

**Bay Area Air Quality Management District**

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

**Permit Evaluation  
and  
Statement of Basis  
for  
MAJOR FACILITY REVIEW PERMIT**

**for  
Waste Management of Alameda County  
Facility #A2066**

**Facility Address:**  
10840 Altamont Pass Road  
Livermore, CA 94550

**Mailing Address:**  
10840 Altamont Pass Road  
Livermore, CA 94550

## TABLE OF CONTENTS

|       |  |    |
|-------|--|----|
| A.    | Background .....   | 3  |
| B.    | Facility Description .....   | 3  |
| C.    | Permit Content.....  | 6  |
| I.    | Standard Conditions.....   | 6  |
| II.   | Equipment.....   | 7  |
| III.  | Generally Applicable Requirements.....                             | 8  |
| IV.   | Source-Specific Applicable Requirements .....                      | 8  |
| V.    | Schedule of Compliance .....                                       | 10 |
| VI.   | Permit Conditions .....  | 11 |
| VII.  | Applicable Limits and Compliance Monitoring Requirements .....     | 19 |
| VIII. | Test Methods.....  | 31 |
| IX.   | Permit Shield: .....   | 31 |
| D.    | Alternate Operating Scenario: .....                                | 32 |
| E.    | Compliance Status:.....  | 32 |
| F.    | Differences Between the Application and the Proposed Permit: ..... | 33 |

## **Title V Statement of Basis**

### **A. Background**

This facility is subject to the Operating Permit requirements of Title V of the federal Clean Air Act, Part 70 of Volume 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 by 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 that is subject to this part and that has a design capacity of greater than or equal to 2.5 million megagrams (Mg) and 2.5 million cubic meters (m<sup>3</sup>) to obtain an operating permit pursuant to Part 70. As discussed in more detail below in Section C.IV. of this report, this facility is subject to these emission guidelines and meets the designated facility criteria listed in 40 CFR § 60.32c(c).

This facility is also a major facility, as defined by BAAQMD Regulation 2-6-212, because it has the “potential to emit,” as defined by BAAQMD Regulation 2-6-218, more than 100 tons per year of a regulated air pollutant. This facility has the potential to emit more than 100 tons per year of nitrogen oxides and more than 100 tons/year of carbon monoxide.

Major Facility Operating permits (Title V permits) must meet specifications contained in 40 CFR Part 70 as contained in BAAQMD Regulation 2, Rule 6. 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.

### **B. Facility Description**

Waste Management of Alameda County (Facility # A2066) owns and operates the Altamont Landfill and Resource Recovery Facility (ALRRF) in Livermore, CA. The facility includes an active municipal solid waste landfill (with Class II and III areas), active landfill gas collection systems, landfill gas fired energy recovery equipment, landfill gas flares, condensate and leachate treatment operations, a gasoline dispensing facility, and several diesel fired internal combustion engines.

The District permit for the Altamont Landfill with Landfill Gas Collection System (S-2) is for Fill Area 1 (a 235-acre area on an excavated hillside) and the associated active landfill gas collection systems. Waste acceptance at Fill Area 1 began in 1980 and is expected to continue through 2008. The landfill is currently permitted to accept up to 11,150 tons/day of wastes. The landfill accepts municipal solid waste, industrial waste, construction/demolition debris, asbestos, non-hazardous sewage sludge, non-hazardous contaminated soils, and other miscellaneous non-hazardous materials. Fill Area 1 has a maximum design capacity of 58.9 million cubic yards (45.0 million m<sup>3</sup>) and is expected to contain about 47.1 million tons (42.7 million Mg) of decomposable waste when it reaches full capacity. Since the design capacity of this landfill exceeds the 40 CFR § 60.32c(c) applicability criteria, a Title V Permit is required for this entire facility.

At the landfill, the waste decomposition process generates landfill gas, which contains mainly methane, carbon dioxide, and small amounts of non-methane organic compounds (<1%) and sulfur compounds (<200 ppmv). Many of the non-methane organic compounds (NMOCs) found in landfill gas are precursor organic compounds (POC), and some NMOCs are hazardous air pollutants (HAP). Various local, state, and federal regulations require that landfill gas be collected and controlled to reduce POC and HAP emissions to the atmosphere. In order to meet these requirements, the landfill at this site is equipped with active, continuously operating landfill gas collection and control systems.

Active landfill gas collection systems consist of perforated pipes that are buried in the refuse at numerous locations, solid pipes (laterals and headers), and blowers. The perforated pipes are generally referred to as vertical wells or horizontal collectors, depending on the orientation of the pipes within the refuse. The gas collection system at this site includes 44 vertical wells, 14 horizontal collectors, and 3 combination collectors (with both vertical and horizontal pipe sections). Landfill gas is also collected from 2 leachate risers<sup>1</sup> to control any gas that migrates into the leachate collection system. The solid pipes connect the perforated pipes to the blowers. The blowers collect landfill gas by creating a vacuum in the buried refuse that draws landfill gas into the pipes. The blowers vent this collected landfill gas to the landfill gas control systems.

The landfill gas control systems for this landfill currently include four energy recovery devices (S-6 and S-7 Gas Turbines and S-23 and S-24 Internal Combustion Engines) and one enclosed ground flare (A-15 Landfill Gas Flare). Most of the collected landfill gas is burned in the energy recovery devices, which produce electricity for on-site use and for sale to the power grid. The remaining collected landfill gas is burned in the flare. These combustion devices (S-6, S-7, S-23, S-24, and A-15) destroy most of the methane, organic compounds, sulfur compounds, and HAPS in the landfill gas but also produce secondary combustion pollutants including: Nitrogen Oxides (NO<sub>x</sub>), Carbon Monoxide (CO), Sulfur Dioxide (SO<sub>2</sub>), Particulate Matter (PM<sub>10</sub>), Formaldehyde and Hydrogen Chloride. The gas turbines are each equipped with a Fogging System (A-6 and A-7, respectively). The purpose of the fogging systems is to reduce NO<sub>x</sub> emissions from the turbines. However, operation of the fogging systems is optional, because the turbines are capable of meeting all regulatory requirements without the fogging systems in place.

---

<sup>1</sup> Leachate is water (from rain and dust control measures) that has percolated through the landfill. Since leachate contains small amounts of contaminants, the leachate must be collected and treated prior to reuse or disposal. The leachate risers are part of the leachate collection system.

In addition to the combustion equipment discussed above, Waste Management has been issued an Authority to Construct for two Liquefied Natural Gas (LNG) Plants (S-25 and S-26) that will be used to control landfill gas at this site in the future. The LNG Plants will convert landfill gas into LNG by using a proprietary process. The LNG Plants will separate landfill gas into its main components (carbon dioxide and methane) and purify the gas streams (by removing water, NMOCs, and sulfur contaminants). The resulting LNG may be burned on-site, used as fuel for garbage trucks, or sold for other purposes. The byproduct carbon dioxide stream will be vented to the atmosphere. This process will comply with Regulation 8, Rule 34, because the carbon dioxide stream will contain no detectable NMOC. No detectable NMOC emissions is defined as less than 5 ppmv of NMOC expressed as methane, while the BAAQMD Regulation 8-34-301.4 limit is 120 ppmv of NMOC, expressed as methane at 3% oxygen, dry basis.

Waste Management has one permitted source (S-19) and several exempt sources (S-12 and S-28) that store and treat landfill gas condensate. Landfill gas condensate is a liquid (mainly water with small amounts of organic compounds) that forms when landfill gas is cooled or compressed. The condensate is collected at the S-12 Knockout Vessel and may either be delivered to the S-19 Transfer Tank with Siphon Pump or to the S-28 Condensate Storage Tank (an agitated vessel). These storage and transfer operations will emit small quantities of POCs and HAPs.

When the condensate is delivered to S-19, it is allowed to settle and will form two phases (a thin hydrocarbon layer floating on top of an aqueous layer). The siphon pump at S-19 removes the hydrocarbon layer for off-site treatment or disposal. The aqueous phase of the condensate at S-19 is delivered to the S-130 Equalization Tank.

When the condensate is delivered to the agitated storage tank (S-28), the agitation prevents the formation of two phases. Condensate from S-28 will be atomized and then injected into combustion zone of the A-15 Landfill Gas Flare. The flare will destroy most of the organic compounds in the condensate and may result in higher carbon monoxide emissions and lower nitrogen oxide emissions from the flare compared to burning landfill gas alone. However, condensate injection is not expected to result in any emissions that exceed the maximum permitted emission levels for this flare.

The aqueous phase of the landfill gas condensate from S-19 is combined with leachate, surface water run-off from the landfill, and other non-hazardous wastewater streams in the S-130 Equalization Tank, which is exempt from permit requirements. The wastewater in S-130 is neutralized, if necessary, and mixed with nutrients to stimulate biodegradation. S-130 is equipped with an optional Carbon Adsorption System (A-130) to control odors.

The wastewater from S-130 is treated in two aerated biological reactors (S-140 and S-141). Most of the POC and HAP emissions from the wastewater treatment operations are expected to occur at S-140 and S-141. Treated effluent from S-140 and S-141 is stored in the S-20 Effluent Storage Tank, which is exempt from permit requirements and has negligible emissions. The treated effluent may be used for on-site dust control. The solids slurry from S-140 and S-141 are delivered to the S-180 Sludge Thickening Tank (which is exempt from permit requirements), where gravity is used to remove most of the water from the solids. The sludge tank is also

expected to have negligible emissions. The supernatant (water phase from S-180) is recycled to the S-130 Equalization Tank, and the sludge is trucked off for disposal.

Waste Management has a non-retail gasoline dispensing facility (GDF # 7123 / S-99), which emits small amounts of POCs and HAPs. This GDF has one nozzle each for dispensing gasoline and diesel fuel. Diesel fuel storage and loading operations are exempt from permit requirements.

Waste Management has five small (< 250 bhp) diesel fired internal combustion (IC) engines (S-191, S-192, S-193, S-197, and S-198) that provide power to various operations around the site including water pumps, vacuum pumps, and portable facilities. Waste Management also has four diesel fire IC engines (S-190, S-194, S-195, and S-196) that provide power during emergencies. These IC engines emit combustion pollutants (NO<sub>x</sub>, CO, POC, PM<sub>10</sub>, SO<sub>2</sub>, and HAPs).

Waste Management is planning an expansion of the landfill into a new fill area (Fill Area 2) covering about 250 acres of this site (east of Fill Area 1) with a proposed capacity of about 164 million tons of waste. In addition, Waste Management is planning to add composting operations to this site. These proposed operations are not included in this permit, because the District has not evaluated or approved these operations. Waste Management is required to obtain an Authority to Construct from the District, before beginning construction on either of these new operations. After the MFR Permit is issued, Waste Management will also be required to revise the MFR Permit before beginning any significant modifications to this site.

## **C. Permit Content**

The legal and factual basis for the permit follows. The permit sections are described in the order presented in the permit.

### **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. 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.

Condition I.J has been added to clarify that the capacity limits shown in Table II-A are enforceable limits.

## 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., S1).

Permitted sources are those sources that require a BAAQMD operating permit pursuant to BAAQMD Rule 2-1-302.

Significant sources are those sources that have a potential to emit of more than 2 tons of a “regulated air pollutant,” as defined in BAAQMD Rule 2-6-222, per year or 400 pounds of a “hazardous air pollutant,” as defined in BAAQMD Rule 2-6-210, per year. This facility has no unpermitted significant sources.

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-3).

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.

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 this table are the maximum allowable capacities for each source, pursuant to Standard Condition and Regulation 2-1-403.

The equipment list for this Title V Application has changed since the application was filed on October 24, 1995. It was amended on November 21, 2002. These changes were due to equipment shut-downs, permit exemption determinations, new sources and abatement devices, modified equipment, revised permit descriptions, and new permit requirements, as described below.

- The following equipment was deleted from the equipment lists because this equipment has been shut down and removed from the facility: S-3 Industrial Flare #1 (renamed A-13 Landfill Gas Flare and subsequently shut down), S-4 Industrial Flare #2 (renamed A-14 Landfill Gas Flare and subsequently shut down), S-13 Oil/Water Separator, S-14 Storage Tank, S-15 Storage Tank, S-16 Oil/Water Separator, S-181 Sludge Dewatering Filter Press (never installed), A-1 Carbon Adsorbers, and A-2 Carbon Adsorbers.
- The following equipment was deleted from the equipment lists because this equipment was determined to be exempt from permit requirements and was also determined not to be a significant source: S-12 Knock-out Vessel, S-20 Effluent Storage Tank, S-28 Condensate Storage Tank, S-130 Equalization Tank, S-180 Sludge Thickening Tank, and A-130 Carbon Adsorption System.
- The following new equipment has been added to the equipment lists based on a District Authority to Construct that was issued after October 24, 1995: S-23 Internal Combustion Engine, S-24 Internal Combustion Engine, S-25 Liquefied Natural Gas Plant (not operating yet), S-26 Liquefied Natural Gas Plant (not operating yet), A-6 Fogging System, A-7

Fogging System, and A-15 Landfill Gas Flare (operating under Authority to Construct, Permit to Operate is expected to be issued by October 2003).

- The following equipment has been modified as indicated: S-99 Gasoline Dispensing Facility (removed 1000 gallon gasoline tank and added a 3000 gallon above ground gasoline/diesel tank).
- The following equipment was issued Permits to Operate due to a loss of exemption from permitting requirements resulting from amendments of BAAQMD Regulation 2-1-114: S-190, S-191, S-192, S-192, S-194, S-195, S-196, S-197, and S-198 (Diesel Engines).

### **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 pursuant to the definition in BAAQMD Rule 2-6-239. This facility does not have any significant sources that do not have District Permits to Operate.

### **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 and Regulations
- 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's or EPA's 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.

#### Complex Applicability Determinations

Landfills and landfill gas combustion equipment are subject to BAAQMD Regulation 8, Rule 34. This regulation requires landfills that have more than 1 million tons of refuse in place to collect and control the landfill gas that is generated by waste decomposition and specifies numerous operating, monitoring, and reporting requirements for subject operations. Regulation 8, Rule 34 has required that the landfill at this site be controlled by an active landfill gas collection system and a landfill gas control system since 1987.

Landfills and landfill gas combustion equipment are also potentially subject to either the federal New Source Performance Standards (NSPS) for Municipal Solid Waste (MSW) Landfills or the Emission Guidelines (EG) for MSW Landfills. The federal NSPS for MSW Landfills (40 CFR Part 60, Subpart WWW) applies to landfills that have had a design capacity modification after May 30, 1991. The EG for MSW Landfills (40 CFR Part 60, Subpart Cc) applies to landfills that have had no design capacity modification since May 30, 1991 but that have accepted waste since November 8, 1987. The Altamont Landfill has had no approved design capacity modifications but has accepted waste after November 8, 1987. Therefore, the EG regulations are applicable to this landfill. If the proposed Fill Area 2 expansion is approved by the District, the NSPS requirements will apply to this entire landfill in the future upon commencement of construction and waste filling in Fill Area 2.

The BAAQMD implemented the EG by amending Regulation 8, Rule 34 on October 6, 1999. Initially, Bay Area landfills were subject to the Federal Plan for MSW Landfills (40 CFR Part 62, Subpart GGG) until EPA incorporated the October 1999 amendments to Regulation 8, Rule 34 into the California State Plan for MSW Landfills (40 CFR § 62.1115). On September 20, 2001, EPA amended the California State Plan to include the BAAQMD's October 1999 amendments and amended the Federal Plan to remove Bay Area landfills from the Federal Plan, effective November 19, 2001. Therefore, BAAQMD Regulation 8, Rule 34, as amended on October 1999, is federally enforceable. In addition, the October 1999 amendments were adopted into the SIP, effective August 30, 2002.

In accordance with the EG, BAAQMD Regulation 8, Rule 34 requires landfills with a design capacity of more than 2.5 million Mg and more than 2.5 million m<sup>3</sup> to be equipped with landfill gas collection and control systems. The design capacity of the S-2 Altamont Landfill exceeds these applicability criteria. This regulation also requires S-2 and the associated collection and control systems (including A-15, S-6, S-7, S-23, S-24, S-25, and S-26) to meet numerous operating, monitoring, and reporting requirements. Landfill operations (S-2), landfill gas

combustion devices (A-15, S-6, S-7, S-23, and S-24), and the LNG Plants (S-25 and S-26) are also subject to numerous other BAAQMD regulations and to permit conditions. All applicable requirements are described in detail in Section IV of the permit.

Gas Turbines are also potentially subject to the federal NSPS for Stationary Gas Turbines (40 CFR Part 60, Subpart GG). These regulations apply to any gas turbines that have a heat input rate at peak load of equal to or greater than 10.7 gigajoules (10 million BTU) per hour based on the lower heating value (LHV) of the fuel that began construction/modification after October 3, 1977. The S-6 and S-7 Gas Turbines meet the date applicability criteria because these turbines were issued an Authority to Construct in July 1988 and began operating in May 1989. The peak heat input rate for S-6 and S-7 is 40.0 million BTU per hour each based on the high heating value (HHV) of the fuel. The fuel is landfill gas with heat contents of 500 BTU/scf (HHV) and 451 BTU/scf (LHV). The maximum heat input rate for each turbine, based on LHV, is 36.1 million BTU per hour. Since the heat input rate (LHV) exceeds 10 million BTU per hour, S-6 and S-7 are subject to this NSPS.

Subpart GG establishes NO<sub>x</sub> and SO<sub>2</sub> emission limits, a fuel sulfur content limit, monitoring requirements, and reporting requirements for the S-6 and S-7 Gas Turbines. In 1994, EPA approved a custom fuel sulfur content monitoring schedule for these turbines. This custom schedule requires monthly testing of the landfill gas for sulfur concentration instead of the daily monitoring frequency required by 40 CFR 60.334(b)(2). These turbines are also subject to several other BAAQMD regulations and to permit conditions. All applicable requirements are described in detail in Section IV of the permit.

The permitted wastewater treatment operations (S-19, S-140, and S-141), gasoline dispensing facility (S-99), and diesel engines (S-190, S-191, S-192, S-193, S-194, S-195, S-196, S-197, and S-198) are not subject to any federal requirements other than SIP requirements. These operations are subject to several BAAQMD regulations and to permit conditions. All applicable requirements are described in detail in Section IV of the permit.

## **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.”

The BAAQMD Compliance and Enforcement Division has conducted a review of compliance during July 10, 2002 through July 9, 2003 and has no records of compliance problems at this facility during this time period. However, one monitor excess and one equipment breakdown were reported and are currently under investigation by the District. The compliance report is contained in Appendix A of this permit evaluation and statement of basis.

## **VI. Permit Conditions**

During the Title V permit development, the District has reviewed the existing permit conditions, deleted the obsolete conditions, and, as appropriate, revised the conditions for clarity and enforceability. Each permit condition is identified with a unique numerical identifier, up to five digits.

While the District has authority to revise the existing permits, and is doing so here concomitantly with the Title V process, it also has authority to supplement the terms of existing permits through the Title V process itself. When necessary to meet Title V requirements, additional monitoring, record keeping, or reporting has been added to the permit.

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; all “underline” language will be retained, subject to consideration of comments received.

The existing permit conditions are derived from previously issued District Authorities to Construct or Permits to Operate. 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 BAAQMD Regulation 2, Rule 6, Major Facility Review.

The District has reviewed and, where appropriate, revised or added new annual and daily throughput limits on sources so as to help ensure compliance with District rules addressing preconstruction review, BAAQMD Regulation 2-1-301. For a grandfathered source (a source in existence before 1979) these limits are being added to the existing permits pursuant to the authority in Regulation 2-1-403, which provides the District with authority to “impose any permit condition [it] deems reasonably necessary to insure compliance with federal or California law or District regulations.” Creating throughput limits for grandfathered sources is not required by either Part 70 or the District’s MFR rules. However, issuance of the Title V permit is an opportunity for the District to exercise authority under Regulation 2-1-403 by adding conditions to the District operating permit through a parallel process, that is, by revising the Permit to Operate concurrently with the Title V permit issuance. The District believes the addition of these throughput limits is authorized under Regulation 2-6-409.2.2, as these limits will help “assure compliance” with the District preconstruction review program.

The applicability of preconstruction review depends on whether there is a “modified source” as defined in BAAQMD Regulation 2-1-234. Whether there is a modified source depends in part on whether there has been an “increase” in “emission level.” Regulation 2-1-234 defines what will be considered an emissions level increase, and takes a somewhat different approach depending on whether a source has previously permitted by the District. Sources that were modified or constructed since the District began issuing new source review permits will have permits that contain throughput limits, and these limits are reflected in the Title V permit. These limits have previously undergone District review, and are considered to be the legally binding “emission level” for purposes of Regulations 2-1-234.1 and 2-1-234.2. By contrast, for older sources that have never been through preconstruction review (commonly referred to as “grandfathered” sources), an “increase” in “emission level” is addressed in Regulation 2-1-234.3. A grandfathered source is not subject to preconstruction review unless its emission level increases above the highest of: 1) the design capacity of the source, 2) the capacity listed in a permit to operate, or 3) the highest capacity demonstrated prior to March 2000. However, if the throughput capacity of a grandfathered source is limited by upstream or downstream equipment (i.e., is “bottlenecked”), then the relaxing of that limitation (“debottlenecking”) is considered a modification.

In proposing throughput limits for grandfathered sources, the District has described the limits differently based on the factual support in the record. The limit may be a reporting threshold, in which case if the limit is exceeded and not reported, a permit violation has occurred. Secondly, it may be a firm throughput limit, in which case a permit violation occurs whenever the limit is exceeded. Thirdly, it may be a Regulation 2-1-234.3 modification threshold, in which case exceedence of the limit triggers a requirement to obtain an Authority to Construct. Where the information in the record is indicative of a Regulation 2-1-234.3 threshold, but not definitive in that regard, the limit is structured as a reporting threshold, and as presumptively an emissions limit and a modification threshold (presumptive limit). Where, on the other hand, the District believes the information in the record is definitive, the limit is structured as a firm throughput limit and a modification threshold. It would be redundant for a limit to function as both a reporting threshold and a throughput limit, and so the latter will normally preclude the former.

As noted, for presumptive limits, exceedence of the limit is not per se a violation of the permit. *Failure to report an exceedence would be a permit violation.* If an exceedence occurs, the facility would have an opportunity to demonstrate that the throughput limit in fact did not reflect the appropriate limit for purposes of Regulation 2-1-234.3. If the facility can demonstrate this, no enforcement action would follow, and the permit would be revised at the next opportunity. It also follows that compliance with these limits is not a “safe harbor” for the facility. If evidence clearly shows that a grandfathered source has undergone a “modification” as defined in Regulation 2-1-234.3, the District would consider that a preconstruction review-triggering event, notwithstanding compliance with the throughput limit in the Title V permit. There is no Title V “permit shield” associated with throughput limits for grandfathered sources.

Conditions have also been modified or deleted due to the following:

- Condition is obsolete,
- Condition has no regulatory basis,
- Redundancy in record-keeping requirements,

- Redundancy in other conditions, regulations and rules,
- The condition has been superseded by other regulations and rules,
- The equipment has been taken out of service or is exempt,
- The event has already occurred (i.e. initial or start-up source tests),

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.

Parameter monitoring has been added for each abatement device. Additional monitoring has been added, where appropriate, to assure compliance with the applicable requirements. The reasons for the changes to each condition are discussed further below.

**Condition # 16516**

**FOR: S-99 NON-RETAIL GASOLINE DISPENSING FACILITY G # 7123**

No changes are proposed.

**Condition # 18773**

**FOR: S-6 GAS TURBINE WITH A-6 FOGGING SYSTEM AND**

**FOR: S-7 GAS TURBINE WITH A-7 FOGGING SYSTEM**

Part 1: An incorrect expression was deleted.

Part 2: The basis was corrected.

Part 3: Obsolete requirements were deleted and the basis was corrected accordingly.

Part 6: The text was updated to reflect that this facility now has more landfill gas control options than just landfill gas flares. In addition, the continuous landfill gas control requirements and the prohibition against intentionally venting raw landfill gas to the atmosphere were clarified.

- Part 7: The applicability of the Regulation 8-34-113 exemption and associated record keeping requirements were clarified.
- Part 8: This heat input limits for the S-6 and S-7 Gas Turbines were identified. These heat input limits define the maximum rated capacity for this equipment and were derived from the information in Permit Application # 475. These heat input limits combined with the NO<sub>x</sub>, CO, and NMOC concentration limits in Parts 1-3 will ensure that emissions will not increase as a result of a replacement or modification that increases the capacity of a permitted source without a preconstruction permit review.
- Part 9: This part was added to identify the key emission control system operating parameter for the gas turbines that is required pursuant to Regulation 8-34-507. The appropriate operating ranges for this parameter were identified from the October 2002 source test data and the June 2003 amendments to the Collection and Control System Design Plan for this facility. The District is also proposing criteria for determining the appropriate operating ranges for this parameter based on future source test data.
- Part 10: This part was added to identify the landfill gas sulfur concentration monitoring requirements that apply to the S-6 and S-7 Gas Turbines. EPA approved a custom fuel sulfur content monitoring schedule for these turbines on July 6, 1994. This custom schedule requires monthly monitoring for landfill gas sulfur content. Text was added to identify this custom schedule. As discussed in Section C.VII below, monthly monitoring for landfill gas sulfur concentration will be used as a surrogate for demonstrating compliance with the Regulation 9-1-302 sulfur dioxide emission limit, which applies to all landfill gas combustion equipment.
- Part 11: This part establishes annual source testing at the gas turbines to demonstrate compliance with the Regulation 8-34-301.4 NMOC emission limit, the NO<sub>x</sub> concentration limits in Part 1 and Regulation 9-9-301.1, and the CO concentration limit in Part 2. This part expands upon the Regulation 8-34-412 testing requirement and provides additional details about testing, notifying, and reporting procedures.

**Condition # 19235**

FOR: S-2 ALTAMONT LANDFILL WITH LANDFILL GAS COLLECTION SYSTEM AND A-15  
LANDFILL GAS FLARE

- Part 3: The basis was added.
- Part 11: This part eliminates the previously proposed quarterly draeger tube monitoring method for landfill gas sulfur concentration and replaces it with the sulfur concentration monitoring frequency required by Condition # 18773, Part 10 for the Gas Turbines and the ASTM test methods specified in 40 CFR 60.335(d).

- Part 13: The requirement to test for SO<sub>2</sub> from A-15 on an annual basis was deleted because is not necessary. As discussed in Section C.VII below, monthly testing for landfill gas sulfur content will be used to demonstrate compliance Regulation 9-1-302.
- Part 14: This part clarifies the annual gas characterization requirements by specifically listing the compounds that should be tested for. This test list includes all organic compounds that are in both EPA's AP-42 Table 2.4-1 and the District's Table 2-1-316 Risk Screen Trigger Levels. This testing will provide the organic compound data necessary for conducting any risk screening analyses that are necessary for compliance with NSR or the AB-2588 Air Toxics Hot Spots Act.
- Part 17: The District approved permit condition changes in September 2003 that eliminated references to the A-13 Flare, which was permanently shut down. These changes resulted in changes to part numbers (deletion of part 16, renumbering of part 17 to part 16). In order to prevent the necessity of renumbering many references in this permit to parts 18-23, part 17 is being held in reserve. There are no current or proposed requirements associated with this part number.
- Part 18: Waste acceptance rate limits were added to define the capacity of the landfill. The total cumulative waste disposal limit (subpart d) and the design capacity limit (subpart c) pertain to regulation of VOC emissions from decomposing waste in the landfill. The daily sludge acceptance limit (subpart b) pertains to regulation of organic emissions due to the handling, placement, and drying of the sludge. The daily waste acceptance limit (subpart a) pertains to regulation of particulate emissions from waste transport and disposal. All daily limits and the design capacity limit were determined from information provided in Waste Management's Initial Design Capacity Report and Solid Waste Facility Permit. These limits are proposed as firm throughput limits and modification thresholds, so that any change to these rates constitutes a modification of the landfill source as defined in Regulation 2-1-234.4 and is subject to the Authority to Construct requirements of Regulation 2-1-301. The cumulative waste disposal limit is based on assumptions regarding compaction density and current cover practices. The correlation between the total cumulative waste disposal limit and emissions is therefore changeable based on these variables. Accordingly, this limit is proposed as a reporting threshold and as a presumptive throughput limit and modification threshold.
- Part 19: This part describes the dust mitigation measures necessary to maintain compliance with the Regulation 6-301 and 6-305 limits.
- Part 20: Any on-site handling operations for non-contaminated VOC-laden soil (such as petroleum contaminated soil containing  $\leq 50$  ppmw of VOC) soil are subject to Regulation 8, Rule 2. Due to the fugitive nature of the organic emissions that occur due to handling this low VOC content soil, the source testing procedures typically used to determine compliance with the 300 ppm total carbon limit (Regulation 8-2-301) are not appropriate. The calculation procedures in this part were added in order to provide a simple way to demonstrate compliance with the alternative limit of 15 pounds per day of total carbon emissions that is allowed by Regulation 8-2-301.

Part 21: This part was added to identify appropriate handling, monitoring, record keeping, and notification procedures for landfill operations involving contaminated soil (soil containing more than 50 ppmw of VOC) that will ensure compliance with Regulation 8, Rule 40. The text in this part uses standard language that the District is imposing on all landfill operations that handle contaminated soil.

Part 22: Record keeping requirements were added to ensure compliance with Regulations 6-301, 6-305, 8-2-301, 8-34-304, and 8-40-301.

Part 23: The MSW Landfill NESHAP (40 CFR, Part 63, Subpart AAAA) that was adopted by EPA on 1/16/03 requires landfill operators to submit semi-annual reports instead of the annual report required by Regulation 8-34-411. The effective date for this new reporting frequency is January 16, 2004. This permit condition was added in order to establish the semi-annual reporting frequency and to synchronize the reporting periods and submittal dates for this report with the semi-annual MFR monitoring reports that will be required by Section I.F of the MFR Permit.

**Condition # 19237**

**FOR: S-23 INTERNAL COMBUSTION ENGINE AND S-24 INTERNAL COMBUSTION ENGINE**

Part 10: The basis was corrected.

**Condition # 19238**

**FOR: S-25 LIQUEFIED NATURAL GAS PLANT AND S-26 LIQUEFIED NATURAL GAS PLANT**

Part 2: The meaning of “non-detectable organic compounds” was clarified based on staff comments.

Part 5: The reporting procedures in this part were corrected.

**Condition # 20774**

**FOR: S-19 TRANSFER TANK WITH SIPHON PUMP**

No changes are proposed.

**Condition # 20800**

**FOR: S-190 DIESEL ENGINE (FOR EMERGENCY STANDBY GENERATOR AT WWTP)**

- Part 1: The text was corrected to use the current standard terminology. An asterisk was added to identify that this part is not federally enforceable.
- Part 2: The text was corrected to use the current standard terminology. An asterisk was added to identify that this part is not federally enforceable.
- Part 3: The text was corrected to use the current standard terminology. An asterisk was added to subparts a-d to identify that these subparts are not federally enforceable. A record keeping requirement was added for fuel sulfur content data to verify compliance with Regulation 9-1-304.

**Condition # 20801**

- FOR: S-191 DIESEL ENGINE (FOR PIMARY WATER PUMP)**  
**FOR: S-192 DIESEL ENGINE (FOR BOOSTER WATER PUMP)**  
**FOR: S-193 DIESEL ENGINE (FOR FIRE PUMP AT GAS PLANT)**  
**FOR: S-197 DIESEL ENGINE (FOR PORTABLE GENERATOR AT BREAK TRAILER)**  
**FOR: S-198 DIESEL ENGINE (FOR VACUUM TRUCK PUMP)**

These small diesel engines are not currently subject to any permit conditions.

- Part 1: Throughput limits were added to define the capacity of each diesel engine as reported in Application # 6390. These limits are proposed as firm throughput limits and modification thresholds, so that any change to these rates constitutes a modification of the source as defined in Regulation 2-1-234.4 and is subject to the Authority to Construct requirements of Regulation 2-1-301.
- Part 2: Record keeping requirements were added to show compliance with the throughput limits in Part 1 and with the Regulation 9-1-304 fuel sulfur content limit.

**Condition # 20812**

- FOR: S-194 DIESEL ENGINE (FOR EMERGENCY STANDBY GENERATOR AT FLARE STATION), S-195 DIESEL ENGINE (FOR EMERGENCY STANDBY GENERATOR AT MAINTENANCE FACILITY), AND S-196 DIESEL ENGINE (FOR EMERGENCY STANDBY GENERATOR AT SCALE HOUSE)**

These small diesel engines for emergency generators are not currently subject to any permit conditions.

- Part 1: Limits on operating time were added that are consistent with Regulation 9-8-330. This is not a federally enforceable requirement.

Part 2: The meter requirements of Regulation 9-8-530 were identified as applicable to these sources. This is not a federally enforceable requirement.

Part 3: The record keeping requirements of Regulation 9-8-530 were referenced in subparts a-d, which are not federally enforceable. A record keeping requirement was added for fuel sulfur content data to verify compliance with Regulation 9-1-304, which is federally enforceable.

**Condition # 20813**

**FOR: S-99 NON-RETAIL GASOLINE DISPENSING FACILITY G # 7123**

Part 1: The basis was corrected.

**Condition # 20828**

**FOR: SPECIFIED PAVED ROADS AT FACILITY # A2066 AND S-2 ALTAMONT LANDFILL**

This condition was added to this facility pursuant to Application # 3421 - a project to bank particulate emission reductions due to the paving of three roads at this site. This condition does not become effective until the permit holder has completed the paving of the specified roads. These parts were imposed to ensure that the emission reductions achieved by this project would be real, permanent, quantifiable, and enforceable.

Part 1: Minor corrections to the text were made to use standard terminology. In subpart a, the procedures that will need to be followed in order to modify these parts were identified.

Part 2: Minor corrections to the text were made to use standard terminology.

Part 3: Minor corrections to the text were made to use standard terminology.

Part 4: Minor corrections to the text were made to use standard terminology. The basis was corrected.

**Condition # 20922**

**For: S-140 SBR 1 AND S-141 SBR 2 (AERATED BIOLOGICAL REACTORS)**

Part 6: Text was added to identify the applicable effective date for the monitoring requirements based on the permit condition amendment date of September 23, 2003.

## 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.

The tables below contain only the limits for which there is no monitoring or inadequate monitoring in the applicable requirements. The District has examined the monitoring for other limits and has determined that monitoring is adequate to provide a reasonable assurance of compliance. Calculations for potential to emit will be provided in the discussion when no monitoring is proposed due to the size of a source.

Monitoring decisions are typically the result of a balancing of 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 only when it can support a conclusion that existing monitoring is inadequate.

### NO<sub>x</sub> Sources

| S# & Description                       | Emission Limit Citation  | Federally Enforceable Emission Limit                                       | Monitoring                        |
|--|--|--|-----------------------------------|
| S-23 IC Engine and<br>S-24 IC Engine   | BAAQMD 9-8-302.1   | Waste Fuel Gas, Lean-Burn<br>≤ 140 ppmv,<br>dry basis @ 15% O <sub>2</sub> | Annual Source Test and<br>Records |
| S-6 Gas Turbine and<br>S-7 Gas Turbine | BAAQMD 9-9-301.1<br>and BAAQMD<br>Condition # 18733,<br>Part 1 | ≤ 42 ppm of NO <sub>x</sub><br>at 15% O <sub>2</sub> , dry                 | Annual Source Test and<br>Records |

### NO<sub>x</sub> Sources

| <b>S# &amp; Description</b>            | <b>Emission Limit Citation</b> | <b>Federally Enforceable Emission Limit</b>   | <b>Monitoring</b>                 |
|--|--------------------------------|---|-----------------------------------|
| S-6 Gas Turbine and<br>S-7 Gas Turbine | 40 CFR 60.332(a)(2)            | $STD = 0.015 * 14.4 / Y + F$<br>STD = % NO <sub>x</sub><br>(by volume at 15% O <sub>2</sub> , dry)<br>For S-6 and S-7:<br>Y = 11.4 and F = 0.0<br>STD = .019 % or<br>190 ppmv,<br>at 15% O <sub>2</sub> , dry basis | Annual Source Test and<br>Records |

#### NO<sub>x</sub> Discussion:

The District has imposed an annual source test requirement for NO<sub>x</sub> limits for other landfill gas fired combustion equipment in other Title V permits. Annual source testing is a standard monitoring method for engines that are used for control of landfill gas. Gas turbines control a comparable quantity of landfill gas and have much lower emissions. Therefore annual source testing is adequate.

### CO Sources

| <b>S# &amp; Description</b>            | <b>Emission Limit Citation</b>         | <b>Federally Enforceable Emission Limit</b>                       | <b>Monitoring</b>                 |
|--|--|---|-----------------------------------|
| S-23 IC Engine and<br>S-24 IC Engine   | BAAQMD 9-8-302.3                       | Waste Fuel Gas:<br>≤ 2000 ppmv,<br>dry basis @ 15% O <sub>2</sub> | Annual Source Test and<br>Records |
| S-6 Gas Turbine and<br>S-7 Gas Turbine | BAAQMD<br>Condition # 18733,<br>Part 2 | ≤ 128 ppmv,<br>at 15% O <sub>2</sub> , dry basis                  | Annual Source Test and<br>Records |

#### CO Discussion:

The District has imposed an annual source test requirement for CO limits for other landfill gas fired combustion equipment in other Title V permits. Annual source testing is a standard monitoring method for engines that are used for control of landfill gas. Gas turbines control a comparable quantity of landfill gas and have much lower emissions. Therefore annual source testing is adequate.

### SO<sub>2</sub> Sources

| <b>S# &amp; Description</b>   | <b>Emission Limit Citation</b>    | <b>Federally Enforceable Emission Limit</b>   | <b>Monitoring</b>                                       |
|---|-----------------------------------|---|---|
| S-6 Gas Turbine, S-7 Gas Turbine, S-23 IC Engine, S-24 IC Engine, A-15 Landfill Gas Flare, and Diesel Engines (S-190, S-191, S-192, S-193, S-194, S-195, S-196, S-197, and S-198) | BAAQMD 9-1-301                    | Property Line Ground Level SO <sub>2</sub> Limits:<br>≤ 0.5 ppm for 3 minutes and<br>≤ 0.25 ppm for 60 minutes and<br>≤ 0.05 ppm for 24 hours | None  |
| S-6 Gas Turbine, S-7 Gas Turbine, S-23 IC Engine, S-24 IC Engine, and A-15 Landfill Gas Flare   | BAAQMD 9-1-302                    | Exhaust Point Limit:<br>≤ 300 ppmv (dry) of SO <sub>2</sub>   | Monthly Sulfur Analysis of Landfill Gas and Records     |
| S-6 Gas Turbine and S-7 Gas Turbine   | 40 CFR 60.333(a)                  | Exhaust Point Limit:<br>≤ 0.015% of SO <sub>2</sub> , by volume, at 15% O <sub>2</sub> , dry basis  | Monthly Sulfur Analysis of Landfill Gas and Records     |
| S-2 Altamont Landfill with Gas Collection System  | BAAQMD Condition # 19235, Part 11 | Landfill Gas Sulfur Content Limit:<br>≤ 200 ppmv (dry) of TRS, expressed as H <sub>2</sub> S  | Monthly Sulfur Analysis of Landfill Gas and Records     |
| Diesel Engines (S-190, S-191, S-192, S-193, S-194, S-195, S-196, S-197, and S-198)  | BAAQMD 9-1-304                    | Fuel Sulfur Content Limit:<br>≤ 0.5 % sulfur by weight  | Records of Vendor Certifications of Fuel Sulfur Content |

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

Maximum potential sulfur dioxide (SO<sub>2</sub>) emissions are calculated below for all combustion sources followed by a discussion of each applicable limit related to sulfur dioxide emissions. Definitions of the terms used below are contained in the glossary.

#### Potential to Emit Calculations for Landfill Gas Fired Combustion Equipment (S-6, S-7, S-23, S-24, A-13 and A-15)

The S-2 Altamont Landfill is subject to a federally enforceable permit condition (BAAQMD Condition # 19235, Part 11) that limits the sulfur concentration in landfill gas to 200 ppmv (expressed as H<sub>2</sub>S). For landfill gas containing 40% methane, this sulfur concentration is equivalent to the following emission factor:

$$(200 \text{ ft}^3 \text{ H}_2\text{S}/1 \text{ MM ft}^3 \text{ LFG})/(379.5 \text{ ft}^3 \text{ H}_2\text{S}/\text{lbmol H}_2\text{S})*(1 \text{ lbmol SO}_2/1 \text{ lbmol H}_2\text{S})*(64.06 \text{ pounds SO}_2/\text{lbmol SO}_2)/(405 \text{ MM BTU}/\text{MM ft}^3 \text{ LFG}) = 0.08336 \text{ lbs SO}_2/\text{MM BTU}$$

S-6 and S-7:

$$(0.08336 \text{ lbs}/\text{MM BTU})*(331,200 \text{ MM BTU}/\text{yr})/(2000 \text{ lbs}/\text{ton}) = 13.80 \text{ tons}/\text{year SO}_2 \text{ each}$$

S-23 and S-24:

$$(0.08336 \text{ lbs}/\text{MM BTU})*(153,300 \text{ MM BTU}/\text{yr})/(2000 \text{ lbs}/\text{ton}) = 6.39 \text{ tons}/\text{year SO}_2 \text{ each}$$

A-15:

$$(0.08336 \text{ lbs}/\text{MM BTU})*(621,785 \text{ MM BTU}/\text{yr})/(2000 \text{ lbs}/\text{ton}) = 25.92 \text{ tons}/\text{year SO}_2$$

The maximum potential sulfur dioxide emission rate from all landfill gas combustion equipment is 66.30 tons/year.

#### Potential to Emit Calculations for Diesel Engines (S-190, S-191, S-192, S-193, S-194, S-195, S-196, S-197, and S-198)

Maximum potential SO<sub>2</sub> emissions are based on the maximum permitted fuel sulfur content of 0.5% sulfur by weight and the maximum hourly fuel usage rate for each engine and 8760 hours/year of operation.

$$(17.1 + 3.3 + 3.3 + 7.1 + 10.0 + 10.0 + 4.0 + 3.96 + 8.6 \text{ gallons}/\text{hour}) * (8760 \text{ hours}/\text{year}) = 590,074 \text{ gallons}/\text{year}$$

$$(590,074 \text{ gallons fuel}/\text{year})*(7.1 \text{ pounds fuel}/\text{gallon fuel})*(0.005 \text{ pounds sulfur}/\text{pound fuel})/(32.06 \text{ pounds sulfur}/\text{lbmol sulfur})*(1 \text{ lbmol SO}_2/\text{lbmol sulfur})*(64.06 \text{ pounds SO}_2/\text{lbmol SO}_2)/(2000 \text{ pounds SO}_2/\text{ton SO}_2) = 20.93 \text{ tons SO}_2/\text{year}$$

However, maximum expected sulfur dioxide emissions from the diesel engines will be much lower, because the standby engines (S-190, S-194, S-195, and S-196) are not expected to operate for more than 500 hours per year and all diesel engines are using diesel fuel that meets CARB requirements and contains less than 0.05% sulfur by weight. Based on these assumptions, diesel fuel usage will be no more than 250,588 gallons/year and emissions will be 0.89 tons/year of SO<sub>2</sub>.

BAAQMD Regulation 9-1-301: As discussed below for BAAQMD Regulations 9-1-302 and 9-1-304, this facility will be subject to federally enforceable limits, which will ensure compliance with the Regulation 9-1-302 gas stream emission limit of 300 ppmv of SO<sub>2</sub> in the exhaust from the landfill gas combustion equipment and with the Regulation 9-1-304 fuel sulfur content limit of 0.5% sulfur by weight. Sources complying with the Regulation 9-1-302 or 9-1-304 limits are not expected to result in an excess of the ground level concentration limits listed in Regulation 9-1-301. Air dispersion modeling at other landfills has confirmed this conclusion. Furthermore, actual sulfur dioxide emissions from the landfill gas combustion equipment are expected to be less than 50 ppmv in the exhaust (one sixth of the limit) based on the landfill gas sulfur concentration limit for this site. In addition, the diesel engines are using low sulfur fuel containing no more than 0.05% sulfur by weight (one tenth of the limit). Therefore, sulfur

dioxide emissions from this site are expected to be well below the rates allowed by Regulations 9-1-302 and 9-1-304, and the margin of compliance with the Regulation 9-1-301 ground level sulfur dioxide limits is expected to be very high. Monitoring for ground level SO<sub>2</sub> concentrations, in addition to the landfill gas monitoring and record keeping requirements proposed below, would not be appropriate, because violations of the Regulation 9-1-301 limits are not expected to be possible.

BAAQMD Regulation 9-1-302: This facility is subject to a federally enforceable limit of 200 ppmv of Total Reduced Sulfur (TRS) in the landfill gas (BAAQMD Condition # 19235, Part 11). As shown by the calculation below, this limit will ensure compliance with the BAAQMD Regulation 9-1-302 limit of 300 ppmv of SO<sub>2</sub> in the flare exhaust. As a worst-case assumption, the landfill gas is assumed to contain 40% methane, which will produce 4.0186 dry cubic feet of flue gas per cubic foot of landfill gas under theoretical combustion conditions (no excess air).  
 $(200 \text{ scf H}_2\text{S} / 10^6 \text{ scf LFG}) * (1 \text{ scf SO}_2 / 1 \text{ scf H}_2\text{S}) / (4.0186 \text{ scf flue gas at 0\% O}_2 / \text{scf LFG})$   
 $= 4.98\text{E-}5 \text{ scf SO}_2 / \text{scf flue gas at 0\% O}_2 = 50 \text{ ppmv of SO}_2 \text{ at 0\% O}_2, \text{ dry basis}$

As required by EPA's custom fuel sulfur content monitoring schedule and proposed permit conditions (BAAQMD Condition # 18773, Part 10), landfill gas must be monitored for TRS content (measured using the ASTM methods required by the NSPS for Stationary Gas Turbines) on a monthly basis. This testing may also be used to show compliance with the 200 ppmv landfill gas sulfur concentration limit. The margin of compliance with the Regulation 9-1-302 limit is 6 to 1. Since the margin of compliance is high, the existing monthly monitoring requirement is adequate for demonstrating compliance with this limit.

BAAQMD Regulation 9-1-304: In accordance with BAAQMD Conditions #20800, Part 3e, #20801, Part 2e, and #20812, Part 3e, this facility is required to maintain records of vendor-certified sulfur content for all fuels burned in the Diesel Engines (S-190 through S-198). The use of vendor certification is a standard method of monitoring for compliance with a liquid fuel sulfur content limit.

40 CFR 60.333(a): This federal NSPS requirement applies only to the S-6 and S-7 Gas Turbines and limits sulfur dioxide emissions to 0.015% (150 ppmv) at 15% oxygen, dry basis. This concentration limit is equivalent to 528 ppmv of SO<sub>2</sub> at 0% oxygen, dry basis. As discussed above for Regulation 9-1-302, emissions from the turbines will not exceed 50 ppmv of SO<sub>2</sub> at 0% oxygen, dry basis. The compliance margin is more than 10 to 1. Since the compliance margin is high, the current monthly landfill gas testing requirement is adequate to demonstrate compliance with this limit.

40 CFR 60.333(b): This federal NSPS requirement applies only to the S-6 and S-7 Gas Turbines and limits the fuel sulfur content to 0.8% sulfur by weight. The only fuel for these turbines is landfill gas. For landfill gas containing 40-60% CH<sub>4</sub> and 60-40% CO<sub>2</sub>, the molecular weight range is 27.23 to 32.82. As shown by the calculation below, the sulfur content weight limit for landfill gas is equivalent to an average of about 7500 ppmv of H<sub>2</sub>S in the landfill gas.  
 $(0.008 \text{ lbs S/lb LFG}) / (32.06 \text{ lbs S/lbmol S}) * (1 \text{ lbmol H}_2\text{S/lbmol S}) * (\text{MW lbs LFG/lbmol LFG}) * 10^6 = 6795 \text{ to } 8190 \text{ ppmv of H}_2\text{S in landfill gas or an average of about } 7500 \text{ ppmv of H}_2\text{S}$

As discussed below for Condition # 19235, Part 11, the landfill gas at this site is subject to a federally enforceable landfill gas sulfur content limit of 200 ppmv of TRS expressed as H<sub>2</sub>S, dry basis. The compliance margin with the 40 CFR 60.333(b) limit is more than 30 to 1. Since the compliance margin is very high and the landfill gas sulfur content is expected to have negligible variation, the current monthly monitoring required by EPA's custom fuel sulfur content monitoring schedule is more than adequate.

BAAQMD Condition # 19235, Part 11: This permit condition limits the sulfur concentration in the landfill gas at this site to 200 ppmv of TRS, expressed as H<sub>2</sub>S dry, in order to meet new source review requirements for the S-23 and S-24 IC Engines and the A-15 Landfill Gas Flare. Staff has proposed permit conditions (Condition # 18773, Part 10) that will require the landfill gas to be monitored for TRS content on a monthly basis to ensure compliance with this landfill gas sulfur concentration limit. District testing has not found more than 30 ppmv of TRS in the landfill gas at this site. The margin of compliance with this permit condition limit is expected to be at least 6 to 1. Since the margin of compliance is high, the proposed monthly monitoring frequency is appropriate for demonstrating compliance with this limit.

### PM Sources

| <b># &amp; Description</b>   | <b>Emission Limit Citation</b> | <b>Federally Enforceable Emission Limit</b> | <b>Monitoring</b>   |
|--|--------------------------------|---|---|
| S-6 Gas Turbine,<br>S-7 Gas Turbine,<br>S-23 IC Engine,<br>S-24 IC Engine, and<br>A-15 Landfill Gas<br>Flare | BAAQMD 6-301                   | Ringelmann 1.0                              | None  |
| S-2 Altamont Landfill<br>with Gas Collection<br>System   | BAAQMD 6-301                   | Ringelmann 1.0                              | Records of all site<br>watering and road<br>cleaning events |
| Diesel Engines<br>(S-191, S-192, S-193,<br>S-197, and S-198)   | BAAQMD 6-303                   | Ringelmann 2.0                              | None  |
| Diesel Engines<br>(S-190, S-194, S-195,<br>and S-196)  | BAAQMD 6-303                   | Ringelmann 2.0                              | None  |
| S-6 Gas Turbine,<br>S-7 Gas Turbine,<br>S-23 IC Engine,<br>S-24 IC Engine, and<br>A-15 Landfill Gas<br>Flare | BAAQMD 6-310                   | ≤ 0.15 grains/dscf                          | None  |

PM Discussion:

Maximum potential PM<sub>10</sub> emissions are calculated below for any sources listed above that have a PM limit and no proposed monitoring for that limit.

Potential to Emit Calculations for Landfill Gas Fired Combustion Equipment  
(S-6, S-7, S-23, S-24, and A-15)

Emission calculations are based on emission factors from AP-42 Table 2.4-5 (F pounds per million cubic feet of methane in the equation below, where F is a different factor for each type of device) and the maximum capacities of each device. The AP-42 emission factors are converted to pounds per million BTU as shown below:

$$(F \text{ pounds PM}_{10}/\text{MM ft}^3 \text{ CH}_4) * (0.40 \text{ MM ft}^3 \text{ CH}_4/\text{MM ft}^3 \text{ LFG}) / (405 \text{ MM BTU}/\text{MM ft}^3 \text{ LFG}) \\ = F * 9.8765\text{E-}4$$

S-6 and S-7:

$$(22 * 9.8765\text{E-}4 \text{ lbs}/\text{MM BTU}) * (331,200 \text{ MM BTU}/\text{yr}) / (2000 \text{ lbs}/\text{ton}) = 3.60 \text{ tons}/\text{year PM}_{10} \\ \text{each}$$

S-23 and S-24:

$$(48 * 9.8765\text{E-}4 \text{ lbs}/\text{MM BTU}) * (153,300 \text{ MM BTU}/\text{yr}) / (2000 \text{ lbs}/\text{ton}) = 3.63 \text{ tons}/\text{year PM}_{10} \\ \text{each}$$

A-15:

$$(17 * 9.8765\text{E-}4 \text{ lbs}/\text{MM BTU}) * (621,785 \text{ MM BTU}/\text{yr}) / (2000 \text{ lbs}/\text{ton}) = 5.22 \text{ tons}/\text{year PM}_{10}$$

The maximum potential particulate emissions from all landfill gas combustion equipment are 19.68 tons/year of PM<sub>10</sub>.

Potential to Emit Calculations for Diesel Engines  
(S-190, S-191, S-192, S-193, S-194, S-195, S-196, S-197, and S-198)

The maximum potential PM<sub>10</sub> emissions are based on an AP-42 emission factor (0.0022 pounds/bhp-hour), the total bhp rating for these engines, and the maximum potential operating rate (8760 hours/year). The total bhp rating for all diesel engines is 1412 bhp. Maximum potential emissions are:

$$(0.0022 \text{ pounds PM}_{10}/\text{bhp-hour}) * (1412 \text{ bhp}) * (8760 \text{ hours}/\text{year}) / (2000 \text{ pounds}/\text{ton}) \\ = 13.61 \text{ tons}/\text{year of PM}_{10}$$

The emergency standby generators are not expected to operate more than 500 hours per year each. The small diesel engines for on-site portable equipment are not expected to operate for more than 3600 hours per year each. Therefore, maximum expected emissions are:

$$(0.0022 \text{ pounds PM}_{10}/\text{bhp-hour}) * (872 \text{ bhp}) * (500 \text{ hours}/\text{year}) / (2000 \text{ pounds}/\text{ton}) + \\ (0.0022 \text{ pounds PM}_{10}/\text{bhp-hour}) * (540 \text{ bhp}) * (3600 \text{ hours}/\text{year}) / (2000 \text{ pounds}/\text{ton}) \\ = 2.62 \text{ tons}/\text{year of PM}_{10}$$

BAAQMD Regulation 6-301: The active filling operations and associated vehicle traffic can generate significant particulate emissions. Presently this facility has no means of demonstrating compliance with the Regulation 6-301, which limits 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). Additional monitoring is required pursuant to Part 70 of the Clean Air Act. Typically, landfills maintain compliance with Regulation 6-301 by employing a dust mitigation program and using visual monitoring by site operators to ensure that dust mitigation measures are adequate. Dust mitigation measures include the application of water and/or dust suppressants on unpaved roads, fill areas, stockpiles, and other dust prone operations and sweeping, watering, or other cleaning measures on paved roads and parking areas. The frequency of watering and sweeping schedules varies from several water applications/day for dry days to no watering or sweeping on rainy days. Waste Management's watering requirements are specified in BAAQMD Condition # 19235, Part 19 (proposed). The District is proposing to add record keeping requirements of all water and/or dust suppressant applications and road cleaning activities (Condition # 19235, Part 22f), in order to demonstrate compliance with the Regulation 6-301. District inspectors will occasionally observe the landfill operations on dry days to ensure that the dust mitigation measures in place are adequate to maintain compliance with the Ringelmann 1.0 limit.

BAAQMD Regulation 6-303 for S-191, S-192, S-193, S-197, and S-198: These small diesel fired engines are used to provide power to various on-site operations. Such engines generally are able to meet a Ringelmann No. 2 limit. Since the likelihood of non-compliance is low and maximum expected emissions are low (<0.5 tons/year of PM<sub>10</sub> per engine), periodic monitoring for the Ringelmann limit would not be appropriate for these engines.

BAAQMD Regulation 6-303 for S-190, S-194, S-195, and S-196: These diesel fired engines are used to provide power during a power failure. These engines are operated only a few hours per month for reliability testing and are not expected to be operated more than 500 hours per year. Operation is infrequent and mainly unpredictable. Such engines generally are able to meet a Ringelmann No. 2 limit. Since the likelihood of non-compliance is low and maximum expected emissions are low (<0.5 tons/year of PM<sub>10</sub>), periodic monitoring for the Ringelmann limit would not be appropriate for these engines.

BAAQMD Regulation 6-301 for Landfill Gas Fired Combustion Equipment (S-6, S-7, S-23, S-24, and A-15): Visible particulate emissions are normally not associated with combustion of gaseous fuels, such as natural gas or landfill gas. Maximum potential emissions from all landfill gas combustion equipment are 19.68 tons/year of PM<sub>10</sub>. Since particulate emissions are not substantial and violations of Ringelmann 1.0 limit are not expected, periodic monitoring for the Ringelmann limit would not be appropriate for this combustion equipment.

BAAQMD Regulation 6-310 for Landfill Gas Fired Combustion Equipment (S-6, S-7, S-23, S-24, and A-15): BAAQMD Regulation 6-310 limits filterable particulate (FP) emissions from any source to 0.15 grains per dry standard cubic foot (gr/dscf) of exhaust volume. Using the applicable AP-42 emission factors and the maximum landfill gas methane content (60% CH<sub>4</sub>), the maximum PM<sub>10</sub> emission rates from these devices are determined below:

S-6 and S-7 Gas Turbines with a total of 7.20 tons/year of PM<sub>10</sub> emissions:

$$(22 \text{ pounds PM}_{10}/1\text{E}6 \text{ ft}^3 \text{ CH}_4) * (7000 \text{ grains/pound}) * (0.60 \text{ ft}^3 \text{ CH}_4/\text{ft}^3 \text{ LFG}) / (5.5279 \text{ ft}^3 \text{ flue gas, dry, } 0\% \text{ O}_2/\text{ft}^3 \text{ LFG}) = 0.017 \text{ grains/dscf @ } 0\% \text{ O}_2$$

S-23 and S-24 IC Engines with a total of 7.26 tons/year of PM<sub>10</sub> emissions:  
 $(48 \text{ pounds PM}_{10}/1\text{E}6 \text{ ft}^3 \text{ CH}_4) * (7000 \text{ grains/pound}) * (0.60 \text{ ft}^3 \text{ CH}_4/\text{ft}^3 \text{ LFG}) / (5.5279 \text{ ft}^3 \text{ flue gas, dry, } 0\% \text{ O}_2/\text{ft}^3 \text{ LFG}) = 0.036 \text{ grains/dscf @ } 0\% \text{ O}_2$

A-15 Landfill Gas Flare with a maximum of 5.22 tons/year of PM<sub>10</sub> emissions:  
 $(17 \text{ pounds PM}_{10}/1\text{E}6 \text{ ft}^3 \text{ CH}_4) * (7000 \text{ grains/pound}) * (0.60 \text{ ft}^3 \text{ CH}_4/\text{ft}^3 \text{ LFG}) / (5.5279 \text{ ft}^3 \text{ flue gas, dry, } 0\% \text{ O}_2/\text{ft}^3 \text{ LFG}) = 0.013 \text{ grains/dscf @ } 0\% \text{ O}_2$

The compliance margins with the Regulation 6-310 limit are: 8.8:1 for the turbines, 4.2:1 for the IC engines, and 11.5:1 for the flare. Periodic monitoring for compliance with this limit would not be appropriate for the landfill gas fired combustion equipment, because the Regulation 6-310 grain-loading limit is far above any expected PM emissions and particulate emissions from each device are low.

### Organic Compound Sources

| # & Description  | Emission Limit Citation                              | Federally Enforceable Emission Limit   | Monitoring  |
|--|--|--|---|
| S-140 SBR 1 and S-141 SBR 2  | BAAQMD 8-2-301                                       | Total Carbon:<br>≤ 15 pounds/day or<br>≤ 300 ppm, dry basis  | Daily Operating Records, Monthly Wastewater Throughput Records, and Quarterly Organic Compound Analyses |
| S-2 Altamont Landfill (applies only to aeration of or use as cover soil of soil containing < 50 ppmw of VOC) | BAAQMD 8-2-301 and BAAQMD Condition # 19235, Part 20 | Total Carbon:<br>≤ 15 pounds/day or<br>≤ 300 ppm, dry basis in an exhaust point                        | Records   |
| S-2 Altamont Landfill (aeration of contaminated soil)  | BAAQMD 8-40-118                                      | 150 pounds of organic compounds per project and TAC emissions < trigger levels in BAAQMD Table 2-1-316 | Records   |

#### Organic Compound Discussion:

BAAQMD Regulation 8-2-301 for Wastewater Treatment Operations: The wastewater biological reactors (S-140 and S-141) are each subject to the total carbon limits of Regulation 8-2-301. Based on Applications # 10603 and # 7933, maximum permitted emissions from these sources are 0.36 tons/year of POC (725 pounds/year). The average daily emissions are 1.0 pounds/day of POC per source. Current permit conditions will ensure that emissions do not exceed 10 pounds per day at S-140 or S-141. The compliance ratio for S-140 and S-141 is 1.5 to 1 at the

maximum permitted emission rate and 15 to 1 for the average daily emission rate. Daily operating records, monthly throughout records, and quarterly wastewater testing will be used to verify the compliance with the throughput and organic content limits for these sources. Since POC emissions are low and emission excesses are not expected, daily operating records, monthly throughout records, and quarterly organic concentration analyses of the wastewater are adequate for demonstrating compliance with Regulation 8-2-301.

BAAQMD Regulation 8-2-301 for Handling VOC-Laden (not contaminated) Soil: The on-site handling operations at landfills involving VOC-laden soil (including aerating and/or using the soil as cover material) are subject to BAAQMD Regulation 8-2-301. Regulation 8-2-301 allows an emission rate of total carbon up to either 15 pounds/day or 300 ppmv (dry). Due to the fugitive nature of the emissions that occur due to handling VOC-laden soil, the source testing procedures typically used to determine compliance with the 300 ppmv total carbon limit are not appropriate. Therefore, calculation procedures were added in Condition # 19235, Part 20, in order to provide a simple way to demonstrate compliance with the alternative emission limit (15 pounds/day of total carbon). Record keeping requirements were added to Condition # 19235, 22 to ensure compliance with these requirements.

BAAQMD 8-40-118: The District is proposing to add record keeping requirements in BAAQMD Condition # 19235, Part 22m that will demonstrate compliance with this limit. Records are a standard method of demonstrating compliance with limits on project emissions for operations involving contaminated soil.

### H<sub>2</sub>S Sources

| S# & Description  | Emission Limit Citation | Emission Limit (Not Federally Enforceable)   | Monitoring |
|---|-------------------------|--|------------|
| S-2 Altamont Landfill with Gas Collection System, S-6 Gas Turbine, S-7 Gas Turbine, S-23 IC Engine, S-24 IC Engine, S-25 LNG Plant, S-26 LNG Plant, and A-15 Landfill Gas Flare | BAAQMD 9-2-301          | Property Line Ground Level Limits:<br>≤ 0.06 ppm averaged over 3 minutes<br>and<br>≤ 0.03 ppm averaged over 60 minutes<br>(applies to fugitive landfill gas emissions) | None       |

#### Hydrogen Sulfide (H<sub>2</sub>S) Discussion:

BAAQMD Regulation 9-2-301: 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 Regulation 9-2-301 emission limit of 0.03 ppmv. The District rarely 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. Monitoring for ground level H<sub>2</sub>S concentrations would not be appropriate when no H<sub>2</sub>S odor problem exists. Also, these H<sub>2</sub>S limits are not federally enforceable.

### Other Limits

| <b>S# &amp; Description</b>                          | <b>Emission Limit Citation</b>     | <b>Federally Enforceable Emission Limit</b>   | <b>Monitoring</b> |
|--|------------------------------------|---|-------------------|
| S-2 Altamont Landfill with Gas Collection System     | BAAQMD Condition # 19235, Part 18  | Waste Acceptance Limits:<br>≤ 11,150 tons/day of total waste<br>≤ 5,000 tons/day of sludge<br>≤ 47,100,000 tons total, and<br>≤ 58,900,000 cubic yards total                        | Records           |
| S-2 Altamont Landfill (contaminated soil operations) | BAAQMD Condition # 19235, Part 21g | Contaminated Soil Disposal Rate:<br>≤ 6,000 tons/day  | Records           |
| S-2 Altamont Landfill (contaminated soil operations) | BAAQMD 8-40-116.1                  | 1 cubic yard aerated per project  | Records           |
| S-2 Altamont Landfill (contaminated soil operations) | BAAQMD 8-40-116.2                  | 8 cubic yards aerated per project, provided organic content ≤ 500 ppmw, and limited to 1 exempt project per 3 month period  | Records           |
| S-2 Altamont Landfill (contaminated soil operations) | BAAQMD 8-40-117                    | aeration of soil contaminated by accidental spillage of ≤ 5 gallons of liquid organic compounds   | Records           |
| S-2 Altamont Landfill (contaminated soil operations) | BAAQMD 8-40-118                    | 150 pounds of organic compounds per project and TAC emissions < trigger levels in BAAQMD Table 2-1-316  | Records           |
| S-2 Altamont Landfill (contaminated soil operations) | BAAQMD 8-40-301                    | Aeration Prohibited for Soil with > 50 ppmw VOC, unless exempt per 8-40-116, 117, or 118  | Records           |
| S-2 Altamont Landfill (contaminated soil operations) | BAAQMD Condition # 19235, Part 21e | ≤ 2 on-site transfers of contaminated soil per lot  | Records           |
| S-2 Altamont Landfill (contaminated soil operations) | BAAQMD Condition # 19235, Part 21f | On-Site Storage Time Limitation for Contaminated Soil:<br>For Soil VOC < 500 ppmv,<br>Time ≤ 90 days from receipt<br>and<br>For Soil VOC ≥ 500 ppmv,<br>Time ≤ 45 days from receipt | Records           |

### Other Limits

| <b>S# &amp; Description</b>                                  | <b>Emission Limit Citation</b>          | <b>Federally Enforceable Emission Limit</b>  | <b>Monitoring</b>                                |             |               |     |         |      |                 |     |                     |      |                    |     |                     |     |                       |      |                    |      |                   |      |                           |     |                   |      |                |      |   |
|--|---|--|--|-------------|---------------|-----|---------|------|-----------------|-----|---------------------|------|--------------------|-----|---------------------|-----|-----------------------|------|--------------------|------|-------------------|------|---------------------------|-----|-------------------|------|----------------|------|---|
| S-6 Gas Turbine and<br>S-7 Gas Turbine                       | BAAQMD<br>Condition # 18773, Part<br>8  | Heat Input:<br>≤ 960 MM BTU per day (each)<br>and<br>≤ 331,200 MM BTU per year<br>(each)   | Continuous Gas Flow<br>Meter and Records         |             |               |     |         |      |                 |     |                     |      |                    |     |                     |     |                       |      |                    |      |                   |      |                           |     |                   |      |                |      |   |
| S-6 Gas Turbine and<br>S-7 Gas Turbine                       | BAAQMD<br>Condition # 18773, Part<br>9  | Combustion Chamber Discharge<br>Temperature:<br>1120 °F ≤ CCDT ≤ 1220 °F,<br>averaged over any 3-hour period   | Continuous<br>Temperature Sensor and<br>Recorder |             |               |     |         |      |                 |     |                     |      |                    |     |                     |     |                       |      |                    |      |                   |      |                           |     |                   |      |                |      |   |
| Diesel Engines<br>(S-191, S-192, S-193,<br>S-197, and S-198) | BAAQMD<br>Condition # 20801, Part<br>1  | Fuel Usage Limits:<br>S-191 28,908 gallons/year<br>S-192 28,908 gallons/year<br>S-193 62,196 gallons/year<br>S-197 34,690 gallons/year<br>S-198 75,336 gallons/year  | Monthly Records                                  |             |               |     |         |      |                 |     |                     |      |                    |     |                     |     |                       |      |                    |      |                   |      |                           |     |                   |      |                |      |   |
| <b>S# &amp; Description</b>                                  | <b>Emission Limit Citation</b>          | <b>Emission Limit (Not Federally Enforceable)</b>  | <b>Monitoring</b>                                |             |               |     |         |      |                 |     |                     |      |                    |     |                     |     |                       |      |                    |      |                   |      |                           |     |                   |      |                |      |   |
| S-2 Altamont Landfill<br>with Gas Collection<br>System       | BAAQMD<br>Condition # 19235,<br>Part 12 | Toxic Compound Concentration<br>Limits for Landfill Gas:<br><table border="0"> <thead> <tr> <th><u>Compound</u></th> <th><u>PPBV</u></th> </tr> </thead> <tbody> <tr><td>acrylonitrile</td><td>500</td></tr> <tr><td>benzene</td><td>2200</td></tr> <tr><td>benzyl chloride</td><td>100</td></tr> <tr><td>1,4 dichlorobenzene</td><td>1100</td></tr> <tr><td>ethylene dibromide</td><td>100</td></tr> <tr><td>ethylene dichloride</td><td>150</td></tr> <tr><td>ethylidene dichloride</td><td>1200</td></tr> <tr><td>methylene chloride</td><td>2500</td></tr> <tr><td>perchloroethylene</td><td>2400</td></tr> <tr><td>1,1,2,2 tetrachloroethane</td><td>100</td></tr> <tr><td>trichloroethylene</td><td>1400</td></tr> <tr><td>vinyl chloride</td><td>1100</td></tr> </tbody> </table> | <u>Compound</u>                                  | <u>PPBV</u> | acrylonitrile | 500 | benzene | 2200 | benzyl chloride | 100 | 1,4 dichlorobenzene | 1100 | ethylene dibromide | 100 | ethylene dichloride | 150 | ethylidene dichloride | 1200 | methylene chloride | 2500 | perchloroethylene | 2400 | 1,1,2,2 tetrachloroethane | 100 | trichloroethylene | 1400 | vinyl chloride | 1100 | Annual Landfill Gas<br>Characterization<br>Analysis and Records |
| <u>Compound</u>  | <u>PPBV</u>                             |  |  |             |               |     |         |      |                 |     |                     |      |                    |     |                     |     |                       |      |                    |      |                   |      |                           |     |                   |      |                |      |   |
| acrylonitrile  | 500                                     |  |  |             |               |     |         |      |                 |     |                     |      |                    |     |                     |     |                       |      |                    |      |                   |      |                           |     |                   |      |                |      |   |
| benzene  | 2200                                    |  |  |             |               |     |         |      |                 |     |                     |      |                    |     |                     |     |                       |      |                    |      |                   |      |                           |     |                   |      |                |      |   |
| benzyl chloride  | 100                                     |  |  |             |               |     |         |      |                 |     |                     |      |                    |     |                     |     |                       |      |                    |      |                   |      |                           |     |                   |      |                |      |   |
| 1,4 dichlorobenzene  | 1100                                    |  |  |             |               |     |         |      |                 |     |                     |      |                    |     |                     |     |                       |      |                    |      |                   |      |                           |     |                   |      |                |      |   |
| ethylene dibromide   | 100                                     |  |  |             |               |     |         |      |                 |     |                     |      |                    |     |                     |     |                       |      |                    |      |                   |      |                           |     |                   |      |                |      |   |
| ethylene dichloride  | 150                                     |  |  |             |               |     |         |      |                 |     |                     |      |                    |     |                     |     |                       |      |                    |      |                   |      |                           |     |                   |      |                |      |   |
| ethylidene dichloride  | 1200                                    |  |  |             |               |     |         |      |                 |     |                     |      |                    |     |                     |     |                       |      |                    |      |                   |      |                           |     |                   |      |                |      |   |
| methylene chloride   | 2500                                    |  |  |             |               |     |         |      |                 |     |                     |      |                    |     |                     |     |                       |      |                    |      |                   |      |                           |     |                   |      |                |      |   |
| perchloroethylene  | 2400                                    |  |  |             |               |     |         |      |                 |     |                     |      |                    |     |                     |     |                       |      |                    |      |                   |      |                           |     |                   |      |                |      |   |
| 1,1,2,2 tetrachloroethane                                    | 100                                     |  |  |             |               |     |         |      |                 |     |                     |      |                    |     |                     |     |                       |      |                    |      |                   |      |                           |     |                   |      |                |      |   |
| trichloroethylene  | 1400                                    |  |  |             |               |     |         |      |                 |     |                     |      |                    |     |                     |     |                       |      |                    |      |                   |      |                           |     |                   |      |                |      |   |
| vinyl chloride   | 1100                                    |  |  |             |               |     |         |      |                 |     |                     |      |                    |     |                     |     |                       |      |                    |      |                   |      |                           |     |                   |      |                |      |   |

Other Limits Discussion:

BAAQMD Condition # 19235, Part 18: The use of records is a standard method for monitoring for compliance with throughput limits such as these waste acceptance limits.

BAAQMD Condition # 19235, Part 21g: The use of records is a standard method for monitoring for compliance with throughput limits such as this contaminated soil disposal rate limit.

BAAQMD Regulations 8-40-116.1, 8-40-116.2, 8-40-117, 8-40-118, and 8-40-301: These limits describe the type and amounts of contaminated soil that may be aerated on a site. The use of records is a standard method for monitoring for compliance with throughput limits such as these.

BAAQMD Conditions # 19235, Parts 21e-f: These conditions limit how contaminated may be handled on site and how long soil can be stored in stockpiles before it is placed in the final disposal area. Establishing operating procedures to ensure compliance with these limits and maintaining records that these operating procedures were followed are appropriate methods for showing compliance with these requirements.

BAAQMD Condition # 18773, Part 8: The use of gas flow meters and records are standard methods for monitoring for heat input limits at gas turbines.

BAAQMD Condition # 18773, Part 9: The use of temperature sensors and records are standard methods for monitoring for temperature limits at gas turbines.

BAAQMD Condition # 20801, Part 1: The use of records is a standard method for monitoring for compliance with throughput limits such as these fuel usage limits.

BAAQMD Condition # 19235, Part 12: These toxic compound concentration limits for landfill gas are not federally enforceable. Therefore, no additional monitoring is required pursuant to Title V. However, the annual landfill gas characterization analysis, which is required by Condition # 19235, Part 14 for other purposes, can also be used to show compliance with this limit.

## **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.

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

## **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 that identifies and justifies specific federally enforceable regulations and standards are not applicable to a source or group of sources, or (2) A provision in a major facility review permit that identifies and justifies specific federally enforceable applicable requirements for monitoring, recordkeeping and/or reporting which 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 no permit shields. This permit has no streamlining. The applicant requested a permit shield from 40 CFR, Part 60, Subpart Kb, Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984. The only applicable requirements in this regulation are the exemption criteria and the requirement to maintain records of tank dimensions for S-20 and S-130. Since these tanks are exempt from permitting requirements, a permit shield is not required.

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

The applicant described several alternate operating scenarios in the October 1995 application materials. These scenarios described the various different landfill gas control devices that may be used at this facility and the procedures that will be followed when switching between devices. These possible landfill gas control methods are described in BAAQMD Condition # 19235, Parts 1 and 2. All applicable requirements for each method of controlling landfill gas are described in Tables IV-A through Table IV-J of the MFR Permit. Therefore, these different landfill gas control methods are not considered to be alternate operating scenarios and have not been designated as such in this MFR Permit.

#### **E. Compliance Status:**

An August 4, 2003 office memorandum from the Director of Compliance and Enforcement, to the Director of Permit Services<sup>2</sup>, presents a review of the compliance record of Waste Management, Facility #A2066. The Compliance and Enforcement Division staff has reviewed the records for the facility for the period between 7/10/02 through 7/09/03. This review was initiated as part of the District evaluation of an application by Waste Management for a Title V permit. During the period subject to review, activities known to the District include:

- There were no Notices of Violation issued during this review period.
- The District did not receive any alleged complaints.
- The facility is not operating under a Variance or an Order of Abatement from the District Board.
- One monitor excess and one equipment breakdown were reported and are currently under investigation by District staff.

The owner last certified that all equipment was operating in compliance on May 13, 2003. No other non-compliance issues have been identified as of September 1, 2003.

---

<sup>2</sup> As of July 1, 2003, the Permit Services Division is called the Engineering Division.

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

The Title V permit application was submitted on October 24, 1995 with equipment list amendments provided on November 21, 2002. This application is the basis for constructing the proposed Title V permit. Differences between the application and the proposed permit include the following:

1. As discussed in detail in Section C.II of this report, the equipment list has changed due to equipment shut-downs, new permitted equipment, exemption determinations, and loss of exemptions.
2. As discussed in detail in Section C.VI of this report, the District is proposing amendments to BAAQMD Conditions # 18773, # 19235, # 19237, # 19238, # 20800, # 20801, # 20812, # 20813, # 20828, and # 20922.
3. As discussed in detail in Section C.IX of this report, the requested permit shield is not expected to be necessary and was not included in this permit.
4. As discussed in detail in Section D of this report, the requirements for all of the requested alternate operating scenarios are thoroughly described in the applicable requirements for each source. Therefore no alternatives from the applicable requirements have been declared.
5. In their application, the Waste Management identified only the primary applicable requirements for the sources at this facility. The District has identified all of the applicable requirements for each permitted source at this facility, including any requirements or conditions that were adopted or amended after the Title V permit application was submitted.

APPENDIX A  
BAAQMD COMPLIANCE REPORT

APPENDIX B  
GLOSSARY

**ACT**

Federal Clean Air Act

**ALRRF**

Altamont Landfill and Resource Recovery Facility

**AP-42**

An EPA Document “Compilation of Air Pollution Emission Factors” that is used to estimate emissions from numerous source types. It is available electronically from EPA’s web site at: <http://www.epa.gov/ttn/chief/ap42/index.html>

**APCO**

Air Pollution Control Officer: Head of Bay Area Air Quality Management District

**ARB**

Air Resources Board (same as CARB)

**ASTM**

American Society for Testing and Materials

**ATC**

Authority to Construct

**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

**CAPCOA**

California Air Pollution Control Officers Association

**CARB**

California Air Resources Board (same as ARB)

**CCDT**

Combustion Chamber Discharge Temperature (for gas turbines)

**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.

**CH<sub>4</sub> or CH<sub>4</sub>**

Methane

**CO**

Carbon Monoxide

**CO<sub>2</sub> or CO<sub>2</sub>**

Carbon Dioxide

**CT**

Cylinder Temperature (for internal combustion engines)

**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.

**CZT**

Combustion Zone Temperature (for flares)

**District**

The Bay Area Air Quality Management District

**EG**

Emission Guidelines

**EO**

Executive Order

**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 (MACT), 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.

**GDF**

Gasoline Dispensing Facility

**H<sub>2</sub>S or H<sub>2</sub>S**

Hydrogen Sulfide

**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.

**HHV**

Higher Heating Value. The quantity of heat evolved as determined by a calorimeter where the combustion products are cooled to 60F and all water vapor is condensed to liquid.

**IC**

Internal Combustion

**LFG**

Landfill gas

**LHV**

Lower Heating Value. Similar to the higher heating value (see HHV) except that the water produced by the combustion is not condensed but retained as vapor at 60F.

**LNG**

Liquefied Natural Gas. For this site, LNG is produced using a proprietary process that separates landfill gas into methane and carbon dioxide, removes non-methane organic compounds, and compresses the purified methane.

**Major Facility**

A facility with potential emissions of: (1) at least 100 tons per year of regulated air pollutants, (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 or 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 or Min.**

Minimum

**MOP**

The District's Manual of Procedures.

**MSW**

Municipal solid waste

**MW**

Molecular weight

**N2 or N<sub>2</sub>**

Nitrogen

**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 (Same as NMOC)

**NMOC**

Non-methane Organic Compounds (Same as NMHC)

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

Oxides of nitrogen.

**NSPS**

Standards of Performance for New Stationary Sources. Federal standards for emissions from new stationary sources. 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. 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> or 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, NO<sub>x</sub>, PM<sub>10</sub>, and SO<sub>2</sub>.

**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 or PM<sub>10</sub>**

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.

**PTO**

Permit to Operate

**PV or P/V Valve**

Pressure/Vacuum Valve

**RMP**

Risk Management Plan

**RWQCB**

Regional Water Quality Control Board

**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.

**SO<sub>2</sub> or SO<sub>2</sub>**

Sulfur dioxide

**SSM**

Startup, Shutdown, or Malfunction

**SSM Plan**

A plan, which states the procedures that will be followed during a startup, shutdown, or malfunction, that is prepared in accordance with the general NESHAP provisions (40 CFR Part 63, Subpart A) and maintained on site at the facility.

**THC**

Total Hydrocarbons (NMHC + Methane)

**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 (NMOC + Methane, Same as THC)

**TPH**

Total Petroleum Hydrocarbons

**TRMP**

Toxic Risk Management Policy

**TRS**

Total Reduced Sulfur

**TSP**

Total Suspended Particulate

**VMT**

Vehicle Miles Traveled

**VOC**

Volatile Organic Compounds

**WM**

Waste Management

**Symbols:**

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

**Units of Measure:**

|      |   |                         |
|------|---|-------------------------|
| bhp  | = | brake-horsepower        |
| btu  | = | British Thermal Unit    |
| 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                               |
| lb              | = | pound                              |
| lbmol           | = | pound-mole                         |
| in              | = | inches                             |
| m <sup>2</sup>  | = | square meter                       |
| m <sup>3</sup>  | = | cubic meters                       |
| min             | = | minute                             |
| mm              | = | millimeter                         |
| MM              | = | million                            |
| MM BTU          | = | million BTU                        |
| MMcf            | = | million cubic feet                 |
| Mg              | = | mega grams                         |
| ppb             | = | parts per billion                  |
| ppbv            | = | parts per billion, by volume       |
| ppm             | = | parts per million                  |
| 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              | = | yard                               |
| yd <sup>3</sup> | = | cubic yards                        |
| yr              | = | year                               |