

**Bay Area Air Quality Management District**

939 Ellis Street  
San Francisco, CA 94109  
(415) 771-6000

**Permit Evaluation  
and  
Statement of Basis  
for  
RENEWAL of the**

**MAJOR FACILITY REVIEW PERMIT**

for

**Kirby Canyon Recycling and Disposal Facility  
Facility #A1812**

**Facility Address:**

910 Coyote Creek Golf Drive  
Morgan Hill, CA 95037

**Mailing Address:**

P. O. Box 1870  
Morgan Hill, CA 95038

Application Engineer: Tamiko Endow

Site Engineer: Tamiko Endow

Application Number: 17168

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## TABLE OF CONTENTS

A.	Background.....	3
B.	Facility Description .....	4
C.	Permit Content.....	6
I.	Standard Conditions.....	6
II.	Equipment .....	7
III.	Generally Applicable Requirements .....	9
IV.	Source-Specific Applicable Requirements .....	10
V.	Schedule of Compliance .....	12
VI.	Permit Conditions .....	13
VII.	Applicable Limits and Compliance Monitoring Requirements .....	15
VIII.	Test Methods.....	18
IX.	Permit Shield:.....	19
X.	Revision History .....	19
XI.	Glossary .....	19
D.	Alternate Operating Scenarios:.....	19
E.	Compliance Status:.....	19
F.	Differences Between the Application and the Proposed Permit: .....	20
	APPENDIX A BAAQMD COMPLIANCE REPORT .....	21
	APPENDIX B GLOSSARY .....	25
	APPENDIX C NSR Permit Evaluations Applications #19359, #21786,. #23446 .....	33

**Title V Statement of Basis for:  
Renewal of Major Facility Review Permit for  
Kirby Canyon Recycling and Disposal Facility, Site #A1812  
Application #17168**

**A. Background**

Kirby Canyon Recycling & Disposal Facility (KCRDF), formerly known as Kirby Canyon Landfill, is subject to the Operating Permit requirements of Title V of the federal Clean Air Act, Part 70 of Title 40 of the Code of Federal Regulations (CFR), and BAAQMD Regulation 2, Rule 6, Major Facility Review because it is a designated facility as defined in BAAQMD Regulation 2-6-204. The Emission Guidelines for Municipal Solid Waste Landfills (40 CFR Part 60, Subpart Cc) require the owner or operator of a landfill subject to this part and having a design capacity of 2.5 million megagrams and 2.5 million cubic meters or more to obtain a federal operating permit pursuant to Part 70. This facility is a designated facility because it meets the criteria listed in 40 CFR, Section 60.32c(c).

Major Facility Operating Permits (Title V permits) must meet specifications contained in 40 CFR Part 70 as contained in BAAQMD Regulation 2, Rule 6, Major Facility Review (MFR). The permits must contain all “applicable requirements” (as defined in BAAQMD Regulation 2-6-202), monitoring requirements, recordkeeping requirements, and reporting requirements. The permit holders must submit reports of all monitoring at least every six months and compliance certifications at least every year.

In the Bay Area, state and District requirements are also applicable requirements and are included in the permit. These requirements can be federally enforceable or non-federally enforceable. All applicable requirements are contained in Sections I through VI of the permit.

Each facility in the Bay Area is assigned a facility identifier that consists of a letter and a 4-digit number. This identifier is also considered to be the identifier for the permit. The identifier for this facility is A1812.

This facility received its initial Title V permit on July 10, 2003. Four minor permit revisions have been issued since then, annually between 2005 and 2008. This Application 17168 for a permit renewal was received on December 28, 2007. Although the current permit expired on June 30, 2008, it continues in force until the District takes final action on the permit renewal.

Pursuant to Regulation 2, Rule 6, section 416, the District has reviewed the terms and conditions of this Major Facility Review permit and determined that they are valid and correct. This review included an analysis of all applicability determinations for all sources. The review also included an assessment of the sufficiency of all monitoring for determination of compliance with applicable requirements. The statements of basis for permit revisions that have occurred through the last revision of the Major Facility Review permit are hereby incorporated by reference and are available upon request. The proposed permit shows all changes to the permit since the last revision in strikeout/underline format. These changes are discussed in this Statement of Basis.

## **B. Facility Description**

Kirby Canyon Recycling & Disposal Facility is operated by Waste Management of California and includes the Kirby Canyon MSW Landfill, which is an active Class III municipal solid waste (MSW) landfill. The site is located 15 miles south of downtown San Jose, adjacent to US Highway 101 and opened in July 1986. The facility and accepts non-hazardous residential, commercial, industrial, and inert wastes. It has a total permitted area of 827 acres with a permitted waste disposal footprint of 311 acres and a design capacity of 36.4 million cubic yards (20.5 million tons). The waste-in-place as of the end of 2009 was reported to be 5.76 million tons, and the site's estimated closure is 2065.

Landfills generate landfill gas due to the waste decomposition process. The landfill gas contains methane and carbon dioxide (which are greenhouse gases: GHG) and small amounts of non-methane organic compounds (NMOC) and sulfur compounds. Many of the NMOCs are precursor organic compounds (POC), and many NMOCs and also toxic air contaminants (TACs) and hazardous air pollutants (HAPs). Hydrogen sulfide, a TAC, makes up about 95% or more of the sulfur compounds. District and EPA regulations require that landfill gas from larger landfills be continuously collected and controlled to reduce emissions of NMOCs to the atmosphere. These collection and control requirements also reduce GHG, TAC, and HAP emissions.

In accordance with these requirements, Kirby Canyon MSW Landfill (S-1) is equipped with a landfill gas collection system and a landfill gas control system. Landfill gas collection systems are perforated pipes that are buried in the refuse at numerous locations. For active collection systems, the perforated pipes are connected to blowers by solid pipes (referred to as laterals and headers). The blowers maintain a vacuum in the buried refuse and draw landfill gas into the perforated pipes. The landfill is also equipped with a leachate collection system, which collects liquid leachate that is then injected into the landfill gas flare for destruction. The collection system currently includes 58 vertical gas collection wells and 1 leachate collection well.

During 2009, an estimated average of 1,397 cfm of landfill gas was collected from S-1. The collected landfill gas is abated on-site by the A-12 Landfill Gas Flare. Combustion destroys most of the methane, NMOC, TAC, and HAP that are present in the landfill gas; however, landfill gas combustion also produces secondary emissions comprised of nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO), sulfur dioxide (SO<sub>2</sub>), particulate matter (PM), formaldehyde, and acid gases such as hydrogen chloride (HCl) and hydrogen fluoride (HF).

KCRDF also operates a portable diesel-fired IC Engine (S-8), which is used to operate a portable air compressor. This engine requires a District permit because it remains at the site for more than 12 months and is therefore not eligible for the statewide portable equipment registration program (PERP). The diesel engine emits combustion products including: GHG, NO<sub>x</sub>, CO, SO<sub>2</sub>, POC, PM, and diesel PM (a TAC).

The emissions for this facility, based on the 2010 operating data reported by Waste Management, have been summarized in Table 1, below.

**Table 1**  
**2010 Facility Emissions**  
**Site #A1812, Kirby Canyon Recycling & Disposal Facility**

Source Number/Description	Emissions (tons/year)				
	PM10	VOC	NOx	SO2	CO
S-1, Landfill with Gas Collection System	14.0	20.8	0.15	0	0
S-8, Portable Diesel IC Engine –Air Compressor	0.0	0.0	0.02	0.0	0.02
A-12, Enclosed LFG Flare	1.1	1.0	13.3	3.1	69.8
<b>Total Facility Emissions</b>	<b>15.1</b>	<b>21.8</b>	<b>13.5</b>	<b>3.1</b>	<b>69.8</b>

During the 2011 annual renewal of the BAAQMD permits to operate for this facility, the District split the existing landfill source (S-1) into three source numbers (S-1, S-22, and S-23) based on the type of emissions and the type of activities that occur at active landfills. These source description changes were necessary due to an amendment of BAAQMD Regulation 3, Fees, Schedule K that was approved by the BAAQMD Board of Directors in June 2011 and due to changes the District is making to its emission inventory calculation programs. All active landfills in the Bay Area will be undergoing similar source description changes. The new source descriptions for this site are as follows:

- S-1 Kirby Canyon MSW Landfill – Waste Decomposition Process; equipped with landfill gas collection system and abated by A-12 Enclosed Landfill Gas Flare
- S-22 Kirby Canyon MSW Landfill – Waste and Cover Material Dumping
- S-23 Kirby Canyon MSW Landfill – Excavating, Bulldozing, and Compacting Activities

S-22 and S-23 encompass all of the active landfilling activities (vehicle travel on roads, material handling, wind erosion, etc.) that generate or result in particulate emissions from the landfill. Some of these activities, such as disposal of contaminated soil and use of VOC laden soil as cover material, also generate volatile organic compound emissions due to aeration of VOCs that occur during movement of these VOC laden materials or during exposure of the materials to the atmosphere (in uncovered stockpiles or after placement as daily cover material). These VOC emissions are attributed to S-22.

These source description changes were incorporated into this Title V renewal permit by adding the new source descriptions to Table II-A and to the titles of the applicable tables (Tables IV-A, VII-A, and IX-A). All of the above sources are subject to the permit conditions, Condition # 1437, and regulatory requirements that applied to the original S-1.

Three NSR applications have been processed since the last minor revision of this permit. Application #19359 allowed for alternate operating temperatures at specific wells, and Applications #21786 and #23446 allowed for additional alterations to the gas and leachate collection system for well additions, removals, and replacements. The resulting changes in

permit conditions from these three applications have been shown in the proposed permit in strikeout/underline format. The permit evaluations for these NSR applications have been included in Appendix C for reference.

The District has received one additional NSR application from this facility for which action has not yet been taken, Application #21156. The proposed Change of Conditions requested under this outstanding application has therefore not been included in this proposed permit renewal. This application involves a request to increase in the landfill gas sulfur content limit for the landfill which will impact toxic emissions from the landfill and flare and sulfur dioxide emissions from the flare. If the requested Change of Conditions is approved, the permit condition revisions will be updated to the Title V permit for this facility, separately, under the Title V minor permit revision procedures.

### **C. Permit Content**

The legal and factual basis for the permit follows. The permit sections are described in the order presented in the permit. Routine changes to the standard permit text in Sections I “Standard Conditions”, III “Generally Applicable Requirements”, and X “Glossary” are not considered part of the Title V permit renewal process, but may be made at the discretion of the District during the term of this permit.

#### Changes to the Permit, Title Page:

- The business name and address has been updated.
- The Responsible Official and Facility Contact have been updated.

### **I. Standard Conditions**

This section contains administrative requirements and conditions that apply to all facilities. If the Title IV (Acid Rain) requirements for certain fossil-fuel fired electrical generating facilities or the accidental release (40 CFR § 68) programs apply, the section will contain a standard condition pertaining to these programs. This permit does not include Title IV or accidental release provisions.

Many of these conditions derive from 40 CFR § 70.6, Permit Content, which dictates certain standard conditions that must be placed in the permit. The language that the District has developed for many of these requirements has been adopted into the BAAQMD Manual of Procedures, Volume II, Part 3, Section 4, and therefore must appear in the permit.

The standard conditions also contain references to BAAQMD Regulation 1 and Regulation 2. These are the District’s General Provisions and Permitting rules.

### Changes to the Permit, Section I:

- The dates of adoption and approval of rules in Standard Condition I.A have been updated. In addition Regulation 2, Rule 5 and the SIP version of Regulation 2, Rule 6 have been added.
- The bases of Standard Condition I.B.1, I.B.7, I.B.11, I.E, and I.F were corrected.
- The following language was added to Standard Condition I.B.1: “If the permit renewal has not been issued by [the permit expiration date], but a complete application for renewal has been submitted in accordance with the above deadlines, the existing permit will continue in force until the District takes final action on the renewal application.” This is standard language implements the “application shield” pursuant to BAAQMD Regulation 2-6-407.
- Standard Condition I.B.12 was added to reiterate that the Permit Holder is responsible for ensuring that all activities at the facility comply with all applicable requirements.
- Editorial corrections were made to Standard Conditions I.F and I.G.

## **II. Equipment**

This section of the permit lists all permitted or significant sources. Each source is identified by an S and a number (e.g., S-24). Permitted sources are those sources that require a BAAQMD operating permit pursuant to BAAQMD Rule 2-1-302. Each of the permitted sources has previously been issued a permit to operate pursuant to the requirements of BAAQMD Regulation 2, Permits. These permits are issued in accordance with state law and the District’s regulations. The capacities in the permitted sources table are the maximum allowable capacities for each source, pursuant to Standard Condition I.J and Regulation 2-1-403. The permitted sources are listed in Table II-A.

As discussed in the Facility Description section, the District is splitting the existing active landfill source (S-1) into three source numbers (S-1, S-22, S-23). Source S-1 will represent the waste decomposition process for this landfill and will include all GHG, NMOC, TAC, and HAP emissions that occur due to the decomposition of waste and cover materials placed in the landfill. S-1 will continue to include the landfill gas and leachate collection system equipment, which is vented to the A-12 Enclosed Landfill Gas Flare. The waste and cover material dumping processes, which include particulate emissions resulting from material handling and delivery plus NMOC emissions due to the handling of VOC-laden or contaminated soil, will be covered under source S-22. Source S-23 will represent the excavating, bulldozing, and compacting activities that occur at this active landfill and will include the particulate emissions generated by these activities. The new source descriptions for S-1, S-22, and S-23 were used throughout this proposed permit renewal.

Significant sources are those sources that have a potential to emit of more than 2 tons per year of a “regulated air pollutant” (as defined in BAAQMD Rule 2-6-222) or 400 pounds per year of a “hazardous air pollutant” (as defined in BAAQMD Rule 2-6-210). No significant sources have been reported at this facility. Note that the following sources, which are exempt from District permit requirements, have been reported by the facility, but are not identified as significant sources:

- Diesel Storage Tank, 10,000 gallon capacity; exempt per Regulation 2-1-123.3.4
- Waste Oil Storage Tank, 550 gallon capacity; exempt per Regulation 2-1-123.3.3
- 3 Storage Tanks for Transmission Fluid, Hydraulic Oil, Motor Oil, 480 gallon capacity each; exempt per Regulation 2-1-123.3.3
- 3 Grease/Gear Oil Storage Tanks, 55 gallon capacity each; exempt per Regulation 2-1-123.1
- Waste Antifreeze Storage Tank, 20 gallon capacity; exempt per Regulation 2-1-123.1
- Leachate and Flare LFG Condensate Storage Tanks; exempt per Regulation 2-1-123.2

All abatement (control) devices that control permitted or significant sources are listed. Each abatement device whose primary function is to reduce emissions is identified by an “A” and a number (e.g., A-24). If a source is also an abatement device, such as when an engine controls VOC emissions, it will be listed in the abatement device table but will have an “S” number. An abatement device may also be a source (such as a thermal oxidizer that burns fuel) of secondary emissions. If the primary function of a device is to control emissions, it is considered an abatement (or “A”) device. If the primary function of a device is a non-control function, the device is considered to be a source (or “S”).

Regulation 2-6-114 specifies that engines, as defined by 40 CFR Part 89, are exempt from Major Facility Review requirements. 40 CFR Part 89, applies to nonroad engines, defined as follows:

*Nonroad engine* is defined as any internal combustion engine, in or on a piece of equipment that is self-propelled or serves a dual purpose by both propelling itself and performing another function (such as garden tractors, off-highway mobile cranes and bulldozers); or in or on a piece of equipment that is intended to be propelled while performing its function (such as lawnmowers and string trimmers); or that, by itself or in or on a piece of equipment, is portable or transportable, meaning designed to be and capable of being carried or moved from one location to another. Indicia of transportability include, but are not limited to, wheels, skids, carrying handles, dolly, trailer, or platform.

An internal combustion engine is not a nonroad engine, if the engine remains or will remain at a location for more than 12 consecutive months or a shorter period of time for an engine located at a seasonal source. A location is any single site at a building, structure, facility, or installation.

Source S-8 Portable Diesel Engine is a non-road engine and has therefore been removed from Table II-A and moved to a new Table II-C, for sources exempt from Regulation 2, Rule 6, Major Facility Review.

The equipment section is considered to be part of the facility description. It contains information that is necessary for applicability determinations, such as fuel types, contents or sizes of tanks, etc. This information is part of the factual basis of the permit.

#### Changes to the Permit, Section II:

- The format of the tables has been updated.
- The description of S-1 was modified and the new source numbers (S-22 and S-23) were added to Table II-A.
- The applicable waste acceptance limits were clarified.
- The landfill gas and leachate collection system component counts were updated.
- The minimum operating temperature for the flare and flare description were updated.



- S-8, the portable diesel engine was removed from Table II-A and added in a new Table II-C, since it is a “nonroad engine” as defined by 40 CFR Part 89 and exempt from Major Facility Review requirements by Regulation 2-6-114.

### **III. Generally Applicable Requirements**

This section of the permit lists requirements that generally apply to all sources at a facility, including insignificant sources and portable equipment that may not require a District permit. If a generally applicable requirement applies specifically to a source that is permitted or significant, the standard will also appear in Section IV and the monitoring for that requirement will appear in Sections IV and VII of the permit. Parts of this section apply to all facilities (e.g., particulate, architectural coating, odorous substance, and sandblasting standards). In addition, standards that apply to insignificant or unpermitted sources at a facility (e.g., refrigeration units that use more than 50 pounds of an ozone-depleting compound) are placed in this section.

Unpermitted sources are exempt from normal District permits pursuant to an exemption in BAAQMD Regulation 2, Rule 1. They may, however, be specifically described in a Title V permit if they are considered “significant sources” as defined in BAAQMD Rule 2-6-239. This facility does not have any significant sources that do not have District permits.

#### Changes to the Permit, Section III:

- Editorial corrections were made to the text in this section.
- The dates of adoption or approval of the rules and their “federal enforceability” status in Table III have been updated.
- The following rules and standards have been added to conform to current practice:
  - SIP Regulation 2-1-429, Federal Emissions Statement
  - BAAQMD Regulation 2, Rule 5, New Source Review of Toxic Air Contaminants
  - BAAQMD Regulation 6, Particulate Matter and Visible Emissions has been renamed and renumbered as Regulation 6, Rule 1, Particulate Matter - General Requirements
  - SIP Regulation 6, Particulate Matter and Visible Emissions
  - SIP Regulation 8, Rule 2, Organic Compounds - Miscellaneous Operations
  - BAAQMD and SIP Regulation 8, Rule 5, Organic Compounds – Storage of Organic Liquids
  - BAAQMD Regulation 8, Rule 15, Organic Compounds – Emulsified and Liquid Asphalts
  - BAAQMD and SIP Regulation 8, Rule 40, Organic Compounds – Aeration of Contaminated Soil and Removal of Underground Storage Tanks
  - BAAQMD and SIP Regulation 8, Rule 47, Organic Compounds – Air Stripping and Soil Vapor Extraction Operations
  - BAAQMD and SIP Regulation 9, Rule 1, Inorganic Gaseous Pollutants – Sulfur Dioxide
  - BAAQMD Regulation 9, Rule 2
  - California Health and Safety Code Section 41750 et seq., Portable Equipment

- California Code of Regulations, Title 17, Section 93105, Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations
- California Code of Regulations, Title 17, Section 93106, Asbestos Airborne Toxic Control Measure for Asbestos Containing Serpentine
- California Health and Safety Code Section 93116, Airborne Toxic Control Measure for Diesel Particulate Matter from Portable Engines Rated at 50 Horsepower and Greater
- 40 CFR Part 61, Subpart A, National Emission Standards for Hazardous Air Pollutants – General Provisions

#### **IV. Source-Specific Applicable Requirements**

This section of the permit lists the applicable requirements that apply to permitted or significant sources. These applicable requirements are contained in tables that pertain to one or more sources that have the same requirements. The order of the requirements is:

- District Rules
- SIP Rules (if any) are listed following the corresponding District rules. SIP rules are District rules that have been approved by EPA for inclusion in the California State Implementation Plan. SIP rules are “federally enforceable” and a “Y” (yes) indication will appear in the “Federally Enforceable” column. If the SIP rule is the current District rule, separate citation of the SIP rule is not necessary and the “Federally Enforceable” column will have a “Y” for “yes”. If the SIP rule is not the current District rule, the SIP rule or the necessary portion of the SIP rule is cited separately after the District rule. The SIP portion will be federally enforceable; the non-SIP version will not be federally enforceable, unless EPA has approved it through another program.
- Other District requirements, such as the Manual of Procedures, as appropriate.
- Federal requirements (other than SIP provisions)
- BAAQMD permit conditions. The text of BAAQMD permit conditions is found in Section VI of the permit.
- Federal permit conditions. The text of Federal permit conditions, if any, is found in Section VI of the permit.

Section IV of the permit contains citations to all of the applicable requirements. The text of the requirements is found in the regulations, which are readily available on the District or EPA websites, or in the permit conditions, which are found in Section VI of the permit. All monitoring requirements are cited in Section IV. Section VII is a cross-reference between the limits and monitoring requirements. A discussion of monitoring is included in Section C.VII of this permit evaluation/statement of basis.

### New Complex Applicability Determinations:

#### Applicability of 40 CFR Part 64, Compliance Assurance Monitoring

Sources at Title V facilities may be subject to the Compliance Assurance Monitoring (CAM) requirements in 40 CFR, Part 64. The District has reviewed applicability of the Compliance Assurance Monitoring (CAM) requirements in 40 CFR, Part 64, for this facility. Three criteria specified in 40 CFR Part 64.2(a)(1-3) must be met for CAM to apply:

- The source must be subject to a federally enforceable emission limit for a regulated air pollutant, other than an exempt limitation.
- The source must use a control device to achieve compliance with this emission limitation.
- The pre-controlled emissions of the specific pollutant being controlled must be greater than the major facility emissions threshold for that pollutant.

Kirby Canyon MSW Landfill – Waste Decomposition Process Equipped with Gas Collection System, S-1; abated by Landfill Gas Flare, A-12:

At this facility, the landfill waste decomposition process and its related emission control device (S-1 and A-12) are exempt from the first CAM applicability criteria, 40 CFR Part 64.2(a)(1), pursuant to 40 CFR Part 64.2(b)(1)(i), because the landfill and landfill gas control systems are subject to the NSPS and NESHAPS requirements identified above, and these NSPS and NESHAP requirements were adopted pursuant to Sections 111 and 112 of the Clean Air Act after November 15, 1990. Since the applicable federal requirements contain adequate monitoring provisions, additional compliance monitoring is not necessary. In addition, the uncontrolled emissions of precursor organic compounds from the landfill are less than the major facility emissions threshold of 100 tons of POC per year. Thus, S-1 does not meet the third CAM applicability criteria from 40 CFR Part 64.2(a)(3). Since the landfill and its related control devices do not satisfy all three CAM applicability criteria, CAM does not apply to S-1 and A-12.

Kirby Canyon MSW Landfill – Waste and Cover Material Dumping, S-22; and  
Kirby Canyon MSW Landfill – Excavating, Bulldozing, and Compacting Activities, S-23

These operations emit fugitive NMOC due to the handling of VOC-laden and contaminated soils. Since these NMOC emissions are uncontrolled, CAM does not apply to this pollutant.

These operations also emit fugitive PM<sub>10</sub>, primarily due to on-site vehicle travel. Although some PM<sub>10</sub> emission reductions are employed for S-22 and S-23, such as using water sprays, dust suppressants, road sweeping, etc., these measures are more passive in nature and are intended to prevent PM<sub>10</sub> emissions from forming. Therefore, these emission controls do not constitute a control device as defined in Section 64.1, and the second CAM applicability criteria does not apply. Also, all of the pre-control and post-control PM<sub>10</sub> emissions from these operations are fugitive in nature. Non-fugitive uncontrolled PM<sub>10</sub> emissions are 0.0 tons/year and do not exceed the major facility threshold of 100 tons/year PM<sub>10</sub>. Therefore, the third CAM applicability criteria does not apply to S-22 or S-23.

Since S-22 and S-23 do not meet either the second or the third CAM applicability criteria - 40 CFR Part 64.2(a)(2 and 3), these sources are not subject to CAM.

Changes to the Permit, Section IV:

- Editorial corrections were made to the text of Section IV.
- The dates of adoption or approval of the rules and their “federal enforceability” status have been updated.
- For Table IV-A, the descriptions for S-1 and A-12 were revised and the new descriptions for S-22 and S-23 were added.
- In Table IV-A, editorial corrections were made to the descriptions of BAAQMD Regulation 1 requirements. SIP Regulation 1 was deleted since the BAAQMD and SIP versions 1-523 and 1-523.3 are identical.
- In Table IV-A, Regulation 6 citations have been updated to the new numbering and name (now Regulation 6, Rule 1). A SIP citation of Regulation 6 has been added since the current District rule has been renumbered. Note that the standards are the same in both versions.
- For Table IV-A, Regulation 8-34-301.4 was removed as it is not applicable to any currently permitted equipment, editorial corrections were made to the descriptions of Regulations 8-34-305.2-4 and 8-34-507, and Regulations 8-34-404 and 8-34-501.5 were added because permit condition revisions now include less than continuous operation provisions for certain landfill gas collection system components.
- In Table IV-A, editorial corrections were made to the descriptions of the following applicable requirements: Regulations 9-1-301 and 9-1-302 & 40 CFR Part 62, Subpart F.
- In Table IV-A, the new conditions have been added and corrections have been made to the citations of the basis of various permit conditions. Note that the reference to “offsets” in Condition #1437 for the flare was incorrect; this flare was not subject to offset requirements.
- Table IV-D was deleted since S-8 is exempt from major facility review.

**V. Schedule of Compliance**

A schedule of compliance is required in all Title V permits pursuant to BAAQMD Regulation 2-6-409.10 which provides that a major facility review permit shall contain the following information and provisions:

“409.10 A schedule of compliance containing the following elements:

- 10.1 A statement that the facility shall continue to comply with all applicable requirements with which it is currently in compliance;
- 10.2 A statement that the facility shall meet all applicable requirements on a timely basis as requirements become effective during the permit term; and
- 10.3 If the facility is out of compliance with an applicable requirement at the time of issuance, revision, or reopening, the schedule of compliance shall contain a plan by which the facility will achieve compliance. The plan shall contain deadlines for each item in the plan. The schedule of compliance shall also contain a requirement for submission of progress reports by the facility at least every six months. The progress reports shall contain the dates by which each item in the plan was achieved and an explanation of why any dates in the schedule of compliance were not or will not be met, and any preventive or corrective measures adopted.”

Since the District has not determined that the facility is out of compliance with an applicable requirement, the schedule of compliance for this permit contains only sections 2-6-409.10.1 and 2-6-409.10.2.

The BAAQMD Compliance and Enforcement Division has conducted a review of the compliance record of this facility and has determined that Kirby Canyon Recycling and Disposal Facility has been in intermittent compliance during the previous 5 years. The Compliance and Enforcement Division has noted no evidence of on-going non-compliance and no recurring pattern of violations that would warrant consideration of a compliance schedule. The compliance status is discussed in more detail in Section E, and the compliance report is contained in Appendix A of this permit evaluation and statement of basis.

The District is not proposing any changes to Section V of the permit.

## **VI. Permit Conditions**

Each permit condition is identified with a unique numerical identifier, up to five digits. The existing permit conditions are derived from previously issued District Authorities to Construct (A/C) or Permits to Operate (P/O). Permit conditions may also be imposed or revised as part of the annual review of the facility by the District pursuant to California Health and Safety Code (H&SC) § 42301(e), through a variance pursuant to H&SC § 42350 *et seq.*, an order of abatement pursuant to H&SC § 42450 *et seq.*, or as an administrative revision initiated by District staff. After issuance of the Title V permit, permit conditions will be revised using the procedures in Regulation 2, Rule 6, Major Facility Review.

The regulatory basis is listed following each condition. The regulatory basis may be a rule or regulation. The District is also using the following terms for regulatory basis:

- **BACT:** This term is used for a condition imposed by the Air Pollution Control Officer (APCO) to ensure compliance with the Best Available Control Technology in Regulation 2-2-301.
- **Cumulative Increase:** This term is used for a condition imposed by the APCO that limits a source's operation to the operation described in the permit application pursuant to BAAQMD Regulation 2-1-403.
- **Offsets:** This term is used for a condition imposed by the APCO to ensure compliance with the use of offsets for the permitting of a source or with the banking of emissions from a source pursuant to Regulation 2, Rules 2 and 4.
- **PSD:** This term is used for a condition imposed by the APCO to ensure compliance with a Prevention of Significant Deterioration permit issued pursuant to Regulation 2, Rule 2.
- **TRMP:** This term is used for a condition imposed by the APCO to ensure compliance with limits that arise from the District's Toxic Risk Management Policy. This policy was replaced by Regulation 2, Rule 5 in 2005.

During the initial Title V permit development, the District reviewed the existing permit conditions, deleted the obsolete conditions, and, as appropriate, revised the conditions for clarity

and enforceability. When necessary to meet Title V requirements, additional monitoring, recordkeeping, or reporting requirements have been added to the permit. No changes have occurred to the facility operations since the last revision of the Title V permit, but the District is incorporating changes that the District has made to the descriptions of these existing operations. The permit conditions have been reviewed again for this permit renewal and proposed changes to the permit conditions are summarized below.

Changes to the Permit, Section VI:

- The descriptions of S-1 and A-12 were updated and the new descriptions for S-22 and S-23 were added to Condition # 1437.
- Condition #1437 Part 1b was clarified to apply to decomposable materials. This throughput limit is used in conjunction with the LANDGEM program and site-specific landfill gas NMOC concentration data to establish the maximum NMOC generation rate for the landfill. The input to the LANDGEM program assumes that all of the materials are decomposable.
- The bases of Condition #1437 Parts 3 and 4 were corrected.
- In Condition #1437 Part 6, the description of the landfill gas collection system has been updated to reflect the alterations of the landfill gas collection system, approved under NSR Applications #21786 and #23446, as well as the notified well alterations since Application 23446 has been processed.
- In Condition #1437 Part 7, the applicability of the continuous operation required was clarified, because the District is allowing some components to operate less than continuously pursuant to Part 19.
- In Condition #1437 Part 8, a typographical error was corrected.
- In Condition #1437 Part 9, the minimum flare temperature was updated based on the 1/20/09 source test and the criteria in Part 9.
- In Condition #1437 Parts 10 and 11, “offsets” has been removed as the bases for the flare limits – the flare was never subject to the offset requirements.
- Obsolete test requirements were removed from Condition #1437 Part 12 and the basis was corrected.
- The basis was corrected in Condition #1437 Parts 13-15.
- Obsolete language was removed from Condition #1437 Part 16.
- For Condition #1437 Parts 17-19, the alternative operating parameters for gas collection system wells and for the leachate collection system have been updated, and the condition setting out the procedures for adding wells to the list with alternate operating parameters has been added to reflect the permit condition changes approved under NSR Application #19359.
- Condition #23022 for S-8 was deleted since S-8 is exempt from major facility review.

All changes to existing permit conditions are clearly shown in “strike-out/underline” format in the proposed permit. When the permit is issued, all “strike-out” language will be deleted and all “underline” language will be retained, subject to consideration of comments received.

## **VII. Applicable Limits and Compliance Monitoring Requirements**

This section of the permit is a summary of numerical limits and related monitoring requirements for each source. The summary includes a citation for each monitoring requirement, frequency of monitoring, and type of monitoring. The applicable requirements for monitoring are completely contained in Sections IV, Source-Specific Applicable Requirements, and VI, Permit Conditions, of the permit.

Monitoring decisions are typically the result of balancing several different factors including: 1) the likelihood of a violation given the characteristics of normal operation, 2) degree of variability in the operation and in the control device, if there is one, 3) the potential severity of impact of an undetected violation, 4) the technical feasibility and probative value of indicator monitoring, 5) the economic feasibility of indicator monitoring, and 6) whether there is some other factor, such as a different regulatory restriction applicable to the same operation, that also provides some assurance of compliance with the limit in question.

These factors are the same as those historically applied by the District in developing monitoring for applicable requirements. It follows that, although Title V calls for a re-examination of all monitoring, there is a presumption that these factors have been appropriately balanced and incorporated in the District's prior rule development and/or permit issuance. It is possible that, where a rule or permit requirement has historically had no monitoring associated with it, no monitoring may still be appropriate in the Title V permit if, for instance, there is little likelihood of a violation. Compliance behavior and associated costs of compliance are determined in part by the frequency and nature of associated monitoring requirements. As a result, the District will generally revise the nature or frequency of monitoring requirements only when it can support a conclusion that existing monitoring is inadequate.

The tables below list only the emission limits for which there is no monitoring in the applicable requirements. For each emission limit without corresponding monitoring, the analysis of the individual source compliance status has been documented. If a determination of inadequate monitoring was found, additional monitoring would be proposed through this permit renewal. However, in the cases identified below, no additional monitoring is being recommended for the reasons identified. The District has examined the monitoring for all other emission limits and has determined that monitoring is adequate to provide a reasonable assurance of compliance.

**Table 2**  
**SO<sub>2</sub>/H<sub>2</sub>S Emission Limits with No Associated Monitoring**  
**Site #A1812, Kirby Canyon Recycling & Disposal Facility**

<b># &amp; Description</b>	<b>Emission Limit Citation</b>	<b>Federally Enforceable Emission Limit</b>	<b>Monitoring</b>
A-12 Enclosed Landfill Gas Flare	BAAQMD 9-1-301	Ground Level Concentrations of SO <sub>2</sub> : ≤ 0.5 ppm for 3 consecutive minutes AND ≤ 0.25 ppm averaged over 60 consecutive minutes AND ≤ 0.05 ppm averaged over 24 hours	Not Recommended
S-1 Kirby Canyon MSW Landfill – Waste Decomposition Process and A-12 Enclosed Landfill Gas Flare	BAAQMD 9-2-301	Property Line Ground Level Limits of H <sub>2</sub> S ≤ 0.06 ppm Averaged over 3 minutes AND ≤ 0.03 ppm Averaged over 60 minutes	Not Recommended

**SO<sub>2</sub> Discussion:**

Burning of fuel that contains sulfur compounds will result in emissions of sulfur dioxide (SO<sub>2</sub>) as a product of that combustion. The landfill gas burned at the flare at this facility contains small levels of sulfur compounds which will contribute to ground level concentrations of SO<sub>2</sub>, as well as combustion of diesel fuel in the portable engine.

BAAQMD Regulation 9-1-301

Area monitoring to demonstrate compliance with the ground level SO<sub>2</sub> concentration limitations of Regulation 9-1-301 is required at the discretion of the APCO (per BAAQMD Regulation 9-1-501). Since the ground level monitoring is expensive, such monitoring is not required if the expected levels of SO<sub>2</sub> emissions are low, resulting in a large expected margin of compliance with the emission limit.

Modeling analyses performed for other landfill sites has shown that compliance with the Regulation 9-1-302 limit of 300 ppmv of SO<sub>2</sub> in the flare stack exhaust results in ground level concentrations that are less than the BAAQMD Regulation 9-1-301 limits. An annual source test is required to demonstrate the flare complies with the 300 ppmv of SO<sub>2</sub> in Regulation 9-1-302, and the margin of compliance with this SO<sub>2</sub> outlet concentration limit has been high. Therefore, area monitoring of SO<sub>2</sub> has not been required at this facility and is not justifiable given the very low probability of non-compliance.



**H2S Discussion:**

BAAQMD Regulation 9-2-301

Area monitoring to demonstrate compliance with the ground level H<sub>2</sub>S concentration limitations of Regulation 9-1-301 is required at the discretion of the APCO (per BAAQMD Regulation 9-1-501). The H<sub>2</sub>S emissions near this site are a result of fugitive emissions from the landfill. Hydrogen sulfide can be detected by its odor at concentrations as low as 0.0005 ppmv and is generally identified by its characteristic rotten egg smell a concentration of 0.005 ppmv or less. Therefore, hydrogen sulfide emissions are typically discovered by smell well before the concentration approaches the lowest 9-2-301 emission limit of 0.03 ppmv.

The District rarely ever receives complaints about hydrogen sulfide odors from Bay Area landfills and has never received any complaints about hydrogen sulfide odors from this facility. Since hydrogen sulfide odors have not been detected at this facility, the concentration of hydrogen sulfide at the property line is expected to be well below the Regulation 9-1-301 limits. Therefore, although this regulation is generally applicable, the landfill is expected to have insignificant H<sub>2</sub>S emissions and will not be required to perform ground level H<sub>2</sub>S monitoring.

**Table 3**  
**PM Emission Limits with No Associated Monitoring**  
**Site #A1812, Kirby Canyon Recycling & Disposal Facility**

<b>S# &amp; Description</b>	<b>Emission Limit Citation</b>	<b>Federally Enforceable Emission Limit</b>	<b>Monitoring</b>
A-12 Enclosed Landfill Gas Flare	BAAQMD Regulation 6-1-301, SIP Regulation 6-301	Ringelmann 1.0 for 3 minutes in any hour	Not Recommended
A-12 Enclosed Landfill Gas Flare	BAAQMD Regulation 6-1-310, SIP Regulation 6-310	≤ 0.15 gr/dscf	Not Recommended

**PM Discussion:**

BAAQMD Regulation 6, Rule 1 “Particulate Matter – General Requirements”

SIP Regulation 6, “Particulate Matter and Visible Emissions”

BAAQMD Regulation 6-1-301 and SIP Regulation 6-301 limit visible emissions to no darker than 1.0 on the Ringelmann Chart, except for periods or aggregate periods less than 3 minutes in any hour. Visible emissions are normally not associated with proper combustion of gaseous fuels, such as landfill gas. Since A-12 burns only landfill gas, no monitoring is required to assure compliance with this limit.

BAAQMD Regulation 6-1-310 and SIP Regulation 6-301 limit filterable particulate (FP) emissions from any source to 0.15 grains per dry standard cubic foot (gr/dscf) of exhaust volume. Using EPA’s AP-42 emission factor for landfill gas combustion (48 lbs/MM dscf methane), the

worst methane content (45%), and the worst case landfill gas flue gas factor (4.395 dscf flue gas/scf LFG), the particulate emission rate from the flare is expected to be 0.0344 gr/dscf at 0% oxygen, which is far less than the Regulation 6-1-310 limit. Therefore no monitoring is required to assure compliance with this limit.

Changes to the Permit, Section VII:

- Symbols ( $\leq$  or  $\geq$ , as applicable) have been added to all Section VII tables to clarify limits.
- Citation of the SIP version of Regulation 6 has been added, since the District Regulation 6 has been renumbered to Regulation 6, Rule 1. Note that both rules contain the same standards.
- The revised sources descriptions for S-1, A-12, S-22, and S-23 were incorporated into Table VII-A.
- Continuous operation provisions and exemptions were clarified.
- The alternative wellhead standards have been added.
- The minimum flare temperature was updated.
- The contaminated soil restrictions from Permit Condition #1437 Part 2 have been added.
- Waste acceptance limits were clarified.
- Table VII-D for S-8 was deleted, as this source is not subject major facility review.

**VIII. Test Methods**

This section of the permit lists test methods that are associated with standards in District or other rules. It is included only for reference. In most cases, the test methods in the rules are source test methods that can be used to determine compliance but are not required on an ongoing basis. They are not “applicable requirements” as defined by Regulation 2-6-202.

If a rule or permit condition requires ongoing testing, the requirement will also appear in Section IV of the permit.

Changes to the Permit, Section VIII:

- The Regulation 6, Rule 1 reference has been updated and reference to the SIP version of Regulation 6 has been added. EPA tests methods were added for these BAAQMD and SIP particulate emission limits.
- Test methods for the BAAQMD and SIP Regulation 8-2-301 limit were clarified.
- Editorial corrections were made to the description of requirement or to the test methods for BAAQMD Regulations 8-34-301.2, 8-34-301.3, 8-34-303, and 8-34-305.2-4.
- Several obsolete test methods were removed.
- Several test methods were removed because the limits were not identified as applicable requirements in Section IV, including test methods that applied to S-8, which has been removed from Section IV.
- Test methods were added for the landfill gas flare compliance demonstration test and landfill gas characterization test required by Condition # 1437 Parts 12-13.
- Test methods were added for several wellhead limits in Condition # 1437 Parts 17-19.

## **IX. Permit Shield:**

The District rules allow two types of permit shields. The permit shield types are defined as follows: (1) A provision in a major facility review permit explaining that specific federally enforceable regulations and standards do not apply to a source or group of sources, or (2) A provision in a major facility review permit explaining that specific federally enforceable applicable requirements for monitoring, recordkeeping and/or reporting are subsumed because other applicable requirements for monitoring, recordkeeping, and reporting in the permit will assure compliance with all emission limits.

The second type of permit shield is allowed by EPA's "White Paper 2 for Improved Implementation of the Part 70 Operating Permits Program." The District uses the second type of permit shield for all streamlining of monitoring, recordkeeping, and reporting requirements in Title V permits. The District's program does not allow other types of streamlining in Title V permits.

This facility has one permit shield for Regulation 8-2-601.

### Changes to the Permit, Section IX:

- The District clarified that this permit shield now applies to S-22 rather than S-1. The handling of VOC-laden soil triggers the need for this permit shield. This VOC-laden soil handling operation was previously included as a permitted operation under S-1. The VOC-laden soil handling operation has been separated from S-1 and is now covered by a new source number: S-22 Kirby Canyon MSW Landfill – Waste and Cover Material Dumping.

## **X. Revision History**

### Changes to the Permit, Section X:

- The revision history was updated to include this proposed permit renewal.

## **XI. Glossary**

### Changes to the Permit, Section XI:

- Some additional standard terms have been added to the glossary and the section for commonly used symbols.

## **D. Alternate Operating Scenarios:**

No alternate operating scenario has been requested for this facility.

## **E. Compliance Status:**

An October 12, 2011 office memorandum from the Director of Compliance and Enforcement, to the Director of Engineering, presents a review of the compliance record of Kirby Canyon

Recycling and Disposal Facility, formerly known as Kirby Canyon Landfill, (Site #A1812). The Compliance and Enforcement Division staff reviewed the records for Kirby Canyon Landfill as part of the District's evaluation of Kirby Canyon Landfill's application for renewal of their Title V permit. During October 12, 2006 through October 12, 2011, activities known to the District include:

- 3 notifications for reportable compliance activities, including mechanical breakdown of the pilot light to the flare and parametric monitor downtime associated with this breakdown in 2009, and a mechanical breakdown of the flare and gas collection system due to a utility electrical outage in 2010.
- 1 air pollution complaint alleging this site as the source.

No Notices of Violation were issued during this period. The responsible official for Kirby Canyon Landfill certified that all equipment was operating in compliance on July 29, 2011. No ongoing non-compliance issues were identified in the annual compliance certifications submitted by Kirby Canyon Landfill, and there is no recurring pattern of violations. Since no recurring non-compliance issues have been identified to date, the District does not find that a Schedule of Compliance is warranted for this facility.

#### **F. Differences Between the Application and the Proposed Permit:**

The application for renewal of this Title V permit was originally submitted on December 28, 2007. The changes requested by the applicant include the following:

- Removal of sources S-3, S-4, S-5, S-6, and S-7. Note that these sources were removed from the Title V permit during previous minor revisions of the permit that were processed after this application for permit renewal was received.

The District has proposed the following additional changes to this permit:

- The District split S-1 into three source numbers: S-1, S-22, and S-23. These source description changes did not involve any modifications to these sources. The new source descriptions have been incorporated throughout the permit.
- The District is proposing removal of S-8 from Sections IV-VII of the permit. S-8 is identified as exempt from major facility review in Section II-C.
- The District is proposing numerous updates to the standard permit language, regulatory descriptions, and regulatory amendment dates throughout the permit to reflect regulatory changes, to clarify limits and other applicable requirements, to explain permit terminology, to remove obsolete requirements, and to correct permit errors.

## **APPENDIX A**

### **BAAQMD COMPLIANCE REPORT**

**COMPLIANCE & ENFORCEMENT DIVISION**

**Inter-Office Memorandum**

**October 12, 2011**

TO: JOHN CHILADAKIS – DIRECTOR OF ENGINEERING

FROM: BRIAN BATEMAN – DIRECTOR OF ENFORCEMENT

SUBJECT: REVIEW OF COMPLIANCE RECORD OF:

**KIRBY CANYON LANDFILL; SITE # A1812**

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**Background**

This review was initiated as part of the District evaluation of an application by Kirby Canyon Landfill for a Title V Permit Renewal. It is standard practice of the Compliance and Enforcement Division to undertake a compliance record review in advance of a renewal of a Title V Permit to Operate. The purpose of this review is to assure that any non-compliance problems identified during the prior five-year permit term have been adequately addressed, or, if non-compliance persists, that a schedule of compliance is properly incorporated into the Title V permit compliance schedule. In addition, the review checks for patterns of recurring violation that may be addressed by additional permit terms. Finally, the review is intended to recommend, if necessary, any additional permit conditions and limitations to improve compliance.

**Compliance Review**

Compliance records were reviewed for the time period from October 12, 2006 through October 12, 2011. The results of this review are summarized as follows.

**1. Violation History**

Staff reviewed Kirby Canyon Landfill Annual Compliance Certifications, and found no ongoing non-compliance and no recurring pattern of violations.

Staff also reviewed the District compliance records. During this period Kirby Canyon Landfill activities known to the District include:

REVIEW OF COMPLIANCE RECORD OF:  
**KIRBY CANYON LANDFILL – SITE # A1812**

Date  
Page 2 of 3

District-issued Notices of Violation:

NOV#	Regulation	Date Occur	# of Days	Comments	Disposition
NONE					

The District received 3 notifications for Reportable Compliance Activities (RCA):

Episode	Date Occur	# of Days	Comments	Disposition
05P08	9/11/2009	1	Mechanical breakdown of A-12 flare pilot light	Granting of breakdown relief
05P09	9/11/2009	1	Parametric (temp, flow) monitor downtime associated with 05P08	-
05U93	7/12/2010	1	Mechanical breakdown of A-12 flare and associated LFG collection system due to utility electrical outage	Granting of breakdown relief

**2. Complaint History**

The District received one air pollution complaint during the review period, complaint #206187, alleging Kirby Canyon Landfill as the source.

**3. Reportable Compliance Activity**

Reportable Compliance Activity (RCA), also known as “Episode” reporting, is the reporting of compliance activities involving a facility as outlined in District Regulations and State Law. Reporting covers breakdown requests, indicated monitor excesses, pressure relief device releases, inoperative monitor reports and flare monitoring.

Within the review period, there were no air quality violations issued as a result of an RCA.

**4. Enforcement Agreements, Variances, or Abatement Orders**

There were no enforcement agreements, variances, or abatement orders for Kirby Canyon Landfill over the review period.

**Conclusion**

Following its review of all available facility and District compliance records for Kirby Canyon Landfill, the District’s Compliance and Enforcement Division has determined that Kirby Canyon Landfill was in intermittent compliance from the date of the last permit renewal, from October 12, 2006 through October 12, 2011. However, Kirby

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REVIEW OF COMPLIANCE RECORD OF:  
**KIRBY CANYON LANDFILL – SITE # A1812**  
Date  
Page 3 of 3

Canyon Landfill has demonstrated no evidence of ongoing noncompliance and no recurring pattern of violations that would warrant consideration of a Title V permit compliance schedule for this facility.

Based on this review and the fact that no violations were issued for the 5-year period of review, the District has concluded that no schedule of compliance or change in permit terms is necessary beyond what is already contained in the facility's current Title V permit.



**APPENDIX B**

**GLOSSARY**

**ACT**

Federal Clean Air Act

**APCO**

Air Pollution Control Officer

**ARB**

Air Resources Board

**ATCM**

Airborne Toxic Control Measure

**BAAQMD**

Bay Area Air Quality Management District

**BACT**

Best Available Control Technology

**Basis**

The underlying authority that allows the District to impose requirements.

**CAA**

The federal Clean Air Act

**CAAQS**

California Ambient Air Quality Standards

**CARB**

California Air Resources Board (same as ARB)

**CCR**

The California Code of Regulations

**CEM**

A “continuous emission monitor” is a monitoring device that provides a continuous direct measurement of some pollutant (e.g. NO<sub>x</sub> concentration) in an exhaust stream.

**CEQA**

California Environmental Quality Act

**CFR**

The Code of Federal Regulations. 40 CFR contains the implementing regulations for federal environmental statutes such as the Clean Air Act. Parts 50-99 of 40 CFR contain the requirements for air pollution programs.

**CI**  
Compression Ignition

**CO**  
Carbon Monoxide

**CO<sub>2</sub>**  
Carbon Dioxide

**Cumulative Increase**

The sum of permitted emissions from each new or modified source since a specified date pursuant to BAAQMD Rule 2-1-403, Permit Conditions (as amended by the District Board on 7/17/91) and SIP Rule 2-1-403, Permit Conditions (as approved by EPA on 6/23/95). Used to determine whether threshold-based requirements are triggered.

**District**

The Bay Area Air Quality Management District

**E6, E9, E12**

Very large or very small number values are commonly expressed in a form called scientific notation, which consists of a decimal part multiplied by 10 raised to some power. For example, 4.53E6 equals  $(4.53) \times (10^6) = (4.53) \times (10 \times 10 \times 10 \times 10 \times 10 \times 10) = 4,530,000$ . Scientific notation is used to express large or small numbers without writing out long strings of zeros.

**EPA**

The federal Environmental Protection Agency.

**Excluded**

Not subject to any District regulations.

**Federally Enforceable, FE**

All limitations and conditions which are enforceable by the Administrator of the EPA including those requirements developed pursuant to 40 CFR Part 51, subpart I (NSR), Part 52.21 (PSD), Part 60, (NSPS), Part 61, (NESHAPs), Part 63 (HAP), and Part 72 (Permits Regulation, Acid Rain), including limitations and conditions contained in operating permits issued under an EPA-approved program that has been incorporated into the SIP.

**FP**

Filterable Particulate as measured by BAAQMD Method ST-15, Particulate.

**FR**  
Federal Register

**Grains**  
1/7000 of a pound

**GRS**  
Gas Recovery Systems, Inc.

**HAP**  
Hazardous Air Pollutant. Any pollutant listed pursuant to Section 112(b) of the Act. Also refers to the program mandated by Title I, Section 112, of the Act and implemented by 40 CFR Part 63.

**H<sub>2</sub>S**  
Hydrogen Sulfide

**H&SC**  
Health and Safety Code

**Hg**  
Mercury

**LFG**  
Landfill gas

**Major Facility**  
A facility with potential emissions of: (1) at least 100 tons per year of any regulated air pollutant, (2) at least 10 tons per year of any single hazardous air pollutant, and/or (3) at least 25 tons per year of any combination of hazardous air pollutants, or such lesser quantity of hazardous air pollutants as determined by the EPA administrator.

**Max**  
Maximum

**MFR**  
Major Facility Review. The District's term for the federal operating permit program mandated by Title V of the Federal Clean Air Act and implemented by District Regulation 2, Rule 6.

**Min**  
Minimum

**MOP**

The District's Manual of Procedures.

**NA**

Not Applicable

**NAAQS**

National Ambient Air Quality Standards

**NESHAPS**

National Emission Standards for Hazardous Air Pollutants. See in 40 CFR Parts 61 and 63

**NMHC**

Non-methane Hydrocarbons

**NMOC**

Non-methane Organic Compounds (same as NMHC)

**NO<sub>2</sub>**

Nitrogen Dioxide

**NO<sub>x</sub>**

Oxides of nitrogen.

**NSPS**

Standards of Performance for New Stationary Sources are federal standards for emissions from new stationary sources that are mandated by Title I, Section 111 of the Federal Clean Air Act, and implemented by 40 CFR Part 60 and District Regulation 10.

**NSR**

New Source Review is a federal program for pre-construction review and permitting of new and modified sources of pollutants for which criteria have been established in accordance with Section 108 of the Federal Clean Air Act. Mandated by Title I of the Federal Clean Air Act and implemented by 40 CFR Parts 51 and 52 and District Regulation 2, Rule 2. (Note: There are additional NSR requirements mandated by the California Clean Air Act.)

**O<sub>2</sub>**

Oxygen

**Offset Requirement**

A New Source Review requirement to provide federally enforceable emission offsets for the emissions from a new or modified source. Applies to emissions of POC, NOx, PM10, and SO2.

**Phase II Acid Rain Facility**

A facility that generates electricity for sale through fossil-fuel combustion and is not exempted by 40 CFR 72 from Titles IV and V of the Clean Air Act.

**POC**

Precursor Organic Compounds

**PM**

Particulate Matter

**PM10**

Particulate matter with aerodynamic equivalent diameter of less than or equal to 10 microns.

**PSD**

Prevention of Significant Deterioration. A federal program for permitting new and modified sources of those air pollutants for which the District is classified "attainment" of the National Air Ambient Quality Standards. Mandated by Title I of the Act and implemented by both 40 CFR Part 52 and District Regulation 2, Rule 2.

**SIP**

State Implementation Plan. State and District programs and regulations approved by EPA and developed in order to attain the National Air Ambient Quality Standards. Mandated by Title I of the Act.

**SO2**

Sulfur dioxide

**TAC**

Toxic Air Contaminant

**TBACT**

Best Available Control Technology for Toxics

**THC**

Total Hydrocarbons include all non-methane hydrocarbons plus methane and are the same as TOC.

**Title V**

Title V of the federal Clean Air Act. Requires a federally enforceable operating permit program for major and certain other facilities.

**TOC**

Total Organic Compounds include all non-methane organic compounds plus methane and are the same as THC.

**TRMP**

Toxic Risk Management Policy. The District's TRMP was replaced by Regulation 2, Rule 5 in 2005.

**TRS**

Total Reduced Sulfur, which is a measure of the amount of sulfur-containing compounds in a gas stream, typically a fuel gas stream, including, but not limited to, hydrogen sulfide. The TRS content of a fuel gas determines the concentration of SO<sub>2</sub> that will be present in the combusted fuel gas, since sulfur compounds are converted to SO<sub>2</sub> by the combustion process.

**TSP**

Total Suspended Particulate

**TVP**

True Vapor Pressure

**VOC**

Volatile Organic Compounds

**Symbols:**

<	=	less than
>	=	greater than
≤	=	less than or equal to
≥	=	greater than or equal to

**Units of Measure:**

atm	=	atmospheres
bhp	=	brake-horsepower
btu or BTU	=	British Thermal Unit
°C	=	degrees Centigrade
cfm	=	cubic feet per minute
dscf	=	dry standard cubic feet
°F	=	degrees Fahrenheit
ft <sup>3</sup>	=	cubic feet
g	=	grams
gal	=	gallon
gpm	=	gallons per minute
gr	=	grains
hp	=	horsepower
hr	=	hour
in	=	inches
kW	=	kilowatt
lb	=	pound
max	=	maximum
m <sup>2</sup>	=	square meter
m <sup>3</sup>	=	cubic meter
min	=	minute
mm	=	millimeter
MM	=	million
MMBtu	=	million Btu
MW	=	megawatts
ppmv	=	parts per million, by volume
ppmw	=	parts per million, by weight
psia	=	pounds per square inch, absolute
psig	=	pounds per square inch, gauge
scf	=	standard cubic feet
scfm	=	standard cubic feet per minute
sdcf	=	standard dry cubic feet
sdcfm	=	standard dry cubic feet per minute
yd <sup>3</sup>	=	cubic yards
yr	=	year



## **APPENDIX C**

### **NSR Permit Evaluations Applications #19359, #21786, #23446**

## **Engineering Evaluation Report**

Kirby Canyon Landfill, P#1812  
910 Coyote Creek Golf Drive, San Jose  
Application #19359

### **Background**

Kirby Canyon Landfill is an active Class III municipal solid waste landfill operated by Waste Management of California (“Applicant”). The Applicant has requested approval of higher maximum operating temperatures for a number of the gas collection wells installed at the Kirby Canyon Landfill:

#### **S-1 Municipal Solid Waste Landfill with Gas Collection System, equipped with (34) Landfill Gas Extraction Wells**

Regulation 8, Rule 34 requires that the landfill gas wells be operated with wellhead temperatures below 131 degrees F. Monitoring of the wells in August 2008 identified that 6 wells (Well Numbers 56, 58, 59, 60, 64, and 65) were operating at temperatures greater than 131 degrees F. The Applicant has indicated that these wells have historically shown elevated temperatures, and although the temperatures at most of the wells have dropped below 131 degrees F, the temperatures are expected to increase again this summer. Subsequent monitoring has shown that the wells are not damaged and appear to be operating as designed, producing gas with methane levels of greater than 50% with corresponding low oxygen, carbon monoxide, and balance gas concentrations. High carbon monoxide (CO) concentrations are an early indication of subsurface fires, and the CO monitoring has shown that the carbon monoxide levels at these wells are low. In addition, the Applicant has indicated that the low measured oxygen and balance gas concentrations are insufficient to support subsurface combustion.

The Applicant has asserted that based on this monitoring, these wells simply have high normal operating temperatures and has therefore requested approval of a higher operating temperature of 145 degrees F at Wells 58, 59, 60, 64, and 65 and a higher operating temperature of 155 degrees F for Well 56. In addition, the Applicant has requested addition of a permit condition flexibility clause to allow higher operating temperatures at other wells, if the specified monitoring requirements eliminate the possibility of subsurface fires as the cause of the elevated temperatures. This flexibility clause has been approved for other landfill sites permitted by the District.

### **Emission Calculations**

Landfills are sources of air emissions, including particulate matter from the handling of waste, excavation and compaction activities, as well as vehicular traffic across paved and unpaved roads. Landfill gas control equipment, as well as delivery vehicles and onsite mobile construction equipment, also generate combustion emissions from the combustion of fuel. The decomposition of waste in the landfill generates emissions of methane and volatile organic compounds, which is emitted in the form of fugitive leaks from uncollected landfill gas or as the small fraction of organic compounds which are not combusted at the landfill gas abatement device. All of these forms of emissions are attributed to the landfill source, S-1, and are a function of the permitted capacity of the landfill.

Under this application, the Applicant has not proposed any modification to the landfill itself, therefore there is no associated increase in any of these emissions, which were reviewed and addressed at the time the landfill was permitted.

### **Cumulative Increase**

There is no change in emissions associated with the request to modify a temperature limit, therefore this application will not change the cumulative increase for this facility.

### **Compliance Determination**

#### **Regulation 1, "General Provisions and Definitions"**

#### **Regulation 2, Rule 1, "Permits – General Requirements" - Public Notice Requirements**

#### **Regulation 2, Rule 2, "Permits – New Source Review" - Best Available Control Technology (BACT) Requirements, Emission Offsets and Prevention of Significant Deterioration (PSD)**

#### **Regulation 2, Rule 5, "Permits – New Source Review of Toxic Air Contaminants" - Health Risk Assessment Requirements**

#### **Regulation 6, "Particulate Matter and Visible Emissions"**

#### **Regulation 9, Rule 2, "Inorganic Gaseous Pollutants – Hydrogen Sulfide"**

As there is no change in emissions associated with this request, continued compliance with the emission limits in Regulation 1 (public nuisance), Regulation 6 (particulate and visible emissions), and Rule 9-2 (hydrogen sulfide) is expected, and the public notification requirements of Regulation 2-1-412, BACT, PSD, emission offsets, and the health risk assessment requirements in Rule 2-5 do not apply.

### **California Environmental Quality Act (CEQA) Requirements, Regulation 2, Rule 1**

The requested modification of the temperature limit for the specified wells will be a modification of the permit conditions for the permitted source, S-1, will not involve physical modifications, and is not expected to increase emissions. Therefore, this request is exempt from CEQA review by the express terms of CEQA and District Regulation 2-1-312.1.

### **Major Facility Review, Regulation 2, Rule 6**

This facility is a designated facility, as it is currently subject to the requirements of 40 CFR Part 60. The requirements of this program have been codified in District Regulation 2, Rule 6. As a designated facility, this facility was required to obtain a Title V Federal Operating Permit.

The facility was issued the initial Title V permit on July 10, 2003 and has undergone 4 minor permit revisions. The last revised permit was issued on November 13, 2008. The proposed establishment of alternate well temperature limits is considered a minor revision to the Title V permit, which will be processed under Application #19362.

### **Regulation 8, Rule 34, "Organic Compounds – Solid Waste Disposal Sites"**

Section 8-34-305 limits the landfill gas temperature at each wellhead to less than 131 degrees F. The well temperature limit is intended to minimize the potential for subterranean fires and to ensure anaerobic decomposition is not inhibited. Exceptions are allowed under Section 8-34-305 if the operator has satisfied the requirements of Section 8-34-414 (Repair Schedule for Wellhead Excesses) or has received permit conditions containing alternative operating levels.

It is not unusual to observe temperatures higher than 131 degrees F at wells that are operating properly. According to published data, the observed subsurface landfill gas temperature during normal thermophilic bacterial reaction can range between 113 and 149 degrees F. Temperatures as high as 158 degrees F have been measured with no corresponding subsurface combustion. The Applicant has requested approval of higher well temperature limit of 145 degrees F for 5 wells and 155 degrees F for one well at this site. The Applicant's investigation of the wells, which are running at higher temperatures, indicates that the wells are operating properly, producing gas with methane levels of greater than 50% with corresponding low oxygen, carbon monoxide, and balance gas concentrations.

Therefore, the requested higher well temperatures will be added to the permit conditions for Wells 56, 58, 59, 60, 64, and 65. The Applicant will continue to monitor the landfill gas composition to ensure that the anaerobic decomposition is within normal tolerances. No increase in emissions is expected due to this change.

**40 CFR Part 60, Standards of Performance for New Stationary Sources (NSPS):  
Subpart A, Standards of Performance for New Stationary Sources – General Provisions  
Subpart Cc, Standards of Performance for New Stationary Sources – Emission Guidelines  
and Compliance Times for Municipal Solid Waste Landfills**

40 CFR Part 60, Subpart Cc, Emission Guidelines (EG) for Municipal Solid Waste (MSW) Landfills applies to MSW landfills that have had no design capacity modification since May 30, 1991, but that have accepted waste since November 8, 1987. The District's Regulation 8, Rule 34 has been approved in the state plan for implementation of the EG requirements. Therefore, the facility is currently subject to the EG, which is enforced through compliance with District Regulation 8, Rule 34.

**40 CFR Part 70, State Operating Permit Programs (Title V):**

This facility is a designated facility, as it is currently subject to the requirements of 40 CFR Part 70. As a designated facility, this facility is subject to the requirements of 40 CFR Part 70. The requirements of this program have been codified in District Regulation 2, Rule 6.

**Permit Condition #1437**

Part 17 of Condition #1437 will be amended as indicated below to address the new alternate temperature limits for these 6 wells:

17. The gas collection system operating requirements listed below shall replace the well head requirements identified in Regulation 8-34-305.2 through 8-34-305.4 for the specified wells and collectors. All wells and collectors remain subject to the Regulation 8-34-305.1 requirement to maintain vacuum at each well head. (basis: Regulation 8-34-301.2, 8-34-303, and 8-34-305, 40 CFR Part 60.755(a) and 60.759)
  - a. The Regulation 8-34-305.2 temperature limit shall not apply to the Wells 36 through 39, 41 through 44, 45, 51, ~~and 52, 56, 58, 59, 60, 64, and 65~~ and any other wells for which the District has approved a higher operating temperature value, provided that the landfill gas temperature at each of the identified wells (except Well 56) does not exceed 145 degrees F (63 degrees C) and that the temperature at Well 56 does not exceed 156 degrees F (69 degrees C).
  - b. The owner/operator shall demonstrate compliance with the alternative wellhead landfill gas temperature limit in 17(a) above by monitoring the temperature of each wellhead on a monthly basis, in accordance with Regulation 8-34-505.
  - c. All records to demonstrate compliance with Part 17(a) and all applicable sections of BAAQMD Regulation 8, Rule 34 shall be recorded in a District-approved log and made available to District staff upon request in accordance with Regulation 8-34-501.4, 501.9, and 414.
  - d. If the temperatures measured at any of the Part 17(a) wells are found to exceed the temperature limit in Part 17(a), the owner/operator shall take all measures necessary to investigate the possibility of subsurface fires, including landfill gas testing for carbon monoxide (CO) on those landfill gas collection wells in Part 17(a) that exceed the operating temperature limit. If a fire is suspected, the owner/operator shall employ all means as appropriate to extinguish the fire, repair the well(s), and bring the well(s) back into service according to Section 8-34-414.

18. If any other well has a temperature of 131 degrees F or higher, the owner/operator may elect to add this component to the list of alternative temperature limit wells in Part 17 if all of the following requirements are met:
- a. The wellhead temperature does not exceed 145 degrees F.
  - b. The carbon monoxide (CO) concentration in the wellhead gases does not exceed 500 ppmv.
  - c. The component does not exceed any wellhead limit other than temperature and had no excesses of wellhead limits (other than temperature) during the past 120 days prior to adding this component to the list in this subpart, unless the excess is positive pressure at the well from the well vacuum being reduced to eliminate any potential over pull that could contribute to a landfill fire.
  - d. Prior to adding a component to the list in Part 17, the owner/operator shall monitor the gas in the wellhead for CO concentration at least two times, with no more than 15 days between tests. CO monitoring shall continue on a monthly basis, or more frequently if required below, until the owner/operator is allowed to discontinue CO monitoring per subpart e(ii)(3).
  - e. The owner/operator shall comply with all applicable monitoring and recordkeeping requirements below:
    - i. The owner/operator shall demonstrate compliance with the alternative wellhead temperature limit by monitoring and recording the temperature of the landfill gas in the wellhead on a monthly basis, in accordance with Regulations 8-34-501.4, 8-34-501.9, and 8-34-505.
    - ii. If the temperature of the landfill gas in the wellhead exceeds 140 degrees F, the owner/operator shall investigate the possibility of a subsurface fire at the wellhead by monitoring CO concentration in the wellhead gases and by searching for smoke, smoldering odors, combustion residues, and other fire indicators in the wellhead and in the landfill area near the wellhead. Within 5 days of triggering a fire investigation, the owner/operator shall measure the CO concentration in the landfill gas at the wellhead using a portable CO monitor, CO Draeger tube, or an EPA-approved test method. CO monitoring shall continue according to the frequency specified below:
      1. If the CO concentration is greater than 500 ppmv, the owner/operator shall immediately take all steps necessary to prevent or extinguish the subsurface fire, including disconnecting the well from the vacuum system if necessary. If the well is not disconnected from the vacuum system or upon reconnecting the well to the vacuum system, the owner/operator shall monitor the well for CO concentration, wellhead temperature, and other fire indicators on at least a weekly basis until CO concentration drops to 500 ppmv or less.
      2. If the CO concentration is less than or equal to 500 ppmv but great than 100 ppmv, the owner/operator shall monitor for CO concentration at least twice per month (not less than once every 15 days) until the CO concentration drops to 100 ppmv or less. Wellhead temperature and other fire indicators shall be evaluated at each of these semi-monthly monitoring events.
      3. If the CO concentration is less than or equal to 100 ppmv, the owner/operator shall monitor for CO concentration on a monthly basis. CO monitoring may be discontinued if three consecutive CO measurements are 100 ppmv or less and the wellhead temperature during each of these three monitoring events is 140 degrees F or less. If the component has three or more CO measurement of 100 ppmv or less but the wellhead temperature was greater than 140 degrees F, the owner/operator must receive written approval from the District before discontinuing the monthly CO monitoring at that component.
    - iii. The owner/operator shall record the dates and results of all monitoring events required

- by this subpart in a District-approved log. If subpart 18e(ii) or 18e(ii)(1) applies, the owner/operator shall also record all actions taken to prevent or extinguish the fire.
- f. Within 30 days of adding a component to the list in this subpart, the owner/operator shall notify the District in writing that the operator is requesting to add the component to the list of alternative temperature limit wells. This notification shall include the well ID number, a map of the collection system to identify the location of the well, and the dates and results of all monitoring conducted on the well to verify that the above requirements have been satisfied.
- g. If the Regulation 8-34-414 repair schedule has been invoked for the wellhead temperature excess and the owner/operator has met the requirement in Sections 414.1 and 414.2, then compliance with the requirements of the subpart shall be deemed an acceptable resolution of the wellhead temperature excess in lieu of the collection system expansion specified in Section 414.3 and 414.4.  
(basis: Regulation 8-34-305)

### **Recommendations**

I recommend issuing a Change of Conditions to Condition #1437 for the following source:

- S-1 Municipal Solid Waste Landfill with Gas Collection System, equipped with (34) Landfill Gas Extraction Wells**

\_\_\_\_\_  
Tamiko Endow  
Air Quality Engineer

\_\_\_\_\_  
Date

## **Engineering Evaluation Report**

Kirby Canyon Landfill, P#1812  
910 Coyote Creek Golf Drive, San Jose  
Application #21786

### **Background**

Kirby Canyon Landfill is an active Class III municipal solid waste landfill operated by Waste Management of California (“Applicant”). The Applicant has requested a Change of Conditions to allow installation, decommissioning, and maintenance of vertical landfill gas collection wells, horizontal landfill gas trench collectors, and leachate cleanout risers at the Landfill, S-1, under the accelerated permitting program.

Also, subsequent to the initial submittal of this application, the Applicant has requested approval of Less Than Continuous Operation (LTCO) and approval of alternate operating standards for the existing leachate cleanout risers (LCR) at this site. The LCRs are horizontal collectors, which are intended to collect and remove liquid (“leachate”) that accumulates in the landfill. Both horizontal landfill gas trench collectors and LCRs are composed of a perforated pipe, surrounded by gravel. However, the LCRs are installed as a network of piping at the bottom of the landfill to collect liquid that accumulates in the landfill by gravity. This liquid is eventually drained to a sump. Horizontal landfill gas trench collectors are intended to collect landfill gas; they are typically installed on top of waste placed in the landfill and are eventually covered with more waste.

The Applicant has requested a Change of Conditions to allow the following alterations to the gas collection system and leachate collection system for the Landfill, S-1:

### **S-1 Municipal Solid Waste Landfill with Gas Collection System, equipped with (57) Landfill Gas Vertical Extraction Wells, (0) Horizontal Landfill Gas Trench Collectors, and (4) Leachate Cleanout Risers:**

- **Installation of up to (70) New Vertical Gas Extraction Wells**
- **Replacement of up to (40) Existing Vertical Gas Extraction Wells**
- **Decommissioning of up to (15) Existing Vertical Gas Extraction Wells**
- **Installation of up to (15) new Leachate Cleanout Risers**
- **Decommissioning of up to (8) Leachate Cleanout Risers**
- **Installation of up to (5) new Horizontal Trench Collectors**
- **Decommissioning of up to (2) Horizontal Trench Collectors**

The District previously issued approval for changes to landfill gas collection systems under an Authority to Construct, which expired in 2 years. As changes to the gas collection system must be performed regularly, the District now reviews landfill gas collection system alterations as a Change of Conditions, with no expiration date.

### **Emission Calculations**

Landfills are sources of air emissions, including particulate matter from the handling of waste, excavation and compaction activities, as well as vehicular traffic across paved and unpaved roads. Landfill gas control equipment, as well as delivery vehicles and onsite mobile construction equipment, also generate combustion emissions from the combustion of fuel. The decomposition of waste in the landfill generates emissions of methane and volatile organic compounds, which is emitted in the form of fugitive leaks from uncollected landfill gas or as the small fraction of organic compounds which are not combusted at the landfill gas abatement device. All of these types of emissions are related to the permitted capacity of the landfill, S-1.

Under this application, the Applicant has not proposed any modification to the permitted capacity of the landfill itself, therefore there is no associated increase in any of these emissions, which were reviewed and addressed at the time the landfill was permitted.

The maximum landfill gas generation rate calculated using EPA's LANDGEM emission model is expected to be 3,420 scfm. At the standard estimated collection efficiency of 75%, this corresponds to a maximum collected flow rate of 2,565 scfm to be sent to the flare at peak production. The Applicant has recently installed and started up a new replacement flare, A-12, 149 MM BTU/hour. The new flare has a landfill gas processing capacity of 4,500 scfm, which is adequate to process the increase in landfill gas collection from the proposed additional wells, and in fact all of the gas expected to be generated at this landfill. As the emissions from the flare have already been fully accounted for under Application #15617, there is no increase in emissions from the flare due to the proposed changes to the gas and leachate collection systems under this application.

### **Cumulative Increase**

There is no change in emissions associated with the request to alter the landfill gas collection system or the proposed alternate operating conditions, therefore there will be no change to the cumulative emission increases for this facility as a result of this application.

### **Compliance Determination**

#### **Regulation 1, "General Provisions and Definitions"**

#### **Regulation 2, Rule 1, "Permits – General Requirements" - Public Notice Requirements**

#### **Regulation 2, Rule 2, "Permits – New Source Review" - Best Available Control Technology (BACT) Requirements, Emission Offsets and Prevention of Significant Deterioration (PSD)**

#### **Regulation 2, Rule 5, "Permits – New Source Review of Toxic Air Contaminants" - Health Risk Assessment Requirements**

#### **Regulation 6, Rule 1, "Particulate Matter – General Requirements"**

#### **Regulation 9, Rule 2, "Inorganic Gaseous Pollutants – Hydrogen Sulfide"**

As there is no change in emissions associated with the proposed alterations to the landfill gas and leachate collection systems or alternate operating conditions, continued compliance with the emission limits in Regulation 1 (public nuisance), Regulation 6, Rule 1 (particulate and visible emissions), and Regulation 9, Rule 2 (hydrogen sulfide) is expected. In addition, the public notification requirements of Regulation 2, Rule 1, Section 412, the BACT, PSD, and emission offset requirements in Regulation 2, Rule 2, as well as the health risk assessment requirements in Regulation 2, Rule 5 are requirements that are triggered based on emission increases and therefore also do not apply.

### **California Environmental Quality Act (CEQA) Requirements, Regulation 2, Rule 1**

The proposed alterations to the collection system and alternate operating limitations will require a change to the permit conditions for the permitted source, S-1, but will not involve an increase emissions. Therefore, this request is exempt from CEQA review by the express terms of CEQA and District Regulation 2-1-312.1.

### **Major Facility Review, Regulation 2, Rule 6**

#### **40 CFR Part 70, State Operating Permit Programs (Title V)**

The Title V federal permitting requirements of 40 CFR Part 70 have been codified and are enforced through District Regulation 2, Rule 6. This facility is a designated facility and is therefore subject to Title V and Regulation 2, Rule 6. As a designated facility, this facility was required to obtain a Title V Federal Operating Permit. The facility was issued the initial Title V permit on July 10, 2003 and has undergone 4 minor permit revisions since that date. The last permit revision was issued on November 13,



2008. The proposed collection system alterations are considered a minor revision to the Title V permit, which will be processed under Application #19362.

**Regulation 8, Rule 34, "Organic Compounds – Solid Waste Disposal Sites"**

**40 CFR Part 60, Subpart Cc, Standards of Performance for New Stationary Sources (NSPS) – Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills**

40 CFR Part 60, Subpart Cc, Emission Guidelines (EG) for Municipal Solid Waste (MSW) Landfills applies to MSW landfills that have not undergone a design capacity modification since May 30, 1991, but that have accepted waste since November 8, 1987. The District's Regulation 8, Rule 34 has been approved in the state plan for implementation of the EG requirements. This facility is currently subject to the EG, which is enforced through compliance with District Regulation 8, Rule 34.

Regulation 8, Rule 34 contains operational requirements that apply to the landfill gas collection system as well as requirements that apply to the landfill operation and the landfill gas emission control system. As only the gas collection system and leachate collection system will be affected by the Applicant's proposal, only the collection system requirements are discussed below.

Section 8-34-301.1 requires the landfill gas collection system to be operated continuously, unless the requirements of Section 8-34-404 are met. Also, Section 8-34-305 requires landfill gas collection wells to be operated in compliance with the following limits, unless alternate operating limits have been approved:

- Operate under vacuum (negative pressure);
- Gas temperature < 55 deg C (131 deg F); and
- Nitrogen concentration less than 20% by volume, or oxygen concentration less than 5% by volume.

Although the leachate collection system is intended to capture and remove liquids, due to the construction, landfill gas does migrate into the leachate collection system. The leachate collection system does meet the definition of "gas collection system" in Section 8-34-210 and is therefore subject to the operating limits above. The Applicant has proposed to operate the leachate collection system less than continuously and has also requested alternate operating limits for the LCRs.

Although the leachate collection system is intended to capture and remove liquids, due to the construction, landfill gas does migrate into the leachate collection system. The accumulation of landfill gas in this system can eventually build up enough pressure to cause the gas to migrate out of the system where the cover is minimal near the edge of the landfill liner, resulting in emissions of landfill gas and potential odor problems. To prevent this, the Applicant connects the LCRs to the landfill gas collection system to remove accumulated landfill gas.

However, the Applicant has indicated that applying even minimal vacuum to the LCRs can result in excess air infiltration due to the design of the leachate collection system, making it difficult for the LCRs to comply with both the negative pressure and oxygen content limitations specified above for landfill gas collection wells. Therefore, the Applicant has also requested approval of following oxygen content and pressure limits for the LCRs:

- Oxygen concentration not to exceed 15% by volume.
- Operate at a maximum pressure of up to 0.5 inches water column; and

In the event that the oxygen concentration measured at a LCR approaches 15% by volume, the Applicant has proposed to close the LCR until the presence of landfill gas must again be addressed. As required by Section 8-34-404 which specifies the required elements of a "Less Than Continuous Operation Petition," the Applicant has submitted monthly monitoring data for the LCRs showing that landfill gas is present in the leachate collection system, a map identifying the locations of the LCRs, and has proposed to inspect the LCRs on the standard monthly schedule specified by Regulation 8-34. As the neighboring landfill gas collection wells are expected to collect the gas in the vicinity of the LCRs when they are periodically

closed, and since the landfill leak and well monitoring requirements will continue to be met, closure of the LCRs is not expected to cause excess emissions. Therefore, since the requirements of Section 8-34-404 have been met, approval of these alternate operating limits and less than continuous operation of the LCRs is recommended.

In addition, the following requirements apply to the gas collection and leachate collection systems:

- Section 8-34-301.2 limits component leaks to no more than 1000 ppmv, as methane, unless the leak has been discovered by the operator, recorded pursuant to Section 8-34-501, and repaired within 7 days. Quarterly leak testing is required by Section 8-34-503.
- Section 8-34-304 specifies when gas collection wells must be installed within the landfill.
- Section 8-34-501 requires maintenance of all monitoring and testing dates, the results, as well as collection system downtime, and all repairs to the gas collection system.
- Section 8-34-505 requires monthly monitoring of wells for compliance with operational limits.

The Applicant is expected to continue to comply with these requirements.

**Permit Condition #1437**

Part 6 of Condition #1437 will be amended as indicated below to address the proposed landfill gas collection system and leachate collection system alterations:

6. The owner/operator shall apply for and receive an Authority to Construct Change of Conditions from the District before ~~modifying-altering~~ the landfill gas collection system described in Parts 6a-b below. Increasing or decreasing the number of wells or collectors, changing the length of collectors, or changing the locations of wells or collectors are ~~alterations~~all considered to be modifications that are subject to ~~this the Authority to Construct~~ requirement. The authorized number of landfill gas collection system and leachate collection system components is the baseline count listed below, plus any components added and minus any components decommissioned pursuant to Part 6b, as evidenced by start-up/shutdown notification letters submitted to the District.

a. The owner/operator has been issued a Permit to Operate for the landfill gas collection system and leachate collection system components listed below. Well and collector locations, depths, and lengths are as described in detail in Permit Applications #2232, #7835, #11730, and #17016.

	Current
Total Number of Vertical Landfill Gas Extraction Wells:	57
<u>Total Number of Horizontal Landfill Gas Trench Collectors</u>	<u>0</u>
Total Number of Leachate Collection Wells:	4

b. The owner/operator is authorized to make the landfill gas collection system and leachate collection system component alterations listed below. Specific details regarding well alterations are described in Permit Application #21786.

	Minimum	Maximum
<u>Install new Vertical Gas Extraction Wells:</u>	<u>0</u>	<u>70</u>
<u>Replace Vertical Gas Extraction Wells:</u>	<u>0</u>	<u>40</u>
<u>Decommission Vertical Gas Extraction Wells:</u>	<u>0</u>	<u>15</u>
<u>Install new Horizontal Trench Collectors</u>	<u>0</u>	<u>5</u>
<u>Decommission Horizontal Trench Collectors</u>	<u>0</u>	<u>2</u>
<u>Install new Leachate Cleanout Risers</u>	<u>0</u>	<u>15</u>
<u>Decommission Leachate Cleanout Risers</u>	<u>0</u>	<u>8</u>

Wells installed, relocated, replaced, or shutdown pursuant to Part 6b shall be added to or removed from Part 6a in accordance with the procedures identified in Regulations 2-6-414 or 2-6-415. The owner/operator shall maintain records of the decommissioning date for each well that is shut down and the initial operation date for each new or relocated well.

(basis: Regulations 2-1-301, 8-34-301.1, 8-34-303, 8-34-304, 8-34-305)

Part 19 will be added to Condition #1437 as indicated below to allow alternate operating limits and less than continuous operation of the leachate cleanout risers:

19. The leachate collection system operating requirements listed below shall replace the operating requirements identified in Regulation 8-34-301.1, 8-34-305.1, 8-34-305.3, and 8-34-305.4 for the leachate collection risers (LCRs) LR-03, LR-04, and LR-06 and any other LCRs for which the District has approved for inclusion in Part 19. All LCRs remain subject to the landfill gas temperature limit in Regulation 8-34-305.2. (basis: Regulation 8-34-305, Regulation 8-34-404, Regulation 8-34-414, Regulation 8-34-501.4, Regulation 8-34-501.9, 40 CFR Part 60.755(a) and 60.759, Regulation 2-6-501)
- a. The Regulation 8-34-305.3 and 8-34-305.4, the nitrogen and oxygen content limits, shall not apply, provided that each LCR is operated at an oxygen concentration not to exceed 15% by volume.
  - b. If compliance with Part 19(a) requires turning off the vacuum to a LCR, the Regulation 8-34-301.1 continuous operation and 8-34-305.1 negative pressure requirement shall not apply if the owner/operator ensures the pressure at the affected LCR does not exceed 0.5 inches water column. This allowance for less than continuous operation will expire on October 30, 2013, unless the owner/operator requests renewal of this provision pursuant to Regulation 8-34-404 and the District approves the request.
  - c. The owner/operator shall demonstrate compliance with the oxygen content limit in 19(a) alternative wellhead pressure limit in 19(b) by installing and maintaining a District-approved vacuum/pressure gauge at each LCR and by monitoring and recording the oxygen content and pressure at each affected LCR on a monthly basis, in accordance with Regulation 8-34-501 and 8-34-505.
  - d. The owner/operator may elect to add additional LCRs to these alternate operating conditions by notifying the District in writing of this request, with identification of the LCR ID number(s) and submittal of the information required by Regulation 8-34-404.
  - e. All records to demonstrate compliance with Part 19 and all applicable sections of BAAQMD Regulation 8, Rule 34 shall be recorded in a District-approved log and made available to District staff upon request for at least 5 years from date of entry.

### Recommendations

I recommend issuing a Change of Conditions to Condition #1437 for the following source:

**S-1 Municipal Solid Waste Landfill with Gas Collection System, equipped with (57) Landfill Gas Vertical Extraction Wells, (0) Horizontal Landfill Gas Trench Collectors, and (4) Leachate Cleanout Risers:**

- **Installation of up to (70) New Vertical Gas Extraction Wells**  
**Replacement of up to (40) Existing Vertical Gas Extraction Wells**  
**Decommissioning of up to (15) Existing Vertical Gas Extraction Wells**
- **Installation of up to (15) new Leachate Cleanout Risers**  
**Decommissioning of up to (8) Leachate Cleanout Risers**
- **Installation of up to (5) new Horizontal Trench Collectors**  
**Decommissioning of up to (2) Horizontal Trench Collectors**

\_\_\_\_\_  
Tamiko Endow  
Air Quality Engineer

\_\_\_\_\_  
Date

## **Engineering Evaluation Report**

Kirby Canyon Landfill, P#1812  
910 Coyote Creek Golf Drive, Morgan Hill  
Application #23446

### **Background**

Kirby Canyon Landfill (KCL) is an active Class III municipal solid waste landfill operated by Waste Management of California (“Applicant”). The Applicant has requested a Change of Conditions to allow installation, decommissioning, and maintenance of vertical landfill gas collection wells, horizontal landfill gas trench collectors, and leachate cleanout risers at the Landfill, S-1, under the accelerated permitting program.

The Applicant has requested approval of the following alterations to gas and leachate collection systems, under the accelerated permitting program:

#### **S-1 Municipal Solid Waste Landfill with Gas Collection System, equipped with (53)**

##### **Vertical Gas Extraction Wells and (1) Leachate Cleanout Riser:**

- **Installation of up to (50) New Vertical Gas Extraction Wells, Decommissioning of up to (40) Vertical Gas Extraction Wells, Replacement of up to (103) Vertical Gas Extraction Wells,**
- **Installation of up to (5) New Horizontal Trench Collectors, Decommissioning of up to (2) Horizontal Trench Collectors**
- **Installation of up to (15) New Leachate Cleanout Risers, and Decommissioning of up to (8) Leachate Cleanout Risers,**

### **Emission Calculations**

Landfills are sources of air emissions, including particulate matter from the handling of waste, excavation and compaction activities, as well as vehicular traffic across paved and unpaved roads. Landfill gas control equipment, as well as delivery vehicles and onsite mobile construction equipment, also generate combustion emissions from the combustion of fuel. The decomposition of waste in the landfill generates emissions of methane and volatile organic compounds, which is emitted in the form of fugitive leaks from uncollected landfill gas or as the small fraction of organic compounds which are not combusted at the landfill gas abatement device. All of these types of emissions are related to the permitted capacity of the landfill, S-1.

Under this application, the Applicant has not proposed any modification to the permitted capacity of the landfill itself, therefore there is no associated increase in any of these emissions, which were reviewed and addressed at the time the landfill was permitted.

The maximum landfill gas generation rate calculated using EPA’s LANDGEM emission model is expected to be 3,420 scfm. At the standard collection efficiency of 75%, this corresponds to a maximum collected flow rate of 2,565 scfm to be sent to the flare at peak production. The collected landfill gas is currently being abated at the existing 149 MM BTU/hour Enclosed Landfill Gas Flare, A-12, which has a processing capacity of 4,500 scfm of landfill gas. The capacity of the landfill gas flare is adequate to process the increase in landfill gas collection from the proposed additional wells, and in fact all of the gas expected to be generated at this landfill. As the emissions from the flare have already been fully accounted for under Application #15617, there is no increase in emissions due to this application.

### **Cumulative Increase**

There is no change in emissions associated with the request to alter the landfill gas and leachate collection systems, therefore there will be no change to the cumulative emission increases for this facility as a result of this application.

### **Statement of Compliance**

#### **Regulation 1, "General Provisions and Definitions"**

#### **Regulation 2, Rule 1, "Permits – General Requirements" - Public Notice Requirements**

#### **Regulation 2, Rule 2, "Permits – New Source Review" - Best Available Control Technology (BACT) Requirements, Emission Offsets and Prevention of Significant Deterioration (PSD)**

#### **Regulation 2, Rule 5, "Permits – New Source Review of Toxic Air Contaminants" - Health Risk Assessment Requirements**

#### **Regulation 6, Rule 1, "Particulate Matter – General Requirements"**

#### **Regulation 9, Rule 2, "Inorganic Gaseous Pollutants – Hydrogen Sulfide"**

As there is no change in emissions associated with the proposed alterations to the landfill gas and leachate collection systems, continued compliance with the emission limits in Regulation 1 (public nuisance), Regulation 6, Rule 1 (particulate and visible emissions), and Regulation 9, Rule 2 (hydrogen sulfide) is expected. In addition, the public notification requirements of Regulation 2, Rule 1, Section 412, the BACT, PSD, and emission offset requirements in Regulation 2, Rule 2, as well as the health risk assessment requirements in Regulation 2, Rule 5 are requirements that are triggered based on emission increases and therefore also do not apply.

#### **California Environmental Quality Act (CEQA) Requirements, Regulation 2, Rule 1**

The proposed alterations to the collection systems will require a change to the permit conditions for the permitted source, S-1, but will not involve an increase emissions. Therefore, this request is exempt from CEQA review by the express terms of CEQA and District Regulation 2-1-312.1.

#### **Major Facility Review, Regulation 2, Rule 6**

#### **40 CFR Part 70, State Operating Permit Programs (Title V)**

The Title V federal permitting requirements of 40 CFR Part 70 have been codified and are enforced through District Regulation 2, Rule 6. This facility is a designated facility and is therefore subject to Title V and Regulation 2, Rule 6. As a designated facility, this facility was required to obtain a Title V Federal Operating Permit. The facility was issued the initial Title V permit on July 10, 2003 and has undergone 4 minor permit revisions since that date. The proposed collection system alterations are considered a minor revision to the Title V permit, but will likely be processed under the renewal of the Title V permit, currently underway.

#### **Regulation 8, Rule 34, "Organic Compounds – Solid Waste Disposal Sites"**

#### **40 CFR Part 60, Subpart Cc, Standards of Performance for New Stationary Sources (NSPS)– Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills**

40 CFR Part 60, Subpart Cc, Emission Guidelines (EG) for Municipal Solid Waste (MSW) Landfills applies to MSW landfills that have not undergone a design capacity modification since May 30, 1991, but that have accepted waste since November 8, 1987. The District's Regulation 8, Rule 34 has been approved in the state plan for implementation of the EG requirements. This facility is currently subject to the EG, which is enforced through compliance with District Regulation 8, Rule 34. Continued compliance with these regulations is expected.

#### **Permit Condition #1437**

Part 6 of the permit condition #1437 will be modified as indicated below to address the gas and leachate collection system modifications proposed under this application:

6. The owner/operator shall apply for and receive a Change of Conditions from the District before altering the landfill gas collection system described in Parts 6a-b below. Increasing or decreasing the number of wells or collectors, changing the length of collectors, or changing the locations of wells or collectors are alterations that are subject to this requirement.

a. The owner/operator has been issued a Permit to Operate for the landfill gas collection system and leachate collection system components listed below. Well and collector locations, depths, and lengths are as described in detail in Permit Applications #2232, #7835, #11730, ~~and #17016~~, and #21786.

	Current
Total Number of Vertical Landfill Gas Extraction Wells:	<del>5753</del>
Total Number of Horizontal Landfill Gas Trench Collectors	0
Total Number of Leachate Collection Wells:	<del>41</del>

b. The owner/operator is authorized to make the landfill gas collection system and leachate collection system component alterations listed below. Specific details regarding well alterations are described in Permit Application #~~21786~~23446.

	Minimum	Maximum
Install new Vertical Gas Extraction Wells:	0	<del>7050</del>
Replace Vertical Gas Extraction Wells:	0	<del>40103</del>
Decommission Vertical Gas Extraction Wells:	0	<del>1540</del>
Install new Horizontal Trench Collectors	0	5
Decommission Horizontal Trench Collectors	0	2
Install new Leachate Cleanout Risers	0	15
Decommission Leachate Cleanout Risers	0	8

Wells installed, relocated, replaced, or shutdown pursuant to Part 6b shall be added to or removed from Part 6a in accordance with the procedures identified in Regulations 2-6-414 or 2-6-415. The owner/operator shall maintain records of the decommissioning date for each well that is shut down and the initial operation date for each new or relocated well.

(basis: Regulations 2-1-301, 8-34-301.1, 8-34-303, 8-34-304, 8-34-305)

### Recommendations

I recommend issuing a Change of Conditions to the following source:

**S-1 Municipal Solid Waste Landfill with Gas Collection System, equipped with (53) Vertical Gas Extraction Wells and (1) Leachate Cleanout Riser:**

- **Installation of up to (50) New Vertical Gas Extraction Wells, Decommissioning of up to (40) Vertical Gas Extraction Wells, Replacement of up to (103) Vertical Gas Extraction Wells,**
- **Installation of up to (5) New Horizontal Trench Collectors, Decommissioning of up to (2) Horizontal Trench Collectors**
- **Installation of up to (15) New Leachate Cleanout Risers, and Decommissioning of up to (8) Leachate Cleanout Risers,**

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Tamiko Endow  
Air Quality Engineer

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Date