Bay Area Air Quality Management District

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

Permit Evaluation
and
Statement of Basis
MAJOR FACILITY REVIEW PERMIT
SIGNIFICANT REVISION

for

TriCities Waste Management
Facility #A2246

Facility Address:
7010 Auto Mall Parkway
Fremont, CA 94538

Mailing Address:
7010 Auto Mall Parkway
Fremont, CA 94538

Application #009907
January 2006

Engineer: Ted Hull

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Title V Permit Evaluation and 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 New Source Performance Standards (NSPS) 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 this NSPS 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. 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 number that consists of a letter and a 4-digit number. This facility number is also considered to be the identifier for the permit.

This facility received its initial Title V permit on November 28, 2001 with an expiration date of October 31, 2006. The permit has been revised four times since the initial issuance. (this proposed revision will be the fifth)

<u>Proposed Permit Revision</u>
As part of their landfill operations, Tri-Cities Waste Management may accept and place into the landfill, soil that contains volatile organic compounds (VOC). Soil with a VOC content of 50 ppm by weight or less is considered to be “low VOC soil” and may be used as cover material for the landfill. Soil with a VOC content greater than 50 ppm by weight is considered to be “contaminated soil”, subject to the soil aeration limitations of Regulation 8, Rule 40 “Aeration of Contaminated Soil and Removal of Underground Storage Tanks”.

Permit Condition #8366, part 17 currently requires the landfill to limit the quantity of VOC laden soil (low VOC soil) handled so that no more than 15 pounds per day of VOC could be emitted. The basis of this requirement is Regulation 8-2-301, which limits VOC emissions from

"miscellaneous operations" to 15 lb/day if the emission has a concentration greater than 300 ppm (vol) total carbon.

Part 17 was included in the permit conditions for the Title V permit because it was thought that a 300 ppm (vol) total carbon emission could not be totally ruled out for soil containing up to 50 ppm (wt) of volatile organic compounds. However, Regulation 8-40-205 defines "contaminated soil" as either soil with an organic content greater than 50 ppm (wt) or which registers an organic concentration greater than 50 ppm (vol) 3 inches from the surface of the soil. Therefore, if the latter method for defining contaminated soil were used, the emissions from non-contaminated (low VOC) soil would never exceed 300 ppm (vol) so the 15 lb/day VOC limit of Regulation 8-2-301 would not apply.

Tri-Cities Waste Management has requested that the current condition be removed from the permit and replaced with a more appropriate condition that does not include a 15 lb/day VOC limit. They have also requested that the District add a Permit Shield to subsume the monitoring requirements of Regulation 8, Rule 2 "Miscellaneous Operations" with those of Regulation 8, Rule 40 "Aeration of Contaminated Soil and Removal of Underground Storage Tanks".

There is no increase of emissions associated with the proposed changes to the permit. However, the proposed changes constitute a Significant Permit Revision as defined by Regulation 2-6-226.3 because a significant change to an applicable monitoring condition is being proposed.

Summary of Proposed Changes to the Permit

- Update permit content to the current District standard.
- Replace Permit Condition #8366, part 17 with a condition that does not require a determination of compliance with a 15 lb/day VOC limit.
- Add a Permit Shield that subsumes the monitoring requirements of Regulation 8-2 with those of Regulation 8-40.

B. Facility Description

TriCities Waste Management owns and operates the TriCities Recycling and Disposal Facility (Site # A2246) located in Fremont, CA. The permitted property encompasses about 225 acres. Of the total site area, 115 acres are permitted for solid waste (MSW) disposal in a Class II/III landfill. This facility also includes a landfill gas flare, wood waste recycling operations, and a parts cleaning unit.

The S-1 Landfill has been accepting waste since 1968. The site currently accepts non-hazardous municipal solid waste, green waste, and some designated wastes such as petroleum-contaminated soils. In May 1994, the landfill was issued a revised Solid Waste Facility Permit that approved an increase to the design capacity of the landfill. In accordance with 40 CFR § 60.751, this 1994 design capacity expansion is considered a modification of the landfill. Therefore, the landfill is subject to the NSPS for MSW Landfills (40 CFR, Part 60, Subpart WWW). The landfill now has a maximum permitted capacity of 19.271 million cubic yards (about 13.49 million tons) and accepts a maximum of 2628 tons/day of refuse. The landfill has 10.9 million tons of refuse in place as of October 2003 and is expected to reach full capacity in 2005.

The landfill is equipped with an active continuously operated landfill gas collection system. Currently, all collected landfill gas is burned in the A-3 Landfill Gas Flare. A-3 is an enclosed ground flare with a maximum capacity of 41.8 MM BTU/hour or about 1375 scfm of landfill gas.

The wood waste recycling operations include the S-5 Wood Waste Stockpiles with particulate emissions controlled by the A-5 Water Truck and the S-9 Portable Diesel Engine.

Four additional diesel-fired engines (S-14, S-15, S-16, and S-17) were issued Permits to Operate in November 2003 due to a loss of exemption from District permit requirements (Permit Application #008278). In addition, the District has issued an Authority to Construct (Permit Application #009222) for (3) landfill gas fired engine generator sets (S-18, S-19, and S-20). These engines have been added to the Title V permit in a previous permit revision. All other currently permitted operations are included in this proposed MFR Permit revision.

The main source of air emissions at this facility is the S-1 Landfill. This active landfill generates significant fugitive particulate matter emissions due to waste disposal activities, vehicle traffic, cover material handling operations, and wind erosion. In addition, the waste decomposition process generates landfill gas. Landfill gas contains mainly methane, carbon dioxide, and small amounts of non-methane organic compounds (<1%) and sulfur compounds (<400 ppmv). Many of the non-methane organic compounds (NMOCs) found in landfill gas are precursor organic compounds (POC), and some NMOCs are hazardous air pollutants (HAP). Various local, state, and federal regulations require that landfill gas be collected and controlled to reduce POC and HAP emissions to the atmosphere. In order to meet these requirements, the landfill at this site is equipped with 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 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 currently includes the A-3 Landfill Gas Flare. Currently, all collected landfill gas is vented to this flare. The 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. Upon installation, the Engine Generator Sets S-18, S-19, and S-20 will combust a portion of the gas generated by the landfill to generate electricity and will also serve as abatement for the methane, organic compounds, sulfur compounds, and HAPs in the landfill gas.

The wood waste recycling operations are additional sources of particulate matter emissions. The diesel fired internal combustion engines produce combustion emissions including NO_x, CO,

POC, SO_2, PM_{10}, and HAPs. The parts cleaning operation uses a low volatility solvent to equipment parts needing maintenance or repair.

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.

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.

Changes to Permit:
None.

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-1).

Permitted sources are those sources that require a BAAQMD operating permit pursuant to BAAQMD Regulation 2-1-302. There are currently (8) permitted sources at this facility.

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. There are no significant sources.

All abatement (control) devices that control permitted or significant sources are listed. Each abatement device whose primary function is to reduce emissions is identified by an A and a number (e.g., A-3). Some equipment, such as the landfill gas fired engine generator sets, are both sources and abatement devices. However, if the primary function of the equipment is something other than abating air pollutants, it will have an "S" number and will be listed in Table II A "Permitted Sources".

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.

With the exception of the IC Engine Generator Sets (S-18, S-19, and S-20), which have been issued an Authority to Construct under Permit Application #9222, each of the listed 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. Permits for S-18, S-19, and S-20 will be issued upon installation and testing in accordance with the terms of the Authority to Construct.

The Diesel IC Engines S-17 through S-17 were added to the Title V permit because they lost their exemption from BAAQMD permitting requirements. Prior to May 17, 2000, all internal combustion engines and gas turbines with rated capacities of 250 hp or less were exempt from permitting. However, revisions to Regulation 2, Rule 1 "Permits, General Requirements" adopted on May 17, 2000 lowered the IC engine and gas turbine horsepower exemption to 50 hp. This regulatory change affected (4) small diesel engines at Tri-Cities, which were subsequently issued permits to operate under Application #008287.

Changes to Permit:
None.

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.

Sources that are exempt from 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 Rule 2-6-239. This facility does not have any significant sources that do not have District permits.

Changes to Permit:
None.

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 portion of the SIP rule is cited separately after the District rule. The SIP portion is federally enforceable; the non-SIP version are not 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 TriCities Landfill (S-1) be controlled by an active landfill gas collection system and a landfill gas control system since 1987. The current landfill gas control system includes the A-2 Landfill Gas Flare.

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. As discussed previously, the 1994 design capacity increase to the landfill at this site was considered a modification pursuant to 40 CFR § 60.751. Therefore, the S-1 Landfill is subject to this NSPS (40 CFR, Part 60, Subpart WWW). The design capacity of the landfill is now 19.271 million cubic yards (14.734 million m^3) and about 13.5 million tons (12.25 million Mg) of waste.

In accordance with 40 CFR, Part 60, Subpart WWW and BAAQMD Regulation 8, Rule 34, 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) must be equipped with landfill gas collection and control systems. Subject landfills and the associated collection and control systems were required to meet numerous operating, monitoring, and reporting requirements pursuant to Subpart WWW and Regulation 8, Rule 34. These requirements are specified in detail in Section IV of the permit. Landfill operations and landfill gas combustion devices are also subject to numerous other BAAQMD regulations and permit conditions. Regulation 6 is listed as a source-specific applicable

requirement for the landfill (S-1), because the landfill is operating and will produce particulate emissions due to waste deposition, cover material application, and vehicle traffic. All applicable requirements are described in Section IV of the permit.

The NESHAP for Municipal Solid Waste Landfills (40 CFR 63, Subpart AAAA) was adopted in November 2002 with an effective date of January 16, 2003. Any landfills that are subject to the MSW Landfill NSPS or Emission Guidelines landfill gas collection and control requirements are also subject to this NESHAP. For landfills subject to the NESHAP at the date of adoption, the requirements became effective on January 16, 2004. This NESHAP did not add any new control requirements, but it did require the preparation of a Startup, Shutdown, Malfunction Plan (to be retained on-site at all times) and added new reporting requirements. These requirements were added to Section IV of the permit.

None of the other sources at this facility are subject to any federal requirements. However, these sources are subject to several BAAQMD regulations and permit conditions. All applicable requirements are described in Section IV of the permit.

Changes to Permit:

- A note will be added to the Regulation 8-2-301 requirement in Table IV-A to state that it only applies to low VOC soil handling and disposal activities. Compliance with this regulation may be assumed for soil that has been verified as meeting the definition of "low VOC soil". (See Section IX. "Permit Shield")
- The description of Permit Condition #8366, part 17 will be modified in Table IV-A to conform to the new condition text.

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.

There has been no change to the compliance status at this facility.

Changes to Permit:
None.

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, 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; 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 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.

Additional monitoring has been added, where appropriate, to assure compliance with the applicable requirements.

Changes to the permit:

- Permit Condition #8366, part 17 will be replaced with a new condition. The basis for the original condition was compliance with the 15 lb/day VOC limit in Regulation 8-2-301. However, it has since been established that if soil measurements made in accordance with Regulation 8-40-604 show surface VOC concentrations to be less than 50 ppmv (expressed as methane, C1) compliance with Regulation 8-2-301 can be assumed. The proposed Condition #8366, part 17 establishes the procedure for verifying that soil to be used as cover material is "low VOC soil" (i.e. $\leq$ 50 ppm by weight VOC).

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 contained in Sections IV, Source-Specific Applicable Requirements, and VI, Permit Conditions, of the permit.

The District has reviewed all monitoring and has determined the existing monitoring is adequate with the exceptions below. This Statement of Basis addresses only the changes made in the proposed Significant Revision.

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**.**

Changes to Permit:

- The Total Carbon limits of Regulation 8-2-301 will be removed from Table VII-A because compliance with these limits will be demonstrated by monitoring in accordance with Regulation 8-40-604.
- The "Low VOC Soil" monitoring requirements established in Permit Condition #8366, part 17 will be added to Table VII-A.

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:

- The test methods associated with Permit Condition #8366, part 17 will be replaced to reflect the changes made to the condition. The condition now relies on Regulation 8-40 test methods rather than the Regulation 8, Rule 2 methods.

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 that 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.

Changes to Permit:

- A Permit Shield will be added to the permit that subsumes the applicable monitoring requirements of Regulation 8-2-601 with the streamlined monitoring requirements of Regulation 8-40-604. In short, if Regulation 8-40-604 monitoring verifies that soil is not contaminated (i.e. $\leq$ 50 ppm by weight VOC), there is no need to monitor under Regulation 8-2-604. Conversely, if Regulation 8-40-604 monitoring shows that soil is contaminated, it is then subject to the requirements of Regulation 8-40 and not to Regulation 8-2. In either case, Regulation 8-2-601 monitoring would not be required to demonstrate compliance with any applicable limits.

D. Alternate Operating Scenarios

No alternate operating scenario has been requested for this facility.

GLOSSARY

ACT
Federal Clean Air Act

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

API
American Petroleum Institute

ARB
Air Resources Board (same as CARB)

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.

C5
An Organic chemical compound with five carbon atoms

C6
An Organic chemical compound with six carbon atoms

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 emission monitor" is a monitoring device that provides a continuous direct measurement of some pollutant (e.g. NOx 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_4
Methane

CO
Carbon Monoxide

CO2 or CO_2
Carbon Dioxide

CT
Combustion Zone Temperature

Cumulative Increase
The sum of permitted emissions from each new or modified source since a specified date. Used to determine whether threshold-based requirements are triggered.

District
The Bay Area Air Quality Management District

dscf
Dry Standard Cubic Feet

dscm
Dry Standard Cubic Meter

E 6, 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 E 6 equals (4.53) x (10^6) = (4.53) x (10 x 10 x 10 x 10 x 10 x 10) = 4,530,000. Scientific notation is used to express large or small numbers without writing out long strings of zeros.

EG
Emission Guidelines

EGT
Exhaust Gas Temperature

EO
Executive Order

EPA
The federal Environmental Protection Agency.

Excluded
Not subject to any District regulations.

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

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

FR
Federal Register

GDF
Gasoline Dispensing Facility

GLC
Ground level concentration.

GLM
Ground Level Monitor

grains
1/7000 of a pound

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.

Hg
Mercury

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

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.

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

MW
Molecular weight

N2 or N_2
Nitrogen

NA
Not Applicable

NAAQS
National Ambient Air Quality Standards

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

NMHC
Non-methane Hydrocarbons (Same as NMOC)

NMOC
Non-methane Organic Compounds (Same as NMHC)

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.

PV or P/V Valve
Pressure/Vacuum Valve

RMP
Risk Management Plan

S
Sulfur

SCR
A "selective catalytic reduction" unit is an abatement device that reduces NOx concentrations in the exhaust stream of a combustion device. SCRs utilize a catalyst, which operates at a specific temperature range, and injected ammonia to promote the conversion of NOx compounds to nitrogen gas.

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.

TAC
Toxic Air Contaminant (as identified by CARB)

THC
Total Hydrocarbons (NMHC + Methane)

therm
100,000 British Thermal Unit

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

TVP
True Vapor Pressure

VOC
Volatile Organic Compounds

VMT
Vehicle Miles Traveled

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 (7000 grains = 1 pound)
hp	=	horsepower
hr	=	hour
in=	inches	
kg	=	kilograms
lb=	pound	
lbmol	=	pound-mole
M	=	thousand
m^2	=	square meter
m^3	=	cubic meters
Mg	=	mega-grams (1000 kg)
min	=	minute

mm	=	millimeter
MM	=	million
MMBTU	=	million BTU
MMcf	=	million cubic feet
mm Hg	=	millimeters of mercury (pressure)
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
therms	=	1 therm = 100,000 BTU
yd	=	yard
yd^3	=	cubic yards
yr	=	year