Bay Area Air Quality Management District

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Permit Evaluation
and
Statement of Basis
for
MAJOR FACILITY REVIEW PERMIT

for

Republic Services Vasco Road
Facility #A5095

Facility Address:
4001 North Vasco Road
Livermore, CA 94550

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4001 North Vasco Road
Livermore, CA 94550

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Title V Statement of Basis

A. Background

This facility is subject to the Operating Permit requirements of Title V of the federal Clean Air Act, Part 70 of Volume 40 of the Code of Federal Regulations (CFR), and BAAQMD Regulation 2, Rule 6, Major Facility Review because it is a designated facility as defined by BAAQMD Regulation 2-6-204. The Emission Guidelines for Municipal Solid Waste Landfills (40 CFR Part 60, Subpart Cc) require the owner or operator of a landfill that is subject to this part and that has a design capacity of greater than or equal to 2.5 million 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).

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, record keeping 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 facility identifier is also considered to be the identifier for the permit.

B. Facility Description

Republic Services Vasco Road (Facility # A5095) is a regional solid waste disposal and recycling facility. The site includes the Vasco Road Landfill and Gas Collection System (S-1), a Pugmill (S-5), a Silo (S-6), a Non-Retail Gasoline Dispensing Facility (S-7), three Diesel Engines (S-8, S-9, and S-10), a Landfill Gas Flare (A-3), and a Baghouse (A-6).

The Vasco Road Landfill is a 323-acre Class III disposal site that accepts household, commercial, industrial, construction, and demolition wastes but does not accept any hazardous wastes. The maximum design capacity of the site is 31.65 million yd^3 (24.2 million m^3). Waste disposal began in 1963. As of December 31, 2002, the landfill had disposed of a total of 14.1 million tons of waste. The maximum amount of waste that will be placed in this landfill is estimated to be 23.8 million tons. Full capacity is expected to be reached in the year 2020.

The waste decomposition process generates landfill gas, which contains mainly methane, carbon dioxide, and small amounts of non-methane organic compounds (<1%) and sulfur compounds (<400 ppmv). Many of the non-methane compounds (NMOCs) found in landfill gas are precursor organic compounds (POC), and some NMOcs are hazardous air pollutants (HAP). Various local, state, and federal regulations require that landfill gas be collected and controlled to reduce POC and HAP emissions to the atmosphere. In order to meet these requirements, the landfill at this site is equipped with an active landfill gas collection system and a landfill gas control system.

Active landfill gas collection systems consist of perforated pipes that are buried in the refuse at numerous locations, solid pipes referred to as laterals and headers, and blowers. The perforated pipes are called horizontal collectors or vertical wells, depending on the orientation of the pipes within the refuse. The gas collection system at this site includes 5 horizontal collectors and 83 vertical wells. The solid pipes connect the horizontal collectors and vertical wells to the blowers. The blowers collect landfill gas by creating a vacuum in the buried refuse that draws landfill gas into the pipes. The blowers vent this collected landfill gas to the landfill gas control system.

The landfill gas control system at this site is the A-3 Landfill Gas Flare. This flare destroys most of the methane, organic compounds, sulfur compounds, and HAPs in the landfill gas, but also produces secondary combustion pollutants including: nitrogen oxides (NO_x), carbon monoxide (CO), sulfur dioxide (SO_2), particulate matter (PM_{10}), formaldehyde, and hydrogen chloride.

This facility has a recycling operation that mixes sewage sludge and fly ash to produce a material that is suitable for use as a daily cover material at the landfill. The fly ash (from coal fired furnaces or lime kilns) is stored in the S-6 Silo. The A-6 Baghouse controls particulate emissions from the silo. The ash and sludge are mixed in the S-5 Pugmill. The mixing operation creates heat, which volatilizes some of the water and organic compounds in the sludge, and emits POCs and HAPs to the atmosphere.

This facility uses diesel engines to provide power to on-site equipment. Some of these engines are exempt from permit requirements, because the engines are portable (on-site for less than 12 months per year) or small (output rating of 50 hp or less). Three engines (S-8, S-9, and S-10) are included in this MFR permit. These engines produce combustion emissions including NO_x, CO, POC, SO_2, PM_{10}, and HAPs.

The S-7 Non-Retail Gasoline Dispensing Facility includes: a 1000 gallon aboveground gasoline storage tank, one gasoline dispensing nozzle, a 10,000 gallon diesel fuel storage (exempt from permit requirements), and one diesel fuel dispensing nozzle (exempt from permit requirements). The gasoline and diesel are used to fuel on-site vehicles and equipment such as bulldozers, compactors, trucks, and stationary diesel engines. Gasoline storage and transfer operations emit POCs and HAPs.

C. Permit Content

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

I. Standard Conditions

This section contains administrative requirements and conditions that apply to all facilities. If the Title IV (Acid Rain) requirements for certain fossil fuel fired electrical generating facilities or the accidental release (40 CFR § 68) programs apply, the section will contain a standard condition pertaining to these programs. Many of these conditions derive from 40 CFR § 70.6, Permit Content, which dictates certain standard conditions that must be placed in the permit. The language that the District has developed for many of these requirements has been adopted into the BAAQMD Manual of Procedures, Volume II, Part 3, Section 4, and therefore must appear in the permit.

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

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

II. Equipment

This section of the permit lists all permitted or significant sources. Each source is identified by an S and a number (e.g., S-24).

Permitted sources are those sources that require a BAAQMD operating permit pursuant to BAAQMD Regulation 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 Regulation 2-6-222, per year or 400 pounds of a "hazardous air pollutant," as defined in BAAQMD Regulation 2-6-210, per year. This facility has no significant sources that are exempt from District permits.

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).

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.

All permitted equipment was discussed in this facility's Title V permit application that was submitted on April 9, 2001. Three diesel engines (S-8, S-9, and S-10) lost the exemption from District permitting requirements on May 17, 2000 due to a change of District regulations. These engines were issued Permits to Operate in April 2003.

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

IV. Source-Specific Applicable Requirements

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

- District Rules and Regulations
- SIP Rules (if any) are listed following the corresponding District regulations. SIP rules are District regulations 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 portions of the SIP rule are cited separately after the District rule. The SIP portion will be federally enforceable; the non-SIP version will not be federally enforceable, unless EPA has approved it through another program.
- Other District requirements, such as the Manual of Procedures, as appropriate.
- Federal requirements (other than SIP provisions)
- BAAQMD permit conditions. The text of BAAQMD permit conditions is found in Section VI of the permit.
- Federal permit conditions. The text of Federal permit conditions, if any, is found in Section VI of the permit.

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

Complex Applicability Determinations

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

Landfills and landfill gas combustion equipment may also be subject to either the federal New Source Performance Standards (NSPS) for Municipal Solid Waste (MSW) Landfills or the Emission Guidelines (EG) for MSW Landfills. The federal NSPS for MSW Landfills (40 CFR Part 60, Subpart WWW) applies to landfills that have had a design capacity modification after May 30, 1991. The EG for MSW Landfills (40 CFR Part 60, Subpart Cc) applies to landfills that have had no design capacity modification since May 30, 1991 but that have accepted waste since November 8, 1987. The Vasco Road Landfill has had no design capacity modifications since May 30, 1991, but has accepted waste after November 8, 1987. Therefore the EG is applicable to this disposal facility.

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

In accordance with the EG, BAAQMD Regulation 8, Rule 34 requires large landfills (with a design capacity greater than or equal to 2.5 million Mg and greater than or equal to 2.5 million m^3) to be equipped with landfill gas collection and control systems. The EG (40 CFR § 60.32c(c)) requires the owner or operator of a landfill meeting these design capacity criteria to obtain a Title V operating permit pursuant to 40 CFR, Part 70. Accordingly, Republic Services Vasco Road was required to submit an application for Title V permit by April 6, 2001. This permit includes all equipment operated by Vasco Road Republic Services.

Effective July 1, 2002, subject landfills and the associated collection and control systems were required to meet numerous new operating, monitoring, and reporting requirements. These requirements are specified in detail in Section IV of the permit.

This landfill may accept soil or other materials containing low concentrations of volatile organic compounds (VOC) or metals, provided the material is not hazardous waste. The Permit Holder has stated that this facility does not accept soil that is contaminated, as defined in Regulation 8, Rule 40, Section 205. Therefore, Regulation 8, Rule 40 was not included as a source-specific regulation for this landfill. Regulation 8, Rule 2 applies to the handling and disposal of VOC-laden soils, which contain some VOC but do not meet the definition of "contaminated soil" in Regulation 8-40-205. Permit conditions were imposed pursuant to NSR and the District's Toxic Risk Management Policy to ensure that the handling and disposal of VOC-laden soil and metal-laden soil will not result in any significant adverse health impacts.

Landfill operations and landfill gas combustion devices are also subject to numerous other BAAQMD regulations and permit conditions. All applicable requirements are described in Section IV of the permit.

No federal requirements apply to the pugmill, silo, baghouse, diesel engines, and gasoline dispensing facility. These operations are subject to several BAAQMD regulations and permit conditions. The permit conditions ensure compliance with the applicable District regulations, NSR requirements, and the District's Toxic Risk Management Policy. All applicable requirements are described in Section IV of the permit.

V. Schedule of Compliance

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

"409.10 A schedule of compliance containing the following elements:

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

In the application, Vasco Road Republic Services stated that two diesel engines were not in compliance with District permit requirements and submitted a compliance plan stating their intent to obtain Permits to Operate for this equipment. The District issued a Permit to Operate for each engine requiring a permit in April 2003. These engines are now complying with District permitting requirements. Therefore, section 2-6-409.10.3 is no longer applicable.

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

The BAAQMD Compliance and Enforcement Division has conducted a review of compliance for the period of July 1, 2001 to June 30, 2002 and found no records of compliance problems at this facility. The compliance report is contained in Appendix A of this permit evaluation and statement of basis.

VI. Permit Conditions

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

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

All changes to existing permit conditions are clearly shown in "strike-out/underline" format in the proposed permit. When the permit is issued, all 'strike-out" language will be deleted; all "underline" language will be retained.

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

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

The applicability of preconstruction review (Regulation 2-1-301) depends on whether there is a "modified source" as defined in District Regulation 2-1-234. Whether there is a modified source depends in part on whether there has been an "increase" in "emission level." Regulation 2-1-234 defines what will be considered an emission level increase, and takes a somewhat different

approach depending on whether a source has previously been permitted by the District. Sources that were modified or constructed since the District began issuing new source review permits generally will have permits that contain throughput limits, and these limits are reflected in the Title V permit. These limits have previously undergone District review, and are considered to be the legally binding "emission level" for purposes of Regulations 2-1-234.1 and 2-1-234.2. In contrast, for "grandfathered" sources that have not had preconstruction review, an "increase" in "emission level" is addressed in Regulation 2-1-234.3. A grandfathered source is not subject to preconstruction review unless its emission level increases above the highest of: 1) the design capacity of the source, 2) the capacity listed in a permit to operate, or 3) highest capacity demonstrated prior to March 2000. However, if the throughput capacity of a grandfathered source is limited by upstream or downstream equipment (i.e., is "bottlenecked"), then the relaxing of that limitation ("debottlenecking") is considered a modification.

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

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

Conditions 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 APCO to ensure compliance with the Best Available Control Technology in Regulation 2-2-301.
- Cumulative Increase: This term is used for a condition imposed by the APCO that limits a source to the operations 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 pursuant to Regulation 2, Rule 2.
- TRMP: This term is used for a condition imposed by the APCO to ensure compliance with limits that arise from the District's Toxic Risk Management Policy.

Parameter monitoring has been added for each abatement device. Additional monitoring has been added, where appropriate, to assure compliance with the applicable requirements.

The reasons for the changes to each condition are discussed below.

Condition # 818 for: S-1, Vasco Road Landfill and Gas Collection System; A-3, Landfill Gas Flare

The basis for each part was added. Specific changes to each part are discussed below.

Part 1: This part replaces part 1 from the original permit conditions. This part identifies the landfill gas control device that must be used to control the collected landfill gas. Language was added to prohibit the intentional venting of raw untreated landfill gas.

Part 2: This part replaces part 3 from the original conditions. This part identifies the landfill gas collection system components that are subject to BAAQMD Regulation 8-34-305 and that are required to be monitored monthly pursuant to BAAQMD Regulation 8-34-505. This part also identifies changes to the collection system that are subject to the Authority to Construct requirements of BAAQMD Regulation 2-1-301.

Part 3: This part replaces part 2 from the original conditions. This part clarifies the BAAQMD Regulation 8-34-301.1 requirement to operate the landfill gas collection system continuously by identifying specific actions that are prohibited. These actions prevent the collection system from being in continuous operation, as defined in BAAQMD Regulation 8-34-219.

Part 4: The text of this part was modified to state that flare combustion zone temperature charts must be maintained continuously (as required by Regulation 8-34-501.3) and retained for five years (as required by Regulation 2-6-501).

Part 5: A three-hour averaging time was added to the minimum flare combustion zone temperature limit for consistency with the federal Emission Guidelines (EG) for MSW Landfills. In addition, this part incorporates the EG procedure for establishing a minimum combustion zone temperature limit based on source test results. The District previously required a minimum temperature of 1400 °F to ensure adequate destruction of toxic compounds. Using the EG procedure for determining the flare temperature limit and the October 2002 source test results, the minimum flare combustion zone temperature should be 1650 °F.

Deleted Parts 6 and 7: These requirements are clearly stated in Regulations 8-34-301.3 and 8-34-508 and do not need to be repeated in the permit conditions. Therefore, these parts were deleted.

Parts 6 through 11: Each part was renumbered (the part numbers from the original conditions were 8 through 13). The descriptions of the NOx limits in part 8 were corrected.

Part 12: The landfill gas flare is exempt from BACT requirements for secondary pollutants, pursuant to Regulation 2-2-112, provided the flare meets BACT or BARCT for control of another pollutant and all secondary pollutants meet RACT. This flare is considered BARCT for control of POC emissions from collected landfill gas. Part 12 was imposed as a RACT requirement for sulfur dioxide emissions from the flare. Under theoretical combustion conditions, burning landfill gas containing 45% methane and a maximum of 320 ppmv of total reduced sulfur compounds (expressed as H_2S) will result in 73 ppmv of SO_2 (dry basis, with 0% oxygen in the flue gas).
(320 ft^3 H_2S/MM ft^3 LFG)/(4.3959 MM ft^3 flue gas at 0% O_2/MM ft^3 LFG)*(1 ft^3 SO_2/ft^3 H_2S) = 72.8 ppmv of SO_2 at 0% O_2
All landfill gas combustion equipment is subject to the BAAQMD Regulation 9-1-302 limit of no more than 300 ppmv of SO_2 in the exhaust (dry basis). As shown above, the RACT limit of 320 ppmv of total reduced sulfur compounds in the landfill gas is much more stringent than the Regulation 9-1-302 limit of 300 ppmv of SO_2 in an exhaust gas stream. Complying with the RACT limit will also demonstrate compliance with Regulation 9-1-302 with a compliance margin of more than 4:1. Annual source testing of the landfill gas for reduced sulfur compounds (Part 21) and of the flare exhaust gas for sulfur dioxide (Part 20) will demonstrate compliance with these requirements.

Part 13: This part was added to identify the heat input limits for the A-3 Landfill Gas Flare, which define the maximum rated capacity for this equipment. These limits were derived from the information in Permit Application # 16282. These heat input limits combined with the NO_x, CO, and PM_{10} limits in Parts 8 through 11 will ensure that emissions will not increase as a result of a replacement or modification that increases the capacity of a permitted source without a preconstruction permit review.

Part 14: Waste acceptance limits were added to define the capacity of the landfill, which is a grandfathered source. The tons-per day limit pertains to regulation of particulate emissions from waste transport and disposal. The total cumulative waste disposal limit and the design capacity limit pertain to regulation of VOC emissions from decomposing waste in the landfill. The tons per day limit and design capacity limit were determined from information provided in the facility's Initial Design Capacity Report, the Collection and Control System Design Plan, and Title V permit application. These limits are proposed as firm throughput limits and modification thresholds, so that any change to these rates constitutes a modification of the landfill source as defined in Regulation 2-1-234.4 and is subject to the Authority to Construct requirements of Regulation 2-1-301. The total cumulative tons of waste limit is based on assumptions regarding compaction density and current cover practices. The correlation between the total cumulative limit and emissions is therefore changeable based on these variables. Accordingly, this limit is proposed as a reporting threshold and as a presumptive throughput limit and modification threshold.

Part 15: This part replaces parts 15 and 17 from the original conditions. Republic Services Vasco Road stated that no contaminated soil would be accepted at this site. Part 15 reflects this statement and clarifies the District's "contaminated" soil definitions from Regulation 8, Rule 40. Note that this facility accepts soil that is often referred to as "petroleum contaminated soil" or "PC soil". However, the PC soil accepted at this site is limited to 50 ppmv of VOC and is therefore not "contaminated" soil as defined in Regulation 8, Rule 40.

Part 16: For this part, petroleum contaminated soil containing less than 50 ppmv of VOC will be termed "VOC-laden" soil to prevent confusion over the meaning of the word "contaminated". For these conditions "contaminated" soil refers only to soil that contains more than 50 ppmv of VOC as defined in Regulation 8, Rule 40.

Part 17: This requirement was moved to this part from Condition # 12203, Part 4, because it applies to the landfill and not to the pugmill. It requires that certain alternative daily cover materials be covered within 48 hours of placement on the landfill to prevent nuisance odors.

Part 18: The terms used in the text of this part were corrected as discussed above for part 16.

Part 19: This part describes the dust mitigation measures necessary to maintain compliance with the Regulation 6-301 and 6-305 limits.

Part 20: This part expands on the annual source testing required by Regulation 8-34-412 by establishing notification, testing, and reporting procedures.

Part 21: This part provides more details about the annual landfill gas characterization analysis that is required by Regulation 8-34-412.

Part 22: Record keeping requirements were added to ensure compliance with these conditions.

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

<u>Condition # 12203 for: S-5, Pugmill (mixing of sludge and ash)</u>

The basis for each part was added or corrected.

Parts 2 and 3: The throughput limits were clarified.

Part 4 and Part 6c: These requirements were moved to Condition # 818, Part 17, because the requirements applies to the landfill and not to the pugmill.

Parts 4 through 7: These parts were renumbered.

Condition # 12204 for: S-6, Silo (for storing ash) and A-6, Baghouse

The basis for each part was added. The throughput limit was clarified in part 2. The records retention time was corrected in part 3.

VII. Applicable Limits and Compliance Monitoring Requirements

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

The tables below contain only the limits for which there is no monitoring or inadequate monitoring in the applicable requirements. The District has examined the monitoring for other limits and has determined that monitoring is adequate to provide a reasonable assurance of compliance. Calculations for potential to emit will be provided 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) the 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) 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. When a rule or permit requirement has historically had no monitoring associated with it, no monitoring may still be appropriate in the Title V permit if, for instance, there is little likelihood of a violation**.** Compliance behavior and associated costs of compliance are determined in part by the frequency and nature of associated monitoring requirements. As a result, the District will generally revise the nature or frequency of monitoring only when it can support a conclusion that existing monitoring is inadequate**.**

NO_x Sources

S# & Description	Emission Limit Citation	Federally Enforceable Emission Limit	Monitoring

NO_x Sources

S# & Description	Emission Limit Citation	Federally Enforceable Emission Limit	Monitoring
A-3 Landfill Gas Flare	BAAQMD Condition # 818, Part 8	$\leq$ 12 ppmv of NO_x, corrected to 15% O_2, dry or 0.054 pounds of NO_x (calculated as NO_2) per million BTU	Annual Source Test
A-3 Landfill Gas Flare	BAAQMD Condition # 818, Part 9	$\leq$ 92.0 pounds of NO_x per day (calculated as NO_2)	Annual Source Test and Calculations

NO_x Discussion:
The District has imposed an annual source test requirement for NO_x limits at landfill gas fired flares in other Title V permits. Annual source testing is a standard monitoring method for engines that are used for control of landfill gas. Flares control a comparable quantity of landfill gas and have much lower emissions. Therefore annual source testing is adequate.

CO Sources

S# & Description	Emission Limit Citation	Federally Enforceable Emission Limit	Monitoring
A-2 Landfill Gas Flare	BAAQMD Condition # 876, Part 7	$\leq$ 460.1 pounds of CO per day	Annual Source Test and Calculations

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

SO_2 Sources

S# & Description	Emission Limit Citation	Federally Enforceable Emission Limit	Monitoring
S-8, S-9, and S-10 Diesel Engines and A-3 Landfill Gas Flare	BAAQMD 9-1-301	Property Line Ground Level SO_2 Limits: $\leq$ 0.5 ppm for 3 minutes and $\leq$ 0.25 ppm for 60 min. and $\leq$ 0.05 ppm for 24 hours	None
A-3 Landfill Gas Flare	BAAQMD 9-1-302	Gas Stream SO_2 Limit: $\leq$ 300 ppm (dry basis)	Annual Source Test

SO_2 Sources

S# & Description	Emission Limit Citation	Federally Enforceable Emission Limit	Monitoring
S-1 Vasco Road Landfill and Gas Collection System	BAAQMD Condition # 818, Part 12	Landfill Gas Sulfur Compound Limits: $\leq$ 80 ppmv of H_2S (dry basis) $\leq$ 320 ppmv of TRS, expressed as H_2S (dry basis)	Annual Sulfur Analysis of Landfill Gas

SO_2 Discussion:

Potential to Emit Calculations for S-8, S-9, and S-10 Diesel Engines:

Maximum potential SO_2 emissions are based on the maximum fuel sulfur content of 0.5% sulfur by weight from Regulation 9-1-302.

S-8 Diesel Engine:
(4.8 gallons fuel/hour)*(7.1 pounds fuel/gallon fuel)*(0.005 pounds sulfur/pound fuel)/ (32.06 pounds sulfur/lbmol sulfur)*(1 lbmol SO_2/lbmol sulfur)*(64.06 pounds SO_2/lbmol SO_2)*(3744 hours/year)/(2000 pounds SO_2/ton SO_2) = 0.64 tons SO_2/year

S-9 Diesel Engine:
(4.8 gallons fuel/hour)*(7.1 pounds fuel/gallon fuel)*(0.005 pounds sulfur/pound fuel)/ (32.06 pounds sulfur/lbmol sulfur)*(1 lbmol SO_2/lbmol sulfur)*(64.06 pounds SO_2/lbmol SO_2)*(1872 hours/year)/(2000 pounds SO_2/ton SO_2) = 0.32 tons SO_2/year

S-10 Diesel Engine:
(4.0 gallons fuel/hour)*(7.1 pounds fuel/gallon fuel)*(0.005 pounds sulfur/pound fuel)/ (32.06 pounds sulfur/lbmol sulfur)*(1 lbmol SO_2/lbmol sulfur)*(64.06 pounds SO_2/lbmol SO_2)*(1872 hours/year)/(2000 pounds SO_2/ton SO_2) = 0.27 tons SO_2/year

Potential to Emit Calculations for A-2 Landfill Gas Flare:

For worst case SO_2 calculations, the landfill gas is assumed to contain 45% methane with a heating value of 456 BTU/ft^3 at 60 °F.

(1704 MM BTU/day)*(10^6 BTU/1 MM BTU)/(456 BTU/ft^3 LFG)*(320 ft^3 H_2S/10^6 ft^3 LFG)/ (379.5 ft^3 H_2S/lbmol H_2S)*(1 lbmol SO_2/1 lbmol H_2S)*(64.06 pounds SO_2/lbmol SO_2)* (365 days/year)/(2000 pounds SO_2/ton SO_2) = 36.84 tons SO_2/year

Definitions of the terms used above are contained in the glossary.

Maximum potential sulfur dioxide emissions from this facility are 38.1 tons/year and are not substantial. Actual SO_2 emissions are expected to be much lower (less than 9 tons/year). The diesel fuel used at S-8, S-9, and S-10 is expected to meet the more stringent CARB fuel oil limit of 0.05% sulfur by weight. Consequently, actual SO_2 emissions from these engines are expected to be less than 1.3 tons/year. District analyses of landfill gas from this site have found no

instances where the total reduced sulfur (TRS) content exceeds 65 ppmv, expressed as H_2S. Therefore, actual SO_2 emissions from the A-3 Landfill Gas Flare are expected to be less than 7.5 tons/year.

BAAQMD Regulation 9-1-301: As discussed below for BAAQMD Regulation 9-1-302 and 9-1-304, this facility will be subject to federally enforceable limits, which will ensure compliance with the BAAQMD Regulation 9-1-302 gas stream emission limit of 300 ppmv of SO_2 in the flare exhaust and with the BAAQMD Regulation 9-1-304 fuel sulfur content limit of 0.5% sulfur by weight. Sources complying with the BAAQMD Regulation 9-1-302 or 9-1-304 limits are not expected to result in an excess of the ground level concentration limits listed in BAAQMD Regulation 9-1-301. Monitoring for ground level SO_2 concentrations in addition to the proposed source testing, landfill gas monitoring, and record keeping requirements would not be appropriate, because maximum potential sulfur dioxide emissions from this facility are not substantial.

BAAQMD Regulation 9-1-302: This facility will be subject to a federally enforceable limit of 320 ppmv of TRS in the landfill gas (BAAQMD Condition # 818, Part 12). This limit will ensure compliance with the BAAQMD Regulation 9-1-302 emission limit of 300 ppmv of SO_2 in the flare exhaust, because the air required for combustion dilutes the concentration of sulfur dioxide in the exhaust compared to the concentration of sulfur in the landfill gas. Staff has proposed permit conditions that require the landfill gas to be monitored annually for TRS content to ensure compliance with the landfill gas concentration limit of 320 ppmv of TRS (a RACT limit). District analyses have not found any instances of gas from this site containing more than 65 ppmv of TRS (expressed as H_2S), which is less than a quarter of the RACT limit and less than 5% of the emission rate allowed by Regulation 9-1-302.

BAAQMD Condition # 818, Part 12: In accordance with BAAQMD Condition # 876, Part 21, this facility will be required to analyze for TRS content (measured as H_2S) in the landfill gas on an annual basis. Since the compliance margin is high (more than 4:1 based on historical analyses), annual testing is appropriate.

PM Sources

S# & Description	Emission Limit Citation	Federally Enforceable Emission Limit	Monitoring
S-1 Vasco Road Landfill and Gas Collection System	BAAQMD 6-301	Ringelmann 1.0	Records
S-5 Pugmill	BAAQMD 6-301	Ringelmann 1.0	Observation of Source in Operation
S-6 Silo and A-6 Baghouse	BAAQMD 6-301	Ringelmann 1.0	Observation of Source in Operation
A-3 Landfill Gas Flare	BAAQMD 6-301	Ringelmann 1.0	None
S-8, S-9, and S-10 Diesel Engines	BAAQMD 6-303	Ringelmann 2.0	Observation of Source in Operation
S-6 Silo and A-6 Baghouse	BAAQMD 6-310	$\leq$ 0.15 grains/dscf	None

PM Sources

S# & Description	Emission Limit Citation	Federally Enforceable Emission Limit	Monitoring
S-8, S-9, and S-10 Diesel Engines	BAAQMD 6-310	≤ 0.15 grains/dscf	None
A-3 Landfill Gas Flare	BAAQMD 6-310	≤ 0.15 grains/dscf	None
S-5 Pugmill, S-6 Silo and A-6 Baghouse	BAAQMD 6-311	$E = 0.026(P)^{0.67}$ where: E = Allowable Emission Rate (lb/hr); and P = Process Weight Rate (lb/hr) Maximum Allowable Emission Rate When P >57,320 lb/hr: E = 40 lb/hour	None
A-3 Landfill Gas Flare	BAAQMD Condition # 818, Part 11	≤ 37.5 pounds/day	None

PM Discussion:

Potential to Emit Calculations for S-5 Pugmill:

Particulate emissions from the Pugmill will occur during loading of ash from the screw conveyor into the feed hoppers. Due to the high water content (46%) in the ash/sludge mixture, no emissions are expected from the mixer. The ash has physical characteristics similar to cement and the method of operation for this pugmill is similar to that of a concrete batch plant. Therefore, particulate emission factors for this operation will be taken from AP-42 Chapter 11-12 "Concrete Batching". From Table 11.12-2, the appropriate uncontrolled emission factor for weigh hopper loading is 0.02 lbs/ton. These emissions are assumed to be all PM_{10}. Maximum emission from the pugmill are:
(60,000 dry tons/yr)*(0.02 lbs/dry ton)/(2000 lbs/ton) = 0.60 tons/yr of PM_{10}

Potential to Emit Calculations for S-6 Silo and A-6 Baghouse:

Since the ash is similar to cement, the emission factor for S-6 is taken from AP-42 Chapter 11.12 “Concrete Batching”, Table 11.12-2. The particulate emission factor for pneumatic cement unloading to an elevated storage silo is 0.27 lbs/ton (uncontrolled). The A-6 Baghouse will control at least 99% of these emissions. Maximum emissions from the S-6 Ash Silo (after control by A-6) are:
(124,800 tons/yr)*(0.27 lbs/ton)*(1.0-0.99)/(2000 lbs/ton) = 0.17 tons/yr of PM_{10}

Potential to Emit Calculations for S-8, S-9, and S-10 Diesel Engines:

The maximum potential PM_{10} emissions from S-3 are based on an AP-42 emission factor: 0.0022 pounds/bhp-hour and the hp and maximum allowable operating hours for each engine.

S-8 Diesel Engine:

(0.0022 pounds PM_{10}/bhp-hour)*(95 bhp)*(3744 hours/year)/(2000 pounds/ton)
= 0.39 tons/year of PM_{10}

S-9 Diesel Engine:
(0.0022 pounds PM_{10}/bhp-hour)*(94 bhp)*(1872 hours/year)/(2000 pounds/ton)
= 0.20 tons/year of PM_{10}

S-10 Diesel Engine:
(0.0022 pounds PM_{10}/bhp-hour)*(77 bhp)*(1872 hours/year)/(2000 pounds/ton)
= 0.16 tons/year of PM_{10}

Potential to Emit Calculations for A-3 Landfill Gas Flare:

The maximum potential PM_{10} emissions from A-3 are based on an AP-42 emission factor: 17 pounds/MM dscf methane (CH_4) and continuous operation.
(1704 MM BTU/day)/(1013 MM BTU/MM ft^3 CH_4)*(17 pounds PM_{10}/MM ft^3 CH_4)*
(365 days/year)/(2000 pounds/ton) = 5.22 tons/year of PM_{10}

BAAQMD Regulation 6-301 for S-1 Vasco Road Landfill and Gas Collection System:

The active filling operations and associated vehicle traffic can generate significant particulate emissions. Presently this facility has no method for demonstrating compliance with the Regulation 6-301, which limits visible emissions to no darker than 1.0 on the Ringelmann Chart (except for periods or aggregate periods less than 3 minutes in any hour). Additional monitoring is required pursuant to Part 70 of the Clean Air Act. Typically, landfills (including Vasco Road Landfill) maintain compliance with Regulation 6-301 by employing a dust mitigation program and using visual monitoring by site operators to ensure that dust mitigation measures are adequate. Dust mitigation measures include the application of water and/or dust suppressants on unpaved roads, fill areas, stockpiles, and other dust prone operations and sweeping, watering, or other cleaning measures on paved roads and parking areas. The frequency of watering and sweeping schedules varies from several water applications/day for dry days to no watering or sweeping on rainy days. This facility's watering requirements are specified in Condition # 818, Part 19. The District is proposing to add record keeping requirements of all water and/or dust suppressant applications and road cleaning activities (Condition # 818, Part 22d), in order to demonstrate compliance with the Regulation 6-301. District inspectors will observe the landfill operations on dry days to ensure that the dust mitigation measures are adequate to maintain compliance with the Ringelmann 1.0 limit.

BAAQMD Regulation 6-301 for S-5 Pugmill: Condition # 12203, Part 8 requires observation of the pugmill during all ash transfer operations and requires the operator to take corrective actions to stop any visible emissions. These actions will ensure compliance with the Regulation 6-301 Ringelmann 1 limit, because particulate emissions will be visible before the Ringelmann 1 limit is exceeded.

BAAQMD Regulation 6-301 for S-6 Silo and A-6 Baghouse: Condition # 12204, Part 4 requires observation of the baghouse during all ash transfer operations and requires the operator to take corrective actions to stop any visible emissions. These actions will ensure compliance with the

Regulation 6-301 Ringelmann 1 limit, because particulate emissions will be visible before the Ringelmann 1 limit is exceeded.

BAAQMD Regulation 6-301 for A-3 Landfill Gas Flare: Visible particulate emissions are normally not associated with combustion of gaseous fuels, such as natural gas or landfill gas. Since maximum potential particulate emissions are not substantial and violations of Ringelmann 1.0 limit are not expected, periodic monitoring for the Ringelmann limit would not be appropriate for this flare.

BAAQMD Regulation 6-303 for Diesel Engines: Condition # 20396, Part 4 requires observation of the engines during operation and requires the operator to take corrective actions to stop any visible emissions. These actions will ensure compliance with the Regulation 6-303 Ringelmann 2 limit, because particulate emissions will be visible before the Ringelmann 2 limit is exceeded.

BAAQMD Regulation 6-310 for S–6 Silo and A-6 Baghouse:
BAAQMD Regulation 6-310 limits filterable particulate (FP) emissions from any source to 0.15 grains per dry standard cubic foot (gr/dscf) of exhaust volume. Using the AP-42 emission factor for cement unloading and the vendor specifications for the baghouse, the grain loading rate is determined below.
(50 dry tons/hour)*(0.27 pounds/ton)*(1.0-0.99)*(7000 grains/pound)/(60 minutes/hour)/
(375 ft^3/minute) = 0.04 grains/dscf flue gas, dry, 15% O_2

BAAQMD Regulation 6-311 limits particulate matter emission rate according to the process weight rate. For any process weight rate over 28.66 ton/hr, the particulate emission rate is limited to 40 lb/hr. Using the AP-42 emission factor for cement unloading, the cement process weight rate and the vendor specifications for the baghouse, the particulate emission rate is determined below.
(50 dry tons/hour)*(0.27 pounds/ton)*(1.0-0.99) = 0.14 lb/hr
The compliance margins with the Regulation 6-310 limit and Regulation 6-311 limit are about 3.8:1 and 286:1 respectively. Periodic compliance monitoring for these limits would not be appropriate for S-6 and A-6, because the compliance margins are very high, particulate emissions are low, and the source testing for PM emissions is difficult and costly.

BAAQMD Regulation 6-310 for S–8, S-9, and S-10 Diesel Engines:
BAAQMD Regulation 6-310 limits filterable particulate (FP) emissions from any source to 0.15 grains per dry standard cubic foot (gr/dscf) of exhaust volume. Using the AP-42 emission factor and diesel oil data, a typical diesel oil flue gas production rate of 9190 dscf/MM BTU at 0% oxygen, and typical flue gas oxygen content of 15%, the particulate grain loading in each engine's exhaust is expected to be less than 0.07 grains/dscf at 15% oxygen.
(0.0022 pounds PM_{10}/bhp-hour)*(95 bhp)*(7000 grains/pound)/(4.9 gallons/hour)/
(7.1 pounds/gallon)/(0.0193 MM BTU/pound)/(9190 dscf/MM BTU)*(20.9-15)/(20.9-0)
= 0.067 grains/dscf flue gas, dry, 15% O_2
The compliance margin with the Regulation 6-310 limit is about 2:1. Periodic monitoring for compliance this limit would not be appropriate for these engines, because particulate emissions are low and source testing for PM emissions from engines is difficult and costly.

BAAQMD Regulation 6-310 for A-3 Landfill Gas Flare: Regulation 6-310 limits filterable particulate (FP) emissions from any source to 0.15 grains per dry standard cubic foot (gr/dscf) of exhaust volume. Using the AP-42 emission factor for landfill gas combustion in a flare (17 pounds PM_{10}/MM ft_3 CH4) and typical landfill gas data (heat content of 547 BTU/scf of landfill gas at 55% methane), the particulate grain loading in the flare exhaust is calculated to be 0.013 grains/dscf at 0% oxygen.
(17 pounds PM_{10}/MM ft^3 CH_4)*(7000 grains/pound)/(8.55E6 dscf, 0% O_2/MM ft^3 CH_4)
= 0.014 grains/dscf at 0% O_2
The grain loading limit is far above any expected PM emissions with a compliance ratio (limit/emissions) of more than 10:1. It would therefore not be appropriate to add periodic monitoring for this standard.

BAAQMD Regulation 6-311 for S-5 Pugmill, S–6 Silo, and A-6 Baghouse:
The maximum operating rates for S-5 and S-6 are 125 dry tons/hour and 50 dry tons/hour, respectively. Since these process rates will exceed 57,320 pounds/hour (28.7 tons/hour), Regulation 6-311 limits both operations to 40 pounds/hour of PM. Using the AP-42 emission factors discussed above in the potential to emit calculations for these sources, the maximum hourly emissions will be 2.5 pounds/hour from S-5 and 0.14 pounds/hour from S-6/A-6. The compliance ratio is 16:1 for S-5 and more than 200:1 for S-6/A-6. Since the emissions are far below the standard, it would not be appropriate to add periodic monitoring for this standard.

BAAQMD Condition # 818, Part 11 for A-3 Landfill Gas Flare:
Using the AP-42 emission factor for landfill gas combustion in flares, the expected emissions are 28.6 pounds/day compared to an emission limit of 37.5 pounds/day. Although the compliance margin for this standard is not high, particulate emissions from A-3 are not substantial (5.2 tons/year). In addition, particulate testing is difficult and costly for a exhaust streams with high temperatures. Therefore, testing for particulate emissions is not recommended for A-3.

Organic Compounds

S# & Description	Limit Citation	Federally Enforceable Limit	Monitoring
S-5 Pugmill	BAAQMD 8-2-301	Total Carbon $\leq$ 15 pounds/day or $\leq$ 300 ppm, dry basis	Daily Records and Analyses of New Sludge Sources

Organic Compounds Discussion:

BAAQMD Regulation 8-2-301: BAAQMD Condition # 12203, Part 2 limits sludge throughput to 50 dry tons/day and Part 4 limits the concentration of organic compounds in sludge to 90 ppm by weight. Together, these parts limit organic emissions from S-5 to 9 pounds/day and were imposed to ensure that this operation would not trigger BACT. These parts will also ensure compliance with Regulation 8-2-301 by limiting emissions to less than 15 pounds/day of total carbon. The existing daily record keeping requirements in Condition # 12203, Part 6 and the sludge analyses requirements in Part 5 will adequately demonstrate compliance with Parts 2 and 4 and with Regulation 8-2-301. Historical data on the organic content of the sludge indicates

that organic content of the sludge is generally less than half of the Part 4 limit, which results in a compliance margin of more than 3:1 for the Regulation 8-2-301 limit.

H_2S Sources

S# & Description	Emission Limit Citation	Emission Limit (Not Federally Enforceable)	Monitoring
S-1 Landfill and Gas Collection System	BAAQMD 9-2-301	Property line ground level limits: $\leq$ 0.06 ppm Averaged over 3 minutes and $\leq$ 0.03 ppm Averaged over 60 minutes	None
S-5 Pugmill	BAAQMD 9-2-301	Property line ground level limits: $\leq$ 0.06 ppm Averaged over 3 minutes and $\leq$ 0.03 ppm Averaged over 60 minutes	None
A-3 Landfill Gas Flare	BAAQMD 9-2-301	Property line ground level limits: $\leq$ 0.06 ppm Averaged over 3 minutes and $\leq$ 0.03 ppm Averaged over 60 minutes	None

Hydrogen Sulfide (H_2S) Discussion:

BAAQMD Regulation 9-2-301: Hydrogen sulfide can be detected by its odor at concentrations as low as 0.0005 ppmv and is generally identified by its characteristic rotten egg smell at a concentration of 0.005 ppmv or less. Therefore, H_2S emissions are typically discovered by smell well before the concentration approaches the lowest Regulation 9-2-301 emission limit of 0.03 ppmv. The District rarely ever receives complaints about hydrogen sulfide odors from Bay Area landfills and has never received any complaints about hydrogen sulfide odors from this facility. Since H_2S odors have not been detected at this facility, the concentration of H_2S at the property line is expected to be well below the Regulation 9-1-301 limits. Furthermore, the maximum expected H_2S emissions are not significant (less than 5 tons/year) and the BAAQMD Regulation 9-2-301 emission limits are not federally enforceable. Monitoring for ground level H_2S concentrations would not be appropriate for such low emission rates when no H_2S odor problem exists.

Other Limits

S# & Description	Limit Citation	Federally Enforceable Limit	Monitoring
A-3 Landfill Gas Flare	BAAQMD Condition # 818, Part 13	Heat Input Limit: ≤ 1704 MM BTU per day and ≤ 621,960 MM BTU per year	Gas Flow Meter and Records of Operating Times

Other Limits Discussion:
BAAQMD Condition # 818, Part 13: The use of a gas flow meter and records is a standard method for monitoring heat input limits at flares.

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 VI of the permit.

IX. Permit Shield:

The District rules allow two types of permit shields. The permit shield types are defined as follows: (1) A provision in an MFR permit explaining that specific federally enforceable regulations and standards are not applicable to a source or group of sources, or (2) A provision in an MFR 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, record keeping, and reporting requirements in Title V permits. The District's program does not allow other types of streamlining in Title V permits.

This facility has no permit shields. This permit has no streamlining. The applicant did not request any permit shields or streamlining.

D. Alternate Operating Scenarios:

No alternate operating scenario has been requested for this facility.

E. Compliance Status:

A July 31, 2002 office memorandum, from the Director of Compliance and Enforcement to the Director of Permit Services, presents a review of the compliance record of Republic Services Vasco Road (Site #A5095). The Compliance and Enforcement Division staff has reviewed the records for Site #A5095 for the period between July 1, 2001 through June 30, 2002. This review was initiated as part of the District evaluation of an application by Shoreline Amphitheatre for a Title V permit. During the review period:

- There were no Notices of Violation issued during this review period.
- The District did not receive any complaints.
- The facility is not operating under a Variance or an Order for Abatement from the District's Hearing Board.
- There were no monitor excesses or equipment breakdowns reported or documented by District staff.

The owner certified that all equipment (except as noted below) was operating in compliance on April 5, 2001. No other non-compliance issues have been identified to date.

Vasco Road Republic Services stated that two diesel engines were not in compliance with District permit requirements and submitted a compliance plan stating their intent to obtain Permits to Operate for this equipment. The District issued a Permit to Operate for each engine requiring a permit by April 17, 2003. These engines are now complying with District permitting requirements. No other non-compliance issues have been identified to date.

F. Differences between the Application and the Proposed Permit:

The Title V permit application was originally submitted April 9, 2001. This version is the basis for the proposed Title V permit.

All equipment listed in the proposed permit was discussed in the application. Three diesel engines (S-8, S-9, and S-10) were issued Permits to Operate after the application was submitted.

The applicant cited most of the applicable requirements in the permit application. The proposed permit includes all requirements that are applicable to this equipment. The District added applicable requirements from the following regulations: BAAQMD Regulation 1; BAAQMD Regulation 6; BAAQMD Regulation 8, Rule 2; BAAQMD Regulation 9, Rule 1; BAAQMD Regulation 9, Rule 2; 40 CFR Part 60, Subpart A; 40 CFR Part 60, and Subpart Cc; 40 CFR Part 62; 40 CFR Part 63, Subpart A; and 40 CFR Part 63, Subpart AAAA. Note that 40 CFR 62.1115 did not become effective until November 19, 2001 (after the application was submitted). Also, the NESHAP for MSW Landfills (40 CFR Part 63, Subpart AAAA) was adopted by EPA on January 16, 2003. The NESHAP requirements (Subparts A and AAAA) are not applicable until January 16, 2004. The proposed permit also includes modifications to Condition #818, Condition #12203, and Condition #12204.

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APPENDIX A

BAAQMD COMPLIANCE REPORT

APPENDIX B
GLOSSARY

ACT
Federal Clean Air Act

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

ARB
Air Resources Board

BAAQMD
Bay Area Air Quality Management District

BACT
Best Available Control Technology

Basis
The underlying authority which allows the District to impose requirements.

CAA
The federal Clean Air Act

CAAQS
California Ambient Air Quality Standards

CAPCOA
California Air Pollution Control Officers Association

CARB
California Air Resources Board (same as ARB)

CEQA
California Environmental Quality Act

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

CH4 or CH_4
Methane

CO
Carbon Monoxide

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

EG
Emission Guidelines

EPA
The federal Environmental Protection Agency.

Excluded
Not subject to any District regulations.

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

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

H2S or H_2S
Hydrogen Sulfide

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

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

LFG
Landfill gas

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

MAX or Max.
Maximum

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

MIN or Min.
Minimum

MOP
The District's Manual of Procedures.

MSW
Municipal solid waste

MW
Molecular weight

NA
Not Applicable

NAAQS
National Ambient Air Quality Standards

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

NMHC
Non-methane Hydrocarbons (Same as NMOC)

NMOC
Non-methane Organic Compounds (Same as NMHC)

NOx or NO_x
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.)

O2 or O_2
Oxygen

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

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

POC
Precursor Organic Compounds

PM
Particulate Matter

PM10 or PM_{10}
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.

RMP
Risk Management Plan

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

SO2 or SO_2
Sulfur dioxide

SSM
Startup, Shutdown, or Malfunction

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

THC
Total Hydrocarbons (NMHC + Methane)

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

TOC
Total Organic Compounds (NMOC + Methane, Same as THC)

TPH
Total Petroleum Hydrocarbons

TRMP
Toxic Risk Management Policy

TRS
Total Reduced Sulfur

TSP
Total Suspended Particulate

VOC
Volatile Organic Compounds

Symbols:

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

Units of Measure:

bhp	=	brake-horsepower
btu	=	British Thermal Unit
BTU	=	British Thermal Unit
°C	=	degrees Centigrade
cfm	=	cubic feet per minute
dscf	=	dry standard cubic feet
°F	=	degrees Fahrenheit
ft^3	=	cubic feet
g	=	grams
gal	=	gallon
gpm	=	gallons per minute
gr	=	grains
hp	=	horsepower
hr	=	hour
lb	=	pound
lbmol	=	pound-mole
in	=	inches

m^2	=	square meter
m^3	=	cubic meters
min	=	minute
mm	=	million
MM	=	million
MM BTU	=	million BTU
MMcf	=	million cubic feet
Mg	=	mega grams
ppb	=	parts per billion
ppbv	=	parts per billion, by volume
ppm	=	parts per million
ppmv	=	parts per million, by volume
ppmw	=	parts per million, by weight
psia	=	pounds per square inch, absolute
psig	=	pounds per square inch, gauge
scf	=	standard cubic feet
scfm	=	standard cubic feet per minute
sdcf	=	standard dry cubic feet
sdcfm	=	standard dry cubic feet per minute
yd	=	yard
yd^3	=	cubic yards
yr	=	year