

**Bay Area Air Quality Management District**

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San Francisco, CA 94109  
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**Permit Evaluation  
and  
Statement of Basis  
for  
RENEWAL of**

**MAJOR FACILITY REVIEW PERMIT**

**for  
Martinez Cogen Limited Partnership  
Facility #A1820**

**Facility Address:**  
550 Solano Way  
Martinez, CA 94553

**Mailing Address:**  
Same As Above

Application #19496

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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 major facility as defined by BAAQMD Regulation 2-6-212. It is a major facility because it has the “potential to emit,” as defined by BAAQMD Regulation 2-6-218, of more than 100 tons per year of a regulated air pollutant.

Major Facility Operating permits (Title V permits) must meet specifications contained in 40 CFR Part 70 as contained in BAAQMD Regulation 2, Rule 6. The permits must contain all applicable requirements (as defined in BAAQMD Regulation 2-6-202), monitoring requirements, recordkeeping requirements, and reporting requirements. The permit holders must submit reports of all monitoring at least every six months and compliance certifications at least every year. In the Bay Area, state and District requirements are also applicable requirements and are included in the permit. These requirements can be federally enforceable or non-federally enforceable. All applicable requirements are contained in Sections I through VI of the permit.

Each facility in the Bay Area is assigned a facility identifier that consists of a letter and a 4-digit number. This identifier is also considered to be the identifier for the permit. The identifier for this facility is A1820.

This facility received its initial Title V permit on December 18, 1998, which was renewed on July 15, 2004. This application is for a second permit renewal. Although the current permit expired on June 30, 2009, it continues in force until the District takes final action on this permit renewal. Since the last renewal permit was issued, there have been significant changes to a number of requirements applicable to this facility. Most notably: BAAQMD Regulation 9, Rule 8 “Nitrogen Oxides and Carbon Monoxide from Stationary Internal Combustion Engines”, BAAQMD Regulation 9, Rule 9 “Nitrogen Oxides from Stationary Gas Turbines”, and California Code of Regulations 93115 “Airborne Toxic Control Measure for Stationary Compression Ignition Engines”. The District will make updates and corrections to the permit as appropriate to update the text to the current standards and to correct outdated or erroneous information. All permit revisions are clearly shown in strikeout and underline formatting in the proposed renewal permit.

Pursuant to Regulation 2, Rule 6, section 416, the District has reviewed the terms and conditions of this Major Facility Review permit and determined that they are still valid and correct. This review included an analysis of all applicability determinations for all sources, including those that have been modified or permitted since the issuance of the last renewal Major Facility Review Permit. The review also included an assessment of the sufficiency of all monitoring for determination of compliance with applicable requirements. The statement of basis documents for permit revisions that have occurred since the initial Major Facility Review permit was issued are hereby incorporated by reference and are available upon request.

## B. Facility Description

### Cogeneration Plant

The primary business of Martinez Cogen Limited Partnership (MCLP) is the production of steam and electricity at the Cogeneration Plant. The facility operates (2) natural gas/refinery gas fired combustion turbine/generators each with a rated capacity of 500 MMBTU/hr. The exhaust gases from the turbines are ducted to unfired heat recovery boilers, where steam is generated. A portion of the steam is then fed to a steam turbine for additional electrical power generation and the remainder is sold to off-site users. MCLP uses a gas blending system to ensure fuel consistency. The permitted sources at the Cogeneration Plant are the Combustion Turbines S-10 and S-11.

### Sludge Drying Plant

In addition to the power generation facilities, MCLP also has permits to operate a sludge drying plant. MCLP has operated this facility in the past when steam demands have been low, but it is not presently in service. The sludge drying plant consists of a two-stage evaporator, centrifuge, and hydro extractor. In order to improve its ability to flow through the drying unit, the sludge is mixed with a carrier oil. The centrifuge and hydro extractor are used to separate and remove the carrier oil from the dried sludge. Vapors released in the first stage evaporator are abated by a vapor condenser and carbon bed adsorber. Dried solids are pneumatically conveyed under vacuum to a product silo. Particulate emissions from the silo are abated by a baghouse. The permitted sources at the Sludge Drying Plant are the Sludge Dryer S-1, the Product Silo S-2, and the Sludge Feed Storage Tank S-3. Permitted abatement devices are the Carbon Adsorber A-1 and the Baghouse A-2.

### Other Sources

In addition to the Cogeneration Plant and Sludge Drying Plant, MCLP operates (3) diesel internal combustion engines, two as starter engines for the combustion turbines (S-12 and S-13) and one as an emergency generator to provide backup electrical power during an outage (S-14). MCLP also operates a Cooling Tower that is exempt from District permitting per Regulations 2-1-128.4 and 2-1-319.1.

## C. Permit Content

The legal and factual basis for the permit follows. The permit sections are described in the order that they are presented in the permit. Changes to the standard permit text have been made since the initial Title V Permit for this site was issued. These changes are reflected in the new proposed permit in strikeout/underline format.

### 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:

- Standard text has been updated and Condition I.B.12 will be added to clarify that the permit holder is ultimately responsible for compliance, and certification of compliance, with all conditions of the permit, regardless of what additional parties may be involved in these determinations.

## **II. Equipment**

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

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

Significant sources are those sources that have a potential to emit of more than 2 tons of a "regulated air pollutant," as defined in BAAQMD Rule 2-6-222, per year or 400 pounds of a "hazardous air pollutant," as defined in BAAQMD Rule 2-6-210, per year.

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

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

Each of the permitted sources has previously been issued a permit to operate pursuant to the requirements of BAAQMD Regulation 2, Permits. These permits are issued in accordance with state law and the District's regulations. The capacities in the permitted sources table are the maximum allowable capacities for each source, pursuant to Standard Condition I.J and Regulation 2-1-403. The Cooling Tower is exempt from District permitting per Regulations 2-1-128.4 and 2-1-319.1 and was not included in the initial Title V permit. However, revisions were made to Regulation 2-6-405.6 on May 2, 2001 so that significant sources are no longer excluded from the Title V permit, regardless of any exemption from District permitting. Since the Cooling Tower has potential PM10 emissions that may exceed 2 tons per year, it has been included in the Title V permit as a Significant Source.

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.

Changes to permit:

- Changes to this section of the permit include the addition of generally applicable requirements that are new since the permit was last issued, such as BAAQMD Regulation 2, Rule 5 “New Source Review of Toxic Air Contaminants” (adopted 6/15/05). Updates will also be made to reflect the most recent versions of cited regulations.

**IV. Source-Specific Applicable Requirements**

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

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

Section IV of the permit contains citations to all of the applicable requirements. The text of the requirements is found in the regulations, which are readily available on the District’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

### Applicability of 40 CFR 64, Compliance Assurance Monitoring (CAM)

The Compliance Assurance Monitoring (CAM) regulation in 40 CFR 64 was developed to provide assurance that facilities comply with applicable emissions limitations by adequately monitoring control devices. The CAM rule was effective on November 21, 1997. However, most facilities are not affected by CAM requirements until they submit applications for Title V permit renewal.

CAM applies to a source of criteria pollutant or hazardous air pollutant (HAP) emissions if all the following requirements are met:

- The source is located at a major source for which a Title V permit is required; and
- The source is subject to a federally enforceable emission limitation or standard for a criteria pollutant or HAP; and
- The source uses a control device to comply with the federally enforceable emission limitation or standard; and
- The source has potential pre-control emissions of the regulated pollutant that are equal to or greater than the major source threshold for the pollutant (in BAAQMD, the major source thresholds are 100 tons per year for each criteria pollutant, 10 tons per year for a single HAP, and 25 tons per year for two or more HAPs); and
- The source is not otherwise exempt from CAM.

The Gas Turbines S-10 and S-11 are not subject to CAM because they do not use a control device to comply with a federally enforceable emission standard. All other sources at the facility are exempt from CAM because the emissions of regulated air pollutants are less than 100 tons per year; and emissions of HAPs are less than 10 tons for a single HAP and 25 tons for all combined HAPs.

### Applicability of 40 CFR 72, Acid Rain Program

The Gas Turbines S-10 and S-11 are not subject to 40 CFR Part 72 (Acid Rain Program). Specifically, they fall under the cogeneration exemption of Section 72.6(b)(4)(i); the facility was constructed for the purpose of supplying less than one-third of its potential electrical output or less than 219,000 MWh per year to the utility power distribution system and since 1990 there has been no 3-year period during which the annual average sales to the utility exceeded 1/3 of our potential electrical output capacity and also exceeded 219,000 MW-hrs/year actual electrical output.

### Applicability of CAA 112 (j), Equivalent Emission Limitation by Permit

This section ensures control of HAP emissions even if the EPA should miss a scheduled NESHAP promulgation date. If the EPA misses a scheduled promulgation date by 18 months, major sources in that category must submit to their respective State (or local) agencies a permit application proposing source-specific MACT. Conditions of the MACT determination must be incorporated into the Title V operating permit. Section 112(j) is commonly referred to as the "MACT hammer."

Martinez Cogen L.P. is not subject to CAA Section 112 (j) because it is not a major source\* of Hazardous Air Pollutants (HAPs).

**Applicability of 40 CFR 63 Subpart YYYY, NESHAP for Combustion Turbines (MACT)**

Martinez Cogen L.P. is not subject to MACT standards for Combustion Turbines because it is not a major source\* of Hazardous Air Pollutants (HAPs).

\* Greater than 10 tons/yr of a single HAP or 25 tons/yr of all combined HAPs.

**Changes to permit:**

- 1) The monitoring citation for BAAQMD Regulation 1-520.8 “Monitors as required by Regulations 10, 12 and Section 2-1-403 of Regulation 2” will be added to the applicable requirements for the Gas Turbines S-10 and S-11 (Table IV-C) to reflect the fact that additional monitoring is required by permit conditions.
- 2) BAAQMD Regulation 6 “Particulate Matter and Visible Emissions” was revised and renumbered to “Regulation 6, Rule 1”, effective 12/5/2007. The previous version of Regulation 6 (9/4/1998) is now designated as the SIP approved version of the regulation. These changes will be made for each source subject to Regulation 6.
- 3) BAAQMD Regulation 9, Rule 8 “Nitrogen Oxides and Carbon Monoxide from Stationary Internal Combustion Engines” was revised on 7/25/2007. The Diesel IC Engines S-12 and S-13 were previously exempt from NOx and CO emissions standards because the rule exempted liquid fuelled engines (and low use engines). The new version of the rule will end these exemptions as of January 1, 2012. Therefore, S-12 and S-13 will have future effective dates to comply with the applicable standards in the rule (see Table IV-D). The Emergency Generator IC Engine S-14 will remain exempt from Regulation 9, Rule 8 NOx and CO emissions standards.
- 4) BAAQMD Regulation 9, Rule 9 “Nitrogen Oxides from Stationary Gas Turbines” was revised on 12/6/2006. The applicable requirements of this regulation for the Gas Turbines S-10 and S-11 will be updated in Table IV-C. The previous version of Regulation 9, Rule 9 (9/21/1994) will be included in Table IV-C as the SIP approved version.
- 5) The applicable requirements of the California Code of Regulations 93115 “Airborne Toxic Control Measure for Stationary Compression Ignition Engines” (ATCM); adopted 2/26/2004 and revised on 10/18/2007, were not included in the previous version of the permit. Therefore, the ATCM standards for the Diesel IC Engines S-12, S-13, and S-14 will be added to Tables IV-D and IV-E.
- 6) 40 CFR 60 Subpart GG “Standards of Performance for Stationary Gas Turbines” was amended on 10/17/2000. The applicable requirements of this standard to the Gas Turbines S-10 and S-11 will be updated in Table IV-C.
- 7) References to Permit Conditions #13422 (Table IV-C), #18843 (Table IV-D), and #18844 (Table IV-E) will be updated to reflect proposed permit condition changes. Proposed revisions to permit conditions are discussed in detail in Section VI “Permit Conditions”.

**V. Schedule of Compliance**

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

“409.10 A schedule of compliance containing the following elements:

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

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

Changes to permit:

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.

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, subject to consideration of comments received.

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

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

- BACT: This term is used for a condition imposed by the Air Pollution Control Officer (APCO) to ensure compliance with the Best Available Control Technology in Regulation 2-301.
- Cumulative Increase: This term is used for a condition imposed by the APCO which limits a source’s operation to the operation described in the permit application pursuant to BAAQMD Regulation 2-1-403.

- Offsets: This term is used for a condition imposed by the APCO to ensure compliance with the use of offsets for the permitting of a source or with the banking of emissions from a source pursuant to Regulation 2, Rules 2 and 4.
- PSD: This term is used for a condition imposed by the APCO to ensure compliance with a Prevention of Significant Deterioration permit issued pursuant to Regulation 2, Rule 2.
- TRMP: This term is used for a condition imposed by the APCO to ensure compliance with limits that arise from the District's Toxic Risk Management Policy.

Changes to permit:

**Permit Condition #13422:**

- 1) Delete Part 6, outdated requirement.
- 2) Add Part 13 as follows:

13. Effective January 1, 2010, for the purposes of demonstrating compliance with Regulation 9 Rule 9 Section 301.4 and for Title V compliance certification, the permit holder is considered to be in compliance with Section 301.2, if either the NOx corrected concentration or the output based NOx emission calculations in Section 9 9 605 are below the limits in 301.2. The permit holder shall identify an exceedance only if both the NOx corrected concentration and the output based NOx calculated emission rate exceed the standards in 9 9 301.2. An exceedance of both standards will be reported to the BAAQMD using the compliance procedures specified in the Title V permit. (Basis: Regulation 9-9-301.4)

This condition (with minor wording changes by the BAAQMD) was proposed by Martinez Cogen, L.P. as a means of clarifying how compliance with alternative NOx emissions standards will be demonstrated.

**Permit Condition #18843:**

- 1) Amend Part 1 to verify that the BAAQMD agrees that the Gas Turbine Start Diesel IC Engines S-12 and S-13 meet the ATCM Low-Use Prime Engine exemption (93115.3 (j)) and are not subject to ATCM emission control requirements.
- 2) Update Part 2 to change the fuel sulfur requirement from <0.5% to the more stringent ATCM standard of "CARB Diesel" (0.005% sulfur).

**Permit Condition #18844:**

Replace the existing conditions with the following updated conditions for an existing emergency use diesel engine limited by the ATCM to 20 hours of operation per year for maintenance and testing:

1. Only CARB Diesel fuel or approved alternative shall be combusted at S-14. The maximum sulfur content of the fuel shall be demonstrated by vendor certification. (basis: CCR 93115.5(b))
2. S-14 shall only be operated to mitigate emergency conditions or for reliability-related activities. Operation for reliability-related activities shall not exceed 20 hours in any

calendar year. Operation while mitigating emergency conditions is unlimited. (basis: CCR 93115.6(b)(3)(A)(1)(a))

3. “Emergency Conditions” is defined as any of the following:
  - a. Failure of regular electric power supply.
  - b. Flood mitigation.
  - c. Sewage overflow mitigation.
  - d. Fire.
  - e. Failure of a primary motor, but only for such time as needed to repair or replace the primary motor. (basis: Regulation 9-8-231.)
4. “Reliability-related activities” is defined as any of the following:
  - a. Operation of an emergency standby engine to test its ability to perform for an emergency use.
  - b. Operation of an emergency standby engine during maintenance of a primary motor.
  - c. Operation of an emergency standby engine after notification by the utility that involuntary curtailment is imminent but before the actual curtailment. (basis: Regulation 9-8-232)
5. The emergency standby engine S-14 shall be equipped with a non-resettable totalizing meter that measures and records the hours of operation for the engine. This meter shall have a minimum display capability of 9,999 hours. (basis: CCR 93115.10(e)(1))
6. The following monthly records shall be maintained for the emergency standby engine S-14 in a District approved log. Records shall be kept for at least 5 years and shall be made available for District inspection upon request: (basis: Regulations 9-8-530, 1-441, CCR 93115.10(g))
  - a. Total hours of operation.
  - b. Hours of operation under emergency conditions and a description of the nature of each emergency condition.
  - c. Fuel usage.

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

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

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

These factors are the same as those historically applied by the District in developing monitoring for applicable requirements. It follows that, although Title V calls for a re-examination of all monitoring, there is a presumption that these factors have been appropriately balanced and

incorporated in the District's prior rule development and/or permit issuance. It is possible that, where a rule or permit requirement has historically had no monitoring associated with it, no monitoring may still be appropriate in the Title V permit if, for instance, there is little likelihood of a violation. Compliance behavior and associated costs of compliance are determined in part by the frequency and nature of associated monitoring requirements. As a result, the District will generally revise the nature or frequency of monitoring only when it can support a conclusion that existing monitoring is inadequate.

The District has reviewed all monitoring and has determined the existing monitoring is adequate with the following exceptions.

### PM Sources

S# & Description	Emission Limit Citation	Federally Enforceable Emission Limit	Monitoring
<b>COOLING TOWER:</b>	BAAQMD Regulation 6-301	Ringelmann 1.0	None
	BAAQMD Regulation 6-310	0.15 gr/dscf	None
<b>SLUDGE DRYING OPERATION, PRODUCT SILO: S-1, S-2</b>	BAAQMD Regulation 6-301	Ringelmann 1.0	None
	BAAQMD Regulation 6-310	0.15 gr/dscf	None
	BAAQMD Regulation 6-311	3.4 pounds/hour, for Process Weight Rate (P) 1,420 pounds/hour	None
<b>DIESEL IC ENGINES S-12, S-13, S-14</b>	BAAQMD Regulation 6-303.1	Ringelmann 2.0	None
	BAAQMD Regulation 6-310	0.15 gr/dscf	None

### **PM Discussion:**

#### Cooling Tower

BAAQMD Regulation 6-301 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). Particulate emissions from cooling towers come from dissolved solids in the cooling tower water and are therefore expected to be fairly constant and not subject to operational control. A search of the District's data base for MCLP reveals that the facility has received no violations or complaints in regard to particulate emissions in the past 10 year period. The District is therefore satisfied that a periodic monitoring requirement for visible emissions is not necessary for the Cooling Tower.

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. As shown in the following

calculation, the worst-case grain loading from the Cooling Tower is much less than 0.15 grains per dscf. Therefore, no monitoring is required to ensure compliance with this limit for this source.

Cooling water circulation rate	23,000 gpm
Drift rate	0.003%
Maximum total dissolved solids	2,080 ppm
Minimum Exhaust gas flow rate:	540,500 dscfm

Cooling tower drift:

$$(23,000 \text{ gal/min})(60 \text{ min/hr})(8.34 \text{ lb/gal})(0.00003) = 345 \text{ lb/hr}$$

$$\begin{aligned} \text{Max. PM10 emission rate} &= (345 \text{ lb/hr})(2,080 \text{ ppm})/10^6 \\ &= 0.72 \text{ lb/hr} \end{aligned}$$

$$\begin{aligned} \text{Grain loading} &= (0.72 \text{ lb/hr})(\text{hr}/60 \text{ min})(7000 \text{ gr/lb})/(540,500 \text{ dscfm}) \\ &= 0.00015 \text{ gr/dscf} \end{aligned}$$

#### S-1, S-2: Sludge Drying Operations

Dried sludge from the Sludge Drying Operation S-1 is pneumatically conveyed to the Product Silo S-2. Therefore, the potential particulate emissions from this operation would occur at the exhaust vent of the Product Silo. The Product Silo is abated by the Baghouse A-2, so PM emissions are expected to be low. The maximum throughput of dried sludge from the Sludge Dryer to the Product Silo is 0.71 tons/hr and the silo has a capacity of 1,200 cubic feet (approximately 30 tons). From AP-42 Table 11.12-2, an uncontrolled PM factor of 0.72 lb/ton is given for "cement unloading to elevated storage silo". Due to a similarity in the nature of the operations and the lack of a specific emission factor for handling dried sludge, this factor will be used to estimate emissions from the product silo. Assuming a typical (conservative) baghouse abatement efficiency of 98% and that as a worst case the product silo will be filled and emptied two times per week, the highest estimated PM emissions for this operation will be 0.01 lb/hr and 0.02 tons/yr. Because the predicted PM emissions are so low, the addition of periodic monitoring to demonstrate compliance with Regulation 6, Sections 301, 310, and 311 is not recommended.

#### S-12, S-13, S-14: IC Engines

BAAQMD Regulation 6-303.1 limits visible emissions from IC Engines that are less than 1,500 cubic inches of displacement to no darker than 2.0 on the Ringelmann Chart (except for periods or aggregate periods less than 3 minutes in any hour). Due to the sporadic and infrequent nature of the usage of these engines for Gas Turbine starts (S-12, S-13) and standby power generation (S-14) and because Ringelmann 2 is not a stringent limit, the District has determined that the addition of periodic monitoring for the Regulation 6-303.1 visible emissions limit is not necessary.

BAAQMD Regulation 6-310 limits PM emissions to 0.15 gr/dscf. If it is assumed that the diesel engine exhaust gases contain 15% excess oxygen under normal operating conditions, the Regulation 6-310 limit can be compared to the expected emissions from S-12, S-13 and S-14 as follows:

From 40 CFR 60, Appendix A, Method 19, Table 19-1, a stoichiometric dry gas combustion factor of 9,190 dscf/MMBTU is given for distillate oil combustion. At 15% excess O<sub>2</sub> this factor becomes:

$$9,190 \times [21\% / (21\% - 15\%)] = 32,165 \text{ dscf (combustion products) / MMBTU}$$

The conversion of 0.15 gr/dscf @ 15% O<sub>2</sub> to lb/MMBTU is then:

$$(32,165 \text{ dscf / MMBTU}) \times (0.15 \text{ gr / dscf}) \times (\text{lb} / 7,000 \text{ gr}) = 0.689 \text{ lb / MMBTU}$$

The converted manufacturer's PM emission factors (in lb/MMBTU) for S-12, S-13, and S-14 are as follows:

- S-12, S-13: 0.10 lb/MMBTU
- S-14: 0.12 lb/MMBTU

Since the manufacturer's PM emission factors for each of these engines are less than the converted Regulation 6-310 limit, compliance is assumed.

### SO2 Sources

S# & Description	Emission Limit Citation	Federally Enforceable Emission Limit	Monitoring
DIESEL IC ENGINES S-12, S-13, S-14	BAAQMD 9-1-304	Fuel Sulfur Content Limit: $\leq 0.5\%$ sulfur by weight	Vendor fuel certification

### **SO2 Discussion:**

#### S-12, S-13, S-14: IC Engines

BAAQMD Regulation 9-1-304 limits the sulfur content of liquid fuels to 0.5% by weight. Per the CAPCOA/ARB/EPA Agreement of 6/24/99 entitled "Periodic Monitoring Recommendations For Generally Applicable Requirements in SIP", vendor fuel sulfur content certifications for liquid fuels will provide sufficient assurances of compliance with SO<sub>2</sub> emissions limits. Compliance with Diesel fuel sulfur limits in BAAQMD Regulation 9-1-304 and BAAQMD Conditions #18843 and #18844 will be assured by certification of the sulfur content by the fuel supplier for each fuel delivery.

The District has concluded that the monitoring requirements included in the proposed renewal Title V permit are adequate.

#### Changes to permit:

Tables VII A-E have been updated to reflect the changes to regulations and permit conditions previously discussed.

### **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:

No substantive changes will be made.

### **IX. Permit Shield:**

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

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

#### Changes to permit

Martinez Cogen L.P. currently has (5) permit shields of the first type (Non-Applicable Requirements) and (11) of the second type (Subsumed Requirements). In their Title V renewal application, the permit holder requested that the existing permit shields be retained.

NSPS Subpart GG requirement designations have changed and will be updated in this section.

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

No alternate operating scenario has been requested for this facility.

**E. Compliance Status:**

A January 14, 2010 office memorandum from the Director of Compliance and Enforcement, to the Director of Engineering, presents a review of the compliance record of Martinez Cogen Limited Partnership (MCLP), Site #A1820. This review was initiated as part of the District evaluation of an application by MCLP for a renewal of their Title V permit.

The Compliance and Enforcement Division staff reviewed the Compliance Certifications submitted by MCLP for the period of December 1, 2004 to November 30, 2009 and found no ongoing non-compliance or recurring patterns of violation. In addition, a detailed review of BAAQMD compliance records for the period from January 1, 2009 to December 31, 2009 found no instances of non-compliance with applicable Title V requirements. During the review period there were:

- No Notices of Violation.
- No air pollution complaints alleging MCLP as the source.
- No notifications of Reportable Compliance Activities (RCA).
- No enforcement agreements, open variances, or open abatement orders for MCLP.

The Director of Compliance and Enforcement has concluded there is no recurring pattern of non-compliant activity that warrants consideration of a Title V compliance schedule for this facility.

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

The renewal Title V permit application was submitted on December 23, 2008. This version is the basis for constructing the proposed Title V permit. There are no significant differences between the renewal Title V application and the proposed permit.

H:\Engineering\TITLE V Permit Appls\1 ALL T5 Application Files here\A1820\Renew-19496\3.0 Proposed docs\A1820sobC

**APPENDIX A**  
**BAAQMD COMPLIANCE REPORT**

**COMPLIANCE & ENFORCEMENT DIVISION**

**Inter-Office Memorandum**

**January 14, 2010**

**TO:** BRIAN BATEMAN – DIRECTOR OF ENGINEERING  
**FROM:** KELLY WEE – DIRECTOR OF ENFORCEMENT *N. K. for*  
**SUBJECT:** REVIEW OF COMPLIANCE RECORD OF:

**MARTINEZ COGEN LIMITED PARTNERSHIP – SITE# A1820**

**Background**

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

**Compliance Review**

Staff reviewed MCLP Annual Compliance Certifications for 12/1/2004 to 11/30/2009 and found no ongoing non-compliance and no recurring pattern of violations. Staff also reviewed the District compliance records for MCLP for 1/1/2009 through *1/31/2010* *12/31/2009*. During this period MCLP activities known to the District include:

The District issued 0 Notices of Violation.

The District did not receive any air pollution complaints alleging MCLP as the source.

The District received 0 notifications for Reportable Compliance Activities (RCA) including inoperative monitors.

There are no enforcement agreements, open variances, or open abatement orders for MCLP.

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### **Conclusion**

The Compliance and Enforcement Division has made a determination that for the five year period MCLP was in intermittent compliance. There is no evidence of on-going non-compliance and no recurring pattern of violations that would warrant consideration of a Title V permit compliance schedule.

rjs 01-14-10

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**APPENDIX B**  
**GLOSSARY**

**ACT**

Federal Clean Air Act

**APCO**

Air Pollution Control Officer

**API**

American Petroleum Institute

**ARB**

Air Resources Board

**BAAQMD**

Bay Area Air Quality Management District

**BACT**

Best Available Control Technology

**BARCT**

Best Available Retrofit Control Technology

**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

**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.

**CO**

**Carbon Monoxide**

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

Carbon Dioxide

**Cumulative Increase**

The sum of permitted emissions from each new or modified source since a specified date. 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, E 9, E 12**

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

**EGT**

Exhaust Gas Temperature

**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), and also 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

**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 both 40 CFR Part 63, and District Regulation 2, Rule 5.

**H2S**

Hydrogen Sulfide

**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.

**LHV**

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

**Major Facility**

A facility with potential emissions of regulated air pollutants greater than 100 tons per year, greater than or equal to 10 tons per year of any single hazardous air pollutant, and/or greater than or equal to 25 tons per year of any combination of hazardous air pollutants, or such lesser quantity as determined by the EPA administrator.

**MFR**

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

**MOP**

The District's Manual of Procedures.

**MSDS**

Material Safety Data Sheet

**MW**

Megawatts

**NA**

Not Applicable

**NAAQS**

National Ambient Air Quality Standards

**NESHAPS**

National Emission Standards for Hazardous Air Pollutants. Contained in 40 CFR Part 61.

**NMHC**

Non-methane Hydrocarbons

**NMOC**

Non-methane Organic Compounds (Same as NMHC)

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

Oxides of nitrogen.

**NSPS**

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

**NSR**

New Source Review. A federal program for preconstruction review and permitting of new and modified sources of air pollutants for which the District is classified "non-attainment". Mandated by Title I of the Clean Air Act and implemented by 40 CFR Parts 51 and 52 as well as District Regulation 2, Rule 2. (Note: There are additional NSR requirements mandated by the California Clean Air Act.)

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

The chemical name for naturally-occurring oxygen gas.

**Offset Requirement**

A New Source Review requirement to provide federally enforceable emission offsets at a specified ratio for the emissions from a new or modified source and any pre-existing cumulative increase minus any onsite contemporaneous emission reduction credits. Applies to emissions of POC, NO<sub>x</sub>, PM10, and SO<sub>2</sub>.

**Phase II Acid Rain Facility**

A facility that generates electricity for sale through fossil-fuel combustion and by virtue of certain other characteristics (defined in Regulation 2, Rule 6) is subject to Titles IV and V of the Clean Air Act.

**POC**

Precursor Organic Compounds

**PM**

Total Particulate Matter

**PM10**

Particulate matter with aerodynamic equivalent diameter of less than 10 microns

**PSD**

Prevention of Significant Deterioration. A federal program for permitting new and modified sources of 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.

**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**

Sulfur dioxide

**SO2 Bubble**

An SO2 bubble is an overall cap on the SO2 emissions from a defined group of sources, or from an entire facility. SO2 bubbles are sometimes used at refineries because combustion sources are typically fired entirely or in part by "refinery fuel gas" (RFG), a waste gas product from refining operations. Thus, total SO2 emissions may be conveniently quantified by monitoring the total amount of RFG that is consumed, and the concentration of H2S and other sulfur compounds in the RFG.

**SO3**

Sulfur trioxide

**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)

**TRMP**

Toxic Risk Management Plan

**TSP**

Total Suspended Particulate

**TVP**

True Vapor Pressure

**VOC**

## Volatile Organic Compounds

### Units of Measure:

bhp	=	brake-horsepower
Btu	=	British Thermal Unit
g	=	grams
gal	=	gallon
hp	=	horsepower
hr	=	hour
lb	=	pound
in	=	inches
max	=	maximum
m <sup>2</sup>	=	square meter
min	=	minute
MM	=	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
scfm	=	standard cubic feet per minute
yr	=	year

### Symbols:

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