

**Bay Area Air Quality Management District**

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**Statement of Basis  
for  
RENEWAL of  
MAJOR FACILITY REVIEW PERMIT**

**for  
City of Mountain View (Shoreline)  
Facility #A2740**

**Facility Address:**  
2600 Shoreline Boulevard  
Mountain View, CA 94043

**Mailing Address:**  
231 N. Whisman Rd.  
Mountain View, CA 94043

Application Engineer: Judith Cutino  
Site Engineer: Carol Allen

Application: 17127

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## **TITLE V STATEMENT OF BASIS**

City of Mountain View (Shoreline); PLANT # A2740

APPLICATION # 17127

### **A. BACKGROUND**

This facility is subject to the Operating Permit requirements of Title V of the federal Clean Air Act, Part 70 of Title 40 of the Code of Federal Regulations (CFR), and BAAQMD Regulation 2, Rule 6, Major Facility Review because it is a designated facility as defined 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 mega grams and 2.5 million cubic meters 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). Therefore, this facility is required to have an MFR permit pursuant to Regulation 2-6-304.

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. The identifier for this facility is A2740.

This facility received its initial Title V permit on July 28, 2003. The permit was last revised on September 19, 2007. This application is for a permit renewal. Although the current permit expired on June 30, 2008, it continues in force until the District takes final action on the permit renewal. The standard sections of the permit have been upgraded to include new standard language used in all Title V permits. The proposed renewal permit clearly shows all proposed changes to the permit in strikeout/underline format.

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## **B. FACILITY DESCRIPTION**

The City of Mountain View's Shoreline complex (Facility # A2740) is located in the City of Mountain View, east of Highway 101, near Shoreline Boulevard. The Shoreline complex is a recreational and wildlife area constructed over approximately 600 acres of closed landfills. The landfills stopped accepting refuse in October, 1993. The individual landfill sites in the complex are referred to as the 544-Acre Landfill, which includes the golf course and sailing lake areas, the Crittenden Landfill, and the Vista Landfill. A small portion of the Vista Landfill is leased to Shoreline Amphitheatre (Facility #A2561), which is owned and operated by Live Nation, and which operates the landfill gas (LFG) collection system in the Amphitheater Area, a Flare and a back-up carbon system. The City of Mountain View includes the following permitted operations: the closed Shoreline Landfill sites with Gas Collection Systems (S-1), three Landfill Gas Flares (A-3, A-4, A-5), two Diesel Engines for Emergency Generators (S-11 and S-14), and two landfill gas-fired Microturbines (S-12 and S-13). The size thresholds (2.5 million m<sup>3</sup> and 2.5 million Mg) that trigger the Title V permitting requirements pursuant to 40 CFR § 60.32c(c) apply to all solid waste disposal sites located on contiguous property. Since the Vista Landfill, the 544 Acre Landfill, and the Crittenden Landfill are located on contiguous property, the combined size of these three landfills was used to determine Title V applicability for these landfills. The combined size of the three contiguous landfills is 18.2 million yd<sup>3</sup> (13.9 million m<sup>3</sup>) and 13.1 million tons (11.9 million Mg). Therefore, a Title V Permit is required for all three landfills. The Title V permit for the City of Mountain View (Facility # A2740) describes the requirements for the Vista Landfill, the 544 Acre Landfill, the Crittenden Landfill, and all gas collection and control equipment owned and operated by the City of Mountain View.

Landfills generate landfill gas due to the waste decomposition process. The landfill gas contains methane, carbon dioxide, and small amounts of non-methane organic compounds (NMOC) and sulfur compounds. Many of the NMOCs are precursor organic compounds (POC) and/or toxic air contaminants (TACs). District and EPA regulations require that landfill gas from larger landfills be continuously collected and controlled to reduce emissions of NMOCs to the atmosphere. In accordance with these requirements, the City of Mountain View's Landfill complex (S-1) is equipped with a landfill gas collection system and landfill gas control systems. Landfill gas collection systems are perforated pipes that are buried in the refuse at numerous locations. For active collection systems, the perforated pipes are connected to blowers by solid pipes (referred to as laterals and headers). The blowers maintain a vacuum in the buried refuse and draw landfill gas into the perforated pipes. The current landfill gas collection system includes 264 vertical wells and 7 horizontal collectors.

During 2007, the City of Mountain View collected an average of 1358 cfm of landfill gas from the Shoreline Landfills. About 14% of this collected landfill gas is controlled by combustion in enclosed ground flares (A-3, A-4, and A-5). These flares destroy most of the methane, precursor organic compounds, non-precursor organic compounds, and toxic compounds in the landfill gas, but also produce secondary combustion pollutants including: nitrogen oxides, carbon monoxide, sulfur dioxide, particulate matter, formaldehyde, and hydrogen chloride. About 82% of the collected gas is delivered to ALZA Corporation for combustion in off-site IC engines. A small portion of the collected landfill gas (about 4%) is delivered to two on-site microturbines.

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This facility also has two Diesel Engines for Emergency Standby Generators (S-11 and S-14) that provide minimal power in the event of a power failure.

All emission increases for this facility were discussed in detail in the Statement of Basis for the Title V permit revision that was issued in 2003. The current facility wide actual emission rates for each source - based on the 2007 throughput report - are summarized in Table 1.

Table 1. Actual 2007 Emissions for Site # A2740

| Device Number and Description | Emissions (tons/year) |                  |                 |       |                 |
|-------------------------------|-----------------------|------------------|-----------------|-------|-----------------|
|                               | CO                    | PM <sub>10</sub> | NO <sub>x</sub> | POC   | SO <sub>2</sub> |
| S-1 Landfill                  | 0.00                  | 0.00             | 0.13            | 29.47 | 0.00            |
| S-11 Diesel Engine            | 0.00                  | 0.00             | 0.00            | 0.00  | 0.00            |
| S-12 Microturbine             | 0.04                  | 0.07             | 0.11            | 0.02  | 0.05            |
| S-13 Microturbine             | 0.04                  | 0.09             | 0.11            | 0.02  | 0.05            |
| S-14 Diesel Engine            | 0.00                  | 0.00             | 0.00            | 0.00  | 0.00            |
| A-3 Landfill Gas Flare        | 14.31                 | 1.22             | 9.34            | 0.71  | 1.20            |
| A-4 Landfill Gas Flare        | 14.11                 | 1.20             | 4.27            | 0.69  | 1.19            |
| A-5 Landfill Gas Flare        | 18.83                 | 1.61             | 5.69            | 0.93  | 1.59            |
| Facility Wide Emissions       | 47.3                  | 4.2              | 19.6            | 31.9  | 4.1             |

### C. PERMIT CONTENT

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

#### I. Standard Conditions

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

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

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

Changes to Permit, Section I:

- The District is updating the dates of adoption and approval of rules in Standard Condition 1.A.
- The District is adding a recently adopted toxic NSR rule: BAAQMD Regulation 2, Rule 5 "New Source Review for Toxic Air Contaminants" to Standard Condition 1.A. However, this rule is not federally enforceable.
- SIP Regulation 2, Rule 6 – Permits, Major Facility Review has been added to Standard Condition 1.A.
- The District is adding the following language to Standard Condition I.B.1: "If the permit renewal has not been issued by [5<sup>th</sup> anniversary of issuance date], but a complete application for renewal has been submitted in accordance with the above deadlines, the existing permit will continue in force until the District takes final action on the renewal application." This is the "application shield" pursuant to BAAQMD Regulation 2-6-407.
- The basis for Standard Condition I.B.11 is being amended by adding "Regulation 2-6-409.20" to conform to changes in Regulation 2, Rule 6.
- The following language is added as Standard Condition I.B.12: "The permit holder is responsible for compliance, and certification of compliance, with all conditions of the permit, regardless whether it acts through employees, agents, contractors, or subcontractors. (Regulation 2-6-307)." The purpose is to reiterate that the Permit Holder is responsible for ensuring that all activities at the facility comply with all applicable requirements.
- The District is correcting errors in the bases for Standard Conditions I.E.2 and I.F by deleting "Regulation 3;" from these bases.
- The District is clarifying the certification period in Standard Condition I.G by changing it from "July 1<sup>st</sup> to June 30<sup>th</sup>" to "July 1<sup>st</sup> through June 30<sup>th</sup>".

## **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., S24).

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.

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

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

There are no differences in the equipment list between the time that the facility was originally issued a Title V permit (July 2003) and the permit proposal date.

Changes to Permit, Section II:

- The District is not proposing any changes to this section.

**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 has no unpermitted significant sources.

Changes to Permit, Section III:

- The District is adding EPA’s website address for the SIP standards to Section III.

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- For Table III, the District is amending dates of adoption or approval of the rules, correcting the "federal enforceability" status for these rules, and adding or deleting rules and standards to conform to current practice. The rules that are being amended, added, or removed are listed below:
  - Regulation 1, General Provisions and Definitions
  - Regulation 2, Rule 1, Permits – General Requirements
  - Regulation 2, Rule 5, Permits – New Source Review of Toxic Air Contaminants
  - Regulation 6, Rule 1, Particulate Matter – General Requirements
  - Regulation 8, Rule 2, Organic Compounds – Miscellaneous Operations
  - Regulation 8, Rule 3, Organic Compounds – Architectural Coatings
  - Regulation 8, Rule 4, Organic Compounds – General Solvent and Surface Coating Operations
  - Regulation 8, Rule 15, Organic Compounds – Emulsified and Liquid Asphalts
  - Regulation 8, Rule 16, Organic Compounds – Solvent Cleaning Operations
  - Regulation 8, Rule 40, Organic Compounds – Aeration of Contaminated Soil and Removal of Underground Storage Tanks
  - Regulation 8, Rule 47, Organic Compounds – Air Stripping and Soil Vapor Extraction Operations
  - Regulation 9, Rule 1, Inorganic Gaseous Pollutants – Sulfur Dioxide
  - Regulation 9, Rule 2, Inorganic Gaseous Pollutants – Hydrogen Sulfide
  - California Health and Safety Code, Section 41750 et seq., Portable Equipment
  - California Code of Regulations, Title 17, Section 93115 et seq., Airborne Toxic Control Measure for Stationary Compression Ignition Engines
  - California Code of Regulations, Title 17, Section 93116 et seq., Airborne Toxic Control Measure for Diesel Particulate Matter from Portable Engines Rated at 50 Horsepower and Greater
  - EPA Regulation 40 CFR Part 61, Subpart A, National Emission Standards for Hazardous Air Pollutants – General Provisions.

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

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

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

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- 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:

The landfill at this site is subject to BAAQMD Regulation 8, Rule 34, because the Vista Landfill accepted waste within the last 30 years and the contiguous landfills contained in the permits for Site # A2740 and A2561 contain more than 1,000,000 tons of decomposable refuse. These contiguous landfills are also subject to the EG for MSW Landfills (40 CFR, Part 60, Subpart Cc) and the NESHAP for MSW Landfills (40 CFR, Part 63, Subpart AAAA), because (1) the landfills commenced construction before May 30, 1991, (2) the landfills have accepted waste after November 8, 1987, (3) the landfills have a design capacity of greater than 2.5 million cubic meters and greater than 2.5 million megagrams, and (4) the uncontrolled NMOC generation rate from the three landfills combined exceeds 50 Mg/year.

The diesel-fired compression ignition engines (S-11 and S-14) that power emergency standby generators at this site are not subject to the NSPS for Compression Ignition Internal Combustion Engines (40 CFR Part 60, Subpart IIII) pursuant to 40 CFR Part 60.4200(a)(2), because these engines commenced construction before July 11, 2005.

The two microturbines (S-12 and S-13) are exempt from NSPS, Subpart GG – Standards of Performance for Stationary Gas Turbines pursuant to §60.330(a), because each microturbine has a heat input at peak load of less than 10 million Btu per hour.

Sources at Title V facilities may be subject to the Compliance Assurance Monitoring (CAM) requirements in 40 CFR, Part 64. A source must meet all of the three criteria specified in 40 CFR Part 64.2(a)(1-3) in order for CAM to apply. First, the source must be subject to an emission limit for a regulated air pollutant other than an exempt limitation. Second, the source must use a control device to achieve compliance with this emission limitation. Third, the pre-controlled emissions of the specific pollutant being controlled must be greater than the major facility emissions threshold for that pollutant.

At this facility, the landfill and its related emission control devices (S-1, A-3, A-4, and A-5) are exempt from the first CAM applicability criteria, 40 CFR Part 64.2(a)(1), pursuant to 40 CFR Part 64.2(b)(1)(i), because the landfill and landfill gas control systems are subject to the EG and NESHAP requirements identified above, and these EG and NESHAP requirements were adopted

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pursuant to Sections 111 and 112 of the Clean Air Act after November 15, 1990. Since the applicable EG and NESHAP requirements contain adequate monitoring provisions, additional compliance assurance monitoring is not necessary. In addition, the pre-control emissions of precursor organic compounds from the landfill are less than the major facility emissions threshold of 100 tons of POC per year. Thus, S-1 does not meet the third CAM applicability criteria from 40 CFR Part 64.2(a)(3). Since the landfill and its related control devices do not satisfy all three CAM applicability criteria, CAM does not apply to S-1, A-3, A-4, or A-5.

The two microturbines, S-12 and S-13, at this facility have federally enforceable emission limits for particulate matter (PM<sub>10</sub>), nitrogen oxides (NO<sub>x</sub>), sulfur dioxide (SO<sub>2</sub>), and carbon monoxide (CO). However, S-12 and S-13 do not use a control device to achieve compliance with these limits, and the uncontrolled PM<sub>10</sub>, NO<sub>x</sub>, SO<sub>2</sub>, and CO emissions from these microturbines are less than the major facility emissions threshold (100 tons/year) for these pollutants. Since S-12 and S-13 do not meet either the second or the third CAM applicability criteria – 40 CFR Part 64.2(a)(2 or 3), S-12 and S-13 are not subject to CAM.

The two diesel engines (S-11 and S-14) at this facility have federally enforceable emission limits for particulate matter (PM<sub>10</sub>) and sulfur dioxide (SO<sub>2</sub>). However, S-11 and S-14 do not use a control device to achieve compliance with these limits, and the uncontrolled PM<sub>10</sub> and SO<sub>2</sub> emissions from these engines are less than the major facility emissions threshold (100 tons/year) for these pollutants. Since S-11 and S-14 do not meet either the second or the third CAM applicability criteria – 40 CFR Part 64.2(a)(2 or 3), S-11 and S-14 are not subject to CAM.

Changes to Permit, Section IV:

The main proposed changes to the applicable requirements for the S-1 Shoreline Landfills are the removal of the landfill gas flow rate limit to the flares and the removal of the vinyl chloride limit at the flare stacks (Condition #16065, Parts 8 and 11, respectively). As discussed in Section VI below, the District is proposing to replace the quarterly landfill gas hydrogen sulfide monitoring requirement in Condition # 16065, Part 12 with either an annual sulfur dioxide test at the flare exhaust (Part 13) or an annual landfill gas sulfur test (Part 14). These condition changes required changes to the bases for Parts 12, 13, and 14, which are reflected in Table IV-A.

Currently, the requirements for the emergency standby engines (S-11 and S-14) are listed in two separate sets of tables and permit conditions. The District is proposing to combine Tables IV-B and IV-D into Table IV-B. Table IV-D will be deleted. Likewise, Tables VII-B and VII-D will be combined into Table VII-B, and Table VII-D will be deleted. In Table IV-B for the S-11 and S-14, the District is also including new applicable requirements for these engines: the recently adopted amendments to BAAQMD Regulation 9, Rule 8 and the CARB ATCM for Stationary Compression Ignition Engines. The District is proposing to delete Conditions # 19210 and #21195 (all parts) and replace them with Condition #24175, which will include all new requirements for S-11 and S-14.

For all three remaining tables in Section IV, (Tables IV-A, IV-B, and IV-C), the District is proposing to incorporate a particulate matter regulatory amendment by adding BAAQMD

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Regulation 6, Rule 1 and changing BAAQMD Regulation 6 to SIP Regulation 6. Other regulatory amendment dates and descriptions were corrected wherever necessary.

The specific changes to Section IV are as follows:

- Section IV is being modified by adding EPA's website address for the SIP standards.
- In Table IV-A, the amendment dates and descriptions for BAAQMD Regulation 1; BAAQMD Regulation 6, Rule 1; BAAQMD Regulation 8, Rule 34; 40 CFR, Part 60, Subpart A; 40 CFR Part 62, Subpart F; and 40 CFR Part 63, Subparts A and AAAA are being updated pursuant to recent revisions to these rules. These rule amendments involved changes to definitions, descriptions, and citation references that have no impact on the applicability or execution of any of the S-1 specific requirements cited in Table IV-A.
- In Table IV-A, the District is making editorial corrections to the amendment dates for BAAQMD Regulation 9, Rules 1 and 2 and 40 CFR, Part 60, Subpart Cc.
- In Table IV-A, the District is proposing to delete Part 8 of Condition #16065, which limits the combined landfill gas flow rate to the flares. This limit is redundant, because it is equivalent to the combined maximum heat input capacity for these flares, which is already limited pursuant to Section II. It is not necessary to have a limit that is simply based on the maximum operating capacity of the device.
- In Table IV-A, the District is proposing to delete Part 11 of Condition #16065, which set a vinyl chloride emission limit. As discussed below in Section VI, the vinyl chloride emissions from the landfill gas flare exhaust are currently non-detectable and the inlet vinyl chloride concentration is far below this outlet limit. Since the landfill could not possibly exceed this vinyl chloride outlet concentration limit, the District is proposing to delete this limit.
- In Table IV-A, the District is proposing to revise the description for Condition #16065, Part 12 pursuant to the condition revision discussed below in Section VI. This revision will retain the existing landfill gas sulfur content limit but eliminate the quarterly testing requirement for landfill gas sulfur content.
- In Table IV-A, Condition #16065, Part 13 and 14, the District is revising the description of the regulatory basis for these requirements.
- In Table IV-B, the District is proposing to revise the amendment date and description of Regulation 6, Rule 1 and to add the missing subpart 6-1-303.1 that clarifies why 6-1-303 is applicable to S-11 and S-14 instead of 6-1-301.
- In Table IV-B, the District is incorporating the July 25, 2007 amendments to Regulation 9, Rule 8 that apply to emergency standby engines. The applicable exemptions, operating requirements, and record keeping provisions are now identified in Sections 110, 330, 502, and 530 of BAAQMD Regulation 9, Rule 8. Since SIP 9-8-110.2 exempts liquid fueled engines from all provision of SIP Regulation 9, Rule 8, the District has not included the SIP version of this rule in Table IV-B.
- In Table IV-B, the District is adding the CARB ATCM for Stationary Compression Ignition Engines. Each specific section of this ATCM that applies to S-11 or S-14 is identified in Table IV-B.

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- The current permit conditions for S-11 (Condition #19210, Parts 1-5) and S-14 (Condition #21195 Parts 1-4) are being replaced by standard permit conditions for emergency standby generators that were developed to ensure compliance with the CARB ATCM for Stationary Compression Ignition Engines. The new conditions are identified in Condition #24175, Parts 1-5. The description of these revised conditions and the corrected bases for each part are being added to Table IV-B.
- In Table IV-C, for Sources S-12 and S-13, the amendment dates and descriptions for BAAQMD Regulation 6, Rule 1 are being updated pursuant to recent revisions to this rule. These rule amendments involved only changes to descriptions and citation references. Also editorial changes were made to Regulation 9, Rule 1 and Regulation 9, Rule 2.
- Table IV-D for S-14 is deleted. The requirements for S-14 are now combined with S-11 in Table IV-B.

## V. Schedule of Compliance

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

“409.10 A schedule of compliance containing the following elements:

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

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

### Changes to Permit, Section V:

- The District is not proposing any changes to this section.

## 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.

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When necessary to meet Title V requirements, additional monitoring, recordkeeping, 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 and 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 (A/C) or Permits to Operate (P/O). Permit conditions may also be imposed or revised as part of the annual review of the facility by the District pursuant to California Health and Safety Code (H&SC) § 42301(e), through a variance pursuant to H&SC § 42350 et seq., an order of abatement pursuant to H&SC § 42450 et seq., or as an administrative revision initiated by District staff. After issuance of the Title V permit, permit conditions are revised using the procedures in Regulation 2, Rule 6, Major Facility Review.

Conditions that are obsolete or that have no regulatory basis have been deleted from the permit.

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 which 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 arose from the District’s Toxic Risk Management Policy and that were imposed prior to adoption of Regulation 2, Rule 5 NSR for Toxic Air Contaminants.

Under previous Title V permit applications, parameter monitoring was added for each abatement device. Additional monitoring was added, where appropriate, to assure compliance with the applicable requirements.

The District is proposing to modify BAAQMD Condition #16065, Parts 2a, 4, 5(a) and (b), 8, 9, 10, 11, 12, 13, 14, and 15. These permit condition revisions clarify landfill gas collection system requirements, add wells to the alternative temperature and O<sub>2</sub> and N<sub>2</sub> requirements, delete a redundant flow rate limit, add alternative NO<sub>x</sub> and CO emission limits for the flares, remove an unnecessary vinyl chloride limit and the requirement to test the flare exhaust for vinyl chloride,

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eliminate the quarterly landfill gas sulfur content monitoring requirements, clarify annual testing requirements for NO<sub>x</sub>, CO and SO<sub>2</sub>, and make editorial revisions.

The District is proposing to replace all parts of BAAQMD Condition # 19210 (Parts 1-5) and Condition #21195 (Parts 1-4) with new standard condition text for emergency standby generators in Condition #24175, Parts 1-5. As discussed previously, these condition revisions are necessary due to the adoption by CARB of an ATCM for stationary compression ignition engines. Effective January 1, 2006, the ATCM required that S-11 comply with an operating time limitation of 30 hours per year for reliability related testing based on PM emissions between 0.15 and 0.4 grams/bhp-hour. This operating time limit will be identified in Condition #24175, Part 1. For S-14, the ATCM allows an exemption from the new operating time restrictions for in-use stationary diesel-fueled CI engines used in emergency standby or prime applications, if the engine was permitted prior to January 1, 2005 and was required to comply with minimum technology requirements or performance standards implemented from the Risk Management Guidance for permitting new stationary diesel-fueled engines. Since S-14 was permitted in 2004 and was allowed to operate up to 100 hours/year pursuant to compliance with TBACT and a project risk limit of 10 in a million increased cancer risk, S-14 qualifies for this ATCM exemption from the 50 hour/year operating requirement. However, this exemption will shortly be replaced by the new Regulation 9, Rule 8 amendments. Until January 1, 2012, S-14 is limited to 100 hours per year for reliability related testing, pursuant to Regulation 9-8-330.2. Effective January 1, 2012, Regulation 9-8-330.3 requires an operating time limitation of 50 hours per year for reliability related testing. These limits will be identified in Part 2 of Condition #24175. Part 3 will describe other operating restrictions for emergency standby engines that are contained in the ATCM and Regulation 9, Rule 8. Part 4 will identify the operating time meter that is now required by the ATCM and Regulation 9, Rule 8. Part 5 will identify the record keeping requirements from the ATCM and Regulation 9, Rule 8. In addition, the District is retaining the requirement to maintain records of the vendor certified sulfur content of the fuel (Condition # 24175, Part 5f) to ensure compliance with the Regulation 9-1-304 fuel content limit and the CARB ATCM requirement to use CARB Certified Diesel Fuel.

All proposed changes to Conditions # 16065 and # 24175 are marked with strike-through and underline formatting in the proposed permit. No changes are proposed for Condition #23579 regarding the S-12 and S-13 microturbines. The proposed changes to each part of Conditions # 16065 and # 24175 are explained in more detail below.

Changes to Permit, Section VI:

- Condition #16065, Part 2: The District is revising text to clarify that operation of the microturbines (S-12 and S-13) to abate landfill gas is optional, not required. The three flares A-3, A-4, and A-5 are the primary abatement system. Also, a significant amount of landfill gas has been sent to Alza Corp. to their cogeneration engines. The microturbines use landfill gas to fuel onsite operations as needed.

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- Condition #16065, Part 4: The District is revising text to clarify that well changes are alterations requiring a Change of Conditions rather than an Authority to Construct, and that redrilling or replacement of an existing well does not require a Change of Conditions provided the replacement well is close to the location of the existing well. The language regarding “changing the length of collectors or changing the locations of wells or collectors” was deleted; these changes do not require a change of conditions provided the replacement well is close to the location of the existing well.
- Condition #16065, Part 5a: One well is added to the list of wells that are allowed a landfill gas temperature of 140 degrees F or less.
- Condition #16065, Part 5b: Six wells are added to the list of wells allowed alternative nitrogen and oxygen concentrations.
- Condition # 16065, Part 8: The District is proposing to delete this redundant gas flow rate limit. From Section II, the three flares have a combined capacity of 129 MM BTU/hour. For landfill gas with a heat content of 511.9 BTU/scf (about 51.5% methane), the maximum possible landfill gas flow rate is equal to this limit (4200 scfm of landfill gas). It is not necessary to have both the heat input capacity from Section II and an equivalent gas flow rate limit. Therefore, the District is proposing to delete Part 8.
- Condition #16065, Part 9a, 9b, and 9c: The District is revising text to clarify that the nitrogen oxide emissions from the flares shall not exceed the applicable RACT emission rate limit for the flare. The estimated equivalent outlet concentration limits will be retained, but these will become secondary limits. For A-3, the NO<sub>x</sub> RACT limit was 0.13 pounds/MM BTU when A-3 was permitted. The equivalent outlet concentration limit was conservatively determined to be 33 ppmv of NO<sub>x</sub>. For A-4 and A-5, the NO<sub>x</sub> RACT limit was 0.06 pounds/MM BTU when A-4 and A-5 were permitted, and this RACT limit was found to have an equivalent outlet concentration of 15 ppmv of NO<sub>x</sub>. Compliance with these outlet concentration limits will ensure compliance with the RACT pounds/MM BTU limits. However, these equivalent outlet concentrations depend on the inlet methane concentration in the landfill gas and several simplifying assumptions. It is possible that a flare could be complying with the pounds/MM BTU limit, while it had a higher outlet concentration than the specified equivalent limit. The proposed condition changes allow for this latter possibility and clarify that the RACT emission limit (pounds/MM BTU) is the governing limit. Thus, the flares should remain in compliance if source test results indicate compliance with the appropriate pounds/MMBTU limit, even if the outlet concentration exceeds the calculated equivalent concentration limits specified in Part 9.
- Condition #16065, Part 10a, 10b, and 10c: Similar to Part 9, the District is revising text to clarify that the carbon monoxide emissions from the flares shall not exceed the CO RACT limit of 0.2 pounds/MM BTU instead of the calculated outlet concentration limit of 83 ppmv of CO. For A-3, A-4 and A-5, if the CO limit of 83 ppmv is exceeded, the flares will remain in compliance if source test results indicate a CO emission rate of 0.20 pounds/MMBTU or less.

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- Condition #16065, Part 11: The District is proposing to delete this non-federally enforceable concentration limit (48 ppmv of vinyl chloride in the flare exhaust), because it cannot possibly be exceeded, and it is not enforceable. In 2006, a source test found that the landfill gas from this site contained 640 ppbv (0.64 ppmv) of vinyl chloride. For closed landfills, vinyl chloride concentrations have historically decreased as the waste ages. Therefore, this 2006 vinyl chloride concentration is the maximum expected vinyl chloride concentration for this site's landfill gas. Even with no control at all, this inlet concentration is well below the Part 11 outlet concentration limit. The flare is expected to destroy most of the vinyl chloride in the landfill gas, while the combustion products and excess air in the flare exhaust will further reduce the outlet vinyl chloride concentration. Based on typical landfill gas flare performance criteria, the vinyl chloride outlet concentration will be no more than 3% of the vinyl chloride concentration in the inlet landfill gas. Thus, the outlet vinyl chloride concentration for flares at this site will be less than 20 ppbv (<0.02 ppmv), which is less than 0.05% of the Part 11 limit. A flare outlet concentration of 20 ppbv vinyl chloride is also less than the typical detection limit for flare source tests. For the 2006 source test at this site, the vinyl chloride concentration was non-detect in the exhaust from all three flares. Since the vinyl chloride concentration in the flare exhaust is not expected to be detectable, this vinyl chloride outlet concentration limit is not enforceable.
- Condition #16065, Part 12: This part was imposed with the initial issuance of the Title V permit for this facility, because there was no landfill gas sulfur data for this site and the maximum potential sulfur dioxide emissions (determined based on the 9-1-302 limit of 300 ppmv of SO<sub>2</sub> at the outlet from A-3, A-4, and A-5) were not insignificant. A landfill gas sulfur content limit of 1300 ppmv of TRS was imposed to ensure compliance with the 9-1-302 limit. The facility has now collected more than 3 years of quarterly landfill gas sulfur data for this site. The reduced sulfur compounds in the landfill gas from this site consist almost entirely of hydrogen sulfide, and the hydrogen sulfide content in the collected gas ranges from 0-40 ppmv of H<sub>2</sub>S. As explained below in Section VII, the maximum expected landfill gas sulfur content is less than 20% of the sulfur content limit in Part 12 and maximum potential sulfur dioxide emissions are now 23 tons/year. Since the compliance margin is very high for the Part 12 sulfur content limit, and the site has demonstrated that the landfill gas sulfur content does not vary appreciably, quarterly testing of the landfill gas is no longer necessary to ensure compliance with this sulfur content limit and is not justifiable in light of the low sulfur emissions from A-3, A-4, and A-5. Therefore, the District is proposing to eliminate the quarterly Draeger tube testing requirements. The District will retain the equivalent sulfur content limit of 1300 ppmv of TRS as a compliance option. The facility will be allowed to either demonstrate compliance with the 300 ppmv SO<sub>2</sub> outlet concentration limit by measuring the SO<sub>2</sub> directly during the annual source test (see Part 13g), or the site may show compliance with the Part 12 TRS limit by measuring the concentration of TRS in the landfill gas during the annual landfill gas characterization analysis (see Part14).

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- Condition #16065, Part 13: The District is proposing to make editorial revisions to this section to clarify the related applicable requirements and eliminate an unnecessary restriction on the test period. In Part 13d, the District is deleting the requirement to annually test the flare exhaust for vinyl chloride. This revision is consistent with the proposed change to delete Part 11, the vinyl chloride limit. In Part 13g, the District is revising a test reference for consistency with the proposed changes to Part 12.
- Condition #16065, Part 15: The District is proposing to make editorial changes.
- Condition #19210, Obsolete Parts 1-5 and Condition #21195, Obsolete Parts 1-4: The District is proposing to delete all parts of Conditions #19210 and #21195 and to replace these conditions with new Condition #24175, Parts 1-5.
- Condition #24175, Proposed Part 1: For S-11 this part will continue to limit the operating time for reliability-related activities and emissions testing, but the District is proposing to reduce the operating time limit from 100 hours/year to 30 hours/year for consistency with the new CARB ATCM requirement for engines with particulate emissions of between 0.15 and less than 0.40 g/bhp-h, which became effective January 1, 2006. S-11 is a Cummins Engine 6CTA8.3-G2, which was certified by CARB Executive Order U-R-2-36 to meet exhaust PM emissions of 0.4 g/hp-h.
- Condition #24175, Proposed Part 2: For S-14, the ATCM allows an exemption from the Section 93115.6(3) operating time limitations for in-use stationary diesel-fueled CI engines used in emergency standby or prime applications that, prior to January 1, 2005, were required to comply with either minimum technology requirements or performance standards implemented from the Risk Management Guidance for permitting new stationary diesel-fueled engines. The S-14 engine was permitted in 2004. It was allowed to operate for 100 hours per year for reliability related activities pursuant to BAAQMD risk management policy and the engine's compliance with TBACT requirements ( $\leq 0.15$  grams  $PM_{10}$ /bhp-hour). Therefore, S-14 qualifies for this ATCM exemption. Until January 1, 2012, S-14 is also limited to 100 hours per year for reliability related testing pursuant to Regulation 9-8-330.2. Effective January 1, 2012, Regulation 9-8-330.3 imposes an operating time limitation of 50 hours per year for reliability related testing. There are no applicable exemptions from this 50 hour per year limit.
- Condition #24175, Proposed Part 3: This part identifies the operating restrictions for emergency standby engines. The District is proposing to revise these restrictions for consistency with the CARB ATCM and with Regulation 9, Rule 8.
- Condition #24175, Proposed Part 4: This proposed part describes the hour meter monitor that is required by the CARB ATCM and by BAAQMD 9-8-530.
- Condition # 24175, Proposed Part 5: This proposed part describes the record keeping requirements that are contained in the CARB ATCM and Regulation 9, Rule 8. In addition, the District is proposing to retain the vendor certified sulfur content records (from Part 5d of Condition #21195) that will ensure compliance with liquid fuel sulfur content limit in Regulation 9-1-304 and the CARB ATCM requirement to use CARB certified diesel fuel in these engines.

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## **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 District has reviewed all monitoring and has determined that the existing monitoring is adequate. The tables below contain only the federally enforceable limits for which there is no 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.

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

All of the combustion devices located at this facility burn fuels that contain small amounts of sulfur compounds and emit sulfur dioxide (SO<sub>2</sub>) as a product of combustion. Therefore, each of these devices will contribute to the ground level SO<sub>2</sub> concentration at the fence line of this site, and all these combustion devices are subject to the Regulation 9-1-301 ground level SO<sub>2</sub> limits. As explained in more detail below, the District is not proposing any ground level SO<sub>2</sub> monitoring for this facility, because the likelihood of non-compliance with these ground level SO<sub>2</sub> limits is very low, the maximum expected sulfur dioxide emissions from this site are only 4 tons/year, and ground level SO<sub>2</sub> monitoring is very expensive. This type of expensive monitoring is not justifiable in light of a high margin of compliance and a low site-wide emission rate.

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**SO<sub>2</sub> Sources**

| <b>S# &amp; Description</b>   | <b>Emission Limit Citation</b> | <b>Federally Enforceable Emission Limit</b>  | <b>Monitoring</b> |
|---|--------------------------------|--|-------------------|
| A-3, A-4, and A-5<br>Landfill Gas Flares<br>And<br>S-12 and S-13<br>Microturbines<br>And<br>S-11 and S-14<br>Diesel Engines | BAAQMD 9-1-301                 | Property Line<br>Ground Level Limits:<br>≤ 0.5 ppm for 3 minutes,<br>AND<br>≤ 0.25 ppm for 60 minutes,<br>AND<br>≤ 0.05 ppm for 24 hours | None              |

The maximum expected sulfur dioxide emissions for this facility are summarized below followed by a summary of the landfill gas sulfur content data collected over the last three years. Detailed Emission calculations are presented after the tables.

**Maximum Expected SO<sub>2</sub> Emissions from Site # A2740**

| <b>Sources</b>    | <b>Description</b>     | <b>Fuel Sulfur Content</b> | <b>SO<sub>2</sub> Emissions Tons/Year</b> |
|-------------------|------------------------|----------------------------|---|
| A-3, A-4, and A-5 | Landfill Gas Flares    | 62 ppmv of TRS in LFG      | 3.662                                     |
| S-12 and S-13     | Microturbines          | 62 ppmv of TRS in LFG      | 0.305                                     |
| S-11 and S-14     | Diesel Engines         | .05% S in CARB Diesel Oil  | 0.008                                     |
| Total             | All Combustion Sources |                            | 3.975                                     |

**Landfill Gas Sulfur Content Data for Site # A2740**

| <b>Date</b> | <b>Location</b> | <b>Total Sulfur Analysis ppm</b> | <b>Sulfur Content as H<sub>2</sub>S ppm</b> |
|-------------|-----------------|----------------------------------|---|
| 1/3/2005    | Flare Station   | ND                               | ND  |
| 4/6/2005    | Flare Station   | ND                               | ND  |
| 7/1/2005    | Flare Station   |                                  | 40  |
| 10/4/2005   | Flare Station   |                                  | 25  |
| 7/5/2006    | Flare Station   | ND                               | 15  |
| 10/2/2006   | Flare Station   | ND                               | 0   |
| 1/2/2007    | Flare Station   | 10                               | 4   |
| 4/2/2007    | Flare Station   | 0                                | 16  |
| 7/3/2007    | Flare Station   | ND                               | 18  |
| 10/1/2007   | Flare Station   | ND                               | 10  |
| 1/2/2008    | Flare Station   | <100                             | 16  |
| 4/2/2008    | Flare Station   | 5                                | 18  |
| Average     |                 |                                  | 16.2  |

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Potential to Emit Calculations for the A-3, A-4, and A-5 Landfill Gas Flares:

For the Landfill Gas Flares, maximum potential sulfur dioxide (SO<sub>2</sub>) emissions were previously based on the maximum allowable total reduced sulfur compound concentration (1300 ppmv as H<sub>2</sub>S) and the maximum permitted landfill gas flow rate to the flares. The three flares (A-3, A-4, and A-5) have a maximum combined heat input rate of 129 MM BTU/hour, which is equivalent to the maximum permitted flow rate of 4200 scfm of landfill gas at 50% methane. Based on these assumptions, maximum potential SO<sub>2</sub> emissions from the flares were determined to be:

$$\begin{aligned} & (4200 \text{ ft}^3 \text{ LFG/min}) * (60 \text{ min/hr}) * (24 \text{ hrs/day}) * (365 \text{ days/year}) * \\ & (1300 \text{ ft}^3 \text{ S/1E6 ft}^3 \text{ LFG}) / (387.006 \text{ ft}^3 \text{ S/lbmol S}) * (1 \text{ lbmol SO}_2 / 1 \text{ lbmol S}) * \\ & (64.06 \text{ lbs SO}_2 / \text{lbmol SO}_2) / (2000 \text{ lbs SO}_2 / \text{ton SO}_2) \\ & = 237.5 \text{ tons/year of SO}_2 \text{ from the three flares combined} \end{aligned}$$

However, the site only collected an average of 1358 scfm of landfill gas in 2007 with an average concentration of 47.5% methane (equivalent to 38.5 MM BTU/hour), and landfill gas generation rates are declining for this closed landfill. This site has been monitoring hydrogen sulfide on a quarterly basis since July 2004. The concentrations ranged from 0-40 ppmv of H<sub>2</sub>S with an average of 16.2 ppmv and a standard deviation of 11.8 ppmv for 10 tests. The maximum expected H<sub>2</sub>S concentration is estimated as follows (average + 3 std. dev.) = (16.2 + 3\*11.8) = 51.6 ppmv. For landfills, the typical TRS/H<sub>2</sub>S ratio is about 1.2 to 1. Thus, the TRS concentration is expected to be no more than (51.6\*1.2) = 62 ppmv of TRS expressed as H<sub>2</sub>S. The landfill gas at this site has an average concentration of 47.5% CH<sub>4</sub>, an average heat content 472.1 BTU/scf, and an average flue gas generation rate of 4.595 sdcf flue gas/sdcf LFG. The maximum expected sulfur dioxide emissions and maximum projected outlet SO<sub>2</sub> concentration for the flares are determined below using site-specific landfill gas flow rate and sulfur content data.

$$\begin{aligned} & (1358 \text{ ft}^3 \text{ LFG/min}) * (60 \text{ min/hr}) * (24 \text{ hrs/day}) * (365 \text{ days/year}) * \\ & (62 \text{ ft}^3 \text{ S/1E6 ft}^3 \text{ LFG}) / (387.006 \text{ ft}^3 \text{ S/lbmol S}) * (1 \text{ lbmol SO}_2 / 1 \text{ lbmol S}) * \\ & (64.06 \text{ lbs SO}_2 / \text{lbmol SO}_2) / (2000 \text{ lbs SO}_2 / \text{ton SO}_2) \\ & = 3.662 \text{ tons/year of SO}_2 \text{ from the three flares combined} \end{aligned}$$

$$\begin{aligned} & (62 \text{ scf H}_2\text{S/MM scf LFG}) * (1 \text{ scf SO}_2 / 1 \text{ scf H}_2\text{S}) / (4.595 \text{ MM sdcf flue gas/MM scf LFG}) \\ & = 13 \text{ ppmv of SO}_2 \text{ in flue gas from A-3, A-4, or A-5 with 0\% excess O}_2 \end{aligned}$$

Potential to Emit Calculations for the S-12 and S-13 Microturbines:

For the microturbines (S-12 and S-13), the maximum heat input rate is 1.6 MM BTU/hour per microturbine. The microturbines are fueled by landfill gas. The landfill gas has the same properties as described above for the flares: average of 47.5% CH<sub>4</sub>, maximum of 62 ppmv of TRS, average of 472.1 BTU/scf of LFG, and 4.595 sdcf flue gas/sdcf of LFG at 0% excess air. Therefore, the maximum landfill gas flow rate to each microturbine is 56.5 scfm (113 scfm total) of landfill gas containing 47.5% CH<sub>4</sub>. The maximum expected SO<sub>2</sub> emissions from these microturbines are:

$$(113 \text{ ft}^3 \text{ LFG/min}) * (60 \text{ min/hr}) * (24 \text{ hrs/day}) * (365 \text{ days/year}) *$$

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$$\begin{aligned} & (62 \text{ ft}^3 \text{ S}/1\text{E}6 \text{ ft}^3 \text{ LFG})/(387.006 \text{ ft}^3 \text{ S}/\text{lbmol S})*(1 \text{ lbmol SO}_2/1 \text{ lbmol S})* \\ & (64.06 \text{ lbs SO}_2/\text{lbmol SO}_2)/(2000 \text{ lbs SO}_2/\text{ton SO}_2) \\ & = 0.305 \text{ tons/year of SO}_2 \text{ from the two microturbines combined} \end{aligned}$$

$$\begin{aligned} & (62 \text{ scf H}_2\text{S}/\text{MM scf LFG})*(1 \text{ scf SO}_2/1 \text{ scf H}_2\text{S})/(4.595 \text{ MM scf flue gas}/\text{MM scf LFG}) \\ & = 13 \text{ ppmv of SO}_2 \text{ in flue gas from S-12 or S-13 with 0\% excess O}_2 \end{aligned}$$

Potential to Emit Calculations for the S-11 and S-14 Diesel Engines:

Maximum potential SO<sub>2</sub> emissions from these diesel engines are based on the CARB maximum allowable fuel sulfur content limit of 0.05% sulfur by weight. The diesel oil is assumed to have a density of 7.1 pound/gallon and a high heating value of 137,000 BTU/gallon. Per EPA, diesel oil produces 9190 dscf of flue gas per MM BTU.

Based on the engine manufacturer's data for S-11, the engine capacity is 207 bhp with a maximum fuel flow rate of 10.6 gallons/hour and a maximum exhaust gas flow rate of 1515 ft<sup>3</sup>/min (wet) at 1055 °F (519 scfm).

$$\begin{aligned} & (10.6 \text{ gallons diesel}/\text{hour})*(7.1 \text{ lbs diesel}/\text{gallon diesel})*(0.0005 \text{ lbs S}/\text{lb diesel})/ \\ & (32.06 \text{ lbs S}/\text{lbmol S})*(1 \text{ lbmol SO}_2/1 \text{ lbmol S})*(64.06 \text{ lbs SO}_2/\text{lbmol SO}_2) \\ & = 0.0752 \text{ lbs SO}_2/\text{hour from S-11 Diesel Engine} \end{aligned}$$

$$\begin{aligned} & (0.0752 \text{ lbs SO}_2/\text{hour})*(30 \text{ hours}/\text{year})/(2000 \text{ lbs SO}_2/\text{ton SO}_2) \\ & = 0.001 \text{ tons SO}_2/\text{year from S-11 Diesel Engine} \end{aligned}$$

$$\begin{aligned} & (0.0752 \text{ lbs SO}_2/\text{hr})/(60 \text{ min}/\text{hr})/(64.06 \text{ lbs SO}_2/\text{lbmol SO}_2)*(387.006 \text{ scf SO}_2/\text{lbmol SO}_2)/ \\ & (519 \text{ scf exhaust}/\text{min})*(1 \text{ E}6 \text{ scf}/\text{MM scf}) \\ & = 15 \text{ ppmv of SO}_2 \text{ in exhaust from S-11 Diesel Engine} \end{aligned}$$

Based on the engine manufacturer's data for S-14, the engine capacity is 469 bhp with a maximum fuel flow rate of 19.8 gallons/hour and a typical exhaust gas flow rate of 2190 ft<sup>3</sup>/min (wet) at 822 °F (887 scfm).

$$\begin{aligned} & (19.8 \text{ gallons diesel}/\text{hour})*(7.1 \text{ lbs diesel}/\text{gallon diesel})*(0.0005 \text{ lbs S}/\text{lb diesel})/ \\ & (32.06 \text{ lbs S}/\text{lbmol S})*(1 \text{ lbmol SO}_2/1 \text{ lbmol S})*(64.06 \text{ lbs SO}_2/\text{lbmol SO}_2) \\ & = 0.1404 \text{ lbs SO}_2/\text{hour from S-14 Diesel Engine} \end{aligned}$$

$$\begin{aligned} & (0.1404 \text{ lbs SO}_2/\text{hour})*(100 \text{ hours}/\text{year})/(2000 \text{ lbs SO}_2/\text{ton SO}_2) \\ & = 0.007 \text{ tons SO}_2/\text{year from S-14 Diesel Engine} \end{aligned}$$

$$\begin{aligned} & (0.1404 \text{ lbs SO}_2/\text{hr})/(60 \text{ min}/\text{hr})/(64.06 \text{ lbs SO}_2/\text{lbmol SO}_2)*(387.006 \text{ scf SO}_2/\text{lbmol SO}_2)/ \\ & (887 \text{ scf exhaust}/\text{min})*(1 \text{ E}6 \text{ scf}/\text{MM scf}) \\ & = 16 \text{ ppmv of SO}_2 \text{ in exhaust from S-14 Diesel Engine} \end{aligned}$$

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BAAQMD Regulation 9-1-301: This facility is subject to federally enforceable limits that will ensure compliance with the Regulation 9-1-302 gas stream emission limit of 300 ppmv of SO<sub>2</sub> by ratios of 23:1 for each of the three flares (A-3, A-4, and A-5) and the two microturbines (S-12 and S-13), 20:1 for the S-11 engine and 19:1 for the S-14 engine. Based on modeling analyses conducted at another landfill site, sources complying with the Regulation 9-1-302 and 9-1-304 limits are not expected to result in excesses of the ground level concentration limits listed in Regulation 9-1-301. In addition, the maximum expected SO<sub>2</sub> emissions from this site are not substantial (<4 tons/year of SO<sub>2</sub>) and ground level SO<sub>2</sub> monitoring is very expensive. Considering all these factors (high likelihood of compliance, low emissions, and high cost of monitoring), the District has determined that ground level SO<sub>2</sub> monitoring to demonstrate compliance with the Regulation 9-1-301 limits is unnecessary and not warranted for this facility.

BAAQMD Regulation 9-1-302: This regulation applies to the A-3, A-4 and A-5 Landfill Gas Flares and to the S-12 and S-13 Microturbines. It limits the sulfur dioxide concentration in the outlet gas stream to 300 ppmv of SO<sub>2</sub>. Initially, the District imposed quarterly landfill gas sulfur content testing with the initial issuance of the Title V permit for this facility, because there was no landfill gas sulfur data for this site and the maximum potential sulfur dioxide emissions were significant. A landfill gas sulfur content limit of 1300 ppmv of TRS was imposed to ensure compliance with the 9-1-302 outlet SO<sub>2</sub> concentration limit.

The facility has now collected more than 3 years of quarterly landfill gas sulfur data for this site. The reduced sulfur compounds in the landfill gas at this site consist almost entirely of hydrogen sulfide. The hydrogen sulfide content in the collected gas ranges from 0-40 ppmv of H<sub>2</sub>S, with an average of 16 ppmv of H<sub>2</sub>S and a standard deviation of 12 ppmv of H<sub>2</sub>S. Based on this data, the sulfur concentration in the landfill gas at this site is not ever expected to exceed 62 ppmv of TRS, which is less than 5% of the limit. The maximum sulfur dioxide outlet concentration is 13 ppmv of SO<sub>2</sub> at 0% O<sub>2</sub> with a compliance margin of at least 23:1. The maximum expected sulfur dioxide emissions from this site are now less than 4 tons/year. Considering the high compliance margin with the SO<sub>2</sub> outlet concentration limit and the low SO<sub>2</sub> emissions from the flares and microturbines, the continued expense of quarterly sulfur content monitoring is not justifiable, especially given that the landfill has been closed for many years, and the sulfur dioxide emissions will continue to decrease as gas generation declines. Therefore, the District is proposing to reduce the sulfur content testing frequency to once per year. The facility may choose either to test the flares for outlet SO<sub>2</sub> directly or to analyze the landfill gas for the sulfur compounds listed in AP-42 Chapter 2.4. Since the microturbines and flares are burning the same fuel and the microturbines are only burning a small fraction of the landfill gas at this site, no source testing requirement is proposed for the microturbines.

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**PM Discussion:**

All combustion devices at this facility will emit particulate matter and are subject to the Regulation 6-1-310 outlet grain loading limit of 0.15 grains/dscf. As discussed below, the District has not been conducting particulate emission testing at these combustion devices due to a high compliance margin compared to this limit, the low particulate emission rates from these devices, and the high cost of particulate emission testing.

**PM Sources**

| <b>S# &amp; Description</b>   | <b>Emission Limit Citation</b> | <b>Federally Enforceable Emission Limit</b> | <b>Monitoring</b> |
|---|--------------------------------|---|-------------------|
| A-3, A-4, and A-5<br>Landfill Gas Flares<br>And<br>S-12 and S-13<br>Microturbines<br>And<br>S-11 and S-14<br>Diesel Engines | BAAQMD 6-1-310                 | 0.15 grains/dscf                            | None              |

The maximum expected particulate emissions for this facility are summarized below followed by detailed emission calculations.

**Maximum Expected PM<sub>10</sub> Emissions from Site # A2740**

| <b>Sources</b>    | <b>Description</b>     | <b>Fuel</b>     | <b>PM<sub>10</sub> Emissions Tons/Year</b> |
|-------------------|------------------------|-----------------|--|
| A-3, A-4, and A-5 | Landfill Gas Flares    | Landfill Gas    | 2.884                                      |
| S-12 and S-13     | Microturbines          | Landfill Gas    | 0.378                                      |
| S-11 and S-14     | Diesel Engines         | CARB Diesel Oil | 0.010                                      |
| Total             | All Combustion Sources |                 | 3.272                                      |

Potential to Emit Calculations for the A-3, A-4, and A-5 Landfill Gas Flares:

Maximum permitted PM emissions for A-3, A-4, and A-5 are based on the AP-42 emission factor for landfill gas fired flares (17 lbs PM<sub>10</sub>/MM dscf of methane). As discussed for the sulfur dioxide calculations above, the landfill gas is assumed to contain 47.5% methane with an HHV of 472.1 BTU/scf LFG. This landfill gas (47.5% CH<sub>4</sub>) produces 4.595 scf of exhaust at 0% oxygen per scf of landfill gas burned.

$$(17 \text{ lbs PM}_{10}/\text{MM dscf CH}_4) * (1 \text{ MM dscf CH}_4/1\text{E}6 \text{ scf CH}_4) * (0.475 \text{ scf CH}_4/\text{scf LFG}) / (472.1 \text{ BTU}/\text{scf LFG}) * (1\text{E}6 \text{ BTU}/\text{MM BTU}) = 0.0171 \text{ lbs PM}_{10}/\text{MM BTU}$$

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$$\begin{aligned} & (129 \text{ MM BTU/hour}) * (24 \text{ hours/day}) * (365 \text{ days/year}) * (0.0171 \text{ lbs PM}_{10}/\text{MM BTU}) / \\ & (2000 \text{ lbs PM}_{10}/\text{ton PM}_{10}) \\ & = 9.662 \text{ tons PM}_{10}/\text{year from A-3, A-4, and A-5 Flares} \end{aligned}$$

As discussed for SO<sub>2</sub> emissions, the flares cannot possibly achieve this maximum flow rate because the landfill gas generation rate is declining. The maximum heat input rate for the flares, based on the maximum collection rate of 1358 scfm of landfill gas, is 38.5 MM BTU/hour. Maximum expected PM<sub>10</sub> emissions from the flares are therefore:

$$\begin{aligned} & (38.5 \text{ MM BTU/hour}) * (24 \text{ hours/day}) * (365 \text{ days/year}) * (0.0171 \text{ lbs PM}_{10}/\text{MM BTU}) / \\ & (2000 \text{ lbs PM}_{10}/\text{ton PM}_{10}) \\ & = 2.884 \text{ tons PM}_{10}/\text{year from A-3, A-4, and A-5 Flares} \end{aligned}$$

$$\begin{aligned} & (0.0171 \text{ lbs PM}_{10}/\text{MM BTU}) * (7000 \text{ grains PM/lb PM}) / (1\text{E}6 \text{ BTU/MM BTU}) * \\ & (472.1 \text{ BTU/scf LFG}) / (4.595 \text{ dscf exhaust/scf LFG}) \\ & = 0.012 \text{ grains/dscf exhaust at 0\% O}_2 \text{ from A-3, A-4, and A-5 Flares} \end{aligned}$$

Potential to Emit Calculations for the S-12 and S-13 Microturbines:

From Application # 15608, maximum permitted PM emissions for S-12 and S-13 were based on the Regulation 6-1-310 limit with an equivalent emission rate of 0.2164 pounds of PM<sub>10</sub>/MM BTU. The vendor stated that these microturbines would emit no more than 0.027 lbs PM<sub>10</sub>/MM BTU. The AP-42 emission factor for landfill gas fired turbines is 22 lbs PM<sub>10</sub>/MM dscf of methane (0.022 lbs PM<sub>10</sub>/MM BTU).

For the two microturbines (3.2 MM BTU/hour combined capacity), maximum permitted PM<sub>10</sub> emissions are:

$$\begin{aligned} & (3.2 \text{ MM BTU/hour}) * (24 \text{ hours/day}) * (365 \text{ days/year}) * (0.2164 \text{ lbs PM}_{10}/\text{MM BTU}) / \\ & (2000 \text{ lbs PM}_{10}/\text{ton PM}_{10}) \\ & = 3.033 \text{ tons PM}_{10}/\text{year from S-12 and S-13 Microturbines} \end{aligned}$$

However, this maximum permitted level is far above both the AP-42 emission factor and the vendor's maximum emission rate. Maximum expected PM<sub>10</sub> emissions from the microturbines will be based on the vendor's emission guarantee.

$$\begin{aligned} & (3.2 \text{ MM BTU/hour}) * (24 \text{ hours/day}) * (365 \text{ days/year}) * (0.027 \text{ lbs PM}_{10}/\text{MM BTU}) / \\ & (2000 \text{ lbs PM}_{10}/\text{ton PM}_{10}) \\ & = 0.378 \text{ tons PM}_{10}/\text{year from S-12 and S-13 Microturbines} \end{aligned}$$

$$\begin{aligned} & (0.027 \text{ lbs PM}_{10}/\text{MM BTU}) * (7000 \text{ grains PM/lb PM}) / (1\text{E}6 \text{ BTU/MM BTU}) * \\ & (472.1 \text{ BTU/scf LFG}) / (4.595 \text{ dscf exhaust/scf LFG}) \\ & = 0.087 \text{ grains/dscf exhaust at 0\% O}_2 \text{ from S-12 and S-13 Microturbines} \end{aligned}$$

Potential to Emit Calculations for the S-11 and S-14 Diesel Engines:

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Maximum permitted PM emissions for S-11 are based on the CARB Certified Emission Factor of 0.4 grams/bhp-hour (8.82E-4 pounds/bhp-hour) for this Cummins IC engine firing diesel oil. As discussed for the sulfur dioxide calculations above, the engine capacity is 207 bhp, the maximum exhaust flow rate is 519 scdf/min, and the engine is limited to 30 hrs/year of operation for reliability related testing.

$$(207 \text{ bhp}) * (8.82\text{E-}4 \text{ lbs PM}_{10}/\text{bhp-hr}) * (30 \text{ hrs/yr}) / (2000 \text{ lbs PM}_{10}/\text{ton PM}_{10}) \\ = 0.003 \text{ tons PM}_{10}/\text{year from S-11 Diesel Engine}$$

$$(207 \text{ bhp}) * (8.82\text{E-}4 \text{ lbs PM}_{10}/\text{bhp-hr}) * (7000 \text{ grains PM}_{10}/\text{lb PM}_{10}) / (60 \text{ min/hr}) / (519 \text{ scdf/min}) \\ = 0.041 \text{ grains/dscf exhaust from S-11 Diesel Engine}$$

Maximum permitted PM emissions for S-14 are based on the CARB Certified Emission Factor of 0.15 grains/bhp-hour (3.31E-4 pounds/bhp-hour) for this IC engine firing diesel oil. As discussed for the sulfur dioxide calculations above, the engine capacity is 469 bhp, the typical exhaust flow rate is 887 scdf/min, and the engine is limited to 100 hrs/year of operation for reliability related testing.

$$(469 \text{ bhp}) * (3.31\text{E-}4 \text{ lbs PM}_{10}/\text{bhp-hr}) * (100 \text{ hrs/yr}) / (2000 \text{ lbs PM}_{10}/\text{ton PM}_{10}) \\ = 0.008 \text{ tons PM}_{10}/\text{year from S-14 Diesel Engine}$$

$$(469 \text{ bhp}) * (3.31 \text{ E-}4 \text{ lbs PM}_{10}/\text{bhp-hr}) * (7000 \text{ grains PM}_{10}/\text{lb PM}_{10}) / (60 \text{ min/hr}) / (887 \text{ scdf/min}) \\ = 0.020 \text{ grains/dscf exhaust from S-14 Diesel Engine}$$

BAAQMD Regulation 6-1-310: Regulation 6-1-310 limits filterable particulate (FP) emissions from any source to 0.15 grains per dry standard cubic foot (gr/dscf) of exhaust volume. As shown above, A-3, A-4, and A-5 will emit 0.012 gr/dscf of exhaust at 0% oxygen; S-12 and S-13 will emit 0.087 gr/dscf of exhaust at 0% oxygen; and S-11 and S-14 will emit 0.041 and 0.020 gr/dscf of exhaust, respectively. The compliance ratios (limit/expected grain loading rate) are 12.5:1 for the flares; 1.7:1 for the microturbines; 3.7:1 for S-11, and 7.5:1 for S-14.

For A-3, A-4, and A-5, the likelihood of compliance is high and PM<sub>10</sub> emissions are low. Considering these factors and the high cost of PM<sub>10</sub> stack testing, it would not be appropriate to add periodic PM monitoring at the flares for the Regulation 6-1-310 standard. The fuel filter for A-3, A-4, and A-5 and the minimum temperature requirement will ensure that flare PM<sub>10</sub> emissions do not exceed the low PM<sub>10</sub> emission rate determined above. This decision is consistent with the “no additional monitoring” recommendation for flares burning landfill gas containing less than 200 ppmv of sulfur compounds from the CAPCOA/CARB/EPA Region IX Periodic Monitoring Recommendations for Generally Applicable Requirements in SIP: Combustion Sources (see source category I.B.4).

For S-12 and S-13, the likelihood of compliance is not particularly high, but the PM<sub>10</sub> emissions are very low (< 0.4 tons/year combined). Thus, the consequences of non-compliance are not significant. Considering the insignificant consequences of non-compliance and the very high

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cost of PM<sub>10</sub> testing, it would not be appropriate to add periodic PM monitoring at the microturbines for the Regulation 6-1-310 standard. This decision is consistent with the “no additional monitoring” recommendation for gas turbines burning landfill gas containing less than 200 ppmv of sulfur compounds from the CAPCOA/CARB/EPA Region IX Periodic Monitoring Recommendations for Generally Applicable Requirements in SIP: Combustion Sources (see source category I.B.2).

For S-11 and S-14, the likelihood of compliance is not particularly high, but the PM<sub>10</sub> emissions from S-11 and S-14 are very low (< 0.01 tons/year combined). Thus, the consequences of non-compliance are not significant. In addition, the engines are only allowed to operate for 30 and 100 hours/year respectively for reliability-related activities and emissions testing. Considering the insignificant consequences of non-compliance, the low annual operating time for these engines, and the very high cost of PM<sub>10</sub> testing for IC engines, it would not be appropriate to add periodic PM monitoring at the engines for the Regulation 6-1-310 standard. This decision is consistent with the “no additional monitoring” recommendation for non-utility emergency standby engines that are limited to 200 hours/year or less of operation for maintenance and testing from the CAPCOA/CARB/EPA Region IX Periodic Monitoring Recommendations for Generally Applicable Requirements in SIP: Combustion Sources (see source category II.A.1).

Changes to Permit, Section VII:

- A note is being added at the beginning of the section to clarify that this section is a summary of the limits and monitoring, and that in the case of a conflict between Sections I-VI and Section VII, the preceding sections take precedence.
- Throughout Tables VII-A and VII-B, the District is correcting permit condition part number citations in accordance with the proposed revisions to Condition # 16065 and the replacement of Conditions # 19210 and #21195 with Condition #24175 that are discussed above in Section VI.
- In Tables VII-A, VII-B, and VII-C, the District is adding symbols (<, ≤, >, and ≥) to clarify limits.
- In Tables VII-A, VII-B, and VII-C, the District is correcting references to Regulation 6 requirements pursuant to recent amendments to this rule.
- As discussed in Section VI, the District is proposing to delete the redundant gas flow rate limit in Condition #16065, Part 8 from Table VII-A.
- For the flare sulfur dioxide limit in Table VII-A, the District is adding an optional annual source test pursuant to proposed Condition #16065, Part 13g. This testing is not required if the site tests for landfill gas sulfur content instead.
- For the landfill gas sulfur content limit in Table VII-A, the District is deleting the quarterly Draeger tube monitoring for H<sub>2</sub>S and replacing it with an annual laboratory analysis pursuant to the proposed changes to Condition #16065, Parts 12 and 14.
- In Table VII-C, for S-12 and S-13 Microturbines, compliance with the SO<sub>2</sub> limit in 9-1-302 may be demonstrated by annual sulfur analysis of landfill gas at the flare station. Retesting at the microturbine is not required.

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- Pursuant to the proposed changes to Conditions #16065, Parts 9 and 10, the District is adding the appropriate NO<sub>x</sub> and CO RACT emission rate limits and is clarifying the applicability of the NO<sub>x</sub> and CO concentration limits.
- As discussed in Section VI, the District is proposing to delete the vinyl chloride limit at the flare exhaust in accordance with the proposed removal of Condition #16065, Part 11.
- The District is combining Tables VII-B and VII-D into Table VII-B.
- In Table VII-B, the District is clarifying the BAAQMD Regulation 9-1-304 sulfur content limit for diesel fuel.
- The District is adding the CARB ATCM requirement to use CARB Diesel Fuel and identifying the current diesel fuel sulfur content limits for CARB Diesel Fuel.
- In Table VII-B for S-11, the obsolete 100 hour/year operating time limit for reliability-related testing is being replaced with the CARB ATCM limit of 30 hours/year for engines with PM emission rates between 0.15 and 0.40 g/bhp-hour.
- The District is adding the appropriate operating time limits for reliability related testing at S-14 to Table VII-B. The current 100 hour/year operating time limit for reliability-related testing (Regulation 9-8-330.2) will remain in effect, due to an applicable CARB ATCM exemption for this engine, until January 1, 2012. Effective 1/1/2012, Regulation 9-8-330.3 limits reliability-related testing to 50 hour/year for S-14.
- The District is deleting all of Table VII-D. As discussed for Table VII-B, the District is combining the requirements for S-14 into Table VII-B.

### **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.

#### Changes to Permit, Section VIII:

- The introductory text to Section VIII is being corrected.
- In Table VIII, the District is correcting citations and adding the missing EPA reference methods for Regulation 6, Rule 1 requirements.
- The District is clarifying the description of the Regulation 9-1-304 limit.
- The District is adding a CARB test method for sulfur content in diesel fuel.
- The District is deleting the Condition # 16065, Part 8 gas flow rate limit and Part 11 vinyl chloride limit that are being deleted from Section VI.
- For Condition #16065, Part 12, the District is replacing the Draeger tube test method with the appropriate BAAQMD MOP and EPA test methods for analyzing sulfur compounds in a gas.
- Throughput Table VIII, the District is adding the missing EPA reference methods for NO<sub>x</sub>, CO, and SO<sub>2</sub> limits.

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## **IX. Permit Shield:**

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

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

This facility has no permit shields. This permit has no streamlining.

### Changes to Permit, Section IX:

- The District is not proposing any changes to this section.

## **X. Revision History**

This section of the permit summarizes each revision to the permit.

### Changes to Permit, Section X:

- The District is adding the permit revisions associated with this MFR Renewal Permit (Application #17127) to Section X.

## **XI. Glossary**

This section of the permit defines and explains acronyms, abbreviations, and other terms that are used in this permit.

### Changes to Permit, Section XI:

- The District is updating the Section XI Glossary by clarifying explanations and adding numerous new terms.

## **XII. Applicable State Implementation Plan**

### Changes to Permit, Section XII:

- The District is deleting this section. The address for EPA's website is now found in Sections III and IV.

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#### **D. ALTERNATIVE OPERATING SCENARIOS**

No alternate operating scenarios have been requested for this facility.

#### **E. COMPLIANCE STATUS**

A February 19, 2009 office memorandum from the Director of Compliance and Enforcement, to the Director of Permit Services, presents a review of the compliance record of City of Mountain View (Shoreline) (Site # A2740). This review was initiated as part of the District evaluation of an application for renewal of a Title V permit and is contained in Appendix A.

The Compliance and Enforcement Division staff has reviewed the compliance history for City of Mountain View (Shoreline) for the prior five-year permit term 1/1/2004 to 12/31/2008 and has reviewed the Annual Compliance Certifications for this facility submitted between 1/1/2004 to 12/31/2008. Most recently, the owner certified that all equipment was operating in compliance on 12/13/07. The Compliance and Enforcement Division staff found no on-going non-compliance and no recurring pattern of violations.

The Compliance and Enforcement Division staff also reviewed the compliance history for this site for the prior 12-month period (from 1/1/2008 to 12/31/2008). During this period, activities known to the District include:

- The District did not issue any Notices of Violation.
- The District did not receive any air pollution complaints alleging City of Mountain View (Shoreline) as the source.
- The District did not receive any notifications of a Reportable Compliance Activity (RCA) during this period.
- The facility is not operating under an Enforcement Agreement, a Variance, or an Order of Abatement.

The Compliance and Enforcement Division has determined that for the periods reviewed, City of Mountain View (Shoreline) was in continuous compliance. There is no evidence of on-going non-compliance and no recurring pattern of violations that would warrant consideration of a Title V permit compliance schedule.

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## **F. DIFFERENCES BETWEEN THE APPLICATION AND THE PROPOSED PERMIT**

The Title V permit application for renewal was originally submitted on December 17, 2007. No permit changes have been proposed since that date. The July 28, 2003 version of the Title V permit for Site # A2740 is the basis for constructing the proposed Title V permit.

The changes specifically requested by the applicant are as follows:

- Source S-1: Landfill and Gas Collection System; and Abatement Devices A-3, A-4, and A-5: Landfill Gas Flares (Condition #16065 and Table VII-A)
  - Part 2a: Request to clarify that operation of the microturbines (Sources S-12 and S-13) to abate LFG is optional, not required.
  - Part 4: Request to clarify that redrilling/replacement of an existing well does not require an Authority to Construct provided the replacement well is close to the location of the existing well.
  - Part 5: Request the addition of a few wells to the list of wells that have been granted alternative temperature and/or nitrogen/oxygen limits. Specifically:
    - Part 5a: Add well VJ-04A
    - Part 5b: Add wells NEB-07, NEB-14, NED-01, WA-02, WA-15, and WA-24
  - Part 9: Request that pounds per million BTUs (lb/MMBTU) emission limits be added, as alternative compliance limits, to the ppmv limits already listed in the Part. This modification could allow the flare to remain in compliance even if the ppmv limit is exceeded. The request is to have the limits revised to include the lb/MMBTU values from which the ppmv limits are derived.
    - For A-3: If the NO<sub>x</sub> limit of 33 ppmv is exceeded, the flare would remain in compliance if source test results indicate a NO<sub>x</sub> emission rate of 0.13 lb/MMBTU or less.
    - For A-4: If the NO<sub>x</sub> limit of 15 ppmv is exceeded, the flare would remain in compliance if source test results indicate a NO<sub>x</sub> emission rate of 0.06 lb/MMBTU or less (District RACT standard);
    - For A-5: If the NO<sub>x</sub> limit of 15 ppmv is exceeded, the flare would remain in compliance if source test results indicate a NO<sub>x</sub> emission rate of 0.06 lb/MMBTU or less (District RACT standard);
  - Part 10: Request that pounds per million BTUs (lb/MMBTU) emission limits be added, as alternative compliance limits, to the ppmv limits already listed in the Part. This modification could allow the flare to remain in compliance even if the ppmv limit is exceeded. The request is to have the limits revised to include the lb/MMBTU values from which the ppmv limits are derived, as follows:
    - For A-3: If the CO limit of 83 ppmv is exceeded, the flare would remain in compliance if source test results indicate a CO emission rate of 0.20 lb/MMBTU or less (District RACT standard);
    - For A-4: If the CO limit of 83 ppmv is exceeded, the flare would remain in compliance if source test results indicate a CO emission rate of 0.20 lb/MMBTU or less (District RACT standard);

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- For A-5: If the CO limit of 83 ppmv is exceeded, the flare would remain in compliance if source test results indicates a CO emission rate of 0.20 lb/MMBTU or less (District RACT standard);
- Sources S-11 and S-14, Diesel Engines for Emergency Standby Generators: (Conditions #19210 and 21195, and Tables VII-B and D).
    - The applicant requested that these two sources be consolidated in the revised Title V Permit under one set of conditions.

The District has incorporated all of the applicants requested changes into the proposed MFR Permit. Although the applicant did not specifically request changes to the Facility Contact information, new data for this individual was included on the Title V application forms submitted by the applicant. The proposed revisions to the Facility Contact are identified on the Title Page. In addition to these changes, the District has proposed numerous updates to standard permit language, regulatory descriptions, and regulatory amendment dates throughout the MFR Permit (in Sections I, III, IV, VII, VIII, and XI and in Tables III, IV-A, IV-B, IV-C, VII-A, VII-B, VII-C, and VIII) to reflect regulatory changes, to clarify limits and other applicable requirements, to explain permit terminology, and to correct permit errors. The proposed changes to the standard text in Sections III and IV make Section XII of this permit obsolete. Therefore, the District is proposing to delete Section XII from the permit and from the Table of Contents.

After reviewing the source-specific permit conditions, flare source test data, landfill gas sulfur content monitoring data, and the new applicable regulations for the standby engines, the District has decided to make several additional permit condition revisions that are intended to eliminate obsolete or unnecessary requirements, clarify limits and monitoring procedures, include new applicable limits, and identify missing test methods. The District's additional proposed source-specific permit changes are described below.

- Source S-1: Landfill and Gas Collection System; and Abatement Devices A-3, A-4, and A-5: Landfill Gas Flares (Condition #16065, Tables IV-A, VII-A, VIII)
  - Part 4: In addition to the applicant's requested change, the District clarified that non-replacement well changes are alterations that require a Change of Conditions rather than modifications that require an Authority to Construct.
  - Part 8: The District is deleting a redundant gas flow rate limit to the flares. This limit is equivalent to the combined maximum heat input capacity of the flares identified in Section II.
  - Parts 11 and 13: This District is deleting an unnecessary vinyl chloride limit at the flare exhaust and the associated vinyl chloride test in Part 13.
  - Parts 12, 13, and 14: This District is reducing the required landfill gas sulfur content monitoring frequency from quarterly to annual based on the low sulfur content found in this gas during the last three years. The District is deleting the Draeger tube monitoring procedures and requiring that the annual landfill gas sulfur measurement be conducted by laboratory analysis. As an alternative to this annual landfill gas sulfur analysis, the site will be allowed to monitor sulfur dioxide directly at the exhaust from the flares.

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- Part 15: The District is making editorial revisions to this part.
- All proposed revisions to Condition # 16065 are reflected in Tables IV-A, VII-A, and VIII.
- Sources S-11 and S-14, Diesel Engines for Emergency Standby Generators: (Conditions #19210, #21195, and #24175, and Tables IV-B, IV-D, VII-B, VII-D, and VIII).
  - The District is deleting Tables IV-D and VII-D, and all requirements for S-14 are being added to Tables IV-B and VII-B.
  - The District is adding the CARB ATCM for Stationary Compression Ignition Engines and the BAAQMD Regulation 9, Rule 8 requirements for S-11 and S-14 into Tables IV-B, VII-B, and VIII. The current CARB Diesel Fuel sulfur content limits and test methods are referenced in Table VII-B and Table VIII.
  - The District is replacing Condition #19210 for S-11 and #21195 for S-14 with Condition #24175 that will apply to both S-11 and S-14. The proposed text for Condition #24175 is based on standard template condition text that will ensure compliance with the new CARB ATCM. The District is also proposing to incorporate the new Regulation 9, Rule 8 requirements into this condition text and to identify the correct bases for each limit.
  - Part 1: The District is proposing to decrease the allowed annual operating time for reliability-related operations at S-11 from 100 hours per year to 30 hours per year, in accordance with the CARB ATCM limit for this engine. This limit is updated in Table VII-B.
  - Part 2: Since the S-14 engine qualifies for an exemption from the CARB ATCM operating time limit, the District is proposing to temporarily retain the currently allowed annual operating time of 100 hours per year for reliability-related operations at S-14. Effective 1/1/12, BAAQMD Regulation 9-8-330.3 will reduce this operating time limit to 50 hours per year. The CARB ATCM exemption and the applicable BAAQMD Regulation 9, Rule 8 limits are identified in the basis for Part 2. These new regulatory requirements for S-14 are also reflected in Tables IV-B, VII-B, and VIII.
  - Parts 3-5: This language includes standard condition text that will ensure compliance with other CARB ATCM operating restrictions, monitoring, and record keeping requirements that apply to both S-11 and S-14. One CARB ATCM requirement is that the S-11 and S-14 engines use CARB Diesel Fuel. For clarity, the sulfur content limits for CARB Diesel Fuel are being added to Table VII-B. The test method for this CARB fuel sulfur content limit is being added to Table VIII.
  - Part 5f: Records of vendor certified sulfur content are required for S-11 and S-14 to verify compliance with Regulation 9-1-304. These records will also show compliance with the non-federally enforceable CARB Diesel Fuel sulfur content limits.

Statement of Basis:  
Application #17127

Site A2740, City of Mountain View (Shoreline)  
2600 Shoreline Boulevard, Mountain View, CA 94043

Renewal of Title V Permit for City of Mountain View (Shoreline), Site # A2740

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APPENDIX A  
BAAQMD COMPLIANCE REPORT

APPENDIX B  
GLOSSARY

Renewal of Title V Permit for City of Mountain View (Shoreline), Site # A2740

Appendix B: Glossary

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**ACT**

Federal Clean Air Act

**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

**API**

American Petroleum Institute

**ARB**

Air Resources Board

**ASTM**

American Society for Testing and Materials

**ATC**

Authority to Construct

**ATCM**

Airborne Toxic Control Measure

**BAAQMD**

Bay Area Air Quality Management District

**BACT**

Best Available Control Technology

**BARCT**

Best Available Retrofit Control Technology

**Basis**

The underlying authority that allows the District to impose requirements.

**C1**

An organic chemical compound with one carbon atom, for example: methane

**C3**

An organic chemical compound with three carbon atoms, for example: propane

**C5**

An organic chemical compound with five carbon atoms, for example: pentane

Renewal of Title V Permit for City of Mountain View (Shoreline), Site # A2740

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**C6**

An organic chemical compound with six carbon atoms, for example: hexane

**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)

**CCR**

California Code of Regulations

**CEC**

California Energy Commission

**CEQA**

California Environmental Quality Act

**CEM**

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

**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.

**CH4 or CH<sub>4</sub>**

Methane

**CI**

Compression Ignition

**CIWMB**

California Integrated Waste Management Board

**CO**

Carbon Monoxide

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**CO2 or CO<sub>2</sub>**  
Carbon Dioxide

**CT**  
Combustion Zone Temperature

**Cumulative Increase**

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

**District**

The Bay Area Air Quality Management District

**E6, E9, E12**

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

**EG**

Emission Guidelines

**EO**

Executive Order

**EPA**

The federal Environmental Protection Agency.

**ETP**

Effluent Treatment Plant

**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.

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**FR**

Federal Register

**GDF**

Gasoline Dispensing Facility

**GLM**

Ground Level Monitor

**grains**

1/7000 of a pound

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

Hydrogen Sulfide

**H<sub>2</sub>SO<sub>4</sub> or H<sub>2</sub>SO<sub>4</sub>**

Sulfuric Acid

**H&SC**

Health and Safety Code

**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.

**Hg**

Mercury

**HHV**

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

**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 60 °F.

**Long ton**

2200 pounds

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**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.

**MSDS**

Material Safety Data Sheet

**MSW**

Municipal solid waste

**MTBE**

methyl tertiary-butyl ether

**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)

Renewal of Title V Permit for City of Mountain View (Shoreline), Site # A2740

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**NMOC**

Non-methane Organic Compounds (Same as NMHC)

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

Nitrogen Dioxide

**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

**PM<sub>10</sub> 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.

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**PV or P/V Valve**

Pressure/Vacuum Valve

**Regulated Organic Liquid**

“Regulated organic liquids” are those liquids which require permits, or which are subject to some regulation, when processed at a liquid-handling operation. For example, for refinery marine terminals, regulated organic liquids are defined as “organic liquids” in Regulation 8, Rule 44.

**RMP**

Risk Management Plan

**RWQCB**

Regional Water Quality Control Board

**S**

Sulfur

**SCR**

A “selective catalytic reduction” unit is an abatement device that reduces NO<sub>x</sub> concentrations in the exhaust stream of a combustion device. SCRs utilize a catalyst, which operates within a specific temperature range, and injected ammonia to promote the conversion of NO<sub>x</sub> compounds to nitrogen gas.

**Short ton**

2000 pounds

**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

**SO<sub>3</sub> or SO<sub>3</sub>**

Sulfur trioxide

**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.

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**TAC**

Toxic Air Contaminant (as identified by CARB)

**THC**

Total Hydrocarbons includes all NMHC plus methane (same as TOC).

**therm**

100,000 British Thermal Units

**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 includes all NMOC plus methane (same as THC).

**TPH**

Total Petroleum Hydrocarbons

**TRMP**

Toxic Risk Management Policy

**TRS**

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

**TSP**

Total Suspended Particulate

**TVP**

True Vapor Pressure

**VMT**

Vehicle Miles Traveled

**VOC**

Volatile Organic Compounds

**Symbols:**

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

Renewal of Title V Permit for City of Mountain View (Shoreline), Site # A2740

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**Units of Measure:**

|                 |   |                                    |
|-----------------|---|------------------------------------|
| atm             | = | atmospheres                        |
| bbl             | = | barrel of liquid (42 gallons)      |
| 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                               |
| in              | = | inches                             |
| kW              | = | kilowatts                          |
| lb              | = | pound                              |
| lbmol           | = | pound-mole                         |
| m <sup>2</sup>  | = | square meter                       |
| m <sup>3</sup>  | = | cubic meters                       |
| Mg              | = | mega grams                         |
| min             | = | minute                             |
| mm              | = | millimeter                         |
| MM              | = | million                            |
| MM BTU          | = | million BTU                        |
| M cf            | = | one thousand cubic feet            |
| MM cf           | = | one million cubic feet             |
| MW              | = | megawatts                          |
| 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                               |