Reporting**. The reports shall contain, in addition to reporting requirements specified in this MRP, a summary of the laboratory quality assurance/quality control standards and shall indicate that they meet the standards specified in the revised SSGWMP.

The Discharger shall determine groundwater flow rate and direction in the uppermost aquifer and in any zones of perched water and in any additional zone of saturation monitored pursuant to this MRP **quarterly** and shall report the results in the semi-annual report.

The Discharger may use analytical methods other than those contained in this MRP provided the method has equal or lower reporting limits, can detect all the required COCs and monitoring parameters, and is an approved US EPA method.

**2. Incoming Waste**

The Discharger shall report on a **monthly** basis, the type and quantity of hazardous waste and designated waste accepted for disposal to the Class I WMUs at the facility.

**3. Leachate Collection and Removal Systems**

The leachate collection and removal system (LCRS) fluid levels shall be inspected **daily**. For primary LCRSs, the volume of liquid removed shall be measured and reported. For the secondary LCRSs, the volume of liquid removed shall be measured, calculated in gallons per acre per day, and reported. The results of LCRS monitoring shall be reported **monthly**.

Liquids removed from the LCRSs shall be analyzed **quarterly** for four consecutive calendar quarters commencing in the quarter following initial placement of waste within the B-18 Phase III Expansion WMU and **annually** thereafter for the COCs listed in Table 1 of this MRP.

The Discharger shall follow the actions specified in LCRS Specification D.1 contained in the WDRs should any hydraulic head occur on any liner outside of the LCRS sump.

**a. Integrity Testing**

In accordance with Title 23 CCR Section 2543(d), LCRSs shall be tested **annually** to demonstrate proper operation. The results of the tests shall be compared with earlier tests under comparable conditions.

**4. Unsaturated Zone**

The Discharger shall submit a revised *Site-Specific Unsaturated Zone Monitoring Plan* with a revised semi-annual sampling schedule for the soil-moisture monitoring wells and the soil-gas monitoring wells, and other appropriate changes as necessary.

Liquids removed from vadose zone collection sumps shall be analyzed **annually** for the COCs listed in Table 1 of this MRP.

**5. Class I Surface Impoundments**

The Discharger shall measure the fluid levels in all Class I surface impoundments. The calibrated freeboard gauges shall be inspected **daily** and the fluid levels recorded and reported **monthly**.

## 6. Facility Monitoring

### a. Facility Inspection

Annually, **prior to 30 September,** the Discharger shall submit written certification that the drainage control system; slope conditions; groundwater, and unsaturated zone monitoring equipment; fencing; and visible portions of waste management unit liners and covers have been inspected and any necessary repairs have been completed.

### b. Post-Closure Inspection

Submit an **annual** inspection report of the closed WMUs indicating compliance with Closure and Post-Closure Specifications G.7. and G.9. contained in the WDRs.

### c. Storm Events

The Discharger shall inspect all precipitation, diversion, and drainage facilities for damage during the rainy season or following a precipitation event of 1.0 or more inches in a 24-hour period measured at the facility. Necessary repairs shall be implemented as soon as practicable. The Discharger shall report any damage and subsequent repairs **within 45 days** of completion of the repairs.

### d. Seismic Events

The Discharger shall perform a full-scale facility inspection **within 24 hours** following an earthquake of magnitude ($M_w$) 5.0 or greater within 25 miles of the facility or $M_w$ 6.0 or greater earthquake within 50 miles of the facility. The inspection shall be performed in accordance with the facility Post-Earthquake Inspection and Response Plan cited in Discharge Specification B.15 in the WDRs. The Discharger shall report any damage and subsequent repairs **within 45 days** of completion.

Ordered by: Kenneth D Landau
for PAMELA C. CREEDON, Executive Officer

1/16/2014
(Date)

# TABLE 1
# CONSTITUENTS OF CONCERN

| | Inorganic parameter | Method | | Inorganic parameter | Method |
|---|---|---|---|---|---|
| 1 | Aluminum | 6010B | 14 | Iron | 6010B |
| 2 | Antimony | 6010B | 15 | Lead | 6010B |
| 3 | Arsenic | 6010B | 16 | Manganese | 6010B |
| 4 | Barium | 6010B | 17 | Mercury | 7470A |
| 5 | Beryllium | 6010B | 18 | Molybdenum | 6010B |
| 6 | Boron | 6010B | 19 | Nickel | 6010B |
| 7 | Cadmium | 6010B | 20 | Nitrogen, Nitrate | 300.0A |
| 8 | Chromium | 6010B | 21 | Selenium | 6010B |
| 9 | Chromium VI | 7196A | 22 | Silver | 6010B |
| 10 | Cobalt | 6010B | 23 | Thallium | 6010B |
| 11 | Copper | 218.5 | 24 | Tin | 6010B |
| 12 | Cyanide | 9012A | 25 | Vanadium | 6010B |
| 13 | Flouride | 300.0A | 26 | Zinc | 6010B |

## TABLE 1 (Cont.)
## CONSTITUENTS OF CONCERN

Organic Parameters (Method 8260B)

| | | | |
|---|---|---|---|
| 27 | Acetone | 47 | p-Dichlorobenzene |
| 28 | Acetonitrile | 48 | Ethylbenzene |
| 29 | Acrolein | 49 | Ethyl methacrylate |
| 30 | Acrylonitrile | 50 | Hexachlorobutadiene |
| 31 | Allyl chloride | 51 | 2-Hexanone |
| 32 | Benzene | 52 | Isobutyl alcohol |
| 33 | Bromochloromethane | 53 | Methacrylonitrile |
| 34 | Bromodichloromethane | 54 | Methyl bromide |
| 35 | Bromoform | 55 | Methyl chloride |
| 36 | Carbon disulfide | 56 | Methylene bromide |
| 37 | Carbon tetrachloride | 57 | trans-1,4-Dichloro-2-butene |
| 38 | Chlorobenzene | 58 | Dichlorodifluoromethane |
| 39 | Chloroethane | 59 | 1,1-Dichloroethane |
| 40 | Chloroform | 60 | 1,2-Dichloroethane |
| 41 | Chloroprene | 61 | 1,1-Dichloroethylene |
| 42 | Dibromochloromethane | 62 | cis-1,2-Dichloroethylene |
| 43 | 1,2-Dibromo-3-chloropropane | 63 | trans-1,2-Dichloroethylene |
| 44 | 1,2-Dibromoethane | 64 | 1,2-Dichloropropane |
| 45 | o-Dichlorobenzene | 65 | 1,1-Dichloropropene |
| 46 | m-Dichlorobenzene | 66 | 1,3-Dichloropropane |

## TABLE 1 (Cont.)
## CONSTITUENTS OF CONCERN

Organic Parameters (Method 8260B)

| | | | |
|---|---|---|---|
| 67 | 2,2-Dichloropropane | 79 | 1,1,2,2-Tetrachloroethane |
| 68 | cis-1,3-Dichloropropene | 80 | Tetrachloroethylene |
| 69 | trans-1,3-Dichloropropene | 81 | Toluene |
| 70 | 1,4-Dioxane | 82 | 1,2,4-Trichlorobenzene |
| 71 | Methylene chloride | 83 | 1,1,1-Trichloroethane |
| 72 | Methyl ethyl ketone | 84 | 1,1,2-Trichloroethane |
| 73 | Methyl iodide | 85 | Trichloroethylene |
| 74 | Methyl methacrylate | 86 | Trichlorofluoromethane |
| 75 | 4-Methyl-2-petanone | 87 | 1,2,3-Trichloropropane |
| 76 | Propionitrile | 88 | Vinyl acetate |
| 77 | Styrene | 89 | Vinyl chloride |
| 78 | 1,1,1,2-Tetrachloroethane | 90 | Xylene (total) |

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Organic Parameters (Method 8270C)

| | | | |
|---|---|---|---|
| 91 | Acenaphthene | 96 | Aniline |
| 92 | Acenaphthylene | 97 | Anthracene |
| 93 | Acetophenone | 98 | Aramite |
| 94 | 2-Acetylaminofluorene | 99 | Benzo(a)anthracene |
| 95 | 4-Aminobiphenyl | 100 | Benzo(b)fluoranthene |

## TABLE 1 (Cont.)
## CONSTITUENTS OF CONCERN

Organic Parameters (Method 8270C)

| | | | |
|---|---|---|---|
| 101 | Benzo(k)fluoranthene | 122 | Dibenz(a,h)anthracene |
| 102 | Benzo(g,h,i)perylene | 123 | Dibenzofuran |
| 103 | Benzo(a)pyrene | 124 | Di-n-butyl phthalate |
| 104 | Benzyl alcohol | 125 | Ethyl methanesulfonate |
| 105 | Bis(2-chloroethoxy)methane | 126 | Famphur |
| 106 | Bis(2-chloroethyl)ether | 127 | Fluoranthene |
| 107 | Bis(2-chloro-1-methylethyl)ether | 128 | Fluorene |
| 108 | Bis(2-ethylhexyl)phthalate | 129 | Hexachlorobenzene |
| 109 | 4-Bromophenyl phenyl ether | 130 | Hexachlorocyclopentadiene |
| 110 | Butyl benzyl phthalate | 131 | Hexachloroethane |
| 111 | p-Chloroaniline | 132 | Hexachlorophene |
| 112 | Chlorobenzilate | 133 | Hexachloropropene |
| 113 | p-Chloro-m-cresol | 134 | Indeno(1,2,3-cd)pyrene |
| 114 | 2-Chloronaphthalene | 135 | Isodrin |
| 115 | 2-Chlorophenol | 136 | Isophorone |
| 116 | 4-Chlorophenyl phenyl ether | 137 | Isosafrole |
| 117 | Chrysene | 138 | Kepone |
| 118 | m-Cresol | 139 | Methapyrilene |
| 119 | o-Cresol | 140 | 3-Methylcholanthrene |
| 120 | p-Cresol | 141 | 3,3'-Dichlorobenzidine |
| 121 | Diallate | 142 | 2,4-Dichlorophenol |

## TABLE 1 (Cont.)
## CONSTITUENTS OF CONCERN

Organic Parameters (Method 8270C)

| | | | |
|---|---|---|---|
| 143 | 2,6-Dichlorophenol | 164 | 1-Naphthylamine |
| 144 | Diethyl phthalate | 165 | 2-Naphthylamine |
| 145 | Dimethoate | 166 | o-Nitroaniline |
| 146 | p-(Dimethylamino)azobenzene | 167 | m-Nitroaniline |
| 147 | 7-12-Dimethylbenz(a)anthracene | 168 | p-Nitroaniline |
| 148 | 3,3'-Dimethylbenzidine | 169 | Nitrobenzene |
| 149 | alpha-Dimethylphenethylamine | 170 | o-Nitrophenol |
| 150 | 2,4-Dimethylphenol | 171 | p-Nitrophenol |
| 151 | Dimethyl phthalate | 172 | 4-Nitroquinoline 1-oxide |
| 152 | m-Dinitrobenzene | 173 | N-Nitrosodi-n-butylamine |
| 153 | 4,6-Dinitro-o-cresol | 174 | N-Nitrosodiethylamine |
| 154 | 2,4-Dinitrophenol | 175 | N-Nitrosodimethylamine |
| 155 | 2,4-Dinitrotoluene | 176 | N-Nitrosodiphenylamine |
| 156 | 2,6-Dinitrotoluene | 177 | N-Nitrosodipropylamine |
| 157 | Di-n-octyl phthalate | 178 | N-Nitrosomethylethylamine |
| 158 | Diphenylamine | 179 | N-Nitrosomopholine |
| 159 | Disulfoton | 180 | N-Nitrosopiperidine |
| 160 | Methyl methanesulfonate | 181 | N-Nitrosopyrrolidine |
| 161 | 2-Methylnaphthalene | 182 | 5-Nitro-o-toluidine |
| 162 | Naphthalene | 183 | Pentachlorobenzene |
| 163 | 1,4-Naphthoquinone | 184 | Pentachloroethane |

## TABLE 1 (Cont.)
## CONSTITUENTS OF CONCERN

Organic Parameters (Method 8270C)

| | | | |
|---|---|---|---|
| 185 | Pentachloronitrobenzene | 194 | Pyridine |
| 186 | Pentachlorophenol | 195 | Safrole |
| 187 | Phenacetin | 196 | 1,2,4,5-Tetrachlorobenzene |
| 188 | Phenanthrene | 197 | 2,3,4,6-Tetrachlorophenol |
| 189 | Phenol | 198 | Tetraethyl dithiopyrophosphate |
| 190 | p-Phenylenediamine | 199 | o-Toluidine |
| 191 | 2-Picoline | 200 | 2,4,5-Trichlorophenol |
| 192 | Pronamide | 201 | 2,4,6-Trichlorophenol |
| 193 | Pyrene | 202 | 0,0,0-Triethyl phosphorothioate |
| | | 203 | sym-Trinitrobenzene |

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Pesticides (Method 8081A)

| | | | |
|---|---|---|---|
| 204 | Aldrin | 213 | Dieldrin |
| 205 | alpha-BHC | 214 | Endosulfan I |
| 206 | beta-BHC | 215 | Endosulfan II |
| 207 | delta-BHC | 216 | Endosulfan sulfate |
| 208 | gamma-BHC (Lindane) | 217 | Endrin |
| 209 | Chlordane | 218 | Endrin aldehyde |
| 210 | 4,4'-DDD | 219 | Heptachlor |
| 211 | 4,4'-DDE | 220 | Heptachlor epoxide |
| 212 | 4,4'-DDT | 221 | Methoxychlor |
| | | 222 | Toxaphene |

## TABLE 1 (Cont.)
## CONSTITUENTS OF CONCERN

Polychlorinated biphenyls (Method 8082)

| | | | |
|---|---|---|---|
| 223 | Aroclor 1016 | 227 | Aroclor 1248 |
| 224 | Aroclor 1221 | 228 | Aroclor 1254 |
| 225 | Aroclor 1232 | 229 | Aroclor 1260 |
| 226 | Aroclor 1242 | 230 | Aroclor 1262 |
| | | 231 | Aroclor 1268 |

Organophosphorus Compounds (Method 8141A)

| | | | |
|---|---|---|---|
| 232 | Methyl parathion | 235 | Phorate |
| 233 | Parathion | 236 | Dichlorvos |
| 234 | 0,0-Diethyl 0-2-pyrazinyl phosphorothioate | | |

Chlorinated Herbicides (Method 8151A)

| | | | |
|---|---|---|---|
| 237 | 2,4-D (2,4-Dichlorophenoxyacetic acid) | 239 | Dinoseb (DNBP; 2-sec-Butyl-4,6-dinitrophenol) |
| 238 | Silvex (2,4,5-Trichlorophenoxypropionic acid; 2,4,5-TP) | 240 | 2,4,5-T (2,4,5-Trichlorophenoxyacetic acid) |

Carbamate & Urea Pesticides (Method 632)

| | | | |
|---|---|---|---|
| 241 | Barban | 249 | Methiocarb |
| 242 | Carbaryl | 250 | Methomyl |
| 243 | Carbofuran | 251 | Monuron |
| 244 | Chlorpropham | 252 | Neburon |
| 245 | Diuron | 253 | Oxamyl |
| 246 | Fenuron | 254 | Propham |
| 247 | Fluometuron | 255 | Propoxur |
| 248 | Linuron | 256 | Siduron |
| | | 257 | Swep |

# TABLE 2
# DETECTION MONITORING PARAMETERS - CLASS I WMUs

Organic Parameters (Method 8260B)

| | | | |
|---|---|---|---|
| 1 | Benzene | 17 | 1,1-Dichloroethane |
| 2 | Bromodichloromethane | 18 | 1,2-Dichloroethane |
| 3 | Bromoform | 19 | 1,1-Dichloroethene |
| 4 | Bromomethane | 20 | Ethylbenzene |
| 5 | Carbon Tetrachloride | 21 | trans-1,2-Dichloroethene |
| 6 | Chlorobenzene | 22 | 1,2-Dichloropropane |
| 7 | Chloroethane | 23 | trans-1,3-Dichloropropene |
| 8 | Chloroform | 24 | Methylene chloride |
| 9 | 2-Chloroethylvinyl ether | 25 | 1,1,2,2-Tetrachloroethane |
| 10 | Chloromethane | 26 | Tetrachloroethene |
| 11 | cis-1,3-Dichloropropene | 27 | Toluene |
| 12 | Dibromochloromethane | 28 | 1,1,1-Trichloroethane |
| 13 | 1,2-Dichlorobenzene | 29 | 1,1,2-Trichloroethane |
| 14 | 1,3-Dichlorobenzene | 30 | Trichloroethene |
| 15 | 1,4-Dichlorobenzene | 31 | Trichlorofluoromethane |
| 16 | Dichlorodifluoromethane | 32 | Vinyl chloride |
| | | 33. | Xylenes, total |

# TABLE 3
# SUPPLEMENTAL HYDROCHEMICAL PARAMETERS
# AND
# FIELD PARAMETERS

| | Hydrochemical Parameters[1] | Method |
|---|---|---|
| 1 | Calcium | 6010B |
| 2 | Potassium | 6010B |
| 3 | Magnesium | 6010B |
| 4 | Sodium | 6010B |
| 5 | Chloride | 300.0A |
| 6 | Alkalinity | 2320B |
| 7 | Sulfate | 300.0A |
| 8 | Silica | 6010B |
| 9 | Total Dissolved Solids | 2540C |
| 10 | Total Organic Carbon | 5310B |

| | Field Parameters[2] |
|---|---|
| 1 | pH |
| 2 | Specific Conductance |
| 3 | Temperature |
| 4 | Turbidity |
| 5 | Dissolved Oxygen |

[1]Parameters to be analyzed as part of semi-annual groundwater monitoring program.

[2]Measured in the field prior to sampling groundwater monitoring wells.

# TABLE 4
# GROUNDWATER MONITORING WELL NETWORK

| DETECTION MONITORING WELLS | WMU[1] | CORRECTIVE ACTION WELLS | WMU[2] | GRADIENT WELLS[3] |
|---|---|---|---|---|
| K5 (Tuffaceous B)[4] | B19,P20,S6 | A2 (Neverita B) | P12/12A | K12 (Neverita A) |
| K7 (Tuffaceous A) | P1,P4,P13,S1,S3,B9 exp | A7 (Neverita B) | P12/12A | K34 (Cascajo A) |
| K17 (Neverita A) | B19,S5 | E1 (Neverita B) | P12/12A | K36 (Tuffaceous A) |
| K18 (Sand No. 10) | B18 | K4R (Neverita B) | P12/12A | K39 (Mya A) |
| K32R (Mya A) | B18 | K6 (Neverita B) | P12/12A | K69 (Neverita A) |
| K35 (Cascajo A) | P14,P15,P16,S4 | A5 (Mya C/D) | P9 | K70 (Neverita B) |
| K37 (Mya C/D) | B9 ext, B11 | E2 (Mya C/D) | P9 | |
| K38 (Mya A) | B15 | K30R (Mya A) | P9 | |
| K41 (Neverita B) | P6,P8,B9 exp,S1,S2 | K44 (Neverita A) | B7 | |
| K42 (Tuffaceous B) | P1,P2,P3,P4,P4.5,B9 exp | K45 (Cascajo A) | B7 | |
| K43 (Mya A) | B8,B9,B10 | K63 (Tuffaceous A) | B15 | |
| K46 (Mya A) | B12,B13 | K65 (Neverita B) | P18 | |
| K47 (Neverita A) | P7,B1,B4,B5,B6,B9 exp | | | |
| K48 (Neverita B) | B19,P18,S6 | | | |
| K49 (Neverita B) | B16 | | | |
| K50 (Tuffaceous B) | B14 | | | |
| K51 (Mya C/D) | B18 | | | |
| K60 (Pecten A) | P10,P11 | | | |
| K62 (Tuffaceous B) | B15 | | | |
| K64 (Tuffaceous A) | B19,P20,S6 | | | |
| K66 (Neverita A) | B19 | | | |
| K67 (Sand No. 10) | B18 | | | |
| K68 (Pecten B) | B18 | | | |
| K71R (Pecten B) | B18 | | | |

[1]Indicates the WMUs monitored by detection monitoring wells. WMUs not shown on Attachment B of the revised WDRs include B2, B3, and S4; P1, P2, P3, P4, P4.5, P13, S1, S2, S3, B1, B4, B5, B6, B8, B9, B9 ext, B9 exp, B-10, and B11 which are all located in the Combined Closure Area; P18, P19, P20, S5, and S6, which are former WMUs within the footprint of Landfill B-19; B12, which is within the footprint of closed Landfill B-13 which is shown on Attachment E of the revised WDRs.

[2]Indicates WMUs monitored by corrective action wells.

[3]Groundwater elevations only

[4]Water bearing zone being monitored is in parenthesis.

# INFORMATION SHEET

ORDER R5-2014-0003
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 (µg/L), and arsenic concentrations range from 2 to 20 µg/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 R5-2014-0003 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.

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for Chapter 15 (23 CCR 2510, et seq.) and Part 258 (40 CFR 258)
September 1993


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CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

STANDARD PROVISIONS AND REPORTING REQUIREMENTS
FOR
WASTE DISCHARGE REQUIREMENTS
FOR
DISCHARGES REGULATED BY CHAPTER 15 AND/OR PART 258
(23 CCR 2510 et.seq. and 40 CFR 258 et. seq.)

SEPTEMBER 1993

## GENERAL PROVISIONS

1. The discharge shall neither cause nor contribute to the contamination, degradation, or **pollution of ground water** via the release of waste constituents in either liquid or gaseous phase.

2. The discharge shall neither cause nor contribute to any **surface water pollution**, contamination, or nuisance, including, but not limited to:

   a. floating, suspended, or deposited macroscopic particulate matter or foam;
   b. increases in bottom deposits or aquatic growth;
   c. an adverse change in temperature, turbidity, or apparent color beyond natural background levels;
   d. the creation or contribution of visible, floating, suspended, or deposited oil or other products of petroleum origin;
   e. the introduction or increase in concentration of toxic or other pollutants/contaminants resulting in unreasonable impairment of beneficial uses of waters of the State.

3. The discharge shall not cause any increase in the concentration of waste constituents in soil-pore gas, soil-pore liquid, soil, or other geologic materials outside of the waste management unit if such waste constituents could migrate to waters of the State—in either the liquid or the gaseous phase—and cause **a condition of contamination, pollution, degradation, or nuisance.**

4. The discharge shall not cause the release of pollutants, or waste constituents in a manner which could cause a condition of contamination, pollution, degradation, or nuisance to occur, as indicated by the most appropriate statistical or non-statistical data analysis method and retest method listed in the Monitoring and Reporting Program.
5. The discharger shall take **all reasonable steps to minimize any adverse impact** to the waters of the state resulting from noncompliance with this Order. ("Order," as used

throughout this document, means the Waste Discharge Requirements). Such steps shall include accelerated or additional monitoring as necessary to determine the nature, extent, and impact of the noncompliance.

6. The requirements prescribed herein do not authorize the commission of any act causing injury to the property of another, and do not protect the discharger from **liabilities** under federal, state, or local laws. This Order does not convey any property rights or exclusive privileges.

7. The provisions of this Order are **severable**. If any provision of this Order is held invalid, the remainder of this Order shall not be affected.

8. If there is any conflicting or contradictory language between the Waste Discharge Requirements (WDRs), the Monitoring and Reporting Program (MRP), or the Standard Provisions and Reporting Requirements (SPRR), then language in the WDRs shall govern over either the MRP or the SPRR, and language in the MRP shall govern over the SPRR.

9. After notice and opportunity for a hearing, this Order may be **terminated or modified** for cause, including, but not limited to:

   a. Violation of any term or condition contained in this Order;
   b. Obtaining this Order by misrepresentation, or failure to disclose fully all relevant facts;
   c. A change in any condition that results in either a temporary or permanent need to reduce or eliminate the authorized discharge;
   d. A material change in the character, location, or volume of discharge.

10. Before making a **material change** in the character, location, or volume of discharge, the discharger shall file a new Report of Waste Discharge with the Regional Water Quality Control Board (hereafter Board). A material change includes, but is not limited to, the following:

    a. An increase in area or depth to be used for solid waste disposal beyond that specified in waste discharge requirements;
    b. A significant change in disposal method, location or volume (e.g., change from land disposal to land treatment);
    c. A change in the type of waste being accepted for disposal; or
    d. The addition of a major industrial waste discharge to a discharge of essentially domestic waste, or the addition of a new process or product by an industrial facility resulting in a change in the character or type of waste being discharged.

11. The discharger shall, in a timely manner, **remove and relocate** any wastes discharged at this facility in violation of this Order.

12. The discharger shall maintain a **copy of this Order** at the facility and make it available at all times to facility operating personnel, who shall be familiar with its contents, and to regulatory agency personnel.

13. The discharger shall permit representatives of the Board and the State Water Resources Control Board, upon presentation of credentials, to have **access** during reasonable hours, to:

    a. Enter premises where wastes are treated, stored, or disposed of and facilities in which any records are kept,
    b. Copy any records required to be kept under terms and conditions of this Order,
    c. Inspect, monitoring equipment required by this Order, and
    d. Sample, photograph and video tape any discharge, waste, waste management unit or monitoring device.

14. Except for material determined to be **confidential** in accordance with California law and regulations, all reports prepared in accordance with terms of this Order shall be available for public inspection at the offices of the Board. Data on waste discharges, water quality, geology, and hydrogeology shall not be considered confidential.

## REPORTING REQUIREMENTS

### General Requirements

1. In the event the discharger does not comply or will be unable to comply with any prohibition or limitation of this Order for any reason, the discharger shall **notify the Board by telephone** at (559) 445-5116 as soon as it or its agents have knowledge of such noncompliance or potential for noncompliance, and shall confirm this notification in writing within two weeks. The written notification shall state the nature, time and cause of **noncompliance**, and shall describe the measures being taken to prevent recurrences and shall include a timetable for corrective actions.

2. The Discharger shall **immediately notify the Board** of any **evidence of a release**, or of any flooding, equipment failure, slope failure, or other **change in site conditions** which could impair the integrity of waste or leachate containment facilities or of precipitation and drainage control structures.

3. The discharger shall **mail a copy of each** monitoring **report** and any other reports required by this Order to:

California Regional Water Quality Control Board
Central Valley Region
1685 E Street
Fresno, CA 93706
(or the current address if the office relocates)

4. The discharger shall **retain records of all monitoring information**, including all calibration and maintenance records, all original strip chart recordings of continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order. Records shall be maintained for a minimum of five years from the date of the sample, measurement, report, or application. This period may be extended during the course of any unresolved litigation regarding this discharge or when requested by the Board Executive Officer.
Such records shall show the following for each sample:

a. Identity of sample and of the Monitoring Point or Background Monitoring Point from which it was taken, along with the identity of the individual who obtained the sample;
b. Date, time, and manner of sampling;
c. Date and time that analyses were started and completed, and the name of the personnel and laboratory performing each analysis;
d. Complete procedure used, including method of preserving the sample, and the identity and volumes of reagents used;
e. Calculation of results; and
f. Results of analyses, and the MDL and PQL for each analysis.

Such records shall also include legible records of the volume and type of each waste discharged at each WMU and the manner and location of discharge. These waste discharge records shall be maintained at the facility until the beginning of the post-closure maintenance period, at which time copies of these records shall be sent to the Board.

5. **All reports and transmittal letters shall be signed** by persons identified below:

a. *For a corporation:* by a principal executive officer of at least the level of senior vice-president.
b. *For a partnership or sole proprietorship:* by a general partner or the proprietor.
c. *For a municipality, state, federal or other public agency:* by either a principal executive officer or ranking elected or appointed official.

d. A duly authorized representative of a person designated in a, b or c above if;

i. the authorization is made in writing by a person described in a, b, or c of this provision;
ii. the authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a waste management unit, superintendent, or position of equivalent responsibility. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and
iii. the written authorization is submitted to the Board.

Any person signing a document under this Section shall make the following certification:

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

6. In reporting the monitoring data, the Discharger shall arrange the **data in tabular form** so that the date, the constituents, the concentrations, and the units are readily discernible. The data shall be summarized in such a manner so as to illustrate clearly the compliance with waste discharge requirements or lack thereof.

7. Unless otherwise required in the Monitoring and Reporting Program, monthly **monitoring reports shall be submitted** to the Board by the 15th day of the month following the month in which the samples were taken or observations made, and quarterly, semiannual, and annual monitoring reports shall be submitted to the Board by the 15th day of the month following the calendar quarter in which the samples were taken or observations made.

8. The results of any monitoring done more frequently than required at the locations specified herein shall be reported to the Board.

## Reports to be Filed with the Board

1. A **transmittal letter** explaining the essential points in each report shall accompany each report. Such a letter shall include a discussion of any violations found since the last such report was submitted, and shall describe actions taken or planned for correcting those violations. If the Discharger has previously submitted a detailed time schedule for correcting the violations, a reference to the correspondence transmitting such schedule will be

satisfactory. If no violations have occurred since the last submittal, this shall be stated in the letter of transmittal.

2. Each monitoring report (e.g., Detection Monitoring Report, Constituents of Concern 5-Year Report) shall include a **compliance evaluation summary**. The summary shall contain at least:

   a. For each monitored ground water body, a description and graphical presentation of the gradient and direction of **ground water flow** under/around the waste management unit, based upon water level elevations taken during the collection of the water quality data submitted in the report.
   b. For each monitoring well addressed by the report, a description of the method and time of water level measurement, of the type of pump used for **purging** and the placement of the pump in the well, and of the method of purging (the pumping rate, the equipment and methods used to monitor field pH, temperature, and conductivity during purging, the calibration of the field equipment, results of the pH, temperature, conductivity, and turbidity testing, the well recovery time, and the method of disposing of the purge water).
   c. For each Monitoring Point and Background Monitoring Point addressed by the report, a description of the type of pump—or other device—used and its placement for **sampling**, and a detailed description of the sampling procedure (number and description of the samples, field blanks, travel blanks, and duplicate samples taken, the type of containers and preservatives used, the date and time of sampling, the name and qualifications of the person actually taking the samples, and any other observations).
   d. For each monitoring well addressed by the report, a description of how the well was **purged to remove** all portions of the water that was in the well bore while the sample was being taken.
   e. A **map or aerial photograph** showing the locations of observation stations, Monitoring Points, and Background Monitoring Points.
   f. Laboratory statements of results of all analyses evaluating compliance with requirements.
   g. An evaluation of the effectiveness of the leachate monitoring and control facilities, and of the run-off/run-on control facilities.
   h. A summary and certification of completion of all Standard Observations for the waste management unit, for the perimeter of the WMU, and for the receiving waters.
   i. The quantity and types of wastes discharged and the locations in the WMU where waste has been placed since submittal of the last such report.

3. The Discharger shall report by telephone concerning any **seepage from the disposal area** immediately after it is discovered. A written report shall be filed with the Board within seven days, containing at least the following information:

a. A map showing the location(s) of seepage;
b. An estimate of the flow rate;
c. A description of the nature of the discharge (e.g., all pertinent observations and analyses); and
d. corrective measures underway or proposed, and corresponding time schedule.

See **RESPONSE TO A RELEASE** below.

4. The Discharger shall submit an **Annual Monitoring Summary Report** to the Board covering the reporting period previous monitoring year. This report shall contain:

a. For each Monitoring Point and Background Monitoring Point, submit in **graphical format** the laboratory analytical data for all samples taken within at least the previous five calendar years. Each such graph shall plot the concentration of one or more constituents for the period of record for a given Monitoring Point or Background Monitoring Point, at a scale appropriate to show trends or variations in water quality. The graphs shall plot each datum, rather than plotting mean values. For any given constituent or parameter, the scale for background plots shall be the same as that used to plot downgradient data. Graphical analysis of monitoring data may be used to provide significant evidence of a release.
b. Unless otherwise exempted by the Executive Officer, all monitoring analytical data obtained during the previous two six-month Reporting Periods, presented in tabular form as well as on 3.50" **computer diskettes**, either in MS-DOS/ASCII format or in another file format acceptable to the Executive Officer. Data sets too large to fit on a single 2 MB diskette may be submitted on disk in a commonly available compressed format (e.g. PKZIP or NORTON BACKUP). The Board regards the submittal of data in hard copy and on diskette as "...the form necessary for..." statistical analysis (2550.8(h)), in that this facilitates periodic review by the Board's statistical consultant.
c. A **comprehensive discussion of the compliance record**, and the result of any corrective actions taken or planned which may be needed to bring the Discharger into full compliance with the waste discharge requirements.
d. A **map** showing the area and elevations in which filling has been completed during the previous calendar year.
e. A **written summary** of the monitoring results, indicating any changes made or observed since the previous annual report.
f. An **evaluation** of the effectiveness of the leachate monitoring/control facilities.

## PROVISIONS FOR MONITORING

### General

1. The discharger shall maintain a **written sampling and analysis plan** sufficient to assure compliance with the terms of this Order. Anyone performing sampling on behalf of the discharger shall be familiar with the sampling and analysis plan.

2. All monitoring instruments and devices used by the discharger to fulfill the prescribed monitoring program shall be properly maintained and regularly **calibrated** to ensure their continued accuracy.

3. The discharger shall construct or abandon all **monitoring wells** to meet or exceed the standards stated in the State Department of Water Resources Bulletin 74-81 and subsequent revisions, and shall comply with the reporting provisions for wells required by Water Code Sections 13750 through 13755.

4. All sample analyses shall be conducted at a **laboratory accredited** for such analyses by the State Department of Health Services. The **Quality Assurance-Quality Control Program** must conform to EPA guidelines (e.g., "Laboratory Documentation Requirements for Data Validation," January 1990, USEPA Region 9) or to procedures approved by the Board.

5. The **director of the laboratory** whose name appears on the certification shall supervise all analytical work in his/her laboratory and shall sign all reports of such work submitted to the Regional Board.

6. Unless samples are from water supply wells or unless otherwise specified by the Executive Officer, all ground water samples to be analyzed for **metals** shall be field-filtered. Filtration methods shall minimize the entrainment of air into the sample (by using, for example, in-line pressure filtration).

### Sampling and Analytical Methods

1. For any given monitored medium, the **samples taken** from all Monitoring Points and Background Monitoring Points to satisfy the data analysis requirements for a given Reporting Period shall all be taken **within a span not exceeding 30 days**, unless the Executive Officer approves a longer time period, and shall be taken in a manner that ensures sample independence to the greatest extent feasible.

2. Specific **methods of collection and analysis** must be identified. Sample collection, storage, and analysis shall be performed according to the most recent version of USEPA Methods, such as the latest editions, as applicable, of: (1) "Methods for Organic Chemical Analysis of

Municipal and Industrial Wastewater" (EPA 600 Series), (2) "Test Methods for Evaluating Solid Waste" (SW 846-latest edition), and (3) "Methods for Chemical Analysis of Water and Wastes," and in accordance with an approved sampling and analysis plan.

If methods other than USEPA-approved methods or Standard Methods are used, the exact methodology must be submitted for review and must be approved by the Executive Officer prior to use.

3. The **methods of analysis and the detection limits** used must be appropriate for the expected concentrations. For detection monitoring of any constituent or parameter that is found in concentrations which produce more than 90% non-numerical determinations (i.e., "trace" or "ND") in data from Background Monitoring Points for that medium, the analytical method having the lowest method detection limit (MDL) shall be selected from among those methods which would provide valid results in light of any matrix effects or interferences.

4. **"Trace" results**—results falling between the MDL and the practical quantitation limit (PQL)—shall be reported as such, and shall be accompanied both by the estimated MDL and PQL values for that analytical run.

5. **MDLs and PQLs** shall be derived by the laboratory for each analytical procedure, according to State of California laboratory accreditation procedures. These MDLs and PQLs shall reflect the detection and quantitation capabilities of the specific analytical procedure and equipment used by the lab, rather than simply being quoted from USEPA analytical method manuals. In relatively interference-free water, laboratory-derived MDLs and PQLs are expected to closely agree with published USEPA MDLs and PQLs.

   If the lab suspects that, due to a change in matrix or other effects, the true detection limit or quantitation limit for a particular analytical run differs significantly from the laboratory-derived MDL/PQL values, the results shall be flagged accordingly, along with estimates of the detection limit and quantitation limit actually achieved. The MDL shall always be calculated such that it represents a concentration associated with a 99% reliability of a non-zero result. The PQL shall always be calculated such that it represents the lowest constituent concentration at which a numerical value can be assigned with reasonable certainty that it represents the constituent's actual concentration in the sample. Normally, PQLs should be set equal to the concentration of the lowest standard used to calibrate the analytical procedure.

6. All **QA/QC data** shall be reported, along with the sample results to which they apply, including the method, equipment, and analytical detection and quantitation limits, the percent recovery, an explanation for any recovery that is less than 80%, the results of equipment and method blanks, the results of spiked and surrogate samples, the frequency of quality control analysis, and the name and qualifications of the person(s) performing the analyses. Sample results

shall be reported unadjusted for blank results or spike recoveries. In cases where contaminants are detected in QA/QC samples (i.e., field, trip, or lab blanks), the accompanying sample results shall be appropriately flagged.

7. **Unknown chromatographic peaks** shall be reported, along with an estimate of the concentration of the unknown analyte. When unknown peaks are encountered, second column or second method confirmation procedures shall be performed to attempt to identify and more accurately quantify the unknown analyte.

## Analysis of Monitoring Data

Unless an alternate method has been approved by the Executive Officer, the Discharger shall use one of the following methods, according to the method selection procedure below-

One-Way Parametric Analysis of Variance (ANOVA),
One-Way Non-Parametric ANOVA (Kruskal-Wallis Test),
Method of Proportions, or
non-statistical method

-to compare the downgradient concentration of each monitored constituent or parameter with its respective background concentration to determine if there has been a release from the WMU.

Upon receiving written approval from the Executive Officer, alternate statistical procedures may be used for determining the significance of analytical results for **common laboratory contaminants** (i.e., methylene chloride, acetone, diethylhexyl phthalate, and di-n-octyl phthalate). Nevertheless, analytical results involving detection of these analytes in any background or downgradient sample shall be reported and flagged for easy reference by Board staff.

For any given data set, the Discharger should proceed sequentially down the list below of statistical analysis methods, followed by the non-statistical method, and use the first method for which the data qualify. If that analysis tentatively indicates the detection of a release, then the Discharger shall implement the retest procedure under Discrete Retest.

1. The Discharger shall use one of the following **statistical methods** to analyze Constituents of Concern or Monitoring Parameters which exhibit concentrations equal to or exceeding their respective MDL in at least ten percent of the background samples taken during the Reporting Period. Except for pH, which uses a two-tailed approach, the statistical analysis for all constituents and parameters shall be one-tailed (i.e. testing only for statistically significant increase relative to background). If the data are log-normally distributed, then the data shall be transformed, by replacing each data point with the natural log (ln) of the data point, prior to performing the statistical test.

a. The **One-Way Parametric Analysis of Variance (ANOVA)**, followed by multiple comparisons, shall be used when the pooled background data for the parameter or constituent, obtained during a given sampling period, have not more than 15% of the data below the PQL.

This test requires at least four independent samples from each Monitoring Point and Background Monitoring Point during each sampling episode. Prior to analysis, replace all "trace" analytical results with a value halfway between the PQL and the MDL values reported for that sample run, and replace all "non-detect" results with a value equal to half the MDL value reported for that sample run. The ANOVA shall be carried out at the 95% confidence level. Following the ANOVA, the data from each downgradient Monitoring Point shall be tested at a 99% confidence level against the pooled background data. If these multiple comparisons cause the Null Hypothesis (i.e., that there is no release) to be rejected at any Monitoring Point, the Discharger shall conclude that a release is tentatively indicated for that parameter or constituent.

b. The **One-Way Non-Parametric ANOVA (Kruskal-Wallis Test)**, followed by multiple comparisons, shall be used when the pooled background data for the parameter or constituent, obtained within a given sampling period, have not more than 50% of the data below the PQL.

This method requires at least nine independent samples from each Monitoring Point and Background Monitoring Point; therefore, the Discharger shall anticipate the need for taking more than four samples per Monitoring Point, based upon past monitoring results. The ANOVA shall be carried out at the 95% confidence level. Following the ANOVA, the data from each downgradient Monitoring Point shall be tested at a 99% confidence level against the pooled background data. If these multiple comparisons cause the Null Hypothesis (i.e., that there is no release) to be rejected at any Monitoring Point, the Discharger shall conclude that a release is tentatively indicated for that parameter or constituent.

c. The **Method of Proportions** shall be used if the "combined data set"—the data from a given Monitoring Point in combination with the data from the Background Monitoring Points—has between 50% and 90% of the data below the MDL for the constituent or parameter in question.

This method requires:

i. at least nine downgradient data points per Monitoring Point per Reporting Period,
ii. at least thirty data points in the combined data set, and
iii. that $n * P > 5$ [where n is the number of data points in the combined data set and P is the proportion of the combined set that equals or exceeds the MDL].

Therefore, the Discharger shall anticipate the number of samples required, based upon past monitoring results. The test shall be carried out at the 99% confidence level. If the analysis results in rejection of the Null Hypothesis [i.e., that there is no release], the Discharger shall conclude that a release is tentatively indicated for that constituent or parameter.

2. The Discharger shall use the following **non-statistical method** for the $VOC_{water}$ and $VOC_{spg}$ Monitoring Parameters and for all Constituents of Concern which are not amenable to the statistical tests above (i.e., less than 10% of the data from background samples equal or exceed their respective MDL).

Each qualifying constituent at a Monitoring Point shall be determined based on either:

(1) the data from a single sample for that constituent, taken during that Reporting Period from that Monitoring Point, or
(2) (where several independent samples have been analyzed for that constituent at a given Monitoring Point) the data from the sample which contains the largest number of qualifying constituents.

Background shall be represented by the data from all samples taken from Background Monitoring Points during that Reporting Period (at least one sample from each Background Monitoring Point).

The method shall be implemented as follows:

a. *For the Volatile Organics Monitoring Parameter For Water Samples [$VOC_{water}$]*:
For any given Monitoring Point, the $VOC_{water}$ Monitoring Parameter is a composite parameter addressing all detectable VOCs.

The Discharger shall conclude that a release is tentatively indicated for the $VOC_{water}$ Monitoring Parameter if the data for any Monitoring Point contain either:

i. two or more qualifying VOCs that equal or exceed their respective MDLs, or
ii. one qualifying VOC that equals or exceeds its PQL.

b. *For the Volatile Organics Monitoring Parameter For Soil Pore Gas Samples [$VOC_{spg}$]*:

The $VOC_{spg}$ Monitoring Parameter is a composite parameter for soil pore gas addressing all VOCs detectable using either GC or GC/MS analysis of at least a ten liter sample of soil pore gas (e.g., collected in a vacuum canister). It involves the same scope of VOCs as does the $VOC_{water}$ Monitoring Parameter.

The Discharger shall conclude that a release is tentatively indicated for the $VOC_{spg}$ Monitoring Parameter if the data for any Monitoring Point contain either:

i. two or more qualifying VOCs that equal or exceed their respective MDLs, or
ii. one qualifying VOC that equals or exceeds its PQL.

c. *For Constituents of Concern*:

The Discharger shall conclude that a release is tentatively indicated if the data for any Monitoring Point contain either:

i. two or more qualifying constituents that equal or exceed their respective MDLs, or
ii. one qualifying constituent which exceeds its PQL.

## RESPONSE TO A RELEASE

### General

1. If the Discharger determines that there is significant **statistical evidence of a release** (i.e. the initial statistical comparison or non-statistical comparison indicates, for any Constituent of Concern or Monitoring Parameter, that a release is tentatively identified), the Discharger shall immediately notify the Board verbally as to the Monitoring Point(s) and constituent(s) or parameter(s) involved, shall provide written notification by certified mail within seven days of such determination [2550.80(1)], and shall carry out a **discrete retest** *(see below)*.

   If the retest confirms the existence of a release, the Discharger shall carry out the requirements of **3. below**. In any case, the Discharger shall inform the Board of the outcome of the retest as soon as the results are available, following up with written results submitted by certified mail within seven days of completing the retest.

2. If the Discharger determines that there is significant **physical evidence of a release**, the Discharger shall notify the Board of this fact by telephone within 24 hours and by certified mail within 7 days, and shall carry out the requirements of **3. below** for all potentially-affected monitored media.

3. If the Discharger concludes that a release has been discovered:

   a. If this conclusion is not based upon "direct monitoring" of the Constituents of Concern, then the Discharger shall, within thirty days, sample for all Constituents of Concern at all Monitoring Points in the affected medium for the waste management unit and submit

them for laboratory analysis. Within seven days of receiving the laboratory analytical results, the Discharger shall notify the Regional Board, by certified mail, of the concentration of all Constituents of Concern at each Monitoring Point in the affected medium. Because this scan is not to be statistically tested against background, only a single datum is required for each Constituent of Concern at each Monitoring Point [2550.8(k)(1)].

b. The Discharger shall, within 90 days of discovering the release, submit a Revised Report of Waste Discharge proposing an Evaluation Monitoring Program meeting the requirements of 2550.8(k)(5) and 2550.9 of Article 5, and, if Part 258 is applicable to the site, satisfying the requirements of 40 CFR 258.55 .

c. The Discharger shall, within 180 days of discovering the release, submit to the Board a preliminary engineering feasibility study meeting the requirements of 2550.8(k)(6) of Article 5.

**Discrete Retest**

In the event that the Discharger concludes that a release has been tentatively indicated (under the statistical or nonstatistical methods above), the Discharger shall, within 30 days of this indication, collect two new suites of samples for the indicated Constituent(s) of Concern or Monitoring Parameter(s) at each indicating Monitoring Point, collecting at least as many samples per suite as were used for the initial test. Resampling of the Background Monitoring Points is optional. Samples shall be analyzed using the same analytical methods which produced the original data which showed tentative evidence of a release. Sample data shall be analyzed using the same statistical procedure or non-statistical procedure which provided the tentative evidence of a release.

As soon as the data are available, the Discharger shall rerun the statistical method (or non-statistical comparison) separately upon each suite of retest data. For any indicated Monitoring Parameter or Constituent of Concern at an affected Monitoring Point, if the test results of either (or both) of the retest data suites confirm the original indication, the Discharger shall conclude that a release has been discovered.

All retests shall be carried out only for the Monitoring Point(s) for which a release is tentatively indicated, and only for the Constituents of Concern or Monitoring Parameters which triggered the indication there, as follows:

1. If an ANOVA method was used for the original data, the retest shall involve only a repeat of the multiple comparison procedure, carried out separately on each of the two new suites of samples taken from the indicating Monitoring Point;

2. If the Method of Proportions statistical test was used for the original data, the retest shall consist of a full repeat of the statistical test for the indicated constituent or parameter, performed separately on each of the new sample suites from the indicating Monitoring Point;

3. If the non-statistical method was used for the original data:

   a. Because the VOC Monitoring Parameters [$VOC_{water}$ or $VOC_{spg}$] each address, as a single parameter, an entire family of constituents which are likely to be present in any landfill release, the scope of the laboratory analysis for each retest sample shall include all VOCs detectable in that retest sample. Therefore, a confirming retest for either parameter shall have validated the original indication even if the suite of constituents in the confirming retest sample(s) differs from that in the sample which initiated the retest;

   b. Because all Constituents of Concern that are jointly addressed in the non-statistical testing remain as individual Constituents of Concern, the scope of the laboratory analysis for the nonstatistical retest samples shall be narrowed to involve only those constituents detected in the sample which initiated the retest.

**Response to Detection in Background of VOCs**
**(or any other constituent which is expected to be "zero" in background and thus not amenable to statistical analysis)**

1. Except as provided in 3. below, any time the laboratory analysis of a sample from a Background Monitoring Point, sampled for VOCs, shows either:

   (1) two or more VOCs at or above their respective MDL, or
   (2) one VOC at or above its respective PQL,
   then the Discharger shall:
   a. immediately notify the Board by phone,
   b. follow up with written notification by certified mail within seven days,
   c. obtain two new independent VOC samples from that Background Monitoring Point
   d. and send such samples for laboratory analysis of all detectable VOCs within thirty days.

2. If either or both the new samples validates the presence of VOC(s), using the above procedure, the Discharger shall:

   a. immediately notify the Regional Board about the VOC(s) verified to be present at that Background Monitoring Point, and follow up with written notification submitted by certified mail within seven days of validation; and

b. within 180 days of validation, submit a report—acceptable to the Executive Officer—which examines the possibility that the detected VOC(s) originated from the Unit and proposing appropriate changes to the monitoring program.

3. If the Executive Officer determines, after reviewing the report submitted under 2.b. above, that the VOC(s) detected originated from a source other than the WMU, the Executive Officer will make appropriate changes to the monitoring program.

4. If the Executive Officer determines, after reviewing the report submitted under 2.b. above, that the detected VOC(s) most likely originated from the WMU, the Discharger shall assume that a release has been detected and shall immediately begin carrying out the applicable General requirements for Response to a Release, above.

### Release beyond facility boundary

1. Any time the discharger concludes that a release from the waste management unit has proceeded beyond the facility boundary, the discharger shall so notify all persons who either own or reside upon the land that directly overlies any part of the plume (Affected Persons).

2. Initial notification to Affected Persons shall be accomplished within 14 days of making this conclusion and shall include a description of the discharger's current knowledge of the nature and extent of the release.

3. Subsequent to initial notification, the discharger shall provide updates to all Affected Persons, including any persons newly affected by a change in the boundary of the release, within 14 days of concluding there has been any material change in the nature or extent of the release.

4. Each time the discharger sends a notification to Affected Persons, the discharger shall provide the Board, within seven days of sending such notification, with both a copy of the notification and a current mailing list of Affected Persons.

## STANDARD CONDITIONS

### Supervision and Certification

1. All waste management units shall be **designed and constructed** under the direct supervision of a California registered civil engineer or a certified engineering geologist and shall be certified by that individual as meeting the prescriptive standards, or approved engineered alternative design, and performance goals of Chapter 15 prior to waste discharge.

2. All ground water monitoring and corrective action required for MSWLF units pursuant to 40 CFR Part 258 shall be implemented and certified, as appropriate, by a qualified ground water scientist as specified in 40 CFR 258.50(f).

3. Designs of waste management units shall include a **Construction Quality Assurance Plan**, which shall:

   a. be submitted for review and approval by the Board prior to construction;
   b. demonstrate that the waste management unit has been constructed according to the specifications and plans as approved by the Board; and
   c. provide quality control on the materials and construction practices used to construct the waste management unit and prevent the use of inferior products and/or materials which do not meet the approved design plans or specifications.

4. **Closure** of each waste management unit shall be performed under the direct supervision of a California registered civil engineer or California certified engineering geologist.

## Construction

1. Materials used to construct **liners** shall have appropriate physical and chemical properties to ensure containment of discharged wastes over the operating life, closure, and post-closure maintenance period of the waste management units.

2. Materials used to construct **leachate collection and removal systems** (LCRSs) shall have appropriate physical and chemical properties to ensure the required transmission of leachate over the life of the WMUs and the post-closure maintenance period.

3. Hydraulic conductivities determined through laboratory methods shall be confirmed by appropriate **field testing**, and the results shall be submitted to the Board prior to construction.

## Operations

1. The discharger shall maintain in **good working order** and operate as efficiently as possible any facility, control system, or monitoring device installed to achieve compliance with the waste discharge requirements.

2. For any **electrically** operated equipment at the site, the **failure** of which could cause loss of control or containment of waste materials, or violation of this Order, the discharger shall employ safeguards to prevent loss of control over wastes. Such safeguards may include alternate power sources, standby generators, retention capacity, operating procedures, or other means.

3. The fact that it would have been necessary to halt or reduce the permitted activity in Order to maintain compliance with this Order shall not be regarded as a defense for the discharger's violations of the Order.

4. The discharge shall remain within the designated disposal area at all times.

5. By the effective date of waste discharge requirements, the discharger shall have a plan for preventing and controlling **accidental discharges**, and for minimizing the effect of such events. This plan shall:

   a. Identify the possible sources of accidental loss or leakage of wastes from each waste storage, treatment, or disposal unit.
   b. Evaluate the effectiveness of present waste management units and operational procedures, and identify needed changes or contingency plans.
   c. Predict the effectiveness of the proposed changes in waste management facilities and procedures and provide an implementation schedule containing interim and final dates when changes will be implemented.

   The Board, after review of the plan, may establish conditions that it deems necessary to control leakage and minimize its effects.

6. Methane and other **landfill gases** shall be adequately vented, removed from landfill units, or otherwise controlled to prevent the danger of explosion, adverse health effects, nuisance conditions, or the impairment of beneficial uses of water due to migration through the vadose (unsaturated) zone.

7. During the rainy season a minimum one-foot thickness of low permeability **soil or alternative cover**, approved by the Board and by the California Integrated Waste Management Board, shall be maintained over all but the active disposal area of the landfill units. The active disposal area shall be confined to the smallest area practicable based on the anticipated quantity of waste discharge and other waste management facility operations.

8. Any direct-line discharge to a surface impoundment shall have fail-safe equipment or operating procedures to prevent overfilling.

9. Surface impoundments shall be designed, constructed and maintained to prevent scouring and/or erosion of the liners and other containment features at points of discharge to the impoundments and by wave action at the waterline.

10. Leachate removed from a surface impoundment LCRS shall be discharged to the impoundment from which it originated. Leachate removed from a landfill shall not be discharged to any landfill.

11. Solids which accumulate in a surface impoundment shall be periodically removed to maintain minimum freeboard requirements and to maintain sufficient capacity for landfill and surface impoundment leachate and for the discharge of wastes. Prior to removal of these solids, sufficient samples shall be taken for their characterization and classification pursuant to Article 2 of Chapter 15. The rationale for the sampling protocol used, the results of this sampling, and a rationale for classification of the solids shall be submitted to the Board for review. The solids may be discharged to the Class III landfill units only if the Board determines that they qualify for classification as "nonhazardous solid waste" or "inert waste."

12. Water used for facility maintenance shall be limited to the minimum amount necessary for dust control.

## Siting

1. Waste management units shall be designed, constructed, and operated to prevent inundation or washout due to floods with a 100-year return period.

   Class II surface impoundments and related containment structures shall be constructed and maintained to prevent, to the greatest extent possible, inundation, erosion, slope failure, washout, and overtopping under 1000-year, 24-hour precipitation conditions, and shall be designed to contain the 100-year wet season precipitation without using the required two feet of freeboard.

   Class III landfill units and related containment structures shall be constructed and maintained to prevent, to the greatest extent possible, ponding, infiltration, inundation, erosion, slope failure, washout, and overtopping under 100-year, 24-hour precipitation conditions.

2. Surface drainage from tributary areas and internal site drainage from surface or subsurface sources shall not contact or percolate through wastes, and shall either be contained on-site or be discharged in accordance with applicable storm water regulations.

## Closure

1. Closed WMUs shall be provided with at least two **permanent monuments**, installed by a licensed land surveyor or by a registered civil engineer authorized to perform land surveying, from which the location and elevation of all wastes, containment structures, and monitoring facilities can be determined throughout the post-closure maintenance period.

2. Areas with **slopes greater than ten percent**, surface drainage courses, and areas subject to erosion by wind or water shall be designed and constructed to prevent such erosion.

## Post-Closure

1. The post-closure maintenance period shall continue until the Board determines that remaining wastes in all WMUs will not threaten water quality.

2. The owner of the waste management facility shall have the continuing responsibility to assure protection of usable waters from discharged wastes and from gases and leachate generated by discharged waste during the active life, closure, and post-closure maintenance period of the WMUs and during subsequent use of the property for other purposes.

## DEFINITIONS

Unless otherwise stated, all terms are as defined in Chapter 2, Division 7, of the California Water Code (Section 13050 et.seq.), in Article 10, Chapter 15, Division 3, Title 23 of the California Code of Regulations (23 CCR 2600 et.seq.), and in Section 258.2, and elsewhere in Part 258, Title 40 of the Code of Federal Regulations.

The following additional definitions apply to the Order:

1. "**Affected Persons**" means all individuals who either own or occupy land outside the boundaries of the parcel upon which the landfill is located that has been or may be affected by the release of leachate or waste constituents (in gas or liquid phase) from an MSW landfill.

2. "**Background Monitoring Point**" means a device (e.g., well) or location (e.g., a specific point along a lakeshore), upgradient or sidegradient from the waste management unit, or as otherwise approved by the Executive Officer, where water quality samples are taken that are not affected by any release from the waste management unit and that are used as a basis of comparison against samples taken from downgradient Monitoring Points.

3. "**Composite liner**" means a liner that consists of two or more components, which include a Synthetic Liner in direct and uniform contact with an underlying layer of prepared, low-permeability soil such that the net permeability of the resulting combination is significantly less than would be expected by reference to the permeability of the individual components layers.

4. Unless otherwise specified, "**composite sample**" means a combination of individual samples either collected over a specified sampling period or collected over an area at one time (synoptically):
   a. at equal time intervals,
   b. at varying time intervals so that each sample represents an equal portion of the media to be sampled.

The duration of the sampling period shall be specified in the Monitoring and Reporting Program. The method of compositing shall be reported with the results.

5. "**Constituents of Concern (COC)**" means those constituents which are likely to be in the waste in the WMU or which are likely to be derived from waste constituents in the event of a release.

6. "**Daily maximum concentration**" means the highest measurement made on any single discrete sample or composite sample.

7. "**Existing Footprint**" means the portion of land covered by waste discharged to an MSWLF as of midnight on the day before the Federal Deadline. The term includes the area under the active face of the landfill as well as all portions of the landfill unit containing waste that is obscured from view by daily, intermediate, or permanent cover. The term includes only areas covered with waste that is discharged in a manner that is consistent either with past operating practices or with modifications thereof that ensure good management of the waste. The term has the same meaning as the area enclosed by the "waste boundaries of an existing MSWLF unit," as used in the definition of the federal term of art "lateral expansion" in 40 CFR 258.2.

8. "**Federal Deadline**" means the date listed in 40 CFR 258(j)—currently October 9, 1993—when the majority of the provisions in the federal MSW regulations become effective.

9. "**Federal MSW regulations**" means the regulations promulgated by the United States Environmental Protection Agency on October 9, 1991 (Title 40, Code of Federal Regulations, Parts 257 and 258).

10. "**Grab sample**" means a discrete sample collected in less than 15 minutes.

11. "**Matrix effect**" means any change in the method detection limit or practical quantitation limit for a given analyte as a result of the presence of other constituents - either of natural origin or introduced by humans as a result of a release or spill - that are present in the sample of water or soil-pore gas being analyzed.

12. "**Method detection limit (MDL)**" means the lowest constituent concentration associated with a 99% reliability of a "non-zero" analytical result. The MDL shall reflect the detection capabilities of the specific analytical procedure and equipment used by the laboratory. MDLs reported by the laboratory shall not simply be restated from USEPA analytical method manuals. In relatively interference-free water, laboratory-derived MDLs are expected to closely agree with published USEPA MDLs. If the lab suspects that, due to matrix or other effects, the detection limit for a particular analytical run differs significantly from the laboratory-derived MDL, the results should be flagged accordingly, along with an estimate of the detection limit achieved.

13. "**Monitoring Parameters**" means the short list of constituents and parameters used for the majority of monitoring activity at a given WMU. Monitoring for the short list of Monitoring Parameters constitutes "indirect monitoring," in that the results are used to indicate indirectly the success or failure of adequate containment for the longer list of Constituents of Concern.

14. "**Monitored Media**" means those water-, solid-, or gas-bearing media that are monitored pursuant to the Monitoring and Reporting Program. The Monitored Media may include:
    a. Ground water in the uppermost aquifer, in any other portion of the zone of saturation in which it would be reasonable to anticipate that waste constituents migrating from the WMU could be detected, and in any perched zones underlying the WMU,
    b. Any bodies of surface water that could be measurably affected by a release,
    c. Soil pore liquid beneath and/or adjacent to the WMU, and
    d. Soil pore gas beneath and/or adjacent to the Unit.

15. "**Monitoring Point**" means a device (e.g., well) or location (e.g., a specific point along a lakeshore), downgradient from the landfill and that is assigned in this Order, at which samples are collected for the purpose of detecting a release by comparison with samples collected at Background Monitoring Points.

16. "**Monthly average concentration**" means the arithmetic mean of measurements made during the month.

17. "**Monthly average discharge**" means the total discharge by volume during a calendar month divided by the number of days in the month that the facility was discharging (e.g. gallons per day, cubic feet per day).

    Where less than daily sampling is required by this Order, the monthly average shall be determined by the summation of all the measured discharges divided by the number of days during the month when the measurements were made.

18. "**MSWLF, or MSW landfill**" means a Class II or Class III landfill unit in this region that accepts, or has accepted, municipal solid wastes, and that is subject to regulation under either or both Chapter 15 and the federal MSW regulations.

19. "**Order**," as used throughout this document, means the Waste Discharge Requirements. The Monitoring and Reporting Program and Standard Provisions and Reporting Requirements are incorporated by reference into the Waste Discharge Requirements.

20. "**Practical quantitation limit (PQL)**" means the lowest constituent concentration at which a numerical concentration can be assigned with reasonable certainty that its value represents the constituent's actual concentration in the sample. Normally PQLs should be set equal to the concentration of the lowest standard used to calibrate the analytical procedure. The PQL

shall reflect the quantitation capabilities of the specific analytical procedure and equipment used by the laboratory. PQLs reported by the laboratory shall not simply be restated from U.S. EPA analytical method manuals. In relatively interference-free water, laboratory-derived PQLs are expected to closely agree with published U. S. EPA PQLs. If the lab suspects that, due to matrix or other effects, the quantitation limit for a particular analytical run differs significantly from the laboratory-derived PQL, the results should be flagged accordingly, along with an estimate of the quantitation limit achieved.

21. "**Reporting Period**" means the time interval during which samples are collected and analyzed, and the results then reported to the Board, to comply with a specified monitoring and reporting frequency. The maximum reporting period for analysis of all Constituents of Concern is five years; for Monitoring Parameters it is six months (generally, Spring/Summer = April 1 to September 30, and Fall/Winter = October 1 to March 31). The Reporting Period for the Annual Summary Report extends from April 1 of the previous year to March 31 of the current year. The due date for the submittal of any given report will be 15 days after the end of its Reporting Period, unless otherwise stated.

22. "**Receiving Waters**" refers to any surface or ground water which actually or potentially receives waste constituents, leachate, or surface or ground waters which come in contact with waste materials or contaminated soils.

23. "**Sample size**":

    a. For Monitoring Points, means the number of data points obtained from a given Monitoring Point during a given Reporting Period used for carrying out the statistical or non-statistical analysis of a given analyte during a given Reporting Period; or
    b. For Background Monitoring Points, means the number of new and existing data points collected under 2550.7(e)(11 and 12) from all applicable Background Monitoring Points in a given monitored medium—used to collectively represent the background concentration and variability of a given analyte in carrying out statistical or non-statistical analysis of that analyte during a given Reporting Period.

24. "**Standard Observations**" means:

    a. For Receiving Waters:

        i. Floating and suspended materials of waste origin: presence or absence, source, and size of affected area;
        ii. Discoloration and turbidity: description of color, source, and size of affected area;
        iii. Evidence of odors: presence or absence, characterization, source, and distance of travel from source;
        iv. Evidence of water uses: presence of water-associated wildlife;

v. Flow rate; and
vi. Weather conditions: wind direction and estimated velocity, total precipitation during recent days and on the day of observation;

b. Along the perimeter of the WMU:

i. Evidence of liquid leaving or entering the Unit, estimated size of affected area, and flow rate (show affected area on map);
ii. Evidence of odors: presence or absence, characterization, source, and distance of travel from source; and
iii. Evidence of erosion and/or of daylighted refuse.

c. For the WMU:

i. Evidence of ponded water at any point on the waste management facility (show affected area on map);
ii. Evidence of odors: presence or absence, characterization, source, and distance of travel from source; and
iii. Evidence of erosion and/or of daylighted refuse.

25. "**Standard Analysis and Measurements**" means:

a. Turbidity, in NTU;
b. Water elevation to the nearest 1/100th foot above mean sea level; and
c. Sampling and statistical/non-statistical analysis of the Monitoring Parameters.

26. "**Synthetic Liner**" means a layer of flexible, man-made material that is installed in accordance with the standard of the industry over an area of land prior to the discharge of waste there.

27. "**$VOC_{water}$**" (Volatile Organics Monitoring Parameter for Water) means the composite monitoring parameter encompassing all VOCs that are detectable in less than ten percent of applicable background samples from a monitored water-bearing medium (e.g., the unsaturated zone, the uppermost aquifer, a zone of perched ground water, or a surface water body). This parameter is analyzed via the non-statistical analytical method described elsewhere in this Order to identify a release to waters of the state of VOCs whose presence in background water is detected too infrequently to allow statistical analysis.

28. "**$VOC_{spg}$**" (Volatile Organics Monitoring Parameter for Soil Pore Gas) means Monitoring Parameters addressing all volatile organic constituents detectable in a sample of soil pore gas.

29. "**Volatile organic constituents (VOCs)**" means the suite of organic constituents having a high vapor pressure. The term includes at least the 47 organic constituents listed in Appendix I to 40 CFR Part 258.

# APPENDIX C

# TITLE V PERMIT FACILITY ID: C-283

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

# Permit to Operate

**FACILITY:** C-283 **EXPIRATION DATE:** 08/31/2022

**LEGAL OWNER OR OPERATOR:** CHEMICAL WASTE MANAGEMENT, INC
**MAILING ADDRESS:** PO BOX 471
KETTLEMAN CITY, CA 93239-0471

**FACILITY LOCATION:** 35251 OLD SKYLINE ROAD
KETTLEMAN CITY, CA 93239

**FACILITY DESCRIPTION:** WASTE DISPOSAL

The Facility's Permit to Operate may include Facility-wide Requirements as well as requirements that apply to specific permit units.

This Permit to Operate remains valid through the permit expiration date listed above, subject to payment of annual permit fees and compliance with permit conditions and all applicable local, state, and federal regulations. This permit is valid only at the location specified above, and becomes void upon any transfer of ownership or location. Any modification of the equipment or operation, as defined in District Rule 2201, will require prior District approval. This permit shall be posted as prescribed in District Rule 2010.

Seyed Sadredin
Executive Director / APCO

Arnaud Marjollet
Director of Permit Services

Jan 25 2018 1:36PM -- SRANK

# Detailed Facility Report

For Facility=283 and excluding Deleted Permits
Sorted by Facility Name and Permit Number



**CHEMICAL WASTE MANAGEMENT, INC**
**35251 OLD SKYLINE ROAD**
**KETTLEMAN CITY, CA 93239**

FAC # **C 283** STATUS: **A** TELEPHONE: **2093866151**
TYPE: **TitleV** TOXIC ID: **40029**
EXPIRE ON: **08/31/2022** AREA: **9 / 307** INSP. DATE: **08/18**

| PERMIT NUMBER | FEE DESCRIPTION | FEE RULE | QTY | FEE AMOUNT | FEE TOTAL | PERMIT STATUS | EQUIPMENT DESCRIPTION |
|---|---|---|---|---|---|---|---|
| C-283-8-7 | 499 total facility acres, per CUP | 999-99 | 1 | 0.00 | 0.00 | A | 306 HP CATERPILLAR MODEL 3306 DI DIESEL-FIRED EMERGENCY IC ENGINE POWERING AN ELECTRICAL GENERATOR (900791) |
| C-283-11-8 | 499 total facility acres, per CUP | 999-99 | 1 | 0.00 | 0.00 | A | HAZARDOUS WASTE LANDFILL (B-18), 15.6 (GROSS) MILLION CUBIC YARD CAPACITY, USED FOR DISPOSAL OF BULK SOLIDS OF EMPTY CONTAINERS, SOLIDS, AND CONTAMINATED SOIL, (67 ACRE) |
| C-283-14-4 | 499 total facility acres, per CUP | 999-99 | 1 | 0.00 | 0.00 | A | 4,400,000 GALLON EVAPORATION POND (P-9) FOR AQUEOUS WASTES |
| C-283-15-4 | 499 total facility acres, per CUP | 999-99 | 1 | 0.00 | 0.00 | A | 2,100,000 GALLON EVAPORATION POND (P-14) FOR AQUEOUS WASTES |
| C-283-17-4 | 499 total facility acres, per CUP | 999-99 | 1 | 0.00 | 0.00 | A | 3,900,000 GALLON EVAPORATION POND (P-16) FOR AQUEOUS WASTES |
| C-283-19-3 | 499 total facility acres, per CUP | 999-99 | 1 | 0.00 | 0.00 | A | WASTE STABILIZATION UNIT WITH FOUR 100 CUBIC YARD PROCESSING TANKS FOR MIXING WASTE AND REAGENT AND TWO REAGENT STORAGE SILOS |
| C-283-20-8 | 1 grade/npzzle | 3020-11 A | 1 | 38.00 | 38.00 | A | GASOLINE DISPENSING OPERATION WITH ONE 10,000 GALLON UNDERGROUND STORAGE TANK SERVED BY OPW PHASE I VAPOR RECOVERY SYSTEM (VR-102-A), AND 1 FUELING POINT WITH 1 GASOLINE DISPENSING NOZZLE SERVED BY HEALY EVR PHASE II VAPOR RECOVERY SYSTEM (NOT INCLUDING ISD) (VR-201-G) |
| C-283-22-18 | 499 total facility acres, per CUP | 3020-12 U | 499 | 109.00 | 11,186.00 | A | MUNICIPAL SOLID WASTE BIOREACTOR LANDFILL, CLASS II AND III (B-19), 4.2 MILLION CUBIC YARD CAPACITY (40.4 ACRES) WITH GAS COLLECTION AND CONTROL SYSTEM SERVED BY A 2,500 SCFM (EQUIVALENT TO 83.6 MMBTU/HR) PARNEL BIOGAS ENCLOSED FLARE SHARED WITH C-283-25 |
| C-283-24-3 | 499 total facility acres, per CUP | 999-99 | 1 | 0.00 | 0.00 | A | 4100 CUBIC FEET (30670 GAL) TRANSPORTABLE PNEUMATIC STORAGE SYSTEM ("GUPPY") FOR THE STORAGE AND DELIVERY OF REAGENTS SERVED BY FLEXKLEEN MODEL 84 BV-BS 16 II G PULSE JET BAGHOUSE COMMON TO C-283-19 |
| C-283-25-4 | 499 total facility acres, per CUP | 999-99 | 1 | 0.00 | 0.00 | A | MUNICIPAL SOLID WASTE LANDFILL, CLASS II AND III (B-17), 18.4 MILLION CUBIC YARD CAPACITY (62 ACRES) WITH GAS COLLECTION AND CONTROL SYSTEM SERVED BY A 2,500 SCFM (EQUIVALENT TO 83.6 MMBTU/HR) PARNEL BIOGAS ENCLOSED FLARE SHARED WITH C-283-22 |

Number of Facilities Reported: 1

# San Joaquin Valley
# Air Pollution Control District

**FACILITY:** C-283-0-3 **EXPIRATION DATE:** 08/31/2022

## FACILITY-WIDE REQUIREMENTS

1. The owner or operator shall notify the District of any breakdown condition as soon as reasonably possible, but no later than one hour after its detection, unless the owner or operator demonstrates to the District's satisfaction that the longer reporting period was necessary. [District Rule 1100, 6.1] Federally Enforceable Through Title V Permit
2. The District shall be notified in writing within ten days following the correction of any breakdown condition. The breakdown notification shall include a description of the equipment malfunction or failure, the date and cause of the initial failure, the estimated emissions in excess of those allowed, and the methods utilized to restore normal operations. [District Rule 1100, 7.0] Federally Enforceable Through Title V Permit
3. The owner or operator of any stationary source operation that emits more than 25 tons per year of nitrogen oxides or reactive organic compounds, shall provide the District annually with a written statement in such form and at such time as the District prescribes, showing actual emissions of nitrogen oxides and reactive organic compounds from that source. [District Rule 1160, 5.0] Federally Enforceable Through Title V Permit
4. Any person building, altering or replacing any operation, article, machine, equipment, or other contrivance, the use of which may cause the issuance of air contaminants or the use of which may eliminate, reduce, or control the issuance of air contaminants, shall first obtain an Authority to Construct (ATC) from the District unless exempted by District Rule 2020 (12/18/14). [District Rule 2010, 3.0 and 4.0; and 2020] Federally Enforceable Through Title V Permit
5. The permittee must comply with all conditions of the permit including permit revisions originated by the District. All terms and conditions of a permit that are required pursuant to the Clean Air Act (CAA), including provisions to limit potential to emit, are enforceable by the EPA and Citizens under the CAA. Any permit noncompliance constitutes a violation of the CAA and the District Rules and Regulations, and is grounds for enforcement action, for permit termination, revocation, reopening and reissuance, or modification; or for denial of a permit renewal application. [District Rules 2070, 7.0; 2080; and 2520, 9.8.1 and 9.13.1] Federally Enforceable Through Title V Permit
6. A Permit to Operate or an Authority to Construct shall not be transferred unless a new application is filed with and approved by the District. [District Rule 2031] Federally Enforceable Through Title V Permit
7. Every application for a permit required under Rule 2010 (12/17/92) shall be filed in a manner and form prescribed by the District. [District Rule 2040] Federally Enforceable Through Title V Permit
8. The operator shall maintain records of required monitoring that include: 1) the date, place, and time of sampling or measurement; 2) the date(s) analyses were performed; 3) the company or entity that performed the analysis; 4) the analytical techniques or methods used; 5) the results of such analysis; and 6) the operating conditions at the time of sampling or measurement. [District Rule 2520, 9.4.1] Federally Enforceable Through Title V Permit
9. The operator shall retain records of all required monitoring data and support information for a period of at least 5 years from the date of the monitoring sample, measurement, or report. Support information includes copies of all reports required by the permit and, for continuous monitoring instrumentation, all calibration and maintenance records and all original strip-chart recordings. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
10. The operator shall submit reports of any required monitoring at least every six months unless a different frequency is required by an applicable requirement. All instances of deviations from permit requirements must be clearly identified in such reports. [District Rule 2520, 9.5.1] Federally Enforceable Through Title V Permit

FACILITY-WIDE REQUIREMENTS CONTINUE ON NEXT PAGE

11. Deviations from permit conditions must be promptly reported, including deviations attributable to upset conditions, as defined in the permit. For the purpose of this condition, promptly means as soon as reasonably possible, but no later than 10 days after detection. The report shall include the probable cause of such deviations, and any corrective actions or preventive measures taken. All required reports must be certified by a responsible official consistent with section 10.0 of District Rule 2520 (6/21/01). [District Rules 2520, 9.5.2 and 1100, 7.0] Federally Enforceable Through Title V Permit

12. If for any reason a permit requirement or condition is being challenged for its constitutionality or validity by a court of competent jurisdiction, the outcome of such challenge shall not affect or invalidate the remainder of the conditions or requirements in that permit. [District Rule 2520, 9.7] Federally Enforceable Through Title V Permit

13. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit. [District Rule 2520, 9.8.2] Federally Enforceable Through Title V Permit

14. The permit may be modified, revoked, reopened and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition. [District Rule 2520, 9.8.3] Federally Enforceable Through Title V Permit

15. The permit does not convey any property rights of any sort, or any exclusive privilege. [District Rule 2520, 9.8.4] Federally Enforceable Through Title V Permit

16. The Permittee shall furnish to the District, within a reasonable time, any information that the District may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the District copies of records required to be kept by the permit or, for information claimed to be confidential, the permittee may furnish such records directly to EPA along with a claim of confidentiality. [District Rule 2520, 9.8.5] Federally Enforceable Through Title V Permit

17. The permittee shall pay annual permit fees and other applicable fees as prescribed in Regulation III of the District Rules and Regulations. [District Rule 2520, 9.9] Federally Enforceable Through Title V Permit

18. Upon presentation of appropriate credentials, a permittee shall allow an authorized representative of the District to enter the permittee's premises where a permitted source is located or emissions related activity is conducted, or where records must be kept under condition of the permit. [District Rule 2520, 9.13.2.1] Federally Enforceable Through Title V Permit

19. Upon presentation of appropriate credentials, a permittee shall allow an authorized representative of the District to have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit. [District Rule 2520, 9.13.2.2] Federally Enforceable Through Title V Permit

20. Upon presentation of appropriate credentials, a permittee shall allow an authorized representative of the District to inspect at reasonable times any facilities, equipment, practices, or operations regulated or required under the permit. [District Rule 2520, 9.13.2.3] Federally Enforceable Through Title V Permit

21. Upon presentation of appropriate credentials, a permittee shall allow an authorized representative of the District to sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with the permit or applicable requirements. [District Rule 2520, 9.13.2.4] Federally Enforceable Through Title V Permit

22. No air contaminants shall be discharged into the atmosphere for a period or periods aggregating more than 3 minutes in any one hour which is as dark or darker than Ringelmann #1 or equivalent to 20% opacity and greater, unless specifically exempted by District Rule 4101 (02/17/05). If the equipment or operation is subject to a more stringent visible emission standard as prescribed in a permit condition, the more stringent visible emission limit shall supersede this condition. [District Rule 4101] Federally Enforceable Through Title V Permit

23. No person shall manufacture, blend, repackage, supply, sell, solicit or apply any architectural coating with a VOC content in excess of the corresponding limit specified in Table of Standards 1 effective until 12/30/10 or Table of Standards 2 effective on and after 1/1/11 of District Rule 4601 (12/17/09) for use or sale within the District. [District Rule 4601, 5.1] Federally Enforceable Through Title V Permit

FACILITY-WIDE REQUIREMENTS CONTINUE ON NEXT PAGE

24. All VOC-containing materials subject to Rule 4601 (12/17/09) shall be stored in closed containers when not in use. [District Rule 4601, 5.4] Federally Enforceable Through Title V Permit

25. The permittee shall comply with all the Labeling and Test Methods requirements outlined in Rule 4601 sections 6.1 and 6.3 (12/17/09). [District Rule 4601, 6.1 and 6.3] Federally Enforceable Through Title V Permit

26. With each report or document submitted under a permit requirement or a request for information by the District or EPA, the permittee shall include a certification of truth, accuracy, and completeness by a responsible official. [District Rule 2520, 9.13.1 and 10.0] Federally Enforceable Through Title V Permit

27. If the permittee performs maintenance on, or services, repairs, or disposes of appliances, the permittee shall comply with the standards for Recycling and Emissions Reduction pursuant to 40 CFR Part 82, Subpart F. [40 CFR 82 Subpart F] Federally Enforceable Through Title V Permit

28. If the permittee performs service on motor vehicles when this service involves the ozone-depleting refrigerant in the motor vehicle air conditioner (MVAC), the permittee shall comply with the standards for Servicing of Motor Vehicle Air Conditioners pursuant to all the applicable requirements as specified in 40 CFR Part 82, Subpart B. [40 CFR Part 82, Subpart B] Federally Enforceable Through Title V Permit

29. Disturbances of soil related to any construction, demolition, excavation, extraction, or other earthmoving activities shall comply with the requirements for fugitive dust control in District Rule 8021 unless specifically exempted under Section 4.0 of Rule 8021 (8/19/2004) or Rule 8011 (8/19/2004). [District Rules 8011 and 8021] Federally Enforceable Through Title V Permit

30. Outdoor handling, storage and transport of any bulk material which emits dust shall comply with the requirements of District Rule 8031, unless specifically exempted under Section 4.0 of Rule 8031 (8/19/2004) or Rule 8011 (8/19/2004). [District Rules 8011 and 8031] Federally Enforceable Through Title V Permit

31. An owner/operator shall prevent or cleanup any carryout or trackout in accordance with the requirements of District Rule 8041 Section 5.0, unless specifically exempted under Section 4.0 of Rule 8041 (8/19/2004) or Rule 8011 (8/19/2004). [District Rules 8011 and 8041] Federally Enforceable Through Title V Permit

32. Whenever open areas are disturbed, or vehicles are used in open areas, the facility shall comply with the requirements of Section 5.0 of District Rule 8051, unless specifically exempted under Section 4.0 of Rule 8051 (8/19/2004) or Rule 8011 (8/19/2004). [District Rules 8011 and 8051] Federally Enforceable Through Title V Permit

33. Any paved road or unpaved road shall comply with the requirements of District Rule 8061 unless specifically exempted under Section 4.0 of Rule 8061 (8/19/2004) or Rule 8011 (8/19/2004). [District Rules 8011 and 8061] Federally Enforceable Through Title V Permit

34. Any unpaved vehicle/equipment area that anticipates more than 50 Average annual daily Trips (AADT) shall comply with the requirements of Section 5.1.1 of District Rule 8071. Any unpaved vehicle/equipment area that anticipates more than 150 vehicle trips per day (VDT) shall comply with the requirements of Section 5.1.2 of District Rule 8071. On each day that 25 or more VDT with 3 or more axles will occur on an unpaved vehicle/equipment traffic area, the owner/operator shall comply with the requirements of Section 5.1.3 of District Rule 8071. On each day when a special event will result in 1,000 or more vehicles that will travel/park on an unpaved area, the owner/operator shall comply with the requirements of Section 5.1.4 of District Rule 8071. All sources shall comply with the requirements of Section 5.0 of District Rule 8071 unless specifically exempted under Section 4.0 of Rule 8071 (9/16/2004) or Rule 8011 (8/19/2004). [District Rules 8011 and 8071] Federally Enforceable Through Title V Permit

35. Any owner or operator of a demolition or renovation activity, as defined in 40 CFR 61.141, shall comply with the applicable inspection, notification, removal, and disposal procedures for asbestos containing materials as specified in 40 CFR 61.145 (Standard for Demolition and Renovation). [40 CFR 61 Subpart M] Federally Enforceable Through Title V Permit

FACILITY-WIDE REQUIREMENTS CONTINUE ON NEXT PAGE

36. The permittee shall submit certifications of compliance with the terms and standards contained in Title V permits, including emission limits, standards and work practices, to the District and the EPA annually (or more frequently as specified in an applicable requirement or as specified by the District). The certification shall include the identification of each permit term or condition, the compliance status, whether compliance was continuous or intermittent, the methods used for determining the compliance status, and any other facts required by the District to determine the compliance status of the source. [District Rule 2520, 9.16] Federally Enforceable Through Title V Permit

37. The permittee shall submit an application for Title V permit renewal to the District at least six months, but not greater than 18 months, prior to the permit expiration date. [District Rule 2520, 5.2] Federally Enforceable Through Title V Permit

38. When a term is not defined in a Title V permit condition, the definition in the rule cited as the origin and authority for the condition in a Title V permits shall apply. [District Rule 2520, 9.1.1] Federally Enforceable Through Title V Permit

39. An owner or operator of a facility at which the total annual benzene quantity from facility waste is less than 10 megagrams per year (Mg/yr) shall be exempt from the requirements of 40 CFR 61.342(b) and (c). The total annual benzene quantity from facility waste is the sum of the annual benzene quantity for each waste stream at the facility that has a flow-weighted annual average water content greater than 10 percent or that is mixed with water, or other wastes, at any time and the mixture has an annual average water content greater than 10 percent. [40 CFR 61.342(a)] Federally Enforceable Through Title V Permit

40. Exemption to 40 CFR 61.342 will be determined by review of facility records and results from tests and inspections using methods and procedures specified in 40 CFR 61.355. [40 CFR 61.342(g)] Federally Enforceable Through Title V Permit

41. Facility records shall include all test results, measurements, calculations, and other documentation used to determine the following information for the waste stream: waste stream identification, water content, whether or not the waste stream is a process wastewater stream, annual waste quantity, range of benzene concentrations, annual average flow-weighted benzene concentration, and annual benzene quantity. [40 CFR 61.356] Federally Enforceable Through Title V Permit

42. Prior to accepting benzene waste in excess of 10 Mg/yr, facility shall apply for modification of this operating permit to satisfy the requirements of 40 CFR 61 Subpart FF. [District Rule 2520, 9.1] Federally Enforceable Through Title V Permit

43. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

44. When applicable to 40 CFR Part 68, a subject facility shall submit to the proper authority a Risk Management Plan when mandated by the regulation. [40 CFR Part 68] Federally Enforceable Through Title V Permit

45. The reporting periods for the Report of Required Monitoring and the Compliance Certification Report begin January 1 of every year, unless alternative dates are approved by the District Compliance Division. These reports are due within 30 days after the end of the reporting period. [District Rule 2520] Federally Enforceable Through Title V Permit

# San Joaquin Valley
# Air Pollution Control District

**PERMIT UNIT:** C-283-8-7 **EXPIRATION DATE:** 08/31/2022

**EQUIPMENT DESCRIPTION:**
306 HP CATERPILLAR MODEL 3306 DI DIESEL-FIRED EMERGENCY IC ENGINE POWERING AN ELECTRICAL GENERATOR (900791)

## PERMIT UNIT REQUIREMENTS

1. Sulfur compound emissions shall not exceed 0.2% by volume, 2000 ppmv, on a dry basis averaged over 15 consecutive minutes. [District Rule 4801] Federally Enforceable Through Title V Permit
2. Particulate matter emissions shall not exceed 0.1 gr/dscf in concentration at the point of discharge. [District Rule 4201] Federally Enforceable Through Title V Permit
3. The permittee shall document the use of CARB certified diesel fuel through the retention of fuel purchase records indicating that the only fuel purchased for supply to this engine was CARB certified diesel fuel. [District Rule 2520, 9.3.2 and 17 CCR 93115] Federally Enforceable Through Title V Permit
4. Emissions shall not exceed 10.4 g-NOx/hp-hr. [District Rule 2201] Federally Enforceable Through Title V Permit
5. This engine shall be operated only for maintenance, testing, and required regulatory purposes, and during emergency situations. Operation of the engine for maintenance, testing and required regulatory purposes shall not exceed 20 hours per year. [District Rules 2201 and 4702, 4.2.1, 17 CCR 93115 and 40 CFR 63 Subpart ZZZZ] Federally Enforceable Through Title V Permit
6. The permittee shall maintain monthly records of emergency and non-emergency operation. Records shall include the number of hours of emergency operation, the date and number of hours of all testing and maintenance operations, the purpose of the operation (for example: load testing, weekly testing, rolling blackout, general area power outage, etc.), and records of operational characteristics monitoring. For units with automated testing systems, the operator may, as an alternative to keeping records of actual operation for testing purposes, maintain a readily accessible written record of the automated testing schedule. [District Rules 4702, 5.7, 2520, 9.3.2, 17 CCR 93115, and 40 CFR 63 Subpart ZZZZ] Federally Enforceable Through Title V Permit
7. This engine shall be operated using only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight. [District Rule 4801 and 17 CCR 93115] Federally Enforceable Through Title V Permit
8. This engine shall be equipped with an operational non-resettable elapsed time meter or other APCO approved alternative. [District Rule 4702, CCR 93115, and 40 CFR 63 Subpart ZZZZ] Federally Enforceable Through Title V Permit
9. This engine shall be operated and maintained in proper operating condition as recommended by the engine manufacturer or emissions control system supplier. [District Rule 4702, 5.7.3 and 40 CFR 63 Subpart ZZZZ] Federally Enforceable Through Title V Permit
10. During periods of operation for maintenance, testing, and required regulatory purposes, the permittee shall monitor the operational characteristics of the engine as recommended by the manufacturer or emission control system supplier (for example: check engine fluid levels, battery, cables and connections; change engine oil and filters; replace engine coolant; and/or other operational characteristics as recommended by the manufacturer or supplier). [District Rule 4702] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

11. The permittee must minimize the engine's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes. [40 CFR 63 Subpart ZZZZ] Federally Enforceable Through Title V Permit
12. The engine's oil and filter shall be changed every 500 hours of operation or every 12 months, whichever comes first. [40 CFR 63 Subpart ZZZZ] Federally Enforceable Through Title V Permit
13. The engine's air filter shall be inspected every 1,000 hours of operation or every 12 months, whichever comes first, and replaced as necessary. [40 CFR 63 Subpart ZZZZ] Federally Enforceable Through Title V Permit
14. The engine's hoses and belts shall be inspected every 500 hours of operation or every 12 months, whichever comes first, and replaced as necessary. [40 CFR 63 Subpart ZZZZ] Federally Enforceable Through Title V Permit
15. The permittee has the option of utilizing an oil analysis program in order to extend the specified oil change requirement in Tables 2c and 2d of Subpart ZZZZ. The oil analysis must be performed at the same frequency specified for changing the oil in Table 2c or 2d to this subpart. The analysis program must at a minimum analyze the following three parameters: Total Base Number, viscosity, and percent water content. The condemning limits for these parameters are as follows: Total Base Number is less than 30 percent of the Total Base Number of the oil when new; viscosity of the oil has changed by more than 20 percent from the viscosity of the oil when new; or percent water content (by volume) is greater than 0.5. If all of these condemning limits are not exceeded, the engine owner or operator is not required to change the oil. If any of the limits are exceeded, the engine owner or operator must change the oil within 2 days of receiving the results of the analysis; if the engine is not in operation when the results of the analysis are received, the engine owner or operator must change the oil within 2 days or before commencing operation, whichever is later. The owner or operator must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine. [40 CFR 63 Subpart ZZZZ] Federally Enforceable Through Title V Permit
16. The permittee must maintain records of all required maintenance performed on the air pollution control and monitoring equipment. [40 CFR 63 Subpart ZZZZ] Federally Enforceable Through Title V Permit
17. The permittee shall maintain monthly records of the occurrence and duration of each malfunction of operation (i.e., process equipment) or the air pollution control and monitoring equipment. The permittee shall also maintain monthly records of action taken during periods of malfunction to minimize emissions, including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation. [40 CFR 63 Subpart ZZZZ] Federally Enforceable Through Title V Permit
18. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 4702, 6.2, 2520, 9.4.2, 17 CCR 93115, and 40 CFR 63 Subpart ZZZZ] Federally Enforceable Through Title V Permit

# San Joaquin Valley
# Air Pollution Control District

**PERMIT UNIT:** C-283-11-8 **EXPIRATION DATE:** 08/31/2022

**EQUIPMENT DESCRIPTION:**
HAZARDOUS WASTE LANDFILL (B-18), 15.6 (GROSS) MILLION CUBIC YARD CAPACITY, USED FOR DISPOSAL OF BULK SOLIDS OF EMPTY CONTAINERS, SOLIDS, AND CONTAMINATED SOIL, (67 ACRE)

## PERMIT UNIT REQUIREMENTS

1. The District shall be notified in writing 10 days prior to the acceptance of any new waste stream causing, or having the potential to cause, emissions of pollutants designated under the National Emissions Standards for Hazardous Air Pollutants which are not already addressed in this permit. [District Rule 2201] Federally Enforceable Through Title V Permit
2. The District shall be notified in writing 10 days prior to the acceptance of new types of waste streams, or waste streams with significant malodorous qualities. [District Rules 2201 and 4102] Federally Enforceable Through Title V Permit
3. A District approved anemometer shall be continuously operated on site with permanent data available to the District. [District Rule 2201] Federally Enforceable Through Title V Permit
4. Wastes with the potential to release hazardous gases, mists, or vapors in excess of existing air quality standards shall not be exposed to the atmosphere, and combustion of flammable wastes in the landfill shall be prevented. [District Rule 2080] Federally Enforceable Through Title V Permit
5. Vehicle speeds on all roads shall be limited to fifteen miles per hour. [District Rule 2201] Federally Enforceable Through Title V Permit
6. Materials handling operations associated with landfill construction and operation shall be curtailed when wind and moisture conditions make it likely that any resulting visible emissions will exceed 40% opacity at an elevation of 25 feet. [District Rule 2201] Federally Enforceable Through Title V Permit
7. Any malodorous material received at the B-18 Landfill which exhibits odors detectable at or beyond the facility property boundary shall be covered at the end of the working day with acceptable cover material. [District Rule 4102]
8. Truck operating areas, including roadways within the boundaries of landfill B-18, shall be watered to maintain moisture content such that the generation of dust is controlled. [District Rule 2201] Federally Enforceable Through Title V Permit
9. Each owner or operator shall comply with applicable paragraphs of section 40 CFR 61.154. [40 CFR 61.154] Federally Enforceable Through Title V Permit
10. For purposes of complying with conditions 11 through 15 below, applicable definitions are found from section 40 CFR 61.341. [40 CFR 61.341] Federally Enforceable Through Title V Permit
11. Each owner or operator shall comply with applicable paragraphs of section 40 CFR 61.342 (a), (f), and (g). Prior to accepting benzene waste in excess of 10 Mg/yr, facility shall apply for modification of this operating permit to satisfy the applicable requirements of 40 CFR 61.342 (b) through (e) and (h). [40 CFR 61.342] Federally Enforceable Through Title V Permit
12. Prior to accepting benzene waste in excess of 10 Mg/yr, facility shall apply for modification of this operating permit to satisfy the applicable sections of 40 CFR 61.343 through 61.354. [40 CFR 61.343 through 61.354] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

13. Each owner or operator shall comply with applicable paragraphs of section 40 CFR 61.355 (a), (b), and (c). Prior to accepting benzene waste in excess of 10 Mg/yr, facility shall apply for modification of this operating permit to satisfy the applicable requirements of 40 CFR 61.355 (d) through (k). [40 CFR 61.355] Federally Enforceable Through Title V Permit

14. Each owner or operator shall comply with applicable paragraphs of section 40 CFR 61.356 (a), (b) and (c). Prior to accepting benzene waste in excess of 10 Mg/yr, facility shall apply for modification of this operating permit to satisfy the applicable requirements of 40 CFR 61.356 (d) through (n). [40 CFR 61.356] Federally Enforceable Through Title V Permit

15. Each owner or operator shall comply with applicable paragraphs of section 40 CFR 61.357 (a), (b), and (c). Prior to accepting benzene waste in excess of 10 Mg/yr, facility shall apply for modification of this operating permit to satisfy the applicable requirements of 40 CFR 61.357 (d) through (g). [40 CFR 61.357] Federally Enforceable Through Title V Permit

16. With the exception of non-exposed waste (such as containers, drums, macrovaults, transformers, other large objects, etc.), the open face area shall be covered with a minimum of one inch of clean soil, or other alternative daily cover material, or soils permitted for use as daily cover, before the end of each working day. [District Rule 2201] Federally Enforceable Through Title V Permit

17. Records of the type of daily cover material used, along with testing results for alternative daily cover materials, such as Class II soils, shall be maintained onsite. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

18. No more than 7,200 cubic yards per day of waste shall be received for placement into landfill B-18. [District Rule 2201] Federally Enforceable Through Title V Permit

19. No more than 1,800 cubic yards per day of daily cover shall be received for placement onto landfill B-18. [District Rule 2201] Federally Enforceable Through Title V Permit

20. Daily weighted average VOC content of non-containerized landfilled waste shall not exceed any of the following: 10,000 ppmw for the active face or 1,834 ppmw for the landfill (combined active face plus inactive area). [District Rule 2201] Federally Enforceable Through Title V Permit

21. Annual weighted average VOC content of non-containerized landfilled waste shall not exceed 1,834 ppmw for the active face or inactive area. [District Rule 2201] Federally Enforceable Through Title V Permit

22. VOC content of non-containerized landfilled waste shall be determined according to the procedures described in the document entitled "Determination of VOC Content for Bulk Direct Landfilled Waste Destined for Landfill B-18, SDP Number ET-400". [District Rule 2201] Federally Enforceable Through Title V Permit

23. Permittee shall maintain daily records of the weight of wastes, the corresponding ppmw VOC in waste, lab and method used to analyze the sample(s). The VOC content of the waste shall be determined using a combination of generator knowledge and the procedures described in the document entitled "Determination of VOC Content for Bulk Direct Landfilled Waste Destined for Landfill B-18, SDP Number ET-400". Permittee shall also compute and record the daily and annual weighted-average VOC content of non-containerized wastes. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

24. Before the end of each day, the daily weighted-average VOC content for wastes landfilled shall be determined by dividing the sum of all the individual loads VOC's (summation of ppmw x tons) placed in the landfill by the tons of waste placed into the landfill. The VOC content may be determined using the generator analysis and the amount of the materials added to the landfill. [District Rule 2201] Federally Enforceable Through Title V Permit

25. Total PM10 emissions from handling of solid waste and daily cover shall not exceed 0.000453 pounds per ton material handled. [District Rule 2201] Federally Enforceable Through Title V Permit

26. The active open face area, defined as the area where exposed waste is being worked, shall not exceed 0.64 acres in size. [District Rule 2201] Federally Enforceable Through Title V Permit

27. Soil with VOC content of 50 ppm by weight or greater shall not be used as daily cover. [District Rule 4651] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

28. Soil or other alternative daily cover material that registers 50 ppm by volume or greater when measured as hexane at a distance of three (3) inches above the surface of the soil shall not be used as daily cover. [District Rule 4651] Federally Enforceable Through Title V Permit

29. Contaminated wastes containing organic constituents, with the potential to be used for daily cover, shall be analyzed for VOC content using District approved Organic Vapor Analyzer (OVA) at a distance 3 inches above the surface. These waste materials shall be analyzed at the facility receiving area prior to being transported to the landfill for direct waste disposal or stockpiled and/or used as alternative daily cover. [District Rule 2201] Federally Enforceable Through Title V Permit

30. An OVA reading shall be taken for a minimum of 10 seconds and the highest reading in this 10 second period shall be recorded. [District Rule 2201] Federally Enforceable Through Title V Permit

31. Permittee shall maintain daily records of the volume of wastes received for placement into landfill B-18 and daily records of the volume of daily cover used for placement onto landfill B-18. [District Rule 1070] Federally Enforceable Through Title V Permit

32. Permittee shall maintain records of all OVA readings for waste materials that were considered for use as daily cover. [District Rule 1070] Federally Enforceable Through Title V Permit

33. Permittee shall maintain daily records of size of active open face area. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

34. All records shall be maintained and retained on-site for a period of at least 5 years and shall be made available for District inspection upon request. [District Rule 1070] Federally Enforceable Through Title V Permit

# San Joaquin Valley
# Air Pollution Control District

**PERMIT UNIT:** C-283-14-4 **EXPIRATION DATE:** 08/31/2022

**EQUIPMENT DESCRIPTION:**
4,400,000 GALLON EVAPORATION POND (P-9) FOR AQUEOUS WASTES

## PERMIT UNIT REQUIREMENTS

1. Before placing off-site material in the pond, permittee must determine that the average VOHAP concentration of the off-site material is less than 500 parts per million by weight (ppmw) at the point-of-delivery. Permittee must perform an initial determination of the average VOHAP concentration of the off-site material using the procedures specified in 40 CFR 63.694(b). This initial determination must be performed before the first time any portion of the off-site material stream is placed in the pond. Thereafter, the owner or operator must review and update, as necessary, this determination at least once every calendar year following the date of the initial determination for the off-site material stream. [40 CFR 63.683(b)(1)(iii)] Federally Enforceable Through Title V Permit
2. Documentation shall be prepared that presents the information used as the basis for permittee's knowledge of the off-site material stream's average VOHAP concentration. Examples of information that may be used as the basis for knowledge include: material balances for the source or process generating the off-site material stream; species-specific chemical test data for the off-site material stream from previous testing that are still applicable to the current off-site material stream; previous test data for other locations managing the same type of off-site material stream; or other knowledge based on information in documents such as manifests, shipping papers, or waste certification notices. [40 CFR 63.694(b)(3)(i)] Federally Enforceable Through Title V Permit
3. If test data are used as the basis for knowledge, then permittee shall document the test method, sampling protocol, and the means by which sampling variability and analytical variability are accounted for in the determination of the average VOHAP concentration. For example, a permittee may use HAP concentration test data for the off-site material stream that are validated in accordance with EPA Method 301 as the basis for knowledge of the off-site material. [40 CFR 63.694(b)(3)(ii)] Federally Enforceable Through Title V Permit
4. A permittee using species-specific chemical concentration test data as the basis for knowledge of the off-site material may adjust the test data to the corresponding average VOHAP concentration value which would be obtained had the off-site material samples been analyzed using EPA Method 305. To adjust these data, the measured concentration for each individual HAP chemical species contained in the off-site material is multiplied by the appropriate species-specific adjustment factor (fm305) listed in Table 1 to Subpart DD. [40 CFR 63.694(b)(3)(iii)] Federally Enforceable Through Title V Permit
5. In the event that the Administrator and the permittee disagree on a determination of the average VOHAP concentration for an off-site material stream using knowledge, then the results from a determination of VOHAP concentration using direct measurement as specified in 40 CFR 63.694(b)(2) shall be used to establish compliance with the applicable requirements of this subpart. The Administrator may perform or request that the permittee perform this determination using direct measurement. [40 CFR 63.694(b)(3)(iv)] Federally Enforceable Through Title V Permit
6. The District shall be notified in writing 10 days prior to the acceptance of any new waste stream causing, or having the potential to cause, emissions of pollutants designated under the National Emissions Standards for Hazardous Air Pollutants which are not already addressed in this permit. [District Rule 2201] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

7. The District shall be notified 10 working days prior to the acceptance of new types of waste streams, or of new waste streams with potentially significant malodorous qualities. [District Rules 2201 and 4102] Federally Enforceable Through Title V Permit

8. A District-approved anemometer shall operate continuously on site with permanent data available to the District. [District Rule 2201] Federally Enforceable Through Title V Permit

9. Hazardous wastes capable of releasing hazardous gases, mists, or vapors in excess of existing air quality standards shall not be exposed to the atmosphere. [District Rule 2080] Federally Enforceable Through Title V Permit

# San Joaquin Valley
# Air Pollution Control District

**PERMIT UNIT:** C-283-15-4 **EXPIRATION DATE:** 08/31/2022

**EQUIPMENT DESCRIPTION:**
2,100,000 GALLON EVAPORATION POND (P-14) FOR AQUEOUS WASTES

## PERMIT UNIT REQUIREMENTS

1. Before placing off-site material in the pond, permittee must determine that the average VOHAP concentration of the off-site material is less than 500 parts per million by weight (ppmw) at the point-of-delivery. Permittee must perform an initial determination of the average VOHAP concentration of the off-site material using the procedures specified in 40 CFR 63.694(b). This initial determination must be performed before the first time any portion of the off-site material stream is placed in the pond. Thereafter, the owner or operator must review and update, as necessary, this determination at least once every calendar year following the date of the initial determination for the off-site material stream. [40 CFR 63.683(b)(1)(iii)] Federally Enforceable Through Title V Permit
2. Documentation shall be prepared that presents the information used as the basis for permittee's knowledge of the off-site material stream's average VOHAP concentration. Examples of information that may be used as the basis for knowledge include: material balances for the source or process generating the off-site material stream; species-specific chemical test data for the off-site material stream from previous testing that are still applicable to the current off-site material stream; previous test data for other locations managing the same type of off-site material stream; or other knowledge based on information in documents such as manifests, shipping papers, or waste certification notices. [40 CFR 63.694(b)(3)(i)] Federally Enforceable Through Title V Permit
3. If test data are used as the basis for knowledge, then permittee shall document the test method, sampling protocol, and the means by which sampling variability and analytical variability are accounted for in the determination of the average VOHAP concentration. For example, a permittee may use HAP concentration test data for the off-site material stream that are validated in accordance with EPA Method 301 as the basis for knowledge of the off-site material. [40 CFR 63.694(b)(3)(ii)] Federally Enforceable Through Title V Permit
4. A permittee using species-specific chemical concentration test data as the basis for knowledge of the off-site material may adjust the test data to the corresponding average VOHAP concentration value which would be obtained had the off-site material samples been analyzed using EPA Method 305. To adjust these data, the measured concentration for each individual HAP chemical species contained in the off-site material is multiplied by the appropriate species-specific adjustment factor (fm305) listed in Table 1 to Subpart DD. [40 CFR 63.694(b)(3)(iii)] Federally Enforceable Through Title V Permit
5. In the event that the Administrator and the permittee disagree on a determination of the average VOHAP concentration for an off-site material stream using knowledge, then the results from a determination of VOHAP concentration using direct measurement as specified in 40 CFR 63.694(b)(2) shall be used to establish compliance with the applicable requirements of this subpart. The Administrator may perform or request that the permittee perform this determination using direct measurement. [40 CFR 63.694(b)(3)(iv)] Federally Enforceable Through Title V Permit
6. The District shall be notified in writing 10 days prior to the acceptance of any new waste stream causing, or having the potential to cause, emissions of pollutants designated under the National Emissions Standards for Hazardous Air Pollutants which are not already addressed in this permit. [District Rule 2201] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

7. The District shall be notified 10 working days prior to the acceptance of new types of waste streams, or of new waste streams with potentially significant malodorous qualities. [District Rules 2201 and 4102] Federally Enforceable Through Title V Permit
8. A District-approved anemometer shall operate continuously on site with permanent data available to the District. [District Rule 2201] Federally Enforceable Through Title V Permit
9. Hazardous wastes capable of releasing hazardous gases, mists, or vapors in excess of existing air quality standards shall not be exposed to the atmosphere. [District Rule 2080] Federally Enforceable Through Title V Permit

# San Joaquin Valley
# Air Pollution Control District

**PERMIT UNIT:** C-283-17-4 **EXPIRATION DATE:** 08/31/2022

**EQUIPMENT DESCRIPTION:**
3,900,000 GALLON EVAPORATION POND (P-16) FOR AQUEOUS WASTES

## PERMIT UNIT REQUIREMENTS

1. Before placing off-site material in the pond, permittee must determine that the average VOHAP concentration of the off-site material is less than 500 parts per million by weight (ppmw) at the point-of-delivery. Permittee must perform an initial determination of the average VOHAP concentration of the off-site material using the procedures specified in 40 CFR 63.694(b). This initial determination must be performed before the first time any portion of the off-site material stream is placed in the pond. Thereafter, the owner or operator must review and update, as necessary, this determination at least once every calendar year following the date of the initial determination for the off-site material stream. [40 CFR 63.683(b)(1)(iii)] Federally Enforceable Through Title V Permit
2. Documentation shall be prepared that presents the information used as the basis for permittee's knowledge of the off-site material stream's average VOHAP concentration. Examples of information that may be used as the basis for knowledge include: material balances for the source or process generating the off-site material stream; species-specific chemical test data for the off-site material stream from previous testing that are still applicable to the current off-site material stream; previous test data for other locations managing the same type of off-site material stream; or other knowledge based on information in documents such as manifests, shipping papers, or waste certification notices. [40 CFR 63.694(b)(3)(i)] Federally Enforceable Through Title V Permit
3. If test data are used as the basis for knowledge, then permittee shall document the test method, sampling protocol, and the means by which sampling variability and analytical variability are accounted for in the determination of the average VOHAP concentration. For example, a permittee may use HAP concentration test data for the off-site material stream that are validated in accordance with EPA Method 301 as the basis for knowledge of the off-site material. [40 CFR 63.694(b)(3)(ii)] Federally Enforceable Through Title V Permit
4. A permittee using species-specific chemical concentration test data as the basis for knowledge of the off-site material may adjust the test data to the corresponding average VOHAP concentration value which would be obtained had the off-site material samples been analyzed using EPA Method 305. To adjust these data, the measured concentration for each individual HAP chemical species contained in the off-site material is multiplied by the appropriate species-specific adjustment factor (fm305) listed in Table 1 to Subpart DD. [40 CFR 63.694(b)(3)(iii)] Federally Enforceable Through Title V Permit
5. In the event that the Administrator and the permittee disagree on a determination of the average VOHAP concentration for an off-site material stream using knowledge, then the results from a determination of VOHAP concentration using direct measurement as specified in 40 CFR 63.694(b)(2) shall be used to establish compliance with the applicable requirements of this subpart. The Administrator may perform or request that the permittee perform this determination using direct measurement. [40 CFR 63.694(b)(3)(iv)] Federally Enforceable Through Title V Permit
6. The District shall be notified in writing 10 days prior to the acceptance of any new waste stream causing, or having the potential to cause, emissions of pollutants designated under the National Emissions Standards for Hazardous Air Pollutants which are not already addressed in this permit. [District Rule 2201] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

7. The District shall be notified 10 working days prior to the acceptance of new types of waste streams, or of new waste streams with potentially significant malodorous qualities. [District Rules 2201 and 4102] Federally Enforceable Through Title V Permit

8. A District-approved anemometer shall operate continuously on site with permanent data available to the District. [District Rule 2201] Federally Enforceable Through Title V Permit

9. Hazardous wastes capable of releasing hazardous gases, mists, or vapors in excess of existing air quality standards shall not be exposed to the atmosphere. [District Rule 2080] Federally Enforceable Through Title V Permit

# San Joaquin Valley
# Air Pollution Control District

this doesn't match what they asked for

**PERMIT UNIT:** C-283-19-3 **EXPIRATION DATE:** 08/31/2022

**EQUIPMENT DESCRIPTION:**
WASTE STABILIZATION UNIT WITH FOUR 100 CUBIC YARD PROCESSING TANKS FOR MIXING WASTE AND REAGENT AND TWO REAGENT STORAGE SILOS

## PERMIT UNIT REQUIREMENTS

1. This stabilization unit is exempted from the requirements of 40CFR63 Subpart DD because the waste material meets the specifications of 40CFR63.683(b)(2)(iv)(A). The owner or operator must review and update, as necessary, this determination at least once every calendar year following the date of the initial determination for the off-site material stream. [40 CFR 63.683(b)(2)(iv)] Federally Enforceable Through Title V Permit
2. Documentation shall be maintained of the off-site material stream's average VOHAP concentration. Examples of information that may be used as the basis for knowledge include: material balances for the source or process generating the off-site material stream; species-specific chemical test data for the off-site material stream from previous testing that are still applicable to the current off-site material stream; previous test data for other locations managing the same type of off-site material stream; or other knowledge based on information in documents such as manifests, shipping papers, or waste certification notices. [40 CFR 63.694(b)(3)(i)] Federally Enforceable Through Title V Permit
3. Emissions from reagent silos shall be controlled by two Flexkleen model 84 BV-BS 16 II G pulse jet baghouses, S/N W33633 A & B, with one shared with C-283-24. [District Rule 2201] Federally Enforceable Through Title V Permit
4. Unit shall incorporate a dust control system with a Mikropulsaire model 7003-10-20-TRH "C" baghouse, S/N 890339-H1. Process air shall be supplied by a Chicago size 60 model 10B fan, driven by a 200 HP motor. [District Rule 2201] Federally Enforceable Through Title V Permit
5. Odorous liquids or sludge shall be treated and transferred to a landfill only during daylight hours. [District Rule 2201] Federally Enforceable Through Title V Permit
6. Permittee shall maintain records of the materials processed at the waste stabilization site. [District Rule 2201] Federally Enforceable Through Title V Permit
7. Material removed from dust collector(s) shall be disposed of in a manner preventing entrainment into the atmosphere. [District Rule 2080] Federally Enforceable Through Title V Permit
8. Particulate matter emissions shall not exceed 0.1 gr/dscf in concentration at the point of discharge. [District Rule 4201] Federally Enforceable Through Title V Permit
9. Particulate matter emissions shall not exceed the hourly rate as calculated in District Rule 4202 using the equation E= 3.59 x P^0.62; P is less than or equal to 30 tons per hour, or E = 17.31 x P^0.16; P is greater than 30 tons per hour. [District Rule 4202] Federally Enforceable Through Title V Permit
10. Permittee shall perform a complete inspection of the baghouses and its components on an annual basis. Filters shall be inspected thoroughly for tears, scuffs, abrasions, holes, or any evidence of particulate matter breakthrough and shall be replaced as needed. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

11. Visible emissions shall be inspected quarterly during operation. If visible emissions are observed, corrective action shall be taken to eliminate visible emissions. If visible emissions cannot be corrected within 24 hours, a visible emissions test using EPA Method 9 shall be conducted. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

12. The Mikropulsaire model 7003-10-20-TRH "C" baghouse shall be equipped with a pressure differential gauge to indicate the pressure drop across the bags. The gauge shall be maintained in good working condition at all times and shall be located in an easily accessible location. [40 CFR Part 64] Federally Enforceable Through Title V Permit

13. The Mikropulsaire model 7003-10-20-TRH "C" baghouse shall operate at all times with a minimum differential pressure of 3.5 inches water column and a maximum differential pressure of 8 inches water column. During each day of operation, the permittee shall record the differential pressure of the baghouse and compare the readings with the permitted range. If the baghouse's differential pressure falls outside the permitted range, the permittee shall take all necessary steps to return the baghouse's differential pressure to within the permitted range as soon as possible, but no longer than three hours after detection. If the differential pressure cannot be returned within the permitted range after three hours of operation following detection, the permittee shall shut the operation down and make all necessary repairs to bring the differential pressure back to within the permitted range. [40 CFR Part 64] Federally Enforceable Through Title V Permit

14. For the Mikropulsaire model 7003-10-20-TRH "C", the permittee shall comply with the compliance assurance monitoring operation and maintenance requirements of 40 CFR part 64.7. [40 CFR Part 64] Federally Enforceable Through Title V Permit

15. For the Mikropulsaire model 7003-10-20-TRH "C", the permittee shall comply with the recordkeeping and reporting requirements of 40 CFR part 64.9. [40 CFR Part 64] Federally Enforceable Through Title V Permit

16. If the District or EPA determine that a Quality improvement Plan is required under 40 CFR 64.7(d)(2) for the Mikropulsaire model 7003-10-20-TRH "C", the permittee shall develop and implement the Quality Improvement Plan in accordance with 40 CFR part 64.8. [40 CFR Part 64] Federally Enforceable Through Title V Permit

17. Records of dust collector maintenance, inspections, and repair shall be maintained. The records shall include identification of the equipment, date of inspection, corrective action taken, and identification of the individual performing the inspection. [District Rule 2520, 9.3.2 and 40 CFR 64] Federally Enforceable Through Title V Permit

# San Joaquin Valley
# Air Pollution Control District

**PERMIT UNIT:** C-283-20-8 **EXPIRATION DATE:** 08/31/2022

**EQUIPMENT DESCRIPTION:**
GASOLINE DISPENSING OPERATION WITH ONE 10,000 GALLON UNDERGROUND STORAGE TANK SERVED BY OPW PHASE I VAPOR RECOVERY SYSTEM (VR-102-A), AND 1 FUELING POINT WITH 1 GASOLINE DISPENSING NOZZLE SERVED BY HEALY EVR PHASE II VAPOR RECOVERY SYSTEM (NOT INCLUDING ISD) (VR-201-G)

## PERMIT UNIT REQUIREMENTS

1. The Phase I and Phase II vapor recovery systems shall be installed and maintained in accordance with the manufacturer specifications and the ARB Executive Orders specified in this permit, including applicable rules and regulations of the Division of Measurement Standards of the Department of Food and Agriculture, the Office of the State Fire Marshal of the Department of Forestry and Fire Protection, the Division of Occupational Safety and Health of the Department of Industrial Relations, and the Division of Water Quality of the State Water Resources Control Board that have been made conditions of the certification. [District Rules 4621 and 4622] Federally Enforceable Through Title V Permit
2. This gasoline storage and dispensing equipment shall not be used in retail sales, where gasoline dispensed by the unit is subject to payment of California sales tax on gasoline sales. [District Rule 4622] Federally Enforceable Through Title V Permit
3. The Phase I and Phase II vapor recovery systems and gasoline dispensing equipment shall be maintained without leaks as determined in accordance with the test method specified in this permit. [District Rules 4621 and 4622] Federally Enforceable Through Title V Permit
4. A leak is defined as the dripping of VOC-containing liquid at a rate of more than three (3) drops per minute, or the detection of any gaseous or vapor emissions with a concentration or total organic compound greater than 10,000 ppmv, as methane, above background when measured in accordance with EPA Test Method 21. [District Rules 4621 and 4622] Federally Enforceable Through Title V Permit
5. No gasoline delivery vessel shall be operated or be allowed to operate unless valid State of California decals are displayed on the cargo container, which attest to the vapor integrity of the container. [District Rule 4621] Federally Enforceable Through Title V Permit
6. The permittee shall store or dispose of gasoline in closed, non-leaking containers. The containers shall remain closed at all times except when depositing or removing the contents of the containers or when the container is empty. [District Rule 4621] Federally Enforceable Through Title V Permit
7. No person shall operate any ARB certified Phase II vapor recovery system or any portion thereof that has a major defect or an equipment defect that is identified in any applicable ARB Executive Order until the following conditions have been met: 1) the defect has been repaired, replaced, or adjusted as necessary to correct the defect; 2) the District has been notified, and the District has reinspected the system or authorized the system for use (such authorization shall not include the authority to operate the equipment prior to the correction of the defective components); and 3) all major defects, after repair, are duly entered into the Operations and Maintenance (O&M) manual. [District Rule 4622] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

8. Upon identification of any major defects, the permittee shall tag "Out-of-Order" all dispensing equipment for which vapor recovery has been impaired. Tagged equipment shall be rendered inoperable and the tag(s) shall not be removed until the defective equipment has been repaired, replaced, or adjusted, as necessary. In the case of defects identified by the District, tagged equipment shall be rendered inoperable, and the tag shall not be removed until the District has been notified of the repairs, and the District has either reinspected the system or authorized the tagged equipment for use. [District Rule 4622] Federally Enforceable Through Title V Permit

9. The permittee shall implement a periodic maintenance inspection program for the certified Phase II vapor recovery system consistent with the requirements of this permit. The program shall be documented in an operation and maintenance (O&M) manual and shall at a minimum contain the following information: 1) copies of all vapor recovery performance tests; 2) all applicable ARB Executive Orders, Approval Letters, and District Permits; 3) the manufacturer's specifications and instructions for installation, operation, repair, and maintenance required pursuant to ARB Certification Procedure CP-201, and any additional instruction provided by the manufacturer; 4) system and/or component testing requirements, including test schedules and passing criteria for each of the standard tests required by this permit (the owner/operator may include any non-ARB required diagnostic and other tests as part of the testing requirements), and 5) additional O&M instructions, if any, that are designed to ensure compliance with the applicable rules, regulations, ARB Executive Orders, and District permit conditions, including replacement schedules for failure or wear prone components. [District Rule 4622] Federally Enforceable Through Title V Permit

10. The permittee shall conduct periodic maintenance inspections based on the greatest monthly throughput of gasoline dispensed by the facility in the previous year as follows: A) less than 2,500 gallons - one day per month; B) 2,500 to less than 25,000 gallons - one day per week; or C) 25,000 gallons or greater - five days per week. All inspections shall be documented within the O & M Manual. [District Rules 4621 and 4622] Federally Enforceable Through Title V Permit

11. Periodic maintenance inspections of the Phase I vapor recovery system shall include, at a minimum, verification that 1) the fill caps and vapor caps are not missing, damaged, or loose; 2) the fill cap gasket and vapor cap gaskets are not missing or damaged; 3) the fill adapter and vapor adapter are securely attached to the risers; 4) where applicable, the spring-loaded submerged fill tube seals properly against the coaxial tubing; 5) the dry break (poppet-valve) is not missing or damaged; and 6) the submerged fill tube is not missing or damaged. [District Rule 4621] Federally Enforceable Through Title V Permit

12. Periodic maintenance inspections of the Phase II vapor recovery system shall include, at a minimum, verification that 1) the fueling instructions required by this permit are clearly displayed with the appropriate toll-free complaint phone number and toxic warning signs; 2) the following nozzle components are in place and in good condition as specified in ARB Executive Order as applicable: faceplate/facecone, bellows, latching device spring, vapor check valve, spout (proper diameter/vapor collection holes), insertion interlock mechanism, automatic shut-off mechanism, and hold open latch (unless prohibited by law or the local fire control authority); 3) the hoses are not torn, flattened or crimped; 4) the vapor path of the coaxial hoses associated with bellows equipped nozzles does not contain more than 100 ml of liquid if applicable; and 5) the vapor processing unit is functioning properly, for operations that are required to have or possess such a unit. [District Rule 4622] Federally Enforceable Through Title V Permit

13. In the event of a separation due to a drive off, the permittee shall, unless otherwise specified in the applicable ARB Executive Order, conduct a visual inspection of the affected equipment and either 1) perform qualified repairs on any damaged components and conduct applicable re-verification tests pursuant to the requirements of this permit, or 2) replace the affected nozzles, coaxial hoses, breakaway couplings, and any other damaged components with new or certified rebuilt components that are ARB certified. The activities shall be documented in accordance with the requirements of this permit before placing the affected equipment back in service. [District Rule 4622] Federally Enforceable Through Title V Permit

14. The gasoline throughput for this permit unit shall not exceed 600,000 gallons in any one calendar year. [District Rule 2201] Federally Enforceable Through Title V Permit

15. The permittee shall conduct all periodic vapor recovery system performance tests specified in this permit, no more than 30 days before or after the required compliance testing date, unless otherwise required under the applicable ARB Executive Order. [District Rules 4621 and 4622] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

16. The permittee shall perform and pass a Static Torque of Rotatable Phase I Adaptors test using ARB procedure TP-201.1B at least once every 36 months. [District Rule 4621] Federally Enforceable Through Title V Permit

17. The permittee shall perform and pass a Pressure Integrity of Drop Tube Drain Valve Assembly Test using ARB TP-201.1C or a Pressure Integrity of Drop Tube Overfill Protection Devices Test using ARB TP-201.1D if an overfill protection device is installed, at least once every 36 months. [District Rule 4621] Federally Enforceable Through Title V Permit

18. The permittee shall perform and pass a Static Leak Test for Underground Tanks using ARB TP-201.3 in accordance with the Executive Order specified in this permit for the Phase II Vapor Recovery System at least once every 12 months. [District Rules 4621 and 4622] Federally Enforceable Through Title V Permit

19. The permittee shall perform and pass a Dynamic Back Pressure Test using ARB TP-201.4 at least once every 12 months. [District Rule 4622] Federally Enforceable Through Title V Permit

20. The permittee shall perform and pass a Vapor-to-Liquid Volume Ratio Test using the test procedure defined in the Executive Order specified in this permit for the Phase II Vapor Recovery System at least once every six (6) months. [District Rule 4622] Federally Enforceable Through Title V Permit

21. The permittee shall perform and pass a Static Pressure Test for the Healy Clean Air Separator using the test procedure defined in the Executive Order specified in this permit for the Phase II Vapor Recovery System at least once every 12 months. [District Rule 4622] Federally Enforceable Through Title V Permit

22. The permittee shall perform and pass a Dispenser vapor Line Tightness test for each dispenser using the test procedure defined in the Installation, Operation and Maintenance manual of the Executive Order specified in this permit for the Phase II Vapor Recovery System at least once every 12 months. [District Rule 4622] Federally Enforceable Through Title V Permit

23. A person conducting testing of, or repairs to, a certified vapor recovery system shall be in compliance with District Rule 1177 (Gasoline Dispensing Facility Tester Certification). [District Rules 4621 and 4622] Federally Enforceable Through Title V Permit

24. A person performing installation of, or maintenance on, a certified Phase I or Phase II vapor recovery system shall be certified by the ICC for Vapor Recovery System Installation and Repair, or work under the direct and personal supervision of an individual physically present at the work site who is certified. The ICC certification shall be renewed every 24 months. [District Rules 4621 and 4622] Federally Enforceable Through Title V Permit

25. Proof of the ICC certification and all other certifications required by the Executive Order and installation and operation manual shall be made available onsite. [District Rules 4621 and 4622] Federally Enforceable Through Title V Permit

26. The permittee shall notify the District at least 7 days prior to each performance test. The test results shall be submitted to the District no later than 30 days after the completion of each test. [District Rule 4621] Federally Enforceable Through Title V Permit

27. The permittee shall maintain a copy of all test results. The test results shall be dated and shall contain the name, address, and telephone number of the company responsible for system installation and testing. [District Rule 4622] Federally Enforceable Through Title V Permit

28. The permittee shall maintain on the premises a log of any repairs made to the certified Phase I or Phase II vapor recovery system. The repair log shall include the following: 1) date and time of each repair; 2) the name and applicable certification numbers of the person(s) who performed the repair, and if applicable, the name, address and phone number of the person's employer; 3) description of service performed; 4) each component that was repaired, serviced, or removed; 5) each component that was installed as replacement, if applicable; and 6) receipts or other documents for parts used in the repair and, if applicable, work orders which shall include the name and signature of the person responsible for performing the repairs. [District Rule 4622] Federally Enforceable Through Title V Permit

29. The O&M manual shall be kept at the dispensing operation and made available to any person who operates, inspects, maintains, repairs, or tests the equipment at the operation as well as to District personnel upon request. [District Rule 4622] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

30. The permittee shall maintain monthly gasoline throughput records. [District Rules 4621 and 4622] Federally Enforceable Through Title V Permit

31. All records required by this permit shall be retained on-site for a period of at least five years and shall be made available for District inspection upon request. [District Rules 4621 and 4622] Federally Enforceable Through Title V Permit

# San Joaquin Valley
# Air Pollution Control District

**PERMIT UNIT:** C-283-22-18 **EXPIRATION DATE:** 08/31/2022

**EQUIPMENT DESCRIPTION:**
MUNICIPAL SOLID WASTE BIOREACTOR LANDFILL, CLASS II AND III (B-19), 4.2 MILLION CUBIC YARD CAPACITY (40.4 ACRES) WITH GAS COLLECTION AND CONTROL SYSTEM SERVED BY A 2,500 SCFM (EQUIVALENT TO 83.6 MMBTU/HR) PARNEL BIOGAS ENCLOSED FLARE SHARED WITH C-283-25

## PERMIT UNIT REQUIREMENTS

1. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1/4 or 5% opacity. [District Rules 2201 and 4101] Federally Enforceable Through Title V Permit
2. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
3. Each owner or operator shall keep for at least 5 years up-to-date, readily accessible, on-site records of the maximum design capacity, the current amount of solid waste in-place, and the year-by-year waste acceptance rate. Off-site records may be maintained if they are retrievable within 4 hours. [40 CFR 60.758(a)] Federally Enforceable Through Title V Permit
4. This operating permit may be cancelled with APCO approval when the landfill is closed, pursuant to the requirements of this permit, if the landfill is not otherwise subject to the requirements of either 40 CFR part 70 or part 71 and if either 1) it was never subject to the requirement for a control system under 40 CFR 60.752(b)(2); or 2) the owner or operator meets the conditions for control system removal specified in 40 CFR 60.752(b)(2)(v). [40 CFR 60.752(d)] Federally Enforceable Through Title V Permit
5. If the landfill is permanently closed, a closure notification shall be submitted to the APCO within 30 days of waste disposal cessation. A permanent closure must take place in accordance with 40 CFR 258.60. If a closure report has been submitted, no additional waste may be placed in the landfill without filing a notification of modification to the APCO, pursuant to 40 CFR 60.7(a)(4). [40 CFR 60.752(b)(1)(ii)(B), 60.757(d)] Federally Enforceable Through Title V Permit
6. An active collection system shall be designed to handle the maximum expected gas flow rate from the entire area of the landfill that warrants control over the intended use period of the gas control or treatment system equipment, collect gas from each area, cell, or group of cells in the landfill in which the initial solid waste has been placed for a period of 5 years or more if active; or 2 years or more if closed or at final grade, collect gas at a sufficient extraction rate, and be designed to minimize off-site migration of subsurface gas. [40 CFR 60.752(b)(2)(ii)(A)] Federally Enforceable Through Title V Permit
7. Each owner or operator seeking to comply with 40 CFR 60.752(b)(2)(i) shall site active collection wells, horizontal collectors, surface collectors, or other extraction devices at a sufficient density throughout all gas producing areas using the procedures in 60.759(a)(1), (2), and (3) unless alternative procedures have been approved by the APCO as provided in 60.752(b)(2)(i)(C) and (D). [40 CFR 60.759(a)] Federally Enforceable Through Title V Permit
8. For the purposes of calculating the maximum expected gas generation flow rate from the landfill to determine compliance with 60.752(b)(2)(ii)(A)(1), one of the equations in Section 60.755(a)(1)(i) or (ii) or (iii) shall be used. [40 CFR 60.755(a)(1)] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

9. For the purposes of determining sufficient density of gas collectors for compliance with 60.752(b)(2)(ii)(A)(2), the owner or operator shall design a system of vertical wells, horizontal collectors, or other collection devices, satisfactory to the APCO, capable of controlling and extracting gas from all portions of the landfill sufficient to meet all operational and performance standards. [40 CFR 60.755(a)(2)] Federally Enforceable Through Title V Permit

10. For the purpose of demonstrating whether the gas collection system flow rate is sufficient to determine compliance with 60.752(b)(2)(ii)(A)(3), the owner or operator shall measure gauge pressure in the gas collection header at each individual well, monthly. If a positive pressure exists, action shall be initiated to correct the exceedance within 5 calendar days, except for the three conditions allowed under 60.753(b). If negative pressure cannot be achieved without excess air infiltration within 15 calendar days of the first measurement, the gas collection system shall be expanded to correct the exceedance within 120 days of the initial measurement of positive pressure. Any attempted corrective measure shall not cause exceedances of other operational or performance standards. An alternative timeline for correcting the exceedance may be submitted to the APCO for approval. [40 CFR 60.755(a)(3)] Federally Enforceable Through Title V Permit

11. Owners or operators are not required to expand the system as required in paragraph 60.755(a)(3) during the first 180 days after gas collection system startup. [40 CFR 60.755(a)(4)] Federally Enforceable Through Title V Permit

12. For the purpose of identifying whether excess air infiltration into the landfill is occurring, the owner or operator shall monitor each well monthly for temperature and nitrogen or oxygen as provided in 60.753(c). If a well exceeds one of these operating parameters, action shall be initiated to correct the exceedance within 5 calendar days. If correction of the exceedance cannot be achieved within 15 calendar days of the first measurement, the gas collection system shall be expanded to correct the exceedance within 120 days of the initial exceedance. Any attempted corrective measure shall not cause exceedance of other operational or performance standards. An alternative timeline for corrected in the exceedance may be submitted to the APCO for approval. [40 CFR 60.755(a)(5)] Federally Enforceable Through Title V Permit

13. The provisions of this subpart apply at all times, except during periods of start-up, shutdown, or malfunction, provided that the duration of start-up, shutdown, or malfunction shall not exceed 5 days for collection systems and shall not exceed 1 hour for treatment or control devices. [40 CFR 60.755(e)] Federally Enforceable Through Title V Permit

14. Surface testing to measure the methane concentration at the surface of the landfill shall be conducted around the perimeter of the collection area and along a pattern that traverses the landfill at 30 meter intervals and where visual observations indicate elevated concentrations of landfill gas, such as distressed vegetation and cracks or seeps in the cover. The owner or operator may establish an alternative traversing pattern that ensures equivalent coverage. A surface monitoring design plan shall be developed that includes a topographical map with the monitoring route and the rationale for any site-specific deviations from the 30 meter intervals. Areas with steep slopes or other dangerous areas may be excluded from the surface testing. [District Rule 2201, 40 CFR 60.753(d), and 40 CFR 60.755(c)(1)] Federally Enforceable Through Title V Permit

15. Surface testing to measure the methane concentration at the surface of the landfill shall be conducted on a quarterly basis using an organic vapor analyzer, flame ionization detector, or other portable monitor meeting the specifications provided in 40 CFR 60.755(d). [40 CFR 60.755(c)(1)] Federally Enforceable Through Title V Permit

16. The collection system shall be operated such that the methane concentration is less than 500 parts per million above background at the surface of the landfill. Compliance with this surface methane operational standard shall be demonstrated using the procedures outlined in 40 CFR 60.755(c) within 180 days of installation and startup of the collection and control system and quarterly thereafter. [District Rule 2201, 40 CFR 60.753(d), 40 CFR 60.755(c), and 40 CFR 60.8] Federally Enforceable Through Title V Permit

17. Permittee shall calculate the NMOC emission rate for purposes of determining when the collection and control system can be removed as provided in 40 CFR 60.752(b)(2)(v) by using the equation found in 40 CFR 60.754(b). [40 CFR 60.754(b)] Federally Enforceable Through Title V Permit

18. Permittee shall operate the enclosed flare at all times when the collected gas is routed to it. [40 CFR 60.753(f)] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

19. Permittee shall operate the landfill gas collection system such that gas is collected from each area, cell, or group of cells in the MSW landfill in which solid waste has been in place for: (1) five years or more if active; or (2) two years or more if closed or at final grade. [40 CFR 60.753(a)] Federally Enforceable Through Title V Permit

20. Permittee shall operate the landfill gas collection system with negative pressure at each wellhead except under the following conditions: (1) A fire or increased well temperature. The owner or operator shall record instances when positive pressure occurs in efforts to avoid a fire. These records shall be submitted with the annual reports as provided in 60.757(f)(1); (2) Use of a geomembrane or synthetic cover. The owner or operator shall develop acceptable pressure limits in the design plan; (3) A decommissioned well. A well may experience a static positive pressure after shut down to accommodate for declining flows. All design changes shall be approved by the APCO. [40 CFR 60.753(b)] Federally Enforceable Through Title V Permit

21. Permittee shall operate each interior wellhead in the collection system with a landfill gas temperature less than 55 °C and with either a nitrogen level less than 20 percent or an oxygen level less than 5 percent. The owner or operator may establish a higher operating temperature, nitrogen, or oxygen value at a particular well. A higher operating value demonstration shall show supporting data that the elevated parameter does not cause fires or significantly inhibit anaerobic decompositions by killing methanogens. [40 CFR 60.753(c)] Federally Enforceable Through Title V Permit

22. If monitoring demonstrates that the operational requirements in paragraphs (b), (c), or (d) of section 60.753 are not met, corrective action shall be taken as specified in 40 CFR 60.755(a)(3 - 5) or (c). If corrective actions are taken as specified in 60.755, the monitored exceedance is not a violation of the operational requirements in this section. [40 CFR 60.753(g)] Federally Enforceable Through Title V Permit

23. Each wellhead shall have a sampling port and a thermometer, other temperature-measuring device, or an access port for temperature measurements. [40 CFR 60.756(a)] Federally Enforceable Through Title V Permit

24. When monitoring interior wellheads for operation for a nitrogen level, the nitrogen level shall be determined using Method 3C, unless an alternative test method is established as allowed by 60.752(b)(2)(i) of this subpart. [40 CFR 60.753(c)(1)] Federally Enforceable Through Title V Permit

25. For each interior wellhead, unless an alternative test method is established as allowed by 60.752(b)(2)(i) of this subpart, the oxygen shall be determined by an oxygen meter using Method 3A or 3C except that: (i) The span shall be set so that the regulatory limit is between 20 and 50 percent of the span; (ii) A data recorder is not required; (iii) Only two calibration gases are required, a zero and span, and ambient air may be used as the span; (iv) A calibration error check is not required; (v) The allowable sample bias, zero drift, and calibration drift are ±10 percent. [40 CFR 60.753(c)(2)] Federally Enforceable Through Title V Permit

26. The background concentration shall be determined by moving the probe inlet upwind and downwind outside the boundary of the landfill at a distance of at least 30 meters from the perimeter wells. [40 CFR 60.755(c)(2)] Federally Enforceable Through Title V Permit

27. Surface emission monitoring shall be performed in accordance with section 4.3.1 of Method 21 of appendix A, except that the probe inlet shall be placed within 5 to 10 centimeters of the ground. Monitoring shall be performed during typical meteorological conditions. Any reading of 500 parts per million or more above background at any location shall be recorded as a monitored exceedance and the actions specified in 40 CFR 60.755(c)(4)(i-v) shall be taken. As long as the specified actions are taken, the exceedance is not a violation of the operational requirements of 60.753(d). [40 CFR 60.755(c)(3), (4)] Federally Enforceable Through Title V Permit

28. For the performance test required in 60.752(b)(2)(iii)(B), Method 25, 25C, or Method 18 of Appendix A must be used to determine compliance with the 98 weight percent efficiency or the 20 ppmv outlet concentration level, unless another method to demonstrate compliance has been approved by the APCO as provided by 60.752(b)(2)(i)(B). Method 3 or 3A shall be used to determine oxygen for correcting the NMOC concentration as hexane to 3 percent. In cases where the outlet concentration is less than 50 ppm NMOC as carbon (8 ppm NMOC as hexane), Method 25A should be used in place of Method 25. If using Method 18 of appendix A, the minimum list of compounds to be tested shall be those published in the most recent Compilation of Air Pollutant Emission Factors (AP-42). The following equation shall be used to calculate efficiency: (NMOCin - NMOCout)/NMOCin. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081; 40 CFR 60.754(d)] Federally Enforceable Through Title V Permit

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29. Permittee shall implement a program to monitor for cover integrity and implement cover repairs as necessary on a monthly basis. [40 CFR 60.755(c)(5)] Federally Enforceable Through Title V Permit

30. The portable analyzer shall meet the instrument specifications of Method 21, section 3 (except that "methane" shall replace all references to VOC). The calibration gas shall be methane, diluted to a nominal concentration of 500 parts per million in air. To meet the performance evaluation requirements of Method 21, section 3.1.3, the instrument evaluation procedures of Method 21, section 4.4. The calibration procedures provided in Method 21, section 4.2 shall be followed immediately before commencing a surface monitoring survey. The provisions of this condition apply at all times, except during periods of start-up, shutdown, or malfunction (as defined in 40 CFR 60.755(e)). [40 CFR 60.755(d), (e)] Federally Enforceable Through Title V Permit

31. The provisions of this subpart apply at all times, except during periods of start-up, shutdown, or malfunction, provided that the duration of start-up, shutdown, or malfunction shall not exceed 5 days for collections systems and shall not exceed 1 hour for treatment or control devices. [40 CFR 60.755(e)] Federally Enforceable Through Title V Permit

32. Operator shall measure the gauge pressure in the gas collection header on a monthly basis as provided in 40 CFR 60.755(a)(3); and monitor nitrogen or oxygen concentration in the landfill gas on a monthly basis as provided in 40 CFR 60.755(a)(5); and monitor temperature of the landfill gas on a monthly basis as provided in 40 CFR 60.755(a)(5). [40 CFR 60.756(a)] Federally Enforceable Through Title V Permit

33. Permittee shall submit an equipment removal report to the District 30 days prior to removal or cessation of operation of the control equipment. The report shall conform to the requirements of 40 CFR 60.757(e)(1). [40 CFR 60.757(e)] Federally Enforceable Through Title V Permit

34. Permittee shall submit to the District semiannual reports of the recorded information in 40 CFR 60.757(f)(1-6). The initial report shall be submitted within 180 days of installation and start-up of the collection and control system, and shall include the initial performance test report required under 40 CFR 60.8. [40 CFR 60.757(f), 40 CFR 63.1980(a)] Federally Enforceable Through Title V Permit

35. Each owner or operator seeking to comply with 40 CFR 60.752(b)(2)(iii) shall include information specified in 40 CFR 60.757(g)(1-6) with the initial performance test report required under 40 CFR Part 60.8. [40 CFR 60.757(g)] Federally Enforceable Through Title V Permit

36. The following constitute exceedances that also shall be recorded and reported under 40 CFR 60.757(f): all 3-hour periods of operation during which the average combustion temperature was more than 28 °C below the average combustion temperature during the most recent performance test (flare source test). [40 CFR 60.758(c)] Federally Enforceable Through Title V Permit

37. Except as provided in 60.752(b)(2)(i)(B), each owner or operator of a controlled landfill shall keep up-to-date, readily accessible records for the life of the control equipment of the data listed in paragraphs 60.758(b)(1) through (b)(4) as measured during the initial performance test or compliance determination. Records of subsequent tests or monitoring shall be maintained for a minimum of 5 years. Records of the control device vendor specifications shall be maintained until removal. [40 CFR 60.758(b)] Federally Enforceable Through Title V Permit

38. Permittee shall keep the following records: (1)(i) the maximum expected gas generation flow rate as calculated in 60.755(a)(1). The owner or operator may use another method to determine the maximum gas generation flow rate, if the method has been approved by the APCO; (ii) the density of wells, horizontal collectors, surface collectors, or other gas extraction devices determined using the procedures specified in 60.759(a)(1); (2)(i) the average combustion temperature measured at least every 15 minutes and averaged over the same time period of the performance test; (ii) the percent reduction of NMOC determined as specified in 60.752(b)(2)(iii)(B) achieved by the control device. [40 CFR 60.758(b)(1) and (2)] Federally Enforceable Through Title V Permit

39. Except as provided in 60.752(b)(2)(i)(B), permittee shall keep, for the life of the collection system, an up-to-date, readily accessible plot map showing each existing and planned collector in the system and providing a unique identification location label for each collector. Permittee shall keep readily accessible documentation of the nature, date of deposition, amount, and location of asbestos-containing or nondegradable waste excluded from collection as well as any nonproductive areas excluded from collection. [40 CFR 60.758(d)] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

40. Except as provided in 60.752(b)(2)(i)(B), permittee shall keep for at least 5 years up-to-date, readily accessible records of all collection and control system exceedances of the operational standards in 60.753, the reading in the subsequent month whether or not the second reading is an exceedance, and the location of each exceedance. [40 CFR 60.758(e)] Federally Enforceable Through Title V Permit

41. VOC emissions from the flare and landfill shall not exceed 339.5 lb-VOC/day. [District Rule 2201] Federally Enforceable Through Title V Permit

42. Emissions from the flare shall not exceed any of the following limits: 0.06 lb-NOx/MMBtu, 91.1 lb-SOx/day, 13,146 lb-SOx/year, 0.008 lb-PM10/MMBtu, 0.22 lb-CO/MMBtu, or 0.063 lb-VOC/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit

43. The combined heat input of collected B-17 and B-19 landfill gas into the flare shall not exceed any of the following: 83.6 MMBtu/hr or 398,333 MMBtu/year. Heat input shall be calculated daily using monthly methane measurements (%), landfill gas flow into the flare (cubic feet per minute), and the annually tested landfill gas heat content (Btu/cubic foot). [District Rule 2201] Federally Enforceable Through Title V Permit

44. Enclosed flare shall reduce the inlet NMOC emissions by at least 98% by weight or to no more than 20 ppmvd @ 3% O2 as methane. [District Rule 2201] Federally Enforceable Through Title V Permit

45. The methane destruction efficiency for the enclosed flares shall be at least 99% by weight. [17 CCR 95464 (b)(2)(A)(1)]

46. Emissions from the flare LPG-fired pilot shall not exceed any of the following limits: 0.15 lb-NOx/MMBtu, 0.0164 lb-SOx/MMBtu, 0.0044 lb-PM10/MMBtu, 0.021 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit

47. A non-resettable, totalizing mass or volumetric landfill gas fuel flow meter to measure the amount of gas combusted in the enclosed flare shall be installed, utilized and maintained. [District Rule 2201] Federally Enforceable Through Title V Permit

48. Sampling ports adequate for sulfur testing shall be provided in the landfill gas manifold line to the flare. [District Rule 1081] Federally Enforceable Through Title V Permit

49. SOx emissions shall be determined by measuring the sulfur concentration in the landfill gas and calculating the correlated SOx emission rate based on the correlation between landfill gas sulfur concentration and associated SOx emission rate demonstrated during startup. [District Rule 1081] Federally Enforceable Through Title V Permit

50. Testing to demonstrate compliance with the daily and annual SOx emission limit shall be conducted weekly. Once eight (8) consecutive weekly tests show compliance, the frequency of monitoring sulfur content, and associated SOx emissions, may be reduced to monthly. If a monthly test shows violation of the SOx emission limit, then weekly testing shall resume and continue until eight (8) consecutive tests show compliance. Once compliance is shown on eight (8) consecutive weekly tests, then testing may return to monthly. [District Rule 2201] Federally Enforceable Through Title V Permit

51. Sulfur content of the landfill gas being combusted in the flare shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or double GC for H2S and mercaptans, or draeger tubes for H2S, or an equivalent method approved by the District. [District Rule 1081] Federally Enforceable Through Title V Permit

52. Total combined Class II/III waste material and Class II soil acceptance rate of C-283-22 and '-25 shall not exceed 2000 tons per day. [District Rule 2201] Federally Enforceable Through Title V Permit

53. Total combined Class II/III waste material acceptance rate of C-283-22 and '-25 shall not exceed 620,000 tons per year. [District Rule 2201] Federally Enforceable Through Title V Permit

54. Total combined Class II soil acceptance rate of C-283-22 and '-25 shall not exceed 800 tons per day. [District Rule 2201] Federally Enforceable Through Title V Permit

55. Total combined clean (<50 ppm by weight VOC) soil cover usage rate of C-283-22 and '-25 shall not exceed 6000 tons per day. [District Rule 2201] Federally Enforceable Through Title V Permit

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56. Total PM10 emissions from handling of Class II/III waste material and soil cover shall not exceed 0.000454 pounds per ton material handled. [District Rule 2201] Federally Enforceable Through Title V Permit

57. Source testing on the flare shall be performed to demonstrate compliance with the flare NOx and CO limits, and the NMOC destruction efficiency of 98%, or no more than 20 ppmvd @ 3% O2 as methane, as required by this permit shall be conducted annually. [District Rule 2201] Federally Enforceable Through Title V Permit

58. Source testing for flare NOx emissions shall be conducted using CARB Method 7 or Method 20. [District Rule 1081] Federally Enforceable Through Title V Permit

59. Source testing for flare CO emissions shall be conducted using EPA Method 10 or 10B, CARB Methods 1 through 5 with 10, or CARB Method 100. [District Rule 1081] Federally Enforceable Through Title V Permit

60. Operator shall determine landfill gas fuel higher heating value annually by ASTM D 1826 or D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rule 2201] Federally Enforceable Through Title V Permit

61. The results of each landfill gas sulfur content test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit

62. Gas collection system shall be operated in a manner which maximizes the amount of landfill gas extracted while preventing overdraw that can cause fires or damage the gas collection system. [District Rule 2201] Federally Enforceable Through Title V Permit

63. During maintenance of the gas collection system or incineration device, emissions of landfill gas shall be minimized during shutdown. [District Rule 2201] Federally Enforceable Through Title V Permit

64. Maintenance is defined as work performed on a gas collection system and/or control device in order to ensure continued compliance with District rules, regulations, and/or Permits to Operate, and to prevent its failure or malfunction. [District Rule 2201] Federally Enforceable Through Title V Permit

65. The permittee shall notify the APCO by telephone at least 24 hours before performing any maintenance work that requires the system to be shutdown. The notification shall include a description of work, the date work will be performed and the amount of time needed to complete the maintenance work. [District Rule 2201] Federally Enforceable Through Title V Permit

66. Permittee shall maintain records of system inspections including: date, time and inspection results. [District Rule 1070] Federally Enforceable Through Title V Permit

67. Permittee shall maintain records of maintenance related or other collection system and control device downtime, including individual well shutdown. [District Rule 1070] Federally Enforceable Through Title V Permit

68. The operator shall record emission control device source tests (emissions of CO, NOx, and VOC) in pounds per MMbtu heat input. Operator shall also record VOC destruction/treatment efficiency. [District Rule 1081] Federally Enforceable Through Title V Permit

69. Daily records of the weight of materials received (tons) - including Class II/III waste material, Class II soil cover, and clean soil cover - and daily records of all soil organic content test results and certifications, shall be maintained, kept on site for a period of five years, and made available to District staff upon request. [District Rule 2201] Federally Enforceable Through Title V Permit

70. The District shall be notified in writing ten days prior to the acceptance of new types of waste streams, or waste streams with significant malodorous qualities. [District Rules 2201 and 4102] Federally Enforceable Through Title V Permit

71. A District approved anemometer shall be continuously operated on site with permanent data available to the District. [District Rule 2201] Federally Enforceable Through Title V Permit

72. Wastes with the potential to release hazardous gases, mists, or vapors in excess of existing air quality standards shall not be exposed to the atmosphere, and combustion of flammable wastes in the landfill shall be prevented. [District Rule 2080] Federally Enforceable Through Title V Permit

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73. A record of continuous flare combustion temperature, continuous volumetric gas flow rate, net heating value of landfill gas being combusted, daily landfill gas fuel consumption, and daily heat input shall be maintained, retained on the premises for a period of at least five years and made readily available for District inspection upon request. [District Rule 2201] Federally Enforceable Through Title V Permit

74. Records of daily and annual landfill gas flow rate, annual test results of higher heating value of landfill gas, and calculated daily and annual SOx emissions shall be maintained. [District Rule 2201] Federally Enforceable Through Title V Permit

75. The collection devices within the interior and along the perimeter areas shall be certified to achieve comprehensive control of surface gas emissions by a professional engineer. The following issues shall be addressed in the design: depths of refuse, refuse gas generation rates and flow characteristics, cover properties, gas system expandibility, leachate and condensate management, accessibility, compatibility with filling operations, integration with closure end use, air intrusion control, corrosion resistance, fill settlement, and resistance to the refuse decomposition heat. [40 CFR 60.759(a)(1)] Federally Enforceable Through Title V Permit

76. The placement of gas collection devices determined in paragraph 60.759(a)(1) shall control all gas producing areas, except as provided by paragraphs 60.759(a)(3)(i) and (a)(3)(ii). [40 CFR 60.759(a)(3)] Federally Enforceable Through Title V Permit

77. The sufficient density of gas collection devices determined in paragraph 60.759(a)(1) shall address landfill gas migration issues and augmentation of the collection system through the use of active or passive systems at the landfill perimeter or exterior. [40 CFR 60.759(a)(2)] Federally Enforceable Through Title V Permit

78. Any segregated area of asbestos or nondegradable material may be excluded from collection if documented as provided under 60.758(d). The documentation shall provide the nature, date of deposition, location and amount of asbestos or nondegradable material deposited in the area, and shall be provided to the Administrator upon request. [40 CFR 60.759(a)(3)(i)] Federally Enforceable Through Title V Permit

79. Any nonproductive area of the landfill may be excluded from control provided that the total of all excluded areas can be shown to contribute less than 1 percent of the total amount of NMOC emissions from the landfill. The amount, location, and age of the material shall be documented and provided to the Administrator upon request. A separate NMOC emissions estimate shall be made for each section proposed for exclusion, and the sum of all such sections shall be compared to the NMOC emissions estimate for the entire landfill. Emissions from each section shall be computed using the equation in Section 60.759(a)(3)(ii). [40 CFR 60.759(a)(3)(ii)] Federally Enforceable Through Title V Permit

80. The values for k and CNMOC in equation in Section 60.759(a)(3)(ii) determined in field testing shall be used if field testing has been performed in determining the NMOC emission rate or the radii of influence (this distance from the well center to a point in the landfill where the pressure gradient applied by the blower or compressor approaches zero). If field testing has not been performed, the default values for k, Lo, and CNMOC provided in 60.754(a)(1) or the alternative values from 60.754(a)(5) shall be used. The mass of nondegradable solid waste contained within the given section may be subtracted from the total mass of the section when estimating emissions provided the nature, location, age, and amount of the nondegradable material is documented as provided in paragraph 60.759(a)(3)(i). [40 CFR 60.759(a)(3)(iii)] Federally Enforceable Through Title V Permit

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81. Each owner or operator seeking to comply with 60.752(b)(2)(i)(A) shall construct the gas collection devices using the following equipment or procedures: (1) The landfill gas extraction components shall be constructed of polyvinyl chloride (PVC), high density polyethylene (HDPE) pipe, fiberglass, stainless steel, or other nonporous corrosion resistant material of suitable dimensions to: convey projected amounts of gases; withstand installation, static, and settlement forces; and withstand planned overburden or traffic loads. The collection system shall extend as necessary to comply with emission and migration standards. Collection devices such as wells and horizontal collectors shall be perforated to allow gas entry without head loss sufficient to impair performance across the intended extent of control. Perforations shall be situated with regard to the need to prevent excessive air infiltration; (2) Vertical wells shall be placed so as not to endanger underlying liners and shall address the occurrence of water within the landfill. Holes and trenches constructed for piped wells and horizontal collectors shall be of sufficient cross-section so as to allow for their proper construction and completion including, for example, centering of pipes and placement of gravel backfill. Collection devices shall be designed so as not to allow indirect short circuiting of air into the cover or refuse into the collection system or gas into the air. Any gravel used around pipe perforations should be of a dimension so as not to penetrate or block perforations; (3) Collection devices may be connected to the collection header pipes below or above the landfill surface. The connector assembly shall include a positive closing throttle valve, any necessary seals and couplings, access couplings and at least one sampling port. The collection devices shall be constructed of PVC, HDPE, fiberglass, stainless steel, or other nonporous material of suitable thickness. [40 CFR 60.759(b)] Federally Enforceable Through Title V Permit

82. Each owner or operator seeking to comply with 60.752(b)(2)(i)(A) shall convey the landfill gas to a control system in compliance with 60.752(b)(2)(iii) through the collection header pipe(s). The gas mover equipment shall be sized to handle the maximum gas generation flow rate expected over the intended use period of the gas moving equipment using the following procedures: (1) For existing collection systems, the flow data shall be used to project the maximum flow rate. If no flow data exists, the procedures in paragraph 60.759(c)(2) shall be used; (2) For new collection systems, the maximum flow rate shall be in accordance with 60.755(a)(1). [40 CFR 60.759(c)] Federally Enforceable Through Title V Permit

83. The permittee is no longer required to comply with the requirements of 40 CFR Part 63 Subpart AAAA for the bioreactor provided the conditions in paragraphs (a) or (b) are met: (a) the affected source meets the control system removal criteria in 40 CFR 60.752(b)(2)(v) of part 60, subpart WWW or the bioreactor meets the criteria for a nonproductive area of the landfill in 40 CFR 60.759(a)(3)(ii) of part 60, subpart WWW; (b) the bioreactor portion of the landfill is a closed landfill as defined in 40 CFR 60.751, subpart WWW and has permanently ceased adding liquids to the bioreactor, and have not added liquids to the bioreactor for at least 1 year. A closure report for the bioreactor must be submitted to the APCO as provided in 40 CFR 60.757(d) of subpart WWW. [40 CFR 63.1952(a) and (b)] Federally Enforceable Through Title V Permit

84. For the bioreactor portions, the permittee shall comply with the general provisions specified in Table 1 of 40 CFR Part 63 Subpart AAAA and 63.1960 through 63.1985 starting on the date required to install the gas collection and control system and must extend the collection and control system into each new cell or area of the bioreactor prior to initiating liquids addition in that area. [40 CFR 63.1955(b) and (d)(2)] Federally Enforceable Through Title V Permit

85. Continuous parameter monitoring data, collected under 40 CFR 60.756(b)(1), (c)(1), and (d), are used to demonstrate compliance with the operating conditions for control systems. If a deviation occurs, the permittee has failed to meet the control device operation conditions described in this subpart and has deviated from the requirements of this subpart. The permittee shall develop a written SSM plan according to the provisions in 40 CFR 63.6(e)(3). A copy of the SSM plan must be maintained on site. Failure to write or maintain a copy of the SSM plan is a deviation from the requirements of this subpart. [40 CFR 63.1960] Federally Enforceable Through Title V Permit

86. The permittee shall maintain records as specified in the general provisions of 40 CFR part 60 and this part as shown in Table 1 of this subpart. Applicable records in the general provisions include items such as SSM plans and the SSM plan reports. [40 CFR 63.1980(b)] Federally Enforceable Through Title V Permit

87. The permittee shall submit the initial semiannual compliance report and performance tests results described in 40 CFR 60.757(f) within 180 days after the date required to being operating the gas collection and control system by 63.1947(c) of this subpart. [40 CFR 63.1980(e)] Federally Enforceable Through Title V Permit

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88. If a semiannual compliance report for the bioreactor is required as well as a semiannual compliance report for the conventional portion of the same landfill, submittal may be delayed of a subsequent semiannual compliance report for the bioreactor according to the following so that the reports may be submitted on the same schedule: (1) After submittal of the initial semiannual compliance report and performance test results for the bioreactor, the permittee may delay of the submittal of the subsequent semiannual compliance report for the bioreactor until the date of the initial or subsequent semiannual compliance report is due for the conventional portion of the landfill; (2) The permittee may delay submittal of the subsequent semiannual compliance report by no more than 12 months after the due date for submitting the initial semiannual compliance report and performance test results described in 40 CFR 60.757(f) for the bioreactor. The report shall cover the time period since the previous semiannual report for the bioreactor, which would be a period of at least 6 months and no more than 12 months; (3) After the delayed semiannual report, all subsequent semiannual reports for the bioreactor must be submitted every 6 months on the same date the semiannual report for the conventional portion of the landfill is due. [40 CFR 63.1980(f)] Federally Enforceable Through Title V Permit

89. All records shall be maintained and retained on-site for a period of at least 5 years and shall be made available for District inspection upon request. [District Rule 1070] Federally Enforceable Through Title V Permit

90. The landfill surface shall be monitored quarterly. If there are any exceedances during a quarterly event, monitoring will be required monthly until three consecutive months without exceedances, which would allow a return to quarterly monitoring. [District Rule 2201] Federally Enforceable Through Title V Permit

91. After an exceedance, the permittee shall initiate correction action within five days and conduct remonitoring within ten days from the initial exceedance. If compliance is shown, an additional remonitoring event is required within one month of the initial exceedance. If the ten day event shows an exceedance, the permittee shall initiate correction action within five days and conduct remonitoring within ten days from the second exceedance. If compliance is shown, an additional remonitoring is required within one month of the initial exceedance. If the second ten day event shows an exceedance, the permittee shall permit and install additional landfill gas wells to correct the problem within 120 days of the initial exceedance. [District Rule 2201] Federally Enforceable Through Title V Permit

92. The gas collection and control system shall comply with the operational standards of 40 CFR 60.753, the compliance provisions of 40 CFR 60.755, the monitoring provisions of 40 CFR 60.756, the reporting and record keeping requirements of 40 CFR 60.757 and 60.758, and the requirements of 40 CFR 60.759 (for active collection systems). [40 CFR 60.752(b)(2)(ii), 60.753, 60.755, 60.756, 60.757, 60.758 and 60.759] Federally Enforceable Through Title V Permit

93. In the event that the collection or control system becomes inoperable, the gas mover equipment (as defined in 40 CFR 60.751) shall be shut down and all valves in the collection and control system contributing to venting of the landfill gas to the atmosphere shall be closed within one hour. [40 CFR 60.753(e)] Federally Enforceable Through Title V Permit

94. The owner/operator shall install, calibrate, maintain, and operate a meter that measures and records the landfill gas flow rate into the flare at least once every 15 minutes. This meter shall also be capable of measuring the landfill gas flow rate that might bypass the flare in the event of equipment malfunction or maintenance. [40 CFR 60.756(c)(2)] Federally Enforceable Through Title V Permit

95. The flare shall be operated with a flame present at all times while gas is being vented to it. The presence of a flame shall be continuously monitored using a thermocouple, ultraviolet sensor, or any other equivalent device located at the pilot light or the flame itself. The flame's presence shall be recorded at least once every 15 minutes. [40 CFR 60.18(c)(2) and 40 CFR 60.756(c)(1)] Federally Enforceable Through Title V Permit

96. The enclosed flare shall be equipped with an accurate temperature indicator/recorder that continuously measures and records the operating temperature. [District Rule 2201 and 40 CFR 60.756(b)(1)] Federally Enforceable Through Title V Permit

97. The enclosed flare shall be equipped with either a device that records flow to the control device at least every 15 minutes; or secure the bypass line valve in the closed position with a car-seal or a lock-and-key type configuration of the control device. [40 CFR 60.756(b)(2] Federally Enforceable Through Title V Permit

98. Any closed landfill that has demonstrated compliance in three consecutive quarterly monitoring periods may perform annual monitoring. Quarterly monitoring shall resume if any methane readings of 500 ppm or more above background are detected during annual monitoring. [40 CFR 60.756(f)] Federally Enforceable Through Title V Permit

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99. Permittee shall keep up-to-date, readily accessible continuous records of the indication of flow to the enclosed flare, or the indication of bypass flow, or records of monthly inspections of car-seals or lock-and-key configurations used to seal bypass lines. [40 CFR 60.758(c) and 60.34c] Federally Enforceable Through Title V Permit

100. The non-bioreactor portion of the landfill is no longer required to comply with the requirements of 40 CFR Part 63 Subpart AAAA when it is no longer required to apply controls as specified in 40 CFR 60.752(b)(2)(v) of subpart WWW. [40 CFR 63.1950] Federally Enforceable Through Title V Permit

101. Except for the spreading of landfill cover, when handling bulk materials outside an enclosed structure or building, water or chemical/organic stabilizers/suppressants shall be applied as required to limit Visible Dust Emissions to a maximum of 20% opacity. When necessary to achieve this opacity limitation, wind barriers with less than 50% porosity shall also be used. [District Rules 8011 and 8031] Federally Enforceable Through Title V Permit

102. Except for the spreading of landfill cover, when transporting bulk materials outside an enclosed structure or building, all bulk material transport vehicles shall limit Visible Dust Emissions to 20% opacity by either limiting vehicular speed, maintaining sufficient freeboard on the load, applying water to the top of the load, or covering the load with a tarp or other suitable cover. [District Rules 8011 and 8031] Federally Enforceable Through Title V Permit

103. Records and other supporting documentation shall be maintained as required to demonstrate compliance with the requirements of the rules under Regulation VIII only for those days that a control measure was implemented. Such records shall include the type of control measure(s) used, the location and extent of coverage, and the date, amount, and frequency of application of dust suppressant, manufacturer's dust suppressant product information sheet that identifies the name of the dust suppressant and application instructions. Records shall be kept for one year following project completion that results in the termination of all dust generating activities. [District Rules 8031, 8071, and 8011] Federally Enforceable Through Title V Permit

104. One or more of the following control measures shall be implemented on each day that 50 or more VDT (Vehicle Daily Trips), or 25 or more VDT with 3 or more axles, originates from within and remains exclusively within an unpaved vehicle/equipment traffic area: water, gravel, roadmix, or chemical/organic dust stabilizers/suppressants, vegetative materials, or other District-approved control measure shall be applied to unpaved vehicle travel areas as required to limit Visible Dust Emissions to 20% opacity and comply with the requirements for a stabilized unpaved road as defined in District Rule 8011. [District Rule 8071 and 8011] Federally Enforceable Through Title V Permit

105. On each day that 50 or more VDT (Vehicle Daily Trips), or 25 or more VDT with 3 or more axles, originates from within and remains exclusively within an unpaved vehicle/equipment traffic area, dusting materials accumulated on paved surfaces shall be removed daily or water and/or chemical/organic dust stabilizers/suppressants shall be applied to the paved surface as required to maintain continuous compliance with the requirements for a stabilized unpaved road as defined in District Rule 8011 and limit Visible Dust Emissions (VDE) to 20% opacity. [District Rule 8011 and 8071] Federally Enforceable Through Title V Permit

106. Whenever any portion of the site becomes inactive, permittee shall restrict access and periodically stabilize any disturbed surface to comply with the conditions for a stabilized surface as defined in Section 3.58 of District Rule 8011. [District Rules 8071 and 8011] Federally Enforceable Through Title V Permit

107. The flare and gas collection system may be shut down when there is an insufficient amount of landfill gas to operate on. During the shutdown period, all gas collection system vents shall be closed and no emissions shall occur through the gas collection system. [District Rule 2201] Federally Enforceable Through Title V Permit

108. During the shutdown of the gas collection system, surface testing to measure the methane concentration at the surface of the landfill shall be conducted at least once every week using an organic vapor analyzer, flame ionization detector, or other portable monitor meeting the specifications provided in 40 CFR 60.755(d). After demonstrating compliance on four consecutive tests, the testing frequency shall be at least once every month. [District Rule 2201] Federally Enforceable Through Title V Permit

109. During the shutdown of the gas collection system, if the methane concentration measured during weekly or monthly surface testing exceeds 500 parts per million above background at the surface of the landfill, the testing frequency shall be at least once every other day. After demonstrating compliance on four consecutive tests, the testing frequency shall revert to at least once every week. [District Rule 2201] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

110. During operation of the enclosed flare, the permittee shall continuously monitor and record combustion chamber temperature. The temperature readings shall not be less than 28 °C (50 °F) below the average combustion temperature determined during the most recent flare source test, averaged over a 3-hour period. Upon detecting any temperature excursion lower than 28 °C (50 °F) below the source test average combustion temperature, averaged over a 3-hour period, the permittee shall investigate the excursion and take corrective action to minimize excessive emissions and prevent recurrence of the excursion as expeditiously as practicable. [40 CFR part 64] Federally Enforceable Through Title V Permit

111. The temperature monitoring device shall be calibrated, maintained, and operated according to the manufacturer's specifications. [40 CFR part 64] Federally Enforceable Through Title V Permit

112. The enclosed flare burner and its associated components and the vapor collection system shall be inspected on an annual basis. The records of inspection shall at least contain date and time of inspection, identification of the person performing an inspection, parts replacement and repairs, and all maintenance actions taken. The records shall be kept and maintained for compliance inspection upon request. [40 CFR part 64] Federally Enforceable Through Title V Permit

113. The permittee shall comply with the compliance assurance monitoring operation and maintenance requirements of 40 CFR part 64.7. [40 CFR part 64] Federally Enforceable Through Title V Permit

114. The permittee shall comply with the recordkeeping and reporting requirements of 40 CFR part 64.9. [40 CFR part 64] Federally Enforceable Through Title V Permit

115. If the District or EPA determine that a Quality Improvement Plan is required under 40 CFR 64.7(d)(2), the permittee shall develop and implement the Quality Improvement Plan in accordance with 40 CFR part 64.8. [40 CFR part 64] Federally Enforceable Through Title V Permit

116. Landfill gas collection system components downstream of blower have a leak limit of 500 ppmv as methane. Components must be checked quarterly. [17 CCR 95464 (b)(1)(B), 17 CCR 95469 (b)(3)]

117. Landfill gas collection system wellheads must be operated under vacuum. Monthly monitoring of wellheads is required. Landfill gas collection system wellheads may be operated under neutral or positive pressure except as allowed in sections 95464(c), 95464(d), and 95464(e). [17 CCR 95464(b)(1)(C)]

118. Landfill gas collection and control system must be operated such that landfill surface methane emissions shall not exceed instantaneous surface emission limit of 500 ppmv as methane or integrated surface emission limit of 25 ppmv as methane. [17 CCR 95465]

119. Instantaneous and integrated landfill surface emissions measurements shall be done quarterly. The landfill may monitor annually provided they comply with requirements of 17 CCR 95469 (a)(3). [17 CCR 95469(a)]

120. Permittee shall keep records of all gas collection system downtime exceeding five days, including individual well shutdown and disconnection times and the reason for downtime. [17 CCR 95470(a)(1)(A)]

121. Permittee shall keep records of all gas control system downtime in excess of one hour, the reason for the downtime and the length of time the gas control system was shutdown. [17 CCR 95470(a)(1)(B)]

122. Permittee shall keep records of the expected gas generation flow rate calculated pursuant to section 95471(e). [17 CCR 95470(a)(1)(C)]

123. Permittee shall keep records of all instantaneous surface readings of 200 ppmv or greater; all exceedances of the limits in sections 95464(b)(1)(B) or 95465, including the location of the leak (or affected grid), leak concentration in ppmv, date and time of measurement, the action taken to repair the leak, date of repair, any required re-monitoring and the re-monitored concentration in ppmv, and wind speed during surface sampling; and the installation date and location of each well installed as part of a gas collection system expansion. [17 CCR 95470(a)(1)(D)]

124. Permittee shall keep records of any positive wellhead gauge pressure measurements, the date of the measurements, the well identification number, and the corrective action taken. [17 CCR 95470(a)(1)(E)]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

125. Permittee shall conduct surface emission monitoring using either the procedures specified in section 95471(c) or the Los Angeles County Sanitation District monitoring procedure. Permittee shall keep records of which procedure was used. [17 CCR 95468]

126. Permittee shall keep records of delays encountered during repair of leaks or repair of positive wellhead readings. Documentation of delays shall be submitted with the annual report. [17 CCR 95468(a)(2)]

127. Permittee shall keep records of alternate landfill gas collection system modifications being implemented to correct an exceedance in the landfill gas surface emissions or wellhead pressure. Any alternative to installing a new well shall be documented and submitted with the annual report. [17 CCR 95468]

128. Permittee shall identify areas which are dangerous and unable to be inspected or contain only inert, non-decomposing waste. Areas shall be clearly identified on a map of the facility. A copy of the map shall be kept onsite as well as submitted with the annual report. [17 CCR 95468(a)(5)]

129. Permittee shall conduct monitoring of the landfill surface within 3 inches of the surface. The facility may monitor surface emissions with the probe tip at the height of the vegetation if there is vegetation and it is impractical to monitor at 3 inches from the landfill surface. [17 CCR 95468]

130. Permittee shall terminate surface emission testing when the measured average wind speed is over 10 mph or the instantaneous wind speed is over 20 mph. [17 CCR 95468(a)(3), 17 CCR 95471(c)(1)(C)]

131. Permittee shall only conduct surface emission testing when precipitation has met the following requirements. It has been 24 hours since measured precipitation of 0.01 to 0.15 inches. It has been 48 hours since measured precipitation of 0.16 to 0.24 inches. It has been 72 hours since measured precipitation of 0.25 or more inches. [17 CCR 95468]

132. Permittee shall keep records of the annual solid waste acceptance rate and the current amount of waste-in-place. [17 CCR 95470(a)(1)(F)]

133. Permittee shall keep records of the nature, location, amount , and date of deposition of non-degradable waste for any landfill areas excluded from the collection system. [17 CCR 95470(a)(1)(G]

134. Permittee shall keep records of any source tests conducted pursuant to section 95464(b)(4). [17 CCR 95470(a)(1)(H)]

135. The flare must be source tested annually for methane destruction efficiency of at least 99% by weight. If the flare is in compliance after three consecutive source tests, the facility may move to source testing the flare every three years. If subsequent tests show the flare out of compliance, the test frequency shall revert to annual testing. [17 CCR 95464(b)(4)]

136. The flare must have automatic dampers, an automatic shutdown device, a flame arrester, and continuous recording temperature sensors. [17 CCR 95464(b)(2)(A)(2)]

137. The flare must operate within the parameter ranges established during the initial or most recent source test. [17 CCR 95464(b)(2)(A)(4)]

138. Permittee shall keep records describing the mitigation measures taken to prevent the release of methane or other emissions into the atmosphere during the following activities: 1. When solid waste was brought to the surface during the installation or preparation of wells, piping, or other equipment; 2. During repairs or the temporary shutdown of gas collection system components; or, 3. When solid waste was excavated and moved. [17 CCR 95470(a)(1)(I)]

139. Permittee shall keep records of any construction activities pursuant to section 95466. The records must contain the following information: 1. A description of the actions being taken, the areas of the MSW landfill that will be affected by these actions, the reason the actions are required, and any landfill gas collection system components that will be affected by these actions. 2. Construction start and finish dates, projected equipment installation dates, and projected shut down times for individual gas collection system components. 3. A description of the mitigation measures taken to minimize methane emissions and other potential air quality impacts. [17 CCR 95470(a)(1)(J)]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

140. Permittee shall keep records of the equipment operating parameters specified to be monitored under section 95469(b)(1) as well as records for periods of operation during which the parameter boundaries established during the most recent source test are exceeded. The records must include the following information: 1. For enclosed flares, all 3-hour periods of operation during which the average temperature difference was more than 28 °Celsius (or 50 °Fahrenheit) below the average combustion temperature during the most recent source test at which compliance with sections 95464(b)(2) was determined and a gas flow rate device which must record the flow to the control device at least every 15 minutes. [17 CCR 95470(a)(1)(K), 17 CCR 95469(b)(1)(B)]

141. Permittee shall submit the following reports as required in section 95470(b): Closure notification, Equipment removal report and Annual report. All reports must be accompanied by a certification of truth, accuracy, and completeness signed by a responsible official. [17 CCR 95470(b)]

142. Permittee may request alternatives to the compliance measures, monitoring requirements, test methods and procedures of sections 95464, 95469, and 95471. Any requests must be submitted in writing. [17 CCR 95468]

# San Joaquin Valley
# Air Pollution Control District

**PERMIT UNIT:** C-283-24-3 **EXPIRATION DATE:** 08/31/2022

**EQUIPMENT DESCRIPTION:**
4100 CUBIC FEET (30670 GAL) TRANSPORTABLE PNEUMATIC STORAGE SYSTEM ("GUPPY") FOR THE STORAGE AND DELIVERY OF REAGENTS SERVED BY FLEXKLEEN MODEL 84 BV-BS 16 II G PULSE JET BAGHOUSE COMMON TO C-283-19

## PERMIT UNIT REQUIREMENTS

1. Visible emissions from baghouse serving the transportable pneumatic storage system shall not equal or exceed 5% opacity for a period or periods aggregating more than three minutes in one hour. [District Rule 2201] Federally Enforceable Through Title V Permit
2. Material removed from dust collector(s) shall be disposed of in a manner preventing entrainment into the atmosphere. [District Rule 2080] Federally Enforceable Through Title V Permit
3. Particulate matter emissions shall not exceed 0.1 gr/dscf in concentration at the point of discharge. [District Rule 4201, 3.1] Federally Enforceable Through Title V Permit
4. Particulate matter emissions shall not exceed the hourly rate as calculated in District Rule 4202 using the equation E= 3.59 x P^0.62; P is less than or equal to 30 tons per hour. [District Rule 4202] Federally Enforceable Through Title V Permit
5. Permittee shall perform a complete inspection of the baghouse and its components on an annual basis. Filters shall be inspected thoroughly for tears, scuffs, abrasions, holes, or any evidence of particulate matter breakthrough and shall be replaced as needed. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
6. Emissions from the Flexkleen model 84 BV-BS 16 II G pulse jet baghouse shall not exceed 0.0049 lb PM10 per ton of reagent. [District Rule 2201] Federally Enforceable Through Title V Permit
7. The maximum throughput for the transportable pneumatic storage system shall not exceed 150 tons of reagent per day. [District Rule 2201] Federally Enforceable Through Title V Permit
8. Visible emissions shall be inspected quarterly during operation. If visible emissions are observed, corrective action shall be taken to eliminate visible emissions. If visible emissions cannot be corrected within 24 hours, a visible emissions test using EPA Method 9 shall be conducted. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
9. Records of daily throughput, dust collector maintenance, inspections, and repair shall be maintained. The records shall include identification of the equipment, date of inspection, corrective action taken, and identification of the individual performing the inspection. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

# San Joaquin Valley
# Air Pollution Control District

**PERMIT UNIT:** C-283-25-4 **EXPIRATION DATE:** 08/31/2022

**EQUIPMENT DESCRIPTION:**
MUNICIPAL SOLID WASTE LANDFILL, CLASS II AND III (B-17), 18.4 MILLION CUBIC YARD CAPACITY (62 ACRES) WITH GAS COLLECTION AND CONTROL SYSTEM SERVED BY A 2,500 SCFM (EQUIVALENT TO 83.6 MMBTU/HR) PARNEL BIOGAS ENCLOSED FLARE SHARED WITH C-283-22

## PERMIT UNIT REQUIREMENTS

1. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1/4 or 5% opacity. [District Rules 2201 and 4101] Federally Enforceable Through Title V Permit
2. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
3. Each owner or operator shall keep for at least 5 years up-to-date, readily accessible, on-site records of the maximum design capacity, the current amount of solid waste in-place, and the year-by-year waste acceptance rate. Off-site records may be maintained if they are retrievable within 4 hours. [40 CFR 60.758(a)] Federally Enforceable Through Title V Permit
4. This operating permit may be cancelled with APCO approval when the landfill is closed, pursuant to the requirements of this permit, if the landfill is not otherwise subject to the requirements of either 40 CFR part 70 or part 71 and if either 1) it was never subject to the requirement for a control system under 40 CFR 60.752(b)(2); or 2) the owner or operator meets the conditions for control system removal specified in 40 CFR 60.752(b)(2)(v). [40 CFR 60.752(d)] Federally Enforceable Through Title V Permit
5. If the landfill is permanently closed, a closure notification shall be submitted to the APCO within 30 days of waste disposal cessation. A permanent closure must take place in accordance with 40 CFR 258.60. If a closure report has been submitted, no additional waste may be placed in the landfill without filing a notification of modification to the APCO, pursuant to 40 CFR 60.7(a)(4). [40 CFR 60.752(b)(1)(ii)(B), 60.757(d)] Federally Enforceable Through Title V Permit
6. An active collection system shall be designed to handle the maximum expected gas flow rate from the entire area of the landfill that warrants control over the intended use period of the gas control or treatment system equipment, collect gas from each area, cell, or group of cells in the landfill in which the initial solid waste has been placed for a period of 5 years or more if active; or 2 years or more if closed or at final grade, collect gas at a sufficient extraction rate, and be designed to minimize off-site migration of subsurface gas. [40 CFR 60.752(b)(2)(ii)(A)] Federally Enforceable Through Title V Permit
7. Each owner or operator seeking to comply with 40 CFR 60.752(b)(2)(i) shall site active collection wells, horizontal collectors, surface collectors, or other extraction devices at a sufficient density throughout all gas producing areas using the procedures in 60.759(a)(1), (2), and (3) unless alternative procedures have been approved by the APCO as provided in 60.752(b)(2)(i)(C) and (D). [40 CFR 60.759(a)] Federally Enforceable Through Title V Permit
8. For the purposes of calculating the maximum expected gas generation flow rate from the landfill to determine compliance with 60.752(b)(2)(ii)(A)(1), one of the equations in Section 60.755(a)(1)(i) or (ii) or (iii) shall be used. [40 CFR 60.755(a)(1)] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

9. For the purposes of determining sufficient density of gas collectors for compliance with 60.752(b)(2)(ii)(A)(2), the owner or operator shall design a system of vertical wells, horizontal collectors, or other collection devices, satisfactory to the APCO, capable of controlling and extracting gas from all portions of the landfill sufficient to meet all operational and performance standards. [40 CFR 60.755(a)(2)] Federally Enforceable Through Title V Permit

10. For the purpose of demonstrating whether the gas collection system flow rate is sufficient to determine compliance with 60.752(b)(2)(ii)(A)(3), the owner or operator shall measure gauge pressure in the gas collection header at each individual well, monthly. If a positive pressure exists, action shall be initiated to correct the exceedance within 5 calendar days, except for the three conditions allowed under 60.753(b). If negative pressure cannot be achieved without excess air infiltration within 15 calendar days of the first measurement, the gas collection system shall be expanded to correct the exceedance within 120 days of the initial measurement of positive pressure. Any attempted corrective measure shall not cause exceedances of other operational or performance standards. An alternative timeline for correcting the exceedance may be submitted to the APCO for approval. [40 CFR 60.755(a)(3)] Federally Enforceable Through Title V Permit

11. Owners or operators are not required to expand the system as required in paragraph 60.755(a)(3) during the first 180 days after gas collection system startup. [40 CFR 60.755(a)(4)] Federally Enforceable Through Title V Permit

12. For the purpose of identifying whether excess air infiltration into the landfill is occurring, the owner or operator shall monitor each well monthly for temperature and nitrogen or oxygen as provided in 60.753(c). If a well exceeds one of these operating parameters, action shall be initiated to correct the exceedance within 5 calendar days. If correction of the exceedance cannot be achieved within 15 calendar days of the first measurement, the gas collection system shall be expanded to correct the exceedance within 120 days of the initial exceedance. Any attempted corrective measure shall not cause exceedance of other operational or performance standards. An alternative timeline for corrected in the exceedance may be submitted to the APCO for approval. [40 CFR 60.755(a)(5)] Federally Enforceable Through Title V Permit

13. The provisions of this subpart apply at all times, except during periods of start-up, shutdown, or malfunction, provided that the duration of start-up, shutdown, or malfunction shall not exceed 5 days for collection systems and shall not exceed 1 hour for treatment or control devices. [40 CFR 60.755(e)] Federally Enforceable Through Title V Permit

14. Surface testing to measure the methane concentration at the surface of the landfill shall be conducted around the perimeter of the collection area and along a pattern that traverses the landfill at 30 meter intervals and where visual observations indicate elevated concentrations of landfill gas, such as distressed vegetation and cracks or seeps in the cover. The owner or operator may establish an alternative traversing pattern that ensures equivalent coverage. A surface monitoring design plan shall be developed that includes a topographical map with the monitoring route and the rationale for any site-specific deviations from the 30 meter intervals. Areas with steep slopes or other dangerous areas may be excluded from the surface testing. [District Rule 2201, 40 CFR 60.753(d), and 40 CFR 60.755(c)(1)] Federally Enforceable Through Title V Permit

15. Surface testing to measure the methane concentration at the surface of the landfill shall be conducted on a quarterly basis using an organic vapor analyzer, flame ionization detector, or other portable monitor meeting the specifications provided in 40 CFR 60.755(d). [40 CFR 60.755(c)(1)] Federally Enforceable Through Title V Permit

16. The collection system shall be operated such that the methane concentration is less than 500 parts per million above background at the surface of the landfill. Compliance with this surface methane operational standard shall be demonstrated using the procedures outlined in 40 CFR 60.755(c) within 180 days of installation and startup of the collection and control system and quarterly thereafter. [District Rule 2201, 40 CFR 60.753(d), 40 CFR 60.755(c), and 40 CFR 60.8] Federally Enforceable Through Title V Permit

17. Permittee shall calculate the NMOC emission rate for purposes of determining when the collection and control system can be removed as provided in 40 CFR 60.752(b)(2)(v) by using the equation found in 40 CFR 60.754(b). [40 CFR 60.754(b)] Federally Enforceable Through Title V Permit

18. Permittee shall operate the enclosed flare at all times when the collected gas is routed to it. [40 CFR 60.753(f)] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

19. Permittee shall operate the landfill gas collection system such that gas is collected from each area, cell, or group of cells in the MSW landfill in which solid waste has been in place for: (1) five years or more if active; or (2) two years or more if closed or at final grade. [40 CFR 60.753(a)] Federally Enforceable Through Title V Permit

20. Permittee shall operate the landfill gas collection system with negative pressure at each wellhead except under the following conditions: (1) A fire or increased well temperature. The owner or operator shall record instances when positive pressure occurs in efforts to avoid a fire. These records shall be submitted with the annual reports as provided in 60.757(f)(1); (2) Use of a geomembrane or synthetic cover. The owner or operator shall develop acceptable pressure limits in the design plan; (3) A decommissioned well. A well may experience a static positive pressure after shut down to accommodate for declining flows. All design changes shall be approved by the APCO. [40 CFR 60.753(b)] Federally Enforceable Through Title V Permit

21. Permittee shall operate each interior wellhead in the collection system with a landfill gas temperature less than 55 °C and with either a nitrogen level less than 20 percent or an oxygen level less than 5 percent. The owner or operator may establish a higher operating temperature, nitrogen, or oxygen value at a particular well. A higher operating value demonstration shall show supporting data that the elevated parameter does not cause fires or significantly inhibit anaerobic decompositions by killing methanogens. [40 CFR 60.753(c)] Federally Enforceable Through Title V Permit

22. If monitoring demonstrates that the operational requirements in paragraphs (b), (c), or (d) of section 60.753 are not met, corrective action shall be taken as specified in 40 CFR 60.755(a)(3 - 5) or (c). If corrective actions are taken as specified in 60.755, the monitored exceedance is not a violation of the operational requirements in this section. [40 CFR 60.753(g)] Federally Enforceable Through Title V Permit

23. Each wellhead shall have a sampling port and a thermometer, other temperature-measuring device, or an access port for temperature measurements. [40 CFR 60.756(a)] Federally Enforceable Through Title V Permit

24. When monitoring interior wellheads for operation for a nitrogen level, the nitrogen level shall be determined using Method 3C, unless an alternative test method is established as allowed by 60.752(b)(2)(i) of this subpart. [40 CFR 60.753(c)(1)] Federally Enforceable Through Title V Permit

25. For each interior wellhead, unless an alternative test method is established as allowed by 60.752(b)(2)(i) of this subpart, the oxygen shall be determined by an oxygen meter using Method 3A or 3C except that: (i) The span shall be set so that the regulatory limit is between 20 and 50 percent of the span; (ii) A data recorder is not required; (iii) Only two calibration gases are required, a zero and span, and ambient air may be used as the span; (iv) A calibration error check is not required; (v) The allowable sample bias, zero drift, and calibration drift are ±10 percent. [40 CFR 60.753(c)(2)] Federally Enforceable Through Title V Permit

26. The background concentration shall be determined by moving the probe inlet upwind and downwind outside the boundary of the landfill at a distance of at least 30 meters from the perimeter wells. [40 CFR 60.755(c)(2)] Federally Enforceable Through Title V Permit

27. Surface emission monitoring shall be performed in accordance with section 4.3.1 of Method 21 of appendix A, except that the probe inlet shall be placed within 5 to 10 centimeters of the ground. Monitoring shall be performed during typical meteorological conditions. Any reading of 500 parts per million or more above background at any location shall be recorded as a monitored exceedance and the actions specified in 40 CFR 60.755(c)(4)(i-v) shall be taken. As long as the specified actions are taken, the exceedance is not a violation of the operational requirements of 60.753(d). [40 CFR 60.755(c)(3), (4)] Federally Enforceable Through Title V Permit

28. For the performance test required in 60.752(b)(2)(iii)(B), Method 25, 25C, or Method 18 of Appendix A must be used to determine compliance with the 98 weight percent efficiency or the 20 ppmv outlet concentration level, unless another method to demonstrate compliance has been approved by the APCO as provided by 60.752(b)(2)(i)(B). Method 3 or 3A shall be used to determine oxygen for correcting the NMOC concentration as hexane to 3 percent. In cases where the outlet concentration is less than 50 ppm NMOC as carbon (8 ppm NMOC as hexane), Method 25A should be used in place of Method 25. If using Method 18 of appendix A, the minimum list of compounds to be tested shall be those published in the most recent Compilation of Air Pollutant Emission Factors (AP-42). The following equation shall be used to calculate efficiency: (NMOCin - NMOCout)/NMOCin. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081; 40 CFR 60.754(d)] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

29. Permittee shall implement a program to monitor for cover integrity and implement cover repairs as necessary on a monthly basis. [40 CFR 60.755(c)(5)] Federally Enforceable Through Title V Permit

30. The portable analyzer shall meet the instrument specifications of Method 21, section 3 (except that "methane" shall replace all references to VOC). The calibration gas shall be methane, diluted to a nominal concentration of 500 parts per million in air. To meet the performance evaluation requirements of Method 21, section 3.1.3, the instrument evaluation procedures of Method 21, section 4.4. The calibration procedures provided in Method 21, section 4.2 shall be followed immediately before commencing a surface monitoring survey. The provisions of this condition apply at all times, except during periods of start-up, shutdown, or malfunction (as defined in 40 CFR 60.755(e)). [40 CFR 60.755(d), (e)] Federally Enforceable Through Title V Permit

31. The provisions of this subpart apply at all times, except during periods of start-up, shutdown, or malfunction, provided that the duration of start-up, shutdown, or malfunction shall not exceed 5 days for collections systems and shall not exceed 1 hour for treatment or control devices. [40 CFR 60.755(e)] Federally Enforceable Through Title V Permit

32. Operator shall measure the gauge pressure in the gas collection header on a monthly basis as provided in 40 CFR 60.755(a)(3); and monitor nitrogen or oxygen concentration in the landfill gas on a monthly basis as provided in 40 CFR 60.755(a)(5); and monitor temperature of the landfill gas on a monthly basis as provided in 40 CFR 60.755(a)(5). [40 CFR 60.756(a)] Federally Enforceable Through Title V Permit

33. Permittee shall submit an equipment removal report to the District 30 days prior to removal or cessation of operation of the control equipment. The report shall conform to the requirements of 40 CFR 60.757(e)(1). [40 CFR 60.757(e)] Federally Enforceable Through Title V Permit

34. Permittee shall submit to the District semiannual reports of the recorded information in 40 CFR 60.757(f)(1-6). The initial report shall be submitted within 180 days of installation and start-up of the collection and control system, and shall include the initial performance test report required under 40 CFR 60.8. [40 CFR 60.757(f), 40 CFR 63.1980(a)] Federally Enforceable Through Title V Permit

35. Each owner or operator seeking to comply with 40 CFR 60.752(b)(2)(iii) shall include information specified in 40 CFR 60.757(g)(1-6) with the initial performance test report required under 40 CFR Part 60.8. [40 CFR 60.757(g)] Federally Enforceable Through Title V Permit

36. The following constitute exceedances that also shall be recorded and reported under 40 CFR 60.757(f): all 3-hour periods of operation during which the average combustion temperature was more than 28 C below the average combustion temperature during the most recent performance test (flare source test). [40 CFR 60.758(c)] Federally Enforceable Through Title V Permit

37. Except as provided in 60.752(b)(2)(i)(B), each owner or operator of a controlled landfill shall keep up-to-date, readily accessible records for the life of the control equipment of the data listed in paragraphs 60.758(b)(1) through (b)(4) as measured during the initial performance test or compliance determination. Records of subsequent tests or monitoring shall be maintained for a minimum of 5 years. Records of the control device vendor specifications shall be maintained until removal. [40 CFR 60.758(b)] Federally Enforceable Through Title V Permit

38. Permittee shall keep the following records: (1)(i) the maximum expected gas generation flow rate as calculated in 60.755(a)(1). The owner or operator may use another method to determine the maximum gas generation flow rate, if the method has been approved by the APCO; (ii) the density of wells, horizontal collectors, surface collectors, or other gas extraction devices determined using the procedures specified in 60.759(a)(1); (2)(i) the average combustion temperature measured at least every 15 minutes and averaged over the same time period of the performance test; (ii) the percent reduction of NMOC determined as specified in 60.752(b)(2)(iii)(B) achieved by the control device. [40 CFR 60.758(b)(1) and (2)] Federally Enforceable Through Title V Permit

39. Except as provided in 60.752(b)(2)(i)(B), permittee shall keep, for the life of the collection system, an up-to-date, readily accessible plot map showing each existing and planned collector in the system and providing a unique identification location label for each collector. Permittee shall keep readily accessible documentation of the nature, date of deposition, amount, and location of asbestos-containing or nondegradable waste excluded from collection as well as any nonproductive areas excluded from collection. [40 CFR 60.758(d)] Federally Enforceable Through Title V Permit

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40. Except as provided in 60.752(b)(2)(i)(B), permittee shall keep for at least 5 years up-to-date, readily accessible records of all collection and control system exceedances of the operational standards in 60.753, the reading in the subsequent month whether or not the second reading is an exceedance, and the location of each exceedance. [40 CFR 60.758(e)] Federally Enforceable Through Title V Permit

41. VOC emissions from the flare and landfill shall not exceed 240.7 lb-VOC/day. [District Rule 2201] Federally Enforceable Through Title V Permit

42. Emissions from the flare shall not exceed any of the following limits: 0.06 lb-NOx/MMBtu, 91.1 lb-SOx/day, 13,146 lb-SOx/year, 0.008 lb-PM10/MMBtu, 0.22 lb-CO/MMBtu, or 0.063 lb-VOC/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit

43. The combined heat input of collected B-17 and B-19 landfill gas into the flare shall not exceed any of the following: 83.6 MMBtu/hr or 398,333 MMBtu/year. Heat input shall be calculated daily using monthly methane measurements (%), landfill gas flow into the flare (cubic feet per minute), and the annually tested landfill gas heat content (Btu/cubic foot). [District Rule 2201] Federally Enforceable Through Title V Permit

44. Enclosed flare shall reduce the inlet NMOC emissions by at least 98% by weight or to no more than 20 ppmvd @ 3% O2 as methane. [District Rule 2201] Federally Enforceable Through Title V Permit

45. The methane destruction efficiency for the enclosed flares shall be at least 99% by weight. [17 CCR 95464(b)(2)(A)(1)]

46. Emissions from the flare LPG-fired pilot shall not exceed any of the following limits: 0.15 lb-NOx/MMBtu, 0.0164 lb-SOx/MMBtu, 0.0044 lb-PM10/MMBtu, 0.021 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit

47. A non-resettable, totalizing mass or volumetric landfill gas fuel flow meter to measure the amount of gas combusted in the enclosed flare shall be installed, utilized and maintained. [District Rule 2201] Federally Enforceable Through Title V Permit

48. Sampling ports adequate for sulfur testing shall be provided in the landfill gas manifold line to the flare. [District Rule 1081] Federally Enforceable Through Title V Permit

49. SOx emissions shall be determined by measuring the sulfur concentration in the landfill gas and calculating the correlated SOx emission rate based on the correlation between landfill gas sulfur concentration and associated SOx emission rate demonstrated during startup. [District Rule 1081] Federally Enforceable Through Title V Permit

50. Testing to demonstrate compliance with the daily and annual SOx emission limit shall be conducted weekly. Once eight (8) consecutive weekly tests show compliance, the frequency of monitoring sulfur content, and associated SOx emissions, may be reduced to monthly. If a monthly test shows violation of the SOx emission limit, then weekly testing shall resume and continue until eight (8) consecutive tests show compliance. Once compliance is shown on eight (8) consecutive weekly tests, then testing may return to monthly. [District Rule 2201] Federally Enforceable Through Title V Permit

51. Sulfur content of the landfill gas being combusted in the flare shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or double GC for H2S and mercaptans, or draeger tubes for H2S, or an equivalent method approved by the District. [District Rule 1081] Federally Enforceable Through Title V Permit

52. Total combined Class II/III waste material and Class II soil acceptance rate of C-283-22 and '-25 shall not exceed 2000 tons per day. [District Rule 2201] Federally Enforceable Through Title V Permit

53. Total combined Class II/III waste material acceptance rate of C-283-22 and '-25 shall not exceed 620,000 tons per year. [District Rule 2201] Federally Enforceable Through Title V Permit

54. Total combined Class II soil acceptance rate of C-283-22 and '-25 shall not exceed 800 tons per day. [District Rule 2201] Federally Enforceable Through Title V Permit

55. Total combined clean (<50 ppm by weight VOC) soil cover usage rate of C-283-22 and '-25 shall not exceed 6000 tons per day. [District Rule 2201] Federally Enforceable Through Title V Permit

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56. Total PM10 emissions from handling of Class II/III waste material and soil cover shall not exceed 0.000454 pounds per ton material handled. [District Rule 2201] Federally Enforceable Through Title V Permit

57. Source testing on the flare shall be performed to demonstrate compliance with the flare NOx and CO limits, and the NMOC destruction efficiency of 98%, or no more than 20 ppmvd @ 3% O2 as methane, as required by this permit shall be conducted within 60 days of startup and annually thereafter. [District Rule 2201] Federally Enforceable Through Title V Permit

58. Source testing for flare NOx emissions shall be conducted using CARB Method 7 or Method 20. [District Rule 1081] Federally Enforceable Through Title V Permit

59. Source testing for flare CO emissions shall be conducted using EPA Method 10 or 10B, CARB Methods 1 through 5 with 10, or CARB Method 100. [District Rule 1081] Federally Enforceable Through Title V Permit

60. Operator shall determine landfill gas fuel higher heating value annually by ASTM D 1826 or D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rule 2201] Federally Enforceable Through Title V Permit

61. The results of each landfill gas sulfur content test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit

62. Gas collection system shall be operated in a manner which maximizes the amount of landfill gas extracted while preventing overdraw that can cause fires or damage the gas collection system. [District Rule 2201] Federally Enforceable Through Title V Permit

63. During maintenance of the gas collection system or incineration device, emissions of landfill gas shall be minimized during shutdown. [District Rule 2201] Federally Enforceable Through Title V Permit

64. Maintenance is defined as work performed on a gas collection system and/or control device in order to ensure continued compliance with District rules, regulations, and/or Permits to Operate, and to prevent its failure or malfunction. [District Rule 2201] Federally Enforceable Through Title V Permit

65. The permittee shall notify the APCO by telephone at least 24 hours before performing any maintenance work that requires the system to be shutdown. The notification shall include a description of work, the date work will be performed and the amount of time needed to complete the maintenance work. [District Rule 2201] Federally Enforceable Through Title V Permit

66. Permittee shall maintain records of system inspections including: date, time and inspection results. [District Rule 1070] Federally Enforceable Through Title V Permit

67. Permittee shall maintain records of maintenance related or other collection system and control device downtime, including individual well shutdown. [District Rule 1070] Federally Enforceable Through Title V Permit

68. The operator shall record emission control device source tests (emissions of CO, NOx, and VOC) in pounds per MMbtu heat input. Operator shall also record VOC destruction/treatment efficiency. [District Rule 1081] Federally Enforceable Through Title V Permit

69. Daily records of the weight of materials received (tons) - including Class II/III waste material, Class II soil cover, and clean soil cover - and daily records of all soil organic content test results and certifications, shall be maintained, kept on site for a period of five years, and made available to District staff upon request. [District Rule 2201] Federally Enforceable Through Title V Permit

70. The District shall be notified in writing ten days prior to the acceptance of new types of waste streams, or waste streams with significant malodorous qualities. [District Rules 2201 and 4102] Federally Enforceable Through Title V Permit

71. A District approved anemometer shall be continuously operated on site with permanent data available to the District. [District Rule 2201] Federally Enforceable Through Title V Permit

72. Wastes with the potential to release hazardous gases, mists, or vapors in excess of existing air quality standards shall not be exposed to the atmosphere, and combustion of flammable wastes in the landfill shall be prevented. [District Rule 208] Federally Enforceable Through Title V Permit

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73. A record of continuous flare combustion temperature, continuous volumetric gas flow rate, net heating value of landfill gas being combusted, daily landfill gas fuel consumption, and daily heat input shall be maintained, retained on the premises for a period of at least five years and made readily available for District inspection upon request. [District Rule 2201] Federally Enforceable Through Title V Permit

74. Records of daily and annual landfill gas flow rate, annual test results of higher heating value of landfill gas, and calculated daily and annual SOx emissions shall be maintained. [District Rule 2201] Federally Enforceable Through Title V Permit

75. The collection devices within the interior and along the perimeter areas shall be certified to achieve comprehensive control of surface gas emissions by a professional engineer. The following issues shall be addressed in the design: depths of refuse, refuse gas generation rates and flow characteristics, cover properties, gas system expandibility, leachate and condensate management, accessibility, compatibility with filling operations, integration with closure end use, air intrusion control, corrosion resistance, fill settlement, and resistance to the refuse decomposition heat. [40 CFR 60.759(a)(1)] Federally Enforceable Through Title V Permit

76. The placement of gas collection devices determined in paragraph 60.759(a)(1) shall control all gas producing areas, except as provided by paragraphs 60.759(a)(3)(i) and (a)(3)(ii). [40 CFR 60.759(a)(3)] Federally Enforceable Through Title V Permit

77. The sufficient density of gas collection devices determined in paragraph 60.759(a)(1) shall address landfill gas migration issues and augmentation of the collection system through the use of active or passive systems at the landfill perimeter or exterior. [40 CFR 60.759(a)(2)] Federally Enforceable Through Title V Permit

78. Any segregated area of asbestos or nondegradable material may be excluded from collection if documented as provided under 60.758(d). The documentation shall provide the nature, date of deposition, location and amount of asbestos or nondegradable material deposited in the area, and shall be provided to the Administrator upon request. [40 CFR 60.759(a)(3)(i)] Federally Enforceable Through Title V Permit

79. Any nonproductive area of the landfill may be excluded from control provided that the total of all excluded areas can be shown to contribute less than 1 percent of the total amount of NMOC emissions from the landfill. The amount, location, and age of the material shall be documented and provided to the Administrator upon request. A separate NMOC emissions estimate shall be made for each section proposed for exclusion, and the sum of all such sections shall be compared to the NMOC emissions estimate for the entire landfill. Emissions from each section shall be computed using the equation in Section 60.759(a)(3)(ii). [40 CFR 60.759(a)(3)(ii)] Federally Enforceable Through Title V Permit

80. The values for k and CNMOC in equation in Section 60.759(a)(3)(ii) determined in field testing shall be used if field testing has been performed in determining the NMOC emission rate or the radii of influence (this distance from the well center to a point in the landfill where the pressure gradient applied by the blower or compressor approaches zero). If field testing has not been performed, the default values for k, Lo, and CNMOC provided in 60.754(a)(1) or the alternative values from 60.754(a)(5) shall be used. The mass of nondegradable solid waste contained within the given section may be subtracted from the total mass of the section when estimating emissions provided the nature, location, age, and amount of the nondegradable material is documented as provided in paragraph 60.759(a)(3)(i). [40 CFR 60.759(a)(3)(iii)] Federally Enforceable Through Title V Permit

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81. Each owner or operator seeking to comply with 60.752(b)(2)(i)(A) shall construct the gas collection devices using the following equipment or procedures: (1) The landfill gas extraction components shall be constructed of polyvinyl chloride (PVC), high density polyethylene (HDPE) pipe, fiberglass, stainless steel, or other nonporous corrosion resistant material of suitable dimensions to: convey projected amounts of gases; withstand installation, static, and settlement forces; and withstand planned overburden or traffic loads. The collection system shall extend as necessary to comply with emission and migration standards. Collection devices such as wells and horizontal collectors shall be perforated to allow gas entry without head loss sufficient to impair performance across the intended extent of control. Perforations shall be situated with regard to the need to prevent excessive air infiltration; (2) Vertical wells shall be placed so as not to endanger underlying liners and shall address the occurrence of water within the landfill. Holes and trenches constructed for piped wells and horizontal collectors shall be of sufficient cross-section so as to allow for their proper construction and completion including, for example, centering of pipes and placement of gravel backfill. Collection devices shall be designed so as not to allow indirect short circuiting of air into the cover or refuse into the collection system or gas into the air. Any gravel used around pipe perforations should be of a dimension so as not to penetrate or block perforations; (3) Collection devices may be connected to the collection header pipes below or above the landfill surface. The connector assembly shall include a positive closing throttle valve, any necessary seals and couplings, access couplings and at least one sampling port. The collection devices shall be constructed of PVC, HDPE, fiberglass, stainless steel, or other nonporous material of suitable thickness. [40 CFR 60.759(b)] Federally Enforceable Through Title V Permit

82. Each owner or operator seeking to comply with 60.752(b)(2)(i)(A) shall convey the landfill gas to a control system in compliance with 60.752(b)(2)(iii) through the collection header pipe(s). The gas mover equipment shall be sized to handle the maximum gas generation flow rate expected over the intended use period of the gas moving equipment using the following procedures: (1) For existing collection systems, the flow data shall be used to project the maximum flow rate. If no flow data exists, the procedures in paragraph 60.759(c)(2) shall be used; (2) For new collection systems, the maximum flow rate shall be in accordance with 60.755(a)(1). [40 CFR 60.759(c)] Federally Enforceable Through Title V Permit

83. Continuous parameter monitoring data, collected under 40 CFR 60.756(b)(1), (c)(1), and (d), are used to demonstrate compliance with the operating conditions for control systems. If a deviation occurs, the permittee has failed to meet the control device operation conditions described in this subpart and has deviated from the requirements of this subpart. The permittee shall develop a written SSM plan according to the provisions in 40 CFR 63.6(e)(3). A copy of the SSM plan must be maintained on site. Failure to write or maintain a copy of the SSM plan is a deviation from the requirements of this subpart. [40 CFR 63.1960] Federally Enforceable Through Title V Permit

84. The permittee shall maintain records as specified in the general provisions of 40 CFR part 60 and this part as shown in Table 1 of this subpart. Applicable records in the general provisions include items such as SSM plans and the SSM plan reports. [40 CFR 63.1980(b)] Federally Enforceable Through Title V Permit

85. The permittee shall submit the initial semiannual compliance report and performance tests results described in 40 CFR 60.757(f) within 180 days after the date required to being operating the gas collection and control system by 63.1947(c) of this subpart. [40 CFR 63.1980(e)] Federally Enforceable Through Title V Permit

86. All records shall be maintained and retained on-site for a period of at least 5 years and shall be made available for District inspection upon request. [District Rule 1070] Federally Enforceable Through Title V Permit

87. The landfill surface shall be monitored quarterly. If there are any exceedances during a quarterly event, monitoring will be required monthly until three consecutive months without exceedances, which would allow a return to quarterly monitoring. [District Rule 2201] Federally Enforceable Through Title V Permit

88. After an exceedance, the permittee shall initiate correction action within five days and conduct remonitoring within ten days from the initial exceedance. If compliance is shown, an additional remonitoring event is required within one month of the initial exceedance. If the ten day event shows an exceedance, the permittee shall initiate correction action within five days and conduct remonitoring within ten days from the second exceedance. If compliance is shown, an additional remonitoring is required within one month of the initial exceedance. If the second ten day event shows an exceedance, the permittee shall permit and install additional landfill gas wells to correct the problem within 120 days of the initial exceedance. [District Rule 2201] Federally Enforceable Through Title V Permit

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89. The gas collection and control system shall comply with the operational standards of 40 CFR 60.753, the compliance provisions of 40 CFR 60.755, the monitoring provisions of 40 CFR 60.756, the reporting and record keeping requirements of 40 CFR 60.757 and 60.758, and the requirements of 40 CFR 60.759 (for active collection systems). [40 CFR 60.752(b)(2)(ii), 60.753, 60.755, 60.756, 60.757, 60.758 and 60.759] Federally Enforceable Through Title V Permit

90. In the event that the collection or control system becomes inoperable, the gas mover equipment (as defined in 40 CFR 60.751) shall be shut down and all valves in the collection and control system contributing to venting of the landfill gas to the atmosphere shall be closed within one hour. [40 CFR 60.753(e)] Federally Enforceable Through Title V Permit

91. The owner/operator shall install, calibrate, maintain, and operate a meter that measures and records the landfill gas flow rate into the flare at least once every 15 minutes. This meter shall also be capable of measuring the landfill gas flow rate that might bypass the flare in the event of equipment malfunction or maintenance. [40 CFR 60.756(c)(2)] Federally Enforceable Through Title V Permit

92. The flare shall be operated with a flame present at all times while gas is being vented to it. The presence of a flame shall be continuously monitored using a thermocouple, ultraviolet sensor, or any other equivalent device located at the pilot light or the flame itself. The flame's presence shall be recorded at least once every 15 minutes. [40 CFR 60.18(c)(2) and 40 CFR 60.756(c)(1)] Federally Enforceable Through Title V Permit

93. The enclosed flare shall be equipped with an accurate temperature indicator/recorder that continuously measures and records the operating temperature. [District Rule 2201; 40 CFR 60.756(b)(1)] Federally Enforceable Through Title V Permit

94. The enclosed flare shall be equipped with either a device that records flow to the control device at least every 15 minutes; or secure the bypass line valve in the closed position with a car-seal or a lock-and-key type configuration of the control device. [40 CFR 60.756(b)(2] Federally Enforceable Through Title V Permit

95. Any closed landfill that has demonstrated compliance in three consecutive quarterly monitoring periods may perform annual monitoring. Quarterly monitoring shall resume if any methane readings of 500 ppm or more above background are detected during annual monitoring. [40 CFR 60.756(f)] Federally Enforceable Through Title V Permit

96. Permittee shall keep up-to-date, readily accessible continuous records of the indication of flow to the enclosed flare, or the indication of bypass flow, or records of monthly inspections of car-seals or lock-and-key configurations used to seal bypass lines. [40 CFR 60.758(c) and 60.34c] Federally Enforceable Through Title V Permit

97. The landfill is no longer required to comply with the requirements of 40 CFR Part 63 Subpart AAAA when it is no longer required to apply controls as specified in 40 CFR 60.752(b)(2)(v) of subpart WWW. [40 CFR 63.1950] Federally Enforceable Through Title V Permit

98. Except for the spreading of landfill cover, when handling bulk materials outside an enclosed structure or building, water or chemical/organic stabilizers/suppressants shall be applied as required to limit Visible Dust Emissions to a maximum of 20% opacity. When necessary to achieve this opacity limitation, wind barriers with less than 50% porosity shall also be used. [District Rules 8011 and 8031] Federally Enforceable Through Title V Permit

99. Except for the spreading of landfill cover, when transporting bulk materials outside an enclosed structure or building, all bulk material transport vehicles shall limit Visible Dust Emissions to 20% opacity by either limiting vehicular speed, maintaining sufficient freeboard on the load, applying water to the top of the load, or covering the load with a tarp or other suitable cover. [District Rules 8011 and 8031] Federally Enforceable Through Title V Permit

100. Records and other supporting documentation shall be maintained as required to demonstrate compliance with the requirements of the rules under Regulation VIII only for those days that a control measure was implemented. Such records shall include the type of control measure(s) used, the location and extent of coverage, and the date, amount, and frequency of application of dust suppressant, manufacturer's dust suppressant product information sheet that identifies the name of the dust suppressant and application instructions. Records shall be kept for one year following project completion that results in the termination of all dust generating activities. [District Rules 8031, 8071, and 8011] Federally Enforceable Through Title V Permit

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101. One or more of the following control measures shall be implemented on each day that 50 or more VDT (Vehicle Daily Trips), or 25 or more VDT with 3 or more axles, originates from within and remains exclusively within an unpaved vehicle/equipment traffic area: water, gravel, roadmix, or chemical/organic dust stabilizers/suppressants, vegetative materials, or other District-approved control measure shall be applied to unpaved vehicle travel areas as required to limit Visible Dust Emissions to 20% opacity and comply with the requirements for a stabilized unpaved road as defined in District Rule 8011. [District Rule 8071 and 8011] Federally Enforceable Through Title V Permit

102. On each day that 50 or more VDT (Vehicle Daily Trips), or 25 or more VDT with 3 or more axles, originates from within and remains exclusively within an unpaved vehicle/equipment traffic area, dusting materials accumulated on paved surfaces shall be removed daily or water and/or chemical/organic dust stabilizers/suppressants shall be applied to the paved surface as required to maintain continuous compliance with the requirements for a stabilized unpaved road as defined in District Rule 8011 and limit Visible Dust Emissions (VDE) to 20% opacity. [District Rule 8011 and 8071] Federally Enforceable Through Title V Permit

103. Whenever any portion of the site becomes inactive, Permittee shall restrict access and periodically stabilize any disturbed surface to comply with the conditions for a stabilized surface as defined in Section 3.58 of District Rule 8011. [District Rules 8071 and 8011] Federally Enforceable Through Title V Permit

104. The flare and gas collection system may be shut down when there is an insufficient amount of landfill gas to operate on. During the shutdown period, all gas collection system vents shall be closed and no emissions shall occur through the gas collection system. [District Rule 2201] Federally Enforceable Through Title V Permit

105. During the shutdown of the gas collection system, surface testing to measure the methane concentration at the surface of the landfill shall be conducted at least once every week using an organic vapor analyzer, flame ionization detector, or other portable monitor meeting the specifications provided in 40 CFR 60.755(d). After demonstrating compliance on four consecutive tests, the testing frequency shall be at least once every month. [District Rule 2201] Federally Enforceable Through Title V Permit

106. During the shutdown of the gas collection system, if the methane concentration measured during weekly or monthly surface testing exceeds 500 parts per million above background at the surface of the landfill, the testing frequency shall be at least once every other day. After demonstrating compliance on four consecutive tests, the testing frequency shall revert to at least once every week. [District Rule 2201] Federally Enforceable Through Title V Permit

107. During operation of the enclosed flare, the permittee shall continuously monitor and record combustion chamber temperature. The temperature readings shall not be less than 28 °C (50 °F) below the average combustion temperature determined during the most recent flare source test, averaged over a 3-hour period. Upon detecting any temperature excursion lower than 28 °C (50 °F) below the source test average combustion temperature, averaged over a 3-hour period, the permittee shall investigate the excursion and take corrective action to minimize excessive emissions and prevent recurrence of the excursion as expeditiously as practicable. [40 CFR part 64] Federally Enforceable Through Title V Permit

108. The temperature monitoring device shall be calibrated, maintained, and operated according to the manufacturer's specifications. [40 CFR part 64] Federally Enforceable Through Title V Permit

109. The enclosed flare burner and its associated components and the vapor collection system shall be inspected on an annual basis. The records of inspection shall at least contain date and time of inspection, identification of the person performing an inspection, parts replacement and repairs, and all maintenance actions taken. The records shall be kept and maintained for compliance inspection upon request. [40 CFR part 64] Federally Enforceable Through Title V Permit

110. The permittee shall comply with the compliance assurance monitoring operation and maintenance requirements of 40 CFR part 64.7. [40 CFR part 64] Federally Enforceable Through Title V Permit

111. The permittee shall comply with the recordkeeping and reporting requirements of 40 CFR part 64.9. [40 CFR part 64] Federally Enforceable Through Title V Permit

112. If the District or EPA determine that a Quality Improvement Plan is required under 40 CFR 64.7(d)(2), the permittee shall develop and implement the Quality Improvement Plan in accordance with 40 CFR part 64.8. [40 CFR part 64] Federally Enforceable Through Title V Permit

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113. Landfill gas collection system components downstream of blower have a leak limit of 500 ppmv as methane. Components must be checked quarterly. [17 CCR 95464(b)(1)(B), 17CCR 95469(b)(3)]

114. Landfill gas collection system wellheads must be operated under vacuum. Monthly monitoring of wellheads is required. Landfill gas collection system wellheads may be operated under neutral or positive pressure except as allowed in sections 95464(c), 95464(d), and 95464(e). [17 CCR 95464(b)(1)(C)]

115. Landfill gas collection and control system must be operated such that landfill surface methane emissions shall not exceed instantaneous surface emission limit of 500 ppmv as methane or integrated surface emission limit of 25 ppmv as methane. [17 CCR 95465]

116. Instantaneous and integrated landfill surface emissions measurements shall be done quarterly. The landfill may monitor annually provided they comply with requirements of 17 CCR 95469 (a)(3). [17 CCR 95469(a)]

117. Permittee shall keep records of all gas collection system downtime exceeding five days, including individual well shutdown and disconnection times and the reason for downtime. [17 CCR 95470(a)(1)(A)]

118. Permittee shall keep records of all gas control system downtime in excess of one hour, the reason for the downtime and the length of time the gas control system was shutdown. [17 CCR 95470(a)(1)(B)]

119. Permittee shall keep records of the expected gas generation flow rate calculated pursuant to section 95471(e). [17 CCR 95470(a)(1)(C)]

120. Permittee shall keep records of all instantaneous surface readings of 200 ppmv or greater; all exceedances of the limits in sections 95464(b)(1)(B) or 95465, including the location of the leak (or affected grid), leak concentration in ppmv, date and time of measurement, the action taken to repair the leak, date of repair, any required re-monitoring and the re-monitored concentration in ppmv, and wind speed during surface sampling; and the installation date and location of each well installed as part of a gas collection system expansion. [17 CCR 95470(a)(1)(D)]

121. Permittee shall keep records of any positive wellhead gauge pressure measurements, the date of the measurements, the well identification number, and the corrective action taken. [17 CCR 95470(a)(1)(E)]

122. Permittee shall conduct surface emission monitoring using either the procedures specified in section 95471(c) or the Los Angeles County Sanitation District monitoring procedure. Permittee shall keep records of which procedure was used. [17 CCR 95468]

123. Permittee shall keep records of delays encountered during repair of leaks or repair of positive wellhead readings. Documentation of delays shall be submitted with the annual report. [17 CCR 95468(a)(2)]

124. Permittee shall keep records of alternate landfill gas collection system modifications being implemented to correct an exceedance in the landfill gas surface emissions or wellhead pressure. Any alternative to installing a new well shall be documented and submitted with the annual report. [17 CCR 95468]

125. Permittee shall identify areas which are dangerous and unable to be inspected or contain only inert, non-decomposing waste. Areas shall be clearly identified on a map of the facility. A copy of the map shall be kept onsite as well as submitted with the annual report. [17 CCR 95468(a)(5)]

126. Permittee shall conduct monitoring of the landfill surface within 3 inches of the surface. The facility may monitor surface emissions with the probe tip at the height of the vegetation if there is vegetation and it is impractical to monitor at 3 inches from the landfill surface. [17 CCR 95468]

127. Permittee shall terminate surface emission testing when the measured average wind speed is over 10 mph or the instantaneous wind speed is over 20 mph. [17 CCR 95468(a)(3), 17 CCR 95471(c)(1)(C)]

128. Permittee shall only conduct surface emission testing when precipitation has met the following requirements. It has been 24 hours since measured precipitation of 0.01 to 0.15 inches. It has been 48 hours since measured precipitation of 0.16 to 0.24 inches. It has been 72 hours since measured precipitation of 0.25 or more inches. [17 CCR 95468]

129. Permittee shall keep records of the annual solid waste acceptance rate and the current amount of waste-in-place. [17 CCR 95470(a)(1)(F)]

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130. Permittee shall keep records of the nature, location, amount , and date of deposition of non-degradable waste for any landfill areas excluded from the collection system. [17 CCR 95470(a)(1)(G)]

131. Permittee shall keep records of any source tests conducted pursuant to section 95464(b)(4). [17 CCR 95470(a)(1)(H)]

132. The flare must be source tested annually for methane destruction efficiency of at least 99% by weight. If the flare is in compliance after three consecutive source tests, the facility may move to source testing the flare every three years. If subsequent tests show the flare out of compliance, the test frequency shall revert to annual testing. [17 CCR 95464(b)(4)(A)]

133. The flare must have automatic dampers, an automatic shutdown device, a flame arrester, and continuous recording temperature sensors. [17 CCR 95464(b)(2)(A)(2)]

134. The flare must operate within the parameter ranges established during the initial or most recent source test. [17 CCR 95464(b)(2)(A)(4)]

135. Permittee shall keep records describing the mitigation measures taken to prevent the release of methane or other emissions into the atmosphere during the following activities: 1. When solid waste was brought to the surface during the installation or preparation of wells, piping, or other equipment; 2. During repairs or the temporary shutdown of gas collection system components; or, 3. When solid waste was excavated and moved. [17 CCR 95470(a)(1)(I)]

136. Permittee shall keep records of any construction activities pursuant to section 95466. The records must contain the following information: 1. A description of the actions being taken, the areas of the MSW landfill that will be affected by these actions, the reason the actions are required, and any landfill gas collection system components that will be affected by these actions. 2. Construction start and finish dates, projected equipment installation dates, and projected shut down times for individual gas collection system components. 3. A description of the mitigation measures taken to minimize methane emissions and other potential air quality impacts. [17 CCR 95470(a)(1)(J)]

137. Permittee shall keep records of the equipment operating parameters specified to be monitored under section 95469(b)(1) as well as records for periods of operation during which the parameter boundaries established during the most recent source test are exceeded. The records must include the following information: 1. For enclosed flares, all 3-hour periods of operation during which the average temperature difference was more than 28 °Celsius (or 50 °Fahrenheit) below the average combustion temperature during the most recent source test at which compliance with sections 95464(b)(2) was determined and a gas flow rate device which must record the flow to the control device at least every 15 minutes. [17 CCR 95470(a)(1)(K), 17 CCR 95469(b)(1)(B)]

138. Permittee shall submit the following reports as required in section 95470(b): Closure notification, Equipment removal report and Annual report. All reports must be accompanied by a certification of truth, accuracy, and completeness signed by a responsible official. [17 CCR 95470(b)]

139. Permittee may request alternatives to the compliance measures, monitoring requirements, test methods and procedures of sections 95464, 95469, and 95471. Any requests must be submitted in writing. [17 CCR 95468]